



AMSR Sensor Series

Format Conversion Description Document

Version 1.3

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Japan Aerospace Exploration Agency

Revision History

Version	Date	Revision Contents
1.0	Aug. 22, 2011	New release.
1.1	Oct. 31, 2012	GeoTIFF File Header Part(4.4.1.1 Header Part) Change
1.2	Dec.12, 2012	GeoTIFF Tag Ploar setereo (Table 4.4-2(b), The OGP Geomatics Committee registered the new EPSG code "5890" for Jaxa JAXA Snow Depth Polar Stereographic North products.
1.3	Jan.19, 2017	The scale factor of AMSR2 Precipitation was modified from 0.1 to 0.01.

AMSR Sensor Series Format Conversion Description Document Contents

Chapter 1	Introduction	1
1.1	Purpose.....	1
1.2	Scope and Structure.....	1
1.3	Reference Documents.....	1
Chapter 2	Product Formats of AMSR Sensor Series	3
2.1	Standard Formats.....	3
2.2	Optional Formats.....	3
Chapter 3	Conversion to HDF5	4
3.1	File Name	4
3.2	File Format Specification	4
Chapter 4	Conversion to GeoTIFF/TIFF	5
4.1	Number of Generated Files	5
4.2	File Name	6
4.2.1	AMSR	6
4.2.2	AMSR-E.....	7
4.2.3	AMSR2	8
4.3	Processing Specification	10
4.3.1	Map Data Type.....	10
4.3.1.1	AMSR	10
4.3.1.2	AMSR-E	11
4.3.1.3	AMSR2	12
4.3.2	Scene Data Type	13
4.4	File Format Specification	13
4.4.1	GeoTIFF File.....	13
4.4.1.1	Header Part	14
4.4.1.2	Data Part.....	18
4.4.2	TIFF File	20
4.4.2.1	Header Part	20
4.4.2.2	Data Part.....	22
4.4.3	Location Information File.....	24
Chapter 5	Conversion to NetCDF.....	25
5.1	File Name	25
5.2	Processing Specification	25
5.2.1	Conversion Rule	25

5.2.2	Additional Attribute.....	29
5.3	File Format Specification	29
5.3.1	AMSR	30
5.3.1.1	Level 1	30
5.3.1.2	Level 2	52
5.3.1.3	Level 3	56
5.3.2	AMSR-E.....	66
5.3.2.1	Level 1	66
5.3.2.2	Level 2	88
5.3.2.3	Level 3	92
5.3.3	AMSR2	103
5.3.3.1	Level 1	103
5.3.3.2	Level 2	136
5.3.3.3	Level 3	141

AMSR Sensor Series Format Conversion Description Document

List of Tables and Figures

[TABLES]

Table 1.1-1 AMSR Sensor Series	1
Table 2.1-1 Standard Products	3
Table 2.2-1 Optional Formats.....	3
Table 4.1-1 Number of GeoTIFF/TIFF Files	5
Table 4.2-1 Names of GeoTIFF/TIFF Files Generated from AMSR Products.....	6
Table 4.2-2 Names of GeoTIFF/TIFF Files Generated from AMSR-E Products	7
Table 4.2-3 Names of GeoTIFF/TIFF Files Generated from AMSR2 Products.....	8
Table 4.3-1 Generated File Formats.....	10
Table 4.3-2 Summary of AMSR GeoTIFF Files	10
Table 4.3-3 Summary of AMSR-E GeoTIFF Files.....	11
Table 4.3-4 Summary of AMSR2 GeoTIFF Files	12
Table 4.4-1 GeoTIFF File Structure	13
Table 4.4-2(a) GeoTIFF Tags Equirectangular	14
Table 4.4-2(b) GeoTIFF Tags Polar stereo	16
Table 4.4-3 Information of Image Data	18
Table 4.4-4 TIFF File Structure	20
Table 4.4-5 TIFF Tags.....	20
Table 4.4-6 TIFF Image Data Information	22
Table 5.2-1 NetCDF Conversion Rule	27
Table 5.2-2 NetCDF Additional Attributes	29
Table 5.3-1 AMSR L1A Global Attributes	30
Table 5.3-2 AMSR L1A Variables	38
Table 5.3-3 AMSR L1B Global Attributes	41
Table 5.3-4 AMSR L1B Variables	49
Table 5.3-5 AMSR Level 2 Global Attributes	52
Table 5.3-6 AMSR Level 2 Variables	55
Table 5.3-7 AMSR Level 3 Global Attributes	56
Table 5.3-8 AMSR Level 3 Variables (Brightness Temperature, Equirectangular projection).....	58
Table 5.3-9 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (North), except 89GHz)	59
Table 5.3-10 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo	

Projection (North), 89GHz).....	60
Table 5.3-11 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (South), except 89GHz)	61
Table 5.3-12 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (South), 89GHz).....	62
Table 5.3-13 AMSR Level 3 Variables (Physical Quantity, Equirectangular Projection)	63
Table 5.3-14 AMSR Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (North))	64
Table 5.3-15 AMSR Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (South))	64
Table 5.3-16 AMSR Level 3 Variables (Snow Water Equivalence, Polar Stereo Projection (North))	65
Table 5.3-17 AMSR-E L1A Global Attributes.....	66
Table 5.3-18 AMSR-E L1A Variables.....	74
Table 5.3-19 AMSR-E L1B Global Attributes	77
Table 5.3-20 AMSR-E L1B Variables.....	85
Table 5.3-21 AMSR-E Level 2 Global Attributes	88
Table 5.3-22 AMSR-E Level 2 Variables	91
Table 5.3-23 AMSR-E Level 3 Global Attributes	92
Table 5.3-24 AMSR-E Level 3 Variables (Brightness Temperature, Equirectangular Projection)	95
Table 5.3-25 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo Projection (North), except 89GHz)	96
Table 5.3-26 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (North), 89GHz)	97
Table 5.3-27 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (South), except 89GHz).....	98
Table 5.3-28 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (South), 89GHz)	99
Table 5.3-29 AMSR-E Level 3 Variables (Physical Quantity, Equirectangular Projection)	100
Table 5.3-30 AMSR-E Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (North))	101
Table 5.3-31 AMSR-E Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (South))	101

Table 5.3-32 AMSR-E Level 3 Variables (Snow Water Equivalence, Polar Stereo Projection (North))	102
Table 5.3-33 AMSR2 L1A Global Attributes	103
Table 5.3-34 AMSR2 L1A Variables	111
Table 5.3-35 AMSR2 L1B Global Attributes	114
Table 5.3-36 AMSR2 L1B Variables	122
Table 5.3-37 AMSR2 L1R Global Attributes	125
Table 5.3-38 AMSR2 L1R Variables	133
Table 5.3-39 AMSR2 Level 2 Global Attributes	136
Table 5.3-40 AMSR2 Level 2 Variables (High Resolution)	139
Table 5.3-41 AMSR2 Level 2 Variables (Low Resolution)	140
Table 5.3-42 AMSR2 Level 3 Global Attributes	141
Table 5.3-43 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Equirectangular Projection, Brightness Temperature).....	143
Table 5.3-44 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature)	144
Table 5.3-45 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature)	145
Table 5.3-46 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Equirectangular Projection, Physical Quantity)	146
Table 5.3-47 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration)	147
Table 5.3-48 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration)	148
Table 5.3-49 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Snow Depth)	149
Table 5.3-50 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Equirectangular Projection, Brightness Temperature).....	150
Table 5.3-51 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature)	151
Table 5.3-52 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature)	152
Table 5.3-53 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Equirectangular Projection, Physical Quantity)	153
Table 5.3-54 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration)	154

Table 5.3-55 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration)	155
Table 5.3-56 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Snow Depth)	156
Table 5.3-57 AMSR2 Level 3 Variables (Daily Average, High Resolution, Equirectangular Projection, Brightness Temperature).....	157
Table 5.3-58 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature)	158
Table 5.3-59 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature)	159
Table 5.3-60 AMSR2 Level 3 Variables (Daily Average, High Resolution, Equirectangular Projection, Physical Quantity)	160
Table 5.3-61 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration)	161
Table 5.3-62 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration)	161
Table 5.3-63 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Snow Depth)	162
Table 5.3-64 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Equirectangular Projection, Brightness Temperature).....	162
Table 5.3-65 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature).....	163
Table 5.3-66 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature).....	164
Table 5.3-67 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Equirectangular Projection, Physical Quantity)	165
Table 5.3-68 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration).....	166
Table 5.3-69 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (South), Sea Ice Concentration)	166
Table 5.3-70 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Snow Depth)	167

[FIGURES]

Figure 4.4-1 Location Information File Format.....	24
Figure 4.4-2 Example of Location Information File	24

Figure 5.2-1 NetCDF File Structure 25

Chapter 1 Introduction

1.1 Purpose

This document describes the format conversion of the products of AMSR sensor series to provide the products by the GCOM-W1 Data Providing Service.

The sensors of AMSR sensor series are shown in Table 1.1-1.

Table 1.1-1 AMSR Sensor Series

Sensor	Satellite	Operational Period
AMSR (Advanced Microwave Scanning Radiometer)	ADEOS-II	From Apr. 2003 to Oct. 2003
AMSR-E (Advanced Microwave Scanning Radiometer for EOS)	Aqua	From Jun 2002 to Oct. 2012
AMSR2 (Advanced Microwave Scanning Radiometer-2)	GCOM-W1	From May 2012

1.2 Scope and Structure

This document is composed of the following 5 chapters:

- Chapter 1: Purpose and scope of this document
- Chapter 2: Product formats of AMSR sensor series
- Chapter 3: HDF5 format conversion specification
- Chapter 4: GeoTIFF/TIFF format conversion specification
- Chapter 5: NetCDF format conversion specification

1.3 Reference Documents

- AMSR Level 1 Product Format Description Document (NEB-01040E)
- AMSR Level 2 Product Format Description Document (NDX-000154D)
- AMSR Level 3 Product Format Description Document (NDX-000155B)
- AMSR-E Data Users Handbook (NCX-030021)
- AMSR-E Level 1 Format Description Document (NEB-00011E)
- AMSR-E Level 2 Format Description Document (NDX-000272C)
- AMSR-E Level 2 Map Format Description Document (NDX-000273D)

- AMSR-E Level 3 Format Description Document (NDX-000274B)
- AMSR2 Level-1 Product Format Description Document (SGC-120003)
- AMSR2 Level-2,3 Product Format Description Document (SGC-120005)

Chapter 2 Product Formats of AMSR Sensor Series

This chapter describes the standard formats of the products of the AMSR sensor series and the formats which can be generated by the format conversion of the GCOM-W1 Data Providing Service.

2.1 Standard Formats

The standard formats of the products of AMSR sensor series are shown in Table 2.1-1.

Table 2.1-1 Standard Products

Sensor	Standard Product
AMSR	HDF4
AMSR-E	
AMSR2	HDF5

2.2 Optional Formats

The GCOM-W1 Data Providing Service converts a standard format to a HDF5, GeoTIFF/TIFF or NetCDF by user request.

The formats of the products which can be generated by the format conversion depend on the product type (Sensor/Product Level).

The optional formats are shown in Table 2.2-1.

Table 2.2-1 Optional Formats

Sensor	Product Level	HDF4	HDF5	GeoTIFF	TIFF	NetCDF
AMSR	Level 1	○	●	—	●	●
	Level 2	○	●	—	●	●
	Level 3	○	●	●	—	●
AMSR-E	Level 1	○	●	—	●	●
	Level 2	○	●	—	●	●
	Level 3	○	●	●	—	●
AMSR2	Level 1	—	○	—	●	●
	Level 2	—	○	—	●	●
	Level 3	—	○	●	—	●

○:Standard format

●:Optional format

Chapter 3 Conversion to HDF5

A standard product (HDF4) of AMSR/AMSR-E is converted to a HDF5 file.

One HDF4 file is converted to one HDF5 file.

3.1 File Name

The name of the generated HDF5 file is shown below.

<Granule ID>.h5

3.2 File Format Specification

The data types, attributes, core metadata, and etc. stored in the source file (HDF4) are stored to the HDF5 file with no change. Refer to the format description document of the source file.

Chapter 4 Conversion to GeoTIFF/TIFF

A standard product of AMSR/AMSR-E/AMSR2 is converted to a GeoTIFF/TIFF file.

A map data (Level 3) is converted to a GeoTIFF file. A scene data (Level 1/2) is converted to a TIFF file.

One standard product is converted to one or several files (GeoTIFF/TIFF).

At a same time with the conversion to TIFF, a text file (location information file) containing the coordinates (latitude and longitude) of 4 corners of a TIFF image is generated.

4.1 Number of Generated Files

Table 4.1-1 shows the number of the files generated from one source file.

A TIFF file is generated from each channel of Level 1 product.

AMSR-E has not been acquired with channel 89.0GHz-HA and 89.0GHz-VA from Nov. 4, 2004, but TIFF files of two channels are generated. AMSR-E does not acquire with channel 50.3GHz-V and 52.8GHz-V. Therefore TIFF file of them is not generated.

Number of GeoTIFF/TIFF files generated from the physical quantity data of Level 2 and Level 3 of the AMSR2 is the number of dimensions of the physical quantity data (maximum of 3 dimensions).

Table 4.1-1 Number of GeoTIFF/TIFF Files

Sensor	Product Level		No. of Source	No. of Generated	Location Info.
AMSR	Level 1		1	17	○
	Level 2		1	2	○
	Level 3		1	1	
AMSR-E	Level 1		1	15	○
	Level 2		1	2	○
	Level 3		1	1	
AMSR2	Level 1	L1A/L1B	1	17	○
		L1R	1	41	○
	Level 2	High Resolution	1	3~7	○
		Low Resolution	1	2~4	○
	Level 3	Brightness Temperature	1	2	
		Physical Quantity	1	1~3	

The number of the generated files includes the number of the location information file.

4.2 File Name

This session describes the names of the generated files about each sensor.

4.2.1 AMSR

The names of the GeoTIFF/TIFF files generated from AMSR products are shown in Table 4.2-1.

A TIFF file is generated from each channel of Level 1 product.

A location information file is generated from Level 1 product and Level 2 product.

Table 4.2-1 Names of GeoTIFF/TIFF Files Generated from AMSR Products

Product Level	Name of GeoTIFF/TIFF File	Remarks
Level 1	<Granule ID>_<XXX>.tif XXX: 06H, 06V, 10H, 10V, 18H, 18V, 23H, 23V, 36H, 36V, 50V, 52V, 89HA, 89HB, 89VA, 89VB	
	<Granule ID>.txt	Location Information File
Level 2	<Granule ID>.tif	
	<Granule ID>.txt	Location Information File
Level 3	<Granule ID>.tif	

4.2.2 AMSR-E

The names of the GeoTIFF/TIFF files generated from AMSR-E products are shown in Table 4.2-2.

A TIFF file is generated from each channel of Level 1 product.

AMSR-E has not been acquired with channel 89.0GHz-HA and 89.0GHz-VA from Nov. 4, 2004, but TIFF files of two channels are generated. AMSR-E does not acquire with channel 50.3GHz-V and 52.8GHz-V. Therefore TIFF file of them is not generated.

A location information file is generated from Level 1 product and Level 2 product.

Table 4.2-2 Names of GeoTIFF/TIFF Files Generated from AMSR-E Products

Product Level	Name of GeoTIFF/TIFF File	Remarks
Level 1	<Granule ID>_<XXX>.tif XXX: 06H, 06V, 10H, 10V, 18H, 18V, 23H, 23V, 36H, 36V, 89HA, 89HB, 89VA, 89VB	
	<Granule ID>.txt	Location Information File
Level 2	<Granule ID>.tif	
	<Granule ID>.txt	Location Information File
Level 3	<Granule ID>.tif	

4.2.3 AMSR2

The names of the GeoTIFF/TIFF files generated from AMSR2 products are shown in Table 4.2-3

A TIFF file is generated from each channel of Level 1 product.

A TIFF file is generated from each horn (A/B) of the high resolution product of Level 2.

A GeoTIFF file is generated from each horn (H/V) of the brightness temperature product of Level 3.

A location information file is generated from Level 1 product and Level 2 product.

Table 4.2-3 Names of GeoTIFF/TIFF Files Generated from AMSR2 Products

Product Level		Name of GeoTIFF/TIFF File	Remarks
Level 1	L1A	<Granule ID>_<XXX>.tif XXX: 06H, 06V, 07H, 07V, 10H, 10V, 18H, 18V, 23H, 23V, 36H, 36V, 89HA, 89HB, 89VA, 89VB	
	L1B	<Granule ID>.txt	Location Information File
	L1R	<Granule ID>_<XXX>.tif XXX: r06_06H, r06_06V, r06_07H, r06_07V, r06_10H, r06_10V, r06_18H, r06_18V, r06_23H, r06_23V, r06_36H, r06_36V, r06_89H, r06_89V, r10_10H, r10_10V, r10_18H, r10_18V, r10_23H, r10_23V, r10_36H, r10_36V, r10_89H, r10_89V, r23_18H, r23_18V, r23_23H, r23_23V, r23_36H, r23_36V, r23_89H, r23_89V, r36_36H, r36_36V, r36_89H, r36_89V r89_89HA, r89_89HB, r89_89VA, r89_89VB,	
		<Granule ID>.txt	Location Information File
Level 2	High	1) Where the physical quantity data is one-dimensional array:	

Product Level		Name of GeoTIFF/TIFF File	Remarks
	Resolution	<Granule ID>_<XXX>.tif XXX: 89A, 89B 2) Where the physical quantity data is two or three-dimensional array: <Granule ID>_<XXXX>_<Y>.tif XXX: 89A, 89B Y: Sequential number, 1~number of dimensions (maximum of 3)	
		<Granule ID>.txt	Locational Information File
	Low Resolution	1) Where the physical quantity data is one-dimensional array: <Granule ID>.tif 2) Where the physical quantity data is two or three-dimensional array: <Granule ID>_<Y>.tif Y: Sequential number, 1~number of dimensions (maximum of 3)	
		<Granule ID>.txt	Locational Information File
Level 3	Brightness Temperature	<Granule ID>_<X>.tif X: H, V	
	Physical Quantity	1) Where the physical quantity data is one-dimensional array: <Granule ID>.tif 2) Where the physical quantity data is two or three-dimensional array: <Granule ID>_<Y>.tif Y: Sequential number, 1~number of dimensions (maximum of 3)	

4.3 Processing Specification

The generated file format depends on the data type of the standard product.

The generated file formats are shown in Table 4.3-1.

Table 4.3-1 Generated File Formats

Data Type	Product Level	Generated File Format
Map data type	Level 3	GeoTIFF
Scene data type	Level 1, Level 2	TIFF

4.3.1 Map Data Type

If one standard product contains several physical quantities (frequency, etc.), several GeoTIFF files are generated.

4.3.1.1 AMSR

The summary of GeoTIFF file generated from AMSR products is shown in Table 4.3-2.

Table 4.3-2 Summary of AMSR GeoTIFF Files

Product Type		Image Size	Pixel Interval	
Brightness Temperature	Equirectangular	1440*721	0.25 (deg)	
	Polar Stereo (North), except 89GHz	304*448	25 (km)	
	Polar Stereo (North), 89GHz	608*896	25 (km)	
	Polar Stereo (South), except 89GHz	316*332	25 (km)	
	Polar Stereo (South), 89GHz	632*664	25 (km)	
Physical Quantity	Equirectangular	Precipitation	1440*721	0.25 (deg)
		Cloud Liquid Water		
		Soil Moisture		
		Sea Surface Temperature		
		Sea Surface Wind Speed		
		Snow Water Equivalence		
	Water Vapor			
	Polar Stereo (North)	Sea Ice Concentration	304*448	25 (km)
		Snow Water Equivalence	431*573	25 (km)
Polar Stereo (South)	Sea Ice Concentration	316*332	25 (km)	

4.3.1.2 AMSR-E

The summary of GeoTIFF file generated from AMSR-E products is shown in Table 4.3-3.

Table 4.3-3 Summary of AMSR-E GeoTIFF Files

Product Type		Image Size	Pixel Interval	
Brightness Temperature	Equirectangular	1440*721	0.25 (deg)	
	Polar Stereo (North), except 89GHz	304*448	25 (km)	
	Polar Stereo (North), 89GHz	608*896	25 (km)	
	Polar Stereo (South), except 89GHz	316*332	25 (km)	
	Polar Stereo (South), 89GHz	632*664	25 (km)	
Physical Quantity	Equirectangular	Precipitation	1440*721	0.25 (deg)
		Cloud Liquid Water		
		Soil Moisture		
		Sea Surface Temperature		
		Sea Surface Wind Speed		
		Snow Water Equivalence		
		Sea Ice Concentration		
	Polar Stereo (North)	Water Vapor	304*448	25 (km)
		Snow Water Equivalence	431*573	25 (km)
	Polar Stereo (South)	Sea Ice Concentration	316*332	25 (km)

4.3.1.3 AMSR2

The summary of GeoTIFF file generated from AMSR2 products is shown in Table 4.3-4.

Table 4.3-4 Summary of AMSR2 GeoTIFF Files

		Product Type		Image Size	Pixel Interval
Brightness	High Resolution	Equirectangular		3600*1800	0.1 (deg)
		Polar Stereo (North)		760*1120	10 (km)
		Polar Stereo (South)		790*830	10 (km)
Temperature	Low Resolution	Equirectangular		1440*720	0.25 (deg)
		Polar Stereo (North)		304*448	25 (km)
		Polar Stereo (South)		316*332	25 (km)
Physical Quantity	High Resolution	Equirectangular	Cloud Liquid Water	3600*1800	0.1 (deg)
			Precipitation		
			Soil Moisture		
			Snow Depth		
			Sea Surface Temperature		
			Sea Surface Wind Speed		
	Polar Stereo (North)	Sea Ice Concentration	760*1120	10 (km)	
		Snow Depth	1080*1435	10 (km)	
		Polar Stereo (South)	Sea Ice Concentration	790*830	10 (km)
	Low Resolution	Equirectangular	Cloud Liquid Water	1440*720	0.25 (deg)
			Precipitation		
			Soil Moisture		
Snow Depth					
Sea Surface Temperature					
Sea Surface Wind Speed					
Water Vapor					
Polar Stereo (North)		Sea Ice Concentration	304*448	25 (km)	
		Snow Depth	432*574	25 (km)	
Polar Stereo (South)	Sea Ice Concentration	316*332	25 (km)		

4.3.2 Scene Data Type

TIFF file is generated from scene data. In TIFF file, the upper left point means the start point of the first scan, and the lower right point means the end point of the last scan.

If one standard product includes several physical quantities (frequency, etc.), several TIFF files are generated.

A text file (location information file) containing the coordinates (latitude and longitude) of 4 corners of a TIFF image is generated.

4.4 File Format Specification

This section describes the specification of the generated GeoTIFF/TIFF file.

4.4.1 GeoTIFF File

GeoTIFF file consists of the usual TIFF file and geographical information data. Refer to the following URL about GeoTIFF file structure.

<http://trac.osgeo.org/geotiff/>

GeoTIFF file consists of the header part and data part. GeoTIFF File structure is shown in Table 4.4-1.

Table 4.4-1 GeoTIFF File Structure

File Structure	Description
Header Part	Geographical information, etc.
Data Part	Image data

4.4.1.1 Header Part

Tags contained in header part are shown in Table 4.4-2(a) GeoTIFF Tags Equirectangular, Table 4.4-3(b) GeoTIFF Tags Polar stereo, Table 4.4-3(b) GeoTIFF Tags Polar stereo.

Table 4.4-2(a) GeoTIFF Tags Equirectangular

Tag Name	Contents
TIFFTAG_IMAGEWIDTH	Number of Pixels
TIFFTAG_IMAGELENGTH	Number of Lines
TIFFTAG_PLANARCONFIG	PLANARCONFIG_CONTIG
TIFFTAG_PHOTOMETRIC	PHOTOMETRIC_MINISBLACK
TIFFTAG_SAMPLESPPERPIXEL	1
TIFFTAG_SAMPLEFORMAT	AMSR/AMSR-E: SAMPLEFORMAT_INT AMSR2 Brightness Temperature: SAMPLEFORMAT_UINT AMSR2 Physical Quantity: SAMPLEFORMAT_INT
TIFFTAG_BITSPERSAMPLE	16
TIFFTAG_GEOPIXELSCALE	360.0 / Number of Pixels 180.0 / Number of Lines 0
TIFFTAG_GEOTIEPOINTS	0, 0, 0, -180, 90, 0
GTModelTypeGeoKey	ModelTypeGeographic
GTRasterTypeGeoKey	RasterPixelIsArea
GeogGeodeticDatumGeoKey	Datum_WGS84
GeogEllipsoidGeoKey	Ellipse_WGS_84

Tag Name	Contents
GeographicTypeGeoKey	GCS_WGS_84
GeogAngularUnitsGeoKey	Angular_Degree

Table 4.4-3(b) GeoTIFF Tags Polar stereo

Tag Name	Contents
TIFFTAG_IMAGEWIDTH	Number of Pixels
TIFFTAG_IMAGELENGTH	Number of Lines
TIFFTAG_PLANARCONFIG	PLANARCONFIG_CONTIG
TIFFTAG_PHOTOMETRIC	PHOTOMETRIC_MINISBLACK
TIFFTAG_SAMPLESPPERPIXEL	1
TIFFTAG_SAMPLEFORMAT	AMSR/AMSR-E: SAMPLEFORMAT_INT AMSR2 Brightness Temperature: SAMPLEFORMAT_UINT AMSR2 Physical Quantity: SAMPLEFORMAT_INT
TIFFTAG_BITSPERSAMPLE	16
GTModelTypeGeoKey	ModelTypeProjected
GTRasterTypeGeoKey	RasterPixelIsArea
GeogGeodeticDatumGeoKey	CT_PolarStereographic
GeogCitationGeoKey	Unspecified datum based upon the Hughes 1980 ellipsoid
GeogGeodeticDatumGeoKey	6054 (Not_specified_based_on_Hughes_1980_ellipsoid)
GeogEllipsoidGeoKey	7058 (Hughes 1980)
GeogSemiMajorAxisGeoKey	6378273.0
GeogSemiMinorAxisGeoKey	6356889.449
GTCitationGeoKey	Polar Stereo (North): "NSIDC Sea Ice Polar Stereographic North Polar Stereo (North) SIC: "NSIDC Sea Ice Polar Stereographic North Polar Stereo (North) SWE: JAXA Snow Depth Polar Stereographic North

Tag Name	Contents
	Polar Stereo (North) SND: JAXA Snow Depth Polar Stereographic North Polar Stereo (South): NSIDC Sea Ice Polar Stereographic South
ProjectedCSTypeGeoKey	Polar Stereo (North) IC: 3411 (NSIDC Sea Ice Polar Stereographic North) Polar Stereo (North) SIC: 3411 (NSIDC Sea Ice Polar Stereographic North) Polar Stereo (North) SWE: 5890 (JAXA Snow Depth Polar Stereographic North) Polar Stereo (North) SND: 5890 (JAXA Snow Depth Polar Stereographic North) Polar Stereo (South): 3412 (NSIDC Sea Ice Polar Stereographic South)
ProjNatOriginLatGeoKey	Polar Stereo (North): 70.0 Polar Stereo (South): -70.0
ProjStraightVertPoleLongGeoKey	Polar Stereo (North) IC: -45 Polar Stereo (North) SIC: -45 Polar Stereo (North) SWE: 90 Polar Stereo (North) SND: 90 Polar Stereo (South) : 0
ProjFalseEastingGeoKey	0
ProjFalseNorthingGeoKey	0
ProjNatOriginLatGeoKey	Polar Stereo (North): 70 Polar Stereo (South): -70
ProjScaleAtNatOriginGeoKey	1
ProjLinearUnitsGeoKey	9001 (metre)

IC(Ice Concentration),SWE(Snow Water Equivalence) is data of AMSR/AMSR-E.

SIC(Sea Ice Concentration),SND(Snow Depth) is data of AMSR2.

4.4.1.2 Data Part

The resolution of the image data is same as the acquired data.

The data type, scale factor, etc. of the image data are same as the source product (HDF file).

The information of the image data is shown in Table 4.4-4.

Table 4.4-4 Information of Image Data

Sensor	Data Type		Scale Factor	Data Unit	Data Size
AMSR	Brightness Temperature		0.1	K	signed int 16bit
	Physical Quantity	Precipitation	0.1	mm/h	
		Cloud Liquid Water	0.001	kg/m2	
		Sea Ice Concentration	1.0	%	
		Soil Moisture	0.001	g/cm3	
		Sea Surface Temperature	0.1	°C	
		Sea Surface Wind Speed	0.1	m/s	
		Snow Water Equivalence	1.0	mm	
Water Vapor	0.1	kg/m2			
AMSR-E	Brightness Temperature		0.1	K	signed int 16bit
	Physical Quantity	Precipitation	0.1	mm/h	
		Cloud Liquid Water	0.001	kg/m2	
		Sea Ice Concentration	1.0	%	
		Soil Moisture	0.001	g/cm3	
		Sea Surface Temperature	0.1	°C	
		Sea Surface Wind Speed	0.1	m/s	

Sensor	Data Type		Scale Factor	Data Unit	Data Size
		Snow Water Equivalence	1.0	mm	
		Water Vapor	0.1	kg/m2	
AMSR2	Brightness Temperature		0.01	K	unsigned int 16bit
	Physical Quantity	Cloud Liquid Water	0.001	kg/m2	
		Precipitation	0.01	mm/h	
		Sea Ice Concentration	0.1	%	
		Soil Moisture	0.1	%	
		Snow Depth	0.1	cm	
		Sea Surface Temperature	0.01	°C	
		Sea Surface Wind Speed	0.01	m/s	
		Water Vapor	0.01	kg/m2	

4.4.2 TIFF File

Refer to the following URL about TIFF file structure.

<http://partners.adobe.com/public/developer/tiff/index.html>

TIFF file consists of the header part and data part. TIFF File structure is shown in Table 4.4-5.

Table 4.4-5 TIFF File Structure

File Structure	Description
Header Part	Image size, etc.
Data Part	Image data

4.4.2.1 Header Part

Tags contained in header part are shown in Table 4.4-6.

Table 4.4-6 TIFF Tags

Tag Name	Contents
TIFFTAG_IMAGEWIDTH	Number of Pixels
TIFFTAG_IMAGELENGTH	Number of Lines
TIFFTAG_PLANARCONFIG	PLANARCONFIG_CONTIG
TIFFTAG_PHOTOMETRIC	PHOTOMETRIC_MINISBLACK
TIFFTAG_SAMPLESPPERPIXEL	1
TIFFTAG_SAMPLEFORMAT	AMSR/AMSR-E: SAMPLEFORMAT_INT AMSR2 Brightness Temperature: SAMPLEFORMAT_UINT AMSR2 Physical Quantity: SAMPLEFORMAT_INT
TIFFTAG_BITSPERSAMPLE	16
TIFFTAG_GEOPIXELSCALE	360.0 / Number of Pixels 180.0 / Number of Lines 0
TIFFTAG_GEOTIEPOINTS	0,0,0,-180,90,0
GTMModelTypeGeoKey	Equiarectangular: ModelTypeGeographic Polar stereo: ModelTypeProjected
GTRasterTypeGeoKey	RasterPixelIsArea
GeogGeodeticDatumGeoKey	Equiarectangular: Datum_WGS84 Polar stereo: CT_PolarStereographic

Tag Name	Contents
GeogEllipsoidGeoKey	Ellipse_WGS_84
GeographicTypeGeoKey	GCS_WGS_84
GeogAngularUnitsGeoKey	Angular_Degree

4.4.2.2 Data Part

The resolution of the image data is same as the acquired data.

The data type, scale factor, etc. of the image data are same as the source product (HDF file).

The information of the image data is shown in Table 4.4-7.

Table 4.4-7 TIFF Image Data Information

Sensor	Data Type		Scale Factor	Data Unit	Data Size
AMSR	Level 1	L1A	1.0	Count	signed int 16bit
		L1B	0.1	K	signed int 16bit
	Level 2	Precipitation	0.1	mm/h	signed int 16bit
		Cloud Liquid Water	0.001	kg/m2	
		Sea Ice Concentration	1.0	%	
		Soil Moisture	0.001	g/cm3	
		Sea Surface Temperature	0.1	°C	
		Sea Surface Wind Speed	0.1	m/s	
		Snow Water Equivalence	1.0	mm	
		Water Vapor	0.1	kg/m2	
AMSR-E	Level 1	L1A	1.0	Count	signed int 16bit
		L1B	0.1	K	signed int 16bit
	Level 2	Precipitation	0.1	mm/h	signed int 16bit
		Cloud Liquid Water	0.001	kg/m2	
		Sea Ice Concentration	1.0	%	
		Soil Moisture	0.001	g/cm3	

Sensor	Data Type		Scale Factor	Data Unit	Data Size
		Sea Surface Temperature	0.1	°C	
		Sea Surface Wind Speed	0.1	m/s	
		Snow Water Equivalence	1.0	mm	
		Water Vapor	0.1	kg/m2	
AMSR2	Level 1	L1A	1.0	Count	signed int 16bit
		L1B	0.01	K	unsigned int 16bit
		L1R	0.01	K	unsigned int 16bit
	Level 2	Cloud Liquid Water	0.001	kg/m2	signed int 16bit
		Precipitation	0.01	mm/h	
		Sea Ice Concentration	0.1	%	
		Soil Moisture	0.1	%	
		Snow Depth	0.1	cm	
		Sea Surface Temperature	0.01	°C	
		Sea Surface Wind Speed	0.01	m/s	
	Water Vapor	0.01	kg/m2		

4.4.3 Location Information File

The location information file contains the coordinates (latitude and longitude) of 4 corners of a TIFF image is generated.

One location information file is generated from one source file.

Format and example of the location information file are shown in Figure 4.4-1 and Figure 4.4-2.

```

OUTPUT FILE: <Output File Name>

    INPUT FILE: <Input Standard Product File Name>

    FIELD NAME: <Input Standard Product Dataset Name>

    UL CORNER LAT/LON: <Latitude of Upper Left of Scene> / < Longitude of Upper Left of Scene >

    UR CORNER LAT/LON: <Latitude of Upper Right of Scene> / < Longitude of Upper Right of Scene >

    LL CORNER LAT/LON: <Latitude of Lower Left of Scene> / < Longitude of Lower Left of Scene >

    LR CORNER LAT/LON: <Latitude of Lower Right of Scene> / < Longitude of Lower Right of Scene >
    
```

Figure 4.4-1 Location Information File Format

```

*****
OUTPUT FILE: A2AMS03071129MD_P01A0000000_6GH.tif
INPUT FILE: A2AMS03071129MD_P01A0000000.00
FIELD NAME: 6GHz-H_Observation_Count_Data
UL CORNER LAT/LON: 80.37 / 170.14
UR CORNER LAT/LON: 70.41 / 109.44
LL CORNER LAT/LON: -70.99 / -88.20
LR CORNER LAT/LON: -82.50 / -21.50
*****

*****
OUTPUT FILE: A2AMS03071129MD_P01A0000000_6GV.tif
INPUT FILE: A2AMS03071129MD_P01A0000000.00
FIELD NAME: 6GHz-V_Observation_Count_Data
UL CORNER LAT/LON: 80.37 / 170.14
UR CORNER LAT/LON: 70.41 / 109.44
LL CORNER LAT/LON: -70.99 / -88.20
LR CORNER LAT/LON: -82.50 / -21.50
*****

*****
OUTPUT FILE: A2AMS03071129MD_P01A0000000_10.65GH.tif
INPUT FILE: A2AMS03071129MD_P01A0000000.00
FIELD NAME: 10.65GHz-H_Observation_Count_Data
UL CORNER LAT/LON: 80.37 / 170.14
UR CORNER LAT/LON: 70.41 / 109.44
LL CORNER LAT/LON: -70.99 / -88.20
LR CORNER LAT/LON: -82.50 / -21.50
*****
    
```

Figure 4.4-2 Example of Location Information File

Chapter 5 Conversion to NetCDF

A standard product of AMSR/AMSR-E/AMSR2 is converted to a NetCDF file.

Format of the NetCDF file generated by the format conversion is NetCDF-4 Classic Model Format complying with CF-1.4 convention provided by NOAA (National Oceanic and Atmospheric Administration).

One standard product is converted to one NetCDF file.

Refer to the following URL about NetCDF file structure.

<http://www.unidata.ucar.edu/software/netcdf/>

5.1 File Name

The name of the generated NetCDF file is shown below.

<Granule ID>.nc

5.2 Processing Specification

Datasets and Core metadata of the standard product are stored as variables and global attributes in NetCDF file.

NetCDF File structure and the relation with HDF file is shown in Figure 5.2-1.

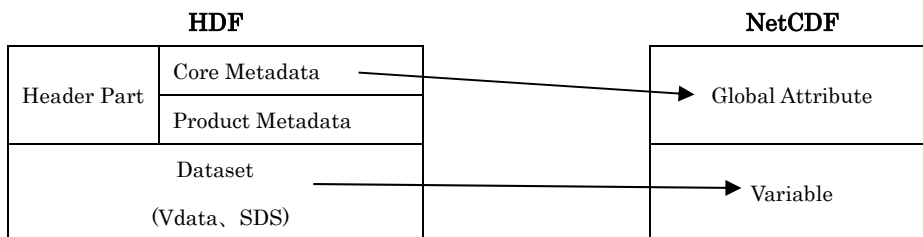


Figure 5.2-1 NetCDF File Structure

5.2.1 Conversion Rule

The format of the generated and provided NetCDF file is NetCDF-4 Classic Model Format complying with CF-1.4 convention provided by NOAA.

Variable names, data types, and data units are stored by the rule shown in Table 5.2-1.

Refer to the following URL about NetCDF-4 Classic Model Format.

http://www.unidata.ucar.edu/software/netcdf/docs/netcdf/NetCDF_002d4-Classic-Model-Format.html

Refer to the following URL about CF-1.4.

<http://cf-pcmdi.llnl.gov/documents/cf-conventions/1.4>

Table 5.2-1 NetCDF Conversion Rule

Conversion Item	Description	Example of Conversion	
		Before Conversion	After Conversion
Variable Name Global Attribute Name	<p>CF-1.4 requires that variable names and global attribute names should begin with a letter and be composed of letters, digits, and underscores.</p> <p>NetCDF Conversion uses the follow 2 rules:</p> <p>1) Special characters except '_' are changed to '_'. 2) Beginning with a digit, "Data" is added before the name.</p> <p>Dataset names are stored with no change as long name attribute.</p>	<p>Antenna Temp Coef (Of+Sl)</p> <hr/> <p>6GHz-V Observation Count Data</p> <hr/> <p>SpatialResolution (AzXEl)</p>	<p>Antenna_Temp_Coef_Of_Sl_</p> <hr/> <p>Data6GHz_V_Observation_Count_Data</p> <hr/> <p>SpatialResolution_AzXEl_</p>
Data Type of Variable	<p>CF-1.4 requires that unsigned data types are not available.</p> <p>Dataset defined by unsigned int type or by unsigned short type exists in the standard product (source file).</p> <p>Dataset defined by such unsigned type is converted according to the following 3 rules:</p> <p style="padding-left: 40px;">unsigned int → float unsigned short → int unsigned byte → short</p> <p>When dataset is defined by unsigned type and consists of bit data or low data, its data type is changed to signed type.</p>	<p>AMSR L1A Rx Offset/Gain Count Data Type: unsigned short</p> <hr/> <p>AMSR L2 Data Quality Data Type: unsigned byte</p>	<p>int</p> <hr/> <p>byte</p> <p>Because this is used as bit data.</p>
Data Unit	<p>Data unit of the standard product (source file) is stored with no change as a "units" attribute of variable.</p> <p>But, data unit which is not according to CF-1.4 is changed according to the units database of UDUNITS designed by Unidata.</p>	<p>deg</p> <hr/> <p>°C</p>	<p>degrees: Commonly-used angle.</p> <hr/> <p>degrees_north: Latitude for map.</p> <hr/> <p>degrees_east: Longitude for map.</p> <hr/> <p>degrees_Celsius</p>

Conversion Item	Description	Example of Conversion	
		Before Conversion	After Conversion
	In addition, data unit which contains ‘ ’ or white space is not defined in NetCDF file.	kg/m2	kg/m^2
		g/cm3	g/cm^3

5.2.2 Additional Attribute

Some attributes which are not in HDF file are defined in NetCDF file.

When the missing data information or the effective range is defined in HDF file, the attributes shown in Table 5.2-2 are defined in NetCDF file.

About additional attributes and its value, see tables which are presented in "5.3 File Format Specification".

Table 5.2-2 NetCDF Additional Attributes

Dataset	NetCDF Additional Attribute
Dataset to which missing data information is defined.	_FillValue
Dataset to which effective range is defined.	valid_range

5.3 File Format Specification

The variables, attributes, and global attributes stored in NetCDF file are explained at each product type in this session.

About the details of the variables and the global attributes, refer to the format description document of each standard product.

5.3.1 AMSR

5.3.1.1 Level 1

(1) L1A

Output specification of AMSR Level 1 (L1A) is shown in the following tables.

Table 5.3-1 AMSR L1A Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSR-L1A	
VersionID	RELEASE2	
SizeMBECSDataGranule	43.4	
LocalGranuleID	A2AMS03071129MD_P01A0000000	
ProcessingLevelID	L1A	
ReprocessingActual	blank or 2002-08-10	
ProductionDateTime	2005-10-29T20:09:10.000Z	
RangeBeginningTime	11:05:27.74Z	
RangeBeginningDate	2003-07-11	
RangeEndingTime	11:56:31.59Z	
RangeEndingDate	2003-07-11	
GringPointLatitude	80.37,70.38,36.48,-22.75,-82.45,-70.99,-19.84,39.84	
GringPointLongitude	170.14,109.56,3.30,-12.60,-21.50,-88.20,-30.56,-17.78	
PGEName	L1A_Process_Software	

Attribute Name	Contents / Examples	Remarks
PGEVersion	2*22*22***22220222	
InputPointer	A2_AMS_MDR_HEOC_L0_SIG_20040217_4016,A2_AMS_MDR _HEOC_L0_SIG_20040217_4017	
ProcessingCenter	JAXA EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	236	
StopOrbitNumber	236	
EquatorCrossingLongitude	-16.65	
EquatorCrossingDate	2003-07-11	
EquatorCrossingTime	11:33:24.49Z	
OrbitDirection	DESCENDING	
EphemerisGranulePointer	EL20030711	
EphemerisType	GPS	
PlatformShortName	ADEOS-2	
SensorShortName	AMSR	
NumberofScans	2042	
NumberofMissingScans	1	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	continuation	
QALocationPacketDiscontinuity	discontinuation	
NumberofPackets	32672	

Attribute Name	Contents / Examples	Remarks
NumberOfInputFiles	2	
NumberOfMissingPackets	16	
NumberOfGoodPackets	32656	
ReceivingCondition	blank	
EphemerisQA	OK	
AutomaticQAFlag	PASS	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, 'PASS' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutOfBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	NumberOfMissingPackets	
SatelliteOrbit	Sun-synchronous_sub-recurrent	
Altitude	802.9km	

Attribute Name	Contents / Examples	Remarks
OrbitSemiMajorAxis	7181.317km	
OrbitEccentricity	0.00007	
OrbitArgumentPerigee	244.018deg	
OrbitInclination	98.62deg	
OrbitPeriod	101minutes	
RevisitTime	4days	
AMSRChannel	6.925GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,50.3GHz,52.8GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,50.3G-200MHz,52G-400MHz,89GA-3000MHz,89GB-3000MHz	
AMSRBeamWidth	6G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,50.3G-0.25deg,52G-0.25deg,89GA-0.15deg,89GB-0.15deg	
OffNadir	46.7deg : for 89GB 46.3deg	
SpatialResolution_AzXEI_	6G-39.8kmX69.5km,10G-26.6kmX46.3km,18G-14.4kmX25.1km,23G-16.6kmX28.9km,36G-7.7kmX13.5km,50.3G-5.5kmX9.6km,52G-5.5kmX9.6km,89GA-3.3kmX5.8km,89GB-3.3kmX5.7km	Standard Product: SpatialResolution (AzXEI)
ScanningPeriod	1.5sec	
SwathWidth	1600km	
DynamicRange	2.7K-340K	
DataFormatType	NCSA-HDF	
HDFFormatVersion	Ver4.1r2	

Attribute Name	Contents / Examples	Remarks
	70.6670,-190.0000,-169.3330,140.0000	
Platinum_2ConversionTableWd	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#2ConversionTableWd
Platinum_3CountRangeWx	590,1473,2575,3675,4096	Standard Product: Platinum#3CountRangeWx
Platinum_3ConversionTableWa	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#3ConversionTableWa
Platinum_3ConversionTableWb	0.00000,0.00900,0.00910,0.00910,0.00910	Standard Product: Platinum#3ConversionTableWb
Platinum_3ConversionTableWc	12.0000,6.6900,6.6500,6.5700,6.4700	Standard Product: Platinum#3ConversionTableWc
Platinum_3ConversionTableWd	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#3ConversionTableWd
CoefficientAvv	6G-1.031,10G-1.027,18G-1.022,23G-1.029,36G-1.030,50G-1.024, 52G-1.030,89GA-1.029,89GB-1.030	
CoefficientAhv	6G--0.003,10G--0.003,18G--0.003,23G--0.003,36G--0.003,50G-0. 000,52G-0.000,89GA--0.004,89GB--0.004	
CoefficientAov	6G--0.028,10G--0.024,18G--0.019,23G--0.026,36G--0.027,50G--0. 024,52G--0.030,89GA--0.025,89GB--0.026	
CoefficientAhh	6G-1.031,10G-1.027,18G-1.022,23G-1.032,36G-1.030,50G-0.000, 52G-0.000,89GA-1.028,89GB-1.029	
CoefficientAvh	6G--0.003,10G--0.002,18G--0.003,23G--0.007,36G--0.004,50G-0. 000,52G-0.000,89GA--0.004,89GB--0.005	
CoefficientAoh	6G--0.027,10G--0.025,18G--0.019,23G--0.024,36G--0.026,50G-0. 000,52G-0.000,89GA--0.024,89GB--0.024	
CSMtemperature	6GV-2.800, 6GH-2.800, 10GV-2.800, 10GH-2.800, 18GV-2.800, 18GH-2.800, 23GV-2.800, 23GH-2.800, 36GV-2.800, 36GH-2. 800, 50GV-2.800, 52GV-2.800, 89GAV-2.800, 89GAH-2.800, 89	

Attribute Name	Contents / Examples	Remarks
	GBV-2.800, 89GBH-2.800	
CoRegistrationParameterA1	6G--0.27500, 10G--0.70900, 18G--0.54400, 23G--0.33000, 36G--0.45900, 50G--0.37000	
CoRegistrationParameterA2	6G-0.00000, 10G-0.00000, 18G-0.00000, 23G-0.00000, 36G-0.0000, 50G-0.00000	
CalibrationCurveCoefficient_1	6GV--0.1919871, 6GH--0.0994771, 10GV--0.0140960, 10GH--0.0011593, 18GV-0.0000000, 18GH-0.0000000, 23GV--0.1514239, 23GH--0.1514239, 36GV--0.0264439, 36GH--0.0555515, 50GV-0.0000000, 52GV-0.0000000, 89GAV--0.0197245, 89GAH--0.0632250, 89GBV--0.0186104, 89GBH--0.0659556	Standard Product: CalibrationCurveCoefficient#1
CalibrationCurveCoefficient_2	6GV-1.0692195, 6GH-1.0358657, 10GV-1.0050821, 10GH-1.0004180, 18GV-1.0000000, 18GH-1.0129884, 23GV-1.0545937, 23GH-1.0545937, 36GV-1.0095340, 36GH-1.0200283, 50GV-1.0000000, 52GV-1.0000000, 89GAV-1.0071118, 89GAH-1.0227955, 89GBV-1.0067097, 89GBH-1.0237784	Standard Product: CalibrationCurveCoefficient#2
CalibrationCurveCoefficient_3	6GV--0.0002331, 6GH--0.0001208, 10GV--0.0000171, 10GH--0.0000014, 18GV-0.0000000, 18GH--0.0000436, 23GV--0.0001835, 23GH--0.0001835, 36GV--0.0000321, 36GH--0.0000673, 50GV-0.0000000, 52GV-0.0000000, 89GAV--0.0000241, 89GAH--0.0000768, 89GBV--0.0000225, 89GBH--0.0000796	Standard Product: CalibrationCurveCoefficient#3
CalibrationCurveCoefficient_4	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 2	Standard Product: CalibrationCurveCoefficient#4

Attribute Name	Contents / Examples	Remarks
	3GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	
CalibrationCurveCoefficient_5	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#5
CalibrationMethod	RxTemperatureReferenced,SpillOver,CSMInterpolation,Absolute89GPositioning,NonlinearityCorrection	
HTSCorrectionParameterVersion	ver0001	
SpillOverParameterVersion	ver0001	
CSMInterpolationParameterVersion	ver0001	
Absolute89GPositioningParameterVersion	ver0001	

Table 5.3-2 AMSR L1A Variables

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Position_in_Orbit	double	nscan	1.0		
Data6GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data6GHz_H_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data10_65GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data10_65GHz_H_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data18_7GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data18_7GHz_H_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data23_8GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data23_8GHz_H_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data36_5GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data36_5GHz_H_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data50_3GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data52_8GHz_V_Observation_Count_Data	short	nscan*290	1.0	Count	Missing: -9999
Data89_0GHz_V_A_Observation_Count_Data	short	nscan*580	1.0	Count	Missing: -9999
Data89_0GHz_H_A_Observation_Count_Data	short	nscan*580	1.0	Count	Missing: -9999
Data89_0GHz_V_B_Observation_Count_Data	short	nscan*580	1.0	Count	Missing: -9999
Data89_0GHz_H_B_Observation_Count_Data	short	nscan*580	1.0	Count	Missing: -9999
Hot_Load_Count_6_to_52	short	12*nscan*8	1.0	Count	Missing: 0
Hot_Load_Count_89	short	4*nscan*16	1.0	Count	Missing: 0
Cold_Sky_Mirror_Count_6_to_52	short	12*nscan*8	1.0	Count	Missing: 0

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Cold_Sky_Mirror_Count_89	short	4*nscan*16	1.0	Count	Missing: 0
Antenna_Temp_Coef_Of_Sl_	float	nscan*32	1.0	K+K/Cnt	
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Attitude_Data	float	nscan*3	1.0	degrees	
Lat_of_Observation_Point_Except_89B	short	nscan*580	0.01	degrees_north	
Long_of_Observation_Point_Except_89B	short	nscan*580	0.01	degrees_east	
Lat_of_Observation_Point_for_89B	short	nscan*580	0.01	degrees_north	
Long_of_Observation_Point_for_89B	short	nscan*580	0.01	degrees_east	
Sun_Azimuth	short	nscan*290	0.1	degrees	
Sun_Elevation	short	nscan*290	0.1	degrees	
Earth_Incidence	byte	nscan*290	0.02	degrees	
Earth_Azimuth	short	nscan*290	0.01	degrees	
Land_Ocean_Flag_for_6_10_18_23_36_50_89A	byte	7*nscan*290	1.0	%	
Observation_Supplement	short	nscan*27	1.0		
SPC_Temperature_Count	short	nscan*20	1.0	Count	
SPS_Temperature_Count	short	nscan*32	1.0	Count	
Data_Quality	float	nscan*128	1.0		
Interpolation_Flag_6_to_52	byte	12*nscan*8	1.0		
Interpolation_Flag_89	byte	4*nscan*16	1.0		
Spill_Over	float	2*200*290	1.0	mV	

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
lat	short	nscan*290	0.01	degrees_north	Latitude for acquired data except 89GHz.
lon	short	nscan*290	0.01	degrees_east	Longitude for acquired data except 89GHz.

(2) L1B

Output specification of AMSR Level 1 (L1B) is shown in the following tables.

Table 5.3-3 AMSR L1B Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSR-L1B	
VersionID	RELEASE2	
SizeMBECSDataGranule	30.6	
LocalGranuleID	A2AMS03071129MD_P01B0000000	
ProcessingLevelID	L1B	
ReprocessingActual	blank or 2002-08-10	
ProductionDateTime	2005-10-29T20:12:47.000Z	
RangeBeginningTime	11:05:27.74Z	
RangeBeginningDate	2003-07-11	
RangeEndingTime	11:56:31.59Z	
RangeEndingDate	2003-07-11	
GringPointLatitude	84.39,73.06,32.86,-26.75,-86.49,-73.39,-24.15,35.63	
GringPointLongitude	158.07,99.01,0.63,-14.25,-39.84,-100.28,-30.42,-16.84	
PGEName	L1B_Process_Software	
PGEVersion	2*22*22***22220222	
InputPointer	A2_AMS_MDR_HEOC_LO_SIG_20040217_4016,A2_AMS_MDR _HEOC_LO_SIG_20040217_4017	

Attribute Name	Contents / Examples	Remarks
ProcessingCenter	JAXA EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	236	
StopOrbitNumber	236	
EquatorCrossingLongitude	-16.65	
EquatorCrossingDate	2003-07-11	
EquatorCrossingTime	11:33:24.61Z	
OrbitDirection	DESCENDING	
EphemerisGranulePointer	EL20030711	
EphemerisType	GPS	
PlatformShortName	ADEOS-2	
SensorShortName	AMSR	
NumberOfScans	2042	
NumberOfMissingScans	1	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	continuation	
QALocationPacketDiscontinuity	discontinuation	
NumberOfPackets	32672	
NumberOfInputFiles	2	
NumberOfMissingPackets	16	

Attribute Name	Contents / Examples	Remarks
NumberOfGoodPackets	32656	
ReceivingCondition	blank	
EphemerisQA	OK	
AutomaticQAFlag	PASS	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, 'PASS' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutofBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	NumberOfMissingPackets	
SatelliteOrbit	Sun-synchronous_sub-recurrent	
Altitude	802.9km	
OrbitSemiMajorAxis	7181.317km	
OrbitEccentricity	0.00007	

Attribute Name	Contents / Examples	Remarks
OrbitArgumentPerigee	244.018deg	
OrbitInclination	98.62deg	
OrbitPeriod	101minutes	
RevisitTime	4days	
AMSRChannel	6.925GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,50.3GHz,52.8GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,50.3G-200MHz,52G-400MHz,89GA-3000MHz,89GB-3000MHz	
AMSRBeamWidth	6G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,50.3G-0.25deg,52G-0.25deg,89GA-0.15deg,89GB-0.15deg	
OffNadir	46.7deg : for 89GB 46.3deg	
SpatialResolution_AzXEL	6G-39.8kmX69.5km,10G-26.6kmX46.3km,18G-14.4kmX25.1km,23G-16.6kmX28.9km,36G-7.7kmX13.5km,50.3G-5.5kmX9.6km,52G-5.5kmX9.6km,89GA-3.3kmX5.8km,89GB-3.3kmX5.7km	Standard Product: SpatialResolution (AzXEL)
ScanningPeriod	1.5sec	
SwathWidth	1600km	
DynamicRange	2.7K-340K	
DataFormatType	NCSA-HDF	
HDFFormatVersion	Ver4.1r2	
EllipsoidName	WGS84	
SemiMajorAxisofEarth	6378.1km	

Attribute Name	Contents / Examples	Remarks
FlatteningRatioofEarth	0.00335	
SensorAlignment	Rx=0.00000,Ry=0.00000,Rz=0.00000	
ThermistorCountRangeWx	61,138,301,456,591,698,780,840,883,915,937,954,966,974,1023	
ThermistorConversionTableWa	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	
ThermistorConversionTableWb	0.00000,0.06500,0.06100,0.06500,0.07400,0.09400,0.12200,0.16700,0.23300,0.31300,0.45500,0.58800,0.83300,1.25000,0.00000	
ThermistorConversionTableWc	-35.0000,-38.9610,-38.4660,-39.4190,-46.7780,-55.2340,-75.1220,-110.0000,-165.3490,-235.9830,-365.9090,-491.1760,-725.0000,-1127.5000,90.0000	
ThermistorConversionTableWd	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	
Platinum_1CountRangeWx	1168,1296,1536,1752,4096	Standard Product: Platinum#1CountRangeWx
Platinum_1ConversionTableWa	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#1ConversionTableWa
Platinum_1ConversionTableWb	0.00000,0.03900,0.04200,0.03900,0.04200	Standard Product: Platinum#1ConversionTableWb.
Platinum_1ConversionTableWc	-35.0000,-80.6250,-84.0000,-80.0000,-84.6670	Standard Product: Platinum#1ConversionTableWc
Platinum_1ConversionTableWd	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#1ConversionTableWd
Platinum_2CountRangeWx	272,1296,1536,1792,2032,2288,3248,3472,3712,4096	Standard Product: Platinum#2CountRangeWx
Platinum_2ConversionTableWa	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#2ConversionTableWa
Platinum_2ConversionTableWb	0.00000,0.07800,0.08300,0.07800,0.08300,0.07800,0.08300,0.07800,0.08300,0.07800,0.08300,0.00000	Standard Product: Platinum#2ConversionTableWb
Platinum_2ConversionTableWc	-140.0000,-161.2500,-168.0000,-160.0000,-169.3330,-158.7500,-170.6670,-190.0000,-169.3330,140.0000	Standard Product: Platinum#2ConversionTableWc
Platinum_2ConversionTableWd	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#2ConversionTableWd

Attribute Name	Contents / Examples	Remarks
Platinum_3CountRangeWx	590,1473,2575,3675,4096	Standard Product: Platinum#3CountRangeWx
Platinum_3ConversionTableWa	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#3ConversionTableWa
Platinum_3ConversionTableWb	0.00000,0.00900,0.00910,0.00910,0.00910	Standard Product: Platinum#3ConversionTableWb
Platinum_3ConversionTableWc	12.0000,6.6900,6.6500,6.5700,6.4700	Standard Product: Platinum#3ConversionTableWc
Platinum_3ConversionTableWd	0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum#3ConversionTableWd
CoefficientAvv	6G-1.031,10G-1.027,18G-1.022,23G-1.029,36G-1.030,50G-1.024, 52G-1.030,89GA-1.029,89GB-1.030	
CoefficientAhv	6G--0.003,10G--0.003,18G--0.003,23G--0.003,36G--0.003,50G-0. 000,52G-0.000,89GA--0.004,89GB--0.004	
CoefficientAov	6G--0.028,10G--0.024,18G--0.019,23G--0.026,36G--0.027,50G--0. 024,52G--0.030,89GA--0.025,89GB--0.026	
CoefficientAhh	6G-1.031,10G-1.027,18G-1.022,23G-1.032,36G-1.030,50G-0.000, 52G-0.000,89GA-1.028,89GB-1.029	
CoefficientAvh	6G--0.003,10G--0.002,18G--0.003,23G--0.007,36G--0.004,50G-0. 000,52G-0.000,89GA--0.004,89GB--0.005	
CoefficientAoh	6G--0.027,10G--0.025,18G--0.019,23G--0.024,36G--0.026,50G-0. 000,52G-0.000,89GA--0.024,89GB--0.024	
CSMTemperature	6GV-2.800, 6GH-2.800, 10GV-2.800, 10GH-2.800, 18GV-2.800, 18GH-2.800, 23GV-2.800, 23GH-2.800, 36GV-2.800, 36GH-2. 800, 50GV-2.800, 52GV-2.800, 89GAV-2.800, 89GAH-2.800, 89 GBV-2.800, 89GBH-2.800	
CoRegistrationParameterA1	6G--0.27500, 10G--0.70900, 18G--0.54400, 23G--0.33000, 36G-	

Attribute Name	Contents / Examples	Remarks
	-0.45900, 50G--0.37000	
CoRegistrationParameterA2	6G-0.00000, 10G-0.00000, 18G-0.00000, 23G-0.00000, 36G-0.0000, 50G-0.00000	
CalibrationCurveCoefficient_1	6GV--0.1919871, 6GH--0.0994771, 10GV--0.0140960, 10GH--0.0011593, 18GV-0.0000000, 18GH-0.0000000, 23GV--0.1514239, 23GH--0.1514239, 36GV--0.0264439, 36GH--0.0555515, 50GV-0.0000000, 52GV-0.0000000, 89GAV--0.0197245, 89GAH--0.0632250, 89GBV--0.0186104, 89GBH--0.0659556	Standard Product: CalibrationCurveCoefficient#1
CalibrationCurveCoefficient_2	6GV-1.0692195, 6GH-1.0358657, 10GV-1.0050821, 10GH-1.0004180, 18GV-1.0000000, 18GH-1.0129884, 23GV-1.0545937, 23GH-1.0545937, 36GV-1.0095340, 36GH-1.0200283, 50GV-1.0000000, 52GV-1.0000000, 89GAV-1.0071118, 89GAH-1.0227955, 89GBV-1.0067097, 89GBH-1.0237784	Standard Product: CalibrationCurveCoefficient#2
CalibrationCurveCoefficient_3	6GV--0.0002331, 6GH--0.0001208, 10GV--0.0000171, 10GH--0.0000014, 18GV-0.0000000, 18GH--0.0000436, 23GV--0.0001835, 23GH--0.0001835, 36GV--0.0000321, 36GH--0.0000673, 50GV-0.0000000, 52GV-0.0000000, 89GAV--0.0000241, 89GAH--0.0000768, 89GBV--0.0000225, 89GBH--0.0000796	Standard Product: CalibrationCurveCoefficient#3
CalibrationCurveCoefficient_4	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000	Standard Product: CalibrationCurveCoefficient#4

Attribute Name	Contents / Examples	Remarks
	0, 89GBV-0.0000000, 89GBH-0.0000000	
CalibrationCurveCoefficient_5	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#5
CalibrationMethod	RxTemperatureReferenced,SpillOver,CSMInterpolation,Absolute89GPositioning,NonlinearityCorrection	
HTSCorrectionParameterVersion	ver0001	
SpillOverParameterVersion	ver0001	
CSMInterpolationParameterVersion	ver0001	
Absolute89GPositioningParameterVersion	ver0001	

Table 5.3-4 AMSR L1B Variables

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Position_in_Orbit	double	nscan	1.0		
Data6GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data6GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data10_65GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data10_65GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data18_7GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data18_7GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data23_8GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data23_8GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data36_5GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data36_5GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data50_3GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data52_8GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data89_0GHz_V_A_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_H_A_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_V_B_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_H_B_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Hot_Load_Count_6_to_52	short	12*nscan*8	1.0	Count	Missing: 0
Hot_Load_Count_89	short	4*nscan*16	1.0	Count	Missing: 0
Cold_Sky_Mirror_Count_6_to_52	short	12*nscan*8	1.0	Count	Missing: 0

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Cold_Sky_Mirror_Count_89	short	4*nscan*16	1.0	Count	Missing: 0
Antenna_Temp_Coef_Of_SI_	float	nscan*32	1.0	K+K/Cnt	
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Attitude_Data	float	nscan*6	1.0	degrees	
Lat_of_Observation_Point_Except_89B	short	nscan*392	0.01	degrees__north	
Long_of_Observation_Point_Except_89B	short	nscan*392	0.01	degrees_east	
Lat_of_Observation_Point_for_89B	short	nscan*392	0.01	degrees_north	
Long_of_Observation_Point_for_89B	short	nscan*392	0.01	degrees_east	
Sun_Azimuth	short	nscan*196	0.1	degrees	
Sun_Elevation	short	nscan*196	0.1	degrees	
Earth_Incidence	byte	nscan*196	0.02	degrees	
Earth_Azimuth	short	nscan*196	0.01	degrees	
Land_Ocean_Flag_for_6_10_18_23_36_50_89A	byte	7*nscan*196	1.0	%	
Observation_Supplement	short	nscan*27	1.0		
SPC_Temperature_Count	short	nscan*20	1.0	Count	
SPS_Temperature_Count	short	nscan*32	1.0	Count	
Data_Quality	float	nscan*128	1.0		
Interpolation_Flag_6_to_52	byte	12*nscan*8	1.0		
Interpolation_Flag_89	byte	4*nscan*16	1.0		
Spill_Over	float	2*200*290	1.0	mV	

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
lat	short	nscan*196	0.01	degrees_north	Latitude for acquired data except 89GHz.
lon	short	nscan*196	0.01	degrees_east	Longitude for acquired data except 89GHz.

5.3.1.2 Level 2

Output specification of AMSR Level 2 is shown in the following tables.

Table 5.3-5 AMSR Level 2 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSR-L2	
GeophysicalName	Amount of Precipitation	
VersionID	600	
SizeMBECSDataGranule	2.68	
Local_Granule_ID	A2AMS030711029A_P2AP0000600	Standard Product: Local Granule ID
ProcessingLevelID	L2	
ProductionDateTime	2008-4-14-T04:27:33.00Z	
RangeBeginningTime	11:56:16.70Z	
RangeBeginningDate	2003-07-11	
RangeEndingTime	12:46:47.65Z	
RangeEndingDate	2003-07-11	
GringPointLatitude	-73.16,-32.73,26.08,85.32,-85.70,-35.24,23.84,73.38	
GringPointLongitude	-97.21,168.09,153.17,130.20,-36.87,150.36,137.15,70.33	
PGEName	Amount of Precipitation	
PGEVersion	600	
PGEAlgorismDeveloper	Liu	
InputPointer	A2AMS03071129MA_P01B0000000.00	

Attribute Name	Contents / Examples	Remarks
ProcessingCenter	JAXA/EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	236	
StopOrbitNumber	236	
EquatorCrossingLongitude	150.71	
EquatorCrossingDate	2003-07-11	
EquatorCrossingTime	12:24:00.06Z	
OrbitDirection	ASCENDING	
EphemerisGranulePointer	EL20030711	
EphemerisType	GPS	
PlatformShortName	ADEOS-2	
SensorShortName	AMSR	
NumberofScan	2020	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	continuation	
QALocationPacketDiscontinuity	discontinuation	
NumberofPackets	32656	
NumberofInputFiles	2	
NumberofMissingPackets	32	
NumberofGoodPackets	32624	

Attribute Name	Contents / Examples	Remarks
ReceivingCondition	blank	
EphemerisQA	OK or NG	
AutomaticQAFlag	PASS or FAIL	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, ¥'PASS¥' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutofBoundsData	0	

Table 5.3-6 AMSR Level 2 Variables

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data_Quality		byte	nscan*196			
Geophysical_Quantity_Data	Precipitation	short	nscan*196	0.1	mm/h	Missing: -9999, Data Range: 0~1000
	Cloud Liquid Water			0.001	kg/m^2	Missing: -9999, Data Range: 0~1000
	Sea Ice Concentration			1.0	%	Missing: -9999, Data Range: 0~100
	Soil Moisture			0.001	g/cm^3	Missing: -9999
	Sea Surface Temperature			0.1	degrees_Celsius	Missing: -9999, Data Range: -20~350
	Sea Surface Wind Speed			0.1	m/s	Missing: -9999, Data Range: 0~300
	Snow Water Equivalence			1.0	mm	Missing: -9999, Data Range: 0~10000
	Water Vapor			0.1	kg/m^2	Missing: -9999, Data Range: 0~700
Position_in_Orbit		double	nscan			
Lat_of_observation_point_except_89B		short	nscan*196	0.01	degrees_north	
Long_of_observation_point_except_89B		short	nscan*196	0.01	degrees_east	
Scan_Time_Table		double	nscan		days since 1993-1-1 0:0:0	

5.3.1.3 Level 3

Global attributes of AMSR Level 3 are shown in the following table.

Table 5.3-7 AMSR Level 3 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
Short_Name	AMSR_L3	Standard Product: Short Name
GeophysicalName	Brightness temperature (6GHz H)	
VersionID	000	
SizeMBECSDataGranule	1.99	
Local_Granule_ID	A2AMS030710D_P306H000000E0	Standard Product: Local Granule ID
ProcessingLevelID	L3	
ProductionDateTime	2008-04-14T03:05:15.00Z	
RangeBeginningTime	00:00:00.23Z	
RangeBeginningDate	2003-07-10	
RangeEndingTime	23:59:59.99Z	
RangeEndingDate	2003-07-10	
InputPointer	A2AMS03070902MD_P01B0000000.00¥nA2AMS03071006MD_P01B0000000.00¥nA2AMS03071018MD_P01B0000000.00¥nA2AMS03071026MD_P01B0000000.00¥nA2AMS03071034MD_P01B0000000.00¥nA2AMS03071038MD_P01B0000000.00¥nA2AMS03071042MD_P01B0000000.00¥nA2AMS03071046MD_P01B0000000.00¥nA2AMS03071050MD_P01B0000000.00¥nA2A	

Attribute Name	Contents / Examples	Remarks
	MS03071054MD_P01B0000000.00¥nA2AMS03071001MD_P01 B0000000.00¥nA2AMS03071010MD_P01B0000000.00¥nA2AM S03071014MD_P01B0000000.00¥nA2AMS03071022MD_P01B 0000000.00¥nA2AMS03071030MD_P01B0000000.00	
StartOrbitNumber	215	
StopOrbitNumber	229	
OrbitDirection	DESCENDING	
PlatformShortName	ADEOS-2	
SensorShortName	AMSR	
ECSDataModel	B.0	
PGENAME	AMSR Level3 Software	
PGEVersion	Version 2.0	
ProcessingCenter	JAXA/EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	

(1) Brightness Temperature, Equirectangular Projection

Variables of AMSR Level 3 (Brightness Temperature, Equirectangular Projection) are shown in the following table.

Table 5.3-8 AMSR Level 3 Variables (Brightness Temperature, Equirectangular projection)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	721*1440	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
Data50_3GHz_V_Mean_for_Brightness_Temperature					
Data52_8GHz_V_Mean_for_Brightness_Temperature					
Data89_0GHz_H_Mean_for_Brightness_Temperature					
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	short	721*1440	0.01	degrees_north	Latitude for acquired data.
lon	short	721*1440	0.01	degrees_east	Longitude for acquired data.

(2) Brightness Temperature, Polar Stereo Projection (North), except 89GHz

Variables of AMSR Level 3 (Brightness Temperature, Polar Stereo Projection (North), except 89GHz) are shown in the following table.

Table 5.3-9 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (North), except 89GHz)

Variables Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	448*304	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
Data50_3GHz_V_Mean_for_Brightness_Temperature					
Data52_8GHz_V_Mean_for_Brightness_Temperature					
lat	float	448*304	1.0	degrees_north	Latitude for acquired data.
lon	float	448*304	1.0	degrees_east	Longitude for acquired data.

(3) Brightness Temperature, Polar Stereo Projection (North), 89GHz

Variables of AMSR Level 3 (Brightness Temperature, Polar Stereo Projection (North), 89GHz) are shown in the following table.

Table 5.3-10 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (North), 89GHz)

Variables Name	Data Type	Dimension	Scale Factor	Data Unit	Remark
Data89_0GHz_H_Mean_for_Brightness_Temperature	short	896*608	0.1	K	Missing: -9999, Data Range: 0~3500
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	float	896*608	1.0	degrees_north	Latitude for acquired data.
lon	float	896*608	1.0	degrees_east	Longitude for acquired data.

(4) Brightness Temperature, Polar Stereo Projection (South), except 89GHz

Variables of AMSR Level 3 (Brightness Temperature, Polar Stereo Projection (South), except 89GHz) are shown in the following table.

Table 5.3-11 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (South), except 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	332*316	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
Data50_3GHz_V_Mean_for_Brightness_Temperature					
Data52_8GHz_V_Mean_for_Brightness_Temperature					
lat	float	332*316	1.0	degrees_north	Latitude for acquired data.
lon	float	332*316	1.0	degrees_east	Longitude for acquired data.

(5) Brightness Temperature, Polar Stereo Projection (South), 89GHz

Variables of AMSR Level 3 (Brightness Temperature, Polar Stereo Projection (South), 89GHz) are shown in the following table.

Table 5.3-12 AMSR Level 3 Variables (Brightness Temperature, Polar Stereo Projection (South), 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data89_0GHz_H_Mean_for_Brightness_Temperature	short	664*632	0.1	K	Missing: -9999, Data Range: 0~3500
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	float	664*632	1.0	degrees_north	Latitude for acquired data.
lon	float	664*632	1.0	degrees_east	Longitude for acquired data.

(6) Physical Quantity, Equirectangular Projection

Variables of AMSR Level 3 (Physical Quantity, Equirectangular Projection) are shown in the following table.

Table 5.3-13 AMSR Level 3 Variables (Physical Quantity, Equirectangular Projection)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	Precipitation	short	721*1440	0.1	mm/h	Missing: -9999, Data Range: 0~1000
	Cloud Liquid Water			0.001	kg/m ²	Missing: -9999, Data Range: 0~1000
	Soil Moisture			0.001	g/cm ³	Missing: -9999
	Sea Surface Temperature			0.1	degrees_Celsius	Missing: -9999, Data Range: 20~350
	Sea Surface Wind Speed			0.1	m/s	Missing: -9999, Data Range: 0~300
	Snow Water Equivalence			1.0	mm	Missing: -9999, Data Range: 0~10000
	Water Vapor			0.1	kg/m ²	Missing: -9999, Data Range: 0~700
lat	short	721*1440	0.01	degrees_north	Latitude for acquired data.	
lon	short	721*1440	0.01	degrees_east	Longitude for acquired data.	

(7) Sea Ice Concentration, Polar Stereo Projection (North)

Variables of AMSR Level 3 (Sea Ice Concentration, Polar Stereo Projection (North)) are shown in the following table.

Table 5.3-14 AMSR Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (North))

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	448*304	1.0	%	Missing: -9999, Data Range: 0~100
lat	float	448*304	1.0	degrees_north	Latitude for acquired data.
lon	float	448*304	1.0	degrees_east	Longitude for acquired data.

(8) Sea Ice Concentration, Polar Stereo Projection (South)

Variables of AMSR Level 3 (Sea Ice Concentration, Polar Stereo Projection (South)) are shown in the following table.

Table 5.3-15 AMSR Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (South))

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	332*316	1.0	%	Missing: -9999, Data Range: 0~100
lat	float	332*316	1.0	degrees_north	Latitude for acquired data.
lon	float	332*316	1.0	degrees_east	Longitude for acquired data.

(9) Snow Water Equivalence, Polar Stereo Projection (North)

Variables of AMSR Level 3 (Snow Water Equivalence, Polar Stereo Projection (North)) are shown in the following table.

Table 5.3-16 AMSR Level 3 Variables (Snow Water Equivalence, Polar Stereo Projection (North))

Variable	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	573*431	1.0	mm	Missing: -9999, Data Range: 0~100
lat	float	573*431	1.0	degrees_north	Latitude for acquired data.
lon	float	573*431	1.0	degrees_east	Longitude for acquired data.

5.3.2 AMSR-E

5.3.2.1 Level 1

(1) L1A

Output specification of AMSR-E Level 1 (L1A) is shown in the following tables.

Table 5.3-17 AMSR-E L1A Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSREL1A	
VersionID	RELEASE2	
SizeMBECSDataGranule	37.7	
LocalGranuleID	P1AME030101061MA_P01A0000000	
ProcessingLevelID	L1A	
ReprocessingActual	blank or 2002-08-10	
ProductionDateTime	2005-05-19T07:21:04.000Z	
RangeBeginningTime	12:23:47.96Z	
RangeBeginningDate	2003-01-01	
RangeEndingTime	13:13:47.74Z	
RangeEndingDate	2003-01-01	
GringPointLatitude	-73.03,-83.34,-36.90,23.01,73.79,85.23,25.24,-34.35	
GringPointLongitude	130.25,-167.40,9.77,-2.74,-68.14,-4.79,13.00,27.70	
PGEName	L1A_Process_Software	

Attribute Name	Contents / Examples	Remarks
PGEVersion	222*22****22220222	
InputPointer	R1540402SKS0300113073900.RBD,R1540402SGS03001144705 00.RBD	
ProcessingCenter	JAXA EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	3528	
StopOrbitNumber	3529	
EquatorCrossingLongitude	10.38	
EquatorCrossingDate	2003-01-01	
EquatorCrossingTime	12:50:56.84Z	
OrbitDirection	ASCENDING	
EphemerisGranulePointer	20030101.ELMD	
EphemerisType	ELMD	
PlatformShortName	EOS-PM1	
SensorShortName	AMSR-E	
NumberofScans	2001	
NumberofMissingScans	0	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	DEAD Encounter	
QALocationPacketDiscontinuity	continuation	
NumberofPackets	32016	

Attribute Name	Contents / Examples	Remarks
NumberOfInputFiles	2	
NumberOfMissingPackets	0	
NumberOfGoodPackets	32016	
ReceivingCondition	blank	
EphemerisQA	OK	
AutomaticQAFlag	PASS	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, 'PASS' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutOfBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	blank	
SatelliteOrbit	Sun-synchronous_sub-recurrent	
Altitude	707.9km	

Attribute Name	Contents / Examples	Remarks
OrbitSemiMajorAxis	7085.858km	
OrbitEccentricity	0.00095	
OrbitArgumentPerigee	106.480deg	
OrbitInclination	98.15deg	
OrbitPeriod	98minutes	
RevisitTime	16days	
AMSRChannel	6.925GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,50.3GHz,52.8GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,50.3G-0,52G-0,89GA-3000MHz,89GB-3000MH	
AMSRBeamWidth	6G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,50.3G-0,52G-0,89GA-0.15deg,89GB-0.15deg	
OffNadir	47.0deg : 89GB, 47.5deg : others	
SpatialResolution_AzXEI_	6G-43.2kmX75.4km,10G-29.4kmX51.4km,18G-15.7kmX27.4km,23G-18.1kmX31.5km,36G-8.2kmX14.4km,50.3G-3.7kmX6.5km,89GB-3.5kmX5.9km	Standard Product: SpatialResolution (AzXEI)
ScanningPeriod	1.5sec	
SwathWidth	1450km	
DynamicRange	2.7K-340K	
DataFormatType	NCSA-HDF	
HDFFormatVersion	Ver4.1r2	
EllipsoidName	WGS84	

Attribute Name	Contents / Examples	Remarks
SemiMajorAxisofEarth	6378.1km	
FlatteningRatioofEarth	0.00335	
SensorAlignment	Rx=0.00000,Ry=0.00000,Rz=0.00000	
ThermistorCountRangeWx	60,585,770,872,924,952,961,1023	
ThermistorConversionTableWa	0.000000,0.000015,0.000161,0.000618,0.002331,0.011459,0.010101,0.000000	
ThermistorConversionTableWb	0.000000,0.056460,-0.109878,-0.819170,-3.801865,-20.783040,-18.212120,0.000000	
ThermistorConversionTableWc	-35.000000,-38.250000,9.220000,284.170000,1582.770000,9480.000000,8263.350000,90.000000	
ThermistorConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000	
Platinum_1CountRangeWx	1168,1296,1536,1752,4095	Standard Product: Platinum#1CountRangeWx
Platinum_1ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#1ConversionTableWa
Platinum_1ConversionTableWb	0.000000,0.039000,0.042000,0.039000,0.042000	Standard Product: Platinum#1ConversionTableWb
Platinum_1ConversionTableWc	-35.000000,-80.625000,-84.000000,-80.000000,-84.667000	Standard Product: Platinum#1ConversionTableWc
Platinum_1ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#1ConversionTableWd
Platinum_2CountRangeWx	272,1536,1792,2032,2288,3248,3712,4095	Standard Product: Platinum#2CountRangeWx
Platinum_2ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#2ConversionTableWa
Platinum_2ConversionTableWb	0.000000,0.078300,0.078000,0.083000,0.078000,0.083000,0.085300,0.000000	Standard Product: Platinum#2ConversionTableWb

Attribute Name	Contents / Examples	Remarks
Platinum_2ConversionTableWc	-140.000000,-161.440000,-160.000000,-169.333000,-158.750000, -170.667000,-177.640000,140.000000	Standard Product: Platinum#2ConversionTableWc
Platinum_2ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#2ConversionTableWd
Platinum_3CountRangeWx	349,1454,2000,2555,3059,3566,4020,4095	Standard Product: Platinum#3CountRangeWx
Platinum_3ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#3ConversionTableWa
Platinum_3ConversionTableWb	0.000000,0.009100,0.009100,0.009100,0.009900,0.009900,0.008 500,0.000000	Standard Product: Platinum#3ConversionTableWb
Platinum_3ConversionTableWc	10.000000,6.845000,6.803800,6.803800,4.719500,4.719500,9.83 5000,44.000000	Standard Product: Platinum#3ConversionTableWc
Platinum_3ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#3ConversionTableWd
CoefficientAvv	6G-1.037,10G-1.032,18G-1.025,23G-1.032,36G-1.029,50G-0.000, 89GA-1.025,89GB-1.029	
CoefficientAhv	6G--0.003,10G--0.003,18G--0.003,23G--0.004,36G--0.004,50G-0. 000,89GA--0.003,89GB--0.004	
CoefficientAov	6G--0.034,10G--0.029,18G--0.022,23G--0.028,36G--0.024,50G-0. 000,89GA--0.022,89GB--0.024	
CoefficientAhh	6G-1.037,10G-1.031,18G-1.025,23G-1.034,36G-1.029,52G-0.000, 89GA-1.028,89GB-1.031	
CoefficientAvh	6G--0.003,10G--0.002,18G--0.003,23G--0.006,36G--0.004,52G-0.	

Attribute Name	Contents / Examples	Remarks
	000,89GA--0.006,89GB--0.006	
CoefficientAoh	6G--0.034,10G--0.029,18G--0.022,23G--0.028,36G--0.024,52G-0.000,89GA--0.022,89GB--0.024	
CSMtemperature	6GV-2.800, 6GH-2.800, 10GV-2.800, 10GH-2.800, 18GV-2.800, 18GH-2.800, 23GV-2.800, 23GH-2.800, 36GV-2.800, 36GH-2.800, 50GV-0.000, 52GV-0.000, 89GAV-2.800, 89GAH-2.800, 89GBV-2.800, 89GBH-2.800	
CoRegistrationParameterA1	6G-1.15500, 10G-0.85700, 18G-0.81800, 23G-0.80800, 36G-0.72200, 50G-0.00000	
CoRegistrationParameterA2	6G--0.67800, 10G--0.42900, 18G--0.03100, 23G-0.18500, 36G--0.06900, 50G-0.00000	
CalibrationCurveCoefficient_1	6GV--0.2099101, 6GH--0.2054645, 10GV--0.0580782, 10GH--0.0103279, 18GV--0.0853578, 18GH--0.0435186, 23GV--0.1288643, 23GH--0.1288643, 36GV--0.0475611, 36GH--0.0536047, 50GV--0.0000000, 52GV-0.0000000, 89GAV--0.0278573, 89GAH--0.0447590, 89GBV--0.0273764, 89GBH--0.0316265	Standard Product: CalibrationCurveCoefficient#1
CalibrationCurveCoefficient_2	6GV-1.0756783, 6GH-1.0740756, 10GV-1.0209393, 10GH-1.0037236, 18GV-1.0307711, 18GH-1.0156885, 23GV-1.0464586, 23GH-1.0464586, 36GV-1.0171470, 36GH-1.0193259, 50GV-0.0000000, 52GV-0.0000000, 89GAV-1.0100426, 89GAH-1.0161356, 89GBV-1.0098693, 89GBH-1.0114014	Standard Product: CalibrationCurveCoefficient#2
CalibrationCurveCoefficient_3	6GV--0.0002537, 6GH--0.0002483, 10GV--0.0000704, 10GH--0.0000000, 18GV--0.0000000, 18GH--0.0000000, 23GV--0.0000000, 23GH--0.0000000, 36GV--0.0000000, 36GH--0.0000000, 50GV--0.0000000, 52GV--0.0000000, 89GAV--0.0000000, 89GAH--0.0000000, 89GBV--0.0000000, 89GBH--0.0000000	Standard Product: CalibrationCurveCoefficient#3

Attribute Name	Contents / Examples	Remarks
	0000125, 18GV-0.0001022, 18GH-0.0000522, 23GV-0.0001556, 23GH-0.0001556, 36GV-0.0000575, 36GH-0.0000648, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000334, 89GAH-0.0000537, 89GBV-0.0000329, 89GBH-0.0000379	
CalibrationCurveCoefficient_4	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#4
CalibrationCurveCoefficient_5	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.0000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#5
CalibrationMethod	RxTemperatureReferenced,SpillOver,CSMInterpolation,Absolute89GPositioning,NonlinearityCorrection	
HTSCorrectionParameterVersion	ver0001	
SpillOverParameterVersion	ver0001	
CSMInterpolationParameterVersion	ver0001	
Absolute89GPositioningParameterVersion	ver0001	

Table 5.3-18 AMSR-E L1A Variables

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Position_in_Orbit	double	nscan	1.0		
Data6GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data6GHz_H_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data10_65GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data10_65GHz_H_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data18_7GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data18_7GHz_H_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data23_8GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data23_8GHz_H_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data36_5GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data36_5GHz_H_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data50_3GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data52_8GHz_V_Observation_Count_Data	short	nscan*243	1.0	Count	Missing: -9999
Data89_0GHz_V_A_Observation_Count_Data	short	nscan*486	1.0	Count	Missing: -9999
Data89_0GHz_H_A_Observation_Count_Data	short	nscan*486	1.0	Count	Missing: -9999
Data89_0GHz_V_B_Observation_Count_Data	short	nscan*486	1.0	Count	Missing: -9999
Data89_0GHz_H_B_Observation_Count_Data	short	nscan*486	1.0	Count	Missing: -9999
Hot_Load_Count_6_to_52	short	12*nscan*16	1.0	Count	Missing: 0
Hot_Load_Count_89	short	4*nscan*32	1.0	Count	Missing: 0
Cold_Sky_Mirror_Count_6_to_52	short	12*nscan*16	1.0	Count	Missing: 0

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Cold_Sky_Mirror_Count_89	short	4*nscan*32	1.0	Count	Missing: 0
Antenna_Temp_Coef_Of_Sl_	float	nscan*32	1.0	K+K/Cnt	
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Attitude_Data	float	nscan*3	1.0	degrees	
Lat_of_Observation_Point_Except_89B	short	nscan*486	0.01	degrees_north	
Long_of_Observation_Point_Except_89B	short	nscan*486	0.01	degrees_east	
Lat_of_Observation_Point_for_89B	short	nscan*486	0.01	degrees_north	
Long_of_Observation_Point_for_89B	short	nscan*486	0.01	degrees_east	
Sun_Azimuth	short	nscan*243	0.1	degrees	
Sun_Elevation	short	nscan*243	0.1	degrees	
Earth_Incidence	byte	nscan*243	0.02	degrees	
Earth_Azimuth	short	nscan*243	0.01	degrees	
Land_Ocean_Flag_for_6_10_18_23_36_50_89A	byte	7*nscan*243	1.0	%	
Observation_Supplement	short	nscan*27	1.0		
SPC_Temperature_Count	short	nscan*20	1.0	Count	
SPS_Temperature_Count	short	nscan*32	1.0	Count	
Data_Quality	float	nscan*128	1.0		
Interpolation_Flag_6_to_52	byte	12*nscan*16	1.0		
Interpolation_Flag_89	byte	4*nscan*32	1.0		
Spill_Over	float	2*200*243	1.0	mV	

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
lat	short	nscan*243	0.01	degrees_north	Latitude for acquired data except 89GHz.
lon	short	nscan*243	0.01	degrees_east	Longitude for acquired data except 89GHz.

(2) L1B

Output specification of AMSR-E Level 1 (L1B) is shown in the following tables.

Table 5.3-19 AMSR-E L1B Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSREL1B	
VersionID	RELEASE2	
SizeMBECSDataGranule	31.4	
LocalGranuleID	P1AME030101141MA_P01B0000000	
ProcessingLevelID	L1B	
ReprocessingActual	blank or 2002-08-10	
ProductionDateTime	2005-05-19T08:46:44.000Z	
RangeBeginningTime	20:38:12.79Z	
RangeBeginningDate	2003-01-01	
RangeEndingTime	21:28:11.07Z	
RangeEndingDate	2003-01-01	
GringPointLatitude	-74.39,-85.04,-35.12,24.74,74.90,86.64,26.79,-32.86	
GringPointLongitude	1.39,58.74,-113.12,-125.95,162.76,-146.24,-111.57,-97.30	
PGENAME	L1B_Process_Software	
PGEVersion	222*22****22220222	
InputPointer	R1540402AGS0300121190600.RBD,R1540402AGS03002011508 00.RBD	

Attribute Name	Contents / Examples	Remarks
ProcessingCenter	JAXA EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	3533	
StopOrbitNumber	3534	
EquatorCrossingLongitude	-113.21	
EquatorCrossingDate	2003-01-01	
EquatorCrossingTime	21:05:20.23Z	
OrbitDirection	ASCENDING	
EphemerisGranulePointer	20030101.ELMD	
EphemerisType	ELMD	
PlatformShortName	EOS-PM1	
SensorShortName	AMSR-E	
NumberOfScans	2000	
NumberOfMissingScans	0	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	DEAD Encounter	
QALocationPacketDiscontinuity	continuation	
NumberOfPackets	32000	
NumberOfInputFiles	2	
NumberOfMissingPackets	0	

Attribute Name	Contents / Examples	Remarks
NumberOfGoodPackets	32000	
ReceivingCondition	blank	
EphemerisQA	OK	
AutomaticQAFlag	PASS	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, 'PASS' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutofBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	blank	
SatelliteOrbit	Sun-synchronous_sub-recurrent	
Altitude	707.9km	
OrbitSemiMajorAxis	7085.858km	
OrbitEccentricity	0.00095	

Attribute Name	Contents / Examples	Remarks
OrbitArgumentPerigee	106.480deg	
OrbitInclination	98.15deg	
OrbitPeriod	98minutes	
RevisitTime	16days	
AMSRChannel	6.925GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,50.3GHz,52.8GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,50.3G-0.52G-0.89GA-3000MHz,89GB-3000MH	
AMSRBeamWidth	6G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,50.3G-0.52G-0.89GA-0.15deg,89GB-0.15deg	
OffNadir	47.0deg : 89GB, 47.5deg : others	
SpatialResolution_AzXEl_	6G-43.2kmX75.4km,10G-29.4kmX51.4km,18G-15.7kmX27.4km,23G-18.1kmX31.5km,36G-8.2kmX14.4km,50.3G-3.7kmX6.5km,89GB-3.5kmX5.9km	Standard Product: SpatialResolution (AzXEl)
ScanningPeriod	1.5sec	
SwathWidth	1450km	
DynamicRange	2.7K-340K	
DataFormatType	NCSA-HDF	
HDFFormatVersion	Ver4.1r2	
EllipsoidName	WGS84	
SemiMajorAxisofEarth	6378.1km	
FlatteningRatioofEarth	0.00335	

Attribute Name	Contents / Examples	Remarks
SensorAlignment	Rx=0.00000,Ry=0.00000,Rz=0.00000	
ThermistorCountRangeWx	60,585,770,872,924,952,961,1023	
ThermistorConversionTableWa	0.000000,0.000015,0.000161,0.000618,0.002331,0.011459,0.010101,0.000000	
ThermistorConversionTableWb	0.000000,0.056460,-0.109878,-0.819170,-3.801865,-20.783040,-18.212120,0.000000	
ThermistorConversionTableWc	-35.000000,-38.250000,9.220000,284.170000,1582.770000,9480.000000,8263.350000,90.000000	
ThermistorConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000	
Platinum_1CountRangeWx	1168,1296,1536,1752,4095	Standard Product: Platinum#1CountRangeWx
Platinum_1ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#1ConversionTableWa
Platinum_1ConversionTableWb	0.000000,0.039000,0.042000,0.039000,0.042000	Standard Product: Platinum#1ConversionTableWb
Platinum_1ConversionTableWc	-35.000000,-80.625000,-84.000000,-80.000000,-84.667000	Standard Product: Platinum#1ConversionTableWc
Platinum_1ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#1ConversionTableWd
Platinum_2CountRangeWx	272,1536,1792,2032,2288,3248,3712,4095	Standard Product: Platinum#2CountRangeWx
Platinum_2ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000000	Standard Product: Platinum#2ConversionTableWa
Platinum_2ConversionTableWb	0.000000,0.078300,0.078000,0.083000,0.078000,0.083000,0.085300,0.000000	Standard Product: Platinum#2ConversionTableWb
Platinum_2ConversionTableWc	-140.000000,-161.440000,-160.000000,-169.333000,-158.750000,-170.667000,-177.640000,140.000000	Standard Product: Platinum#2ConversionTableWc

Attribute Name	Contents / Examples	Remarks
Platinum_2ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#2ConversionTableWd
Platinum_3CountRangeWx	349,1454,2000,2555,3059,3566,4020,4095	Standard Product: Platinum#3CountRangeWx
Platinum_3ConversionTableWa	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#3ConversionTableWa
Platinum_3ConversionTableWb	0.000000,0.009100,0.009100,0.009100,0.009900,0.009900,0.008 500,0.000000	Standard Product: Platinum#3ConversionTableWb
Platinum_3ConversionTableWc	10.000000,6.845000,6.803800,6.803800,4.719500,4.719500,9.83 5000,44.000000	Standard Product: Platinum#3ConversionTableWc
Platinum_3ConversionTableWd	0.000000,0.000000,0.000000,0.000000,0.000000,0.000000,0.000 000,0.000000	Standard Product: Platinum#3ConversionTableWd
CoefficientAvv	6G-1.037,10G-1.032,18G-1.025,23G-1.032,36G-1.029,50G-0.000, 89GA-1.025,89GB-1.029	
CoefficientAhv	6G--0.003,10G--0.003,18G--0.003,23G--0.004,36G--0.004,50G-0. 000,89GA--0.003,89GB--0.004	
CoefficientAov	6G--0.034,10G--0.029,18G--0.022,23G--0.028,36G--0.024,50G-0. 000,89GA--0.022,89GB--0.024	
CoefficientAhh	6G-1.037,10G-1.031,18G-1.025,23G-1.034,36G-1.029,52G-0.000, 89GA-1.028,89GB-1.031	
CoefficientAvh	6G--0.003,10G--0.002,18G--0.003,23G--0.006,36G--0.004,52G-0. 000,89GA--0.006,89GB--0.006	
CoefficientAoh	6G--0.034,10G--0.029,18G--0.022,23G--0.028,36G--0.024,52G-0.	

Attribute Name	Contents / Examples	Remarks
	000,89GA--0.022,89GB--0.024	
CSMtemperature	6GV-2.800, 6GH-2.800, 10GV-2.800, 10GH-2.800, 18GV-2.800, 18GH-2.800, 23GV-2.800, 23GH-2.800, 36GV-2.800, 36GH-2.800, 50GV-0.000, 52GV-0.000, 89GAV-2.800, 89GAH-2.800, 89GBV-2.800, 89GBH-2.800	
CoRegistrationParameterA1	6G-0.15500, 10G--0.14300, 18G--0.18200, 23G--0.19200, 36G--0.27800, 50G-0.00000	
CoRegistrationParameterA2	6G--0.67800, 10G--0.42900, 18G--0.03100, 23G-0.18500, 36G--0.06900, 50G-0.00000	
CalibrationCurveCoefficient_1	6GV--0.2099101, 6GH--0.2054645, 10GV--0.0580782, 10GH--0.0103279, 18GV--0.0853578, 18GH--0.0435186, 23GV--0.1288643, 23GH--0.1288643, 36GV--0.0475611, 36GH--0.0536047, 50GV--0.0000000, 52GV-0.0000000, 89GAV--0.0278573, 89GAH--0.0447590, 89GBV--0.0273764, 89GBH--0.0316265	Standard Product: CalibrationCurveCoefficient#1
CalibrationCurveCoefficient_2	6GV-1.0756783, 6GH-1.0740756, 10GV-1.0209393, 10GH-1.0037236, 18GV-1.0307711, 18GH-1.0156885, 23GV-1.0464586, 23GH-1.0464586, 36GV-1.0171470, 36GH-1.0193259, 50GV-0.0000000, 52GV-0.0000000, 89GAV-1.0100426, 89GAH-1.0161356, 89GBV-1.0098693, 89GBH-1.0114014	Standard Product: CalibrationCurveCoefficient#2
CalibrationCurveCoefficient_3	6GV--0.0002537, 6GH--0.0002483, 10GV--0.0000704, 10GH--0.0000125, 18GV--0.0001022, 18GH--0.0000522, 23GV--0.0001556, 23GH--0.0001556, 36GV--0.0000575, 36GH--0.0000648, 50	Standard Product: CalibrationCurveCoefficient#3

Attribute Name	Contents / Examples	Remarks
	GV-0.0000000, 52GV-0.0000000, 89GAV--0.0000334, 89GAH--0.0000537, 89GBV--0.0000329, 89GBH--0.0000379	
CalibrationCurveCoefficient_4	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#4
CalibrationCurveCoefficient_5	6GV-0.0000000, 6GH-0.0000000, 10GV-0.0000000, 10GH-0.000000, 18GV-0.0000000, 18GH-0.0000000, 23GV-0.0000000, 23GH-0.0000000, 36GV-0.0000000, 36GH-0.0000000, 50GV-0.0000000, 52GV-0.0000000, 89GAV-0.0000000, 89GAH-0.0000000, 89GBV-0.0000000, 89GBH-0.0000000	Standard Product: CalibrationCurveCoefficient#5
CalibrationMethod	RxTemperatureReferenced,SpillOver,CSMInterpolation,Absolute89GPositioning,NonlinearityCorrection	
HTSCorrectionParameterVersion	ver0001	
SpillOverParameterVersion	ver0001	
CSMInterpolationParameterVersion	ver0001	
Absolute89GPositioningParameterVersion	ver0001	

Table 5.3-20 AMSR-E L1B Variables

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Position_in_Orbit	double	nscan	1.0		
Data6GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data6GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data10_65GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data10_65GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data18_7GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data18_7GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data23_8GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data23_8GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data36_5GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data36_5GHz_H_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data50_3GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data52_8GHz_V_Brightness_Temperature	short	nscan*196	0.1	K	Missing: -9999
Data89_0GHz_V_A_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_H_A_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_V_B_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Data89_0GHz_H_B_Brightness_Temperature	short	nscan*392	0.1	K	Missing: -9999
Hot_Load_Count_6_to_52	short	12*nscan*16	1.0	Count	Missing: 0
Hot_Load_Count_89	short	4*nscan*32	1.0	Count	Missing: 0
Cold_Sky_Mirror_Count_6_to_52	short	12*nscan*16	1.0	Count	Missing: 0

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Cold_Sky_Mirror_Count_89	short	4*nscan*32	1.0	Count	Missing: 0
Antenna_Temp_Coef_Of_SI_	float	nscan*32	1.0	K+K/Cnt	
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Attitude_Data	float	nscan*3	1.0	degrees	
Lat_of_Observation_Point_Except_89B	short	nscan*392	0.01	degrees_north	
Long_of_Observation_Point_Except_89B	short	nscan*392	0.01	degrees_east	
Lat_of_Observation_Point_for_89B	short	nscan*392	0.01	degrees_north	
Long_of_Observation_Point_for_89B	short	nscan*392	0.01	degrees_east	
Sun_Azimuth	short	nscan*196	0.1	degrees	
Sun_Elevation	short	nscan*196	0.1	degrees	
Earth_Incidence	byte	nscan*196	0.02	degrees	
Earth_Azimuth	short	nscan*196	0.01	degrees	
Land_Ocean_Flag_for_6_10_18_23_36_50_89A	byte	7*nscan*196	1.0	%	
Observation_Supplement	short	nscan*27	1.0		
SPC_Temperature_Count	short	nscan*20	1.0	Count	
SPS_Temperature_Count	short	nscan*32	1.0	Count	
Data_Quality	float	nscan*128	1.0		
Interpolation_Flag_6_to_52	byte	12*nscan*16	1.0		
Interpolation_Flag_89	byte	4*nscan*32	1.0		
Spill_Over	float	2*200*243	1.0	mV	

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
lat	short	nscan*196	0.01	degrees_north	Latitude for acquired data except 89GHz.
lon	short	nscan*196	0.01	degrees_east	Longitude for acquired data except 89GHz.

5.3.2.2 Level 2

Output specification of AMSR-E Level 2 is shown in the following tables.

Table 5.3-21 AMSR-E Level 2 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ShortName	AMSR-E-L2	
GeophysicalName	Sea Surface Wind	
VersionID	600	
SizeMBECSDataGranule	2.62	
Local_Granule_ID	P1AME030101157D_P2SSW000600	Standard Product: Local Granule ID
ProcessingLevelID	L2	
ProductionDateTime	2008-5-16-T02:51:35.00Z	
RangeBeginningTime	21:27:56.13Z	
RangeBeginningDate	2003-01-01	
RangeEndingTime	22:17:18.42Z	
RangeEndingDate	2003-01-01	
GringPointLatitude	85.82,34.61,-24.66,-74.60,74.72,32.45,-26.66,-85.80	
GringPointLongitude	-140.27,54.68,41.77,-26.09,166.01,70.15,56.25,30.87	
PGEName	Sea Surface Wind	
PGEVersion	600	
PGEAlgorismDeveloper	Kelly	
InputPointer	P1AME030101157MD_P01B0000000.00	

Attribute Name	Contents / Examples	Remarks
ProcessingCenter	JAXA/EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	
StartOrbitNumber	3534	
StopOrbitNumber	3534	
EquatorCrossingLongitude	54.44	
EquatorCrossingDate	2003-01-01	
EquatorCrossingTime	21:54:42.52Z	
OrbitDirection	DESCENDING	
EphemerisGranulePointer	20030101.ELMD	
EphemerisType	ELMD	
PlatformShortName	EOS-PM1	
SensorShortName	AMSR-E	
NumberofScan	1976	
ECSDataModel	B.0	
DiscontinuityVirtualChannelCounter	DEAD Encounter	
QALocationPacketDiscontinuity	continuation	
NumberofPackets	31952	
NumberofInputFiles	2	
NumberofMissingPackets	0	
NumberofGoodPackets	31952	

Attribute Name	Contents / Examples	Remarks
ReceivingCondition	blank	
EphemerisQA	OK	
AutomaticQAFlag	PASS or FAIL	
AutomaticQAFlagExplanation	1.MissingDataQA:Less than 20 is available->OK,2.AntennaRotationQA:Less than 20 is available->OK,3.HotCalibrationSourceQA:Less than 20 is available->OK,4.AttitudeDataQA:Less than 20 is available->OK,5.EphemerisDataQA:Less than 20 is available->OK,6.QualityofGeometricInformationQA:Less than 0 is available->OK,7.BrightnessTemperatureQA:Less than 20 is available->OK,All items are OK, 'PASS' is employed	
ScienceQualityFlag	blank	
ScienceQualityFlagExplanation	blank	
QAPercentMissingData	0	
QAPercentOutofBoundsData	0	

Table 5.3-22 AMSR-E Level 2 Variables

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data_Quality		byte	nscan*196			
Geophysical_Quantity_Data	Precipitation	short	nscan*196	0.1	mm/h	Missing: -9999, Data Range: 0~1000
	Cloud Liquid Water			0.001	kg/m^2	Missing: -9999, Data Range: 0~1000
	Sea Ice Concentration			1.0	%	Missing: -9999, Data Range: 0~100
	Soil Moisture			0.001	g/cm^3	Missing: -9999
	Sea Surface Temperature			0.1	degrees_Celsius	Missing: -9999, Data Range: -20~350
	Sea Surface Wind Speed			0.1	m/s	Missing: -9999, Data Range: 0~300
	Snow Water Equivalence			1.0	mm	Missing: -9999, Data Range: 0~10000
	Water Vapor			0.1	kg/m^2	Missing: -9999, Data Range: 0~700
Position_in_Orbit		double	nscan			
Lat_of_observation_point_except_89B		short	nscan*196	0.01	degrees_north	
Long_of_observation_point_except_89B		short	nscan*196	0.01	degrees_east	
Scan_Time_Table		double	nscan		days since 1993-1-1 0:0:0	

5.3.2.3 Level 3

Global attributes of AMSR-E Level 3 are shown in the following table.

Table 5.3-23 AMSR-E Level 3 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
Short_Name	AMSR-E_L3	Standard Product: Short Name
GeophysicalName	Snow water equivalent	
VersionID	600	
SizeMBECSDataGranule	0.48	
Local_Granule_ID	P1AME030100A_P3SWE000600PN	Standard Product: Local Granule ID
ProcessingLevelID	L3	
ProductionDateTime	2008-05-17T04:17:04.00Z	
RangeBeginningTime	00:00:00.50Z	
RangeBeginningDate	2003-01-01	
RangeEndingTime	23:19:03.68Z	
RangeEndingDate	2003-01-31	
InputPointer	P1AME030101A_P3SWE000600PN.00¥nP1AME030102A_P3SWE000600PN.00¥nP1AME030103A_P3SWE000600PN.00¥nP1AME030104A_P3SWE000600PN.00¥nP1AME030105A_P3SWE000600PN.00¥nP1AME030106A_P3SWE000600PN.00¥nP1AME030107A_P3SWE000600PN.00¥nP1AME030108A_P3SWE000600PN.00¥nP1AME030109A_P3SWE000600PN.00¥nP1AM	

Attribute Name	Contents / Examples	Remarks
	E030110A_P3SWE000600PN.00¥nP1AME030111A_P3SWE000 600PN.00¥nP1AME030112A_P3SWE000600PN.00¥nP1AME0 30113A_P3SWE000600PN.00¥nP1AME030114A_P3SWE00060 0PN.00¥nP1AME030115A_P3SWE000600PN.00¥nP1AME030 116A_P3SWE000600PN.00¥nP1AME030117A_P3SWE000600P N.00¥nP1AME030118A_P3SWE000600PN.00¥nP1AME030119 A_P3SWE000600PN.00¥nP1AME030120A_P3SWE000600PN. 00¥nP1AME030121A_P3SWE000600PN.00¥nP1AME030122A _P3SWE000600PN.00¥nP1AME030123A_P3SWE000600PN.00 ¥nP1AME030124A_P3SWE000600PN.00¥nP1AME030125A_P 3SWE000600PN.00¥nP1AME030126A_P3SWE000600PN.00 ¥nP1AME030127A_P3SWE000600PN.00¥nP1AME030128A_P 3SWE000600PN.00¥nP1AME030129A_P3SWE000600PN.00 ¥nP1AME030130A_P3SWE000600PN.00¥nP1AME030131A_P 3SWE000600PN.00	
StartOrbitNumber	3520	
StopOrbitNumber	3972	
OrbitDirection	ASCENDING	
PlatformShortName	EOS-PM1	
SensorShortName	AMSR-E	
ECSDDataModel	B.0	
PGENAME	AMSR-E Level3 Software	

Attribute Name	Contents / Examples	Remarks
PGEVersion	Version 2.0	
ProcessingCenter	JAXA/EOC	
ContactOrganizationName	JAXA,1401,Ohashi,Hatoyama-machi,Hiki-gun,Saitama,350-039 3,JAPAN,+81-49-298-1307,orderdesk@eoc.jaxa.jp	

(1) Brightness Temperature, Equirectangular Projection

Variables of AMSR-E Level 3 (Brightness Temperature, Equirectangular Projection) are shown in the following table.

Table 5.3-24 AMSR-E Level 3 Variables (Brightness Temperature, Equirectangular Projection)

Variable Name	Data Type	Dimensions	Scale Factor		Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	721*1440	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
Data89_0GHz_H_Mean_for_Brightness_Temperature					
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	short	721*1440	0.01	degrees_north	Latitude for acquired data.
lon	short	721*1440	0.01	degrees_east	Longitude for acquired data.

(2) Brightness Temperature, Polar Stereo Projection (North), except 89GHz

Variables of AMSR-E Level 3 (Brightness Temperature, Polar Stereo projection (North), except 89GHz) are shown in the following table.

Table 5.3-25 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo Projection (North), except 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	448*304	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
lat	float	448*304	1.0	degrees_north	Latitude for acquired data.
lon	float	448*304	1.0	degrees_east	Longitude for acquired data.

(3) Brightness Temperature, Polar Stereo Projection (North), 89GHz

Variables of AMSR-E Level 3 (Brightness Temperature, Polar Stereo projection (North), 89GHz) are shown in the following table.

Table 5.3-26 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (North), 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data89_0GHz_H_Mean_for_Brightness_Temperature	short	896*608	0.1	K	Missing: -9999, Data Range: 0~3500
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	float	896*608	1.0	degrees_north	Latitude for acquired data.
lon	float	896*608	1.0	degrees_east	Longitude for acquired data.

(4) Brightness Temperature, Polar Stereo Projection (South), except 89GHz

Variables of AMSR-E Level 3 (Brightness Temperature, Polar Stereo projection (South), except 89GHz) are shown in the following table.

Table 5.3-27 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (South), except 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data6GHz_H_Mean_for_Brightness_Temperature	short	332*316	0.1	K	Missing: -9999, Data Range: 0~3500
Data6GHz_V_Mean_for_Brightness_Temperature					
Data10_65GHz_H_Mean_for_Brightness_Temperature					
Data10_65GHz_V_Mean_for_Brightness_Temperature					
Data18_7GHz_H_Mean_for_Brightness_Temperature					
Data18_7GHz_V_Mean_for_Brightness_Temperature					
Data23_8GHz_H_Mean_for_Brightness_Temperature					
Data23_8GHz_V_Mean_for_Brightness_Temperature					
Data36_5GHz_H_Mean_for_Brightness_Temperature					
Data36_5GHz_V_Mean_for_Brightness_Temperature					
lat	float	332*316	1.0	degrees_north	Latitude for acquired data.
lon	float	332*316	1.0	degrees_east	Longitude for acquired data.

(5) Brightness Temperature, Polar Stereo Projection (South), 89GHz

Variables of AMSR-E Level 3 (Brightness Temperature, Polar Stereo projection (South), 89GHz) are shown in the following table.

Table 5.3-28 AMSR-E Level 3 Variables (Brightness Temperature, Polar Stereo projection (South), 89GHz)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Data89_0GHz_H_Mean_for_Brightness_Temperature	short	664*632	0.1	K	Missing: -9999, Data Range: 0~3500
Data89_0GHz_V_Mean_for_Brightness_Temperature					
lat	float	664*632	1.0	degrees_north	Latitude for acquired data.
lon	float	664*632	1.0	degrees_east	Longitude for acquired data.

(6) Physical Quantity, Equirectangular Projection

Variables of AMSR-E Level 3 (Physical Quantity, Equirectangular Projection) are shown in the following table.

Table 5.3-29 AMSR-E Level 3 Variables (Physical Quantity, Equirectangular Projection)

Variable Name		Data Type	Dimension s	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	Precipitation	short	721*1440	0.1	mm/h	Missing: -9999, Data Range: 0~1000
	Cloud Liquid Water			0.001	kg/m ²	Missing: -9999, Data Range: 0~1000
	Soil Moisture			0.001	g/cm ³	Missing: -9999
	Sea Surface Temperature			0.1	degrees_Celsius	Missing: -9999, Data Range: -20~350
	Sea Surface Wind Speed			0.1	m/s	Missing: -9999, Data Range: 0~300
	Snow Water Equivalence			1.0	mm	Missing: -9999, Data Range: 0~10000
	Water Vapor			0.1	kg/m ²	Missing: -9999, Data Range: 0~700
lat	short	721*1440	0.01	degrees_north	Latitude for acquired data.	
lon	short	721*1440	0.01	degrees_east	Longitude for acquired data.	

(7) Sea Ice Concentration, Polar Stereo Projection (North)

Variables of AMSR-E Level 3 (Sea Ice Concentration, Polar Stereo Projection (North)) are shown in the following table.

Table 5.3-30 AMSR-E Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (North))

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	448*304	1.0	%	Missing: -9999, Data Range: 0~100
lat	float	448*304	1.0	degrees_north	Latitude for acquired data.
lon	float	448*304	1.0	degrees_east	Longitude for acquired data.

(8) Sea Ice Concentration, Polar Stereo Projection (South)

Variables of AMSR-E Level 3 (Sea Ice Concentration, Polar Stereo Projection (South)) are shown in the following table.

Table 5.3-31 AMSR-E Level 3 Variables (Sea Ice Concentration, Polar Stereo Projection (South))

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	332*316	1.0	%	Missing: -9999, Data Range: 0~100
lat	float	332*316	1.0	degrees_north	Latitude for acquired data.
lon	float	332*316	1.0	degrees_east	Longitude for acquired data.

(9) Snow Water Equivalence, Polar Stereo Projection (North)

Variables of AMSR-E Level 3 (Snow Water Equivalence, Polar Stereo Projection (North)) are shown in the following table.

Table 5.3-32 AMSR-E Level 3 Variables (Snow Water Equivalence, Polar Stereo Projection (North))

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Mean_for_Geophysical_Data	short	573*431	1.0	mm	Missing: -9999, Data Range:0~10000
lat	float	573*431	1.0	degrees_north	Latitude for acquired data.
lon	float	573*431	1.0	degrees_east	Longitude for acquired data.

5.3.3 AMSR2

5.3.3.1 Level 1

(1) L1A

Output specification of AMSR2 Level 1 (L1A) is shown in the following tables.

Table 5.3-33 AMSR2 L1A Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ProductName	AMSR2-L1A	
GeophysicalName	Observation Count	
ProductVersion	1	
AlgorithmVersion	223	
ParameterVersion	518	
ProductSize_MByte	49.5	
GranuleID	GW1AM2_201212061020_033D_L1SGADNR_1223518	
Operation	Standard	
ProductionDateTime	2013-01-11T07:21:50.000Z	
ObservationStartDateTime	2012-12-06T10:20:09.307Z	
ObservationEndDateTime	2012-12-06T11:09:28.589Z	
GringPointLatitude	84.29,73.40,34.18,-24.77,-83.83,-73.18,-22.60,36.58	
GringPointLongitude	40.03,-21.36,-121.62,-135.88,-149.97,146.79,-151.73,-139.07	
PGEName	AMSR2 Software	

Attribute Name	Contents / Examples	Remarks
InputFileName	GW1AM2_201212060932_017A_L0S1576E.bin, GW1AM2_201212061022_033D_L0S1576E.bin	
ProcessingCenter	JAXA EORC	
ContactOrganizationName	JAXA EORC	
ContactOrganizationTelephone	+050-0000-0000	
StartOrbitNumber	5798	
StopOrbitNumber	5798	
EquatorCrossingLongitude	-139.68	
EquatorCrossingDateTime	2012-12-06T10:46:55.921Z	
OrbitDirection	Descending	
PassNumber	33	
OrbitDataFileName	blank	
EphemerisMissingDataRate	Good	
AttitudeMissingDataRate	Good	
OrbitDataType	ONBOARD	
PlatformShortName	GCOM-W1	
SensorShortName	AMSR2	
NumberOfScans	1974	
NumberOfMissingScans	0	
AntennaRotationVelocity	40.0	
ECSDataModel	B.0	

Attribute Name	Contents / Examples	Remarks
NumberOfPackets	blank	
NumberOfInputFiles	2	
NumberMissingPackets	0	
NumberOfGoodPackets	31584	
OverLapScans	20	
QALocationOfPacketDiscontinuity	Continuation	
EphemerisQA	OK	
AutomaticQAFlag	Good	
ScienceQualityFlag	blank	
ScienceQualityFlag_Explanation	blank	Standard Product: ScienceQualityFlag Explanation
AutomaticQAFlag_Explanation	1.MissingScanQA:Less than 21 is available->OK,2.MissingDataQA:Less than 321 is available->OK,3.AntennaRotationQA:Less than 21 is available->OK,4.HotCalibrationSourceQA:Less than 21 is available->OK,5.AttitudeDataQA:Less than 21 is available->OK,6.EphemerisDataQA:Less than 21 is available->OK,7.QualityofGeometricInformationQA:Less than 21 is available->OK,8.BrightnessTemperatureQA:Less than 21 is available	Standard Product: AutomaticQAFlag Explanation
QAPercentMisssingData	0	
QAPercentOutofBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	

Attribute Name	Contents / Examples	Remarks
ProcessingQAAttribute	QAPercentParityErrorData	
Global_Meteorological_Data_Type	blank	Standard Product: Global Meteorological Data Type
Ancillary_Data_Information	blank	Standard Product: Ancillary Data Information
SatelliteOrbit	Sun-synchronous_sub-recurrent	
SatelliteAltitude	707.9km	
OrbitSemiMajorAxis	7085.858km	
OrbitEccentricity	0.00095	
OrbitArgumentPerigee	106.480deg	
OrbitInclination	98.15deg	
OrbitPeriod	98.0minutes	
RevisitTime	16days	
AMSRChannel	6.925GHz,7.3GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,7G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,89GA-3000MHz,89GB-3000MHz	
AMSRBeamWidth	6G-1.8deg,7G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,89GA-0.15deg,89GB-0.15deg	
OffNadir	47.0deg : 89GB, 47.5deg : others	
SpatialResolution	6G-35kmX62km,7G-35kmX62km,10G-34kmX58km,18G-14kmX22km,23G-15kmX26km,36G-7kmX12km,89GA-3kmX5km,89GB-3kmX5km	
ScanningPeriod	1.5sec	

Attribute Name	Contents / Examples	Remarks
SwathWidth	1450km	
DynamicRange	2.7K-340K	
DataFormatType	HDF	
HDFFormatVersion	Ver5.1.8.3	
EllipsoidName	WGS84	
SemiMajorAxisofEarth	6378.1km	
FlatteningRatioofEarth	0.00335	
SensorAlignment	Rx=0.000000,Ry=0.000000,Rz=0.000000	
Thermistor1Count_Range	0,261,300,760,99999	Standard Product: Thermistor1Count Range
Thermistor1Conversion_TableD	0.0000,3.3333,2.4398,0.0000	Standard Product: Thermistor1Conversion TableD
Thermistor1Conversion_TableE	0.0000,1038.9600,1064.2500,0.0000	Standard Product: Thermistor1Conversion TableE
Thermistor1Conversion_TableF	0.0000,-42.2222,-28.3631,0.0000	Standard Product: Thermistor1Conversion TableF
Thermistor2Count_Range	0,35,973,99999	Standard Product: Thermistor2Count Range
Thermistor2Conversion_TableW4	0.0000,0.0000,0.0000	Standard Product: Thermistor2Conversion TableW4
Thermistor2Conversion_TableW3	0.0000000000000,-0.0000000012978,0.0000000000000	Standard Product: Thermistor2Conversion TableW3
Thermistor2Conversion_TableW2	0.0000000000,0.0000083245,0.0000000000	Standard Product: Thermistor2Conversion TableW2
Thermistor2Conversion_TableW1	1.000000,-0.033141,1.000000	Standard Product: Thermistor2Conversion TableW1
Thermistor2Conversion_TableW0	0.000,54.384,0.000	Standard Product: Thermistor2Conversion TableW0
Thermistor3Count_Range	0,179,915,99999	Standard Product: Thermistor3Count Range
Thermistor3Conversion_TableW4	0.0000000000000,0.0000000000017,0.0000000000000	Standard Product: Thermistor3Conversion TableW4
Thermistor3Conversion_TableW3	0.00000000,-0.00000002,0.00000000	Standard Product: Thermistor3Conversion TableW3

Attribute Name	Contents / Examples	Remarks
Thermistor3Conversion_TableW2	0.000000000,0.000083636,0.000000000	Standard Product: Thermistor3Conversion TableW2
Thermistor3Conversion_TableW1	1.000,-0.165,1.000	Standard Product: Thermistor3Conversion TableW1
Thermistor3Conversion_TableW0	0.0,146.7,0.0	Standard Product: Thermistor3Conversion TableW0
Platinum1Count_Range	0,25,227,99999	Standard Product: Platinum1Count Range
Platinum1Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW4
Platinum1Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW3
Platinum1Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW2
Platinum1Conversion_TableW1	1.0000,0.0339,1.0000	Standard Product: Platinum1Conversion TableW1
Platinum1Conversion_TableW0	0.0,-48.0,0.0	Standard Product: Platinum1Conversion TableW0
Platinum2Count_Range	0,10,216,9999	Standard Product: Platinum2Count Range
Platinum2Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW4
Platinum2Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW3
Platinum2Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW2
Platinum2Conversion_TableW1	1.0000,0.0908,1.0000	Standard Product: Platinum2Conversion TableW1
Platinum2Conversion_TableW0	0.0,-163.4,0.0	Standard Product: Platinum2Conversion TableW0
Platinum3Conversion_TableW4	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW4
Platinum3Conversion_TableW3	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW3
Platinum3Conversion_TableW2	0.00000232865,0.00000242610,0.00000242006,0.00000242217, 0.00000242698,0.00000246554,0.00000245366,0.00000242507, 0.00000241404,0.00000243884	Standard Product: Platinum3Conversion TableW2
Platinum3Conversion_TableW1	0.116612,0.116174,0.116131,0.116165,0.116180,0.115852,0.1158 39,0.116029,0.115961,0.115949	Standard Product: Platinum3Conversion TableW1

Attribute Name	Contents / Examples	Remarks
Platinum3Conversion_TableW0	242.103,-241.644,-241.684,-241.657,-241.678,-241.460,-241.497,- 241.722,-241.612,-241.590	Standard Product: Platinum3Conversion TableW0
CoefficientAvv	6G-1.037,7G-1.037,10G-1.032,18G-1.025,23G-1.032,36G-1.029,8 9GA-1.025,89GB-1.029	
CoefficientAhv	6G-0.003,7G-0.003,10G-0.003,18G-0.003,23G-0.004,36G-0.004,8 9GA-0.003,89GB-0.004	
CoefficientAov	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CoefficientAhh	6G-1.037,7G-1.037,10G-1.031,18G-1.025,23G-1.034,36G-1.029,8 9GA-1.028,89GB-1.031	
CoefficientAvh	6G-0.003,7G-0.003,10G-0.002,18G-0.003,23G-0.006,36G-0.004,8 9GA-0.006,89GB-0.006	
CoefficientAoh	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CSM_Temperature	6GV-2.700,6GH-2.700,7GV-2.700,7GH-2.700,10GV-2.700,10GH- 2.700,18GV-2.700,18GH-2.700,23GV-2.700,23GH-2.700,36GV-2. 700,36GH-2.700,89GAV-2.700,89GAH-2.700,89GBV-2.700,89GB H-2.700	Standard Product: CSM Temperature
CoRegistration_ParameterA1	6G-1.575,7G-0.000,10G-1.877,18G-1.726,23G-1.466,36G-1.479	Standard Product: CoRegistration ParameterA1
CoRegistration_ParameterA2	6G--0.233,7G-0.000,10G--0.173,18G-0.068,23G--0.192,36G-0.000	Standard Product: CoRegistration ParameterA2
CalibrationCurve_Coefficient_1	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH- 0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0.	Standard Product: CalibrationCurve Coefficient#1

Attribute Name	Contents / Examples	Remarks
	000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GBH-0.000	
CalibrationCurve_Coefficient_2	6GV-1.000,6GH-1.000,7GV-1.000,7GH-1.000,10GV-1.000,10GH-1.000,18GV-1.000,18GH-1.000,23GV-1.000,23GH-1.000,36GV-1.000,36GH-1.000,89GAV-1.000,89GAH-1.000,89GBV-1.000,89GBH-1.000	Standard Product: CalibrationCurve Coefficient#2
CalibrationCurve_Coefficient_3	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH-0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0.000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GBH-0.000	Standard Product: CalibrationCurve Coefficient#3
CalibrationCurve_Coefficient_4	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#4
CalibrationCurve_Coefficient_5	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#5
CalibrationMethod	SpillOver	

Table 5.3-34 AMSR2 L1A Variables

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Attitude_Data	float	nscan*3	1.0	degrees	
Cold_Sky_Mirror_Count_6_to_36	short	12*nscan*16	1.0	Count	Missing: -32768
Cold_Sky_Mirror_Count_89	short	4*nscan*32	1.0	Count	Missing: -32768
Earth_Azimuth	short	nscan*243	0.01	degrees	
Earth_Incidence	short	nscan*243	0.01	degrees	
Hot_Load_Count_6_to_36	short	12*nscan*16	1.0	Count	Missing: -32768
Hot_Load_Count_89	short	4*nscan*32	1.0	Count	Missing: -32768
Interpolation_Flag_6_to_36	byte	12*nscan*16			
Interpolation_Flag_89	byte	4*nscan*32			
Land_Ocean_Flag_6_to_36	short	6*nscan*243	1.0	%	
Land_Ocean_Flag_89	short	2*nscan*486	1.0	%	
Latitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_north	
Latitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_north	
Longitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_east	
Longitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_east	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Observation_Count_10_7GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count_10_7GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count_18_7GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count_18_7GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Observation_Count__23_8GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__23_8GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__36_5GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__36_5GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__6_9GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__6_9GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__7_3GHz_H_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__7_3GHz_V_	short	nscan*243	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__89_0GHz_A_H_	short	nscan*486	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__89_0GHz_A_V_	short	nscan*486	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__89_0GHz_B_H_	short	nscan*486	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Count__89_0GHz_B_V_	short	nscan*486	1.0	Count	Missing: -32768, Data Range: -2048~2048
Observation_Supplement	byte	nscan*248			Missing: -1
PCD_Data	byte	nscan*64			Missing: -1
Pixel_Data_Quality_6_to_36	byte	nscan*486			
Pixel_Data_Quality_89	byte	nscan*486			
Position_in_Orbit	double	nscan	1.0		
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
SPC_Temperature_Count	short	nscan*34	1.0	Count	Missing: -1
SPS_Temperature_Count	short	nscan*46	1.0	Count	Missing: -1
Scan_Data_Quality	byte	nscan*512			

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
Spill_Over	float	2*200*243	1.0	mV	
Sun_Azimuth	short	nscan*243	0.01	degrees	
Sun_Elevation	short	nscan*243	0.01	degrees	
lat	float	nscan*243	1.0	degrees_north	Latitude for acquired data except 89GHz.
lon	float	nscan*243	1.0	degrees_east	Longitude for acquired data except 89GHz.

(2) L1B

Output specification of AMSR2 Level 1 (L1B) is shown in the following tables.

Table 5.3-35 AMSR2 L1B Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ProductName	AMSR2-L1B	
GeophysicalName	Brightness Temperature	
ProductVersion	1	
AlgorithmVersion	223	
ParameterVersion	518	
ProductSize_MByte	49.5	
GranuleID	GW1AM2_201212061020_033D_L1SGBTBR_1223518	
Operation	Standard	
ProductionDateTime	2013-01-11T07:21:59.000Z	
ObservationStartDateTime	2012-12-06T10:20:09.307Z	
ObservationEndDateTime	2012-12-06T11:09:28.589Z	
GringPointLatitude	84.29,73.40,34.18,-24.77,-83.83,-73.18,-22.60,36.58	
GringPointLongitude	40.03,-21.36,-121.62,-135.88,-149.97,146.79,-151.73,-139.07	
PGENAME	AMSR2 Software	
InputFileName	GW1AM2_201212060932_017A_L0S1576E.bin, GW1AM2_201212061022_033D_L0S1576E.bin	
ProcessingCenter	JAXA EORC	

Attribute Name	Contents / Examples	Remarks
ContactOrganizationName	JAXA EORC	
ContactOrganizationTelephone	+050-0000-0000	
StartOrbitNumber	5798	
StopOrbitNumber	5798	
EquatorCrossingLongitude	-139.68	
EquatorCrossingDateTime	2012-12-06T10:46:55.921Z	
OrbitDirection	Descending	
PassNumber	33	
OrbitDataFileName	blank	
EphemerisMissingDataRate	Good	
AttitudeMissingDataRate	Good	
OrbitDataType	ONBOARD	
PlatformShortName	GCOM-W1	
SensorShortName	AMSR2	
NumberOfScans	1974	
NumberOfMissingScans	0	
AntennaRotationVelocity	40.0	
ECSDataModel	B.0	
NumberOfPackets	blank	
NumberOfInputFiles	2	
NumberMissingPackets	0	

Attribute Name	Contents / Examples	Remarks
NumberOfGoodPackets	31584	
OverLapScans	20	
QAlocationOfPacketDiscontinuity	Continuation	
EphemerisQA	OK	
AutomaticQAFlag	Good	
ScienceQualityFlag	blank	
ScienceQualityFlag_Explanation	blank	Standard Product: ScienceQualityFlag Explanation
AutomaticQAFlag_Explanation	1.MissingScanQA:Less than 21 is available->OK,2.MissingDataQA:Less than 321 is available->OK,3.AntennaRotationQA:Less than 21 is available->OK,4.HotCalibrationSourceQA:Less than 21 is available->OK,5.AttitudeDataQA:Less than 21 is available->OK,6.EphemerisDataQA:Less than 21 is available->OK,7.QualityofGeometricInformationQA:Less than 21 is available->OK,8.BrightnessTemperatureQA:Less than 21 is available->OK	Standard Product: AutomaticQAFlag Explanation
QAPercentMissingData	0	
QAPercentOutOfBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	QAPercentParityErrorData	
Global_Meteorological_Data_Type	blank	Standard Product: Global Meteorological Data Type
Ancillary_Data_Information	blank	Standard Product: Ancillary Data Information

Attribute Name	Contents / Examples	Remarks
SatelliteOrbit	Sun-synchronous_sub-recurrent	
SatelliteAltitude	707.9km	
OrbitSemiMajorAxis	7085.858km	
OrbitEccentricity	0.00095	
OrbitArgumentPerigee	106.480deg	
OrbitInclination	98.15deg	
OrbitPeriod	98.0minutes	
RevisitTime	16days	
AMSRChannel	6.925GHz,7.3GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,7G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,89GA-3000MHz,89GB-3000MHz	
AMSRBeamWidth	6G-1.8deg,7G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,89GA-0.15deg,89GB-0.15deg	
OffNadir	47.0deg : 89GB, 47.5deg : others	
SpatialResolution	6G-35kmX62km,7G-35kmX62km,10G-34kmX58km,18G-14kmX22km,23G-15kmX26km,36G-7kmX12km,89GA-3kmX5km,89GB-3kmX5km	
ScanningPeriod	1.5sec	
SwathWidth	1450km	
DynamicRange	2.7K-340K	
DataFormatType	HDF	

Attribute Name	Contents / Examples	Remarks
HDFFormatVersion	Ver5.1.8.3	
EllipsoidName	WGS84	
SemiMajorAxisofEarth	6378.1km	
FlatteningRatioofEarth	0.00335	
SensorAlignment	Rx=0.000000,Ry=0.000000,Rz=0.000000	
Thermistor1Count_Range	0,261,300,760,99999	Standard Product: Thermistor1Count Range
Thermistor1Conversion_TableD	0.0000,3.3333,2.4398,0.0000	Standard Product: Thermistor1Conversion TableD
Thermistor1Conversion_TableE	0.0000,1038.9600,1064.2500,0.0000	Standard Product: Thermistor1Conversion TableE
Thermistor1Conversion_TableF	0.0000,-42.2222,-28.3631,0.0000	Standard Product: Thermistor1Conversion TableF
Thermistor2Count_Range	0,35,973,99999	Standard Product: Thermistor2Count Range
Thermistor2Conversion_TableW4	0.0000,0.0000,0.0000	Standard Product: Thermistor2Conversion TableW4
Thermistor2Conversion_TableW3	0.00000000000000,-0.0000000012978,0.00000000000000	Standard Product: Thermistor2Conversion TableW3
Thermistor2Conversion_TableW2	0.0000000000,0.0000083245,0.0000000000	Standard Product: Thermistor2Conversion TableW2
Thermistor2Conversion_TableW1	1.000000,-0.033141,1.000000	Standard Product: Thermistor2Conversion TableW1
Thermistor2Conversion_TableW0	0.000,54.384,0.000	Standard Product: Thermistor2Conversion TableW0
Thermistor3Count_Range	0,179,915,99999	Standard Product: Thermistor3Count Range
Thermistor3Conversion_TableW4	0.00000000000000,0.0000000000017,0.00000000000000	Standard Product: Thermistor3Conversion TableW4
Thermistor3Conversion_TableW3	0.00000000,-0.00000002,0.00000000	Standard Product: Thermistor3Conversion TableW3
Thermistor3Conversion_TableW2	0.000000000,0.000083636,0.000000000	Standard Product: Thermistor3Conversion TableW2
Thermistor3Conversion_TableW1	1.000,-0.165,1.000	Standard Product: Thermistor3Conversion TableW1
Thermistor3Conversion_TableW0	0.0,146.7,0.0	Standard Product: Thermistor3Conversion TableW0

Attribute Name	Contents / Examples	Remarks
Platinum1Count_Range	0,25,227,99999	Standard Product: Platinum1Count Range
Platinum1Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW4
Platinum1Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW3
Platinum1Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW2
Platinum1Conversion_TableW1	1.0000,0.0339,1.0000	Standard Product: Platinum1Conversion TableW1
Platinum1Conversion_TableW0	0.0,-48.0,0.0	Standard Product: Platinum1Conversion TableW0
Platinum2Count_Range	0,10,216,9999	Standard Product: Platinum2Count Range
Platinum2Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW4
Platinum2Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW3
Platinum2Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW2
Platinum2Conversion_TableW1	1.0000,0.0908,1.0000	Standard Product: Platinum2Conversion TableW1
Platinum2Conversion_TableW0	0.0,-163.4,0.0	Standard Product: Platinum2Conversion TableW0
Platinum3Conversion_TableW4	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW4
Platinum3Conversion_TableW3	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW3
Platinum3Conversion_TableW2	0.00000232865,0.00000242610,0.00000242006,0.00000242217, 0.00000242698,0.00000246554,0.00000245366,0.00000242507, 0.00000241404,0.00000243884	Standard Product: Platinum3Conversion TableW2
Platinum3Conversion_TableW1	0.116612,0.116174,0.116131,0.116165,0.116180,0.115852,0.1158 39,0.116029,0.115961,0.115949	Standard Product: Platinum3Conversion TableW1
Platinum3Conversion_TableW0	242.103,-241.644,-241.684,-241.657,-241.678,-241.460,-241.497,- 241.722,-241.612,-241.590	Standard Product: Platinum3Conversion TableW0
CoefficientAvv	6G-1.037,7G-1.037,10G-1.032,18G-1.025,23G-1.032,36G-1.029,8	

Attribute Name	Contents / Examples	Remarks
	9GA-1.025,89GB-1.029	
CoefficientAhv	6G-0.003,7G-0.003,10G-0.003,18G-0.003,23G-0.004,36G-0.004,8 9GA-0.003,89GB-0.004	
CoefficientAov	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CoefficientAhh	6G-1.037,7G-1.037,10G-1.031,18G-1.025,23G-1.034,36G-1.029,8 9GA-1.028,89GB-1.031	
CoefficientAvh	6G-0.003,7G-0.003,10G-0.002,18G-0.003,23G-0.006,36G-0.004,8 9GA-0.006,89GB-0.006	
CoefficientAoh	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CSM_Temperature	6GV-2.700,6GH-2.700,7GV-2.700,7GH-2.700,10GV-2.700,10GH- 2.700,18GV-2.700,18GH-2.700,23GV-2.700,23GH-2.700,36GV-2. 700,36GH-2.700,89GAV-2.700,89GAH-2.700,89GBV-2.700,89GB H-2.700	Standard Product: CSM Temperature
CoRegistration_ParameterA1	6G-1.575,7G-0.000,10G-1.877,18G-1.726,23G-1.466,36G-1.479	Standard Product: CoRegistration ParameterA1
CoRegistration_ParameterA2	6G--0.233,7G-0.000,10G--0.173,18G-0.068,23G--0.192,36G-0.000	Standard Product: CoRegistration ParameterA2
CalibrationCurve_Coefficient_1	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH- 0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0. 000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GB H-0.000	Standard Product: CalibrationCurve Coefficient#1
CalibrationCurve_Coefficient_2	6GV-1.000,6GH-1.000,7GV-1.000,7GH-1.000,10GV-1.000,10GH-	Standard Product: CalibrationCurve Coefficient#2

Attribute Name	Contents / Examples	Remarks
	1.000,18GV-1.000,18GH-1.000,23GV-1.000,23GH-1.000,36GV-1.000,36GH-1.000,89GAV-1.000,89GAH-1.000,89GBV-1.000,89GBH-1.000	
CalibrationCurve_Coefficient_3	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH-0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0.000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GBH-0.000	Standard Product: CalibrationCurve Coefficient#3
CalibrationCurve_Coefficient_4	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#4
CalibrationCurve_Coefficient_5	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#5
CalibrationMethod	SpillOver	

Table 5.3-36 AMSR2 L1B Variables

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Attitude_Data	float	nscan*3	1.0	degrees	
Brightness_Temperature__10_7GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__10_7GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__18_7GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__18_7GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__23_8GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__23_8GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__36_5GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__36_5GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__6_9GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__6_9GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__7_3GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__7_3GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__89_0GHz_A_H_	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__89_0GHz_A_V_	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__89_0GHz_B_H_	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__89_0GHz_B_V_	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Cold_Sky_Mirror_Count_6_to_36	short	12*nscan*16	1.0	Count	Missing: -32768
Cold_Sky_Mirror_Count_89	short	4*nscan*32	1.0	Count	Missing: -32768
Earth_Azimuth	short	nscan*243	0.01	degrees	

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Earth_Incidence	short	nscan*243	0.01	degrees	
Hot_Load_Count_6_to_36	short	12*nscan*16	1.0	Count	Missing: -32768
Hot_Load_Count_89	short	4*nscan*32	1.0	Count	Missing: -32768
Interpolation_Flag_6_to_36	byte	12*nscan*16			
Interpolation_Flag_89	byte	4*nscan*32			
Land_Ocean_Flag_6_to_36	short	6*nscan*243	1.0	%	
Land_Ocean_Flag_89	short	2*nscan*486	1.0	%	
Latitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_north	
Latitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_north	
Longitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_east	
Longitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_east	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Observation_Supplement	byte	nscan*248			Missing: -1
PCD_Data	byte	nscan*64			Missing: -1
Pixel_Data_Quality_6_to_36	byte	nscan*486			
Pixel_Data_Quality_89	byte	nscan*486			
Position_in_Orbit	double	nscan	1.0		
Rx_Offset_Gain_Count	int	nscan*32	1.0	Count	
SPC_Temperature_Count	short	nscan*34	1.0	Count	Missing: -1
SPS_Temperature_Count	short	nscan*46	1.0	Count	Missing: -1
Scan_Data_Quality	byte	nscan*512			

Variable Name	Data Type	Dimension	Scale Factor	Data Unit	Remarks
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
Spill_Over	float	2*200*243	1.0	mV	
Sun_Azimuth	short	nscan*243	0.01	degrees	
Sun_Elevation	short	nscan*243	0.01	degrees	
lat	float	nscan*243	1.0	degrees_north	Latitude for acquired data except 89GHz.
lon	float	nscan*243	1.0	degrees_east	Longitude for acquired data except 89GHz.

(3) L1R

Output specification of AMSR2 Level 1 (L1R) is shown in the following tables.

Table 5.3-37 AMSR2 L1R Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ProductName	AMSR2-L1R	
GeophysicalName	Brightness Temperature	
ProductVersion	1	
AlgorithmVersion	223	
ParameterVersion	518	
ProductSize_MByte	67.4	
GranuleID	GW1AM2_201212061020_033D_L1SGRTBR_1223518	
Operation	Standard	
ProductionDateTime	2013-01-11T07:24:45.000Z	
ObservationStartDateTime	2012-12-06T10:20:09.307Z	
ObservationEndDateTime	2012-12-06T11:09:28.589Z	
GringPointLatitude	84.29,73.40,34.18,-24.77,-83.83,-73.18,-22.60,36.58	
GringPointLongitude	40.03,-21.36,-121.62,-135.88,-149.97,146.79,-151.73,-139.07	
PGENAME	AMSR2 Software	
InputFileName	GW1AM2_201212060932_017A_L0S1576E.bin,GW1AM2_2012 12061022_033D_L0S1576E.bin	
ProcessingCenter	JAXA EORC	

Attribute Name	Contents / Examples	Remarks
ContactOrganizationName	JAXA EORC	
ContactOrganizationTelephone	+050-0000-0000	
StartOrbitNumber	5798	
StopOrbitNumber	5798	
EquatorCrossingLongitude	-139.68	
EquatorCrossingDateTime	2012-12-06T10:46:55.921Z	
OrbitDirection	Descending	
PassNumber	33	
OrbitDataFileName	blank	
EphemerisMissingDataRate	Good	
AttitudeMissingDataRate	Good	
OrbitDataType	ONBOARD	
PlatformShortName	GCOM-W1	
SensorShortName	AMSR2	
NumberOfScans	1974	
NumberOfMissingScans	0	
AntennaRotationVelocity	40.0	
ECSDataModel	B.0	
NumberOfPackets	blank	
NumberOfInputFiles	2	
NumberMissingPackets	0	

Attribute Name	Contents / Examples	Remarks
NumberOfGoodPackets	31584	
OverLapScans	20	
QAlocationOfPacketDiscontinuity	Continuation	
EphemerisQA	OK	
AutomaticQAFlag	Good	
ScienceQualityFlag	blank	
ScienceQualityFlag_Explanation	blank	Standard Product: ScienceQualityFlag Explanation
AutomaticQAFlag_Explanation	1.MissingScanQA:Less than 21 is available->OK,2.MissingDataQA:Less than 321 is available->OK,3.AntennaRotationQA:Less than 21 is available->OK,4.HotCalibrationSourceQA:Less than 21 is available->OK,5.AttitudeDataQA:Less than 21 is available->OK,6.EphemerisDataQA:Less than 21 is available->OK,7.QualityofGeometricInformationQA:Less than 21 is available->OK7.QualityofGeometricInformationQA:Less than 21 is available->OK	Standard Product: AutomaticQAFlag Explanation
QAPercentMisssingData	0	
QAPercentOutofBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	QAPercentParityErrorData	
Global_Meteorological_Data_Type	blank	Standard Product: Global Meteorological Data Type
Ancillary_Data_Information	blank	Standard Product: Ancillary Data Information

Attribute Name	Contents / Examples	Remarks
SatelliteOrbit	Sun-synchronous_sub-recurrent	
SatelliteAltitude	707.9km	
OrbitSemiMajorAxis	7085.858km	
OrbitEccentricity	0.00095	
OrbitArgumentPerigee	106.480deg	
OrbitInclination	98.15deg	
OrbitPeriod	98.0minutes	
RevisitTime	16days	
AMSRChannel	6.925GHz,7.3GHz,10.65GHz,18.7GHz,23.8GHz,36.5GHz,89.0GHz-A,89.0GHz-B	
AMSRBandWidth	6G-350MHz,7G-350MHz,10G-100MHz,18G-200MHz,23G-400MHz,36G-1000MHz,89GA-3000MHz,89GB-3000MHz	
AMSRBeamWidth	6G-1.8deg,7G-1.8deg,10G-1.2deg,18G-0.64deg,23G-0.75deg,36G-0.35deg,89GA-0.15deg,89GB-0.15deg	
OffNadir	47.0deg : 89GB, 47.5deg : others	
SpatialResolution	6G-35kmX62km,7G-35kmX62km,10G-34kmX58km,18G-14kmX22km,23G-15kmX26km,36G-7kmX12km,89GA-3kmX5km,89GB-3kmX5km	
ScanningPeriod	1.5sec	
SwathWidth	1450km	
DynamicRange	2.7K-340K	
DataFormatType	HDF	

Attribute Name	Contents / Examples	Remarks
HDFFormatVersion	Ver5.1.8.3	
EllipsoidName	WGS84	
SemiMajorAxisofEarth	6378.1km	
FlatteningRatioofEarth	0.00335	
SensorAlignment	Rx=0.000000,Ry=0.000000,Rz=0.000000	
Thermistor1Count_Range	0,261,300,760,99999	Standard Product: Thermistor1Count Range
Thermistor1Conversion_TableD	0.0000,3.3333,2.4398,0.0000	Standard Product: Thermistor1Conversion TableD
Thermistor1Conversion_TableE	0.0000,1038.9600,1064.2500,0.0000	Standard Product: Thermistor1Conversion TableE
Thermistor1Conversion_TableF	0.0000,-42.2222,-28.3631,0.0000	Standard Product: Thermistor1Conversion TableF
Thermistor2Count_Range	0,35,973,99999	Standard Product: Thermistor2Count Range
Thermistor2Conversion_TableW4	0.0000,0.0000,0.0000	Standard Product: Thermistor2Conversion TableW4
Thermistor2Conversion_TableW3	0.00000000000000,-0.0000000012978,0.00000000000000	Standard Product: Thermistor2Conversion TableW3
Thermistor2Conversion_TableW2	0.0000000000,0.0000083245,0.0000000000	Standard Product: Thermistor2Conversion TableW2
Thermistor2Conversion_TableW1	1.000000,-0.033141,1.000000	Standard Product: Thermistor2Conversion TableW1
Thermistor2Conversion_TableW0	0.000,54.384,0.000	Standard Product: Thermistor2Conversion TableW0
Thermistor3Count_Range	0,179,915,99999	Standard Product: Thermistor3Count Range
Thermistor3Conversion_TableW4	0.00000000000000,0.0000000000017,0.00000000000000	Standard Product: Thermistor3Conversion TableW4
Thermistor3Conversion_TableW3	0.00000000,-0.00000002,0.00000000	Standard Product: Thermistor3Conversion TableW3
Thermistor3Conversion_TableW2	0.000000000,0.000083636,0.000000000	Standard Product: Thermistor3Conversion TableW2
Thermistor3Conversion_TableW1	1.000,-0.165,1.000	Standard Product: Thermistor3Conversion TableW1
Thermistor3Conversion_TableW0	0.0,146.7,0.0	Standard Product: Thermistor3Conversion TableW0

Attribute Name	Contents / Examples	Remarks
Platinum1Count_Range	0,25,227,99999	Standard Product: Platinum1Count Range
Platinum1Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW4
Platinum1Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW3
Platinum1Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum1Conversion TableW2
Platinum1Conversion_TableW1	1.0000,0.0339,1.0000	Standard Product: Platinum1Conversion TableW1
Platinum1Conversion_TableW0	0.0,-48.0,0.0	Standard Product: Platinum1Conversion TableW0
Platinum2Count_Range	0,10,216,9999	Standard Product: Platinum2Count Range
Platinum2Conversion_TableW4	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW4
Platinum2Conversion_TableW3	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW3
Platinum2Conversion_TableW2	0.0,0.0,0.0	Standard Product: Platinum2Conversion TableW2
Platinum2Conversion_TableW1	1.0000,0.0908,1.0000	Standard Product: Platinum2Conversion TableW1
Platinum2Conversion_TableW0	0.0,-163.4,0.0	Standard Product: Platinum2Conversion TableW0
Platinum3Conversion_TableW4	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW4
Platinum3Conversion_TableW3	0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0	Standard Product: Platinum3Conversion TableW3
Platinum3Conversion_TableW2	0.00000232865,0.00000242610,0.00000242006,0.00000242217, 0.00000242698,0.00000246554,0.00000245366,0.00000242507, 0.00000241404,0.00000243884	Standard Product: Platinum3Conversion TableW2
Platinum3Conversion_TableW1	0.116612,0.116174,0.116131,0.116165,0.116180,0.115852,0.1158 39,0.116029,0.115961,0.115949	Standard Product: Platinum3Conversion TableW1
Platinum3Conversion_TableW0	242.103,-241.644,-241.684,-241.657,-241.678,-241.460,-241.497,- 241.722,-241.612,-241.590	Standard Product: Platinum3Conversion TableW0
CoefficientAvv	6G-1.037,7G-1.037,10G-1.032,18G-1.025,23G-1.032,36G-1.029,8	

Attribute Name	Contents / Examples	Remarks
	9GA-1.025,89GB-1.029	
CoefficientAhv	6G-0.003,7G-0.003,10G-0.003,18G-0.003,23G-0.004,36G-0.004,8 9GA-0.003,89GB-0.004	
CoefficientAov	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CoefficientAhh	6G-1.037,7G-1.037,10G-1.031,18G-1.025,23G-1.034,36G-1.029,8 9GA-1.028,89GB-1.031	
CoefficientAvh	6G-0.003,7G-0.003,10G-0.002,18G-0.003,23G-0.006,36G-0.004,8 9GA-0.006,89GB-0.006	
CoefficientAoh	6G-0.034,7G-0.034,10G-0.029,18G-0.022,23G-0.028,36G-0.024,8 9GA-0.022,89GB-0.024	
CSM_Temperature	6GV-2.700,6GH-2.700,7GV-2.700,7GH-2.700,10GV-2.700,10GH- 2.700,18GV-2.700,18GH-2.700,23GV-2.700,23GH-2.700,36GV-2. 700,36GH-2.700,89GAV-2.700,89GAH-2.700,89GBV-2.700,89GB H-2.700	Standard Product: CSM Temperature
CoRegistration_ParameterA1	6G-1.575,7G-0.000,10G-1.877,18G-1.726,23G-1.466,36G-1.479	Standard Product: CoRegistration ParameterA1
CoRegistration_ParameterA2	6G--0.233,7G-0.000,10G--0.173,18G-0.068,23G--0.192,36G-0.000	Standard Product: CoRegistration ParameterA2
CalibrationCurve_Coefficient_1	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH- 0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0. 000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GB H-0.000	Standard Product: CalibrationCurve Coefficient#1
CalibrationCurve_Coefficient_2	6GV-1.000,6GH-1.000,7GV-1.000,7GH-1.000,10GV-1.000,10GH-	Standard Product: CalibrationCurve Coefficient#2

Attribute Name	Contents / Examples	Remarks
	1.000,18GV-1.000,18GH-1.000,23GV-1.000,23GH-1.000,36GV-1.000,36GH-1.000,89GAV-1.000,89GAH-1.000,89GBV-1.000,89GBH-1.000	
CalibrationCurve_Coefficient_3	6GV-0.000,6GH-0.000,7GV-0.000,7GH-0.000,10GV-0.000,10GH-0.000,18GV-0.000,18GH-0.000,23GV-0.000,23GH-0.000,36GV-0.000,36GH-0.000,89GAV-0.000,89GAH-0.000,89GBV-0.000,89GBH-0.000	Standard Product: CalibrationCurve Coefficient#3
CalibrationCurve_Coefficient_4	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#4
CalibrationCurve_Coefficient_5	6GV-0.0,6GH-0.0,7GV-0.0,7GH-0.0,10GV-0.0,10GH-0.0,18GV-0.0,18GH-0.0,23GV-0.0,23GH-0.0,36GV-0.0,36GH-0.0,89GAV-0.0,89GAH-0.0,89GBV-0.0,89GBH-0.0	Standard Product: CalibrationCurve Coefficient#5
CalibrationMethod	SpillOver	

Table 5.3-38 AMSR2 L1R Variables

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Area_Mean_Height	short	nscan*243	1.0	m	
Attitude_Data	float	nscan*3	1.0	degrees	
Brightness_Temperature__original_89GHz_A_H _	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__original_89GHz_A_V_ _	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__original_89GHz_B_H _	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__original_89GHz_B_V_ _	int	nscan*486	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_10_7GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_10_7GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_18_7GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_18_7GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_23_8GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_23_8GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_36_5GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_36_5GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_6_9GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_6_9GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_7_3GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_7_3GHz_V_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__res06_89_0GHz_H_ _	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature_res06_89_0GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_10_7GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_10_7GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_18_7GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_18_7GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_23_8GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_23_8GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_36_5GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_36_5GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_89_0GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res10_89_0GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_18_7GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_18_7GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_23_8GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_23_8GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_36_5GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_36_5GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_89_0GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res23_89_0GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res36_36_5GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res36_36_5GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature_res36_89_0GHz_H_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_res36_89_0GHz_V_	int	nscan*243	0.01	K	Missing: 65535, Data Range: 1000~50000
Earth_Azimuth	short	nscan*243	0.01	degrees	
Earth_Incidence	short	nscan*243	0.01	degrees	
Land_Ocean_Flag_6_to_36	short	4*nscan*243	1.0	%	
Land_Ocean_Flag_89	short	2*nscan*486	1.0	%	
Latitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_north	
Latitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_north	
Longitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_east	
Longitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_east	
Navigation_Data	float	nscan*6	1.0	m,m/s	
Pixel_Data_Quality_6_to_36	byte	nscan*486	1.0		
Pixel_Data_Quality_89	byte	nscan*486	1.0		
Position_in_Orbit	double	nscan	1.0		
Scan_Data_Quality	byte	nscan*512	1.0		
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	
Sun_Azimuth	short	nscan*243	0.01	degrees	
Sun_Elevation	short	nscan*243	0.01	degrees	
lat	float	nscan*243	1.0	degrees_north	Latitude for acquired data except 89GHz.
lon	float	nscan*243	1.0	degrees_east	Longitude for acquired data except 89GHz.

5.3.3.2 Level 2

Global Attributes of AMSR2 Level 2 are shown in the following table.

Table 5.3-39 AMSR2 Level 2 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ProductName	AMSR2-L2	
GeophysicalName	Cloud Liquid Water	
ProductVersion	1	
AlgorithmVersion	223	
ParameterVersion	517	
ProductSize_MByte	5.1	
GranuleID	GW1AM2_201212061020_033D_L2SGCLWLZ1223517	
Operation	Standard	
ProductionDateTime_	2013-01-11T07:27:19.000Z	Standard Product: ProductionDateTime
ObservationStartDateTime	2012-12-06T10:20:09.307Z	
ObservationEndDateTime	2012-12-06T11:09:28.589Z	
GringPointLatitude	84.29,73.40,34.18,-24.77,-83.83,-73.18,-22.60,36.58	
GringPointLongitude	40.03,-21.36,-121.62,-135.88,-149.97,146.79,-151.73,-139.07	
PGName	AMSR2 Software	
InputFileName	R1540402SGS0221003170100.L0D,R1540402SGS02210053201 00.L0D	
ProcessingCenter	JAXA EORC	

Attribute Name	Contents / Examples	Remarks
ContactOrganizationName	JAXA EORC	
ContactOrganizationTelephone	+050-0000-0000	
StartOrbitNumber	5798	
StopOrbitNumber	5798	
EquatorCrossingLongitude	-139.68	
EquatorCrossingDateTime	2012-06-06T10:46:55.921Z	
OrbitDirection	Descending	
PassNumber	33	
OrbitDataFileName	r	
EphemerisMissingDataRate	Good	
AttitudeMissingDataRate	Good	
OrbitDataType	ONBOARD	
PlatformShortName	GCOM-W1	
SensorShortName	AMSR2	
NumberOfScans	1974	
NumberOfMissingScans	0	
AntennaRotationVelocity	40.0	
ECSDataModel	B.0	
NumberOfPackets	blank	
NumberOfInputFiles	2	
NumberMissingPackets	0	

Attribute Name	Contents / Examples	Remarks
NumberOfGoodPackets	31584	
OverLapScans	0	
QAlocationOfPacketDiscontinuity	Continuation	
EphemerisQA	OK	
AutomaticQAFlag	Good	
ScienceQualityFlag	XXX	
ScienceQualityFlag_Explanation	XXX	Standard Product: ScienceQualityFlag Explanation
AutomaticQAFlag_Explanation	1.MissingScanQA:Less than 21 is available->OK,2.MissingDataQA:Less than 321 is available->OK,3.AntennaRotationQA:Less than 21 is available->OK,4.HotCalibrationSourceQA:Less than 21 is available->OK,5.AttitudeDataQA:Less than 21 is available->OK,6.EphemerisDataQA:Less than 21 is available->OK,7.QualityofGeometricInformationQA:Less than 21 is available->OK,8.BrightnessTemperatureQA:Less than 21 is available->OK	Standard Product: AutomaticQAFlag Explanation
QAPercentMisssingData	0	
QAPercentOutofBoundsData	0	
QAPercentParityErrorData	0	
ProcessingQADescription	PROC_COMP	
ProcessingQAAttribute	QAPercentParityErrorData	
Global_Meteorological_Data_Type	blank	Standard Product: Global Meteorological Data Type
Ancillary_Data_Information	XXXXX	Standard Product: Ancillary Data Information

(1) High Resolution

Variables of AMSR2 Level 2 (High Resolution) are shown in the following table.

Table 5.3-40 AMSR2 Level 2 Variables (High Resolution)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data_for_89A	short	nscan*486*ndim	0.01	mm/h	ndim: 1~3, Missing: -32768
Geophysical_Data_for_89B	short	nscan*486*ndim	0.01	mm/h	Missing: -32768
Latitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_north	
Latitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_north	
Longitude_of_Observation_Point_for_89A	float	nscan*486	1.0	degrees_east	
Longitude_of_Observation_Point_for_89B	float	nscan*486	1.0	degrees_east	
Pixel_Data_Quality_for_89A	byte	nscan*486*ndim			
Pixel_Data_Quality_for_89B	byte	nscan*486*ndim			
Position_in_Orbit	double	nscan	1.0		
Scan_Time	double	nscan	1.0	days since 1993-1-1 0:0:0	

(2) Low Resolution

Variables of AMSR2 Level 2 (Low Resolution) are shown in the following table.

Table 5.3-41 AMSR2 Level 2 Variables (Low Resolution)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	Cloud Liquid Water	short	nscan*243*ndim	0.001	kg/m ²	ndim: 1~3、Missing: -32768
	Sea Ice Concentration			0.1	%	Missing: -32768
	Soil Moisture			0.1	%	Missing: -32768
	Snow Depth			0.1	cm	Missing: -32768
	Sea Surface Temperature			0.01	degrees_Celsius	Missing: -32768
	Sea Surface Wind Speed			0.01	m/s	Missing: -32768
	Water Vapor			0.01	kg/m ²	Missing: -32768
Latitude_of_Observation_Point		float	nscan*243	1.0	degrees_north	
Longitude_of_Observation_Point		float	nscan*243	1.0	degrees_east	
Pixel_Data_Quality		byte	nscan*243*ndim			
Position_in_Orbit		double	nscan	1.0		
Scan_Time		double	nscan	1.0	days since 1993-1-1 0:0:0	

5.3.3.3 Level 3

Global attributes of AMSR2 Level 3 are shown in the following table.

Table 5.3-42 AMSR2 Level 3 Global Attributes

Attribute Name	Contents / Examples	Remarks
Conventions	CF-1.4	
ProductName	AMSR2-L3	
GeophysicalName	Brightness Temperature (6GHz)	
MeanType	MonthMean	
Projection	PS-N	
Resolution	10Km	
ProductVersion	0	
AlgorithmVersion	000	
ParameterVersion	000	
ProductSize_MByte	13.0	
AlgorithmDeveloper	XXXXXX	
GranuleID	GW1AM2_20121200_01M_PNMD_L3SGT06HA0000000	
ProductionDateTime	2013-02-14T07:07:32.000Z	
ObservationStartDateTime	2012-12-01T00:00:00.000Z	
ObservationEndDateTime	2012-12-30T23:59:59.000Z	
PGEName	AMSR2 Software	
InputFileName	R1540402SGS0221003170100.L0D,R1540402SGS02210053201 00.L0D	

Attribute Name	Contents / Examples	Remarks
ProcessingCenter	JAXA EORC	
ContactOrganizationName	JAXA EORC	
ContactOrganizationTelephone	+050-0000-0000	
StartOrbitNumber	0	
StopOrbitNumber	0	
OrbitDirection	Descending	
PlatformShortName	GCOM-W1	
SensorShortName	AMSR2	
ECSDaDataModel	B.0	

(1) Monthly Average, High Resolution, Equirectangular Projection, Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Equirectangular Projection, Brightness Temperature) are shown in the following table.

Table 5.3-43 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Equirectangular Projection, Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	1800*3600	1.0		
Average_Number__V_	short	1800*3600	1.0		
Brightness_Temperature__H_	int	1800*3600	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	1800*3600	0.01	K	Missing: 65535, Data Range: 1000~50000
Standard_Deviation__H_	short	1800*3600	0.01		
Standard_Deviation__V_	short	1800*3600	0.01		
Total_Number__H_	short	1800*3600	1.0		
Total_Number__V_	short	1800*3600	1.0		
lat	short	1800*3600	0.01	degrees_north	
lon	short	1800*3600	0.01	degrees_east	

(2) Monthly Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature) are shown in the following table.

Table 5.3-44 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	1120*760	1.0		
Average_Number__V_	short	1120*760	1.0		
Brightness_Temperature__H_	int	1120*760	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	1120*760	0.01	K	Missing: 65535, Data Range: 1000~50000
Standard_Deviation__H_	short	1120*760	0.01		
Standard_Deviation__V_	short	1120*760	0.01		
Total_Number__H_	short	1120*760	1.0		
Total_Number__V_	short	1120*760	1.0		
lat	float	1120*760	1.0	degrees_north	
lon	float	1120*760	1.0	degrees_east	

(3) Monthly Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature) are shown in the following table.

Table 5.3-45 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	830*790	1.0		
Average_Number__V_	short	830*790	1.0		
Brightness_Temperature__H_	int	830*790	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	830*790	0.01	K	Missing: 65535, Data Range: 1000~50000
Standard_Deviation__H_	short	830*790	0.01		
Standard_Deviation__V_	short	830*790	0.01		
Total_Number__H_	short	830*790	1.0		
Total_Number__V_	short	830*790	1.0		
lat	float	830*790	1.0	degrees_north	
lon	float	830*790	1.0	degrees_east	

(4) Monthly Average, High Resolution, Equirectangular Projection, Physical Quantity

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Equirectangular Projection, Physical Quantity) are shown in the following table.

Table 5.3-46 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Equirectangular Projection, Physical Quantity)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number		short	1800*3600*ndim	1.0		ndim: 1~3
Geophysical_Data	Cloud Liquid Water	short	1800*3600*ndim	0.001	kg/m^2	Missing: -32768
	Precipitation			0.01	mm/h	Missing: -32768
	Soil Moisture			0.1	%	Missing: -32768
	Snow Depth			0.1	cm	Missing: -32768
	Sea Surface Temperature			0.01	degrees_Celsius	Missing: -32768
	Sea Surface Wind Speed			0.01	m/s	Missing: -32768
	Water Vapor			0.01	kg/m^2	Missing: -32768
Standard_Deviation		short	1800*3600*ndim	0.01		
Total_Number		short	1800*3600*ndim	1.0		
lat		short	1800*3600	0.01	degrees_north	
lon		short	1800*3600	0.01	degrees_east	

(5) Monthly Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration) are shown in the following table.

Table 5.3-47 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	1120*760*ndim	1.0		ndim: 1~3
Geophysical_Data	short	1120*760*ndim	0.1	%	Missing: -32768
Standard_Deviation	short	1120*760*ndim	0.01		
Total_Number	short	1120*760*ndim	1.0		
lat	float	1120*760	1.0	degrees_north	
lon	float	1120*760	1.0	degrees_east	

(6) Monthly Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration) are shown in the following table.

Table 5.3-48 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	830*790*ndim	1.0		ndim: 1~3
Geophysical_Data	short	830*790*ndim	0.1	%	Missing: -32768
Standard_Deviation	short	830*790*ndim	0.01		
Total_Number	short	830*790*ndim	1.0		
lat	float	830*790	1.0	degrees_north	
lon	float	830*790	1.0	degrees_east	

(7) Monthly Average, High Resolution, Polar Stereo Projection (North), Snow Depth

Variables of AMSR2 Level 3 (Monthly Average, High Resolution, Polar Stereo Projection (North), Snow Depth) are shown in the following table.

Table 5.3-49 AMSR2 Level 3 Variables (Monthly Average, High Resolution, Polar Stereo Projection (North), Snow Depth)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	1435*1080*ndim	1.0		ndim: 1~3
Geophysical_Data	short	1435*1080*ndim	0.1	cm	Missing: -32768
Standard_Deviation	short	1435*1080*ndim	0.01		
Total_Number	short	1435*1080*ndim	1.0		
lat	float	1435*1080	1.0	degrees_north	
lon	float	1435*1080	1.0	degrees_east	

(8) Monthly Average, Low Resolution, Equirectangular Projection, Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Equirectangular Projection, Brightness Temperature) are shown in the following table.

Table 5.3-50 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Equirectangular Projection, Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	720*1440	1.0		
Average_Number__V_	short	720*1440	1.0		
Brightness_Temperature__H_	int	720*1440	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	720*1440	0.01	K	Missing: 65535, Data Range: 1000~50000
Standard_Deviation__H_	short	720*1440	0.01		
Standard_Deviation__V_	short	720*1440	0.01		
Total_Number__H_	short	720*1440	1.0		
Total_Number__V_	short	720*1440	1.0		
lat	short	720*1440	0.01	degrees_north	
lon	short	720*1440	0.01	degrees_east	

(9) Monthly Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature) are shown in the following table.

Table 5.3-51 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	448*304	1.0		
Average_Number__V_	short	448*304	1.0		
Brightness_Temperature__H_	int	448*304	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	448*304	0.01	K	Missing: 65535, Data Range:1000~50000
Standard_Deviation__H_	short	448*304	0.01		
Standard_Deviation__V_	short	448*304	0.01		
Total_Number__H_	short	448*304	1.0		
Total_Number__V_	short	448*304	1.0		
lat	float	448*304	1.0	degrees_north	
lon	float	448*304	1.0	degrees_east	

(10) Monthly Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature) are shown in the following table.

Table 5.3-52 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number__H_	short	332*316	1.0		
Average_Number__V_	short	332*316	1.0		
Brightness_Temperature__H_	int	332*316	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	332*316	0.01	K	Missing: 65535, Data Range: 1000~50000
Standard_Deviation__H_	short	332*316	0.01		
Standard_Deviation__V_	short	332*316	0.01		
Total_Number__H_	short	332*316	1.0		
Total_Number__V_	short	332*316	1.0		
lat	float	332*316	1.0	degrees_north	
lon	float	332*316	1.0	degrees_east	

(11) Monthly Average, Low Resolution, Equirectangular Projection, Physical Quantity

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Equirectangular Projection, Physical Quantity) are shown in the following table.

Table 5.3-53 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Equirectangular Projection, Physical Quantity)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number		short	720*1440*ndim	1.0		ndim: 1~3
Geophysical_Data	Cloud Liquid Water	short	720*1440*ndim	0.001	kg/m ²	Missing: -32768
	Precipitation			0.01	mm/h	Missing: -32768
	Soil Moisture			0.1	%	Missing: -32768
	Snow Depth			0.1	cm	Missing: -32768
	Sea Surface Temperature			0.01	degrees_Celsius	Missing: -32768
	Sea Surface Wind Speed			0.01	m/s	Missing: -32768
	Water Vapor			0.01	kg/m ²	Missing: -32768
Standard_Deviation		short	720*1440*ndim	0.01		
Total_Number		short	720*1440*ndim	1.0		
lat		short	720*1440	0.01	degrees_north	
lon		short	720*1440	0.01	degrees_east	

(12) Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration) are shown in the following table.

Table 5.3-54 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	448*304*ndim	1.0		ndim: 1~3
Geophysical_Data	short	448*304*ndim	0.1	%	Missing: -32768
Standard_Deviation	short	448*304*ndim	0.01		
Total_Number	short	448*304*ndim	1.0		
lat	float	448*304	1.0	degrees_north	
lon	float	448*304	1.0	degrees_east	

(13) Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Polar Stereo Projection (South), Sea Ice Concentration) are shown in the following table.

Table 5.3-55 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	332*316*ndim	1.0		ndim: 1~3
Geophysical_Data	short	332*316*ndim	0.1	%	Missing: -32768
Standard_Deviation	short	332*316*ndim	0.01		
Total_Number	short	332*316*ndim	1.0		
lat	float	332*316	1.0	degrees_north	
lon	float	332*316	1.0	degrees_east	

(14) Monthly Average, Low Resolution, Polar Stereo Projection (North), Snow Depth

Variables of AMSR2 Level 3 (Monthly Average, Low Resolution, Polar Stereo Projection (North), Snow Depth) are shown in the following table.

Table 5.3-56 AMSR2 Level 3 Variables (Monthly Average, Low Resolution, Polar Stereo Projection (North), Snow Depth)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Average_Number	short	574*432*ndim	1.0		ndim: 1~3
Geophysical_Data	short	574*432*ndim	0.1	cm	Missing: -32768
Standard_Deviation	short	574*432*ndim	0.01		
Total_Number	short	574*432*ndim	1.0		
lat	float	574*432	1.0	degrees_north	
lon	float	574*432	1.0	degrees_east	

(15) Daily Average, High Resolution, Equirectangular Projection, Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Equirectangular Projection, Brightness Temperature) are shown in the following table.

Table 5.3-57 AMSR2 Level 3 Variables (Daily Average, High Resolution, Equirectangular Projection, Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature_H_	int	1800*3600	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_V_	int	1800*3600	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	1800*3600	1.0	min	
lat	short	1800*3600	0.01	degrees_north	
lon	short	1800*3600	0.01	degrees_east	

(16) Daily Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature) are shown in the following table.

Table 5.3-58 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature_H_	int	1120*760	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_V_	int	1120*760	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	1120*760	1.0	min	
lat	float	1120*760	1.0	degrees_north	
lon	float	1120*760	1.0	degrees_east	

(17) Daily Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature) are shown in the following table.

Table 5.3-59 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (South), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature__H_	int	830*790	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	830*790	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	830*790	1.0	min	
lat	float	830*790	1.0	degrees_north	
lon	float	830*790	1.0	degrees_east	

(18) Daily Average, High Resolution, Equirectangular Projection, Physical Quantity

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (South), Physical Quantity) are shown in the following table.

Table 5.3-60 AMSR2 Level 3 Variables (Daily Average, High Resolution, Equirectangular Projection, Physical Quantity)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	Cloud Liquid Water	short	1800*3600*ndim	0.001	kg/m ²	ndim: 1~3, Missing: -32768
	Precipitation			0.01	mm/h	Missing: -32768
	Soil Moisture			0.1	%	Missing: -32768
	Snow Depth			0.1	cm	Missing: -32768
	Sea Surface Temperature			0.01	degrees_Celsius	Missing: -32768
	Sea Surface Wind Speed			0.01	m/s	Missing: -32768
	Water Vapor			0.01	kg/m ²	Missing: -32768
Time_Information		short	1800*3600	1.0	min	
lat		short	1800*3600	0.01	degrees_north	
lon		short	1800*3600	0.01	degrees_east	

(19) Daily Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration) are shown in the following table.

Table 5.3-61 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	1120*760*ndim	0.1	%	ndim: 1~3, Missing: -32768
Time_Information	short	1120*760	1.0	min	
lat	float	1120*760	1.0	degrees_north	
lon	float	1120*760	1.0	degrees_east	

(20) Daily Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration) are shown in the following table.

Table 5.3-62 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (South), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	830*790*ndim	0.1	%	ndim: 1~3, Missing: -32768
Time_Information	short	830*790	1.0	min	
lat	float	830*790	1.0	degrees_north	
lon	float	830*790	1.0	degrees_east	

(21) Daily Average, High Resolution, Polar Stereo Projection (North), Snow Depth

Variables of AMSR2 Level 3 (Daily Average, High Resolution, Polar Stereo Projection (North), Snow Depth) are shown in the following table.

Table 5.3-63 AMSR2 Level 3 Variables (Daily Average, High Resolution, Polar Stereo Projection (North), Snow Depth)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	1435*1080*ndim	0.1	cm	ndim: 1~3, Missing: -32768
Time_Information	short	1435*1080	1.0	min	
lat	float	1435*1080	1.0	degrees_north	
lon	float	1435*1080	1.0	degrees_east	

(22) Daily Average, Low Resolution, Equirectangular Projection, Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Equirectangular Projection, Brightness Temperature) are shown in the following table.

Table 5.3-64 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Equirectangular Projection, Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature__H_	int	720*1440	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	720*1440	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	720*1440	1.0	min	
lat	short	720*1440	0.01	degrees_north	
lon	short	720*1440	0.01	degrees_east	

(23) Daily Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature) are shown in the following table.

Table 5.3-65 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	備考
Brightness_Temperature__H_	int	448*304	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature__V_	int	448*304	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	448*304	1.0	min	
lat	float	448*304	1.0	degrees_north	
lon	float	448*304	1.0	degrees_east	

(24) Daily Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature) are shown in the following table.

Table 5.3-66 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (South), Brightness Temperature)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Brightness_Temperature_H_	int	332*316	0.01	K	Missing: 65535, Data Range: 1000~50000
Brightness_Temperature_V_	int	332*316	0.01	K	Missing: 65535, Data Range: 1000~50000
Time_Information	short	332*316	1.0	min	
lat	float	332*316	1.0	degrees_north	
lon	float	332*316	1.0	degrees_east	

(25) Daily Average, Low Resolution, Equirectangular Projection, Physical Quantity

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Equirectangular Projection, Physical Quantity) are shown in the following table.

Table 5.3-67 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Equirectangular Projection, Physical Quantity)

Variable Name		Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	Cloud Liquid Water	short	720*1440*ndim	0.001	kg/m ²	ndim: 1~3, Missing: -32768
	Precipitation			0.01	mm/h	Missing: -32768
	Soil Moisture			0.1	%	Missing: -32768
	Snow Depth			0.1	cm	Missing: -32768
	Sea Surface Temperature			0.01	degrees_Celsius	Missing: -32768
	Sea Surface Wind Speed			0.01	m/s	Missing: -32768
	Water Vapor			0.01	kg/m ²	Missing: -32768
Time_Information		short	720*1440	1.0	min	
lat		short	720*1440	0.01	degrees_north	
lon		short	720*1440	0.01	degrees_east	

(26) Daily Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration) are shown in the following table.

Table 5.3-68 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	448*304*ndim	0.1	%	ndim: 1~3, Missing: -32768
Time_Information	short	448*304	1.0	min	
lat	float	448*304	1.0	degrees_north	
lon	float	448*304	1.0	degrees_east	

(27) Daily Average, Low Resolution, Polar Stereo Projection (South), Sea Ice Concentration

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Polar Stereo Projection (South), Sea Ice Concentration) are shown in the following table.

Table 5.3-69 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (South), Sea Ice Concentration)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	332*316*ndim	0.1	%	ndim: 1~3, Missing: -32768
Time_Information	short	332*316	1.0	min	
lat	float	332*316	1.0	degrees_north	
lon	float	332*316	1.0	degrees_east	

(28) Daily Average, Low Resolution, Polar Stereo Projection (North), Snow Depth

Variables of AMSR2 Level 3 (Daily Average, Low Resolution, Polar Stereo Projection (North), Snow Depth) are shown in the following table.

Table 5.3-70 AMSR2 Level 3 Variables (Daily Average, Low Resolution, Polar Stereo Projection (North), Snow Depth)

Variable Name	Data Type	Dimensions	Scale Factor	Data Unit	Remarks
Geophysical_Data	short	574*432*ndim	0.1	cm	ndim: 1~3, Missing: -32768
Time_Information	short	574*432	1.0	min	
lat	float	574*432	1.0	degrees_north	
lon	float	574*432	1.0	degrees_east	

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