Level-2A Data Fields

Notations Used in this Document

Refer to Table 1 for the notations used throughout this document.

Table 1. Notations Used in Document

Notation	Description
Int8	8-bit (1-byte) signed integer
Int16	16-bit (2-byte) signed integer
Int32	32-bit (4-byte) signed integer
Uint8	8-bit (1-byte) unsigned integer
Uint16	16-bit (2-byte) unsigned integer
Float32	32-bit (4-byte) floating-point integer
Float64	64-bit (8-byte) floating-point integer
Char	8-bit character
Res. 1	56-km footprint
Res. 2	37-km footprint
Res. 3	21-km footprint
Res. 4	11-km footprint
Res. 5	5-km footprint
JAXA	Japan Aerospace Exploration Agency
RSS	Remote Sensing Systems (U.S.)

Note: For data with scale and offset values, the data values can be obtain in the specified units with the following equation:

Data value in units = (stored data value * scale factor) + offset

Example: T_b ;(kelvin) = (stored data value * 0.01) + 327.68

Scaling factors and offsets are provided with the local attributes of each HDF-EOS file. You should check each file to ensure correct values. See the Software and Tools Web page for help reading these data.

For more information on the L1 data fields' format descriptions transferred to L2A, see Aqua AMSR-E Level-1 Product Format Description Document

Low_Res_Swath Data Fields

See Notations Used in this Document for notation definitions.

Table 2. Low_Res_Swath Data Fields

Field	Type	Dimension per Scan	Units	Scale Factor	Offset	Source
Antenna_Temp_Coefficients_6_to_52	12 x 3	kelvin, kelvin/count, kelvin /countsq	n/a	n/a	RSS	JAXA
Data_Quality	Float32	128	n/a	n/a	n/a	JAXA
Observation_Supplement	Uint16	27	n/a	n/a	n/a	JAXA
Interpolation_Flag_6_to_52	Int8	12 x 16	n/a	n/a	n/a	JAXA
Position_in_Orbit	Float64	1	JAXA_convention_for_fractional_orbit	n/a	n/a	JAXA
Navigation_Data	Float32	6	m, m/s	n/a	n/a	JAXA
Attitude Data	Float32	3	degree	n/a	n/a	JAXA
SPC_Temperature_Count	Uint16	20	count	n/a	n/a	JAXA

Earth_Incidence	Int16	243	degree	0.0050	n/a	JAXA
Earth_Azimuth	Int16	243	degree	0.01	n/a	JAXA
Sun_Elevation	Int16	243	degree	0.1	n/a	JAXA
Sun_Azimuth	Int16	243	degree	0.1	n/a	JAXA
RX_Offset_Gain_Count	Uint16	32	count	n/a	n/a	JAXA
SPS_Temperature_Count	Uint16	32	count	n/a	n/a	JAXA
Land /Ocean_Flag_for_6_10_18_23_36_50_89A	Uint8	243 x 7	%	n/a	n/a	JAXA
Cold_Sky_Mirror_Count_6_to_52	Int16	16 x 12	radiometer_counts	n/a	n/a	JAXA
Hot_Load_Count_6_to_52	Int16	16 x 12	radiometer_counts	n/a	n/a	JAXA
6.9V_Res.1_TB_(not-resampled) 6.9H_Res.1_TB_(not-resampled) 10.7V_Res.2_TB_(not-resampled) 10.7H_Res.2_TB_(not-resampled) 18.7V_Res.3_TB_(not-resampled) 18.7H_Res.3_TB_(not-resampled) 23.8V_Approx._Res.3_TB_(not-resampled) 23.8H_Approx._Res.3_TB_(not-resampled) 36.5V_Res.4_TB_(not-resampled) 36.5H_Res.4_TB_(not-resampled)	Int16	243	kelvin	0.01	327.68	RSS, calculated from JAXA counts
6.9V_Res.1_TB 6.9H_Res.1_TB 10.7V_Res.1_TB 10.7V_Res.2_TB 10.7H_Res.1_TB 10.7H_Res.2_TB 18.7V_Res.1_TB 18.7V_Res.2_TB 18.7H_Res.1_TB 18.7H_Res.2_TB 23.8V_Res.1_TB 23.8V_Res.2_TB 23.8V_Res.3_TB 23.8H_Res.1_TB 23.8H_Res.2_TB 23.8H_Res.3_TB 36.5V_Res.1_TB 36.5V_Res.2_TB 36.5V_Res.3_TB 36.5H_Res.1_TB 36.5H_Res.2_TB 36.5H_Res.3_TB 89.0V_Res.1_TB 89.0V_Res.2_TB 89.0V_Res.3_TB 89.0V_Res.4_TB 89.0H_Res.1_TB 89.0H_Res.2_TB 89.0H_Res.3_TB 89.0H_Res.4_TB	Int16	243	kelvin	0.01	327.68	RSS
Scan_Quality_Flag	Int32	1	flag	n/a	n/a	RSS
Channel_Quality_Flag_6_to_52	Int16	12	flag	n/a	n/a	RSS
Resampled_Channel_Quality_Flag	Int16	30	flag	n/a	n/a	RSS
Effective_Cold_Space_Temperature_6_to_52	Float32	12	kelvin	n/a	n/a	RSS
Effective_Hot_Load_Temperature_6_to_52	Float32	12	kelvin	n/a	n/a	RSS
Res1_Surf Res2_Surf Res3_Surf Res4_Surf	Int8	243	%land	0.4	n/a	RSS
Sun_Glint_Angle	Int16	243	degree	0.01	n/a	RSS
Geostationary_Reflection_Latitude	Int16	243	degree	0.01	n/a	RSS
Geostationary_Reflection_Longitude	Int16	243	degree	0.01	n/a	RSS

High_Res_A_Swath and High_Res_B_Swath Data Fields

See Notations Used in this Document for notation definitions.

Beginning 4 November 2004, the 89 GHz A-horn developed a permanent problem resulting in a loss of those observations. Consequently, after 3 November 2004, the High_Res_A_Swath data fields contain values of 0.

Table 3. High_Res_A_Swath and High_Res_B_Swath Data Fields

Element	Type	Dimension per Scan	Unit	Scale Factor	Offset	Source
Antenna_Temp_Coefficients_89A	Float32	2 x 3	kelvin, kelvin/count, kelvin/countsq	n/a	n/a	RSS
Interpolation_Flag_89_A	Int8	2 x 32	n/a	n/a	n/a	RSS
Cold_Sky_Mirror_Count_89A	Int16	32 x 2	radiometer_counts	n/a	n/a	JAXA
Hot_Load_Count_89A	Int16	32 x 2	radiometer_counts	n/a	n/a	JAXA
89.0V_Res.5A_TB_(not-resampled)	Int16	486	kelvin	0.01	327.68	RSS
89.0H_Res.5A_TB_(not-resampled)	Int16	486	kelivn	0.01	327.68	RSS
Scan_Quality_Flag_89A	Int32	1	flag	n/a	n/a	RSS
Channel_Quality_Flag_89A	Int16	2	flag	n/a	n/a	RSS
Effective_Cold_Space_Temperature_89A	Float32	2	kelvin	n/a	n/a	RSS
Effective_Hot_Load_Temperature_89A	Float32	2	kelvin	n/a	n/a	RSS
Res5A_Surf	Int8	486	%land	4.0	n/a	RSS

Geolocation Fields

See Notations Used in this Document for notation definitions.

The Geolocation fields for the High_Res_A_Swath and the High_Res_B_Swath are completely analogous to those of the Low_Res_Swath with 486 observations per scan rather than 243.

Table 4. Geolocation Fields

Field	Type	Dimension per scan	Source	Units
Time	Float64	1	JAXA	TAI93 (seconds since midnight, 01 January 1993)
Latitude	Float32	243	RSS	degree
Longitude	Float32	243	RSS	degree

Global Attributes

See Notations Used in this Document for notation definitions.

The swath attribute fields of the High_Res_A_Swath and the High_Res_B_Swath are identical to those of the Low_Res_Swath except that the Resampled_Channel_Sequence field is omitted because high-resolution swaths have no resampled channels. Also, the Level1A_Channel_Sequence field was modified to describe the order of the elements of the High_Res_A_Swath Level1A_Scan_Chan_Quality_Flag rather than that of the Low_Res_Swath quality flag.

Table 5. Global Attributes

Attribute	Type	Description
HDFEOSVersion	Char	HDF-EOS Version of product
StructMetadata.0	Char	HDF-EOS structural metadata
ProcessingLevelID	Char	Product processing level
ProcessingFacility	Char	Product processing facility
SensorShortName	Char	Sensor short name
EquatorCrossingLongitude	Char	Longitude at which instrument crosed equator

OrbitSemiMajorAxis	Char	Diameter of platform orbit at the equator
OrbitEccentricity	Char	How far the elliptical platform orbit deviates from a circle
OrbitArgumentPerigee	Char	Point at which platform orbit is closest to Earth in degrees from ascending equatorial node
OrbitInclination	Char	Degree by which platform orbit deviates from polar (north / south) orbit
OrbitPeriod	Char	Orbit period in minutes
EllipsoidName	Char	Reference ellipsoid name
SemiMajorAxisofEarth	Char	Diameter of Earth (geoid) at the equator
FlatteningRatioofEarth	Char	The amount by which the polar geoid diameter is smaller than the equatorial geoid diameter
L1AProductionDataTime	Char	Production date and time of input L1A file
L1ANumerofMissingScans	Char	Number of missing scans in input L1A file
L2AProcessingDate	Char	Production date and time of L2A file
PlatformShortName	Char	Platform short name
EquatorCrossingTime	Char	Time at which instrument crossed equator
EquatorCrossingDate	Char	Date at which instrument crossed equator
EphemerisType	Char	Definitive or Predicted
EphemerisGranulePointer	Char	Ephemeris input file
EphemerisQA	Char	Ephemeris Quality Assessment
NumberofMissingPackets	Char	Number of missing L1A packets, generally from spacecraft to ground transmission
QAPercentParityErrorData	Char	Percent parity error on spacecraft to ground transmission
Altitude	Char	Average altitude of instrument above geoid
RangeBeginningDate	Char	Beginning date of file coverage
RangeBeginningTime	Char	Beginning time of file coverage
RangeEndingDate	Char	Ending date of file coverage
RangeEndingTime	Char	Ending time of file coverage
InputPointer	Char	Input L1A file
PlatinumThermistorWbCoeff	Char	Thermistor Count to Temperature Coefficients: T = Wc + Wb (counts - segment)
PlatinumThermistorWcCoeff	Char	Thermistor Count to Temperature Coefficients: T = Wc + Wb (counts - segment)
PlatinumThermistorSegment	Char	Thermistor Count to Temperature Coefficients: T = Wc + Wb (counts - segment)
CoefficientAvv	Char	APC Coefficients: Tbv = Avv * Tav + Ahv * Tah + Aov
CoefficientAhv	Char	APC Coefficients: Tbv = Avv * Tav + Ahv * Tah + Aov
CoefficientAovTimesCold	Char	APC Coefficients: Tbv = Avv * Tav + Ahv * Tah + Aov
CoefficientAhh	Char	APC Coefficients: Tbh = Ahh * Tah + Avh * Tav + Aoh
CoefficientAvh	Char	APC Coefficients: Tbh = Ahh * Tah + Avh * Tav + Aoh
CoefficientAohTimesCold	Char	APC Coefficients: Tbh = Ahh * Tah + Avh * Tav + Aoh
PGE_Version	Char	Product maturity code and version number
StartOrbitNumber	Float32	Orbit number at start of data acquisition
StopOrbitNumber	Float32	Orbit number at stop of data acquisition
OrbitDirection	Char	Direction of orbit (ascending or descending)
NumberofScans	Int32	Number of scans
SoftwareRevisionDate	Char	Date of last product software revision
CoreMetadata.0	Char	HDF-EOS core metadata