AMSR3

Level 1R Product Format Manual

Rev. B: June 15, 2026
Rev. A: December 18, 2025
NC: November 28, 2025

Japan Aerospace Exploration Agency

CHANGE RECORDS

Rev.	Page	Change Description	Release Date
NC		Initial Release	Nov. 28, 2025
A	11	Revised description in the 'Explanation/Range' section of AutomaticQAFlagExplanation.	Dec. 18,2025
	25	Revised description in the 'Explanation/Range' section of ProcessingQADescription.	
	51	3.5.2 Added the definition of scan number to the diagram.	
	51	3.5.3 Revised the description.	
	61	Revised the example description for AttitudeDataQA in AutomaticQAFlagExplanation.	
	61	Corrected the unit for ‘Consiriona to judge normality’ in AutomaticQAFlagExplanation items: AntennaRotationQA, HotCalibrationSourceQA, AttitudeDataQA, EphemerisDataQA, QualityofGeometricInformationQA, and BrightnessTemperatureQA.	
	70	Revised the description in ProcessingQADescription.	
B	48	3.5.1 Table 3-5 Naming convention of AMSR3 Level 1 products string ‘X’(Processing type) Remove the description of the ‘Standard Product’.	June 15, 2026
	48,49	3.5.1 Revise the item ‘Processing level and observation point code’ to ‘Processing Level’.	
B-1	7	‘source' Update the examples in the 'Explanation/Range' Update 'DataSize' with the actual example values	Aug. 28, 2026
	18	'GringPointLatitude' Update the examples in the 'Explanation/Range' Update 'DataSize' with the actual example values	
	19	'GringPointLongitude' Update the examples in the 'Explanation/Range' Update 'DataSize' with the actual example values	
	19	'InputFileName' Update the examples in the 'Explanation/Range' Update 'DataSize' with the actual example values ‘comment’	

Rev.	Page	Change Description	Release Date
	55 60	Deleted the sentence ‘TBD’ ‘acknowledgement’ Deleted the sentence ‘TBD’	

Table of Contents

1. Introduction 1
1. 1 Purpose 1
1. 2 Overview 1
2. Reference document 1
3. Explanation of Product 2
3. 1 Overview of Level 1 product 2
3. 2 Composition of Product 3
3. 3 Structure of data 4
3. 4 Structure of each data 37
3. 5 Others 49
3. 5. 1 File name 49
3. 5. 2 Data range of product 52
3. 5. 3 Coordinate system 52
3. 5. 4 Scale factor and offset 52
4. Explanation of data 53
4. 1 Product metadata 53
4. 2 Data part 75
4. 2. 1 Dataset 75

1. Introduction

1.1 Purpose

This document specifies the file format of AMSR3 Level 1R (L1R) product.

1.2 Overview

The AMSR3 level 1R product stores the brightness temperature obtained by converting the spatial resolution of each frequency and polarization into the spatial resolution equivalent to a specific frequency, geometric information corresponding to the brightness temperature, land and sea flags, etc.

2. Reference document

N/A

3. Explanation of Product

3.1 Overview of Level 1 product

AMSR3 Level 1 product consists of Level 1A, Level 1B, Level 1R, L1H and L1C. It carries out processing shown in Table 3-1 and stores each product.

Table 3-1 Overview of AMSR3 L1 Products

No	Level	Overview of Product
1	L1A	Level 1A: Product per scene that stores antenna temperature count values converted from level 0 data by radiometric and geometric correction processes, antenna temperature conversion coefficients, etc.
2	L1B	Level 1B: Product per scene that stores the brightness temperature calculated from the L1A antenna temperature using a conversion coefficient.
3	L1R	Level 1R: Product per scene that stores the brightness temperature whose center position and size of the footprint of each frequency band are matched by spatial matching processing of level 1B brightness temperature.
4	L1H	Level 1H: Product per scene that stores the brightness temperature of level 1B with spatial matching process to match the footprint center position in each frequency band and to improve the spatial resolution in the low frequency band.
5	L1C	Level 1C: Product per scene that stores the brightness temperature that matches the center position of the footprint in each frequency band through spatial matching of level 1B brightness temperature.

The AMSR3 level 1R product stores brightness temperature and geometric information in the NetCDF4 format, with the spatial resolution of each frequency and polarization converted to a spatial resolution equivalent to a specific frequency. The product features are shown below.

3.2 Composition of Product

AMSR3 Level 1R product file consists of header part and data part. Table 3-2 shows composition of file.

Table 3-2 Composition of AMSR3 Level 1R product file

Composition		Data model	Contents
Header part	Product metadata	Attribute	Product specific information（Main technical information of AMSR3, conversion table of engineering value） is stored.
Data part		Dataset	Following data is stored ・Scan Time ・Brightness temperature of each frequency and polarization resampled to spatial resolution equivalent to each frequency ・Quality information ・Supplemental information (position, elevation, observation angle of incidence, direction of sun, additional information etc.) Furthermore, following data is also stored. ・Orbit, attitude of satellite

3. 3 Structure of data

Structure of AMSR3 Level 1R product is shown in Figure 3-1. This product consists of product metadata shown in Table 3-3 and data part shown in Table 3-4.

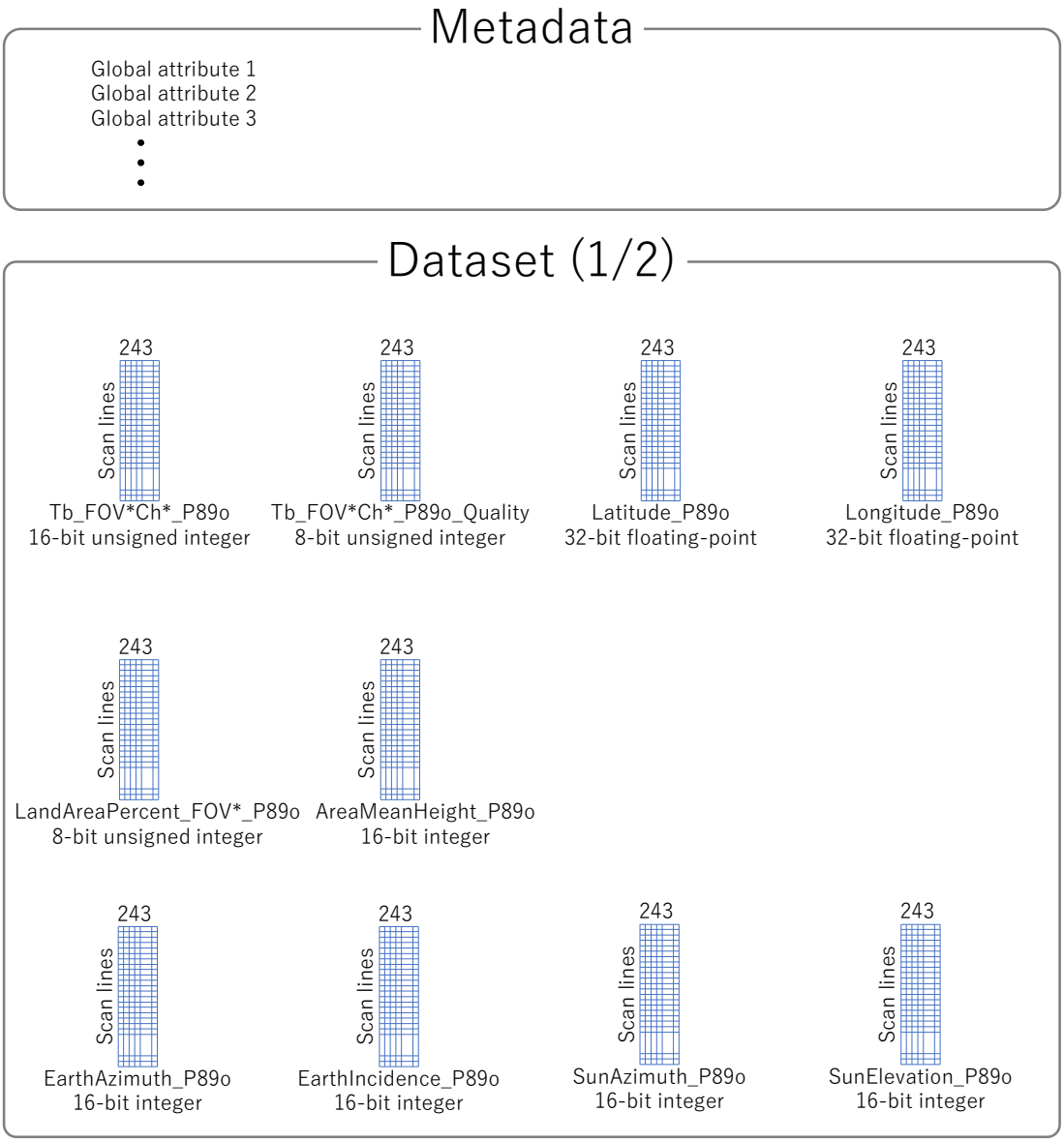


Figure 3-1 Structure of L1R product (1/2)

<u>Note</u>

*1: Detail of Global Attribute is shown in section 4.1.

*2: Detail of each dataset is shown in section 4.2.

3: The 'FOV in the dataset name is a code representing the footprint used for resampling.

4 The 'Ch' in the dataset name is a code for the channel (frequency band x

polarisation). Level 1Rprocessing uses 19 types of code. Detail of code is shown in Table 4-1

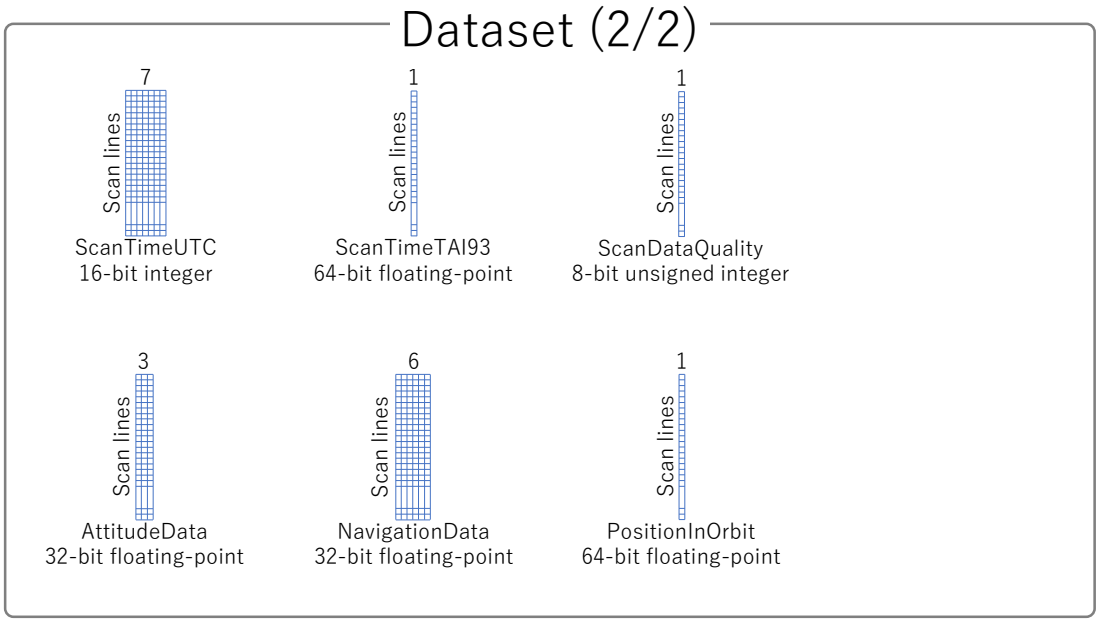


Figure 3-1 Structure of L1R product (2/2)

Table 3-3 Stored items of product metadata

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
1	Conventions	17	Rule (Version of CF Convention, ACDD)	CF-1.7, ACDD-1.3	string
2	title	58	Product name	GOSAT-GW/AMSR3 L1R, Resampled Brightness Temperature (TBR)	string
3	institution	41	Institution name	Japan Aerospace Exploration Agency (JAXA)	string
4	project	21	Project name	JAXA GOSAT-GW Project	string
5	summary	612	Summary of file	Advanced Microwave Scanning Radiometer 3 (AMSR3) onboard Global Observing Satellite for Greenhouse gases and Water cycle (GOSAT-GW) was developed by Japan Aerospace Exploration Agency (JAXA) to succeed to the AMSR2 sensor mounted on GCOM-W. AMSR3 takes measurements at multiple frequencies and multiple polarizations of weak electromagnetic	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				waves in the microwave band radiated from the Earth's surface and the atmosphere. It is designed to estimate a variety of geophysical parameters, particularly those connected to water. This file stores the brightness temperature of Level 1R and the geometric information.	
6	license	46	License of data	https://gportal.jaxa.jp/gpr/index/eula?lang=en	string
7	creator_name	41	Data creating institution	Japan Aerospace Exploration Agency (JAXA)	string
8	creator_type	12	Type of data creating entity	institution	string
9	creator_email	28	E-mail address of data creating entity	z-gportal-support@ml.jaxa.jp	string
10	creator_url	47	Web site address of data creating entity	https://gportal.jaxa.jp/gpr/index/index?lang=en	string
11	keywords	50	Keyword	SPECTRAL/ENGINEERING,MICROWAVE, BRIGHTNESS TEMPERATURE	string
12	standard_names_vocabulary	46	Glossary that cited standard_name	CF Standard Name Table (v49, 12 February 2018)	string
13	id	41	Product ID	Refer to section 3.5.1.	string
14	naming_authority	7	Authority name	jp.jaxa	string
15	source	44	File name of L0 file	Input L0 data name ex.) GGWAM3_202607010158-021_S0-------00A26182.01	string
16	processing_level	8	Processing level	Level1R	string
17	comment	0	Comment not included in other	blank	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
			attribute		
18	date_created	25	Date and time creating data	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second) uuu：000 - 999(milli-second)	string
19	time_coverage_start	25	Start observation date and time	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second) uuu：000 - 999(milli-second)	string
20	time_coverage_end	25	End observation date and time	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute)	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				ss：00 - 59(second) uuu：000 - 999(milli-second)	
21	geospatial_lat_min	4	Southernmost latitude in observation range	-9999.0	32-bit floating point
22	geospatial_lat_max	4	Northernmost latitude in observation range	-9999.0	32-bit floating point
23	geospatial_lon_min	4	Westernmost longitude in observation range	-9999.0	32-bit floating point
24	geospatial_lon_max	4	Easternmost longitude in observation range	-9999.0	32-bit floating point
25	geospatial_vertical_min	4	Maximum altitude in observation range （Set blank for AMSR3 L1）	-9999.0	32-bit floating point
26	geospatial_vertical_max	4	Minimum altitude in observation range （Set blank for AMSR3 L1）	-9999.0	32-bit floating point
27	geospatial_vertical_positive	0	Interpretation of vertical values, identification of altitude/depth	blank	string
28	geospatial_bounds	132	Describe 70 range of two-dimensional spaces expressed in OGC Well-Known Text (WKT) Geometry format.	ex.) POLYGON ((152.28 83.71,91.82 73.23,-10.34 34.10, -24.72 -25.31,-39.30 -84.97,-105.73 -73.60, -40.70 -23.13,-27.99 36.52, 152.28 83.71))	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
			Set the same value as GringPoint.		
29	geospatial_bounds_crs	10	Coordinate Reference System (CRS) of point coordinates in geospatial_bounds attribute	EPSG:4326	string
30	geospatial_vertical_bounds_crs	0	Coordinate Reference System (CRS) of the altitude direction of point coordinates in the geospatial_bounds attribute	blank	string
31	language	3	Language used	en	string
32	topicCategory	12	Field Code of ISO19115	004,008,010	string
33	Role	3	Role Code of ISO19115	003	string
34	history	0	Change record of file	blank	string
35	characterSet	3	Character Code of ISO19115 (set utf8)	004	string
36	acknowledgement	0	Supplemental information about the project	blank	string
37	publisher_name	31	Publisher Name	JAXA GOSAT-GW Project	string
38	publisher_email	37	E-mail address of publisher	z-gportal-support@ml.jaxa.jp	string
39	publisher_url	56	URL of publisher's web site	https://gportal.jaxa.jp/gpr/index/index?lang=en	string
40	DOI	38	Digital Object Identifier assigned to the product	10.57746/EO.01hmszywcnb3m546cg43hd3p75	string
41	DOIauthority	15	URL of IDF (International DOI Foundation), which operates DOI	http://doi.org/	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
42	AlgorithmDeveloper	41	Algorithm developer	Japan Aerospace Exploration Agency (JAXA)	string
43	AlgorithmVersion	3	Algorithm version	“XXX” 000 - 999	string
44	AncillaryDataInformation	0	Ancillary data information	String “XXXXXX” Blank(Set by Level 2 or upper level)	string
45	AutomaticQAFlag	4	Check by program	“XXXX” Good/Fair/NG	string
46	AutomaticQAFlagExplanation	413	Program check description	ex.) MissingScanQA:Less than 21 is available->OK,MissingPacketQA:Less than 321 is available->OK,AntennaRotationQA:Less than 21 is available->OK,HotCalibrationSourceQA:Less than 21 is available->OK,AttitudeDataQA:Less than 1 is available->OK,EphemerisDataQA:Less than 21 is available->OK,QualityofGeometricInformationQA:Less than 1 is available->OK,BrightnessTemperatureQA:Less than 21 is available->OK	string
47	CalibrationMethod	96	Calibration method name	RxTemperatureReferenced,SpillOver,CSMInterpolation, Absolute89GPositioning,NonlinearityCorrection	string
48	CoefficientAvv	209	Conversion coefficient of Brightness temperature Avv	6.925GHz-1.01932,7.3GHz-1.03158,10.25GHz-1.03097,10.65GHz-1.01733,18.7GHz-1.01472,23.8GHz-1.02128,36.42GHz-1.01796,89.0GHzA-1.02358,89.0GHzB-	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				1.02323,165.5GHz-1.01523,183.3+/-3GHz-1.01112,183.3+/-7GHz-1.01112	
49	CoefficientAhv	221	Conversion coefficient of Brightness temperature Ahv	6.925GHz--0.00102,7.3GHz--0.00688,10.25GHz--0.00300,10.65GHz--0.00036,18. 7GHz--0.00041,23.8GHz--0.00184,36.42GHz--0.00071,89.0GHzA--0.00154,89.0GHzB--0.00133,165.5GHz--0.00063,183.3+/-3GHz--0.00057,183.3+/-7GHz--0.00057	string
50	CoefficientAov	221	Conversion coefficient of Brightness temperature Aov	6.925GHz--0.05216,7.3GHz--0.08467,10.25GHz--0.08344,10.65GHz--0.04681,18.7GHz--0.03976,23.8GHz--0.05739,36.42GHz--0.04849,89.0GHzA--0.06362,89.0GHzB--0.06269,165.5GHz--0.04113,183.3+/-3GHz--0.03004,183.3+/-7GHz--0.03004	string
51	CoefficientAhh	188	Conversion coefficient of Brightness temperature Ahh	6.925GHz-1.01923,7.3GHz-1.03149,10.25GHz-1.03104,10.65GHz-1.0176,18.7GHz-1.01467,23.8GHz-1.02132,36.42GHz-1.01769,89.0GHzA-1.02393,89.0GHzB-1.02347,165.5GHz--,183.3+/-3GHz--,183.3+/-7GHz--	string
52	CoefficientAvh	200	Conversion coefficient of Brightness temperature Avh	6.925GHz--0.00107,7.3GHz--0.00698,10.25GHz--0.00295,10.65GHz--0.00036,18.7GHz--0.00041,23.8GHz--0.00189,36.42GHz--0.00056,89.0GHzA--0.00154,89.0GHzB--	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				0.00128,165.5GHz--,183.3+/-3GHz--,183.3+/-7GHz--	
53	CoefficientAoh	200	Conversion coefficient of Brightness temperature Aoh	6.925GHz--0.05192,7.3GHz--0.08441,10.25GHz--0.08363,10.65GHz--0.04756,18.7GHz--0.03963,23.8GHz--0.05749,36.42GHz--0.04777,89.0GHzA--0.06456,89.0GHzB--0.06335,165.5GHz--,183.3+/-3GHz--,183.3+/-7GHz--	string
54	ContactOrganizationEmail	17	E-mail address for contact	z-gportal-support@ml.jaxa.jp	string
55	ContactOrganizationName	22	Organization name for contact	Japan Aerospace Exploration Agency (JAXA)	string
56	CSMTemperature	341	Brightness temperature of CSM (Cold Sky Mirror: Cold calibration source by deep space)	6.925GHzV-2.700,6.925GHzH-2.700,7.3GHzV-2.700,7.3GHzH-2.700,10.25GHzV-2.700,10.25GHzH-2.700,10.65GHzV-2.700,10.65GHzH-2.700,18.7GHzV-2.800,18.7GHzH-2.800,23.8GHzV-2.800,23.8GHzH-2.800,36.42GHzV-2.800,36.42GHzH-2.800,89.0GHz-AV-3.300,89.0GHz-AH-3.300,89.0GHz-BV-3.300,89.0GHz-BH-3.300,165.5GHzV-3.300,183.31+/-3GHzV-3.300,183.31+/-7GHzV-3.300	string
57	DataCode	184	Data Code	TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;TBR;	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
58	DataDatasetName	892	Dataset name of ground observation data	Tb_FOV06Ch06V_P89o;Tb_FOV06Ch06H_P89o;Tb_FOV06Ch07V_P89o;Tb_FOV06Ch07H_P89o;Tb_FOV06Ch10uV_P89o;Tb_FOV06Ch10uH_P89o;Tb_FOV06Ch10V_P89o;Tb_FOV06Ch10H_P89o;Tb_FOV06Ch18V_P89o;Tb_FOV06Ch18H_P89o;Tb_FOV06Ch23V_P89o;Tb_FOV06Ch23H_P89o;Tb_FOV06Ch36V_P89o;Tb_FOV06Ch36H_P89o;Tb_FOV06Ch89V_P89o;Tb_FOV06Ch89H_P89o;Tb_FOV10Ch10uV_P89o;Tb_FOV10Ch10uH_P89o;Tb_FOV10Ch10V_P89o;Tb_FOV10Ch10H_P89o;Tb_FOV10Ch18V_P89o;Tb_FOV10Ch18H_P89o;Tb_FOV10Ch23V_P89o;Tb_FOV10Ch23H_P89o;Tb_FOV10Ch36V_P89o;Tb_FOV10Ch36H_P89o;Tb_FOV10Ch89V_P89o;Tb_FOV10Ch89H_P89o;Tb_FOV23Ch18V_P89o;Tb_FOV23Ch18H_P89o;Tb_FOV23Ch23V_P89o;Tb_FOV23Ch23H_P89o;Tb_FOV23Ch36V_P89o;Tb_FOV23Ch36H_P89o;Tb_FOV23Ch89V_P89o;Tb_FOV23Ch89H_P89o;Tb_FOV23Ch165V_P89o;Tb_FOV23Ch183r3V_P89o;Tb_FOV23Ch183r7V_P89o;Tb_FOV36Ch36V_P89o;Tb_FOV36Ch36H_P89o;Tb_FOV36Ch89V_P89o;Tb_FOV36Ch89H_P89o;Tb_FOV36Ch165V_P89o;Tb_FOV36Ch183r3V_P89o;Tb_FOV36Ch183r7V_P89o;	string
59	DataDynamicRange	9	Dynamic range of	2.7K-340K	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
			ground observation data		
60	DataLongName	2282	Official name of ground observation data	Brightness Temperature 6.925GHz V (FOV06, P89o);Brightness Temperature 6.925GHz H (FOV06, P89o);Brightness Temperature 7.3GHz V (FOV06, P89o);Brightness Temperature 7.3GHz H (FOV06, P89o);Brightness Temperature 10.25GHz V (FOV06, P89o);Brightness Temperature 10.25GHz H (FOV06, P89o);Brightness Temperature 10.65GHz V (FOV06, P89o);Brightness Temperature 10.65GHz H (FOV06, P89o);Brightness Temperature 18.7GHz V (FOV06, P89o);Brightness Temperature 18.7GHz H (FOV06, P89o);Brightness Temperature 23.8GHz V (FOV06, P89o);Brightness Temperature 23.8GHz H (FOV06, P89o);Brightness Temperature 36.42GHz V (FOV06, P89o);Brightness Temperature 36.42GHz H (FOV06, P89o);Brightness Temperature 89.0GHz V (FOV06, P89o);Brightness Temperature 89.0GHz H (FOV06, P89o);Brightness Temperature 10.25GHz V (FOV10, P89o);Brightness Temperature 10.25GHz H (FOV10, P89o);Brightness Temperature 10.65GHz V (FOV10, P89o);Brightness Temperature 10.65GHz H (FOV10, P89o);Brightness Temperature 18.7GHz V (FOV10, P89o);Brightness Temperature 18.7GHz H (FOV10,	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				P89o);Brightness Temperature 23.8GHz V (FOV10, P89o);Brightness Temperature 23.8GHz H (FOV10, P89o);Brightness Temperature 36.42GHz V (FOV10, P89o);Brightness Temperature 36.42GHz H (FOV10, P89o);Brightness Temperature 89.0GHz V (FOV10, P89o);Brightness Temperature 89.0GHz H (FOV10, P89o);Brightness Temperature FOV23 18.7GHz V (FOV23, P89o);Brightness Temperature FOV23 18.7GHz H (FOV23, P89o);Brightness Temperature FOV23 23.8GHz V (FOV23, P89o);Brightness Temperature FOV23 23.8GHz H (FOV23, P89o);Brightness Temperature FOV23 36.42GHz V (FOV23, P89o);Brightness Temperature FOV23 36.42GHz H (FOV23, P89o);Brightness Temperature FOV23 89.0GHz V (FOV23, P89o);Brightness Temperature FOV23 89.0GHz H (FOV23, P89o);Brightness Temperature FOV23 165.5GHz V (FOV23, P89o);Brightness Temperature FOV23 183.31GHz+/-3GHz V (FOV23, P89o);Brightness Temperature FOV23 183.31GHz+/-7GHz V (FOV23, P89o);Brightness Temperature 36.42GHz V (FOV36, P89o);Brightness Temperature 36.42GHz H (FOV36, P89o);Brightness Temperature 89.0GHz V (FOV36,	

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				P89o);Brightness Temperature 89.0GHz H (FOV36, P89o);Brightness Temperature 165.5GHz V (FOV36, P89o);Brightness Temperature 183.31GHz+/-3GHz V (FOV36, P89o);Brightness Temperature 183.31GHz+/-7GHz V (FOV36, P89o);	
61	DataNumber	4	Number of ground observation data	46	32-bit integer
62	DataType	1104	Data type of ground observation data	16-bit unsigned integer;16-bit	String

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;16-bit unsigned integer;	
63	EarthEllipsoidName	6	Earth ellipsoid model	WGS84	string
64	EarthFlatteningRatio	7	Earth oblateness	0.00335	string
65	EarthSemiMajorAxis	8	Earth equatorial radius	6378.1km	string
66	FileFormatType	9	File format type	netCDF-4/HDF5 File Format	string
67	FileFormatVersionHDF	6	HDF format version	HDF5-1.14.4	string
68	FileFormatVersionNC	5	NetCDF format version	netCDF-4.9.2	string
69	FileSizeByte	4	Product size (Byte)	0～2147483647	32-bit integer
70	GranuleID	64	Granule ID	“XXXXXXXXXXX” Granule ID	string
71	GringPointLatitude	459 （variable）	Latitude of data valid range	ex)-30.11,-34.90,-39.58,-44.74,-49.97,-55.22,-60.05,-88.57,-105.61,-115.76,-124.95,-130.70,-134.90,-141.36,-143.85,-146.18,-148.53,-150.20,-152.20,-155.15,-155.79,-156.58,-157.56,-158.81,-160.36,-162.74,-179.08,152.04,128.80,119.63,117.79,119.48,123.04,127.55,132.79,138.32,142.87,146.86,150.85,154.52,157.	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				91,160.82,175.97,-175.03,-169.04,-162.90,-158.58,-155.19,-149.57,-147.28,-145.06,-142.71,-140.84,-137.89,-121.00,-100.65,-22.80,15.84,25.91,30.05,32.60,19.89,-7.95,-34.55,-46.82,-49.85,-48.61,-45.34,-40.86,-35.76,-30.11	
72	GringPointLongitude	522 （variable）	Longitude of data valid range	ex)-30.11,-34.90,-39.58,-44.74,-49.97,-55.22,-60.05,-88.57,-105.61,-115.76,-124.95,-130.70,-134.90,-141.36,-143.85,-146.18,-148.53,-150.20,-152.20,-155.15,-155.79,-156.58,-157.56,-158.81,-160.36,-162.74,-179.08,152.04,128.80,119.63,117.79,119.48,123.04,127.55,132.79,138.32,142.87,146.86,150.85,154.52,157.91,160.82,175.97,-175.03,-169.04,-162.90,-158.58,-155.19,-149.57,-147.28,-145.06,-142.71,-140.84,-137.89,-121.00,-100.65,-22.80,15.84,25.91,30.05,32.60,19.89,-7.95,-34.55,-46.82,-49.85,-48.61,-45.34,-40.86,-35.76,-30.11	string
73	InputFileName	44	Input file name	ex.） GGWAM3_202607010158-021_S0-------00A26182.01	string
74	MeteorologicalDataType	1	Weather data used	Blank(Set by Level 2 or upper level)	string
75	NumberOfAntennaRotationAnomalyScans	4	Number of abnormal antenna rotation speed scans	ex.) 0	32-bit integer
76	NumberOfAttitudeAnomalyS	4	Number of abnormal attitude	ex.)	32-bit integer

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
	cans		angle and attitude angular velocity scans	0	
77	NumberOfGeometricErrorPixels	4	Number of geometric information errors	ex.) 0	32-bit integer
78	NumberOfHTSAnomalyScans	4	Number of HTS anomaly scans	ex.) 0	32-bit integer
79	NumberOfInputFiles	4	Number of input Level 0 data files	ex.) 1	32-bit integer
80	NumberOfMissingPackets	4	Number of missing packets	ex.) 0	32-bit integer
81	NumberOfMissingScans	4	Number of missing scans	ex.) 0	32-bit integer
82	NumberOfOrbitAnomalyScans	4	Number of abnormal orbit and velocity scans	ex.) 0	32-bit integer
83	NumberOfTbLimitErrorPixels	4	Number of brightness temperature limit errors	ex.) 0	32-bit integer
84	NumberOfPackets	4	Number of Level 0 packets	ex.) 0	32-bit integer
85	NumberOfParityError	4	Number of parity errors	ex.) 0	32-bit integer
86	NumberOfPixelsPerScan	4	Number of observations per scan (except for 89GHz)	Number of observations per scan (excluding 89GHz)	32-bit integer
87	NumberOfPixelsPerScan89	4	Number of observations per scan	Number of observations per scan (89GHz)	32-bit integer

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
			(89GHz)		
88	NumberOfScans	4	Number of scans	“XXXXX” 0 - 99999	32-bit integer
89	NumberOfScansOverlap	4	Number of overlap scans（1 side）	“XX” [Standard Processing] 30 [Near real-time processing] 0	32-bit integer
90	ObservationEndDateTime	25	Date and time to end observation（UTC）	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second) uuu：000 - 999(milli-second)	string
91	ObservationEquatorCrossing DateTime	25	Date and time of crossing equator（UTC）	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second)	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				uuu：000 - 999(milli-second) [Standard Processing] Date and time of crossing [Near real-time processing (Global)] The date and time of the first pass in the data if there is more than one. [Near real-time processing (Around Japan)] If it exists, enter it, otherwise leave it blank.	
92	ObservationEquatorCrossing Longitude	4	Equator crossing longitude	“XXXX.XX” [Standard Processing] Set between -180.00 and 180.00 [Near real-time processing (Global)] The longitude of the first pass in the data if there is more than one. [Near real-time processing (Around Japan)] If it exists, enter it, otherwise leave it blank.	32-bit floating-point
93	ObservationStartDateTime	25	Date and time to start observation（UTC）	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second) uuu：000 - 999(milli-second)	
94	OrbitArgumentPerigee	10	Satellite perigee argument	99.5384deg	string
95	OrbitDataFileName	128	Orbit data file name used	“XXXXX”(String) Blank if not used	string
96	OrbitDataType	7	Orbit data type	ONBOARD	string
97	OrbitDirection	10	Orbit direction	“XXXXXXXXX” [Standard processing / Near real-time processing (Around Japan)] Ascending/Descending [Near real-time processing (Global)] Ascending/Descending *Set the first orbit direction in the data.	string
98	OrbitEccentricity	7	Satellite orbit eccentricity	Frozen	string
99	OrbitInclination	9	Orbital inclination angle	98.08deg	string
100	OrbitNumberEnd	4	Orbit end number	“XXXXX” 0 - 99999	32-bit integer
101	OrbitNumberStart	4	Orbit start number	“XXXXX” 0 - 99999	32-bit integer

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
102	OrbitPeriod	7	Satellite period	98.2min	string
103	OrbitSemiMajorAxis	10	Satellite orbit semi-major axis	7035.552km	string
104	ParameterVersion	3	Version of parameter	“XXX” 000 - 999	string
105	PathNumber	4	Path number	“XXX” 0 - 999 Pass number at the start of processing	32-bit integer
106	PGEName	33	Data processing software name	GOSAT-GW Mission Operation System	string
107	PlatformShortName	8	Platform abbreviation	GOSAT-GW	string
108	Platinum2ConversionTableW0	11	Engineering value conversion coefficient of platinum sensor No.2 W0	-233.2059300	string
109	Platinum2ConversionTableW1	9	Engineering value conversion coefficient of platinum sensor No.2 W1	1.8933693	string
110	Platinum2ConversionTableW2	9	Engineering value conversion coefficient of platinum sensor No.2 W2	0.0000000	string
111	Platinum2ConversionTableW3	9	Engineering value conversion coefficient of platinum sensor No.2 W3	0.0000000	string
112	Platinum2ConversionTableW4	9	Engineering value conversion coefficient of platinum sensor No.2 W4	0.0000000	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
113	Platinum3ConversionTableW0	119	Engineering value conversion coefficient of platinum sensor No.3 W0	-60.9048590,-61.2892750,-61.2631300,-61.1614160,-61.0259380,-61.0778560,-61.3169000,-61.1152100,-61.2002040,-61.2893890	string
114	Platinum3ConversionTableW1	99	Engineering value conversion coefficient of platinum sensor No.3 W1	0.0299745,0.0299410,0.0299879,0.0299583,0.0299837,0.0299429,0.0299282,0.0299339,0.0299062,0.0299172	string
115	Platinum3ConversionTableW2	99	Engineering value conversion coefficient of platinum sensor No.3 W2	0.0000002,0.0000001,0.0000001,0.0000002,0.0000002,0.0000002,0.0000002,0.0000002,0.0000001	string
116	Platinum3ConversionTableW3	99	Engineering value conversion coefficient of platinum sensor No.3 W3	0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000	string
117	Platinum3ConversionTableW4	99	Engineering value conversion coefficient of platinum sensor No.3 W4	0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000,0.0000000	string
118	Platinum4ConversionTableW0	11	Engineering value conversion coefficient of platinum sensor No.4 W0	-233.205930	string
119	Platinum4ConversionTableW1	9	Engineering value conversion coefficient of platinum sensor No.4 W1	1.8933693	string
120	Platinum4ConversionTableW2	9	Engineering value conversion coefficient of platinum sensor	0.0000000	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
			No.4 W2		
121	Platinum4ConversionTableW3	9	Engineering value conversion coefficient of platinum sensor No.4 W3	0.0000000	string
122	Platinum4ConversionTableW4	9	Engineering value conversion coefficient of platinum sensor No.4 W4	0.0000000	string
123	ProcessingCenter	22	Data Processing Center	JAXA GOSAT-GW Project	string
124	ProcessingQAAttribute	130	Describe any abnormalities in quality-related items (NumberOf***) in GlobalAttribute	AntennaRotationAnomaly,AttitudeAnomaly,GeometricError,HTSAnomaly,MissingPackets,MissingScans,OrbitAnomaly,TbLimitError,ParityError	string
125	ProcessingQADescription	12	Records of errors occurred during processing	“XXXXXXXXXXXXXXXX”(string) Blank if normal operation.	string
126	ProductCreationDateTime	24	Product created date and time	“YYYY-MM-DDThh:mm:ss.uuuZ” YYYY：western year MM：01 - 12(Month) DD：01 - 31(Day) hh：00 - 23(hour) mm：00 - 59(minute) ss：00 - 59(second) uuu：000 - 999(milli-second)	
127	ProductName	13	Product abbreviation	AMSR3 L1R TBR	string
128	ProductProcessingType	21	Product processing type	“XXXXXXXXXXX”	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				[Standard Processing] Standard Product (Global) [Near real-time processing (Global)] Near Realtime Product (Global): Near real-time processing (Global) Near Realtime Product (Local): Near real-time processing (Around Japan) / Level 1 product created with Level 1 processing software for direct receiving stations	
129	ProductSupplement	0	Supplemental information of product	(blank)	string
130	ProductVersion	3	Product version	“VVv” (3 characters) VV: Major version (00-99) (2 characters) v: Minor version（A-Z）(1 character)	string
131	QALocationOfPacketDiscontinuity	15	Discontinuity of Packet Sequence Counter	“XXXXXXXXXXXXXXXX” Continuation/Discontinuation	string
132	QAPercentMissingData	4	Data missing ratio (%)	0.0 - 100	32-bit floating-point
133	SatelliteAltitude	8	Satellite Altitude	665.96km	string
134	SatelliteOrbit	29	Satellite orbit	Sun-synchronous_sub-recurrent	string
135	SatelliteRevisitTime	5	Revisit time	3days	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
136	SensorAlignment	35	Sensor alignment	Rx=-0.02539,Ry=0.038090,Rz=0.357420	string
137	SensorAntRotationVelocity	4	Rotation velocity of Sensor Antenna	40.0rpm	string
138	SensorBandWidth	199	Band width of AMSR3	6.925GHz:350MHz,7.3GHz:350MHz,10.25GHz:500MHz,10.65GHz:100MHz,18.7GHz:200MHz,23.8GHz:400MHz,36.42GHz:840MHz,89.0GHz-A:3000MHz,89.0GHz-B:3000MHz,165.5GHz:4000MHz,183.31+/-3GHz:2000x2MHz, 183.31+/-7GHz:2000x2MHz	string
139	SensorBeamWidth	256	Beam width of AMSR3	6.925GHz:1.8deg,7.3GHz:1.8deg,10.25GHz:1.2deg,10.65GHz:1.2deg,18.7GHz:0.65deg,23.8GHz:0.75deg,36.42GHz:0.35deg,89.0GHz-A:0.15deg,89.0GHz-B:0.15deg,165.5GHz:0.30deg,183.31+/-3GHz:0.28deg,183.31+/-7GHz:0.28deg	string
140	SensorChannel	236	Observed channel of AMSR3	6.925GHz:V,6.925GHz:H,7.3GHz:V,7.3GHz:H,10.25GHz:V,10.25GHz:H,10.65GHz:V,10.65GHz:H,18.7GHz:V,18.7GHz:H,23.8GHz:V,23.8GHz:H,36.42GHz:V,36.42GHz:H,89.0GHz-A:V,89.0GHz-A:H,89.0GHz-B:V,89.0GHz-B:H,165.5GHz:V,183.31+/-3GHz:V,183.31+/-7GHz:V	string
141	SensorFOV	225	spatial resolution(Az x El)	6.925GHz:33kmx57km,7.3GHz:33kmx57km,10.25GHz:22kmx38km,10.65GHz:22kmx38km,18.7GHz:12kmx21km,23.8GHz:14kmx24km,36.42GHz:6kmx11km,89.0GHz-A:3kmx5km,89.0GHz-B:3kmx5km,165.5GHz:5kmx10km,183.31+/-	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
				3GHz:5kmx9km,183.31+/-7GHz:5kmx9km	
142	SensorOffNadir	35	Off-nadir angle	47.0deg : 89GHz-B, 47.5deg : others	string
143	SensorScanningPeriod	6	Scanning Period	1.5sec	string
144	SensorShortName	5	Sensor abbreviation	AMSR3	string
145	SensorSwathWidth	6	Swath width	1535km	string
146	Thermistor1ConversionTable W0	35	Engineering value conversion coefficient for Thermistor 1 W0	91.699564000000,-31787.062999999998	string
147	Thermistor1ConversionTable W1	32	Engineering value conversion coefficient for Thermistor 1 W1	-1.671018700000,620.584310000000	string
148	Thermistor1ConversionTable W2	30	Engineering value conversion coefficient for Thermistor 1 W2	0.017325889000,-4.531243700000	string
149	Thermistor1ConversionTable W3	30	Engineering value conversion coefficient for Thermistor 1 W3	-0.000098347441,0.014669473000	string
150	Thermistor1ConversionTable W4	30	Engineering value conversion coefficient for Thermistor 1 W4	0.000000204092,-0.000017782910	string
151	Thermistor1CountRange	11	Applied range of conversion coefficient for Thermistor 1	0,185,255	string
152	Thermistor2ConversionTable W0	36	Engineering value conversion coefficient for Thermistor 2 W0	57.2940800000000,-3580.3478000000000	string
153	Thermistor2ConversionTable W1	32	Engineering value conversion coefficient for Thermistor 2 W1	-0.0436646040000,4.7476534000000	string
154	Thermistor2ConversionTable W2	32	Engineering value conversion coefficient for Thermistor 2 W2	0.0000173910510,-0.0023425068000	string

No.	MetaDataName	DataSize	Contents	Explanation/Range	Data type
155	Thermistor2ConversionTable W3	32	Engineering value conversion coefficient for Thermistor 2 W3	-0.0000000049972,0.0000005105244	string
156	Thermistor2ConversionTable W4	32	Engineering value conversion coefficient for Thermistor 2 W4	0.0000000000005,-0.0000000000417	string
157	Thermistor2CountRange	9	Applied range of conversion coefficient for Thermistor 2	0,3079,4095	string
158	Thermistor3ConversionTable W0	35	Engineering value conversion coefficient for Thermistor 3 W0	91.699564000000,-31787.062999999998	string
159	Thermistor3ConversionTable W1	30	Engineering value conversion coefficient for Thermistor 3 W1	-1.671018700000,620.584310000000	string
160	Thermistor3ConversionTable W2	30	Engineering value conversion coefficient for Thermistor 3 W2	0.017325889000,-4.531243700000	string
161	Thermistor3ConversionTable W3	30	Engineering value conversion coefficient for Thermistor 3 W3	-0.000098347441,0.014669473000	string
162	Thermistor3ConversionTable W4	30	Engineering value conversion coefficient for Thermistor 3 W4	0.000000204092,-0.000017782910	string
163	Thermistor3CountRange	9	Applied range of conversion coefficient for Thermistor 3	0,185,255	string

Table 3-4 Composition and size of the data set in the data section

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
	<6GHz resolution>					
1	Tb_FOV06Ch06V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
2	Tb_FOV06Ch06H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
3	Tb_FOV06Ch07V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
4	Tb_FOV06Ch07H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
5	Tb_FOV06Ch10uV_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
6	Tb_FOV06Ch10uH_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
7	Tb_FOV06Ch10V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
8	Tb_FOV06Ch10H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
9	Tb_FOV06Ch18V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
10	Tb_FOV06Ch18H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
11	Tb_FOV06Ch23V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
12	Tb_FOV06Ch23H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
13	Tb_FOV06Ch36V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
14	Tb_FOV06Ch36H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
15	Tb_FOV06Ch89V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
16	Tb_FOV06Ch89H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
	<10GHz resolution>					
17	Tb_FOV10Ch10uV_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
18	Tb_FOV10Ch10uH_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
19	Tb_FOV10Ch10V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
20	Tb_FOV10Ch10H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
21	Tb_FOV10Ch18V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
22	Tb_FOV10Ch18H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
23	Tb_FOV10Ch23V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
24	Tb_FOV10Ch23H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
25	Tb_FOV10Ch36V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
26	Tb_FOV10Ch36H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
27	Tb_FOV10Ch89V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
28	Tb_FOV10Ch89H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
	<23GHz resolution>					
29	Tb_FOV23Ch18V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
30	Tb_FOV23Ch18H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
31	Tb_FOV23Ch23V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
32	Tb_FOV23Ch23H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
33	Tb_FOV23Ch36V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
34	Tb_FOV23Ch36H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
35	Tb_FOV23Ch89V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
36	Tb_FOV23Ch89H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
37	Tb_FOV23Ch165V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
38	Tb_FOV23Ch183r3V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
39	Tb_FOV23Ch183r7V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
	<36GHz resolution>					

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
40	Tb_FOV36Ch36V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
41	Tb_FOV36Ch36H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
42	Tb_FOV36Ch89V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
43	Tb_FOV36Ch89H_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
44	Tb_FOV36Ch165V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
45	Tb_FOV36Ch183r3V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
46	Tb_FOV36Ch183r7V_P89o	16-bit unsigned integer	0.01	K	scan_num x 243	1,001,160
	<6GHz resolution>					
47	Tb_FOV06Ch06V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
48	Tb_FOV06Ch06H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
49	Tb_FOV06Ch07V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
50	Tb_FOV06Ch07H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
51	Tb_FOV06Ch10uV_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
52	Tb_FOV06Ch10uH_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
53	Tb_FOV06Ch10V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
54	Tb_FOV06Ch10H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
55	Tb_FOV06Ch18V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
56	Tb_FOV06Ch18H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
57	Tb_FOV06Ch23V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
58	Tb_FOV06Ch23H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
59	Tb_FOV06Ch36V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
60	Tb_FOV06Ch36H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
61	Tb_FOV06Ch89V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
62	Tb_FOV06Ch89H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
	<10GHz resolution>					
63	Tb_FOV10Ch10uV_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
64	Tb_FOV10Ch10uH_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
65	Tb_FOV10Ch10V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
66	Tb_FOV10Ch10H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
67	Tb_FOV10Ch18V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
68	Tb_FOV10Ch18H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
69	Tb_FOV10Ch23V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
70	Tb_FOV10Ch23H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
71	Tb_FOV10Ch36V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
72	Tb_FOV10Ch36H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
73	Tb_FOV10Ch89V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
74	Tb_FOV10Ch89H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
	<23GHz resolution>					
75	Tb_FOV23Ch18V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
76	Tb_FOV23Ch18H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
77	Tb_FOV23Ch23V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
78	Tb_FOV23Ch23H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
79	Tb_FOV23Ch36V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
80	Tb_FOV23Ch36H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
81	Tb_FOV23Ch89V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
82	Tb_FOV23Ch89H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
83	Tb_FOV23Ch165V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
84	Tb_FOV23Ch183r3V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
85	Tb_FOV23Ch183r7V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
	<36GHz resolution>					
86	Tb_FOV36Ch36V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
87	Tb_FOV36Ch36H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
88	Tb_FOV36Ch89V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
89	Tb_FOV36Ch89H_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
90	Tb_FOV36Ch165V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
91	Tb_FOV36Ch183r3V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
92	Tb_FOV36Ch183r7V_P89o_Quality	8-bit unsigned integer	1	-	scan_num x 243	500,580
93	Latitude_P89o	32-bit floating point	1	deg	scan_num x 243	2,002,320
94	Longitude_P89o	32-bit floating point	1	deg	scan_num x 243	2,002,320
95	LandAreaPercent_FOV06_P89o	8-bit unsigned integer	1	%	scan_num x 243	500,580
96	LandAreaPercent_FOV10_P89o	8-bit unsigned integer	1	%	scan_num x 243	500,580
97	LandAreaPercent_FOV23_P89o	8-bit unsigned integer	1	%	scan_num x 243	500,580
98	LandAreaPercent_FOV36_P89o	8-bit unsigned integer	1	%	scan_num x 243	500,580
99	AreaMeanHeight_P89o	16-bit integer	1	m	scan_num x 243	1,001,160
100	EarthAzimuth_P89o	16-bit integer	0.01	deg	scan_num x 243	1,001,160
101	EarthIncidence_P89o	16-bit integer	0.01	deg	scan_num x 243	1,001,160

No.	Data Name	Data Type	Scale factor	Unit	Dimension size	Size(byte) *1
102	SunAzimuth_P89o	16-bit integer	0.01	deg	scan_num x 243	1,001,160
103	SunElevation_P89o	16-bit integer	0.01	deg	scan_num x 243	1,001,160
104	ScanTimeUTC	16-bit integer	1	{Year, Month, Day, Hour, Minute, Second, Millisecond}	scan_num x 7	28,840
105	ScanTimeTAI93	64-bit floating point	1	sec	scan_num	16,480
106	ScanDataQuality	8-bit unsigned integer	1	-	scan_num	2,060
107	AttitudeData	32-bit floating point	1	deg	scan_num x 3	24,720
108	NavigationData	32-bit floating point	1	m,m/s	scan_num x 6	49,440
109	PositionInOrbit	64-bit floating point	1	-	scan_num	16,480
					(Total Size)*2	77.50Mbyte

*1 Size is calculated assuming 2000 scans per scene (scan_num=2000)

*2 The actual product size of AMSR3 is different because it is compressed using the NetCDF4 compression option.

3. 4 Structure of each data

The structure of each dataset is shown in Figure 3-2 to Figure 3-13.

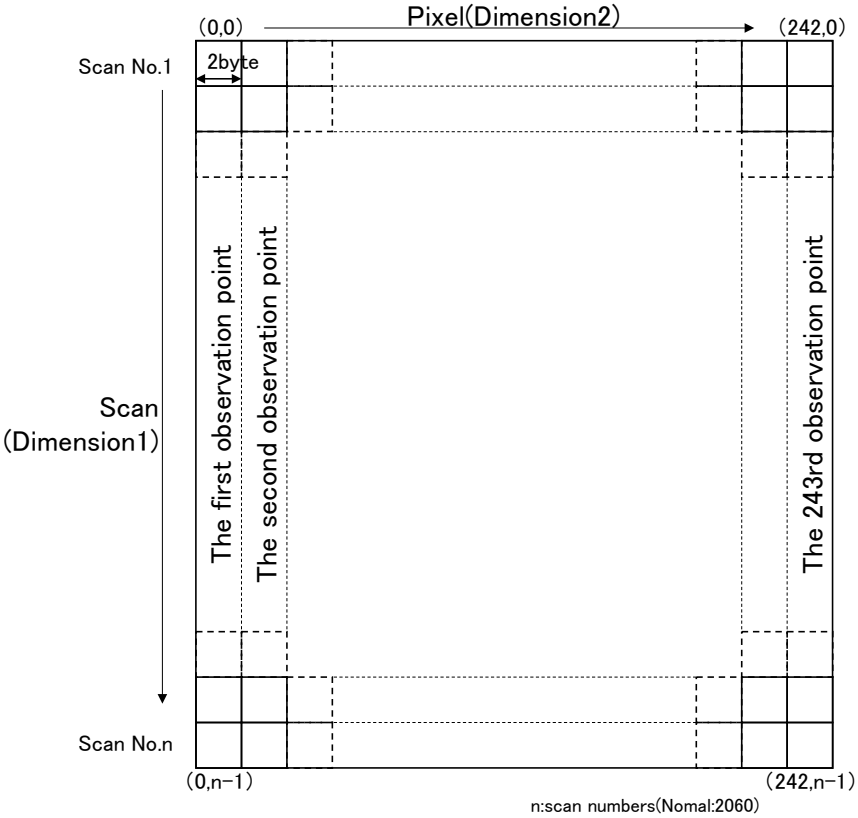


Figure 3-2 Structure of Tb

(Dataset Name : Tb_FOV06Ch06V_P89o, Tb_FOV06Ch06H_P89o, Tb_FOV06Ch07V_P89o, Tb_FOV06Ch07H_P89o, Tb_FOV06Ch10uV_P89o, Tb_FOV06Ch10uH_P89o, Tb_FOV06Ch10V_P89o, Tb_FOV06Ch10H_P89o, Tb_FOV06Ch18V_P89o, Tb_FOV06Ch18H_P89o, Tb_FOV06Ch23V_P89o, Tb_FOV06Ch23H_P89o, Tb_FOV06Ch36V_P89o, Tb_FOV06Ch36H_P89o, Tb_FOV06Ch89V_P89o, Tb_FOV06Ch89H_P89o, Tb_FOV10Ch10uV_P89o, Tb_FOV10Ch10uH_P89o, Tb_FOV10Ch10V_P89o, Tb_FOV10Ch10H_P89o, Tb_FOV10Ch18V_P89o, Tb_FOV10Ch18H_P89o, Tb_FOV10Ch23V_P89o, Tb_FOV10Ch23H_P89o, Tb_FOV10Ch36V_P89o, Tb_FOV10Ch36H_P89o, Tb_FOV10Ch89V_P89o, Tb_FOV10Ch89H_P89o, Tb_FOV23Ch18V_P89o, Tb_FOV23Ch18H_P89o, Tb_FOV23Ch23V_P89o, Tb_FOV23Ch23H_P89o, Tb_FOV23Ch36V_P89o, Tb_FOV23Ch36H_P89o, Tb_FOV23Ch89V_P89o, Tb_FOV23Ch89H_P89o, Tb_FOV23Ch165V_P89o, Tb_FOV23Ch183r3V_P89o, Tb_FOV23Ch183r7V_P89o, Tb_FOV36Ch36V_P89o, Tb_FOV36Ch36H_P89o, Tb_FOV36Ch89V_P89o, Tb_FOV36Ch89H_P89o, Tb_FOV36Ch165V_P89o, Tb_FOV36Ch183r3V_P89o, Tb_FOV36Ch183r7V_P89o)

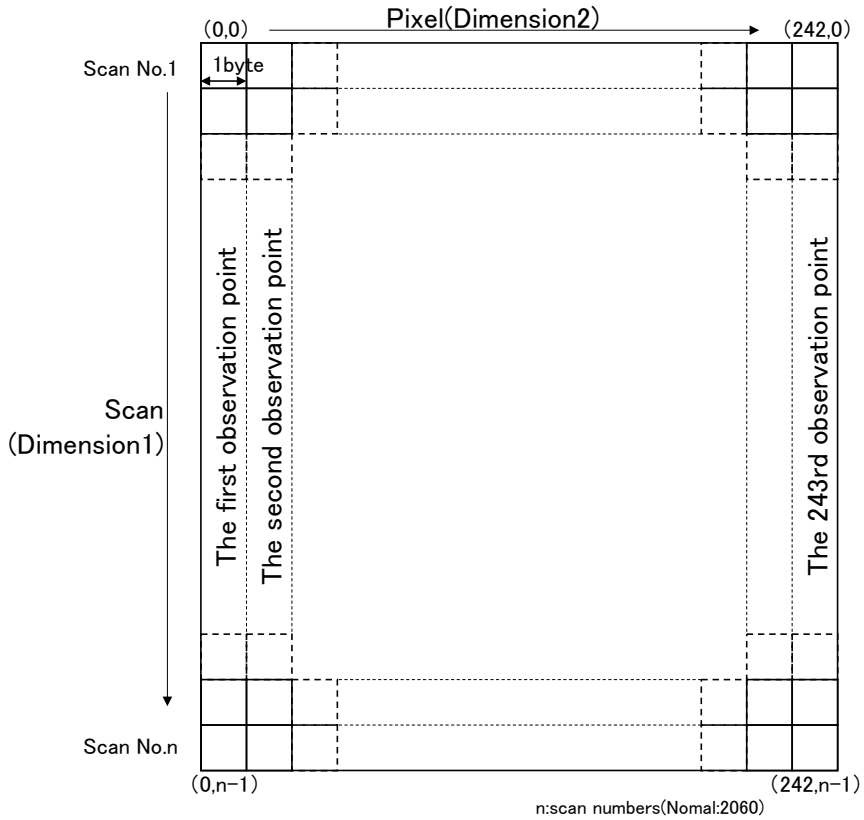


Figure 3-3 Tb_Quality

(Dataset Name : Tb_FOV06Ch06V_P89o_Quality, Tb_FOV06Ch06H_P89o_Quality, Tb_FOV06Ch07V_P89o_Quality, Tb_FOV06Ch07H_P89o_Quality, Tb_FOV06Ch10uV_P89o_Quality, Tb_FOV06Ch10uH_P89o_Quality, Tb_FOV06Ch10V_P89o_Quality, Tb_FOV06Ch10H_P89o_Quality, Tb_FOV06Ch18V_P89o_Quality, Tb_FOV06Ch18H_P89o_Quality, Tb_FOV06Ch23V_P89o_Quality, Tb_FOV06Ch23H_P89o_Quality, Tb_FOV06Ch36V_P89o_Quality, Tb_FOV06Ch36H_P89o_Quality, Tb_FOV06Ch89V_P89o_Quality, Tb_FOV06Ch89H_P89o_Quality, Tb_FOV10Ch10uV_P89o_Quality, Tb_FOV10Ch10uH_P89o_Quality, Tb_FOV10Ch10V_P89o_Quality, Tb_FOV10Ch10H_P89o_Quality, Tb_FOV10Ch18V_P89o_Quality, Tb_FOV10Ch18H_P89o_Quality, Tb_FOV10Ch23V_P89o_Quality, Tb_FOV10Ch23H_P89o_Quality, Tb_FOV10Ch36V_P89o_Quality, Tb_FOV10Ch36H_P89o_Quality, Tb_FOV10Ch89V_P89o_Quality, Tb_FOV10Ch89H_P89o_Quality, Tb_FOV23Ch18V_P89o_Quality, Tb_FOV23Ch18H_P89o_Quality, Tb_FOV23Ch23V_P89o_Quality, Tb_FOV23Ch23H_P89o_Quality, Tb_FOV23Ch36V_P89o_Quality, Tb_FOV23Ch36H_P89o_Quality, Tb_FOV23Ch89V_P89o_Quality, Tb_FOV23Ch89H_P89o_Quality, Tb_FOV23Ch165V_P89o_Quality, Tb_FOV23Ch183r3V_P89o_Quality, Tb_FOV23Ch183r7V_P89o_Quality, Tb_FOV36Ch36V_P89o_Quality, Tb_FOV36Ch36H_P89o_Quality, Tb_FOV36Ch89V_P89o_Quality, Tb_FOV36Ch89H_P89o_Quality, Tb_FOV36Ch165V_P89o_Quality, Tb_FOV36Ch183r3V_P89o_Quality, Tb_FOV36Ch183r7V_P89o_Quality)

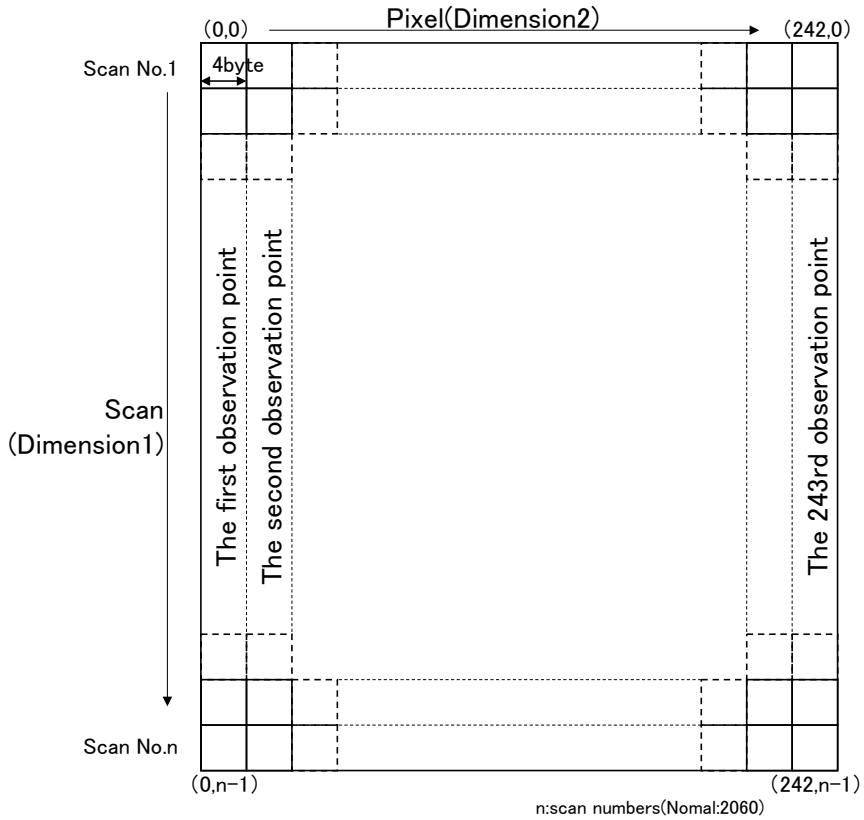


Figure 3-4 Latitude_89o, Longitude_89o

(Dataset Name : Latitude_P89o, Longitude_P89o)

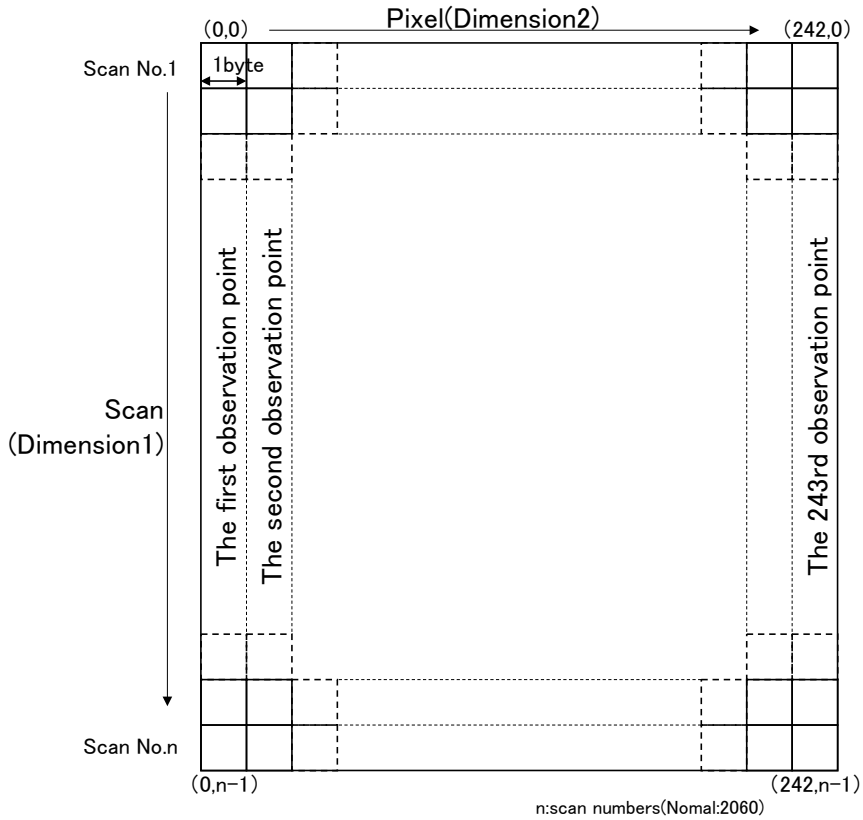


Figure 3-5 LandAreaPercent

(Dataset Name : LandAreaPercent_FOV06_P89o, LandAreaPercent_FOV10_P89o, LandAreaPercent_FOV23_P89o, LandAreaPercent_FOV36_P89o)

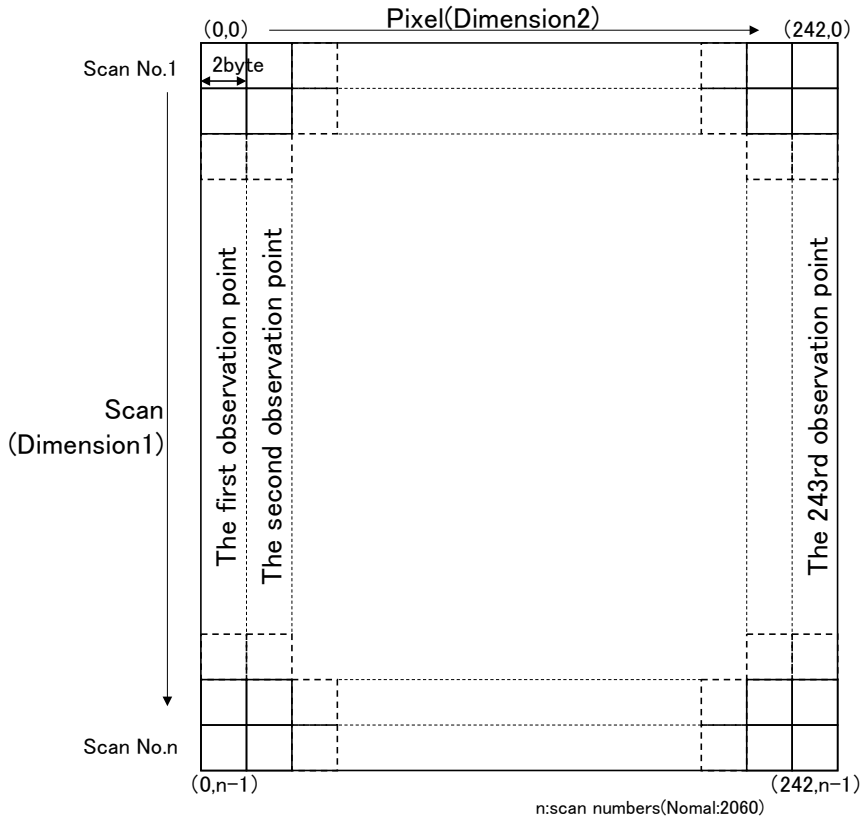


Figure 3-6 AreaMeanHeight_P89o

(Dataset Name : AreaMeanHeight_P89o)

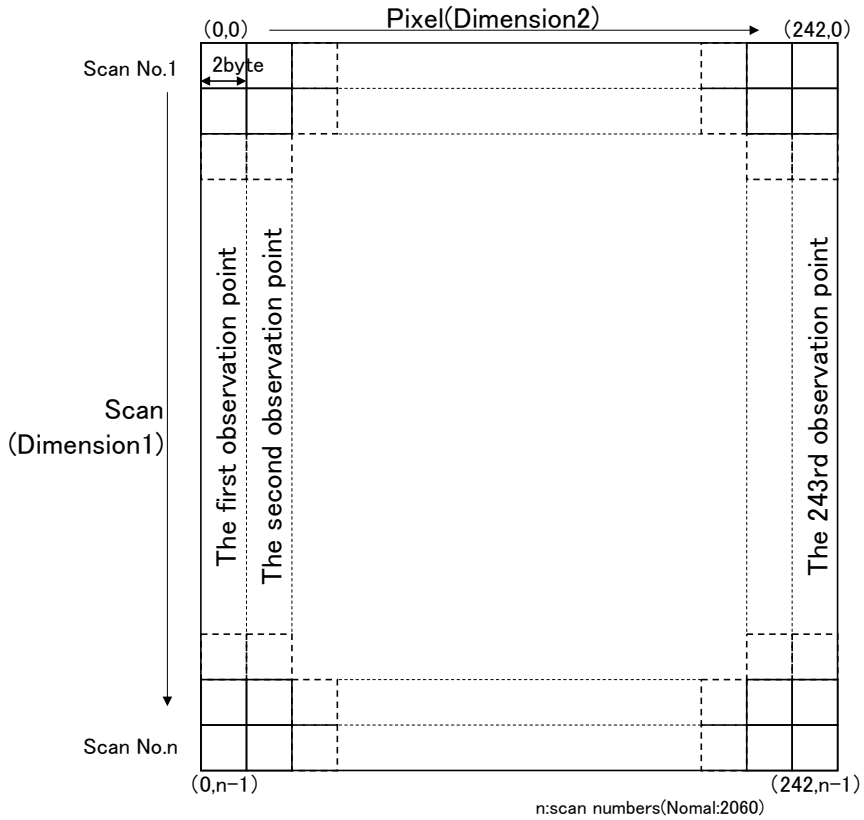


Figure 3-7 EarthAzimuth_P89o, EarthIncidence_P89o, SunAzimuth_P89o, SunElevation_P89o

(Dataset Name : EarthAzimuth_P89o, EarthIncidence_P89o, SunAzimuth_P89o, SunElevation_P89o)

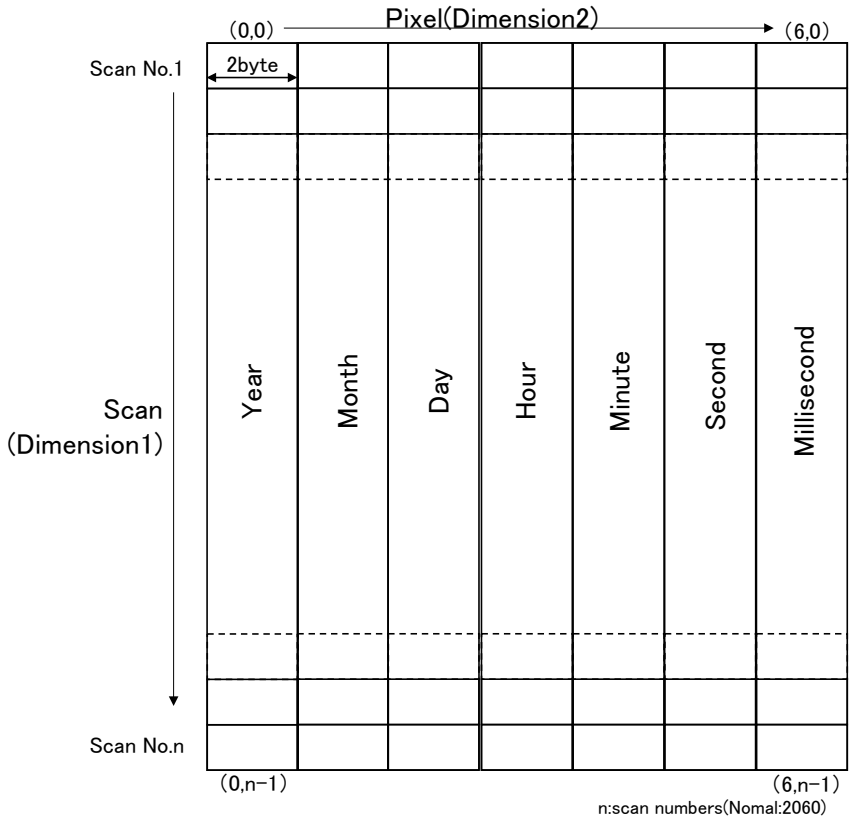


Figure 3-8 ScanTimeUTC

(Dataset Name : ScanTimeUTC)

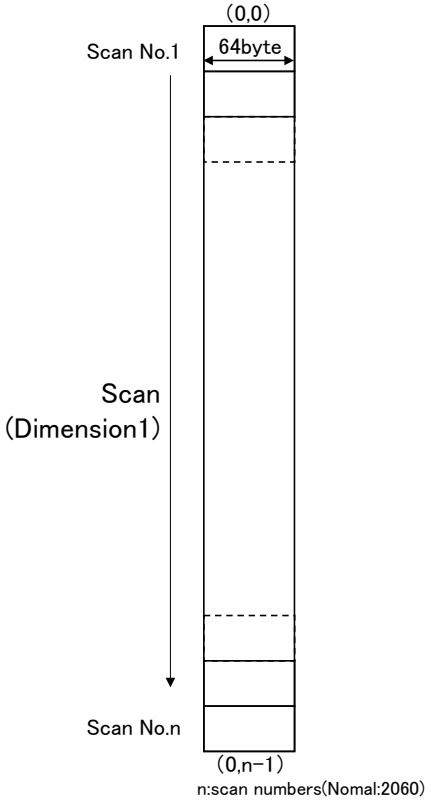


Figure 3-9 ScanTimeTAI93

(Dataset Name : ScanTimeTAI93)

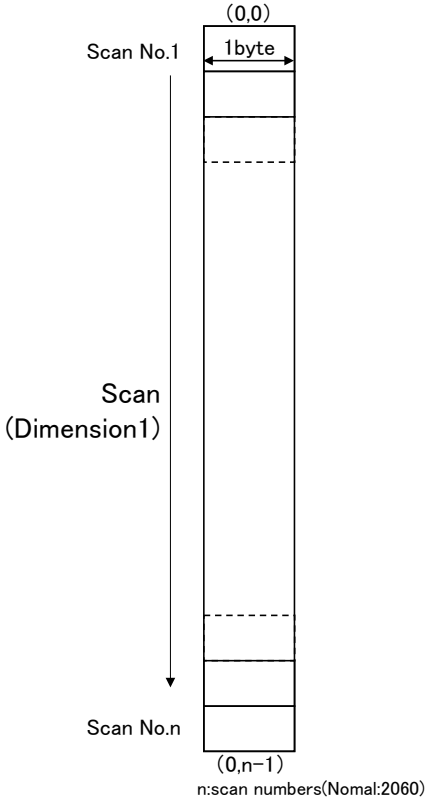


Figure 3-10 ScanDataQuality

(Dataset Name : ScanDataQuality)

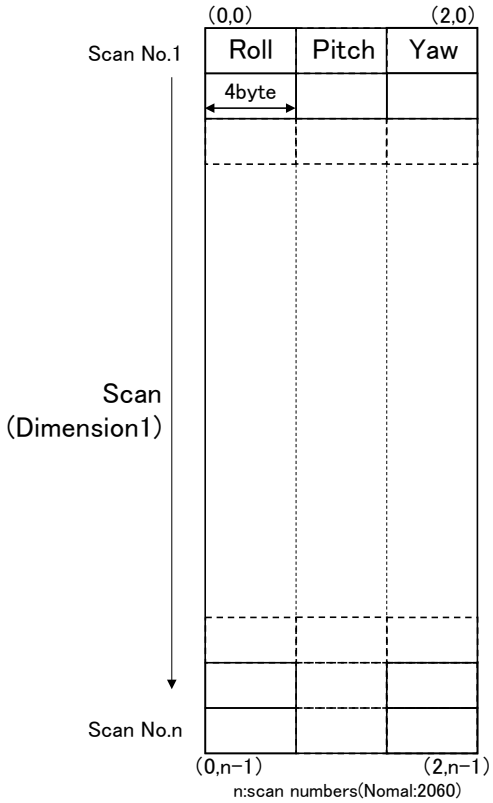


Figure 3-11 AttitudeData

(Dataset Name : AttitudeData)

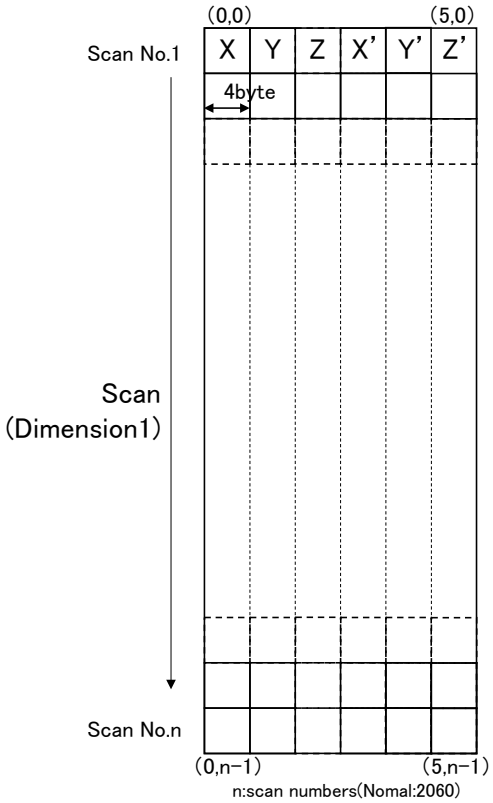


Figure 3-12 NavigationData

(Dataset Name : NavigationData)

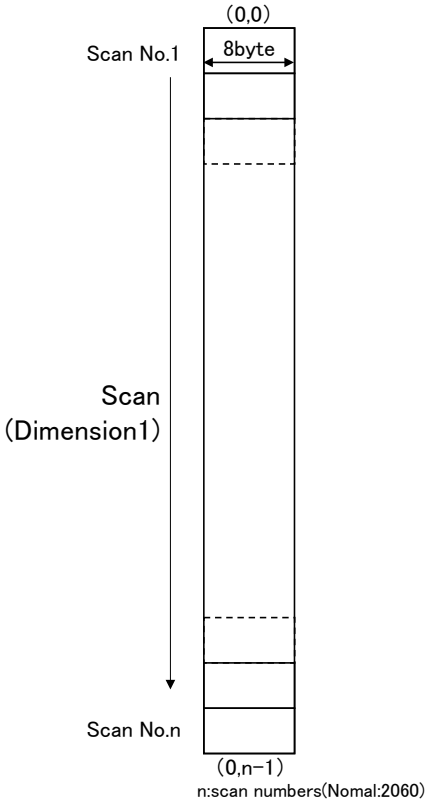


Figure 3-13 PositionInOrbit

(Dataset Name : PositionInOrbit)

3. 5 Others

3. 5. 1 File name

File names for AMSR3 Level 1 products are set according to the following rules.

Position of character	0									1										2										3										4				
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
File name	G	G	W	A	M	3	_	Y	Y	Y	Y	M	M	D	D	H	H	m	m	X	P	P	P	_	x	L	L	K	K	K	A	A	d	V	V	v	y	y	d	d	d	.	n	c

Table 3-5 Naming convention of AMSR3 Level 1 products

String	Bit position	Explanation
GGW	1-3	Satellite name (Fixed as “GGW”)
AM3	4-6	Sensor type (Fixed as “AM3”)
YYYYMMDDhhmm	8-19	Observation start day and time (Year : Western year, Time : UT)
X	20	Orbit A: Ascending orbit D: Descending orbit B: Both of A and D(Near real-time processing Global)
PPP	21-23	Path number (001 - 0XX, starting path number)
x	25	Processing type S: Standard Processing (Global) N: Near real-time Processing (Global) L: Near real-time Processing (Local)
LL	26-27	Processing level (Refer to Table 3-6)
KKK	28-30	Product code (Refer to Table 3-6)
AA	31-32	Area and Receiving station code (Refer to Table 3-8)
d	33	Developer code L1:Z (fixed)
VV	34-35	Product version Major Number (00 - 99) Product version Major Number is updated when major changes are made, such as recalibrating the brightness temperature, changing input data, or revising the algorithm. When updating Major Number, reprocess past products.
v	36	Product version Minor Number (A-Z) The product version minor number is updated

String	Bit position	Explanation
		when minor changes occur within the scope of maintaining compatibility with current existing products. When updating a minor version, in principle, past products are not reprocessed.
yyddd	37-41	Day Created yy = lower 2 digits of Western year ddd = total day of the year
nc	43-44	Extension (fixed) Set the extension of NetCDF

Table 3-6 Processing level

Code(LL)	Explanation
1A	Level 1A: Product per scene that stores antenna temperature count values converted from level 0 data by radiometric and geometric correction processes, antenna temperature conversion coefficients, etc.
1B	Level 1B: Product per scene that stores the brightness temperature calculated from the L1A antenna temperature using a conversion coefficient.
1R	Level 1R: Product per scene that stores the brightness temperature whose center position and size of the footprint of each frequency band are matched by spatial matching processing of level 1B brightness temperature.
1H	Level 1H: Product per scene that stores brightness temperatures with improved consistency of footprint center positions in each frequency band and spatial resolution performance in low frequency bands by spatial matching processing of Level 1B brightness temperatures.
1C	Level 1C: Product per scene that stores the brightness temperature with the center position of the footprint matched in each frequency band by spatial matching processing of level 1B brightness temperature.

Table 3-7 Product code

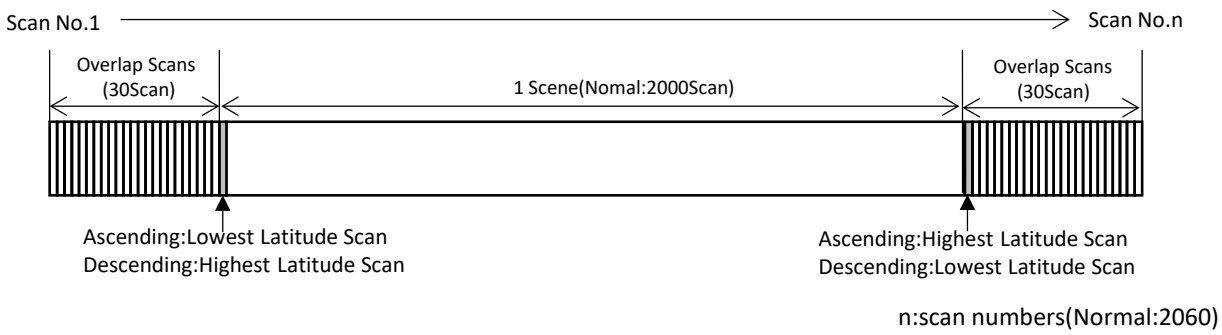
Code(KKK)	Explanation
DNA	Level 1A: Count value(L1A)
TBB	Level 1B: Brightness temperature (L1B)
TBR	Level 1R: Resampling brightness temperature (L1R)
TBH	Level 1H: High resolution brightness temperature (L1H)
TBC	Level 1C: Center position corrected brightness temperature (L1C)

Table 3-8 Area code

Code(AA)	Explanation
GA	Standard processing, near real-time processing Global Area (global)
J0	Near real-time processing, all over Japan (received at Katsuura and Okinawa (Masuda) stations)
J1	Near real-time processing, East Japan (received only at Katsuura station)
J2	Near real-time processing, Western Japan (received only at Okinawa (Masuda) station)
00	Default (no receiving station code)

3. 5. 2 Data range of product

The data range stored in the AMSR3 level 1 product is the same for levels 1A, 1B and 1R. It is the range added an overlap of 30 scans before and after the pole-to-pole range defined as the scene.The positions of the poles indicating both ends of the half-circle are defined by the maximum and minimum latitude and longitude of the observation point at the observation center of the 89GHzA scan.



3. 5. 3 Coordinate system

In the AMSR3 product, items related to location are ground observation location (latitude, longitude) and satellite orbit information. The ground observation location is based on the Greenwich coordinate system (Earth-fixed coordinate system), and stored with east longitudes of 0° to 180°, west longitudes of 0° to -180°, north latitudes of 0° to 90°, and south latitudes of 0° to -90°. WGS84 is adopted as the earth model used for geometric correction for position calculation.

3. 5. 4 Scale factor and offset

Related to Tb and EarthAzimuth, EarthIncidence, SunAzimuth, and SunElevation use scale factor (scale_factor) and offset (add_offset). For the value of the scale factor, refer to the attributes scale_factor and add_offset of each dataset.

The scale factor for each dataset is the value obtained by multiplying the stored value of each dataset by the setting value of scale_factor and adding add_offset.

(actual value) = (stored value) x scale_factor + add_offset

4. Explanation of data

This chapter explains each data item of AMSR3 Level 1R product. Some item is common with AMSR3 Level 1A product and Level 1B product.

4.1 Product metadata

This section explains metadata items of AMSR3 Level 1R product. They are common with AMSR3 Level 1A product and Level 1B product.

(1) Conventions

The version of CF Convention and ACDD AMSR3 product format conforms is stored.

CF Convention is the Climate and Forecast Convention, which is a standardized metadata rules for data structures and product attributes in the fields of weather, climate, and oceans. ACDD is ISO-19115, an international standard for geographic information, and Attribute Conventions for Data Discovery, a standard for cataloging and searching data.

(2) title

For L1R: GOSAT-GW/AMSR3 Level-1, Resampled Brightness Temperature (1R)

(3) institution

The name of institution creating product, ”Japan Aerospace Exploration Agency (JAXA)” is stored.

(4) project

The name of project creating product, ” JAXA GOSAT-GW Project” is stored

(5) summary

Summary of file is stored.

(6) license

The URL ” https://gportal.jaxa.jp/gpr/index/eula?lang=en” that shows the data rights and terms of use is stored.

(7) creator_name

The name of institution creating product, ”Japan Aerospace Exploration Agency (JAXA)” is stored.

(8) creator_type

The type of entity that created the product, “institution” is stored as a fixed value.

(9) creator_email

E-mail address of entity that created the product,” z-gportal-support@ml.jaxa.jp” is stored.

(10) creator_url

Web site URL of entity that created the product, “https://gportal.jaxa.jp/gpr/index/index?lang=en” is stored.

(11) keywords

Keywords representing the contents of the file, “OCEANS,OCEAN TEMPERATURE,SEA SURFACE TEMPERATURE ” is stored.

(12) standard_names_vocabulary

Name and version of the glossary that cited standard_name, ” CF Standard Name Table (v49, 12 February 2018)” is stored.

(13) id

Granule ID is stored. The granule ID is a string obtained by removing the extension from the file name described in Section 3.5.1.

(14) naming_authority

The name of the organization that provides the product, with the reversed DNS name “jp.jaxa” is stored as a fixed value.

(15) source

The file name of L0 file used to create product is stored.

(16) processing_level

The product abbreviation is stored. The following unique values is set according to each processing level.

For L1R : Level1R

(17) comment

Comments regarding the product is stored as necessary.

For L1R : blank

(18) date_created

The product creating date and time (UTC) is set in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY : Western year
MM : 01 - 12(Month)
DD : 01 - 31(Day)
hh : 00 - 23(hour)
mm : 00 - 59(minute)
ss : 00 - 59(second)(* May be 60 if a leap second occurs.)
uuu : 000 - 999(milli-second)

(19) time_coverage_start

Start observation date and time (UTC) of product is set in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY : Western year
MM : 01 - 12(Month)
DD : 01 - 31(Day)
hh : 00 - 23(hour)
mm : 00 - 59(minute)
ss : 00 - 59(second)(*May be 60 if a leap second occurs.)
uuu : 000 - 999(milli-second)

(20) time_coverage_end

End observation date and time (UTC) of product is set in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY : Western year
MM : 01 - 12(Month)
DD : 01 - 31(Day)
hh : 00 - 23(hour)
mm : 00 - 59(minute)
ss : 00 - 59(second)(*May be 60 if a leap second occurs.)
uuu : 000 - 999(milli-second)

(21) geospatial_lat_min

The southernmost latitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	Min. value	Max. value	Abnormal value	Note
geospatial_lat_min	-	-	-9999.0	floating-point

(22) geospatial_lat_max

The northernmost latitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	Min. value	Max. value	Abnormal value	Note
geospatial_lat_max	-	-	-9999.0	floating-point

(23) geospatial_lon_min

The westernmost longitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	Min. value	Max. value	Abnormal value	Note
geospatial_lon_min	-	-	-9999.0	floating-point

(24) geospatial_lon_max

The easternmost longitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	Min. value	Max. value	Abnormal value	Note
geospatial_lon_max	-	-	-9999.0	floating -point

(25) geospatial_vertical_min

The minimum altitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	in. value	Max. value	Abnormal value	Note
geospatial_vertical_min	-	-	-9999.0	floating -point

(26) geospatial_vertical_max

The maximum altitude in the product observation range is set. For level 1 products, the abnormal value "-9999.0" is stored.

Item	in. value	Max. value	Abnormal value	Note
geospatial_vertical_max	-	-	-9999.0	floating-point

(27) geospatial_vertical_positive

The interpretation of the vertical value is stored. This field is blank for level 1 product.

(28) geospatial_bounds

The range of two-dimensional space expressed in OGC's Well-Known Text (WKT) Geometry format is stored.

The polygon that defines the position information of the observation data area is stored as the latitude and longitude of 70 points counterclockwise from the first scan start point.

The latitude and longitude correspond to the ground surface scanning center position of 89GHz A-scanning. They are stored in the following format using the relationship between the product data position and polygon shown in Figure 4-1.

“POLYGON ((Longitude of P0 Latitude of P0, Longitude of P1 Latitude of P1, Longitude of P2 Latitude of P2,...Longitude of P7 Latitude of P70))”

Note that if the latitude and longitude to be stored are missing values, or if the latitude and longitude of the same point are consecutively subject to storage, the latitude and longitude are not stored.

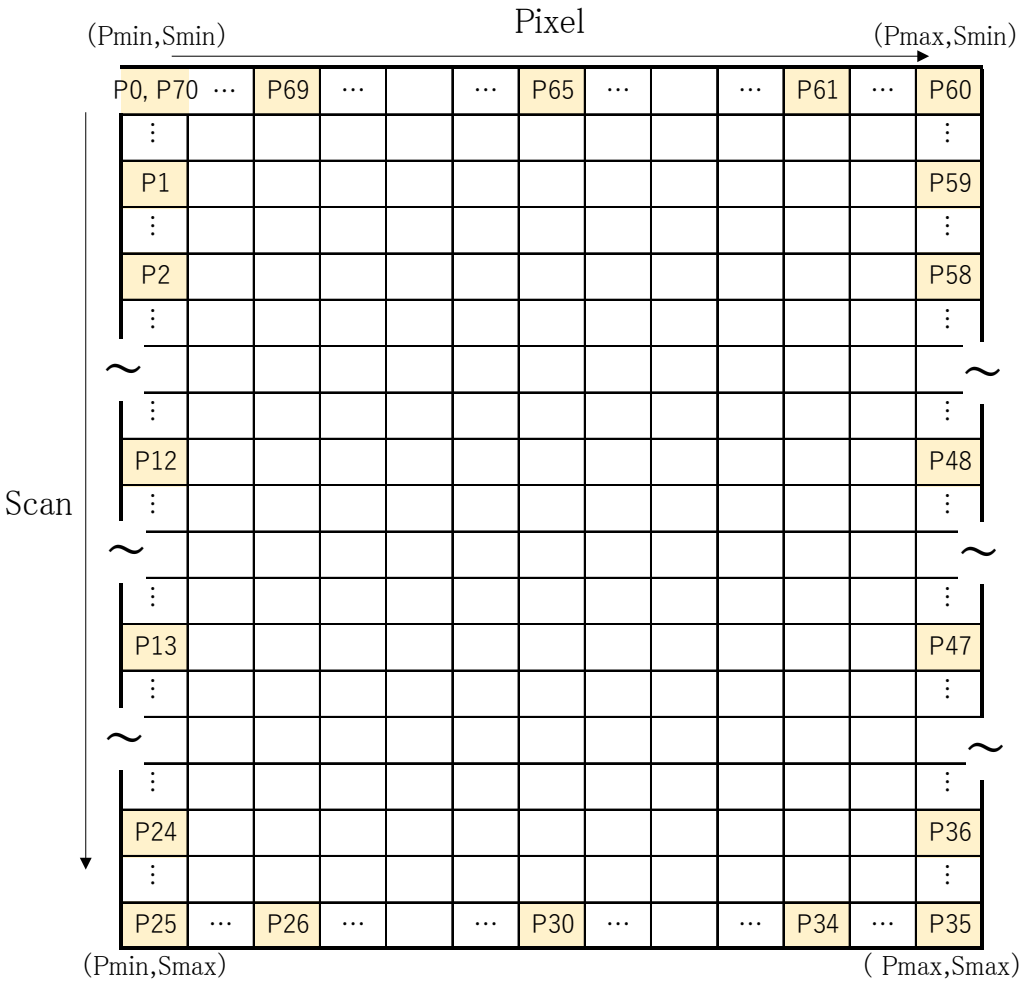


Figure 4-1 Relation between Gring Point and data position in product

Pmin : Observation start pixel position that does not include overlap scans and missing
Pmax : Observation end pixel position that does not include overlap scans and missing
Smin : Observation start scan position that does not include overlap scans and missing
Smax : Observation end scan position that does not include overlap scans and missing

Position	Position in Pixel direction	Position in Scan direction
P0	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P1	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0075 + Smin
P2	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0150 + Smin
P3	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0225 + Smin
P4	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0300 + Smin
P5	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0375 + Smin
P6	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0450 + Smin
P7	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0950 + Smin
P8	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.1450 + Smin
P9	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.1950 + Smin
P10	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.2700 + Smin
P11	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.3450 + Smin
P12	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.4200 + Smin
P13	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.5800 + Smin
P14	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.6550 + Smin
P15	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.7300 + Smin
P16	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.8050 + Smin
P17	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.8550 + Smin
P18	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9050 + Smin
P19	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9550 + Smin
P20	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9625 + Smin
P21	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9700 + Smin
P22	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9775 + Smin
P23	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9850 + Smin
P24	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.9925 + Smin
P25	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P26	(Pmax-Pmin) × 0.1000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P27	(Pmax-Pmin) × 0.2000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P28	(Pmax-Pmin) × 0.3000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P29	(Pmax-Pmin) × 0.4000 + Pmin	(Smax-Smin) × 1.0000 + Smin

Position	Position in Pixel direction	Position in Scan direction
P30	(Pmax-Pmin) × 0.5000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P31	(Pmax-Pmin) × 0.6000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P32	(Pmax-Pmin) × 0.7000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P33	(Pmax-Pmin) × 0.8000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P34	(Pmax-Pmin) × 0.9000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P35	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 1.0000 + Smin
P36	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9925 + Smin
P37	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9850 + Smin
P38	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9775 + Smin
P39	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9700 + Smin
P40	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9625 + Smin
P41	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9550 + Smin
P42	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.9050 + Smin
P43	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.8550 + Smin
P44	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.8050 + Smin
P45	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.7300 + Smin
P46	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.6550 + Smin
P47	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.5800 + Smin
P48	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.4200 + Smin
P49	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.3450 + Smin
P50	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.2700 + Smin
P51	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.1950 + Smin
P52	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.1450 + Smin
P53	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0950 + Smin
P54	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0450 + Smin
P55	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0375 + Smin
P56	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0300 + Smin
P57	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0225 + Smin
P58	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0150 + Smin
P59	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0075 + Smin
P60	(Pmax-Pmin) × 1.0000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P61	(Pmax-Pmin) × 0.9000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P62	(Pmax-Pmin) × 0.8000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P63	(Pmax-Pmin) × 0.7000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P64	(Pmax-Pmin) × 0.6000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P65	(Pmax-Pmin) × 0.5000 + Pmin	(Smax-Smin) × 0.0000 + Smin

Position	Position in Pixel direction	Position in Scan direction
P66	(Pmax-Pmin) × 0.4000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P67	(Pmax-Pmin) × 0.3000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P68	(Pmax-Pmin) × 0.2000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P69	(Pmax-Pmin) × 0.1000 + Pmin	(Smax-Smin) × 0.0000 + Smin
P70	(Pmax-Pmin) × 0.0000 + Pmin	(Smax-Smin) × 0.0000 + Smin

(29) geospatial_bounds_crs

"EPSG:4326" is stored as a fixed value, which is the Coordinate Reference System (CRS) of the point coordinate in the geospatial_bounds attribute.

(30) geospatial_vertical_bounds_crs

"EPSG:5829" is stored as a fixed value, which is the Coordinate Reference System (CRS) of the altitude direction of the point coordinate in the geospatial_bounds attribute.

(31) language

"en" is stored as a fixed value as the language used.

(32) topicCategory

From the field code of ISO19115, "004" indicating weather, "008" indicating earth science information, and "010" indicating global basic map image, are stored separated by commas.

(33) Role

From the role code of ISO19115, "003" indicating information owner is stored.

(34) history

Change record of file is stored.

(35) characterSet

"004" indicating UTF8 is stored as a fixed value as a character code.

(36) acknowledgement

Supplemental information about the project is stored.

(37) publisher_name

As the responsible organization (publisher) for data disclosure, " JAXA GOSAT-GW Project " is stored.

(38) publisher_email

E-mail address of the responsible organization (publisher) for data disclosure is stored.

(39) publisher_url

Web site URL of the responsible organization (publisher) for data disclosure is stored.

(40) DOI

The Digital Object Identifier given to the product is stored.

(41) DOIauthority

"http://doi.org/", which is the URL of IDF (International DOI Foundation), which operates DOI is stored.

(42) AlgorithmDeveloper

Algorithm developer is stored. For Level 1 product, “Japan Aerospace Exploration Agency (JAXA)” is stored.

(43) AlgorithmVersion

The algorithm version is stored in 3 digits.

Item	Min. value	Max. value	Abnormal value	Note
AlgorithmVersion	000	999	N/A	Number in 3 digits

(44) AncillaryDataInformation

Used ancillary data information is stored. This item is blank in Level 1 product as it is not used.

(45) AutomaticQAFlag

Automatic inspection results of data processing during product creation are stored. Automatic inspection in data processing is judged based on the criteria shown in AutomaticQAFlagExplanation, and the following fixed values are set as the results.

“Good” : In the case all check items are OK

“Fair” : In the case some check item is NG

“NG” : In the case all check items are NG

(46) AutomaticQAFlagExplanation

The automatic inspection contents and their threshold values that are carried out within the AMSR3 Level 1 process, are stored separated by commas.

The automatic test results are marked as OK if they are normal, and NG if they are abnormal.

Item	Inspection details	Conditions to judge normality	Example of description
MissingScanQA	Number of missing scans	Less than 21 scans	MissingScanQA:Less than 21 is available->OK
MissingPacketQA	Number of missing packets	Less than 321 packets	MissingPacketQA:Less than 321 is available->OK
AntennaRotationQA	Abnormal antenna rotation velocity	Less than 21 %	AntennaRotationQA:Less than 21 is available->OK
HotCalibrationSourceQA	Abnormal high temperature calibration source temperature	Less than 21 %	HotCalibrationSourceQA:Less than 21 is available->OK
AttitudeDataQA	Abnormal attitude data	Less than 1 %	AttitudeDataQA:Less than 1 is available->OK
EphemerisDataQA	Abnormal orbit data	Less than 21 %	EphemerisDataQA:Less than 21 is available->OK
QualityofGeometricInformationQA	Abnormal geometric information calculation	Less than 1 %	QualityofGeometricInformationQA:Less than 1 is available->OK,
BrightnessTemperatureQA	Abnormal brightness temperature	Less than 21 %	BrightnessTemperatureQA:Less than 21 is available->OK

(47) CalibrationMethod

The correction methods implemented in AMSR3 Level 1 processing is stored separated by commas.

Item	Correction detail
CSMSpillOver	Leakage of ground radiation to CSM
CSMInterpolation	Moon reflection and radio wave interference on CSM

(48) CoefficientAvv,CoefficientAhv,CoefficientAov,CoefficientAhh,CoefficientAvh,CoefficientAoh

The brightness temperature conversion coefficient is stored, which is used when calculating the brightness temperature.

(49) ContactOrganizationEmail

E-mail address for contact, “z-gportal-support@ml.jaxa.jp” is stored.

(50) ContactOrganizationName

Organization name for contact, “Japan Aerospace Exploration Agency (JAXA)” is stored.

(51) CSMTemperature

Temperature of deep space, brightness temperature of low temperature calibration source is stored.

(52) DataCode

Data code of the ground observation data is stored by separating each frequency and polarization with commas.

(53) DataDatasetName

Dataset name of the ground observation data is stored by separating each frequency and polarization with commas.

(54) DataDynamicRange

The brightness temperature dynamic range of ground observation data “2.7K-340K” is stored.

(55) DataLongName

Official name of the ground observation data is stored by separating each frequency and polarization with commas.

(56) DataNumber

The number of ground observation data is stored.

(57) DataType

Data type of the ground observation data is stored by separating each frequency and

(58) EarthEllipsoidName,EarthFlatteningRatio,EarthSemiMajorAxis

The definition of the earth ellipsoid used in AMSR3 Level 1 processing software is stored.

Item	Explanation	Stored value	Note
EarthEllipsoidName	Earth ellipsoid model	WGS84	
EarthFlatteningRatio	Earth oblateness	0.00335	
EarthSemiMajorAxis	Earth equatorial radius	6378.1km	

(59) FileFormatType, FileFormatVersionNC, FileFormatVersionHDF

The definition of the file format used in AMSR3 Level 1 processing software is stored.

Item	Explanation	Stored value	Note
FileFormatType	File format type	netCDF-4/HDF5 File Format	
FileFormatVersionNC	NetCDF format version	netCDF-4.9.2	
FileFormatVersionHDF	HDF format version	HDF5-1.14.4	

(60) FileSizeByte

Product size (unit: MBytes) is stored. Note that the product size is calculated before all product meta is set, so there may be a difference from the actual size.

Item	Min. value	Max. value	Abnormal value	Note
FileSizeByte	0	2147483647	N/A	byte

(61) GranuleID

Granule ID is stored. Granule ID is a string obtained by removing the extension (.nc) from the file name described in Section 3.5.1.

(62) GringPointLatitude,GringPointLongitude

The latitude and longitude of the valid data range are stored. The latitude and longitude of the same observation point as geospatial_bounds is described, separated by commas.

(63) InputFileName

Input file name is stored. In case that there are multiple input files, they are stored, separated by commas.

(64) MeteorologicalDataType

The weather data used is stored. This item is blank in Level 1 product as it is not used.

(65) NumberOfAntennaRotationAnomalyScans

The number of abnormal antenna rotation speed scans is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfAntennaRotationAnomalyScans	0	2147483647	-2147483648	

(66) NumberOfAttitudeAnomalyScans

Number of abnormal attitude angle and attitude angular velocity scans is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfAttitudeAnomalyScans	0	2147483647	-2147483648	

(67) NumberOfGeometricErrorPixels

The total number of observation points with calculation errors (abnormal values in latitude and longitude information) in the latitude and longitude calculated for each frequency is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfGeometricErrorPixels	0	2147483647	-2147483648	

(68) NumberOfHTSAnomalyScans

The number of scans for abnormal temperature of high temperature calibration source (HTS) is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfHTSAnomalyScans	0	2147483647	-2147483648	

(69) NumberOfInputFiles

The number of Level 0 data files is stored. It matches the number of file names stored in InputFIleName.

Item	Min. value	Max. value	Abnormal value	Note
NumberOfInputFiles	0	9	N/A	Value in 1 digit

(70) NumberOfMissingPackets

The number of missing packets in the product is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfMissingPackets	0	2147483647	-2147483648	

(71) NumberOfMissingScans

The number of missing scans in the product is stored (Not include overlapping ranges).

One scan of AMSR3 consists of 16 packets, but if even one packet is missing, it is counted as a missing scan.

Item	Min. value	Max. value	Abnormal value	Note
NumberOfMissingScans	0	2147483647	-2147483648	

(72) NumberOfOrbitAnomalyScans

The number of scans with abnormal orbit position/velocity is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfOrbitAnomalyScans	0	2147483647	-2147483648	

(73) NumberOfTbLimitErrorPixels

The number of brightness temperature limit check errors is stored, which is counted by frequency and polarization and by observation point (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfTbLimitErrorPixels	0	2147483647	-2147483648	

(74) NumberOfPackets

The total number of packets is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfPackets	0	2147483647	-2147483648	

(75) NumberOfParityError

The total number of parity errors is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfParityError	0	2147483647	-2147483648	

(76) NumberOfPixelsPerScan

The number of observation points per scan is stored at frequencies other than 89GHz.

For Level 1R : “243”

(77) NumberOfPixelsPerScan89

The number of observation points per scan is stored at 89GHz.

For Level 1R : “243”

(78) NumberOfScans

The number of scans in observation data is stored (Not include overlapping ranges).

Item	Min. value	Max. value	Abnormal value	Note
NumberOfScans	1	99999	-2147483648	5 digit number (maximum)

(79) NumberOfScansOverlap

The number of 1 side overlap scans, “30” is stored.

(80) ObservationEndDateTime

Date and time to end observation（UTC） stored in Product is set in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY：Western year

MM : 01 - 12(Month)

DD : 01 - 31(Day)

hh : 00 - 23(hour)

mm : 00 - 59(minute)

ss : 00 - 59(second)(*May be 60 if a leap second occurs.)

uuu : 000 - 999(milli-second)

(81) ObservationEquatorCrossingDateTime

Date and time of satellite crossing equator is stored in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY：Western year

MM : 01 - 12(Month)

DD : 01 - 31(Day)

hh : 00 - 23(hour)

mm : 00 - 59(minute)

ss : 00 - 59(second)(*May be 60 if a leap second occurs.)

uuu : 000 - 999(milli-second)

(82) ObservationEquatorCrossingLongitude

The longitude at which the satellite passed the equator is stored. However, for near-real-time products (Global) that pass through the equator more than once, the longitude of the first pass is stored. Even if there is missing in the equator crossing timing, the interpolated value is stored.

If it does not pass through the equator, this item is blank.

Item	Min. value	Max. value	Abnormal value	Note
ObservationEquatorCrossingLongitude	-180.00	180.00	-9999.0	

(83) ObservationStartDateTime

Date and time to start observation（UTC） stored in Product is set in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY：Western year

MM : 01 - 12(Month)

DD : 01 - 31(Day)

hh : 00 - 23(hour)

mm : 00 - 59(minute)

ss : 00 - 59(second)(*May be 60 if a leap second occurs.)

uuu : 000 - 999(milli-second)

(84) OrbitArgumentPerigee,OrbitDataType,OrbitEccentricity,OrbitInclination,OrbitPeriod,OrbitSemiMajor Axis

Orbit parameters of satellite (GOSAT-GW) is stored

Item	Explanation	Stored value	Note
OrbitArgumentPerigee	Satellite perigee argument	99.5384deg	
OrbitDataType	Orbit data type	ONBOARD	
OrbitEccentricity	Satellite orbit eccentricity	Frozen	
OrbitInclination	Orbital inclination angle	98.08deg	
OrbitPeriod	Satellite period	98.2min	
OrbitSemiMajorAxis	Satellite orbit semi-major axis	7035.552km	

(85) OrbitDataFileName

The orbit data file name used for processing is stored. If no orbit data file is used, blank is stored. If multiple inputs are inputted, the file names are stored separated by commas.

(86) OrbitNumberStart,OrbitNumberEnd

The orbit number of the satellite at the first and last scan positions of the product is stored. The orbit number will be the serial number from GOSAT-GW launch.

Item	Min. value	Max. value	Abnormal value	Note
OrbitNumberStart	0	2147483647	-2147483648	Orbit start number
OrbitNumberEnd	0	2147483647	-2147483648	Orbit end number

(87) OrbitDirection

The orbital direction corresponding to the observation range of the product is stored. If the vertical direction is not constant in the near real-time product (Global), the orbit direction at the start is stored.

"Ascending"

"Descending"

(88) ParameterVersion

The version of parameter is stored.

Item	Min. value	Max. value	Abnormal value	Note
ParameterVersion	000	999	N/A	3 digit number

(89) PathNumber

The pass number at the start of the scene is stored. In the case of near real-time processing, the pass number at the start is stored

Item	Min. value	Max. value	Abnormal value	Note
PathNumber	1	44	-2147483648	

(90) PGEName

The name of data processing software, "GOSAT-GW Mission Operation System" is stored.

(91) PlatformShortName

Satellite name "GOSAT-GW" is stored.

(92) Platinum2ConversionTableW0,Platinum2ConversionTableW1,Platinum2ConversionTableW2,Platinum2ConversionTableW3, Platinum2ConversionTableW4

The coefficients for conversion to engineering value of platinum sensor #2 is stored.

Conversion formula to engineering value is as follows.

$$\mathrm{y} = \mathrm{W4} \times x^4 + \mathrm{W3} \times x^3 + \mathrm{W2} \times x^2 + \mathrm{W1} \times x \quad + \mathrm{W0}$$

y : Value after conversion to engineering value

x : Input count value

(93) Platinum3ConversionTableW0,Platinum3ConversionTableW1,Platinum3ConversionTableW2,Platinum3ConversionTableW3,Platinum3ConversionTableW4

The applicable range and coefficients for conversion to engineering value of platinum sensor #3 are stored.

Item	Stored value	Note
W0	$W0_1, W0_2, W0_3 \cdots, W0_{10}$	
W1	$W1_1, W1_2, W1_3 \cdots, W1_{10}$	
W2	$W2_1, W2_2, W2_3 \cdots, W2_{10}$	
W3	$W3_1, W3_2, W3_3 \cdots, W3_{10}$	
W4	$W4_1, W4_2, W4_3 \cdots, W4_{10}$	

Conversion formula to engineering value is as follows.

$$\mathrm{y} = \mathrm{W4}_a \times x^4 + \mathrm{W3}_a \times x^3 + \mathrm{W2}_a \times x^2 + \mathrm{W1}_a \times x \quad + W0_a$$

Then,

For platinum sensor#3-1, a=1

For platinum sensor#3-2, a=2

For platinum sensor#3-3, a=3

$\cdots$

For platinum sensor#3-10, a=10

y : Value after conversion to engineering value

x : Input count value

(94) Platinum4ConversionTableW0,Platinum4ConversionTableW1,Platinum4ConversionTableW2,Platinum4ConversionTableW3, Platinum4ConversionTableW4

The coefficients for conversion to engineering value of platinum sensor #4 is stored.

Conversion formula to engineering value is the same as platinum sensor #2.

(95) ProcessingCenter

As data Processing center, “JAXA GOSAT-GW Project” is stored.

(96) ProcessingQAAttribute

As quality information for data processed by data processing software, the names of items is stored separated by commas, that are judged to be abnormal in quality-related items (NumberOf***) in GlobalAttribute. Blank is stored if no abnormality has occurred.

Name of Item	Abnormality judgment criteria
AntennaRotationAnomaly	NumberOfAntennaRotationAnomalyScans>0
AttitudeAnomaly	NumberOfAttitudeAnomalyScans>0
GeometricError	NumberOfGeometricErrorPixels>0
HTSAnomaly	NumberOfHTSAnomalyScans>0
MissingPackets	NumberOfMissingPackets>0
MissingScans	NumberOfMissingScans>0
OrbitAnomaly	NumberOfOrbitAnomalyScans>0
TbLimitError	NumberOfTbLimitErrorPixels>0
ParityError	NumberOfParityError>0

(97) ProcessingQADescription

The error message generated by data-processing software is stored.

When normal operation, it is blank.

(98) ProductCreationDateTime

The product generation date and time (UTC) is stored in the following format.

“YYYY-MM-DDThh:mm:ss.uuuZ”

YYYY : Western year

MM : 01 - 12(Month)

DD : 01 - 31(Day)

hh : 00 - 23(hour)

mm : 00 - 59(minute)

ss : 00 - 59(second)(*May be 60 if a leap second occurs.)

uuu : 000 - 999(milli-second)

(99) ProductName

The product abbreviation is stored. The following are stored fixedly according to each processing level.

For Level 1R : AMSR3-L1R

(100) ProductProcessingType

The processing type is stored. One of the following unique values is set.

“Standard Product (Global)” : Standard Processing

“Near Realtime Product (Global)” : Near real-time processing (Global)

“Near Realtime Product (Local)” : Near real-time processing (Around Japan) / Level 1 product created with Level 1 processing software for direct receiving stations.

(101) ProductSupplement

Supplemental information of product is stored.

(102) ProductVersion

Product version is stored.

Item	Min. value	Max. value	Abnormal value	Note
ProductVersion(Major Number)	00	99	N/A	2 digit number
ProductVersion(Minor Number)	A	Z	N/A	1 character

(103) QALocationOfPacketDiscontinuity

Whether the Packet Sequence Counter is continuous or discontinuous is stored.

For continuous : Continuation

For discontinuous : Discontinuity

(104) QAPercentMissingData

The proportion [%] of missing data among all observed data in the product is stored.

Item	Min. value	Max. value	Abnormal value	Note
QAPercentMissingData	0.0	100.0	-9999.0	

(105) SatelliteAltitude,SatelliteOrbit, SatelliteRevisitTime

Satellite (GOSAT-GW) parameter is stored

Item	Contents	Stored value	Note
SatelliteAltitude	Satellite altitude	699.6km	Fixed Value
SatelliteOrbit	Satellite orbit	Sun-synchronous_sub-recurrent	Fixed Value
SatelliteRevisitTime	Satellite revisit time	3days	Fixed Value

(106) SensorAlignment

Alignment value between satellite (GOSAT-GW) coordinate system and AMSR3 coordinate system is stored.

(107) SensorAntRotationVelocity

The actual measured value of the antenna rotation velocity is stored. Write the letters obtained by adding rpm to the average value of the antenna rotation speed of the total number of scans of the product, not including overlap.

Item	Min. value	Max. value	Abnormal value	Note
SensorAntRotationVelocity	0.0rpm	99999.0rpm	-9999.0rpm	

(108) SensorBandWidth,SensorBeamWidth,SensorChannel, SensorFOV,SensorOffNadir, SensorScanningPeriod, SensorShortName,SensorSwathWidth

Sensor (AMSR3) parameter is stored.

Item	Contents	Stored value	Note
SensorBandWidth	Band width of AMSR3	6.925GHz:350MHz,7.3GHz:350MHz,10.25GHz:500MHz,10.65GHz:100MHz,18.7GHz:200MHz,23.8GHz:400MHz,36.42GHz:840MHz,89.0GHz-A:3000MHz,89.0GHz-B:3000MHz,165.5GHz:4000MHz,183.31+/-3GHz:2000x2MHz,183.31+/-7GHz:2000x2MHz	
SensorBeamWidth	Beam width of AMSR3	6.925GHz:1.8deg,7.3GHz:1.8deg,10.25GHz:1.2deg,10.65GHz:1.2deg,18.7GHz:0.65deg,23.8GHz:0.75deg,36.42GHz:0.35deg,89.0GHz-A:0.15deg,89.0GHz-B:0.15deg,165.5GHz:0.30deg,183.31+/-3GHz:0.28deg,183.31+/-7GHz:0.28deg	
SensorChannel	Observed channel of AMSR3	6.925GHz:V,6.925GHz:H,7.3GHz:V,7.3GHz:H,10.25GHz:V,10.25GHz:H,10.65GHz:V,10.65GHz:H,18.7GHz:V,18.7GHz:H,23.8GHz:V,23.8GHz:H,36.42GHz:V,36.42GHz:H,89.0GHz-A:V,89.0GHz-A:H,89.0GHz-B:V,89.0GHz-B:H,165.5GHz:V,183.31+/-3GHz:V,183.31+/-7GHz:V	
SensorFOV	spatial resolution (Az x El)	6.925GHz:33kmx57km,7.3GHz:33kmx57km,10.25GHz:22kmx38km,10.65GHz:22kmx38km,18.7GHz:12kmx21km,23.8GHz:14kmx24km,36.42GHz:6kmx11km,89.0GHz-A:3kmx5km,89.0GHz-B:3kmx5km,165.5GHz:5kmx10km,183.31+/-3GHz:5kmx9km,183.31+/-7GHz:5kmx9km	
SensorOffNadir	Off-nadir angle	47.0deg : 89GHz-B, 47.5deg : others	
SensorScanning Period	Scanning Period	1.5sec	

Item	Contents	Stored value	Note
SensorShortName	Sensor abbreviation	AMSR3	
SensorSwathWidth	Swath width	1535km	

(109) Thermistor1CountRange,Thermistor1ConversionTableW0,Thermistor1ConversionTableW1,Thermistor1ConversionTableW2,Thermistor1ConversionTableW3,Thermistor1ConversionTableW4

The applicable range and coefficients for conversion to engineering value of thermistor #1 are stored.

Item	Stored value	Note
CountRange	$x_0, x_1, x_2 \cdot\cdot\cdot, x_a$ (a is an arbitrary constant)	The range of input count values is stored, separated by commas.
W4	$W4_0, W4_1, W4_2 \cdots, W4_{a-1}$	
W3	$W3_0, W3_1, W3_2 \cdots, W3_{a-1}$	
W2	$W2_0, W2_1, W2_2 \cdots, W2_{a-1}$	
W1	$W1_0, W1_1, W1_2 \cdots, W1_{a-1}$	
W0	$W0_0, W0_1, W0_2 \cdots, W0_{a-1}$	

Conversion formula to engineering value is as follows.

$$\mathrm{y} = \mathrm{W4}_a \times x^4 + \mathrm{W3}_a \times x^3 + \mathrm{W2}_a \times x^2 + \mathrm{W1}_a \times x \quad + W0_a$$

Then,

For $x_0 < x \leqq x_1$ a=0

For $x_1 < x \leqq x_2$ a=1

For $x_2 < x \leqq x_3$ a=2

$\cdots$

For $x_{a-1} < x \leqq x_a$ a=$a-1$

y : Value after conversion to engineering value

x : Input count value

(110) Thermistor2CountRange,Thermistor2ConversionTableW0,Thermistor2ConversionTableW1,Thermistor2ConversionTableW2,Thermistor2ConversionTableW3,Thermistor2ConversionTableW4

The coefficients for conversion to engineering value of thermistor #2 is stored.

Conversion formula to engineering value is the same as thermistor #1.

(111) Thermistor3CountRange,Thermistor3ConversionTableW0,Thermistor3ConversionTableW1,Thermistor3ConversionTableW2,Thermistor3ConversionTableW3,Thermistor3ConversionTableW4

The coefficients for conversion to engineering value of thermistor #3 is stored.

Conversion formula to engineering value is the same as thermistor #1.

4. 2 Data part

In the level 1R product, the brightness temperature of each frequency is resampled into footprints of 6.9GHz, 10.65GHz, 23.8GHz, and 36.42GHz, and associated information are stored. Table 4-1 shows the correspondence of resampling frequencies.

Table 4-1 Resampling frequencies and resolution

	6.9 GHz	7.3 GHz	10.25 GHz	10.65 GHz	18.7 GHz	23.8 GHz	36.42 GHz	89.0 GHz	165.5 GHz	183.3 +/-3 GHz	183.3 +/-7 GHz
FOV06	L	A	A	A	A	A	A	A	-	-	-
FOV10	-	-	L	L	A	A	A	A	-	-	-
FOV23	-	-	-	-	-	L	A	A	A	A	A
FOV36	-	-	-	-	-	-	L	A	A	A	A

"A" : Frequency to be resampled

"L" : The data obtained by resampling the center latitude and longitude (spatial resolution remains equivalent to the observation frequency)

" - " : Frequency not to be resampled (not to be stored in product)

*1: Definition is shown below.

FOV06 (resolution equivalent to 6.9GHz, odd number observation position of 89GHzA scanning)

FOV10 (resolution equivalent to 10.65GHz, odd number observation position of 89GHzA scanning)

FOV23 (resolution equivalent to 23.8GHz, odd number observation position of 89GHzA scanning)

FOV36 (resolution equivalent to 36.42GHz, odd number observation position of 89GHzA scanning)

4. 2. 1 Dataset

Dataset names for Level 1R products are named based on the conventions in Table 4-1. Explanations of dataset names are given below.

Table 4-2 Dataset name convention (abbreviation convention)

Abbreviation	Explanation	Note
Tb	Brightness Temperature	
Ch06V	Channel (6.925GHz Vertical polarization)	
Ch06H	Channel (6.925GHz Horizontal polarization)	
Ch07V	Channel (7.3GHz Vertical polarization)	

Abbreviation	Explanation	Note
Ch07H	Channel (7.3GHz Horizontal polarization)	
Ch10uV	Channel (10.25GHz Vertical polarization)	
Ch10uH	Channel (10.25GHz Horizontal polarization)	
Ch10V	Channel (10.65GHz Vertical polarization)	
Ch10H	Channel (10.65GHz Horizontal polarization)	
Ch18V	Channel (18.7GHz Vertical polarization)	
Ch18H	Channel (18.7GHz Horizontal polarization)	
Ch23V	Channel (23.8GHz Vertical polarization)	
Ch23H	Channel (23.8GHz Horizontal polarization)	
Ch36V	Channel (36.42GHz Vertical polarization)	
Ch36H	Channel (36.42GHz Horizontal polarization)	
Ch89AV	Channel (89.0GHz A-scan Vertical polarization)	
Ch89AH	Channel (89.0GHz A-scan Horizontal polarization)	
Ch89BV	Channel (89.0GHz B-scan Vertical polarization)	
Ch89BH	Channel (89.0GHz B-scan Horizontal polarization)	
Ch165V	Channel (165.5GHz Vertical polarization)	
Ch183r3V	Channel (183.3+/-3GHz Vertical polarization)	
Ch183r7V	Channel (183.3+/-7GHz Vertical polarization)	
P89o	Center point of foot print (89.0GHz A-scan Odd-point)	
FOV06	Same as 6.925GHz antenna pattern	
FOV10	Same as 10.65GHz antenna pattern	
FOV23	Same as 23.8GHz antenna pattern	
FOV36	Same as 36.42GHz antenna pattern	

(1) Tb_FOV06

The resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHz-A scan, which corresponds to a spatial resolution of 6.9GHz. The number of observation data per scan is 486 points. The following dataset stores the ground-observed brightness temperature equivalent to the spatial resolution of 6.9GHz with the short axis as the diameter.

No.	Dataset Name	Explanation
1	Tb_FOV06Ch06V_P89o	6.925GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
2	Tb_FOV06Ch06H_P89o	6.925GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
3	Tb_FOV06Ch07V_P89o	7.3GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
4	Tb_FOV06Ch07H_P89o	7.3GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
5	Tb_FOV06Ch10uV_P89o	10.25GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
6	Tb_FOV06Ch10uH_P89o	10.25GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
7	Tb_FOV06Ch10V_P89o	10.65GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
8	Tb_FOV06Ch10H_P89o	10.65GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
9	Tb_FOV06Ch18V_P89o	18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
10	Tb_FOV06Ch18H_P89o	18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
11	Tb_FOV06Ch23V_P89o	23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
12	Tb_FOV06Ch23H_P89o	23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
13	Tb_FOV06Ch36V_P89o	36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
14	Tb_FOV06Ch36H_P89o	36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
15	Tb_FOV06Ch89V_P89o	89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz

No.	Dataset Name	Explanation
16	Tb_FOV06Ch89H_P89o	89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Tb_FOV06	0	50000	65534 (missing data value)	K
			65535 (abnormal parity value)	

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
Product_code	string	TBR	Code of product
long_name	string	-	Official name is stored.
		Brightness Temperature 6.925GHz V (FOV06, P89o)	For Tb_FOV06Ch06V_P89o
		Brightness Temperature 6.925GHz H (FOV06, P89o)	For Tb_FOV06Ch06H_P89o
		Brightness Temperature 7.3GHz V (FOV06, P89o)	For Tb_FOV06Ch07V_P89o
		Brightness Temperature 7.3GHz H (FOV06, P89o)	For Tb_FOV06Ch07H_P89o
		Brightness Temperature 10.25GHz V (FOV06, P89o)	For Tb_FOV06Ch10uV_P89o
		Brightness Temperature 10.25GHz H (FOV06, P89o)	For Tb_FOV06Ch10uH_P89o
		Brightness Temperature 10.65GHz V (FOV06, P89o)	For Tb_FOV06Ch10V_P89o
		Brightness Temperature 10.65GHz H (FOV06, P89o)	For Tb_FOV06Ch10H_P89o
		Brightness Temperature 18.7GHz V (FOV06, P89o)	For Tb_FOV06Ch18V_P89o
		Brightness Temperature 18.7GHz H (FOV06, P89o)	For Tb_FOV06Ch18H_P89o
		Brightness Temperature 23.8GHz V (FOV06, P89o)	For Tb_FOV06Ch23V_P89o

Item	Data type	Setting value	Explanation
		Brightness Temperature 23.8GHz H (FOV06, P89o)	For Tb_FOV06Ch23H_P89o
		Brightness Temperature 36.42GHz V (FOV06, P89o)	For Tb_FOV06Ch36V_P89o
		Brightness Temperature 36.42GHz H (FOV06, P89o)	For Tb_FOV06Ch36H_P89o
		Brightness Temperature 89.0GHz V (FOV06, P89o)	For Tb_FOV06Ch89V_P89o
		Brightness Temperature 89.0GHz H (FOV06, P89o)	For Tb_FOV06Ch89H_P89o
standard_name	string	brightness_temperature	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
units	string	K	Unit is stored.
valid_min	16-bit unsigned integer	0	Minimum value is stored.
valid_max	16-bit unsigned integer	50000	Maximum value is stored.
_FillValue	16-bit unsigned integer	65535	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
cell_methods	string	point	Specification of cell

(2) Tb_FOV10

The resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 10.65GHz. The number of observation data per scan is 243 points. The following dataset stores the ground-observed brightness temperatures equivalent to the spatial resolution of 10.65GHz.

No.	Dataset Name	Explanation
1	Tb_FOV10Ch10uV_P89o	10.25GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
2	Tb_FOV10Ch10uH_P89o	10.25GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
3	Tb_FOV10Ch10V_P89o	10.65GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
4	Tb_FOV10Ch10H_P89o	10.65GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
5	Tb_FOV10Ch18V_P89o	18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
6	Tb_FOV10Ch18H_P89o	18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
7	Tb_FOV10Ch23V_P89o	23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
8	Tb_FOV10Ch23H_P89o	23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
9	Tb_FOV10Ch36V_P89o	36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
10	Tb_FOV10Ch36H_P89o	36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
11	Tb_FOV10Ch89V_P89o	89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
12	Tb_FOV10Ch89H_P89o	89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Tb_FOV10	0	50000	65534 (missing data value)	K
			65535 (abnormal parity value)	

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
Product_code	string	TBR	Code of product
long_name	string	-	Official name is stored.
		Brightness Temperature 10.25GHz V (FOV10, P89o)	For Tb_FOV10Ch10uV_P89o
		Brightness Temperature 10.25GHz H (FOV10, P89o)	For Tb_FOV10Ch10uH_P89o
		Brightness Temperature 10.65GHz V (FOV10, P89o)	For Tb_FOV10Ch10V_P89o
		Brightness Temperature 10.65GHz H (FOV10, P89o)	For Tb_FOV10Ch10H_P89o
		Brightness Temperature 18.7GHz V (FOV10, P89o)	For Tb_FOV10Ch18V_P89o
		Brightness Temperature 18.7GHz H (FOV10, P89o)	For Tb_FOV10Ch18H_P89o
		Brightness Temperature 23.8GHz V (FOV10, P89o)	For Tb_FOV10Ch23V_P89o
		Brightness Temperature 23.8GHz H (FOV10, P89o)	For Tb_FOV10Ch23H_P89o
		Brightness Temperature 36.42GHz V (FOV10, P89o)	For Tb_FOV10Ch36V_P89o
		Brightness Temperature 36.42GHz H (FOV10, P89o)	For Tb_FOV10Ch36H_P89o
		Brightness Temperature 89.0GHz V (FOV10, P89o)	For Tb_FOV10Ch89V_P89o
		Brightness Temperature 89.0GHz H (FOV10, P89o)	For Tb_FOV10Ch89H_P89o
standard_name	string	brightness_temperature	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
units	string	K	Unit is stored.
valid_min	16-bit unsigned integer	0	Minimum value is stored.
valid_max	16-bit	50000	Maximum value is stored.

Item	Data type	Setting value	Explanation
	unsigned integer		
_FillValue	16-bit unsigned integer	65535	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
cell_methods	string	point	Specification of cell

(3) Tb_FOV23

The resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 23.8GHz. The number of observation data per scan is 243 points. The following dataset stores the ground-observed brightness temperatures equivalent to the spatial resolution of 23.8GHz.

No.	Dataset Name	Explanation
1	Tb_FOV23Ch18V_P89o	18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
2	Tb_FOV23Ch18H_P89o	18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
3	Tb_FOV23Ch23V_P89o	23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
4	Tb_FOV23Ch23H_P89o	23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
5	Tb_FOV23Ch36V_P89o	36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
6	Tb_FOV23Ch36H_P89o	36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
7	Tb_FOV23Ch89V_P89o	89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
8	Tb_FOV23Ch89H_P89o	89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
9	Tb_FOV23Ch165V_P89o	165.5GHz Vertical polarization ground observation brightness temperature value with

No.	Dataset Name	Explanation
		spatial resolution equivalent to 23.8GHz
10	Tb_FOV23Ch183r3V_P89o	183.3GHz+/-3GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
11	Tb_FOV23Ch183r7V_P89o	183.3GHz+/-7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Tb_FOV23	0	50000	65534 (missing data value)	K
			65535 (abnormal parity value)	

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
Product_code	string	TBR	Code of product
long_name	string	-	Official name is stored.
		Brightness Temperature FOV23 18.7GHz V (FOV23, P89o)	For Tb_FOV23Ch18V_P89o
		Brightness Temperature FOV23 18.7GHz H (FOV23, P89o)	For Tb_FOV23Ch18H_P89o
		Brightness Temperature FOV23 23.8GHz V (FOV23, P89o)	For Tb_FOV23Ch23V_P89o
		Brightness Temperature FOV23 23.8GHz H (FOV23, P89o)	For Tb_FOV23Ch23H_P89o
		Brightness Temperature FOV23 36.42GHz V (FOV23, P89o)	For Tb_FOV23Ch36V_P89o
		Brightness Temperature FOV23 36.42GHz H (FOV23, P89o)	For Tb_FOV23Ch36H_P89o
		Brightness Temperature FOV23 89.0GHz V (FOV23, P89o)	For Tb_FOV23Ch89V_P89o
		Brightness Temperature FOV23 89.0GHz H (FOV23, P89o)	For Tb_FOV23Ch89H_P89o
		Brightness Temperature FOV23 165.5GHz V (FOV23, P89o)	For Tb_FOV23Ch165V_P89o
		Brightness Temperature FOV23 183.31GHz+/-	For

Item	Data type	Setting value	Explanation
		3GHz V (FOV23, P89o)	Tb_FOV23Ch183r3V_P89o
		Brightness Temperature FOV23 183.31GHz+/-7GHz V (FOV23, P89o)	For Tb_FOV23Ch183r7V_P89o
standard_name	string	brightness_temperature	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
units	string	K	Unit is stored.
valid_min	16-bit unsigned integer	0	Minimum value is stored.
valid_max	16-bit unsigned integer	50000	Maximum value is stored.
_FillValue	16-bit unsigned integer	65535	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
cell_methods	string	point	Specification of cell

(4) Tb_FOV36

The resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 36.42GHz. The number of observation data per scan is 243 points. The following dataset stores the ground-observed brightness temperatures equivalent to the spatial resolution of 36.42GHz.

No.	Dataset Name	Explanation
1	Tb_FOV36Ch36V_P89o	36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
2	Tb_FOV36Ch36H_P89o	36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
3	Tb_FOV36Ch89V_P89o	89.0GHz Vertical polarization ground observation brightness

No.	Dataset Name	Explanation
		temperature value with spatial resolution equivalent to 36.42GHz
4	Tb_FOV36Ch89H_P89o	89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
5	Tb_FOV36Ch165V_P89o	165.5GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
6	Tb_FOV36Ch183r3V_P89o	183.3GHz+/-3GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
7	Tb_FOV36Ch183r7V_P89o	183.3GHz+/-7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Tb_FOV36	0	50000	65534 (missing data value)	K
			65535 (abnormal parity value)	

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
Product_code	string	TBR	Code of product
long_name	string	-	Official name is stored.
		Brightness Temperature 36.42GHz V (FOV36, P89o)	For Tb_FOV36Ch36V_P89o
		Brightness Temperature 36.42GHz H (FOV36, P89o)	For Tb_FOV36Ch36H_P89o
		Brightness Temperature 89.0GHz V (FOV36, P89o)	For Tb_FOV36Ch89V_P89o
		Brightness Temperature 89.0GHz H (FOV36, P89o)	For Tb_FOV36Ch89H_P89o
		Brightness Temperature 165.5GHz V (FOV36, P89o)	For Tb_FOV36Ch165V_P89o
		Brightness Temperature 183.31GHz+/-3GHz V (FOV36, P89o)	For Tb_FOV36Ch183r3V_P89o
		Brightness Temperature 183.31GHz+/-7GHz V (FOV36, P89o)	For Tb_FOV36Ch183r7V_P89o
standard_name	string	brightness_temperature	The name that identifies the

Item	Data type	Setting value	Explanation
			physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
units	string	K	Unit is stored.
valid_min	16-bit unsigned integer	0	Minimum value is stored.
valid_max	16-bit unsigned integer	50000	Maximum value is stored.
_FillValue	16-bit unsigned integer	65535	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
cell_methods	string	point	Specification of cell

(5) Tb_FOV06_Quality

Quality information of the resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 6.9GHz. The number of observation data per scan is 243 points. The following dataset stores quality information of the ground-observed brightness temperatures equivalent to the spatial resolution of 6.9GHz.

No.	Dataset Name	Explanation
1	Tb_FOV06Ch06V_P89o_Quality	Quality information of 6.925GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
2	Tb_FOV06Ch06H_P89o_Quality	Quality information of 6.925GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
3	Tb_FOV06Ch07V_P89o_Quality	Quality information of 7.3GHz Vertical polarization ground observation brightness temperature value with

No.	Dataset Name	Explanation
		spatial resolution equivalent to 6.9GHz
4	Tb_FOV06Ch07H_P89o_Quality	Quality information of 7.3GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
5	Tb_FOV06Ch10uV_P89o_Quality	Quality information of 10.25GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
6	Tb_FOV06Ch10uH_P89o_Quality	Quality information of 10.25GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
7	Tb_FOV06Ch10V_P89o_Quality	Quality information of 10.65GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
8	Tb_FOV06Ch10H_P89o_Quality	Quality information of 10.65GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
9	Tb_FOV06Ch18V_P89o_Quality	Quality information of 18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
10	Tb_FOV06Ch18H_P89o_Quality	Quality information of 18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
11	Tb_FOV06Ch23V_P89o_Quality	Quality information of 23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
12	Tb_FOV06Ch23H_P89o_Quality	Quality information of 23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
13	Tb_FOV06Ch36V_P89o_Quality	Quality information of 36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
14	Tb_FOV06Ch36H_P89o_Quality	Quality information of 36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz
15	Tb_FOV06Ch89V_P89o_Quality	Quality information of 89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz

No.	Dataset Name	Explanation
16	Tb_FOV06Ch89H_P89o_Quality	Quality information of 89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 6.9GHz

The following information is stored for each bit as the quality information.

<table>
<tr><th rowspan="2">No</th><th rowspan="2">Channel</th><th colspan="8">MSB
B
LS</th></tr>
<tr><th>7</th><th>6</th><th>5</th><th>4</th><th>3</th><th>2</th><th>1</th><th>0</th></tr>
<tr><td>1</td><td>FOV06Ch06V_P89o</td><td rowspan="16">Count value decreasing flag
1:Occurred
0:Not occurred</td><td colspan="2" rowspan="16">Resampling quality
11: Abnormal
10:Caution
00:Normal</td><td rowspan="16">Fixed as 0
(Not used)</td><td rowspan="16">Brightness temperature calculation results (abnormal)
(brightness temperature is greater than the threshold or brightness temperature calculation error)
1:Abnormal
0:Normal</td><td rowspan="16">Geometric information calculation results
(Latitude and longitude are abnormal values)
1:Abnormal
0:Normal</td><td colspan="2" rowspan="8">Radio wave interference flag
10: occurred
01: possibility
00: Not occurred</td></tr>
<tr><td>2</td><td>FOV06Ch06H_P89o</td></tr>
<tr><td>3</td><td>FOV06Ch07V_P89o</td></tr>
<tr><td>4</td><td>FOV06Ch07H_P89o</td></tr>
<tr><td>5</td><td>FOV06Ch10uV_P89o</td></tr>
<tr><td>6</td><td>FOV06Ch10uH_P89o</td></tr>
<tr><td>7</td><td>FOV06Ch10V_P89o</td></tr>
<tr><td>8</td><td>FOV06Ch10H_P89o</td></tr>
<tr><td>9</td><td>FOV06Ch18V_P89o</td><td rowspan="8">Fixed as 0
(Not used)</td><td rowspan="8">Fixed as 0
(Not used)</td></tr>
<tr><td>10</td><td>FOV06Ch18H_P89o</td></tr>
<tr><td>11</td><td>FOV06Ch23V_P89o</td></tr>
<tr><td>12</td><td>FOV06Ch23H_P89o</td></tr>
<tr><td>13</td><td>FOV06Ch36V_P89o</td></tr>
<tr><td>14</td><td>FOV06Ch36H_P89o</td></tr>
<tr><td>15</td><td>FOV06Ch89V_P89o</td></tr>
<tr><td>16</td><td>FOV06Ch89H_P89o</td></tr>
</table>

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	-	Official name is stored.
		Brightness Temperature 6.925GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch06V_P89o_Quality
		Brightness Temperature 6.925GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch06H_P89o_Quality
		Brightness Temperature 7.3GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch07V_P89o_Quality
		Brightness Temperature 7.3GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch07H_P89o_Quality
		Brightness Temperature 10.25GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch10uV_P89o_Quality
		Brightness Temperature 10.25GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch10uH_P89o_Quality
		Brightness Temperature 10.65GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch10V_P89o_Quality
		Brightness Temperature 10.65GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch10H_P89o_Quality
		Brightness Temperature 18.7GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch18V_P89o_Quality
		Brightness Temperature 18.7GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch18H_P89o_Quality
		Brightness Temperature 23.8GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch23V_P89o_Quality
		Brightness Temperature 23.8GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch23H_P89o_Quality
		Brightness Temperature 36.42GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch36V_P89o_Quality
		Brightness Temperature 36.42GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch36H_P89o_Quality
		Brightness Temperature 89.0GHz V (FOV06, P89o, Quality)	For Tb_FOV06Ch89V_P89o_Quality
		Brightness Temperature 89.0GHz H (FOV06, P89o, Quality)	For Tb_FOV06Ch89H_P89o_Quality
standard_name	string	brightness_temperature status_flag	The name that identifies the physical quantity is stored. This is

Item	Data type	Setting value	Explanation
			compliant with CF Standard Name Table (v49, 12 February 2018)
_FillValue	8-bit unsigned integer	255	Error value is stored.
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
flag_value	array of 32-bit integer	0, 1, 2, 4, 8, 0, 64, 96, 128	For Tb_FOV06Ch06V_P89o_Quality, Tb_FOV06Ch06H_P89o_Quality, Tb_FOV06Ch07V_P89o_Quality, Tb_FOV06Ch07H_P89o_Quality, Tb_FOV06Ch10uV_P89o_Quality, Tb_FOV06Ch10uH_P89o_Quality, Tb_FOV06Ch10V_P89o_Quality, Tb_FOV06Ch10H_P89o_Quality
		4, 8, 0, 64, 96, 128	For Tb_FOV06Ch18V_P89o_Quality, Tb_FOV06Ch18H_P89o_Quality, Tb_FOV06Ch23V_P89o_Quality, Tb_FOV06Ch23H_P89o_Quality, Tb_FOV06Ch36V_P89o_Quality, Tb_FOV06Ch36H_P89o_Quality, Tb_FOV06Ch89V_P89o_Quality, Tb_FOV06Ch89H_P89o_Quality
flag_masks	array of 32-bit integer	3, 3, 3, 4, 8, 96, 96, 96, 128	For Tb_FOV06Ch06V_P89o_Quality, Tb_FOV06Ch06H_P89o_Quality, Tb_FOV06Ch07V_P89o_Quality, Tb_FOV06Ch07H_P89o_Quality, Tb_FOV06Ch10uV_P89o_Quality, Tb_FOV06Ch10uH_P89o_Quality, Tb_FOV06Ch10V_P89o_Quality, Tb_FOV06Ch10H_P89o_Quality
		4, 8, 96, 96, 96, 128	For Tb_FOV06Ch18V_P89o_Quality, Tb_FOV06Ch18H_P89o_Quality,

Item	Data type	Setting value	Explanation
			Tb_FOV06Ch23V_P89o_Quality, Tb_FOV06Ch23H_P89o_Quality, Tb_FOV06Ch36V_P89o_Quality, Tb_FOV06Ch36H_P89o_Quality, Tb_FOV06Ch89V_P89o_Quality, Tb_FOV06Ch89H_P89o_Quality
flag_meanings	string	RFI_clear RFI_possible RFI_contaminated geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor resampling_quality_ng observation_count_drop_off	For Tb_FOV06Ch06V_P89o_Quality, Tb_FOV06Ch06H_P89o_Quality, Tb_FOV06Ch07V_P89o_Quality, Tb_FOV06Ch07H_P89o_Quality, Tb_FOV06Ch10uV_P89o_Quality, Tb_FOV06Ch10uH_P89o_Quality, Tb_FOV06Ch10V_P89o_Quality, Tb_FOV06Ch10H_P89o_Quality
		geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor resampling_quality_ng observation_count_drop_off	For Tb_FOV06Ch18V_P89o_Quality, Tb_FOV06Ch18H_P89o_Quality, Tb_FOV06Ch23V_P89o_Quality, Tb_FOV06Ch23H_P89o_Quality, Tb_FOV06Ch36V_P89o_Quality, Tb_FOV06Ch36H_P89o_Quality, Tb_FOV06Ch89V_P89o_Quality, Tb_FOV06Ch89H_P89o_Quality
cell_methods	string	point	Specification of cell

(6) Tb_FOV10_Quality

Quality information of the resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 10.65GHz. The number of observation data per scan is 243 points. The following dataset stores quality information of the ground-observed brightness temperatures equivalent to the spatial resolution of 10.65GHz.

No.	Dataset Name	Explanation
1	Tb_FOV10Ch10uV_P89o_Quality	Quality information of 10.25GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
2	Tb_FOV10Ch10uH_P89o_Quality	Quality information of 10.25GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
3	Tb_FOV10Ch10V_P89o_Quality	Quality information of 10.65GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
4	Tb_FOV10Ch10H_P89o_Quality	Quality information of 10.65GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
5	Tb_FOV10Ch18V_P89o_Quality	Quality information of 18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
6	Tb_FOV10Ch18H_P89o_Quality	Quality information of 18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
7	Tb_FOV10Ch23V_P89o_Quality	Quality information of 23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
8	Tb_FOV10Ch23H_P89o_Quality	Quality information of 23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
9	Tb_FOV10Ch36V_P89o_Quality	Quality information of 36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
10	Tb_FOV10Ch36H_P89o_Quality	Quality information of 36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz
11	Tb_FOV10Ch89V_P89o_Quality	Quality information of 89.0GHz Vertical polarization ground

No.	Dataset Name	Explanation
		observation brightness temperature value with spatial resolution equivalent to 10.65GHz
12	Tb_FOV10Ch89H_P89o_Quality	Quality information of 89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 10.65GHz

The following information is stored for each bit as the quality information.

<table>
<tr><th rowspan="2">No</th><th rowspan="2">Channel</th><th colspan="8">MSB LSB</th></tr>
<tr><th>7</th><th>6</th><th>5</th><th>4</th><th>3</th><th>2</th><th>1</th><th>0</th></tr>
<tr><td>1</td><td>FOV10Ch10uV_P89o</td><td rowspan="12">Count value decreasing flag
1:Occurred
0:Not occurred</td><td colspan="2" rowspan="12">Resampling quality
11: Abnormal
10:Caution
00:Normal</td><td rowspan="12">Fixed as 0
(Not used)</td><td rowspan="12">Brightness temperature calculation results (abnormal)
(brightness temperature is greater than the threshold or brightness temperature calculation error)
1:Abnormal
0:Normal</td><td rowspan="12">Geometric information calculation results (Latitude and longitude are abnormal values)
1:Abnormal
0:Normal</td><td colspan="2">Radio wave interference flag
10: occurred
01: possibility
00: Not occurred</td></tr>
<tr><td>2</td><td>FOV10Ch10uH_P89o</td></tr>
<tr><td>3</td><td>FOV10Ch10V_P89o</td></tr>
<tr><td>4</td><td>FOV10Ch10H_P89o</td></tr>
<tr><td>5</td><td>FOV10Ch18V_P89o</td><td rowspan="8">Fixed as 0
(Not used)</td><td rowspan="8">Fixed as 0
(Not used)</td></tr>
<tr><td>6</td><td>FOV10Ch18H_P89o</td></tr>
<tr><td>7</td><td>FOV10Ch23V_P89o</td></tr>
<tr><td>8</td><td>FOV10Ch23H_P89o</td></tr>
<tr><td>9</td><td>FOV10Ch36V_P89o</td></tr>
<tr><td>10</td><td>FOV10Ch36H_P89o</td></tr>
<tr><td>11</td><td>FOV10Ch89V_P89o</td></tr>
<tr><td>12</td><td>FOV10Ch89H_P89o</td></tr>
</table>

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	-	Official name is stored.
		Brightness Temperature 10.25GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch10uV_P89o_Quality
		Brightness Temperature 10.25GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch10uH_P89o_Quality
		Brightness Temperature 10.65GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch10V_P89o_Quality
		Brightness Temperature 10.65GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch10H_P89o_Quality
		Brightness Temperature 18.7GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch18V_P89o_Quality
		Brightness Temperature 18.7GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch18H_P89o_Quality
		Brightness Temperature 23.8GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch23V_P89o_Quality
		Brightness Temperature 23.8GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch23H_P89o_Quality
		Brightness Temperature 36.42GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch36V_P89o_Quality
		Brightness Temperature 36.42GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch36H_P89o_Quality
		Brightness Temperature 89.0GHz V (FOV10, P89o, Quality)	For Tb_FOV10Ch89V_P89o_Quality
		Brightness Temperature 89.0GHz H (FOV10, P89o, Quality)	For Tb_FOV10Ch89H_P89o_Quality
standard_name	string	brightness_temperature status_flag	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
_FillValue	8-bit unsigned integer	255	Error value is stored.
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.

Item	Data type	Setting value	Explanation
flag_value	array of 32-bit integer	0, 1, 2, 4, 8, 0, 64, 96, 128	For Tb_FOV10Ch10uV_P89o_Quality, Tb_FOV10Ch10uH_P89o_Quality, Tb_FOV10Ch10V_P89o_Quality, Tb_FOV10Ch10H_P89o_Quality
		4, 8, 0, 64, 96, 128	For Tb_FOV10Ch18V_P89o_Quality, Tb_FOV10Ch18H_P89o_Quality, Tb_FOV10Ch23V_P89o_Quality, Tb_FOV10Ch23H_P89o_Quality, Tb_FOV10Ch36V_P89o_Quality, Tb_FOV10Ch36H_P89o_Quality, Tb_FOV10Ch89V_P89o_Quality, Tb_FOV10Ch89H_P89o_Quality
flag_masks	array of 32-bit integer	3, 3, 3, 4, 8, 96, 96, 96, 128	For Tb_FOV10Ch10uV_P89o_Quality, Tb_FOV10Ch10uH_P89o_Quality, Tb_FOV10Ch10V_P89o_Quality, Tb_FOV10Ch10H_P89o_Quality
		4, 8, 96, 96, 96, 128	For Tb_FOV10Ch18V_P89o_Quality, Tb_FOV10Ch18H_P89o_Quality, Tb_FOV10Ch23V_P89o_Quality, Tb_FOV10Ch23H_P89o_Quality, Tb_FOV10Ch36V_P89o_Quality, Tb_FOV10Ch36H_P89o_Quality, Tb_FOV10Ch89V_P89o_Quality, Tb_FOV10Ch89H_P89o_Quality
flag_meanings	string	RFI_clear RFI_possible RFI_contaminated geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor resampling_quality_ng observation_count_drop_off	For Tb_FOV10Ch10uV_P89o_Quality, Tb_FOV10Ch10uH_P89o_Quality, Tb_FOV10Ch10V_P89o_Quality, Tb_FOV10Ch10H_P89o_Quality
		geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor	For Tb_FOV10Ch18V_P89o_Quality, Tb_FOV10Ch18H_P89o_Quality, Tb_FOV10Ch23V_P89o_Quality, Tb_FOV10Ch23H_P89o_Quality,

Item	Data type	Setting value	Explanation
		resampling_quality_ng observation_count_drop_off	Tb_FOV10Ch36V_P89o_Quality, Tb_FOV10Ch36H_P89o_Quality, Tb_FOV10Ch89V_P89o_Quality, Tb_FOV10Ch89H_P89o_Quality
cell_methods	string	point	Specification of cell

(7) Tb_FOV23_Quality

Quality information of the resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 23.8GHz. The number of observation data per scan is 243 points. The following dataset stores quality information of the ground-observed brightness temperatures equivalent to the spatial resolution of 23.8GHz.

No.	Dataset Name	Explanation
1	Tb_FOV23Ch18V_P89o_Quality	Quality information of 18.7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
2	Tb_FOV23Ch18H_P89o_Quality	Quality information of 18.7GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
3	Tb_FOV23Ch23V_P89o_Quality	Quality information of 23.8GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
4	Tb_FOV23Ch23H_P89o_Quality	Quality information of 23.8GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
5	Tb_FOV23Ch36V_P89o_Quality	Quality information of 36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
6	Tb_FOV23Ch36H_P89o_Quality	Quality information of 36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
7	Tb_FOV23Ch89V_P89o_Quality	Quality information of 89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
8	Tb_FOV23Ch89H_P89o_Quality	Quality information of 89.0GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz

No.	Dataset Name	Explanation
9	Tb_FOV23Ch165V_P89o_Quality	Quality information of 165.5GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
10	Tb_FOV23Ch183r3V_P89o_Quality	Quality information of 183.3GHz+/-3GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz
11	Tb_FOV23Ch183r7V_P89o_Quality	Quality information of 183.3GHz+/-7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 23.8GHz

The following information is stored for each bit as the quality information.

No	Channel	MSB							LSB
		7	6	5	4	3	2	1	0
1	FOV23Ch18V_P89o	Count value decreasing flag 1:Occurred 0:Not occurred	Resampling quality 11: Abnormal 10:Caution 00:Normal		Fixed as 0 (Not used)	Brightness temperature calculation results (abnormal) (brightness temperature is greater than the threshold or brightness temperature calculation error) 1:Abnormal 0:Normal	Geometric information calculation results (Latitude and longitude are abnormal values) 1:Abnormal 0:Normal	Fixed as 0 (Not used)	Fixed as 0 (Not used)
2	FOV23Ch18H_P89o								
3	FOV23Ch23V_P89o								
4	FOV23Ch23H_P89o								
5	FOV23Ch36V_P89o								
6	FOV23Ch36H_P89o								
7	FOV23Ch89V_P89o								
8	FOV23Ch89H_P89o								

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	-	Official name is stored.
		Brightness Temperature FOV23 18.7GHz V (FOV23, P89o, Quality)	For Tb_FOV23Ch18V_P89o_Quality
		Brightness Temperature FOV23 18.7GHz H (FOV23, P89o, Quality)	For Tb_FOV23Ch18H_P89o_Quality
		Brightness Temperature FOV23 23.8GHz V (FOV23, P89o, Quality)	For Tb_FOV23Ch23V_P89o_Quality
		Brightness Temperature FOV23 23.8GHz H (FOV23, P89o, Quality)	For Tb_FOV23Ch23H_P89o_Quality
		Brightness Temperature FOV23 36.42GHz V (FOV23, P89o, Quality)	For Tb_FOV23Ch36V_P89o_Quality
		Brightness Temperature FOV23 36.42GHz H (FOV23, P89o, Quality)	For Tb_FOV23Ch36H_P89o_Quality
		Brightness Temperature FOV23 89.0GHz V (FOV23, P89o, Quality)	For Tb_FOV23Ch89V_P89o_Quality
		Brightness Temperature FOV23 89.0GHz H (FOV23, P89o, Quality)	For Tb_FOV23Ch89H_P89o_Quality
standard_name	string	brightness_temperature status_flag	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
_FillValue	8-bit unsigned integer	255	Error value is stored.
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.

Item	Data type	Setting value	Explanation
flag_value	array of 32-bit integer	4, 8, 0, 64, 96, 128	Tb_FOV23Ch18V_P89o_Quality, Tb_FOV23Ch18H_P89o_Quality, Tb_FOV23Ch23V_P89o_Quality, Tb_FOV23Ch23H_P89o_Quality, Tb_FOV23Ch36V_P89o_Quality, Tb_FOV23Ch36H_P89o_Quality, Tb_FOV23Ch89V_P89o_Quality, Tb_FOV23Ch89H_P89o_Quality
flag_masks	array of 32-bit integer	4, 8, 96, 96, 96, 128	Tb_FOV23Ch18V_P89o_Quality, Tb_FOV23Ch18H_P89o_Quality, Tb_FOV23Ch23V_P89o_Quality, Tb_FOV23Ch23H_P89o_Quality, Tb_FOV23Ch36V_P89o_Quality, Tb_FOV23Ch36H_P89o_Quality, Tb_FOV23Ch89V_P89o_Quality, Tb_FOV23Ch89H_P89o_Quality
flag_meanings	string	geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor resampling_quality_ng observation_count_drop_off	Tb_FOV23Ch18V_P89o_Quality, Tb_FOV23Ch18H_P89o_Quality, Tb_FOV23Ch23V_P89o_Quality, Tb_FOV23Ch23H_P89o_Quality, Tb_FOV23Ch36V_P89o_Quality, Tb_FOV23Ch36H_P89o_Quality, Tb_FOV23Ch89V_P89o_Quality, Tb_FOV23Ch89H_P89o_Quality
cell_methods	string	point	Specification of cell

(8) Tb_FOV36_Quality

Quality information of the resampled brightness temperature is stored at the observation position of the odd-numbered point (starting from the odd-numbered point) of the 89GHzA scan, which corresponds to a spatial resolution of 36.42GHz. The number of observation data per scan is 243 points. The following dataset stores quality information of the ground-observed brightness temperatures equivalent to the spatial resolution of 36.42GHz.

No.	Dataset Name	Explanation
1	Tb_FOV36Ch36V_P89o_Quality	Quality information of 36.42GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
2	Tb_FOV36Ch36H_P89o_Quality	Quality information of 36.42GHz Horizontal polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
3	Tb_FOV36Ch89V_P89o_Quality	Quality information of 89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
4	Tb_FOV36Ch89H_P89o_Quality	Quality information of 89.0GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
5	Tb_FOV36Ch165V_P89o_Quality	Quality information of 165.5GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
6	Tb_FOV36Ch183r3V_P89o_Quality	Quality information of 183.3GHz+/-3GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz
7	Tb_FOV36Ch183r7V_P89o_Quality	Quality information of 183.3GHz+/-7GHz Vertical polarization ground observation brightness temperature value with spatial resolution equivalent to 36.42GHz

The following information is stored for each bit as the quality information.

<table>
<tr><th rowspan="2">No</th><th rowspan="2">Channel</th><th colspan="8">MSB LSB</th></tr>
<tr><th>7</th><th>6</th><th>5</th><th>4</th><th>3</th><th>2</th><th>1</th><th>0</th></tr>
<tr><td>1</td><td>FOV23Ch36V_P89o</td><td rowspan="4">Count value decreasing flag
1:Occurred
0:Not occurred</td><td colspan="2" rowspan="4">Resampling quality
11: Abnormal
10:Caution
00:Normal</td><td rowspan="4">Fixed as 0
(Not used)</td><td rowspan="4">Brightness temperature calculation results (abnormal)
(brightness temperature is greater than the threshold
or
brightness temperature calculation error)
1:Abnormal
0:Normal</td><td rowspan="4">Geometric information calculation results (Latitude and longitude are abnormal values)
1:Abnormal
0:Normal</td><td rowspan="4">Fixed as 0
(Not used)</td><td rowspan="4">Fixed as 0
(Not used)</td></tr>
<tr><td>2</td><td>FOV23Ch36H_P89o</td></tr>
<tr><td>3</td><td>FOV23Ch89V_P89o</td></tr>
<tr><td>4</td><td>FOV23Ch89H_P89o</td></tr>
</table>

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	-	Official name is stored.
		Brightness Temperature 36.42GHz V (FOV36, P89o, Quality)	For Tb_FOV36Ch36V_P89o_Quality
		Brightness Temperature 36.42GHz H (FOV36, P89o, Quality)	For Tb_FOV36Ch36H_P89o_Quality
		Brightness Temperature 89.0GHz V (FOV36, P89o, Quality)	For Tb_FOV36Ch89V_P89o_Quality
		Brightness Temperature 89.0GHz H (FOV36, P89o, Quality)	For Tb_FOV36Ch89H_P89o_Quality
		Brightness Temperature 165.5GHz V (FOV36, P89o, Quality)	For Tb_FOV36Ch165V_P89o_Quality
		Brightness Temperature 183.31GHz+/-3GHz V (FOV36, P89o, Quality)	For Tb_FOV36Ch183r3V_P89o_Quality
		Brightness Temperature 183.31GHz+/-7GHz V (FOV36, P89o, Quality)	For Tb_FOV36Ch183r7V_P89o_Quality
standard_name	string	brightness_temperature status_flag	The name that identifies the physical quantity is stored. This is compliant with CF Standard Name Table (v49, 12 February 2018)
_FillValue	8-bit unsigned integer	255	Error value is stored.
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information etc.
flag_value	array of 32-bit integer	4, 8, 0, 64, 96, 128	Tb_FOV36Ch36V_P89o_Quality, Tb_FOV36Ch36H_P89o_Quality, Tb_FOV36Ch89V_P89o_Quality, Tb_FOV36Ch89H_P89o_Quality
flag_masks	array of 32-bit integer	4, 8, 96, 96, 96, 128	Tb_FOV36Ch36V_P89o_Quality, Tb_FOV36Ch36H_P89o_Quality, Tb_FOV36Ch89V_P89o_Quality, Tb_FOV36Ch89H_P89o_Quality

Item	Data type	Setting value	Explanation
flag_meanings	string	geometric_information_error brightness_temperature_information_error resampling_quality_ok resampling_quality_poor resampling_quality_ng observation_count_drop_off	Tb_FOV36Ch36V_P89o_Quality, Tb_FOV36Ch36H_P89o_Quality, Tb_FOV36Ch89V_P89o_Quality, Tb_FOV36Ch89H_P89o_Quality
cell_methods	string	point	Specification of cell

(9) Latitude_P89o

The latitude of ground observation data is stored after elevation correction. The number of observation data per 1 scan is 243 points. The dataset that stores the latitude after elevation correction is as follows.

No.	Dataset Name	Explanation
1	Latitude_P89o	Latitude after elevation correction

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Latitude_P89o	-90.0	90.0	-9999.0	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	latitude	Official name is stored.
standard_name	string	latitude	The name that identifies the physical quantity is stored.
units	string	degrees_north	Unit is stored.
_FillValue	32-bit floating-point	-9999.0	Offset
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
cell_methods	string	point	Specification of cell

(10) Longitude_P89o

The longitude of ground observation data is stored after elevation correction. The number of observation data per 1 scan is 243 points. The dataset that stores the longitude after elevation correction is as follows.

No.	Dataset Name	Explanation
1	Longitude_P89o	Longitude after elevation correction

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Longitude_P89o	-180.0	180.0	-9999.0	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	longitude	Official name is stored.
standard_name	string	longitude	The name that identifies the physical quantity is stored.
units	string	degrees_east	Unit is stored.
_FillValue	32-bit floating-point	-9999.0	Offset
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
cell_methods	string	point	Specification of cell

(11) LandAreaPercent

The land area percentage (%) of ground observation data is stored. Value calculated using elevation-corrected latitude and longitude is stored as the ground surface observation position. The number of observation data per 1 scan is 243 points. The dataset that stores the percentage of land area is as follows.

No.	Dataset Name	Explanation
1	LandAreaPercent_FOV06_P89o	Percentage of land area with spatial resolution equivalent to 6.925GHz
2	LandAreaPercent_FOV10_P89o	Percentage of land area with spatial resolution equivalent to 10.65GHz
3	LandAreaPercent_FOV23_P89o	Percentage of land area with spatial resolution equivalent to 23.8GHz
4	LandAreaPercent_FOV36_P89o	Percentage of land area with spatial resolution equivalent to 36.42GHz

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
LandAreaPercent	0	100	255	%

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	-	Official name is stored.
		Land Area Percent (FOV06, P89o)	For LandAreaPercent_FOV06_P89o

Item	Data type	Setting value	Explanation
		Land Area Percent (FOV10, P89o)	For LandAreaPercent_FOV10_P89o
		Land Area Percent (FOV23, P89o)	For LandAreaPercent_FOV23_P89o
		Land Area Percent (FOV36, P89o)	For LandAreaPercent_FOV36_P89o
standard_name	string	land_area_fraction	The name of standard is stored.
units	string	%	Unit is stored.
_FillValue	8-bit unsigned integer	255	Error value is stored.
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	-	Corresponding latitude and longitude information
		Latitude_P89o Longitude_P89o ScanTimeTAI93	For LandAreaPercent_FOV06_P89o
		Latitude_P89o Longitude_P89o ScanTimeTAI93	For LandAreaPercent_FOV10_P89o
		Latitude_P89o Longitude_P89o ScanTimeTAI93	For LandAreaPercent_FOV23_P89o
		Latitude_P89o Longitude_P89o ScanTimeTAI93	For LandAreaPercent_FOV36_P89o
cell_methods	string	point	Specification of cell

(12) AreaMeanHeight_89o

Elevation information corresponding to ground observation data is stored. The number of observation data per 1 scan is 243 points. The datasets that store elevation information are as follows.

No.	Dataset Name	Explanation
1	AreaMeanHeight_P89o	Elevation information

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Area Mean Height_P89o	0	9000	-32768	m

And the following information is stored in the dataset attributes.

Item	Data Type	Setting value	Explanation
long_name	string	Area Mean Height (P89o)	Official name is stored.
standard_name	string	height	The name of standard is stored.
units	string	m	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information
cell_methods	string	point	Specification of cell
positive	string	up	Positive number specification

(13) EarthAzimuth_P89o

The earth azimuth at the ground surface position of ground observation data is stored. The number of observation data per 1 scan is 243 points except for 89GHz, and 486 points for 89GHz. The earth azimuth indicates the angle between the north vector on the observation ground surface and the projected line-of-sight vector defined in Figure 4-2. The data set that stores the earth azimuth angle is as follows.

No.	Dataset Name	Explanation
1	EarthAzimuth_P89o	The earth azimuth at the ground surface position

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
EarthAzimuth_P89o	-18000	18000	-32768	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Earth Azimuth Angle (P89o)	Official name is stored.
standard_name	string	sensor_azimuth_angle	The name of standard is stored.
units	string	degrees	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor

Item	Data type	Setting value	Explanation
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information
cell_methods	string	point	Specification of cell

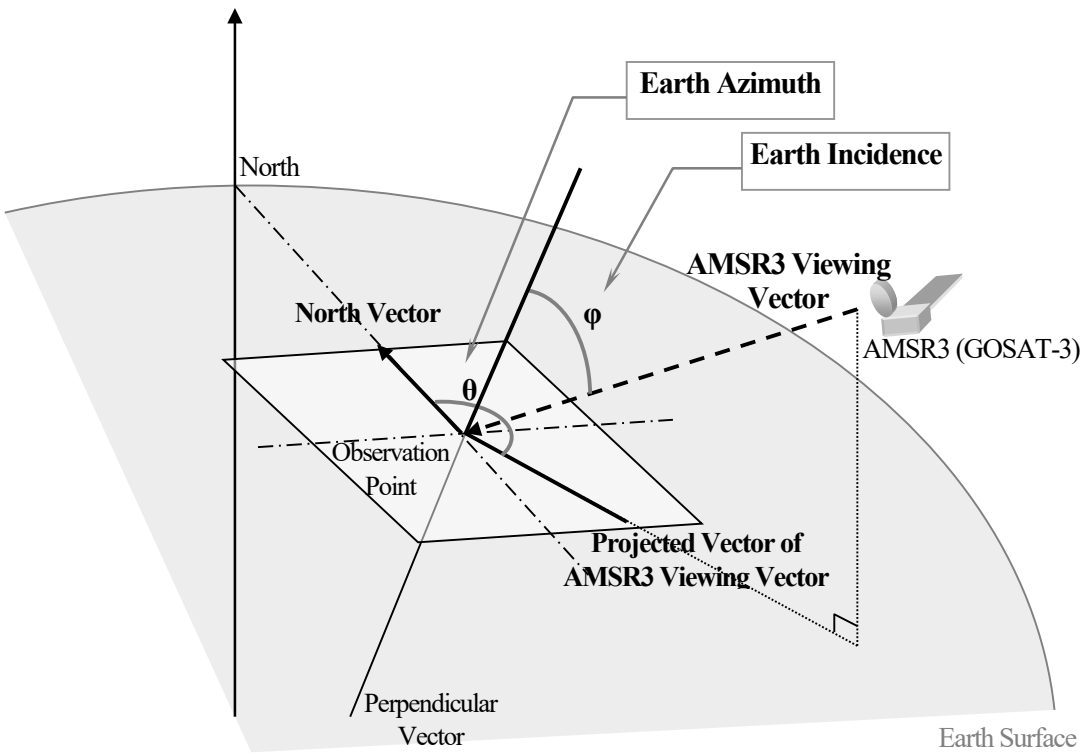


Figure 4-2 The definition of Earth Azimuth,Earth Incidence

(14) EarthIncidence_P89o

The earth incidence angle at the ground surface position of ground observation data is stored. The number of observation data per 1 scan is 243 points. The earth incidence angle indicates the angle between the vertical vector of the ground surface observation point and the line-of-sight vector of AMSR3 defined in Figure 4-2. The data set that stores the earth incidence angle is as follows

No.	Dataset Name	Explanation
1	EarthIncidence_P89o	The earth incidence angle at the ground surface position

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
EarthIncidence_P89o	-18000	18000	-32768	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Earth Incidence Angle (P89o)	Official name is stored.
standard_name	string	sensor_azimuth_angle	The name of standard is stored.
units	string	degrees	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information
cell_methods	string	point	Specification of cell

(15) SunAzimuth_P89o

The sun azimuth angle at the ground surface position of ground observation data is stored. The number of observation data per 1 scan is 243 points. The sun azimuth angle stores the angle defined in Figure 4-3. The data set that stores the sun azimuth angle is as follows.

No.	Dataset Name	Explanation
1	SunAzimuth_P89o	The sun azimuth angle at the ground surface position

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
SunAzimuth_P89o	-18000	18000	-32768	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Sun Azimuth Angle (P89o)	Official name is stored.
standard_name	string	solar_azimuth_angle	The name of standard is stored.
units	string	degrees	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o	Corresponding latitude and longitude

Item	Data type	Setting value	Explanation
		ScanTimeTAI93	information
cell_methods	string	point	Specification of cell

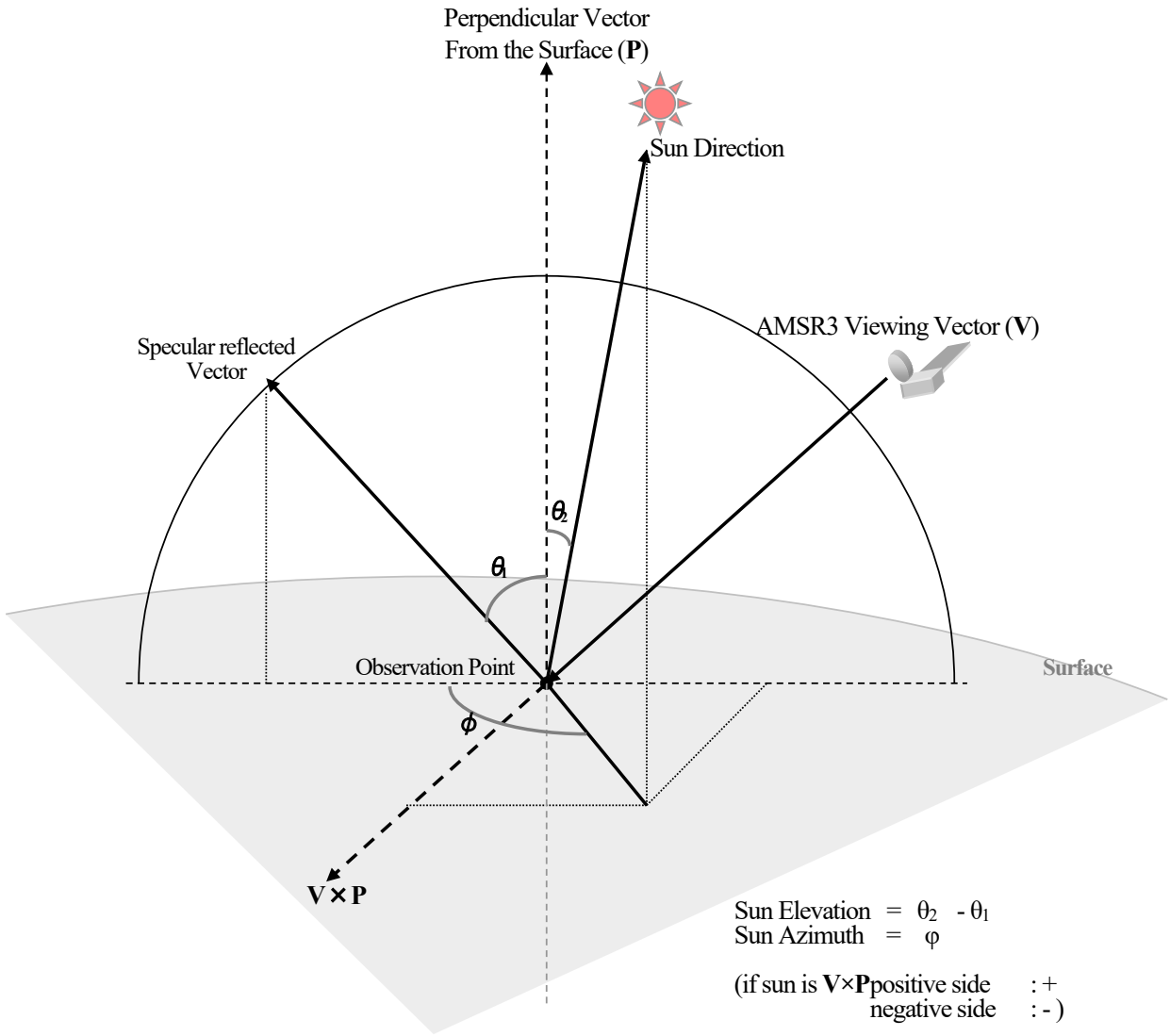


Figure 4-3 Definition of sun elevation angle and sun azimuth angle

(16) SunElevation_P89o

The sun elevation angle at the ground surface position of ground observation data is stored. The number of observation data per 1 scan is 243 points. The sun elevation angle stores the angle defined in Figure 4-3. The data set that stores the sun elevation angle is as follows.

No.	Dataset Name	Explanation
1	SunElevation_P89o	The sun elevation angle at the ground surface position

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
SunElevation_P89o	-18000	18000	-32768	deg

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Sun Elevation Angle (P89o)	Official name is stored.
standard_name	string	Blank	
units	string	degrees	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	0.01	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	Latitude_P89o Longitude_P89o ScanTimeTAI93	Corresponding latitude and longitude information
cell_methods	string	point	Specification of cell

(17) ScanTimeUTC

The time of the observation start position of 89GHz-A scan in each scan is stored. The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
Year	0	9999	32767	Year
Month	1	12	32767	Month
Day	1	31	32767	Day
Hour	0	23	32767	Hour
Minute	0	59	32767	Minute
Second	0	59	32767	Second
Millisecond	0	999	32767	Millisecond

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Scan Time (UTC)	Official name is stored.
standard_name	string	(blank)	The name of standard is stored.

units	string	{Year,Month,Day,Hour,Minute, Second,Millisecond}	Unit is stored.
_FillValue	16-bit integer	-32768	Error value is stored.
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	ScanTimeTAI93	Corresponding latitude and longitude information
cell_methods	string	point	Specification of cell

(18) ScanTimeTAI93

The total seconds of the observation start position of 89GHz-A scan in each scan is stored. The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
sec	0.0	-	-9999.0	Second

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	time	Official name is stored.
standard_name	string	time	The name of standard is stored.
units	string	seconds since 1993-01-01T00:00:00Z	Unit is stored.
_FillValue	64-bit floating-point	-9999.0	Error value is stored.
scale_factor	64-bit floating-point	1	Scale factor
add_offset	64-bit floating-point	0	Offset
calendar	string	gregorian	The calendar definition is stored.
cell_methods	string	point	Specification of cell

(19) ScanDataQuality

Quality information for each scan is stored.

The following information is stored in each bit as the quality information.

MSB							LSB
7	6	5	4	3	2	1	0
Antenna rotation velocity 1: Abnormal 0:Normal	Temperature of high temperature calibration source 1: Abnormal 0:Normal	Attitude angle and attitude angular velocity 1: Abnormal 0:Normal	Orbit position and velocity 1: Abnormal 0:Normal	Missing scan (missing packet / missing data) 1: Abnormal 0:Normal	Fixed as 0 (not used)	Fixed as 0 (not used)	Fixed as 0 (not used)

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Scan Data Quality Flag	Official name is stored.
standard_name	string	status_flag	The name of standard is stored.
_FillValue	8-bit unsigned integer	255	Error value is stored.
coordinates	string	ScanTimeTAI93	Corresponding latitude and longitude information
flag_masks	array of 32-bit integer	8,16,32,64,128	Setting value of flag is stored.
flag_meanings	string	missing_packet_or_data navigation_error attitude_error HTS_temperature_error antenna_rotation_error	Meaning of flag is stored.
cell_methods	string	point	Specification of cell

(20) AttitudeData

Attitude errors (Roll, Pitch, Yaw) are stored as attitude information corresponding to the observation start time (Scan_Time) of each scan. The coordinate system for the attitude error is a right-handed system where Roll is in the satellite's heading direction and Yaw is in the center of the earth direction.

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Attitude Data	Official name is stored.
standard_name	string	(blank)	The name of standard is stored.
units	string	degrees	Unit is stored.
_FillValue	32-bit floating-point	-9999.0	Error value is stored.
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	ScanTimeTAI93	Corresponding latitude and longitude
cell_methods	string	point	Specification of cell

(21) NavigationData

Satellite orbit information in the WGS84 earth-fixed coordinate system is stored. The orbit information is the position and velocity of the satellite corresponding to the observation start time (Scan_Time) of each scan.

And the following information is stored in the dataset attributes.

Item	Data Type	Setting value	Explanation
long_name	string	Navigation Data	Official name is stored.
standard_name	string	(blank)	The name of standard is stored.
units	string	m,m/s	Unit is stored.
_FillValue	32-bit floating-point	-9999.0	Error value is stored.
scale_factor	32-bit floating-point	1	Scale factor
add_offset	32-bit floating-point	0	Offset
coordinates	string	ScanTimeTAI93	Corresponding latitude and longitude
cell_methods	string	point	Specification of cell

(22) PositionInOrbit

The position on the satellite orbit is stored. The position of a satellite is a value expressed by the orbit number and the position from the ascending node (satellite position) from 0 to 1.

Position_in_Orbit = orbit number + satellite position

The maximum value, minimum value, and abnormal value in the dataset are set as follows.

Item	Min. value	Max. value	Abnormal value	Unit
PositionInOrbit	0	999999.9999	-9999.0	N/A

And the following information is stored in the dataset attributes.

Item	Data type	Setting value	Explanation
long_name	string	Position in Orbit	Official name is stored.
standard_name	string	(blank)	The name of standard is stored.
units	string	(blank)	Unit is stored.
_FillValue	64-bit floating-point	-9999.0	Error value is stored.
scale_factor	64-bit floating-point	1	Scale factor
add_offset	64-bit floating-point	0	Offset
coordinates	string	ScanTimeTAI93	Corresponding latitude and longitude
cell_methods	string	point	Specification of cell