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Goddard Space Flight Center
Greenbelt, Maryland

National Aeronautics and
Space Administration

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Joint Polar Satellite System (JPSS) Algorithm Specification Volume II: Data Dictionary for the VIIRS Imagery JPSS Review/Approval Page

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Greenbelt, Maryland

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 Approve Date)	Sections Affected
0200-	Aug. 29, 2013	This version incorporates 474-CCR-13-1178 which was approved by JPSS Ground ERB on the effective date shown.	All
0200A	Jan. 23, 2014	This version incorporates 474-CCR-13-1457 which was approved by JPSS Ground ERB on the effective date shown.	All
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0200B	Nov. 20, 2014	This version incorporates 474-CCR-14-2120 which was approved by the JPSS Ground ERB on the effective date shown.	All
0200C	Jul 28, 2015	This version incorporates 474-CCR-15-2288 and 474-CCR-15-2506 which was approved by the JPSS Ground ERB on the effective date shown.	All
0200D	Feb 12, 2016	This version incorporates 474-CCR-15-2657, and 474-CCR-16-2776 which was approved by the JPSS Ground ERB on the effective date shown.	All

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List of TBx Items

TBx	Type	ID	Text	Action
None				

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1 Introduction

1.1 Scope

The Joint Polar Satellite System (JPSS) Algorithm Specification for VIIRS Imagery - Volume II: Data Dictionary contains the specifications for the format of the VIIRS Imagery Intermediate Products (IPs) and Environmental Data Records (EDRs). This specification includes the format of the Hierarchical Data Format Release 5 (HDF5) files, as well as the product definitions. These formats are available to external users of the JPSS. For an overview of the data product formats, see 474-00001-01, JPSS CDFCB-X Vol I. For an overview of the metadata formats for data products, see 474-00448-02-01, JPSS Algorithm Specification Vol II Data Dictionary for the Common Algorithms.

1.2 Organization

Section	Contents
Section 1	Provides information regarding the scope, and organization of this document, as reference material only.
Section 2	Lists parent documents and related documents that were used as sources of information for this document or that provide additional background information to aid understanding of the interface implementations.
Section 3	Provides an overview of the HDF5 UML for the data product types
Section 4	Provides a description of the contents of each JPSS Intermediate Product associated with this algorithm grouping.
Section 5	Provides a description of the contents of each JPSS EDR associated with this algorithm grouping.
Section 6	Provides a description of the Ancillary and Auxiliary Data Inputs if applicable.
Section 7	Provides a description of relevant Look-Up Tables (LUTs) and Processing Coefficient Tables (PCTs) associated with this algorithm grouping.
Appendix A	Provides the Data Mnemonic to Interface Mapping for the data products in this volume.
Appendix B	Provides a mapping of the quality flags by sensor and product that are reportable to the associated data product quality flag Test ID used in the processing environment.
Appendix C	Reference 470-00041, JPSS Program Lexicon.
Attachment A	Provides the list of applicable xml files for this Data Dictionary.

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

2 Related Documentation

The latest JPSS documents can be obtained from URL: https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm. JPSS Project documents have a document number starting with 470, 472 or 474 indicating the governing Configuration Control Board (CCB) (Program, Flight, or Ground) that has the control authority of the document.

2.1 Parent Documents

The following reference document(s) is (are) the Parent Document(s) from which this document has been derived. Any modification to a Parent Document will be reviewed to identify the impact upon this document. In the event of a conflict between a Parent Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Document Number	Title
474-00448-01-26	JPSS Algorithm Specification Volume I: Software Requirements Specification (SRS) for the VIIRS Imagery

2.2 Applicable Documents

The following document(s) is (are) the Applicable Document(s) from which this document has been derived. Any modification to an Applicable Document will be reviewed to identify the impact upon this document. In the event of conflict between an Applicable Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

Document Number	Title
NPR 7150.2A	NASA Software Engineering Requirements
474-00167	Joint Polar Satellite System (JPSS) Common Ground System (CGS) Requirements Document
474-00005	Joint Polar Satellite System (JPSS) Government Resource for Algorithm Verification, Independent Testing, and Evaluation (GRAVITE) Requirements Document
N/A	Hierarchical Data Format, Version 5 (HDF5), http://www.hdfgroup.org/HDF5/

2.3 Information Documents

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of this document.

Document Number	Title
D0001-M01-S01-008	Joint Polar Satellite System (JPSS) VIIRS Imagery Products Algorithm Theoretical Basis Document (ATBD)
474-00448-03-26	Joint Polar Satellite System (JPSS) Algorithm Specification Volume III: Operational Algorithm Description (OAD) for the VIIRS Imagery OAD
474-00333	Joint Polar Satellite System (JPSS) Ground System (GS) Architecture Description Document (ADD)
474-00054	Joint Polar Satellite System (JPSS) Ground System (GS) Concept of

Document Number	Title
	Operations (ConOps)
470-00041	Joint Polar Satellite System (JPSS) Program Lexicon
474-00001-01	Joint Polar Satellite System (JPSS) Common Data Format Control Book, Volume I - Overview
474-00448-02-01	Joint Polar Satellite System (JPSS) Algorithm Specification Volume II: Data Dictionary for the Common Algorithms

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3 UML for HDF5 Products

The following paragraphs describe the structure and contents of the IP and EDR granules formed by the JPSS ground processing software.

3.1 Intermediate Products and Environmental Data Records HDF5 Details - Statically Sized

Figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, depicts the HDF5 IP/EDR organization as a Unified Modeling Language (UML) class diagram. Each HDF5 IP/EDR file contains an HDF5 Root Group, '/', a Data Products Group, Product Groups (Collection Short Name), an optional Geolocation Group (depending upon packaging option, see the JPSS CDFCB-X Vol. I, for a description of the geolocation packaging), and an All Data Group (dataset arrays). The Product Groups and Geolocation Group both contain datasets - an Aggregation Dataset (Collection Short Name_Agg) and Granule Datasets (Collection Short Name_Gran_n) - where n indicates the nth granule in a temporal aggregation of granules (1 .. n). A granule is a general term used to describe the minimum quanta of data collected per processing period, generally on the order of seconds. For the definition and organization of the metadata attributes contained in the HDF5 files, see the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms. Attributes that are specific to a particular IP/EDR are listed with the specific IP/EDR's data format definition. For the generalized formats and packaging options for the Geolocation data, see the JPSS CDFCB-X Vol. I - Overview.

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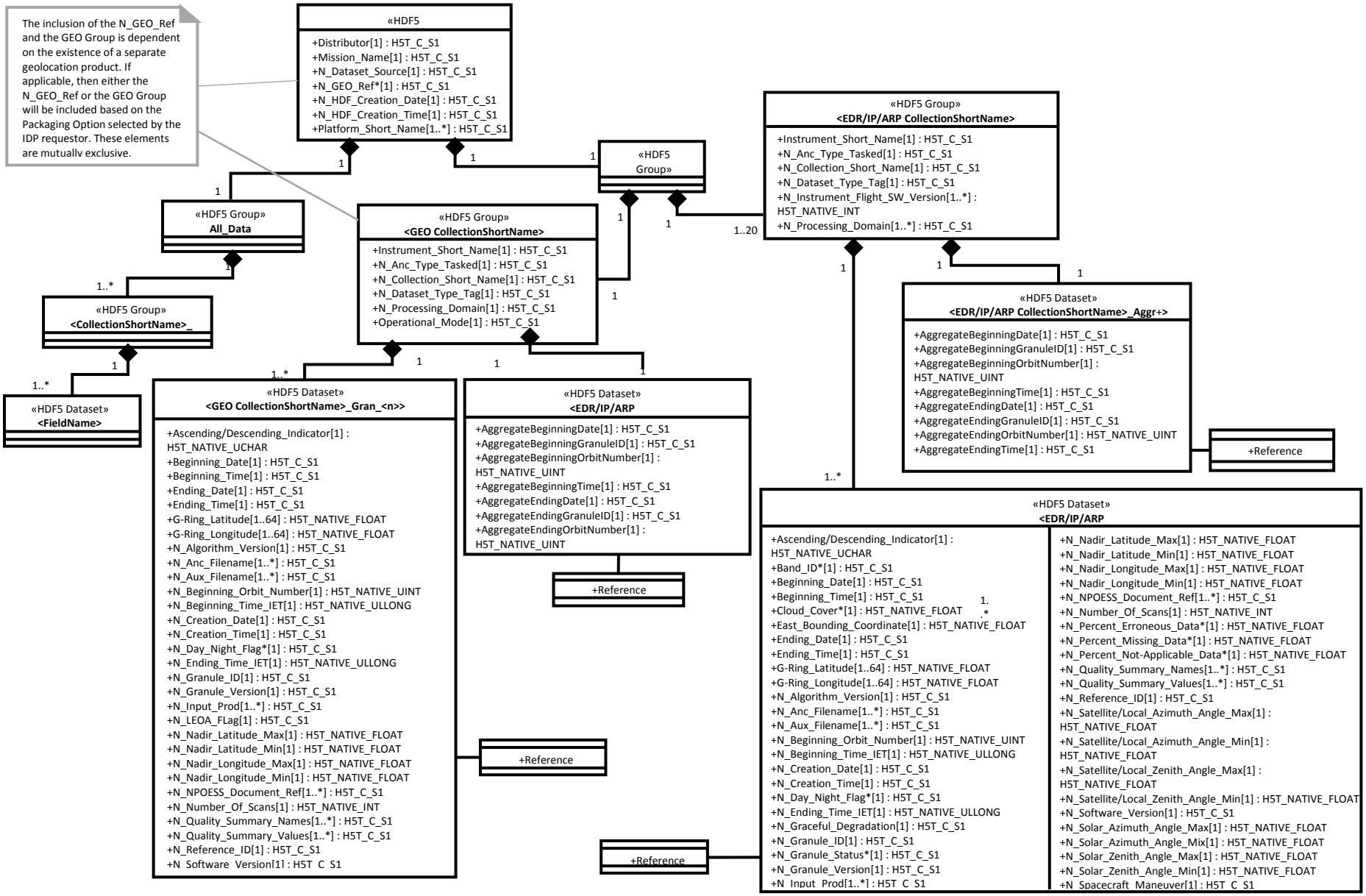

Figure: 3.1-1 Generalized UML Diagram for statically sized HDF5 IP/EDR Files

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

3.2 Intermediate Products, Application Related Products and Environmental Data Records HDF5 Details - Dynamically Sized

Figure 3.2-1, Generalized UML Diagram for dynamically sized HDF5 IP/EDR Files, depicts the HDF5 IP/EDR organization as a Unified Modeling Language (UML) class diagram for products that contain dynamically sized fields. Dynamically sized means that a field's length will vary from granule to granule. The organization of the HDF5 file is identical to the statically sized HDF5 file with the exception of the aggregation and corresponding All_Data group. For statically sized products, the object ID stored in the aggregation array points to a Dataset_Array under the All_Data group. This Dataset_Array is a single HDF5 dataset for each field. This single HDF5 dataset contains all the data for all granules in the file for a given field. However, for dynamically sized products, the object ID stored in the aggregation array points to an HDF5 group instead. This HDF5 group contains one or more datasets - a separate dataset for each granule for a given field. The dataset is named "Dataset_Array_Gran_n".

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

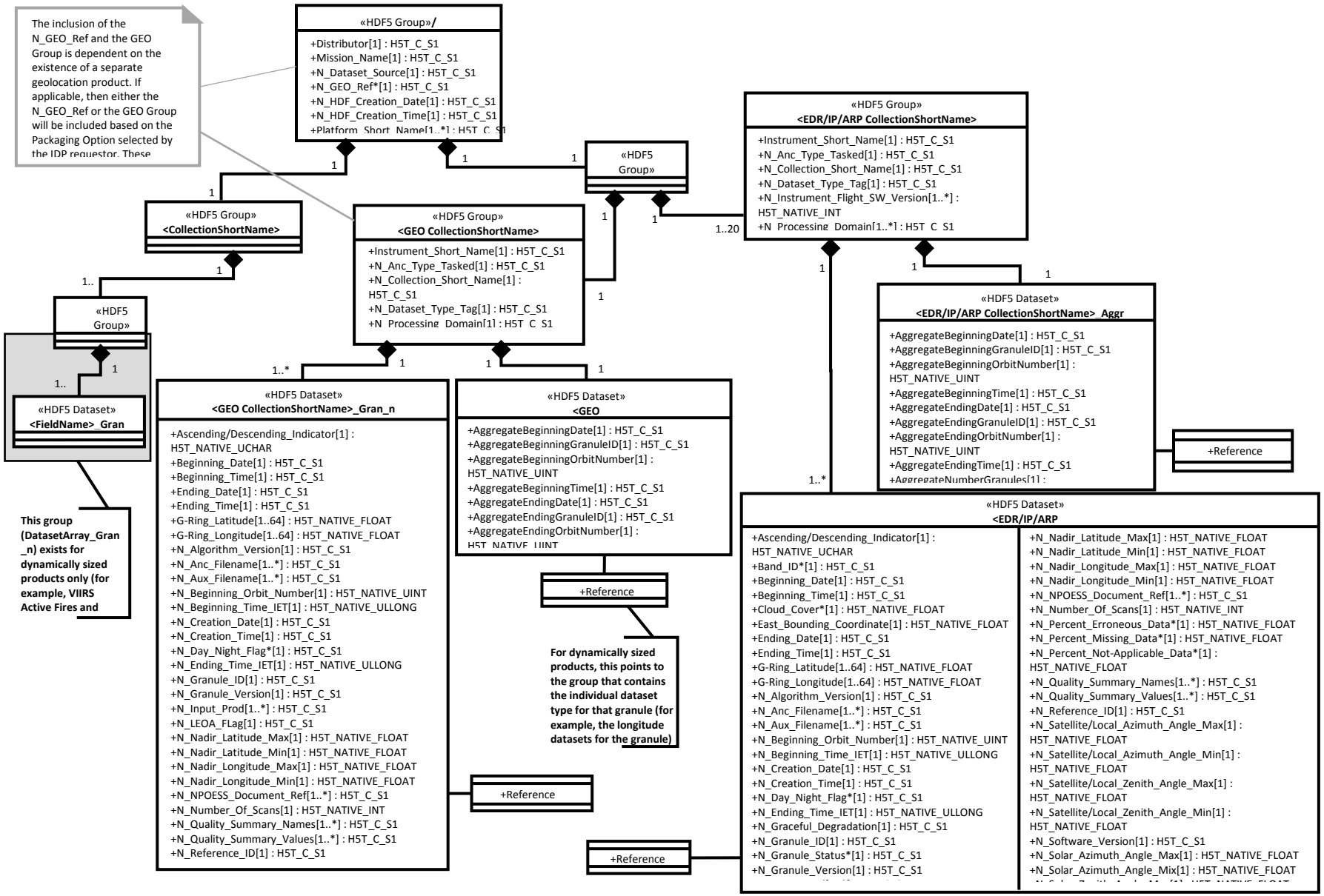

Figure: 3.2-1 Generalized UML Diagram for dynamically sized HDF5 IP/EDR Files

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4 Intermediate Products (IPs)

Not Applicable

5 Environmental Data Records (EDRs)

Environmental Data Records (EDRs) are data records that contain the environmental parameters or imagery generated by the JPSS system as products deliverable to the user. The JPSS and S-NPP required set of EDRs are defined in 470-00067-02, the JPSS Ground System Requirements Document, Vol II. An EDR is either an official EDR, which means that it is part of the set of official JPSS Data Products, or it is a substitute EDR. A substitute EDR is produced by substitute ancillary data, data defined by the IDP operator in order to create a data product using different input (specifically, different ancillary data) than that which is prescribed by JPSS. EDRs provide stable measurements useful for long-term trends. An EDR contains the following:

- EDR specific data (as described in each section)
- Appropriate geolocation values
- Quality Flags
- Metadata represented as Attributes in the HDF5 file that are provided at the granule and aggregation level
- The EDRs are separated by category and are presented alphabetically within each category. All S-NPP EDRs are also delivered during JPSS, thus only those EDRs which are JPSS-only are annotated as such within their respective Description/Purpose section of their interface definition.

5.1 VIIRS Imagery EDR

Imagery products contain two primary data fields:

- A two-dimensional array of locally averaged absolute in-band radiances at the Top of the Atmosphere (TOA) measured in the direction of the viewing sensor
- The corresponding array of Brightness Temperatures (also referred to as Equivalent Black Body Temperatures - EBBTs) if the band is primarily emissive or the corresponding array TOA reflectance if the band is primarily reflective during the daytime

Notes:

All Imagery EDRs are produced in a Ground Track Mercator (GTM) projection.

There are multiple EDRs produced for Imagery products, depending on sensor data availability:

- VIIRS Imagery EDRs
    - I-Band Imagery EDRs
        - I1-Band Imagery EDR
        - I2-Band Imagery EDR
        - I3-Band Imagery EDR
        - I4-Band Imagery EDR

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        - I5-Band Imagery EDR
    - M-Band Imagery EDRs
        - First M-Band Imagery EDR (Default: M1-Band)
        - Second M-Band Imagery EDR (Default: M4-Band)
        - Third M-Band Imagery EDR (Default: M9-Band)
        - Fourth M-Band Imagery EDR (Default: M14-Band)
        - Fifth M-Band Imagery EDR (Default: M15-Band)
        - Sixth M-Band Imagery EDR (Default: M16-Band)
    - Near Constant Contrast Imagery EDR

Note: Only six M-Band Imagery EDRs are produced by JPSS. The EDRs produced by a given Interface Data Processor (IDP) is determined by that IDP's configuration.

Table: 5.1-1 VIIRS Imagery EDRs

Sensors	VIIRS
Effectivity	S-NPP and JPSS
EDR Contents	For each pixel, the I-Band Imagery EDRs (I1 - I5) contain: • Calibrated TOA radiances and reflectances (Reflective Bands: I1-I3) • Calibrated TOA reflectance's and EBBTs (Emissive Bands: I4-I5) • Quality flags For each pixel, the M-Band Imagery EDRs, for the applicable subset of 6 M-bands out of the possible 16 M-bands contain: • Calibrated TOA radiances and reflectance's (Reflective Bands: M1-M11) • Calibrated TOA radiances and EBBTs (Emissive Bands: M12-M16) For each pixel, the NCC Imagery EDR contains: • NCC Imagery Data - Albedo (Normalized TOA Reflectance ... no atmospheric correction applied) • Quality flags

5.1.1 VIIRS I-Band Imagery

Data Mnemonic	EDRE-IMAG-C0030 (Official)
Description/ Purpose	The VIIRS I-Band Imagery radiances, reflectances, and brightness temperatures are characterized by a 375m Horizontal Reporting Interval (HRI). These products are mapped from the 375m VIIRS SDR Imagery Resolution Geolocation to a GTM projection. The "PixelRowSDR" and "PixelColSDR" geolocation fields provide the SDR row and column coordinate for each GTM pixel mapping. The pixel level geolocation quality flag "QF1_VIIRSGTMGEO" provides a flag that indicates whether a pixel has crossed a granule boundary during the SDR to GTM mapping process. If a granule boundary was crossed, the original SDR pixel may be located using effectivity time or the N_Input_Prod

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	standard metadata item may be used to obtain the N_Reference_ID for each SDR granule. The calibrated radiances at TOA for bands I1 - I3 are under daytime conditions. The calibrated radiances at TOA for bands I4 - I5 are under daytime and nighttime conditions. This data is reported in W/(m2 sr um). The calibrated reflectances at TOA for bands I1 - I3 are under daytime conditions and are unitless. The calibrated EBBT for bands I4 - I5 are under daytime and nighttime conditions. This data is reported in Kelvin.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	Estimated Granule Size: See Table 5.1.1.1-1 VIIRS I-Band Imagery EDR Data Content Summary - Bands I1-I3 and Table 5.1.1.1-2 VIIRS I-Band Data Content Summary - Bands I4-I5 for size. Geolocation Estimated Granule Size: See Table 5.1.1.5-1 VIIRS I-Band Imagery GTM EDR Geolocation Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	See Section 5.1.1.1 - Section 5.1.1.20 VIIRS I-Band Imagery EDR Data Content Summaries, VIIRS I-Band Imagery EDR Product Profiles and VIIRS I-Band Imagery EDR HDF5 Details See Section 5.1.1.21, VIIRS I-Band Imagery EDR GTM Geolocation Details See Section 5.1.1.22, VIIRS I-Band Imagery EDR GTM Geolocation Data Summary See Section 5.1.1.23, VIIRS I-Band Imagery EDR GTM Geolocation Product Profile See Section 5.1.1.24, VIIRS I-Band Imagery EDR GTM Geolocation HDF5 Details See Section 5.1.1.25, VIIRS I-Band Imagery EDR GTM Geolocation HDF5 Metadata Details

5.1.1.1 VIIRS I1-Band Imagery EDR Data Content Summary

VIIRS I1 - I3 Bands (daytime only) are reflective bands and contain calibrated TOA radiances and reflectances. Bands I4 and I5 (daytime and nighttime) are emissive bands and contain calibrated TOA radiances and EBBTs. See each band's product profile (Sections 5.1.1.2, 5.1.1.6, 5.1.1.10, 5.1.1.14, 5.1.1.18) for full product details. VIIRS I-Band Data Content Summary (Tables 5.1.1.1-1, 5.1.1.5-1, 5.1.1.9-1, 5.1.1.13-1, 5.1.1.17-1) list the content of the I-Band granule. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.1-1 VIIRS I1 Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	W/(m2 sr um)
Reflectance	TOA reflectances (daytime only)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	unitless
QF1_VIIRSIMGEDR	Pixel Level Quality Flags	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the Band radiances	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
ReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the Band reflectances	32-bit floating point	[N*2]	[2]	unitless
File Size	**63,496,924 Bytes**				

5.1.1.2 VIIRS I1-Band Imagery EDR Product Profile

Table 5.1.1.2-1, VIIRS I1 Band Imagery EDR Product Profile lists product profile details. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.2-1 VIIRS I1 Imagery EDR Product Profile

VIIRS I1-Band Imagery Product Profile

Fields

Name	Data Size	Dimensions
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Top of Atmosphere radiances for the I1-Band	0	-0.41	861.60	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer	NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

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Reflectance	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**										
		AlongTrack	Yes	No	1541	1541										
		CrossTrack	No	No	8241	8241										
		Datum														
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Top of Atmosphere Reflectances (Daytime only) for the I1-Band			0	0.00	1.60	unitless	Yes	ReflectanceFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**	
												NA_UINT16_FILL	65535			
												MISS_UINT16_FILL	65534			
												ONBOARD_PT_UINT16_FILL	65533			
												ONGROUND_PT_UINT16_FILL	65532			
												ERR_UINT16_FILL	65531			
												ELLIPSOID_UINT16_FILL	65530			
												VDNE_UINT16_FILL	65529			
												SOUB_UINT16_FILL	65528			

VIIRS I1-Band Imagery Product Profile - Quality Flags

		Fields																
Name	**Data Size**	**Dimensions**																
QF1_VIIRSIMGEDR	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**												
		AlongTrack	Yes	No	1541	1541												
		CrossTrack	No	No	8241	8241												
		Datum																
		Description					**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality. Dead Pixel Replacement: Individual bad pixels caused by a bad detector are filled as an average of the two adjacent detector pixels. Bad edge-of-scan pixels use the adjacent pixel value. If two adjacent pixels are dead, a fill value is used for each pixel.)					0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**	
																Good	0	
																Poor	1	
																No Calibration	2	
																Dead Pixel Replacement	3	
		Pixel is Saturated					2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**	
																False	0	
																True	1	
		Missing Data (Data required for calibration processing is not available for processing)					3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**	
																All data present	0	
																Earth View RDR data missing	1	
																Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing	2	
																Thermistor Data Missing	3	
		Out of Range					5	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**	
																All data within range	0	
																Radiance out of range	1	
																Reflectance out of range	2	
																Both Radiance and Reflectance out of range	3	
		Spare					7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**	
PadByte1	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**												
		Granule	Yes	No	3	3												
		Datum																
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**						
		Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	**Name**	**Value**	**Name**	**Value**					

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

VIIRS I1-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
ReflectanceFactors	4byte(s)	

RadianceFactors — Dimensions

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

RadianceFactors — Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point				

ReflectanceFactors — Dimensions

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

ReflectanceFactors — Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	unitless	No		32-bit floating point				

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.1.3 VIIRS I1 Imagery EDR HDF5 Details

Figure 5.1.1.3-1 provides the details on the content and data types of the I1 Imagery products. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

The I-Band Imagery products within the HDF5 files can be found within the Data_Products group with the group names of VIIRS-I1-EDR, VIIRS-I2-EDR, VIIRS-I3-EDR, VIIRS-I4-EDR, and VIIRS-I5-EDR, depending on the specific data product contained in the file. The aggregation and granule(s) contain the data fields listed in the UML diagrams. The corresponding HDF5 data type for each field is also provided.

VIIRS-I1-IMG-EDR
+Radiance: H5T NATIVE_USHORT +Reflectance : H5T_NATIVE_USHORT +QF1_VIIRSIMGEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +RadianceFactors : H5T_NATIVE_FLOAT +ReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.1.3-1 VIIRS I1 Imagery EDR UML Diagram

5.1.1.4 VIIRS I1 Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The I-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 5.1.1.4-1, VIIRS I1 Imagery EDR Quality Summary Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS I-Band Imagery EDRs.

Note that there is a standard granule level metadata item that identifies the Imagery Band. This metadata item is the “Band_ID” and is set to “I1”, “I2”, “I3”, “I4” or “I5”.

Table: 5.1.1.4-1 VIIRS I1 Imagery EDR Quality Summary Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Comments**
Summary Imagery Quality	0 - 100	Percent of good quality pixels in granule	
Summary Range Check	0 - 100	Percent of measured radiances in granule outside of required range	
Summary Saturated Pixel	0 - 100	Percent of saturated pixels in granule	

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.1.5 VIIRS I2 Imagery EDR Data Content Summary

VIIRS I1 - I3 Bands (daytime only) are reflective bands and contain calibrated TOA radiances and reflectances. Table 5.1.1.5-1, VIIRS I2 Imagery EDR Data Content Summary lists the contents of the I2 Band.

Table: 5.1.1.5-1 VIIRS I2 Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	W/(m2 sr um)
Reflectance	TOA reflectances (daytime only)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	unitless
QF1_VIIRSIMGEDR	Pixel Level Quality Flag	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the Band radiances	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
ReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the Band reflectances	32-bit floating point	[N*2]	[2]	unitless
File Size	**63,496,924 Bytes**				

5.1.1.6 VIIRS I2 Imagery EDR Product Profile

Table 5.1.1.6-1, VIIRS I2 Imagery EDR Product Profile lists product profile details. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.6-1 VIIRS I2 Imagery EDR Product Profile

VIIRS I2-Band Imagery Product Profile

Fields

Name	Data Size	Dimensions
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Top of Atmosphere radiances for the I2-Band	0	-0.24	418.80	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer				

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

										NA_UINT16_FILL 65535 MISS_UINT16_FILL 65534 ONBOARD_PT_UINT16_FILL 65533 ONGROUND_PT_UINT16_FILL 65532 ERR_UINT16_FILL 65531 ELLIPSOID_UINT16_FILL 65530 VDNE_UINT16_FILL 65529 SOUB_UINT16_FILL 65528
Reflectance	2byte(s)									

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Top of Atmosphere Reflectances (Daytime only) for the I2-Band	0	0.00	1.60	unitless	Yes	ReflectanceFactors	unsigned 16-bit integer	NA_UINT16_FILL 65535 MISS_UINT16_FILL 65534 ONBOARD_PT_UINT16_FILL 65533 ONGROUND_PT_UINT16_FILL 65532 ERR_UINT16_FILL 65531 ELLIPSOID_UINT16_FILL 65530 VDNE_UINT16_FILL 65529 SOUB_UINT16_FILL 65528	

VIIRS I2-Band Imagery Product Profile - Quality Flags

Fields

Name	Data Size	Dimensions
QF1_VIIRSIMGEDR	1byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality. Dead Pixel Replacement: Individual bad pixels caused by a bad detector are filled as an average of the two adjacent detector pixels. Bad edge-of-scan pixels use the adjacent pixel value. If two adjacent pixels are dead, a fill value is used for each pixel.)	0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)		Good 0 Poor 1 No Calibration 2 Dead Pixel Replacement 3
Pixel is Saturated	2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)		False 0 True 1
Missing Data (Data required for calibration processing is not available for processing)	3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)		All data present 0 Earth View RDR data missing 1 Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing 2 Thermistor Data Missing 3
Out of Range	5	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)		All data within range 0 Radiance out of range 1 Reflectance out of range 2 Both Radiance and Reflectance out of range 3

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

		Spare					7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name	Value	Name	Value
PadByte1	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		Granule	Yes	No	3	3											
		Datum															
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**					
		Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name	Value	Name	Value				

VIIRS I2-Band Imagery Product Profile - Scale Factors

Fields																	
Name	**Data Size**	**Dimensions**															
RadianceFactors	4byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		Granule	Yes	No	2	2											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**		**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Scale = first array element; Offset = second array element			0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)		No		32-bit floating point	Name	Value	Name	Value	
ReflectanceFactors	4byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		Granule	Yes	No	2	2											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**		**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Scale = first array element; Offset = second array element			0	MIN_VAL	MAX_VAL	unitless		No		32-bit floating point	Name	Value	Name	Value	

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.1.7 VIIRS I2 Imagery EDR HDF5 Details

Figure 5.1.1.7-1 provides the details on the content and data types of the I2 Imagery products. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

The I-Band Imagery products within the HDF5 files can be found within the Data_Products group with the group names of VIIRS-I1-EDR, VIIRS-I2-EDR, VIIRS-I3-EDR, VIIRS-I4-EDR, and VIIRS-I5-EDR, depending on the specific data product contained in the file. The aggregation and granule(s) contain the data fields listed in the UML diagrams. The corresponding HDF5 data type for each field is also provided.

VIIRS-I2-IMG-EDR
+Radiance : H5T_NATIVE_USHORT +Reflectance : H5T_NATIVE_USHORT +QF1_VIIRSIMGEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +RadianceFactors : H5T_NATIVE_FLOAT +ReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.1.7-1 VIIRS I2 Imagery EDR UML Diagram

5.1.1.8 VIIRS I2 Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The I-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 5.1.1.8-1, VIIRS I2 Imagery EDR Quality Summary Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS I-Band Imagery EDRs.

Note that there is a standard granule level metadata item that identifies the Imagery Band. This metadata item is the “Band_ID” and is set to “I1”, “I2”, “I3”, “I4” or “I5”.

Table: 5.1.1.8-1 VIIRS I2 Imagery EDR Quality Summary Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Comments**
Summary Imagery Quality	0 - 100	Percent of good quality pixels in granule	
Summary Range Check	0 - 100	Percent of measured radiances in granule outside of required range	
Summary Saturated Pixel	0 - 100	Percent of saturated pixels in granule	

5.1.1.9 VIIRS I3 Imagery EDR Data Content Summary

VIIRS I1 - I3 Bands (daytime only) are reflective bands and contain calibrated TOA radiances and reflectances. Table 5.1.1.9-1, VIIRS I3 Data Content Summary lists the contents of the I3 Band.

Table: 5.1.1.9-1 VIIRS I3 Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	W/(m2 sr um)
Reflectance	TOA reflectances (daytime only)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	unitless
QF1_VIIRSIMGEDR	Pixel Level Quality Flags	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for Band radiances	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
ReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the Band reflectances	32-bit floating point	[N*2]	[2]	unitless
File Size	**63,496,924 Bytes**				

5.1.1.10 VIIRS I3 Imagery EDR Product Profile

Table 5.1.1.10-1, VIIRS I3 Imagery EDR Product Profile lists product profile details. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.10-1 VIIRS I3 Imagery EDR Product Profile

VIIRS I3-Band Imagery Product Profile

Fields

Name	Data Size	Dimensions
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Top of Atmosphere radiances for the I3-Band	0	-0.21	87.00	W/(m^2*sr*micro-m)	Yes	RadianceFactors	unsigned 16-bit integer				

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										NA_UINT16_FILL	65535
										MISS_UINT16_FILL	65534
										ONBOARD_PT_UINT16_FILL	65533
										ONGROUND_PT_UINT16_FILL	65532
										ERR_UINT16_FILL	65531
										ELLIPSOID_UINT16_FILL	65530
										VDNE_UINT16_FILL	65529
										SOUB_UINT16_FILL	65528

Reflectance	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**							
		AlongTrack	Yes	No	1541	1541							
		CrossTrack	No	No	8241	8241							
		Datum											
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
		Top of Atmosphere Reflectances (Daytime only) for the I3-Band	0	0.00	1.60	unitless	Yes	ReflectanceFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**
										NA_UINT16_FILL	65535		
										MISS_UINT16_FILL	65534		
										ONBOARD_PT_UINT16_FILL	65533		
										ONGROUND_PT_UINT16_FILL	65532		
										ERR_UINT16_FILL	65531		
										ELLIPSOID_UINT16_FILL	65530		
										VDNE_UINT16_FILL	65529		
										SOUB_UINT16_FILL	65528		

VIIRS I3-Band Imagery Product Profile - Quality Flags

Fields																
Name	**Data Size**	**Dimensions**														
QF1_VIIRSIMGEDR	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**										
		AlongTrack	Yes	No	1541	1541										
		CrossTrack	No	No	8241	8241										
		Datum														
		Description					**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
		Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality. Dead Pixel Replacement: Individual bad pixels caused by a bad detector are filled as an average of the two adjacent detector pixels. Bad edge-of-scan pixels use the adjacent pixel value. If two adjacent pixels are dead, a fill value is used for each pixel.)					0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**
																Good	0
																Poor	1
																No Calibration	2
																Dead Pixel Replacement	3
		Pixel is Saturated					2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**
																False	0
																True	1
		Missing Data (Data required for calibration processing is not available for processing)					3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**
																All data present	0
																Earth View RDR data missing	1
																Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing	2
																Thermistor Data Missing	3
		Out of Range					5	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**
																All data within range	0
																Radiance out of range	1
																Reflectance out of range	2
																Both Radiance and Reflectance out of range	3

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

		Spare					7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name Value	Name Value	
PadByte1	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**										
		Granule	Yes	No	3	3										
		Datum														
		Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**	**Legend Entries**					
		Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name Value	Name Value					

VIIRS I3-Band Imagery Product Profile - Scale Factors

Fields																
Name	**Data Size**	**Dimensions**														
RadianceFactors	4byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**										
		Granule	Yes	No	2	2										
		Datum														
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**	**Legend Entries**			
		Scale = first array element; Offset = second array element			0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m^2*sr*micro-m)	No		32-bit floating point	Name Value	Name Value			
ReflectanceFactors	4byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**										
		Granule	Yes	No	2	2										
		Datum														
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**	**Legend Entries**			
		Scale = first array element; Offset = second array element			0	MIN_VAL	MAX_VAL	unitless	No		32-bit floating point	Name Value	Name Value			

5.1.1.11 VIIRS I3 Imagery EDR HDF5 Details

Figure 5.1.1.11-1 provides the details on the content and data types of the I3 Imagery products. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

The I-Band Imagery products within the HDF5 files can be found within the Data_Products group with the group names of VIIRS-I1-EDR, VIIRS-I2-EDR, VIIRS-I3-EDR, VIIRS-I4-EDR, and VIIRS-I5-EDR, depending on the specific data product contained in the file. The aggregation and granule(s) contain the data fields listed in the UML diagrams. The corresponding HDF5 data type for each field is also provided.

VIIRS-I3-IMG-EDR
+Radiance : H5T_NATIVE_USHORT +Reflectance : H5T_NATIVE_USHORT +QF1_VIIRSIMGEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +RadianceFactors : H5T_NATIVE_FLOAT +ReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.1.11-1 VIIRS I3 Imagery EDR UML Diagram

5.1.1.12 VIIRS I3 Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The I-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 5.1.1.12-1, VIIRS I3 Imagery EDR Quality Summary Level Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS I-Band Imagery EDRs.

Note that there is a standard granule level metadata item that identifies the Imagery Band. This metadata item is the “Band_ID” and is set to “I1”, “I2”, “I3”, “I4” or “I5”.

Table: 5.1.1.12-1 VIIRS I3 Imagery EDR Quality Summary Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Comments**
Summary Imagery Quality	0 - 100	Percent of good quality pixels in granule	
Summary Range Check	0 - 100	Percent of measured radiances in granule outside of required range	
Summary Saturated Pixel	0 - 100	Percent of saturated pixels in granule	

5.1.1.13 VIIRS I4 Imagery EDR Data Content Summary

VIIRS Bands I4 and I5 (daytime and nighttime) are emissive bands and contain calibrated TOA radiances and EBBTs. Table 5.1.1.13-1, VIIRS I4 Imagery EDR Data Content Summary lists the contents of the I4 Band.

Table: 5.1.1.13-1 VIIRS I4 Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	W/(m2 sr um)
BrightnessTemperature	Top of Atmosphere Equivalent Blackbody Brightness Temperatures (daytime and nighttime)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	Kelvin
QF1_VIIRSIMGEDR	Pixel Level Quality Flags	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the Band radiances	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessFactors	Scale = 1st array element; Offset = 2nd array element for the Band brightness temperatures	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin
File Size	**63,496,924 Bytes**				

5.1.1.14 VIIRS I4 Imagery EDR Product Profile

Table 5.1.1.14-1, VIIRS I4 Imagery EDR Product Profile lists product profile details. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.14-1 VIIRS I4 Imagery EDR Product Profile

VIIRS I4-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Radiance	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		AlongTrack	Yes	No	1541	1541											
		CrossTrack	No	No	8241	8241											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**			
		Top of Atmosphere radiances for the I4-Band			0	-0.01	4.651	W/(m^2*sr*micro-m)	Yes	RadianceFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**		
												NA_UINT16_FILL	65535				
												MISS_UINT16_FILL	65534				
												ONBOARD_PT_UINT16_FILL	65533				
												ONGROUND_PT_UINT16_FILL	65532				
												ERR_UINT16_FILL	65531				
												ELLIPSOID_UINT16_FILL	65530				
												VDNE_UINT16_FILL	65529				
												SOUB_UINT16_FILL	65528				
BrightnessTemperature	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		AlongTrack	Yes	No	1541	1541											
		CrossTrack	No	No	8241	8241											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**			
		Top of Atmosphere Equivalent Blackbody Brightness Temperatures for the I4-Band			0	208.00	367.00	Kelvin	Yes	BrightnessFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**		
												NA_UINT16_FILL	65535				
												MISS_UINT16_FILL	65534				
												ONBOARD_PT_UINT16_FILL	65533				
												ONGROUND_PT_UINT16_FILL	65532				
												ERR_UINT16_FILL	65531				
												ELLIPSOID_UINT16_FILL	65530				
												VDNE_UINT16_FILL	65529				
												SOUB_UINT16_FILL	65528				

VIIRS I4-Band Imagery Product Profile - Quality Flags

Fields																		
Name	**Data Size**	**Dimensions**																
QF1_VIIRSIMGEDR	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**												
		AlongTrack	Yes	No	1541	1541												
		CrossTrack	No	No	8241	8241												
		Datum																
		Description					**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**		
		Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality. Dead Pixel Replacement: Individual bad pixels caused by a bad detector are filled as an average of the two adjacent detector pixels. Bad edge-of-scan pixels use the adjacent pixel value. If two adjacent pixels are dead, a fill value is used for each pixel.)					0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**	
																Good	0	
																Poor	1	
																No Calibration	2	
																Dead Pixel Replacement	3	
		Pixel is Saturated					2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**	
																False	0	
																True	1	
		Missing Data (Data required for calibration processing is not available for processing)					3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**	
																All data present	0	
																Earth View RDR data missing	1	
																Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing	2	
																Thermistor Data Missing	3	

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

		Out of Range	5	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	Name Value	Name	Value
											All data within range	0
											Radiance out of range	1
											EBBT out of range	2
											Both Radiance and EBBT out of range	3
		Spare	7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name Value	Name	Value

PadByte1 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	3	3

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name Value	Name Value

VIIRS I4-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
BrightnessFactors	4byte(s)	

RadianceFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m^2*sr*micro-m)	No		32-bit floating point	Name Value	Name Value

BrightnessFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin	No		32-bit floating point	Name Value	Name Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.1.15 VIIRS I4 Imagery EDR HDF5 Details

Figure 5.1.1.15-1 provides the details on the content and data types of the I4 Imagery products. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

The I-Band Imagery products within the HDF5 files can be found within the Data_Products group with the group names of VIIRS-I1-EDR, VIIRS-I2-EDR, VIIRS-I3-EDR, VIIRS-I4-EDR, and VIIRS-I5-EDR, depending on the specific data product contained in the file. The aggregation and granule(s) contain the data fields listed in the UML diagrams. The corresponding HDF5 data type for each field is also provided.

VIIRS-I4-IMG-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperature : H5T_NATIVE_USHORT +QF1_VIIRSIMGEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessFactors : H5T_NATIVE_FLOAT

Figure: 5.1.1.15-1 VIIRS I4 Imagery EDR UML Diagram

5.1.1.16 VIIRS I4 Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The I-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 5.1.1.16-1, VIIRS I4 Imagery EDR Quality Summary Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS I-Band Imagery EDRs.

Note that there is a standard granule level metadata item that identifies the Imagery Band. This metadata item is the “Band_ID” and is set to “I1”, “I2”, “I3”, “I4” or “I5”.

Table: 5.1.1.16-1 VIIRS I4 Imagery EDR Quality Summary Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Comments**
Summary Imagery Quality	0 - 100	Percent of good quality pixels in granule	
Summary Range Check	0 - 100	Percent of measured radiances in granule outside of required range	
Summary Saturated Pixel	0 - 100	Percent of saturated pixels in granule	

5.1.1.17 VIIRS I5 Imagery EDR Data Content Summary

VIIRS Bands I4 and I5 (daytime and nighttime) are emissive bands and contain calibrated TOA radiances and EBBTs. Table 5.1.1.17-1, VIIRS I5 Data Content Summary lists the contents of the I5 Band.

Table: 5.1.1.17-1 VIIRS I5 Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	W/(m^2*sr*micro-m)
BrightnessTemperatures	Top of Atmosphere Equivalent Blackbody Brightness Temperatures (daytime and nighttime)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	Kelvin
QF1_VIIRSIMGEDR	Pixel Level Quality Flags	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the Band radiances	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessFactors	Scale = 1st array element; Offset = 2nd array element for the Band brightness temperatures	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin
File Size	**63,496,924 Bytes**				

5.1.1.18 VIIRS I5 Imagery EDR Product Profile

Table 5.1.1.18-1, VIIRS I5 Imagery EDR Product Profile lists product profile details. Note that only one of the five bands will appear in any single data product's granule.

Table: 5.1.1.18-1 VIIRS I5 Imagery EDR Product Profile

VIIRS I5-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**

Radiance	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		AlongTrack	Yes	No	1541	1541											
		CrossTrack	No	No	8241	8241											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**			
		Top of Atmosphere radiances for the I5-Band			0	-0.08	22.8967	W/(m^2*sr*micro-m)	Yes	RadianceFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**		
												NA_UINT16_FILL	65535				
												MISS_UINT16_FILL	65534				
												ONBOARD_PT_UINT16_FILL	65533				
												ONGROUND_PT_UINT16_FILL	65532				
												ERR_UINT16_FILL	65531				
												ELLIPSOID_UINT16_FILL	65530				
												VDNE_UINT16_FILL	65529				
												SOUB_UINT16_FILL	65528				
BrightnessTemperature	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**											
		AlongTrack	Yes	No	1541	1541											
		CrossTrack	No	No	8241	8241											
		Datum															
		Description			**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**			
		Top of Atmosphere Equivalent Blackbody Brightness Temperatures for the I5-Band			0	150.00	380.00	Kelvin	Yes	BrightnessFactors	unsigned 16-bit integer	**Name**	**Value**	**Name**	**Value**		
												NA_UINT16_FILL	65535				
												MISS_UINT16_FILL	65534				
												ONBOARD_PT_UINT16_FILL	65533				
												ONGROUND_PT_UINT16_FILL	65532				
												ERR_UINT16_FILL	65531				
												ELLIPSOID_UINT16_FILL	65530				
												VDNE_UINT16_FILL	65529				
												SOUB_UINT16_FILL	65528				

VIIRS I5-Band Imagery Product Profile - Quality Flags

Fields																					
Name	**Data Size**	**Dimensions**																			
QF1_VIIRSIMGEDR	1byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**															
		AlongTrack	Yes	No	1541	1541															
		CrossTrack	No	No	8241	8241															
		Datum																			
		Description					**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**					
		Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality. Dead Pixel Replacement: Individual bad pixels caused by a bad detector are filled as an average of the two adjacent detector pixels. Bad edge-of-scan pixels use the adjacent pixel value. If two adjacent pixels are dead, a fill value is used for each pixel.)					0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**				
																Good	0				
																Poor	1				
																No Calibration	2				
																Dead Pixel Replacement	3				
		Pixel is Saturated					2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	**Name**	**Value**	**Name**	**Value**				
																False	0				
																True	1				
		Missing Data (Data required for calibration processing is not available for processing)					3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	**Name**	**Value**	**Name**	**Value**				
																All data present	0				
																Earth View RDR data missing	1				
																Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing	2				
																Thermistor Data Missing	3				

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

		Out of Range	5	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)	Name Value	Name	Value
											All data within range	0
											Radiance out of range	1
											EBBT out of range	2
											Both Radiance and EBBT out of range	3
		Spare	7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name Value	Name	Value

PadByte1 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	3	3

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name Value	Name Value

VIIRS I5-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
BrightnessFactors	4byte(s)	

RadianceFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point	Name Value	Name Value

BrightnessFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin	No		32-bit floating point	Name Value	Name Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.1.19 VIIRS I5 Imagery EDR HDF5 Details

Figure 5.1.1.19-1 provides the details on the content and data types of the I5 Imagery products. These UML diagrams provide details at the product level only. In addition to these UML diagrams, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product.

The I-Band Imagery products within the HDF5 files can be found within the Data_Products group with the group names of VIIRS-I1-EDR, VIIRS-I2-EDR, VIIRS-I3-EDR, VIIRS-I4-EDR, and VIIRS-I5-EDR, depending on the specific data product contained in the file. The aggregation and granule(s) contain the data fields listed in the UML diagrams. The corresponding HDF5 data type for each field is also provided.

VIIRS-I5-IMG-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperature : H5T_NATIVE_USHORT +QF1_VIIRSIMGEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessFactors : H5T_NATIVE_FLOAT

Figure: 5.1.1.19-1 VIIRS I5 Imagery EDR UML Diagram

5.1.1.20 VIIRS I5 Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The I-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level.

In addition to the common metadata items for this product, Table 5.1.1.20-1, VIIRS I5 Imagery EDR Quality Summary Metadata Values, provide the following items as name/value pairs. The listed name/value pair items in the table are the granule level quality flags for the VIIRS I-Band Imagery EDRs.

Note that there is a standard granule level metadata item that identifies the Imagery Band. This metadata item is the “Band_ID” and is set to “I1”, “I2”, “I3”, “I4” or “I5”.

Table: 5.1.1.20-1 VIIRS I5 Imagery Quality Summary Metadata Values

N_Quality_Summary			
Name	**Value**	**Description**	**Comments**
Summary Imagery Quality	0 - 100	Percent of good quality pixels in granule	
Summary Range Check	0 - 100	Percent of measured radiances in granule outside of required range	
Summary Saturated Pixel	0 - 100	Percent of saturated pixels in granule	

5.1.1.21 VIIRS I-Band Imagery GTM Geolocation Details

Data Mnemonic	None
Description/ Purpose	The VIIRS I-Band Imagery GTM Geolocation is mapped to a GTM grid from the Imagery Resolution SDR Geolocation. The original SDR pixel row and column (i,j)th value is provided in the fields “PixelRowSDR” and “PixelColSDR”. Details for each field of the geolocation are provided in Table 5.1.1.5-1, VIIRS I-Band Imagery GTM EDR Geolocation Data Content Summary.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	See Table 5.1.1.22-1 VIIRS I-Band Imagery GTM EDR Geolocation Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	The VIIRS I-Band Imagery GTM Geolocation contains: Time Field Geolocation Angular Fields Height and Satellite Range Geolocation Quality Flags SDR pixel mapping field (for SDR row and column) Pad bytes See Section 5.1.1.22, VIIRS I-Band Imagery GTM Geolocation Data Summary See Section 5.1.1.23, VIIRS I-Band Imagery GTM Geolocation Product Profiles See Section 5.1.1.24, VIIRS I-Band Imagery GTM Geolocation HDF5 Details See Section 5.1.1.25, VIIRS I-Band Imagery GTM Geolocation HDF5 Metadata Details

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5.1.1.22 VIIRS I-Band Imagery GTM EDR Geolocation Data Content Summary

Table: 5.1.1.22-1 VIIRS I-Band Imagery GTM EDR Geolocation Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Time	Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	64-bit integer	[N*1541]	[1541]	microsecond
Latitude	Latitude of each pixel (positive North)	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
Longitude	Longitude of each pixel (positive East)	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
SolarZenithAngle	Zenith angle of sun at each pixel position	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
SolarAzimuthAngle	Azimuth angle of sun (measured clockwise positive from North) at each pixel position	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
SatelliteZenithAngle	Zenith angle to Satellite at each pixel position	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
SatelliteAzimuthAngle	Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	32-bit floating point	[N*1541, 8241]	[1541, 8241]	degree
Height	Ellipsoid-Geoid separation	16-bit integer	[N*1541, 8241]	[1541, 8241]	meter
PadByte1	Pad byte	unsigned 8-bit char	[N*2]	[2]	unitless
SatelliteRange	Line of sight distance from the ellipsoid intersection to the satellite	32-bit floating point	[N*1541, 8241]	[1541, 8241]	meter
QF1_VIIRSGTMGEO	Pixel Level Geolocation Quality Flags	unsigned 8-bit char	[N*1541, 8241]	[1541, 8241]	unitless

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
QF2_VIIRSGTMGEO	Scan Level Geolocation Quality Flags	unsigned 8-bit char	[N*48]	[48]	unitless
PadByte2	Pad byte	unsigned 8-bit char	[N*1]	[1]	unitless
PixelRowSDR	Imagery SDR pixel row index number that was remapped to this GTM pixel (row numbering begins with zero)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	unitless
PixelColSDR	Imagery SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	unsigned 16-bit integer	[N*1541, 8241]	[1541, 8241]	unitless
PadByte3	Pad byte	unsigned 8-bit char	[N*6]	[6]	unitless
File Size	**444,490,720 Bytes**				

5.1.1.23 VIIRS I-Band Imagery GTM Geolocation Product Profile EDR Product Profile

Table: 5.1.1.23-1 VIIRS I-Band Imagery GTM Geolocation Product Profile

I-Band Imagery GTM Geolocation Product Profile

Fields

Name	Data Size	Dimensions
Time	8byte(s)	
Latitude	4byte(s)	

Time — Dimensions:

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541

Time — Datum:

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	0	MIN_VAL	MAX_VAL	microsecond	No		64-bit integer	Name: NA_INT64_FILL, Value: -999 Name: MISS_INT64_FILL, Value: -998 Name: ERR_INT64_FILL, Value: -995 Name: ELLIPSOID_INT64_FILL, Value: -994 Name: VDNE_INT64_FILL, Value: -993	Name, Value

Latitude — Dimensions:

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Latitude — Datum:

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Latitude of each pixel (positive North)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name: NA_FLOAT32_FILL, Value: -999.9	Name, Value

											MISS_FLOAT32_FILL	-999.8
											ERR_FLOAT32_FILL	-999.5
											ELLIPSOID_FLOAT32_FILL	-999.4
											VDNE_FLOAT32_FILL	-999.3

Longitude — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum										
Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
Longitude of each pixel (positive East)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	**Name**	**Value**	**Name**	**Value**
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum										
Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
Zenith angle of sun at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	**Name**	**Value**	**Name**	**Value**
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum										
Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
Azimuth angle of sun (measured clockwise positive from North) at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	**Name**	**Value**	**Name**	**Value**
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum										
Description	**Datum Offset**	**Unscaled Valid Range Min**	**Unscaled Valid Range Max**	**Measurement Units**	**Scaled**	**Scale Factor Name**	**Data Type**	**Fill Values**		**Legend Entries**	
Zenith angle to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	**Name**	**Value**	**Name**	**Value**
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541

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		CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

Height — 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Ellipsoid-Geoid separation	0	MIN_VAL	MAX_VAL	meter	No		16-bit integer	NA_INT16_FILL	-999		
								MISS_INT16_FILL	-998		
								ERR_INT16_FILL	-995		
								ELLIPSOID_INT16_FILL	-994		
								VDNE_INT16_FILL	-993		

PadByte1 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char				

SatelliteRange — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Line of sight distance from the ellipsoid intersection to the satellite	0	MIN_VAL	MAX_VAL	meter	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

QF1_VIIRSGTMGEO — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
SDR Pixel Mapping Coordinate (GTM to SDR). Indicates whether this pixel originated from the previous, current, or next granule in the SDR Imagery Resolution Geolocation.	0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)			Error	0
										Previous	1

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															Granule	
															Current Granule	2
															Next Granule	3
		Spare	2	MIN_VAL	MAX_VAL	unitless	No		6 bit(s)	Name Value		Name Value				

QF2_VIIRSGTMGEO 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Scan	Yes	No	48	48

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Solar Eclipse	0	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name	Value	Name	Value
										False	0
										True	1
Spare	1	MIN_VAL	MAX_VAL	unitless	No		7 bit(s)	Name	Value	Name	Value

PadByte2 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	1	1

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name	Value	Name	Value

PixelRowSDR 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Imagery SDR pixel row index number that was remapped to this GTM pixel (row numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		

PixelColSDR 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	1541	1541
CrossTrack	No	No	8241	8241

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Imagery SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		

PadByte3 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	6	6

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char	Name	Value	Name	Value

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5.1.1.24 VIIRS I-Band Imagery EDR GTM Geolocation HDF5 Details

The VIIRS I-Band Imagery GTM Geolocation is mapped to a GTM grid from the Imagery Resolution SDR Geolocation. The original SDR pixel row and column (i, j) value is provided in the fields “PixelRowSDR” and “PixelColSDR”. Figure 5.1.1.7-1, VIIRS I-Band Imagery GTM Geolocation UML Diagram, provides details on the contents and data types of the I-Band Imagery geolocation.

VIIRS-IMG-GTM-EDR-GEO
+Time : H5T_NATIVE_LLONG +Latitude : H5T_NATIVE_FLOAT +Longitude : H5T_NATIVE_FLOAT +SolarZenithAngle : H5T_NATIVE_FLOAT +SolarAzimuthAngle : H5T_NATIVE_FLOAT +SatelliteZenithAngle : H5T_NATIVE_FLOAT +SatelliteAzimuthAngle : H5T_NATIVE_FLOAT +Height : H5T_NATIVE_SHORT +PadByte1 : H5T_NATIVE_UCHAR +SatelliteRange : H5T_NATIVE_FLOAT +QF1_VIIRSGTMGEO : H5T_NATIVE_UCHAR +QF2_VIIRSGTMGEO : H5T_NATIVE_UCHAR +PadByte2 : H5T_NATIVE_UCHAR +PixelRowSDR : H5T_NATIVE_USHORT +PixelColSDR : H5T_NATIVE_USHORT +PadByte3 : H5T_NATIVE_UCHAR

Figure: 5.1.1.24-1 VIIRS I-Band Imagery GTM EDR Geolocation UML Diagram

5.1.1.25 VIIRS I-Band Imagery EDR GTM Geolocation HDF5 Metadata Details

The HDF5 metadata elements associated with the I-Band Imagery GTM Geolocation are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms. The I-Band Imagery GTM Geolocation metadata includes all common metadata at the root, product, aggregation, and granule level. There are no additional metadata elements or granule level quality flags for this geolocation.

5.1.2 VIIRS M-Band Imagery

Data Mnemonic	EDRE-VMOD-C0030 (Official)
Description/ Purpose	The VIIRS Moderate Band Imagery EDRs are characterized by a 750m Horizontal Reporting Interval (HRI). All M-Band imagery products are re-sampled from the VIIRS moderate resolution SDR geolocation to a GTM projection. The “PixelRowSDR” and “PixelColSDR” geolocation fields provide the SDR row and column coordinate for each GTM pixel mapping. The pixel level geolocation quality flag “QF1_VIIRSGTMGEO” provides a flag that indicates whether a pixel has crossed a granule boundary during the SDR to GTM mapping process. If a granule boundary was crossed, the original SDR pixel may be located using effectivity time or the N_Input_Prod standard metadata item may be used to obtain the N_Reference_ID for each

	SDR granule. Unlike the VIIRS I-Band products, not all VIIRS M-Band EDRs are created and made available for delivery. Instead, only a subset (six) of the 16 M-Bands may be configured at the IDP for output at any one time. The default bands are M1, M4, M9, M14, M15, and M16.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	Estimated Granule Size: See Table 5.1.2.1-1 VIIRS M-Band Imagery EDR Data Content Summary for size. Geolocation Granule Size: See Table 5.1.2.21-1 VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	See Section 5.1.2.1 - Section 5.1.2.18 VIIRS M-Band Imagery EDR Data Content Summaries, VIIRS M-Band Imagery EDR Product Profiles and VIIRS M-Band Imagery EDR HDF5 Details See Section 5.1.2.19, VIIRS M-Band Imagery EDR HDF5 Metadata Details See Section 5.1.2.21, VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary See Section 5.1.2.22, VIIRS M-Band Imagery EDR GTM Geolocation Product Profile See Section 5.1.2.23, VIIRS M-Band Imagery EDR GTM Geolocation HDF5 Details See Section 5.1.2.24, VIIRS M-Band Imagery EDR GTM Geolocation

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5.1.2.1 VIIRS M1st-Band Imagery EDR Data Content Summary

Table: 5.1.2.1-1 VIIRS M1st-Band Imagery EDR Data Content Summary

Name	**Description**	**Data Type**	**Aggregate Dimensions** (N = Number of Granules)	**Granule Dimensions**	**Units**
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer (scaled from 32-bit floating point)	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer (scaled from 32-bit floating point)	[N*771, 4121]	[771, 4121]	Reflectance=unitless brightness temperature=Kelvin
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.2 VIIRS M1st-Band Imagery Product Profile

The following table represents the Product Profiles representative of the M1st EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.2-1 VIIRS M1st Imagery EDR Product Profile

VIIRS M1ST-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**

Radiance — 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer		

Fill Values Name	Value
NA_UINT16_FILL	65535
MISS_UINT16_FILL	65534
ONBOARD_PT_UINT16_FILL	65533
ONGROUND_PT_UINT16_FILL	65532
ERR_UINT16_FILL	65531
ELLIPSOID_UINT16_FILL	65530
VDNE_UINT16_FILL	65529
SOUB_UINT16_FILL	65528

Legend Entries Name	Value

BrightnessTemperatureOrReflectance — 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer		

Fill Values Name	Value
NA_UINT16_FILL	65535
MISS_UINT16_FILL	65534
ONBOARD_PT_UINT16_FILL	65533
ONGROUND_PT_UINT16_FILL	65532
ERR_UINT16_FILL	65531
ELLIPSOID_UINT16_FILL	65530
VDNE_UINT16_FILL	65529
SOUB_UINT16_FILL	65528

Legend Entries Name	Value

VIIRS M1ST-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
BrightnessTemperatureOrReflectanceFactors	4byte(s)	

RadianceFactors — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point		

Fill Values Name	Value

Legend Entries Name	Value

BrightnessTemperatureOrReflectanceFactors — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point		

Fill Values Name	Value

Legend Entries Name	Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.3 VIIRS M1st Imagery EDR HDF5 Details

Figure 5.1.2.3-1, M1st Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M1ST-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.3-1 VIIRS M1st Imagery EDR UML Diagram

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.4 VIIRS M2nd Imagery EDR Data Content Summary

Table: 5.1.2.4-1 VIIRS M2nd Imagery EDR Data Content Summary

Name	**Description**	**Data Type**	**Aggregate Dimensions** (N = Number of Granules)	**Granule Dimensions**	**Units**
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	Kelvin (for BrightnessTemp) or unitless (for Reflectance)
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.5 VIIRS M2nd Imagery EDR Product Profile

The following table represents the Product Profiles representative of the M2nd EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.5-1 VIIRS M2nd Imagery EDR Product Profile

VIIRS M2ND-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**
Radiance	2byte(s)	

Name	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**
AlongTrack	Yes	No	771	771

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectance	2byte(s)	AlongTrack	Yes	No	771	771
		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

VIIRS M2ND-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
BrightnessTemperatureOrReflectanceFactors	4byte(s)	

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
RadianceFactors	4byte(s)	Granule	Yes	No	2	2
BrightnessTemperatureOrReflectanceFactors	4byte(s)	Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point	Name	Value	Name	Value

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point	Name	Value	Name	Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.6 VIIRS M2nd Imagery EDR HDF5 Details

Figure 5.1.2.6-1, M2nd Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M2ND-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.6-1 VIIRS M2ND Imagery EDR UML Diagram

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.7 VIIRS M3rd Imagery EDR Data Content Summary

Table: 5.1.2.7-1 VIIRS M3rd Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	Kelvin (for BrightnessTemp) or unitless (for Reflectance)
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.8 VIIRS M3rd Imagery EDR Product Profile

The following table represents the Product Profiles representative of the M3rd EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.8-1 VIIRS M3rd Imagery EDR Product Profile

VIIRS M3RD-Band Imagery Product Profile

Fields						
Name	**Data Size**	**Dimensions**				
Radiance	2byte(s)	**Name**	**Granule Boundary**	**Dynamic**	**Min Array Size**	**Max Array Size**
		AlongTrack	Yes	No	771	771

		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectance	2byte(s)	AlongTrack	Yes	No	771	771
		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

VIIRS M3RD-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions				
RadianceFactors	4byte(s)	Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point	Name	Value	Name	Value

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectanceFactors	4byte(s)	Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point	Name	Value	Name	Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.9 VIIRS M3rd Imagery EDR HDF5 Details

Figure 5.1.2.9-1, M3rd Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M3RD-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.9-1 VIIRS M3RD Imagery EDR UML Diagram

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.10 VIIRS M4th Imagery EDR Data Content Summary

Table: 5.1.2.10-1 VIIRS M4th Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	Kelvin (for BrightnessTemp) or unitless (for Reflectance)
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.11 VIIRS M4th Imagery EDR Product Profile

The following table represents the Product Profiles representative of the M4th EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.11-1 VIIRS M4th Imagery EDR Product Profile

VIIRS M4TH-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771

		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectance	2byte(s)	AlongTrack	Yes	No	771	771
		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

VIIRS M4TH-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions				
RadianceFactors	4byte(s)	Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point	Name	Value	Name	Value

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectanceFactors	4byte(s)	Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point	Name	Value	Name	Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.12 VIIRS M4th Imagery EDR HDF5 Details

Figure 5.1.2.12-1, M4th Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M4TH-EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.12-1 VIIRS M4TH Imagery EDR UML Diagram

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.13 VIIRS M5th Imagery EDR Data Content Summary

Table: 5.1.2.13-1 VIIRS M5th Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	Kelvin (for BrightnessTemp) or unitless (for Reflectance)
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.14 VIIRS M5th Imagery EDR Product Profile

The following table represents the Product Profiles representative of the M5th EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.14-1 VIIRS M5th Imagery EDR Product Profile

VIIRS M5TH-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771

		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

		Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
BrightnessTemperatureOrReflectance	2byte(s)	AlongTrack	Yes	No	771	771
		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

VIIRS M5TH-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	
BrightnessTemperatureOrReflectanceFactors	4byte(s)	

RadianceFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point	Name	Value	Name	Value

BrightnessTemperatureOrReflectanceFactors

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point	Name	Value	Name	Value

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.15 VIIRS M5th Imagery EDR HDF5 Details

Figure 5.1.2.15-1, M5th Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M5TH EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.15-1 VIIRS M5TH Imagery EDR UML Diagram

5.1.2.16 VIIRS M6th Imagery EDR Data Content Summary

Table: 5.1.2.16-1 VIIRS M6th Imagery EDR Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Radiance	TOA radiances for the M-Band selected	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	W/(m^2 sr um)
BrightnessTemperature OrReflectance	EBBT (for an emissive M-Band) or TOA Reflectances (for a reflective M-Band)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	Kelvin (for BrightnessTemp) or unitless (for Reflectance)
RadianceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band radiance	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = W/(m2 sr um)
BrightnessTemperature OrReflectanceFactors	Scale = 1st array element; Offset = 2nd array element for the selected M-Band Reflectance or Brightness Temperature	32-bit floating point	[N*2]	[2]	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)
File Size	**12,709,180 Bytes**				

5.1.2.17 VIIRS M6th Imagery EDR Product Profile

The following table represents the Product Profiles representative of the M6th EDRs. Note that the default bands may be reflective (M1, M4, M9) or emissive (M14, M15 and M16). Therefore the “BrightnessTemperatureOrReflectance” field may apply to either reflectance or brightness temperature as appropriate. The products are named with the generic names “VIIRS-M1ST-IMG-EDR”, “VIIRS-M2ND-IMG-EDR”, “VIIRS-3RD-IMG-EDR”, “VIIRS-4TH-IMG-EDR”, “VIIRS-5TH-IMG-EDR”, and “VIIRS-6TH-IMG-EDR” since any of the 16 M-bands may be requested. The metadata item “Band_ID” must be in order to determine which M-Band was selected for each product.

Table: 5.1.2.17-1 VIIRS M6th Imagery EDR Product Profile

VIIRS M6TH-Band Imagery Product Profile

Fields		
Name	**Data Size**	**Dimensions**
Radiance	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771

		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Top of Atmosphere radiances for the M-Band selected	0	Varies	Varies	W/(m2 sr um)	Yes	RadianceFactors	unsigned 16-bit integer		

Fill Values		Legend Entries	
Name	**Value**	**Name**	**Value**
NA_UINT16_FILL	65535		
MISS_UINT16_FILL	65534		
ONBOARD_PT_UINT16_FILL	65533		
ONGROUND_PT_UINT16_FILL	65532		
ERR_UINT16_FILL	65531		
ELLIPSOID_UINT16_FILL	65530		
VDNE_UINT16_FILL	65529		
SOUB_UINT16_FILL	65528		

BrightnessTemperatureOrReflectance 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Brightness Temperatures (for an emissive M-Band) or Top of Atmosphere Reflectances (for a reflective M-Band) for the selected M-Band	0	Varies (for BrightnessTemp) or 0.00 (for Reflectance)	Varies (for BrightnessTemp) or 1.60 (for Reflectance)	Kelvin (for BrightnessTemp) or unitless (for Reflectance)	Yes	BrightnessTemperatureOrReflectanceFactors	unsigned 16-bit integer		

Fill Values		Legend Entries	
Name	**Value**	**Name**	**Value**
NA_UINT16_FILL	65535		
MISS_UINT16_FILL	65534		
ONBOARD_PT_UINT16_FILL	65533		
ONGROUND_PT_UINT16_FILL	65532		
ERR_UINT16_FILL	65531		
ELLIPSOID_UINT16_FILL	65530		
VDNE_UINT16_FILL	65529		
SOUB_UINT16_FILL	65528		

VIIRS M6TH-Band Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
RadianceFactors	4byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = W/(m2 sr um)	No		32-bit floating point		

Fill Values		Legend Entries	
Name	**Value**	**Name**	**Value**

BrightnessTemperatureOrReflectanceFactors 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	Scale = unitless; Offset = Kelvin (for BrightnessTemp) or unitless (for Reflectance)	No		32-bit floating point		

Fill Values		Legend Entries	
Name	**Value**	**Name**	**Value**

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.2.18 VIIRS M6th Imagery EDR HDF5 Details

Figure 5.1.2.18-1, M6th Imagery EDR UML Diagram, provides details on the content and data types of the M-Band Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The M-Band Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-M1ST-IMG-EDR, VIIRS-M2ND-IMG-EDR, VIIRS-M3RD-IMG-EDR, VIIRS-M4TH-IMG-EDR, VIIRS-M5TH-IMG-EDR, or VIIRS-M6TH-IMG-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-M6TH EDR
+Radiance : H5T_NATIVE_USHORT +BrightnessTemperatureOrReflectance : H5T_NATIVE_USHORT +RadianceFactors : H5T_NATIVE_FLOAT +BrightnessTemperatureOrReflectanceFactors : H5T_NATIVE_FLOAT

Figure: 5.1.2.18-1 VIIRS M6TH Imagery EDR UML Diagram

5.1.2.19 VIIRS M-Band Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the M-Band Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The M-Band Imagery metadata includes all common metadata at the root, product, aggregation, and granule level. Note that one standard Imagery Metadata item at the granule level, Band_ID, is used to indicate the M-Band name (M1, M2, etc.) for the M-Band EDR. There are no additional granule level metadata elements for the M-Band Imagery.

5.1.2.20 VIIRS M-Band Imagery EDR GTM Geolocation Details

Data Mnemonic	None
Description/ Purpose	The M-Band GTM Geolocation is mapped to a GTM grid from the M-Band Resolution SDR Geolocation. Table 5.1.2.5-1, M-Band Imagery GTM Geolocation Data Content Summary provides geolocation details.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	Estimated Granule Size: See Table 5.1.2.21-1 VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	The VIIRS M-Band Imagery GTM Geolocation contains: Time Field Geolocation Angular Fields Height and Satellite Range Geolocation Quality Flags SDR pixel mapping field (for SDR row and column) Pad bytes See Section 5.1.2.21, VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary See Section 5.1.2.22, VIIRS M-Band Imagery EDR GTM Geolocation Product Profiles

	See Section 5.1.2.23, VIIRS M-Band Imagery EDR GTM Geolocation HDF5 Details See Section 5.1.2.24, VIIRS M-Band Imagery EDR GTM Geolocation HDF5 Metadata Details

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5.1.2.21 VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary

Table: 5.1.2.21-1 VIIRS M-Band Imagery EDR GTM Geolocation Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Time	Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	64-bit integer	[N*771]	[771]	microsecond
Latitude	Latitude of each pixel (positive North)	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
Longitude	Longitude of each pixel (positive East)	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SolarZenithAngle	Zenith angle of sun at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SolarAzimuthAngle	Azimuth angle of sun (measured clockwise positive from North) at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SatelliteZenithAngle	Zenith angle to Satellite at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SatelliteAzimuthAngle	Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
Height	Ellipsoid-Geoid separation	16-bit integer	[N*771, 4121]	[771, 4121]	meter
PadByte1	Pad byte	unsigned 8-bit char	[N*2]	[2]	unitless
SatelliteRange	Line of sight distance from the ellipsoid intersection to the satellite	32-bit floating point	[N*771, 4121]	[771, 4121]	meter
QF1_VIIRSGTMGEO	Pixel Level Geolocation Quality Flags	unsigned 8-bit char	[N*771, 4121]	[771, 4121]	unitless

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
QF2_VIIRSGTMGEO	Granule Level Geolocation Quality Flags	unsigned 8-bit char	[N*1]	[1]	unitless
PixelRowSDR	Moderate SDR pixel row index number that was remapped to this GTM pixel (row numbering begins with zero)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	unitless
PixelColSDR	Moderate SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	unitless
PadByte2	Pad byte	unsigned 8-bit char	[N*4]	[4]	unitless
File Size	**111,211,360 Bytes**				

5.1.2.22 VIIRS M-Band Imagery EDR GTM Geolocation Product Profile

Table: 5.1.2.22-1 VIIRS M-Band Imagery EDR GTM Geolocation Product Profile

VIIRS M-Band Imagery GTM Geolocation Product Profile

Fields

Name	Data Size	Dimensions
Time	8byte(s)	
Latitude	4byte(s)	

Time — Dimensions

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771

Time — Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	0	MIN_VAL	MAX_VAL	microsecond	No		64-bit integer	NA_INT64_FILL	-999		
								MISS_INT64_FILL	-998		
								ERR_INT64_FILL	-995		
								VDNE_INT64_FILL	-993		

Latitude — Dimensions

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Latitude — Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Latitude of each pixel (positive North)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point				

										NA_FLOAT32_FILL	-999.9	
										MISS_FLOAT32_FILL	-999.8	
										ERR_FLOAT32_FILL	-999.5	
										ELLIPSOID_FLOAT32_FILL	-999.4	
										VDNE_FLOAT32_FILL	-999.3	

Longitude — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Longitude of each pixel (positive East)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle of sun at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Azimuth angle of sun (measured clockwise positive from North) at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size

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		AlongTrack	Yes	No	771	771
		CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

Height 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Ellipsoid-Geoid separation	0	MIN_VAL	MAX_VAL	meter	No		16-bit integer	NA_INT16_FILL	-999		
								MISS_INT16_FILL	-998		
								ERR_INT16_FILL	-995		
								ELLIPSOID_INT16_FILL	-994		
								VDNE_INT16_FILL	-993		

PadByte1 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char				

SatelliteRange 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Line of sight distance from the ellipsoid intersection to the satellite	0	MIN_VAL	MAX_VAL	meter	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

QF1_VIIRSGTMGEO 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
SDR Pixel Mapping Coordinate (GTM to SDR). Indicates whether this pixel originated from the previous, current, or next granule in the SDR Moderate Resolution Geolocation.	0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)			Error	0

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																Previous Granule	1
																Current Granule	2
																Next Granule	3
		Spare			2	MIN_VAL	MAX_VAL	unitless	No		6 bit(s)	Name	Value	Name	Value		

QF2_VIIRSGTMGEO 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Solar Eclipse	0	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)			False	0
										True	1
Spare	1	MIN_VAL	MAX_VAL	unitless	No		7 bit(s)	Name	Value	Name	Value

PixelRowSDR 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Moderate SDR pixel row index number that was remapped to this GTM pixel (row numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	MISS_UINT16_FILL	65534		
								ERR_UINT16_FILL	65531		
								VDNE_UINT16_FILL	65529		

PixelColSDR 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Moderate SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	MISS_UINT16_FILL	65534		
								ERR_UINT16_FILL	65531		
								VDNE_UINT16_FILL	65529		

PadByte2 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	4	4

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char				

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5.1.2.23 VIIRS M-Band Imagery EDR GTM Geolocation HDF5 Details

The M-Band Imagery GTM Geolocation is mapped to a GTM grid from the VIIRS M-Band Resolution SDR Geolocation. Figure 5.1.2.22-1, M-Band Imagery GTM Geolocation UML Diagram, provides details on the contents and data types of the M-Band Imagery geolocation.

VIIRS-MOD-GTM-EDR-GEO
+Time : H5T_NATIVE_LLONG +Latitude : H5T_NATIVE_FLOAT +Longitude : H5T_NATIVE_FLOAT +SolarZenithAngle : H5T_NATIVE_FLOAT +SolarAzimuthAngle : H5T_NATIVE_FLOAT +SatelliteZenithAngle : H5T_NATIVE_FLOAT +SatelliteAzimuthAngle : H5T_NATIVE_FLOAT +Height : H5T_NATIVE_SHORT +PadByte1 : H5T_NATIVE_UCHAR +SatelliteRange : H5T_NATIVE_FLOAT +QF1_VIIRSGTMGEO : H5T_NATIVE_UCHAR +QF2_VIIRSGTMGEO : H5T_NATIVE_UCHAR +PixelRowSDR : H5T_NATIVE_USHORT +PixelColSDR : H5T_NATIVE_USHORT +PadByte2 : H5T_NATIVE_UCHAR

Figure: 5.1.2.23-1 VIIRS M-Band Imagery EDR GTM Geolocation UML Diagram

5.1.2.24 VIIRS M-Band Imagery EDR GTM Geolocation HDF5 Metadata Details

The HDF5 metadata elements associated with the M-Band Imagery GTM Geolocation EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The M-Band Imagery GTM Geolocation metadata includes all common metadata at the root, product, aggregation, and granule level. Note that M-Band Imagery is delivered with no quality flags. Therefore, there are no granule level summary quality flags in the M-Band's N_Quality_Summary_Name/Value metadata attributes.

5.1.3 VIIRS Near Constant Contrast (NCC) Imagery

Data Mnemonic	EDRE-IMAG-C1030 (Official)
Description/ Purpose	The VIIRS Near Constant Contrast (NCC) imagery EDR includes a daytime/nighttime visible imagery product that maintains apparent contrast under daytime, nighttime, and terminator region illumination conditions. This product is derived from the daytime/nighttime visible band (DNB) and mapped onto the same GTM Grid as the VIIRS M-Band Resolution Imagery. The "PixelRowSDR" and "PixelColSDR" geolocation fields provide the SDR row and column coordinate for each GTM pixel mapping. The pixel level geolocation quality flag "QF1_VIIRSGTMGEO" provides a flag that indicates whether a pixel has crossed a granule boundary during the SDR to GTM mapping process. If a granule boundary was crossed, the original SDR pixel may be located using effectivity time or the N_Input_Prod standard metadata item may be used to obtain the N_Reference_ID for each

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	SDR granule. The NCC visible imagery minimizes the apparent transition across the terminator when it is viewed on a graphical display system so that apparent image contrast is maintained across the imagery. NCC Visible Imagery is derived from the broad DNB measured in regions with solar illumination in daytime, with lunar illumination at night, and near the terminator (twilight) region.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	Estimated Granule Size: See Table 5.1.3.1-1 VIIRS NCC Imagery Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	See Section 5.1.3.1, NCC Imagery Data Content Summary See Section 5.1.3.2, NCC Imagery Product Profile See Section 5.1.3.3, NCC Imagery HDF5 Details See Section 5.1.3.4, NCC Imagery HDF5 Metadata Details See Section 5.1.3.5, NCC Imagery GTM Geolocation Details See Section 5.1.3.6, NCC Imagery GTM Geolocation Product Profile See Section 5.1.3.7, NCC Imagery GTM Geolocation HDF5 Details See Section 5.1.3.8, NCC Imagery GTM Geolocation HDF5 Metadata Details

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.3.1 VIIRS NCC Imagery Data Content Summary

Table: 5.1.3.1-1 VIIRS NCC Imagery Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Albedo	Normalized Top of Atmosphere Reflectance (no atmospheric correction applied)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	unitless
QF1_VIIRSNCCEDR	Pixel Level Quality Flags	unsigned 8-bit char	[N*771, 4121]	[771, 4121]	unitless
PadByte1	Pad byte	unsigned 8-bit char	[N*3]	[3]	unitless
AlbedoFactors	Scale = 1st array element; Offset = 2nd array element for the NCC Albedo	32-bit floating point	[N*2]	[2]	unitless
File Size	**9,531,884 Bytes**				

5.1.3.2 VIIRS NCC Imagery EDR Product Profile

Table: 5.1.3.2-1 VIIRS NCC Imagery EDR Product Profile

VIIRS NCC Imagery Product Profile

Fields

Name	Data Size	Dimensions
Albedo	2byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values	Legend Entries
Normalized Top of Atmosphere Reflectance (no atmospheric correction applied)	0	-10	1000	unitless	Yes	AlbedoFactors	unsigned 16-bit integer		

Name	Value
NA_UINT16_FILL	65535
MISS_UINT16_FILL	65534
ONBOARD_PT_UINT16_FILL	65533
ONGROUND_PT_UINT16_FILL	65532
ERR_UINT16_FILL	65531
ELLIPSOID_UINT16_FILL	65530
VDNE_UINT16_FILL	65529
SOUB_UINT16_FILL	65528

Name	Value

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VIIRS NCC Imagery Product Profile - Quality Flags

Fields

Name	Data Size	Dimensions
QF1_VIIRSNCCEDR	1byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values (Name / Value)	Legend Entries (Name / Value)
Imagery Quality (Pixel Quality as determined by the SDR Calibration Quality.)	0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)		Good 0 Poor 1 No Calibration 2
Pixel is Saturated	2	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)		False 0 True 1
Missing Data (Data required for calibration processing is not available for processing)	3	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)		All data present 0 Earth View RDR data missing 1 Cal data (Space View, Earth View, Cal View, Solar Diffuser) missing 2 Thermistor Data Missing 3
Out of Range - Calibrated pixel value outside of LUT threshold limits	5	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)		All Data Within Range 0 DNB Radiance Out of Range 1
Spare	6	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)		
NCC Error (Processing error occurred while trying to produce NCC pixel)	7	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)		False 0 True 1

Name	Data Size	Dimensions
PadByte1	1byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	3	3

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values (Name / Value)	Legend Entries (Name / Value)
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char		

VIIRS NCC Imagery Product Profile - Scale Factors

Fields

Name	Data Size	Dimensions
AlbedoFactors	4byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	2	2

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values (Name / Value)	Legend Entries (Name / Value)
Scale = first array element; Offset = second array element	0	MIN_VAL	MAX_VAL	unitless	No		32-bit floating point		

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.3.3 VIIRS NCC Imagery EDR HDF5 Details

Figure 5.1.3.3-1, NCC Imagery UML Diagram, provides details on the content and data types of the NCC Imagery product. This UML provides details at the product level only. In addition to this UML, refer to figure 3.1-1, Generalized UML Diagram for statically sized HDF5 IP/EDR Files, for a complete UML rendering of this product. The NCC Imagery product within the HDF5 file can be found within the Data_Products group with the group name of VIIRS-NCC-EDR. The aggregation and granule(s) contain the data fields listed in the UML .The corresponding HDF5 data type for each field is also provided.

VIIRS-NCC-EDR
+Albedo : H5T_NATIVE_USHORT +QF1_VIIRSNCCEDR : H5T_NATIVE_UCHAR +PadByte1 : H5T_NATIVE_UCHAR +AlbedoFactors : H5T_NATIVE_FLOAT

Figure: 5.1.3.3-1 VIIRS NCC Imagery UML Diagram

5.1.3.4 VIIRS NCC Imagery EDR HDF5 Metadata Details

The HDF5 metadata elements associated with the NCC Imagery EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The NCC Imagery metadata includes all common metadata at the root, product, aggregation, and granule level. In addition, NCC Imagery HDF5 Metadata includes granule level Quality Flags stored as metadata in the N_Quality_Summary_Name and N_Quality_Summary Value metadata attributes. The NCC content and format is identical to the I-Band. See Section 5.1.1.4, I-Band Imagery HDF5 Metadata Details for content and format. Also note that there is a standard granule level metadata item that identifies the NCC Band. This metadata item is the “Band_ID” and is set to “DNB” since the NCC Imagery is created from the Day-Night Band SDR product.

5.1.3.5 VIIRS NCC Imagery GTM Geolocation Details

Data Mnemonic	None.
Description/ Purpose	The NCC Geolocation is mapped to a GTM grid from the Day-Night Band (DNB) SDR Geolocation. Table 5.1.3.5-1, VIIRS NCC Imagery GTM EDR Geolocation Data Content Summary provides geolocation details.
File-Naming Construct	See the JPSS CDFCB-X Vol. I, 474-00001-01, Section 3.4 for details.
File Size	Estimated Granule Size: See Table 5.1.3.5-1 VIIRS NCC Imagery EDR GTM Geolocation Data Content Summary for size.
File Format Type	HDF5
Data Content and Data Format	The VIIRS NCC Imagery GTM Geolocation contains: Time Field Geolocation Angular Fields Height and Satellite Range Geolocation Quality Flags SDR pixel mapping field (for SDR row and column) Pad bytes See Section 5.1.3.5, VIIRS NCC Imagery GTM Geolocation Content Summary

	See Section 5.1.3.6, VIIRS NCC Imagery GTM Geolocation Product Profiles See Section 5.1.3.7, VIIRS NCC Imagery GTM Geolocation HDF5 Details See Section 5.1.3.8, VIIRS NCC Imagery GTM Geolocation HDF5 Metadata Details

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Table: 5.1.3.5-1 VIIRS NCC Imagery EDR GTM Geolocation Data Content Summary

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
Time	Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	64-bit integer	[N*771]	[771]	microsecond
Latitude	Latitude of each pixel (positive North)	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
Longitude	Longitude of each pixel (positive East)	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SolarZenithAngle	Zenith angle of sun at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SolarAzimuthAngle	Azimuth angle of sun (measured clockwise positive from North) at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SatelliteZenithAngle	Zenith angle to Satellite at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
SatelliteAzimuthAngle	Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
Height	Ellipsoid-Geoid separation	32-bit floating point	[N*771, 4121]	[771, 4121]	meter
SatelliteRange	Line of sight distance from the ellipsoid intersection to the satellite	32-bit floating point	[N*771, 4121]	[771, 4121]	meter
QF1_VIIRSGTMGEO	Pixel Level Geolocation Quality Flags	unsigned 8-bit char	[N*771, 4121]	[771, 4121]	unitless
QF2_VIIRSGTMGEO	Granule Level Quality Flag	unsigned 8-bit char	[N*1]	[1]	unitless
PixelRowSDR	Day-Night Band SDR pixel row index number	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	unitless

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Name	Description	Data Type	Aggregate Dimensions (N = Number of Granules)	Granule Dimensions	Units
	that was remapped to this GTM pixel (row numbering begins with zero)				
PixelColSDR	Day-Night Band SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	unsigned 16-bit integer	[N*771, 4121]	[771, 4121]	unitless
MoonIllumFraction	Fraction of the moon illuminated	32-bit floating point	[N*1]	[1]	percent
LunarZenithAngle	Zenith angle of moon at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
LunarAzimuthAngle	Azimuth angle of moon (measured clockwise positive from North) at each pixel position	32-bit floating point	[N*771, 4121]	[771, 4121]	degree
PadByte1	Pad byte	unsigned 8-bit char	[N*4]	[4]	unitless
File Size	**142,984,272 Bytes**				

5.1.3.6 VIIRS NCC Imagery EDR GTM Geolocation Product Profiles

Table: 5.1.3.6-1 VIIRS NCC Imagery EDR GTM Geolocation Product Profile

VIIRS NCC Imagery GTM Geolocation Product Profile

Fields

Name	Data Size	Dimensions
Time	8byte(s)	

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Time of the nadir point of the GTM row in IET (1/1/1958). Represents the time of the nadir point of the GTM row	0	MIN_VAL	MAX_VAL	microsecond	No		64-bit integer	NA_INT64_FILL	-999		
								MISS_INT64_FILL	-998		
								ERR_INT64_FILL	-995		
								VDNE_INT64_FILL	-993		

Latitude — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Latitude of each pixel (positive North)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

Longitude — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Longitude of each pixel (positive East)	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle of sun at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SolarAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Azimuth angle of sun (measured clockwise positive from North) at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Zenith angle to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	Name	Value	Name	Value

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										NA_FLOAT32_FILL	-999.9
										MISS_FLOAT32_FILL	-999.8
										ERR_FLOAT32_FILL	-999.5
										ELLIPSOID_FLOAT32_FILL	-999.4
										VDNE_FLOAT32_FILL	-999.3

SatelliteAzimuthAngle 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Azimuth angle (measured clockwise positive from North) to Satellite at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

Height 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Ellipsoid-Geoid separation	0	MIN_VAL	MAX_VAL	meter	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

SatelliteRange 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Line of sight distance from the ellipsoid intersection to the satellite	0	MIN_VAL	MAX_VAL	meter	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

QF1_VIIRSGTMGEO 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
DNB Pixel Mapping (GTM to SDR DNB). Indicates whether this pixel originated from the previous, current, or next granule in the SDR DNB geolocation.	0	MIN_VAL	MAX_VAL	unitless	No		2 bit(s)				

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														Error	0	
														Previous Granule	1	
														Current Granule	2	
														Next Granule	3	
		Spare	2	MIN_VAL	MAX_VAL	unitless	No		6 bit(s)	Name	Value	Name	Value			

QF2_VIIRSGTMGEO — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Solar Eclipse	0	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name	Value	Name	Value
										False	0
										True	1
Lunar Eclipse	1	MIN_VAL	MAX_VAL	unitless	No		1 bit(s)	Name	Value	Name	Value
										False	0
										True	1
Spare	2	MIN_VAL	MAX_VAL	unitless	No		6 bit(s)	Name	Value	Name	Value

PixelRowSDR — 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Day-Night Band SDR pixel row index number that was remapped to this GTM pixel (row numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		

PixelColSDR — 2byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Day-Night Band SDR pixel column index number that was remapped to this GTM pixel (column numbering begins with zero)	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 16-bit integer	Name	Value	Name	Value
								NA_UINT16_FILL	65535		
								MISS_UINT16_FILL	65534		
								ONBOARD_PT_UINT16_FILL	65533		
								ONGROUND_PT_UINT16_FILL	65532		
								ERR_UINT16_FILL	65531		
								ELLIPSOID_UINT16_FILL	65530		
								VDNE_UINT16_FILL	65529		
								SOUB_UINT16_FILL	65528		

MoonIllumFraction — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
Fraction of the moon illuminated (expressed as percent)	0	MIN_VAL	MAX_VAL	percent	No		32-bit floating point	Name	Value	Name	Value
								NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								VDNE_FLOAT32_FILL	-999.3		

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LunarZenithAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Zenith angle of moon at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

LunarAzimuthAngle — 4byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
AlongTrack	Yes	No	771	771
CrossTrack	No	No	4121	4121

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Azimuth angle of moon (measured clockwise positive from North) at each pixel position	0	MIN_VAL	MAX_VAL	degree	No		32-bit floating point	NA_FLOAT32_FILL	-999.9		
								MISS_FLOAT32_FILL	-999.8		
								ERR_FLOAT32_FILL	-999.5		
								ELLIPSOID_FLOAT32_FILL	-999.4		
								VDNE_FLOAT32_FILL	-999.3		

PadByte1 — 1byte(s)

Name	Granule Boundary	Dynamic	Min Array Size	Max Array Size
Granule	Yes	No	4	4

Datum

Description	Datum Offset	Unscaled Valid Range Min	Unscaled Valid Range Max	Measurement Units	Scaled	Scale Factor Name	Data Type	Fill Values		Legend Entries	
								Name	Value	Name	Value
Pad byte	0	MIN_VAL	MAX_VAL	unitless	No		unsigned 8-bit char				

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

5.1.3.7 VIIRS NCC Imagery EDR GTM Geolocation HDF5 Details

The NCC Imagery Geolocation is mapped to a GTM grid from the Day-Night Band SDR Geolocation. Figure 5.1.3.7-1, NCC Imagery GTM Geolocation UML Diagram, provides details on the contents and data types of the NCC Imagery geolocation.

VIIRS-NCC-EDR-GEO
+Time : H5T_NATIVE_LLONG +Latitude : H5T_NATIVE_FLOAT +Longitude : H5T_NATIVE_FLOAT +SolarZenithAngle : H5T_NATIVE_FLOAT +SolarAzimuthAngle : H5T_NATIVE_FLOAT +SatelliteZenithAngle : H5T_NATIVE_FLOAT +SatelliteAzimuthAngle : H5T_NATIVE_FLOAT +Height : H5T_NATIVE_FLOAT +SatelliteRange : H5T_NATIVE_FLOAT +QF1_VIIRSGTMGEO : H5T_NATIVE_UCHAR +QF2_VIIRSGTMGEO : H5T_NATIVE_UCHAR +PixelRowSDR : H5T_NATIVE_USHORT +PixelColSDR : H5T_NATIVE_USHORT +MoonIllumFraction : H5T_NATIVE_FLOAT +LunarZenithAngle : H5T_NATIVE_FLOAT +LunarAzimuthAngle : H5T_NATIVE_FLOAT +PadByte1 : H5T_NATIVE_UCHAR

Figure: 5.1.3.7-1 VIIRS NCC Imagery GTM Geolocation UML Diagram

5.1.3.8 VIIRS NCC Imagery EDR GTM Geolocation HDF5 Metadata Details

The HDF5 metadata elements associated with the NCC Imagery GTM Geolocation EDR are listed in the JPSS Algorithm Specification Vol. II: Data Dictionary for the Common Algorithms, 474-00448-02-01. The NCC Imagery GTM Geolocation metadata includes all common metadata at the root, product, aggregation, and granule level. There are no additional metadata elements or granule level quality flags for this geolocation.

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

6 Ancillary and Auxiliary Data Inputs

Not Applicable

7 Look-up Tables and Processing Coefficient Tables

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

Data Mnemonic: This is a unique identifier. JPSS CDFCB-X Vol. I, 474-00001-01 describes the data mnemonic definition methodology.

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

Instrument: Identification of the Instrument associated with the table.

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

The following rules apply to all tables:

1. All field names mandatory, unless specified otherwise.
2. Fill data is specified, where applicable.
3. Strings are left-aligned and integers are right-aligned, unless specified otherwise.
4. For information regarding Coordinated Universal Time (UTC) and IDPS Epoch Time (IET) conventions, see the JPSS CDFCB-X Vol. I, 474-00001-01.
5. 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.
6. The fields are presented in order (either top - down or most significant first), unless stated otherwise.

7.1 Look Up Tables

Algorithm Look-up Table (LUT) files contain tables of pre-computed values used in lieu of real-time algorithm computations to reduce processing resource demands. Table values are typically the result of RTM executions and other environmental model simulations. These data generally cover broad, multi-dimensional parameter spaces which are unique to each algorithm.

7.1.1 VIIRS Imagery LUTs

7.1.1.1 VIIRS NCC Gain Value Versus Scene Lunar Zenith LUT

Data Mnemonic	NP_NU-LM0233-013
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Lunar Zenith LUT file contains the gain values for the lunar illuminated scene signal for the Day/Night

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	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	See Table 7.1.1.1-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith LUT Data Format for size.
File Format Type	Little Endian 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 7.1.1.1-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith LUT Data Format

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Table: 7.1.1.1-1 VIIRS NCC Gain Value Versus Scene Lunar Zenith LUT 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
File Size	**8,408 Bytes**				

7.1.1.2 VIIRS NCC Gain Value Versus Scene Solar Elevation LUT

Data Mnemonic	NP_NU-LM0233-014
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Solar Elevation (GVVSSE) LUT 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	See Table 7.1.1.2-1, VIIRS NCC Gain Value Versus Scene Solar Elevation LUT Data Format for size
File Format Type	Little Endian Binary
Production Frequency	Once per instrument during intensive Cal/Val
Data Content and Data Format	For details see Table 7.1.1.2-1, VIIRS NCC Gain Value Versus Scene Solar Elevation LUT Data Format

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Table: 7.1.1.2-1 VIIRS NCC Gain Value Versus Scene Solar elevation LUT 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
File Size	**8,408 Bytes**				

7.1.1.3 VIIRS NCC Lunar BRDF LUT

Data Mnemonic	NP_NU-LM0233-015
Description/ Purpose	The VIIRS NCC Lunar BRDF LUT 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	See Table 7.1.1.3-1, VIIRS NCC Lunar BRDF LUT Data Format for size
File Format Type	Little Endian Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 7.1.1.3-1, VIIRS NCC Lunar BRDF LUT Data Format

Table: 7.1.1.3-1 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
File Size	**1,600 Bytes**				

7.1.1.4 VIIRS NCC Lunar Phase LUT

Data Mnemonic	NP_NU-LM0233-016
Description/ Purpose	The VIIRS NCC Lunar Phase LUT 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	See Table 7.1.1.4-1, VIIRS NCC Lunar Phase LUT Data Format for size.
File Format Type	Little Endian Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 7.1.1.4-1, VIIRS NCC Lunar Phase LUT Data Format

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Table: 7.1.1.4-1 VIIRS NCC Lunar Phase LUT 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
File Size	**40 Bytes**				

7.1.1.5 VIIRS NCC Solar BRDF LUT

Data Mnemonic	NP_NU-LM0233-017
Description/ Purpose	The VIIRS NCC Solar BRDF LUT 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	See Table 7.1.1.5-1, VIIRS NCC Solar BRDF LUT Data Format for size.
File Format Type	Little Endian Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 7.1.1.5-1, VIIRS NCC Solar BRDF LUT Data Format

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Table: 7.1.1.5-1 VIIRS NCC Solar BRDF LUT 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
File Size	**1,600 Bytes**				

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

7.2 Processing Coefficient Tables

The S-NPP/JPSS-1 ground system data product generation subsystem uses Processing Coefficient Table (PCT) file parameters. PCT files can be either Automated or Manual coefficient tables. Within the Manual table type are two coefficient classes: Initial and Ephemeral. Sections below describe all three and any tables of that type for the product.

7.2.1 Automated Processing Coefficients

Automated Processing Coefficient (PC) files contain parameters updated and/or created during the processing of the S-NPP/JPSS Data Products by the processing algorithms. The processing environment subsequently uses these files without human review of their contents. Files can be used immediately after creation or in future processing such as the next granule in the production data stream processing.

7.2.1.1 VIIRS Imagery Automated PCs

The VIIRS Imagery EDR currently uses no Automated PCs.

7.2.2 Manual Processing Coefficients

Manual Processing Coefficient (PC) files contain parameters used for S-NPP/JPSS Data Product generation which require human review prior to operational processing environment insertion. Manual Processing Coefficients have two classes:

- Initialization PCTs contain infrequently updated initial parameters sets S-NPP/JPSS uses for data product generation.
- Ephemeral PCTs contain frequently updated parameters sets S-NPP/JPSS uses for data product generation.

7.2.2.1 VIIRS Imagery Initialization PCs

The VIIRS Imagery EDR currently uses no Initialization PCs.

7.2.2.2 VIIRS NCC Imagery Ephemeral PCTs

Data Mnemonic	DP_NU-LM2020-023
Description/ Purpose	The VIIRS Near Constant Contrast (NCC) Imagery EDR Ephemeral PC provides tunable processing coefficients for use by the algorithm during execution. The coefficients can be modified (tuned) through a configuration control process in response to algorithm, performance, inputs, sensitivity, etc. changes.
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, Table B-1 for the applicable Collection Short Names
File Size	See Table 7.2.2.2-1 VIIRS NCC Imagery EDR Ephemeral PCT
File Format Type	Little Endian Binary
Production	As needed

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Data Mnemonic	DP_NU-LM2020-023
Frequency	
Data Content and Data Format	For details see Table 7.2.2.2-1 VIIRS NCC Imagery EDR Ephemeral PCT

Table: 7.2-1 VIIRS NCC Imagery EDR Ephemeral PCT

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)	Constant used to compute the solar radiance from the anisotropic reflectance factor and the gain
lza_threshold	4	32-bit floating point	Initially set to 180	degrees	Maximum lunar zenith angle threshold (values greater than this threshold result in a gain of 0)
sza_threshold	4	32-bit floating point	Initially set to 180	degrees	Maximum solar zenith angle threshold (values greater than this threshold result in a gain of 0)
max_lunar_arf	4	32-bit floating point	Initially set to 1.5	unitless	Maximum lunar anisotropic reflectance factor threshold (values greater than this threshold result in lunar radiance FILL)
min_lunar_arf	4	32-bit floating point	Initially set to 0.5	unitless	Minimum lunar anisotropic reflectance factor threshold (values less than this threshold result in lunar radiance FILL)
max_solar_arf	4	32-bit floating point	Initially set to 1.5	unitless	Maximum solar anisotropic reflectance factor threshold (values greater than this threshold result in solar radiance FILL)
min_solar_arf	4	32-bit floating point	Initially set to 0.5	unitless	Minimum solar anisotropic reflectance factor threshold (values less than this threshold result in solar radiance FILL)

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_ncc_radiance	4	32-bit floating point	Initially set to -1.0e-8	W/(cm^2*sr)	Minimum solar radiance threshold (values less than this threshold result in NCC albedo FILL)
File Size	32 Bytes				

Appendix A. Data Mnemonic to Interface Mapping

For a complete list of Data Mnemonic to Interface Mapping, see 474-00001-01, JPSS CDFCB-X Vol I. The CDFCB contains Data Mnemonics, Identifiers, Collection Short Names, Interface Documents, and Collection Long Names for each JPSS Data Product and for Geolocation data.

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Appendix B. DQTT Quality Flag Mapping

The following table maps the quality flags by sensor and product that are reportable to the associated data product quality flag Test ID used in the processing environment.

Table: B-1 DQTT Quality Flag Mapping

Algorithm	Product	Test ID	Quality Flag
VIIRS NCC Imagery	VIIRS-NCC-EDR	4600	Summary Imagery Quality
VIIRS NCC Imagery	VIIRS-NCC-EDR	4601	Summary Range check
VIIRS NCC Imagery	VIIRS-NCC-EDR	4602	Summary Saturated Pixel

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.

Appendix C. Abbreviations and Acronyms

See 470-00041 JPSS Program Lexicon for abbreviations and acronyms.

Attachment A. XML Formats for Related Data Products

Table: ATT-1 XML Formats for Related Products

File Number	XML Filename
1	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-I1-IMG-EDR-PP.xml
2	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-I2-IMG-EDR-PP.xml
3	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-I3-IMG-EDR-PP.xml
4	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-I4-IMG-EDR-PP.xml
5	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-I5-IMG-EDR-PP.xml
6	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-IMG-GTM-EDR-GEO-PP.xml
7	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M1ST-EDR-PP.xml
8	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M2ND-EDR-PP.xml
9	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M3RD-EDR-PP.xml
10	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M4TH-EDR-PP.xml
11	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M5TH-EDR-PP.xml
12	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-M6TH-EDR-PP.xml
13	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-MOD-GTM-EDR-GEO-PP.xml
14	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-NCC-EDR-PP.xml
15	474-00448-02-26_JPSS-VIIRS-Imagery-DD-Part-26_0200D_VIIRS-NCC-EDR-GEO-PP.xml

Check the JPSS MIS Server at https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm to verify that this is the correct version prior to use.