GSFC JPSS CMO
January 14, 2015
Released

Effective Date: January 09, 2015
Block/Revision 0124D

Joint Polar Satellite System (JPSS) Ground Project
Code 474
474-00001-08-B0124

Joint Polar Satellite System (JPSS) Common Data Format Control Book – External (CDFCB-X) Volume VIII - Look Up Table Formats

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Block 1.2.4

Goddard Space Flight Center
Greenbelt, Maryland

National Aeronautics and
Space Administration

Joint Polar Satellite System (JPSS) Common Data Format Control Book – External Volume VIII - Look Up Table Formats

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Preface

This document is under JPSS Ground ERB configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

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Change History Log

Revision	Effective Date	Description of Changes (Reference the CCR & CCB/ERB Approval Date; for first Block Version Release, identify origin of document source)	Sections Affected
0124-	Dec 04, 2013	This version incorporates Rev C of 474-00001-08-B0123, dated November 07, 2013 to create the baseline for Block 1.2.4, Rev-. This was approved (out of board) by the JPSS Ground ERB via 474-CCR-13-1281 on the effective date shown.	All
0124A	Jan 30, 2014	This version incorporates 474-CCR-14-1494 (ECR-CGS-0286). This was approved by the JPSS Ground ERB on the effective date shown.	All
0124A-1	Mar 13, 2014	This version incorporates 474-CCR-14-1548 (ECR-CGS-0274). This was approved by the JPSS Ground ERB on the effective date shown.	Section 3.2.1.3.49 Table 3.2.1.3.49-1 Section 3.2.1.4.37 Table 3.2.1.4.37-1 Section 3.2.1.4.46 Table 3.2.1.4.46-1 Table 3.2.2.5.6-1
0124A-2	Apr 21, 2014	This version incorporates 474-CCR-14-1652 (ECR-CGS-0324). This was approved by the JPSS Ground ERB on the effective date shown.	Table 3.1.1.1-1 Table 3.2.2.5.6-1 Table 3.2.2.5.19-1
0124B	May 01, 2014	This version incorporates 0124A-1, 0124A-2, and 474-CCR-14-1675. This was approved on the effective date shown.	All
0124B-1	July 24, 2014	This version incorporates 474-CCR-14-1854 (ECR-CGS-0372). This was approved by the JPSS Ground ERB on the effective date shown.	Table 3.1.2.1-1 Table 3.1.2.2-1 Table 3.1.2.9-1 Table 3.1.2.10-1
0124B-2	Aug 14, 2014	This version incorporates 474-CCR-14-1859 (ECR-CGS-0370). This was approved by the JPSS Ground ERB on the effective date shown.	Table 3.2.2.5.23-1
0124C	Oct 02, 2014	This version incorporates 0124B-1, 0124B-2, and 474-CCR-14-1944 (ECR-CGS-0405). This was approved by the JPSS Ground ERB on the effective date shown.	All
0124D	Jan 09, 2015	This version incorporates 474-CCR-14-2183 (ECR-CGS-0470). This was approved by the JPSS Ground ERB on the effective date	All

Revision	**Effective Date**	**Description of Changes** (Reference the CCR & CCB/ERB Approval Date; for first Block Version Release, identify origin of document source)	**Sections Affected**
		shown.	

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Engineering & Manufacturing Development (EMD) Phase
Acquisition & Operations Contract

CAGE NO. 11982

NPOESS Common Data Format Control Book - External
Volume VIII – Look Up Table Formats

Document Date: 04/16/2010 **Document Number: 474-00001-08**
Revision: D

CDRL A014

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This document has been identified per the Joint Polar Satellite System (JPSS) Common Data Format Control Book - External (CDFCB-X) Volume V - Metadata Formats, 474-00001-05, Appendix B as a document to be provided to the NOAA Comprehensive Large Array-data Stewardship System (CLASS) via the delivery of NPOESS Document Release Packages to CLASS.

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Revision/Change Record

For Document No. D34862-08

Revision	Document Date	Revision/Change Description	Pages Affected
---	07/02/2008	Initial Release, ECR 785A	All
A	01/16/2009	Revision A (for NPOESS CDR), ECR 902A Update to most tables to clarify/correct formats as provided by IDPS/PRO	All
B	06/05/2009	Revision B, ECR 963B - Addition of OMPS TC and OMPS NP LUTs, PCs, and Ephemeral PCs - Updated/Corrected VIIRS Calibration Coefficient Tables (Coeff A, B, and Delta C tables) - Data Mapping table moved to CDFCB-X, Vol I to eliminate duplicate documentation. Appendix A now references Vol I. - Various updates/corrections to Data Mnemonics, File Sizes, Descriptions also provided	All
C	12/09/2009	Revision C , ECR 1018B incorporates the following updates: • Updated references to Tunable Parameters to Ephemeral Processing Coefficients throughout the document for consistency • Incorporated ECR 1012A – Updated Appendix A, DATA MNEMONIC TO INTERFACE MAPPING to reference 474-00001-01, CDFCB-X Volume I for the mapping. This was done based on user feedback on use of the mappings as well as eliminates duplication and precedence issues across the various volumes of the CDFCB-X • NEW: Section 4, Provenance, also added description of new Section 4.0 for Provenance data files in overview • Updated formats based on Full Analysis and Review of PC and LUT files between SI, IDPS, and A&DP • Removed "The Version Number field of the File-Naming Convention for OMPS Automatic PCs will set to a dash ("-")" from File-Naming Construct for all OMPS Automatic PCs, no longer needed with CDFCB-X Volume I update where applicable throughout document • Updated relationship of OMPS version number with respect to the Provenance Versioning Identifier provided in the filename, where applicable throughout document • Incorporation of ECR A-255A, CrIS SDR Algorithm Code and LUT Update and ECR A-184A, Aerosols Code Update • Title corrections and text clarifications throughout	All

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Revision/Change Record	**For Document No.** **D34862-08**

Revision	**Document Date**	**Revision/Change Description**	**Pages Affected**

		document, updates based on LUT/PC analysis performed by IDPS, SE&I, and A&DP against implemented source, tech memo's, IPAC testing, and algorithm ECRs
		• New Defined Formats
		  ○ VIIRS Surface Albedo BPSA Sea Ice LUT
		  ○ VIIRS SDR GEO PARAM PC
		• Deleted Formats (OBE)
		  ○ VIIRS COP SA and Emissivity PC
		  ○ VIIRS Sea Ice Quality PC
		• Closed the following TBXs
		  ○ EDFCB8-TBD-10225 – closed
		  ○ EDFCB8-TBD-10511 – closed
		  ○ EDFCB8-TBD-10275 – closed
		  ○ EDFCB8-TBR-10516 – closed
		  ○ EDFCB8-TBR-10517 – closed
		  ○ EDFCB8-TBR-10518 – closed
		• Incorporated ECR A-251B, VIIRS SDR Cal & Geolocation
		• Incorporated ECR A-263A, Sea Ice Characterization
		• Updated Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format based on A-251B
		• Updated CrIS Correction Matrix in accordance with A-255A with IDPS input
		• Added version identifier specification as applicable for LUTs and PC files
		• Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format - update wmap Array size
		• Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format - Updated led_time_offset array size and total format file size
		• Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format - updated Range of Values for diff Array (True = 1 and False = 0 in lieu of >0)
		• Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format - updated parameter name to macrot (in lieu of badpix BATC)
		• Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format - updated name of second dimension for angles Array	

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Revision/Change Record	**For Document No.** **D34862-08**

Revision	Document Date	Revision/Change Description	Pages Affected

D	04/16/2010	ECR 1063B Incorporates the following changes:
		• VIIRS CTP OSS OD LUT sizing updates based on input from IDPS
		• VIIRS CTP OSS SEL LUT sizing updates based on input from IDPS
		• Various typographical updates (no impact to technical content)
		• VIIRS Cloud Mask IP Ephemeral PC format, closes TBD, based on ECR A-262B
		• VIIRS Net Heat Flux Ephemeral PC format, added parameters based on input from IDPS
		• VIIRS Vegetation Index EDR Ephemeral PC, updated degrees for SZA based on System Specification
		• Incorporation of Program approved ECR 1048B, DCO D1, CrIS SDR PC Update
		• Incorporation of Program approved ECR 1054B, DCO D2, OMPS Updates
		  ○ Incorporated ECR A-225B, OMPS TC SDR LUT
		• Section 3.2.1.4.71, VIIRS Bright Pixel Flag Threshold PC - added unsigned clarification to spare
		• 2. Table 3.2.2.2.1-1, ATMS SDR Ephemeral PC - updates based on ECR A-288B, ATMS SDR Ephemeral PC file update
		• 3. Added two new sections (replacing previously DELETED sections) based on ECR A-284, COP LUT Update
		  ○ Section 3.2.1.4.53, VIIRS COP IR Band Spectral LUT
		  ○ Section 3.2.1.4.55, VIIRS COP Pfaast Regression LUT
		• Table 3.2.2.3.1-1, CrIS SDR Ephemeral PC – updated comments column to indicate array dimensions
		• Table 3.2.2.5.2-1, VIIRS Aerosol Ephemeral PC – updated length throughout
		• Table 3.2.2.5.11-1, VIIRS LST EDR Ephemeral PC (updated variable names, added algmode)
		• Table 3.2.2.5.13-1, VIIRS Net Heat Flux Ephemeral PC (updated variable name)
		• Table 3.2.2.5.14-1, VIIRS ACO/OCC Ephemeral PC
			pp.36-38
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			pp. 664-665
			p. 681
			
			p. 487
			
			pp. 526-535
			
			pp. 446-447
			pp. 453-457
			pp. 557-560
			pp. 579-585
			
			pp. 663-664
			p. 669

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Revision/Change Record

For Document No. D34862-08

Revision	Document Date	Revision/Change Description	Pages Affected
		(updated data types) • Table 3.2.2.5.26-1, VIIRS Surface Albedo Ephemeral PC (removed erroneous parameter) • Moved VIIRS NHF Aggregated PC file format definition to Section 3.2.1.4.72 • Section 3.1.2.9, OMPS NP Darks PC and Section 3.1.2.10, OMPS NP SAA Darks PC - File size based on Dark Data dimensions update	pp. 672-673, 677 p. 699 pp. 494, 701-706 pp. 164-169

Table of Contents

List of Tables

1.0 INTRODUCTION

1.1 Document Purpose and Scope

Volume VIII of the Common Data Format Control Book - External (CDFCB-X) contains the specifications for the format of Look Up Tables (LUT) and Processing Coefficients (PC). These formats are used to create the NPP/NPOESS Data Products and are made available to authorized external users of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) as well as delivered to the Comprehensive Large Array-data Stewardship System (CLASS).

For overview information and the reference documents for the CDFCB-X, see the JPSS CDFCB-X Vol. I, 474-00001-01.

1.2 Document Overview

For ease of reading, understanding, and use of this document, the sections of this volume are organized in the following manner:

Section 1.0: Introduction – Provides a brief overview of the document's purpose, scope, and an explanation of the data formats used in this volume.

Section 2.0: Look Up Tables – Provides the data format definitions for Radiative Transfer Models' (RTM) LUTs and LUTs provided from external vendors such as Optimal Spectral Sampling (OSS).

Section 3.0: Processing Coefficients – Provides the data format definitions for the Processing Coefficients used by NPOESS – includes Ephemeral PCs (XML formatted) and automated/manual PCs (binary formatted).

Section 4.0: Provenance – Provides the data format definitions for the Provenance files product by NPOESS

Appendix A: Data Mnemonic to Interface Mapping - A mapping of data mnemonics to their corresponding logical interface mnemonics.

1.3 LUT Formats Template Overview

LUT data formats are files that contain data used to create NPOESS Data Products.

The template used for these formats in this document is described below.

Data Mnemonic: This is a unique identifier. The method for defining data mnemonics is defined in the JPSS CDFCB-X Vol. I, 474-00001-01.

Description/Purpose: A brief description of the data format and its purpose.

File-Naming Construct: A description of the file-naming constructs for those data units that apply. See the JPSS CDFCB-X Vol. I, 474-00001-01, for file-naming conventions.

File Size: The size of the data file.

File Format Type: The format type of the data file.

Production Frequency: Production frequency is the interval of time for data generation. A production frequency equal to dynamic implies that it is only as requested or as needed.

Data Format/Structure: This defines the actual data format. The definitions provide information for every data element in the data unit.

In the described formats:

The field names are all mandatory, unless specified otherwise.

Fill data is specified, where applicable.

Strings are left-aligned and integers are right-aligned, unless specified otherwise.

For information regarding Coordinated Universal Time (UTC) and IDPS Epoch Time (IET) conventions, see the JPSS CDFCB-X Vol. I, 474-00001-01.

For all references of the ASCII Standard, the corresponding International Standards Organization (ISO) standard is ISO/IEC 10646. The specific Unicode is UTF8, unless stated otherwise.

The fields are presented in order (either top – down or most significant first), unless stated otherwise.

2.0 Look Up Tables

Algorithm LUTs are files that contain tables of pre-computed values which are used in lieu of real-time algorithm computations. These table values are typically the result of RTM executions, and other environmental model simulations. These data typically cover a broad, multi-dimensional parameter space which is unique to each algorithm.

2.1 CrIMSS LUTs

2.1.1 CrIMSS Channel Selection LUT

Data Mnemonic	NP_NU-LM0030-000
Description/ Purpose	The Cross-track Infrared (IR) Microwave Sounder Suite (CrIMSS) Channel Selection LUT identifies which channels are used in the retrievals for the creation of the Atmospheric Vertical Moisture Profile (AVMP), the Atmospheric Vertical Temperature Profile (AVTP), and the Atmospheric Vertical Pressure Profile (AVPP). This file is used in the CrIMSS Environmental Data Records (EDR) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	10,440 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.1-1, CrIMMS Channel Selection LUT Data Format.

Table 2.1.1-1, CrIMSS Channel Selection LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
irChanSel	5220	32-bit integer	0 – 1	unitless	1 Dimensional Array IR Channel Size of Dimension(s): 1305
freq	5220	32-bit floating point	1.9E15 – 7.6E15	Hz	1 Dimensional Array Frequency Size of Dimension(s): 1305

2.1.2 CrIMSS IR Optimal Spectral Sampling Coefficients LUT

Data Mnemonic	NP_NU-LM0030-001
Description/ Purpose	The CrIMSS IR Optimal Spectral Sampling Coefficients LUT provides the IR OSS coefficient and channel information. This file identifies which channels are used in the retrievals and covers both IR and microwave data. This file is used by the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	24,058,412 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.2-1, CrIMSS IR OSS Coefficients LUT Data Format.

Table 2.1.2-1, CrIMSS IR OSS Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	1 – 1305	unitless	Number of sensor channels for which data is provided
nfSel	4	32-bit integer	MinInt - MaxInt	unitless	Number of selected monochromatic spectral points
nChMax	4	32-bit integer	MinInt - MaxInt	unitless	Maximum number of selected points per sensor channel
cFreq	10400	32-bit floating point	Minfloat - Maxfloat	nm	Center Frequencies of the sensor channels 1 Dimensional Array: MAX_OSSIR_CHANS l Size of Dimension(s): 2600
nChSmp	48000	32-bit integer	1 – 1305	unitless	Number of channels which use a particular selected monochromatic spectral Pojnt 1 Dimensional Array: MAX_IR_FSAMP Size of Dimension(s): 12000
coef	12000000	32-bit floating point	Minfloat - Maxfloat	unitless	OSS IR absorption coefficients for the selected monochromatic spectral points 2 Dimensional Array: MAX_IR_FSAMP x MAX_OSSIR_COEFF_CHAN Dimensions: 12000 x 250
iChMap	12000000	32-bit integer	MinInt - MaxInt	unitless	Channel mapping data to relate coef to a particular sensor channel 2 Dimensional Array: MAX_IR_FSAMP x MAX_OSSIR_COEFF_CHAN Dimensions: 12000 x 250

2.1.3 CrIMSS MW Absorption Coefficients LUT

Data Mnemonic	NP_NU-LM0030-002
Description/ Purpose	The CrIMSS Microwave (MW) Absorption Coefficients LUT file provides the MW absorption coefficients at OSS levels as well as temperature and water vapor data. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	160,029,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.3-1, CrIMSS MW Absorption Coefficients LUT Data Format.

Table 2.1.3-1, CrIMSS MW Absorption Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nLayers	4	32-bit integer	1 – 100	unitless	Number of layers
nTemps	4	32-bit integer	MinInt - MaxInt	unitless	Number of temperature elements
watVap	4	32-bit integer	MinInt - MaxInt	unitless	Number of water vapor elements
pRef	404	32-bit floating point	0 – 1100.0	hPa	Reference pressure for each layer 1 Dimensional Array: OSS_MW_LEVS Size of Dimension(s): 101
tempTable	20000	32-bit floating point	Minfloat - Maxfloat	Kelvin	Temperature table 2 Dimensional Array: OSS_MW_LAYERS x MAX_OSSMW_TEMPS Size of Dimension(s): 100 x 50
fixTable	400	32-bit floating point	Minfloat - Maxfloat	g/kg	Fixed gas table 1 Dimensional Array: OSS_MW_LAYERS Size of Dimension(s): 100
wvpTable	8000	32-bit floating point	Minfloat - Maxfloat	g/kg	Water vapor table 2 Dimensional Array: OSS_MW_LAYERS x MAX_OSSMW_WV Size of Dimension(s): 100 x 20
vFreq	400	32-bit floating point	Minfloat - Maxfloat	nm	Frequencies associated with absorption coefficients 1 Dimensional Array: MAX_MW_FSMP Size of Dimension(s): 100

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
kFix	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Fixed gas absorption coeffiecients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Size of Dimension(s): 100 x 100000
dkFix	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Water vapor self continuum absorption coefficients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Size of Dimension(s): 100 x 100000
kH2o	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Absorption coefficients for fixed gases for water 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Dimensions: 100 x 100000
dkH2o	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Interpolation coefficients for the absorption coefficients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Dimensions: 100 x 100000

2.1.4 CrIMSS MW Optimal Spectral Sampling Coefficients LUT

Data Mnemonic	NP_NU-LM0030-004
Description/ Purpose	The CrIMSS MW Optimal Spectral Sampling Coefficients LUT file contains the MW OSS coefficient and channel information. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	5,412bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	See Table 2.1.4-1, CrIMSS MW OSS Coefficients LUT Data Format.

Table 2.1.4-1, CrIMSS MW OSS Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	0 – 22	unitless	Number of sensor channels for which data is provided
nfSel	4	32-bit integer	>=0	unitless	
nChMax	4	32-bit integer	>=0	unitless	
cFreq	200	32-bit floating point	Minfloat - Maxfloat	unitless	Number of selected monochromatic spectral point 1 Dimensional Array: ossmwChannel Size of Dimension(s): 50
nChSmp	400	32-bit integer	0 – 22	unitless	1 Dimensional Array: mwFsamp Size of Dimension(s): 100
coef	2400	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array: mwFsamp x ossmwCoeffChan Size of Dimension(s): 100 x 6
iChMap	2400	32-bit integer	1 – 22	unitless	2 Dimensional Array: mwFsamp x ossmwCoeffChan Size of Dimension(s): 100 x 6

2.1.5 CrIMSS Surface Emissivity LUT

Data Mnemonic	NP_NU-LM0030-005
Description/ Purpose	The CrIMSS Surface Emissivity LUT file contains the IR surface emissivity hinge points. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	52 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.5-1, CrIMSS Surface Emissivity LUT Data Format.

Table 2.1.5-1, CrIMSS Surface Emissivity LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numIrEmiss	4	32-bit integer	MinInt - MaxInt	unitless	Number of IR emissivities in the data buffer
freqSfcHp	48	32-bit floating point	Minfloat - Maxfloat	wavenumber	IR surface emissivity hinge point frequencies. The number of hinge points is equal to the number of surface IR emissivities in the geophysical domain 1 Dimensional Array: freqHp Size of Dimension(s): 12

2.1.6 CrIMSS IR Absorption Coefficients LUT

Data Mnemonic	NP_NU-LM0030-006
Description/ Purpose	The CrIMSS IR Absorption Coefficients LUT file provides the IR absorption coefficients at OSS levels, as well as temperature and water vapor data. This file contains both IR and MW data. This file is used by the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	864,829,296 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.6-1, CrIMSS IR Absorption Coefficients LUT Data Format.

Table 2.1.6-1, CrIMSS IR Absorption Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nLayers	4	32-bit integer	1 – 100	unitless	Number of layers
nTemps	4	32-bit integer	MinInt - MaxInt	unitless	Number of temperature elements
nMol	4	32-bit integer	1 – 7	unitless	Number of molecule IDs
molId	80	32-bit integer	1 – 5	unitless	Molecule IDs 1 Dimensional Array: molIds Size of Dimension(s): 20
pRef	404	32-bit floating point	0 – 1100	hPa	Reference pressure 1 Dimensional Array: ossIrLev Size of Dimension(s): 101
tempTable	4000	32-bit floating point	Minfloat – Maxfloat	Kelvin	Temperature table 2 Dimensional Array: ossIrLayer x ossirTemp Size of Dimension(s): 100 x 10
wvpTable	8800	32-bit floating point	Minfloat – Maxfloat	g/kg	Water vapor table 2 Dimensional Array: ossIrLayer x ossirWv Size of Dimension(s): 100 x 22
vFreq	48000	32-bit floating point	Minfloat – Maxfloat	nm	Frequencies associated with absorption coeffs 1 Dimensional Array: irFsamp Size of Dimension(s): 12000

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nMols	48000	32-bit integer	MinInt – MaxInt	unitless	Number of molecules at each frequency for which there is an absorption coefficient 1 Dimensional Array: irFsamp Size of Dimension(s): 12000
iMols	720000	32-bit integer	1 – 5	unitless	Molecule index array 2 Dimensional Array: irFsamp x mol Size of Dimension(s): 12000 x 15
kFix	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Fixed gas absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
dkH2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Water vapor self continuum absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
kH2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Water vapor lines plus the foreign continuum absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
kVar	720000000	32-bit floating point	Minfloat – Maxfloat	unitless	Absorption coefficient tables for the variable gases 2 Dimensional Array: irFsamp x irVg Size of Dimension(s): 12000 x 15000

2.1.7 CrIMSS IR RTM Bias Correction LUT

Data Mnemonic	NP_NU-LM0030-007
Description/ Purpose	The CrIMSS IR RTM Bias Correction LUT file provides the long, medium and short wave bias corrections. This file is used by the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	5268 bytes
File Format Type	Binary
Production Frequency	As Needed
Data Content and Data Format	For details see Table 2.1.7-1, CrIMSS IR RTM Bias LUT Data Format.

Table 2.1.7-1, CrIMSS IR RTM Bias Correction LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwBias	2868	32-bit floating point	0 – 10	Unitless	Long wave RTM bias correction 1 Dimensional Array: lwnumberofpoints Size of Dimension(s): 717
mwBias	1748	32-bit floating point	0 – 10	Unitless	Mid wave RTM bias correction 1 Dimensional Array: mwnumberofpoints Size of Dimension(s): 437
swBias	652	32-bit floating point	0 – 10	Unitless	Short wave RTM bias correction 1 Dimensional Array: swnumberofpoints Size of Dimension(s): 163

2.1.8 CrIMSS MW BT Bias Correction LUT

Data Mnemonic	NP_NU-LM0030-008
Description/ Purpose	The CrIMSS MW BT Bias Correction LUT file contains the estimated Bias Correction to ATMS SDR Brightness Temperature (per ATMS channel and CRIS FOR).
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	2640 bytes
File Format Type	Binary
Production Frequency	As Needed
Data Content and Data Format	For details see Table 2.1.8-1, CrIMSS MW BT Bias Correction LUT Data Format

Table 2.1.8-1, CrIMSS MW BT Bias Correction LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
atmsBtBiasCorr	2640	32-bit floating point	1.4E-45 - 3.4028235E38	Unitless	MW bias correction to ATMS SDR Brightness Temperature (per ATMS channel and CrIS FOR) 2 Dimensional Array: MAX_MW_CHAN x CRIS_SCAN_FORS Size of Dimension(s): 22 x 30

2.2 VIIRS LUTs

2.2.1 VIIRS AOT LUT

Data Mnemonic	NP_NU-LM0040-000
Description/ Purpose	The VIIRS Aerosol Optical Thickness (AOT) LUT file contains transmittances (used for both upward and downward), spherical albedo, ratios of AOT at the VIIRS band wavelengths to AOT at 550 nm and atmospheric reflectance. Contains values for all land and ocean aerosol models. This file is used in the VIIRS AOT algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	46,622,120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.1-1, VIIRS AOT LUT Data Format.

Table 2.2.1-1, VIIRS AOT LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
szen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SOL_ZEN_DIM Size of Dimension(s): 21
vzen	160	64-bit floating point	0 – 1.21455298	radians	1 Dimensional Array: SAT_ZEN_DIM Size of Dimension(s): 20
aot	60	32-bit floating point	0 – 2	unitless	1 Dimensional Array: AOT_DIM Size of Dimension(s): 15
band	44	32-bit unsigned integer	0 – 9	unitless	1 Dimensional Array: BANDS_DIM Size of Dimension(s): 11
scat_ang_val	1680	32-bit integer	0 – 5491	unitless	1 Dimensional Array: SCAT_ANG_VAL_DIM Size of Dimension(s): 420
trans	176400	32-bit floating point	0 – 1	unitless	4 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM x SOL_ZEN_DIM Size of Dimension(s): 14 x 15 x 10 x 21
albedo	8400	32-bit floating point	0 – 1	unitless	3 Dimensional Array: AERO_MOD_DIM x AOT_DIMx BAND_DIM Size of Dimension(s): 14 x 15 x 10
atau	8400	32-bit floating point	0 – 2	unitless	3 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM Size of Dimension(s): 14 x 15 x 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
reflec	46,426,800	32-bit floating point	0 – 10	unitless	4 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM x SCAT_ANG_DIM Size of Dimension(s): 14 x 15 x 10 x 5527
scat_ang_incr	8	64-bit floating point	0 – 0.06981317	unitless	

2.2.2 VIIRS AOT Sunglint LUT

Data Mnemonic	NP_NU-LM0040-001
Description/ Purpose	The VIIRS AOT Sunglint LUT file contains the normalized integral of downward irradiance by sunglint directional reflectance (also used for normalized integral of upward radiance by sunglint directional reflectance). This file is used in the AOT algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	30,006,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.2-1, VIIRS AOT Sunglint LUT Data Format.

Table 2.2.2-1, VIIRS AOT Sunglint LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
szen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SG_SOL_ZEN_DIM Size of Dimension(s): 21
vzen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SG_SEN_ZEN_DIM Size of Dimension(s): 21
relaz	168	64-bit floating point	0 - 3.14159265	radians	1 Dimensional Array: SG_REL_AZI_DIM Size of Dimension(s): 21
aot	60	32-bit floating point	0 – 2	unitless	1 Dimensional Array: SG_AOT_DIM Size of Dimension(s): 15
rhobar	30,005,640	32-bit floating point	0 – 1	unitless	6 Dimensional Array: SG_AER_MOD_DIM x SG_AOT_DIM x SG_BAND_DIM x SG_SOL_ZEN_DIM x SG_SEN_ZEN_DIM x SG_REL_AZI_DIM Size of Dimension(s): 9 x 15 x 6 x 21 x 21 x 21
pad	4	8-bit unsigned integer	N/A	unitless	1 Dimensional Array: SG_PAD_DIM Size of Dimension(s): 4

2.2.3 VIIRS COP Ice Cloud LUT

Data Mnemonic	NP_NU-LM0040-002
Description/ Purpose	The VIIRS Cloud Optical Properties (COP) Ice Cloud LUT is created from the University of California at Los Angeles' (UCLA) Line-by-Line Equivalent (LBLE) RTM for the purpose of simulating cloudy reflectance for a variety of cloud relationships. This file contains reflectances and radiances generated for a variety of conditions. This file is used by the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	280,829,576 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.3-1, VIIRS COP Ice Cloud LUT Data Format.

Table 2.2.3-1, VIIRS COP Ice Cloud LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sol_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 19
sen_zen_bins	76	32-bit floating point	0 – pi /2	Radians	1 Dimensional Array: COP_ICE_SEN_ZEN_BINS Size of Dimension(s): 19
rel_az_bins	88	32-bit floating point	0 – pi	Radians	1 Dimensional Array: COP_ICE_REL_AZ_BINS Size of Dimension(s): 22
sfc_albedo_bins	40	32-bit floating point	0 – 0.9	unitless	1 Dimensional Array: COP_ICE_ALBEDO_BINS Size of Dimension(s): 10
sfc_emiss_bins	4	32-bit floating point	0.9	unitless	1 Dimensional Array: COP_ICE_EMISS_BINS Size of Dimension(s): 1
eps_indexes	52	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: COP_ICE_EPS_BINS Size of Dimension(s): 13
eps_bins	52	32-bit floating point	5 – 200	Micrometers	1 Dimensional Array: COP_ICE_EPS_BINS Size of Dimension(s): 13
cot_bins	68	32-bit floating point	0.125 – 80	unitless	1 Dimensional Array: COP_ICE_COT_BINS Size of Dimension(s): 17

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM5_refl	70207280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 13 x 1 x 10 x 22 x 19 x 19
precalcM8_refl	70207280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 13 x 1 x 10 x 22 x 19 x 19
precalcM10_refl	70207280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 13 x 1 x 10 x 22 x 19 x 19

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM11_refl	70207280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 13 x 1 x 10 x 22 x 19 x 19

2.2.4 VIIRS COP Water Cloud LUT

Data Mnemonic	NP_NU-LM0040-003
Description/ Purpose	The VIIRS COP Water Cloud LUT file is created from UCLA's LBLE RTM for the purpose of simulating cloudy reflectance for a variety of cloud relationships. This file is used in the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	217,293,552 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.4-1, VIIRS COP Water Cloud LUT Data Format.

Table 2.2.4-1, VIIRS COP Water Cloud LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sol_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19
sen_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_WATER_SEN_ZEN_BINS Size of Dimension(s): 19
rel_az_bins	88	32-bit floating point	0 – pi	Radians	1 Dimensional Array: COP_WATER_REL_AZ_BINS Size of Dimension(s): 22
sfc_albedo_bins	40	32-bit floating point	0 – 0.9	unitless	1 Dimensional Array: COP_WATER_ALBEDO_BINS Size of Dimension(s): 10
sfc_emiss_bins	4	32-bit floating point	0.9	unitless	1 Dimensional Array: COP_WATER_EMISS_BINS Size of Dimension(s): 1
eps_indexes	36	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: COP_WATER_EPS_BINS Size of Dimension(s): 9
eps_bins	36	32-bit floating point	2 – 50	Micrometers	1 Dimensional Array: COP_WATER_EPS_BINS Size of Dimension(s): 9
cot_bins	76	32-bit floating point	0.125 – 200	unitless	1 Dimensional Array: COP_WATER_COT_BINS Size of Dimension(s): 19

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM5_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19
precalcM8_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19
precalcM10_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM11_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19

2.2.5 VIIRS CTP COT LUT

Data Mnemonic	NP_NU-LM0040-004
Description/ Purpose	The VIIRS Cloud Top Parameters (CTP) COT LUT file contains factors for the conversion of COT at 0.55 microns to 10.763 microns. This file is used in the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	31,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.5-1, VIIRS CTP COT LUT Data Format.

Table 2.2.5-1, VIIRS CTP COT LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	31208	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: COT_ROWS x COT_COLS Size of Dimension(s): 3901 x 2

2.2.6 VIIRS CTP MSC LUT

Data Mnemonic	NP_NU-LM0040-005
Description/ Purpose	The VIIRS CTP Multiple Scattering Correction (MSC) file contains regression coefficients for multiple scattering corrections. This file is used by the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	4,412 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.6-1, VIIRS CTP MSC LUT Data Format.

Table 2.2.6-1, VIIRS CTP MSC LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
grid_ndims	4	32-bit integer	3	unitless	Number of input dimensions. That is, the data vectors are specified on a grid in 'grid_ndims'-dimensional space
data_ndims	4	32-bit integer	4	unitless	Dimension of data values. Data variables are vectors with 'data_ndims' elements
ntics	12	32-bit integer	MinInt - MaxInt	unitless	Number of 'tic marks' for each dimension. 'tic marks' are essentially the grid coordinates. The value in ntics[i] is the number of grid coordinates for dimension number 'i' 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
factor	12	32-bit integer	MinInt - MaxInt	unitless	Factors for indexing values 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
tic_min	12	32-bit floating point	Minfloat – Maxfloat	unitless	Min tic value used for interpolation 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
tic_max	12	32-bit floating point	Minfloat – Maxfloat	unitless	Max tic value used for interpolation 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tic	132	32-bit floating point	Minfloat – Maxfloat	unitless	Tic mark (grid coordinate) table. The value in tic[i][j] is the 'j'th grid coordinate for dimension 'i' 2 Dimensional Array: GRID_NDIMS x NUM_TIC Size of Dimension(s): 3 x 11
data	4224	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficients for multiple scattering correction 2 Dimensional Array: DATA_NDIMS x NUM_DATA Size of Dimension(s): 4 x 264

2.2.7 VIIRS CTP OSS OD LUT

Data Mnemonic	NP_NU-LM0040-006
Description/ Purpose	The VIIRS CTP OSS OD LUT file contains the OSS forward model input parameters. This file is used in the VIIRS Cloud Top Pressure (CTP) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	17,952 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.7-1, VIIRS CTP OSS OD LUT Data Format.

Table 2.2.7-1, VIIRS CTP OSS OD LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
NmolFix	2	16-bit integer	MinInt – MaxInt	unitless	
Nmol	2	16-bit integer	MinInt – MaxInt	unitless	
MolIDFix	24	16-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: NUM_MOLIDFIX Size of Dimension(s): 12
MolID	2	16-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: NUM_MOLID Size of Dimension(s): 1
Spare	2	16-bit integer	MinInt – MaxInt	unitless	
NLayOD	4	32-bit integer	MinInt – MaxInt	unitless	
NTmpOD	4	32-bit integer	MinInt – MaxInt	unitless	
pref	96	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_PREF Size of Dimension(s): 24
tmptab	920	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: TMPTAB_ROWS x TMPTAB_COLS Size of Dimension(s): 23 x 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wvptab	276	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: WVPTAB_ROWS x WVPTAB_COLS Size of Dimension(s): 23 x 3
padFloat	4	32-bit floating point	Minfloat – Maxfloat	unitless	Pad
vFreq	48	64-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_VFREQ Size of Dimension(s): 6
NmolS_tmp	2	16-bit integer	MinInt - MaxInt	unitless	
ImolS_tmp	2	16-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: NUM_IMOLS Size of Dimension(s): 1
Padshort	4	16-bit integer	MinInt - MaxInt	unitless	Spare 1 Dimensional Array: Size of Dimension(s): 2
kfix	5520	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: KFIX_ROWS x KFIX_COLS Size of Dimension(s): 6 x 230
dkh2o	5520	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: DKH2O_ROWS x DKH2O_COLS Size of Dimension(s): 6 x 230

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
kh2o	5520	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: KH2O_ROWS x KH2O COLS Size of Dimension(s): 6 x 230

2.2.8 VIIRS CTP OSS SEL LUT

Data Mnemonic	NP_NU-LM0040-007
Description/ Purpose	The VIIRS OSS SEL LUT file contains the OSS SEL regression coefficients. This file is used in the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	76 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.8-1, VIIRS CTP OSS SEL LUT Data Format.

Table 2.2.8-1, VIIRS CTP OSS SEL LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	MinInt - MaxInt	unitless	
nf_sel	4	32-bit integer	MinInt - MaxInt	unitless	
nchmax	4	32-bit integer	MinInt - MaxInt	unitless	
cFreq	4	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_CFREQ Size of Dimension(s): 1
nch	12	16-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: NUM_NCH Size of Dimension(s): 6
coef	24	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: COEF_ROWS x COEF_COLS Size of Dimension(s): 6 x 1
ichmap	24	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: ICH_ROWS x ICH_COLS Size of Dimension(s): 6 x 1

2.2.9 VIIRS Sea Ice Broadband Atmospheric Transmittance LUT

Data Mnemonic	NP_NU-LM0040-008
Description/ Purpose	The VIIRS Sea Ice Broadband Atmospheric Transmittance LUT file is generated using the 6S radiative transfer routine and the algorithm. This file is used in the VIIRS Sea Ice Age algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	332 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.9-1, VIIRS Sea Ice Broadband Atmospheric Transmittance LUT Data Format.

Table 2.2.9-1, VIIRS Sea Ice Broadband Atmospheric Transmittance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aotbin	24	32-bit floating point	0.0 – 1.0 Initial Values = [0.0,0.01,0.1,0.2,0.6,1.0]	unitless	AOT Boundary Values 1 Dimensional Array: NAOT Size of Dimension(s): 6
szabin	44	32-bit floating point	-90 – 90 Initial Values = [48.0,52.0,56.0,60.0,64.0, 68.0,72.0,76.0,80.0,84.0, 88.0]	degree	Solar Zenith Angle Boundary Values 1 Dimensional Array: NSZA Size of Dimension(s): 11

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bbtranslut	264	32-bit floating point	0.0 – 1.0 Initial Values = [0.913416 0.913416 0.883998 0.852080 0.734581 0.634458 **(1)** 0.906948 0.906948 0.874509 0.839625 0.714074 0.610474 **(2)** 0.898996 0.898996 0.862829 0.824371 0.689830 0.583017**(3)** 0.889093 0.889093 0.848281 0.805525 0.661177 0.551780**(4)** 0.876536 0.876536 0.829884 0.781987 0.627344 0.516514**(5)** 0.860251 0.860251 0.806199 0.752198 0.587501 0.477124**(6)** 0.838493 0.838493 0.774994 0.713922 0.540873 0.433793**(7)** 0.808251 0.808251 0.732683 0.663920 0.487026 0.387159**(8)** 0.763895 0.763895 0.673236 0.597567 0.426465 0.338517**(9)** 0.705639 0.705639 0.596868 0.514757 0.359083 0.287918**(10)** 0.633377 0.633377 0.503474 0.415542 0.284933 0.235338**(11)]**	unitless	Atmospheric Broadband Transmittance values, extracted from 6S RTM. Transmittance is provided in this field, one for each “naot” bin (6 total) and a set of 6 for each solar zenith angle (as listed in the szabin field). 2 Dimensional Array: NSZA x NAOT Size of Dimension(s): 11 x 6

2.2.10 VIIRS Sea Ice Reflectance LUT

Data Mnemonic	NP_NU-LM0040-009
Description/ Purpose	The VIIRS Sea Ice Reflectance LUT file contains top of the atmosphere reflectance, spectral albedo and broad band albedo values for snow/ice surfaces which are treated as flat surfaces. This file is used in the VIIRS Sea Ice Age algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	9,314,508 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.10-1, VIIRS Sea Ice Reflectance LUT Data Format.

Table 2.2.10-1, VIIRS Sea Ice Reflectance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
snowThick	24	32-bit floating point	>0.0 Values initially set to: [0.0, 0.25, 0.5, 1.0, 2.0, 3.0]	cm	Snow Depth Bin Values 1 Dimensional Array: DEPTH Size of Dimension(s): 6
snowGrainSize	4	32-bit floating point	Value initially set to = 250.0	micrometers	Snow Grain Size
snowDensity	4	32-bit floating point	Value initially set to = 0.3	g/cm^3	Snow Density
iceThick	20	32-bit floating point	>0.0 Values initially set to: [5,10,20,30,40]	cm	Ice Thickness Bin Values 1 Dimensional Array: THICK Size of Dimension(s): 5
iceGrainSize	4	32-bit floating point	>0.0	micrometers	Ice Grain Size
iceDensity	4	32-bit floating point	>0.0	g/cm^3	Ice Density
normIceDensity	4	32-bit floating point	>0.0	g/cm^3	
brineGrainSize	4	32-bit floating point	>0.0	unitless	Brine Grain Size
brineDensity	4	32-bit floating point	>0.0	g/cm^3	Brine Grain Density
subRefl	4	32-bit floating point	>0.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sunZen	44	32-bit floating point	-1.0 – 1.0	unitless (values are cosines)	Solar Zenith Angle Bin Values 1 Dimensional Array: N_SZA Size of Dimension(s): 11
viewZen	28	32-bit floating point	-1.0 – 1.0	unitless (values are cosines)	View Zenith Angle Bin Values 1 Dimensional Array: N_VZA Size of Dimension(s): 7
relAzm	28	32-bit floating point	0 – 180	degree	Relative Azimuth Angle Bin Values 1 Dimensional Array: N_RELAZ Size of Dimension(s): 7
snowType	4	32-bit floating point	Minfloat - Maxfloat	unitless	Snow Type
h2oVapor	12	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.4323, 2.0]	gm/cm^2	Precipitable Water Bin Values 1 Dimensional Array: N_WVOT Size of Dimension(s): 3
totClmnOzn	12	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.1967, 0.5]	milli-atm-cm	Ozone Column Bin Values 1 Dimensional Array: N_OOT Size of Dimension(s): 3
aeroModel	8	32-bit floating point		unitless	Aerosol Model 1 Dimensional Array: N_AEROMDL Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aotBin	16	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.2366, 0.5472,1.0]	unitless	AOT Bin Values 1 Dimensional Array: N_AOT Size of Dimension(s): 4
iceRefl	9313920	32-bit floating point	> 0.0	unitless	TOA Reflectances From 6S RTM 10 Dimensional Array N_AM x N_BANDS x N_THICK x N_DEPTH x N_AOT x N_WVOT x N_OOT x N_SZA x N_VZA x N_RELAZ Size of Dimension(s): 2 x 2 x 5 x 6 x 4 x 3 x 3 x 11 x 7 x 7
sphrAlbedo	120	32-bit floating point	0.0 – 1.0	unitless	Broadband From 6S radiative transfer model (RTM) 2 Dimensional Array: N_DEPTH x N_THICK Size of Dimension(s): 6 x 5
narrowSphrAlbedo	240	32-bit floating point	0.0 – 1.0	unitless	Spectral Albedo from 6S RTM 3 Dimensional Array: N_BANDS x N_DEPTH x N_THICK Size of Dimension(s): 2 x 6 x 5

2.2.11 VIIRS ACO/OCC Aerosol Coefficients LUT

Data Mnemonic	NP_NU-LM0040-010
Description/ Purpose	The VIIRS ACO/OCC Aerosol Coefficients LUT file contains parameters used to compute the aerosol contribution to the TOA reflectance. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	73,735,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.11-1, VIIRS ACO/OCC Aerosol Coefficients LUT Data Format.

Table 2.2.11-1, VIIRS ACO/OCC Aerosol Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cost	36,867,600	32-bit floating point	~-0.05 ≤ acost ≤ ~27.0 ~-0.7 ≤ bcost ≤ ~4.0 ~-219≤ ccost ≤ ~136.0 ~-5254 ≤ dcost ≤ ~10,247 ~-144187 ≤ ecost ≤ ~64163	unitless	1) Coefficients for fit as rho_a + rho_ra vs. rho_as for the VIIRS bands, or 2) Coefficients for fit rho_as vs. (rho_a + rho_ra) for the VIIRS NIR bands. Coefficients are used to compute the multi-scattering aerosol reflectance for bands M1-M5. Note: AERO_COEF dimension (size = 5) corresponds to a,b,c,d,e (i.e. acost) 6 Dimensional Array: AERO_COEF x MODEL x ACOBANDS x MSUN x MPHI x NRAD Size of Dimension(s): 5 x 12 x 7 x 33 x 19 x 35

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cost_rev	36,867,600	32-bit floating point	~-5996 ≤ acost_rev ≤ ~6167 ~-7972 ≤ bcost_rev ≤ ~3423 ~-1937 ≤ ccost-rev ≤ ~3664 ~-3160 ≤ dcost_rev ≤ ~2539 ~-34950 ≤ ecost_rev ≤~33761	unitless	1) Coefficients for fit as rho_a + rho_ra vs. rho_as for the VIIRS bands, or 2) coefficients for fit rho_as vs. (rho_a + rho_ra) for the VIIRS NIR bands. Single-scattering aerosol (M6 – M7) reflectance coefficients are stored in these arrays (acost_rev, …). Note: AERO_COEF dimension (size = 5) corresponds to a,b,c,d,e (i.e. acost_rev) 6 Dimensional Array: AERO_COEF x MODEL x ACOBANDS x MSUN x MPHI x NRAD Size of Dimension(s): 5 x 12 x 7 x 33 x 19 x 35
thetav	140	32-bit floating point	1 ≤ thetav ≤ 75	degrees	Sensor zenith angles 1 Dimensional Array: NRAD Size of Dimension(s): 35

2.2.12 VIIRS ACO/OCC Aerosol Properties LUT

Data Mnemonic	NP_NU-LM0040-011
Description/ Purpose	The VIIRS ACO/OCC Aerosol Properties LUT file contains aerosol parameters pertaining to 12 different aerosol models. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	76,600 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.12-1, VIIRS ACO/OCC Aerosol Properties LUT Data Format.

Table 2.2.12-1, VIIRS ACO/OCC Aerosol Properties LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	300	32-bit floating point	0 ≤ angle ≤ 180 (increments vary)	degrees	Scattering angles 1 Dimensional Array: NUM_SCAT_ANGLES Size of Dimension(s): 75
wavelength	28	32-bit integer	[412,443,448, 555,670,748, 865]	nm	VIIRS band center wavelengths 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
omega0	336	32-bit floating point	0.9295 ≤ omega0 ≤ 1.0	unitless	Aerosol Single Scattering Albedo 2 Dimensional Array: MODEL x ACOBANDS Size of Dimension(s): 12 x 7
extinc	336	32-bit floating point	1.8376×10^{-5} ≤ extinct ≤ 0.0885	unitless	Aerosol extinction coefficient 2 Dimensional Array: MODEL x ACOBANDS Size of Dimension(s): 12 x 7
s11	25,200	32-bit floating point	0.0350 ≤ s11 ≤ 9.4143×10^{3}	unitless	Aerosol Scattering Phase Function 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ylog	25,200	32-bit floating point	Dependant on the original y values	unitless	Logs of s11 (scattering phase function) 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75
y2	25,200	32-bit floating point	Dependant on the original y values	unitless	Spline (second derivative) of s11 (scattering phase function) 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75

2.2.13 VIIRS ACO/OCC Diffuse Transmittance LUT

Data Mnemonic	NP_NU-LM0040-012
Description/ Purpose	The VIIRS ACO/OCC Diffuse Transmittance LUT file contains values of fitting coefficients used to compute the diffuse transmittance. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	22,176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.13-1, VIIRS ACO/OCC Diffuse Transmittance LUT Data Format.

Table 2.2.13-1, VIIRS ACO/OCC Diffuse Transmittance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tt_coef_a	11,088	32-bit floating point	0 ≤ tt_coeff_a ≤ ~1.0	unitless	Diffuse Transmittance Coefficient 3 Dimensional Array: MSUN x ACOBANDS x MODEL Size of Dimension(s): 33 x 7 x 12
tt_coef_b	11,088	32-bit floating point	0 ≤ tt_coeff_b ≤ ~0.33	unitless	Diffuse Transmittance Coefficient 3 Dimensional Array: MSUN x ACOBANDS x MODEL Size of Dimension(s): 33 x 7 x 12

2.2.14 VIIRS ACO/OCC Rayleigh Scattering LUT

Data Mnemonic	NP_NU-LM0040-013
Description/ Purpose	The VIIRS ACO/OCC Rayleigh Scattering LUT file contains values used to compute the Rayleigh Component of the TOA reflectance. This file is used in the VIIRS ACO/OCC (ACO module) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	3,719,952 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.14-1, VIIRS ACO/OCC Rayleigh Scattering LUT Data Format.

Table 2.2.14-1, VIIRS ACO/OCC Rayleigh Scattering LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ray_tau	28	32-bit floating point	0.0159 (M7) ≤ ray_tau ≤ 0.3164(M1)	unitless	Rayleigh Optical Thickness values for band**s** M1-M7 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
sigma_g	32	32-bit floating point	0.0 ≤ sigma_g ≤ 0.4	unitless	Surface Roughness Parameter (Not used in the code) 1 Dimensional Array: NSIGMA Size of Dimension(s): 8
ray_dep	28	32-bit floating point	0.0273 ≤ ray_dep ≤ 0.0296	unitless	Depolarization Factor for bands M1-M7 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
ray_sun	180	32-bit floating point	0.0 ≤ ray_sun ≤ 88.0 (2 degree intervals)	degrees	Solar Zenith Angles 1 Dimensional Array: NSUN Size of Dimension(s): 45
ray_ang	164	32-bit floating point	0.0 ≤ ray_ang ≤ 84.2153 (~ 2 degree intervals)	degrees	Sensor Zenith Angles 1 Dimensional Array: NRAD_RAY Size of Dimension(s): 41
ray_for_i	1,239,840	32-bit floating point	~-0.013 ≤ ray_for_i ≤ ~ 0.107	unitless	I Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ray_for_q	1,239,840	32-bit floating point	~-0.066 ≤ ray_for_q ≤ ~ 0.027	unitless	Q Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7
ray_for_u	1,239,840	32-bit floating point	0.0 ≤ ray_for_u ≤ ~0.064	unitless	U Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7

2.2.15 VIIRS Surface Albedo Skylight Diffusion Coefficients LUT

Data Mnemonic	NP_NU-LM0040-014
Description/ Purpose	The VIIRS Surface Albedo (SA) Skylight Diffusion Coefficients LUT file contains the Dark Pixel Sub-Algorithm (DPSA) Fraction of Diffuse Skylight (per band, per solar zenith angle, per aot value and per aerosol model, 5 currently). This file relates the fraction of diffuse skylight as a function of band, zenith angles, aerosol optical thickness values and aerosol model. It is used to produce the interpolated value of the diffuse skylight used in conjunction with the black sky and white sky albedo. The Five Aerosol models, in order, are: Dust, Smoke High, Smoke Low, Urban High and Urban Low. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	478,720 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.15-1, VIIRS Surface Albedo Skylight Diffusion Coefficients LUT Data Format.

Table 2.2.15-1, VIIRS Surface Albedo Skylight Diffusion Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M1	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M2	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M3	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M4	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M5	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M7	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M8	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M10	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992
M11	47872	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2992

2.2.16 VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT

Data Mnemonic	NP_NU-LM0040-015
Description/ Purpose	The VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT file contains the Bright Pixel Sub-Algorithm (BPSA) Regression Weight Coefficients (one per solar zenith angle, per view zenith angle, per relative azimuth, and per land type (desert or not)) for bands M1-M5, M7, M8, M10, M11 and an additional coefficient for the linear regression's constant term. Linear regression coefficients are used to directly obtain an albedo value using 10 coefficients (constant value + 9 M-band coefficients). This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	2,384,640 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.16-1, VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT Data Format.

Table 2.2.16-1, VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BPSA regression weight coefficients C	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M1	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)

BPSA regression weight coefficients M2	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M3	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M4	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)

BPSA regression weight coefficients M5	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M7	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M8	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)

BPSA regression weight coefficients M10	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): (18 x 18 x 23 x 4 x 2)
BPSA regression weight coefficients M11	238464	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x LSA_NUM_LANDTYPE Size of Dimension(s): 18 x 18 x 23 x 4 x 2)

2.2.17 VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT

Data Mnemonic	NP_NU-LM0040-016
Description/ Purpose	The VIIRS Surface Albedo DPSA Narrowband to Broadband Coefficients LUT file contains coefficients needed to convert the spectral surface albedo to broadband albedo. One coefficient per M-band is used plus a constant term (10 terms total). Coefficients are derived (via multivariate regression analysis) from radiative transfer simulations. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	40 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.17-1, VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT Data Format.

Table 2.2.17-1, VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient (Constant Term)
M1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M1 Narrowband Albedo variable
M2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M2 Narrowband Albedo variable
M3	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M3 Narrowband Albedo variable
M4	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M4 Narrowband Albedo variable
M5	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M5 Narrowband Albedo variable
M7	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M7 Narrowband Albedo variable
M8	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M8 Narrowband Albedo variable
M10	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M10 Narrowband Albedo variable
M11	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M11 Narrowband Albedo variable

2.2.18 VIIRS Surface Albedo BPSA Sea Ice LUT

Data Mnemonic	NP_NU-LM0040-111
Description/ Purpose	The VIIRS Surface Albedo BPSA Sea Ice LUT file contains coefficients needed to compute the surface albedo of sea ice pixels based on linear regression with top of atmosphere reflectance. One coefficient per M-band is used plus a constant term (10 terms total). Bands M1-M5, M7-M8 and M10-M11 (9 bands) are used plus a constant offset term make the 10 required coefficients for each solar angle bin (currently a total of 15 bins). Coefficients are derived (via multivariate regression analysis) from radiative transfer simulations. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	2,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.18-1, VIIRS Surface Albedo BPSA Sea Ice LUT Data Format.

Table 2.2.18-1, VIIRS Surface Albedo BPSA Sea Ice LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient (Constant Term) 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M1	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M1 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M2	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M2 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M3	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M3 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M4	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M4 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M5	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M5 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M7	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M7 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M8	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M8 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M10	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M10 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M11	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M11 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15

2.2.19 VIIRS Sea Ice Snow Depth/Ice Thickness LUT

Data Mnemonic	NP_NU-LM0233-006
Description/ Purpose	The VIIRS Sea Ice Snow Depth/Ice Thickness LUT contains snow depth on sea ice and ice thickness. The table values are model computations based on NCEP surface temperature and precipitation rate climatology data.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	1,508,812 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.19-1, VIIRS Sea Ice Snow Depth/Ice Thickness LUT Data Format.

Table 2.2.19-1, VIIRS Sea Ice Snow Depth /Ice Thickness LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nlat_bins	92	32-bit floating point	-90 ≤ nlat_bins ≤ 90 Values initially set to a 2.5 degree spacing from 35.0 to 90.0 degrees: [35., 37.5, 40…85., 87.5, 90.]	degree	Northern Hemisphere latitudes at 2.5 deg increments 1 Dimensional Array: N_NLAT Size of Dimension(s): 23
slat_bins	68	32-bit floating point	-90 ≤ slat_bins ≤ 90 Values initially set to a 2.5 degree spacing from -90.0 to -50.0 degrees: [-90., -87.5, -85…-55., -52.5, -50.]	degree	Southern Hemisphere latitudes at 2.5 deg increments 1 Dimensional Array: N_SLAT Size of Dimension(s): 17
lon_bins	580	32-bit floating point	-180 ≤ lon_bins ≤ 180 Values initially set to a 2.5 degree spacing from 0 to 360.0 degrees: [0, 2.5, 5.0…355, 357.5, 360.]	degree	Longitudes at 2.5 deg increments 1 Dimensional Array: N_LON Size of Dimension(s): 145
date_bins	52	32-bit floating point	> 0.0 Values initially set to a 30.5 day spacing from 15.5 to 381.5: [15.5, 46., 76.5…320.5, 351., 381.5]	Day number	Day of year for the middle of each month 1 Dimensional Array: N_DATE Size of Dimension(s): 13

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ice_bins	20	32-bit floating point	> 0.0 Values initially set to: [5.0,10.0,20.0,30.0,40.0]	cm	Ice Thickness 1 Dimensional Array: N_ICE Size of Dimension(s): 5
sdc_n	867,100	32-bit floating point	>= 0.0	cm	Snow depth from climatology model for Northern Hemisphere 4 Dimensional Array: N_DATE x N_LON x N_NLAT x N_ICE Size of Dimension(s): 13 x 145 x 23 x 5
sdc_s	640,900	32-bit floating point	>= 0.0	cm	Snow depth form climatology model for Southern Hemisphere 4 Dimensional Array: N_DATE x N_LON x N_SLAT x N_ICE Size of Dimension(s): 13 x 145 x 17 x 5

2.2.20 VIIRS NHF COART LUT

Data Mnemonic	NP_NU-LM0234-000
Description/ Purpose	The NHF COART LUT This file contains Ocean Albedo and albedo weight Look-up data for the VIIRS NHF algorithm. Table data is from the Coupled Ocean and Atmospheric Radiative Transfer (COART) model.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	829,440 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.20-1, VIIRS NHF COART LUT Data Format.

Table 2.2.20-1, VIIRS NHF COART LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ocnalbtab	806,400	32-bit floating point	Minfloat – Maxfloat	unitless	Ocean Albedo 2 Dimensional Array: OCNALB_NUM_RECS x COART_REC_SIZ Size of Dimension(s): 8400 x 24
albwt	23,040	32-bit floating point	Minfloat – Maxfloat	unitless	Albedo Weights 2 Dimensional Array: ALBWT_NUM_RECS x COART_REC_SIZ Size of Dimension(s): 240 x 24

2.2.21 VIIRS NHF RTM LUT

Data Mnemonic	NP_NU-LM0234-001
Description/ Purpose	The NHF RTM LUT This file contains the RRTM (Rapid Radiative Transfer Model) correlated-k absorption coefficients for calculating radiative fluxes.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	839,872 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.21-1, VIIRS NHF RTM LUT Data Format.

Table 2.2.21-1, VIIRS NHF RTM LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K1_ka	4160	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K1_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K1_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K1_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K1_ka_mn2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K1_kb_mn2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K2_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K2_kb	15040	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K2_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K2_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K3_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K3_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K3_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K3_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K3_ka_mn2o	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K3_kb_mn2o	6080	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 5
K4_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K4_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K4_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K4_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K5_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K5_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K5_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K5_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K5_ka_mo3	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K6_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K6_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K6_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K6_ka_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K7_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K7_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K7_forref	256	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K7_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K7_ka_mco2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K7_kb_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K8_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K8_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K8_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K8_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K8_ka_mco2	1216	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_ka_mo3	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_ka_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_kb_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_kb_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K9_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K9_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K9_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K9_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K9_ka_mn2o	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K9_kb_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K10_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K10_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K10_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K10_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K11_ka	4160	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K11_kb	15040	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K11_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K11_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K11_ka_mo2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K11_kb_mo2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K12_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K12_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K12_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K13_ka	37440	32-bit floating point	Minfloat - Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K13_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K13_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K13_ka_mco2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K13_ka_mco	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K13_kb_mo3	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K14_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K14_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K14_forref	256	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K14_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K15_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K15_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K15_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K15_ka_mn2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K16_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K16_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K16_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K16_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10

2.2.22 VIIRS ACO/OCC Instrumental Polarization Sensitivity LUT

Data Mnemonic	NP_NU-LM0234-002
Description/ Purpose	The VIIRS ACO/OCC Instrumental Polarization Sensitivity LUT are instrument configuration settings used as corrections in the VIIRS OCC EDR.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	5376 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.22-1, VIIRS ACO/OCC Instrument Polarization Sensitivity LUT Data Format.

Table 2.2.22-1, VIIRS ACO/OCC Instrument Polarization Sensitivity LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
polcor_coef_a	2688	32-bit floating point	-0.1 ≤ polcor_coef_a ≤ 0.1	unitless	Polarization Correction Coefficient 4 Dimensional Array: acobands x nHAM x nDetector x nCoef Size of Dimension(s): 7 x 2 x 16 x 3
polcor_coef_b	2688	32-bit floating point	-0.1 ≤ polcor_coef_b ≤ 0.1	unitless	Polarization Correction Coefficient 4 Dimensional Array: acobands x nHAM x nDetector x nCoef Size of Dimension(s): 7 x 2 x 16 x 3

2.2.23 VIIRS ACO/OCC Detector-Dependent Rayleigh Correction Adjustment LUT

Data Mnemonic	NP_NU-LM0234-003
Description/ Purpose	VIIRS Ocean Color/Chlorophyll Detector-Dependent Rayleigh Correction Adjustment LUT.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	448 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.23-1, VIIRS Detector-Dependent Rayleigh Correction Adjustment LUT Data Format.

Table 2.2.23-1, VIIRS Detector-Dependent Rayleigh Correction Adjustment LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ray_detcor	448	32-bit floating point	0.993 ≤ ray_detcor ≤ 1.006	unitless	Detector-Dependent Rayleigh Correction Adjustment Factors for detectors 1-16 of bands M1-M7 2 Dimensional Array: ndet x acobands Size of Dimension(s): 7 x 16

2.2.24 DELETED

2.2.25 DELETED

2.2.26 DELETED

2.2.27 VIIRS NHF RRTM Ozone Climatology LUT

This LUT is an ancillary table. For format details see the CDFCB-X, Volume VI, 474-00001-06, Section 2.1.3.35, Normalized Ozone Profile Climatology.

2.2.28 VIIRS Bright Pixel PSF MOD LUT

Data Mnemonic	NP_NU-LM0235-000
Description/ Purpose	The VIIRS Bright Pixel PSF MOD LUT file contains the Point Spread Function (PSF) parameters for use in determining Bright Pixels. This file is used in the VIIRS Bright Pixel algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier.
File Size	409,728 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.28-1, VIIRS Bright Pixel PSF MOD LUT Data Format.

Table 2.2.28-1, VIIRS Bright Pixel PSF MOD LUT

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Psf	409728	64-bit floating point	-0.446723 – 0.144059	unitless	Point Spread Function (PSF) values 3 Dimensional Array NUM_750M_BANDS NUM_MOD_PSF_ROW NUM_MOD_PSF_COL Size of Dimension(s): 16 x 33 x 97

2.2.29 VIIRS Bright Pixel Sub Radiance LUT

Data Mnemonic	NP_NU-LM0235-001
Description/ Purpose	The VIIRS Bright Pixel Sub Radiance LUT file contains substitute radiance values used for saturated pixels. Note: The dimension of the radianceValues field includes the Imagery Bands in addition to the Moderate Bands (16 + 5 = 21 total). The Imagery bands are not currently used in the algorithm, but retained in this table for possible future inclusion. This file is used in the VIIRS Bright Pixel algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	336 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.29-1, VIIRS Bright Pixel Sub Radiance LUT Data Format

Table 2.2.29-1, VIIRS Bright Pixel Sub Radiance LUT

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radianceValues	4	32-bit floating point	Approx 0 – 4300	W/(m^2 um sr)	2 Dimensional Array TOTAL_M_I_BANDS (MOD + IMG) X NUM_BP_RAD_COLUMNS Size of Dimension(s): 21 x 4 (For TOTAL_M_I_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)

2.2.30 VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT

Data Mnemonic	NP_NU-LM0233-019
Description/ Purpose	The VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT file contains the values of the black sky and white sky albedos for each of the kernel models (Volumetric and Geometric) used in the inversion process of the DPSA. This file is used in the VIIRS Surface Albedo / DPSA algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	5472 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.30-1, VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT Data Format

Table 2.2.30-1, VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
whiteSky	32	32-bit floating point	Minfloat - Maxfloat	Unitless	Kernel White Sky Albedo 1 Dimensional Array: NUM_KERNELS Size of Dimension(s): 8 The 8 Kernels are, in order: 1. Ross-Thick Volumetric Scattering 2. Ross-Thin Volumetric Scattering 3. Non-reciprocal Li-Sparse 4. Reciprocal Li-Sparse 5. Non-Reciprocal Li-Dense 6. Reciprocal Li-Dense 7.Non-Reciprocal Li-Transit 8. Roujean

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
blackSky	5440	32-bit floating point		Unitless	Kernel Black Sky Albedo 2 Dimensional Array: NUM_KERNELS x NUMBINS_KERNELBLACKSKYALBEDO Size of Dimension(s): 8 x 170 The 8 Kernels are, in order: 1. Ross-Thick Volumetric Scattering 2. Ross-Thin Volumetric Scattering 3. Non-reciprocal Li-Sparse 4. Reciprocal Li-Sparse 5. Non-Reciprocal Li-Dense 6. Reciprocal Li-Dense 7.Non-Reciprocal Li-Transit 8. Roujean

2.3 DELETED

3.0 PROCESSING COEFFICIENTS

PCs are files containing parameters used in the creation of NPP/NPOESS Data Products by ground processing.

3.1 Automated PCs

Automated PCs are files containing parameters updated and/or created during the processing of the NPP/NPOESS Data Products by the processing algorithms. These updated files are subsequently used in the processing environment without human review of their contents. In some instances, these files are used immediately for processing, in other instances these files are used for future processing (e.g. for the next granule in the production data stream).

3.1.1 CrIS Automatic PCs

3.1.1.1 CrIS Correction Matrix PC

Data Mnemonic	NP_NU-LM0130-000
Description/ Purpose	The Cross-track Infrared Sounder (CrIS) Correction Matrix PC is applied to spectra as they are ejected from a sliding window. The 4-minute Engineering packet is used as input to create it. It is created at least once an orbit, estimated.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	76,724,776 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.1.1-1, CrIS Correction Matrix PC Data Format

Table 3.1.1.1-1, CrIS Correction Matrix PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
padding	2	16-bit integer	MinInt – MaxInt	unitless	
Version	2	16-bit integer	MinInt – MaxInt	unitless	
lowestWavenumber_LW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW
theMatrix_LW_FOV_1	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_2	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	unitless	
deltaSigma_LW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 3
theMatrix_LW_FOV_3	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_4	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 5
theMatrix_LW_FOV_5	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_6	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 7
theMatrix_LW_FOV_7	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 8

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_8	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 9
theMatrix_LW_FOV_9	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_MW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_MW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 1

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_MW_FOV_1	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 2
theMatrix_MW_FOV_2	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_MW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 3
theMatrix_MW_FOV_3	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 4
theMatrix_MW_FOV_4	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_MW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 5
theMatrix_MW_FOV_5	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_MW_FOV_6	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 7
theMatrix_MW_FOV_7	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_MW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 8
theMatrix_MW_FOV_8	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 9
theMatrix_MW_FOV_9	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_SW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 1
theMatrix_SW_FOV_1	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_SW_FOV_2	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 3
theMatrix_SW_FOV_3	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_SW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 4
theMatrix_SW_FOV_4	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 864
lowestWavenumber_SW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 5
theMatrix_SW_FOV_5	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_SW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 6
theMatrix_SW_FOV_6	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_SW_FOV_7	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 8
theMatrix_SW_FOV_8	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_SW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 9
theMatrix_SW_FOV_9	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
pad	4	32-bit integer	MinInt – MaxInt	unitless	
IET_Time	8	64-bit integer	MinInt – MaxInt	unitless	
padding0	2	16-bit integer	MinInt – MaxInt	unitless	
padding01	2	16-bit integer	MinInt – MaxInt	unitless	
padding1	2	16-bit integer	MinInt – MaxInt	unitless	
versionInfo1	2	16-bit integer	0-32766	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Effective Emissivity	12736	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 1592
Pad Version 2	2	16-bit integer	MinInt – MaxInt	unitless	
Version 2	2	16-bit integer	MinInt – MaxInt	unitless	
Curve Fit Params	3240	64-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array: Band, FOV, Band Edge, ils Curve Fit Param Size of Dimension(s): 3 x 9 x 3 x 5
Pad Version 3	2	16-bit integer	MinInt – MaxInt	unitless	
Version 3	2	16-bit integer	MinInt – MaxInt	unitless	
FOR Params	324	32-bit integer	MinInt – MaxInt	unitless	3 Dimensional Array: Band, ils Curve Fit Param, FOV Size of Dimension(s): 3 x 3 x 9

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
FOV 5 Cross Track Misalignment	12	32-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
FOV 5 In Track Misalignment	12	32-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Pad Version 4	2	16-bit integer	MinInt – MaxInt	unitless	
Version 4	2	16-bit integer	MinInt – MaxInt	unitless	
Beam Splitter Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Scan Mirror Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Interferometer Housing Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Ict Baffle Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Ssm Target Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Warm Beam Splitter View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Cold Beam Splitter View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Baffle View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Frame View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Space View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ssm Target Temp	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Orbital Period	4	32-bit integer	MinInt – MaxInt	unitless	
Baffle Temperature Offset Decimated X	84	32-bit floating point	0-1	unitless	1 Dimensional Array: ECM Baffle Pts Size of Dimension(s): 21
Baffle Temperature Offset Decimated Y	84	32-bit floating point	0-1	unitless	1 Dimensional Array: ECM Baffle Pts Size of Dimension(s): 21
Pad Version 5	2	16-bit integer	MinInt – MaxInt	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 5	2	16-bit integer	MinInt – MaxInt	unitless	
ictPrt1Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt1A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt1B	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2B	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Low Range Calibration Resistor Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Low Range Calibration Resistor A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict High Range Calibration Resistor Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ict High Range Calibration Resistor A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Calibration Resistor RTD RO	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Calibration Resistor RTD A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Bias Current Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beam Splitter Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beam Splitter Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Baffle Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp1intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp1Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp2intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp2Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Telescope Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 1 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 2 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 3 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 4 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Cross Track Ssm Pointing Error Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Cross Track Ssm Pointing Error Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
In Track Ssm Pointing Error Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
In Track Ssm Pointing Error Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Pad Version 6	2	16-bit integer	MinInt – MaxInt	unitless	
Version 6	2	16-bit integer	MinInt – MaxInt	unitless	
Polarization Change	2232	64-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: inTrack, crossTrack, Wavenumber Position Size of Dimension(s): 31, 3, 3
Wavenumber Position	72	64-bit floating point	1000-8500	unitless	2 Dimensional Array: Band, Wavenumber Size of Dimension(s): 3, 3
Pad Version 7	2	16-bit integer	MinInt – MaxInt	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 7	2	16-bit integer	MinInt – MaxInt	unitless	
Neon Cal Starting Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Starting Partial Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Fringe Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Ending Partial Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Neon Cal Ending Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Pad Version 8	2	16-bit integer	MinInt – MaxInt	unitless	
Version 8	2	16-bit integer	MinInt – MaxInt	unitless	
Laser Fringe Count	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Number Designated Calibration Sweeps	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Neon Gas Wave Length	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Wavelength	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Time Stamp Days	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Time Stamp Miliseconds	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Repeat Calibration Time Interval	4	32-bit unsigned integer	MinInt – MaxInt	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Pad Version 9	2	16-bit integer	MinInt – MaxInt	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 9	2	16-bit integer	MinInt – MaxInt	unitless	
ict Temp 1 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Temp 2 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beamsplitter Temp 1 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Drift Limt	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Baffle Temp Drift Limt	8	64-bit floating point	Minfloat – Maxfloat	unitless	
oma Struct 1 Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
oma Struct 2 Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Telescope Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 1 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Stage 2 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 3 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 4 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Wavelength Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Pad Version 10	2	16-bit integer	MinInt – MaxInt	unitless	
Version 10	2	16-bit integer	MinInt – MaxInt	unitless	
Commanded Cross Track Angle ES	240	64-bit floating point	1000-8500	unitless	1 Dimensional Array: Angle Size of Dimension(s): 30
Commanded Cross Track Angle Nadir	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssm Mirror Mount Misalignment Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssm Mirror Mount Misalignment Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Commanded In Track Angle	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Interferometer Borsight Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Interferometer Borsight Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
sbf To IAR Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sbf To IAR Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
sbf To IAR Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
FOR Time Stamp Bias	4	32-bit integer	MinInt – MaxInt	unitless	
Pad Version 11	2	16-bit integer	MinInt – MaxInt	unitless	
Version 11	2	16-bit integer	MinInt – MaxInt	unitless	
a2	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
Vinst	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
ModEff	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Gain Setting	108	32-bit integer	MinInt – MaxInt	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
EffGain	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
Effective Gain Map	192	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band, MAX_EFFECTIVE_GAIN Size of Dimension(s): 3, 16
Fir Filter Scale	24	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band Size of Dimension(s): 3
Fir Start Bit	24	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band Size of Dimension(s): 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Implicit_pad	4	8-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: padBytes Size of Dimension(s): 4
trimIndex	192	32-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: Band, Trim Elements Size of Dimension(s): 3,16
trim	192	32-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: Band, Trim Elements Size of Dimension(s): 3,16
decimationRate	12	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
collectedSamples	12	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
complexSamples	12	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
iWordTotal	12	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
FRstartBit	192	32-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: Band, Trim Elements Size of Dimension(s): 3, 16
FRstopBit	192	32-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: Band, Trim Elements Size of Dimension(s): 3, 16
FRtrimIndex	192	32-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: Band, Trim Elements Size of Dimension(s): 3, 16

3.1.2 OMPS Automatic PCs

3.1.2.1 OMPS TC Darks PC

Data Mnemonic	NP_NU-LM0240-000
Description/ Purpose	The OMPS TC Darks PC table contains averaged detector dark signal in linearity corrected counts (the average of the dark frames during a specific calibration event). This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,077,672 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.1-1, OMPS TC Darks PC Data Format

Table 3.1.2.1-1, OMPS TC Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
orbit_number	20	32-bit integer	>= 0	unitless	Orbit number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
profile_id	20	32-bit integer	>= 0	unitless	Profile ID number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iyear_dark	20	32-bit integer	2000 – 2050	years	Year of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iday_dark	20	32-bit integer	1 – 366	days	Day of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
time_start_dark	40	64-bit floating point	>= 0	seconds	Time start of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
time_end_dark	40	64-bit floating point	>= 0	seconds	Time end of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
expose_dark	8	64-bit floating point	>= 0	seconds	Average exposure time of dark current frames
good_darks	4	32-bit integer	1-100	unitless	Number of good dark frames that made up the average dark data
qual_dark	10	16-bit integer	MinInt – MaxInt	unitless	Quality of processing 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
istat_dark	10	16-bit integer	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
analog_dark	20	32-bit floating point	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
saa_dark	20	32-bit floating point	0 – 100	percent	South Atlantic Anomaly severity flag 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
dark_data	1077440	32-bit floating point	MinInt – MaxInt	counts	Average corrected dark current counts (averaged over the dark frames) 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 364 x 740

3.1.2.2 OMPS TC SAA Darks PC

Data Mnemonic	NP_NU-LM0240-001
Description/ Purpose	The OMPS TC SAA Darks PC table contains detected dark signal in linear corrected counts during South Atlantic Anomaly This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	5,387,454 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.2-1, OMPS TC SAA Darks PC Data Format

Table 3.1.2.2-1, OMPS TC SAA Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
orbit_numbersaa	20	32-bit integer	>= 0	unitless	Orbit Number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
profile_dsaa	20	32-bit integer	>= 0	unitless	Profile ID 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iyear_darksaa	20	32-bit integer	2000 – 2050	years	Year of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iday_darksaa	20	32-bit integer	1 – 366	days	Day of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
time_start_darksaa	40	64-bit floating point	>= 0	seconds	Time start of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
time_end_darksaa	40	64-bit floating point	>= 0	seconds	Time end of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
delta_time_darksaa	40	64-bit floating point	>= 0	seconds	Integration time during observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
darksaa_frames	4	32-bit integer	1-5	unitless	Number of good dark frames that made up the average dark data
saa_darksaa	20	32-bit floating point	0 – 100	percent	South Atlantic Anomaly severity flag 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
istat_darksaa	10	16-bit integer	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
analog_darksaa	20	32-bit floating point	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
darksaa_array	5387200	32-bit floating point	>= 0	counts	Corrected average dark current counts for SAA observation; smear values are in individual pixels 3 Dimensional Array: tc::MAX_COADDS_D x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 5 x 364 x 740

3.1.2.3 OMPS TC Bias PC

Data Mnemonic	NP_NU-LM0240-002
Description/ Purpose	The OMPS TC Bias PC table contains detector electronic offset in counts. This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.3-1, OMPS TC Bias PC Data Format

Table 3.1.2.3-1, OMPS TC Bias PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bias1	4	32-bit floating point	0 – 1e5	counts	bias electronics 1st CCD
bias2	4	32-bit floating point	0 – 1e5	counts	bias electronics 2nd CCD

3.1.2.4 OMPS TC Flat Fields History PC

Data Mnemonic	NP_NU-LM0240-003
Description/ Purpose	The OMPS TC Flat Fields History PC table contains relative multiplication factors for each pixel used in binning for an Earth spatial cell. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	31,246,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.4-1, OMPS TC Flat Fields History PC Data Format

Table 3.1.2.4-1, OMPS TC Flat Fields History PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	1 – 20	unitless	number of observations used in trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
flat Array	31245760	32-bit floating point	Minfloat – Maxfloat	unitless	flat field: local relative normalized radiometric sensitivities 3 Dimensional Array: tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 29 x 364 x 740

3.1.2.5 OMPS TC Wavmon PC

Data Mnemonic	NP_NU-LM0240-004
Description/ Purpose	The OMPS TC Wavemon PC table contains band center wavelength shifts relative to the baseline solar measurement This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	109,496 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.5-1, OMPS TC Wavmon PC Data Format

Table 3.1.2.5-1, OMPS TC Wavmon PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmin	4	32-bit floating point	290 – 390	nanometers	Wavelength Minimum
wmax	4	32-bit floating point	290 – 390	nanometers	Wavelength Maximum
nlines	2	16-bit integer	1 – 10	unitless	Number of Monitor Lines
line_locates	20	16-bit integer	1 – 192	pixels	Line Pixel Numbers 1 Dimensional Array: tc::MAXLINES Size of Array(s): 10
offset_pix	2	16-bit integer	1 – 3	pixels	Offset Pixel Monitored
waveline	40	32-bit floating point	290 – 390	nanometers	Line Monitor Wavelengths 1 Dimensional Array: tc::MAXLINES Size of Array(s): 10
year	40	32-bit integer	2000 – 2050	years	Year 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
day	40	32-bit integer	1 – 366	days	Day 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	Solar Mean Beta-Angle 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
diffuser	20	16-bit integer	1 – 2	unitless	Diffuser Surface 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
nadd	40	32-bit integer	1 – 10	unitless	Number of Solar observations 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
resolution	80	64-bit floating point	>=0	nanometers	FWHM wavelength resolution 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
no_observations	4	32-bit integer	0 – 10	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
r_delw_c	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	Waveshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_scale_c	8400	64-bit floating point	Minfloat – Maxfloat	unitless	Wavestretch 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_rchisq_c	8400	64-bit floating point	>=0	unitless	Reduced Chi^2 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_delw_line	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	Group lineshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
r_err_l	8400	64-bit floating point	>0	nanometers	Group line shift error 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_add_l	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	fit lineshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_stretch_l	8400	64-bit floating point	Minfloat – Maxfloat	unitless	fit slope 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_correl_l	8400	64-bit floating point	-1 – 1	unitless	correlation 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
shift	42000	32-bit floating point	Minfloat – Maxfloat	nanometers	Individual Lineshifts 3 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXLINES tc::MAXCTPX Size of Array(s): 10 x 10 x 105

3.1.2.6 OMPS TC CF Solar PC

Data Mnemonic	NP_NU-LM0240-005
Description/ Purpose	The OMPS TC CF Solar PC table contains radiometric calibration factors for the solar illuminated pixels This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	31,246,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.6-1, OMPS TC CF Solar PC Data Format

Table 3.1.2.6-1, OMPS TC CF Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	Year 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
obs_day	116	32-bit integer	1 – 366	days	Day 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
old_nmonitor	116	32-bit integer	1 – 20	unitless	number of observations used in trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
extrap_cfsolar	31245760	32-bit floating point	>=0	unitless	radiometric calibration factors 3 Dimensional Array: tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Array(s): 29 x 364 x 740

3.1.2.7 OMPS TC Flux PC

Data Mnemonic	NP_NU-LM0240-006
Description/ Purpose	The OMPS TC Flux PC table contains solar signal corrected for detector spectral shifts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	13,046,118 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.7-1, OMPS TC Flux PC Data Format

Table 3.1.2.7-1, OMPS TC Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	reference solar flux observation year
rsf_iday	4	32-bit integer	1 – 366	days	reference solar flux observation day
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between orbital plane and sun vector
rsf_diffuser_surface	2	16-bit integer	1 – 2	unitless	diffuser surface number
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	number of solar observations constituting reference flux
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of reference solar flux observations
rsf_expose	8	64-bit floating point	>=0	seconds	total exposure time of reference solar flux
rsf_data	1135680	32-bit floating point	0 – 1800	W/cm^3	The baseline reference solar flux 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_counts	1135680	32-bit floating point	Minfloat – Maxfloat	counts	The baseline reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
no_observations	4	32-bit integer	MinInt – MaxInt	unitless	
iyear_solar	40	32-bit integer	2000 – 2050	years	year of current solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	32-bit integer	1 – 366	days	day of current solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	angle between current orbital plane and sun vector 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
no_work_frames	40	32-bit integer	>=0	unitless	number of solar data observations constituting raw flux 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
avg_sol_scan_time	80	64-bit floating point	>=0	seconds	average exposure time of raw flux solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
total_sol_expose	80	64-bit floating point	>=0	seconds	total exposure time of raw flux solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
shift_flux	10774400	32-bit floating point	Variable, but around and about 0.5 to 1.5 should be usual	unitless	The current solar flux, ratioed by the baseline solar flux, both at the baseline wavelengths 3 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 10 x 364 x 740

3.1.2.8 OMPS TC Raw Flux PC

Data Mnemonic	NP_NU-LM0240-007
Description/ Purpose	The OMPS TC Raw Flux PC table contains solar signals corrected for detector and normalized by the baseline solar signals This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	3,348,870 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.8-1, OMPS TC Raw Flux PC Data Format

Table 3.1.2.8-1, OMPS TC Raw Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	reference solar flux observation year
rsf_iday	4	32-bit integer	1 – 366	days	reference solar flux observation day
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between orbital plane and sun vector
rsf_diffuser_surface	2	16-bit integer	1 – 2	unitless	diffuser surface number
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	number of solar observations constituting reference flux
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of reference solar flux observations
rsf_expose	8	64-bit floating point	>=0	seconds	total exposure time of reference solar flux
rsf_data	1135680	32-bit floating point	0 – 1800	W/cm^3	reference solar flux 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_counts	1135680	32-bit floating point	Minfloat – Maxfloat	counts	reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
latest_year	4	32-bit integer	2000 – 2050	years	year of current solar data
latest_day	4	32-bit integer	1 – 366	days	day of current solar data
avg_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between current orbital plane and sun vector
n	4	32-bit integer	-1 – 1	unitless	working diffuser surface number
m	4	32-bit integer	>=0	unitless	number of solar data observations constituting raw flux
avg_sol_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of raw flux solar data
t_expose	8	64-bit floating point	>=0	seconds	total exposure time of raw flux solar data
rawflx_data	1077440	32-bit floating point	any, but about 1	unitless	ratio of current observed solar counts to reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 364 x 740

3.1.2.9 OMPS NP Darks PC

Data Mnemonic	NP_NU-LM0240-100
Description/ Purpose	The OMPS NP Darks PC table contains averaged detector dark signal in linearity corrected counts This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	568,072 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.9-1, OMPS NP Darks PC Data Format

Table 3.1.2.9-1, OMPS NP Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
orbit_number	20	32-bit integer	>=0	unitless	Orbit Number 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
profile_id	20	32-bit integer	>=0	unitless	Profile ID 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iyear_dark	20	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iday_dark	20	32-bit integer	1 – 366	days	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_start_dark	40	64-bit floating point	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_end_dark	40	64-bit floating point	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
expose_dark	8	64-bit floating point	>=0	seconds	Average exposure time of dark current frames (expose_dark)
good_darks	4	32-bit integer	>= 0	unitless	Number of good dark frames that made up the average dark data
qual_dark	10	16-bit integer	>= -13	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
istat_dark	10	16-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
analog_dark	20	32-bit floating point	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
saa_dark	20	32-bit floating point	0 – 100	percent	Spacecraft within South Atlantic Anomaly during dark calibration (extent in percent based on a Gaussian Distribution Model) 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
dark_data	567840	32-bit floating point	>=0	Counts	Average linearity corrected dark counts – 2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.1.2.10 OMPS NP SAA Darks PC

Data Mnemonic	NP_NU-LM0240-101
Description/ Purpose	The OMPS NP SAA Darks PC table contains detected average linearity corrected dark signal in counts during South Atlantic Anomaly This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	568,090 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.10-1, OMPS NP SAA Darks PC Data Format

Table 3.1.2.10-1, OMPS NP SAA Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
orbit_numbersaa	20	32-bit integer	>=0	unitless	Orbit Number 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
profile_dsaa	20	32-bit integer	>=0	unitless	Profile ID 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iyear_darksaa	20	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iday_darksaa	20	32-bit integer	1 – 366	days	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_start_darksaa	40	64-bit floating point	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_end_darksaa	40	64-bit floating point	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
delta_time_darksaa	40	64-bit floating point	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
SAA_darksaa	20	32-bit floating point	0 – 100	percent	Spacecraft within South Atlantic Anomaly during dark calibration (on a Gaussian Distribution Model) np::NO_COADDS_D Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
istat_darksaa	10	16-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
analog_darksaa	20	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
darksaa_array	567840	32-bit floating point	>=0	Counts	Average linearity corrected dark counts 2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.1.2.11 OMPS NP Bias PC

Data Mnemonic	NP_NU-LM0240-102
Description/ Purpose	The OMPS NP Bias PC table contains detector electronic offset in counts. This file is used in the OMPS SDR algorithm, except for Earth View.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.11-1, OMPS NP Bias PC Data Format

Table 3.1.2.11-1, OMPS NP Bias PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bias1	4	32-bit floating point	0 - 1.00E+05	Counts	

3.1.2.12 OMPS NP Flat Fields History PC

Data Mnemonic	NP_NU-LM0240-103
Description/ Purpose	The OMPS NP Flat Fields History PC table contains relative multiplication factors for each pixel used in binning for an Earth spatial cell. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	32,935,300 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.12-1, OMPS NP Flat Fields History PC Data Format

Table 3.1.2.12-1, OMPS NP Flat Fields History PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
present_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
present_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
nmonitor	116	32-bit integer	1 – 20	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
history_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
history_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
flat	16467360	32-bit floating point	Minfloat – Maxfloat	unitless	Local relative normalized radiometric sensitivities 3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 29 x 364 x 390

3.1.2.13 OMPS NP Wavmon PC

Data Mnemonic	NP_NU-LM0240-104
Description/ Purpose	The OMPS NP Wavemon PC table contains band center wavelength shifts relative to the baseline solar measurement This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	5,456 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.13-1, OMPS NP Wavmon PC Data Format

Table 3.1.2.13-1, OMPS NP Wavmon PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmin	4	32-bit floating point	240 – 320	nanometers	
wmax	4	32-bit floating point	240 – 320	nanometers	
nlines	2	16-bit Integer	1 – 10	unitless	
line_locates	20	16-bit Integer	1 – 145	unitless	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
offset	2	16-bit Integer	1 – 3	pixels	
wlines	40	32-bit floating point	240 – 320	nanometers	1 Dimensional Array np::MAXLINES Size of Dimension(s): 30
iyear_solar	40	32-bit integer	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	32-bit integer	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
diffuser_surface_solar	20	16-bit Integer	1 – 2	unitless	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
no_solar_frames	40	32-bit integer	1 – 28	unitless	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
resolution	40	32-bit floating point	>=0	nanometers	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
c_shifts	400	64-bit floating point	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
c_scales	400	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
fitness	400	64-bit floating point	>=0	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
l_shift	400	64-bit floating point	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
L_shift_err	400	64-bit floating point	>0	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
l_add	400	64-bit floating point	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
l_stretches	400	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
linear	400	64-bit floating point	-1 – 1	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
shift	2000	32-bit floating point	Minfloat – Maxfloat	nanometers	3 Dimensional Array np::MAX_TREND_POINTS x np::MAXLINES x np::MAXCTPX Size of Dimension(s): 10 x 10 x 5
no_observations	4	32-bit integer	>=1	unitless	

3.1.2.14 OMPS NP CF Solar PC

Data Mnemonic	NP_NU-LM0240-105
Description/ Purpose	The OMPS NP CF Solar PC table contains radiometric calibration factors for the solar illuminated pixels This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	14,778,980 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.14-1, OMPS NP CF Solar PC Data Format

Table 3.1.2.14-1, OMPS NP CF Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	1 – 20	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
extrap_cfsolar	14778400	32-bit floating point	>=0	unitless	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::NOSPACE Size of Dimension(s): 29 x 364 x 350

3.1.2.15 OMPS NP Flux PC

Data Mnemonic	NP_NU-LM0240-106
Description/ Purpose	The OMPS NP Flux PC table contains solar signal corrected for detector spectral shifts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	6,814,478 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.15-1, OMPS NP Flux PC Data Format

Table 3.1.2.15-1, OMPS NP Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	Reference solar flux observation year
rsf_iday	4	32-bit integer	1 – 366	days	Reference solar flux observation day
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	Angle between orbital plane and sun vector
rsf_diffuser_surface	2	16-bit Integer	1 – 2	unitless	Diffuser surface number
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	Number of solar observations constituting reference flux
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	Average exposure time of reference solar flux observations
rsf_expose	8	64-bit floating point	>=0	seconds	Total exposure time of reference solar flux
rsf_data	567840	32-bit floating point	Minfloat – Maxfloat	W/cm/sterad	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
rsf_counts	567840	32-bit floating point	Minfloat – Maxfloat	Counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
no_observations	4	32-bit integer	>=1	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iyear_solar	40	32-bit integer	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
iday_solar	40	32-bit integer	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
diffuser_surface_num	40	32-bit integer	1	unitless	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
no_work_frames	40	32-bit integer	>=0	unitless	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
avg_sol_scan_time	80	64-bit floating point	>=0	seconds	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
total_sol_expose	80	64-bit floating point	>=0	seconds	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
shift_flux	5678400	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array np::MAX_TREND_POINTS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 10 x 364 x 390

3.1.2.16 OMPS NP Raw Flux PC

Data Mnemonic	NP_NU-LM0240-107
Description/ Purpose	The OMPS NP Raw Flux PC table contains solar signals corrected for detector and normalized by the baseline solar signals This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,703,670 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.16-1, OMPS NP Raw Flux PC Data Format

Table 3.1.2.16-1, OMPS NP Raw Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	
rsf_iday	4	32-bit integer	1 – 366	days	
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	
rsf_diffuser_surface	2	16-bit Integer	1 – 2	unitless	
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	
spat_dim	4	32-bit integer	>=0	pixels	
spec_dim	4	32-bit integer	>=0	pixels	
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	
rsf_expose	8	64-bit floating point	>=0	seconds	
rsf_data	567840	32-bit floating point	0 – 1800	W/cm^3	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
rsf_counts	567840	32-bit floating point	Minfloat – Maxfloat	Counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iyear_solar	40	32-bit integer	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	32-bit integer	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	4	32-bit floating point	-180 – 180	degrees	
diffuser_surface_num	4	32-bit integer	1	unitless	
no_work_frames	4	32-bit integer	>=0	unitless	
avg_sol_scan_time	8	64-bit floating point	>=0	seconds	
total_sol_expose	8	64-bit floating point	>=0	seconds	
rawflx_data	567840	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2 Manual Processing Coefficients

Manual PCs are files that contain PC parameters used in the creation of NPP/NPOESS Data Products. All of these files require human review prior to their insertion into the operational processing environment.

3.2.1 Initialization Processing Coefficients

Initialization PCs are files containing the initial sets of PC parameters used to create NPP/NPOESS Data Products and are not updated frequently.

3.2.1.1 CrIMSS PCs

3.2.1.1.1 CrIMSS Daytime LAA PC

Data Mnemonic	NP_NU-LM0230-000
Description/ Purpose	The CrIMSS Daytime Local Angle Adjustment (LAA) PC file contains the regression coefficients used for the daytime local adjustment of the Field Of View (FOV) radiances. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	13,154,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.1-1, CrIMSS Daytime LAA PC Data Format

Table 3.2.1.1.1-1, CrIMSS Daytime LAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rCoeff	12528000	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array: CRIS_SCAN_ANGLES x CRIS_FOV-1 x MAX_LAA_EOFS x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 20 x 1305
cCoeff	626400	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: CRIS_SCAN_ANGLES x CRIS_FOV-1 x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 1305

3.2.1.1.2 CrIMSS Daytime LAA EOF PC

Data Mnemonic	NP_NU-LM0230-001
Description/ Purpose	The CrIMSS Daytime LAA EOF PC file contains the EOFs used for the daytime LAA of the CrIS FOVs. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	208,800 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.2-1, CrIMSS Daytime LAA EOF PC Data Format

Table 3.2.1.1.2-1, CrIMSS Daytime LAA EOF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
eofday	208,800	64-bit floating point	Minfloat – Maxfloat	unitless	EOFs used for daytime local angle adjustment of CrIS FOVs 2 Dimensional Array: MAX_IR_CHAN x MAX_LAA_EOFS Size of Dimension(s): 1305 x 20

3.2.1.1.3 CrIMSS IR Channel Atmospheric Noise PC

Data Mnemonic	NP_NU-LM0230-002
Description/ Purpose	The CrIMSS IR Channel Atmospheric Noise PC file contains the noise values for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	10,444 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.3-1, CrIMSS IR Channel Atmospheric Noise PC Data Format

Table 3.2.1.1.3-1, CrIMSS IR Channel Atmospheric Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nChan	4	32-bit integer	1 – 1305	unitless	Number of Channels Used
freqIR	5220	32-bit floating point	Minfloat – Maxfloat	nanometers	Frequency for IR Channels 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305
atmosphericNoise	5220	32-bit floating point	Minfloat – Maxfloat	unitless	Atmospheric noise for the IR channels 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305

3.2.1.1.4 CrIMSS IR Channel NEdN PC

Data Mnemonic	NP_NU-LM0230-003
Description/ Purpose	The CrIMSS IR Channel Atmospheric Noise Equivalent delta Noise (NEdN) PC file contains the noise values for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	20,944 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.4-1, CrIMSS IR Channel NEdN PC Data Format

Table 3.2.1.1.4-1, CrIMSS IR Channel NEdN PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bnFreq	16	32-bit floating point	Minfloat – Maxfloat	unitless	End points for noise calculations 1 Dimensional Array: MAX_FRQ_CLASS Size of Dimension(s): 4
sceneTemp	48	32-bit floating point	0 – 330	Kelvin	Scene temperatures for which NEdNs were calculated 2 Dimensional Array: NUM_NOISE_TEMPERATURES x MAX_FRQ_CLASS Size of Dimension(s): 3 x 4
irDevNoise	20880	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: MAX_FRQ_CLASS x MAX_IR_CHAN Size of Dimension(s): 4 x 1305

3.2.1.1.5 CrIMSS MW Atmospheric Noise PC

Data Mnemonic	NP_NU-LM0230-004
Description/ Purpose	The CrIMSS MW Atmospheric Noise PC file contains the noise for all of the CrIS and ATMS channels. This file is used in the CrIMMS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	92 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.5-1, CrIMSS MW Atmospheric Noise PC Data Format

Table 3.2.1.1.5-1, CrIMSS MW Atmospheric Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nChan	4	32-bit integer	1 – 22	unitless	Number of channels used
atmosphericNoise	88	32-bit floating point	Minfloat – Maxfloat	unitless	Atmospheric noise for the MW channels 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22

3.2.1.1.6 CrIMSS MW Frequency Polarization PC

Data Mnemonic	NP_NU-LM0230-005
Description/ Purpose	The CrIMSS MW Frequency Polarization PC files contain the MW frequencies, weights, and polarization information. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	444 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.6-1, CrIMSS MW Frequency Polarization PC Data Format

Table 3.2.1.1.6-1, CrIMSS MW Frequency Polarization PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numChans	4	32-bit integer	1 – 22	unitless	Number of MW Channels
freq	88	32-bit floating point	Minfloat – Maxfloat	unitless	MW OSS RTM frequency points 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
s1	88	32-bit floating point	Minfloat – Maxfloat	unitless	s1 variable 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
s2	88	32-bit floating point	Minfloat – Maxfloat	unitless	s2 variable 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
hw	88	32-bit floating point	Minfloat – Maxfloat	unitless	Weight value 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
pol	88	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22

3.2.1.1.7 CrIMSS MW Noise Amplification PC

Data Mnemonic	NP_NU-LM0230-006
Description/ Purpose	The CrIMSS MW Noise Amplification PC file contains the noise amplification data for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2740 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.7-1, CrIMSS MW Noise Amplification PC Data Format

Table 3.2.1.1.7-1, CrIMSS MW Noise Amplification PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numFor	4	32-bit integer	1 – 30	unitless	MWNA data is for numFor FORs per scan. This must match the number of FORs per scan in the data being processed.
numElements	4	32-bit integer	1 – 9	unitless	Number of noise amplification elements
numMwChans	4	32-bit integer	1 – 22	unitless	Number of MW channels for the MWNA data
indexMwNa	88	32-bit integer	Minint – MaxInt	unitless	Index into the MWNA data 1 Dimensional Array: MAX_MW_CHAN Size of Dimension(s): 22
mwNoiseAmp	2640	32-bit floating point	Minfloat – Maxfloat	unitless	MW noise amplification data 2 Dimensional Array: MAX_MW_CHAN x CRIS_SCAN_FORS Size of Dimension(s): 22 x 30

3.2.1.1.8 CrIMSS MW Noise PC

Data Mnemonic	NP_NU-LM0230-007
Description/ Purpose	The CrIMSS MW Noise PC file contains the noise data for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	92 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.8-1, CrIMSS MW Noise PC Data Format

Table 3.2.1.1.8-1, CrIMSS MW Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mwChannel	4	32-bit integer	1 – 22	unitless	Number of channels for which noise data exists in the data
mwNoise	88	32-bit floating point	Minfloat – Maxfloat	unitless	Mw channel noise vector 1 Dimensional Array: MAX_MW_CHAN Size of Dimension(s): 22

3.2.1.1.9 CrIMSS Nighttime LAA PC

Data Mnemonic	NP_NU-LM0230-008
Description/ Purpose	The CrIMSS Nighttime LAA PC file contains the regression coefficients used for nighttime LAA of the FOV radiances. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	13,154,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.9-1, CrIMSS Nighttime LAA PC Data Format

Table 3.2.1.1.9-1, CrIMSS Nighttime LAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rCoeff	12,528,000	32-bit floating point	Minfloat – Maxfloat	unitless	Local angle adjustment regression coefficients 4 Dimensional Array: CRIS_SCAN_ANGLES x LAA_FOVS x MAX_LAA_EOFS x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 20 x 1305
cCoeff	626,400	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: crisScanAngle x crisFov x irChannel Size of Dimension(s): 15 x 8 x 1305

3.2.1.1.10 CrIMSS Nighttime LAA EOF PC

Data Mnemonic	NP_NU-LM0230-009
Description/ Purpose	The CrIMSS Nighttime LAA EOF PC file contains the EOFs used for the nighttime LAA of the CrIS FOVs. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	208,800 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.10-1, CrIMSS Nighttime LAA EOF PC Data Format

Table 3.2.1.1.10-1, CrIMSS Nighttime LAA EOF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
eofNight	208800	64-bit floating point	Minfloat – Maxfloat	unitless	EOFs used for nighttime local angle adjustment of CrIS FOVs 2 Dimensional Array: MAX_IR_CHAN x MAX_LAA_EOFS Size of Dimension(s): 1305 x 20

3.2.1.1.11 CrIMSS NWP Temperature PC

Data Mnemonic	NP_NU-LM0230-010
Description/ Purpose	The CrIMSS Numerical Weather Prediction (NWP) Temperature PC file includes both the climatological means and covariances of all of the state variables used in the CrIS inversion algorithm. This file also includes part of the optimal inverse non-linear method employed by CrIMSS. Separate covariances are included for several geographic/climatological regions This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	41,420 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.11-1, CrIMSS NWP Temperature PC Data Format

Table 3.2.1.1.11-1, CrIMSS NWP Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numTempLevels	4	32-bit integer	1 – 18	unitless	Number of levels for which the coeffs were generated
indxIndep	104	32-bit integer	1 – 101	unitless	Indices for the mapping NWP temperature level data to OSS levels before interpolation 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
pressLevs	104	32-bit integer	1 – 18	hPa	Pressure levels for which the interpolation coefficients were generated 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
coef	40804	32-bit floating point	Minfloat – Maxfloat	unitless	Matrix used in conversion of temperatures from NWP levels to CrIMSS EDR levels. 2 Dimensional Array: ossLevel x ossLevel Size of Dimension(s): 101 x 101
coef0	404	32-bit floating point	Minfloat – Maxfloat	unitless	Vector used in conversion of temperatures from NWP levels to CrIMSS EDR levels. 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101

3.2.1.1.12 CrIMSS NWP Water Vapor PC

Data Mnemonic	NP_NU-LM0230-011
Description/ Purpose	The CrIMSS NWP Water Vapor PC file includes both the climatological means and covariances of all of the state variables used in the CrIS inversion algorithm. This file includes a part of the optimal inverse non-linear inverse method employed by CrIMSS. Separate covariances are included for several geographic/climatological regions. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	41,420 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.12-1, CrIMSS NWP Water Vapor PC Data Format

Table 3.2.1.1.12-1, CrIMSS NWP Water Vapor PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numWatVapLevels	4	32-bit integer	1 – 13	unitless	Number of levels for which the coeffs were generated
indxIndep	104	32-bit integer	1 – 101	unitless	Indices for the mapping NWP water vapor level data to OSS levels before interpolation 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
pressLevs	104	32-bit integer	1 – 18	hPa	1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
coef	40804	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array ossLevel x ossLevel Size of Dimension(s): 101 x 101
coef0	404	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: ossLevel Size of Dimension(s): 101

3.2.1.1.13 CrIMSS Solar Irradiance and IR Frequency PC

Data Mnemonic	NP_NU-LM0230-012
Description/ Purpose	The CrIMSS Solar Irradiance and IR Frequency PC file contains solar irradiance and IR frequency data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	20,880 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.13-1, CrIMSS Solar Irradiance and IR Frequency PC Data Format

Table 3.2.1.1.13-1, CrIMSS Solar Irradiance and IR Frequency PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
freqIR	5220	32-bit floating point	Minfloat – Maxfloat	cm^-1	IR frequency grid. Data is used in the OSS model 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305
solRad	15660	32-bit floating point	Minfloat – Maxfloat	mW/m^2/cm^-1	Extraterrestrial solar irradiance. One value per apodization method per channel 2 Dimensional Array: MAX_IR_CHAN x MAX_APOD Size of Dimension(s): 1305 x 3

3.2.1.1.14 CrIMSS Trace Gas Reference Profiles PC

Data Mnemonic	NP_NU-LM0230-013
Description/ Purpose	The CrIMSS Trace Gas Reference Profiles PC file contains the trace gas reference profiles. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2020 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.14-1, CrIMSS Trace Gas Reference Profiles PC Data Format

Table 3.2.1.1.14-1, CrIMSS Trace Gas Reference Profiles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
trref	2020	32-bit floating point	Minfloat – Maxfloat	unitless	Trace gas profiles 2 Dimensional Array: OSS_LEVELS x NUM_TRACE_GASES Size of Dimension(s): 101 x 5

3.2.1.1.15 CrIMSS Tropopause Reference Profiles PC

Data Mnemonic	NP_NU-LM0230-014
Description/ Purpose	The CrIMSS Tropopause Reference Profiles PC file contains the above tropopause reference profiles. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	808 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.15-1, CrIMSS Tropopause Reference Profiles PC Data Format

Table 3.2.1.1.15-1, CrIMSS Tropopause Reference Profiles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pn2oref	404	32-bit floating point	Minfloat – Maxfloat	g/kg	Reference profile for nitrous oxide 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101
pch4ref	404	32-bit floating point	Minfloat – Maxfloat	g/kg	Reference profile for methane 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101

3.2.1.1.16 CrIMSS Climatological PC

Data Mnemonic	NP_NU-LM0230-015
Description/ Purpose	The CrIMSS Climatological PC file provides the climatological means and covariances of all state variables used in the CrIS inversion algorithm. Separate covariances are included for several geographic/climatological regions. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	976,928 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.16-1, CrIMSS Climatological PC Data Format

Table 3.2.1.1.16-1, CrIMSS Climatological PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
covMatrix	161312	32-bit floating point	Minfloat – Maxfloat	unitless	Two dimensional array containing MW and IR error covariance matrices for each environmental condition 3 Dimensional Array: Land Type x irRetProfLen x irRetProfLen Size of Dimension(s): 8 x 71 x 71
eof	804288	32-bit floating point	Minfloat – Maxfloat	unitless	Contains EOFs for stratified environmental conditions 3 Dimensional Array: Land Type x irRetProfLen x irGeoProfLen Size of Dimension(s): 8 x 71 x 354
background	11328	32-bit floating point	Minfloat – Maxfloat	unitless	MW and IR background mean profiles(climatic means) 2 Dimensional Array: Land Type x irGeoProfLen Size of Dimension(s): 8 x 354

3.2.1.1.17 CrIS Fill Packet PC

Data Mnemonic	NP_NU-LM0230-016
Description/ Purpose	The CrIS Fill Packet PC contains templates of each of the Earth Scene, Deep Space, and Internal Calibration Target Interferogram packets (APIDs 1315-1395). These templates are used to create “fill” packets that are used to replace packets missing from the CrIS RDR inputs, in order to minimize the effect of missing packets to the CrIS sliding window processing. This file is used in the CrIS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	127496 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.17-1, CrIS Fill Packet PC Data Format

Table 3.2.1.1.17-1, CrIS Fill Packet PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ApidID	324	32-bit unsigned integer	1315 - 1395	unitless (Application Packet ID)	Collection of application packet identifiers for each of the 81 unique types of application packets which will be stored in this PC. 1 Dimensional Array Size of Dimension(s): 81
PacketSize	324	32-bit unsigned integer	0 – 2494	Bytes	Collection of application packet sizes (in bytes) for each of the 81 unique types of application packets which will be stored in this PC. 1 Dimensional Array Size of Dimension(s): 81
PacketOffset	324	32-bit unsigned integer	0-126521	Bytes	Collection of offsets into the application packet storage area for each of the 81 unique types of application packets which will be stored in this PC. 1 Dimensional Array Size of Dimension(s): 81
PacketStorage	126522	8-bit unsigned integer	0-255	Unitless	Storage area for each of the 81 unique types of application packets which will be stored in this PC.
Pad0	2	8-bit unsigned integer	minint - maxint	Unitless	Pad bytes. 1 Dimensional Array: Size of Dimension(s): 2

3.2.1.2 ATMS PCs

3.2.1.2.1 ATMS Footprint Matching Kernels PC

Data Mnemonic	NP_NU-LM0231-000
Description/ Purpose	The ATMS Remap Footprint Matching Kernels PC file provides the coefficients for resampling the ATMS observed brightness temperature using the Backus-Gilbert technique to the CrIS Field of Regard (FOR). This file is used in the ATMS algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,058,648 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.2.1-1, ATMS Footprint Matching Kernels PC Data Format

Table 3.2.1.2.1-1, ATMS Footprint Matching Kernels PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxPosTrackOffset	4	32-bit integer	0 – 10	unitless	Maximum positive track offset
maxNegTrackOffset	4	32-bit integer	0 – 10	unitless	Maximum negative track offset
numResBeamPos	2640	32-bit integer	1 - 100	unitless	Number of beam positions (ie. data points) to use in resampling each channel to a CrIS FOR. 2 Dimensional Array: CrIS FOR x ATMS Channel Size of Dimension(s): 30 x 22
scanPos	264000	32-bit integer	1 – 96	unitless	The scan position of each of the values used in resampling to a CrIS FOR for a given channel. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100
trackOff	264000	32-bit integer	-10 – 10	unitless	The along-track (ie. scan) offset of each beam position used in resampling to a CrIS FOR for a given channel. Offset is from the synched ATMS scan. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bgCoeffs	528000	64-bit floating point	0 – 1	unitless	Backus-Gilbert coefficients to use in resampling ATMS data to CrIS FORs. There is one coeff for each data point to be used in resampling an ATMS channel to a CRIS FOR. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100

3.2.1.3 OMPS PCs

3.2.1.3.1 OMPS TC Calibration Constant PC

Data Mnemonic	NP_NU-LM0240-008
Description/ Purpose	The OMPS TC Calibration Constant PC contains radiance calibration constant (from pre-launch calibration). This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.1-1, OMPS TC Calibration Constant PC Data Format

Table 3.2.1.3.1-1, OMPS TC Calibration Constant PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radevresp	2,271,360	32-bit floating point	2.89661 to 3299.13	counts/W/cm^3/sr	Radiometric sensitivities 3 Dimensional Array: tc::NUM_ELECTRONICS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 780

3.2.1.3.2 OMPS TC Field Angles Map PC Table

Data Mnemonic	NP_NU-LM0240-009
Description/ Purpose	The OMPS TC Field Angles Map PC Table contains the detector map of pixel optical angles This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	12,480 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format

Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angles Array	12,480	64-bit floating point	-1 – 8.6044729E-02	nanometers	Pre-launch cross-track and along-track view angles map 2 Dimensional Array: tc::NO_SPAT_CCD x tc::NUM_IMAGE_HALF Note: OPTICAL_ANGLE_TYPE refers to the azimuth angle (0) and elevation angle (1) Size of Dimension(s): 780 x 2

3.2.1.3.3 OMPS TC Observed Solar PC Table

Data Mnemonic	NP_NU-LM0240-010
Description/ Purpose	The OMPS TC Observed Solar PC Table contains observed reference solar irradiances. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.3-1, OMPS TC Observed Solar PC Table Data Format

Table 3.2.1.3.3-1, OMPS TC Observed Solar PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_data Array	1135680	32-bit floating point	0 – ~1316	W/cm^3/sr	Baseline OMPS observed reference solar irradiances 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
rsf_counts Array	1135680	32-bit floating point	24,531.2 – 16,708,400	counts	Baseline OMPS observed reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

3.2.1.3.4 OMPS TC Predicted Solar PC Table

Data Mnemonic	NP_NU-LM0240-011
Description/ Purpose	The OMPS TC Predicted Solar PC Table contains solar irradiances and solar wavelengths predicted from spectral functions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	32,640 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.4-1, OMPS TC Predicted Solar PC Table Data Format

Table 3.2.1.3.4-1, OMPS TC Predicted Solar PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
womps Array	16,320	64-bit floating point	298 – 380	nanometers	OMPS solar wavelengths predicted from spectral functions 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040
fomps Array	16,320	64-bit floating point	400 – 1504	W/cm^3/sr	OMPS solar irradiances predicted from spectral functions 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040

3.2.1.3.5 OMPS TC Solar Irradiance PC Table

Data Mnemonic	NP_NU-LM0240-012
Description/ Purpose	The OMPS TC Solar Irradiance PC Table contains solar wavelengths and irradiances of calibration standard. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	32,640 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.5-1, OMPS TC Solar Irradiance PC Table Data Format

Table 3.2.1.3.5-1, OMPS TC Solar Irradiance PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wsun Array	16,320	64-bit floating point	298 to 380	nanometers	Solar wavelengths of calibration standard 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040
fsun Array	16,320	64-bit floating point	400 to 1504	W/cm^3/sr	Solar irradiances of calibration standard 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040

3.2.1.3.6 OMPS TC Spectral Response Function Table

Data Mnemonic	NP_NU-LM0240-013
Description/ Purpose	The OMPS TC Spectral Response Function Table contains Spectral Response Functions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	198,992 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.6-1, OMPS TC Spectral Response Function Table Data Format

Table 3.2.1.3.6-1, OMPS TC Spectral Response Function Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wave_prof Array	192	64-bit floating point	290 – 390	nanometer	Wavelengths 1 Dimensional Array: tc::NFUNC Size of Dimension(s): 24
offsetw Array	7952	64-bit floating point	-2.6 – 2.6	nanometers	Offset wavelengths 1 Dimensional Array: tc::NSAMP Size of Dimension(s): 994
wavefunc Array	190848	64-bit floating point	0 – 1	unitless	Spectral responses 2 Dimensional Array: tc::NSAMP x tc::NFUNC Size of Dimension(s): 994 x 24

3.2.1.3.7 OMPS TC Wave Fitting Parameters Table

Data Mnemonic	NP_NU-LM0240-014
Description/ Purpose	The OMPS TC Wave Fitting Parameters Table contains the Wavelength fitting parameters This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,684 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format

Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
inputLine Array	72	8-bit character	Minchar – Maxchar	unitless	Describes file content 1 Dimensional Array: tc::LINE_LEN Size of Dimension(s): 72
iterate	4	32-bit integer	True = 1 False = 0	unitless	processing switch
write_fit	4	32-bit integer	True = 1 False = 0	unitless	processing switch
weight	4	32-bit integer	True = 1 False = 0	unitless	processing switch
mirror	4	32-bit integer	True = 1 False = 0	unitless	processing switch
autodiff	4	32-bit integer	True = 1 False = 0	unitless	processing switch
wavelo	8	64-bit floating point	303.5 – 376.5	nanometers	wavelength limits for fitting
wavehi	8	64-bit floating point	303.5 – 376.5	nanometers	wavelength limits for fitting
delchi	8	64-bit floating point	1e-12	unitless	convergence criteria
provar	8	64-bit floating point	1e-12	unitless	convergence criteria

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
var Array	512	64-bit floating point	1.00E-12	unitless	polynomial parameters 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
if_varied Array	256	32-bit integer	True = 1 False = 0	unitless	vary parameter 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
diff Array	512	64-bit floating point	True = 1 False = 0	unitless	increment parameter 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
lock Array	256	32-bit integer	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
alock Array	512	64-bit floating point	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
block Array	512	64-bit floating point	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64

3.2.1.3.8 OMPS TC Solar Irradiance Calibration Constants Table

Data Mnemonic	NP_NU-LM0240-015
Description/ Purpose	The OMPS TC Solar Irradiance Calibration Constants Table contains the solar irradiance calibration constants. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	15,899,520 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.8-1, OMPS TC Solar Irradiance Calibration Constants Table Data Format

Table 3.2.1.3.8-1, OMPS TC Solar Irradiance Calibration Constants Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iradsolresp Array	15,899,520	32-bit floating point	2.89661 – 3299.13	counts/W/cm^3/sr	Radiometric sensitivities 4 Dimensional Array: tc::NUM_ELECTRONICS x tc::NO_DIFFUSER_POSITIONS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 2 x 7 x 364 x 780

3.2.1.3.9 OMPS TC BRDF GRIDS Table

Data Mnemonic	NP_NU-LM0240-017
Description/ Purpose	The OMPS TC BRDF GRIDS Table contains Sensor diffuser irradiance goniometry characteristics. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,774,080,280 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.9-1, OMPS TC BRDF GRIDS Table Data Format

Table 3.2.1.3.9-1, OMPS TC BRDF GRIDS Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BRDF_grid Array	1774080000	32-bit floating point	Minfloat - Maxfloat	unitless	Bireflectance directional functions 5 Dimensional Array tc::NO_DIFFUSER_POSITIONS x tc::NO_SPEC_PIX x tc::BRDF_SPAT_PIX x tc::GRID_SIZE x tc::GRID_SIZE Size of Dimension(s): 7 x 198 x 200 x 40 x 40
minAzim Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Minimum azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
maxAzim Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Maximum azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
minElev Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Minimum elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxElev Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Maximum elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspat_offset Array	28	32-bit integer	Minint - Maxint	unitless	starting spatial index for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspec_offset Array	28	32-bit integer	Minint - Maxint	unitless	starting spectral index for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspat_size Array	28	32-bit integer	Minint - Maxint	unitless	extent of spatial indices for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspec_size Array	28	32-bit integer	Minint - Maxint	unitless	extent of spectral indices for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gazim_size Array	28	32-bit integer	Minint - Maxint	unitless	number of azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gelev_size Array	28	32-bit integer	Minint - Maxint	unitless	number of elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

3.2.1.3.10 OMPS TC Line Shifts Table

Data Mnemonic	NP_NU-LM0240-018
Description/ Purpose	The OMPS TC Line Shifts Table contains bandcenter spectral shift information for calibration/wavelength registration. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	29,750 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.10-1, OMPS TC Line Shifts Table Data Format

Table 3.2.1.3.10-1, OMPS TC Line Shifts Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
instrument Array	12	8-bit character	“Total Column”	unitless	instrument name 1 Dimensional Array tc::INSTR_NAMELEN Size of Dimension(s): 12
nlines	2	16-bit integer	10	unitless	number of lines
indexes Array	20	16-bit integer	5 – 163	pixels	line pixel number 1 Dimensional Array tc:: MAXLINES Size of Dimension(s): 10
offset	2	16-bit integer	1	pixels	pixel offset
nshifts	2	16-bit integer	167	unitless	number of shifts
wlines Array	80	64-bit floating point	302 – 369	nanometers	Selected wavelength lines for monitoring 1 Dimensional Array tc:: MAXLINES Size of Dimension(s): 10
refshifts Array	13360	64-bit floating point	Minfloat – Maxfloat	nanometers	Selected wavelength shifts for monitoring 2 Dimensional Array tc::MAXLINES x tc:: TC_MAX_SHIFTS Size of Dimension(s): 10 x 167

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
irrad_diff Array	13360	64-bit floating point	Minfloat – Maxfloat	unitless	Selected irradiance shifts for monitoring 2 Dimensional Array tc::MAXLINES x tc:: TC_MAX_SHIFTS Size of Dimension(s): 10 x 167
wref_l Array	2912	64-bit floating point	300 – 380	nanometers	reference wavelengths 1 Dimensional Array tc::MAX_NSPEC_CCD Size of Dimension(s): 364

3.2.1.3.11 OMPS TC Spectral Registration Pixel Map Table

Data Mnemonic	NP_NU-LM0240-019
Description/ Purpose	The OMPS TC Spectral Registration Pixel Map Table contains the wavelength mapping of the CCD for spatial and spectral dimensions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format

Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmap Array	2271360	64-bit floating point	290 – 390	nanometers	wavelength map 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

3.2.1.3.12 OMPS TC Timing Pattern Ground Table

Data Mnemonic	NP_NU-LM0240-020
Description/ Purpose	The OMPS TC Timing Pattern Ground Table contains integration times and offsets for Earth View, Solar, LED and Dark. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2188 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format

Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPev_num	4	32-bit integer	1	unitless	number of Earth View Frames
TPsol_num	4	32-bit integer	1	unitless	number of solar frames
TPdark_num	4	32-bit integer	1	unitless	number of dark frames
TPled_num	4	32-bit integer	1	unitless	number of lamp frames
TPev_conum	4	32-bit integer	1	unitless	number of Earth View coadds
TPsol_conum	4	32-bit integer	1 – 7	unitless	number of solar coadds
TPdark_conum	4	32-bit integer	1	unitless	number of dark coadds
TPled_conum	4	32-bit integer	1 – 83	unitless	number of lamp coadds
TPev_time Array	60	32-bit floating point	>=1	seconds	total integration time for each frame – Earth View 1 Dimensional Array tc::NO_SCANS_PER_GRANULE Size of Dimension(s): 15
TPsol_time Array	252	32-bit floating point	>=1	seconds	total integration time for each frame - Solar 1 Dimensional Array tc::NO_SOLAR_IMAGES Size of Dimension(s): 63

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPdark_time Array	20	32-bit floating point	>=1	seconds	total integration time for each frame - Dark 1 Dimensional Array tc::NO_DARK_IMAGES Size of Dimension(s): 5
TPled_time Array	600	32-bit floating point	>=1	seconds	total integration time for each frame - LED 1 Dimensional Array tc::NO_LAMP_IMAGES Size of Dimension(s): 150
ev_time_offset	8	64-bit integer		microseconds	EV time offset
sol_time_offset	8	64-bit integer		microseconds	Solar time offset
dark_time_offset	8	64-bit integer		microseconds	Dark time offset
led_time_offset	1200	64-bit integer		microseconds	1 Dimensional Array tc::NO_LAMP_IMAGES Size of Dimension(s): 150

3.2.1.3.13 OMPS TC Linearity Ground Table

Data Mnemonic	NP_NU-LM0240-021
Description/ Purpose	The OMPS TC Linearity Ground Table contains linearity coefficients for primary and redundant CCD1 and CCD2. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	262,144 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.13-1, OMPS TC Linearity Ground Table Data Format

Table 3.2.1.3.13-1, OMPS TC Linearity Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearity_table Array	262,144	32-bit floating point	1 – 100,000	unitless	linearity coefficients for: primary CCD1, primary CCD2, redundant CCD1, redundant CCD2 3 Dimensional Array tc::NUM_ELECTRONICS x tc::NUM_IMAGE_HALF x tc::LAMPLUTSIZE Size of Dimension(s): 2 x 2 x 16,384

3.2.1.3.14 OMPS TC Earth View Sample Ground Table

Data Mnemonic	NP_NU-LM0240-022
Description/ Purpose	The OMPS TC Earth View Sample Ground Table contains the BATC generated database of utilized pixels. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format

Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	1,135,680	32-bit integer	0-3: 0 = unused pixel 1 = macropixel A 2 = macropixel B 3 = bad pixel	unitless	Flight-like Earth-view sample table array. 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

3.2.1.3.15 OMPS TC Macropixel Ground Table

Data Mnemonic	NP_NU-LM0240-023
Description/ Purpose	The OMPS TC Macropixel Ground Table contains the ccd map of EV macropixels This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.15-1, OMPS TC Macropixel Ground Table Data Format

Table 3.2.1.3.15-1, OMPS TC Macropixel Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot Array	1,135,680	32-bit integer	-N to N: negative number indicates all bad macropixel, N goes from 1 to the number of macropixels	unitless	Macropixel table array 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

3.2.1.3.16 OMPS TC LED Sample Ground Table

Data Mnemonic	NP_NU-LM0240-024
Description/ Purpose	The OMPS TC LED Sample Ground Table contains the ccd map of LAMP pixels. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.16-1, OMPS TC LED Sample Ground Table Data Format

Table 3.2.1.3.16-1, OMPS TC LED Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lampsample Array	1,135,680	32-bit integer	0-2: 0 = unused pixel 1 = macropixel A 2 = macropixel B	unitless	linearity LED sample table array, 3rd dimension is for the primary and redundant CCDs 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

3.2.1.3.17 OMPS TC Solar Sample Ground Table

Data Mnemonic	NP_NU-LM0240-025
Description/ Purpose	The OMPS TC Solar Sample Ground Table contains the sample table array for each of 7 solar diffuser positions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	7,949,760 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.17-1, OMPS TC Solar Sample Ground Table Data Format

Table 3.2.1.3.17-1, OMPS TC Solar Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot Array	7,949,760	32-bit integer	0-2: 0 = unused pixel 1 = macropixel A 2 = macropixel B	unitless	Sample table array for each of 7 solar diffuser positions. 2 Dimensional Array tc::NO_DIFFUSER_POSITIONS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 7 x 364 x 780

3.2.1.3.18 OMPS TC Wavelengths Ground Table

Data Mnemonic	NP_NU-LM0240-026
Description/ Purpose	The OMPS TC Wavelengths Ground Table contains bandcenter wavelengths corrected for solar doppler shift. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8,940,700 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.18-1, OMPS TC Wavelengths Ground Table Data Format

Table 3.2.1.3.18-1, OMPS TC Wavelengths Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	58	16-bit integer	2000 – 2050	years	Year 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	58	16-bit integer	1 – 366	days	Day 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
resolution	232	64-bit floating point	>0	nanometers	FWHM wavelength resolution 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
intercept	24360	64-bit floating point	Minfloat – Maxfloat	nanometers	Intercept line 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105
slope	24360	64-bit floating point	Minfloat – Maxfloat	unitless	Slope line 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
correl	24360	64-bit floating point	>0 Only valid if ntrends > 0	unitless	Correlation 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105
ntrends	116	32-bit integer	>=0	unitless	Number of calibrations used for trend 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
newestyear	58	16-bit integer	2000 – 2050	years	Year of newest calibration trended 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
newestday	58	16-bit integer	1 – 366	days	Day of newest calibration 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
wbands	8867040	64-bit floating point	260-410	nanometers	Wavelengths 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105

3.2.1.3.19 OMPS TC CF Earth Ground Table

Data Mnemonic	NP_NU-LM0240-027
Description/ Purpose	The OMPS TC CF Earth Ground Table contains radiometric calibration factors for the Earth scene spatial cells. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4,434,100 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.19-1, OMPS TC CF Earth Ground Table Data Format

Table 3.2.1.3.19-1, OMPS TC CF Earth Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	year of calibration record 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	day of calibration record 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	>0	unitless	number of observations used in trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cfearth	4433520	32-bit floating point	>0	unitless	radiometric calibration factors 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105

3.2.1.3.20 OMPS NP Calibration Constant PC

Data Mnemonic	NP_NU-LM0240-108
Description/ Purpose	The OMPS NP Calibration Constant PC contains radiance calibration constant (from pre-launch calibration). This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.20-1, OMPS NP Calibration Constant PC Data Format

Table 3.2.1.3.20-1, OMPS NP Calibration Constant PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radevresp	1135680	32-bit floating point	2.89661 – 3299.13	counts/W/cm^3/sterad	3 Dimensional Array np::NUM_ELECTRONICS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 390

3.2.1.3.21 OMPS NP Field Angles Map PC

Data Mnemonic	NP_NU-LM0240-109
Description/ Purpose	The OMPS NP Field Angles Map PC contains the detector map of pixel optical angles This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	6,240 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.21-1, OMPS NP Field Angles Map PC Data Format

Table 3.2.1.3.21-1, OMPS NP Field Angles Map PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angles	6240	64-bit floating point	-1 – 8.6044729E	radians	2 Dimensional Array np::NO_SPAT_CCD x np::OPTICAL_ANGLE_TYPE Note: OPTICAL_ANGLE_TYPE refers to the azimuth angle (0) and elevation angle (1) Size of Dimension(s): 390 x 2

3.2.1.3.22 OMPS NP Observed Solar PC

Data Mnemonic	NP_NU-LM0240-110
Description/ Purpose	The OMPS NP Observed Solar PC contains observed reference solar irradiances. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.22-1, OMPS NP Observed Solar PC Data Format

Table 3.2.1.3.22-1, OMPS NP Observed Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
osol_data	567840	32-bit floating point	0 – ~656	W/cm^3/sterad	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
osol_count	567840	32-bit floating point	9520.00 – 485757.0	counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.23 OMPS NP Predicted Solar PC

Data Mnemonic	NP_NU-LM0240-111
Description/ Purpose	The OMPS NP Predicted Solar PC contains solar irradiances and solar wavelengths predicted from spectral functions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	64,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.23-1, OMPS NP Predicted Solar PC Data Format

Table 3.2.1.3.23-1, OMPS NP Predicted Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
womps	32000	64-bit floating point	~249 – ~315	nanometers	1 Dimensional Array np::MAXPTS_SPEC Size of Dimension(s): 4000
fomps	32000	64-bit floating point	0 – ~800	W/cm^3/sterad	1 Dimensional Array np::MAXPTS_SPEC Size of Dimension(s): 4000

3.2.1.3.24 OMPS NP Solar Irradiance PC

Data Mnemonic	NP_NU-LM0240-112
Description/ Purpose	The OMPS NP Solar Irradiance PC contains solar wavelengths and irradiances of calibration standard. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	64,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.24-1, OMPS NP Solar Irradiance PC Data Format

Table 3.2.1.3.24-1, OMPS NP Solar Irradiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wsun	32000	64-bit floating point	~250 – ~314	nanometers	1 Dimensional Array np::SOL_NP_COUNT Size of Dimension(s): 4000
fsun	32000	64-bit floating point	0 – ~750	W/cm^3/sterad	1 Dimensional Array np::SOL_NP_COUNT Size of Dimension(s): 4000

3.2.1.3.25 OMPS NP Spectral Response Function Table

Data Mnemonic	NP_NU-LM0240-113
Description/ Purpose	The OMPS NP Spectral Response function Table contains Spectral Response Functions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,352 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.25-1, OMPS NP Spectral Response Function Table Data Format

Table 3.2.1.3.25-1, OMPS NP Spectral Response Function Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
offsetw	1176	64-bit floating point	-1.5 – 1.5	nanometers	1 Dimensional Array np::NSAMP Size of Dimension(s): 147
wavefunc	1176	64-bit floating point	0 – 1	unitless	1 Dimensional Array np::NSAMP Size of Dimension(s): 147

3.2.1.3.26 OMPS NP Wave Fitting Parameters Table

Data Mnemonic	NP_NU-LM0240-114
Description/ Purpose	The OMPS NP Wave Fitting Parameters Table contains the Wavelength fitting parameters This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,612 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.26-1, OMPS NP Wave Fitting Parameters Table Data Format

Table 3.2.1.3.26-1, OMPS NP Wave Fitting Parameters Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iterate	4	32-bit integer	>=0	unitless	
write_fit	4	32-bit integer	>=0	unitless	
weight	4	32-bit integer	>=0	unitless	
mirror	4	32-bit integer	>=0	unitless	
autodiff	4	32-bit integer	>=0	unitless	
wavlo	8	64-bit floating point	255.83 – 308.58	nanometers	
wavhi	8	64-bit floating point	255.83 – 308.58	nanometers	
delchi	8	64-bit floating point	1.00E-12	unitless	
provar	8	64-bit floating point	1.00E-12	unitless	
var	512	64-bit floating point	1.00E-12	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
if_varied	256	32-bit integer	>=0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
diff	512	64-bit floating point	>=0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
lock	256	32-bit integer	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
block	512	64-bit floating point	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
alock	512	64-bit floating point	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64

3.2.1.3.27 OMPS NP Solar Irradiance Calibration Constants Table

Data Mnemonic	NP_NU-LM0240-115
Description/ Purpose	The OMPS NP Solar Irradiance Calibration Constants Table contains the solar irradiance calibration constants. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.27-1, OMPS NP Solar Irradiance Calibration Constants Table Data Format

Table 3.2.1.3.27-1, OMPS NP Solar Irradiance Calibration Constants Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iradsolresp	1135680	32-bit floating point	~2 – ~1110	counts/(W/cm^3/sterad)	3 Dimensional Array np::NUM_ELECTRONICS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 390

3.2.1.3.28 OMPS NP BRDF GRIDS Table

Data Mnemonic	NP_NU-LM0240-116
Description/ Purpose	The OMPS NP BRDF GRIDS Table contains Sensor diffuser irradiance goniometry characteristics. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	297,600,088 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.28-1, OMPS NP BRDF GRIDS Table Data Format

Table 3.2.1.3.28-1, OMPS NP BRDF GRIDS Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BRDF_grid	297600000	32-bit floating point	Minint – Maxint	unitless	5 Dimensional Array np::NO_BRDF x np::NO_SPEC_PIX x np::NO_SOL_PIX x np::GRID_SIZE x np::GRID_SIZE Size of Dimension(s): 2 x 150 x 155 x 40 x 40
minAzim	8	32-bit floating point	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
maxAzim	8	32-bit floating point	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
minElev	8	32-bit floating point	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
maxElev	8	32-bit floating point	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspat_offset	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspec_offset	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspat_size	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gspec_size	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gazim_size	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gelev_size	8	32-bit integer	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2

3.2.1.3.29 OMPS NP Line Shifts Table

Data Mnemonic	NP_NU-LM0240-117
Description/ Purpose	The OMPS NP Line Shifts Table contains bandcenter spectral shift information for calibration/wavelength registration. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	30,058 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.29-1, OMPS NP Line Shifts Table Data Format

Table 3.2.1.3.29-1, OMPS NP Line Shifts Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nlines	2	16-bit Integer	10	unitless	
indexes	20	16-bit Integer	37 – 136	pixels	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
offset	2	16-bit Integer	1	pixels	
nshift	2	16-bit Integer	169	unitless	
wlines	80	64-bit floating point	265.0 – 306.2	nanometers	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
refshifts	13520	64-bit floating point	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAXLINES x np::MAXSHIFTS Size of Dimension(s): 10 x 169
irraddiff	13520	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAXLINES x np::MAXSHIFTS Size of Dimension(s): 10 x 169
wref_l	2912	64-bit floating point	250 – 310	nanometers	1 Dimensional Array np::MAX_NSPEC_CCD Size of Dimension(s): 364

3.2.1.3.30 OMPS NP Spectral Registration Pixel Map Table

Data Mnemonic	NP_NU-LM0240-118
Description/ Purpose	The OMPS NP Spectral Registration Pixel Map Table contains the wavelength mapping of the CCD for spatial and spectral dimensions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.30-1, OMPS NP Spectral Registration Pixel Map Table Data Format

Table 3.2.1.3.30-1, OMPS NP Spectral Registration Pixel Map Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmap	1135680	64-bit floating point	240 – 320	nanometers	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.31 OMPS NP Timing Pattern Ground Table

Data Mnemonic	NP_NU-LM0240-119
Description/ Purpose	The OMPS NP Timing Pattern Ground Table contains integration times and offsets for Earth View, Solar, LED and Dark. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,560 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.31-1, OMPS NP Timing Pattern Ground Table Data Format

Table 3.2.1.3.31-1, OMPS NP Timing Pattern Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPev_num	4	32-bit integer	1 – np::NO_SCANS_PER_GRANULE	unitless	
TPsol_num	4	32-bit integer	1 – np::NO_SOLAR_IMAGES	unitless	
TPdark_num	4	32-bit integer	1 – np::NO_DARK_IMAGES	unitless	
TPled_num	4	32-bit integer	1 – np::NO_LAMP_IMAGES	unitless	
TPev_conum	4	32-bit integer	1 – np::NO_COADDS_E	unitless	
TPsol_conum	4	32-bit integer	1 – np::NO_COADDS_S	unitless	
TPdark_conum	4	32-bit integer	1 – np::NO_COADDS_D	unitless	
TPled_conum	4	32-bit integer	1 – np::NO_COADDS_L	unitless	
TPev_time	40	64-bit floating point	>=1	seconds	1 Dimensional Array np::NO_SCANS_PER_GRANULE Size of Dimension(s): 5
TPsol_time	216	64-bit floating point	Minfloat – Maxfloat	seconds	1 Dimensional Array np::NO_SOLAR_IMAGES Size of Dimension(s): 27
TPdark_time	40	64-bit floating point	>=1	seconds	1 Dimensional Array np::NO_DARK_IMAGES Size of Dimension(s): 5
TPled_time	1200	64-bit floating point	>=0.1	seconds	1 Dimensional Array np::NO_LAMP_IMAGES Size of Dimension(s): 150

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ev_time_offset	8	64-bit integer	Minint – Maxint	microseconds	
sol_time_offset	8	64-bit integer	Minint – Maxint	microseconds	
dark_time_offset	8	64-bit integer	Minint – Maxint	microseconds	
led_time_offset	8	64-bit integer	Minint – Maxint	microseconds	

3.2.1.3.32 OMPS NP Linearity Ground Table

Data Mnemonic	NP_NU-LM0240-120
Description/ Purpose	The OMPS NP Linearity Ground Table contains linearity coefficients for primary and redundant electronics. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	131,072 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.32-1, OMPS NP Linearity Ground Table Data Format

Table 3.2.1.3.32-1, OMPS NP Linearity Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearity_table	131072	32-bit floating point	1 – 16384	unitless	2 Dimensional Array np::NUM_ELECTRONICS x np::LAMPLUTSIZE Size of Dimension(s): 2 x 16384

3.2.1.3.33 OMPS NP Earth View Sample Ground Table

Data Mnemonic	NP_NU-LM0240-121
Description/ Purpose	The OMPS NP Earth View Sample Ground Table contains the BATC generated database of utilized pixels. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.33-1, OMPS NP Earth View Sample Ground Table Data Format

Table 3.2.1.3.33-1, OMPS NP Earth View Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
badpixBATC	567840	32-bit integer	0 – 3	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.34 OMPS NP Macropixel Ground Table

Data Mnemonic	NP_NU-LM0240-122
Description/ Purpose	The OMPS NP Macropixel Ground Table contains the ccd map of EV macropixels This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.34-1, OMPS NP Macropixel Ground Table Data Format

Table 3.2.1.3.34-1, OMPS NP Macropixel Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	567840	32-bit integer	Minint – Maxint	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.35 OMPS NP LED Sample Ground Table

Data Mnemonic	NP_NU-LM0240-123
Description/ Purpose	The OMPS NP LED Sample Table contains the ccd map of LAMP pixels. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.35-1, OMPS NP LED Sample Ground Table Data Format

Table 3.2.1.3.35-1, OMPS NP LED Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lampsample	567840	32-bit integer	0 – 2	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.36 OMPS NP Solar Sample Ground Table

Data Mnemonic	NP_NU-LM0240-124
Description/ Purpose	The OMPS NP Solar Sample Ground Table contains the sample table array for each of 7 solar diffuser positions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.36-1, OMPS NP Solar Sample Ground Table Data Format

Table 3.2.1.3.36-1, OMPS NP Solar Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	567840	32-bit integer	0 – 2	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

3.2.1.3.37 OMPS NP Wavelengths Ground Table

Data Mnemonic	NP_NU-LM0240-125
Description/ Purpose	The OMPS NP Wavelengths Ground Table contains band center wavelengths of each macropixel for the current day. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	850,570 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.37-1, OMPS NP Wavelengths Ground Table Data Format

Table 3.2.1.3.37-1, OMPS NP Wavelengths Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	290	16-bit Integer	2000 – 2050	years	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
obs_day	290	16-bit Integer	1 – 366	days	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
resolution	580	32-bit floating point	>=0	nanometers	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
spatial	290	16-bit Integer	>=1	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
intercept	1160	64-bit floating point	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
slope	1160	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
straight	1160	64-bit floating point	>=0 Only valid if nmonitor > 0	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
nmonitor	580	32-bit integer	>=0	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
year	290	16-bit Integer	2000 – 2050	years	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
day	290	16-bit Integer	1 – 366	days	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
wbands	422240	64-bit floating point	230 - 380	nanometers	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5

3.2.1.3.38 OMPS NP CF Earth Ground Table

Data Mnemonic	NP_NU-LM0240-127
Description/ Purpose	The OMPS NP CF Earth Ground Table contains radiometric calibration factors for the Earth scene spatial cells. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: Vxxx-yyy Where xxx and-yyy are the major and minor version numbers of the table. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	211,700 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.38-1, OMPS NP CF Earth Ground Table Data Format

Table 3.2.1.3.38-1, OMPS NP CF Earth Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	>=0	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
cfearth	211120	32-bit floating point	>=0	unitless	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5

3.2.1.3.39 OMPS Nadir Profile IP PC

Data Mnemonic	NP_NU-LM0240-126
Description/ Purpose	The OMPS Nadir Profile PC contains parameters used for OMPS Nadir Profile processing. This file is used in the OMPS Nadir Profile algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	54,464 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.39-1, OMPS Nadir Profile PC Data Format

Table 3.2.1.3.39-1, OMPS Nadir Profile PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
record_id	4	32-bit integer		unitless	
wlen0	52	32-bit floating point		unitless	1 Dimensional Array: BAND_WAVE_MAX Size of Dimension(s): 13
alfa0	52	32-bit floating point		unitless	1 Dimensional Array: BAND_WAVE_MAX Size of Dimension(s): 13
beta	52	32-bit floating point		unitless	1 Dimensional Array: BAND_WAVE_MAX Size of Dimension(s): 13
qlog	9200	32-bit floating point		unitless	4 Dimensional Array: Size of Dimension(s): 10 x 23 x 5 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qslog	9200	32-bit floating point		unitless	4 Dimensional Array: Size of Dimension(s): 10 x 23 x 5 x 2
fract	9200	32-bit floating point		unitless	4 Dimensional Array: Size of Dimension(s): 10 x 23 x 5 x 2
sbt	920	32-bit floating point		unitless	3 Dimensional Array: Size of Dimension(s): 23 x 5 x 2
xlogi0	11040	32-bit floating point		unitless	4 Dimensional Array: Size of Dimension(s): 10 x 23 x 6 x 2
tbyi0	11040	32-bit floating point		unitless	4 Dimensional Array: Size of Dimension(s): 10 x 23 x 6 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sb	1104	32-bit floating point		unitless	3 Dimensional Array: Size of Dimension(s): 23 x 6 x 2
profn	1012	32-bit floating point		unitless	2 Dimensional Array: Size of Dimension(s): 11 x 23
profs	1012	32-bit floating point		unitless	2 Dimensional Array: Size of Dimension(s): 11 x 23
cov	576	32-bit floating point		unitless	2 Dimensional Array: Size of Dimension(s): 12 x 12

3.2.1.3.40 OMPS Total Column EDR PC

Data Mnemonic	NP_NU-LM0240-128
Description/ Purpose	The OMPS Total Column EDR PC contains parameters used for OMPS Total Column processing. This file is used in the OMPS Total Column algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	114,554,924 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.40-1, OMPS Total Column EDR PC Data Format

Table 3.2.1.3.40-1, OMPS Total Column EDR PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
logi0n	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
z1i0n	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
z2i0n	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
ti0n	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
sbn	64064	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 2288

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
logi0s	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
z1i0s	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
z2i0s	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
ti0s	7687680	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 274560
sbs	64064	32-bit floating point	-5 - 100	unitless	2 Dimensional Array: Size of Dimension(s): 7 x 2288

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dndxlogi0	13178880	32-bit floating point	-5 - 100	unitless	1 Dimensional Array: DNDX_IDX Size of Dimension(s): 3294720
dndxzli0	13178880	32-bit floating point	-5 - 100	unitless	1 Dimensional Array: DNDX_IDX Size of Dimension(s): 3294720
dnxdz2i0	13178880	32-bit floating point	-5 - 100	unitless	1 Dimensional Array: DNDX_IDX Size of Dimension(s): 3294720
dndxti0	13178880	32-bit floating point	-5 - 100	unitless	1 Dimensional Array: DNDX_IDX Size of Dimension(s): 3294720

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dndxsb	109824	32-bit floating point	-5 - 100	unitless	1 Dimensional Array: DNDXSB_IDX Size of Dimension(s): 27456
cwavl	616	32-bit floating point	290-390	nm	2 Dimensional Array: Size of Dimension(s): 22 x 7
c0	616	32-bit floating point	0.0-5.0	Atm/cm	2 Dimensional Array: Size of Dimension(s): 22 x 7
c1	616	32-bit floating point	0.0-0.08	Atm/cm/K	2 Dimensional Array: Size of Dimension(s): 22 x 7
c2	616	32-bit floating point	-0.002-0.002	Atm/cm/K^2	2 Dimensional Array: Size of Dimension(s): 22 x 7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
stprf	2496	32-bit floating point	1.2-575	DU	3 Dimensional Array: Size of Dimension(s): 2 x 26 x 12
V8OZ	95040	32-bit floating point		DU	4 Dimensional Array: Size of Dimension(s): 11 x 10 x 18 x 12
so2o3	12	32-bit floating point		DU	1 Dimensional Array: SOIO3_IDX Size of Dimension(s): 3

3.2.1.3.41 OMPS Total Column Straylight PC

Data Mnemonic	NP_NU-LM0240-129
Description/ Purpose	The OMPS Total Column Straylight LUT are stray light coefficients used in corrections by the OMPS TC Earthview SDR.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	240,786,200 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.41-1, OMPS Total Column Straylight PC Data Format

Table 3.2.1.3.41-1, OMPS Total Column Straylight PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nblock	4	32-bit integer	1-260	unitless	Number of regions
nfov	4	32-bit integer	1-105	unitless	Number of spatial macropixels
nchan	4	32-bit integer	1-260	unitless	Number of spectral channels
indx_blck	160	32-bit integer	1-260	unitless	Spectral block boundaries: nchan is divided into nblock regions 2 Dimensional Array: 2 x tc::SLC_NBLOCK Size of Dimension(s): 2 x 20
indx_oor	16	32-bit integer	1-260	unitless	Gives the super channels used in the OOR calculation 1 Dimensional Array: 4 Size of Dimension(s): 4
c370	4	32-bit floating point	0-260	unitless	
c360	4	32-bit floating point	0-260	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
c_power	4	32-bit floating point	0-260	unitless	
sl_cor_oor	11,466,000	32-bit floating point	Min-max	unitless	3 Dimensional Array: tc::MAXCTPX x tc::MAX_SPEC_ALLOCATION x tc::MAXCTPX Size of Dimension(s): 105 x 260 x 105
sl_cor_coef	229320000	32-bit floating point	Min-max	unitless	4 Dimensional Array: tc::SLC_NBLOCK x tc::MAXCTPX x tc::MAX_SPEC_ALLOCATION x tc::MAXCTPX Size of Dimension(s): 260 x 105

3.2.1.3.42 OMPS Table Version Ground Table

Data Mnemonic	NP_NU-LM0240-130
Description/ Purpose	The OMPS Table Version Ground Table contains information to track table and version identification of the following OMPS tables: OMPS TC Solar Sample Table OMPS TC Timing Pattern Table OMPS TC Linearity Table versions OMPS TC Lamp Sample Table OMPS TC Earth View Sample OMPS NP Solar Sample Table OMPS NP Timing Pattern Table OMPS NP Linearity Table OMPS NP Lamp Sample Table OMPS NP Earth View Sample Table This tracking is necessary to coordinate the IDPS versions of these tables to their equivalents uploaded to the spacecraft. This file is used by all OMPS SDR algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,968 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.42-1, OMPS Table Version Ground PC Data Format

Table 3.2.1.3.42-1, OMPS Table Version Ground PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numEntriesUsed	4	32-bit integer	1 to 30	unitless	Number of version entries used in subsequent fields of the structure.
flightTableIds	44	16-bit unsigned integer	0 to MaxInt	unitless	List of flight table IDs. 1 Dimensional array: OMPS_NUM_TABLE_IDS Size of Dimension: 22
flightTableVersions	1,320	16-bit unsigned integer	0 to MaxInt	unitless	List of flight table versions, up to 30 per flight table ID 2 Dimensional array: OMPS_NUM_VER_ENTRIES × OMPS_NUM_TABLE_IDS Size of Dimension: 30 × 22
tcSolSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS TC Solar Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
tcTimPatVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS TC Timing Pattern table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
tcLinearityVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS TC Linearity table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
tcLampSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS TC Lamp Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
tcEvSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS TC Earth View Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
npSolSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS NP Solar Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
npTimPatVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS NP Timing Pattern table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
npLinearityVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS NP Linearity table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
npLampSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS NP Lamp Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30
npEvSampVer	60	16-bit unsigned integer	0 to MaxInt	unitless	List of up to 30 OMPS NP Earth View Sample table versions 1 Dimensional array: OMPS_NUM_VER_ENTRIES Size of Dimension: 30

3.2.1.3.43 OMPS TC Darks Manual PC

Data Mnemonic	NP_NU-LM0240-131
Description/ Purpose	The OMPS TC Darks PC table contains averaged detector dark signal in linearity corrected counts (the average of the dark frames during a specific calibration event). This file is used in the OMPS TC Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,077,672 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.1-1, OMPS TC Darks PC Data Format

3.2.1.3.44 OMPS TC SAA Darks Manual PC

Data Mnemonic	NP_NU-LM0240-132
Description/ Purpose	The OMPS TC SAA Darks PC table contains detected dark signal in linear corrected counts during South Atlantic Anomaly This file is used in the OMPS TC Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	5,387,454 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.2-1, OMPS TC SAA Darks PC Data Format

3.2.1.3.45 OMPS TC Bias Manual PC

Data Mnemonic	NP_NU-LM0240-133
Description/ Purpose	The OMPS TC Bias PC table contains detector electronic offset in counts. This file is used in the OMPS TC Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.3-1, OMPS TC Bias PC Data Format

3.2.1.3.46 OMPS NP Darks Manual PC

Data Mnemonic	NP_NU-LM0240-134
Description/ Purpose	The OMPS NP Darks PC table contains averaged detector dark signal in linearity corrected counts This file is used in the OMPS NP Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-0001-01, for the applicable Collection Short Names.
File Size	568,072 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.9-1, OMPS NP Darks PC Data Format

3.2.1.3.47 OMPS NP SAA Darks Manual PC

Data Mnemonic	NP_NU-LM0240-135
Description/ Purpose	The OMPS NP SAA Darks PC table contains detected average linearity corrected dark signal in counts during South Atlantic Anomaly This file is used in the OMPS NP Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	568,090 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.10-1, OMPS NP SAA Darks PC Data Format

3.2.1.3.48 OMPS NP Bias Manual PC

Data Mnemonic	NP_NU-LM0240-136
Description/ Purpose	The OMPS NP Bias PC table contains detector electronic offset in counts. This file is used in the OMPS NP Earth View SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.11-1, OMPS NP Bias PC Data Format

3.2.1.3.49 OMPS Nadir Profiler Straylight PC

Data Mnemonic	NP_NU-LM0240-137
Description/ Purpose	The OMPS Nadir Profiler Straylight LUT are stray light coefficients used in corrections by the OMPS NP Earthview SDR algorithm
File-Naming Construct	See the File Naming Convention for Auxiliary Data Formats, JPSS CDFCB –X- Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the tables – See the JPSS CDFCB X Vol. I for the applicable Collection Short Names.
File Size	284,152 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.49 -1 OMPS Nadir Profiler (NP) Straylight PC Data Format

Table 3.2.1.3.49 -1 OMPS Nadir Profiler Straylight PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
n_block	4	32-bit integer	1-200	unitless	Number of regions
n_fov	4	32-bit integer	1-5	unitless	Number of spatial macropixels
nchan	4	32-bit integer	1-200	unitless	Number of spectral channels
indx_blck	112	32-bit integer	1-200	unitless	Spectral block boundaries: nchan is divided into nblock regions 2 Dimensional Array: 2 x np::SLC_NBLOCK Size of Dimension(s): 2 x 14
indx_oor	16	32-bit integer	1-200	unitless	Gives the super channels used in the OOR calculation 1 Dimensional Array: 4 Size of Dimension(s): 4
c300	4	32-bit floating point	0-200	unitless	
C290	4	32-bit floating point	0-200	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
c_power	4	32-bit floating point	0-200	unitless	
sl_cor_oor	4000	32-bit floating point	Min-max	unitless	2 Dimensional Array: np::no_spec_pix x np::MAXCTPX Size of Dimension(s): 200 x 5
sl_cor_coef	280000	32-bit floating point	Min-max	unitless	4 Dimensional Array: np::SLC_NBLOCK x np::MAXCTPX x np::no_spec_pix x np::MAXCTPX Size of Dimension(s): 14 x 5 x 200 x 5

3.2.1.4 VIIRS PCs

3.2.1.4.1 VIIRS CBH Liquid Water Content PC

Data Mnemonic	NP_NU-LM0233-001
Description/ Purpose	The VIIRS Cloud Base Height (CBH) Liquid Water Content (LWC) PC file contains the cloud Liquid Water Content values. This file contains a single fixed LWC value for each cloud type (cirrus, stratus, etc.). This file is used in the VIIRS CBH algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	48 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.1-1, VIIRS CBH Liquid Water Content PC Data Format

Table 3.2.1.4.1-1, VIIRS CBH LWC PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwc	48	64-bit floating point	0.000: no cloud 0.293: stratus 0.455: altocumulus or altostratus 0.580: cumulus 0.010: cirrus 0.010: cirrocumulus	g/m3	1 Dimensional Array: cloudType Size of Dimension(s): 6

3.2.1.4.2 VIIRS CCL Cloud Type PC

Data Mnemonic	NP_NU-LM0233-002
Description/ Purpose	The VIIRS CCL Cloud Type PC file contains the attribute values of cloud types. These values are derived from standard meteorological definitions. This file is used in the VIIRS Cloud Cover/Layers (CCL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	60 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.2-1, VIIRS CCL Cloud Type PC Data Format

Table 3.2.1.4.2-1, VIIRS CCL Cloud Type PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
height	20	32-bit floating point	stratus = 1.3 altocumulus = 3.5 cumulus = 3.3 cirrus = 9.0 cirrocumulus = 10.5	Kilometers	Mean Cloud Top Height 1 Dimensional Array: height Size of Dimension(s): 5
size	20	32-bit floating point	stratus = 13.5 altocumulus = 17.0 cumulus = 27.5 cirrus = 55.0 cirrocumulus = 75.0	Micrometers	Mean Cloud Effective Particle Size 1 Dimensional Array: size Size of Dimension(s): 5
op_thick	20	32-bit floating point	stratus = 5.5 altocumulus = 17.0 cumulus = 26.5 cirrus = 2.5 cirrocumulus = 4.5	unitless	Mean Cloud Optical Thickness 1 Dimensional Array: op_thick Size of Dimension(s): 5

3.2.1.4.3 DELETED

3.2.1.4.4 VIIRS CCL/GCE Cloud Aggregation PC

Data Mnemonic	NP_NU-LM0233-005
Description/ Purpose	The VIIRS CCL/GCE Cloud Aggregation PC file contains the data that identifies the cell sizes appropriate for the CCL data products (both the clustering cells and the aggregation cells). This file is used in the VIIRS CCL and GCE algorithms
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	3,453,136 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format

Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numAtCellsPerScan	4	32-bit integer	>=0	unitless	Number of along-track (rows) horizontal cells per scan
numXtCellsPerScan	4	32-bit integer	>=0	unitless	Number of cross-track (columns) horizontal cells per
numAtPixPerScan	4	32-bit integer	>=0	unitless	Number of along-track (rows) pixels per scan
numXtPixPerScan	4	32-bit integer	>=0	unitless	Number of cross-track (columns) pixels per scan
crow	575520	32-bit integer	>=0	unitless	Cell row index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
ccol	575520	32-bit integer	>=0	unitless	Cell column index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
scan	575520	32-bit integer	>=0	unitless	Scan index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
row	575520	32-bit integer	>=0	unitless	Pixel row index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
col	155056	32-bit integer	>=0	unitless	Pixel column index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 38,764
type	575520	32-bit integer	1 = CLUSTER_CELL 2 = PRODUCT_CELL 3 = PRODUCT_AND_CLUSTER CELL	unitless	Cell type 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880

3.2.1.4.5 DELETED

3.2.1.4.6 VIIRS Sea Ice Concentration PC

Data Mnemonic	NP_NU-LM0233-008
Description/ Purpose	The VIIRS Sea Ice Concentration PC file contains ice concentration parameters. This file is used in the VIIRS Sea Ice Concentration algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	132 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.6-1, VIIRS Sea Ice Concentration PC Data Format

Table 3.2.1.4.6-1, VIIRS Sea Ice Concentration PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hmin	12	32-bit floating point	[0.0, 0.0, 0.0]	[unitless, unitless, Kelvin]	Minimum range of histogram, by band. If hmin = hmax then code must derive hmin. 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
hmax	12	32-bit floating point	[0.0, 0.0, 0.0]	[unitless, unitless, Kelvin]	Maximum range of histogram, by band. If hmax = hmin then code must derive hmax. 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_def	12	32-bit floating point	[0.2, 0.17, 269.0]	[unitless, unitless, Kelvin]	Default ice/water thresholds by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_max	12	32-bit floating point	[0.25, 0.22, 270.0]	[unitless, unitless, Kelvin]	Maximum ice/water thresholds by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_min	12	32-bit floating point	[0.15, 0.13, 268.0]	[unitless, unitless, Kelvin]	Minimum ice/water threshold by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wat_def	12	32-bit floating point	[0.08, 0.07, 271.4]	[unitless, unitless, Kelvin]	Default water tie points 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
wat_max	12	32-bit floating point	[0.1, 0.08, 278.0]	[unitless, unitless, Kelvin]	Default maximum water tie point 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
wat_min	12	32-bit floating point	[0.04, 0.03, 270.0]	[unitless, unitless, Kelvin]	Default minimum water tie point 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
ice_tiept_adj_thinice_thresh	12	32-bit floating point	[0.2, 0.17, 269.0]	[unitless, unitless, Kelvin]	Ice tie point adjustment thresholds for thin ice If any element = -999.0 then code interally sets iswitch_adj = 0 to disable the tie point adjustement computation branch. The -999.0 value may be used as a switch for the ic e tie point adjustment 1 Dimensional Array: IC_BANDS Dimensions: 3
ice_tiept_adj_threshT	4	32-bit floating point	270.0	Kelvin	Ice tie point adjustment temperature threshold Ice tie point adjustment is not applied to pixels with surface temperatures greater than this threshold value

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wat_wsize	2	16-bit unsigned integer	15	unitless	Size of search window for local water tie points
max_wsize	2	16-bit unsigned integer	15	unitless	Maximum local window search size in pixels.
min_wsize	2	16-bit unsigned integer	8	unitless	Minimum local window search size in pixels
min_pix_win	2	16-bit unsigned integer	200	unitless	Minimum number of “good” ice pixels, in a search window, required for a reliable histogram
min_pix_wat	2	16-bit unsigned integer	50	unitless	Minimum number of “good” water pixels, in a search window, required for a reliable histogram
nbig	2	16-bit unsigned integer	100	unitless	Number of bins in the reflectance or temperature histograms (global)
nbin	2	16-bit unsigned integer	50	unitless	Number of bins in the reflectance or temperature histograms (local)
ning	2	16-bit unsigned integer	5	unitless	Number of bins for boxcar smoothing of global histograms
nint	2	16-bit unsigned integer	10	unitless	Number of bins for boxcar smoothing of local histograms
pad	2	8-bit unsigned integer	MinInt - MaxInt	unitless	Pad Bytes 1 Dimensional Array: Pad Size of Dimension(s): 2

3.2.1.4.7 VIIRS Surface Temperature PC

Data Mnemonic	NP_NU-LM0233-009
Description/ Purpose	The VIIRS Surface Temperature PC file contains the regression coefficients for baseline and fallback algorithms. Includes values for both day and night time. This file is used in the VIIRS Surface Temperature IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	64 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.7-1, VIIRS Surface Temperature PC Data Format

Table 3.2.1.4.7-1, VIIRS Surface Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
StipCoeffs	64	32-bit floating point	minfloat – maxfloat	unitless	LUT Coefficients / ST IP LUT data file 4 Dimensional Array: NTERMS x NDAYNIGHT x NALGORITHMS Size of Dimension(s): 4 x 2 x 2

3.2.1.4.8 VIIRS Sea Ice Quality PC

Data Mnemonic	NP_NU-LM0233-010
Description/ Purpose	The VIIRS Sea Ice Quality PC file contains ice quality algorithm thresholds. This file is used in the VIIRS Sea Ice Quality EDR and Surface Temperature IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	632 bytes Note: 632 = (316 bytes x 2). The file consists of 2 table identical entries. The order of the fields and sizes of dimensions are the same for both entries.
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.8-1, VIIRS Sea Ice Quality PC Data Format

Table 3.2.1.4.8-1, VIIRS Sea Ice Quality PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bandWgts	12	32-bit floating point	>= 0.0 Initially set to: [0.3, 0.6, 0.1]	unitless	Initial Ice Quality Band Weights 1 Dimensional Array: IQ_N_BANDS Size of Dimension(s): 3
cldWgts	84	32-bit floating point	>= 0.0 Initially set to: **(1) (2) (3) (4) (5) (6) (7)** [0.5, 0.5, 0.5, 0.5, 0.6, 0.3, 0.8; 0.5, 0.5, 0.5, 0.5, 0.6, 0.3, 0.8; 0.5, 0.5, 0.5, 0.5, 0.6, 1.0, 0.8]	unitless	Cloud weights corresponding to the three imagery bands (I1, I2, I5) (rows) and the seven cloud properties (columns) - four phases = Default (1), Water (2), Ice (3), Mixed (4), and 3 types = cirrus (5), shadow (6), adjacency (7); 2 Dimensional Array: IQ_N_BANDS x IQ_N_CLD_TYPES Size of Dimension(s): 3 x 7
cotThresh	96	32-bit floating point	>= 0.0 Initially set to: (Default, Water, Ice, Mixed) (I1) (I2) (I5) [0.5, 0.5, 0.5;**(1)** 0.2, 0.2, 0.2] **(2)** (Phases follow the order shown above)	unitless	Cloud Optical Thickness Thresholds used when COT is used to determine ***cloud confidence*** in the Ice Quality Flags IP output. The “4” in the “Data Type/Size” cell corresponds to the four phases (Default(1), Water(2), Ice(3), Mixed(4)). “IQ_N_THRESH” corresponds to the rows of each set of matrices which are a function of cloud phase; the “(1)’s” represent the YELLOW/RED cot thresholds and the “(2)’s” represent the GREEN/YELLOW COT thresholds. 3 Dimensional Array: IQ_N_BANDS x IQ_N_THRESH x IQ_N_PHASES Size of Dimension(s): 3 x 2 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_nlat	4	32-bit floating point	-PI/2 ≤ minNLat ≤ PI/2 Initially set to: 0.62831 (36°)	Radians	Sea Ice Latitude Range – Minimum Northern Latitude
max_slat	4	32-bit floating point	-PI/2 ≤ maxSLat ≤ PI/2 Initially set to: [0.0,0.15,0.5,1.0]	Radians	Sea Ice Latitude Range – Maximum Southern Latitude
aotBin	16	32-bit floating point	>= 0.0 Initially set to: [0.0,0.15,0.5,1.0]	unitless	AOT bin boundary values 1 Dimensional Array: IQ_N_AOT_BINS Size of Dimension(s): 4
qAOTSunZen	64	32-bit floating point	- PI/2 <= qAOTSunZen <= PI/2 Initially set to: (**I1,I2**) **(G/Y) (Y/R)** [1.308997(75°),1.48353(85°)**(1)** 1.22173(70°) ,1.48353(85°)**(2)** 1.13446(65°) ,1.39626(80°);**(3)** 1.04719(60°),1.308997(75°)]**(4)** (Bands follow the order shown above)	Radians	Solar Zenith Angle values that correspond to the Solar Zenith Angle quality regimes (G/Y = “Green/Yellow”, Y/R = “Yellow/Red”) 3 Dimensional Array: IQ_N_AOT_BANDS x IQ_N_AOT_BINS x IQ_N_AOT_SUNZEN Size of Dimension(s): 2 x 4 x 2
qualWgts	36	32-bit floating point	>= 0.0 Initially set to: **(I1) (I2) (I5)** [0.060,0.12, 0.195;**(1)** 0.12 ,0.24, 0.39 ; **(2)** 0.02 ,0.04 ,0.065]**(3)**	unitless	Overall Ice Quality Band Weights for each band (I1, I2, I5) and for each set of weights for each band; the (1)=“RED”, (2)=“YELLOW” and (3)=“GREEN” quality regions. 2 Dimensional Array: EQ_N_BANDS x IQ_N_WGTS Size of Dimension(s): 3 x 3

3.2.1.4.9 VIIRS IST PC

Data Mnemonic	NP_NU-LM0233-011
Description/ Purpose	The VIIRS Ice Surface Temperature (IST) PC file contains regression coefficients for the baseline and fallback algorithms for both day and night. This file is used in the VIIRS IST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	64 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.9-1, VIIRS IST PC Data Format

Table 3.2.1.4.9-1, VIIRS IST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
IstCoeffs	64	32-bit floating point	MinFloat - MaxFloat	unitless	4 Dimensional Array: Term x Day or Night x Algorithm x Regime Size of Dimension(s): 4 x 2 x 2 x 1 Dimension Details: Day or Night: Index 0 = night, Index 1 = Day Algorithm: Index 0 = “dual”, Index 1 = “split”

3.2.1.4.10 VIIRS LST PC

Data Mnemonic	NP_NU-LM0233-012
Description/ Purpose	The VIIRS Land Surface Temperature (LST) PC file contains regression coefficients for each of the 17 IGBP land cover types for baseline and fallback algorithms. This file contains values for both day and night time. This file is used in the VIIRS LST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4,896 Bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.10-1, VIIRS LST PC Data Format

Table 3.2.1.4.10-1, VIIRS LST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LstLut	4896	64-bit floating point	MinFloat - MaxFloat	unitless	Dual Window has 9, Split Window has 5 for term 5 Dimensional Array: Term x Day or Night x Surface Type x Algorithm x Regime Size of Dimension(s): 9 x 2 x 17 x 2 x 1 Dimension Details: Day or Night: Index 0 = night, index 1 = day Surface Type: Indices 0 – 16 correspond to the Surface Type values in the Surface Type EDR (IGBP values of 1-17) Algorithm: Index 0 = “dual”, Index 1 = “split”

3.2.1.4.11 VIIRS NCC Gain Value Versus Scene Lunar Zenith PC

Data Mnemonic	NP_NU-LM0233-013
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Lunar Zenith PC file contains the gain values for the lunar illuminated scene signal for the Day/Night Band (DNB) for various lunar zenith angles. Note: It is not a function of elevation angle, despite the word “elevation” in the name (a heritage artifact). It is, however, indirectly a function, since the elevation angle is the complement of the zenith angle. This file is used in the VIIRS Near Constant Contrast (NCC) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8408 bytes
File Format Type	Binary
Production Frequency	One time per instrument during intensive Cal/Val using the Algorithm Support Function (ASF).
Data Content and Data Format	For details see Table 3.2.1.4.11-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith PC Data Format

Table 3.2.1.4.11-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	4204	32-bit floating point	0 – 180	Degrees	1 Dimensional Array: ZENITH_ANGLE_GAIN_BINS Size of Dimension(s): 1051
gain	4204	32-bit floating point	1 – 1e+12	unitless	1 Dimensional Array: ZENITH_ANGLE_GAIN_BINS Size of Dimension(s): 1051

3.2.1.4.12 VIIRS NCC Gain Value Versus Scene Solar Elevation PC

Data Mnemonic	NP_NU-LM0233-014
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Solar Elevation (GVVSSE) PC file contains gain values for the solar illuminated scene signal from the DNB for various solar zenith angles. Note: It is not a function of elevation angle, despite the word “elevation” in the name (a heritage artifact). It is, however, indirectly a function, since the elevation angle is the complement of the zenith angle. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8408 bytes
File Format Type	Binary
Production Frequency	Once per instrument during intensive Cal/Val
Data Content and Data Format	For details see Table 3.2.1.4.12-1, VIIRS NCC Gain Value Versus Scene Solar Elevation PC Data Format

Table 3.2.1.4.12-1, VIIRS NCC Gain Value Versus Scene Solar Elevation PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	4204	32-bit floating point	0 – 180	Degrees	1 Dimensional Array: ZENITH_ANGLE_GAIN_BINS Size of Dimension(s): 1051
gain	4204	32-bit floating point	1 – 7e+7	Unitless	1 Dimensional Array: ZENITH_ANGLE_GAIN_BINS Size of Dimension(s): 1051

3.2.1.4.13 VIIRS NCC Lunar BRDF PC

Data Mnemonic	NP_NU-LM0233-015
Description/ Purpose	The VIIRS NCC Lunar BRDF PC file contains the anisotropic reflectance factors for the lunar scene signal from the VIIRS DNB. Note: This is not truly a Bidirectional Reflectance Distribution Function (BRDF) since it is not in units of sr^{-1}, though dividing the values in the file by pi steradians produces a true BRDF. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,600 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.13-1, VIIRS NCC Lunar BRDF PC Data Format

Table 3.2.1.4.13-1, VIIRS NCC Lunar BRDF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
zenith_angle	28	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: ZENITH Size of Dimension(s): 7
view_angle	24	32-bit floating point	0 – 57	Degrees	1 Dimensional Array: VIEW Size of Dimension(s): 6
relative_azimuth	36	32-bit floating point	-180 – 180	Degrees	1 Dimensional Array: RELA Size of Dimension(s): 9
brdf	1512	32-bit floating point	0.5 – 1.5	unitless	Anisotropic reflectance factors 3 Dimensional Array: ZENITH x VIEW x RELA Size of Dimension(s): 7 x 6 x 9

3.2.1.4.14 VIIRS NCC Lunar Phase PC

Data Mnemonic	NP_NU-LM0233-016
Description/ Purpose	The VIIRS NCC Lunar Phase PC file contains values used in calculation of the lunar irradiance as a function of the phase angle of the moon. Note: The lunar radiance as defined here as the radiance that would be observed from a 100% albedo surface where the lunar zenith angle is zero. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	40 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.14-1, VIIRS NCC Lunar Phase PC Data Format

Table 3.2.1.4.14-1, VIIRS NCC Lunar Phase PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Lunar_phase_bins	20	32-bit floating point	0 – 180	degrees	1 Dimensional Array: LPHASE (lunar phase angle) Size of Dimension(s): 5
Lunar_source	20	32-bit floating point	–1e10 – 1e-07	W/(cm^2 sr)	1 Dimensional Array: LSRC (Lunar Source Irradiance) Size of Dimension(s): 5

3.2.1.4.15 VIIRS NCC Solar BRDF PC

Data Mnemonic	NP_NU-LM0233-017
Description/ Purpose	The VIIRS NCC Solar BRDF PC file contains the anisotropic reflectance factors for the solar scene signal from the DNB. Note: This is not truly a Bidirectional Reflectance Distribution Function (BRDF) since it is not in units of sr^{-1}, though dividing the values in the file by pi steradians produces a true BRDF. This file is used in the VIIRS NCC and Bright Pixel algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,600 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.15-1, VIIRS NCC Solar BRDF PC Data Format

Table 3.2.1.4.15-1, VIIRS NCC Solar BRDF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
zenith_angle	28	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: ZENITH Size of Dimension(s): 7
view_angle	24	32-bit floating point	0 – 57	Degrees	1 Dimensional Array: VIEW Size of Dimension(s): 6
relative_azimuth	36	32-bit floating point	-180 – 180	Degrees	1 Dimensional Array: RELA Size of Dimension(s): 9
brdf	1512	32-bit floating point	0.5 – 1.5	unitless	Anisotropic reflectance factors 3 Dimensional Array: ZENITH x VIEW x RELA Size of Dimension(s): 7 x 6 x 9

3.2.1.4.16 VIIRS SST PC

Data Mnemonic	NP_NU-LM0233-018
Description/ Purpose	The VIIRS Sea Surface Temperature (SST) Processing Coefficients file contains the coefficients for each term in the SST retrieval algorithms according to the regimes of predefined conditions. This file is used in the VIIRS SST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	112 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.16-1, VIIRS SST PC Data Format

Table 3.2.1.4.16-1, VIIRS SST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	112	32-bit floating point	MinFloat – MaxFloat	unitless	3 Dimensional Array: MAXCOEFFS x DAYNGT X WINDOW Size of Dimension(s): 7 x 2 x 2

3.2.1.4.17 VIIRS DNB Stray Light PC – Obsolete upon Maintenance Rel. Mx7.2

Data Mnemonic	NP_NU-LM0233-035
Description/ Purpose	The VIIRS DNB Stray Light PC contains the radiance levels below which the DNB Stray Light Quality Flag may be set. The values are indexed by solar zenith angles in the terminator region (assumed to be 85 – 105 degrees).
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	88 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.17-1, VIIRS DNB Stray Light PC Data Format

Table 3.2.1.4.17-1, VIIRS DNB Stray Light PC Data – Obsolete upon Maintenance Rel. Mx7.2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numRadianceLevels	2	16-bit unsigned integer	0 – 21	Unitless	Number of radiance values
implicit_pad0	2	8-bit unsigned integer	N/A	Unitless	1 Dimensional Array: Size of Dimension(s): 2
Radiance levels	84	32-bit floating point	>0	W/(cm^2 sr)	1 Dimensional Array: Size of Dimension(s): 21

3.2.1.4.18 VIIRS SDR BB Thermistor PC

Data Mnemonic	NP_NU-LM0233-021
Description/ Purpose	The VIIRS Blackbody (BB) Thermistor Processing Coefficients file contains an array of coefficient values for each BB thermistor. These values include voltages, currents, and resistances of the BB circuitry as required for the BB temperature calculation. This file is used in the VIIRS Sensor Data Record (SDR) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	240 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.18-1, VIIRS BB Thermistor PC Data Format * Unlike the default row-major ordering for all binary tables documented in this volume, values in this table are written to the binary file in column major order rather than row major order. Specifically, the entries are ordered I0[0], V0[0], Rp[0], G[0], Const1[0], I0[1], V0[1], Rp[1], G[1], Const1[1], etc., so that all 5 coefficients may be read at once for each of the 6 blackbody thermistors.

Table 3.2.1.4.18-1, VIIRS BB Thermistor PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
I0*	48	64-bit floating point	minfloat - maxfloat	milliAmps	Excitation Current applied to thermistor 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
V0*	48	64-bit floating point	minfloat - maxfloat	Volts	Offset voltage (to be added to Vtot) 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
Rp*	48	64-bit floating point	minfloat - maxfloat	ohms	Parallel Resistance 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
G*	48	64-bit floating point	minfloat - maxfloat	Unitless	Gain value (to be multiplied to I0). 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
Const1*	48	64-bit floating point	minfloat - maxfloat	Volts/Counts	Constant value (to be multiplied to DN value) 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6

3.2.1.4.19 VIIRS SDR Detector Response (Coefficient A) PC

Data Mnemonic	NP_NU-LM0233-022
Description/ Purpose	The VIIRS SDR Detector Response PC file contains the temperature dependent coefficients of the detector response functions, which are specific to HAM side and gain state. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	901,120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.19-1, VIIRS SDR Detector Response (Coefficient A) PC Data Format

Table 3.2.1.4.19-1, VIIRS SDR Detector Response (Coefficient A) PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments

Data	901120	64-bit floating point	-7.2647e+06 - 4.88472e+08	Photoelectrons/V[i]	7 Dimensional Array:
					NUM_ELECTRONICS_SIDE x NUM_VIIRS_BANDS x MAX_NUM_DETECTOR x NUM_GAINS x NUM_MIRROR_SIDES x NUM_TDET_LEVEL x 4
					Size of Dimension(s): 2 x 22 x 32 x 2 x 2 x 5 x 4
					Dimension Details:
					• NUM_ELECTRONICS_SIDE: Indices 0/1 corresponds to values for A/B sides (Index 0 = A / Index 1 = B)
					• NUM_VIIRS_BANDS: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. Bands I4, I5, M12 – M16 are not reflective and therefore no A coefficients data is stored in these indices.
					• MAX_NUM_DETECTOR: All bands are sized to the max detector size of 32. Indices 0 – 31 correspond to detectors 1 – 32:
					  ○ I-Bands use all 32 indices.
					  ○ M-Bands use indices 0 – 15, while indices 16 – 31 are filled.
					  *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.
					• NUM_GAINS: low gain or single gain = index

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					0, high gain = index 1, index 2 is not used (fill values) • NUM_MIRROR_SIDES: HAM Side A = index 0, HAM Side B = index 1 • NUM_TDET_LEVEL: Sized to 5 for each of the detector temperatures: • “4”: This dimension combines the temperature of the detectors with the three A coeffs: ○ temperature of detector = index 0, a0 = index1, a2 = index 1, a3 = index2

3.2.1.4.20 VIIRS SDR Electronic Response (Coefficient B) PC

Data Mnemonic	NP_NU-LM0233-023
Description/ Purpose	The VIIRS SDR Electronic Response PC file contains the temperature dependent coefficients of the electronics response functions, which are specific to HAM side. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	450,560 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.20-1, VIIRS SDR Electronic Response (Coefficient B) PC Data Format

Table 3.2.1.4.20-1, SDR VIIRS Electronic Response (Coefficient B) PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments

data	450560	64-bit floating point	-999.9 - 300	V/count[i]	6 Dimensional Array:
					NUM_ELECTRONICS_SIDE x NUM_VIIRS_BANDS x MAX_NUM_DETECTOR x NUM_MIRROR_SIDES x NUM_TELE_LEVEL x 4
					Size of Dimension(s): 2 x 22 x 32 x 2 x 5 x 4
					Dimension Details:
					• NUM_ELECTRONICS_SIDE: Indices 0/1 corresponds to values for A/B sides (Index 0 = A / Index 1 = B)
					• NUM_VIIRS_BANDS: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. Bands I4, I5, M12 – M16 are not reflective and therefore no B coefficients data is stored in these indices.
					• MAX_NUM_DETECTOR: All bands are sized to the max detector size of 32. Indices 0 – 31 correspond to detectors 1 – 32:
					  ○ I-Bands use all 32 indices.
					  ○ M-Bands use indices 0 – 15, while indices 16 – 31 are filled.
					  *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.
					• NUM_MIRROR_SIDES: HAM Side A = index 0, HAM Side B = index 1
					• NUM_TELE_LEVEL: Sized to 5 for each of the electronics temperatures
					• "4": This dimension combines the temperature of the electronics with the three B coeffs:
					  ○ temperature of detector = index 0, a0 = index1, a2 =

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					index 1, a3 = index2

3.2.1.4.21 VIIRS SDR Delta C Temperature PC

Data Mnemonic	NP_NU-LM0233-024
Description/ Purpose	The VIIRS SDR Delta C Temperature PC file contains the detector specific and temperature dependent (electronics and detector temperature) adjustments to the coefficients of the radiance response functions. This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4,505,920bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.21-1, VIIRS SDR Delta C Temperature PC Data Format

Table 3.2.1.4.21-1, VIIRS SDR Delta C Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DeltaC	4505600	64-bit floating point	-0.000902409 – 3.86727	W/(m^{2}μm sr cnts[i])	Delta C coefficients – 0th, 1st, 2nd, and 3rd order delta C coefficients used to obtain the c coefficient values. 7 Dimensional Array: electronicsSideNum x viirsBandNum x detectorNum x gainNum x mirrorNum x coeffNum x telecThermistorNum Size of Dimension(s): 2 x 22 x 32 x 2 x 2 x 4 x 25 **Dimension Details**: • electronicsSideNum: 0/1 corresponds to A/B sides (0 = A / 1 = B) • viirsBandNum: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. • detectorNum: All bands are sized to the max detector size of 32: ○ I-Bands use all 32 entries. ○ M-Bands use indices 0 – 15, while indices 16 – 31 are filled. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. • gainNum: Low/Single = index 0, High = index 1 (index 1 is zero filled for single gain bands) • mirrorNum: HAM Side A = index 0, HAM Side B = index 1 • coeffNum: delta c0 = index 0, delta c1 = index1, delta c2 = index 2, delta c3 = index 3 • telecThermistorNum: The Tdet and Telec values are combined into this dimension (5 x 5). The faster moving

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					dimension is the Telec, the slower moving dimension is the Tdet.
Tele	80	64-bit floating point	240 – 310	K	Electronics Temperatures used in conjunction with the values stored in the DeltaC field. 2 Dimensional Array: electronicsSideNum x teleLevelNum Size of Dimension(s): 2 x 5 **Dimension Details:** electronicsSideNum: Side A = index 0, Side B = index 1 teleLevelNum: Number of electronics Temperatures used in DeltaC field.
Tdet	240	64-bit floating point	0 – 300	K	Detector Temperatures used in conjunction with the values stored in the DeltaC field. The 3 Dimensional Array: electronicsSideNum x focalPlaneNum x tdetLevelNum Size of Dimension(s): 2 x 3 x 5 **Dimension Details:** electronicsSideNum: Side A = index 0, Side B = index 1 focalPlaneNum: fpa1 (Vis/NIR) = index 0, fpa2 (S/MWIR) = index 1, fpa3 (LWIR) = index 2 tdetLevelNum: Number of electronics Temperatures used in DeltaC field.

3.2.1.4.22 VIIRS SDR DNB C PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-025
Description/ Purpose	The VIIRS SDR DNB C PC file contains the aggregation zone specific counts to radiance calibration coefficients, which are dependent on along-track pixel and DNB gain state. The ratios for each gain state are with respect to the Low Gain Stage (LGS) calibration coefficients, so that all LGS calibration coefficient ratios are equal to one. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	73,728 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.22-1, VIIRS SDR DNB C PC Data Format

Table 3.2.1.4.22-1, VIIRS SDR DNB C PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNBCoeffs	73728	64-bit floating point	0 – 1	unitless	5 Dimensional Array: electronicsSideNum x zoneNum x detectorDnbNum x gainNum x polynomialDegree *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 2 x 32 x 16 x 3 x 3

3.2.1.4.23 VIIRS SDR DNB Digital Count 0 PC

Data Mnemonic	NP_NU-LM0233-026
Description/ Purpose	The VIIRS SDR DNB Digital Count 0 (DN0) PC file contains DN sv0 values for DNB calibration. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,560,576 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.23-1, VIIRS SDR DNB Digital Count PC Data Format

Table 3.2.1.4.23-1, VIIRS SDR DNB Digital Count PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	1560576	32-bit floating point	50.0 – 500.0	unitless	4 Dimensional Array: evDnbFrame x detectorDnbNum x dnbGainState x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 4064 x 16 x 3 x 2

3.2.1.4.24 VIIRS SDR DNB Frame to Zone PC

Data Mnemonic	NP_NU-LM0233-027
Description/ Purpose	The VIIRS SDR DNB Frame to Zone PC file contains the DNB Frame to Zone values. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	16,256 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.24-1, VIIRS SDR DNB Frame to Zone PC Data Format

Table 3.2.1.4.24-1, VIIRS SDR DNB Frame to Zone PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
FrameToZone	16256	32-bit integer	MinInt – MaxInt	unitless	DayNight Band Frame to Zone 1 Dimensional Array: evDnbFrame Size of Dimension(s): 4064

3.2.1.4.25 VIIRS SDR DNB Response Versus Frame PC

Data Mnemonic	NP_NU-LM0233-028
Description/ Purpose	The VIIRS SDR DNB Response Versus Frame PC file contains the DNB response versus scan angle values given at the DNB frame angles. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	520,192 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.25-1, VIIRS SDR DNB Response Versus Frame PC Data Format

Table 3.2.1.4.25-1, VIIRS SDR DNB Response Versus Frame PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dnbrvf	520192	32-bit floating point	1.002 – 1.006	unitless	Response vs Frame values for DNB 3 Dimensional Array: evDnbFrame x detectorDnbNum x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 4064 x 16 x 2

3.2.1.4.26 VIIRS SDR Equivalent BB Temperature PC

Data Mnemonic	NP_NU-LM0233-029
Description/ Purpose	The VIIRS SDR Equivalent BB Temperature (EBBT) PC file contains the values for converting radiances to brightness temperatures. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	16,800,056 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.26-1, VIIRS SDR Equivalent BB Temperature PC Data Format

Table 3.2.1.4.26-1, VIIRS SDR Equivalent BB Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EBBT_indices	56	32-bit integer	>=0	unitless	2 Dimensional Array: hamerFileNum x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for L_to_EBBT_tp and L_to_EBBT_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of L_to_EBBT_tp/ L_to_EBBT_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the L_to_EBBT_tp/ L_to_EBBT_rad arrays that mark the beginning of the data for each band. Example: EBBT_indices [0][0] = 2549 Means that the I4 Band has 2549 the L_to_EBBT_tp/ L_to_EBBT entries EBBT_indices [0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 1,049,999 total indices)
L_to_EBBT_tp	8,400,000	64-bit floating	Approx 110 – 683 (dependent	Kelvin	Temperatures to be used in the interpolation of BB Temperatures to emitted radiances (corresponds to L_to_EBBT_rad entries)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
		point	upon Band)		1 Dimensional Array: ebbtIndex Size of Dimension(s): 1,050,000
L_to_EBBT_rad	8,400,000	64-bit floating point	Approx 9e-04 - 632 (Dependent upon Band)	W/(m^2 um sr)	Array of Radiances corresponding to the Temperatures in L_to_EBBT_tp (corresponds to values in HAM_ER_tp field) 1 Dimensional Array: ebbtIndex Size of Dimension(s): 1,050,000

3.2.1.4.27 VIIRS SDR Emissivity PC

Data Mnemonic	NP_NU-LM0233-030
Description/ Purpose	The VIIRS SDR Emissivity PC file contains the values for emissive band calibration. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	48 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.27-1, VIIRS SDR Emissivity PC Data Format

Table 3.2.1.4.27-1, VIIRS SDR Emissivity PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wordBoundaryPad	2	16-bit integer	MinInt – MaxInt	unitless	Padbyte
SV_DN_first_frame_to_use	2	16-bit integer	0-47	unitless	First frame to be used in the Space View if first frame is incremented number of frames should be decremented as not to exceed 47. (used in routine to calculate mean/Std Dev of Space View DNs)
SV_DN_number_of_frames_to_use	2	16-bit integer	48	unitless	Number of frames to be used in the Space View (used in routine to calculate mean/Std Dev of Space View DNs)
SV_DN_moon_include_frames	2	16-bit integer	25	unitless	Threshold for maximum number of frames allowed with moon (Reserved parameter - Not currently used) Max number of frames in granule that may include moon view
BB_DN_first_frame_to_use	2	16-bit integer	0-47	unitless	First frame to be used in the BlackBody View if first frame is incremented number of frames should be decremented as not to exceed 47. (used in routine to calculate mean/Std Dev of Space View DNs)
BB_DN_number_of_frames_to_use	2	16-bit integer	48	unitless	Number of frames to be used (used in routine to calculate mean/Std Dev of Space View DNs)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
T_mir_function_flag	8	32-bit integer	1	unitless	(Reserved parameter - Not implemented in code) 1 Dimensional Array: tMirrorThermistorNum Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
T_mir_default	4	32-bit floating point	256	Kelvin	(Reserved parameter - Not implemented in code)
BB_Weight	24	32-bit floating point	1	unitless	Weighting factors used in the BlackBody calibration corresponding to each of the six active thermistors OBCBB. 1 Dimensional Array bbThermistorNum Size of Dimension(s): 6

3.2.1.4.28 VIIRS SDR F Table PC – Obsolete with implementation of Maintenance Release 1.5.6.2

Data Mnemonic	NP_NU-LM0233-031
Description/ Purpose	The VIIRS SDR F Table PC file contains the values calculated by the VIIRS Solar Diffuser algorithm. This table is replaced with the VIIRS SDR Dynamic F Tables and is therefore no longer operational with implementation of Maintenance Release 1.5.6.2. This table is left in this document for reference only. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	33,792 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.28-1, VIIRS SDR F Table PC Data Format

Table 3.2.1.4.28-1, VIIRS SDR F Table PC Data Format – Obsolete with implementation of Maintenance Release 1.5.6.2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data (F Factors)	33792	64-bit floating point	0 – 10	unitless	F Factors determined from on-orbit calibration. Range of Values accomodates throughput degradation down to 10% level. 4 Dimensional Array: viirsBandNum x detectorNum x gainNum x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 22 x 32 x 3 x 2

3.2.1.4.29 VIIRS SDR Gain Table PC

Data Mnemonic	NP_NU-LM0233-032
Description/ Purpose	The VIIRS SDR Gain Table PC file contains the gain values for each of the VIIRS bands. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.29-1, VIIRS SDR Gain Table PC Data Format

Table 3.2.1.4.29-1, VIIRS SDR Gain Table PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	176	64-bit floating point	Approx: 8.5e-07 to 2.5e-04 Fill value = -999.9	W/(m^2 um sr) /photoelectron	Gain values to convert detector electron counts to radiance 1 Dimensional Array: viirsBandNum Size of Dimension(s): 22 **Dimension Details**: The 22 entries correspond to I1 – I5, M1 – M16, DNB

3.2.1.4.30 VIIRS DG Anomaly DN Limits PC

Data Mnemonic	NP_NU-LM0233-033
Description/ Purpose	The VIIRS DG Anomaly DN Limits PC contains the digital number (DN) limits for which the dual gain quality flag will be set. Minimum and maximum values are listed for the six reflective dual gain bands and for 16 detectors/band. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	768 bytes
File Format Type	Binary
Production Frequency	Seasonally
Data Content and Data Format	For details see Table 3.2.1.4.30-1, VIIRS DG Anomaly DN Limits PC Data Format

Table 3.2.1.4.30-1, VIIRS DG Anomaly DN Limits PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DN values	768	32-bit floating point	>0	unitless	3 Dimensional Array: Number of Reflective DG Bands x Number of Detectors x PRO_VIIRS_MIN_MAX_DIM Size of Dimension(s): 6 x 16 x 2

3.2.1.4.31 DELETED

3.2.1.4.32 VIIRS SDR HAM ER PC

Data Mnemonic	NP_NU-LM0233-036
Description/ Purpose	The VIIRS SDR Half Angle Mirror (HAM) PC file contains the values for calculating the emitted radiance of the HAM based on its temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.32-1, VIIRS SDR HAM PC Data Format

Table 3.2.1.4.32-1, VIIRS SDR HAM ER PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HAM_ER_indices	56	32-bit integer	>=0	unitless	HAM Emitted Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for HAM_ER_tp and HAM_ER_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of HAM_ER_tp/HAM_ER_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the HAM_ER_tp/HAM_ER_rad arrays that mark the beginning of the data for each band. Example: HAM_ER_indices[0][0] = 637 Means that the I4 Band has 637 HAM_ER_tp/rad entries HAM_ER_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HAM_ER_tp	59984	64-bit floating point	Approx 110 – 685 (Dependent upon Band)	Kelvin	Temperatures to be used in the interpolation of HAM Temperatures to emitted radiances (corresponds to HAM_ER_rad entries) 1 Dimensional Array: hamErIndex Size of Dimension(s): 7498
HAM_ER_rad	59984	64-bit floating point	Approx 9e-04 - 632 (Dependent upon Band)	W/(m^2 um sr)	HAM Emitted Radiances (corresponds to values in HAM_ER_tp field) 1 Dimensional Array: hamErIndex Size of Dimension(s): 7498

3.2.1.4.33 VIIRS SDR OBC Emitted Radiance PC

Data Mnemonic	NP_NU-LM0233-037
Description/ Purpose	The VIIRS SDR OBC Emitted Radiance PC file contains the values for calculating the emitted radiance of the BB based on the temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.33-1, VIIRS SDR OBC Emitted Radiance PC Data Format

Table 3.2.1.4.33-1, VIIRS SDR OBC Emitted Radiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_ER_indices	56	32-bit integer	>=0	unitless	OBC Emitted Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for OBC_ER_tp and OBC_ER_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of OBC _ER_tp/ OBC _ER_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the OBC _ER_tp/ OBC _ER_rad arrays that mark the beginning of the data for each band. Example: OBC _ER_indices[0][0] = 637 Means that the I4 Band has 637 HAM_ER_tp/rad entries OBC_ER_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)
OBC_ER_tp	59984	64-bit floating	Minfloat – Maxfloat	Kelvin	Temperatures to be used in the interpolation of OBC Temperatures to emitted radiances (corresponds to OBC_ER_rad entries)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
		point			1 Dimensional Array: obcErIndex Size of Dimension(s): 7498
OBC_ER_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	OBC Emitted Radiances (corresponds to values in OBC_ER_tp field) 1 Dimensional Array: obcErIndex Size of Dimension(s): 7498

3.2.1.4.34 VIIRS SDR OBC Black Body Reflected Radiance PC

Data Mnemonic	NP_NU-LM0233-038
Description/ Purpose	The VIIRS SDR OBC Black Body Reflected Radiance PC file contains the values for calculating the reflected radiance of the Black Body based on the temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.34-1, VIIRS SDR OBC Black Body Reflected Radiance PC Data Format

Table 3.2.1.4.34-1, VIIRS SDR OBC Black Body Reflected Radiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_RR_indices	56	32-bit integer	>=0	unitless	OBC Black Body Reflected Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for OBC_RR_tp and OBC_RR_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of OBC _RR_tp/ OBC _RR_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the OBC _RR_tp/ OBC _RR_rad arrays that mark the beginning of the data for each band. Example: OBC _RR_indices[0][0] = 637 Means that the I4 Band has 637 HAM_RR_tp/rad entries OBC_RR_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_RR_tp	59984	64-bit floating point	Minfloat – Maxfloat	Kelvin	Temperatures to be used in the interpolation of OBC BB Temperatures to reflected radiances (corresponds to OBC_RR_rad entries) 1 Dimensional Array: obcRrIndex Size of Dimension(s): 7498
OBC_RR_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	OBC BB Reflected Radiances (corresponds to values in OBC_RR_tp field) 1 Dimensional Array: obcRrIndex Size of Dimension(s): 7498

3.2.1.4.35 VIIRS SDR OBS to Pixel PC

Data Mnemonic	NP_NU-LM0233-039
Description/ Purpose	The VIIRS SDR OBS to Pixel PC file contains the dual gain band along-scan samples to aggregated pixel frame number mapping table. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	25,216 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.35-1, VIIRS SDR OBS to Pixel PC Data Format

Table 3.2.1.4.35-1, VIIRS SDR OBS to Pixel PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Pixels	25216	32-bit integer	0 - 3199	unitless	Contains the dual gain band along-scan samples to aggregated pixel frame number mapping table 1 Dimensional Array: EV_FRAMES_750m_DG Size of Dimension(s): 6304

3.2.1.4.36 VIIRS SDR Quality Assurance PC

Data Mnemonic	NP_NU-LM0233-040
Description/ Purpose	The VIIRS SDR Quality Assurance PC file contains detectors, quality flags, and moon offset limits science data sets. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	3,812 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format

Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Detector_Quality_Flag_Values	3456	8-bit unsigned integer	0 – 245	unitless	2 Dimensional Array: detectorNum x bitNum Size of Dimension(s): 432 x 8 **Dimension Details:** detectorNum: 432 represents all detectors for the following band resolutions: Reflective 375M = 32 detectors for each of the 3 bands. Bands follow numerical order I1 – I3. This is the first 96 (= 32 x 3) entries of the 432. Reflective 750M = 16 detectors for each of the 11 bands. Bands follow the order of M6, M8, M9, M10, M11, M1-M5, M7 (SG bands followed by DG bands). This is the next 176 (= 16 x 11) entries of the 432. Emissive 375M = 32 detectors for each of the 2 bands. Bands follow the order of I4 – I5. This is the next 64 (= 32 x 2) entries of the 432. Emissive 750M = 16 detectors for each of the 5 bands. Bands follow the order of M12, M14 – M16, M13 (SG bands followed by DG bands). This is the next 80 (= 16 x 5) entries of the 432.DNB = 16 detectors. This is the last 16 entries of the 432. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
moon_offset_limits	352	32-bit floating point	-55 – 55	degrees	Limits used to determine whether the moon is inside or outside the keep-out box. 2 Dimensional Array: bandNum x moonOffsetLimitNum Size of Dimension(s): 22 x 4 **Dimension Details:** bandNum: Order of bands is I1 – I5, M1 – M16, DNB 4: Moon offset limit dimensions: Track Upper Limit = index 0 Track Lower Limit = index 1 Scan Upper Limit = index 3 Scan Lower Limit = index 4
saa_threshold	4	32-bit floating point	0 – 100	Percent	South Atlantic Anomoly Threshold – minimum percent to trigger flag.

3.2.1.4.37 VIIRS SDR Radiometric Parameters PC – Obsolete with Implementation of Maintenance Release 1.5.8.3

Data Mnemonic	NP_NU-LM0233-041
Description/ Purpose	The VIIRS SDR Radiometric Parameters PC file contains various weighting parameters and limits used to compute temperatures used during radiometric calibration. This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	232 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.37-1, VIIRS SDR Radiometric Parameters PC Data Format

Table 3.2.1.4.37-1, VIIRS SDR Radiometric Parameters PC Data Format – Obsolete with Implementation of Maintenance Release 1.5.8.3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Telec_Therm_Indexes	16	32-bit integer	11 - 14	unitless	Contains the indices of the thermistors to be used for each component of the Telec Temperature. 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 4
Telec_Therm_Weights	16	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Electronics Temperatures 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 4
Tsh_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tsh_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ttele_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of telescope Temperatures 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Telescope Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Offset	4	32-bit floating point	-10 – 10.0	Kelvin	Offset used in telescope temperature calculation
Trta_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Rotating Telescope Assembly 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the rotating telescope assembly Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Offset	4	32-bit floating point	-10.0 – 10.0	Kelvin	Offset used in rotating telescope assembly temperature calculation

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tcav_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Cavity 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tcav_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Offset used in cavity temperature calculation 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Indexes	8	32-bit integer	25 – 26	unitless	Contains the indices of the thermistors to be used for each component of HAM 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the HAM Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfpsm_Indexes	8	32-bit integer	22 – 23	unitless	Contains the indices of the thermistors to be used for each component of SW and MW Focal Plane Arrays 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tfpsm_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the SW and MW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Indexes	8	32-bit integer	20 – 21	unitless	Contains the indices of the thermistors to be used for each component of LW Focal Plane Array 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the LW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tomm_Thermistor_Indexs	20	32-bit floating point	15-19	unitless	Indices of the thermistors used for the Opto-Mechanical Module Temperature 1 Dimensional Array: telecThermistorRank Size of Dimension(s): 5
Tomm_Thermistor_Weights	20	32-bit floating point	0.0 – 1.0	unitless	Weights of the thermistors used for the Opto-Mechanical Module Temperature 1 Dimensional Array: telecThermistorRank Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ttel_Tsh_Tcav_Weights	12	32-bit floating point	0.0 – 1.0	unitless	Weights used to obtain the OBC reflected band averaged radiance: Index 0 = Telescope Index 1 = Cavity Index 2 = Shield 1 Dimensional Array: numWeights Size of Dimension(s): 3
Tmax	4	32-bit floating point	330	Kelvin	Max Temperature for Blackbody Thermistor allowed before flagging a warning
Tmin	4	32-bit floating point	270	Kelvin	Min Temperature for Blackbody Thermistor allowed before flagging a warning
Tomm_for_Tfpsm_Switch	4	32-bit floating point	0 – 1	unitless	Switch used to substitute Tomm temperature for Tfpsm Temperature
Tomm_for_Tfplw_Switch	4	32-bit floating point	0 – 1	unitless	Switch used to substitute Tomm temperature for Tfplm Temperature
BB Nominal Temp	4	32-bit floating point	250 – 350	Kelvin	Nominal Blackbody Temperature
BB Nominal Temp Tolerance	4	32-bit floating point	0 – 5.0	Kelvin	Tolerance of setpoint temp from nominal temp before WU/CD flag is set
BB Actual Temp Tolerance	4	32-bit floating point	0 – 5.0	Kelvin	Tolerance of BB measured temp from setpoint temp before WU/CD flag is set

3.2.1.4.38 VIIRS SDR Reflective Values PC

Data Mnemonic	NP_NU-LM0233-042
Description/ Purpose	The VIIRS SDR Reflective Values PC file contains the values for calibrating reflective bands. The values include first frame to use for OBC average, number of frames to use for OBC average, and RSB moon include. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	8 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.38-1, VIIRS SDR Reflective Values PC Data Format

Table 3.2.1.4.38-1, VIIRS SDR Reflective Values PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DN_obc_avg_first_frame	2	16-bit integer	0-47	unitless	First frame to use for OBC average if first frame is incremented number of frames should be decremented as not to exceed 47.
DN_obc_avg_num_frames	2	16-bit integer	>0	unitless	Number of frames to use for OBC average
RSB_SV_DN_moon_include_frames	2	16-bit integer	>0	unitless	RSB moon include
WordBoundaryPad	2	16-bit integer	MinInt – MaxInt	unitless	Pad

3.2.1.4.39 VIIRS SDR RSR PC – Obsolete with Implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-043
Description/ Purpose	The VIIRS SDR Relative Spectral Response (RSR) PC file contains response as a function of wavelength for reflective solar bands, which is used in calculating the D coefficients LUT and for the solar diffuser processing. This file is used in the VIIRS SDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	224,056 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.39-1, VIIRS SDR RSR PC Data Format

Table 3.2.1.4.39-1, VIIRS SDR RSR PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
x2	112000	64-bit floating point	1 – 4600	nanometers	RSR Wavelengths Each of the 14 reflective band's wavelengths for the RSR are stored in blocks of 1000 each. However, only the number stored in num_x2y2_pts are non-filled in each set of 1000. Fill values are represented as -1. Note that the reflective bands are listed in order (I1, I2, I3, M1-11.). 1 Dimensional Array: reflectiveBandNum x NumberOfWavelengths Size of Dimension(s): 14000

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
y2	112000	64-bit floating point	-1 – 1	unitless	RSR values for each reflective band. Corresponding wavelengths are in the x2 field for the response function. Fill values are represented as -1. 1 Dimensional Array: Size of Dimension(s): 14000
num_x2y2_pts	56	32-bit integer	400 - 1000	unitless	Number of RSR wavelengths used for each Reflective Band. 1 Dimensional Array: reflectiveBandNum Size of Dimension(s): 14

3.2.1.4.40 VIIRS SDR RTA PC

Data Mnemonic	NP_NU-LM0233-044
Description/ Purpose	The VIIRS SDR Rotating Telescope Assembly (RTA) PC file contains the VIIRS RTA emissive radiance tables for each VIIRS emissive band (I4-I5), (M12-M16). This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.40-1, VIIRS SDR RTA PC Data Format

Table 3.2.1.4.40-1, VIIRS SDR RTA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RTA_ER_indices	56	32-bit integer	0 – 7497	unitless	Index information for the band of interest and where that band's data is located in the RTA_ER_tp & RTA_ER_rad arrays. 2 Dimensional Array: rtaerFileNum x bufferIndexNum Size of Dimension(s): 7 x 2 Dimension Details: rtaerFileNum: The 7 emissive bands in order: I4, I5, M12 – M16 bufferIndexNum: index 0 = The number of values in the band index 1 = The index number that tells where in the two input arrays (RTA_ER_tp & RTA_ER_rad) the data for the band of interest starts.
RTA_ER_tp	59984	64-bit floating point	>0	Kelvin	Array of Temperatures corresponding to RTA_ER_rad Radiances 1 Dimensional Array: rtaErIndex Size of Dimension(s): 7498
RTA_ER_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	Array of Radiances corresponding to RTA_ER_tp Temperatures 1 Dimensional Array: rtaErIndex Size of Dimension(s): 7498

3.2.1.4.41 VIIRS SDR Response Versus Frame PC

Data Mnemonic	NP_NU-LM0233-045
Description/ Purpose	The VIIRS Response Versus Frame PC file contains the response versus scan (RVS) angle for moderate and imagery bands given at the moderate and imagery frame angles. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	17,532,992 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.41-1, VIIRS SDR Response Versus Frame PC Data Format

Table 3.2.1.4.41-1, VIIRS SDR Response Versus Frame PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVF_375m	8192000	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Imagery Bands. 4 Dimensional Array: 375mBandNum x 375mDetectorNum* x ev375mFrame x mirrorNum Size of Dimension(s): 5 x 32 x 6400 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B *Note on detector ordering for all detector related fields in this table: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVF_750m_SG	3686400	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Single Gain Moderate Resolution Bands 4 Dimensional Array: 750mSgBandNum x 750mDetectorNum x ev750mSgFrame x mirrorSideNum Size of Dimension(s): 9 x 16 x 3200 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVF_750m_DG	5648384	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Dual Gain Moderate Resolution Bands 4 Dimensional Array: 750mSgBandDgBandNum x 750mDetectorNum x ev750mDgFrame x mirrorSideNum Size of Dimension(s): 7 x 16 x 6304 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVF_375m_SV	1280	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Imagery Bands – Space View 3 Dimensional Array: 375mbandNum x 375mDetectorNum x mirrorSideNum Size of Dimension(s): 5 x 32 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 375mDetectorNum: See note above on Detector ordering mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B
RVF_750m_SV_SG	1152	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Single Gain Moderate Resolution Bands – Space View 3 Dimensional Array: 750mSgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 9 x 16 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVF_750m_SV_DG	896	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Dual Gain Moderate Resolution Bands – Space View 3 Dimensional Array: 750mDgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 7 x 16 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVF_375m_BB	1280	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Imagery Bands – Blackbody View 3 Dimensional Array: 375mBandNum x 375mDetectorNum x mirrorSideNum Size of Dimension(s): 5 x 32 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 375mDetectorNum: See note above on Detector ordering mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVF_750m_BB_SG	1152	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.90 – 1.15	unitless	Response Versus Frame for the Single Gain Moderate Resolution Bands – Blackbody View 3 Dimensional Array: 750mSgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 9 x 16 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVF_750m_BB_DG	448	32-bit floating point	Values depend on specific response of HAM, but generally are between: 0 – 2	unitless	Response Versus Frame for the Dual Gain Moderate Resolution Bands – Blackbody View 3 Dimensional Array: 750mDgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 7 x 16 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

3.2.1.4.42 VIIRS SDR Solar Irradiances PC

Data Mnemonic	NP_NU-LM0233-047
Description/ Purpose	The VIIRS SDR Solar Irradiances PC file contains the solar power table needed for calculation of D coefficients, which are used in the reflectance algorithm. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	799216 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.42-1, VIIRS SDR Solar Irradiances PC Data Format

Table 3.2.1.4.42-1, VIIRS SDR Solar Irradiances PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
X	399608	64-bit floating point	-1 – 200000	nanometers	Wavelength 1 Dimensional Array: x Size of Dimension(s): 49951
Y	399608	64-bit floating point	-1 - 6.07e+26	W / Micrometers (W / um)	Solar Irradiance 1 Dimensional Array: y Size of Dimension(s): 49951

3.2.1.4.43 VIIRS SDR Telemetry PC

Data Mnemonic	NP_NU-LM0233-048
Description/ Purpose	The VIIRS SDR Telemetry PC file contains Calibration coefficients for VIIRS thermistors as provided by Raytheon SBRS This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	928 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.43-1, VIIRS SDR Telemetry PC Data Format

Table 3.2.1.4.43-1, VIIRS SDR Telemetry PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
teleCoeffs	624	32-bit floating point	-2.0e-06-1.5e+04	K/counts^n	Calibration Coefficients 2 Dimensional Array: NUM_MAX_THERMISTORS x NUM_TEMP_COEFFS Size of Dimension(s): 26 x 6 Dimension Details: NUM_MAX_THERMISTORS: Corresponds to each thermistor in order Indices 1-6 black body thermistors Indices 7&8 cavity thermistors (Tcav) Indices 9&10 shield thermistors (Tsh) Indices 11-14 elecronics mod (Telec) Indices 15-19 opto-mech mod (Tomm) Indices 20&21 LWIR focal plane (Tfpa2) Indices 22&23 S/MWIR focal plane (Tfpa1) Index 24 = VisNIR focal plane (Tfpa0) Indices 25&26 Ham thermistors (Tham) NUM_TEMP_COEFFS: 6 coefficients needed for each temperature calculation. Index 0 is lowest order (the constant in the polynomial), index 5 holds the highest order coefficient.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bbTemGainDef	4	32-bit floating point	-2.0e06-1.5e+04	unitless	Black body temperature gain default Precision reference thermistor offest and offset/gain in expression for total resistance...Rtot = (DN = offset\/gain, where DN are reference resistor counts from the telemetry and Rtot is used in calculating the OBC BB thermistor temperature.
bbTempOffsetDef	4	32-bit floating point	-2.0e06-1.5e+04	unitless	Black body temperature offset default
bbTempAdditive	4	32-bit floating point	-2.0e06-1.5e+04	unitless	Black body temperature additive
bbTempSpare	12	32-bit floating point	-2.0e06-1.5e+04	unitless	Black body temperature spare 1 Dimensional Array: DIM_3 Size of Dimension(s): 3
Spare 1	48	32-bit floating point	-2.0e06-1.5e+04	unitless	Spare 1 Dimensional Array: DIM_12 Size of Dimension(s): 12
filterThreshold	104	32-bit floating	0 – 1	unitless	1 Dimensional Array:

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
		point			NUM_MAX_THERMISTORS Size of Dimension(s): 26
Spare 2	12	32-bit floating point	0-1	unitless	Spare 1 Dimensional Array: DIM_3 Size of Dimension(s): 3
defaultValue	104	32-bit floating point	80 - 295	Kelvin	Default Temperature used if the thermistor is flagged as bad. 1 Dimensional Array: NUM_MAX_THERMISTORS Size of Dimension(s): 26 Dimension Details: The 26 values correspond to the thermistors listed above for the coefficients.
evCtPrecTrefMux1CA	12	32-bit floating point	0 – 10e+03	ohm	Used to determine Rtot by linear fitting of counts from reference thermistors in the telemetry. 1 Dimensional Array: NUM_MAX_EV_CT_PREC_TREF_MUX1CA Size of Dimension(s): 3

3.2.1.4.44 VIIRS SDR Dynamic F Table PC

Data Mnemonic	NP_NUM-LM0233-086
Description/ Purpose	The VIIRS SDR Dynamic F Table PC file contains the values derived from offline processing of solar calibration data in the OBC IP needed to calculate calibration scale factors for each scan of Earth View data. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Volume I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, 474-00001-01, for the applicable Collection Short Names.
File Size	101,408 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.44-1, VIIRS SDR Dynamic F Table PC Data Format *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.

Table 3.2.1.4.44-1, VIIRS SDR Dynamic F Table PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Fit_type	22	8-bit integer	0 – 1	unitless	Enumerated type of fit specified by equations: • If Fit_type for a given band is 0, then the F parameters specify an exponential: F = F_ref + F_param_1*(1 - exp(F_param_2*(T_this_scan - T_reference))) • If Fit_type for a given band is 1, then the F parameters specify a quadratic fit: F = F_ref + F_param_1*(T_this_scan - T_reference) + F_param_2*(T_this_scan - T_reference)^2 1 Dimensional Array: viirsBandNum Size of Dimension(s): 22
implicit _pad0	2	8-bit integer	N/A	unitless	1 Dimensional Array: PAD_BYTES_2 Size of Dimension(s): 2
T_ref	8	64-bit integer	1483228832000000 - 2272147232000000	microseconds	64-bit IET reference time in microseconds

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
F_ref	33792	64-bit floating point	0 – 10	unitless	F reference value. Range of Values accommodates throughput degradation down to 10% level. 4 Dimensional Array: viirsBandNum x detectorNum x gainNum x mirrorSideNum Size of Dimension(s): 22 x 32 x 3 x 2
F_param_1	33792	64-bit floating point	-9.0e-18 – 9.0e+18	unitless	F first order parameter. 4 Dimensional Array: viirsBandNum x detectorNum x gainNum x mirrorSideNum Size of Dimension(s): 22 x 32 x 3 x 2
F_param_2	33792	64-bit floating point	-9.0e-18 – 9.0e+18	unitless	F second order parameter. 4 Dimensional Array: viirsBandNum x detectorNum x gainNum x mirrorSideNum Size of Dimension(s): 22 x 32 x 3 x 2

3.2.1.4.45 VIIRS SDR DNB Dynamic F Prime Table PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NUM-LM0233-087
Description/ Purpose	The VIIRS SDR DNB Dynamic F Prime Table PC file contains the values derived from offline processing of solar calibration data in the OBC IP needed to calculate the counts to radiance conversion for the DNB Low Gain Stage (LGS) for each scan of DNB Earth View data. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, 474-00001-01, for the applicable Collection Short Names.
File Size	24,592 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.45-1, VIIRS SDR DNB Dynamic F Prime Table PC Data Format

Table 3.2.1.4.45-1, VIIRS SDR DNB Dynamic F Prime Table PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Fit_type	1	8-bit integer	0 – 1	unitless	Enumerated type of fit specified by equations: • If Fit_type is 0, then the F parameters specify an exponential: F = F_ref + F_param_1*(1 - exp(F_param_2*(T_this_scan - T_reference))) • If Fit_type is 1, then the F parameters specify a quadratic fit: F = F_ref + F_param_1*(T_this_scan - T_reference) + F_param_2*(T_this_scan - T_reference)^2 Scalar value
implicit_pad0	7	8-bit integer	N/A	unitless	1 Dimensional Array: PAD_BYTES_7 Size of Dimension(s): 7
T_ref	8	64-bit integer	1483228832000000 - 2272147232000000	microseconds	64-bit IET reference time in microseconds

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
F_ref	8192	64-bit floating point	0 – 1.0e-03	W/cm^2-sr/count	F reference value. 3 Dimensional Array: zoneNum x detectorDnbNum x mirrorSideNum Size of Dimension(s): 32 x 16 x 2
F_param_1	8192	64-bit floating point	-9.0e-18 – 9.0e+18	W/cm^2-sr/count for Fit_type=0, W/cm^2-sr/count-microsecond for Fit_type=1	F first order parameter. 3 Dimensional Array: zoneNum x detectorDnbNum x mirrorSideNum Size of Dimension(s): 32 x 16 x 2
F_param_2	8192	64-bit floating point	-9.0e-18 – 9.0e+18	Microsecond^{-1} for Fit_type=0, W/cm^2-sr/count-microsecond^2 for Fit_type=1	F second order parameter. 3 Dimensional Array: zoneNum x detectorDnbNum x mirrorSideNum Size of Dimension(s): 32 x 16 x 2

3.2.1.4.46 VIIRS SDR Radiometric Parameters Version 3 PC

Data Mnemonic	NP_NU-LM0233-041
Description/ Purpose	The VIIRS SDR Radiometric Parameters PC file contains various weighting parameters and limits used to compute temperatures used during radiometric calibration. This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	236 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.46-1, VIIRS SDR Radiometric Parameters Version 3 PC Data Format

Table 3.2.1.4.46-1, VIIRS SDR Radiometric Parameters Version 3 PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Telec_Therm_Indexes	16	32-bit integer	11 - 14	unitless	Contains the indices of the thermistors to be used for each component of the Telec Temperature. 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 4
Telec_Therm_Weights	16	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Electronics Temperatures 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 4
Tsh_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tsh_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ttele_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of telescope Temperatures 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the Telescope Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Offset	4	32-bit floating point	-10 – 10.0	Kelvin	Offset used in telescope temperature calculation
Trta_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Rotating Telescope Assembly 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the rotating telescope assembly Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Offset	4	32-bit floating point	-10.0 – 10.0	Kelvin	Offset used in rotating telescope assembly temperature calculation

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tcav_Indexes	8	32-bit integer	7 – 10	unitless	Contains the indices of the thermistors to be used for each component of Cavity 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tcav_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Offset used in cavity temperature calculation 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Indexes	8	32-bit integer	25 – 26	unitless	Contains the indices of the thermistors to be used for each component of HAM 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the HAM Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfpsm_Indexes	8	32-bit integer	22 – 23	unitless	Contains the indices of the thermistors to be used for each component of SW and MW Focal Plane Arrays 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tfpsm_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the SW and MW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Indexes	8	32-bit integer	20 – 21	unitless	Contains the indices of the thermistors to be used for each component of LW Focal Plane Array 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Weights	8	32-bit floating point	0.0 – 1.0	unitless	Weights used in to obtain the weighted average temperature of the LW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tomm_Thermistor_Indexs	20	32-bit floating point	15-19	unitless	Indices of the thermistors used for the Opto-Mechanical Module Temperature 1 Dimensional Array: telecThermistorRank Size of Dimension(s): 5
Tomm_Thermistor_Weights	20	32-bit floating point	0.0 – 1.0	unitless	Weights of the thermistors used for the Opto-Mechanical Module Temperature 1 Dimensional Array: telecThermistorRank Size of Dimension(s): 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ttel_Tsh_Tcav_Weights	12	32-bit floating point	0.0 – 1.0	unitless	Weights used to obtain the OBC reflected band averaged radiance: Index 0 = Telescope Index 1 = Cavity Index 2 = Shield 1 Dimensional Array: numWeights Size of Dimension(s): 3
Tmax	4	32-bit floating point	330	Kelvin	Max Temperature for Blackbody Thermistor allowed before flagging a warning
Tmin	4	32-bit floating point	270	Kelvin	Min Temperature for Blackbody Thermistor allowed before flagging a warning
Tomm_for_Tfpsm_Switch	4	32-bit floating point	0 – 1	unitless	Switch used to substitute Tomm temperature for Tfpsm Temperature
Tomm_for_Tfplw_Switch	4	32-bit floating point	0 – 1	unitless	Switch used to substitute Tomm temperature for Tfplm Temperature
BB Nominal Temp	4	32-bit floating point	250 – 350	Kelvin	Nominal Blackbody Temperature
BB Nominal Temp Tolerance	4	32-bit floating point	0 – 5.0	Kelvin	Tolerance of setpoint temp from nominal temp before WU/CD flag is set
BB Actual Temp Tolerance	4	32-bit floating point	0 – 5.0	Kelvin	Tolerance of BB measured temp from setpoint temp before WU/CD flag is set
LWIR FPA Temp Tolerance	4	32-bit Float	0-5.0	Kelvin	Tolerance of LWIR FPA measured temp from setpoint temp

3.2.1.4.47 DELETED

3.2.1.4.48 DELETED

3.2.1.4.49 DELETED

3.2.1.4.50 VIIRS Solar Diffuser H-Value PC – Obsolete with Implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-055
Description/ Purpose	The VIIRS Solar Diffuser PC file contains the Operational constants required by the Solar Diffuser algorithm. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.50-1, VIIRS Solar Diffuser PC Data Format

Table 3.2.1.4.50-1, VIIRS Solar Diffuser PC (SD H-Value) Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
H	112	64-bit floating point	0<H<1.2	unitless	Scale factor describing the time dependence of the BRDF for the Solar Diffuser Stability Monitor 1 Dimensional Array Size of Dimension(s): 14
averageDistanceEarthToSun	8	64-bit floating point	1.49448e+11 - 1.49748e+11	meters	Average Distance between the Earth and Sun in meters
spaceViewVector	24	64-bit floating point	[-1e-02 – 1e-02, 9.0011e-01 – 9.1829e-01, 4.1214e-01 – 4.2046e-01]	unitless	Vector in instrument coordinates of the mean space-view 1 Dimensional Array Size of Dimension(s): 3
limitsPhiV	16	64-bit floating point	[5.0, 41.0]	degrees	angular limit on which to reject a scan due to insufficient alignment of sun with solar diffuser 1 Dimensional Array Size of Dimension(s): 2
limitsPhiH	16	64-bit floating point	[0, 46]	degrees	angular limit on which to reject a scan due to insufficient alignment of sun with solar diffuser 1 Dimensional Array Size of Dimension(s): 2

3.2.1.4.51 VIIRS Solar Diffuser Reflectance PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-056
Description/ Purpose	The VIIRS Solar Diffuser Reflectance PC file contains the solar diffuser (SD) BRDF and screen attenuation (or transmittance) as a function of incidence angles on the SD screen for each reflective band detector. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	2,296,848 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.51-1, VIIRS Solar Diffuser Reflectance PC Data Format

Table 3.2.1.4.51-1, VIIRS Solar Diffuser Reflectance PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
phi_h	96	64-bit floating point	14.0 – 45.0	degrees	Description: binned horizontal angles 1 Dimensional Array: NUM_PHI_H_SAMPLES Size of Dimension(s): 12
phi_v	368	64-bit floating point	14.0 – 18.5	degrees	Description: Binned vertical angles 1 Dimensional Array: NUM_PHI_V_SAMPLES Size of Dimension(s): 46
lambda	64	64-bit floating point	0.35 – 2.35	micrometers	Description: binned wavelengths 1 Dimensional Array: NUM_LAMBDA_SAMPLES Size of Dimension(s): 8
brdf	35,328	64-bit floating point	0.28 – 0.38	1/steradian	Array of bidirectional reflectance distribution function values 3 Dimensional Array: NUM_PHI_H_SAMPLES x NUM_PHI_V_SAMPLES x NUM_LAMBDA_SAMPLES Size of Dimension(s): 12 x 46 x 8
tau	2,260,992	64-bit floating point	0 – 0.11967	unitless	Array of tau (SD Screen Transmittance) values 3 Dimensional Array: NDETMAX x BANDGROUP x NUM_TAU_SAMPLES Size of Dimension(s): 32 x 2 x 4416

3.2.1.4.52 VIIRS Solar Diffuser RVF PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-057
Description/ Purpose	The VIIRS Solar Diffuser RVF PC file contains the response versus scan at the solar diffuser angle for the moderate and imagery bands. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	7168 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.52-1, VIIRS Solar Diffuser RVF PC Data Format

Table 3.2.1.4.52-1, VIIRS Solar Diffuser RVF PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ResponseVsFrame	7168	64-bit floating point	0.90 – 1.15 (Range may vary somewhat – depends upon calibration results)	unitless	2 Dimensional Array: NUM_Reflective_Bands x NUM_Imagery_Detectors x NUM_MIRROR_SIDES Size of Dimension(s): 14 x 32 x 2

3.2.1.4.53 VIIRS COP IR Band Spectral LUT

Data Mnemonic	NP_NU-LM0233-088
Description/ Purpose	The VIIRS Cloud Optical Properties (COP) IR Band Spectral LUT contains the VIIRS M12, M14, M15 and M16 band center in wavenumber, and clear radiance correction factors. This file is used by the VIIRS COP algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	48 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.53-1, VIIRS COP IR Band Spectral LUT Data Format

Table 3.2.1.4.53-1, VIIRS COP IR Band Spectral LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cwn_band	16	32-bit floating point	minFloat-maxFloat	inverse centimeters	Effective Central Wave Numbers 1 Dimensional Array: BANDS Size of Dimension(s): 4
tcs_band	16	32-bit floating point	minFloat-maxFloat	unitless	Temperature Correction Slaps 1 Dimensional Array: BANDS Size of Dimension(s): 4
tci_band	16	32-bit floating point	minFloat-maxFloat	deg. Kelvin	Temperature Correction Intercepts 1 Dimensional Array: BANDS Size of Dimension(s): 4

3.2.1.4.54 VIIRS Solar Diffuser Aggregation PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-059
Description/ Purpose	The VIIRS Solar Diffuser Aggregation PC file contains frame and scan aggregation parameters. Included are frame limits, orbits to aggregate, min/max DN values and sigmas, and min SNRs. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.54-1, VIIRS Solar Diffuser Aggregation PC Data Format

Table 3.2.1.4.54-1, VIIRS Solar Diffuser Aggregation PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minFrameCount	56	32-bit integer	MinInt – MaxInt	unitless	Minimum number of frames 1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11
minDNsv	112	32-bit integer	MinInt – MaxInt	unitless	Min DN for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
maxDNsv	112	32-bit integer	MinInt – MaxInt	unitless	Max DN for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxDNsvSigma	112	32-bit integer	MinInt – MaxInt	unitless	Max DN Sigma for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
minDNsd	112	32-bit integer	MinInt – MaxInt	unitless	Min DN for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
maxDNsd	112	32-bit integer	MinInt – MaxInt	unitless	Max DN for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxDNsdSigma	112	32-bit integer	MinInt – MaxInt	unitless	Max DN Sigma for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
minSNR	224	64-bit floating point	Minfloat – Maxfloat	unitless	Min SNR value for Band and Gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
physicsSigma	224	64-bit floating point	Minfloat – Maxfloat	unitless	Sigma from external physics analysis by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
limitsSDM	8	32-bit integer	[0, 1]	unitless	Solar Diffuser frame limits [0]=start [1]=number of frames for Moderate Resolution Bands (M) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSDI	8	32-bit integer	[0, 1]	unitless	Solar Diffuser frame limits [0]=start [1]=number of frames for Imagery Resolution Bands (I) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSVM	8	32-bit integer	[0, 1]	unitless	Space view frame limits [0]=start [1]=number of frames for Moderate Resolution Bands (M) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSVI	8	32-bit integer	[0, 1]	unitless	Space view frame limits [0]=start [1]=number of frames for Imagery Resolution Bands (I) 1 Dimensional Array: Index Size of Dimension(s): 2

3.2.1.4.55 VIIRS COP Pfaast Regression LUT

Data Mnemonic	NP_NU-LM0233-089
Description/ Purpose	The VIIRS Cloud Optical Properties (COP) Pressure –Layer Fast Algorithm for Atmospheric Transmittance (Pfaast) Regression LUT contains the Pfaast regression coefficients for the level-to-space transmittance due to the absorption of the CO2 and water vapor in the atmosphere. The coefficient tables correspond to a number of predictors and pressure levels (fixed at 41). There are tables for M12, M14, M15 and M16 bands. This file is used by the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	24,304 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.55-1, VIIRS COP Pfaast Regression LUT Data Format

Table 3.2.1.4.55-1, VIIRS COP Pfaast Regression LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Pstd	168	32-bit floating point	0 – Maxfloat	milibars	Pressure 1 Dimensional Array: PFAAST_LAYERS Size of Dimension(s): 42
Tstd	168	32-bit floating point	0 – Maxfloat	kelvin	Temperature 1 Dimensional Array: PFAAST_LAYERS Size of Dimension(s): 42
Wstd	168	32-bit floating point	0 – Maxfloat	gm/kg	Moisture 1 Dimensional Array: PFAAST_LAYERS Size of Dimension(s): 42
Ostd	168	32-bit floating point	0 – Maxfloat	ppmv	Ozone1 Dimensional Array: PFAAST_LAYERS Size of Dimension(s): 42
coefd37	1476	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 9 Size of Dimension(s): 41 x 9
coefo37	1640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 10 Size of Dimension(s): 41 x 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coefs37	1968	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 12 Size of Dimension(s): 41 x 12
coefl37	4	32-bit floating point	Minfloat – Maxfloat	unitless	
coefc37	820	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 5 Size of Dimension(s): 41 x 5
coefd84	1476	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 9 Size of Dimension(s): 41 x 9
coefo84	1640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 10 Size of Dimension(s): 41 x 10
coefs84	1968	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 12 Size of Dimension(s): 41 x 12
coefl84	4	32-bit floating point	Minfloat – Maxfloat	unitless	
coefc84	820	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 5 Size of Dimension(s): 41 x 5

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coefd107	1476	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 9 Size of Dimension(s): 41 x 9
coefo107	1640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 10 Size of Dimension(s): 41 x 10
coefs107	1968	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 12 Size of Dimension(s): 41 x 12
coefl107	4	32-bit floating point	Minfloat – Maxfloat	unitless	
coefc107	820	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 5 Size of Dimension(s): 41 x 5
coefd12	1476	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 9 Size of Dimension(s): 41 x 9
coefo12	1640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 10 Size of Dimension(s): 41 x 10

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coefs12	1968	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 12 Size of Dimension(s): 41 x 12
coefl12	4	32-bit floating point	Minfloat – Maxfloat	unitless	
coefc12	820	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: 41 X 5 Size of Dimension(s): 41 x 5

3.2.1.4.56 VIIRS AOT Climatology PC

The VIIRS AOT Climatology PC is an ancillary rather than an auxiliary product. This product is documented in the CDFCB-X, Vol VI, Section 2.1.3.1, Aerosol Optical Thickness Climatology File.

3.2.1.4.57 VIIRS COP Surface PC

Data Mnemonic	NP_NU-LM0233-063
Description/ Purpose	The VIIRS COP Surface PC file contains the Surface Albedo and emissivity for the surface types identified by the VCM. This file is used in the VIIRS Cloud Optical Properties (COP) IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	312 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.57-1, VIIRS COP Surface PC Data Format

Table 3.2.1.4.57-1, VIIRS COP Surface PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Albedo	120	32-bit floating point	0 – 1	unitless	2 Dimensional Array: COP_SURFACE_TYPES x COP_ALBEDO_BANDS Size of Dimension(s): 6 x 5
Emissivity	192	32-bit floating point	0 – 1	unitless	2 Dimensional Array: COP_SURFACE_TYPES x COP_EMISSIVITY_BANDS Size of Dimension(s): 6 x 8

3.2.1.4.58 VIIRS Surface Reflectance AOT Values PC

Data Mnemonic	NP_NU-LM0233-064
Description/ Purpose	The VIIRS Surface Reflectance AOT Values PC file contains the ratio of AOT at VIIRS wavelengths to AOT at 550 nm calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	60 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.58-1, VIIRS Surface Reflectance AOT Values PC Data Format

Table 3.2.1.4.58-1, VIIRS Surface Reflectance AOT Values PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	60	32-bit floating point	1.00E-02 – 2.00E+00	unitless	1 Dimensional Array: AOT_DIM Size of Dimension(s): 15

3.2.1.4.59 VIIRS Surface Reflectance Atmospheric Reflectance PC

Data Mnemonic	NP_NU-LM0233-065
Description/ Purpose	The VIIRS Surface Reflectance Atmospheric Reflectance PC contains the atmospheric reflectance calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	16,581,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.59-1, VIIRS Surface Reflectance Atmospheric Reflectance PC Data Format

Table 3.2.1.4.59-1, VIIRS Surface Reflectance Atmospheric Reflectance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	16581000	32-bit floating point	1.18E-38 – 3.40E+38	unitless	4 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM x ANG_DIM Size of Dimension(s): 5 x 15 x 10 x 5527

3.2.1.4.60 VIIRS Surface Reflectance Downward Transmittance PC

Data Mnemonic	NP_NU-LM0233-066
Description/ Purpose	The VIIRS Surface Reflectance Downward Transmittance PC contains the downward transmittance calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	63,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.60-1, VIIRS Surface Reflectance Downward Transmittance PC Data Format

Table 3.2.1.4.60-1, VIIRS Surface Reflectance Downward Transmittance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	63000	32-bit floating point	1.18E-38 – 3.40E+38	unitless	4 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM x SOL_ZEN_DIM Size of Dimension(s): 5 x 15 x 10 x 21

3.2.1.4.61 VIIRS Surface Reflectance Incremental Scattering Angles PC

Data Mnemonic	NP_NU-LM0233-067
Description/ Purpose	The VIIRS Surface Reflectance Incremental Scattering Angles PC file is used to compute the four scattering angles that come closest to the input scattering angle that will be used to interpolate the atmospheric reflectance. This table contains the incremental scattering angle (= step_length). This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.61-1, VIIRS Surface Reflectance Incremental Scattering Angles PC Data Format

Table 3.2.1.4.61-1, VIIRS Surface Reflectance Inc Scattering Angles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	4	32-bit floating point	Initially set to 4.0	Degrees	Incremental scattering angles Step Length

3.2.1.4.62 VIIRS Surface Reflectance Solar Zenith Angle PC

Data Mnemonic	NP_NU-LM0233-068
Description/ Purpose	The VIIRS Surface Reflectance Solar Zenith Angle LUT file is used to compute the four solar zenith angles that come closest to the input solar zenith angle that will be used in interpolation. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	168 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.62-1, VIIRS Surface Reflectance Solar Zenith Angle PC Data Format

Table 3.2.1.4.62-1, VIIRS Surface Reflectance Solar Zenith Angle PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	168	64-bit floating point	0.0 – 1.4	Radians	1 Dimensional Array: SOL_ZEN_DIM Size of Dimension(s): 21

3.2.1.4.63 VIIRS Surface Reflectance Scattering Angle Dimensions PC

Data Mnemonic	NP_NU-LM0233-069
Description/ Purpose	The VIIRS Surface Reflectance Scattering Angle Dimensions LUT file is used to determine how many scattering angles correspond to the given solar and satellite zenith angles. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.63-1, VIIRS Surface Reflectance Scattering Angle Dimensions PC Data Format

Table 3.2.1.4.63-1, VIIRS Surface Reflectance Scattering Angle Dimensions PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	1680	32-bit integer	1 – 36	unitless	1 Dimensional Array: SOL_ZEN_DIM*SAT_ZEN_DIM Size of Dimension(s): 420

3.2.1.4.64 VIIRS Surface Reflectance Satellite Zenith Angles PC

Data Mnemonic	NP_NU-LM0233-070
Description/ Purpose	The VIIRS Surface Reflectance Satellite Zenith Angles PC file is used to compute the four satellite zenith angles that come closest to the input solar satellite angle that will be used in interpolation. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	160 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.64-1, VIIRS Surface Reflectance Satellite Zenith Angles PC Data Format

Table 3.2.1.4.64-1, VIIRS Surface Reflectance Satellite Zenith Angles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	160	64-bit floating point	0.0 – 1.21	Radians	1 Dimensional Array: SAT_ZEN_DIM Size of Dimension(s): 20

3.2.1.4.65 VIIRS Surface Reflectance Spherical Albedo PC

Data Mnemonic	NP_NU-LM0233-071
Description/ Purpose	The VIIRS Surface Reflectance Spherical Albedo PC file contains spherical albedo calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	3,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.65-1, VIIRS Surface Reflectance Spherical Albedo PC Data Format

Table 3.2.1.4.65-1, VIIRS Surface Reflectance Spherical Albedo PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	3000	32-bit floating point	0.0 – 1.0	unitless	3 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM Size of Dimension(s): 5 x 15 x 10

3.2.1.4.66 VIIRS SCD Snow Cover Quality PC

Data Mnemonic	NP_NU-LM0233-072
Description/ Purpose	The VIIRS SCD Snow Cover Quality PC file contains weight reduction factors for cloud contamination and degradation/ exclusion threshold limits. This file is used in the VIIRS Snow Cover EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,652 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.66-1, VIIRS SCD Snow Cover Qual PC Data Format

Table 3.2.1.4.66-1, VIIRS SCD Snow Cover Qual PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nbands_i	4	32-bit unsigned integer	> 0	unitless	Number of Imagery Resolution Bands
nbands_m	4	32-bit unsigned integer	> 0	unitless	Number of Moderate Resolution Bands
band_wgt	36	32-bit floating point	0.0 – 1.0	unitless	Default Moderate Resolution Band Weights 1 Dimensional Array: SCD_NBANDS_M Size of Dimension(s): 9
num_aot_bins	4	32-bit unsigned integer	> 0	unitless	Number of AOT bins, corresponding to the number of AOT values used for thresholding (aot_bins, this table)
aot_bins	16	32-bit floating point	0.0 – 1.0	unitless	AOT Bin Boundary Values 1 Dimensional Array: SCD_NUM_AOT_BINS Size of Dimension(s): 4
num_thresh	4	32-bit unsigned integer	> 0	unitless	Number of Solar Zenith Angle Thresholds

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
q_aot_sza	384	32-bit floating point	0.0 <= sza <= π/2	Radians	Solar Zenith Angle values that correspond to the Solar Zenith Angle quality regimes The order for each num_aot_bin x num_thresh matrix of angles is: I1, I2, I3, M1, M2, M3, M4, M5, M7, M8, M10, and M11 3 Dimensional Array: SCD_NUM_THRESH x SCD_NUM_AOT_BINS x SCD_NBANDS_TOTAL Size of Dimension(s): 2 x 4 x 12
cot_switch	4	32-bit unsigned integer	0 – 1	unitless	Switch to flag the availability of the Cloud Optical Thickness IP 0 = COT Not Available (Use VCM mode) 1 = COT Available (Use COT mode) Initially a placeholder – cot_switch is used in the code, but not from this field in this table. The cot_switch used in the code has been placed in the VIIRS Snow Cover/Depth Ephemeral PC, Table 3.2.2.5.17-1
num_cloud_types	4	32-bit unsigned integer	> 0	unitless	Number of Cloud Types

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cloud_wgts	336	32-bit floating point	0.0 – 1.0	unitless	Cloud weights corresponding to the 3 imagery bands + 9 moderate bands and the 7 cloud properties - 4 phases = Default (1), Water (2), Ice (3), Mixed (4), and 3 types = cirrus (5), shadow (6), adjacency (7); the parenthetical values correspond to the rows of the matrix shown in the "Range" cell, the column represent the bands I1, I2, I3, M1, M2, M3, M4, M5, M7, M8, M10, and M11 in this order. 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 12 x 7
cot_gy	336	32-bit floating point	MinFloat – MaxFloat	unitless	Cloud Optical Thickness "GREEN/YELLOW" quality threshold values 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 7 x 12
cot_yr	336	32-bit floating point	MinFloat – MaxFloat	unitless	Cloud Optical Thickness "YELLOW/RED" quality threshold values 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 7 x 12
qwgt_r	48	32-bit floating point	0.0 – 1.0	unitless	Quality weight values for Solar Zenith Angle boundaries "RED" 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qwgt_y	48	32-bit floating point	0.0 – 1.0	unitless	Quality weight values for Solar Zenith Angle boundaries “YELLOW” 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12
qwgt_g	48	32-bit floating point	0.0 – 1.0	unitless	Quality weight values for Solar Zenith Angle boundaries “GREEN” 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12
frac_wgt_yr	4	32-bit floating point	0 – 1	unitless	Fractional Weight “YELLOW/RED” Threshold
frac_wgt_gy	4	32-bit floating point	0 – 1	unitless	Fractional Weight “GREEN/YELLOW” Threshold
sfrac_bmap_excl_thresh1	4	32-bit floating point	0 – 1	unitless	Tunable Snow fraction threshold lower limit for binary map exclusion
sfrac_bmap_excl_thresh2	4	32-bit floating point	0 – 1	unitless	Tunable Snow fraction threshold upper limit for binary map exclusion
sza_sfrac_degrad_thresh1	4	32-bit floating point	0.0 <= sza <= π/2	Radians	Tunable Solar zenith angle threshold lower limit for degraded snow fraction condition
sza_sfrac_degrad_thresh2	4	32-bit floating point	0.0 <= sza <= π/2	Radians	Tunable Solar zenith angle threshold upper limit for degraded snow fraction condition
sza_bmap_excl_thresh	4	32-bit floating point	0.0 <= sza <= π/2	Radians	Tunable Solar zenith angle threshold for binary map exclusion

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sza_sfrac_excl_thresh	4	32-bit floating point	0.0 <= sza <= π/2	Radians	Tunable Solar zenith angle threshold for snow fraction exclusion
aot_excl_thresh	4	32-bit floating point	>0.0	unitless	Tunable Aerosol optical thickness exclusion threshold
sza_daynight_thresh	4	32-bit floating point	0.0 <= sza <= π/2	Radians	Tunable Solar zenith angle threshold for day to night transition

3.2.1.4.67 VIIRS SCD Snow Cover PC

Data Mnemonic	NP_NU-LM0233-073
Description/ Purpose	The VIIRS SCD Snow Cover PC file contains thresholds, switches, and coeffiecients used to derive TOA reflectance for each of the nine moderate resolution bands used for snow fraction. This file is used in the VIIRS Snow Cover EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	104 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.67-1, VIIRS SCD Snow Cover PC Data Format

Table 3.2.1.4.67-1, VIIRS SCD Snow Cover PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nbands_m	4	32-bit unsigned integer	1 – 9	unitless	Number of moderate resolution bands SCD_NBANDS_M
band_m	36	32-bit unsigned integer	1 – 11	unitless	Band Numbers (nbands_m in size) 1 Dimensional Array: SCD_NBANDS_M Size of Dimension(s): 9
num_r_water	4	32-bit unsigned integer	> 0	unitless	Number of water reflectance thresholds (For I1 and I2) SCD_NUM_R_WATER
r_water	8	32-bit floating point	0.0 – 1.0	unitless	Water Reflectance Thresholds (For I1 and I2) 1 Dimensional Array: SCD_NUM_R_WATER Size of Dimension(s): 2
ndsi_thre1	4	32-bit floating point	-1.0 – 1.0	unitless	First NDSI Threshold
ndsi_thr2	4	32-bit floating point	-1.0 – 1.0	unitless	Second NDSI Threshold
n_max_coeff	4	32-bit unsigned integer	> 0	unitless	Number of NDVI Maximum Coefficients SCD_N_MAX_COEFF
ndvi_max_coeff	16	32-bit floating point	MinFloat – MaxFloat	unitless	NDVI Maximum Coefficients 1 Dimensional Array: SCD_N_MAX_COEFF Size of Dimension(s): 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
n_min_coeff	4	32-bit unsigned integer	> 0	unitless	Number of NDVI Minimum Coefficients SCD_N_MIN_COEFF
ndvi_min_coeff	8	32-bit floating point	MinFloat – MaxFloat	unitless	NDVI Minimum Coefficients 1 Dimensional Array: SCD_N_MIN_COEFF Size of Dimension(s): 2
Btmax	4	32-bit floating point	> 0.0	Kelvin	Tunable Brightness Temperature Threshold
Ntypes	4	32-bit unsigned integer	1 – 24	unitless	Number of Snow Types (6 grain size * 4 impurities = 24 types) (Initially a placeholder – Not used in code)
frac_option	4	32-bit unsigned integer	0 – 2	unitless	Flag which determines which snow fraction algorithm to run 0 = Spectral Mixing Algorithm 1 = Binary Snow Map Aggregation 2 = Both Initially set to 1 as default

3.2.1.4.68 VIIRS Gridded SIN Tiles Earth Land PC

Data Mnemonic	NP_NU-LM0233-074
Description/ Purpose	The VIIRS Sinusoidal Map Earth/Land PC file contains earth/off-earth information for each tile on the Sinusoidal Grid. This file is used in the VIIRS GridToGran algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	5184 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.68-1, VIIRS Gridded SIN Tiles Earth/Land PC Data Format

Table 3.2.1.4.68-1, VIIRS Gridded SIN Tiles Earth Land PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
classification	5184	8-bit unsigned integer	[0, 1, 3]	unitless	0 = off the earth 1 = on the earth – not land 3 = on the earth – land 2 Dimensional Array: SinusoidalGridRow x SinusoidalGridCol Size of Dimension(s): 72 x 72

3.2.1.4.69 VIIRS COP Transmittance PC

Data Mnemonic	NP_NU-LM0040-017
Description/ Purpose	This file is used in the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	4,768 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.69-1, VIIRS COP Transmittance PC Data Format

Table 3.2.1.4.69-1, VIIRS COP Transmittance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Altitude	208	32-bit floating point	0 – 100	meters	1 Dimensional Array: COP_ALTITUDE_LAYERS Size of Dimension(s): 52
Trans_ref	416	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_ALTITUDE_LAYERS Size of Dimension(s): 52
transdT_ref	1664	64-bit floating point	0 – 1	unitless	2 Dimensional Array: 4 x COP_ALTITUDE_LAYERS Size of Dimension(s): 4 x 52
transdq_ref	1664	64-bit floating point	0 – 1	unitless	2 Dimensional Array: 4 x COP_ALTITUDE_LAYERS Size of Dimension(s): 4 x 52
t_ref	408	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_TRANSMITTANCE_LAYERS Size of Dimension(s): 51
du_ref	408	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_TRANSMITTANCE_LAYERS Size of Dimension(s): 51

3.2.1.4.70 VIIRS DNB Stray Light Correction

Data Mnemonic	NP_NU-LM0233-034
Description/ Purpose	The VIIRS DNB Stray Light Correction PC contains the stray light correction offsets and the corresponding spacecraft (S/C) solar zenith angle grids. This PC also contains the maximum radiance limit for which the correction is performed. If a given pixel has radiances above this threshold, then no stray light correction is performed. The correction values are indexed by hemisphere, S/C solar zenith angles, frame number, detector, and half angle mirror side in the terminator region.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	487,943,852 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.70-1, VIIRS DNB Stray Light Correction PC Data Format

Table 3.2.1.4.70-1, VIIRS DNB Stray Light Correction PC Data

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
MAX_RADIANCE_STRAY	4	32-bit floating point	>0	W/(cm^2 sr)	Maximum radiance threshold for stray light correction. Pixels with radiances above this threshold are not corrected for stray light.
VIIRS_STRAY_SZA_GRID	3752	32-bit floating point	-180 to 180	Degrees	2 Dimensional Array: Hemisphere x S/C solar zenith angles Size of Dimension(s): 2 x 469
Radiance levels	487,940,096	32-bit floating point	>0	W/(cm^2 sr)	5 Dimensional Array: Hemisphere x S/C solar zenith angles x frame x detector x HAM side Size of Dimension(s): 2 x 469 x 4064 x 16 x 2

3.2.1.4.71 VIIRS Bright Pixel Flag Threshold PC

Data Mnemonic	NP_NU-LM0235-002
Description/ Purpose	The VIIRS Bright Pixel Flag Threshold PC file contains bit patterns that match corresponding percents of scattered light. These thresholds are used to determine the output 4-bit state flag that is the output of the Bright Pixel Algorithm. This file is used in the VIIRS Bright Pixel and ACO/OCC algorithms
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1052 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.71-1, VIIRS Bright Pixel Flag Threshold PC Data Format

Table 3.2.1.4.71-1, VIIRS Bright Pixel Flag Threshold PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Pattern	210	8-bit unsigned integer	0-15 Current values are documented in the PC file which can be obtained as part of an IDPS release package.	unitless	Values that match the % scattered light thresholds (table entries represent fractional scattered light, not percents) – entries correspond to the thresholds field in this table. 2 Dimensional Array NUM_IMG_MOD_BANDS NUM_BP_THRESHOLDS Size of Dimension(s): 21 x 10 (For NUM_IMG_MOD_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)
Spare	2	16-bit unsigned integer	MinInt-MaxInt	Unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Thresholds	840	32-bit floating point	-1E-6 to 0.1	percent (of scattered light)	Thresholds for percent of scattered light - entries correspond to the patterns field. 2 Dimensional Array NUM_IMG_MOD_BANDS NUM_BP_THRESHOLDS Size of Dimension(s): 21 x 10 (For NUM_IMG_MOD_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)

3.2.1.4.72 VIIRS NHF Aggregation PC

Data Mnemonic	NP_NU-LM0234-007
Description/ Purpose	The NHF Aggregation PC This file is used by the VIIRS NHF EDR algorithm to aggregate moderate resolution pixels into NHF horizontal cells.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	For File Size details see Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format.
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	This LUT format is identical to the format for the VIIRS CCL Cloud Aggregation PC. (Note that the field names and data types will be identical, the values stored in the table will be different.) For format details see Table 3.2.1.4.4-1, VIIRS CCL Cloud Aggregation PC Data Format.

3.2.1.4.73 DELETED

3.2.1.4.74 VIIRS Solar Diffuser Rotation Matrix PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-080
Description/ Purpose	The VIIRS Solar Diffuser Rotation Matrix PC contains the Solar Diffuser rotation matrix and the SDSM screen rotation matrix. These matrices are used to determine the orientation of the Solar Diffuser with respect to the spacecraft. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	72 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.74-1, VIIRS Solar Diffuser Rotation Matrix PC Data Format

Table 3.2.1.4.74-1, Solar Diffuser Rotation Matrix PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to Solar Diffuser Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3
SDSM	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to SDSM Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3

3.2.1.4.75 VIIRS Solar Diffuser SDSM BRDF PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-081
Description/ Purpose	The VIIRS Solar Diffuser SDSM BRDF PC contains Solar Diffuser Bidirectional Reflectance Factor (BRF) values as observed by the SDSM. (Note: BRDF in the title is somewhat of a misnomer here). This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	19,520
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.75-1, VIIRS Solar Diffuser SDSM BRDF PC Data Format

Table 3.2.1.4.75-1, Solar Diffuser SDSM BRDF PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Elevation	1472	32-bit floating point	14–18.5	degrees	Solar Elevation Angle 2 Dimensional Array SDSM_DETECTOR x SDSM_BRDF_EL Size of Dimension(s): 8 x 46
Azimuth	384	32-bit floating point	14-45	degrees	Solar Azimuth Angle 2 Dimensional Array SDSM_DETECTOR x SDSM_BRDF_AZ Size of Dimension(s): 8 x 12
Factor	17,664	32-bit floating point	<= 1.0	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array SDSM_DETECTOR x SDSM_BRDF_AZ x SDSM_BRDF_EL Size of Dimension(s): 8 x 12 x 46

3.2.1.4.76 VIIRS Solar Diffuser SDSM Time PC - Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-082
Description/ Purpose	The VIIRS Solar Diffuser SDSM Time PC contains scan fractions of SDSM sample times. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	20 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.76-1, VIIRS Solar Diffuser SDSM Time PC Data Format

Table 3.2.1.4.76-1, Solar Diffuser SDSM Time PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Fraction	20	32-bit floating point	0 – 1	unitless (fraction of scan)	Collection of offsets by time fraction. These are the scan fraction locations of the SDSM sample time. 1 Dimensional Array Size of Dimension(s): 5

3.2.1.4.77 VIIRS Solar Diffuser Transmittance Screen PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-083
Description/ Purpose	The VIIRS Solar Diffuser Transmittance Screen PC contains the transmittance of the attenuation screen in front of the Solar Diffuser. This file is used in the VIIRS Solar Diffuser algorithm in computing the SDSM radiance.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	19,520 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.77-1, VIIRS Solar Diffuser Transmittance Screen PC Data Format

Table 3.2.1.4.77-1, Solar Diffuser Transmittance Screen PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Elevation	1472	32-bit floating point	14 – 18.5	degrees	Solar Elevation Angle 2 Dimensional Array SDSM_DETECTOR x SDSM_EL Size of Dimension(s): 8 x 46
Azimuth	384	32-bit floating point	14 - 45	degrees	SolarAzimuth Angle 2 Dimensional Array SDSM_DETECTOR x SDSM_AZ Size of Dimension(s): 8 x 12
Factor	17664	32-bit floating point	0.1 - 0.15	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array SDSM_DETECTOR x SDSM_AZ x SDSM_EL Size of Dimension(s): 8 x 12 x 46

3.2.1.4.78 VIIRS Solar Diffuser Voltage PC- Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-084
Description/ Purpose	The VIIRS Solar Diffuser Voltage PC contains scaling factors for converting scaled integer data to engineering units (volts). This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,280
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.78-1, VIIRS Solar Diffuser Voltage PC Data Format

Table 3.2.1.4.78-1, Solar Diffuser Voltage PC Data Format – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
voltCoef	960	32-bit floating point		unitless	Conversion factors for polynomial conversions of SDSM data 3 Dimensional Array nsamples x ndetectors x ncoefficients Size of Dimension(s): 5 x 8 x 6
voltLowerLimit	160	32-bit integer	-8192 to 8191	unitless	Lower limit of unscaled data 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8
voltUpperLimit	160	32-bit integer	-8192 to 8191	unitless	voltUpperLimit 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8

3.2.1.4.79 VIIRS SDSM Transmittance Screen PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Data Mnemonic	NP_NU-LM0233-085
Description/ Purpose	The VIIRS SDSM Transmittance Screen PC contains the transmittance screen coefficients for the Solar Diffuser Stability Monitor. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	16,608
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.79-1, VIIRS SDSM Transmittance Screen PC Data Format

Table 3.2.1.4.79-1, SDSM Transmittance Screen PC – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Elevation	800	32-bit floating point	Initially set to: -1.8 – 1.8	degrees	Solar Elevation Angle 2 Dimensional Array Number of bands x elevations Size of Dimension(s): 8 x 25
Azimuth	608	32-bit floating point	Initially set to: -18 – 18	degrees	SolarAzimuth Angle 2 Dimensional Array Number of bands x azimuths Size of Dimension(s): 8 x 19
Factor	15200	32-bit floating point	0 – 1	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array Number of bands x azimuths x elevations Size of Dimension(s): 8 x 19 x 25

3.2.1.4.80 VIIRS SDR GEO PARAM PC

Data Mnemonic	NP_NU-LM0233-211: I-Band Geolocation PC NP_NU-LM0233-212: M-Band Geolocation PC NP_NU-LM0233-213: DNB Geolocation PC
Description/ Purpose	The VIIRS SDR GEO PARAM PC contains coefficients used in the geolocation algorithm. This file is used in the VIIRS SDR Geolocation algorithm. This is a common format for I-Band, M-Band Aggregated and DNB PC Tables.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	6664
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.80-1, VIIRS SDR GEO PARAM PC Data Format

Table 3.2.1.4.80-1, VIIRS SDR GEO PARAM PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Revision	10	8-bit unsigned integer	>=0	unitless	Revision number for the parameter file. 1 Dimensional Array: Size of Dimension(s): 10
pad1	6	8-bit unsigned integer	MinInt - MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 6
band_number	4	32-bit integer	0 – 22	unitless	Band number to geolocate (0 is the ideal band). This parameter is used to index other band dependent parameters.
pad2	4	8-bit unsigned integer	MinInt - MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 4
latch_to_center	8	64-bit floating point	0 – 1.0	unitless	Used to calculate sample time from frame time. This specifies the fraction of the frame time that is used to compute the sample time, e.g., latch_to_center = 0.5 means that the sample time is computed at the center of the frame time.
t_reset	8	64-bit floating point	0 <= 2.3e-5	seconds	Time to reset the sample, otherwise called the readout time. This is computed by subtracting the integration time from the frame time.
N_samp	74	16-bit unsigned integer	1 - 2	unitless	Factor used to determine the number of samples per frame for each band (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pad3	6	8-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
focal_length	296	64-bit floating point	0.270 – 1.15	meters	Instrument focal length for each band. This parameter is tied to the Mag parameter. If the system Mag is used, then the system focal length should be used. Likewise, if the Mag of the Aft Optics is used, then the Aft Optics focal length should be used.1 Dimensional Array: Size of Dimension(s): 37
det_space_track	296	64-bit floating point	Range for IMG: 0.000508 – 0.000511 Range for MOD: 0.001016 – 0.001022	meters	Detector center spacing in the track direction (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37
det_space_scan	296	64-bit floating point	≥ 0	meters	Detector center spacing in the scan direction (0 is the ideal band). This parameter currently set to zero for all bands since the scan offset is accounted for by a timing offset. 1 Dimensional Array: Size of Dimension(s): 37
DNB_space_track	256	64-bit floating point	0.000484 - 0.001016	meters	DNB detector center spacing in the track direction. Aggregation zone dependent, listed in order from Zone 0 to 31, where aggregation Zone 0 is nadir.1 Dimensional Array: Size of Dimension(s): 32

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_space_scan	256	64-bit floating point	≥ 0	meters	DNB detector center spacing in the scan direction. Aggregation zone dependent, listed in order of zone 0 to 31, where aggregation zone 0 is nadir. This parameter currently set to zero for all zones since the scan offset is accounted for by a timing offset. 1 Dimensional Array: Size of Dimension(s): 32
det_position	592	64-bit floating point	Range Dim 1 (scan): Range IMG: 0 - 0.000177 Range MOD: 0 - 0.000354 Range DNB: 0 - 0.000015] Range Dim 2 (track): Range IMG: 0 - 0.000508 Range MOD: 0 - 0.001016 Range DNB: 0 - 0.000024	meters	Band center x and y offset pairs with respect to the optical center (0 is the ideal band). This value is the average shift of all detector locations within the band from the nominal location (overall bias per band). 2 Dimensional Array: Size of Dimension(s): 37 x 2 Col 1: x-component (scan) shift Col 2: y-component (track) shift
band_position	296	64-bit floating point	-22 - 22	MOD Res IFOV	Scan IFOV offset of band trailing edges with respect to the Optical Center (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37
earth_view_delay	8	64-bit floating point	MinFloat – MaxFloat	seconds	The delay following the start of scan (referenced to the encoder clock reset) to the start of the first Earth View (EV) sample. This parameter specifies the dropped samples to allow for electronic settling before EV sampling.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
detector_sampling_rate	8	64-bit floating point	0.00003 – 0.0009	seconds	Sampling rate for MOD, IMG and DNB resolution detectors
scan_length	8	64-bit floating point	1.77 – 1.80	seconds	Scan period (Length of VIIRS scan).
agg_zone_bounds	20	32-bit integer	Constants	unitless	Upper bounds for the MOD and IMG resolution along-scan aggregation zones. For the MOD resolution case, specification of a Negative value for the first zone forces the software to geolocate unaggregated MOD pixels. Capability required for Cal/Val. Note that N_frame should be consistent with RES choice made here. 1 Dimensional Array: Size of Dimension(s): 5
DNB_aggregation	256	32-bit integer	Constant	unitless	The first column is the number of samples occurring in each DNB aggregation zone, and the second column is the number of along-scan photosites per pixel for that zone. Values are listed from aggregation zone 0 to 31, where Zone 0 is nadir. 2 Dimensional Array: Size of Dimension(s): 32 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_ag_zone_bounds	768	32-bit integer	Range for Col 0 &1: 0 – 4063 Range for Col 2: 0 – 31	Col 0 and 1: Frame Num Col 2: Agg Zone Index	Frame number limits for the 32 DNB aggregation zones from start of scan through nadir to end of scan, and the associated DNB aggregation zone indices. Columns 0 & 1 are the lower and upper frame numbers per zone, respectively. Column 2 contains the associated aggregation zone index, where Index 0 corresponds to nadir and Index 31 the edge of scan. 2 Dimensional Array: Size of Dimension(s): 64 x 3
pad4	4	8-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 4
scan_ang_coef_tel	8	64-bit floating point	MinFloat – MaxFloat	unitless	Scan angle coefficient for telescope.
scan_ang_coef_mirr	8	64-bit floating point	MinFloat – MaxFloat	unitless	Scan angle coefficient for HAM
scan_ang_offsets	16	64-bit floating point	0 to 2π	radians	Scan angle offsets for computing the sample scan angle for mirror side 1 (element 0) and side 2 (element 1). 1 Dimensional Array: Size of Dimension(s): 2
enc_scale	8	64-bit floating point	Constant	unitless	Scale factor for converting 14-bit encoders to 16-bit representation.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mirr_abs_limit	16	64-bit floating point	875 – 885	Scan-time counter ticks	Mirror encoder time stamp absolute limits in units of Scan-Time counter ticks. This parameter determines the valid range for the mirror encoder delta time stamp readings (specifies the acceptable stable scan rate range by limiting the delta timestamp readings). 1 Dimensional Array: Size of Dimension(s): 2
mirr_del_limit	8	64-bit floating point	<= 10	Scan-time counter ticks	Mirror encoder time stamp delta limits in units of Scan-Time counter ticks. This parameter specifies the maximum allowable difference between adjacent mirror encoder delta time stamp readings (limits the instantaneous changes in scan rate).
tel_abs_limit	16	64-bit floating point	875 to 885	Scan-time counter ticks	Telescope encoder time stamp absolute limits in units of Scan-Time counter ticks. This parameter determines the valid range for the telescope encoder delta time stamp readings (specifies the acceptable stable scan rate range by limiting the delta timestamp readings). 1 Dimensional Array: Size of Dimension(s): 2
tel_del_limit	8	64-bit floating point	<= 10	Scan-time counter ticks	Telescope encoder time stamp delta limits in units of Scan-Time counter ticks. This parameter specifies the maximum allowable difference between adjacent telescope encoder delta time stamp readings (limits the instantaneous changes in scan rate).

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sample_impulse_mirr	4	32-bit integer	Constant	Encoder pulses	Mirror encoder pulses between each encoder sample (= 2)
sample_impulse_tel	4	32-bit integer	Constant	Encoder pulses	Telescope encoder pulses between each encoder sample (= 4)
A_bit_adj	8	32-bit integer	0 - 1	16-bit encoder ticks	Offset to convert from pseudo 15-bit to 16-bit encoders, depending on if the Start-of-Scan15-bit encoder is even or odd [even adjust / odd adjust] 1 Dimensional Array: Size of Dimension(s): 2
B_HAM_adj	8	32-bit integer	0 - 2^{16}	16-bit encoder ticks	Offset for converting HAM encoders to absolute encoders depending on the HAM side [HAM A adjust / HAM B adjust] 1 Dimensional Array: Size of Dimension(s): 2
t_encoder	8	64-bit floating point	0.495624 - 0.495688	Microseconds per scan time counter tick	Encoder data scale factor to convert from scan time counter ticks to time.
mirr_side1_range	16	64-bit floating point	$-\pi$ to π	radians	Mirror side 1 angle range 1 Dimensional Array: Size of Dimension(s): 2
Alpha	8	64-bit floating point	< 9.7e-5	radians	Mirror wedge angle α is the non-parallelism of the HAM in the along-scan axis, and creates an along-scan offset between scans from mirror sides 1 and 2.
Beta	8	64-bit floating point	< 9.7e-5	radians	Mirror wedge angle β is the non-parallelism of the HAM in the along-track axis, and creates an along-track offset.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Gamma	8	64-bit floating point	-4.85e-5 to 4.85e-5	radians	Misalignment of the mirror plane-of-symmetry (defined as the plane midway between the two mirror surfaces) to the rotation axis (HAM motor axis)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
T_inst2sc	72	64-bit floating point	MinFloat – MaxFloat	unitless	3x3 Instrument to Spacecraft frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_mirr2inst	72	64-bit floating point	MinFloat – MaxFloat	unitless	3x3 Mirror to Instrument frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_aft2inst	72	64-bit floating point	-1 - 1	unitless	3x3 AFT to Instrument frame transformation matrix (this matrix includes Focal plane to AFT frame transformation, which is a 3x3 rotation matrix with the scan velocity lag angle) 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_inst2SD	72	64-bit floating point	-2 - 2	unitless	3x3 Instrument to Solar Diffuser frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_tel2inst	72	64-bit floating point	MinFloat – MaxFloat	unitless	3x3 Telescope to Instrument frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
num_thermistor	4	32-bit integer	0 - 26	unitless	Number of thermistors used for thermal correction.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
thermistor_id	1040	8-bit unsigned integer	MinInt - MaxInt	unitless	ID of thermistors used for temperature corrections. Each ID or name corresponds to a set of thermistor coefficients listed in the thermistor_coeffs parameter. The number of items listed here should equal num_thermistor. 2 Dimensional Array: Size of Dimension(s): 40 x 26
pad5	4	8-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 4
thermistor_coeffs	1248	64-bit floating point	MinFloat – MaxFloat	unitless	Set of coefficients used in a conversion polynomial to derive a temperature from thermistor readings. Each set corresponds to a thermistor name (see thermistor_id). The number of items entered here should equal num_thermistor. 2 Dimensional Array: Size of Dimension(s): 26 x 6
Mag	72	64-bit floating point	0 - 1	unitless	3x3 telescope magnification matrix, where the matrix contains the term 1/m. This parameter is coupled with the focal_length parameter (see focal_length comments). 2 Dimensional Array: Size of Dimension(s): 3 x 3
basis_in	72	64-bit floating point	-1 - 1	unitless	3x3 telescope entrance basis matrix. 2 Dimensional Array: Size of Dimension(s): 3 x 3

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
basis_out	72	64-bit floating point	-1 - 1	unitless	3x3 telescope exit basis matrix. 2 Dimensional Array: Size of Dimension(s): 3 x 3
poly_coef_mirr	40	64-bit floating point	MinFloat – MaxFloat	Element 0: Radians Element 1: radians/16-bit encoder ticks	Polynomial coefficients for mirror encoder-to-angle conversion. Assumes linear relationship, so only first two coefficients are populated. 1 Dimensional Array: Size of Dimension(s): 5
poly_coef_tel	80	64-bit floating point	MinFloat – MaxFloat	Element 0: Radians Element 1: radians/16-bit encoder ticks	Polynomial coefficients for telescope encoder-to-angle conversion for electronic sides a and b. Assumes linear relationship, so only first two coefficients are populated. 2 Dimensional Array: Size of Dimension(s): 2 x 5
tel_ref	8	64-bit floating point	$-\pi$ to π	radians	Telescope reference angle
MIN_COS_VIEW	8	64-bit floating point	$0 – \pi$	radians	This parameter specifies the sensor zenith angle limit used for flagging pixels as being near the limb. If the sensor zenith angle is greater than MIN_COS_VIEW, the pixels are flagged as being “Near Limb”
band_type	4	32-bit integer	0 - 2	unitless	Identifies band type: moderate (0), imagery (1), or DNB (2)
num_detectors	4	32-bit integer	16 - 32	unitless	Number of detectors per band (depends on band type).
poly_degree	4	32-bit integer	1 - 4	unitless	Degree of the polynomial for mirror encoder-to-angle conversion

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
N_frame	2	8-bit unsigned integer	3200 – 6400	unitless	Number of frames per scan (depends on band_type).
Pad6	2	8-bit unsigned integer	MinInt - MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 2

3.2.1.4.81 Common Geolocation Parameters PC

Data Mnemonic	NP_NU-LM0233-215: Common Geolocation PC
Description/ Purpose	The COMMON GEO PARAM PC contains coefficients used in the common geolocation algorithm. This file is used in the Common Geolocation algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.81-1, Common Geolocation Parameters PC Data Format

Table 3.2.1.4.81-1, Common Geolocation Parameters PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ang_mom_limit	16	64-bit floating point	5.3E10 - 5.44E10	Meters^2 per second	Angular momentum magnitude absolute limits. 1 Dimensional Array: Size of Dimension(s): 2
ang_mom_z_limit	16	64-bit floating point	-8.5E10 - -7.5E9	Meters^2 per second	Angular momentum Z component absolute limits. 1 Dimensional Array: Size of Dimension(s): 2
orbit_consistency	8	64-bit floating point	≤ 1000 m	Meters	Orbit position/velocity consistency limit – used to verify that the S/C velocity data can be used to compute the absolute value of the shift in S/C position between two E&A data points to within the consistency limit. The same limit applies to all vector components.
position_abs_limit	16	64-bit floating point	-7.25E6 to 7.25E6	Meters	Orbit position absolute limits –used to check that the position vector components are within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
position_mag_limit	16	64-bit floating point	7.0E6 to 7.5E6	Meters	Orbit position magnitude limits –used to check that the magnitude of the position vector is within the valid range. 1 Dimensional Array: Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
velocity_abs_limit	16	64-bit floating point	-7.55E3 to 7.55E3	Meters per second	Orbit velocity absolute limits –used to check that the velocity vector components are within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
velocity_mag_limit	16	64-bit floating point	7.35E3 to 7.55E3	Meters per second	Orbit velocity magnitude limits –used to check that the magnitude of the velocity vector is within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
attitude_abs_limit	16	64-bit floating point	-1800.0 to 1800.0	Arcseconds	Attitude angle absolute limits. 1 Dimensional Array: Size of Dimension(s): 2

3.2.1.4.82 VIIRS SDR Relative Spectral Response PC

Data Mnemonic	NP_NU-LM0233-090
Description/ Purpose	The VIIRS SDR Relative Spectral Response (RSR) PC file contains response as a function of wavelength for reflective solar bands, including the DNB RSR, which is used in calculating the D coefficients LUT and for the solar diffuser processing. This file is used in the VIIRS SDR algorithm and in the RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	240,064 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.82-1, VIIRS SDR Relative Spectral Response PC Data Format

Table 3.2.1.4.82-1, VIIRS SDR Relative Spectral Response PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wavelength	120,000	64-bit floating point	1 – 4600	nanometers	RSR Wavelengths Each of the 15 reflective band's wavelengths for the RSR are stored in blocks of 1000 each. However, only the number stored in the first numRsr locations are non-filled in each set of 1000. Fill values are represented as -1. Note that the reflective bands are listed in order (I1, I2, I3, M1-11, DNB.). 2 Dimensional Array: NUM_REFL_PLUS_DNB_BANDS x MAX_RSR_VALUES Size of Dimension(s): 15 x 1000
rsr	120,000	64-bit floating point	-1 – 1	unitless	RSR values for each reflective band. Corresponding wavelengths are in the x2 field for the response function. Fill values are represented as -1. 2 Dimensional Array: NUM_REFL_PLUS_DNB_BANDS x MAX_RSR_VALUES Size of Dimension(s): 15 x 1000
numRsr	60	32-bit integer	400 - 1000	unitless	Number of RSR wavelengths used for each Reflective Band. 1 Dimensional Array: NUM_REFL_PLUS_DNB_BANDS Size of Dimension(s): 15

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Implicit_pad0	4	8-bit unsigned integer	N/A	unitless	Pad bytes for natural alignment Size of Dimension(s): 4

3.2.1.4.83 VIIRS SDSM Screen Transmittance PC

Data Mnemonic	NP_NU-LM0233-091
Description/ Purpose	The VIIRS SDSM Screen Transmiittance PC contains the transmittance screen coefficients for the Solar Diffuser Stability Monitor. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	106,240
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.83-1, VIIRS SDSM Screen Transmittance PC Data Format

Table 3.2.1.4.83-1, VIIRS SDSM Screen Transmittance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
elevation	1280	32-bit floating point	-2.0 – 1.9	degrees	Solar Elevation Angle 2 Dimensional Array SDSM_DETECTOR x NUM_SDSM_EL Size of Dimension(s): 8 x 40
azimuth	2560	32-bit floating point	-15 – 1.8	degrees	Solar Azimuth Angle 2 Dimensional Array SDSM_DETECTOR x NUM_SDSM_AZ Size of Dimension(s): 8 x 80
factors	102400	32-bit floating point	0 – 1	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array SDSM_DETECTOR x NUM_SDSM_AZ x NUM_SDSM_EL Size of Dimension(s): 8 x 80 x 40

3.2.1.4.84 VIIRS RSBAUTOCAL BRDF – Solar Attentuation Screen Transmittance Product (RTA View) PC

Data Mnemonic	NP_NU-LM0233-092
Description/ Purpose	The VIIRS RSBAUTOCAL BRDF - Solar Attenuation Screen Transmittance Product (RTA View) PC contains the product of the RSBAUTOCAL Bidirectional Reflectance Distribution Function (BRDF) and Solar Attenuation Screen Transmittance values as observed by VIIRS. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	538,832
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.84-1, VIIRS RSBAUTOCAL BRDF – Solar Attenuation Screen Product (RTA View) PC Data Format

Table 3.2.1.4.84-1, VIIRS RSBAUTOCAL BRDF – Solar Attenuation Screen Transmittance Product (RTA View) PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
azimuth	640	64-bit floating point	13.5 – 31	degrees	Solar Azimuth Angle 1 Dimensional Array BRDF_TAU_RTA_AZ Size of Dimension(s): 80
declination	480	64-bit floating point	12 – 18.4	degrees	Solar Declination Angle 1 Dimensional Array BRDF_TAU_RTA_DEC Size of Dimension(s): 60
wavelength	112	64-bit floating point	0.35 – 2.35	micrometers	Wavelength 1 Dimensional Array NUM_WAVELENGTH_SAMPLES Size of Dimension(s): 14
brdf_tau_RTA	537,600	64-bit floating point	0 - 1	inverse steradians	Product of SD BRDF and Solar Attenuation Screen Transmittance (RTA view) 3 Dimensional Array BRDF_TAU_RTA_AZ x BRDF_TAU_RTA_DEC x NUM_WAVELENGTH_SAMPLES Size of Dimension(s): 80 x 60 x 14

3.2.1.4.85 VIIRS RSBAUTOCAL BRDF - Solar Attenuation Screen Transmittance Product (SDSM View) PC

Data Mnemonic	NP_NU-LM0233-093
Description/ Purpose	The VIIRS RSBAUTOCAL BRDF - Solar Attenuation Screen Transmittance Product (SDSM View) PC contains the product of the RSBAUTOCAL Bidirectional Reflectance Distribution Function (BRDF) and Solar Attenuation Screen Transmittance values as observed by the SDSM. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	158,080
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.85-1, VIIRS RSBAUTOCAL BRDF – Solar Attenuation Screen Transmittance Product (SDSM View) PC Data Format

Table 3.2.1.4.85-1, VIIRS RSBAUTOCAL BRDF - Solar Attenuation Screen Transmittance Product (SDSM View) PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
azimuth	2560	32-bit floating point	13.5 – 31	degrees	Solar Azimuth Angle 2 Dimensional Array SDSM_DETECTOR x BRDF_TAU_SDSM_AZ Size of Dimension(s): 8 x 80
declination	1920	32-bit floating point	12 – 18.4	degrees	Solar Declination Angle 2 Dimensional Array SDSM_DETECTOR x BRDF_TAU_SDSM_DEC Size of Dimension(s): 8 x 60
brdf_tau_SDSM	153,600	32-bit floating point	0 - 1	inverse steradians	Product of SD BRDF and Solar Attenuation Screen Transmittance (SDSM view) 3 Dimensional Array SDSM_DETECTOR x BRDF_TAU_SDSM_AZ x BRDF_TAU_SDSM_DEC Size of Dimension(s): 8 x 80 x 60

3.2.1.4.86 VIIRS RSBAUTOCAL RVF PC

Data Mnemonic	NP_NU-LM0233-094
Description/ Purpose	The VIIRS RSBAUTOCAL RVF PC contains the response versus frame (or scan angle) values at the angle of the Solar Diffuser for the reflective solar bands including the DNB. These values are used in calculation of the RSB F factors and the DNB LGS gain. This file is used in the RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	7680
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.86-1, VIIRS RSBAUTOCAL RVF PC Data Format

Table 3.2.1.4.86-1, VIIRS RSBAUTOCAL RVF PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	7680	64-bit floating point	0 – 1.5	unitless	Response versus Frame values at the Solar Diffuser angle. 3 Dimensional Array NUM_REFL_PLUS DNB_BANDS x NDETMAX x NUM_MIRROR_SIDES Size of Dimension(s): 15 x 32 x 2

3.2.1.4.87 VIIRS SDR Automated Calibration PC

Data Mnemonic	NP_NU-LM0233-095
Description/ Purpose	The VIIRS SDR Automated Calibration PC contains flags for enabling use of outputs from the RSB Automated Calibration algorithm (RSBAUTOCAL) and several other parameters. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	21408
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.87-1, VIIRS SDR Automated Calibration PC Data Format

Table 3.2.1.4.87-1, VIIRS SDR Automated Calibration PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RSB_automate	1792	8-bit integer	0 - 1	unitless	Flags enabling use of RSB F factors calculated by RSBAUTOCAL code 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
H_automate	14	8-bit integer	0 - 1	unitless	Flags enabling use of H factors calculated by RSBAUTOCAL code 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
pad_0	2	8-bit unsigned integer	N/A	unitless	Pad bytes for natural alignment Size of Dimension(s): 2
DNB_LGS_gain_automate	1152	8-bit integer	0 – 1	unitless	Flags enabling use of DNB LGS gains calculated by RSBAUTOCAL code 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_automate	1152	8-bit integer	0 – 1	unitless	Flags enabling use of DNB gain ratios calculated by RSBAUTOCAL code 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_dark_signal_automate	3456	8-bit integer	0 – 1	unitless	Flags enabling use of DNB dark signals calculated by RSBAUTOCAL code 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 3
DNB_dark_signal_reference	13824	32-bit floating point	> 0	unitless	Calibration sector dark signal reference calculated by RSBAUTOCAL code 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 3
orbit_to_IET_trend_-conversion_factor	8	64-bit floating point	5.0e09 – 7.0e09	microseconds	Number of IET microseconds in orbit
MoonAngleThreshold	8	64-bit floating point	> 0	degrees	Threshold used to determine if moon is in SV

3.2.1.4.88 VIIRS SDR DNB Gain Ratios PC

Data Mnemonic	NP_NU-LM0233-096
Description/ Purpose	The VIIRS SDR DNB Gain Ratios PC file contains the gain ratios used when the SDR algorithm is configured not to use automatically calculated gain ratios calculated by the RSB Automated Calibration (RSBAUTOCAL) algorithm. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	27,648 bytes
File Format Type	Binary
Production Frequency	Rarely
Data Content and Data Format	For details see Table 3.2.1.4.88-1, VIIRS SDR DNB Gain Ratios PC Data Format

Table 3.2.1.4.88-1, VIIRS SDR DNB Gain Ratios PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DnbGainRatios	27,648	64-bit floating point	> 0	unitless	DNB gain ratios used in non-automated RSB calibration mode. The three coefficients correspond to the zero'th, first and second order coefficients in quadratic function of offset corrected DNB counts. The zero'th and second order coefficients are normalized with respect to the first order coefficient for each gain state. The first order coefficient is normalized to the LGS gain. Gain ratio index 0 corresponds to HGS/LGS; gain ratio index 1 corresponds to MGS/LGS. 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS x NUM_GAIN_RATIO_COEFFS Size of Dimension(s): 36 x 16 x 2 x 3

3.2.1.4.89 VIIRS SDR DNB LGS Gains PC

Data Mnemonic	NP_NU-LM0233-097
Description/ Purpose	The VIIRS SDR DNB LGS Gains PC contains DNB LGS gains used by the SDR algorithm when configured not to use the DNB LGS gains calculated by the RSB Automated Calibration algorithm (RSBAUTOCAL). This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	27,664
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.89-1, VIIRS SDR DNB LGS Gains PC Data Format

Table 3.2.1.4.89-1, VIIRS SDR DNB LGS Gains PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Fit_type	1	8-bit integer	0 - 1	unitless	Enumerated type of fit specified by equations: • If Fit_type is 0, then the F parameters specify an exponential: F = F_ref + F_param_1*(1 - exp(F_param_2*(T_this_scan - T_reference))) • If Fit_type is 1, then the F parameters specify a quadratic fit: F = F_ref + F_param_1*(T_this_scan - T_reference) + F_param_2*(T_this_scan - T_reference)^2
Implicit_pad0	7	8-bit unsigned integer	N/A	unitless	Pad bytes for natural alignment Size of Dimension(s): 7
T_ref	8	64-bit integer	0 – MaxInt64	microseconds	Reference time in IET used in functional form for DNB LGS gain as a function of time
F_ref	9216	64-bit floating point	0 – 10	unitless	Value of DNB LGS gain at reference time T_ref 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_MIRROR_SIDES Size of Dimension(s): 36 x 16 x 2
F_param_1	9216	64-bit floating point	-9.0e-18 – 9.0e+18	W/cm^2-sr/count for Fit_type=0, W/cm^2-sr/count-microsecond for Fit_type=1	Parameter in functional form for DNB LGS gain. 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_MIRROR_SIDES Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
F_param_2	9216	64-bit floating point	-9.0e-18 – 9.0e+18	Microsecond^{-1} for Fit_type=0, W/cm^2-sr/count-microsecond^2 for Fit_type=1	Parameter in functional form for DNB LGS gain. 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_MIRROR_SIDES Size of Dimension(s): 36 x 16 x 2

3.2.1.4.90 VIIRS RSBAUTOCAL RSB F Automate PC

Data Mnemonic	NP_NU-LM0233-098
Description/ Purpose	The VIIRS RSBAUTOCAL RSB F Automate PC contains the smoothing weights and other parameters used in Robust Holt Winters (RHW) filtering of the per-orbit RSB F factors. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	50,180
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.90-1, VIIRS RSBAUTOCAL RSB F Automate PC Data Format

Table 3.2.1.4.90-1, VIIRS RSBAUTOCAL RSB F Automate PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RSB_F_level_smoothing_weight	7168	32-bit floating point	0 – 1	unitless	RHW smoothing weights for F level 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_trend_smoothing_weight	7168	32-bit floating point	0 – 1	unitless	RHW smoothing weights for F trend 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_sigma_smoothing_weight	7168	32-bit floating point	0 – 1	unitless	RHW smoothing weights for F sigma 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_k_value	7168	32-bit floating point	0 – 1	unitless	Multiple of sigma used for outlier rejection in RHW filtering 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RSB_F_ck_value	7168	32-bit floating point	0 – 1	unitless	Parameter used to ensure consistency of RHW sigma factor with standard deviation for normal distribution 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_scale_factor	7168	32-bit floating point	> 0	unitless	Multiplicative scale factor used for tuning of RHW smoothed F factors 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_offset_factor	7168	32-bit floating point	-10 – 10	unitless	Additive offset used for tuning of RHW smoothed F factors 4 Dimensional Array NUM_REFL_BANDS x MAX_NUM_DETECTOR x NUM_HAM x NUM_M_I_GAIN_STATES Size of Dimension(s): 14 x 32 x 2 x 2
RSB_F_RHW_min_sigma	4	32-bit floating point	> 0	unitless	Minimum allowed value of sigma in RHW filter

3.2.1.4.91 VIIRS RSBAUTOCAL H Automate PC

Data Mnemonic	NP_NU-LM0233-099
Description/ Purpose	The VIIRS RSBAUTOCAL H Automate PC contains the smoothing weights and other parameters used in Robust Holt Winters (RHW) filtering of the per-orbit H factors. H factors are used to correct the Solar Diffuser BRDF for on-orbit degradation effects. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	508
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.91-1, VIIRS RSBAUTOCAL H Automate PC Data Format

Table 3.2.1.4.91-1, VIIRS RSBAUTOCAL H Automate PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
H_level_smoothing_weight	56	32-bit floating point	0 – 1	unitless	RHW smoothing weights for H level 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_trend_smoothing_weight	56	32-bit floating point	0 – 1	unitless	RHW smoothing weights for H trend 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_sigma_smoothing_weight	56	32-bit floating point	0 – 1	unitless	RHW smoothing weights for H sigma 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_k_value	56	32-bit floating point	0 – 1	unitless	Multiple of sigma used for outlier rejection in RHW filtering 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_ck_value	56	32-bit floating point	0 – 1	unitless	Parameter used to ensure consistency of RHW sigma factor with standard deviation for normal distribution 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
H_scale_factor	56	32-bit floating point	0 – 1	unitless	Multiplicative scale factor used for tuning of RHW smoothed H factors 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_offset_factor	56	32-bit floating point	0 – 1	unitless	Additive offset used for tuning of RHW smoothed H factors 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_orbit_zero_scale_factor	56	32-bit floating point	0 – 1	unitless	Multiplicative scale factor used for tuning of RHW smoothed H factors 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_orbit_zero_offset_factor	56	32-bit floating point	0 – 1	unitless	Additive offset used for tuning of RHW smoothed H factors 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_RHW_min_sigma	4	32-bit floating point	> 0	unitless	Minimum allowed value of sigma in RHW filter

3.2.1.4.92 VIIRS RSBAUTOCAL DNB LGS Gain Automate PC

Data Mnemonic	NP_NU-LM0233-100
Description/ Purpose	The VIIRS RSBAUTOCAL DNB LGS Gain Automate PC contains the smoothing weights and other parameters used in Robust Holt Winters (RHW) filtering of the per-orbit DNB LGS gains. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	32,264
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.92-1, VIIRS RSBAUTOCAL DNB LGS Gain Automate PC Data Format

Table 3.2.1.4.92-1, VIIRS RSBAUTOCAL DNB LGS Gain Automate PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_LGS_gain_-level_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB LGS gain level 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_LGS_gain_-trend_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB LGS gain trend 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_LGS_gain_-sigma_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB LGS gain sigma 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_LGS_gain_k_value	4608	32-bit floating point	0 – 1	unitless	Multiple of sigma used for outlier rejection in RHW filtering 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_LGS_gain_-ck_value	4608	32-bit floating point	0 – 1	unitless	Parameter used to ensure consistency of RHW sigma factor with standard deviation for normal distribution 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_LGS_gain_-scale_factor	4608	32-bit floating point	> 0	unitless	Multiplicative scale factor used for tuning of RHW smoothed DNB LGS gains 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_LGS_gain_-offset_factor	4608	32-bit floating point	-10 – 10	W/m^2-sr	Additive offset used for tuning of RHW smoothed DNB LGS gains 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM Size of Dimension(s): 36 x 16 x 2
DNB_min_sample	2	16-bit integer	0 - 16383	unitless	Minimum value of DNB LGS counts used in calculation
DNB_max_sample	2	16-bit integer	- 16383	unitless	Maximum value of DNB LGS counts used in calculation
DNB_LGS_gain_-RHW_min_sigma	4	32-bit floating point	> 0	W/m^2-sr	Minimum allowed value of sigma in RHW filter

3.2.1.4.93 VIIRS RSBAUTOCAL DNB Dark Signal Automate PC

Data Mnemonic	NP_NU-LM0233-101
Description/ Purpose	The VIIRS RSBAUTOCAL DNB Dark Signal Automate PC contains the smoothing weights and other parameters used in Robust Holt Winters (RHW) filtering of the per-orbit DNB dark signals. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	147,472
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.93-1, VIIRS RSBAUTOCAL DNB Dark Signal Automate PC Data Format

Table 3.2.1.4.93-1, VIIRS RSBAUTOCAL DNB Dark Signal Automate PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_dark_signal-level_smoothing_weight	18,432	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB dark signal level 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
DNB_dark_signal_-trend_smoothing_weight	18,432	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB dark signal trend 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
DNB_dark_signal_-sigma_smoothing_weight	18,432	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB dark signal sigma 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_dark_signal_k_value	18,432	32-bit floating point	0 – 1	unitless	Multiple of sigma used for outlier rejection in RHW filtering 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
DNB_dark_signal_-ck_value	18,432	32-bit floating point	0 – 1	unitless	Parameter used to ensure consistency of RHW sigma factor with standard deviation for normal distribution 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
Min_num_valid_DN	2	16-bit integer	>= 0	unitless	Minimum number of valid DN's required for dark signal determination
Max_moon_percentage	2	16-bit integer	0 - 100	percentage	Maximum allowed brightness of moon as percentage of its peak brightness for collection of dark signals
Min_SZA	4	16-bit integer	0 - 180	degrees	Minimum Solar Zenith Angle at spacecraft to ensure eclipse of sun for collection of dark signals

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_dark_signal_-scale_factor	18,432	32-bit floating point	> 0	unitless	Multiplicative scale factor used for tuning of RHW smoothed DNB dark signal 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
DNB_dark_signal_-offset_factor	18,432	32-bit floating point	-10 – 10	unitless	Additive offset used for tuning of RHW smoothed DNB dark signals 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
DNB_dark_signal_percentile	18,432	32-bit floating point	0 - 100	percentage	Percentage of values smaller than value chosen as representative dark signal from rank ordered list of dark signals, minimum to maximum 4 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_HAM x N_DNB_BANDS Size of Dimension(s): 36 x 16 x 2 x 4
dark_signal_selection_flag	1	8-bit integer	0 - 1	unitless	Flag used to select calibration sectors for dark signal determination. Byte 1 = 0/1: SD sector not used/used Byte 2 = 0/1: BB sector not used/used Byte 3 = 0/1: SV sector not used/used

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
implicit_pad0	3	8-bit unsigned integer	N/A	unitless	Pad bytes for natural alignment Size of Dimension(s): 3
DNB_dark_signal_-RHW_min_sigma	4	32-bit floating point	> 0	unitless	Minimum allowed value of sigma in RHW filter

3.2.1.4.94 VIIRS RSBAUTOCAL DNB Gain Ratios Automate PC

Data Mnemonic	NP_NU-LM0233-102
Description/ Purpose	The VIIRS RSBAUTOCAL Gain Ratios Automate PC contains the smoothing weights and other parameters used in Robust Holt Winters (RHW) filtering of the per-orbit DNB gain ratios, as well as other parameters used to create the gain ratios from the calibration sector data. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	41,480
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.94-1, VIIRS RSBAUTOCAL DNB Gain Ratios Automate PC Data Format

Table 3.2.1.4.94-1, VIIRS RSBAUTOCAL DNB Gain Ratios Automate PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_gain_ratios-level_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB gain ratios level 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_-trend_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB gain ratios trend 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_-sigma_smoothing_weight	4608	32-bit floating point	0 – 1	unitless	RHW smoothing weights for DNB gain ratios sigma 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_gain_ratios_k_value	4608	32-bit floating point	0 – 1	unitless	Multiple of sigma used for outlier rejection in RHW filtering 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_-ck_value	4608	32-bit floating point	0 – 1	unitless	Parameter used to ensure consistency of RHW sigma factor with standard deviation for normal distribution 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
Max_DN_threshold	2304	16-bit integer	0 – 16,383	unitless	Maximum allowed value of raw counts DN for higher gain stage data used in gain ratio determination 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Min_dn_threshold	2304	16-bit integer	0 – 16,383	unitless	Minimum allowed value of offset corrected counts dn for lower gain stage data used in gain ratio determination 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_-scale_factor	4608	32-bit floating point	> 0	unitless	Multiplicative scale factor used for tuning of RHW smoothed DNB gain ratios 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2
DNB_gain_ratios_-offset_factor	4608	32-bit floating point	MinFloat32 – MaxFloat32	unitless	Additive offset used for tuning of RHW smoothed DNB gain ratios 3 Dimensional Array NUM_AGG_SEQ x NUM_DETECTORS_DNB x NUM_GAIN_RATIOS Size of Dimension(s): 36 x 16 x 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_gain_ratios_percentile	4608	32-bit floating point	0 - 100	percentage	Percentage of values smaller than value chosen as representative gain ratio from rank ordered list of gain ratios, minimum to maximum
Min_num_valid_ratios	2	16-bit integer	0 - 1000	unitless	Minimum allowed number of per-scan gain ratios used in gain ratio determination
DNB_gain_ratios_cal_sector_selection_flag	1	8-bit integer	0 - 1	unitless	Flag used to select calibration sectors for gain ratio determination. Byte 1 = 0/1: SD sector not used/used Byte 2 = 0/1: BB sector not used/used Byte 3 = 0/1: SV sector not used/used
implicit_pad0	1	8-bit unsigned integer	N/A	unitless	Pad bytes for natural alignment Size of Dimension(s): 1
DNB_gain_ratios_-RHW_min_sigma	4	32-bit floating point	> 0	unitless	Minimum allowed value of sigma in RHW filter

3.2.1.4.95 VIIRS RSBAUTOCAL DNB Moon Illumination PC

Data Mnemonic	NP_NU-LM0233-103
Description/ Purpose	The VIIRS RSBAUTOCAL DNB Moon Illumination PC contains the lunar brightness as a fraction of peak lunar brightness at specified times. The duration of the time period covered by this PC table is 01-Oct-2011 00:00:00 to 31-Oct-2021 00:00:00, with illumination percentages spaced every 6 hours. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	175,200
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.95-1, VIIRS RSBAUTOCAL DNB Moon Illumination PC Data Format

Table 3.2.1.4.95-1, VIIRS RSBAUTOCAL DNB Moon Illumination PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
IET_time	116,800	64-bit integer	0 – MaxInt64	unitless	IET's at which moon illumination percentages are specified
Moon_illumination_percentage	58,400	32-bit floating point	0 – 100	unitless	Moon illumination as a fraction of its peak illumination

3.2.1.4.96 VIIRS RSBAUTOCAL H PC

Data Mnemonic	NP_NU-LM0233-104
Description/ Purpose	The VIIRS RSBAUTOCAL H PC contains values for parameters in a functional form for H as a function of time used when the SDR code is configured not to use the H values calculated by the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm. This PC also contains geometric and other parameter values used in the RSBAUTOCAL algorithm for calculating H in automated mode. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	624
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.96-1, VIIRS RSBAUTOCAL H PC Data Format

Table 3.2.1.4.96-1, VIIRS RSBAUTOCAL H PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
H_ref	112	64-bit floating point	0 – 1	unitless	Reference value of H at reference time T_ref in functional form used to calculate H as a function of time: H(t) = H_ref + H_param_1 * (1.0 - exp(-1.0 * H_param_2 * (t - T_ref))) 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_param_1	112	64-bit floating point	< 0	unitless	Parameter value used in functional form for H(t). 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
H_param_2	112	64-bit floating point	> 0	Inverse microseconds	Parameter value used in functional form for H(t). 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
T_ref	8	64-bit integer	0 – MaxInt64	microseconds	Reference time in functional form for H(t

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
spaceViewVector	24	64-bit floating point	0 – 1	unitless	Unit vector in direction of the Space View field of view center 1 Dimensional Array SD_NUM_COEFFS_SIZE Size of Dimension(s): 3
limitsPhiV	16	64-bit floating point	12 – 18.4	degrees	Minimum and maximum declination of sun in spacecraft coordinates for data used in H determination. 1 Dimensional Array SD_LUT_NUM_DIMENSION Size of Dimension(s): 2
limitsPhiH	16	64-bit floating point	13.5 - 31	degrees	Minimum and maximum azimuth of sun in spacecraft coordinates for data used in H determination. 1 Dimensional Array SD_LUT_NUM_DIMENSION Size of Dimension(s): 2
limitsElev	16	64-bit floating point	-2 – 1.9	degrees	Minimum and maximum elevation of sun in SDSM screen coordinates for data used in H determination. 1 Dimensional Array SD_LUT_NUM_DIMENSION Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
limitsAz	16	64-bit floating point	- 15 – 1.8	degrees	Minimum and maximum azimuth of sun in SDSM screen coordinates for data used in H determination. 1 Dimensional Array SD_LUT_NUM_DIMENSION Size of Dimension(s): 2
VIIRS_center_wavelengths	112	64-bit floating point	400 - 2300	nanometers	VIIRS RSB band center wavelengths. 1 Dimensional Array NUM_REFL_BANDS Size of Dimension(s): 14
SDSM_detector_center_wavelengths	64	64-bit floating point	400 - 950	nanometers	SDSM detector band center wavelengths. 1 Dimensional Array SDSM_DETECTOR Size of Dimension(s): 8
Max_SDSM_screen_transmittance	8	64-bit floating point	0 – 0.002	unitless	Maximum transmittance of SDSM solar attenuation screen.
SDSM_solid_cone_half_angle	8	64-bit floating point	7 - 8	degrees	Half angle of SDSM conical field of view.

3.2.1.4.97 VIIRS RSBAUTOCAL Rotation Matrix PC

Data Mnemonic	NP_NU-LM0233-080
Description/ Purpose	The VIIRS RSBAUTOCAL Rotation Matrix PC contains the Solar Diffuser rotation matrix and the SDSM screen rotation matrix. These matrices are used to determine the orientation of the Solar Diffuser with respect to the spacecraft. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	72 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.97-1, VIIRS RSBAUTOCAL Rotation Matrix PC Data Format

Table 3.2.1.4.97-1, VIIRS RSBAUTOCAL Rotation Matrix PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to Solar Diffuser Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3
SDSM	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to SDSM Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3

3.2.1.4.98 VIIRS RSBAUTOCAL SDSM Time PC

Data Mnemonic	NP_NU-LM0233-082
Description/ Purpose	The VIIRS RSBAUTOCAL SDSM Time PC contains scan fractions of SDSM sample times. This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	20 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.98-1, VIIRS RSBAUTOCAL SDSM Time PC Data Format

Table 3.2.1.4.98-1, VIIRS RSBAUTOCAL SDSM Time PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Fraction	20	32-bit floating point	0 – 1	unitless (fraction of scan)	Collection of offsets by time fraction. These are the scan fraction locations of the SDSM sample time. 1 Dimensional Array Size of Dimension(s): 5

3.2.1.4.99 VIIRS RSBAUTOCALVoltage PC

Data Mnemonic	NP_NU-LM0233-084
Description/ Purpose	The VIIRS RSBAUTOCAL Voltage PC contains scaling factors for converting scaled integer data to engineering units (volts). This file is used in the VIIRS RSB Automated Calibration (RSBAUTOCAL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1,280
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.99-1, VIIRS RSBAUTOCAL Voltage PC Data Format

Table 3.2.1.4.99-1, VIIRS RSBAUTOCAL Voltage PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
voltCoef	960	32-bit floating point		unitless	Conversion factors for polynomial conversions of SDSM data 3 Dimensional Array nsamples x ndetectors x ncoefficients Size of Dimension(s): 5 x 8 x 6
voltLowerLimit	160	32-bit integer	-8192 to 8191	unitless	Lower limit of unscaled data 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8
voltUpperLimit	160	32-bit integer	-8192 to 8191	unitless	voltUpperLimit 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8

3.2.2 Ephemeral PCs

Ephemeral PCs are files containing the processing coefficient parameters used to create NPP/NPOESS Data Products and are updated frequently. Ephemeral PC updates follow the data format definition provided in the JPSS CDFCB-X Vol. VI, 474-00001-06 for PC Tables.

The following sections indicate the parameters included in each respective file.

Most Ephemeral PCs are applicable to a single sensor or sensor suite. However, the SAA table is independent of all sensors. The format is provided in Table 3.2.2-1, Common Geolocation SAA PC Data Format.

The South Atlantic Anomaly (SAA) PC file contains the SAA intensity as modeled using a 2-d Gaussian to provide the intensity at any given latitude and longitude. Coefficients for the peak intensity (100%), and latitude/longitude widths and centers are also provided. The resulting values are typically binned into a percentage threshold range and a quality flag is set accordingly – this quality flag is present in multiple SDRs and EDRs.

Table 3.2.2-1, Common Geolocation SAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
centerLat	8	64-bit floating point	-pi/2 to pi/2	Radians	Latitude of the center of the SAA (in radians, positive north)
centerLon	8	64-bit floating point	-pi to pi	Radians	Longitude of the center of the SAA (in radians, positive East)
maxIndex	8	64-bit floating point	0 - 100	Percent	Maximum index value produced by the function
latHeight	8	64-bit floating point	0 to pi/2	Radians	Latitude height of the SAA (in radians) equal to 1 standard deviation of the Gaussian distribution model
lonWidth	8	64-bit floating point	0 to pi	Radians	Longitude width of the SAA (in radians) equal to 1 standard deviation of the Gaussian distribution model

3.2.2.1 CrIMSS PCs

3.2.2.1.1 CrIMSS EDR Ephemeral PC

Table 3.2.2.1.1-1, CrIMSS EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
localAngleAdj	4	32-bit integer	MinInt – MaxInt	unitless	Flag to perform local angle adjustments
iTrop	4	32-bit integer	MinInt – MaxInt	unitless	Flag to determine whether to find the tropopause level
mwCloud	4	32-bit integer	MinInt – MaxInt	unitless	Flag for Cloud retrieval
covSelectMethod	4	32-bit integer	MinInt – MaxInt	unitless	Covariance selection method
chanSelFlag	88	32-bit integer	MinInt – MaxInt	unitless	Array of channel selection flag for mw 1 Dimensional Array Size of Dimension(s): 22
landTypes	32	32-bit integer	MinInt – MaxInt	unitless	Array of land types used in the algorithm 1 Dimensional Array Size of Dimension(s): 8
fovFac	4	32-bit floating point	Minfloat – Maxfloat	unitless	Additional flag for MW channels 1 and 2
apodFlag	4	32-bit integer	MinInt – MaxInt	unitless	Apodization option flag
maxMwIter	4	32-bit integer	MinInt – MaxInt	unitless	Maximum number of iterations for MW retrieval

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxIrIter	4	32-bit integer	MinInt – MaxInt	unitless	Maximum number of iterations for IR+MW retrieval
sceneClassMode	4	32-bit integer	MinInt – MaxInt	unitless	Scene classification mode
freqIrSfcHp	48	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Surface hinge points for IR emissivity 1 Dimensional Array Size of Dimension(s): 12
bkgCld	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of cloud backgrounds 1 Dimensional Array Size of Dimension(s): 2
cldRetrCov	16	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud retrieval covariance 1 Dimensional Array Size of Dimension(s): 2 x 2
chanFlagLowerMin	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection lower limit flag's minimum value
chanFlagLowerMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection lower limit flag's maximum value
chanFlagUpperMin	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection upper limit flag's minimum value
chanFlagUpperMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection upper limit flag's maximum value
maxTemp	4	32-bit floating point	Minfloat – Maxfloat	Kelvin	Maximum temperature

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minTemp	4	32-bit floating point	Minfloat – Maxfloat	Kelvin	Minimum temperature
alpha1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Constant used to calculate error covariance matrix
chiSqMwIterThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	MW convergence flag to finish iteration
chiSqMwThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Threshold used to determine when to reset background and covariance
chiSqCldThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloudy radiance convergence criterion
chiSqIrThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Convergence threshold to finish IR iterations
Htol	4	32-bit floating point	Minfloat – Maxfloat	unitless	Constant used for checking mixing ratio for super-saturation
Debug	4	32-bit integer	Minfloat – Maxfloat	unitless	Debug flag
landThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Land Threshold(Percentage of land)
oceanThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Ocean Threshold(percentage of ocean)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tSkinMwThreshold1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 1 background profiles and covariance matrices according to value
tSkinMwThreshold2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 2 background profiles and covariance matrices according to value
tSkinMwThreshold3	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 3 background profiles and covariance matrices according to value
tSkinMwThreshold4	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 4 background profiles and covariance matrices according to value
firstCldTunApod0	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 0
firstCldTunApod1	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 1
firstCldTunApod2	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 2
secondCldTunApod0	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 0
secondCldTunApod1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 1
secondCldTunApod2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cldClearRngBnd1	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud-clearing spectral range for band 1 1 Dimensional Array Size of Dimension(s): 2
cldClearRngBnd3	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud-clearing spectral range for band 3 1 Dimensional Array Size of Dimension(s): 2
atmNoise	4	32-bit integer	MinInt – MaxInt	unitless	Atmospheric noise flag used in FOV selection routine
irChanRangNotUsed	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR channels not used in the retrieval 1 Dimensional Array Size of Dimension(s): 2
cloudIEmissAndRefl	4	32-bit floating point	Minfloat – Maxfloat	unitless	Emissivity and reflectivity for cloud I for all channels
cloudIIEmissAndRefl	4	32-bit floating point	Minfloat – Maxfloat	unitless	Emissivity and reflectivity for cloud II for all channels
irECMSpectRangeLow	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR lower spectral range to calculate error covariance matrix 1 Dimensional Array Size of Dimension(s): 2
irECMSpectRangeHigh	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR higher spectral range to calculate error covariance matrix 1 Dimensional Array Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
chiSqAirsMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	AIRS chi-square threshold - quality flag is set if value is exceeded
chiSqMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second stage chi-square threshold - quality flag is set if value exceeded
chiSqMwMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	First stage (MW only) chi-square threshold - quality flag is set if is exceeded
chiSqMw2Max	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second stage MW chi-square threshold - quality flag is set if value is exceeded
profDiffMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	First vs. second stage retrieval profile difference threshold quality flag. Set if value is exceeded
ccThreshIrMw	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for second stage chisquare value
ccThreshMw	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for first stage chisquare value
ccThreshIrna	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for the IR Noise Amplification Factor value
sunGlintThresh	4	32-bit floating point	Minfloat – Maxfloat	degrees	Sun glint threshold (degrees)
detectorQF	108	32-bit integer	MinInt – MaxInt	unitless	Detector quality flags (0=detector failure) 1 Dimensional Array Size of Dimension(s): 27

3.2.2.2 ATMS PCs

3.2.2.2.1 ATMS SDR Ephemeral PC

Table 3.2.2.2.1-1, ATMS SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
scanWeightsWc	1760	64-bit floating point	0 – 1	unitless	Weighting factors applied to hot calibration target data 2 Dimensional Array: NUM_SCAN_WC x NUM_CHANNELS Size of Dimenions(s): 10 x 22
scanWeightsCc	1760	64-bit floating point	0 – 1	unitless	Weighting factors applied to cold calibration target data 2 Dimensional Array: NUM_SCAN_CC x NUM_CHANNELS Size of Dimenions(s): 10 x 22
scanBias	16896	64-bit floating point	-5 – 5	Kelvin	Scan-angle dependent BT biases for each channel coefficient of 0th order term in brightness temperature equation Tcorrected = AT + B 2 Dimensional Array: NUM_CHANNELS x NUM_BEAM_POSITIONS Size of Dimenions(s): 22 x 96

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
beamEfficiencyCorrection	16896	64-bit floating point	0 – 1.2	unitless	Scan-angle dependent beam efficiency correction factor for each channel coefficient of 1st order term in brightness temperature equation corrected = AT + B 2 Dimensional Array: NUM_CHANNELS x NUM_BEAM_POSITIONS Size of Dimenions(s): 22 x 96
warmBiasCorrection	528	64-bit floating point	-1 - 1	a1: K a2: KC^{-1} a3: KC^{-2}	Warm bias corrections of the form a1 + a2TR + a3TR**2 and coefficients are a1, a2, and a3. TR is the receiver temperature in degrees C. 2 Dimensional Array: NUM_BIAS_COEFFS x NUM_CHANNELS Size of Dimenions(s): 3 x 22
instr2scMatrix	72	64-bit floating point	MinFloat – MaxFloat	unitless	3x3 Instrument to Spacecraft frame transformation matrix 2 Dimensional Array: ROTATION_MATRIX_DIM x ROTATION_MATRIX_DIM Size of Dimension(s): 3 x 3
scanWeightsPrtKav	288	32-bit floating point	0 – 1	unitless	Weighting factors applied to KAV target PRT measurements 2 Dimensional Array: NUM_SCAN_PRT x NUM_PRT_KAV Size of Dimenions(s): 9 x 8

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
scanWeightsPrtWg	252	32-bit floating point	0 – 1	unitless	Weighting factors applied to WG target PRT measurements 2 Dimensional Array: NUM_SCAN_PRT x NUM_PRT_WG Size of Dimenions(s): 9 x 7
coldSpaceTbs	88	32-bit floating point	2.76 – 4.70	Kelvin	Brightness temperature of cosmic cold space, with Planck correction applied, for each ATMS channel 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
quadraticRc	1056	32-bit floating point	-0.85 – 0.854	Kelvin	Quadratic coefficients for 22 channels, four redundancy configurations (RC1, RC2, RC5 and RC6) and three cold plate temperatures (-10°, +5° and +20° C) 3 Dimensional Array: NUM_COLD_PLATE_TEMP x NUM_REDUNCDANCY_CONFIGS x NUM_CHANNELS Size of Dimenions(s): 3 x 4 x 22
shelfTemp	48	32-bit floating point	-10 – 50	Celsius	Four shelf temperatures (KKA, V, W, G) measured at each of the three cold plate temperatures tested (-10°, +5° and +20° C) 2 Dimensional Array: NUM_COLD_PLATE_TEMP x NUM_SHELF_TEMPS Size of Dimenions(s): 3 x 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
beamAlignmentError	792	32-bit floating point	-0.665 – 0.656	Degrees	Bore-sight(beam) alignment errors at scan positions 1, 48 and 96 3 Dimensional Array: NUM_CHANNELS x BEAM_POS_OFFSET x ATTITUDE Size of Dimenions(s): 22 x 3 x 3
coldBiasCorrection	352	32-bit floating point	0 – 0.6	Kelvin	Cold bias correction for 22 channels and four cold space view groups 2 Dimensional Array: NUM_COLD_SAMPLES x NUM_CHANNELS Size of Dimenions(s): 4 x 22
lowLimitPrt	8	32-bit floating point	245- 340	Kelvin	Lower PRT temperature limit for the KAV and WG targets 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
uppLimitPrt	8	32-bit floating point	245- 340	Kelvin	Upper PRT temperature limit for the KAV and WG targets 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
maxVarPrt	8	32-bit floating point	0 -10	Kelvin	Maximum temperature difference among the PRTs for the KAV and WG targets 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
threeDBeamWidth	88	32-bit floating point	1 – 6	degrees	Channel-specific 3dB beamwidths 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lunarContaminationThreshold	88	32-bit floating point	0 – 1	Kelvin	Channel-specific thresholds for cold space view temperature increase caused by lunar contamination 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
prtConvergence	4	32-bit floating point	Initially set to 0.0005	celsius	Convergence criteria for Newton-Raphson computation of temperature from PRT resistance
wtThresholdPrt	4	32-bit floating point	0 -1	unitless	Minimum normalized weight-sum required for passing the PRT data sufficiency check
wtThresholdWc	4	32-bit floating point	0 -1	unitless	Weight threshold for WC - Minimum normalized weight-sum required for passing the warm count data sufficiency check
wtThresholdCc	4	32-bit floating point	0 -1	unitless	Weight threshold for CC - Minimum normalized weight-sum required for passing the cold count data sufficiency check
dataLimits	592	32-bit floating point	minfloat – maxfloat	unitless	The valid value range for the Health & Status telemetry 2 Dimensional Array: MIN_MAX_DIM x NUM_HS_VARS Size of Dimenions(s): 2 x 74

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
spaceViewresolverCounts	64	32-bit integer	13746 - 15565	Expected Counts	Space view resolver counts - Expected count for 4 cold view positions and 4 cold scan profiles 2 Dimensional Array: NUM_COLD_SAMPLES x NUM_COLD_SCAN_PROFILES Size of Dimenions(s): 4 x 4
blackBodyResolverCounts	64	32-bit integer	35286 – 35892	Expected Counts	Black body resolver counts - Expected count for 4 warm view positions 2 Dimensional Array: NUM_WARM_SAMPLES x NUM_WARM_SCAN_PROFILES Size of Dimenions(s): 4 x 4
lowLimitWc	88	32-bit integer	0 – 65635	Count	Lower limit WC - Channel-specific lower limit for warm count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
uppLimitWc	88	32-bit integer	0 – 65635	Count	Upper limit WC - Channel-specific upper limit for warm count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
maxVarWc	88	32-bit integer	0 – 65635	Count	Max variance WC - Channel-specific maximum difference among four warm samples 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowLimitCc	88	32-bit integer	0 – 65635	Count	Lower limit CC - Channel-specific lower limit for cold count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
uppLimitCc	88	32-bit integer	0 – 65635	Count	Upper limit CC - Channel-specific upper limit for cold count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
maxVarCc	88	32-bit integer	0 – 65635	Count	Max variance CC - Channel-specific maximum difference among four cold samples 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
numThresholdPrt	8	32-bit integer	1 – 8	unitless	Number of threshold PRTs - Minimum number of “good” PRTs in a scan below which all PRTs is considered “bad 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
mapRc	32	32-bit integer	1 – 4	unitless	Map of RC - Map 8 Redundancy Configurations to 4 experimental cases RC1, RC2, RC5 RC6 1 Dimensional Array: NUM_MAP_RC_SIZE Size of Dimenions(s): 8

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
resolverOffset	4	32-bit integer	-200 – 200	Count	Resolver mechanical offset specific for each instrument; for the PFM, it is 91
epsilonCold	4	32-bit integer	0 - 20	unitless	Allowable deviation from the cold view expected resolver counts
epsilonWarm	4	32-bit integer	0 - 20	unitless	Allowable deviation from the warm view expected resolver counts
allowableDev	4	32-bit integer	0 - 20	milliseconds	Allowable deviation from the nominal scan period (8/3 sec)
prtLoops	4	32-bit integer	1 – 200	unitless	Maximum allowable loops for PRT temperature calculations
useQuadraticTerm	1	boolean	0 or 1	unitless	Flag indicating use of quadratic 0: do not use quadratic term 1: use quadratic term
useQuadraticTele	1	boolean	0 or 1	unitless	Flag indicating source of quadratic coefficients: 0: quadratic coefficients from ancillary file 1: quadratic coefficients from telemetry
useBeamAlignTele	1	boolean	0 or 1	unitless	Flag indicating the source of beam alignment errors: 0: beam alignment errors (22 channels) from ancillary file 1: beam alignment errors (five bands) from telemetry

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
useWarmBiasTele	1	Boolean	0 or 1	unitless	Flag indicating the source of warm bias: 0: warm bias (22 channels) from ancillary file 1: warm bias (five bands) from telemetry
useColdBiasTele	1	Boolean	0 or 1	unitless	Flag indicating the source of cold bias: 0: cold bias (22 channels) from ancillary file 1: cold bias (five bands) from telemetry
chkConsistWcCc	1	Booleam	0 or 1	unitless	Flag indicating consistency check for warm and cold counts: 0: do not check consistency 1: check consistency
chkConsistPrt	1	boolean	0 or 1	unitless	Flag indicating consistency check for PRTs: 0: do not check consistency 1: check consistency
Pad	1	8-bit character	0	unitless	Padding array 1 Dimensional Array: COEFF_PAD_SIZE Size of Dimenions(s): 1

3.2.2.2.2 ATMS Remap SDR Ephemeral PC

Table 3.2.2.2.2-1, ATMS Remap SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coefSumLimit	4	32-bit floating point	0 – 1	unitless	If the sum of the Backus-Gilbert coefficients used for resampling to a CrIS FOR does not exceed this value, the resampled data are set to erroneous fill.
expTimeDiff	4	32-bit integer	-1334 – 1334	ms	Expected time difference between the mid-point of CrIS FOR 15 and the mid-point of ATMS beam position 47. This parameter is needed to allow other synchronization schemes to be implemented without changing code. If synchronization scheme is middle of FOR 15 and beam position 47 this parameter should be zero.
synchDeltaMax	4	32-bit integer	0 – 1000	ms	The maximum deviation from the ideal time synchronization.
implicit_pad0	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
viewVec	6480	64-bit floating point	-1.0 – 1.0	unitless	Exit vectors used for generating Geolocation when CrIS data is not available 3-Dimensional Array: NUM_CRIS_FORS x NUM_CRIS_FOVS x NUM_COMP Size of Dimension(s): 30 x 9 x 3

3.2.2.2.3 DELETED

3.2.2.3 CrIS PCs

3.2.2.3.1 CrIS SDR Ephemeral PC

Table 3.2.2.3.1-1, CrIS SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hammingParameter	8	64-bit floating point	Minfloat – Maxfloat	unitless	Hamming apodization
ictPrt1Bias	8	64-bit floating point	Minfloat – Maxfloat	Kelvin	Used to calculate ICT Temperature
ictPrt2Bias	8	64-bit floating point	Minfloat – Maxfloat	Kelvin	Used to calculate ICT Temperature
laserWavelengthDriftTolerance	8	64-bit floating point	Minfloat – Maxfloat	ppm	Used to determine if calculated laser wavelength should replace existing laser wavelength.
fceParamLwAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamLwDimensionThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwDimensionThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwDimensionThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fceParamLwFractionalFceThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwFractionalFceThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwFractionalFceThresholdLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwGoodLinearFittingThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	rad^2	Fringe count validation
fceParamLwGoodLinearFittingThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwGoodLinearFittingThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamLwMaxFceThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwMaxFceThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwMaxFceThreshLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
postCalibrationSwA2	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA2	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW Parameter used to calculate Post Calibration correction mat
postCalibrationLwA2	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA4	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW Parameter used to calculate Post Calibration correction matrix

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
postCalibrationMwA4	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwA4	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW Parameter used to calculate Post Calibration correction matrix
maximumFractionRejections	8	64-bit floating point	Minfloat – Maxfloat	unitless	Fringe count validation
blackmanHarrisParamA0	8	64-bit floating point	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA1	8	64-bit floating point	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA2	8	64-bit floating point	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA3	8	64-bit floating point	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
computedWavelengthRejectionThreshold	4	32-bit integer	MinInt – MaxInt	unitless	Threshold used to reject laser wavelengths during Neon Calibration
fceParamMwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamLwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamSwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamLwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fceParamMwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection
fceParamSwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection
fceParamDefaultDetectorBand	4	32-bit integer	MinInt – MaxInt	unitless	FCE default detector band
fceParamDefaultDetectorFOV	4	32-bit integer	MinInt – MaxInt	unitless	FCE default detector FOV
polarizationCorrectionFitOrder	4	32-bit integer	MinInt – MaxInt	unitless	Order of Polynomial fit used to calculate Polarization Curve
postCalibrationLwA1	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA1	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA1	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwA3	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA3	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA3	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwK	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
postCalibrationLwK0	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwK1	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK0	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK1	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK0	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK1	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
numberOpdOverscanSamples	4	32-bit integer	MinInt – MaxInt	unitless	Number of samples of trim from each end of the interferogram
calibrationTargetDataValidityDuration	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement to ES under calibration

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
calibrationTargetDataValidityDurationTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement of FOR under calibration
elapsedTimeForValidScienceTlmData	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement to ES under calibration
elapsedTimeForValidSpaceTargetTemperature	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement of FOR under calibration
scienceTlmTimeDifferenceTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement
spaceTargetTemperatureTimeDifferenceTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement for temperature correlation
maxLunarRadiance	4	32-bit floating point	Minfloat – Maxfloat	unitless	Discards DS measurements above this threshold
movingAverageWindowSize	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the reference window size (ES are half that)
maximumNumberOfFceTriesDuringIctDsSynchronization	4	32-bit integer	MinInt – MaxInt	unitless	Max fringe counts to try in both directions
maximumNumberOfIctDsSynchronizationTries	4	32-bit integer	MinInt – MaxInt	unitless	Max ES window depth to seek valid measurement
dsTemperatureOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies origin for file
instrumentTemperatureOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies source of value
ictEmissivityOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies emissivities are used from main configuration file

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
allowCalibrationTargetDataMissing	1	Boolean	0 or 1	unitless	Allows for missing ICT/DS references measurements
allowEngineeringDataPacketsMissing	1	Boolean	0 or 1	unitless	Allows for missing reference measurements
allowSpaceTargetTemperatureDataMissing	1	Boolean	0 or 1	unitless	Allows for missing reference measurements
disableTimeStampBasedMovingWindow	1	Boolean	0 or 1	unitless	Adds additional constrains for packet timing
performRadiometricCalibration	1	Boolean	0 or 1	unitless	Allows for radiometric calibration
skipIctDsPhaseSynchronization	1	Boolean	0 or 1	unitless	Phase aligns initial ICT/DS reference window
useDeepSpaceRadiance	1	Boolean	0 or 1	unitless	Specifies calibration equation to consider cold target
useIctEnvironmentalCorrectionModel	1	Boolean	0 or 1	unitless	Sets ICT temp to include component contributions
useWavenumberDependentDsEmissivity	1	Boolean	0 or 1	unitless	Specifies emissivities are used from main config file
useWavenumberDependentIctEmissivity	1	Boolean	0 or 1	unitless	Specifies emissivities are used from main config file
allowScienceTlmDataMissing	1	boolean	0 or 1	unitless	Allows for missing reference measurement
monitorLunarIntrusion	1	boolean	0 or 1	unitless	Discards DS measurements about a threshold
edrMwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for MW

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
edrLwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for LW
edrSwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for SW
edrSwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for SW
edrLwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for LW
edrMwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for MW
edrSwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for SW
edrMwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for MW
edrLwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for LW
impulseNoiseCountThreshold	4	32-bit integer	MinInt – MaxInt	unitless	Specifies limit to flag
edrSwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for SW
edrMwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for MW
edrLwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for LW
apodizationType	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Choice of apodization
laserDiodeWavelengthOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Identifies the source for measurement (telemetry or config)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
applyPolarizationCorrections	1	Boolean	0 or 1	unitless	Specifies the application of scene specific correction
applyPostCalibrationFilterMatrixCorrection	1	Boolean	0 or 1	unitless	Specifies the application of matrix correction
applyIlsFovEffectsCorrection	1	Boolean	0 or 1	unitless	Specifies the application of ILS corrections
applyIlsResidualEffectCorrection	1	Boolean	0 or 1	unitless	Specifies the application of ILS residual correction
applyResamplingMatrix	1	Boolean	0 or 1	unitless	Specifies the application of resampling corrections
disableLaserMonitoring	1	Boolean	0 or 1	unitless	Specifies the monitoring for laser drift
performFringeCountErrorHandling	1	Boolean	0 or 1	unitless	Enables FCE Handling
performPolarizationCorrection	1	Boolean	0 or 1	unitless	Allows for polarization correction
performSpectralAndSpatialCorrection	1	Boolean	0 or 1	unitless	Allows spectral and spatial corrections
useSavedMatrices	1	Boolean	0 or 1	unitless	Allows for use of saved matrices
userSelectedClipping	1	boolean	0 or 1	unitless	Set up clip guard bands
implicit_pad_0	1	UInt8	0 - 255	unitless	Pad byte for natural alignment
calibrationWindowSize	4	32-bit integer	MinInt – MaxInt	unitless	Calibration window size
outputStyle	4	32-bit integer	MinInt – MaxInt	unitless	Output style
calibrationType	4	32-bit integer	MinInt – MaxInt	unitless	Calibration type
maxBufferDepth	4	32-bit integer	MinInt – MaxInt	unitless	Maximum buffer depth
windowManagementStyle	4	32-bit integer	MinInt – MaxInt	unitless	Window management style

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
instrumentLocation	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Instrument location

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Detector	27	boolean[9][3]	0 or 1	unitless	Detector 2 Dimensional Array: Size of Dimension(s): 9 x 3
fieldOfRegard	34	boolean[34]	0 or 1	unitless	Field of regard 1 Dimensional Array: Size of Dimension(s): 34
requestNEdN	1	Boolean	0 or 1	unitless	Request
outputStyle_All	1	Boolean	0 or 1	unitless	Output style for all
outputStyle_Discard	1	boolean	0 or 1	unitless	Output style for discard
implicit_pad_1	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
dsTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space temperature bench testing value
beamsplitterTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Beamsplitter temperature bench testing value
beamsplitterTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Beamsplitter temperature chamber value
dsTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space temperature chamber value
ictTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Internal calibration target temperature bench testing value
ictTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Internal calibration target temperature chamber value
meanDsEmissivityBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Mean deep space emissivity bench testing value

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
meanDsEmissivityChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Mean deep space emissivity chamber testing value
omaTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	OMA temperature value for bench testing
omaTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	OMA temperature value for chamber testing
scanBaffleTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Scan baffle temperature for bench testing
scanBaffleTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Scan baffle temperature for the chamber
dsEffectiveEmissivityLW	6912	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity long wave value 1 Dimensional Array Size of Dimension(s): 864
dsEffectiveEmissivityMW	4224	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity medium wave value 1 Dimensional Array Size of Dimension(s): 528
dsEffectiveEmissivitySW	1600	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity small wave value 1 Dimensional Array Size of Dimension(s): 200
laserDiodeWavelength	8	64-bit floating point	Minfloat – Maxfloat	unitless	Laser frequency used in absence of measurement
spaceTargetTemperatureDriftLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies limit to flag

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW ICT Emissivity (Instrument Location = Bench)
lwChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW ICT Emissivity (Instrument Location = Chamber)
mwChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW ICT Emissivity (Instrument Location = Chamber)
swChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW ICT Emissivity (Instrument Location = Chamber)
swBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW ICT Emissivity (Instrument Location = Bench)
mwBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW ICT Emissivity (Instrument Location = Bench)
benchMeanIctEmissivity	4	32-bit floating point	Minfloat – Maxfloat	unitless	
chamberMeanIctEmissivity	4	32-bit floating point	Minfloat – Maxfloat	unitless	
forIdentifierDs	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the DS of the ICT reference measurement
forIdentifierIct	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the FOR of the ICT reference measurement
forwardSweepDirectionIdentifier	4	32-bit integer	MinInt – MaxInt	unitless	"0" by convention
lwDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	LW data points undecimated

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	LW decimation factor
mwDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	MW data points decimated
mwDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	MW data points undecimated
swDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	SW data points decimated
swDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	SW data points undecimated
mwDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	MW decimation factor
numberFOR	4	32-bit integer	MinInt – MaxInt	unitless	Number of FOR
numberSpectralBands	4	32-bit integer	MinInt – MaxInt	unitless	Number of spectral bands
numberSamplesPerLaserWavelength	4	32-bit integer	MinInt – MaxInt	unitless	Number of samples per wavelength
numberFOV	4	32-bit integer	MinInt – MaxInt	unitless	Number of FOV
reverseSweepDirectionIdentifier	4	32-bit integer	MinInt – MaxInt	unitless	"1" by convention
swDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	SW decimation factor
lwDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	LW data points decimated
dataPointsUndecimatedInterferogram	12	32-bit integer	MinInt – MaxInt	unitless	Dimensions Correspond to Bands in this order: “LW”, “MW”, “SW” 1 Dimensional Array: Size of Dimension(s): 3
decimationFactor	12	32-bit integer	MinInt – MaxInt	unitless	Dimensions Correspond to Bands in this order: “LW”, “MW”, “SW” 1 Dimensional Array: Size of Dimension(s): 3
engineeringPacketAPID	4	32-bit integer	MinInt – MaxInt	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sciencePacketAPID	4	32-bit integer	MinInt – MaxInt	unitless	
forwardSweepDirectionLabel	2	8-bit character	“F”	unitless	"F" for forward 1 Dimensional Array: Size of Dimension(s): 2
lwBandLabel	3	8-bit character	“LW”	unitless	"LW" 1 Dimensional Array: Size of Dimension(s): 3
mwBandLabel	3	8-bit character	“MW”	unitless	"MW" 1 Dimensional Array: Size of Dimension(s): 3
reverseSweepDirectionLabel	2	8-bit character	“R”	unitless	"R" for reverse 1 Dimensional Array: Size of Dimension(s): 3
swBandLabel	3	8-bit character	“SW”	unitless	"SW" 1 Dimensional Array: Size of Dimension(s): 3
implicit_pad_2	7	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 7
rotationMatrix	72	64-bit floating point	MinDouble-MaxDouble	unitless	Rotation matrix for sensor to spacecraft projection Size of Dimension(s): 3x3
timingSequenceErrorThreshold	8	64-bit integer	>=0	seconds	Amount of time scan start times are allowed to vary from eight seconds with respect to adjacent scans' start times

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
invalidNeonCalibrationPercentageThreshold	8	64-bit floating point	0 – 100	percent	Percentage of the number of scans by the number of EV FORs by the number of FOVs by the number of bands neon calibration values are allowed to change
numOfValidPRTTempThreshold	4	32-bit integer	Minint - Maxint	unitless	Number of valid PRT temperature threshold
impulseNoiseCountThresh	4	32-bit integer	Minint - Maxint	unitless	Impulse noise count threshold
ictTempLowThreshold	4	32-bit integer	Minint - Maxint	unitless	ICT low temperature threshold
ictTempHighThreshold	4	32-bit integer	Minint - Maxint	unitless	ICT high temperature threshold
ictTempStabilityThreshold	4	32-bit floating point	Minint - Maxint	unitless	ICT temperature stability threshold
ictTempConsistencyThreshold	4	32-bit floating point	Minint - Maxint	unitless	ICT temperature consistency threshold
surfaceEmissivityCoeff	32	64-bit floating point	Minfloat – Maxfloat	unitless	Surface Emissivity Coefficients Size of Dimension(s): 4
suppressSsmBaffleProfile	1	boolean	0-1	unitless	Suppress the SSM Baffle Profile
implicit_pad_3	7	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 7
earthTargetTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Earth Target Temperature Bench
earthTargetTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Earth Target Temperature Chamber

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ictBaffleViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	ICT Baffle View Factor

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
scanBaffleViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	Scan Baffle View Factor
omaFrameViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	OMA Frame View Factor
warmBeamsplitterViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	Warm Beam Splitter View Factor
coldBeamsplitterViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	Cold Beam Splitter View Factor
earthTargetViewFactor	8	64-bit floating point	Minfloat – Maxfloat	unitless	Earth Target View Factor
overrideEarthTargetTemp	1	boolean	0-1	unitless	Overrides the SSM Target Emissivity
implicit_pad_4	3	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 3
durationOfOrbit	4	32-bit integer	MinInt – MaxInt	unitless	Duration of the satellite orbit
ictBaffleEmissivity	24	64-bit floating point	Minfloat – Maxfloat	unitless	ICT Baffle Emissivity Size of Dimension(s): 3
scanBaffleEmissivity	24	64-bit floating point	Minfloat – Maxfloat	unitless	Scan Baffle Emissivity Size of Dimension(s): 3
omaFrameEmissivity	24	64-bit floating point	Minfloat – Maxfloat	unitless	OMA Frame Emissivity Size of Dimension(s): 3
earthTargetEmissivity	24	64-bit floating point	Minfloat – Maxfloat	unitless	Earth Target Emissivity Size of Dimension(s): 3
scanBaffleTempOffset	84	32-bit floating point	Minfloat – Maxfloat	unitless	Scan Baffle Temperature Offset Size of Dimension(s): 21

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
implicit_pad_5	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
linearityCorrectionParameter_a2	216	64-bit floating point	Minfloat – Maxfloat	unitless	Linearity Correction A2 Parameters Size of Dimension(s): 27

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearityCorrectionVinstParameters	216	64-bit floating point	Minfloat – Maxfloat	unitless	Linearity Correction Voltage Parameters Size of Dimension(s): 27
linearityCorrectionParameter_ModEff	216	64-bit floating point	Minfloat – Maxfloat	unitless	Linearity Correction Mod Effectivity Parameters Size of Dimension(s): 27
linearityCorrectionControlParam	12	(enum) 32-bit integer	MinInt – MaxInt	unitless	Linearity Correction Control Parameters Size of Dimension(s): 3
performLinearityCorrectionControl	3	boolean	0-1	unitless	Flag indicating whether linearity correction control is performed Size of Dimension(s): 3
implicit_pad_6	1	UInt8	0 - 255	unitless	Pad byte for natural alignment
firAccumulatorStartBit	12	32-bit integer	MinInt – MaxInt	unitless	FIR Accumulator start bits Size of Dimension(s): 3
implicit_pad_7	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
firFilterScaleFactor	24	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Filter Scale Factor Size of Dimension(s): 3
firPassBandStartValues	24	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Pass Band Start Values Size of Dimension(s): 3
firPassBandStopValues	24	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Pass Band Stop Values Size of Dimension(s): 3
firFilterResponse_Real	6120	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Filter Response Real Values Size of Dimension(s): 765

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
firFilterResponse_Imag	6120	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Filter Response Imaginary Values Size of Dimension(s): 765

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
firEffectiveGainSetting	12	32-bit integer	MinInt – MaxInt	unitless	FIR Effective Gain Setting Size of Dimension(s): 3
implicit_pad_8	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
firGainMapping	384	64-bit floating point	Minfloat – Maxfloat	unitless	FIR Gain Mapping Size of Dimension(s): 48
laserDiodeWavelengthMW	8	64-bit floating point	Minfloat – Maxfloat	unitless	Midwave Laser Diode Wavelength
laserDiodeWavelengthSW	8	64-bit floating point	Minfloat – Maxfloat	unitless	Shortwave Laser Diode Wavelength
fceParamLwRefAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	FCE longwave Amp threshold rejection limit
fceParamMwRefAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	FCE midwave Amp threshold rejection limit
fceParamSwRefAmpThreshRejectLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	FCE shortwave Amp threshold rejection limit
appShiftFactorFlag	1	boolean	0-1	unitless	Shift factor flag
implicit_pad_9	7	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 7
shiftFactor	72	64-bit floating point	Minfloat – Maxfloat	unitless	Shift factor Size of Dimension(s): 9
lwImagRadCheckStart	4	UInt32	0 - MaxInt	unitless	Beginning LW channel to check for imaginary radiance within threshold
lwImagRadCheckEnd	4	UInt32	0 - MaxInt	unitless	Ending LW channel to check for imaginary radiance within threshold
lwImagRadUpperThresh	8	64-bit floating point	Minfloat - Maxfloat	$mW/(m^2\ sr\ cm^{-1})$	Upper LW imaginary radiance threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwImagRadLowerThresh	8	64-bit floating point	Minfloat - Maxfloat	mW/(m^2 sr cm^{-1})	Lower LW imaginary radiance threshold
mwImagRadCheckStart	4	UInt32	0 - MaxInt	unitless	Beginning MW channel to check for imaginary radiance within threshold
mwImagRadCheckEnd	4	UInt32	0 - MaxInt	unitless	Ending MW channel to check for imaginary radiance within threshold
mwImagRadUpperThresh	8	64-bit floating point	Minfloat - Maxfloat	mW/(m^2 sr cm^{-1})	Upper MW imaginary radiance threshold
mwImagRadLowerThresh	8	64-bit floating point	Minfloat - Maxfloat	mW/(m^2 sr cm^{-1})	Lower MW imaginary radiance threshold
swImagRadCheckStart	4	UInt32	0 - MaxInt	unitless	Beginning SW channel to check for imaginary radiance within threshold
swImagRadCheckEnd	4	UInt32	0 - MaxInt	unitless	Ending SW channel to check for imaginary radiance within threshold
swImagRadUpperThresh	8	64-bit floating point	Minfloat - Maxfloat	mW/(m^2 sr cm^{-1})	Upper SW imaginary radiance threshold
swImagRadLowerThresh	8	64-bit floating point	Minfloat - Maxfloat	mW/(m^2 sr cm^{-1})	Lower SW imaginary radiance threshold

3.2.2.4 OMPS PCs

3.2.2.4.1 OMPS Nadir Profile IP PCs

Table 3.2.2.4.1-1, Nadir Profile IP Parameters

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Iopts	20	boolean			Array options for processing
Lprint	24	boolean			Array of print flags
Wlen	48	floating point			Array of sensor wavelengths
Adjoza	4	floating point			Bias correction for A pair
Adjozb	4	floating point			Bias correction for B pair
Adjozc	4	floating point			Bias correction for C pair
Biasmx	12	floating point			Array of the maximum unflagged bias between best ozone and A, B, C pair results
Ozerr	4	floating point			Estimated error of total ozone
Alferr	4	floating point			Estimated error of absorption coefficients
Raderr	4	floating point			Estimated error of radiances
Shell	4	floating point			Solar zenith angle at which the shellq methods starts to be used rather than the Chapman function (in radians)
Xlatlo	4	floating point			Minimum subsatellite latitude to be processed

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Xlathi	4	floating point			Maximum subsatellite latitude to be processed
Xlonlo	4	floating point			Minimum subsatellite longitude to be processed
Xlonhi	4	floating point			Maximum subsatellite longitude to be processed
Scno	4	character			Null-terminated string of the spacecraft name

3.2.2.4.2 OMPS Total Column SDR PCs

Table 3.2.2.4.2-1, OMPS Total Column SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deviate	8	64-bit floating point	0 - 1000	unitless	Wavelength shift deviation threshold
qUpPrimaryElec	8	64-bit floating point	0 - 16384	counts	Upper tie point for linearity calculation on CCD1 (Primary)
qUpRedundantElec	8	64-bit floating point	0 - 16384	counts	Upper tie point for linearity calculation on CCD1 (Redundant)
qUp2PrimaryElec	8	64-bit floating point	0 - 16384	counts	Upper tie point for linearity calculation on CCD2 (Primary)
qUp2RedundantElec	8	64-bit floating point	0 - 16384	counts	Upper tie point for linearity calculation on CCD2 (Redundant)
mountMatrix[0][0]	8	64-bit floating point	-1 - +1	unitless	mountMatrix is sensor mounting matrix
mountMatrix[0][1]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[0][2]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[1][0]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[1][1]	8	64-bit floating point	-1 - +1	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mountMatrix[1][2]	8	64-bit floating point	-1 - +1	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mountMatrix[2][0]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[2][1]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[2][2]	8	64-bit floating point	-1 - +1	unitless	
flopdownAngle	8	64-bit floating point	0 - 180	degrees	Diffuser rotation in y plane
xangle	8	64-bit floating point	-180 - 180	degrees	Diffuser rotation in x (rotor) plane
chiTol	4	32-bit floating point	0 - 1000	unitless	Wavelength shift chi-squared tolerance
motorRate	4	32-bit floating point	0 - 1000	unitless	
tcFov	4	32-bit floating point	0 - 180	degrees	Field of view
diffusersOffset	4	32-bit floating point	0 - 1000	unitless	
diffuserSep	4	32-bit floating point	0 - 1000	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
biasDefault	4	32-bit floating point	0 - 1000	unitless	Bias default value
radHigh	4	32-bit floating point	3.00000064E8	W/cm-3 / sterad	Max expected radiance
badSaa	4	32-bit floating point	0 - 1000	percent	Bad SAA range
fullWidth	4	32-bit floating point	0 - 1000	unitless	Nominal spectral FWHM
solarSize	4	32-bit floating point	0 - 360	degrees	
diffEdgeAngle	4	32-bit floating point	0 - 1000	unitless	Diffuser grazing angle theshold
nwaveTrends	4	32-bit integer	0 – 1000	unitless	No of values to use/save for trending for wavelenths
wmonInterval	4	32-bit integer	0 – 1000	unitless	No of days between trending observations of wavelenghs
trendCf	4	32-bit integer	0 – 1000	unitless	No of values to use save for trending albedo
cfInterval	4	32-bit integer	0 – 1000	unitless	No of days between treding observations for albedo

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bias_indx[0]	4	32-bit integer	0 – 1000	unitless	Bias_indx specified the lower and upper bounds of the serial overclock pixels
bias_indx[1]	4	32-bit integer	0 – 1000	unitless	
bias_indx[2]	4	32-bit integer	0 – 1000	unitless	
bias_indx[3]	4	32-bit integer	0 – 1000	unitless	
Nalts	4	32-bit integer	0 – 1000	unitless	
altitudeBinM	4	32-bit integer	0 - 1000	unitless	
lpSeparation	4	32-bit integer	0 – 1000	unitless	
lpNoTrack	4	32-bit integer	0 – 1000	unitless	
Nsamp	4	32-bit integer	0 – 1000	unitless	
Nfunc	4	32-bit integer	0 – 1000	unitless	
Norder	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[0]	4	32-bit integer	0 – 780	spatial location on CCD	Defines boundaries used in code for the 7 solar diffusers
diffEndEdges[1]	4	32-bit integer	0 – 1000	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
diffEndEdges[2]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[3]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[4]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[5]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[6]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[7]	4	32-bit integer	0 – 1000	unitless	
trendGapMax	4	32-bit integer	0 – 1000	days	Max gap allowed before trending begins anew
badPixLowerThreshold	4	32-bit integer	0 - 1000	dark counts	Lower threshold used to determine if a pixel might be bad
badPixUpperThreshold	4	32-bit integer	0 - 27550	unitless	Upper threshold to determine if a pixel might be bad
goniometryOn	1	boolean		unitless	
cfSolarCorrect	1	boolean		unitless	
isSlCor	1	boolean		unitless	
PadByte	1	boolean		unitless	

3.2.2.4.3 OMPS Nadir Profile SDR Calibration Coefficients

Table 3.2.2.4.3-1, OMPS Nadir Profile SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Deviate	8	64-bit floating point	0 - 1000	unitless	Correlation threshold for identifying deviations
deviateWidth	8	64-bit floating point	0 - 1000	unitless	Correlation threshold for identifying deviations
qUpPrimaryElec	8	64-bit floating point	0 - 12050	unitless	Upper tie point for primary electronics (for Linearity use)
qUpRedundantElec	8	64-bit floating point	0 - 12050	unitless	Upper tie point for redundant electronics (for Linearity use)
mountMatrix[0][0]	8	64-bit floating point	-1 - +1	unitless	mountMatrix is sensor mounting matrix.
mountMatrix[0][1]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[0][2]	8	64-bit floating point	-1 - +1	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mountMatrix[1][0]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[1][1]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[1][2]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[2][0]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[2][1]	8	64-bit floating point	-1 - +1	unitless	
mountMatrix[2][2]	8	64-bit floating point	-1 - +1	unitless	
flopdownAngle	8	64-bit floating point	0 - 1000	unitless	Flopdown angle used in goniometric corrections. Y rotation in addition to orbital motion in degrees.
xAngle	8	64-bit floating point	-70 - 1000	unitless	X rotation takes into account diffuser rotation in the rotor plane. Its sign corresponds to counterclockwise direction if viewed from motor side of assembly.
chiTol	4	32-bit floating point	0 - 1000	unitless	Threshold reduced Chi-square for line wavelength use.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fullWidth	4	32-bit floating point	0 - 1000	unitless	The expected nominal spectral FWHM (Full Width at Half Maximum).
Edge	4	32-bit floating point	0 - 1000	unitless	Extra bandpass in nm around wave min and max
motorRate	4	32-bit floating point	0 - 1000	unitless	Motor counts/degree
diffusersOffset	4	32-bit floating point	0 - 1000	unitless	Angle between reference diffuser stowed position and mid position.
diffuserSep	4	32-bit floating point	0 - 1000	unitless	Separation angle between nominal diffuser positions.
radHigh	4	32-bit floating point	0 - 3.00000064E8	unitless	Maximum expected radiance.
badSaa	4	32-bit floating point	0 – 1000	unitless	Bad SAA range
waveStdTol	4	32-bit floating point	0 – 1000	unitless	Threshold wavelength precision to adjust calibration fluxes
biasDefault	4	32-bit floating point	0 – 1000	unitless	Default electronics bias value in counts.
solarSize	4	32-bit floating point	0 – 1000	unitless	Sun disk diameter
diffEdgeAngle	4	32-bit floating point	0 – 1000	unitless	Tolerance angle from diffuser edge (degrees)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmonInterval	4	32-bit integer	0 – 1000	unitless	Number of solar calibrations to trend wavelengths.
cfInterval	4	32-bit integer	0 – 1000	unitless	Calibration Factor Interval: number of days between calibration events
badPixLowerThreshold	4	32-bit integer	0 – 1000	unitless	The lower threshold for bad pixels. Values below this number are considered bad.
badPixUpperThreshold	4	32-bit integer	0 – 1000	unitless	The upper threshold for bad pixels. Values above this number are considered bad.
biasIndex[0]	4	32-bit integer	0 – 1000	unitless	The lower and upper bounds of the serial overclock pixels to be used in the bias estimate.
biasIndex[1]	4	32-bit integer	0 – 1000	unitless	The lower and upper bounds of the serial overclock pixels to be used in the bias estimate.
biasIndex[2]	4	32-bit integer	0 – 1000	unitless	The lower and upper bounds of the serial overclock pixels to be used in the bias estimate.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
biasIndex[3]	4	32-bit integer	0 – 1000	unitless	The lower and upper bounds of the serial overclock pixels to be used in the bias estimate.
smearSpatCcdIndex[0]	4	32-bit integer	0 – 1000	unitless	Beginning and Ending spatial pixel index in the Smear Region of the CCD
smearSpatCcdIndex[1]	4	32-bit integer	0 – 1000	unitless	Beginning and Ending spatial pixel index in the Smear Region of the CCD
viewSpatCcdIndex[0]	4	32-bit integer	0 – 1000	unitless	Beginning and Ending spatial pixel index in the View Region of the CCD
viewSpatCcdIndex[1]	4	32-bit integer	0 – 1000	unitless	Beginning and Ending spatial pixel index in the View Region of the CCD
specCcdIndex[0]	4	32-bit integer	0 – 1000	unitless	Begining and Ending spectral pixel index of the CCD. To account for the spectral bias region, the no_bias_pix value needs to be added and subtracted from these indices

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
specCcdIndex[1]	4	32-bit integer	0 – 1000	unitless	Begining and Ending spectral pixel index of the CCD. To account for the spectral bias region, the no_bias_pix value needs to be added and subtracted from these indices
Offset	2	16-bit integer	0 – 1000	unitless	The number of pixels on both sides of a line to monitor
trendGapMax	2	16-bit integer	0 – 1000	unitless	How many days are tolerated between cal events before you cannot do trending.
goniometryOn	1	boolean		unitless	Switch for processing goniometry during execution.
cfSolarCorrect	1	boolean		unitless	Switch determining if CF solar correction should be performed
Padbytes	2	16-bit integer		unitless	Pad bytes added by the compiler to memory align the structure.

3.2.2.4.4 DELETED

3.2.2.5 VIIRS PCs

3.2.2.5.1 VIIRS Active Fires ARP Ephemeral PC

Table 3.2.2.5.1-1, VIIRS Active Fires ARP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aggregationBound	16	integer[4]	0-2610	unitless	The aggregation boundary values (determines bow-tie width based upon the current column)
searchBound	8	integer[2]	0-1000	unitless	The search boundary values (determines if the pixel is within search bounds)
aWidth	12	integer[3]	0-1000	unitless	The bowtie boundary width (determines bow-tie width based upon the current column)
maxDistance	4	floating point	0.0-1000.0	unitless	The max distance, which is a float (greater than the configurable distance)
Interval	36	integer[9]	0-1000	unitless	The bowtie interval
prevPixel	36	integer[9]	0-1000	unitless	The previous pixels
m13_confidence_day_max	4	floating point	0.0-1000.0	unitless	m13 confidence max (day)
m13_confidence_day_min	4	floating point	0.0-1000.0	unitless	m13 confidence min (day)
m13_confidence_night_max	4	floating point	0.0-1000.0	unitless	m13 confidence max (night)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m13_confidence_night_min	4	floating point	0.0-1000.0	unitless	m13 confidence min (night)
m13_deviation_confidence_max	4	floating point	0.0-1000.0	unitless	m13 deviation confidence max
m13_deviation_confidence_min	4	floating point	0.0-1000.0	unitless	m13 deviation confidence min
dt_confidence_max	4	floating point	0.0-1000.0	unitless	m13 - m15 confidence max
dt_confidence_min	4	floating point	0.0-1000.0	unitless	m13 - m15 confidence min
adj_water_confidence_max	4	floating point	0.0-1000.0	unitless	adjacent water confidence max
adj_water_confidence_min	4	floating point	0.0-1000.0	unitless	adjacent water confidence min
adj_cloud_confidence_max	4	floating point	0.0-1000.0	unitless	adjacent cloud confidence max
adj_cloud_confidence_min	4	floating point	0.0-1000.0	unitless	adjacent cloud confidence min
m13_bt_threshold	4	floating point	0.0-1000.0	unitless	m13 brightness temperature threshold
m13_bt_saturation	4	floating point	0.0-1000.0	unitless	m13 brightness temperature saturation
m15_bt_saturation	4	floating point	0.0-1000.0	unitless	m15 brightness temperature saturation
m16_bt_saturation	4	floating point	0.0-1000.0	unitless	m16 brightness temperature saturation
test2_sigma	4	floating point	0.0-1000.0	unitless	Test 2 sigma value
test4_sigma	4	floating point	0.0-1000.0	unitless	Test 4 sigma value

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
test6_sigma	4	floating point	0.0-1000.0	unitless	Test 6 sigma value
bkgoverride_fvalid	4	floating point	0.0-1000.0	unitless	background override value for fvalid
bkgoverride_nbfire	4	integer	0-1	unitless	background override value for nb fire
bkgoverride_MeanM13	4	floating point	0.0-1000.0	unitless	background override value for mean of m13
bkgoverride_MadM13	4	floating point	0.0-1000.0	unitless	background override value for mean absolute deviation
bkgoverride_m7	4	floating point	0.0-1000.0	unitless	background override value of m7
bkgoverride_sigmaM13	4	floating point	0.0-1000.0	unitless	Background override sigma value for m13
glintlevel3_limit	4	floating point	0.0-1000.0	unitless	glint level 3 limit
glintlevel2_limit	4	floating point	0.0-1000.0	unitless	glint level 2 limit
glintlevel1_limit	4	floating point	0.0-1000.0	unitless	glint level 1 limit
glintlevel2_m5	4	floating point	0.0-1000.0	unitless	Glint level 2 m5 limit
glintlevel2_m7	4	floating point	0.0-1000.0	unitless	Glint level 2 m7 limit
glintlevel2_m11	4	floating point	0.0-1000.0	unitless	Glint level 2 m11 limit
bkgwater_m7	4	floating point	0.0-1000.0	unitless	Background water limit for m7

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bkgwater_m11	4	floating point	0.0-1000.0	unitless	Background water limit for m11
bkgwater_NDVI	4	floating point	0.0-1000.0	unitless	Background water limit for NDVI
iscloud_test1	4	floating point	0.0-1000.0	unitless	Test 1 for internal cloud mask
iscloud_test2	4	floating point	0.0-1000.0	unitless	Test 2 for internal cloud mask
iscloud_test3	4	floating point	0.0-1000.0	unitless	Test 3 for internal cloud mask
iscloud_test4	4	floating point	0.0-1000.0	unitless	Test 4 for internal cloud mask
max_win_size	4	integer	0-1000	unitless	Maximum window size
min_win_size	4	integer	0-1000	unitless	Minimum window size
valid_win_ratio	4	floating point	0.0-1000.0	unitless	Valid window ratio
valid_win_size	4	integer	0-1000	unitless	Valid window size
day_thresh_PF_m13	4	floating point	0.0-1000.0	unitless	Potential fire threshold for m13 (was m13b)
day_thresh_PF_DT	4	floating point	0.0-1000.0	unitless	potential fire threshold for m15 - m13
day_thresh_PF_m7	4	floating point	0.0-1000.0	unitless	potential fire threshold for m7
day_thresh_bkg_m13	4	floating point	0.0-1000.0	unitless	Background fire threshold for m13 (was m13b)
day_thresh_bkg_DT	4	floating point	0.0-1000.0	unitless	Background fire threshold for m15 - m13

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
day_thresh_m13	4	floating point	0.0-1000.0	unitless	Threshold for m13 (was threshold m13b)
day_min_bkg_DT	4	floating point	0.0-1000.0	unitless	minimum background for m15 - m13
day_devrp_m15	4	floating point	0.0-1000.0	unitless	Devrp value for m15 day granules
night_thresh_PF_m13	4	floating point	0.0-1000.0	unitless	Potential fire threshold for m13 (was m13b)
night_thresh_PF_DT	4	floating point	0.0-1000.0	unitless	potential fire threshold for m15 - m13
night_thresh_PF_m7	4	floating point	0.0-1000.0	unitless	potential fire threshold for m7
night_thresh_bkg_m13	4	floating point	0.0-1000.0	unitless	Background fire threshold for m13 (was m13b)
night_thresh_bkg_DT	4	floating point	0.0-1000.0	unitless	Background fire threshold for m15 - m13
night_thresh_m13	4	floating point	0.0-1000.0	unitless	Threshold for m13 (was threshold m13b)
night_min_bkg_DT	4	floating point	0.0-1000.0	unitless	minimum background for m15 - m13
night_devrp_m15	4	floating point	0.0-1000.0	unitless	Devrp value for m15 night granules

3.2.2.5.2 VIIRS Aerosol Ephemeral PC

Table 3.2.2.5.2-1, VIIRS Aerosol Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaClimo	8	64-bit floating point	0 – 1000	unitless	
Solird	8	64-bit floating point	0 – 1000	mW/(m^2/cm)	Solar Irradiance
Esnorm	8	64-bit floating point	0 – 1000	unitless	Earth Sun Normalization Factor
r375thsh	8	64-bit floating point	0 – 1000	radians	Solar Zenith threshold for 3.75 refl calculation
Sttsh	8	64-bit floating point	0 – 1000	K	Surface Temperature Threshold
stcoeff1	32	64-bit floating point	0 – 1000	unitless	Surface Temp. Coeffs 1 Dimensional Array: AOT_SFCTEMP_DIM Size of Dimension(s): 4
stcoeff2	32	64-bit floating point	0 – 1000	unitless	Surface Temp. Coeffs 1 Dimensional Array: AOT_SFCTEMP_DIM Size of Dimension(s): 4
Sgcoeff	80	64-bit floating point	0 – 1000	unitless	Band Dependant Sunglint Refl. Coeffs 1 Dimensional Array: AOT_SG_REFL_DIM Size of Dimension(s): 10

Vracoeff	8	64-bit floating point	0 – 1000	unitless	Visible Reflectance Anomaly Coeff
Vrathsh	8	64-bit floating point	0 – 1000	unitless	Visible Reflectance Anomaly Thresh
miracoeff1	8	64-bit floating point	0 – 1000	unitless	Middle Infrared Reflectance Anomaly Coeff
miracoeff2	8	64-bit floating point	0 – 1000	unitless	Middle Infrared Reflectance Anomaly Coeff
Mirathsh	8	64-bit floating point	0 – 1000	unitless	Middle Infrared Reflectance Anomaly threshold
cirrus1	8	64-bit floating point	0 – 1000	unitless	Cirrus M9 Reflectance Threshold
cirrus2	8	64-bit floating point	0 – 1000	K	Cirrus Surface Temp. Diff. Threshold
Sungt	8	64-bit floating point	0 – 1000	K	Sunglint over Land Surface Temp. Diff. Threshold
Firethsh	8	64-bit floating point	0 – 1000	K	Fire Surface Temp. Diff. Threshold
snowthsh1	8	64-bit floating point	0 – 1000	unitless	Snow M8/M7 Reflectance Threshold
snowthsh2	8	64-bit floating point	0 – 1000	K	Snow Temp Threshold

Icethsh	8	64-bit floating point	0 – 1000	K	Ice Temperature Threshold
ephemeralWaterThsh	8	64-bit floating point	0 – 1000	unitless	NDVI Threshold for ephemeral water test
residualLandThsh	8	64-bit floating point	0 – 1000	unitless	Residual threshold for land models
residualOceanThsh	8	64-bit floating point	0 – 1000	unitless	Residual threshold for ocean models
wvllnd1	8	64-bit floating point	0 – 1000	microns	Land angstrom exponent band wavelengths
wvllnd2	8	64-bit floating point	0 – 1000	microns	Land angstrom exponent band wavelengths
wvlwat1	8	64-bit floating point	0 – 1000	microns	Ocean angstrom exponent band wavelengths
wvlwat2	8	64-bit floating point	0 – 1000	microns	Ocean angstrom exponent band wavelengths

smkco1	8	64-bit floating point	0 – 1000	unitless	Coefficient for Smoke Concentration
smkco2	8	64-bit floating point	0 – 1000	unitless	Coefficient for Smoke Concentration
minsmkco	8	64-bit floating point	0 – 1000	micro gram/m^3	Minimum value of Smoke Concentration
solarZenithNightThresh	4	32-bit floating point	0 – 1000	radians	Maximum solar zenith angle for daytime classification
solarZenithExclusionThresh	4	32-bit floating point	0 – 1000	radians	Solar zenith angle beyond which retrievals are excluded from performance
solarZenithDegradationThresh	4	32-bit floating point	0 – 1000	radians	Solar zenith angle beyond which retrievals are expected to have degraded performance
lambda	44	32-bit floating point	0 – 1000	microns	Band center wavelengths 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
moltau	44	32-bit floating point	0 – 1000	unitless	Band Rayleigh optical depths 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11

rayrefl	40	32-bit floating point	-50.30925 – 1000	unitless	Rayleigh refl. Coefficients a0, a1, a2, a3, a4, b0, b1, b2, b3, b4 – Vermote and Tanre, 1992 1 Dimensional array AOT_RAYREF_DIM Size of Dimension(s): 10
o3cof	44	32-bit floating point	0 – 1000	unitless	Band ozone optical depths 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
tgoga0	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
tgoga1	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
tgogb0	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11

tgogb1	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
tgogc0	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
tgogc1	44	32-bit floating point [11]	-1.0 – 1.0	unitless	Band dependant coefficient for computing constant species gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
pwcof1	44	32-bit floating point	-50.003174 – 1000	unitless	Band dependant coefficient for computing water vapor gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
pwcof2	44	32-bit floating point	-50.003834 – 1000	unitless	Band dependant coefficient for computing water vapor gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11

pwcof3	44	32-bit floating point	0 – 1000	unitless	Band dependant coefficient for computing water vapor gaseous absorption 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
turbThsh	44	32-bit floating point	0 – 1000	unitless	Band dependent turbid water thresholds 1 Dimensional array AOT_NBANDS Size of Dimension(s): 11
planckco	8	32-bit floating point	0 – 1000		Coefficients for Planck function 1 Dimensional array AOT_PLANCK_DIM Size of Dimension(s): 2
emissco	12	32-bit floating point	0 – 1000	unitless	Emissivity Coefficients 1 Dimensional array AOT_EMISS_DIM Size of Dimension(s): 3
transco	20	32-bit floating point	-50.057297 – 1000	unitless	Transmission Coeffs 1 Dimensional array AOT_TRANS_DIM Size of Dimension(s): 5
residualAotThsh	4	32-bit floating point	0 – 1000	unitless	Minimum AOT value for residual threshold test
aotrnglo	4	32-bit floating point	0 – 1000	unitless	Lower limit of high quality AOT retrievals

aotrnghi	4	32-bit floating point	0 – 1000	unitless	Upper limit of high quality AOT retrievals
foutlo	4	32-bit floating point	0 – 1000	unitless	EDR HCS outlier removal fractions
fouthi	4	32-bit floating point	0 – 1000	unitless	EDR HCS outlier removal fractions
erelc	20	32-bit floating point	-50.057297 – 1000	unitless	Expected spectral ratios of land bands to M5 1 Dimensional Array: NUMBER_OF_LAND_INV_BANDS Size of Dimension(s): 5
aotThsh	4	32-bit floating point	0 – 1000	unitless	AOT at 550 nm threshold for reporting the presence of suspended matter
detectExcThsh	4	32-bit floating point	0 – 1000	unitless	AOT at 550 nm exclusion threshold for detecting suspended matter
typeExcThsh	4	32-bit floating point	0 – 1000	unitless	AOT at 550 nm exclusion threshold for typing suspended matter
distClimo	4	32-bit integer	0 – 1000	unitless	Distance for interpolating NAAPS/Climatology
defaultLandClimo	4	32-bit integer	0 – 1000	unitless	Default land model for NAAPS/Climatology/Interpolation
defaultOceanClimo	4	32-bit integer	0 – 1000	unitless	Default ocean model for NAAPS/Climatology/Interpolation

smlmdoff	4	32-bit integer	0 – 1000	unitless	Model offset for ocean small mode models
lrgmdoff	4	32-bit integer	0 – 1000	unitless	Model offset for ocean large mode models
dustmdl	4	32-bit integer	0 – 1000	unitless	Land Aerosol Model Definition – Dust
smokehimdl	4	32-bit integer	0 – 1000	unitless	Land Aerosol Model Definition – High absorption smoke
smokelomdl	4	32-bit integer	0 – 1000	unitless	Land Aerosol Model Definition – Low absorption smoke
urbancmdl	4	32-bit integer	0 – 1000	unitless	Land Aerosol Model Definition – Urban clean
urbanpmdl	4	32-bit integer	0 – 1000	unitless	Land Aerosol Model Definition – Urban polluted
implicit_pad0	4	8-bit unsigned integer	MinInt - MaxInt	unitless	Pad Bytes 1 Dimensional Array: dim_implicit_aeros_pad0 Size of Dimension(s): 4

3.2.2.5.3 DELETED

3.2.2.5.4 VIIRS CBH Ephemeral PC

Table 3.2.2.5.4-1, VIIRS CBH Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minCbh	4	floating point	Initially set to 0.0	km	Cloud base height min
maxCbh	4	floating point	Initially set to 20.0	km	Cloud base height max
c0	4	floating point	Initially set to -0.006656	m^2/g	Ice Water Path (IWP) contants in equation IWP = Cot/[c_0 + (c_1 /2reff)]
c1	4	floating point	Initially set to 3.686	m^2 Micrometers/g	Ice Water Path (IWP) contants in equation IWP = Cot/[c_0 + (c_1 /2reff)]
c2	4	floating point	Initially set to 20.0	Celsius	Ice Water Concentration Constant
c3	4	floating point	Initially set to 2.455	Unitless	Ice Water Concentration Constant
c4	4	floating point	Initially set to -0.2443	Unitless	Ice Water Concentration Constant
c5	4	floating point	Initially set to 0.001	Unitless	Ice Water Concentration Constant
c6	4	floating point	Initially set to -7.6	Unitless	Ice Water Concentration Constant
c7	4	floating point	Initially set to 4.0	Unitless	Ice Water Concentration Constant
d0	4	floating point	Initially set to 2.0	gm/m^2	Liquid Water Concentration Constant

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
d3	4	floating point	Initially set to 3.0	Micrometers	Liquid Water Concentration Constant
minCtt	4	floating point	Initially set to -60.0	Celcius	Cloud Top Temperature Minimum
maxCtt	4	floating point	Initially set to -20.0	Celcius	Cloud Top Temperature Maximum

3.2.2.5.5 VIIRS CCL Ephemeral PC

Table 3.2.2.5.5-1, VIIRS CCL Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wgtCth	4	floating point	Initially set to 0.5	km	K-Means algorithm cluster assignment weight for cloud top height
wgtCot	4	floating point	Initially set to 0.0	Unitless	K-Means algorithm cluster assignment weight for cloud optical thickness
wgtEps	4	floating point	Initially set to 0.2	Micrometers	K-Means algorithm cluster assignment weight for cloud top height
wgtPhase	4	floating point	Initially set to 2.0	Unitless	K-Means algorithm cluster assignment weight for cloud top height
EkmCthThresh1	4	floating point	Initially set to 0.75	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
EkmCthThresh2	4	floating point	Initially set to 1.6	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
EkmCthThresh3	4	floating point	Initially set to 1.6	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
Cluster_Flag_Threshold	4	floating point	Initially set to 0.75	percent	Percentage of cloudy product pixels
CTH_LOW_THRESH	4	floating point	Initially set to 2.5	Unitless	Mbkm_first_guess() lower CTH threshold
CTH_MID_THRESH	4	floating point	Initially set to 5.0	Unitless	Mbkm_first_guess() middle CTH threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CTH_HIGH_THRESH	4	floating point	Initially set to 7.5	Unitless	Mbkm_first_guess() high CTH threshold
PHASE_WATER	4	floating point	Initially set to 0.0	Unitless	Water cloud
PHASE_MIXED	4	floating point	Initially set to 0.5	Unitless	Water and ice cloud
PHASE_ICE	4	floating point	Initially set to 1.0	Unitless	Ice cloud
gracefulDegradationMode	1	integer	Initially set to 0	Unitless	Switch for handling missing pixel data
kmeansAlgorithm	1	integer	Initially set to 0	Unitless	Switch to select the first guess algorithm for layer analysis
kmeansMaxIter	1	integer	Initially set to 3	Unitless	Maximum number of iterations
clusterConvergCrit	1	integer	Initially set to 14	Unitless	Convergence criteria = number of pixel reassignments

3.2.2.5.6 VIIRS Cloud Mask IP Ephemeral PC

Table 3.2.2.5.6-1, VIIRS Cloud Mask IP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Processing Path Determination					
snow_thresh_BTM15	4	32-bit floating point	273.0 – 285.0	kelvin	Maximum M15 brightness temperature at which snow/ice may exist
snow_thresh_RM7	4	32-bit floating point	0.05 – 0.20	unitless	Minimum M7 reflectance for which snow/ice can be present
ndsi_snow	4	32-bit floating point	0.30 – 0.50	unitless	Minimum normalized difference snow index for snow/ice to be present
snow_thinCiM9	4	32-bit floating point	0.0 – 0.1	unitless	Minimum M9 reflectance for snow/ice to be present rather than thin cirrus
VCM_SNOWICE_M12M13BTD_CLDFREE_THRESH_FOR_M9THINCI	4	32-bit floating point	-100.0 - 100.0	unitless	Total precipitable water path correction factor for global atmospheric moisture variations evidence by the M15-M16 BTD used in the surface temperature-M15 difference test to detect non-overlap thin cirrus identified by the M9 test
VCM_SNOWICE_SFCM15DIFF_CLDTHRESH_FOR_M9THINCI	4	32-bit floating point	0.0 - 30.0	unitless	Surface temperature -M15BT difference threshold used to identify non-overlapping thin cirrus detected by the M9 thin cirrus test that fail the M12M13BTD test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_SNOWICE_SFCM15DIFF_TPW_CORR_FACTOR_FOR_M9THINCI	4	32-bit floating point	0.0 - 20.0	unitless	Total precipitable water path correction factor for global atmospheric moisture variations evidence by the M15-M16 BTD used in the surface temperature-M15 difference test to detect non-overlap thin cirrus identified by the M9 test
VCM_SNOWICE_SFCM15DIFF_CLDTHRESH_FOR_M9OVERLAP	4	32-bit floating point	0.0-30.0	unitless	Surface temperature -M15BT difference threshold used to identify existence of overlap clouds when the M9 band fails to detect any clouds present.
VCM_SNOWICE_SFCM15DIFF_TPW_CORR_FACTOR_FOR_M9OVERLAP	4	32-bit floating point	0.0 - 20.0	unitless	Total precipitable water path correction factor for global atmospheric moisture variations evidence by the M15-M16 BTD used in the surface temperature-M15 difference test to detect overlap thin cirrus not identified by the M9 test
VCM_SNOWICE_POLAR_LAT	4	32-bit floating point	0.0 – 90.0	Degrees	Minimum latitude at which the VCM snow/ice routine is used over open ocean; for lower latitudes, the snow/ice ancillary product is used
snow_thresh_BTM14_M15	4	32-bit floating point	0.30 – 0.70	kelvin	Maximum M14 – M15 BTD for snow/ice to be present rather than thin cirrus
snow_thresh_BTM12_M15_LoElev	4	32-bit floating point	5.0 – 15.0	kelvin	Minimum M12 – M15 BTD for snow/ice to exist rather than thin cirrus; threshold used for elevations less than or equal to HiElevThresh (See Cloud Confidence Parameters)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
snow_thresh_BTM12_M15_HiElev	4	32-bit floating point	7.5 – 20.0	kelvin	Minimum M12 – M15 BTD for snow/ice to exist rather than thin cirrus; threshold used for elevations greater than HiElevThresh
maxSolarZenith	4	32-bit floating point	75.0 – 90.0	degree	Maximum solar zenith angle for daytime classification
VCM_DAYNIGHT_TOL	4	32-bit floating point	0.0 – 1.0e-04	degree	Tolerance on maxSolarZenith
Sun Glint Parameters					
VCM_SUNGLINT_MAX_SOLZEN	4	32-bit floating point	87.0 – 91.0	degree	Maximum solar zenith angle for determining sun glint
VCM_SUNGLINT_MAX_REFANG_FOR_GEO	4	32-bit floating point	33.0 – 39.0	degree	Maximum reflection angle for sun glint to be geometry based
PROB_THRESH	4	32-bit floating point	0.0 – 3.0	unitless	Probability threshold for sun glint
M12 Reflectance Calculation					
LAMBDA_M12	4	32-bit floating point	3.75e-06 to 3.82e-06 m (3.78 µm +/- 32 nm)	meters	Response-weighted M12 band center

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M12_MEAN_TOA_SOL_IRRAD	4	32-bit floating point	10.5 to 10.9 W/ m^2	W/m^2 µm	Average extra-terrestrial solar irradiance in M12 band corrected for sensor responsivity
Aerosol and Fire Parameters					
VCM_AERO_NUM_MOD_WIN_CANDS_THRESH	4	32-bit unsigned integer	0 to 4	unitless	Minimum number of moderate resolution pixels containing heavy aerosol candidates for heavy aerosol spatial test to be performed. Defined as 0 to $VCM\_AERO\_MOD\_WINSIZE^2$.
VCM_AERO_NUM_IMG_SAMPS_STDDEV_THRESH	4	32-bit unsigned integer	0 to 16	unitless	Minimum number of imagery resolution pixels required to compute standard deviation for heavy aerosol spatial test. Defined as 0 to $4*(VCM\_AERO\_MOD\_WINSIZE^2$
VCM_AERO_ASH_POLAR_LAT	4	32-bit floating point	50.0 – 70.0	degree	Lower bound latitude for using volcanic ash detection in polar regions
VCM_AERO_ASH_TROPIC_LAT	4	32-bit floating point	20.0 – 40.0	degree	Lower bound latitude for using volcanic ash detection in tropic regions
VCM_AERO_DUST_SOLZEN	4	32-bit floating point	70.0 – 80.0	degree	Maximum solar zenith angle allowed for dust detection
VCM_AERO_SMOKE_SOLZEN	4	32-bit floating point	70.0 – 80.0	degree	Maximum solar zenith angle allowed for smoke detection
VCM_AERO_ASH_SOLZEN	4	32-bit floating point	60.0 – 80.0	degree	Maximum solar zenith angle allowed for volcanic ash detection

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_SMOKE_CONF_M11M1_REFLRATIO_THRESH	4	32-bit floating point	0.0 – 0.2	unitless	Maximum M11/M1 reflectance ratio at nadir for confident heavy aerosol detection; smoke candidate flag also set; value corrected for sensor zenith angle
VCM_AERO_SMOKE_CAND_M11M1_REFLRATIO_THRESH	4	32-bit floating point	0.1 – 0.4	unitless	Maximum M11/M1 reflectance ratio at nadir for possible presence of smoke; value corrected for sensor zenith angle
VCM_RAYLEIGH_M1_MOLTAU	4	32-bit floating point	0.0 – 1.0	unitless	M1 molecular optical thickness for Rayleigh reflectance calculation
VCM_RAYLEIGH_M5_MOLTAU	4	32-bit floating point	0.0 – 1.0	unitless	M5 molecular optical thickness for Rayleigh reflectance calculation
VCM_AERO_DUST_CAND_M1_REFL_THRESH	4	32-bit floating point	0.0 – 1.0	unitless	Maximum M1 reflectance for possible presence of dust
VCM_AERO_DUST_CAND_M1M5_REFLRATIO_THRESH	4	32-bit floating point	0.0 – 1.0	unitless	Maximum M1/M5 refectance ratio at nadir for possible presence of dust; value corrected for sensor zenith angle
VCM_AERO_COMP_OCEAN_M15M16BTD_MAX_THRESH	4	32-bit floating point	-0.1 -- - 0.5	kelvin	Maximum M15 – M16 BTD threshold for volcanic ash detection
VCM_AERO_ASH_OCEAN_MAX_LAT	4	32-bit floating point	50.0f to 70.0f	degree	Maximum latitude for applying volcanic ash detection over water
VCM_AERO_ASH_OCEAN_MIN_LAT	4	32-bit floating point	-40.0 -- - 60.0	degree	Minimum latitude for applying volcanic ash detection over water

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_MIN_TOC_NDVI	4	32-bit floating point	0.5 – 0.8	unitless	Minimum TOC NDVI for which volcanic ash detection over land should be performed
VCM_AERO_ASH_EXCLREG1_LAT_UP	4	32-bit floating point	0.0 -- - 10.0	degree	Boundaries of 1st exclusion region where volcanic ash detection over water is not performed in order to eliminate regions of high false alarms
VCM_AERO_ASH_EXCLREG1_LAT_LO	4	32-bit floating point	-20.0 -- - 40.0	degree	
VCM_AERO_ASH_EXCLREG1_LON_LF	4	32-bit floating point	-100.0 -- -120.0	degree	
VCM_AERO_ASH_EXCLREG1_LON_RT	4	32-bit floating point	-60.0 -- - 80.0	degree	
VCM_AERO_ASH_EXCLREG2_LAT_UP	4	32-bit floating point	0.0 -- - 30.0	degree	Boundaries of 2nd exclusion region where volcanic ash detection over water is not performed in order to eliminate regions of high false alarms
VCM_AERO_ASH_EXCLREG2_LAT_LO	4	32-bit floating point	-10.0 -- - 50.0	degree	
VCM_AERO_ASH_EXCLREG2_LON_LF	4	32-bit floating point	-15.0 -- +15.0	degree	
VCM_AERO_ASH_EXCLREG2_LON_RT	4	32-bit floating point	0.0 – 30.0	degree	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_EXCLREG3_LAT_UP	4	32-bit floating point	10.0 – 50.0	degree	Boundaries of 3rd exclusion region where volcanic ash detection over water is not performed in order to eliminate regions of high false alarms
VCM_AERO_ASH_EXCLREG3_LAT_LO	4	32-bit floating point	0.0 – 30.0	degree	
VCM_AERO_ASH_EXCLREG3_LON_LF	4	32-bit floating point	-125.0 -- -175.0	degree	
VCM_AERO_ASH_EXCLREG3_LON_RT	4	32-bit floating point	-90.0 -- -150.0	degree	
VCM_AERO_ASH_REFM12_MIN_THRESH_1	4	32-bit floating point	0 – 0.2	unitless	First minimum M12 reflectance for volcanic ash detection over land
VCM_AERO_ASH_BTM15_MAX_THRESH_1	4	32-bit floating point	190.0 – 240.0	kelvin	First maximum M15 BT threshold for detection of volcanic ash over land
VCM_AERO_ASH_REFM5_MAX_THRESH_1	4	32-bit floating point	0.25 – 0.60	unitless	First maximum M5 reflectance threshold for detection of volcanic ash over land
VCM_AERO_ASH_BTM15_TROPIC_MAX_THRESH_1	4	32-bit floating point	270.0 – 290.0	kelvin	1st set of spectral discriminators for volcanic ash detection over land at tropical latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio,
VCM_AERO_ASH_M12M5REFRAT_TROPIC_MIN_THRESH_1	4	32-bit floating point	0.0 – 1.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_M15M16BTDIFF_TROPIC_MAX_THRESH_1	4	32-bit floating point	0.0 – 0.5	kelvin	•maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_BTM15_TROPIC_MAX_THRESH_2	4	32-bit floating point	275.0 – 295.0	kelvin	2nd set of spectral discriminators for volcanic ash detection over land at tropical latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio, •maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_M12M5REFRAT_TROPIC_MIN_THRESH_2	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_M15M16BTDIFF_TROPIC_MAX_THRESH_2	4	32-bit floating point	-1.5 – 0.0	kelvin	
VCM_AERO_ASH_BTM15_TROPIC_MAX_THRESH_3	4	32-bit floating point	267.0 – 287.0	kelvin	3rd set of spectral discriminators for volcanic ash detection over land at tropical latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio, •maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_M12M5REFRAT_TROPIC_MIN_THRESH_3	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_M15M16BTDIFF_TROPIC_MAX_THRESH_3	4	32-bit floating point	-3.0 -- -1.0	kelvin	
VCM_AERO_ASH_BTM15_TROPIC_MAX_THRESH_4	4	32-bit floating point	223.0 – 243.0	kelvin	4th set of spectral discriminators for volcanic ash detection over land at tropical latitudes: •maximum M15 BT, •maximum M5 reflectance,
VCM_AERO_ASH_REFM5_TROPIC_MAX_THRESH_4	4	32-bit floating point	0.0 – 1.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_REFM12_TROPIC_MIN_THRESH_4	4	32-bit floating point	0.0 – 0.5	unitless	•minimum M12 reflectance, Respectively
VCM_AERO_ASH_BTM15_MIDLAT_MAX_THRESH_1	4	32-bit floating point	260.0 – 280.0	kelvin	1st set of spectral discriminators for volcanic ash detection over land at mid latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio, •maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_M12M5REFRAT_MIDLAT_MIN_THRESH_1	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_M15M16BTDIFF_MIDLAT_MAX_THRESH_1	4	32-bit floating point	-1.0 – 0.0	kelvin	
VCM_AERO_ASH_BTM15_MIDLAT_MAX_THRESH_2	4	32-bit floating point	260.0 – 280.0	kelvin	2nd set of spectral discriminators for volcanic ash detection over land at mid latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio, •maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_M12M5REFRAT_MIDLAT_MIN_THRESH_2	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_M15M16BTDIFF_MIDLAT_MAX_THRESH_2	4	32-bit floating point	-2.0 – 0.0	kelvin	
VCM_AERO_ASH_BTM15_MIDLAT_MAX_THRESH_3	4	32-bit floating point	267.0 – 287.0	kelvin	3rd set of spectral discriminators for volcanic ash detection over land at mid latitudes: •maximum M15 BT, •minimum M12/M5 reflectance ratio,
VCM_AERO_ASH_M12M5REFRAT_MIDLAT_MIN_THRESH_3	4	32-bit floating point	0.0 – 1.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_M15M16BTDIFF_MIDLAT_MAX_THRESH_3	4	32-bit floating point	-3.0 -- -1.0	kelvin	•maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_BTM15_MIDLAT_MAX_THRESH_4	4	32-bit floating point	-220.0 – 250.0	kelvin	4th set of spectral discriminators for volcanic ash detection over land at mid latitudes: •maximum M15 BT, •maximum M5 reflectance, •minimum M12 reflectance, Respectively
VCM_AERO_ASH_REFM5_MIDLAT_MAX_THRESH_4	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_REFM12_MIDLAT_MIN_THRESH_4	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_BTM15_POLAR_MAX_THRESH_1	4	32-bit floating point	267.0 – 287.0	kelvin	1st set of spectral discriminators for volcanic ash detection over land at polar latitudes: •maximum M15 BT, •maximum M15 – M16 BTD, Respectively
VCM_AERO_ASH_M15M16BTDIFF_POLAR_MAX_THRESH_1	4	32-bit floating point	-5.0 – 0.0	kelvin	
VCM_AERO_ASH_BTM15_POLAR_MAX_THRESH_2	4	32-bit floating point	260.0 – 280.0	kelvin	2nd set of spectral discriminators for volcanic ash detection over land at polar latitudes: •maximum M15 BT, •maximum M15 – M16 BTD, •minimum M12/M5 reflectance ratio, Respectively
VCM_AERO_ASH_M15M16BTDIFF_POLAR_MAX_THRESH_2	4	32-bit floating point	-1.0 – 0.0	kelvin	
VCM_AERO_ASH_M12M5REFRAT_POLAR_MIN_THRESH_2	4	32-bit floating point	0.0 – 2.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_ASH_BTM15_POLAR_MAX_THRESH_3	4	32-bit floating point	230.0 – 260.0	kelvin	3rd set of spectral discriminators for volcanic ash detection over land at polar latitudes: •maximum M15 BT, •maximum M15 – M16 BTD, •minimum M12 reflectance, Respectively
VCM_AERO_ASH_M15M16BTDIFF_POLAR_MAX_THRESH_3	4	32-bit floating point	-1.0 – 0.0	kelvin	
VCM_AERO_ASH_REFM12_POLAR_MIN_THRESH_3	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_BTM15_POLAR_MAX_THRESH_4	4	32-bit floating point	220.0 – 260.0	kelvin	4th set of spectral discriminators for volcanic ash detection over land at polar latitudes: •maximum M15 BT, •minimum M12 reflectance, •maximum M5 reflectance, Respectively
VCM_AERO_ASH_REFM12_POLAR_MIN_THRESH_4	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_ASH_REFM5_POLAR_MAX_THRESH_4	4	32-bit floating point	0.0 – 1.0	unitless	
VCM_AERO_WATER_STDDEV_THRESH	4	32-bit floating point	0.0 – 1.0	Unitless	Maximum standard deviation for heavy aerosol detection over ocean and inland water without glint
VCM_AERO_WATER_GLINT_STDDEV_THRESH	4	32-bit floating point	0.0 – 1.0	Unitless	Maximum spatial standard deviation for heavy aerosol detection over ocean and inland water with glint
VCM_AERO_LAND_STDDEV_THRESH	4	32-bit floating point	0.0 – 1.0	Unitless	Maximum spatial standard deviation for heavy aerosol detection over land, desert, and coast without glint

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_AERO_LAND_GLINT_STDDEV_THRESH	4	32-bit floating point	0.0 – 1.0	unitless	Maximum spatial standard deviation for heavy aerosol detection over land, desert, and coast with glint
VCM_AERO_COMP_TOCNDVI_THRESH	4	32-bit floating point	0.0 – 1.0	unitless	Minimum TOC_NDVI for heavy aerosol detection over desert, land, and coast using spatial test
Imagery Band Test Parameters					
BTI4_limit	4	32-bit floating point	240.0 – 280.0	kelvin	Minimum I4 BT for performing imagery band spatial uniformity test at night
VCM_I2_MAX_VAR_THRESH	4	32-bit floating point	0.001 to 0.5	unitless	Maximum I2 reflectance variation in imagery pixels for a given viewing geometry to detect clouds with the spatial uniformity test for daytime confidently and probably clear mod res pixels over water
VCM_I2_MIN_VAR_THRESH	4	32-bit floating point	0.001 – 0.2	unitless	minimum I2 reflectance variation in imagery pixels for a given viewing geometry to detect clouds with the spatial uniformity test for daytime confidently and probably clear mod res pixels over water
I4varthres	4	32-bit floating point	0.0-1.0	kelvin	Minimum I4 BT variation threshold to detect water clouds with the spatial uniformity test for nighttime confidently- and probably-clear mod res pixels over water
I5varthres	4	32-bit floating point	0.0-1.0	kelvin	minimum I5 BT variation threshold to detect ice clouds with the spatial uniformity test for nighttime confidently- and probably-clear mod res pixels over water

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
vis2_ref_arr	6156	32-bit floating point	0.0-100.0	kelvin	Theoretical calculation of expected I2 reflectance variations, expressed as percentages, for cloud-free atmosphere as a function of scattering geometry 3 Dimensional Array: NSZ x NVZ x NRAZ 9 x 9 x 19
Cloud Confidence Parameters					
VCM_CONFIDENCE_HIGH	4	32-bit floating point	0.85 – 1.0	unitless	maximum composite cloud confidence threshold for classifying a daytime pixel as “Confidently Clear”
VCM_CONFIDENCE_MED	4	32-bit floating point	0.4 – 0.6	unitless	maximum composite cloud confidence threshold for classifying a daytime pixel as “Probably Clear”
VCM_CONFIDENCE_LOW	4	32-bit floating point	0.0 – 0.2	unitless	maximum composite cloud confidence threshold for classifying a daytime pixel as “Probably Cloudy”; a daytime pixel is classified as “Confidently Cloudy” when the composite cloud confidence value is less than or equal to the value of this parameter
VCM_CONFIDENCE_HIGH_NIGHT	4	32-bit floating point	0.85 – 1.0	unitless	maximum composite cloud confidence threshold for classifying a pixel as “Confidently Clear” at night
VCM_CONFIDENCE_MED_NIGHT	4	32-bit floating point	0.4 – 0.6	unitless	maximum composite cloud confidence threshold for classifying a pixel as “Probably Clear” at night

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_CONFIDENCE_LOW_NIGHT	4	32-bit floating point	0.0 – 0.2	unitless	maximum composite cloud confidence threshold for classifying a pixel as “Probably Cloudy”; a pixel is classified as “Confidently Cloudy” when the composite cloud confidence value is less than or equal to this value
VCM_MIN_COS_SENZEN_TOL	4	32-bit floating point	1.0e-5 – 1.0e-3	unitless	minimum allowable value for the cosine of the moderate band sensor zenith angle in order to avoid a singularity (1/0) result when the secant of the angle is determined
VCM_MIN_PTPW	4	32-bit floating point	0.0 to 0.10	cm	minimum path total precipitable water limit used in the execution of the M15-M12 BTD test for nighttime pixels
VCM_M9_HIGH_PTPW_LIMIT	4	32-bit floating point	0.0 - 20.0	cm	Maximum path total precipitable water limit used in the execution of the daytime M9 cloud conf and thin cirrus tests
VCM_M15_M16_MIN_DIFTEMP	4	32-bit floating point	0.05 – 0.20.0	Kelvin	minimum M15 – M16 BTD allowed before the default M15 – M16 BTD is used
VCM_M15M16_WATER_TO_SNOW_EMISS_CORR	4	32-bit floating point	0.0 to 1.0	unitless	Water to snow emissivity correction factor for the M15M16 BTD used over snow or ice in both day and night
CD_M15_M12_Hi	4	32-bit floating point	-15.0 - -5.0	kelvin	Confident clear threshold used in the coast/day M15 – M12 emission difference test
CD_M15_M12_Mid	4	32-bit floating point	-20.0 - .10.0	kelvin	Clear/cloudy threshold used in the coast/day M15 – M12 emission difference test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CD_M15_M12_Lo	4	32-bit floating point	-20.0 -- -10.0	kelvin	Confident cloudy threshold used in the coast/day M15 – M12 emission difference test
CD_M15_M16_Mid	4	32-bit floating point	00.0 – 5.0	kelvin	Clear/cloudy default threshold used in the coast/day M15 – M16 emission thin cirrus test
CD_M15_M16_LO_CORR	4	32-bit floating point	0.0 – 5.0	Kelvin	Correction added to the coast/day M15-M16 clear/cloudy threshold (derived or default CD_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
CD_M15_M16_HI_CORR	4	32-bit floating point	-2.0 – 0.0	Kelvin	Correction applied to the coast/day M15-M16 clear/cloudy threshold (derived or default CD_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test
CD_M9_PTPW_INFLECTION	4	32-bit floating point	0.0 – 0.50	cm	total path integrated water vapor value at coast/day M9 vs path TPW inflection pt
CD_M9_HI_POLY_COEFS	8	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th-1st} order polynomial coeffs on path tpw used in the ConfCir threshold calc for the coast/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimention(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CD_M9_MID_POLY_COEFS	8	64-bit floating point	-1000.0 – 1000	unitless	0th-1st order polynomial coeffs on path tpw used in the Clr/Cldy threshold calc for the coast/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimention(s): 2
CD_M9_LO_POLY_COEFS	8	64-bit floating point	-1000.0 – 1000	unitless	0th-1st order polynomial coeffs on path tpw used in the ConfCldy threshold calc for the coast/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimention(s): 2
DD_MIN_POLAR_LAT	4	32-bit floating point	50.0 – 70.0	degree	Absolute value of the minimum latitude defining the boundary of the polar latitude region for desert/day tests
DD_MAX_POLAR_LAT	4	32-bit floating point	MAX_LAT	degree	Absolute value of the maximum latitude defining the boundary of the polar latitude region for desert/day tests
DD_M15_M12_A1	4	32-bit floating point	0.0 – 10.0	kelvin/cm	1st degree coefficient used in desert/day M15 – M12 threshold determination under low total path integrated water vapor (tpiwv) conditions according to equation threshold = A*tpiwv + B

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M15_M12_B1	4	32-bit floating point	-100.0 -- 100.0	kelvin	0th degree coefficient used in desert/day M15 – M12 threshold determination under low total path integrated water vapor (tpiwv) conditions according to equation threshold = A*tpiwv + B
DD_M15_M12_A2	4	32-bit floating point	0.0 – 10.0	kelvin/cm	1st degree coefficient used in desert/day M15 – M12 threshold determination under high total path integrated water vapor (tpiwv) conditions according to equation threshold = A*tpiwv + B
DD_M15_M12_B2	4	32-bit floating point	-100.0 -- 100.0	kelvin	0th degree coefficient used in desert/day M15 – M12 threshold determination under high total path integrated water vapor (tpiwv) conditions according to equation threshold = A*tpiwv + B
DD_M15_M12_TPIWV_switch	4	32-bit floating point	0.1 – 5.0	cm	Total path integrated water vapor (tpiwv) switch value used for classifying low versus high tpiwv conditions in the desert/day M15 – M12 emission difference test
DD_M15_M12_LO_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the derived desert/day M15-M12 clear/cloudy threshold to define the confident cloudy threshold for the M15 – M12 emission thin cirrus test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M15_M12_HI_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the derived desert/day M15-M12 clear/cloudy threshold to define the confident clear threshold for the M15 – M12 emission thin cirrus test
DD_M15_M16_Mid	4	32-bit floating point	0.1 – 10.0	kelvin	Clear/cloudy default threshold used in the desert/day M15 – M16 emission thin cirrus test
DD_M15_M16_LO_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the desert/day M15-M16 clear/cloudy threshold (derived or default DD_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
DD_M15_M16_HI_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the desert/day M15-M16 clear/cloudy threshold (derived or default DD_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test
Implicit_pad_0	4	8-bit byte	0	Unitless	Padding
DD_M1_PRESS_SCALEHT_CORR	4	32-bit floating point	5000.0 – 10000.0	meters	scale height used in desert/day M1 to correct molecular tau for altitudes above sea-level

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M1_HI_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Clear threshold calculation for the desert/day M1 reflectance test. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4
DD_M1_MID_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Clear/Cloudy threshold calculation for the desert/day M1 reflectance test. 1 Dimensional Array: NUM_DD_M1_POLY_COEFS Size of Dimension(s): 4
DD_M1_LO_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Cloudy threshold calculation for the desert/day M1 reflectance test. 1 Dimensional Array: NUM_DD_M1_POLY_COEFS Size of Dimension(s): 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M1_HI_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Confident Clear threshold correction for the desert/day M1 reflectance test
DD_M1_MID_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Confident Clear threshold correction for the desert/day M1 reflectance test
DD_M1_LO_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Confident Clear threshold correction for the desert/day M1 reflectance test
DD_M9_PTPW_INFLECTION	4	32-bit floating point	0.0 – 0.50	cm	Total path integrated water vapor value at desert/day M9 vs path TPW inflection pt
DD_M9_HI_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th}–1^{st} order polynomial coeffs on path tpw used in the ConfClr threshold calc for the desert/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimesion(s): 2
DD_M9_MID_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th}–1^{st} order polynomial coeffs on path tpw used in the Clr/Cldy threshold calc for the desert/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimesion(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M9_LO_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th}–1^{st} order polynomial coeffs on path tpw used in the ConfCldy threshold calc for the desert/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimesion(s): 2
LD_M12_M13_Hi	4	32-bit floating point	5.0 – 14.0	kelvin	Confident clear threshold used in the land/day M12 – M13 emission difference test
LD_M12_M13_Mid	4	32-bit floating point	6.0 – 17.0	kelvin	Clear/cloudy threshold used in the land/day M12 – M13 emission difference test
LD_M12_M13_Lo	4	32-bit floating point	07.0 – 20.0	kelvin	Confident cloudy threshold used in the land/day M12 – M13 emission difference test
LD_M15_M12_Hi	4	32-bit floating point	-12.0 -- -20.0	kelvin	Confident clear threshold used in the land/day M15 – M12 emission difference test
LD_M15_M12_Mid	4	32-bit floating point	-14.0 -- -25.0	kelvin	Clear/cloudy threshold used in the land/day M15 – M12 emission difference test
LD_M15_M12_Lo	4	32-bit floating point	-16.0 -- -30.0	kelvin	Confident cloudy threshold used in the land/day M15 – M12 emission difference test
LD_M15_M16_Mid	4	32-bit floating point	1.0 – 4.0	kelvin	Clear/cloudy default threshold used in the land/day M15 – M16 emission thin cirrus test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LD_M15_M16_LO_CORR	4	32-bit floating point	0.10 – 1.0	kelvin	Correction added to the land/day M15-M16 clear/cloudy threshold (derived or default LD_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
LD_M15_M16_HI_CORR	4	32-bit floating point	-1.0 -- +1.0	kelvin	Correction added to the land/day M15-M16 clear/cloudy threshold (derived or default LD_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test
LD_M5_M7_Hi	4	32-bit floating point	1.5 – 2.5	unitless	Confident clear threshold used in the land/day M7/M5 reflectance threshold test
LD_M5_M7_Mid	4	32-bit floating point	1.25 – 2.25	unitless	Clear/cloudy threshold used in the land/day M7/M5 reflectance threshold test
LD_M5_M7_Lo	4	32-bit floating point	0.99 – 2.0	unitless	Confident cloudy threshold used in the land/day M7/M5 reflectance threshold test
LD_M5_GEMI_THRESH	4	32-bit floating point	0.001 – 0.20	unitless	Minimum M5 reflectance required to perform the land/day M7/M5 reflectance threshold test
LD_M9_PTPW_INFLECTION	4	32-bit floating point	0.0 – 0.50	cm	Total path integrated water vapor value at land/day M9 vs. path TPW inflection pt

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LD_M9_HI_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the ConfClr threshold calc for the land/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
LD_M9_MID_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the Clr/Cldy threshold calc for the land/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
LD_M9_LO_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the ConfCldy threshold calc for the land and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
LN_M12_M16_Hi	4	32-bit floating point	1.0 – 5.0	kelvin	Confident clear threshold used in the land/night M12 – M16 emission difference test
LN_M12_M16_Mid	4	32-bit floating point	1.5 – 5.5	kelvin	Clear/cloudy threshold used in the land/night M12 – M16 emission difference test
LN_M12_M16_Lo	4	32-bit floating point	2.0 – 6.0	kelvin	Confident cloudy threshold used in the land/night M12 – M16 emission difference test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LN_M15_M12_Hi	4	32-bit floating point	1.0 – 5.0	kelvin	Confident clear threshold used in the land/night M15 – M12 emission difference test
LN_M15_M12_Mid	4	32-bit floating point	1.25 – 5.5	kelvin	Clear/cloudy threshold used in the land/night M15 – M12 emission difference test
LN_M15_M12_Lo	4	32-bit floating point	1.5 – 6.0	kelvin	Confident cloudy threshold used in the land/night M15 – M12 emission difference test
LN_M15_M12_MAX_PTPW	4	32-bit floating point	1.0 -- 8.0	cm	Maximum slant-path-corrected total precipitable water limit for the land/night M15 – M12 BTD emission test
LN_M12_M16_MAX_PTPW	4	32-bit floating point	0.0 to 30.0	cm	Maximum path total precipitable water limit under which the land/night M12M16 BTD test is executed
LN_HI_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 confident clear sky threshold LN_M15_M12_Hi, see above
LN_MID_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 clear/cloudy threshold LN_M15_M12_Mid, see above
LN_LO_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 confident cloudy threshold LN_M15_M12_Lo, see above

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LN_M15_M16_Mid	4	32-bit floating point	1.0 – 8.0	kelvin	Clear/cloudy default threshold used in the land/night M15 – M16 emission thin cirrus test
LN_M15_M16_LO_CORR	4	32-bit floating point	0.1 – 1.0	kelvin	Correction added to the land/night M15-M16 clear/cloudy threshold (derived or default LN_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
LN_M15_M16_HI_CORR	4	32-bit floating point	-1.0 – +1.0	kelvin	Correction added to the land/night M15-M16 clear/cloudy threshold (derived or default LN_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test
LN_M15_LO_CORR	4	32-bit floating point	0.1 – 5.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the land/night M15 emission test to produce the confident cloudy threshold
LN_M15_HI_CORR	4	32-bit floating point	-10.0 -- +10.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the land/night M15 emission test to produce the confident clear threshold
SD_M15_M16_Mid	4	32-bit floating point	0.0 to 5.0	Kelvin	clear/cloudy default threshold used in the snow/day M15-M16 emission thin cirrus test
SD_M15_M16_LO_CORR	4	32-bit floating point	-0.50 to -0.15	Kelvin	correction added to the snow/day M15-M16 clear cloudy threshold to define confidently cloudy threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD_M15_M16_HI_CORR	4	32-bit floating point	-0.50 to -0.15	Kelvin	correction added to the snow/day M15-M16 clear cloudy threshold to define confidently clear threshold
SD_M12_M13_Hi	4	32-bit floating point	0.1 – 12.0	kelvin	Confident clear threshold used in the snow/day M12 – M13 emission difference test
SD_M12_M13_Mid	4	32-bit floating point	0.5 – 15.0	kelvin	Clear/cloudy threshold used in the snow/day M12 – M13 emission difference test
SD_M12_M13_Lo	4	32-bit floating point	1.0 – 30.0	kelvin	Confident cloudy threshold used in the snow/day M12 – M13 emission difference test
SD_M12_M15_Hi	4	32-bit floating point	0.1 – 30.0	kelvin	Confident clear threshold used in the snow/day M15 – M12 emission difference test when terrain height is less or equal to high elevation threshold, HiElevThresh
SD_M12_M15_Mid	4	32-bit floating point	3.0 – 35.0	kelvin	Clear/cloudy threshold used in the snow/day M15 – M12 emission difference test when terrain height is less or equal to high elevation threshold, HiElevThresh
SD_M12_M15_Lo	4	32-bit floating point	5.0 – 40.0	kelvin	Confident cloudy threshold used in the snow/day M15 – M12 emission difference test when terrain height is less or equal to high elevation threshold
SD_M12_M15_HiHiElev	4	32-bit floating point	0.1 – 30.0	kelvin	Confident clear threshold used in the snow/day M15 – M12 emission difference test when terrain height is greater than high elevation threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD_M12_M15_MidHiElev	4	32-bit floating point	6.0 – 35.0	kelvin	Clear/cloudy threshold used in the snow/day M15 – M12 emission difference test when terrain height is greater than high elevation threshold
SD_M12_M15_LoHiElev	4	32-bit floating point	7.0 – 40.0	kelvin	Confident cloudy threshold used in the snow/day M15 – M12 emission difference test when terrain height is greater than high elevation threshold
SD_M9_PTPW_INFLECTION	4	32-bit floating point	0.0 – 0.50	cm	Total path integrated water vapor value at desert/day M9 vs. path TPW inflection pt
Implicit_pad1	4	8-bit byte	0	unitless	Padding
SD_M9_HI_ZERO_TPW_REFLECTANCE	8	64-bit floating point	0.0 – 100.0	unitless	M9 high clear-sky confidence reflectance at 0 cm total precipitable water for the snow/day M9 cloud conf reflectance test; value percent reflectance
SD_M9_MID_ZERO_TPW_REFLECTANCE	8	64-bit floating point	0.0 – 100.0	unitless	M9 cloud/no cloud reflectance at 0 cm total precipitable water for the snow/day M9 cloud conf reflectance test; value percent reflectance
SD_M9_LO_ZERO_TPW_REFLECTANCE	8	64-bit floating point	0.0 – 100.0	unitless	M9 low clear-sky confidence reflectance at 0 cm total precipitable water for the snow/day M9 cloud conf reflectance test; value percent reflectance

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD_M9_HI_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0th-1st order polynomial coeffs on path tpw used in the ConfClr threshold calc for the snow/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
SD_M9_MID_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0th-1st order polynomial coeffs on path tpw used in the Clr/Cldy threshold calc for the snow/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
SD_M9_LO_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000	unitless	0th-1st order polynomial coeffs on path tpw used in the ConfCldy threshold calc for the snow/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
SN_M15_M16_Mid	4	32-bit floating point	0.0 to 5.0	Kelvin	clear/cloudy default threshold used in the snow/nightday M15-M16 emission thin cirrus test
SN_M15_M16_LO_CORR	4	32-bit floating point	-0.50 to -0.15	Kelvin	correction added to the snow/night M15-M16 clear cloudy threshold to define confidently cloudy threshold
SN_M15_M16_HI_CORR	4	32-bit floating point	-0.50 to -0.15	Kelvin	correction added to the snow/night M15-M16 clear cloudy threshold to define confidently clear threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SN_M12_M16_Hi	4	32-bit floating point	1.0 – 5.0	kelvin	Confident clear threshold used in the snow/night M12 – M16 emission difference test
SN_M12_M16_Mid	4	32-bit floating point	1.5 – 5.5	kelvin	Clear/cloudy threshold used in the snow/night M12 – M16 emission difference test
SN_M12_M16_Lo	4	32-bit floating point	2.0 – 6.0	kelvin	Confident cloudy threshold used in the snow/night M12 – M16 emission difference test
SN_M15_M12_Hi	4	32-bit floating point	-10.0 – 0.0	kelvin	Confident clear threshold used in the snow/night M15 – M12 emission difference test
SN_M15_M12_Mid	4	32-bit floating point	-12.5 -- -2.5	kelvin	Clear/cloudy threshold used in the snow/night M15 – M12 emission difference test
SN_M15_M12_Lo	4	32-bit floating point	-15.0 -- -5.0	kelvin	Confident cloudy threshold used in the snow/night M15 – M12 emission difference test
SN_M15_LO_CORR	4	32-bit floating point	0.1 – 5.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the snow/night M15 emission test to produce the confident cloudy threshold
SN_M15_HI_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the snow/night M15 emission test to produce the confident clear threshold
WD_M12_M13_Hi	4	32-bit floating point	0.1 – 12.0	kelvin	Confident clear threshold used in the water/day M12 – M13 emission difference test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M12_M13_Mid	4	32-bit floating point	1.0 – 13.0	kelvin	Clear/cloudy threshold used in the water/day M12 – M13 emission difference test
WD_M12_M13_Lo	4	32-bit floating point	2.0 – 14.0	kelvin	Confident cloudy threshold used in the water/day M12 – M13 emission difference test
WD_M15_M12_Hi	4	32-bit floating point	-10.0 – 5.0	kelvin	Confident clear threshold used in the water/day M15 – M12 emission difference test
WD_M15_M12_Mid	4	32-bit floating point	-15.0 -- -7.5	kelvin	Clear/cloudy threshold used in the water/day M15 – M12 emission difference test
WD_M15_M12_Lo	4	32-bit floating point	-20.0 -- -10.0	kelvin	Confident cloudy threshold used in the water/day M15 – M12 emission difference test
WD_M15_M16_Mid	4	32-bit floating point	1.0 – 8.0	kelvin	Clear/cloudy default threshold used in the water/day M15 – M16 emission thin cirrus test
WD_M15_M16_LO_CORR	4	32-bit floating point	0.1 – 1.0	kelvin	Correction added to the water/day M15 – M16 clear/cloudy threshold (derived or default WD_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
WD_M15_M16_HI_CORR	4	32-bit floating point	-1.0 -- 1.0	kelvin	Correction added to the water/day M15-M16 clear/cloudy threshold (derived or default WD_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M14_M15_M16_LO_CORR	4	32-bit floating point	0.1 – 1.0	kelvin	Correction added to a derived clear/cloudy threshold to define the confident cloudy threshold for the trispectral emission test
WD_M14_M15_M16_HI_CORR	4	32-bit floating point	-1.0 -- 1.0	kelvin	Correction added to a derived clear/cloudy threshold to define the confident clear threshold for the trispectral emission test
WD_M5_M7_Hi1	4	32-bit floating point	0.70 – 0.98	unitless	Confident clear threshold used in the water/day M7/M5 reflectance threshold test when no land (e.g., island) and no sun glint is present
WD_M5_M7_Mid1	4	32-bit floating point	0.8 – 1.05	unitless	Clear/cloudy threshold used in the water/day M7/M5 reflectance threshold test when no land (e.g., island) and no sun glint is present
WD_M5_M7_Lo1	4	32-bit floating point	0.9 – 1.5	unitless	Confident cloudy threshold used in the water/day M7/M5 reflectance threshold test when no land (e.g., island) and no sun glint is present
WD_M5_M7_Hi2	4	32-bit floating point	1.0 – 1.4	unitless	Confident clear threshold used in the water/day M7/M5 reflectance threshold test when no sun glint is present but some land (e.g., land) is present
WD_M5_M7_Mid2	4	32-bit floating point	1.0 – 1.3	unitless	Clear/cloudy threshold used in the water/day M7/M5 reflectance threshold test when no sun glint is present but some land (e.g., land) is present

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M5_M7_Lo2	4	32-bit floating point	0.9 – 1.5	unitless	Confident cloudy threshold used in the water/day M7/M5 reflectance threshold test when no sun glint is present but some land (e.g., land) is present
VCM_M7_TOA_NDVI_THRESH	4	32-bit floating point	0.001 to 0.2	unitless	maximum TOA NDVI allowable for execution of the water/day M7 reflectance test for pixels classified as inland water
implicit_pad2	4	8-bit byte	0	unitless	Padding
WD_M7_HI_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Clear threshold calculation for the water/day /noGlint M7 reflectance test; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4
WD_M7_MID_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Clear/Cloudy threshold calculation for the water/day /noGlint M7 reflectance test; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M7_LO_POLY_COEFS	32	64-bit floating point	-1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Cloudy threshold calculation for the water/day /noGlint M7 reflectance test; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4
WD_M7_HI_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Confident Clear threshold correction for the water/day /noGlint M7 reflectance test, expressed as fraction, not percent.
WD_M7_MID_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Clear/Cloudy threshold correction for the water/day /noGlint M7 reflectance test, expressed as fraction, not percent.
WD_M7_LO_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	Confident Cloudy threshold correction for the water/day /noGlint M7 reflectance test, expressed as fraction, not percent.
implicit_pad3	4	8-bit byte	0	unitless	Padding
WD_M7_SNGLNT_HI_POLY_COEFS	32	64-bit floating point	1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Clear threshold calculation for the M7 reflectance test over inland water or in glint; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M7_SNGLNT_MID_POLY_COEFS	32	64-bit floating point	1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Clear/Cloudy threshold calculation for the M7 reflectance test over inland water or in glint; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4
WD_M7_SNGLNT_LO_POLY_COEFS	32	64-bit floating point	1000.0 – 1000.0	unitless	0th-3rd order polynomial coefficients on scattering angle when used in the Confident Cloudy threshold calculation for the M7 reflectance test over inland water or in glint; calc yields percent reflectance. 1 Dimensional Array: NUM_WD_M7_POLY_COEFS Size of Dimension(s): 4
WD_M7_SNGLNT_HI_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	
WD_M7_SNGLNT_MID_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	
WD_M7_SNGLNT_LO_CORR	4	32-bit floating point	-1.0 – 1.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M9_PTPW_INFLECTION	4	32-bit floating point	0.0 – 0.50	cm	total path integrated water vapor value at water/day M9 vs path TPW inflection pt
WD_M9_HI_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000.0	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the ConfClr threshold calc for the water/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
WD_M9_MID_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the Clr/Cldy threshold calc for the water/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
WD_M9_LO_POLY_COEFS	16	64-bit floating point	-1000.0 – 1000	unitless	0^{th}-1^{st} order polynomial coeffs on path tpw used in the ConfCldy threshold calc for the water/day M9 cloud conf reflectance and thin cirrus tests; calc yields percent reflectance 1 Dimensional Array Size of Dimension(s): 2
WN_M15_M12_Hi	4	32-bit floating point	1.0 – 5.0	kelvin	Confident clear base threshold used in the water/night M15 – M12 emission difference test; threshold adjusted for precipitable water

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WN_M15_M12_Mid	4	32-bit floating point	1.25 – 5.5	kelvin	Clear/cloudy base threshold used in the water/night M15 – M12 emission difference test; threshold adjusted for precipitable water
WN_M15_M12_Lo	4	32-bit floating point	1.5 – 6.0	kelvin	Confident cloudy base threshold used in the water/night M15 – M12 emission difference test; threshold adjusted for precipitable water
WN_M15_M12_MAX_PTPW	4	32-bit floating point	1.0 – 8.0	cm	Maximum slant-path-corrected total precipitable water limit for the water/night M15 – M12 BTD emission test
WN_HI_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 confident clear sky threshold WN_M15_M12_Hi, see above
WN_MID_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 clear/cloudy threshold WN_M15_M12_Mid, see above
WN_LO_PTPW_FACTOR	4	32-bit floating point	0.1 – 1.0	kelvin/cm	Slant path total precipitable water factor used for adjusting the M15 – M12 confident cloudy threshold WN_M15_M12_Lo, see above
WN_M15_M16_Mid	4	32-bit floating point	01.0 – 8.0	kelvin	Clear/cloudy default threshold used in the water/night M15 – M16 emission thin cirrus test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WN_M15_M16_LO_CORR	4	32-bit floating point	0.1 – 1.0	kelvin	Correction added to the water/night M15-M16 clear/cloudy threshold (derived or default WN_M15_M16_Mid) to define the confident cloudy threshold for the M15 – M16 emission thin cirrus test
WN_M15_M16_HI_CORR	4	32-bit floating point	-1.0 -- 1.0	kelvin	Correction added to the water/night M15-M16 clear/cloudy threshold (derived or default WN_M15_M16_Mid) to define the confident clear threshold for the M15 – M16 emission thin cirrus test
WN_M15_LO_CORR	4	32-bit floating point	0.1 – 5.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the water/night M15 emission test to produce the confident cloudy threshold
WN_M15_HI_CORR	4	32-bit floating point	-10.0 -- 10.0	kelvin	Correction added to the derived M15 clear/cloudy threshold used in the water/night M15 emission test to produce the confident clear threshold
WN_M14_M15_M16_LO_CORR	4	32-bit floating point	0.1 – 1.0	kelvin	Correction added to a derived clear/cloudy threshold to define the confident cloudy threshold for the trispectral emission test
WN_M14_M15_M16_HI_CORR	4	32-bit floating point	-1.0 -- 1.0	kelvin	Correction added to a derived clear/cloudy threshold to define the confident clear threshold for the trispectral emission test
HiElevThresh	4	32-bit integer	1000 - 5000	meters	Minimum high terrain value required for performing snow/day and snow/night M12 – M15 emission difference test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sst_thres	4	32-bit floating point	2.0 – 7.0	kelvin	Clear/cloudy base threshold used for ocean pixels in the water/night M15 – M16 emission threshold test; value adjusted with brightness temperature difference and corrected for sensor zenith angle
sst_in_water_thres	4	32-bit floating point	3.0 – 11.0	kelvin	Clear/cloudy base threshold used for inland water pixels in the water/night M15 – M16 emission threshold test; value adjusted with brightness temperature difference and corrected for sensor zenith angle
lst_thres	4	32-bit floating point	6.0 – 14.0	kelvin	Clear/cloudy base threshold used for non-desert pixels in the land/night M15 – M16 BTD emission threshold test; value adjusted with brightness temperature difference and corrected for sensor zenith angle
lst_desert_thres	4	32-bit floating point	15.0 – 25.0	kelvin	Clear/cloudy base threshold used for desert pixels in the land/night M15 – M16 emission threshold test; value adjusted with brightness temperature difference and corrected for sensor zenith angle
lst_snow_thres	4	32-bit floating point	2.0 – 14.0	kelvin	Clear/cloudy base threshold used in the snow/night M15 – M16 emission threshold test; value adjusted with brightness temperature difference and corrected for sensor zenith angle
VCM_MIN_SFC_TEMP	4	32-bit floating point	160.0 – 180.0	kelvin	Minimum surface temperature required to perform the nighttime M15 – M16 emission threshold test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_MAX_SFC_TEMP	4	32-bit floating point	340.0 – 360.0	kelvin	Maximum surface temperature required to perform the nighttime M15 – M16 emission threshold test
snglntRatio_Hi1	4	32-bit floating point	0.8 – 1.05	unitless	Confident clear threshold used in the water/day M7/M5 reflectance threshold test when sun glint is present but no land (e.g., island) is present
snglntRatio_Mid1	4	32-bit floating point	0.9 – 1.15	unitless	Clear/cloudy threshold used in the water/day M7/M5 reflectance threshold test when sun glint is present but no land (e.g., island) is present
snglntRatio_Lo1	4	32-bit floating point	1.0 – 1.6	unitless	Confident cloudy threshold used in the water/day M7/M5 reflectance threshold test when sun glint is present but no land (e.g., island) is present
snglntRatio_Hi2	4	32-bit floating point	1.05 – 1.45	unitless	Confident clear threshold used in the water/day M7/M5 reflectance threshold test when sun glint and some land (e.g., island) is present
snglntRatio_Mid2	4	32-bit floating point	1.0 – 1.3	unitless	Clear/cloudy threshold used in the water/day M7/M5 reflectance threshold test when sun glint and some land (e.g., island) is present
snglntRatio_Lo2	4	32-bit floating point	1.05 – 1.6	unitless	Confident cloudy thresholds used in the water/day M7/M5 reflectance threshold test when sun glint and some land (e.g., island) is present

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BTM12_limit	4	32-bit floating point	230.0 – 250.0	kelvin	Minimum brightness temperature M12 required for performing M15 – M12 emission difference test under nighttime conditions
highLat	4	32-bit floating point	50.0 – 70.0	degree	Maximum northern latitude in which M12-M13 BT Difference Test is used
lowLat	4	32-bit floating point	-70.0 -- -50.0	degree	Maximum southern latitude in which M12-M13 BT Difference Test is used
VCM_M15M12DIFF_MIN_TOCNDVI	4	32-bit floating point	0.1 – 0.4	unitless	Minimum TOC NDVI required to perform the land/day and coast/day M15 – M12 emission difference test.
VCM_M12M13DIFF_MIN_TOCNDVI	4	32-bit floating point	0.1 – 0.4	unitless	Minimum TOC NDVI required to perform the land/day M12 – M13 emission difference test
VCM_NIGHT_MIN_TOCNDVI	4	32-bit floating point	0.1 – 0.4	unitless	Minimum TOC NDVI required to perform the land/night M15 – M12 emission difference test
VCM_TRISPEC_C0	4	32-bit floating point	2.0 – 3.0	kelvin	Coefficients for the tri-spectral clear/cloudy threshold calculation, where midpt = VCM_TRISPEC_C0 + VCM_TRISPEC_C1 * T + VCM_TRISPEC_C2 * T2 + VCM_TRISPEC_C3 * T3
VCM_TRISPEC_C1	4	32-bit floating point	-3.0 -- -4.0	unitless	
VCM_TRISPEC_C2	4	32-bit floating point	0.0 – 2.0	1/kelvin	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
VCM_TRISPEC_C3	4	32-bit floating point	-2.0 – 0.0	1/kelvin^2	
M15_M16_WV_CORR_THRESH	4	32-bit floating point	0.1 – 3.0	kelvin	Minimum threshold at which the M15 – M16 BTD clear/cloudy threshold is corrected for water vapor effects; used for nighttime tests for land, water and snow
M15_MIDPT_WV_CORR_FACTOR	4	32-bit floating point	1.0 – 3.0	unitless	Water vapor correction factor applied to the M15 – M16 brightness temperature difference; the resulting product is used to adjust the nighttime M15 clear/cloudy threshold for land, water and snow
M15_ATM_SLANT_WV_CORR_FACTOR	4	32-bit floating point	1.0 – 6.0	kelvin	Slant path water vapor correction factor used in the M15 emission nighttime tests for land, water and snow
GEMI_RATIO1_CONST_1	4	32-bit floating point	1.0 – 3.0	unitless	Coefficients used in the M7/M5 GEMI ratio equation for land/day, where m5/m7)GEMI = (GEMI_EQU_CONST_1 – GEMI_EQU_CONST_2 * ratio_c3) – ((RefM5 – GEMI_EQU_CONST_3)/(GEMI_EQU_CONST_4 – RefM5)) and ratio_c3 = (GEMI_RATIO1_CONST1(RefM7 – RefM5) +
GEMI_RATIO1_CONST_2	4	32-bit floating point	0.0 – 3.0	unitless	
GEMI_RATIO1_CONST_3	4	32-bit floating point	0.0 – 2.0	unitless	
GEMI_RATIO2_CONST_1	4	32-bit floating point	0.0 – 1.0	unitless	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
GEMI_EQU_CONST_1	4	32-bit floating point	0.0 – 2.0	unitless	GEMI_RATIO1_CONST_2(RefM7) + GEMI_RATIO1_CONST_3(RefM5)) / (RefM7 + RefM5 + GEMI_RATIO_CONST2_1)
GEMI_EQU_CONST_2	4	32-bit floating point	0.0 – 0.2	unitless	
GEMI_EQU_CONST_3	4	32-bit floating point	0.0 – 1.0	Unitless	
GEMI_EQU_CONST_4	4	32-bit floating point	0.0 – 1.0	Unitless	
Thin Cirrus Detection Parameters					
LD_M9_THIN_CIRRUS_WEIGHT_CORR	4	32-bit floating point	0.0 – 1.0	unitless	weighting factor for M9 mid – M9 conf clr threshold diff used in adjusting M9 thin cirrus threshold test for land/day
CD_M9_THIN_CIRRUS_WEIGHT_CORR	4	32-bit floating point	0.0 – 1.0	unitless	weighting factor for M9 mid – M9 conf clr threshold diff used in adjusting M9 thin cirrus threshold test for coast/day
DD_M9_THIN_CIRRUS_WEIGHT_CORR	4	32-bit floating point	0.0 – 1.0	unitless	weighting factor for M9 mid – M9 conf clr threshold diff used in adjusting M9 thin cirrus threshold test for desert/day
SD_M9_THIN_CIRRUS_WEIGHT_CORR	4	32-bit floating point	0.0 – 1.0	unitless	weighting factor for M9 mid – M9 conf clr threshold diff used in adjusting M9 thin cirrus threshold test for snow/day
WD_M9_THIN_CIRRUS_WEIGHT_CORR	4	32-bit floating point	0.0 – 1.0	unitless	weighting factor for M9 mid – M9 conf clr threshold diff used in adjusting M9 thin cirrus threshold test for water/day

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M15_M16_THIN_CIRRUS_MID_CORR	4	32-bit floating point	-2.0 -- -0.1	kelvin	Correction added to the M15 – M16 clear/cloudy thin cirrus threshold
Ephemeral Water Detection					
VCM_TOA_NDVI_THRESH	4	32-bit floating point	0.001 – 0.1	unitless	Maximum TOA NDVI for detection of ephemeral water
Cloud Phase					
CP_LAMBDA_M12	4	32-bit floating point	3.6e-06 – 3.8e-06	meters	M12 band center used in Cloud_Phase()
CP_M12_MEAN_TOA_SOL_IRRAD	4	32-bit floating point	8.0 – 12.0	W/m^2	Mean M12 top of atmosphere solar irradiance
CP_M12_BW_MICRONS	4	32-bit floating point	0.01 – 0.03	microns	M12 bandwith
CP_M12_BW_METERS	4	32-bit floating point	0.01e-06 – 0.03e-06	meters	M12 bandwith
CP_EARTHSUNRATIO	4	32-bit floating point	0.5 – 1.5	unitless	Ratio of the earth to sun distance/sun diameter
CP_M14M15_BTM15_LIMIT	4	32-bit floating point	310.0 – 350.0	kelvin	Maximum valid BTM15 used in the M14M15 BTD test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_WIN_OVER_CORRECTION	4	32-bit floating point	0.01 – 0.20	kelvin	SWBTD correction to vary MIN_win_over threshold table
CP_NIR_OVERLAP_WATER_CORRECTION	4	32-bit floating point	0.01 – 0.1	unitless	NIR correction to M9 over water which alters the M10 threshold
CP_NIR_OVERLAP_LAND_CORRECTION	4	32-bit floating point	0.01 – 0.1	unitless	NIR correction to M9 over land which alters the M10 threshold
CP_NIR_OVERLAP_LAND_MAX_POLY	4	32-bit floating point	0.1 – 0.5	unitless	Lower limit on M10 reflection used with NIR test over land
CP_M9_WATER_HI_LAT_N	4	32-bit floating point	40.0 – 70.0	degree	Latitude for NIR cloud overlap test
CP_M9_WATER_HI_LAT_S	4	32-bit floating point	-70.0 -- -40.0	degree	Latitude for NIR cloud overlap test
CP_IR_WATER_TROPIC_LAT_N	4	32-bit floating point	20.0 – 40.0	degree	North latitude defining humid tropics for nighttime overlap test
CP_IR_WATER_TROPIC_LAT_S	4	32-bit floating point	-40.0 – 20.0	degree	South latitude defining humid tropics for nighttime overlap test
CP_M9_DESERT_HI_LAT_N	4	32-bit floating point	40.0 – 70.0	degree	Latitude for NIR cloud overlap test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_M9_DESERT_HI_LAT_S	4	32-bit floating point	-70.0 -- -40.0	degree	Latitude for NIR cloud overlap test
CP_M12_WATER_HI_LAT_N	4	32-bit floating point	50.0 – 70.0	degree	Hi polar latitude for NIR M12 test; assumes surf type is water
CP_M12_WATER_HI_LAT_S	4	32-bit floating point	-70.0 -- -60.0	degree	Lo polar latitude for NIR M12 test; assumes surf type is water
CP_M12_DESERT_EXCLREG1_LAT_HI	4	32-bit floating point	30.0 – 40.0	degree	Hi latitude desert exclusion for NIR daytime cirrus M12 test
CP_M12_DESERT_EXCLREG1_LAT_LO	4	32-bit floating point	5.0 – 15.0	degree	Lo latitude desert exclusion for NIR daytime cirrus M12 test
CP_M12_DESERT_EXCLREG1_LON_LF	4	32-bit floating point	-40.0 – 0.5	degree	Left longitude desert exclusion for NIR daytime cirrus M12 test
CP_M12_DESERT_EXCLREG1_LON_RT	4	32-bit floating point	25.0 – 60.0	degree	Right longitude desert exclusion for NIR daytime cirrus M12 test
CP_M9_LAND_HI_LAT_N	4	32-bit floating point	30.0 – 50.0	degree	North latitude for NIR cloud overlap test
CP_M9_LAND_HI_LAT_S	4	32-bit floating point	-50.0 -- -30.0	degree	South latitude for NIR cloud overlap test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_M10_SNOW_HI_LAT_N	4	32-bit floating point	40.0 – 60.0	degree	North latitude for SWBTD cloud overlap test
CP_M10_SNOW_HI_LAT_S	4	32-bit floating point	-60.0 – 40.0	degree	South latitude for SWBTD cloud overlap test
CP_MAX_BTM15_CERTAIN_ICE	4	32-bit floating point	230.0 – 240.0	kelvin	Maximum BTM15 for certain ice; all water is frozen at -40°C
CP_MIN_BTM15_MIXED	4	32-bit floating point	240.0 – 260.0	kelvin	Minimum BTM15 where water/ice coexist
CP_MAX_BTM15_MIXED	4	32-bit floating point	270.0 – 275.0	kelvin	Maximum BTM15 where water/ice coexist
CP_MAX_M10M5_RATIO_OVER_LAND	4	32-bit floating point	0.8 – 1.0	unitless	Maximum M10/M5 ratio for M10 refl over land
CP_OP_ICE_MAX_M10M5_RATIO	4	32-bit floating point	0.8 – 1.0	unitless	Maximum M10/M5 ratio for opaque cirrus
CP_CIRRUS_MIN_M9_THRESH	4	32-bit floating point	0.001 – 0.04	unitless	Minimum M9 reflectance to detect presence of cirrus cloud; also used to reclassify mixed phase to cirrus. Note intentional double use.
CP_CIRRUS_MAX_M5_THRESH	4	32-bit floating point	0.3 – 0.5	unitless	Maximum M5 reflectance to detect presence of cirrus cloud

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_CIRRUS_MIN_M9M5_RATIO_THRESH	4	32-bit floating point	0.1 – 0.2	unitless	Minimum M9/M5 ratio to detect presence of cirrus cloud
CP_OP_ICE_MAX_BTM15_THRESH	4	32-bit floating point	260.0 – 266.0	Kelvin	Maximum BTM15 allowed to reclassify mixed phase to opaque ice
CP_M14_M15_THRESH_CORR	4	32-bit floating point	0.1 – 0.3	unitless	M14M15 BTD threshold correction to reclassify opaque ice to mixed phase
CP_THIN_CIRRUS_MIN_M9_THRESH	4	32-bit floating point	0.001 – 0.04	unitless	Minimum M9 reflectance threshold to reclassify water phase to cirrus
CP_MIN_M14M15BTD_THRESH	4	32-bit floating point	0.4 – 0.6	kelvin	Minimum M14M15 BTD to reclassify water phase to cirrus
CP_M12_MIN_EMIS_THRESH_NIGHT	4	32-bit floating point	0.9 – 1.5	unitless	Minimum EMSM12 to identify cirrus clouds at night using M15M16BTD test
CP_M12_MAX_EMIS_THRESH_NIGHT	4	32-bit floating point	1.2 – 1.6	unitless	Maximum EMSM12 to identify cirrus clouds at night using M12 emission test
CP_MAX_BTM15_WIN_OVER	4	32-bit floating point	265.0 – 275.0	kelvin	Maximum BTM15 for SWBTD test to detect cloud overlap
CP_MAX_BTM15_NIR_OVER	4	32-bit floating point	275.0 – 285.0	kelvin	Maximum BTM15 for NIR test to detect cloud overlap

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_MAX_BTM15_NIGHT_OVER	4	32-bit floating point	280.0 – 300.0	kelvin	Maximum BTM15 for nighttime detection of cloud overlap
CP_NIR_CIRRUS_THRES_WATER_M12	4	32-bit floating point	0.1 -- 0.3	kelvin	Maximum NIR M12 threshold for detection of cirrus over water
CP_NIR_CIRRUS_THRES_LAND_M12	4	32-bit floating point	0.1 – 0.3	kelvin	Maximum NIR M12 threshold for detection of cirrus over land
CP_NIR_CIRRUS_THRES_DESERT_M12	4	32-bit floating point	0.25 – 0.5	kelvin	Maximum NIR M12 threshold for detection of cirrus over desert
CP_MIN_CIRRUS	4	32-bit floating point	0.4 – 0.8	kelvin	Minimum allowable cirrus threshold for M15-M16 BTD cirrus test
CP_MAX_CIRRUS	4	32-bit floating point	3.5 – 7.0	kelvin	Maximum allowable cirrus threshold for M15-M16 BTD cirrus test
CP_MIN_M5_OVER	4	32-bit floating point	0.25 – 0.5	unitless	SWBTD cloud overlap test param; minimum M5 reflectance to ensure presence of lower level water cloud
CP_MID_M5_OVER	4	32-bit floating point	0.4f to 0.8f	unitless	SWBTD cloud overlap test param; M5 breakpoint. 4th degree polynomial applied min to mid region; linear mid to max
CP_MAX_M5_OVER	4	32-bit floating point	0.4 – 0.8	unitless	SWBTD cloud overlap test param; M5 breakpoint. 4th degree polynomial applied min to mid region; linear mid to max

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_MIN_M1_OVER	4	32-bit floating point	0.9 – 1.0	unitless	SWBTD cloud overlap test param; max M5 where curve fit is linear
CP_MIN_M9_OVER_WATER_LOW	4	32-bit floating point	0.3 – 0.6	unitless	Min M1 refl over desert for valid SWBTD threshold
CP_MIN_M9_OVER_LAND_LOW	4	32-bit floating point	0.001 – 0.04	unitless	Lower M9 limits of the NIR detection window for daytime overlap for land, tropic/mid latitudes
CP_MIN_M9_OVER_WATER_HIGH	4	32-bit floating point	0.04 – 0.15	unitless	Lower M9 limits of the NIR detection window for daytime overlap for land, tropic/mid latitudes
CP_MIN_M9_OVER_LAND_HIGH	4	32-bit floating point	0.04 – 0.15	unitless	Lower M9 limits of the NIR detection window for daytime overlap for water, high latitudes
CP_M9_WIN_CHECK_THRES_LAND	4	32-bit floating point	0.05 – 0.2	unitless	Upper M9 limits of the NIR window for daytime overlap for land
CP_M9_WIN_CHECK_THRES_WATER	4	32-bit floating point	0.04 – 0.15	unitless	Upper M9 limits of the NIR window for daytime overlap for water
CP_MAX_M9_OVER	4	32-bit floating point	0.25 – 0.5	unitless	Maximum M9 reflectance for valid NIR overlap threshold
CP_SNOW_M10_THRES_LOW	4	32-bit floating point	0.05 – 0.20	unitless	Minimum M10 threshold in for detection of cloud overlap in non-polar latitudes with SWBTD test

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_SNOW_M10_THRES_HIGH	4	32-bit floating point	0.20 – 0.40	unitless	Minimum M10 threshold in for detection of cloud overlap in polar latitudes with SWBTD test
CP_M15_M16_N_OVER_L_TROPWATER	4	32-bit floating point	0.5 – 1.0	kelvin	M15-M16 BTD low threshold for overlap over tropic oceans at night
CP_M15_M16_N_OVER_H_TROPWATER	4	32-bit floating point	1.0 – 3.0	kelvin	M15-M16 BTD hi threshold for overlap over tropic oceans at night
CP_M12_N_OVER_L_TROPWATER	4	32-bit floating point	0.5 – 2.0	kelvin	BTM12 low threshold for overlap over tropic oceans at night
CP_M12_N_OVER_H_TROPWATER	4	32-bit floating point	1.5 – 3.0	kelvin	BTM12 hi threshold for overlap over tropic oceans at night
CP_M15_M16_N_OVER_L_MIDWATER	4	32-bit floating point	0.5 – 1.0	kelvin	M15-M16 BTD low threshold for overlap over mid latitude oceans at night
CP_M15_M16_N_OVER_H_MIDWATER	4	32-bit floating point	1.0 – 3.0	kelvin	M15-M16 BTD hi threshold for overlap over mid latitude oceans at night
CP_M12_N_OVER_L_MIDWATER	4	32-bit floating point	0.5 – 2.0	kelvin	BTM12 low threshold for overlap over mid latitude oceans at night
CP_M12_N_OVER_H_MIDWATER	4	32-bit floating point	1.0 – 3.0	kelvin	BTM12 hi threshold for overlap over mid latitude oceans at night

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_M15_M16_N_OVER_L_LAND	4	32-bit floating point	0.5 – 1.0	kelvin	M15-M16 BTD low threshold for overlap over land at night
CP_M15_M16_N_OVER_H_LAND	4	32-bit floating point	1.0 – 3.0	kelvin	M15-M16 BTD hi threshold for overlap over land at night
CP_M12_N_OVER_L_LAND	4	32-bit floating point	0.5 – 2.0	kelvin	BTM12 low threshold for overlap over land at night
CP_M12_N_OVER_H_LAND	4	32-bit floating point	1.0 – 3.0	kelvin	BTM12 hi threshold for overlap over land at night
CP_M12_M15_N_OVER_L	4	32-bit floating point	2.0 – 5.0	kelvin	M12-M15 BTD low threshold at night
CP_M12_M15_N_OVER_H	4	32-bit floating point	10.0 – 20.0	kelvin	M12-M15 BTD hi threshold at night
Implicit_pad4	4	8-bit byte	00	unitless	Padding

A_nir_over_water	144	64-bit floating point	-100.0 -- +100.0	unitless	NIR cloud overlap test coefficients used to define the M10 threshold over a water surface. Thresholds are a function of scattering angle (i.e., 18 bins used at 10 deg intervals represent 0 to 180 degrees scattering geometry). Coefficients are for a 4-degree polynomial in M9 reflectance, x: $Ax^4 + Bx^3 + Cx^2 + Dx + E$ 1 Dimensional Array: NSCT Size of Dimension(s): 18
B_nir_over_water	144	64-bit floating point			
C_nir_over_water	144	64-bit floating point			
D_nir_over_water	144	64-bit floating point			
E_nir_over_water	144	64-bit floating point			
A_nir_over_land	144	64-bit floating point	-100.0 -- +100.0	unitless	NIR cloud overlap test coefficients used to define the M10 threshold over a grass surface. Thresholds are a function of scattering angle (i.e., 18 bins used at 10 deg intervals represent 0 to 180 degrees scattering geometry). Coefficients are for a 4-degree polynomial in M9 reflectance, x: $Ax^4 + Bx^3 + Cx^2 + Dx + E$ 1 Dimensional Array: NSCT Size of Dimension(s): 18
B_nir_over_land	144	64-bit floating point			
C_nir_over_land	144	64-bit floating point			
D_nir_over_land	144	64-bit floating point			
E_nir_over_land	144	64-bit floating point			

A_cirrus	56	64-bit floating point	-1.0e04 - - +1.0e04	unitless	M15-M16 BTD (10.7μm-12μm) as a function of M15 BT coefficients for cirrus detection. Coefficients are for a 4-degree polynomial in M15 BT, x: $Ax^4 + Bx^3 + Cx^2 + Dx + E$ 1 Dimensional Array: NVZA Size of Dimension(s): 7
B_cirrus	56	64-bit floating point			
C_cirrus	56	64-bit floating point			
D_cirrus	56	64-bit floating point			
E_cirrus	56	64-bit floating point			
A_M14_M15	56	64-bit floating point	-1.0e03 - - +1.0e03	kelvin	M14-M15 BTD (8.6μm-10.7μm) coefficients as a function of M15 BT for cloud typing. Coefficients are for a 4-degree polynomial in M15 BT, x: $Ax^4 + Bx^3 + Cx^2 + Dx + E$ 1 Dimensional Array: NVZA Size of Dimension(s): 7
B_M14_M15	56	64-bit floating point			
C_M14_M15	56	64-bit floating point			
D_M14_M15	56	64-bit floating point			
E_M14_M15	56	64-bit floating point			

A_win_over	448	64-bit floating point	-1.0e03 - - +1.0e03	kelvin	4-degree polynomial in M5 reflectance, x, as a function of scattering geometry used to calculate M5 reflectance threshold applied in the SWBTD (split-window BTD) test: $Ax^4 + Bx^3 + Cx^2 + Dx + E$ See MIN_win_over description below. 2 Dimensional Array: NSZA x NVZA Size of Dimension(s): 8 x 7
B_win_over	448	64-bit floating point			
C_win_over	448	64-bit floating point			
D_win_over	448	64-bit floating point			
E_win_over	448	64-bit floating point			
MIN_win_over	448	64-bit floating point	0.0 – 10.0	kelvin	Minimum M15-M16 BTD (10.7um - 12um), aka (SWBTD, split-window BTD) required for cloud overlap as a function of M5 reflectance for a single-layered water cloud; the M5 reflectance is a function of sol zen (1st dim) and sat zen (2nd dimension); applied when M5 values are between CP_MID_M5_OVER and CP_MAX_M5_OVER, but may be applied at lower M5. 2 Dimensional Array: NSZA x NVZA Size of Dimension(s): 8 x 7
TOC NDVI Test Thresholds for M1 and M5					

M5_ndvi_coef	480	32-bit floating point	0.0 -- +1.0	unitless	M5 coefficient table as a function of scattering angle and TOC NDVI bins used in land/day and coast/day M5(M1) reflectance test for determining confident clear, clear/cloudy and confident cloudy thresholds; TOC NDVI bins consist of 10 bins from 0 to 1. Note that final thresholds are scaled by a factor of 0.01 and adjusted by a threshold adjustment, M5_*_THRES_ADJUST, in the software. 3 Dimensional Array: NTHRESH x NUM_NDVI_BINS x NCOEFS Size of Dimension(s): 3 x 10 x 4
M1_ndvi_coef	144	32-bit floating point	0.0 -- +1.0	unitless	M1 coefficient table as a function of scattering angle and TOC NDVI bins used in land/day and coast/day M5(M1) reflectance test for determining confident clear, clear/cloudy and confident cloudy thresholds; TOC NDVI bins consist of MAX_NUM_M1_NDVI_BINS bins from 0 to MAX_NUM_M1_NDVI_BINS * 0.1. Note that final thresholds are scaled by a factor of 0.01 and adjusted by a threshold adjustment, M5_*_THRES_ADJUST, in the software. 3 Dimensional Array: NTHRESH x MAX_NUM_M1_NDVI_BINS x NCOEFS Size of Dimension(s): 3 x 3 x 4
M5_LO_THRES_ADJUST	4	32-bit floating point	0.01 – 0.05	unitless	Low clear-sky confidence threshold correction value for the M5 reflectance band used in the M5 reflectance test

M5_MID_THRES_ADJUST	4	32-bit floating point	0.01 – 0.04	unitless	Mid clear-sky confidence threshold correction value for the M5 reflectance band used in the M5 reflectance test
M5_HI_THRES_ADJUST	4	32-bit floating point	0.0 – 0.015	unitless	High clear-sky confidence threshold correction value for the M5 reflectance band used in the M5 reflectance test
M1_LO_THRES_ADJUST	4	32-bit floating point	0.01 – 0.05	unitless	Low clear-sky confidence threshold correction value for the M1 reflectance band used in the M5 reflectance test
M1_MID_THRES_ADJUST	4	32-bit floating point	0.01 – 0.04	unitless	Mid clear-sky confidence threshold correction value for the M5 reflectance band used in the M5 reflectance test
M1_HI_THRES_ADJUST	4	32-bit floating point	0.0 – 0.015	unitless	High clear-sky confidence threshold correction value for the M5 reflectance band used in the M5 reflectance test
M5_TEST_HI_NDVI_THRESH	4	32-bit floating point	0.5 – 0.8	unitless	High TOC NDVI threshold used in land/day and coast/day M5 tests to limit the minimum scattering angle used in calculating the TOA NDVI-based thresholds.
M5_TEST_HI_NDVI_MIN_SCAT_ANGLE	4	32-bit floating point	80.0 – 100.0	degree	Minimum scattering angle for high NDVI
Cloud Shadows					
VCM_SHADOW_MIN_NUM_DAY_PIXS	4	32-bit integer	2 - 8	unitless	The minimum number of moderate resolution “day” pixels in a granule required to cast a shadow, where “day” for the shadow algorithm is defined as pixels having a solar zenith angle < VCM_SHADOW_MAX_SZA
VCM_SHADOW_GRIDCELL_SIZE	4	32-bit integer	15 -- 30	pixel	Hopping window size
VCM_SHADOW_LAPSE_RATE	4	32-bit floating point	5.0 – 10.0	degree K/km	Atmospheric lapse rate

VCM_SHADOW_MAX_SZA	4	32-bit floating point	70.0 --- 80.0	degree	Maximum allowed solar zenith angle
VCM_SHADOW_DEFAULT_NCEP_2M_T	4	32-bit floating point	290.0 – 310.0	degree kelvin	Default NCEP 2-meter surface air temperature
VCM_SHADOW_CLOUDHEIGHT_OFFSET	4	32-bit floating point	1.0 – 2.0	km	Cloud base and top offsets heights
VCM_SHADOW_CLOUDTHICKNESS_FACTOR	4	32-bit floating point	0.1 – 0.5	unitless	Cloud thickness adjustment factor
VCM_SHADOW_MIN_CLOUDBASE	4	32-bit floating point	0.25 – 1.25	km	Minimum cloud base height
VCM_SHADOW_MAX_CLOUDHEIGHT	4	32-bit floating point	14.0 – 18.0	km	Maximum cloud top height
VCM_SHADOW_CLOUDHEIGHT_STEPSIZE	4	32-bit floating point	0.5 – 1.5	km	Default cloud height step size
VCM_SHADOW_CLOUDHEIGHT_MAX_NSTEPS	4	32 bit integer	2 – 6	unitless	Maximum number of cloud height iteration steps (used to compute height step size)
VCM_SHADOW_POLAR_TROPO_HEIGHT	4	32-bit floating point	6.0 – 12.0	km	Polar tropopause height
VCM_SHADOW_EQUATORIAL_TROPO_HEIGHT	4	32-bit floating point	15.0 – 18.0	km	Equatorial tropopause height
VCM_SHADOW_ICECLOUD_BOT	4	32-bit floating point	0.05 – 3.0	km	Ice cloud minimum cloud base height

VCM_SHADOW_ICECLOUD_TOP	4	32-bit floating point	9.0 – 15.0	km	Ice cloud maximum cloud top height
VCM_SHADOW_THINCIRRUS_BOT	4	32-bit floating point	6.0 – 9.0	km	Thin cirrus cloud base height
VCM_SHADOW_THINCIRRUS_TOP	4	32-bit floating point	9.0 -- 12	km	Thin cirrus cloud top height
VCM_SHADOW_CLDCONF_CHECK_WINDOW	4	32-bit integer	1 -- 5	unitless	number of pixels to define the window half width for shadow application
ShadowCastSwitch	4	32-bit integer	0-1	unitless	ShadowCastSwitch = 0 ;Shadow Cast Switch for casting shadow from confidently cloudy pixel only ShadowCastSwitch = 1 Shadow Cast Switch for casting shadows from confidently cloudy and probably cloudy pixels
Degraded Flags					
VCM_POLAR_LAT	4	32-bit floating point	50.0 – 70.0	degree	Latitude demarking the beginning of the polar region
VCM_MIN_DEGRAD_TOC_NDVI	4	32-bit floating point	0.15 – 0.25	unitless	Minimum TOC NDVI of the defined degradation/exclusion range
VCM_MAX_DEGRAD_TOC_NDVI	4	32-bit floating point	0.35 – 0.45	unitless	Maximum TOC NDVI of the defined degradation/exclusion range

3.2.2.5.7 VIIRS COP Ephemeral PC

Table 3.2.2.5.7-1, VIIRS COP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sza_threshold	4	32-bit floating point	Minfloat - Maxfloat	radians	Solar Zenith Angle Threshold
water_increment	4	32-bit floating point	Minfloat - Maxfloat	unitless	Together with the hi_water_ctt and low_water_ctt defined the maximum iterations for the solution of the IR equation
lo_water_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelivn	The minimum water cloud top temperature
hi_water_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature
lo_water_re	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum water cloud particle radius
hi_water_re	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum water cloud particle radius
ice_increment	4	32-bit floating point	Minfloat - Maxfloat	unitless	Together with the hi_ice_ctt and lo_ice_ctt defined the maximum iterations for the solution of the IR equation

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lo_ice_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum ice cloud top temperature
hi_ice_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum ice cloud top temperature
ice_thresh_btM15	4	32-bit floating point	Minfloat - Maxfloat	unitless	Threshold for determining which CTT alg to use
min_day_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum daytime ice cloud optical thickness boundary value for quality flag
max_day_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum daytime ice cloud optical thickness boundary value for quality flag
min_night_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum night ice cloud optical thickness boundary value for quality flag
max_night_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum night ice cloud optical thickness boundary value for quality flag
min_day_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum daytime water cloud optical thickness boundary value for quality flag

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
max_day_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum daytime water cloud optical thickness boundary value for quality flag
min_night_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum night water cloud optical thickness boundary value for quality flag
max_night_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum night water cloud optical thickness boundary value for quality flag
min_eps_ice	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum ice effective particle size boundary value for quality flag
max_eps_ice	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum ice effective particle size boundary value for quality flag
min_eps_water	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum water effective particle size boundary value for quality flag
max_eps_water	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum water effective particle size boundary value for quality flag
min_ctt_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum ice cloud top temperature boundary value for quality flag

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
max_ctt_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum ice cloud top temperature boundary value for quality flag
min_ctt_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum water cloud top temperature boundary value for quality flag
max_ctt_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature boundary value for quality flag
night_ice_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_ice_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_ice_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_ice_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_ice_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
night_ice_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
night_water_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_water_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_water_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_water_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_water_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
night_water_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_ice_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_ice_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_ice_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_ice_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
day_ice_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_ice_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_water_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_water_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_water_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_water_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_water_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_water_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
m12_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M12 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m12_center_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometers	Center value of M12
m12_bwidth_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometers	Bandwidth value of M12
m12_lowlimit_wavenum	4	32-bit floating point	0.0-2820.0	cm^-1	Lower wave number limit of M12
m12_upplimit_wavenum	4	32-bit floating point	0.0-2688.52	cm^-1	Upper wave number limit of M12
m15_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M15 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
m15_center_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometer	Center value of M15 in microns
m_coeffs	16	32-bit floating point	Minfloat - Maxfloat	unitless	Coefficients used to calculate scaling factor in nighttime IR Water Cloud Retrieval 1 Dimensional Array: Size of Dimension(s): 4
m15_center_wavenum	4	32-bit floating point	Minfloat - Maxfloat	cm^-1	Center value of M15 in wave number

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
equation57_alpha	4	32-bit floating point	-50.0-1000.0	unitless	Empirical constant used in Nighttime IR Cirrus Cloud Retrieval
equation57_beta	4	32-bit floating point	Minfloat - Maxfloat	unitless	Empirical constant used in Nighttime IR Cirrus Cloud Retrieval
k2	4	32-bit floating point	Minfloat - Maxfloat	unitless	Extinction coefficient for M15
init_mean_de_coeffs	16	32-bit floating point	Minfloat - Maxfloat	unitless	Coeffiicents to determine initial temperature (averaged EPS) from equation 52 1 Dimensional Array: Size of Dimension(s): 4
de_coeffs	12	32-bit floating point	Minfloat - Maxfloat	unitless	Coefficents De of equation 49 in the ATBD 1 Dimensional Array: Size of Dimension(s): 3
pad1	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
d_coeffs	96	64-bit floating point	-365.-1000.0	unitless	Coefficents Dn of Equation 50 in the ATBD 2 Dimensional Array: Size of Dimension(s): 3 x 4
m15_emiss_min_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum emissivity for ice cloud

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m15_emiss_max_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum emissivity ice cloud
m15_emiss_min_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum emissivity for water cloud
m15_emiss_max_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum emissivity water cloud
init_cot_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum initial cloud optical thickness
init_cot_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum initial cloud optical thickness
k_ratio_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum value for K ratio
k_ratio_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum value for K ratio
de_min	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Minimum value for Mean Effective Size (De)
de_max	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Maximum value for Mean Effective Size (De)
init_mean_de_min	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Minimum value for the initial mean temperature

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
init_mean_de_max	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Maximum value for the initial mean temperature
mean_iwc_min	4	32-bit floating point	Minfloat - Maxfloat	g/m3	Minimum value for the mean ice water content
mean_iwc_max	4	32-bit floating point	Minfloat - Maxfloat	g/m3	Maximum value for the mean ice water content
ctt_min_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Minimum value for water cloud top temperature
ctt_max_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum value for water cloud top temperature
ctt_min_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Minimum value for ice cloud top temperature
ctt_max_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum value for ice cloud top temperature
diff_threshold	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Difference threshold for refinement of ice ctt
diff_max	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum difference for refinement of ice ctt
weight_of_De_of_k	4	32-bit floating point	Minfloat - Maxfloat	unitless	Weight of De_of_k in final determination of De

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pad2	4	UInt8	0 - 255	unitless	Pad bytes for natural alignment Size of Dimension(s): 4
m14_center_microns	8	64-bit floating point	Minfloat - Maxfloat	Micrometer	Center value of M14 in microns
m16_center_microns	8	64-bit floating point	Minfloat - Maxfloat	Micrometer	Center value of M16 in microns
m14_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M14 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
m16_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M16 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
min_night_cot_water_init	4	32-bit floating point	Minfloat - Maxfloat	unitless	Initial minimum value of night over water for cloud optical thickness
max_night_cot_water_init	4	32-bit floating point	Minfloat - Maxfloat	unitless	Initial maximum value of night over water for cloud optical thickness
k_ratio_inbound_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum inbound value for k ratio

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
night_alpha_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum value of night alpha
night_alpha_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum value of night alpha
hi_water_ctt_conv	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature
tmin	8	64-bit floating point	Minfloat – Maxfloat	K	Minimum temperature
tmax	8	64-bit floating point	Minfloat – Maxfloat	K	Maximum temperature
B12min	8	64-bit floating point	Minfloat – Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B12max	8	64-bit floating point	Minfloat – Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
B14min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B14max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B15min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B15max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B16min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
B16max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
M12_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6
M12_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M14_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6
M14_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6
M15_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M15_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6
M16_B_COEF	48	64-bit floating point	Minfloat – Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6
M16_TEMP_COEF	48	64-bit floating point	Minfloat – Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
degraded_ice_gt_ten	8	64-bit floating point	Minfloat – Maxfloat	unitless	Ice cloud pixel exclusion value for cot > 10
qf_excl_day_ice	8	64-bit floating point	Minfloat – Maxfloat	unitless	Day ice cloud pixel exclusion value for cot < 1
qf_excl_day_water	8	64-bit floating point	Minfloat – Maxfloat	unitless	Day water cloud pixel exclusion value for cot < 1
qf_excl_night_ice	8	64-bit floating point	Minfloat – Maxfloat	unitless	Night ice cloud pixel exclusion value for cot < 1
qf_excl_night_water	8	64-bit floating point	Minfloat - Maxfloat	unitless	Night water cloud pixel exclusion value for cot < 1
transdq-ref	80	32-bit floating point	Minfloat - Maxfloat	unitless	SDR rescaling coefficients

3.2.2.5.8 VIIRS GCE Ephemeral PC

Table 3.2.2.5.8-1, VIIRS GCE Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qf_cot_sza_threshold	4	floating point	(75*pi)/180	Radians	Cloud Optical Thickness solar zenith angle
c1	4	floating point	0.002644	Unitless	Height_conversion constant
c2	4	floating point	0.0089	Unitless	Height_conversion constant
c3	4	floating point	6245	Unitless	Height_conversion constant

3.2.2.5.9 VIIRS Sea Ice Age Ephemeral PC

Table 3.2.2.5.9-1, VIIRS Sea Ice Age Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
h00	4	32-bit floating point	>0.0 Initial Value = 30.0	cm	Young/First Year ice thickness threshold
min_conc	4	32-bit floating point	0.0 ≤ min_conc ≤ 1.0 Initial Value = 0.10	unitless	Minimum ice concentration for ice age processing
min_twgt	4	32-bit floating point	0.0 ≤ min_twgt ≤ 1.0 Initial Value = 0.05	unitless	Minimum temperature weight for processing.
max_thick_dev	4	32-bit floating point	> 0.0 Initial Value = 5.0	cm	Maximum allowed difference between I1 and I2 thickness.
q0	4	32-bit floating point	> 0.0 Initial Value = 1368	W/m^2	Solar irradiance
atmo_const	8	32-bit floating point]	> 0.0 Initial Values = [0.65, 0.055]	unitless	Atmospheric constants (empirical) used to compute long wave heat flux as a function of humidity and temperature. 1 Dimensional Array: NUM_ATM_CONST Size of Dimension(s): 2

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ct	4	32-bit floating point	> 0.0 Initial Value = 0.0017	unitless	Coefficient of turbulent heat exchange (sensible heat).
ce	4	32-bit floating point	> 0.0 Initial Value = 0.0017	unitless	Coefficient of turbulent heat exchange (latent heat).
specific_heat	4	32-bit floating point	> 0.0 Initial Value = 1005	J/kg/K	Specific heat
latent_heat	4	32-bit floating point	> 0.0 Initial Value = 2.456e6	J/kg	Latent heat of evaporation
latent_heat_fus	4	32-bit floating point	> 0.0 Initial Value = 3.0e5	J/kg	Latent heat of fusion
sb_const	4	32-bit floating point	5.6704E-8 Initial Value = 5.6704E-8	W/m^2/K^4	Stephan-Boltzmann constant
emiss	4	32-bit floating point	0 <= emiss <= 1.0 Initial Value = 1.0	unitless	Surface emissivity.
ice_conduct	4	32-bit floating point	> 0.0 Initial Value = 2.093	W/m/K	Ice conductivity
snow_conduct	4	32-bit floating point	> 0.0 Initial Value = 0.279	W/m/K	Snow conductivity

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
t_freeze	4	32-bit floating point	Initial Value = 271.4	Kelvin	Freezing point of sea water
sza_thre_r	4	32-bit floating point	0< sza_thre_r < 90 Initial Value = 80.0	degree	Red/Yellow SZA threshold (degrees) for energy balance.
sza_thre_y	4	32-bit floating point	0< sza_thre_y < 90 Initial Value = 85.0	degree	Yellow/Green SZA threshold (degrees) for energy balance
trans_thre_r	4	32-bit floating point	0< trans_thre_r < 90 Initial Value = 76.0	degree	Red/Yellow SZA threshold (degrees) for transmittance
arctic_haze_aot_thresh	4	32-bit floating point	> 0.0 Initial Value = 0.1	unitless	Arctic haze aerosol optical thickness threshold
iceAirDeltaT	4	32-bit floating point	-999.0 Initial Value = -999.0	degree	Temperature difference threshold for Ice-Surface Air Temperature Note: Setting the threshold to -999.0 effectively disables a branch to classify ice age First Year using a temperature difference threshold. This will allow the algorithm to fully utilize the energy balance equation

3.2.2.5.10 VIIRS IST EDR Ephemeral PC

Table 3.2.2.5.10-1, VIIRS IST EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Bt_M15	4	floating point	Initially set to: 180	K	Min Brightness Temp for M15
max_Bt_M15	4	floating point	Initially set to 350	K	Max Brightness Temp for M15
min_Bt_M16	4	floating point	Initially set to 180	K	Min Brightness Temp for M16
max_Bt_M16	4	floating point	Initially set to 350	K	Max Brightness Temp for M16
Ice_Threshold	4	floating point	Initially set to 0.9999	unitless	Ice fraction threshold for "ICE"
max_SolZen_Lim	4	floating point	Initially set to 1.48353	radians	Max solar zenith angle defining day/night
Ice_Primary_Threshold	4	floating point	Initially set to 0.95	unitless	Ice fraction threshold for "PRIMARILY ICE"
Ice_No_Threshold	4	floating point	Initially set to 0.0	unitless	Ice fraction threshold for "NOT ICE"
min_Aot_Lim	4	floating point	Initially set to 0.0	unitless	Min AOT Value
max_Aot_Lim	4	floating point	Initially set to 1.0	unitless	Max AOT Value
ist_Min_Rept_Range	4	floating point	Initially set to 213	K	Minimum Reportable IST
ist_Max_Rept_Range	4	floating point	Initially set to 275	K	Maximum Reportable IST

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Ice_Cov_N_Lat	4	floating point	Initially set to: 36º * DEG2RAD	radians	Southern extent of Ice Cov Zone in Northern Hemisphere
max_Ice_Cov_S_Lat	4	floating point	Initially set to: -50º * DEG2RAD	radians	Northern extent of Ice Cov Zone in Southern Hemisphere

3.2.2.5.11 VIIRS LST EDR Ephemeral PC

Table 3.2.2.5.11-1, VIIRS LST EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Bt_M12_M13	4	32-bit floating point	Initially set to 260	Kelvin	Min Brightness Temp for M12 and M13
max_Bt_M12_M13	4	32-bit floating point	Initially set to 350	Kelvin	Max Brightness Temp for M12 and M13
min_Bt_M15	4	32-bit floating point	Initially set to 240	Kelvin	Min Brightness Temp for M15
max_Bt_M15	4	32-bit floating point	Initially set to 350	Kelvin	Max Brightness Temp for M15
min_Bt_M16	4	32-bit floating point	Initially set to 240	Kelvin	Min Brightness Temp for M16
max_Bt_M16	4	32-bit floating point	Initially set to 350	Kelvin	Max Brightness Temp for M16
day_Sol_Zen_Ang_Lim	4	32-bit floating point	Initially set to 1.4835	radians	Solar Zenith Angle defining Day/Night Boundary
min_Hcs_Sens_Zen_Lim	4	32-bit floating point	Initially set to 0.0	radians	Sensor Zenith Angle at Nadir
max_Hcs_Sens_Zen_Lim	4	32-bit floating point	Initially set to 0.8779	radians	Sensor Zenith Angle at Edge of Scan

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Term_Lim	4	32-bit floating point	Initially set to 1.4835	radians	Min Solar Zenith Angle Defines Terminator
max_Term_Lim	4	32-bit floating point	Initially set to 1.7453	radians	Max Solar Zenith Angle Defines Terminator
lst_Min_Rept_Range	4	32-bit floating point	Initially set to 180	K	Minimum Land Surface Temperature Threshold
lst_Max_Rept_Range	4	32-bit floating point	Initially set to 380	K	Maximum Land Surface Temperature Threshold
max_Sens_Zen_Lim	4	32-bit floating point	Initially set to 0.0	radians	Sensor Zenith Degradation Limit
algmode	4	32-bit integer	0 or 1	unitless	Algorithm mode switch 0: Use 4-band dual split-window algorithm 1: Use 2-band single split-window algorithm

3.2.2.5.12 VIIRS NCC EDR Ephemeral PC

Table 3.2.2.5.12-1, VIIRS NCC EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
solar_Irradiance	4	32-bit floating point	Initially set to 0.01695	W/(cm^2 sr)	Solar Radiance Note: this is not, strictly speaking, an irradiance, since it contains sr in the denominator of the units. It is defined here as the radiance that would be observed from a 100% albedo surface where the solar zenith angle is zero. To convert to irradiance this value would need to be multiplied by pi
lza_Threshold	4	32-bit floating point	Initially set to 180	degrees	lunar zenith angle threshold
sza_Threshold	4	32-bit floating point	Initially set to 180	degrees	solar zenith angle threshold
max_lunar_arf	4	32-bit floating point	Initially set to 1.5	unitless	maximum lunar anisotropic reflectance factor
min_lunar_arf	4	32-bit floating point	Initially set to 0.5	unitless	minimum lunar anisotropic reflectance factor
max_solar_arf	4	32-bit floating point	Initially set to 1.5	unitless	maximum solar anisotropic reflectance factor
min_solar_arf	4	32-bit floating point	Initially set to 0.5	unitless	minimum solar anisotropic reflectance factor

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_ncc_radiance	4	32-bit floating point	Initially set to -1e-8	W/(cm^2 sr)	minimum near constant contrast radiance

3.2.2.5.13 VIIRS Net Heat Flux Ephemeral PC

Table 3.2.2.5.13-1, VIIRS Net Heat Flux Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minClear	4	floating point	Initially set to 0.8	unitless	Threshold for determining a clear pixel(fraction)
minIceWater	4	floating point	Initially set to 0.1	unitless	Threshold for determining water or ice pixels(fraction)
boundaryLayer	4	floating point	Initially set to 400	meters	Boundary layer threshold
minSSTp	2	integer	Initially set to 5	unitless	Minimum input data points needed
minISTp	2	integer	Initially set to 5	unitless	Minimum input data points needed for ice skin temperature
minODp	2	integer	Initially set to 1	unitless	Minimum input data points needed for aerosol optical depth(aot 550 nm) data
minSMp	2	integer	Initially set to 1	unitless	Minimum input data points needed for suspended matter index data
minCHLp	2	integer	Initially set to 5	unitless	Minimum input data points needed for chlorophyll data
minIAp	2	integer	Initially set to 1	unitless	Minimum input data points needed for ice age index data
minALBp		integer	Initially set to 1		Minimum for albedo data
defaultIA	2	integer	Initially set to 0	unitless	Data source flag(1 = default, 0 = retrieve if available) for ice age
defaultCHL	2	integer	Initially set to 0	unitless	Data source flag for chlorophyll
defaultSM	2	integer	Initially set to 0	unitless	Data source flag for Suspended matter
iaBase	2	integer	Initially set to 2	unitless	Default index to ice age model for ice roughness length

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
chloro	4	floating point	Initially set to 0.1	mg/m^3	Default value for chlorophyll concentration(mg/m3)
smBase	4	Integer	Initially set to 3	unitless	Default index to suspended matter model for optical depth distribution
aotBase	4	floating point	Initially set to 0.1	unitless	Default base aerosol optical depth at .550 microns
nAotModels	2	integer	Initially set to 6	unitless	Number of AOT models as defined in the RRTM SW
bmAOT	4	floating point	Initially set to 0.05	unitless	Default value of base maritime optical depth
bbsAOT	4	floating point	Initially set to 0.004	unitless	Default value of bse stratospheric optical depth
newIce	4	Floating point	Initially set to 0.0001	m	Default value of roughness length over new ice(m)
firstyr	4	floating point	Initially set to 0.0005	m	Default value of roughness length over first year ice(m)
multiyr	4	floating point	Initially set to 0.001	m	Default value of roughness length over multi year ice(m)
co2mmr	4	floating point	Initially set to 0.000538301	kg/kg	Default value of gaseous species CO2(kg/kg)
ch4mmr	4	floating point	Initially set to 9.10876e-07	kg/kg	Default value for gaseous species CH4(kg/kg)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
n2ommr	4	floating point	Initially set to 4.65468e-07	kg/kg	Default value for gaseous species N2O(kg/kg)
cfc11mmr	4	floating point	Initially set to 1.28052e-09	kg/kg	Default value for gaseous species CFC-11(kg/kg)
cfc12mmr	4	floating point	Initially set to 2.00379e-09	kg/kg	Default value for gaseous species CFC-12(kg/kg)
emislwW	4	floating point	Initially set to 0.95	unitless	Default value for LW emissivity over water
emislwI	4	floating point	Initially set to 0.99	unitless	Default value for LW emissivity over ice
levels	104	floating point[26]	Initially set to [10, 20, 30, 50, 70, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 925, 950, 975, 1000]	hPa	Atmospheric Pressure levels in hPa 1 Dimensional Array Size of Dimension(s): 26
surfaceD	56	floating point[14]	Initially set to [0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.0]	unitless	Default values of surface albedo over water(diffuse) 1 Dimensional Array Size of Dimension(s): 14

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
surfaceP	56	floating point[14]	Initially set to [0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.0]	unitless	Default values of surface albedo over water(parallel) 1 Dimensional Array Size of Dimension(s): 14
surfaceIceD	56	floating point[14]	Initially set to [0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07,0.0]	unitless	Default values of surface albedo over ice(diffuse) 1 Dimensional Array Size of Dimension(s): 14
surfaceIceP	56	floating point[14]	Initially set to [0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07,0.0]	unitless	Default values of surface albedo over ice(parallel) 1 Dimensional Array Size of Dimension(s): 14
bands	64	floating point[16]	Initially set to [3.846, 3.077, 2.5, 2.15, 1.942, 1.626, 1.299, 1.242, 0.7782, 0.625, 0.4415, 0.3448, 0.2632, 0.2, 12.195, 3.846]	micrometers	Array of spectral channels for RRTM SW(in microns) 1 Dimensional Array Size of Dimension(s): 16
aotExclThreshold	32	floating point	1.0	unitless	
windExclThreshold	32	floating point	25	m/s	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minFlux	32	floating point	-2000	W/m^2	
maxFlux	32	floating point	2000	W/m^2	

3.2.2.5.14 VIIRS ACO/OCC Ephemeral PC

Table 3.2.2.5.14-1, VIIRS ACO/OCC Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
esol	40	64-bit floating point	Initially set to [1708.78748, 1862.79031, 1999.75896, 1869.62187, 1530.19582]	unitless	Coefficient to convert the RSR (remote sensing reflectance) to water leaving radiance
band1	4	32-bit integer	Initially set to 1	unitless	M1 (412nm)
band2	4	32-bit integer	Initially set to 2	unitless	M2 (445nm)
band3	4	32-bit integer	Initially set to 3	unitless	M3 (488nm)
band4	4	32-bit integer	Initially set to 4	unitless	M4 (555nm)
lam	20	32-bit floating point [5]	Initially set to [412, 443, 490, 555, 670]	nm	Wavelengths used in algorithm
bb_denom	4	32-bit integer	Initially set to 0	unitless	For bb_denom = 0: backscatter coefficients are added to absorption coeffs to obtain 675nm abs coeff. For bb_demon = 1: Only absorption coeffs are used
chl_key	4	32-bit integer	Initially set to 2	unitless	Chlorophyll algorithm selection enumeration (0 = Carder (Initial Value), 1 = Carder with OC3V, or 2 = OC3V)
d1	4	32-bit floating point	Initially set to 2.5	unitless	Threshold for determining “packaged” vs ‘unpackaged” bio-optical domains using the r12 vs r25 comparison

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
d2	4	32-bit floating point	Initially set to 0.95	unitless	Regression line Coefficient for r12 vs r25 comparison
d3	4	32-bit floating point	Initially set to 0.16	unitless	Regression line Coefficient (exponent) for r12 vs r25 comparison
delta	4	32-bit floating point	Initially set to 0.03	unitless	Difference used in determination phytoplankton packaging type
s	4	32-bit floating point	Initially set to 0.0225	nm^-1	Empirically determined coefficient used in calculation of absorption due to detritus and gelbstoff (CDOM)
bbw	20	32-bit floating point[5]	Initially set to [0.003341, 0.002406, 0.001563, 0.000929, 0.000388]	m^-1	Backscatter coefficients for water for the 5 wavelengths specified in the “lam” field.
aw	20	32-bit floating point[5]	Initially set to [0.0048, 0.00742, 0.01632, 0.0591, 0.43538]	m^-1	Absorption coefficients for water for the 5 wavelengths specified in the “lam” field.
ga0	20	32-bit floating point[5]	Initially set to [1.82, 3.05, 1.94, 0.39, 1.0]	unitless	Global a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
ga1	20	32-bit floating point[5]	Initially set to [0.59, 0.69, 0.54, -0.18, 0.0]	unitless	Global a1 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.
ga2	20	32-bit floating point[5]	Initially set to [-0.48, -0.48, -0.48, -0.48, -0.48]	unitless	Global a2 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.
ga3	20	32-bit floating point[5]	Initially set to [0.014, 0.014, 0.014, 0.014, 0.014]	m^-1	Global a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
x0	4	32-bit floating point	Initially set to -0.00182	m^-1	Empirical coefficient (MODIS derived) used to derive magnitude of particle backscattering (X)
x1	4	32-bit floating point	Initially set to 2.058	sr m^-1	Empirical coefficient (MODIS derived) used to derive magnitude of particle backscattering (X)
y_0	4	32-bit floating point	Initially set to -1.13	m^-1	Empirical coefficient (MODIS derived) used to derive Spectral Shape particle backscattering (Y)
y_1	4	32-bit floating point	Initially set to 2.57	m^-1	Empirical coefficient (MODIS derived) used to derive Spectral Shape particle backscattering (Y)
aph_lo	4	32-bit floating point	Initially set to 9.9999997e-05	m^-1	Min value used to obtain the root (bisection method) for the 675nm absorption coefficient
aph_hi	4	32-bit floating point	Initially set to 0.03	m^-1	Max value used to obtain the root (bisection method) for the 675nm absorption coefficient
gc0	4	32-bit floating point	Initially set to 0.354824	log10(mg/m^3)	Model Dependent Coefficients for Chlorophyll-a Concentration calculations (these values are used to calculate $\log_{10}$(chl a))
gc1	4	32-bit floating point	Initially set to -2.64124	log10(mg/m^3)	
gc2	4	32-bit floating point	Initially set to 1.13884	log10(mg/m^3)	
gc3	4	32-bit floating point	Initially set to -1.62316	log10(mg/m^3)	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gp0	4	32-bit floating point	Initially set to 1.7454	log10(mg/m^3)	Empirical (default) Dependent Coefficients for Chlorophyll-a Concentration calculations (these values are used to calculate $\log_{10}$(chl a))
gp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	
gp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	
low_412_thresh	4	32-bit floating point	Initially set to 0.0008	unitless	
low_555_thresh	4	32-bit floating point	Initially set to 0.001	unitless	
chl_inconsistent_thresh	4	32-bit floating point	Initially set to 0.4	unitless	Threshold used to check the value of the calculated modeled Cholorphyll a output
upa0	20	32-bit floating point[5]	Initially set to [2.2, 3.59, 2.27, 0.42, 1.0]	unitless	Unpackaged a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
upa3	20	32-bit floating point[5]	Initially set to [0.0112, 0.0112, 0.0112, 0.0112, 0.0112]	m^-1	Unpackaged a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
pa0	20	32-bit floating point[5]	Initially set to [1.46778, 2.53786, 1.62954, 0.35552, 1.0]	unitless	Packaged a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pa3	20	32-bit floating point[5]	Initially set to [0.017276, 0.017276, 0.017276, 0.017276, 0.017276]	m^-1	Packaged a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
upc0	4	32-bit floating point	Initially set to 0.2818	log10(mg/m^3)	Unpackaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)
upc1	4	32-bit floating point	Initially set to -2.783	log10(mg/m^3)	Unpackaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
upc2	4	32-bit floating point	Initially set to 1.863	log10(mg/m^3)	Unpackaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
upc3	4	32-bit floating point	Initially set to -2.387	log10(mg/m^3)	Unpackaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)
pc0	4	32-bit floating point	Initially set to 0.423284	log10(mg/m^3)	Packaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)
pc1	4	32-bit floating point	Initially set to -2.50834	log10(mg/m^3)	Packaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
pc2	4	32-bit floating point	Initially set to 0.45994	log10(mg/m^3)	Packaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
pc3	4	32-bit floating point	Initially set to -0.90706	log10(mg/m^3)	Packaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)
upp0	4	32-bit floating point	Initially set to 1.715	log10(mg/m^3)	Unpackaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
upp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Unpackaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
upp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Unpackaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
pp0	4	32-bit floating point	Initially set to 1.7739	log10(mg/m^3)	Packaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)
pp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Packaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
pp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Packaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
hpa0	20	32-bit floating point[5]	Initially set to [1.019, 1.893, 1.237, 0.316, 1.0]	unitless	Fully Packaged a0 modeled coefficients for for Phytoplankton Absorption Function aph
hpa1	20	32-bit floating point[5]	Initially set to [0.26, 0.45, 0.42, -0.08, 0.0]	unitless	Fully Packaged a1 modeled coefficients for for Phytoplankton Absorption Function aph
hpa2	20	32-bit floating point[5]	Initially set to [-0.45, -0.45, -0.45, -0.45, -0.45]	unitless	Fully Packaged a2 modeled coefficients for for Phytoplankton Absorption Function aph
hpa3	20	32-bit floating point[5]	Initially set to [0.021, 0.021, 0.021, 0.021, 0.021]	m^-1	Fully Packaged a3 modeled coefficients for for Phytoplankton Absorption Function aph
hpc0	4	32-bit floating point	Initially set to 0.51	log10(mg/m^3)	Fully Packaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hpc1	4	32-bit floating point	Initially set to -2.34	log10(mg/m^3)	Fully Packaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
hpc2	4	32-bit floating point	Initially set to 0.4	log10(mg/m^3)	Fully Packaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
hpc3	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Fully Packaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)
hpp0	4	32-bit floating point	Initially set to 1.9	log10(mg/m^3)	Fully Packaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)
hpp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Fully Packaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
hpp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Fully Packaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
lambda0bb	4	32-bit floating point	Initially set to 555	nm	Reference wavelength for backscattering (related to absorption coefficient due to phytoplankton)
lambda0dom	4	32-bit floating point	Initially set to 400	nm	Reference wavelength for backscattering (related to absorption coefficient due to gelbstoff/DOM)
bathy_thresh	4	32-bit floating point	Initially set to -50.0	meter	Bathymetry threshold for identification of shallow water conditions
rsr_thresh	4	32-bit floating point	Initially set to 0.32	sr^-1	Remote sensing reflectance threshold used to indicate no retrieval

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsr_min	4	32-bit floating point	Initially set to 9.9999999e-09	sr^-1	Remote sensing reflectance minimum used to indicate out of bounds
turbid_water_thresh	4	32-bit floating point	Initially set to 0.0012	sr^-1	Turbid water threshold (M5 RSR value) used to set exclusion condition
Max_nLw	4	32-bit floating point	Initially set to 40.0	W/(m2 um sr)	Max nLw value used to set Poor quality/Out of range flag
Min_nLw	4	32-bit floating point	Initially set to 0.1	W/(m2 um sr)	Min nLw value used to set Poor quality/out of range flag
Max_chlo	4	32-bit floating point	Initially set to 50	mg/m^3	Max Chlorophyll a value used to set Poor quality/Out of range flag
Min_chlo	4	32-bit floating point	Initially set to 0.05	mg/m^3	Min Chlorophyll a value used to set Poor quality/out of range flag
Chlo_1	4	32-bit floating point	Initially set to 1.0	mg/m^3	Chlorophyll a values used to set the “Range of Chlorophyll Concentration” flag*
Chlo_10	4	32-bit floating point	Initially set to 10.0	mg/m^3	
Max_iopa	4	32-bit floating point	Initially set to 10.0	m^-1	IOP-a/IOP-s values used to set the quality flags
Max_iops	4	32-bit floating point	Initially set to 50.0	m^-1	

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Min_iopa	4	32-bit floating point	Initially set to 0.01	m^-1	
Min_iops	4	32-bit floating point	Initially set to 0.01	m^-1	
NLW_M2_THRESH	4	32-bit floating point	Initially set to 1.1	W/(m^2 μm sr)	nLw values used to set good/poor quality flag for each (M1-M5) band
NLW_M4_THRESH	4	32-bit floating point	Initially set to 0.81	W/(m^2 μm sr)	
M2_M4_RATIO_MIN	4	32-bit floating point	Initially set to 0.6	unitless	
M2_M4_RATIO_MAX	4	32-bit floating point	Initially set to 1.1	unitless	
aa	20	32-bit floating point[5]	Initially set to [2.71247525669551, -4.93449420258074, 3.41474858799965, -3.02114778759546, 0.36980217074978]	unitless	Regression coefficients for OC3V (based on VIIRS/SeaWifs Jeremy Werdell (NASA) values.
sphae	4	32-bit floating point	Initially set to 0.0225	nm^-1	phaeophytin term for total absorption coeff calculation
lam412	4	32-bit floating point	Initially set to 412	unitless	phaeophytin term for ag412 used in the total absorption coeff calculation

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ag_def_coeff	20	32-bit floating point[5]	Initially set to [-1.147, -1.963, -1.01, 0.856, 1.702]	unitless	ag coeff values for OCC band
aph_def_coeff	20	32-bit floating point[5]	Initially set to [-0.919, 1.037, -0.407, -3.531, 1.579]	unitless	Aph coeff values for OCC bands
w0_thresh	4	32-bit floating point	Initially set to 0.7	unitless	Strongly Absorbing Aerosol Exclusion
tau_thresh	4	32-bit floating point	Initially set to 0.3	unitless	tau_thresh for AOT
ViCal_Coeff	28	32-bit floating point[7]	[0.9775, 0.9852, 0.9787, 0.9651, 0.9730. 0.9750, 1.0000]	unitless	Pre-multipliers to the M1 to M7 reflectances for performing Vicarious Calibration post-launch.
pad	4	Unsigned 8-bit integer	minint - maxint	Unitless	Pad bytes.

3.2.2.5.15 VIIRS Snow Cover/Depth EDR Ephemeral PC

Table 3.2.2.5.15-1, VIIRS Snow Cover/Depth EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cot_switch	4	integer	0 or 1	unitless	Switch to flag the availability of the Cloud Optical Thickness IP 0 = COT Not Available (Use VCM mode) 1 = COT Available (Use COT mode) Initially set to zero

3.2.2.5.16 DELETED

3.2.2.5.17 VIIRS Surface Reflectance IP Ephemeral PC

Table 3.2.2.5.17-1, VIIRS Surface Reflectance IP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_SR	4	32-bit floating point	Initially set to: 0.0	unitless	Minimum value for surface reflectance
max_SR	4	32-bit floating point	Initially set to: 1.5	unitless	Maximum value for surface reflectance
min_AOT	4	32-bit floating point	Initially set to: 0.0	unitless (tau)	Min value for AOT
max_AOT	4	32-bit floating point	Initially set to: 2.0	unitless (tau)	Max value for AOT
min_ANC	4	32-bit floating point	Initially set to: 0.0	unitless	Min value for ANC
max_SDR	4	32-bit floating point	Initially set to: 1.0	unitless	Max value for SDR data
min_AMDL	4	8-bit unsigned character	Initially set to: 1	unitless	Minimum value for AMDL data
max_AMDL	4	8-bit unsigned character	Initially set to: 5	unitless	Maximum value for AMDL data
heavy_AOT	4	32-bit floating point	Initially set to: 1.0	unitless	Threshold value to determine heavy aerosol

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tauray	4	32-bit floating point	Initially set to: [3.1891e-01, 2.3362e-01, 1.6050e-01, 9.7790e-02, 5.4517e-02, 4.4158e-02, 1.6005e-02, 1.6054e-02, 3.6706e-03, 1.3148e-03, 1.3119e-03, 3.3128e-04]	unitless	Raleigh optical thickness 1 Dimensional Array Size of Dimension(s): 12
oztransa	4	32-bit floating point	Initially set to: [-2.8521e-04, -2.8798e-03, 1.8035e-02, -8.3850e-02, -8.1032e-02, -4.3313e-02, -4.9914e-05, -7.6735e-05 -1.5258e-08, 1.5132e-15, 6.9839e-16, 4.0739e-16]	1/(atm-cm)	Ozone transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wvtransa	4	32-bit floating point	Initially set to: [4.0437e-05, -7.2395e-07, 6.7759e-06, -1.2286e-04, -2.8439e-03, -5.1704e-04, -2.6544e-03, -2.5102e-03, -3.7703e-03, -1.1744e-03, -1.1536e-03, -1.6212e-03]	1/cm	Water vapor transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12
wvtransb	4	32-bit floating point	Initially set to: [-9.8648e-04, -1.2469e-04, -3.7264e-04, -2.4709e-04, 9.5168e-04, -3.0649e-05, 7.7237e-04, 7.1285e-04, 2.3837e-03, 9.0314e-04, 8.6349e-04 , 1.0102e-03]	unitless	Water vapor transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wvtransc	4	32-bit floating point	Initially set to: [-7.3747e-06, 7.1421e-08, -1.2270e-06, 2.0745e-05, 4.5434e-04, 7.7318e-05, 4.0668e-04, 3.8148e-04, 5.9124e-04, 1.4085e-04, 1.3783e-04, 2.6527e-04]	1/cm	Water vapor transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12
ogtransa0	4	32-bit floating point	Initially set to: [-2.8056e-04, -2.8328e-05, -1.1754e-04, -9.9606e-05, -9.0969e-04, -1.9818e-03, -2.6176e-05, -2.7552e-05, -9.0407e-04, -2.1231e-02, -2.0948e-02, -4.7069e-02]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ogtransa1	4	32-bit floating point	Initially set to: [1.1649e-03, 1.0375e-04, 3.6623e-04, 3.1128e-04, 5.2716e-03, 8.4638e-03, 1.1231e-03, 1.1246e-03, 7.3716e-03, 3.5759e-03, 3.9373e-03, 3.9820e-02]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12
ogtransb0	4	32-bit floating point	Initially set to: [2.8171e-04, 2.9041e-05, 1.2075e-04, 1.0242e-04, 1.6574e-04, 1.7787e-03, 7.2406e-06, 8.4389e-06, 1.2425e-05, 3.0789e-03, 3.0169e-03, -1.2661e-02]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ogtransb1	4	32-bit floating point	Initially set to: [-1.1162e-03, -1.0215e-04, -3.7520e-04, -3.2265e-04, -3.1559e-03, -9.5491e-03, 2.0884e-04, 2.0229e-04, -5.9251e-04, 4.1082e-02, 4.0356e-02, -4.2285e-02]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12
ogtransc0	4	32-bit floating point	Initially set to: [7.4310e-05, 7.5244e-06, 3.1271e-05, 2.6456e-05, 1.9821e-04, 5.1932e-04, 2.3153e-06, 2.6909e-06, 1.4641e-04, 4.3176e-03, 4.2526e-03, 7.7193e-03]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ogtransc1	4	32-bit floating point	Initially set to: [-3.0489e-04, -2.7054e-05, -9.6747e-05, -8.1778e-05, -1.3178e-03, -2.3157e-03, -8.0386e-06, -9.6868e-06, -1.1865e-03, 4.6775e-03, 4.5467e-03, -1.3653e-02]	unitless	Other gases transmittance coefficients 1 Dimensional Array Size of Dimension(s): 12

3.2.2.5.18 VIIRS SST EDR PCs

Table 3.2.2.5.18-1, VIIRS SST EDR Ephemeral PCs

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
btDThresh	4	32-bit floating point	Initially set to 0.8	kelvin	Moisture stratification threshold
dBtDThresh	4	32-bit floating point	Initially set to 0.2	kelvin	Moisture stratification threshold overlap
aotDegThresh	4	32-bit floating point	Initially set to 0.6	unitless	AOT degraded threshold
aotExclThresh	4	32-bit floating point	Initially set to 1.0	unitless	AOT exclusion threshold
szaDegThresh	4	32-bit floating point	Initially set to 40.0 * pi/180	radians	Sensor zenith angle unfavorable threshold
szaExclThresh	4	32-bit floating point	Initially set to 53.0 * pi/180	radians	Sensor zenith angle exclusion threshold
sstLowThresh	4	32-bit floating point	Initially set to 271.0	kelvin	SST low threshold
sstHighThresh	4	32-bit floating point	Initially set to 313.0	kelvin	SST low threshold
sstDegThresh	4	32-bit floating point	Initially set to 305.0	kelvin	SST degraded threshold

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iceConcThresh	4	32-bit floating point	Initially set to 0.1	unitless	Ice Concentration Threshold

3.2.2.5.19 VIIRS Surface Type EDR Ephemeral PC

Table 3.2.2.5.19-1, VIIRS Surface Type EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Vegetation_Threshold	4	32-bit floating point	Initially set to 0.05	unitless	Threshold test for vegetation update
Snow_Fraction_Threshold	4	32-bit floating point	Initially set to 0.49	unitless	Threshold test for snow cover update
Veg_Fraction_Scale	4	32-bit integer	Initially set to 100	unitless	Veg_Fraction_Scale Value
Solar_Zenith_Angle_Threshold	4	32-bit floating point	Initially set to 1.22173	radians	Solar Zenith Angle Threshold Value
Solar_Zenith_Angle_Snow_Ice_Threshold	4	32-bit floating point	Initially set to 1.48353	radians	Solar Zenith Angle Snow/Ice Threshold Value
Snow_Fraction_Quality_Threshold	4	32-bit integer	Initially set to 1	unitless	Threshold test for VSCDO snow fraction quality

3.2.2.5.20 VIIRS Vegetation Index EDR Ephemeral PC

Table 3.2.2.5.20-1, VIIRS Vegetation Index EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EVI_C	4	32-bit floating point	Initially set to 1.0	unitless	Constant used to adjust for the soil background, in the EVI calculation
EVI_I1	4	32-bit floating point	Initially set to 6.0	unitless	constant used in EVI calculation - derived from minimizing feedback and errors from soil and atmospheric effects
EVI_M3	4	32-bit floating point	Initially set to 7.5	unitless	Constant used in EVI calculation - derived from minimizing feedback and errors from soil and atmospheric effects
SZA_LOW	4	32-bit floating point	Initially set to 1.2217304763	radians	Solar Zenith Angle threshold (65degrees) used to set the low/high QF
SZA_HI	4	32-bit floating point	Initially set to 1.4835298641	radians	Solar Zenith Angle threshold (85 degrees) used to set the SZA Exclusion flag
NDVI_MIN	4	32-bit floating point	Initially set to -1.0	unitless	Min allowable value for NDVI. Values less than this are set to FILL
NDVI_MAX	4	32-bit floating point	Initially set to 1.0	unitless	Max allowable value for NDVI. Values greater than this are set to FILL
EVI_MIN	4	32-bit floating point	Initially set to -1.0	unitless	Min allowable value for EVI. Values less than this are set to FILL

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EVI_MAX	4	32-bit floating point	Initially set to 4.0	unitless	Max allowable value for EVI. Values greater than this are set to FILL
VI_SCALE_FACTOR	4	32-bit integer	Initially set to 10000	unitless	Not currently used in code – scaling is performed outside of VI algorithm

3.2.2.5.21 VIIRS Bright Pixel Ephemeral PC

Table 3.2.2.5.21-1, VIIRS Bright Pixel Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mode	21	8-bit unsigned character [21]	0 – 255	unitless	Mode 1 Dimensional Array: MODES Size of Dimension(s): 21

3.2.2.5.22 VIIRS CTP Ephemeral PC

Table 3.2.2.5.22-1, VIIRS CTP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
dayThresh	4	32-bit floating point	Initially set to 1.39626	radians	Day/Night solar zenith angle threshold
pw0	4	32-bit floating point	Initially set to 0.067	unitless	Precipitable Water regression coefficient
pw1	4	32-bit floating point	Initially set to -0.002	unitless	Precipitable Water regression coefficient
pw2	4	32-bit floating point	Initially set to 0.22	unitless	Precipitable Water regression coefficient
pw3	4	32-bit floating point	Initially set to 0.105	unitless	Precipitable Water regression coefficient
maxCth	4	32-bit floating point	Initially set to 20	Kilometers	Maximum height for CTH
minCth	4	32-bit floating point	Initially set to 0	Kilometers	Minimum height for CTH
maxCtp	4	32-bit floating point	Initially set to 1050	hPa	Maximum pressure for CTP
minCtp	4	32-bit floating point	Initially set to 50	hPa	Minimum pressure for CTP
maxCtt	4	32-bit floating point	Initially set to 310	K	Maximum temperature for CTT

Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
minCtt	4	32-bit floating point	Initially set to 180	K	Minimum temperature for CTT
numAggAt	4	32-bit integer	Initially set to 8	unitless	Number of pixels along track in analysis block
numAggXt	4	32-bit integer	Initially set to 8	unitless	Number of pixels along scan in analysis block
maxIterRt	4	32-bit integer	Initially set to 10	unitless	Maximum number of allowed iteration of daywater CTP retrieval
chiSqFit	4	32-bit floating point	Initially set to 1	unitless	Chi-square requirement for convergence
blkCloudCot	4	32-bit floating point	Initially set to 200	unitless	Default COT for black clouds in WindowIR retrieval
blkCloudEps	4	32-bit floating point	Initially set to 10	unitless	Default EPS for black clouds in WindowIR retrieval
thkCot1	4	32-bit floating point	Initially set to 1	unitless	COT threshold for cloud thickness table
thkCot2	4	32-bit floating point	Initially set to 3	unitless	COT threshold for cloud thickness table
thkCtp1	4	32-bit floating point	Initially set to 600	hPa	CTP threshold for cloud thickness table
thkCtp2	4	32-bit floating point	Initially set to 800	hPa	CTP threshold for cloud thickness table

Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
cldThick	36	32-bit floating point	Initially set to [0][0] = 200 [0][1] = 100 [0][2] = 50 [1][0] = 150 [1][1] = 75 [1][2] = 38 [2][0] = 100 [2][1] = 50 [2][2] = 25	unitless	Cloud thickness as a function of COT and CTP as specified by thkCot1, thkCot2, thkCtp1, and thkCtp2 2 Dimensional Array: Size of Dimension(s): 3 x 3
maxVertTemp	4	32-bit floating point	Initially set to 325	K	Maximum vertical temperature
minVertTemp	4	32-bit floating point	Initially set to 180	K	Minimum vertical temperature
maxVertWaterVap	4	32-bit floating point	Initially set to 10	g/kg	Maximum vertical water vapor
minVertWaterVap	4	32-bit floating point	Initially set to 9.9999997e-10	g/kg	Minimum vertical water vapor
minTempProf	4	32-bit floating point	Initially set to 100	K	Minimum valid temperature profile value

3.2.2.5.23 VIIRS Gran to Grid Snow Ice Cover PCs

Table 3.2.2.5.23-1, VIIRS Gran to Grid Snow Ice Cover Ephemeral PCs

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iceFractionThreshold	4	32-bit floating point	0.0 – 1.0 (initially set to 0.5)	unitless	Ice concentration threshold
concWeightThreshold	4	32-bit floating point	0.0 – 1.0 (initially set to 0.04)	unitless	Concentration weight threshold
forceUpdateDayThreshold	4	32-bit integer	0.0 – MaxInt (initially set to 10)	Days	Force Update Day Threshold - maximum time before the GIP must be updated
viirsSnowCoverGriddingONswitch	4	32 bit integer	0 – 1 (initially set to 0)	unitless	Switch to turn ON or OFF gridding of VSCMO (VIIRS Snow Cover Binary Map) data OFF = 0; ON = 1
viirsSeaIceGriddingONswitch	4	32 bit integer	0 – 1 (initially set to 0)	unitless	Switch to turn ON or OFF gridding of IVIIC (VIIRS Sea Ice Concentration IP) data OFF = 0; ON = 1

3.2.2.5.24 VIIRS GridToGrid LSA Ephemeral PC

Table 3.2.2.5.24-1, VIIRS GridToGrid LSA Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fullInversionMinCount	4	32-bit integer	7	unitless	Full Inversion Minimum Count
magInversionMinCount	4	32-bit integer	3	unitless	Magnitude Inversion Minimum Count
thresholdRMSELow	4	32-bit floating point	0.1	unitless	Threshold RMSE Low
thresholdRMSEHi	4	32-bit floating point	0.3	unitless	Threshold RMSE Hi
thresholdVarianceLow	4	32-bit floating point	0.75	unitless	Threshold Variance Low
thresholdVarianceHi	4	32-bit floating point	1.25	unitless	Threshold Variance Hi
thresholdMaxAlbedoVarianceLow	4	32-bit floating point	1.5	unitless	Threshold Maximum Albedo Variance Low
thresholdMaxAlbedoVarianceHi	4	32-bit floating point	2.5	unitless	Threshold Maximum Albedo Variance Hi
ndviThreshold	4	32-bit floating point	0.15	unitless	NDVI Threshold
hkThetaSInterval	4	32-bit floating point	0.00872665	unitless	Solar Zenith Angle increment in each of the LUT files

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hkThetaSMax	4	32-bit floating point	1.4748	unitless	Maximum Solar Zenith Angle value in the LUT files
implicit_pad0	4	UInt8	MinInt - MaxInt	unitless	Pad byte to align on word boundary 1 Dimensional Array: Size of Dimension(s): 4
crownRelHeightParamLISparse	8	64-bit floating point	2.0	unitless	
crownRelShapeParamLISparse	8	64-bit floating point	1.0	unitless	
crownRelHeightParamLIDense	8	64-bit floating point	2.0	unitless	
crownRelShapeParamLIDense	8	64-bit floating point	1.0	unitless	
crownRelShapeParamRoujean	8	64-bit floating point	1.0	unitless	

3.2.2.5.25 VIIRS Solar Diffuser Aggregation History PCs – Obsolete with implementation of Maintenance Release 1.5.8.0

Table 3.2.2.5.25-1, VIIRS Solar Diffuser Aggregation History Ephemeral PCs – Obsolete with implementation of Maintenance Release 1.5.8.0

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
spaceViewThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Statistical covariance filter threshold
SDThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Statistical covariance filter threshold
maxSpaceViewIntensity_DN	4	32-bit unsigned integer	MinInt – MaxInt	unitless	Maximum allowable space view intensity in detector counts for the SWIR band
nOrbitHistory	4	32-bit integer	MinInt – MaxInt	unitless	Number of orbits to store in history
nOrbitAgg	4	32-bit integer	MinInt – MaxInt	unitless	Number of orbits to aggregate
aggType	4	32-bit integer	MinInt – MaxInt	unitless	Type of aggregation (none, average, linear fit)
outlierThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Outlier removal (Nsigma on Fscan) Nsigma filter threshold
moonAngleThreshold	8	64-bit floating point	Minfloat – Maxfloat	radians	Moon angle filter threshold
dcr_C	48	64-bit floating point	Minfloat – Maxfloat	unitless	dc-restore conversion coefficients 1 Dimensional Array Size of Dimension(s): 6

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tsd_i	72	64-bit floating point	Minfloat – Maxfloat	unitless	Instrument to SolarDiffuser transformation matrix 2 Dimensional Array Size of Dimension(s): 3 x 3
numUnusedGranualCount	4	32-bit integer	MinInt – MaxInt	unitless	Count of granules before processing SD data
minScanCount	4	32-bit integer	MinInt – MaxInt	unitless	Min count of scans before creating new SD data
sdsmCount	4	32-bit integer	MinInt – MaxInt	unitless	Max SDSM count

3.2.2.5.26 VIIRS Surface Albedo PCs

Table 3.2.2.5.26-1, VIIRS Surface Albedo Ephemeral PCs

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SnowThreshold	4	32-bit floating point	0.5	unitless	Snow Fraction Threshold
NDVI_Threshold	4	32-bit floating point	0.15	unitless	NDVI Threshold
NumBins_SolarZenith	8	long	86	unitless	Number of Solar Zenith Angle Values/Bins
BinSize_SolarZenith	4	32-bit floating point	0.0174532925199433	radians	Solar Zenith Angle Bin Size, angular increment
NumBins_KernelBlackSkyAlbedo	8	long	170	unitless	Number of Black Sky Albedo Bins in the LUTs
BinSize_KernelBlackSkyAlbedo	4	32-bit floating point	0.008726646	radians	Bin size for each Kernel Black Sky Albedo
NumBins_AOT	8	long	101	unitless	Number of AOT Bins
BinSize_AOT	4	32-bit floating point	0.02	unitless	
NumKernels	8	long	8	unitless	Number of Surface Albedo LUTs
Num_Kernel_Lut	8	long	8	unitless	Number of Kernel Model LUTs

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Max_Lut_Dim	8	long	3	unitless	Maximum LUT Dimensions (Represents the 3 Geometry Parameters: Solar Zenith, View Zenith, and Relative Azimuth)
Bpsa_Num_Bins_Solar_Zenith	8	long	18	unitless	Number of Solar Zenith Angles LUT bins
Bpsa_Num_Bins_View_Zenith	8	long	18	unitless	Number of View Zenith Angle LUT bins
Bpsa_Num_Bins_Rel_Azimuth	8	long	23	unitless	Number of Relative Azimuth Angle LUT bins
BinCoord_SeaIce_SolarZenith	60	floating point	{0, 53.5, 57.5, 61, 63.5, 66, 68.25, 70.25, 72.25, 74.25, 76, 78, 79.5, 81, 83}	unitless	Grid coordinates for BPSA SEA ICE LUTs 1 Dimensional Array Size of Dimension(s): 15
BinCoord_SolarZenith	72	32-bit floating point	{0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80}	unitless	Grid Coordinates for BPSA LUT for Solar Zenith Angles 1 Dimensional Array Size of Dimension(s): 18

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BinCoord_ViewZenith	72	32-bit floating point	{0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75}	unitless	Grid Coordinates for BPSA LUT for View Zenith Angles 1 Dimensional Array Size of Dimension(s): 18
BinCoord_RelAzimuth	92	32-bit floating point	{0, 5, 15, 30, 60, 90, 120, 150, 165, 175, 180}	unitless	Grid Coordinates for BPSA LUT for Relative Azimuth Angles 1 Dimensional Array Size of Dimension(s): 23
Lut_Size_Bpsa	8	long	Size = BPSA_NUM_BINS_SOLAR_ZENITH * BPSA_NUM_BINS_VIEW_ZENITH * BPSA_NUM_BINS_REL_AZIMUTH	unitless	Size of LUT for BPSA
Bpsa_Map_AeroModel	56	long	{ 1, 2, 3, 4, 5 }	unitless	Aerosol Model map used for interpolation 1 Dimensional Array Size of Dimension(s): 5

4.0 Provenance Data

Provenance files are used to capture the historical information for select Auxiliary Data and Static Ancillary files maintained by the NPOESS Program. The following data format is used to describe these files.

4.1 Provenance Files

Data Mnemonic	NP_NU-LM1010-000
Description/ Purpose	The provenance files provide structured text information on the source and change history of specified versions of their associated Auxiliary Data or Static Ancillary Data files. A single provenance file contains the history of all versions of the referenced file. Note that not all Auxiliary Data or Static Ancillary Data files will require an associated Provenance file.
File-Naming Construct	<Collection Short Name>.prv Where <Collection Short Name> is that of the file which the Provenance File is associated with. The Collection Short Name used in the filename is based on the table – see the JPSS CDFCB-X Vol. I, 474-00001-01, for the applicable Collection Short Names.
File Size	1 KiB to 100 KiB
File Format Type	ASCII
Production Frequency	As needed
Data Content and Data Format	For details see Table 4.1-1, Provenance Files Data Format. An example is provided in Example 4.1-1, Provenance File example.

Table 4.1-1, Provenance Files Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Short Name	Varies	String	Collection Short Name	N/A	Collection Short Name of the associated file for this provenance file
Separator	18	String	"------------------"	N/A	Version separator
Revision Date	Varies	String	"Revision Date: " + Valid Date (MM/DD/YYYY)	N/A	Date of update
Source	Varies	Parent Element	"Source:" Sub-elements: ECR Number Science Version Tech Memo Science Files	N/A	Section heading
ECR Number	Varies	String	"ECR: "+ text	N/A	Provides the ECR number associated with the update. May be "None"
Source Version	Varies	String	"Source version: " + text	N/A	Identifies the SCM VOB identifier containing the science drop source data. May be "N/A"
Tech Memo	Varies	String	"Tech Memo: " + text	N/A	Identifies the technical memo by Identifier. May be "None"
Source Files	Varies	Parent Element	"Source File(s): " Sub-elements: Filename	N/A	Optional Section heading

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Filename	Varies	String	One or more file names	N/A	Name(s) of the source file(s) translated to create the LUT. May be “N/A” if no translation or name change was required.
Provenance Version ID	Varies	String	“Provenance Version ID: ” + Text	N/A	See the Version ID Description of the File-Naming Convention for Auxiliary or Ancillary Data Formats, JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 or 3.5.
Build Identifier	Varies	String	“Build Identifier:” + Text	N/A	Configuration Management Build Identifier of initial version release.
MD5SUM	Varies	String	“MD5SUM:” + Text	N/A	Optional MD5SUM of deployed file for the version defined in this section. May be “N/A”
Notes	Varies	String	Free text	N/A	Description of the source changes and applicability of the version defined in this section.
Separator	18	String	“------------------“	N/A	Version separator
Repeat above sections starting with Revision Date					Each Provenance version will have a completely repeated section from Date to Notes.

Table 4.1-1, Provenance Files Data Format — ATMS-SDR-CC.prv

ATMS-SDR-CC

Revision Date: 05/15/2007
Source:
ECR: None
Source Version: ISTN_ATMS_NPP_PROXY_DATA_NGST_002
Tech Memo: None
Source File(s)
Constants_set1.dat
Provenance Version ID: 1-D-NPP-4
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Chain Testing Table

Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing
Source File(s):
Constants_set1.dat
Provenance Version ID: 1-D-NPP-1
Build Identifier: 1.5.0.X1
MD5SUM: 576A3B76335
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
----
Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing
Source File(s)
Constants_set2.dat
Provenance Version ID: 1-D-NPP-2
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
----
Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing

Source File(s)
Constanst_set3.dat
Provenance Version Number: 1-D-NPP-3
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
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APPENDIX A: DATA MNEMONIC TO INTERFACE MAPPING

See 474-00001-01, JPSS CDFCB-X Vol. I for the Data Mnemonic to Interface Mapping details.