

AMSR3 Data Viewer User Manual

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Original	1/2025	First edition issued	
Rev. A	2026/3	<p>7.1 Basics of Map Projection</p> <p>Table 7-2 Product List Display Items</p> <p>Added a reference for when changing the dataset of L1 products.</p> <p>10.1. Color Settings for L1 Products in Map Display</p> <p>Updated the images for Figures 10-4 and 10-5.</p> <p>Added an explanation of the dataset-change combo box to Tables 10-1 and 10-2.</p> <p>15. List of Error Messages</p> <p>Added on-screen error messages.</p>	

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1. Introduction

This manual explains how to operate the AMSR3 Data Viewer (hereinafter referred to as "the application").

The application is designed to map and display observation data from the AMSR3 (Advanced Microwave Scanning Radiometer 3) onboard the GOSAT-GW (Global Observing SATellite for Greenhouse gases and Water cycle) on a map.

A list of products displayed by the application is shown in .

Table 1-1 List of target products

Processing Level	Display Products		Mapping Display Contents on the Map	Format Conversion	Video Output		
	Code	Description					
L1A	DNA	Count Value (1A)	RGB/Pseudocolor Image				
L1B	TBB	Brightness Temperature (1B)					
L1R	TBR	Resampled Brightness Temperature (1R)					
L1H	TBH	High-Resolution Brightness Temperature (1H)					
L1C	TBC	Center Position Corrected Brightness Temperature (1C)					
L2	TPW	Accumulated Water Vapor		Binary CSV Image NetCDF KML/KMZ	AVI		
	CLW	Accumulated Cloud Water					
	PRC	Precipitation					
	SST	Sea Surface Temperature					
	SSW	Sea Surface Wind Speed					
	ASW	All-Weather Sea Surface Wind Speed					
	SIC	Sea Ice Concentration					
	HSI	High-Resolution Sea Ice Concentration					
	SMC	Soil Moisture Content					
	SND	Snow Depth					
	HST	High-Resolution Sea Surface Temperature					
L3	Brightness Temperature	TL1	Brightness Temperature 6.925GHz	Pseudocolor Image	Binary CSV Image KML/KMZ ¹ (* ¹ excluding SIM)	AVI KML/KMZ ² (* ² EQR data only)	
		TL2	Brightness Temperature 7.3GHz				
		TL3	Brightness Temperature 10.25GHz				
		TL4	Brightness Temperature 10.65GHz				
		TL5	Brightness Temperature 18.7GHz				
		TL6	Brightness Temperature 23.8GHz				
		TL7	Brightness Temperature 36.42GHz				
		TH1	Brightness Temperature 89.0GHz				
		TH2	Brightness Temperature 165.5GHz				
		TH3	Brightness Temperature 183.31+/-3GHz				
		TH4	Brightness Temperature 183.31+/-7GHz				
		Atmosphere	TPW				Accumulated Water Vapor Amount
			CLW				Accumulated Cloud Water Amount
			PRC				Precipitation Amount
	Ocean Polar	SST	Sea Surface Temperature				
		SSW	Sea surface wind Speed				
		ASW	All-weather sea surface wind speed				
		HST	High-resolution sea surface temperature				
	Region	SIC	Sea ice concentration				
		HSI	High-resolution sea ice concentration				
		SIM	Sea ice displacement vector				
	Land	SMC	Soil moisture content				
		SND	Snow depth				

2. System Requirements

This chapter explains the system requirements necessary to run the application.

2.1. Hardware Requirements

Table 2-1 shows the hardware requirements necessary to run the application.

Table 2-1 Hardware Requirements for the Application

Category	Recommended Specifications	Remarks
CPU	Equivalent to Intel Core i5 processor or higher	
Memory	8GB or more	
HDD	1GB or more free space required (Additional space required for product storage.)	Includes map data.
Display	XGA (1024×768) or higher	

2.2. Software Requirements

Table 2-2 shows the software requirements for the operation of the application.

Table 2-2 Supported OS and Packages for the Application

Category	Name	Version	Remarks
OS	<ul style="list-style-type: none"> • Windows10/11 (https://www.microsoft.com/ja-JP/software-download) • MacOS 14 (macappstores://apps.apple.com/jp/app) • Linux (Equivalent to Red Hat 9 and Kernel 5.14.) (https://access.redhat.com/downloads/) 	64bit ver.	
Package	<ul style="list-style-type: none"> • xorg-x11-xauth • flexblas-netlib • mesa-dri-drivers • mesa-libGLw • epel-release • gdal-libs-3.4.3.1 • gdal • zip 		Linux only

2.3. Library Information

The application uses “Qt 5”.

3. Installation and Uninstallation

This chapter describes the installation and uninstallation procedures for the application.

3.1. Installation Procedure

3.1.1. Common Procedure (All OS)

Download the ZIP file for your corresponding OS from this site (see Table 3-1). Save the downloaded ZIP file to an appropriate folder and extract it. Upon extraction, the folders shown in Table 3-2 will be created. This completes the installation.

Table 3-1 Installation ZIP Files for Each OS

OS	ZIP File Name
Windows	AMSR3DataViewer_X.X.X_win_en.zip
MacOS	AMSR3DataViewer_X.X.X_mac_en.zip
Linux	AMSR3DataViewer_X.X.X_linux_en.zip

3.1.2. Installing Required Packages for Linux

In a Linux environment, install the packages required for the application to function. The necessary packages are listed in Table 2-2. No action is needed for packages that are already installed.

- Installing xorg-x11-xauth

Enter and execute the following command:

```
sudo yum install -y xorg-x11-xauth.x86_64
```

After the package installation is complete, log out from the server and log back in. Execute the "ls -a" command and confirm that the ".Xauthority" file has been created.

- Installing flexblas-netlib

Enter and execute the following command:

```
sudo yum install -y flexblas-netlib.x86_64
```

- Installing mesa-dri-drivers

Enter and execute the following command:

```
sudo yum install -y mesa-dri-drivers.x86_64
```

- Installing mesa-libGLw

Enter and execute the following command:

```
sudo yum install -y mesa-libGLw.x86_64
```

- Installing gdal

Enter and execute the following command to check if gdal-related packages can be installed:

```
sudo yum search gdal
```

If no installable packages are found, enable the EPEL repository by installing epel-release:

```
sudo dnf install -y https://dl.fedoraproject.org/pub/epel/epel-release-latest-9.noarch.rpm
```

After installing the EPEL repository, execute "sudo yum search gdal" again to confirm that gdal packages can be installed. If they are available, execute the following command:

1. yum install -y gdal-libs-3.4.3-1.el9.x86_64
2. yum install -y gdal.x86_64

- Installing zip

Enter and execute the following command:

```
dnf install -y zip
```

3.2. Installation Packages

Table 3-2 shows the contents of the application package.

Table 3-2 Contents of the Package for Each OS

OS	Folder Name	File Name
Windows	AMSR3DataViewer_X.X.X_win_en	bin
		config
		lib
		map
		product
		AMSR3DataViewer.bat
		AM3ConvertFile.bat
		AM3CreateMovie.bat
		AM3FileNameInfo.bat
MacOS	AMSR3DataViewer_X.X.X_mac_en	bin
		config
		lib
		map
		product
		AMSR3DataViewer.command
		AM3ConvertFile.sh
		AM3CreateMovie.sh
		AM3FileNameInfo.sh
Linux	AMSR3DataViewer_X.X.X_linux_en	bin
		config
		lib
		map
		product
		AMSR3DataViewer.sh
		AM3ConvertFile.sh
		AM3CreateMovie.sh
		AM3FileNameInfo.sh

bin, config, lib, map, and product are folders that contain files necessary for the operation of the application.

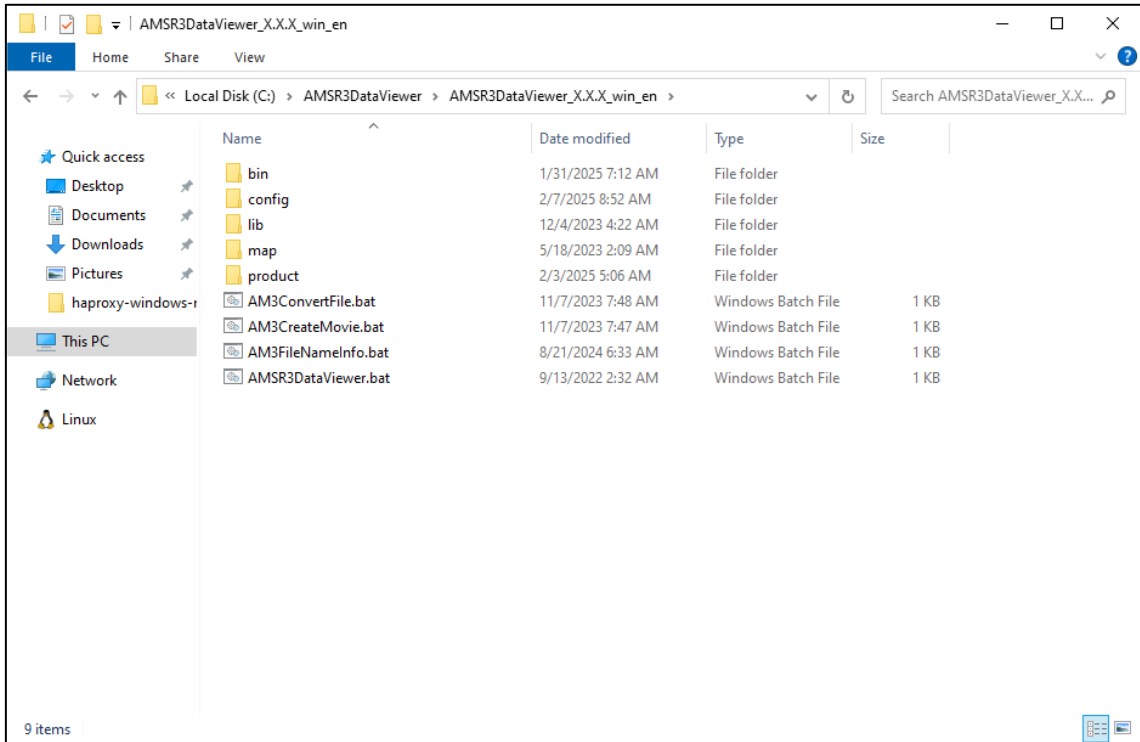


Figure 3-1 AMSR3DataViewer_X.X.X_win_en Folder

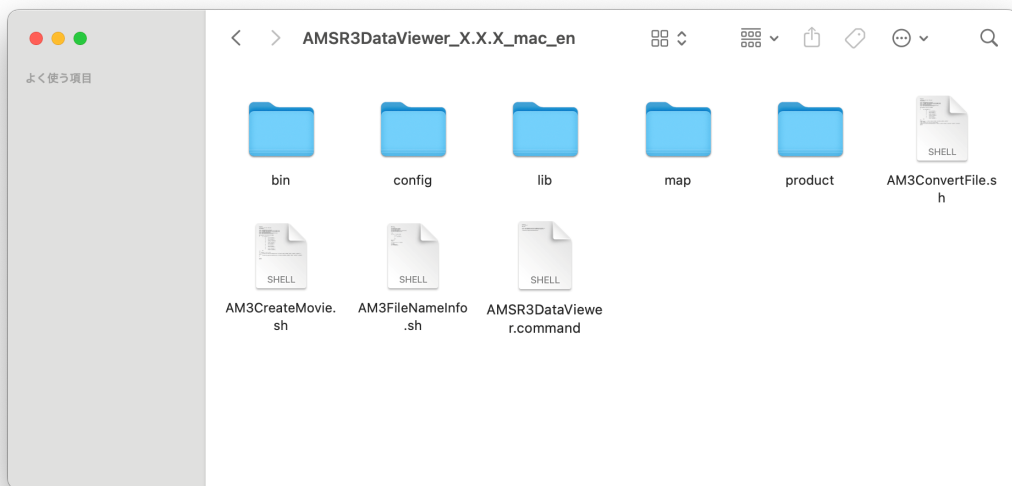


Figure 3-2 UserTool_X.X.X_mac_en Folder

```

[ec2-user@AMSR3DataViewer_X.X.X_linux_en]$ ll
total 32
-rwxr-xr-x 1 ec2-user ec2-user 672 Dec 6 2023 AM3ConvertFile.sh
-rwxr-xr-x 1 ec2-user ec2-user 891 Dec 6 2023 AM3CreateMovie.sh
-rwxrwxr-x 1 ec2-user ec2-user 0 Jan 31 08:54 AM3FileNameInfo.sh
-rwxr-xr-x 1 ec2-user ec2-user 358 Dec 6 2023 AMSR3DataViewer.sh
drwxr-xr-x 4 ec2-user ec2-user 138 Dec 6 2023 bin
drwxr-xr-x 2 ec2-user ec2-user 183 Dec 6 2023 config
drwxr-xr-x 2 ec2-user ec2-user 16384 Dec 6 2023 lib
drwxr-xr-x 10 ec2-user ec2-user 179 Dec 6 2023 map
drwxr-xr-x 2 ec2-user ec2-user 30 Dec 6 2023 product
[ec2-user@AMSR3DataViewer_X.X.X_linux_en]$

```

Figure 3-3 UserTool_X.X.X_linux_en Folder

(1) config Folder

The config folder contains files necessary for the operation of the application. Figure 3-4 shows the structure of the config folder at the time of installation. “userApp.ini” is the configuration file for the application, and “mapColorSetting.ini” and “mapColorSettingDefault.ini” are configuration files used for mapping products on the map. Normally, the color settings specified in “mapColorSetting.ini” are used, but if the default button is used on the color settings screen, “mapColorSettingDefault.ini” is used (see Chapter 10.1 for details). “granuleId.ini” is a configuration file used when obtaining granule ID information.

After the first startup, a file called “appStat.ini”, which saves the state of the application, is automatically created.

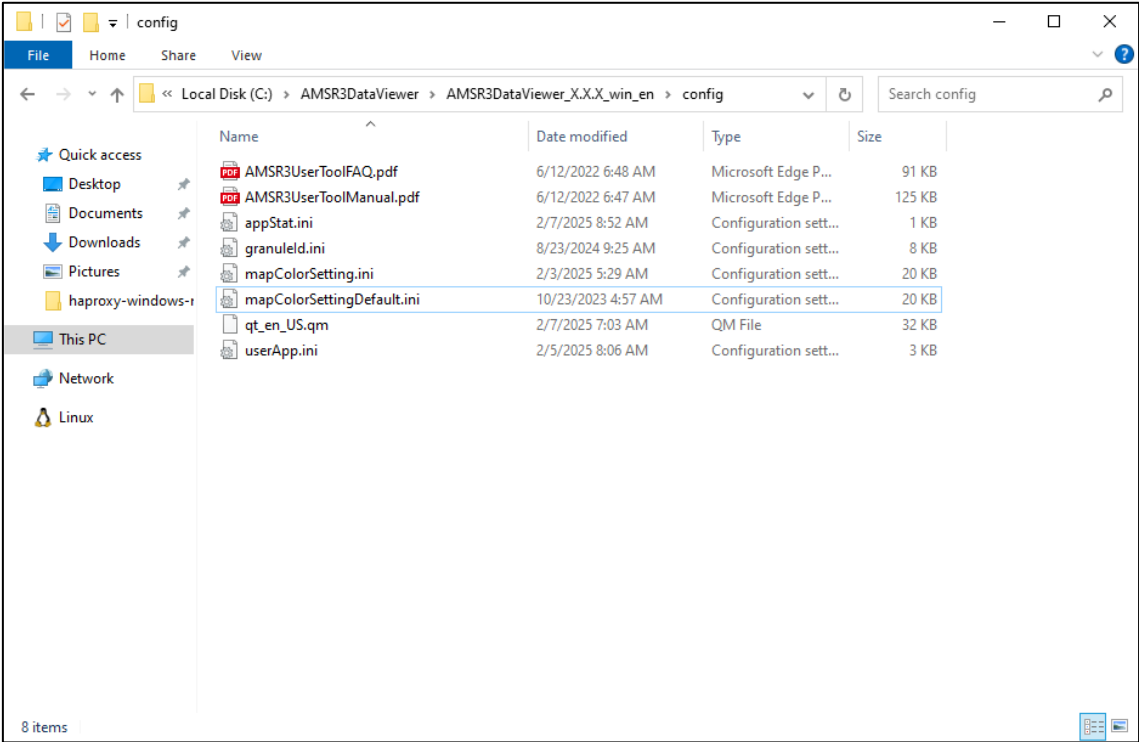


Figure 3-4 Configuration Folder Structure

(2) map Folder

The map folder contains background map images that can be used to display observation results in the application. The following five types of map data are stored in the map folder immediately after installation:

- Mercator Projection/Natural Earth
- Polar Stereographic Projection (Northern Hemisphere)/Natural Earth
- Polar Stereographic Projection (Southern Hemisphere)/Natural Earth
- Equirectangular Projection/Natural Earth
- EASE-Grid Projection/Natural Earth

(3) product folder

The information of the products registered in the application is stored in this folder.

3.3. Uninstallation Procedure

To uninstall the application, refer to Section 3.2 and delete the folders described from the disk. All data within the folders listed in Table 3-2 will be deleted during this process.

3.3.1. Uninstallation on Windows

To uninstall the application on Windows, select the application's folder, right-click on it, and choose "Delete" from the context menu to remove the application.

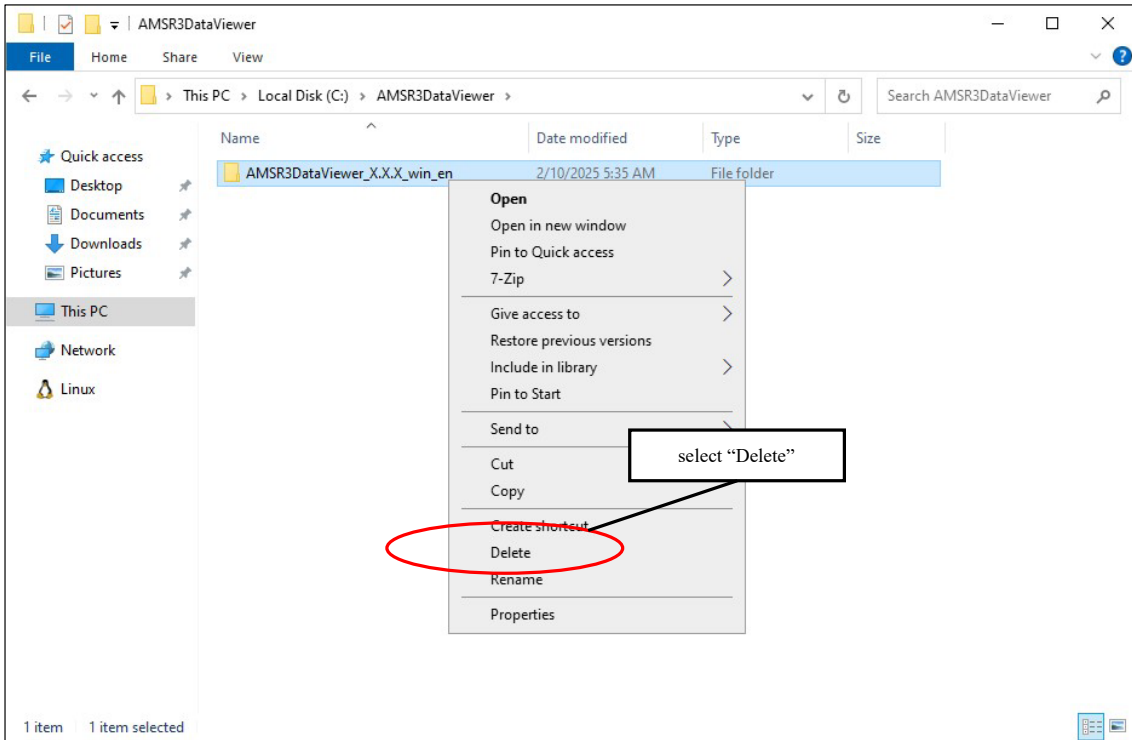


Figure 3-5 Uninstalling the AMSR3 Data Viewer (Windows)

3.3.2. Uninstallation on MacOS

To uninstall the application on MacOS, drag the application's folder to the "Trash". Alternatively, select the application's folder and press the "Command+Delete" keys to remove the application.

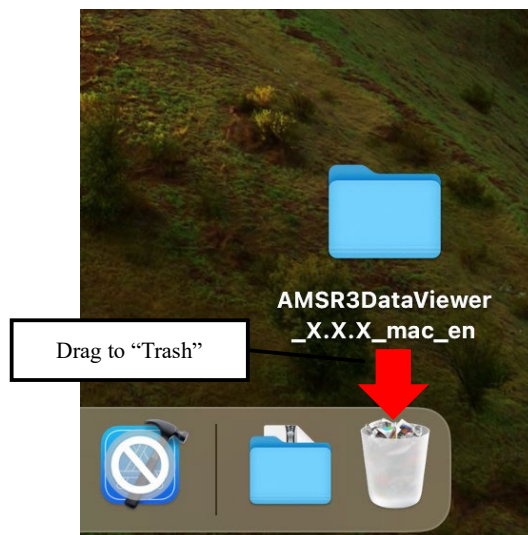


Figure 3-6 Uninstalling the AMSR3 Data Viewer (MacOS)

3.3.3. Uninstallation on Linux

To uninstall the application on Linux, enter the following command:

```
rm -r UserTool_X.X.X_linux_en
```

4. Launching/Exiting the Application and Overview

This chapter explains the procedures for launching and exiting the application.

4.1. Launching the Application

4.1.1. Launching the Application on Windows/MacOS

To launch the application, double-click the `AMSR3DataViewer.bat` file (on MacOS, `AMSR3DataViewer.command`) located in the `AMSR3DataViewer_X.X.X_win_en` folder (on MacOS, `AMSR3DataViewer_X.X.X_mac_en`). (Refer to Table 3-2)

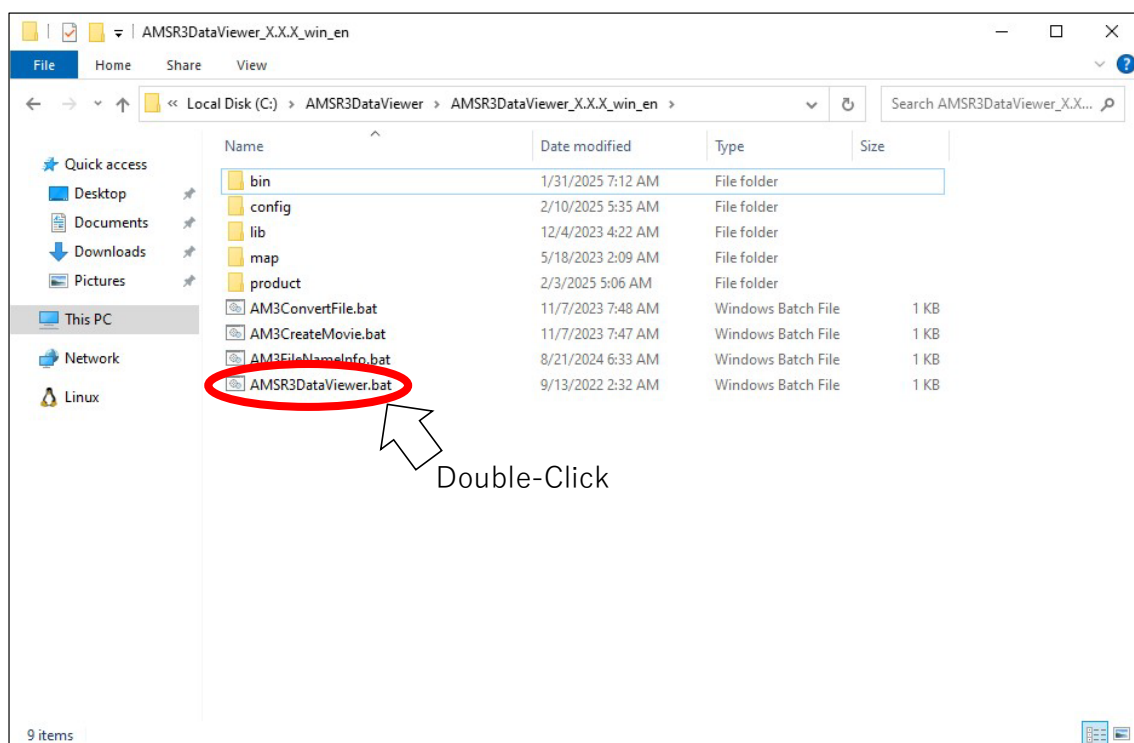


Figure 4-1 Launching the Application

When the program starts, the following screen will be displayed, followed by the "Main Screen".

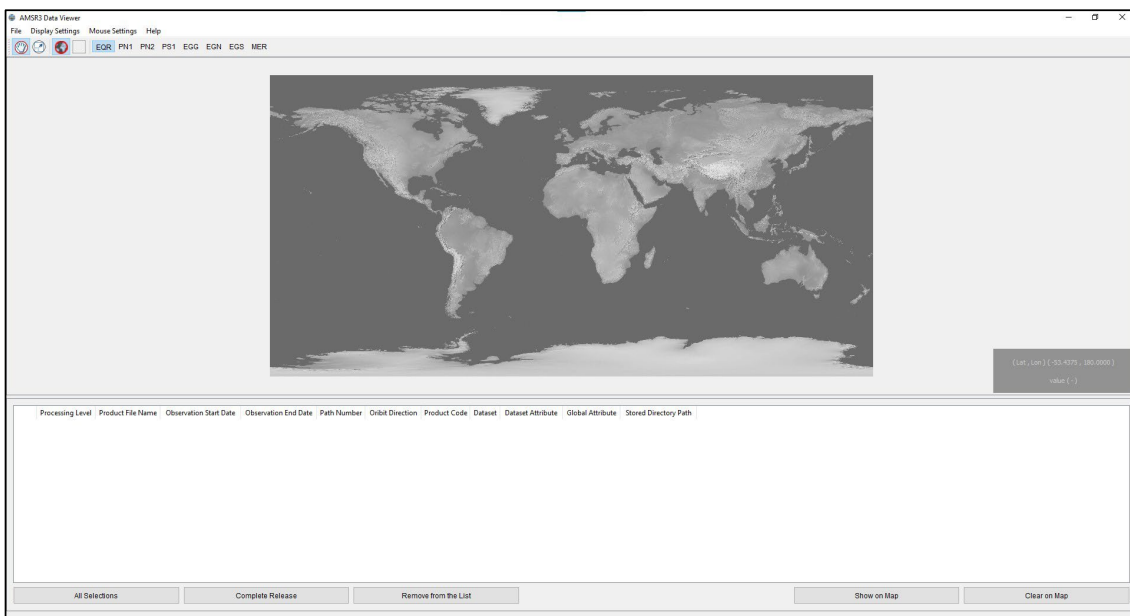
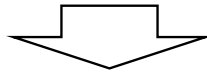
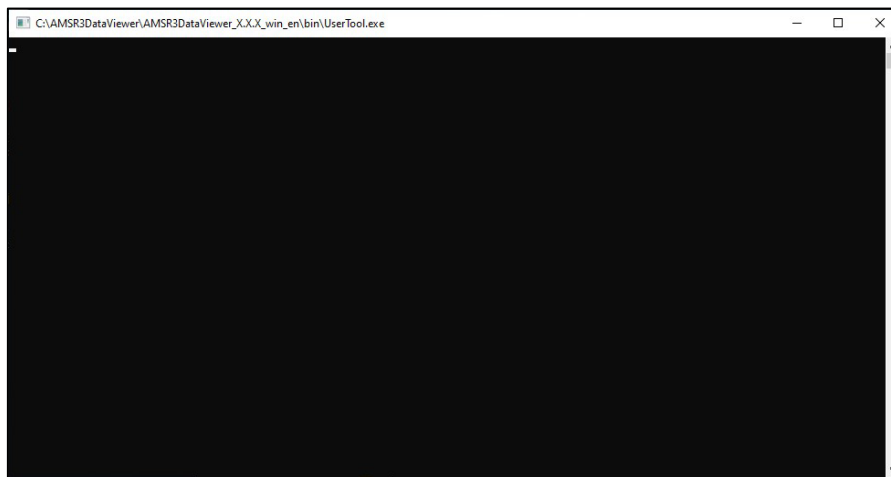


Figure 4-2 Application Main Screen (Windows/MacOS)

4.1.2. Launching the Application on Linux

To launch the application, execute the “AMSR3DataViewer.sh” file located in the AMSR3DataViewer_X.X.X_linux_en folder. (Refer to Table 3-2)

```
./AMSR3DataViewer.sh
```

When the program starts, the “Main Screen” will be displayed.

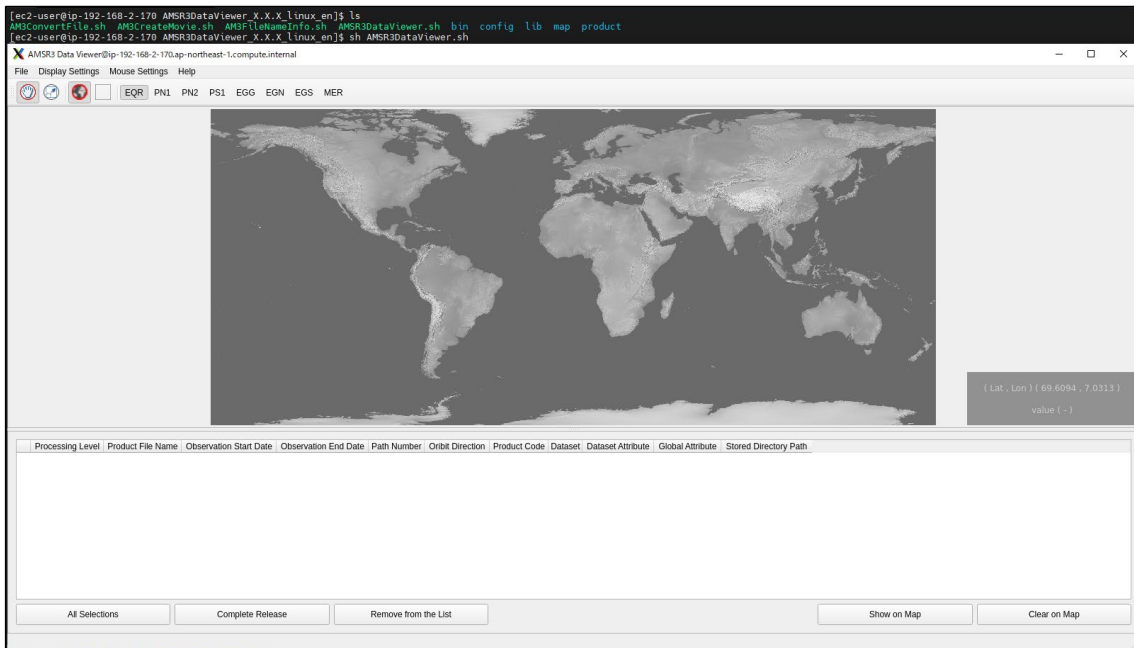


Figure 4-3 Application Main Screen (Linux)

4.2. Exiting the Application

To exit the application, click "File" on the menu bar at the top of the "Main Screen", and select "Exit" from the bottom of the pull-down menu, or click the close button at the right end of the title bar of the window displaying the "Main Screen".

4.3. Application Overview

Figure 4-4 shows the screen layout of the application, and Table 4-1 provides descriptions of the screen elements.

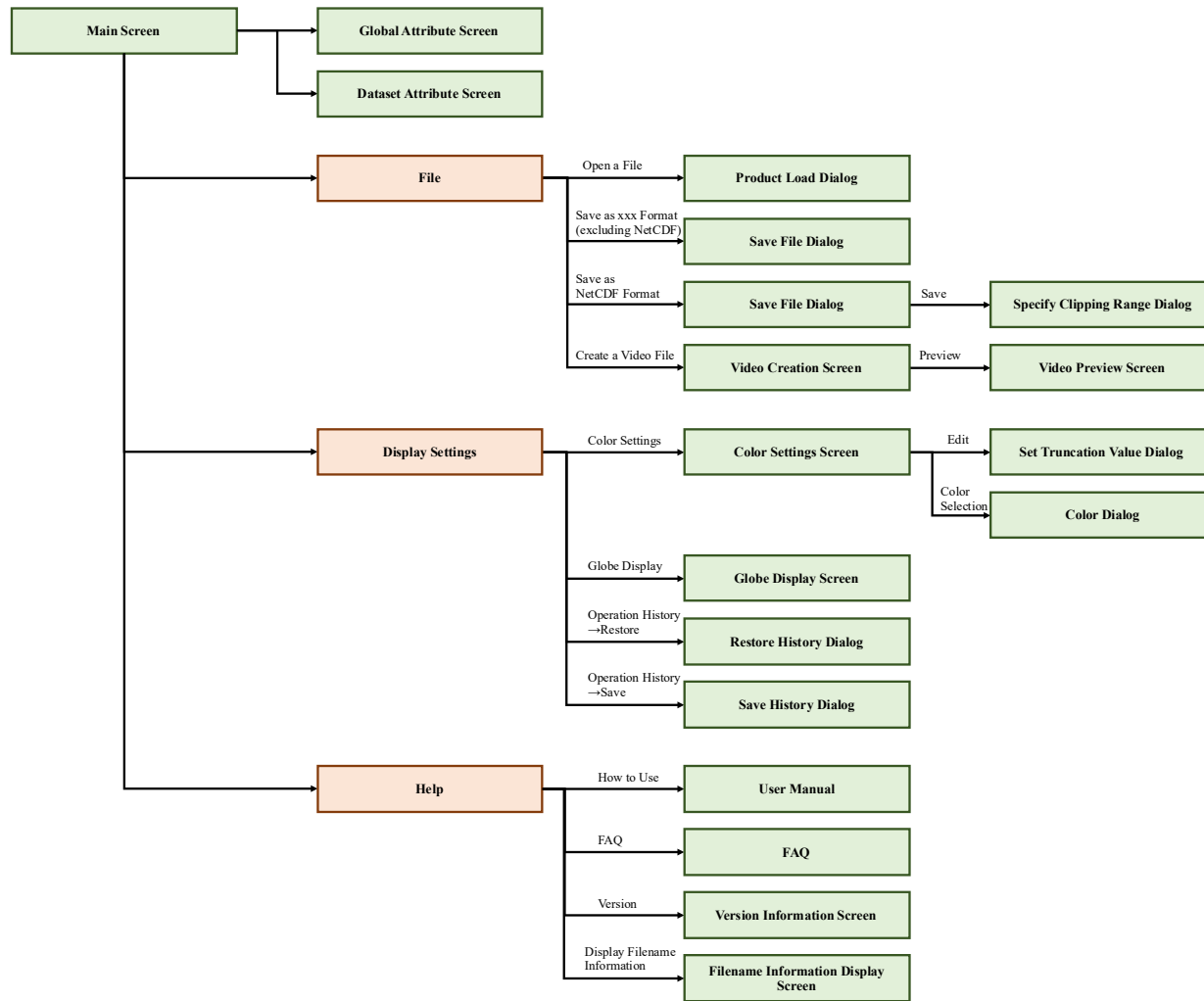


Figure 4-4 Screen Layout Diagram

Table 4-1 Screen Descriptions (1/2)

No.	Screen Name	Description	Reference
1	Main Screen	This is the main screen of the application. From here, you can register or delete products, and perform operations such as map projection.	5 Main Screen 6 Product File Registration and Deletion 7 Displaying Product Data
1.1	Global Attribute Screen	This screen displays the global attributes contained in the products registered in the application.	9.1 Global Attribute Display
1.2	Dataset Attribute Screen	This screen displays the attributes contained in the display datasets of the products registered in the application.	9.2 Dataset Attribute Display
2. File [Menu]			
2.1	Product Load Dialog	This dialog is used to select the product you want to register in the application.	6.1 Product File Registration
2.2	File Save Dialog	This dialog is used to select the location to save the converted file of the map projection result in the application.	11.1 File Conversion
2.2.1	Clipping Range Specification Dialog	This dialog is used to specify the range for NetCDF file output of L1/L2 products in the application.	11.1.5 NetCDF File Output
2.3	Video Creation Screen	This screen is used to output any product as a video in the application.	0 Video File Output
2.3.1	Video Preview Screen	This screen is used to display a preview of the product that is about to be output as a video.	0 Video File Output

Table 4-2 Screen Descriptions (2/2)

No.	Screen Name	Description	Reference
3. Display Settings [Menu]			
3.1	Color Settings Screen	This screen is used to set the colors used for map projection of products in the application.	10 Color Settings
3.1.1	Truncate Value Setting Dialog	This dialog is used to specify the range of values for map projection of products.	10.1 Color Settings for L1 Products in Map Display
3.1.2	Color Dialog	This dialog is used to select colors for invalid values or pseudo-color display.	10.1 Color Settings for L1 Products in Map Display
3.2	Globe Display Screen	This screen is used to display the product projected on the map as a globe on the main screen.	8 Globe
3.3	Operation History Load Dialog	This dialog is used to select the operation history file output by the application.	0 Restoring the Operation History File
3.4	Operation History Save Dialog	This dialog is used to select the location to output the customized settings as an operation history file in the application.	12.1 Saving the Operation History File
4. Help [Menu]			
4.1	User Manual	This displays the user manual of the application in PDF format.	5.1 Main Menu
4.2	FAQ	This displays the FAQ of the application in PDF format.	5.1 Main Menu
4.3	Version Information Screen	This screen is used to display the version information of the application.	5.1 Main Menu
4.4	File Name Information Display Screen	This screen is used to display the file name information of AMSR3 products.	

Table 5-1 Main Menu/Dropdown Menu Items and Actions When Selected (1/2)

Item	Action when clicked
File	—
Open a File	Displays the “Product Load Dialog”.
Save as Binary File Format	Displays the “File Save Dialog (Binary format)”.
Save as CSV File Format	Displays the “File Save Dialog (CSV format)”.
Save as KML(KMZ) File Format	Displays the “File Save Dialog (KML/KMZ format)”.
Save as Image File Format	Displays the “File Save Dialog (Image format)”.
Save as NetCDF File Format	Displays the “File Save Dialog (NetCDF format)”.
Save to clipboard	Copies the selected area in the “Map Display Area” to the clipboard.
Creating a Video File	Displays the “Video Creation Screen”.
Exit	Exits the application.
Display Settings	—
Map Projection	Switches the background map. The map can be selected from the following submenus.
Equirectangular Projection (EQR)	Changes the background map to the Equirectangular Projection (EQR).
Polar Stereo Northern Hemisphere 1 (PN1)	Changes the background map to the Polar Stereo Northern Hemisphere 1 projection (PN1).
Polar Stereo Northern Hemisphere 2 (PN2)	Changes the background map to the Polar Stereo Northern Hemisphere 2 projection (PN2).
Polar Stereo Southern Hemisphere 1 (PS1)	Changes the background map to the Polar Stereo Southern Hemisphere 1 projection (PS1) .
EASE-Grid Global Cylindrical (EGG)	Changes the background map to the EASE-Grid Global Cylindrical projection (EGG).
EASE-Grid Northern Hemisphere Azimuthal (EGN)	Changes the background map to the EASE-Grid Northern Hemisphere Azimuthal projection (EGN).
EASE-Grid Southern Hemisphere Azimuthal (EGS)	Changes the background map to the EASE-Grid Southern Hemisphere Azimuthal projection (EGS).
Mercator (MER)	Changes the background map to the Mercator projection (MER).

Table 5-1 Main Menu/Dropdown Menu Items and Actions When Selected (2/2)



Item	Action when clicked	
	Color Settings	Displays the “Color Settings Screen”.
	Globe View	Displays the “Globe Display Screen”.
	Operation History	Restores or saves the operation history file.
	Restore	Displays the “Operation History File Restore Dialog”.
	Save	Displays the "Operation History File Save Dialog”.
	Background Map	Toggles the display of the background map in the Map Display Area.
	ON	The background map in the Map Display Area is displayed.
	OFF	The background map in the Map Display Area is hidden.
Mouse Settings	—	
	Moving Mode	Changes the mouse operation in the Map Display Area to Moving Mode.
	Region Selection Mode	Changes the mouse operation in the Map Display Area to Region Selection Mode.
Help	—	
	Operation Methods	Displays the operation manual of the application (PDF file).
	FAQ	Displays the FAQ of the application (PDF file).
	Version	Displays the version information.
	Display File Name Information	Displays the “File Name Information Screen”.

5.2. Toolbar

The toolbar consists of three functions from the main menu: Mouse Settings, Background Map, and Map Projection. Clicking on the icons in the toolbar performs the same actions as selecting the corresponding items in the main menu.

(1) Mouse Settings

In Figure 5-2, the area enclosed by the red circle indicates the functionality of Mouse Settings in the toolbar.

Clicking the  icon switches the mouse operation in the Map Display Area to Moving Mode. Clicking the  icon switches the mouse operation in the Map Display Area to Area Selection mode.

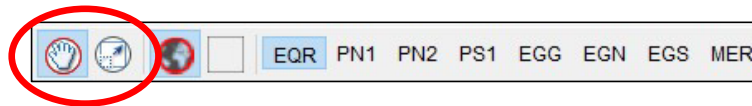




Figure 5-2 Mouse Settings Functionality in the Toolbar

(2) Background Map

In Figure 5-3, the area enclosed by the red circle indicates the functionality of Background Map in the toolbar.

Clicking the  icon displays the background map in the Map Display Area. Clicking the  icon hides the background map in the Map Display Area.

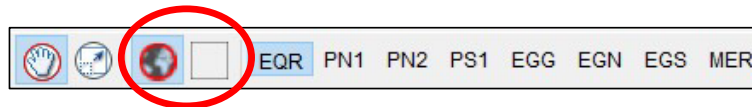


Figure 5-3 Background Map Functionality in the Toolbar

(3) Map Projection

In Figure 5-4, the area enclosed by the red circle indicates the functionality of Map Projection in the toolbar.

Clicking each icon switches the map projection used in the Map Display Area. The list of switchable map projection methods is shown in Table 5-2.

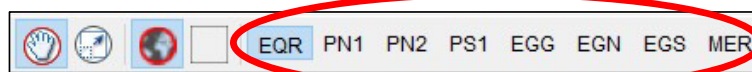


Figure 5-4 Map Projection Functionality in the Toolbar

Table 5-2 List of Switchable Map Projection Methods

Icon	Map Projection Method
EQR	Equirectangular Projection
PN1	Polar Stereo Northern Hemisphere 1
PN2	Polar Stereo Northern Hemisphere 2
PS1	Polar Stereo Southern Hemisphere 1
EGG	EASE-Grid Global Cylindrical
EGN	EASE-Grid Northern Hemisphere Azimuthal
EGS	EASE-Grid Southern Hemisphere Azimuthal
MER	Mercator projection

5.3. Map Display Area

The functions and operations of the Map Display Area are as follows:

- Displays a world map. For information on how to switch maps, refer to Section 7.2.
- You can zoom in and out of the displayed image using the mouse wheel. You can also move the displayed image by dragging with the mouse.
- Maps and displays the specified product (observation data) on the map. For details on map display, refer to Section 7.1.
- Right-clicking on an observation point of a product displayed on the map will show the file name (without extension) of the product in a context menu. Refer to Figure 5-5. Additionally, clicking on the product's file name will display the ancillary information of the product. For details on the ancillary information display function, refer to Section 7.4.

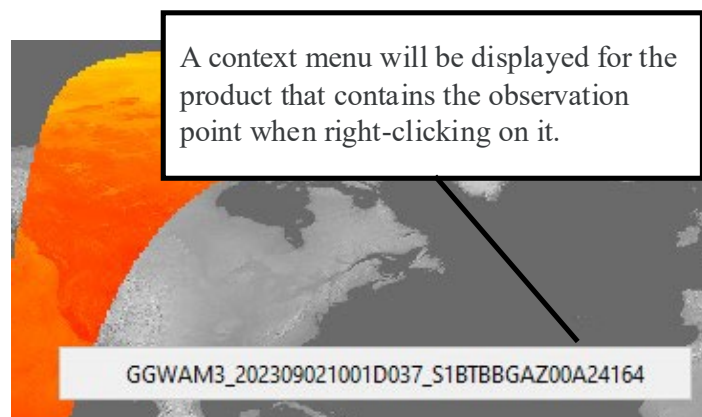


Figure 5-5 Right-clicking on an Observation Point of a Product

5.4. Product List Area

Displays a list of registered product information. Even if the application is closed, the history is retained. These registered products can be displayed in the Map Display Area by clicking the “Shown on Map” button (⑧). For detailed map display methods, refer to Section 7.1.

5.5. All Selections Button

Turn on all checkboxes in the Product List Area.

5.6. Complete Release Button

Turn off all checkboxes in the Product List Area.

5.7. Remove from the List Button

The Product Deletion Confirmation Dialog is displayed. If "Yes" is selected, the product information selected by the checkboxes in the Product List Area is deleted, and the products is also removed from the Product List Area display.

5.8. Shown on Map Button

For the products selected by the checkboxes in the Product List Area, the observation data are mapped and displayed on the map in the Map Display Area. At this time, the background color of the rows of the displayed products on the map changes to light blue.

5.9. Clear on Map Button

All product images displayed in the Map Display Area are removed. At this time, the background color of the rows of the cleared products in the Product List Area reverts to the original color.

6. Product File Registration and Deletion

Observation data that can be displayed in the Map Display Section of the application are referred to as products. Please refer to for the products that can be displayed.

6.1. Product File Registration

To display each product in the application, you need to register the desired product in the library. This is called product file registration. There are two methods for product file registration. The first method is to select "Open a File" from the "File" dropdown menu in the main menu, and use the Product Load Dialog shown in Figure 6-1. Select one product you want to register and click the "Open" button. The second method is to drag and drop the product file from file explorer into the application. This method allows you to register multiple product files at once.

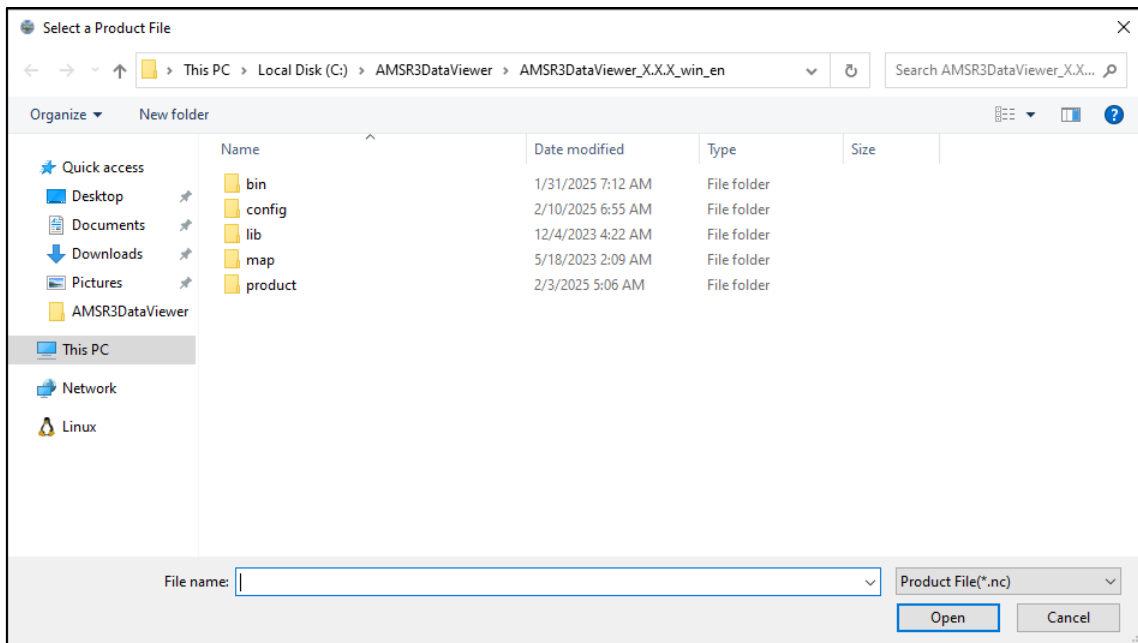


Figure 6-1 Product Load Dialog

6.2. Deleting Registered Products

To delete any product registered in the library, follow these steps:

- (1) Check the selection checkbox of the product you want to delete from the products displayed in the Product List Area on the Main Screen.
- (2) Click the "Remove from the List" button at the bottom of the Main Screen.

A confirmation dialog, as shown in Figure 6-2, is displayed before executing the deletion. Click "Yes" to proceed with the deletion, or click "No" to cancel.

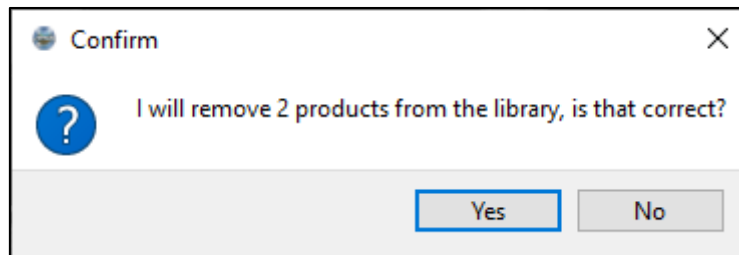


Figure 6-2 Product Deletion Confirmation Dialog

7. Displaying Product Data

This chapter explains the procedure for displaying product data in the application.

7.1. Basics of Map Projection

This section explains how to map the selected product on the map. First, check the "Product Selection Checkbox" for the product you want to display from the list of products shown in the Main Screen. Next, click the "Display on Map" button at the bottom right to display the selected product on the map. By default, the maximum number of products that can be displayed at one time is 10, but this limit can be changed in the section shown in Table 7-1 of the userApp.ini file.

Table 7-1 Setting the Number of Products Displayed Simultaneously

Section	Key	Description
Common		Common Definition Section
	viewProductNum	Number of Products Displayed Simultaneously

When the selected product is mapped on the map, the background color of the row for the selected product in the Product List Area changes to light blue.

To clear the display on the map, click the "Clear on Map" button. This clears all product displays shown in the Map Display Area. Additionally, the background color of the cleared products in the Product List Area returns to the original white.

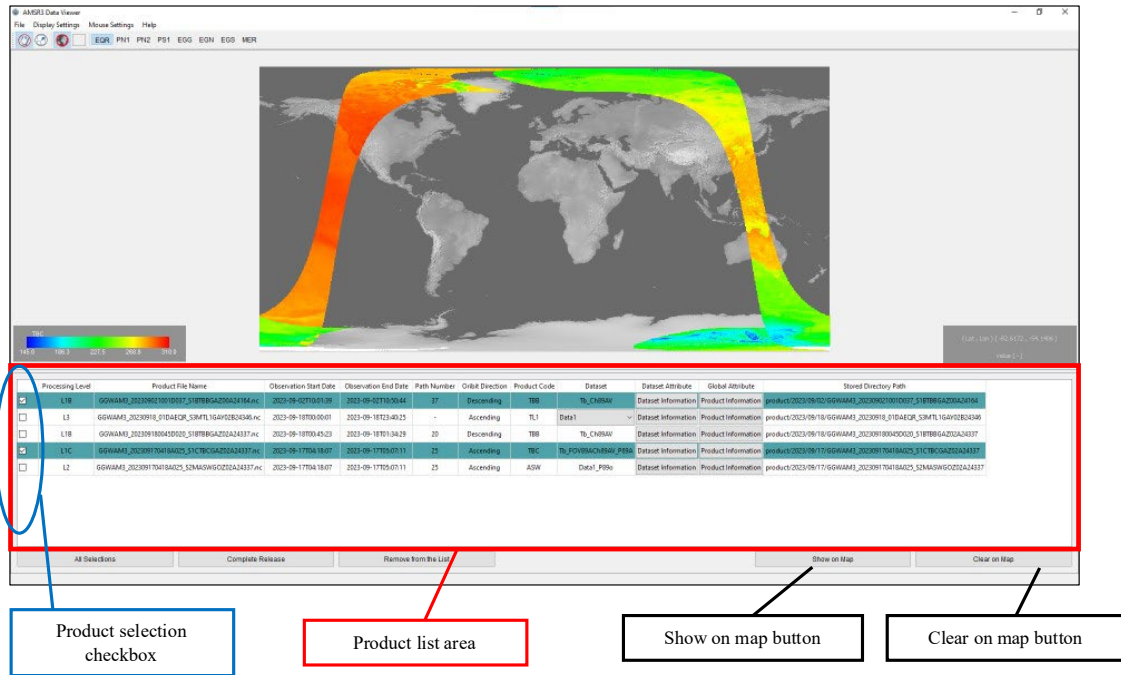


Figure 7-1 Product List Area, Shown on Map, and Clear on Map Button

Table 7-2 provides descriptions of each item displayed in the Product List Area.

Table 7-2 Product List Display Items

Item	Description
Product Selection Checkbox	Check the box to select the item to be displayed on the map. This checkbox is also used when deleting registered products.
Processing Level	This item identifies the processing level (L1A/L1B/L1R/L1H/L1C/L2/L3).
Product File Name	The file name of the product is displayed.
Observation Start Date	The observation start time of the product data is displayed in the format YYYY-MM-DD HH:MM:SS (UTC).
Observation End Date	The observation end time of the product data is displayed in the format YYYY-MM-DD HH:MM:SS (UTC).
Path Number	The path number is displayed. If the product does not have a path number, "-" is displayed.
Orbit Direction	The orbit direction is displayed.
Product Code	This item identifies the product code of the observation data.
Dataset	If the L2 or L3 product has multiple display items, a combo box is displayed. The selected display item from this combo box is mapped on the map. For L1, the contents described in mapColorSetting.ini (see Table 7-3) are displayed. To change the dataset displayed for L1, refer to Section 10.1. For L2/L3, the items described in the product's global attribute "DataDatasetName" are displayed.
Dataset Attribute	Clicking the displayed "Dataset Information" button displays the dataset attributes of the items shown in the dataset. (For details, refer to Section 9.2.)
Global Attribute	Clicking the displayed "Product Information" button displays the global attributes of the product. (For details, refer to Section 9.1.)
Storage Directory Path	The directory path where the data extracted from the registered product is stored is displayed.

Table 7-3 L1 Product Display Datasets

Section	Key	Description
L1_X (X:0~4)		Color Definition Section for L1 Products
	DatasetR	Dataset Name assigned to Red (R) for RGB composite display
	DatasetG	Dataset Name assigned to Green (G) for RGB composite display
	DatasetB	Dataset Name assigned to Blue (B) for RGB composite display
	DatasetS	Dataset Name for Pseudo-color display The values set here are displayed in the Dataset column of Table 7-2.
	LatR	Dataset Name for Latitude corresponding to DatasetR
	LatG	Dataset Name for Latitude corresponding to DatasetG
	LatB	Dataset Name for Latitude corresponding to DatasetB
	LatS	Dataset Name for Latitude corresponding to DatasetS
	LonR	Dataset Name for Longitude corresponding to DatasetR
	LonG	Dataset Name for Longitude corresponding to DatasetG
	LonB	Dataset Name for Longitude corresponding to DatasetB
	LonS	Dataset Name for Longitude corresponding to DatasetS

To display a product with multiple display datasets on the map, click the combo box displayed in the Dataset section of the Product List Area, select the dataset you want to display, and then click the "Display on Map" button.

For example, using the "L2 Precipitation" product as an example, Figure 7-2 shows the case where "Data1_P89A" is displayed on the map, and Figure 7-3 shows the case where "Data2_P89A" is displayed on the map.

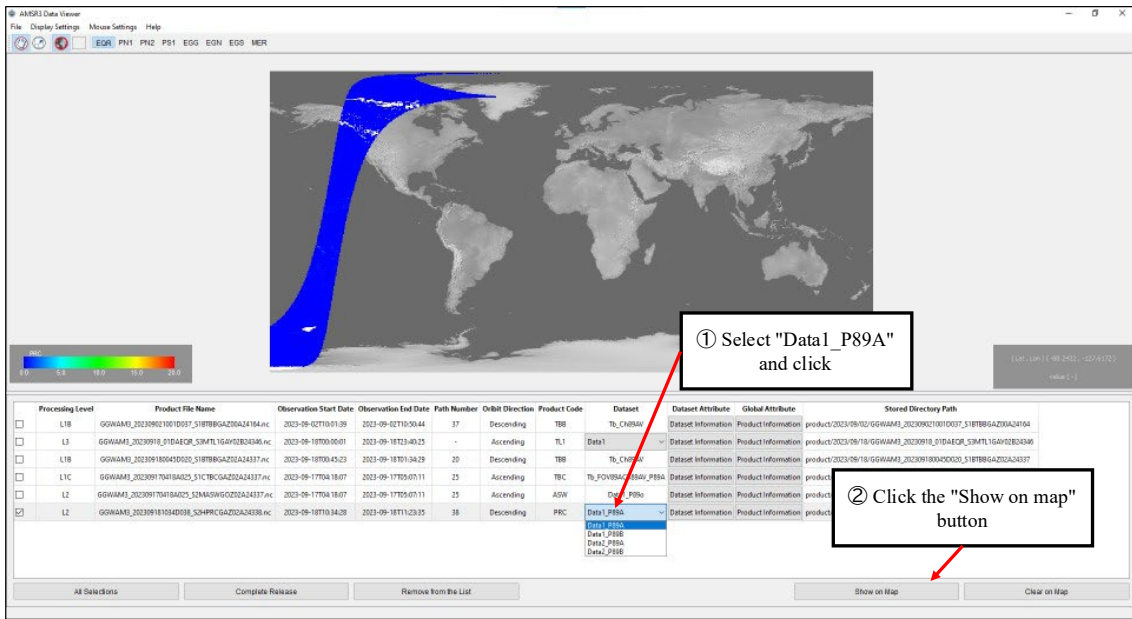


Figure 7-2 Example of Displaying L2 Precipitation "Data1_P89A"

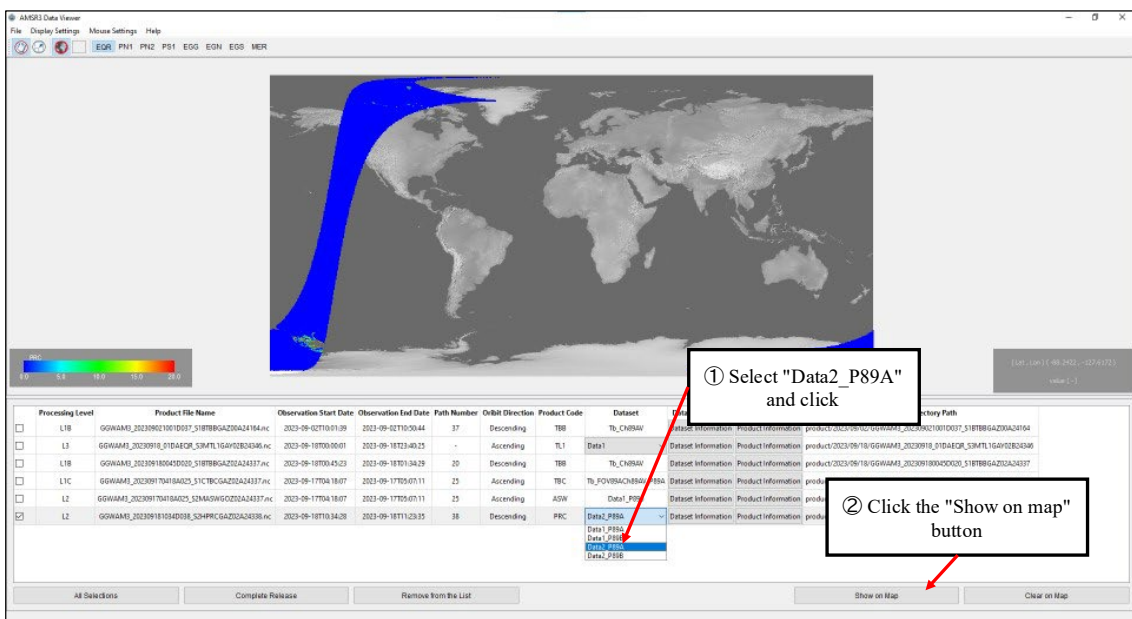


Figure 7-3 Example of Displaying L2 Precipitation "Data2_P89A"

The color bar indicates the pseudo-color display range settings of the product displayed in the Map Display Area and is shown at the bottom left of the Map Display Area.

When multiple products are displayed, you can display the color bar of any product by clicking the row in the Product List Area. However, if you select a product that is displayed in RGB or a product that is not displayed, the color bar will be hidden.

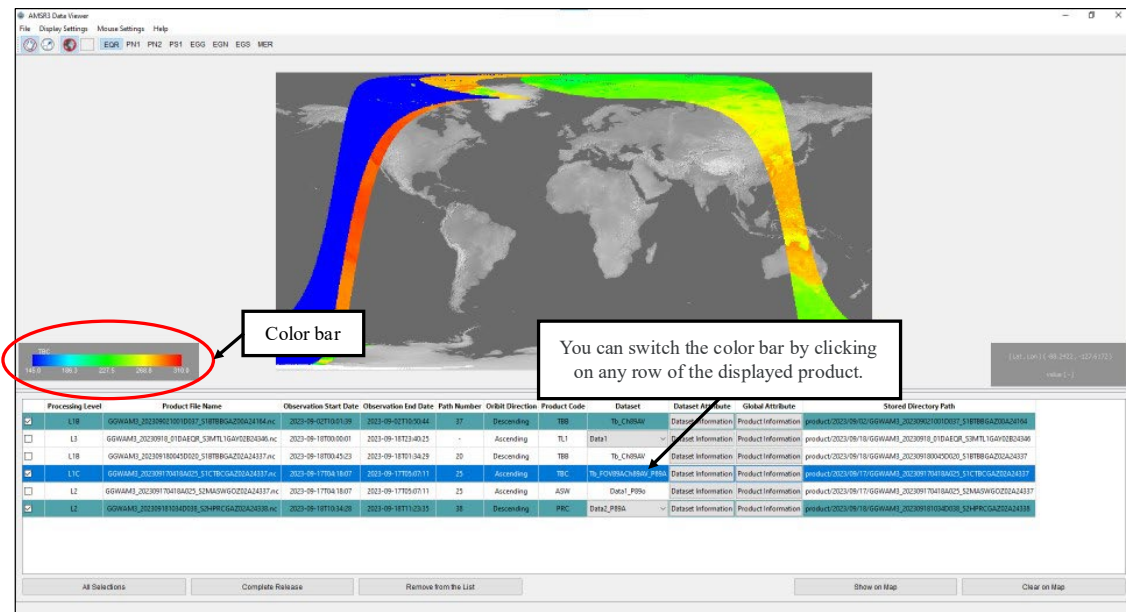


Figure 7-4 Switching the Display of the Color Bar

7.2. Map Switching Method

This section explains how to switch the background map image in the Map Display Area. You can choose from the following eight types of maps for the background map image:

- Equirectangular Projection/Natural Earth
- Polar Stereographic Projection 1 (Northern Hemisphere/PN1)/Natural Earth
- Polar Stereographic Projection 2 (Northern Hemisphere/PN2)/Natural Earth
- Polar Stereographic Projection (Southern Hemisphere)/Natural Earth
- EASE-Grid Projection (Global)/Natural Earth
- EASE-Grid Projection (Northern Hemisphere)/Natural Earth
- EASE-Grid Projection (Southern Hemisphere)/Natural Earth
- Mercator Projection/Natural Earth

To switch the map, click "Display Settings" in the main menu, hover over "Map Projection" in the pull-down menu, and click the displayed map name. You can also switch the map by clicking the map name displayed on the toolbar.

The following example explains how to select the Mercator Projection/Natural Earth.

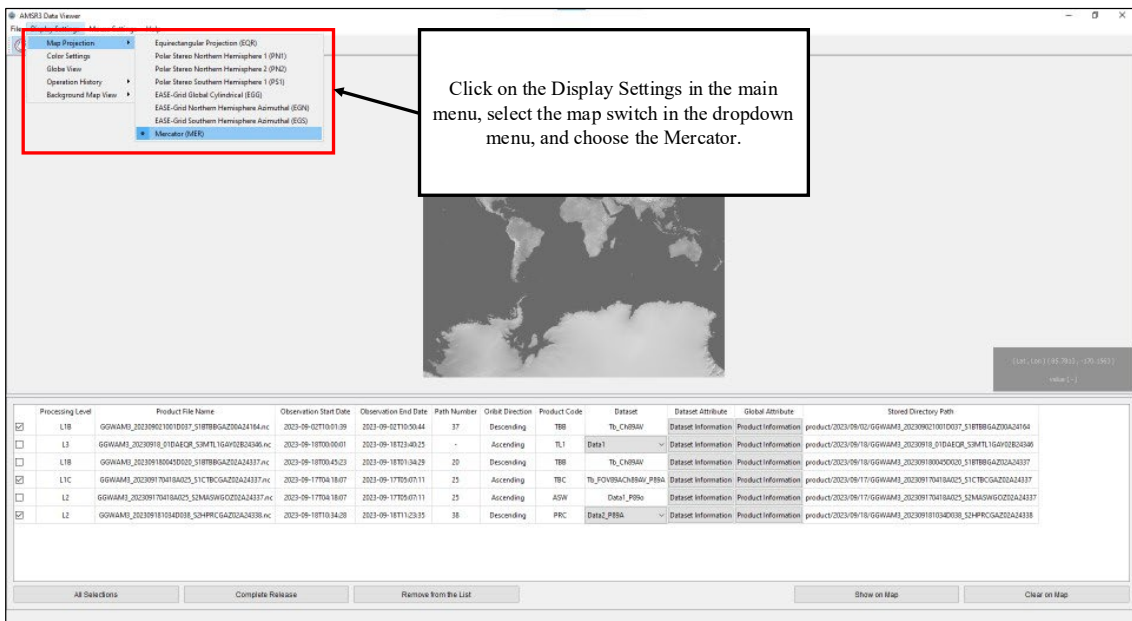


Figure 7-5 Switching Maps (Main Menu)

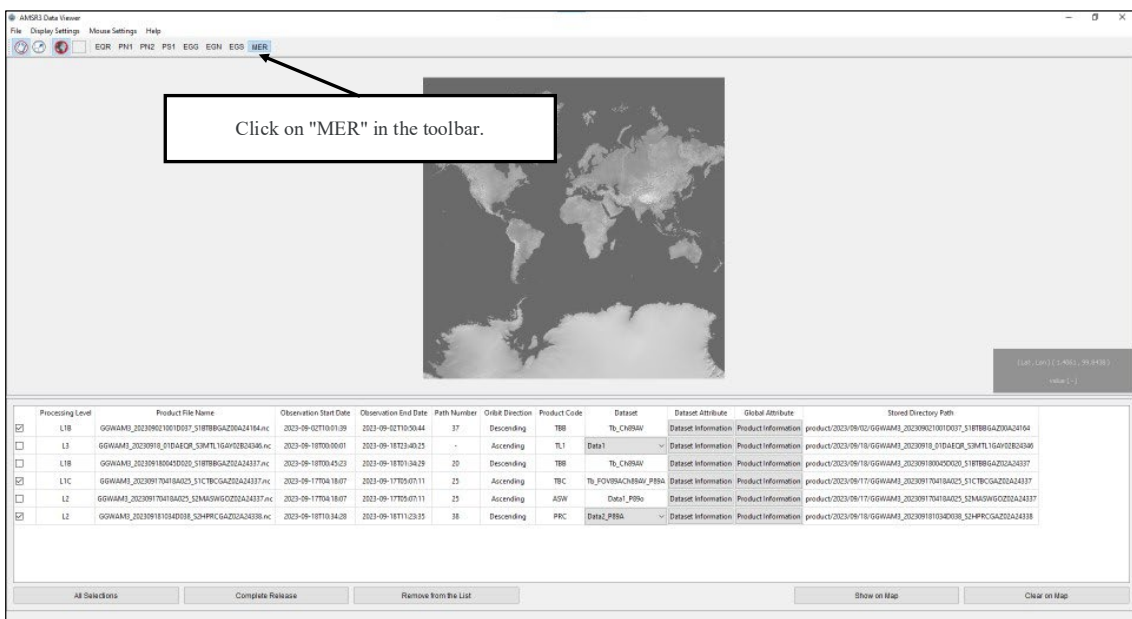


Figure 7-6 Switching Maps (Toolbar)

7.3. Map Display Method

This section explains how to change the display of the background map image in the Map Display Area.

To switch the map display, click "Display Settings" in the main menu, hover over "Background Map" in the pull-down menu, and click on the displayed "ON" or "OFF". You can also switch the map display on or off by clicking the icon displayed on the toolbar. The following example explains how to change the map display to off.

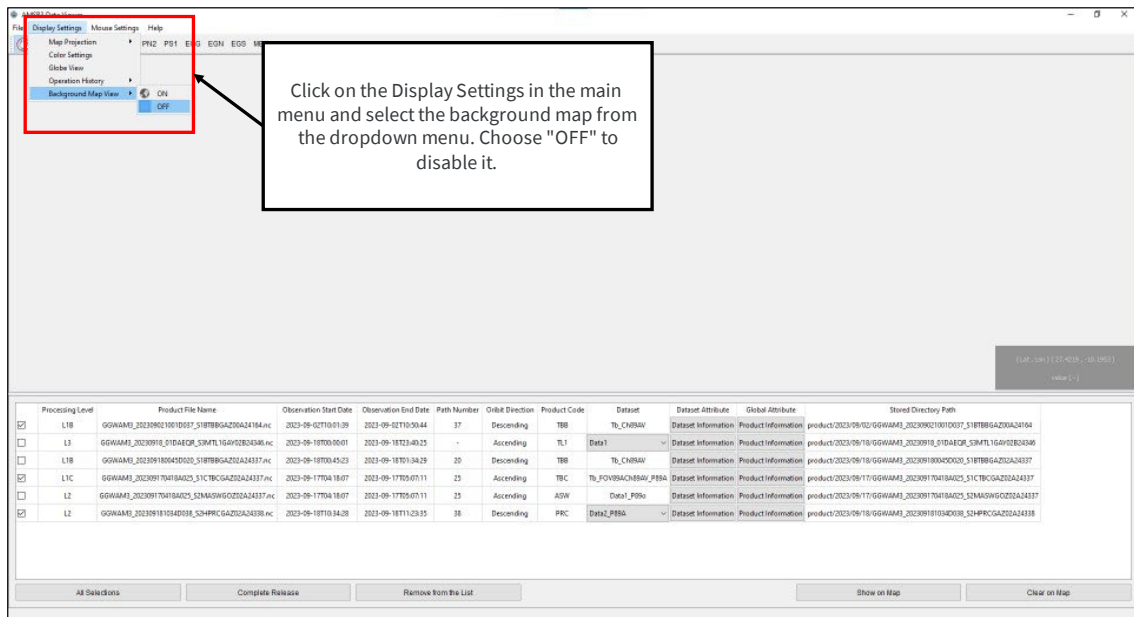


Figure 7-7 Hiding the Background Map Image (Main Menu)

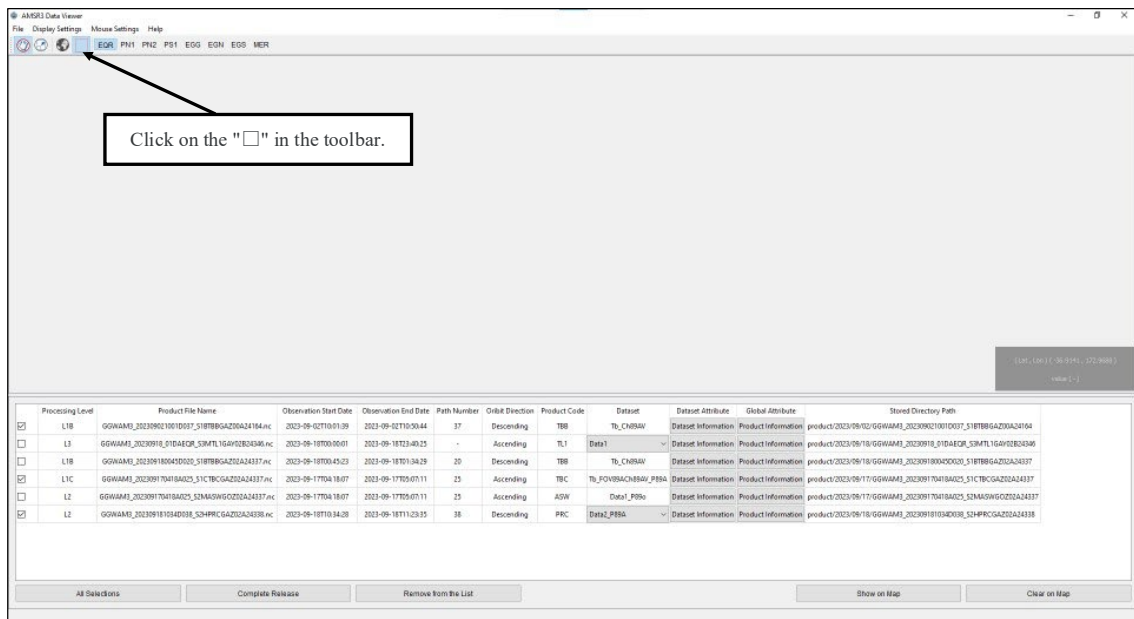


Figure 7-8 Hiding the Background Map Image (Toolbar)

7.4. Displaying Ancillary Information

This section explains how to display ancillary information for products. In the application, you can display ancillary information for products that can be mapped.

Follow the steps in section 7.1 to map the observation data of the product in the Map Display Area. Right-click on the Map Display Area, and the product file names (without extensions) of the products with observation points are displayed in the context menu. By selecting the product file name you want to display, you can display the ancillary information of any product.

Table 7-4 shows the ancillary information that is displayed.

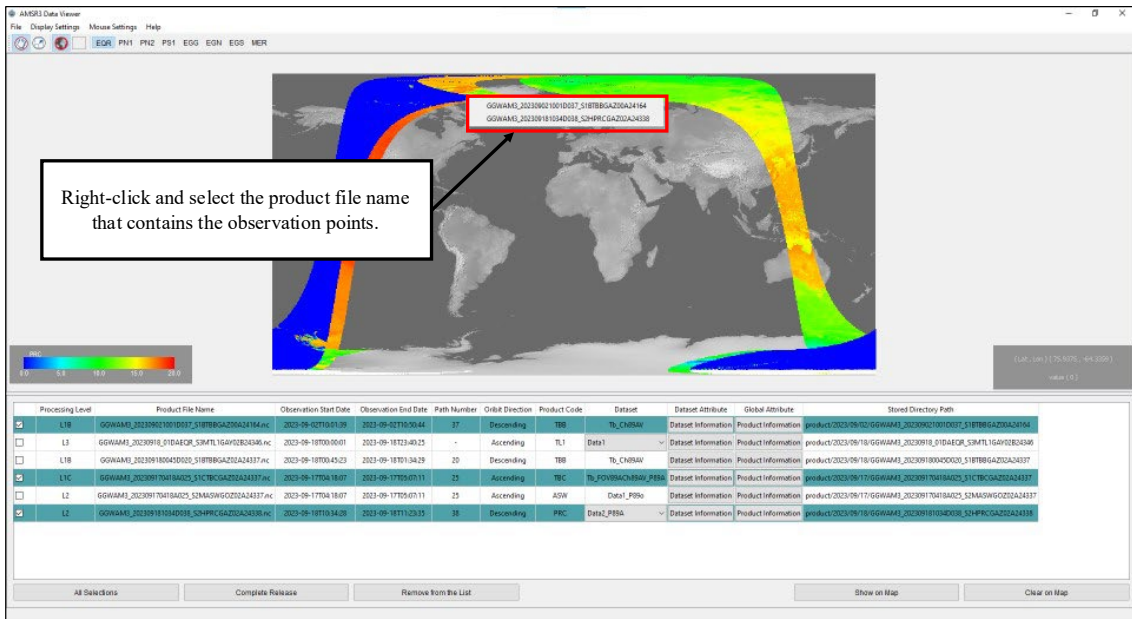


Figure 7-9 Context Menu for Ancillary Information Display

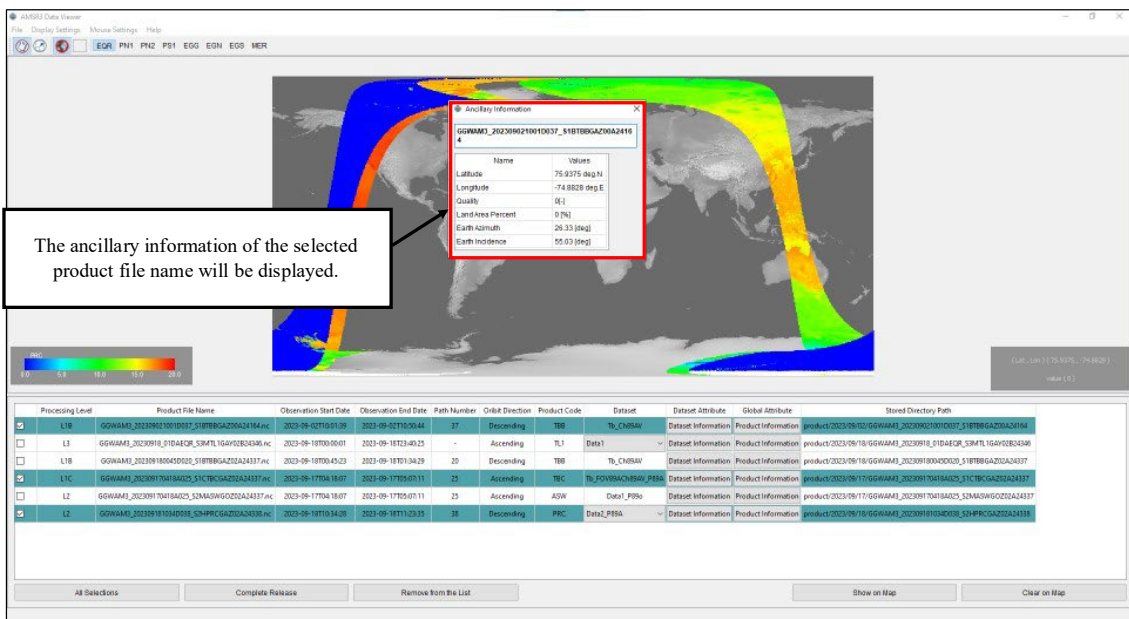


Figure 7-10 Display of Ancillary Information

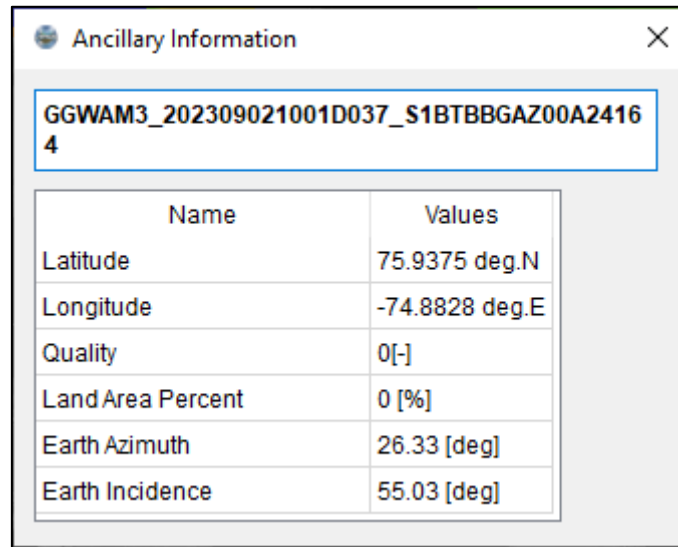


Figure 7-11 Ancillary Information Display Dialog

Table 7-4 Displayed Ancillary Information

Name	Description
Latitude	The latitude of the selected point is displayed.
Longitude	The longitude of the selected point is displayed.
Quality	The quality information of the selected point is displayed. Table 7-5 shows the Quality display content for each product level.
Land Area Percent	The percentage of land area (%) of the selected point is displayed. Not displayed for L3 products.
Earth Azimuth	The surface azimuth angle at the selected point is displayed. Not displayed for L3 products.
Earth Incidence	The surface incidence angle at the selected point is displayed. Not displayed for L3 products.

Table 7-5 Ancillary Information Quality Display Content

Product Level	Description
L1	If there are no missing data and no quality issues, 0[-] is displayed. If there are quality issues, a string based on the dataset attributes flag_values, flag_masks, and flag_meanings is displayed.
L2	A string based on flag_values and flag_meanings is displayed.
L3	Displayed in the following three patterns: ① If the dataset attribute of flag_masks exists, it is displayed in the same pattern as L1.

	<p>② If the dataset attribute of flag_masks does not exist and the dataset attribute of flag_values exists, it is displayed in the same pattern as L2.</p> <p>③ If neither ① nor ② applies, a number [-] indicating the count of valid data is displayed.</p>
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8. Globe View

This section explains how to display the image shown in the map display section as a Globe.

The Globe view can be accessed by clicking "Display Settings" in the main menu and selecting "Globe View" from the dropdown menu. In the Globe view, the product image shown on the map display screen is displayed. However, the "L3 Sea Ice Motion Vector" product is not displayed.

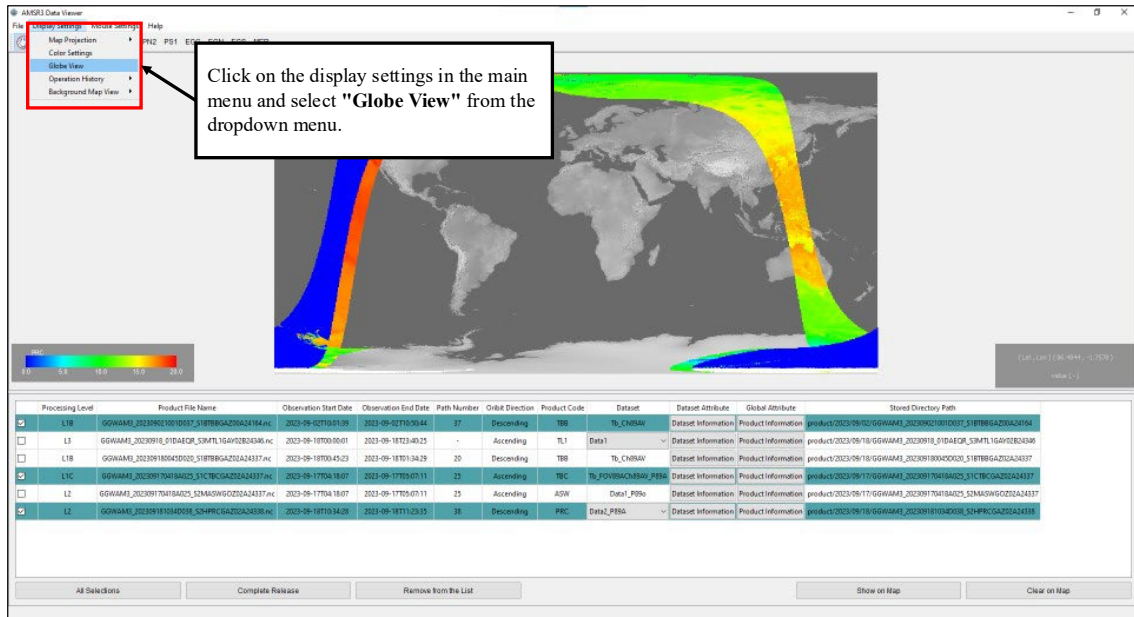


Figure 8-1 Globe View Operation Explanation

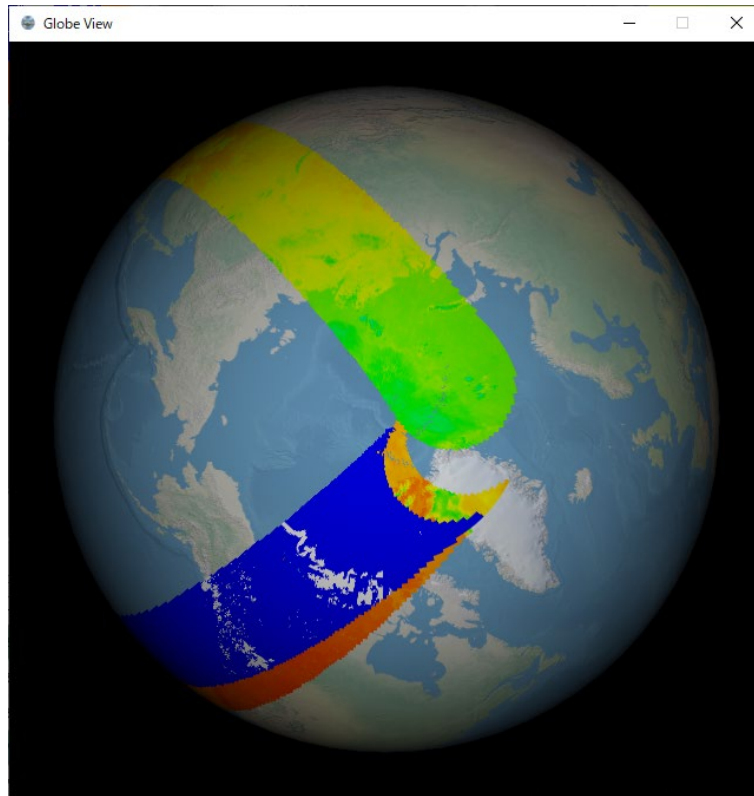


Figure 8-2 Globe View Screen

9. Attribute Display

Attributes store information related to the data. This section explains how to display the attributes of a product in the application.

9.1. Global Attribute Display

Global attributes store overall information about the product, such as the creation date and orbit direction.

This section explains the procedure to display the global attributes included in each product registered in the application.

When a product file is displayed in the Product List Area, a "Product Information" button appears in the Global Attribute column. Clicking this button displays the global attributes included in each product.

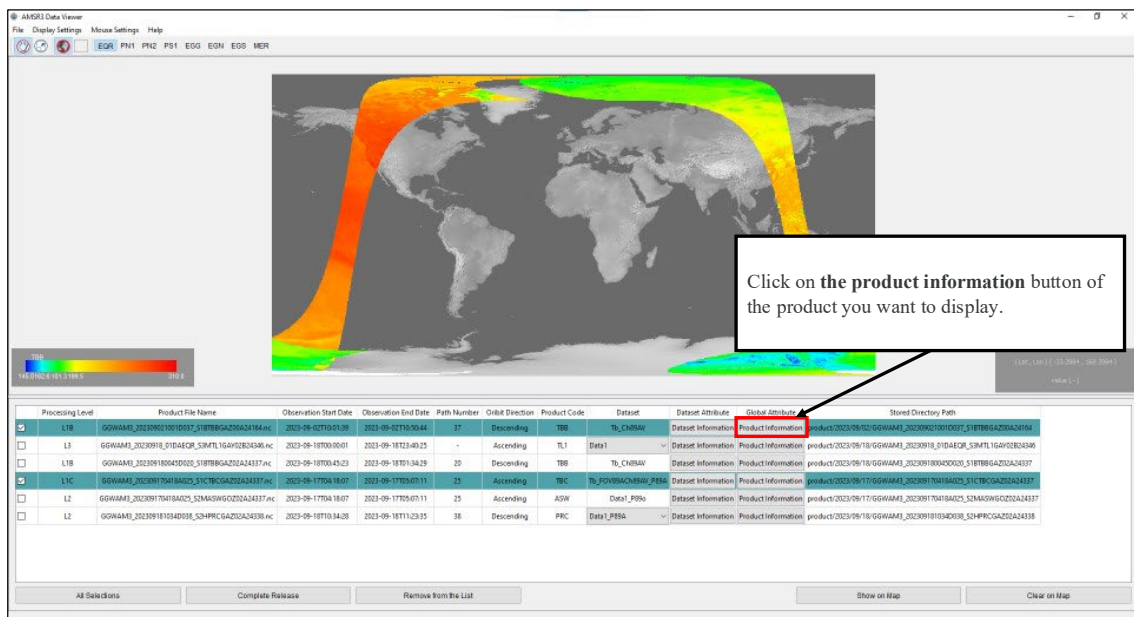


Figure 9-1 Global Attribute Display Method

The screenshot shows a window titled "Global Attribute" with a table of metadata. The table has two columns: "Name" and "Values". The "Name" column lists various attributes, and the "Values" column provides the corresponding data for each attribute.

Name	Values
Conventions	CF-1.7,ACDD-1.3
institution	Japan Aerospace Exploration Agency (JAXA)
project	JAXA GOSAT-GW Project
license	https://gportal.jaxa.jp/gpr/index/eula?lang=en
creator_name	Japan Aerospace Exploration Agency (JAXA)
creator_type	institution
creator_email	z-gportal-support@ml.jaxa.jp
creator_url	https://gportal.jaxa.jp/gpr/index/index?lang=en
standard_names_vocabulary	CF Standard Name Table (v49, 12 February 2018)
id	GGWAM3_202309021001D037_S1BTBBGAZ00A24164
naming_authority	jp.jaxa
source	GGWAM3_202309021002-037_S0-----00A24164_merge
processing_level	Level1B
comment	
date_created	2024-06-12T10:27:14.551Z
time_coverage_start	2023-09-02T10:01:39.155Z
time_coverage_end	2023-09-02T10:50:44.875Z

Figure 9-2 Global Attribute Display Screen

9.2. Dataset Attribute Display

Dataset attributes store information for each dataset, such as invalid values and data offsets.

This section explains the procedure to display the dataset attributes of products registered in the application.

When a product file is displayed in the Product List Area, a "Dataset Information" button appears in the Dataset Attribute column. Clicking this button displays the dataset attributes corresponding to the datasets shown in the "Dataset" section of the product list for each product.

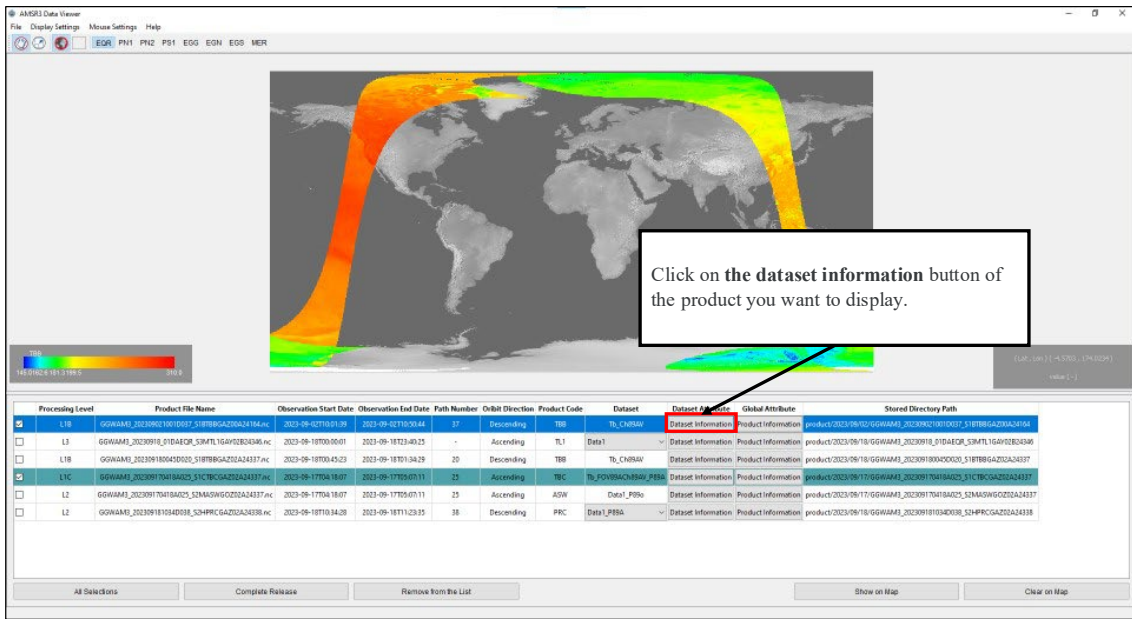


Figure 9-3 Dataset Attribute Display Method

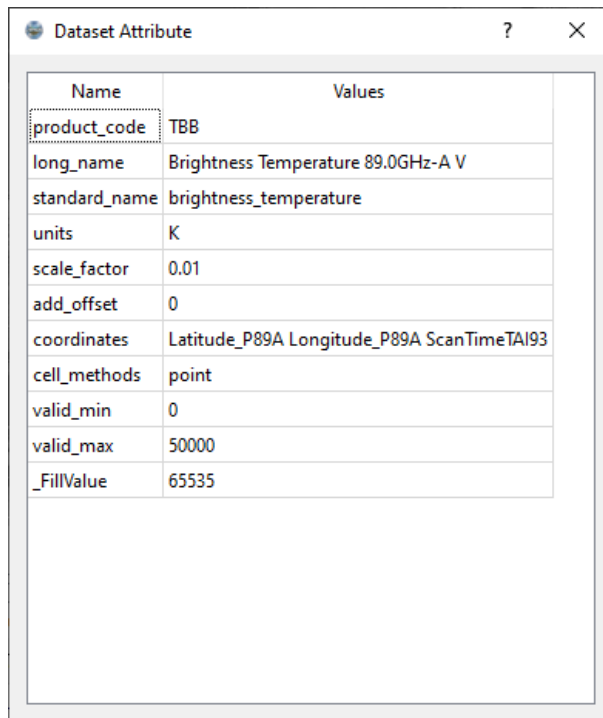


Figure 9-4 Dataset Attribute Display Screen

10. Color Settings

This chapter explains the procedure for configuring color settings in the application.

The display colors of products shown in the Map Display Area and the Globe View Screen can be changed by setting the color display parameters. The Color Settings Screen can be accessed by clicking "Display Settings" in the main menu and selecting "Color Settings" from the dropdown menu.

In the Color Settings Screen, you can select the product (L1/L2/L3/Common) for which you want to configure the color settings in the map display section by selecting the appropriate tab.

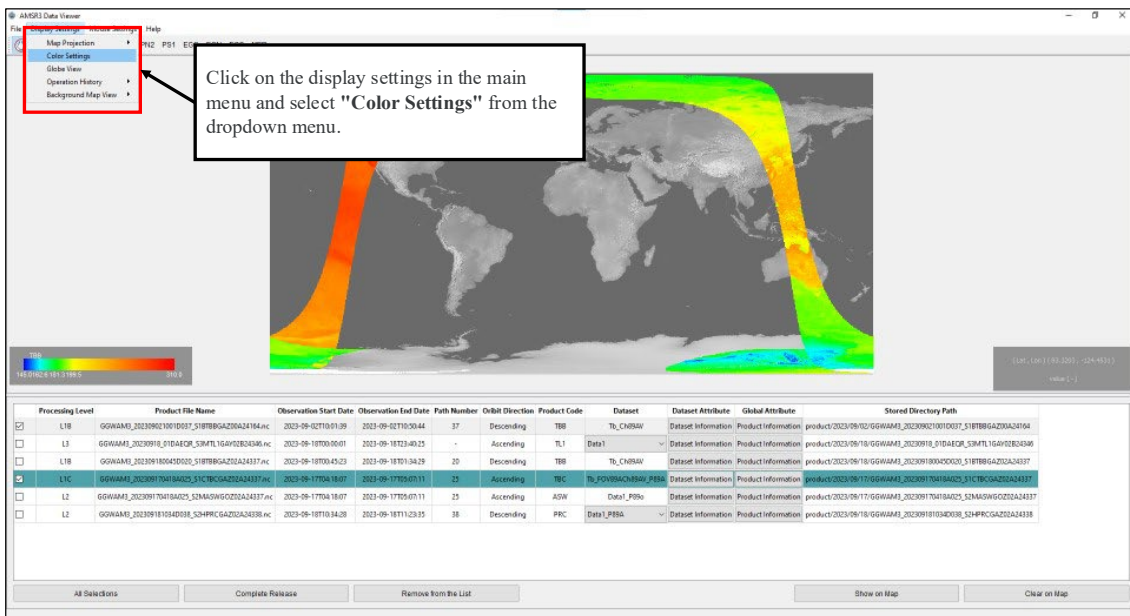


Figure 10-1 Display Method of Color Settings Screen

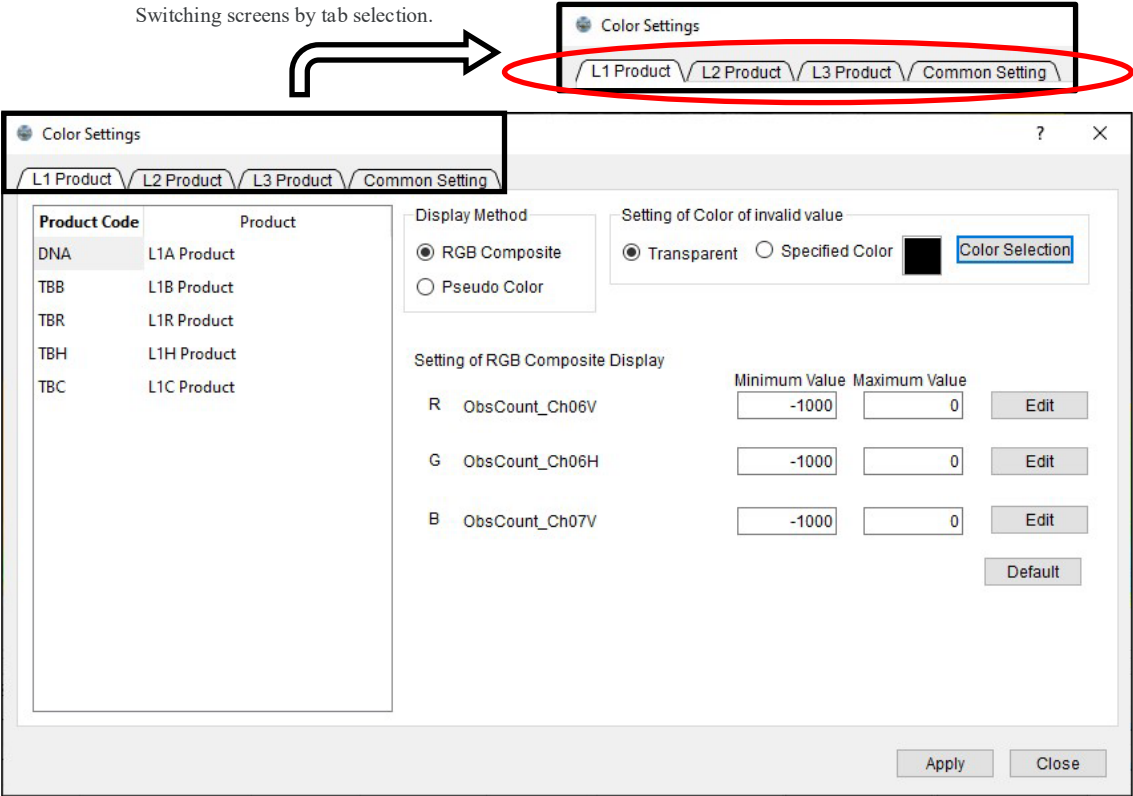
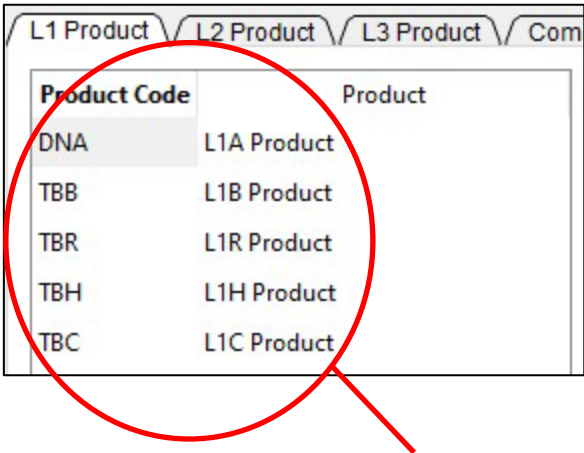


Figure 10-2 Tab Switching in Color Settings Screen

10.1. Color Settings for L1 Products in Map Display

To adjust the color display for L1 products, select the "L1 Products" tab in the Color Settings Screen. For L1 products, you can choose between RGB composite display and pseudo-color display settings.

Select the L1 product for which you want to display the color settings from the product selection list.



Product Selection List

Figure 10-3 Product Selection List for L1 Products

In the center of the screen, select the "RGB Composite Display" radio button to display the Display Band (RGB) Settings Section.

Example of Selecting RGB Composite Display for L1A Products

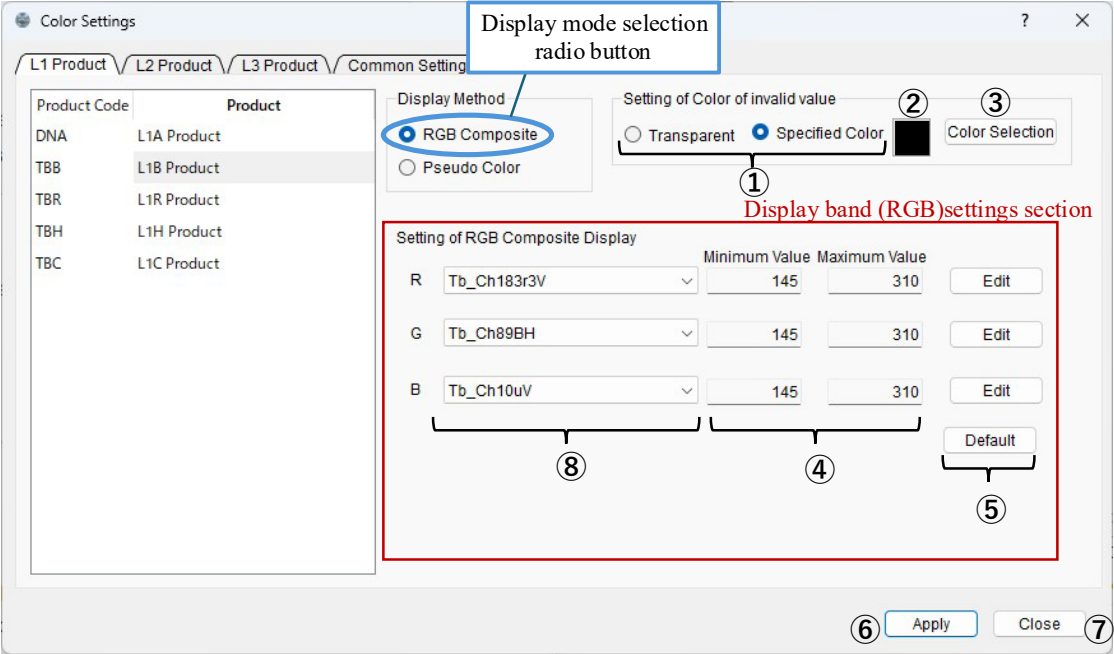


Figure 10-4 Explanation of Display Band (RGB) Setting Section

Table 10-1 provides descriptions and actions for items ① to ⑧ in the Display Band (RGB) Settings Section, indicated by the red frame in Figure 10-4.

Table 10-1 Description and Actions for Each Item in the Display Band (RGB) Settings Section

No	Item Name	Description and Action
①	Invalid Value Color Setting Radio Buttons	Select the color for invalid values in RGB composite display/pseudo-color display. If "Transparent" is selected, the invalid value is rendered transparent. If "Specified Color" is selected, the invalid value is set to the color indicated by the Invalid Value Color Label (②).
②	Invalid Value Color Label	Displays the color specified by the Color Selection Button (③). If the Invalid Value Color Setting Radio Buttons are set to "Specified Color," the invalid value is displayed in this color.
③	Color Selection Button	Clicking the button opens the Color Dialog.
④	Display Range Setting	Convert the product values (2-byte integers) to 256 gradations for displaying L1 Product Image. Sets the minimum and maximum values to be truncated.
⑤	Default Value Button	Clicking the button restores the default values (minimum and maximum values for truncation).
⑥	Apply Button	Save the Color Settings.
⑦	Close Button	Close the Color Settings Screen. A confirmation dialog is displayed.
⑧	Dataset-change combo box	Select the dataset assigned to the RGB components of the L1 product. If a product containing the selected physical quantity is not loaded, the dataset cannot be changed.

When the "Pseudo-Color Display" option is selected using the display mode selection radio button, the Pseudo-Color Settings Section is displayed.

Example of L1A Product → Pseudo-Color Display Selection

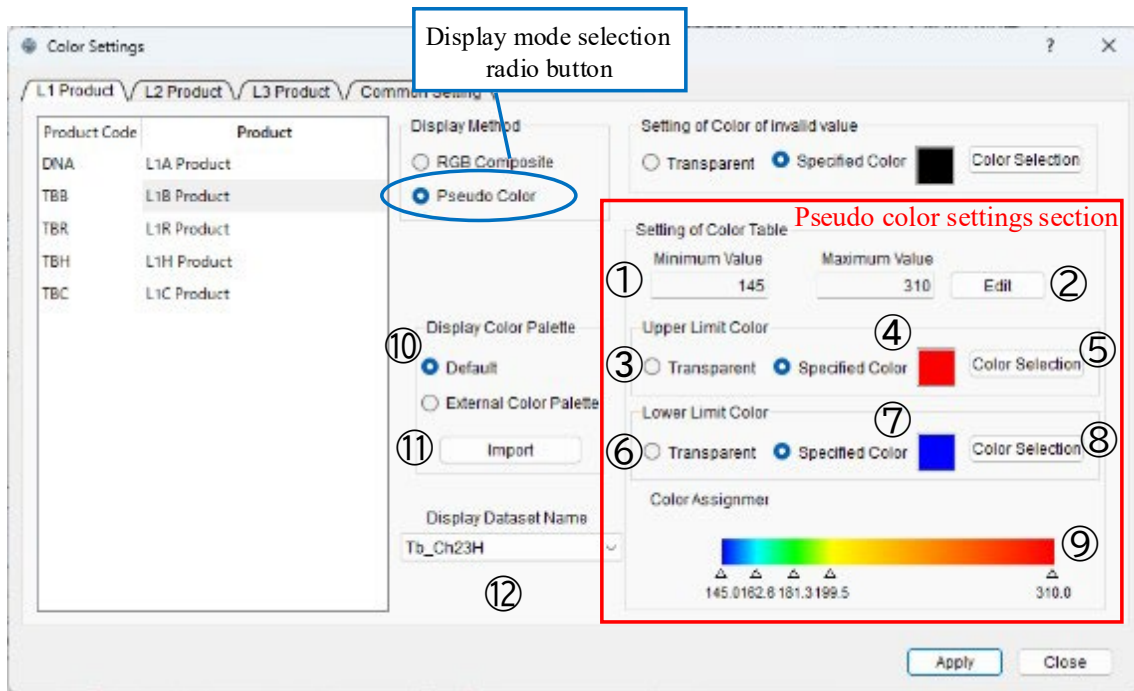


Figure 10-5 Explanation of Pseudo-Color Setting Section

Table 10-2 provides descriptions and actions for items ① to ⑫ in the Pseudo-Color Settings Section, indicated by the red frame in Figure 10-5.

Table 10-2 Description and Actions for Each Item in the Pseudo-Color Settings Section (1/2)

No	Item Name	Description and Action
①	Display Range Setting	Click the Edit Button (②) to open the Truncation Value Setting Dialog and set the minimum and maximum truncation values for the original data during pseudo-coloring.
②	Edit Button	Clicking the button opens the Truncation Value Setting Dialog.
③	Upper Limit Out-of-Range Color Setting Radio Buttons	Set the color for values greater than the maximum truncation value. If "Transparent" is selected, values greater than the maximum truncation value become transparent. If "Specified Color" is selected, the color shown in the Upper Limit Out-of-Range Color Label (④) is used.
④	Upper Limit Out-of-Range Color Label	The color specified by the Upper Limit Out-of-Range Color Selection Button (⑤) is displayed on the label. If the Upper Limit Out-of-Range Color Setting Radio Button is set to "Specified Color", values greater than the maximum truncation value are displayed in this color.
⑤	Upper Limit Out-of-Range Color Selection Button	Clicking the button displays the Color Dialog.
⑥	Lower Limit Out-of-Range Color Setting Radio Buttons	Set the color for values less than the minimum truncation value. If "Transparent" is selected, values less than the minimum truncation value become transparent. If "Specified Color" is selected, the color shown in the Lower Limit Out-of-Range Color Label (⑦) is used.
⑦	Lower Limit Out-of-Range Color Label	The color specified by the Lower Limit Out-of-Range Color Selection Button (⑧) is displayed on the label. If the Lower Limit Out-of-Range Color Setting Radio Button is set to "Specified Color", values less than the minimum truncation value are displayed in this color.
⑧	Lower Limit Out-of-Range Color Selection Button	Clicking the button displays the Color Dialog.

Table 10-2 Description and Actions for Each Item in the Pseudo-Color Settings Section (2/2)

No	Item Name	Description and Actions
⑨	Color Bar Setting Display	During pseudo-coloring, the RGB values for the minimum, intermediate, and maximum values are displayed. If the Display Color Palette Radio Button (⑩) is set to "Default," up to three intermediate values can be set. Double-clicking on the color bar adds the color at that position as an intermediate point. A triangle (△) is displayed at the added position, and the current setting value is shown below the triangle. However, if the Display Color Palette Radio Button (⑩) is set to "External Color Palette," pseudo-color display cannot be changed here.
⑩	Display Color Palette Radio Buttons	Select the display color palette for pseudo-coloring. If "Default" is selected, the image is displayed using the color palette specific to the application. Clicking "Default" restores the default values (invalid value color, upper limit out-of-range color, lower limit out-of-range color, truncation minimum value, truncation maximum value, and color bar). If "External Color Palette" is selected, the values of the external color palette loaded by the External Color Palette Import Button (⑪) are set. However, the color bar settings cannot be made in the Color Bar Setting Display (⑨). Once "Default" is clicked, the settings of the external color palette are not saved.
⑪	External Color Palette Import Button	A file dialog is displayed, allowing you to load an external color palette. The format must be the same as the color palettes shown in the Top of the (cpt) palettes on cpt-city (http://soliton.vm.bytemark.co.uk/pub/cpt-city/views/totp-cpt.html).
⑫	Dataset-change combo box	Select the dataset used for the L1 product's pseudo-color display and dataset attributes. If a product containing the selected physical quantity is not loaded, the dataset cannot be changed.

10.2. Color Settings for L2 Products in Map Display

To adjust the color display of the L2 products, select the "L2 Product" tab on the Color Settings Screen. In the L2 products, pseudo-color display settings can be selected.

Select the L2 product for which you want to display the color settings from the Product Selection List.

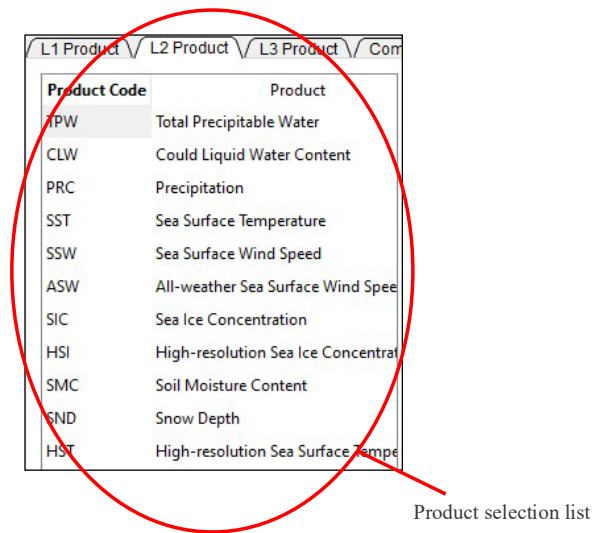


Figure 10-6 Product Selection List for L2 Products

The Pseudo-Color Setting Section is shown in Figure 10-7.

Example When Selecting the L2 Total Precipitable Water (TPW) product

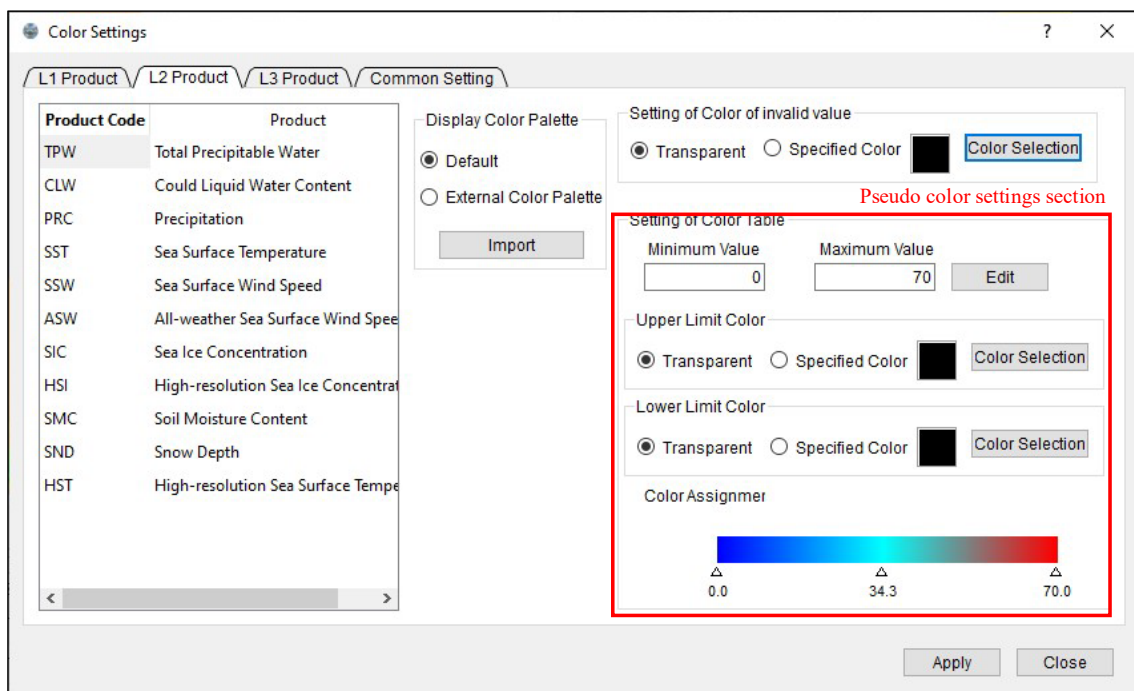


Figure 10-7 Pseudo-Color Setting Section for L2 Products

The operations within the red frame of the Pseudo-Color Setting Section in Figure 10-7 are the same as those described in Table 10-2.

10.3. Color Settings for L3 Products in Map Display

To adjust the color display of the L3 product, select the "L3 Product" tab on the Color Settings Screen. In the L3 product, pseudo-color display settings can be selected.

Select the L3 product for which you want to display the color settings from the Product Selection List.

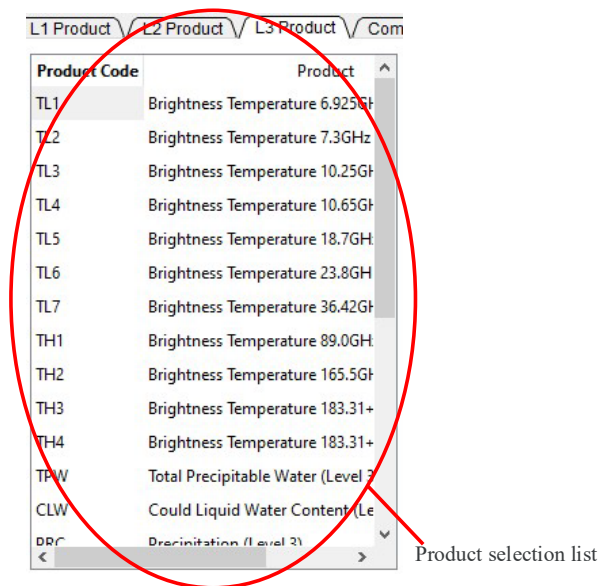


Figure 10-8 Product Selection List for L3 Products

The Pseudo-Color Setting Section is shown in Figure 10-9.

Example When Selecting the L3 Brightness Temperature 6.925GHz (TL1) product

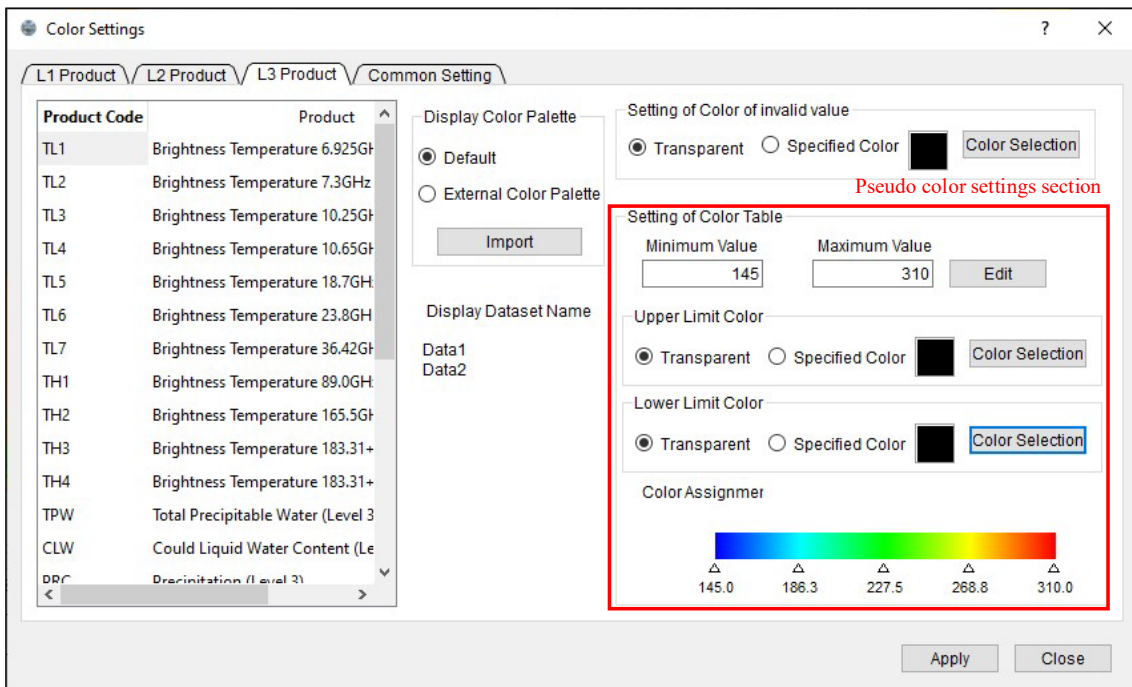


Figure 10-9 Pseudo-Color Setting Section for L3 Products

The operations within the red frame of the pseudo-color settings section in Figure 10-9 are the same as those described in Table 10-2.

10.4. Common Color Settings for Map Display

To import/export the settings from the display Color Settings Screen, select the "Common" tab on the Color Settings Screen.

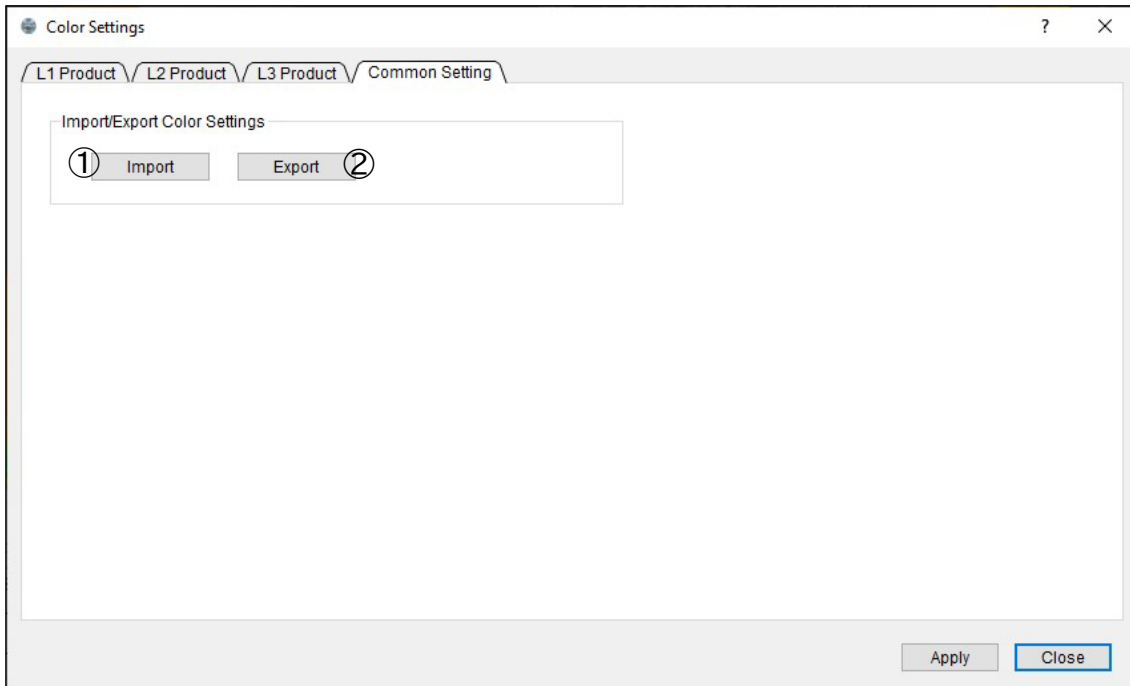


Figure 10-10 Explanation of Common Color Setting Operation

Table 10-3 describes the items ① and ② in the Import and Export section of the Color Settings shown in Figure 10-10, along with their actions when selected.

Table 10-3 Description and Actions of Each Item in the Common Tab

No	Item Name	Description and Actions when Selected
①	Import Button	Imports any color setting file to be used for the product display color. The structure of the importable setting file is shown in Table 10-4. Clicking the button displays a file dialog.
②	Export Button	Saves the color settings configured on the Color Settings Screen to any setting file. Clicking the button displays a file dialog.

Table 10-4 Format of the color settings file (1/3)

Section	Key	Description
Product	L1num	Number of entries in the L1 section
	L2num	Number of entries in the L2 section
	L3num	Number of entries in the L3 section
	L1_X(X:0~L1num-1)	L1 Product Color Definition Section
L1_X(X:0~L1num-1)	name	Product name
	EnName	Product English name
	Code	Product code
	DatasetR	Dataset name assigned to the red (R) channel for RGB composite display
	DatasetG	Dataset name assigned to the green (G) channel for RGB composite display
	DatasetB	RGB Dataset name assigned to the blue (B) channel for RGB composite display
	DatasetS	Dataset name for pseudo-color display
	LatR	Longitude Dataset name corresponding to DatasetR
	LatG	Longitude Dataset name corresponding to DatasetG
	LatB	Longitude Dataset name corresponding to DatasetB
	LatS	Longitude Dataset name corresponding to DatasetR
	LonR	Longitude Dataset name corresponding to DatasetR
	LonG	Longitude Dataset name corresponding to DatasetG
	LonB	Longitude Dataset name corresponding to DatasetB
	LonS	Longitude Dataset name corresponding to DatasetS
	intervalDeg	Interval coefficient for latitude and longitude index map
	RGBView	Flag indicating the display method true: RGB composite false: Pseudo-color display
	RGB_R	Band information assigned to the red (R) channel for RGB composite display Set the following items separated by commas: <ul style="list-style-type: none"> • Truncation minimum value • Truncation maximum value

Table 10-4 Format of the color settings file (2/3)

Section	Key	Description
	RGB_G	Band information assigned to the green (G) channel for RGB composite display Same format as RGB_R
	RGB_B	Band information assigned to the blue (B) channel for RGB composite display Same format as RGB_R
	ExportColorPaletteFlag	Flag indicating the use of an external color palette true: External color palette false: Default
	colorNum	Number of color settings
	ColorX (X:1~colorNum)	Set the color and original image data value for pseudo-color conversion. Set the following items separated by commas: <ul style="list-style-type: none"> • Color code • Image data value
	BackgroundIsTransparent	Flag indicating transparency for values smaller than the minimum value true: Transparent false: Specified color
	BackgroundColor	Color for values smaller than the minimum value
	ForegroundIsTransparent	Flag indicating transparency for values larger than the maximum value true: Transparent false: Specified color
	ForegroundColor	Color for values larger than the maximum value
	NanIsTransparent	Flag indicating transparency for invalid values true: Transparent false: Specified color
	NanColor	Color for invalid values
L2_X(X:0~L2num-1)		L2 Product Color Definition Section
	name	Product name
	EnName	Product English name
	Code	Product Code

Table 10-4 Format of the color settings file (3/3)

Section	Key	Description
	intervalDeg	Interval coefficient of latitude and longitude index map
	ExportColorPaletteFlag	Flag indicating the use of an external color palette true: External color palette false: Default
	colorNum	Number of color settings
	ColorX (X:1~colorNum)	Set the colors and corresponding image data values for pseudo-color conversion. Set the following items separated by commas: • Color code • Image data value
	BackgroundIsTransparent	Flag indicating transparency for values below the minimum value true: Transparent false: Specified color
	BackgroundColor	Color for values below the minimum value
	ForegroundIsTransparent	Flag indicating transparency for values above the maximum value true: Transparent false: Specified color
	ForegroundColor	Color for values above the maximum value
	NanIsTransparent	Flag indicating transparency for invalid values true: Transparent false: Specified color
	NanColor	Color for invalid values
L3_X(X:0~L3num-1)		Color definition section for L3 products
		Same format as the color definition section for L2 products

11. File Output

This chapter describes the procedures for file output in the application.

11.1. File Conversion

In the application, the product displayed in the Map Display Area can be converted to the following file formats for any selected area:

- Binary file format
- CSV file format
- KML (KMZ) file format
- Image file format (BMP, JPEG, PNG, TIFF, GeoTiff)
- NetCDF file format

11.1.1. Binary File (Raw Data) Output

In the application, data for a specified area of the product displayed on the map can be output as a binary file (raw data).

To output a binary file (raw data), click "File" in the main menu and select "Save as Binary File format" from the displayed pull-down menu. The binary file (raw data) output screen shown in Figure 11-1 is displayed. Set the file save location and file name, then click the "Save" button to save the file.

Please note that when outputting a binary file (raw data), only one product should be displayed in the Map Display Area.

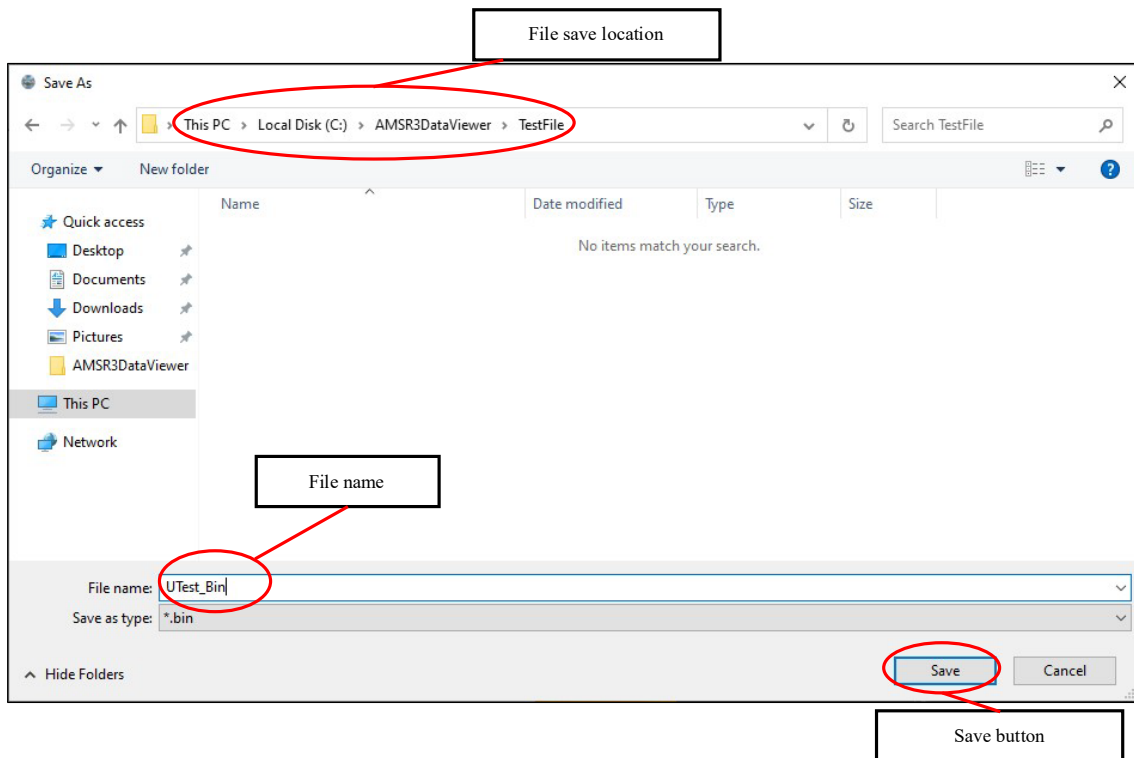


Figure 11-1 Binary File (raw data) Output Screen

11.1.2.CSV File Output

In the application, data for a specified area of the product displayed on the map can be output as a CSV file. Table 11-1 shows the files that will be output. "XXXXXX" is the file output name set from the screen.

Table 11-1 List of Output CSV Files

File Name	Description
XXXXXX.csv	Outputs the data values for the specified area. Invalid values within the specified area are output as "-".
XXXXXX_lat.csv	Outputs the latitudes for the specified area.
XXXXXX_lon.csv	Outputs the longitudes for the specified area.

To output a CSV file, click "File" in the main menu and select "Save as CSV format" from the displayed pull-down menu.

The CSV file output screen shown in Figure 11-2 is displayed. Set the file save location and file name, then click the "Save" button to save the file.

Please note that when outputting a CSV file, only one product should be displayed in the Map Display Area.

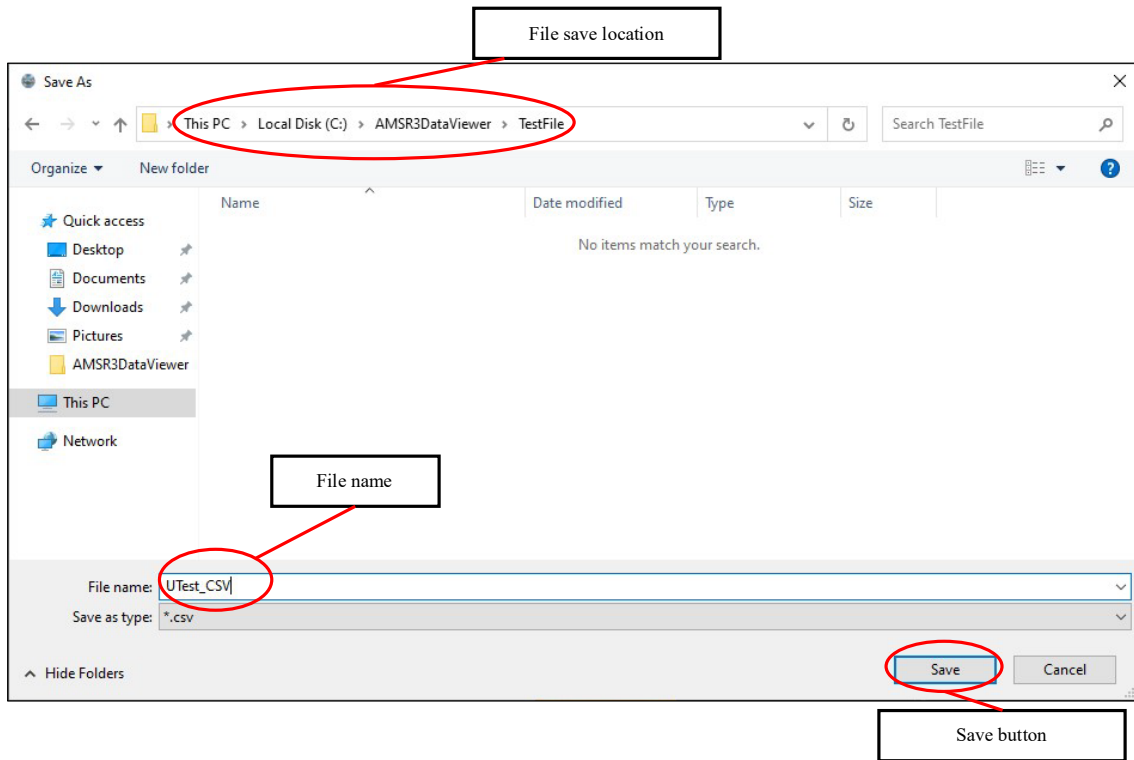


Figure 11-2 CSV File Output Screen

11.1.3. KML (KMZ) File Output

In the application, data for a specified area of the product displayed on the map can be output as a static image in KML (KMZ) file format.

To output a KML (KMZ) file, click "File" in the main menu and select "Save as KML (KMZ) format" from the displayed pull-down menu.

The KML (KMZ) file output screen shown in Figure 11-3 is displayed. Specify the file save location and file name, select the file type from the pull-down menu, then click the "Save" button to save the file.

Please note that when outputting a KML (KMZ) file, switch the background map in the Map Display Area to the Equidistant Cylindrical Projection (EQR). Additionally, the L3 Sea Ice Motion Vector (SIM) product cannot be output.

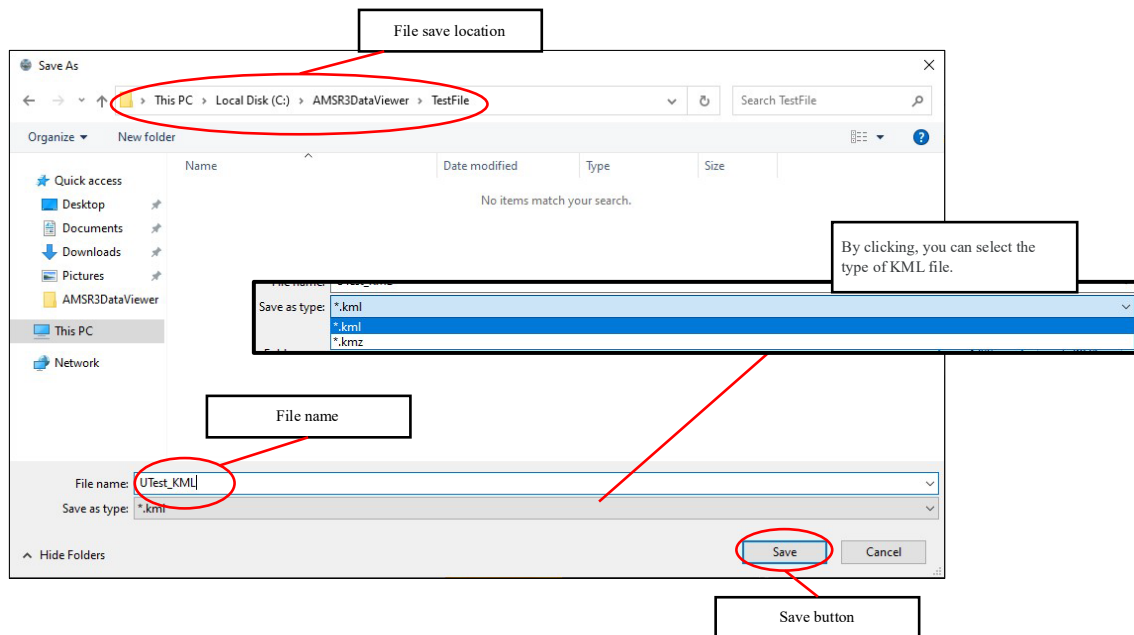


Figure 11-3 KML (KMZ) File Output Screen

11.1.4. Image File Output

In the application, data for a specified area of the product displayed on the map can be output as an image file (BMP/JPEG/PNG/TIFF/GeoTiff).

To output an image file (BMP/JPEG/PNG/TIFF/GeoTiff), click "File" in the main menu and select "Save as Image format" from the displayed pull-down menu.

The image file output screen shown in Figure 11-4 is displayed. Specify the file save location and file name, select the file type from the pull-down menu, then click the "Save" button to save the file.

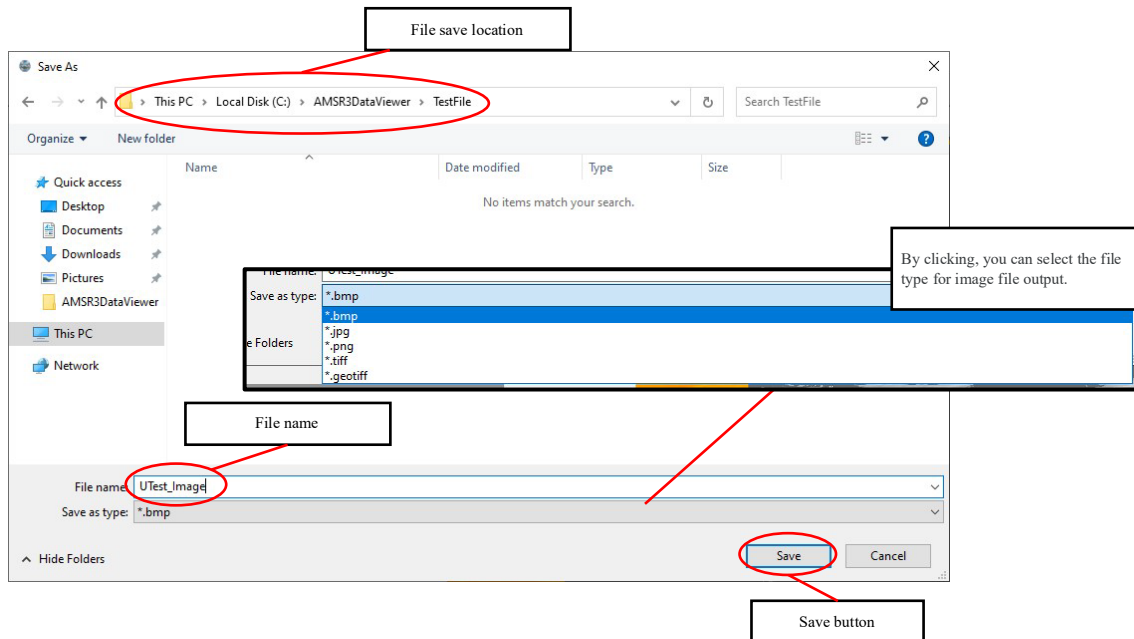


Figure 11-4 Image File Output Screen

11.1.5. NetCDF File Output

In the application, data for L1 products/L2 products displayed on the map can be output as a NetCDF file by specifying the time.

To output a NetCDF file, click "File" in the main menu and select "Save as NetCDF format" from the displayed pull-down menu.

The NetCDF file output screen shown in Figure 11-5 is displayed. After setting the file save location and file name, click the "Save" button to save the file. Then, the clipping range specification dialog shown in Figure 11-6 is displayed. Specify the clipping range and click the "OK" button.

Please note that when outputting a NetCDF file, only one product should be displayed in the Map Display Area.

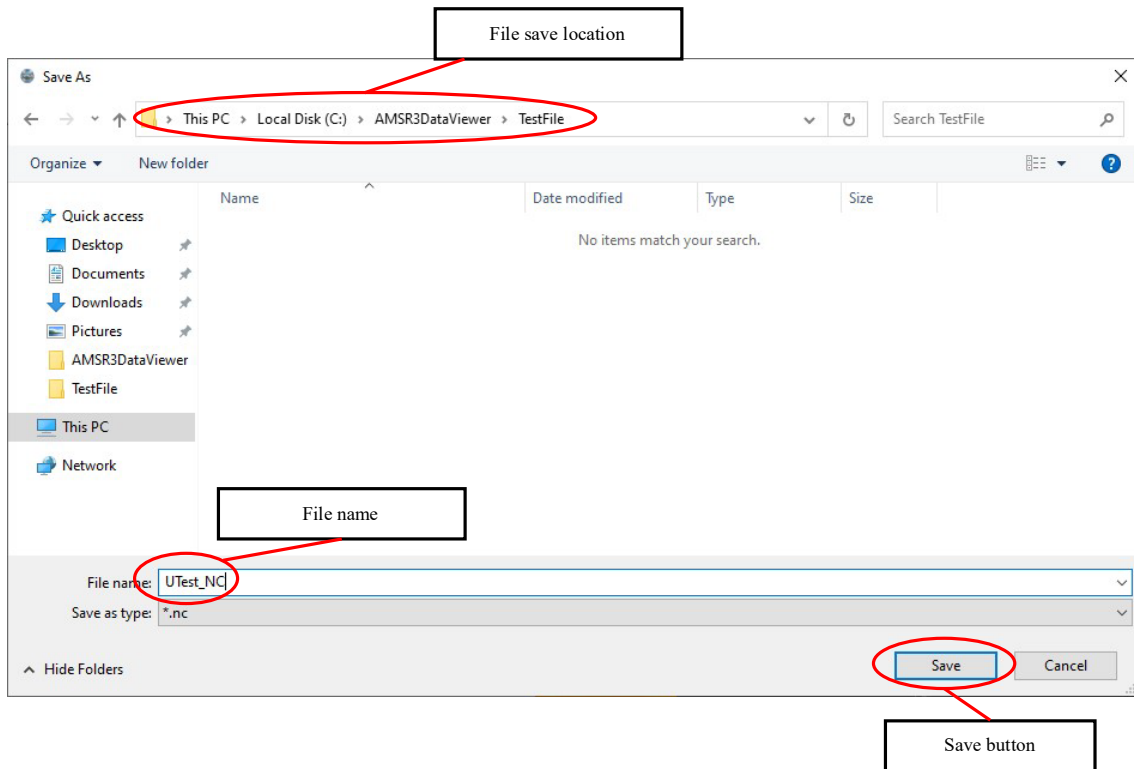


Figure 11-5 NetCDF File Output Screen

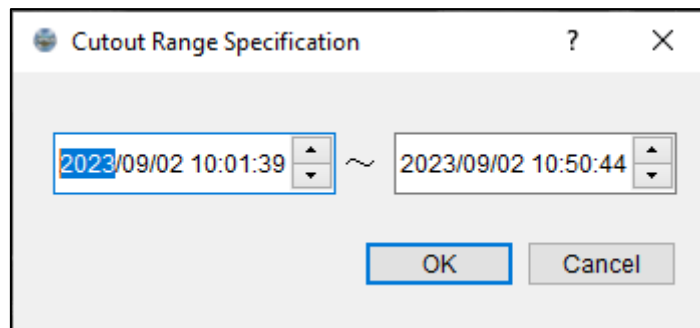


Figure 11-6 Cutout Range Specification Dialog

11.1.6. Save to Clipboard

In the application, data for a specified area of the product displayed on the map can be saved to the clipboard.

To save to the clipboard, click "File" in the main menu and select "Save to Clipboard" from the displayed pull-down menu.

11.2. Video File Output

In the application, video files (AVI/KML/KMZ) can be output.

For L1 products/L2 products, videos are created using the dataset that stores the observation start time of the product. For L3 products, videos are created by grouping using the product file names. The Video Creation Screen is displayed by clicking "File" in the main menu and selecting "Creating a Video File" from the displayed pull-down menu.

On the Video Creation Screen, you can select between "Creating Video (L1/L2)" for outputting video files of L1/L2 products and "Creating Video (L3)" for creating videos of L3 products by selecting the appropriate tab.

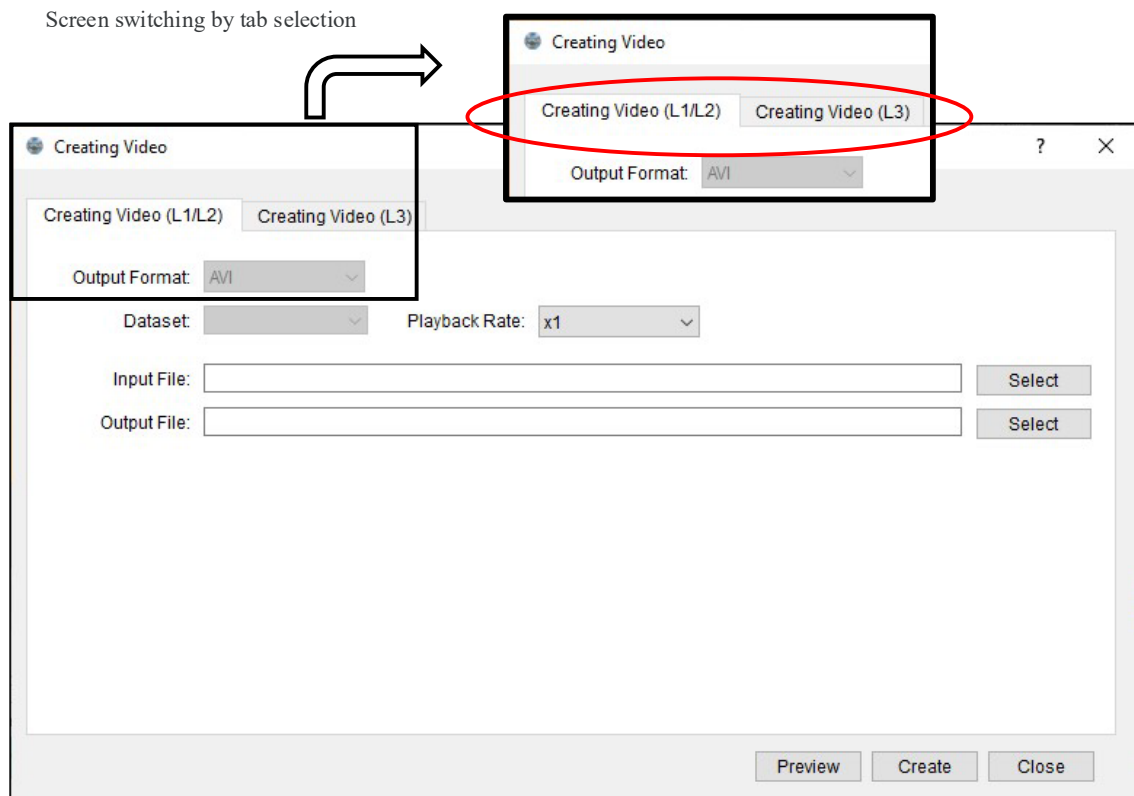


Figure 11-7 Tab Switching in Video Creation Screen
("Video Creation (L1/L2)" and "Video Creation (L3)")

11.2.1. Video File Output for L1/L2 Products

To output video files for L1/L2 products, select the "Creating Video (L1/L2)" tab on the Video Creation Screen.

The video output format for L1/L2 products is AVI only. The background map for the video will be the one specified in the Map Display Area.

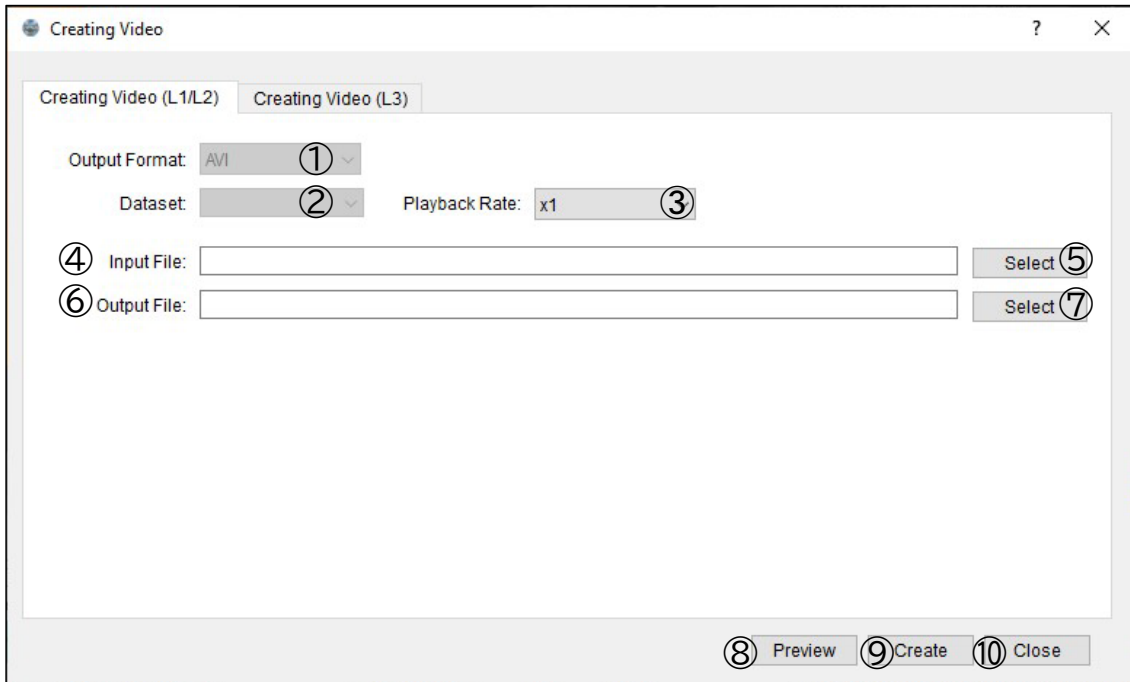


Figure 11-8 Video Creation Screen (L1/L2)

Table 11-2 provides explanations and actions for items ① to ⑩ described in Figure 11-8.

Table 11-2 Explanation and Actions of Items on the Video Creation Screen (L1/L2)

No	Item Name	Explanation and Behavior when Selected
①	Output Format Specification Combo box	Select the video output format, but it cannot be selected for L1/L2 products.
②	Dataset Selection Combo box	Specify the dataset used for video creation. When an L2 product is loaded using the input file selection button (⑤), the dataset can be specified..
③	Playback Rate Specification Combo box	Specify the playback rate for video creation. The playback rate can be selected from x1, x2, x4, and x8.
④	Input File Specification Text	Displays the file path of the file selected with the input file selection button (⑤).
⑤	Input File Selection Button	Clicking the button displays a file dialog. You can select an L1 product or L2 product.
⑥	Output File Selection Text	Displays the file path of the file specified with the output file selection button (⑦).
⑦	Output File Selection Button	Clicking the button displays a file dialog. Specify the save location and file name of the output file.
⑧	Preview Button	Displays the video preview screen (see Figure 11-9).
⑨	Create Video Button	Creates a video at the file path indicated in the output file path text.
⑩	Close Button	Exits the Video Creation Screen.

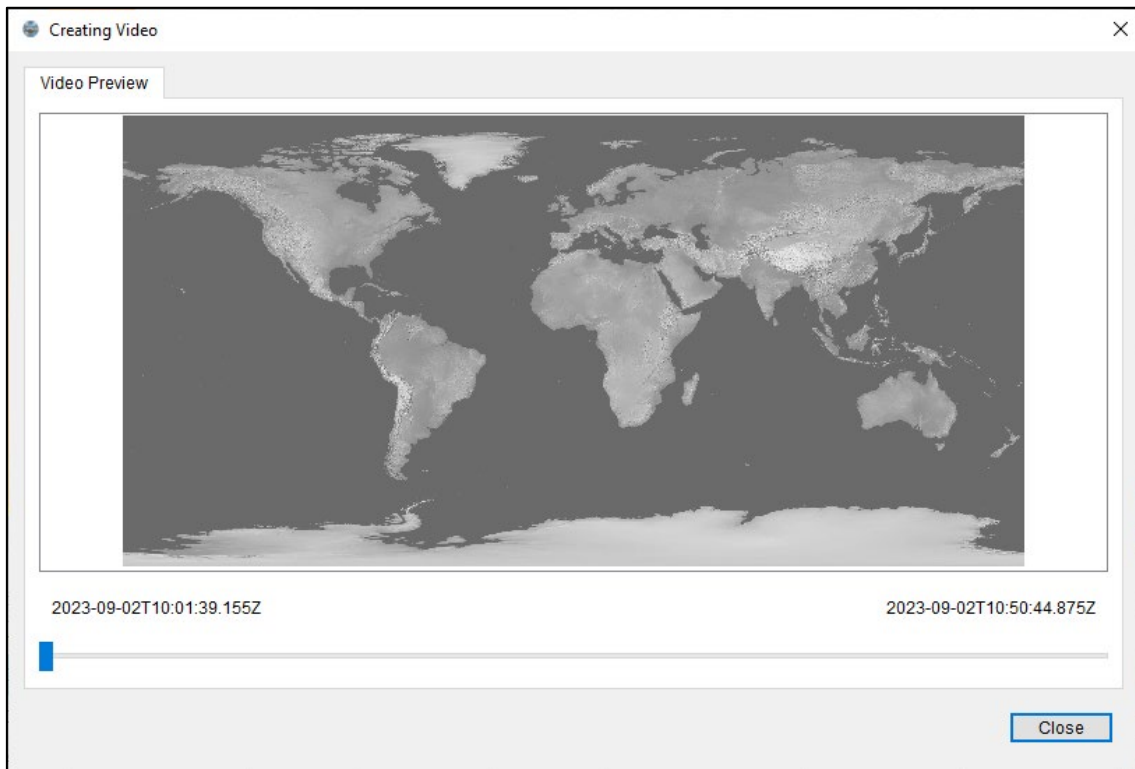


Figure 11-9 Video Preview Screen

11.2.2. Video File Output for L3 Products

To output video files for L3 products, select the "Creating Video (L3)" tab on the Video Creation Screen.

For products with a map projection type of EQR, you can choose the video output format from AVI/KML/KMZ. In this case, the output KML (KMZ) file will be a video. The background map for the video will be set according to the map projection type of the product.

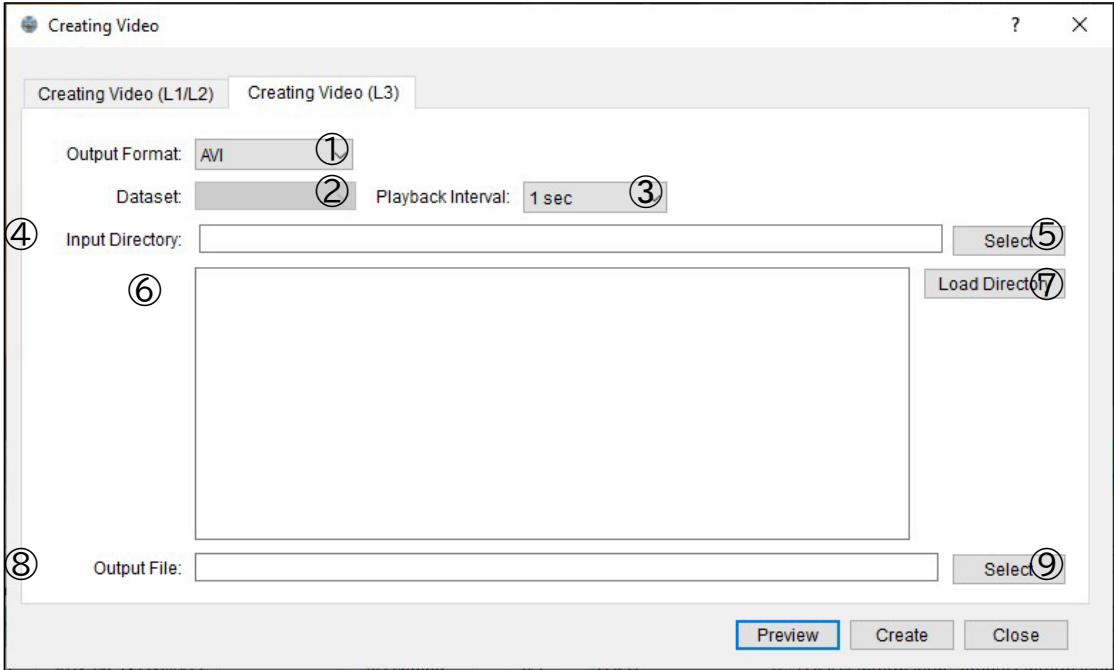


Figure 11-10 Video Creation Screen (L3)

Table 11-2 provides explanations and actions for items ① to ⑨ described in Figure 11-10.

Table 11-3 Explanation and Actions of Items on the Video Creation Screen (L3)

No	Item Name	Explanation and Behavior when Selected
1.	Output Format Specification Combo box	Select the video output format. For products with a map projection type of EQR, you can choose AVI/KML/KMZ. However, for other products, only AVI format can be selected.
2.	Dataset Specification Combo box	Specify the dataset used for video creation. After loading the product using the Input Directory Selection Button (⑤), you can specify the dataset.
3.	Playback Interval Specification Combo box	Specify the playback interval for video creation. The playback interval can be selected in 1-second increments from 1 second to 10 seconds.
4.	Input Directory Path Text	Displays the path of the directory selected with the Input Directory Selection Button (⑤).
5.	Input Directory Selection Button	Clicking the button displays a file dialog. Select the directory where the L3 product is stored.
6.	L3 Product List Text	After clicking the Directory Load Button (⑦), a list of the same type of L3 products contained in the directory will be displayed.
7.	Directory Load Button	Extracts the same type of L3 products in the directory displayed in the Input Directory Path Text (④). This process uses the file names.
8.	Output File Path Text	Displays the path of the file specified with the Output File Selection Button (⑨).
9.	Output File Selection Button	Clicking the button displays a file dialog. Specify the save location and file name of the output file.

12. Operation History File

This chapter explains how to save and restore the operation history file of the application.

12.1. Saving the Operation History File

The screen state of the product displayed in the Map Display Area can be saved as an operation history file.

To save the operation history file, click "Display Settings" in the main menu, hover over "Operation History" in the displayed pull-down menu, and select "Save".

The Operation History File Save Dialog shown in Figure 12-1 appears. Set the file save location and file name, then click the "Save" button.

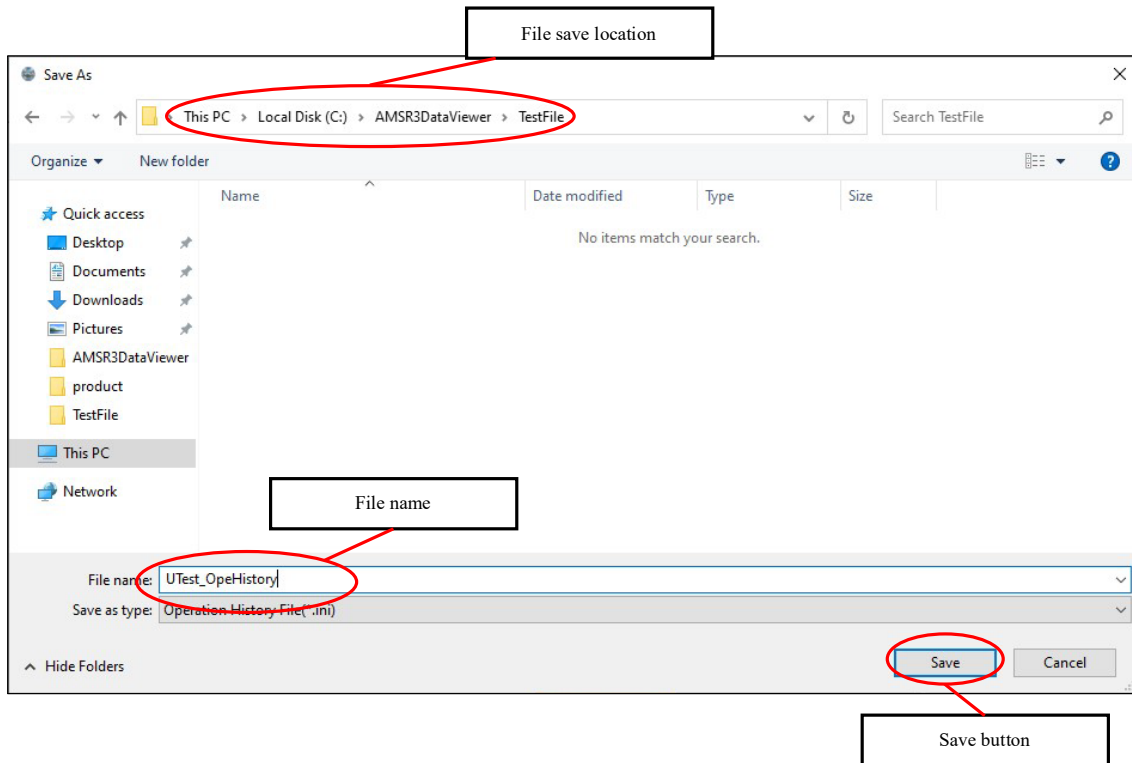


Figure 12-1 Operation History Save Dialog

12.2. Restoring the Operation History File

You can restore the screen state using the operation history file saved in section 12.1.

To restore the screen state, click "Display Settings" in the main menu, hover over "Operation History" in the displayed pull-down menu, and select "Restore".

The Operation History File Restore Dialog shown in Figure 12-2 appears. Specify the location of the operation history file saved in section 12.1, select the operation history file you want to restore, and click the "Open" button.

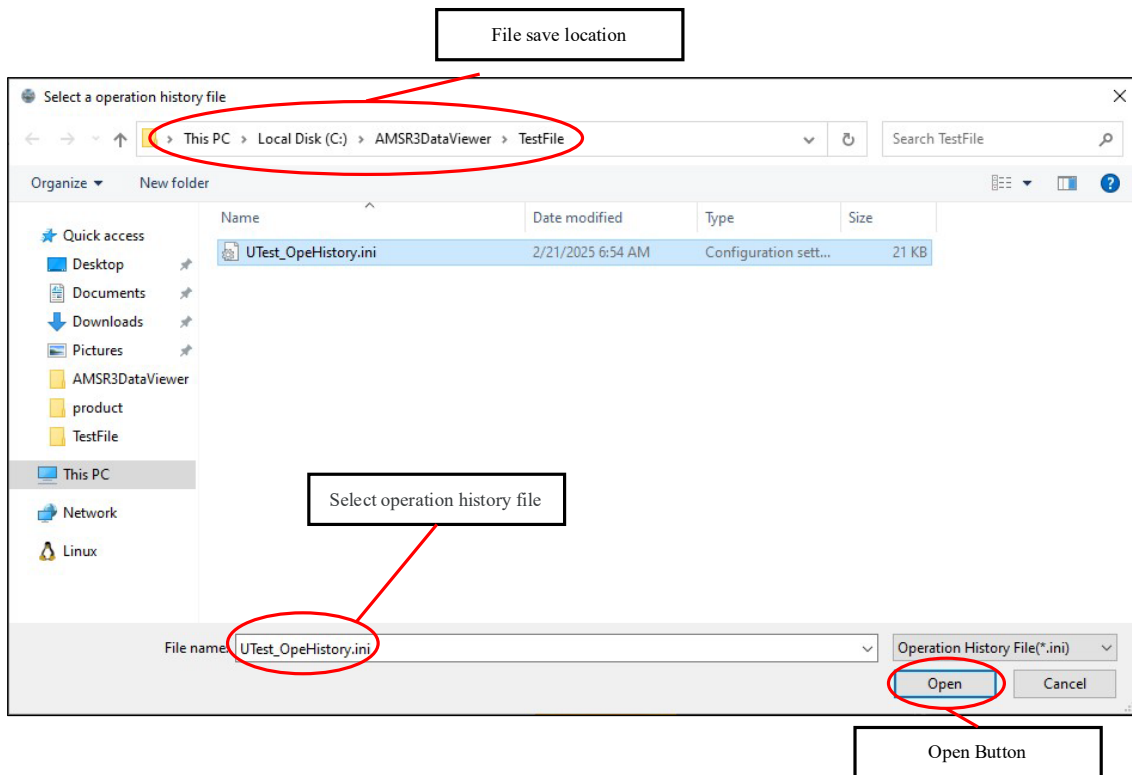


Figure 12-2 Operation History Load Dialog

13. Retrieving File Name Information

This chapter explains how to display the information contained in the file names (Granule IDs) of AMSR3 products in the application.

To display the file name information screen, click "Help" in the main menu, and select "Display File Name Information" from the displayed pull-down menu.

In the file information display screen shown in Figure 13-2, enter the file name of the AMSR3 product in the text box and click the "Display" button to show the information contained in the file name.

Table 13-1 provides descriptions and actions for items ① to ③ in Figure 13-2.

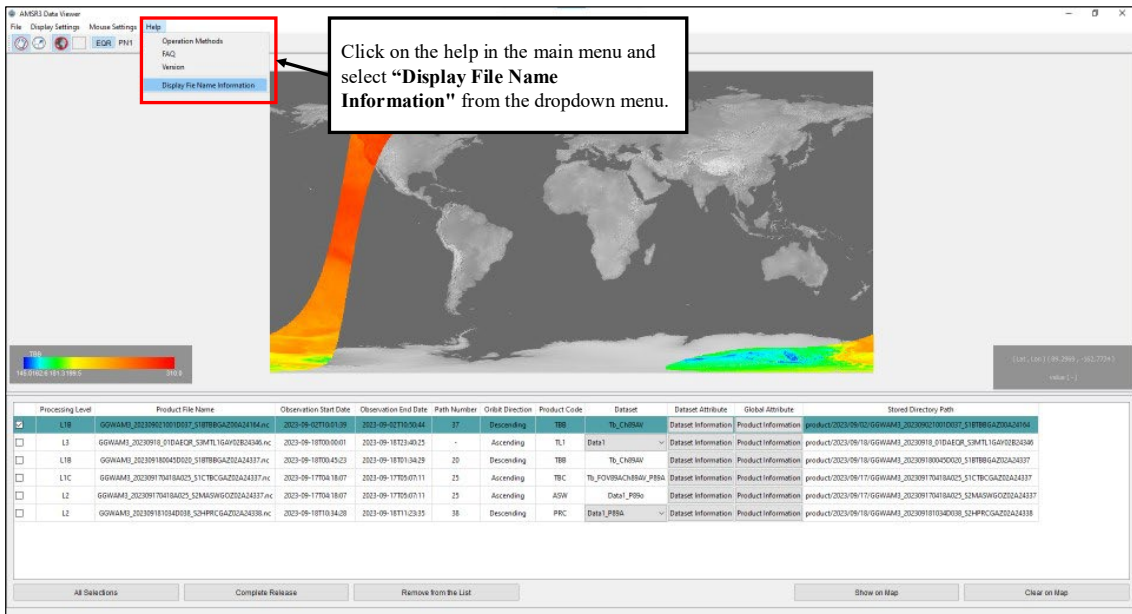


Figure 13-1 How to Display the File Name Information Screen

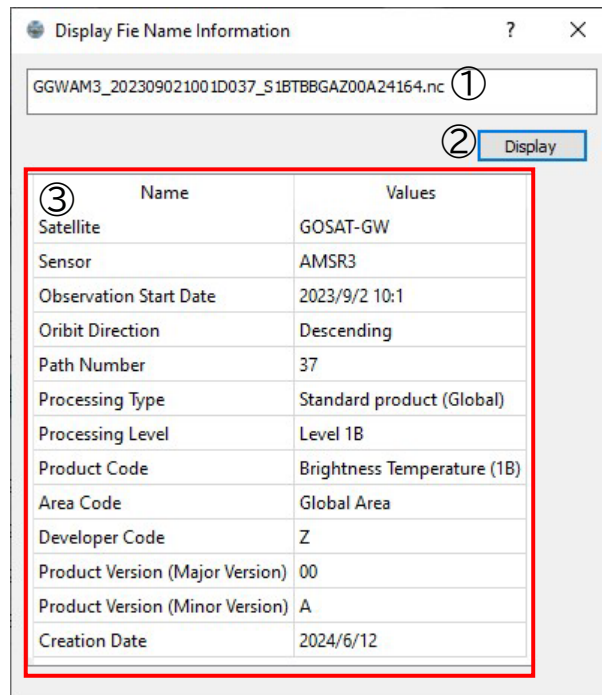


Figure 13-2 Explanation of File Name Information Display Operation

Table 13-1 Descriptions and Actions for Each Item in the File Name Information Display

No	Item Name	Description and Action
①	File Name Input Text Box	Enter the file name of the product for which you want to display file name information. The presence or absence of the file extension does not matter.
②	Display Button	Click this button to display the information of the file name entered in the file name input text box (①).
③	File Name Information Display Area	The information of the file name entered in the file name input text box (①) is displayed here. Initially, this area is hidden, and it is displayed when the display button (②) is clicked.

14. API Functions

This section explains the API functions of the application.

The application allows you to create certain types of files described in Section 11 without using the screen program. The following is a list of file types that can be created:

- Binary file (raw data)
- CSV file
- KML (KMZ) file
- Image file (BMP/JPEG/PNG/TIFF/GeoTiff)
- Video file

Additionally, you can output the file name (Granule ID) information of AMSR3 products to the standard output on the command line without using the screen program.

14.1. File Conversion Function

By using the API functions, you can create binary files (raw data), CSV files, KML (KMZ) files, and image files. However, only one input product can be used for file conversion.

By specifying an operation history file, you can execute processing on the command line based on customized settings. Background map settings and color settings are reflected when the file is output.

Table 14-1 shows the bat files used for the command line program.

Table 14-1 File Conversion Bat Files for Each OS

OS	bat file name
Windows	AM3ConvertFile.bat
MacOS/Linux	AM3ConvertFile.sh

Table 14-2 shows the input items for the command line, and Table 14-4 shows the output items. The command line for execution on Windows is shown in Figure 14-1, and the command line for execution on MacOS/Linux is shown in Figure 14-2. After executing the command line, a return value of 0 indicates normal completion, while any value other than 0 indicates abnormal termination.

Table 14-2 Input Items for Command Line (File Conversion)

Item Name	Input Content	Req.
Processing Level	Specify the processing level (L1/L2/L3).	○
Output Image File Size	Specify the width and height of the output image file separated by commas.	○
Output Format	Specify the output format corresponding to Table 14-3.	○
Operation History File Path	Specify the path of the operation history file created by performing the operations in Section 12.1.	○
Input File Path	Specify the file path of the input product for file conversion. Only one input product can be specified.	○
Output File Path	Specify the path of the file to be output after file conversion.	○

Table 14-3 Output Format Specification Characters

File Format	Input String
Binary File (raw data)	bin
CSV File	csv
KML(KMZ) File	kml/kmz
Image File	bmp/jpeg/png/tiff/geotiff

Table 14-4 Output Items for Command Line (File Conversion)

Item Name	Output Content
Conversion File	If the return value is 0 (conversion successful), the converted file will be output to the file path specified in the output file path of the input (Table 14-2).
Return Value	Displays the return value when the file conversion is executed. 0: Conversion successful Non-zero: Conversion failed

AM3ConvertFile.bat -L [Processing Level] -A [Output Image File Size] -F [Output Format] -s [Operation History File Path] -I [Input File Path] -o [Output File Name]

Figure 14-1 Command Line Example for File Conversion on Windows

```
sh AM3ConvertFile.sh -L [Processing Level] -A [Output Image File Size] -F [Output Format] -s [Operation History File Path] -I [Input File Path] -o [Output File Name]
```

Figure 14-2 Command Line Example for File Conversion on MacOS/Linux

Below is an example of outputting an image file (PNG) for an L1A product.

- (1) Configure the display settings for the L1A product from the screen. The settings are shown in Table 14-5. The default value for the midpoint of the color bar remains unchanged.

Table 14-5 Example of L1A Product Display Settings

Item	Setting Content
Background Map Type	MER
Background Map Existence	OB
Invalid Value Color Specification	Transparent
Display Range	-300 to 0
Upper Limit Color Specification	Specified color (white, RGB = (255, 255, 255))
Lower Limit Color Specification	Transparent

- (2) Output the operation history file. Details are described in Section 12.1.

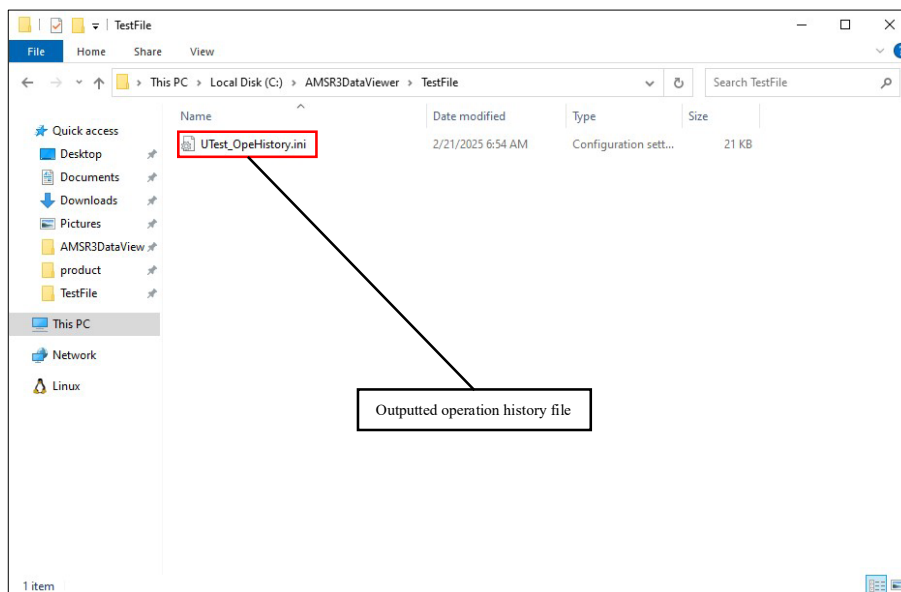


Figure 14-3 Result of Outputting Operation History File for File Conversion

- (3) Execute the command line. The input items are shown in Table 14-6. The execution results are shown in Figure 14-4 and Figure 14-5.

Table 14-6 Example of Input Items for File Conversion Command Line

Item Name	Input Content
Processing Level	L1
Output Image File Size	300,400
Output Format	png
Operation History File Path	C:\¥UserToolTestFile¥UTEST_API.ini (refer to Figure 14-3)
Input File Path	Path of any L1A product
Output File Path	C:\¥UserToolTestFile¥test_L1A.png

```
C:\AMSR3DataViewer\AMSR3DataViewer_X.X.X_win_en>AM3ConvertFile.bat -L L1 -A 300,400 -F png -s "C:\AMSR3DataViewer\TestFile\Utest_OpeHistory.ini" -i "C:\AMSR3DataViewer\product\GGWAM3_202402292359A017_S1ADNAGAZ01A23111.nc" -o "C:\AMSR3DataViewer\TestFile\test_L1A.png"
0
```

Figure 14-4 Example of File Conversion Function Command Line

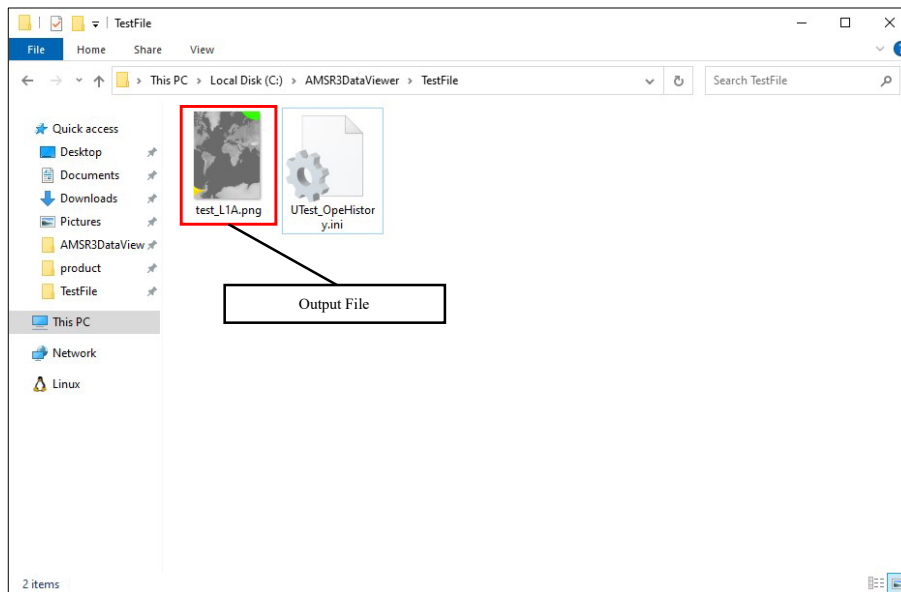


Figure 14-5 Example of File Conversion Function Output

14.2. Video Creation Function

You can create video files using the API function.

The bat files used for the command line program are shown in Table 14-7, and the output is shown in Table 14-8. After executing the command line, a return value of 0 indicates successful completion, while any value other than 0 indicates an error.

Table 14-7 Batch File for Video Creation for Each OS

OS	bat File Name
Windows	AM3CreateMovie.bat
MacOS/Linux	AM3CreateMovie.sh

Table 14-8 Output items for command line (video creation)

Item Name	Output Content
Video File	If the return value is 0 (conversion successful), the video file will be output to the file path specified in the output file path of the input (Table 14-9 or Table 14-11).
Return Value	Displays the return value when the video creation is executed. 0: Conversion successful Non-zero: Conversion failed

14.2.1. Video Creation for L1/L2 Products

The input items for the command line are shown in Table 14-9. The command line for execution on Windows is shown in Figure 14-6, and the command line for execution on MacOS/Linux is shown in Figure 14-7.

Table 14-9 Command Line Input Items (Video Creation for L1/L2)

Item Name	Input Content	Req.
Processing Level	Specify the processing level (L1/L2).	○
Playback Rate	Specify the playback rate of the video. Please specify an integer between 1 and 10.	○
Output Format	Specify the output format (avi).	○
Projection Type	Specify the type of background map (EQR/PN1/PN2/PS1/EGG/EGN/EGS/MER).	○
Input File Path	Specify the file path of the input product for file conversion. Only one input product can be specified.	○
Output File Path	Specify the path to output the video file.	○
Target Dataset Name for Drawing	Specify the dataset name to be drawn in the video.	○

```
AM3CreateMovie.bat -L [Processing Level] -R [Playback Rate] -F [Output Format] -P [Projection Method]
-i [Input File Path] -o [Output File Name] -D [Target Dataset Name]
```

Figure 14-6 Command Line Example for Video Creation (L1/L2) on Windows

```
sh AM3CreateMovie.sh -L [Processing Level] -R [Playback Rate] -F [Output Format] -P [Projection
Method] -i [Input File Path] -o [Output File Name] -D [Target Dataset Name]
```

Figure 14-7 Command Line Example for Video Creation (L1/L2) on MacOS/Linux

Below is an example of outputting a video file for an L1A product.

The input items for executing the command line are shown in Table 14-10. The execution results are shown in Figure 14-8 and Figure 14-9.

Table 14-10 Example of Input Items for Video Creation (L1/L2) Command Line

Item Name	Input Content
Processing Level	L1
Playback Rate	3
Output Format	avi
Projection Type	PN1
Input File Path	Path of any L1A product
Output File Path	C:\¥UserTool\TestFile\¥L1A_PN1.avi
Target Dataset Name for Drawing	ObsCount_Ch06V

```
C:\AMSR3DataViewer\AMSR3DataViewer_X.X.X_win_en>AM3CreateMovie.bat -L L1 -R 3 -F avi -P PN1 -i "C:\AMSR3DataViewer\produ
ct\GGWAM3_202402292359A017_S1ADNAGAZ01A23111.nc" -o "C:\AMSR3DataViewer\TestFile\L1A_PN1.avi" -D ObsCount_Ch06V
0
```

Figure 14-8 Example of Video Creation (L1/L2) Function Command Line

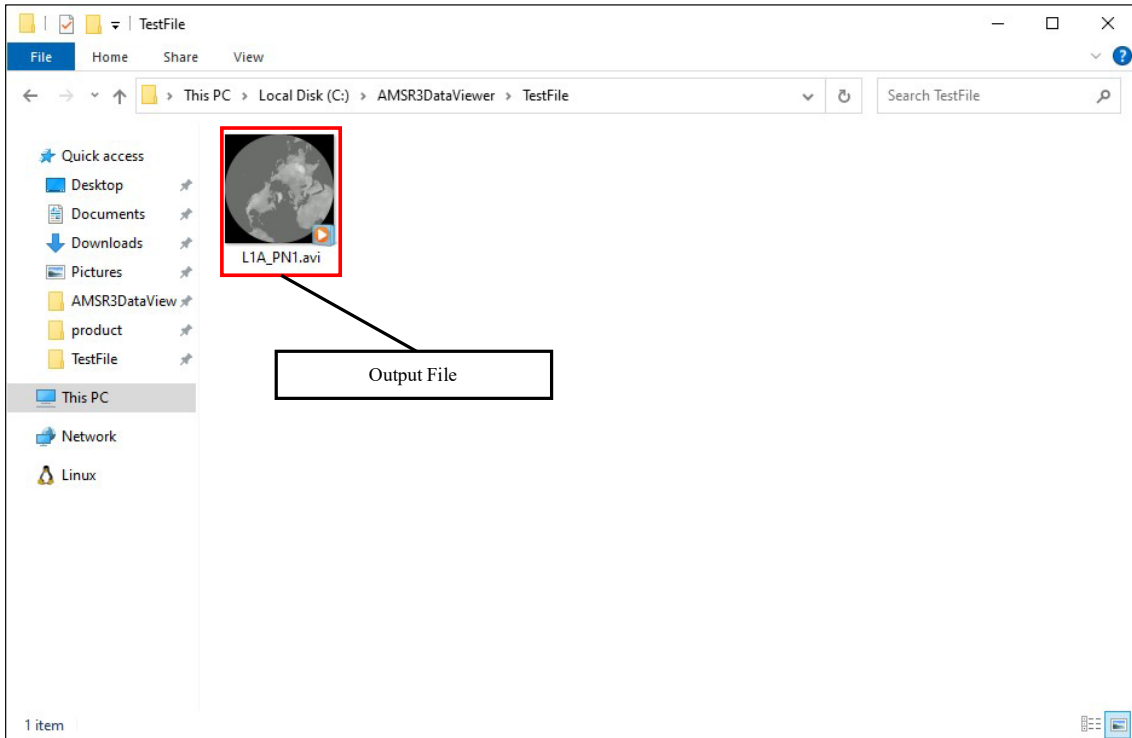


Figure 14-9 Example of Video Creation (L1/L2) Function Output

14.2.2. Video Creation for L3 Products

The input items for the command line are shown in Table 14-11. The command line for execution on Windows is shown in Figure 14-10, and the command line for execution on MacOS/Linux is shown in Figure 14-11.

Table 14-11 Command Line Input Items (Video Creation for L3)

Item Name	Input Content	Req.
Processing Level	Specify the processing level (L3).	○
Playback Interval	Specify the playback interval of the video. Please specify an integer between 100 and 1000.	○
Output Format	Specify the output format (avi/kml/kmz). Only products with EQR projection type can output video files in KML(KMZ) format.	○
Input Directory Path	Specify the directory that contains the input products for file conversion. Group the same type of L3 products and output them as video files. Note that file names are used for grouping.	○
Output File Path	Specify the path to output the video file.	○
Target Dataset Name for Drawing	Specify the dataset name to be drawn in the video.	○

```
AM3CreateMovie.bat -L [Processing Level] -I [Playback Interval] -F [Output Format] -d [Input Directory Name] -o [Output File Name] -D [Target Dataset Name]
```

Figure 14-10 Command Line Example for Video Creation (L3) on Windows

```
sh AM3CreateMovie.sh -L [Processing Level] -I [Playback Interval] -F [Output Format] -d [Input Directory Name] -o [Output File Name] -D [Target Dataset Name]
```

Figure 14-11 Command Line Example for Video Creation (L3) on MacOS/Linux

Below is an example of outputting a video file for an L3product. The input items for executing the command line are shown in Table 14-12. The execution results are shown in Figure 14-12 and Figure 14-13.

Table 14-12 Example of Input Items for Video Creation (L3) Command Line

Item Name	Input Content
Processing Level	L3
Playback Interval	100
Output Format	avi
Input File Path	Path of any L3 product directory
Output File Path	C:\¥UserToolTestFile¥L3.avi
Target Dataset Name for Drawing	Data1

```
C:\AMSR3DataViewer\AMSR3DataViewer_X.X.X_win_en>AM3CreateMovie.bat -L L3 -I 100 -F avi -d "C:\AMSR3DataViewer\product\EGG" -o "C:\AMSR3DataViewer\TestFile\L3.avi" -D Data1
check file name ok
check file name ok
check file name ok
0
```

Figure 14-12 Example of Video Creation (L3) Function Command Line

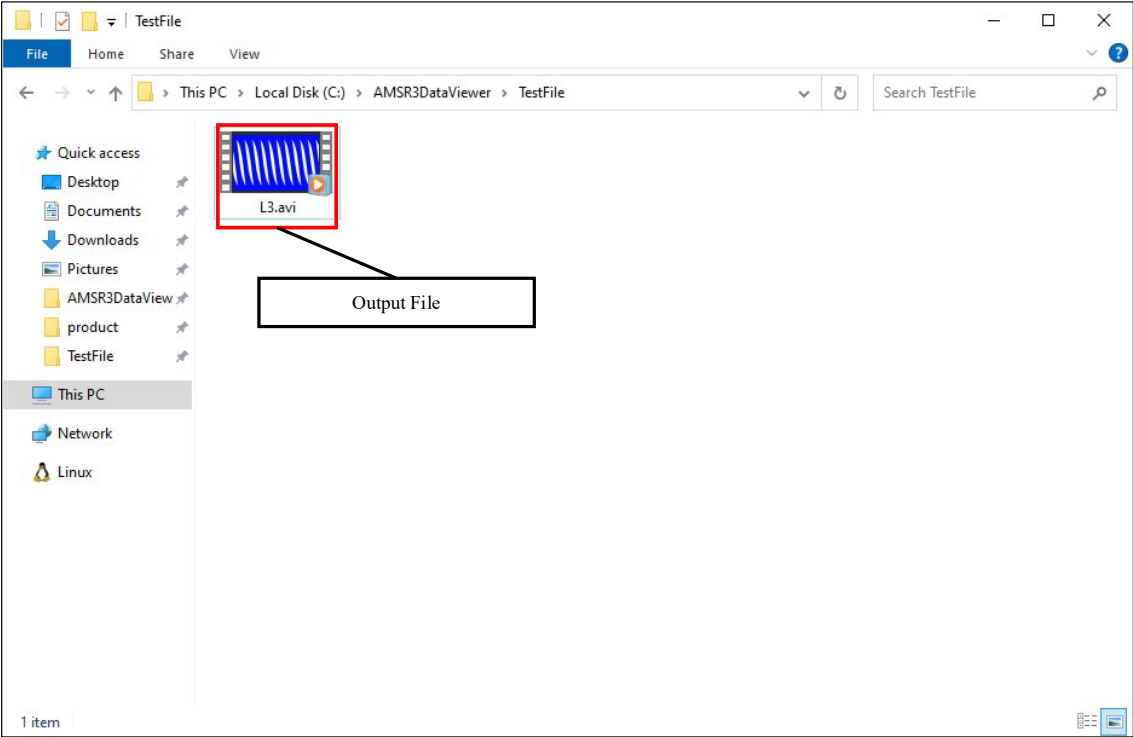


Figure 14-13 Example of Video Creation (L3) Function Output

15. List of Error Messages

Table 15-1 shows a list of error messages output by the application.

Table 15-1 List of Error Messages (1/7)

No	Error Message	Possible Causes
Screen		
1.	Could not correctly read [userApp.ini]. The application will terminate.	<ul style="list-style-type: none"> • The config folder does not contain the necessary configuration files. • The format is incorrect. • No read permissions.
2.	Could not correctly read [mapColorSetting.ini]. The application will terminate.	
3.	Could not correctly read [granuleId.ini]. The application will terminate.	
4.	Could not read registration information. Please register the product again.	<ul style="list-style-type: none"> • The product_list.csv file does not exist in the product folder. • The format of product_list.csv is incorrect.

Table 15-1 List of Error Messages (2/7)

No	Error Message	Possible Causes
5.	Could not retrieve the dataset.	<ul style="list-style-type: none"> The product format is incorrect.
6.	Failed to register the product file. Registration process will terminate. Invalid file name. File name: {File Name}	
7.	Failed to register the product file. Registration process will terminate. Failed to read the product file. File name: {File Name}	
8.	Failed to register the product file. Registration process will terminate. The product file is already registered. File name: {File Name}	<ul style="list-style-type: none"> The product being registered is already registered.

Table 15-1 List of Error Messages (3/7)

No	Error Message	Possible Causes
9.	Failed to register the product file. Registration process will terminate. Failed to create directory. Please check available space. File name: {File Name}	<ul style="list-style-type: none"> Insufficient disk space.
10.	Failed to register the product file. Registration process will terminate. Failed to write the registration file. Please check available space. File name: {File Name}	
11.	No product selected for deletion. Please select a product.	<ul style="list-style-type: none"> No product selected for deletion.
12.	Failed to delete the registered product file. Process will terminate. File name: {File Name}	<ul style="list-style-type: none"> The product folder contains files or directories in use by the device.
13.	Failed to display the product. {File Name}	<ul style="list-style-type: none"> The product folder does not contain the necessary data for display.

Table 15-1 List of Error Messages (4/7)

No	Error Message	Possible Causes
14.	No product selected for display. Please select a product.	<ul style="list-style-type: none"> No product selected for map display.
15.	The number of selected products exceeds the limit. Please adjust the number of selected products.	<ul style="list-style-type: none"> The number of selected products exceeds the maximum display limit.
16.	Failed to retrieve global attributes.	<ul style="list-style-type: none"> No text file containing global attributes found in the product folder.
17.	Failed to retrieve dataset attributes.	<ul style="list-style-type: none"> No text file containing dataset attributes found in the product folder.
18.	Failed to save color settings. Failed to write to mapColorSetting.ini.	<ul style="list-style-type: none"> Insufficient disk space. No write permission for mapColorSetting.ini.
19.	Failed to import file.	<ul style="list-style-type: none"> The format of the color settings file is incorrect.
20.	Failed to export file.	<ul style="list-style-type: none"> Insufficient disk space. A directory with the same name already exists at the output destination.
21.	Failed to import external color palette file.	<ul style="list-style-type: none"> The external color palette file is empty.
22.	The format of the external color palette is incorrect.	<ul style="list-style-type: none"> The file format of the external color palette is incorrect.
23.	The setting value is blank or invalid.	<ul style="list-style-type: none"> Please enter a truncation minimum value < truncation maximum value for color settings.
24.	Only one product can be displayed on the map.	<ul style="list-style-type: none"> No product is displayed on the map or multiple products are displayed.
25.	L3SIM products cannot be output.	<ul style="list-style-type: none"> L3SIM products are displayed when outputting KML (KMZ) files.

Table 15-1 List of Error Messages (5/7)

No	Error Message	Possible Causes
26.	Please display the EQR product on the map.	<ul style="list-style-type: none"> • A non-EQR projection method is used when outputting KML (KMZ) files.
27.	Please display L1 or L2 products on the map.	<ul style="list-style-type: none"> • L1 or L2 products are not displayed on the map when outputting NetCDF files.
28.	Input file does not exist.	<ul style="list-style-type: none"> • The file used for input does not exist when outputting NetCDF files.
29.	Time information is incorrect.	<ul style="list-style-type: none"> • The product format is incorrect.
30.	Date and time are reversed.	<ul style="list-style-type: none"> • The specified date and time range for NetCDF output is reversed.
31.	Please specify the range as follows: {observation start date} ~ {observation end date}	<ul style="list-style-type: none"> • The NetCDF output range exceeds the observation start date and time to the observation end date and time.
32.	Failed to output CSV file.	<ul style="list-style-type: none"> • Insufficient disk space.
33.	Failed to output binary file.	<ul style="list-style-type: none"> • A directory with the same name already exists at the output destination.
34.	Failed to output KML/KMZ file.	
35.	Failed to output image file.	
36.	Failed to output NetCDF file.	<ul style="list-style-type: none"> • The product format is incorrect. • Insufficient device capacity. • A directory with the same name already exists at the output destination.
37.	Failed to output file.	<ul style="list-style-type: none"> • Insufficient device capacity. • A directory with the same name already exists at the output destination.
38.	Please specify the output destination.	<ul style="list-style-type: none"> • The output destination is not specified when creating a video.
39.	No L2 data information available.	<ul style="list-style-type: none"> • The corresponding L2 data information does not exist in mapColorSetting.ini.

Table 15-1 List of Error Messages (6/7)

No	Error Message	Possible Causes
40.	Unable to retrieve dataset information.	<ul style="list-style-type: none"> The product format is incorrect.
41.	Not L1/L2 data.	<ul style="list-style-type: none"> The specified product is not L1/L2 when creating an L1/L2 video.
42.	Please load the input directory.	<ul style="list-style-type: none"> The directory is not loaded when creating an L3 product video.
43.	Please specify the directory.	<ul style="list-style-type: none"> The input directory is not specified when clicking the "Load Directory" button during L3 product video creation.
44.	No product files exist in the specified directory.	<ul style="list-style-type: none"> The specified directory does not contain L3 products.
45.	User manual not found. {File Name}	<ul style="list-style-type: none"> The specified file does not exist in the config folder.
46.	FAQ not found. {File Name}	
47.	Not an AMSR3 product file name.	<ul style="list-style-type: none"> The file name does not follow the AMSR3 product file name format.
48.	Failed to display product.	<ul style="list-style-type: none"> Files required for displaying the product are not all present.
API		
1.	area parse error!	<ul style="list-style-type: none"> The format of the command line arguments is incorrect.
2.	read Setting File error!	<ul style="list-style-type: none"> The format of the operation history file is incorrect. The file path is incorrect.
3.	input file error!	<ul style="list-style-type: none"> The file path is incorrect.
4.	DirList Error!	<ul style="list-style-type: none"> The directory path is incorrect.
5.	make workDirectory error!	<ul style="list-style-type: none"> There is insufficient disk space.
6.	Clean WorkDir Error!	<ul style="list-style-type: none"> There are files or directories in the working directory that are in use by the device.

Table 15-1 List of Error Messages (7/7)

No	Error Message	Possible Causes	
7.	read Product error!	<ul style="list-style-type: none"> The product format is incorrect. 	
8.	set Layer error!		
9.	FileName Error!		
10.	Get Product Information Error!		
11.	Reading Dataset Error!		
12.	Product Dump Error!	<ul style="list-style-type: none"> There is insufficient disk space. The product format is incorrect. 	
13.	image file write error!	<ul style="list-style-type: none"> There is insufficient disk space. A directory with the same name already exists at the output destination. 	
14.	binary file write error!		
15.	csv file write error!		
16.	kml/kmz file write error!		
17.	MakeDir Error!		
18.	Create Movie Image Error!		
19.	Movie Output Error!		
20.	KML Output Error!		
21.	No Dir Error!		<ul style="list-style-type: none"> The output destination directory does not exist.
22.	product file name error!		<ul style="list-style-type: none"> The file name entered does not follow the required format.