

# **Format Conversion Tool**

Operation Manual for Users

Appendix A

**Ver. 7.0**

**27/09/2029**

Changes and status paragraphs

Revision	Date	Modified or added paragraphs	Reason for change
1.0	10/03/2016	Creation	-
2.0	26/11/2016	-	Moved Section 8.1 to Appendix A.
3.0	20/6/2017	1.1	Wrote “DPR Daily L3” KuNS product which is outputted.
3.1	21/7/2017	-	We have released the data format conversion tool v3.1 to solve a bug of memory leak in trying GSMap binary data conversion.
4.0	12/3/2020	1.4	Aqua products added to target products.
5.0	29/3/2021	1.5	GCOM-C products added to target products.
6.0	28/10/2021	1.1	Added DPRMS, DPRMS and KuFS to the output file of DPR Daily L3. Added DPRFS, KaFS and KuFS to the output file of DPR Monthly L3.
7.0	27/09/2024	—	—

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# 1. Details of conversion target products

## 1.1 GPM products

- GSMP Hourly L3(HDF5) – hourlyPrecipRate
- GSMP Monthly L3(HDF5)– MonthlyPrecipRate
- GSMP Daily Rainfall in 0.25-deg(Binary)
- GSMP Daily Rainfall in 0.1-deg(Binary)
- DPR Daily L3(HDF5) – Grid – PrecipRateESurfMean
  - ◇ DPRMS×Ascending
  - ◇ DPRMS×Descending
  - ◇ KuNS×Ascending
  - ◇ KuNS×Descending
- DPR Daily L3(HDF5) – Grid – PrecipRateESurfaceMean
  - ◇ DPRFS × Ascending
  - ◇ DPRFS × Descending
  - ◇ DPRMS × Ascending
  - ◇ DPRMS × Descending
  - ◇ KuFS × Ascending
  - ◇ KuFS × Descending
- DPR Monthly L3(HDF5) – Grids – G2 – precipRateESurface-mean
  - ◇ KuNS×stratiform
  - ◇ KuNS×convective
  - ◇ KuNS×all
  - ◇ KaMS×stratiform
  - ◇ KaMS×convective
  - ◇ KaMS×all
  - ◇ KaHS×stratiform
  - ◇ KaHS×convective
  - ◇ KaHS×all
  - ◇ DPRMS×stratiform
  - ◇ DPRMS×convective
  - ◇ DPRMS×all
  - ◇ KuMS×stratiform
  - ◇ KuMS×convective
  - ◇ KuMS×all

- DPR Monthly L3(HDF5) – FS – G2 – precipRateESurface-mean
  - ◇ DPRFS × stratiform
  - ◇ DPRFS × convective
  - ◇ DPRFS × all
  - ◇ KaFS × stratiform
  - ◇ KaFS × convective
  - ◇ KaFS × all
  - ◇ KuFS × stratiform
  - ◇ KuFS × convective
  - ◇ KuFS × all

## 1.2 GCOM-W products

- AMSR2 L1A/L1B(HDF5)
  - Observation Count(L1A)
    - ◇ 6.9GHz,H
    - ◇ 6.9GHz,V
    - ◇ 7.3GHz,H
    - ◇ 7.3GHz,V
    - ◇ 10.7GHz,H
    - ◇ 10.7GHz,V
    - ◇ 18.7GHz,H
    - ◇ 18.7GHz,V
    - ◇ 23.8GHz,H
    - ◇ 23.8GHz,V
    - ◇ 36.5GHz,H
    - ◇ 36.5GHz,V
    - ◇ 89GHz-A,H
    - ◇ 89GHz-A,V
    - ◇ 89GHz-B,H
    - ◇ 89GHz-B,V
  - Brightness Temperature (L1B)
    - ◇ 6.9GHz,H
    - ◇ 6.9GHz,V
    - ◇ 7.3GHz,H
    - ◇ 7.3GHz,V
    - ◇ 10.7GHz,H
    - ◇ 10.7GHz,V
    - ◇ 18.7GHz,H
    - ◇ 18.7GHz,V
    - ◇ 23.8GHz,H
    - ◇ 23.8GHz,V
    - ◇ 36.5GHz,H
    - ◇ 36.5GHz,V

- ◇ 89.0GHz-A,H
- ◇ 89.0GHz-A,V
- ◇ 89.0GHz-B,H
- ◇ 89.0GHz-B,V
- AMSR2 L1R(HDF5)
  - Brightness Temperature
    - ◇ reso06 6.9GHz,H
    - ◇ reso06 6.9GHz,V
    - ◇ reso06 7.3GHz,H
    - ◇ reso06 7.3GHz,V
    - ◇ reso06 10.7GHz,H
    - ◇ reso06 10.7GHz,V
    - ◇ reso06 18.7GHz,H
    - ◇ reso06 18.7GHz,V
    - ◇ reso06 23.8GHz,H
    - ◇ reso06 23.8GHz,V
    - ◇ reso06 36.5GHz,H
    - ◇ reso06 36.5GHz,V
    - ◇ reso06 89.0GHz,H
    - ◇ reso06 89.0GHz,V
    - ◇ reso10 10.7GHz,H
    - ◇ reso10 10.7GHz,V
    - ◇ reso10 18.7GHz,H
    - ◇ reso10 18.7GHz,V
    - ◇ reso10 23.8GHz,H
    - ◇ reso10 23.8GHz,V
    - ◇ reso10 36.5GHz,H
    - ◇ reso10 36.5GHz,V
    - ◇ reso10 89.0GHz,H
    - ◇ reso10 89.0GHz,V
    - ◇ reso23 18.7GHz,H
    - ◇ reso23 18.7GHz,V
    - ◇ reso23 23.8GHz,H
    - ◇ reso23 23.8GHz,V
    - ◇ reso23 36.5GHz,H
    - ◇ reso23 36.5GHz,V
    - ◇ reso23 89.0GHz,H
    - ◇ reso23 89.0GHz,V
    - ◇ reso36 36.5GHz,H
    - ◇ reso36 36.5GHz,V
    - ◇ reso36 89.0GHz,H
    - ◇ reso36 89.0GHz,V
    - ◇ original 89.0GHz-A,H
    - ◇ original 89.0GHz-A,V

- ◇ original 89.0GHz-B,H
  - ◇ original 89.0GHz-B,V
- AMSR2 L2 High(HDF5) – Geophysical Data
  - ◇ Precipitation for 89A
  - ◇ Precipitation for 89B
- AMSR2 L2 Low(HDF5) – Geophysical Data
  - ◇ Total Precipitable Water(
  - ◇ Cloud Liquid Water
  - ◇ Sea Surface Wind speed
  - ◇ Sea Surface Temperature
  - ◇ Sea Surface Temperature 10GHz
  - ◇ Snow Depth
  - ◇ Snow Water Equivalent
  - ◇ Soil Moisture Content
  - ◇ Sea Ice Concentration
- AMSR2 L3 (HDF5) – Brightness Temperature
  - ◇ Brightness Temperature H
  - ◇ Brightness Temperature V
- AMSR2 L3 (HDF5) – Geophysical Data
  - ◇ Total Precipitable Water
  - ◇ Cloud Liquid Water
  - ◇ Precipitation
  - ◇ Sea Surface Wind speed
  - ◇ Sea Surface Temperature
  - ◇ Sea Surface Temperature 10GHz
  - ◇ Snow Depth
  - ◇ Snow Water Equivalent
  - ◇ Soil Moisture Content
  - ◇ Sea Ice Concentration

### 1.3 JASMES products

- JASMES Global(Binary)
  - chla
  - dpar
  - lst
  - ndvi
  - olst
  - par
  - ptw
  - rgb
  - rpar
  - swr
  - taua

- tip
- uva
- uvb
- wf
- wst
- JASMES Global(HDF4) – snwefr\_ghrm5c
- snwefr\_mds10c
- JASMES Japan Area(Binary) –alph
- chla
- dpar
- ndvi
- olst
- par
- ptw
- rgb
- rpar
- swr
- taua
- tip
- uva
- uvb
- wf
- wst
- JASMES Japan Area(HDF4) – snwefr
- JASMES Thailand Area(Binary) – chla
- dpar
- ndvi
- olst
- par
- ptw
- rgb
- rpar
- swr
- taua
- tip
- uva
- uvb
- wf
- wst
- JASMES Gobi Desert(Binary) – aerosol

## 1.4 AQUA products

- AMSR-E L1B(HDF5)
  - Brightness Temperature(L1B)
    - ◇ 6.9GHz,H
    - ◇ 6.9GHz,V
    - ◇ 7.3GHz,H
    - ◇ 7.3GHz,V
    - ◇ 10.7GHz,H
    - ◇ 10.7GHz,V
    - ◇ 18.7GHz,H
    - ◇ 18.7GHz,V
    - ◇ 23.8GHz,H
    - ◇ 23.8GHz,V
    - ◇ 36.5GHz,H
    - ◇ 36.5GHz,V
    - ◇ 89.0GHz-A,H
    - ◇ 89.0GHz-A,V
    - ◇ 89.0GHz-B,H
    - ◇ 89.0GHz-B,V
  
- AMSR-E L1R(HDF5)
  - Brightness Temperature
    - ◇ reso06 6.9GHz,H
    - ◇ reso06 6.9GHz,V
    - ◇ reso06 7.3GHz,H
    - ◇ reso06 7.3GHz,V
    - ◇ reso06 10.7GHz,H
    - ◇ reso06 10.7GHz,V
    - ◇ reso06 18.7GHz,H
    - ◇ reso06 18.7GHz,V
    - ◇ reso06 23.8GHz,H
    - ◇ reso06 23.8GHz,V
    - ◇ reso06 36.5GHz,H
    - ◇ reso06 36.5GHz,V
    - ◇ reso06 89.0GHz,H
    - ◇ reso06 89.0GHz,V
    - ◇ reso10 10.7GHz,H
    - ◇ reso10 10.7GHz,V
    - ◇ reso10 18.7GHz,H
    - ◇ reso10 18.7GHz,V
    - ◇ reso10 23.8GHz,H
    - ◇ reso10 23.8GHz,V
    - ◇ reso10 36.5GHz,H
    - ◇ reso10 36.5GHz,V
    - ◇ reso10 89.0GHz,H
    - ◇ reso10 89.0GHz,V

- ◇ reso23 18.7GHz,H
  - ◇ reso23 18.7GHz,V
  - ◇ reso23 23.8GHz,H
  - ◇ reso23 23.8GHz,V
  - ◇ reso23 36.5GHz,H
  - ◇ reso23 36.5GHz,V
  - ◇ reso23 89.0GHz,H
  - ◇ reso23 89.0GHz,V
  - ◇ reso36 36.5GHz,H
  - ◇ reso36 36.5GHz,V
  - ◇ reso36 89.0GHz,H
  - ◇ reso36 89.0GHz,V
  - ◇ original 89.0GHz-A,H
  - ◇ original 89.0GHz-A,V
  - ◇ original 89.0GHz-B,H
  - ◇ original 89.0GHz-B,V
- AMSR-E L2 High(HDF5) – Geophysical Data
  - ◇ Precipitation for 89A
  - ◇ Precipitation for 89B
- AMSR-E L2 Low(HDF5) – Geophysical Data
  - ◇ Total Precipitable Water(
  - ◇ Cloud Liquid Water
  - ◇ Sea Surface Wind speed
  - ◇ Sea Surface Temperature
  - ◇ Sea Surface Temperature 10GHz
  - ◇ Snow Depth
  - ◇ Snow Water Equivalent
  - ◇ Soil Moisture Content
  - ◇ Sea Ice Concentration
- AMSR-E L3 (HDF5) – Brightness Temperature
  - ◇ Brightness Temperature H
  - ◇ Brightness Temperature V
- AMSR-E L3 (HDF5) – Geophysical Data
  - ◇ Total Precipitable Water
  - ◇ Cloud Liquid Water
  - ◇ Precipitation
  - ◇ Sea Surface Wind speed
  - ◇ Sea Surface Temperature
  - ◇ Sea Surface Temperature 10GHz
  - ◇ Snow Depth
  - ◇ Snow Water Equivalent
  - ◇ Soil Moisture Content
  - ◇ Sea Ice Concentration

## 1.5 GCOM-C products

- GCOM-C L1B VNR (HDF5) – Image Data
  - ◇ Lt\_VN01
  - ◇ Lt\_VN02
  - ◇ Lt\_VN03
  - ◇ Lt\_VN04
  - ◇ Lt\_VN05
  - ◇ Lt\_VN06
  - ◇ Lt\_VN07
  - ◇ Lt\_VN08
  - ◇ Lt\_VN09
  - ◇ Lt\_VN10
  - ◇ Lt\_VN11
  - ◇ QA\_flag
  - ◇ Land\_water\_flag
- GCOM-C L1B POL (HDF5) – Image Data
  - ◇ Lt\_P1\_0
  - ◇ Lt\_P1\_m60
  - ◇ Lt\_P1\_p60
  - ◇ Lt\_P2\_0
  - ◇ Lt\_P2\_m60
  - ◇ Lt\_P2\_p60
  - ◇ Lt\_PI01
  - ◇ Lt\_PI02
  - ◇ Lt\_PQ01
  - ◇ Lt\_PQ02
  - ◇ Lt\_PU01
  - ◇ Lt\_PU02
  - ◇ QA\_flag
  - ◇ Land\_water\_flag
- GCOM-C L1B IRS (HDF5) – Image Data
  - ◇ Lt\_SW01
  - ◇ Lt\_SW02
  - ◇ Lt\_SW03
  - ◇ Lt\_SW04
  - ◇ Lt\_TI01
  - ◇ Lt\_TI02
  - ◇ QA\_flag
  - ◇ Land\_water\_flag
- GCOM-C L2 NWLR (HDF5) – Image Data
  - ◇ NWLR\_380

- ◇ NWLR\_412
  - ◇ NWLR\_443
  - ◇ NWLR\_490
  - ◇ NWLR\_530
  - ◇ NWLR\_565
  - ◇ NWLR\_670
  - ◇ PAR
  - ◇ TAUR\_670
  - ◇ TAUR\_865
  - ◇ QA\_flag
- GCOM-C L2 IWPR (HDF5) – Image Data
  - ◇ CDOM
  - ◇ CHLA
  - ◇ TSM
  - ◇ QA\_flag
- GCOM-C L2 SST (HDF5) – Image Data
  - ◇ SST
  - ◇ QA\_flag
  - ◇ Cloud\_probability
- GCOM-C L2 LTOA (HDF5) – Image Data
  - ◇ Lt\_P1\_0
  - ◇ Lt\_P1\_m60
  - ◇ Lt\_P1\_p60
  - ◇ Lt\_P2\_0
  - ◇ Lt\_P2\_m60
  - ◇ Lt\_P2\_p60
  - ◇ Lt\_PI01
  - ◇ Lt\_PI02
  - ◇ Lt\_PQ01
  - ◇ Lt\_PQ02
  - ◇ Lt\_PU01
  - ◇ Lt\_PU02
  - ◇ Lt\_SW01
  - ◇ Lt\_SW02
  - ◇ Lt\_SW03
  - ◇ Lt\_SW04
  - ◇ Lt\_TI01
  - ◇ Lt\_TI02
  - ◇ Lt\_VN01
  - ◇ Lt\_VN02
  - ◇ Lt\_VN03
  - ◇ Lt\_VN04
  - ◇ Lt\_VN05

- ◇ Lt\_VN06
  - ◇ Lt\_VN07
  - ◇ Lt\_VN08
  - ◇ Lt\_VN08P
  - ◇ Lt\_VN09
  - ◇ Lt\_VN10
  - ◇ Lt\_VN11
  - ◇ Lt\_VN11P
  - ◇ QA\_flag
  - ◇ Land\_water\_flag
- GCOM-C L2 RSRF (HDF5) – Image Data
  - ◇ Rs\_PI01
  - ◇ Rs\_PI02
  - ◇ Rs\_SW01
  - ◇ Rs\_SW02
  - ◇ Rs\_SW03
  - ◇ Rs\_SW04
  - ◇ Rs\_VN01
  - ◇ Rs\_VN02
  - ◇ Rs\_VN03
  - ◇ Rs\_VN04
  - ◇ Rs\_VN05
  - ◇ Rs\_VN06
  - ◇ Rs\_VN07
  - ◇ Rs\_VN08
  - ◇ Rs\_VN08P
  - ◇ Rs\_VN09
  - ◇ Rs\_VN10
  - ◇ Rs\_VN11
  - ◇ Rs\_VN11P
  - ◇ Tb\_TI01
  - ◇ Tb\_TI02
  - ◇ QA\_flag
  - ◇ Angstrom
  - ◇ Land\_water\_flag
  - ◇ PAR
  - ◇ Tau\_500
  - ◇ SWR
- GCOM-C L2 LST (HDF5) – Image Data
  - ◇ LST
  - ◇ QA\_flag
  - ◇ E01
  - ◇ E02

- GCOM-C L2 CLFG (HDF5) – Image Data
  - ✧ Cloud\_flag