GENNECT One
User's Manual

Rev. 18

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Table of Contents

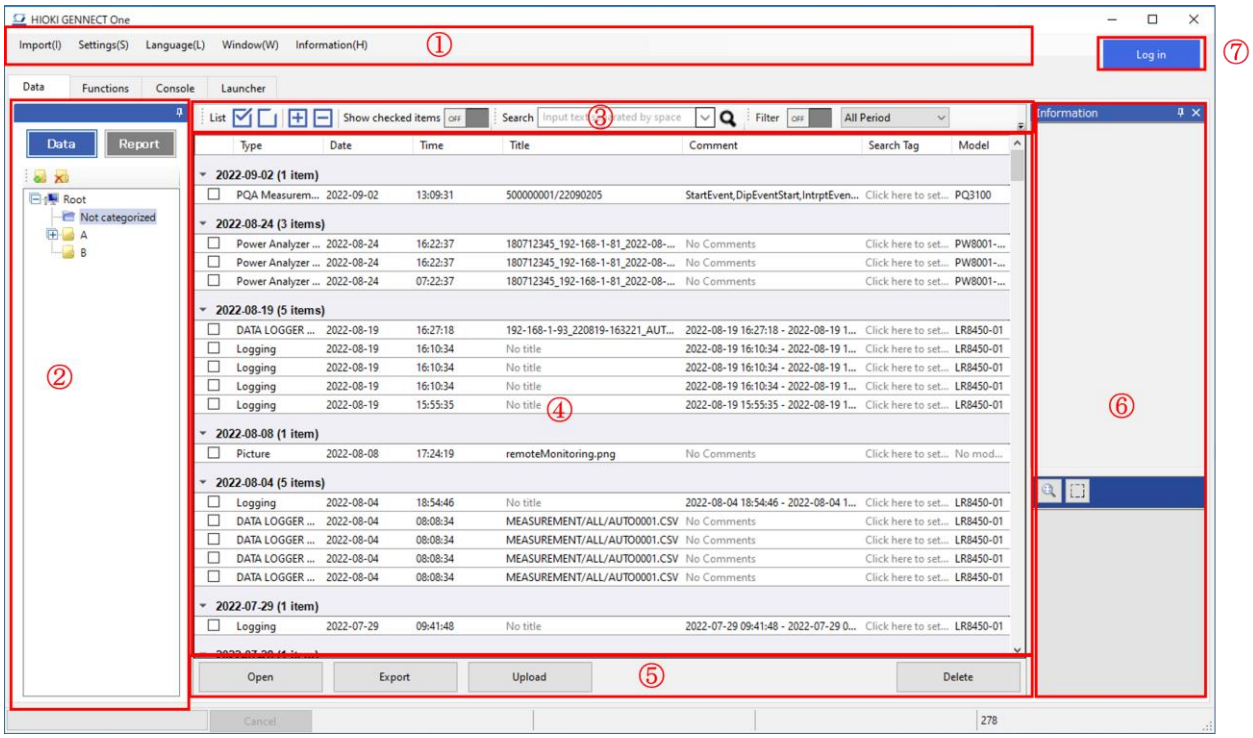
Before start using

Thank you for using the HIOKI GENNECT One.

Main screens

The main window of GENNECT One is composed of [Data] ,[Functions],[Console],[Launcher] tabs.

[Data] Tab



① **Menu Bar**

The menu of the application is displayed.

See the following sections for the functions of the menu.

- IMPORT DATA FROM FILES
- IMPORT DATA FROM THE MEASUREMENT INSTRUMENTS
- CHANGING INSTRUMENT settings (instrument configuration modification function)
- APPLICATION SETTINGS
- SHOW VERSION
- CHECK FOR UPDATES
- SHOW HELP
- SHOW INQUIRY FORM
- SHOW PRIVACY POLICY
- CHANGE THE LANGUAGE SETTINGS

② **Data Switch Window**

Changes the data type to display in the data list by selecting [Data]/[Report].
Manage the data group in the tree style structure.
Data displayed in the data list is filtered by selecting the group.

See the following sections for the management of the data group.

- ORGANIZE DATA

③ **Toolbar**

Search data by text or search tag.
Refine the data displayed in the data list by applying the criteria settings.
Change the checked state or the expanded/collapsed state of the data list.

See the following sections for the functions of the tool bar.

- MANIPULATE DATA LIST

④ **Data List**

Display the data loaded from the measurement instrument or GENNECT One in the list. Data is listed in date order.

See the following sections for the functions of the data list.

- MANIPULATE DATA LIST

⑤ **Button Panel**

Open the selected data.
Output the selected data in the CSV/Image/PDF format.
Delete the selected data.

See the following sections for the functions of the button panel.

- VIEW data
- OUTPUT DATA
- DELETE DATA

If you are logged in to GENNECT Cloud, the [Upload] button will be displayed.

You can upload saved measurement data to GENNECT One. Uploaded measurement data will be reflected on the GENNECT Cloud drive window and in the GENNECT One data list (cloud), creating a data link with GENNECT Cloud. Measurement data for which a data link has been created can be shared with other users in the same account.

For more information, see the following:

- Creating links between GENNECT One and GENNECT Cloud measurement data

⑥ **Information Windows**

Show the detailed information of the selected data.
Show the preview image if the data is the image format.

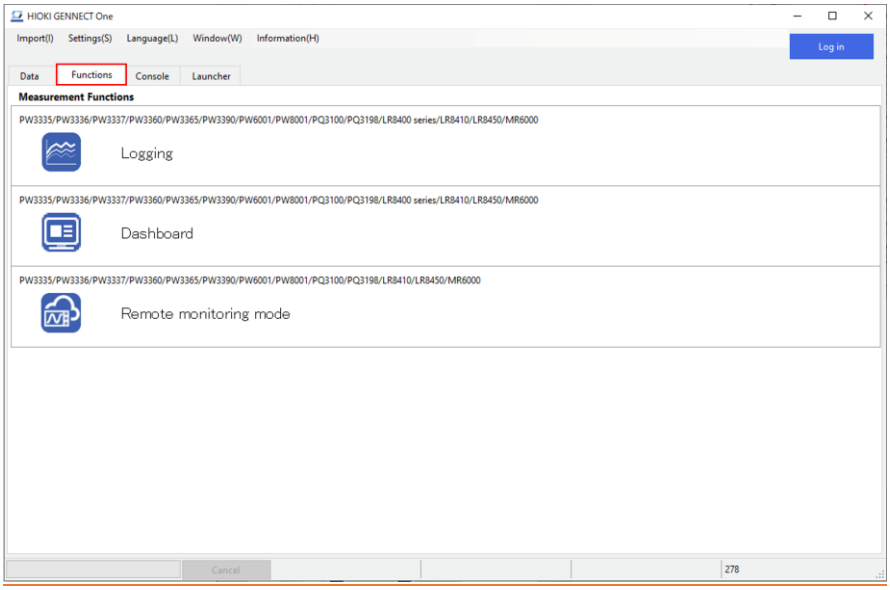
⑦ **Login button**

Log in to GENNECT Cloud.

- Linking GENNECT One to GENNECT Cloud

[Functions] Tab

The features for collecting the measured values from the instruments connected to the computer with LAN cables are listed here.



① **Logging**

[Logging] feature logs the measured values with the specified logging interval.

This feature supports following instruments.

- ✓ LR8400, LR8401, LR8402, LR8410, LR8450, LR8450-01, LR8101, LR8102
- ✓ MR6000
- ✓ PQ3100, PQ3198
- ✓ PW3335, PW3336, PW3337
- ✓ PW3360, PW3365
- ✓ PW3390, PW6001, PW8001
- ✓ BT5525, BT4560-50, BT6065, BT6075, ST5680, IM3523A, RM3545A, DM7275, DM7276

See the following sections for the functions of the logging.

➢ Measured values with the logging feature (Logging Function [LAN])

② **Dashboard**

The [Dashboard] function allows you to monitor the status of measurements in an easy-to-understand, visual manner by placing measured values on a user-specified background image.

This feature supports following instruments.

- ✓ LR8400, LR8401, LR8402, LR8410, LR8450, LR8450-01, LR8101, LR8102
- ✓ MR6000
- ✓ PQ3100, PQ3198
- ✓ PW3335, PW3336, PW3337
- ✓ PW3360, PW3365
- ✓ PW3390, PW6001, PW8001
- ✓ BT5525, BT4560-50, BT6065, BT6075, ST5680, IM3523A, RM3545A, DM7275, DM7276

See the following sections for the functions of the dashboard.

➢ Monitor MEASURED VALUES (DASHBOARD FUNCTION [LAN])

③ **Remote monitoring mode**

Linked to GENNECT Cloud, remote monitoring (monitoring, file transfer, remote control, etc.) is performed.

This feature supports following instruments.

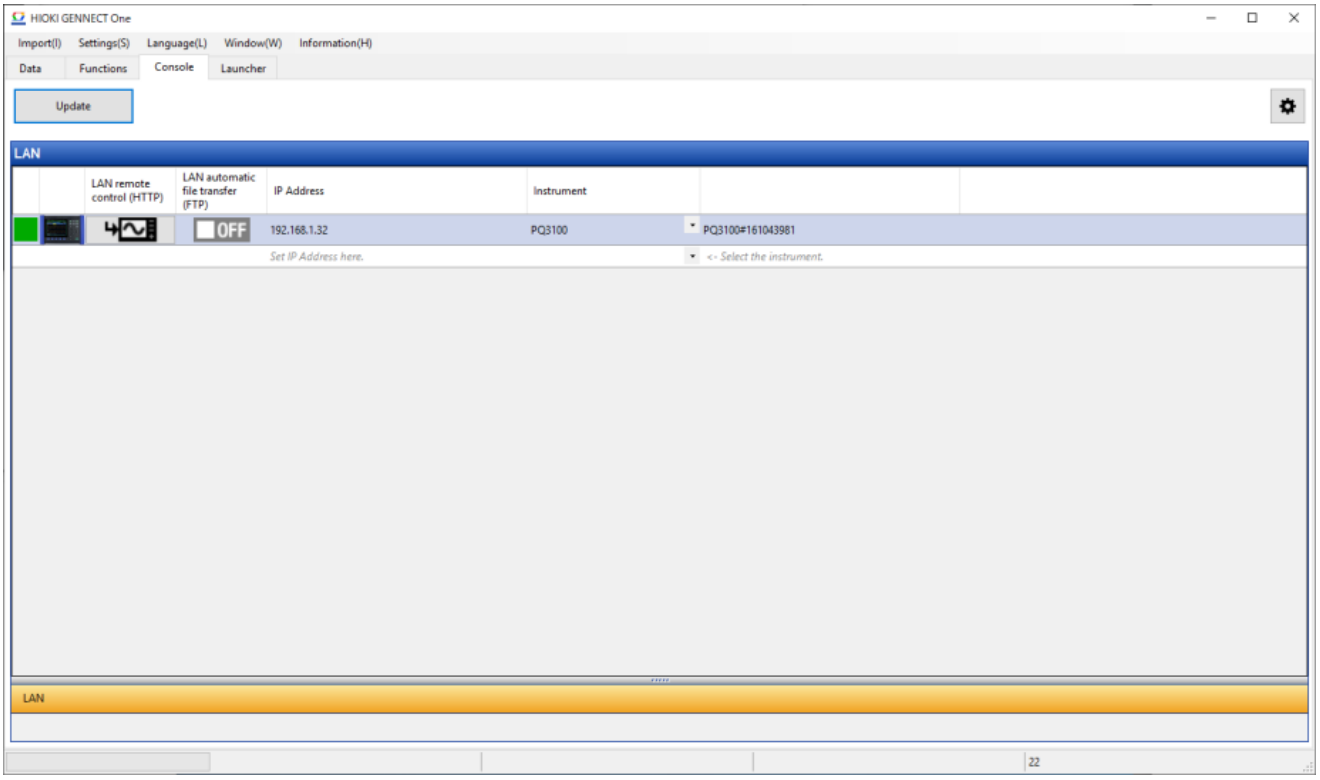
- ✓ LR8410, LR8450, LR8450-01, LR8101, LR8102
- ✓ MR6000
- ✓ PQ3100, PQ3198
- ✓ PW3335, PW3336, PW3337
- ✓ PW3360, PW3365
- ✓ PW3390, PW6001, PW8001
- ✓ BT5525, BT4560-50, BT6065, BT6075, ST5680, IM3523A, DM7275, DM7276

See the following sections for the functions of the remote monitoring mode.

➢ Using Remote Monitoring Mode

「Console」Tab

Configure the measuring instruments connected to the computer via LAN.

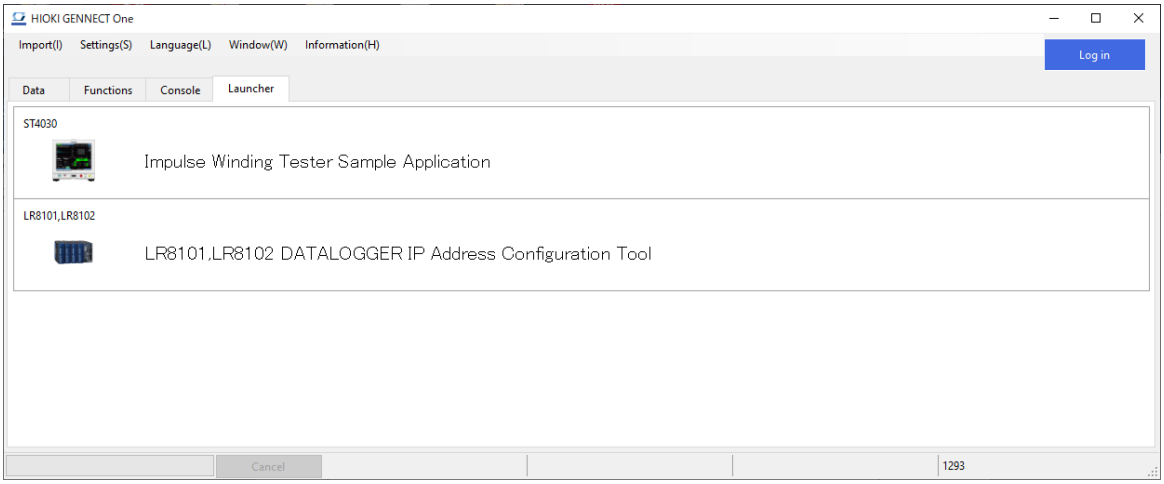


See the following sections for the detailed description of [Console] tab.

- Manually Acquiring Files from an Instrument (File Acquisition [MANUAL])
- Automatically receive instrument files (File Transfer [AUTO])
- Control an instrument (Remote control [LAN])

「Launcher」 Tab

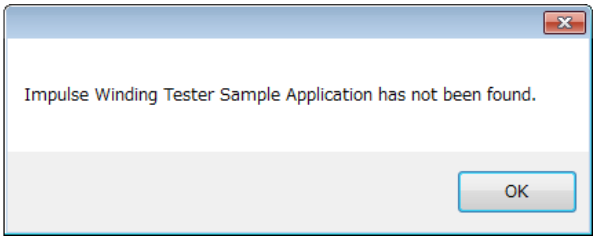
Open the HIOKI application software installed on your computer.



①Impulse Winding Tester Sample Application.

Open the application software for ST4030 Impulse Winding Tester installed on your computer.

* If the application software listed in [Other App] tab has not installed on your computer, the following message appears. Install the application software if needed.



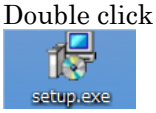
② LR8101,LR8102 DATALOGGER IP Address Configuration Tool

Open the LR8101,LR8102 DATALOGGER IP Address Configuration Tool.

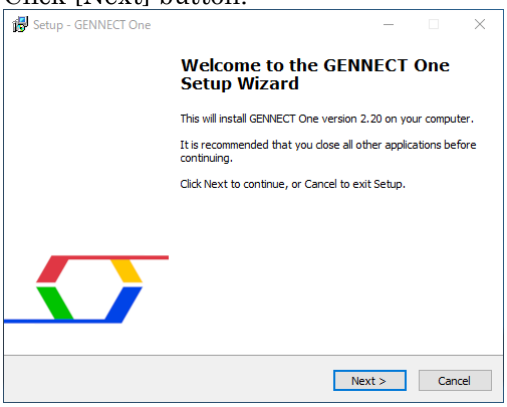
Install the application

Install GENNECT One by following steps.

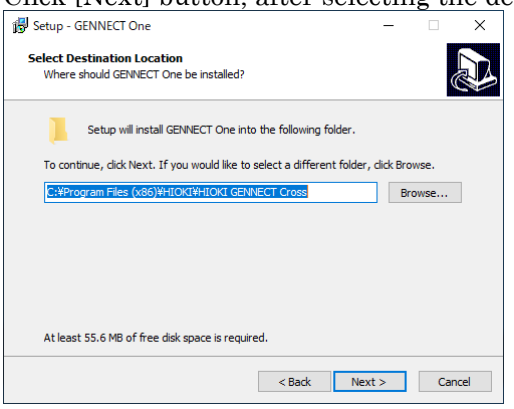
1. Double click the [setup.exe].



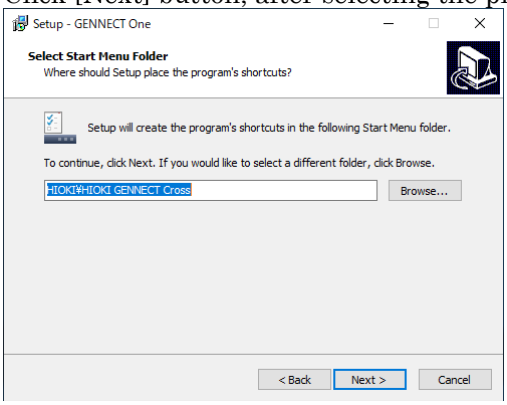
2. Click [Next] button.



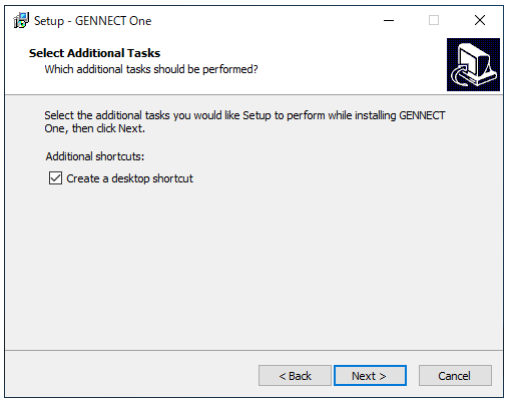
3. Click [Next] button, after selecting the destination for installation.



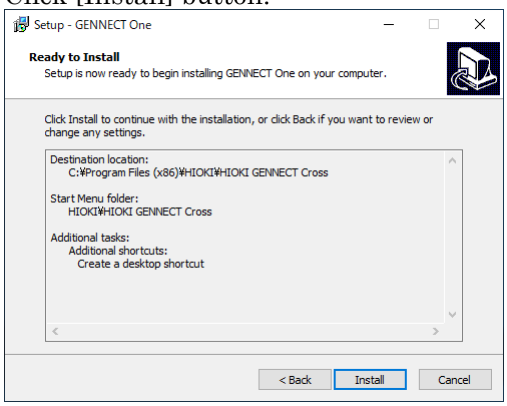
4. Click [Next] button, after selecting the program group.



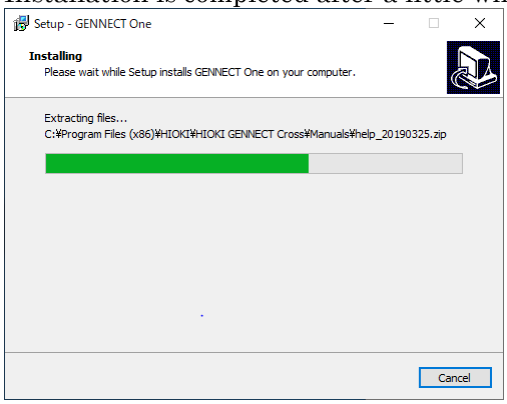
5. Click [Next] button, after selecting whether to create shortcut icon.



6. Click [Install] button.



7. Installation is completed after a little while.



8. Click [Next] button to finish the installation.

Connect the instruments

To communicate with Battery Tester（BT3554,BT3554-01,BT3554-50）by USB cable

To communicate with Battery Tester by USB connection cable, the USB driver package must be installed on the computer.

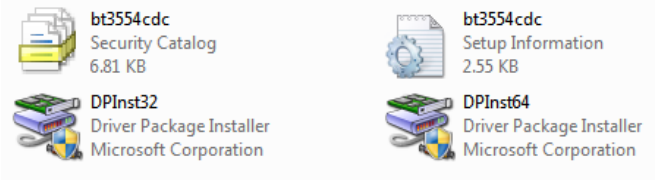
Install the USB driver package

※See the instruction manual for how to install the USB driver of the earlier product 3554.
※Please note that the earlier product 3554 is NOT supported by Windows 8 or later.

1. Insert the CD-R that comes with BT3554 Series into the computer.

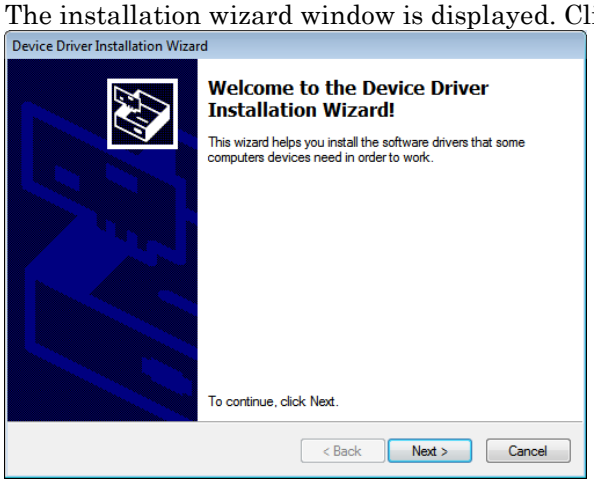
2. Open the [driver] folder.

3. Double-click the [DPInst32.exe] or [DPInst64.exe] to perform the driver installation.(*1)

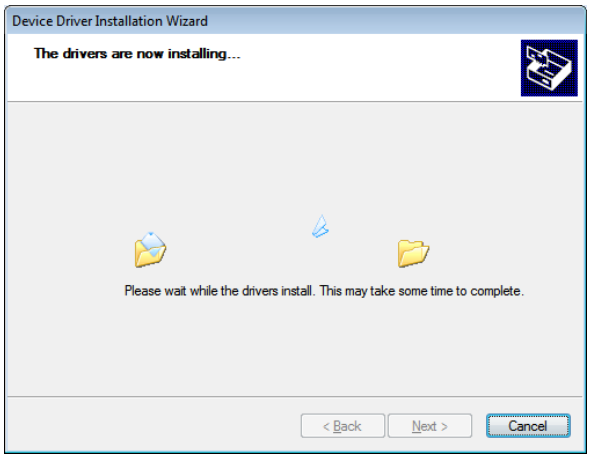


(*1) For the 32bit version of Windows, click [DPInst32.exe] to perform installation.
For the 64bit version of Windows, click [DPInst64.exe] to perform installation.

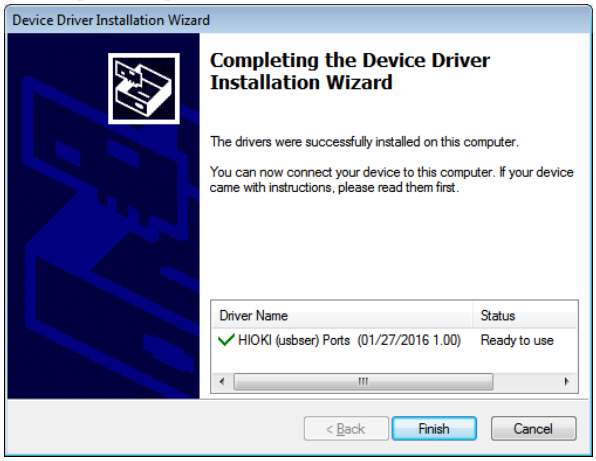
4. The installation wizard window is displayed. Click [Next].



5. After a while, the installation will be completed.



6. Click [Finish] to close the installation wizard.

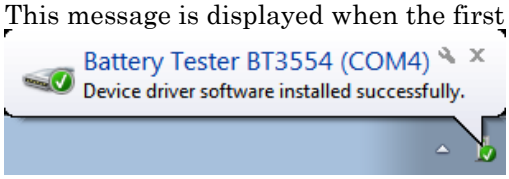


Connect Battery Tester with the computer.

1. Connect the Battery Tester with the computer using the USB connection cable that comes with BT3554 Series.

2. The conformation message is displayed when the computer find the installed driver.

   This message is displayed when the first connection is made between the computer and Battery Tester.



3. If [PC] is displayed in the battery tester, your instrument is connected to the computer.

※ See Import data from Battery Tester (BT3554/BT3554-01/BT3554-50) for how to load data from Battery Tester.

➢ See Settings for Battery Tester BT3554/BT3554-01/BT3554-50 for how to perform the settings of Battery Tester.

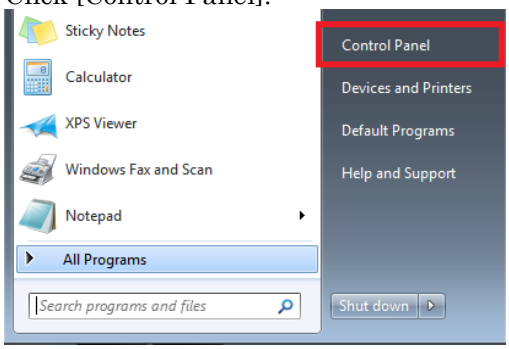
Uninstall the USB driver package

※See the instruction manual for how to uninstall the USB driver of the earlier product 3554.

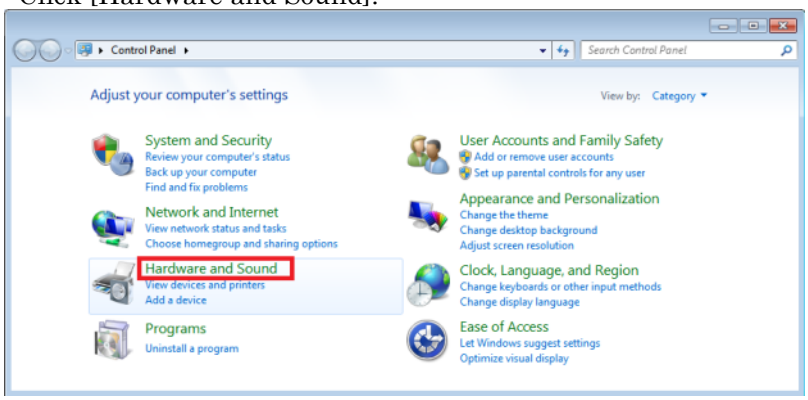
1. Connect the Battery Tester with the computer using the USB connection cable.

2. Click [Start] button.

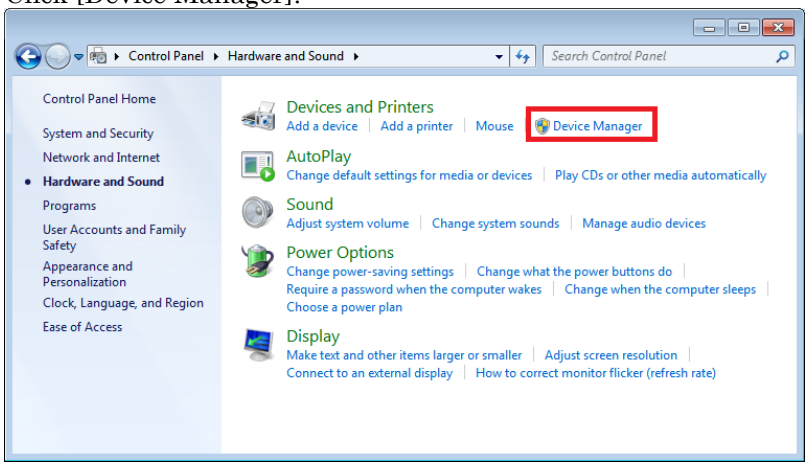
3. Click [Control Panel].



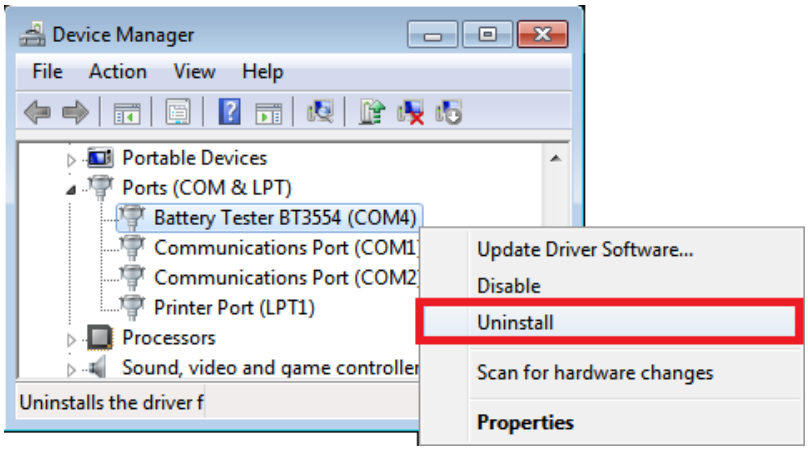
4. Click [Hardware and Sound].



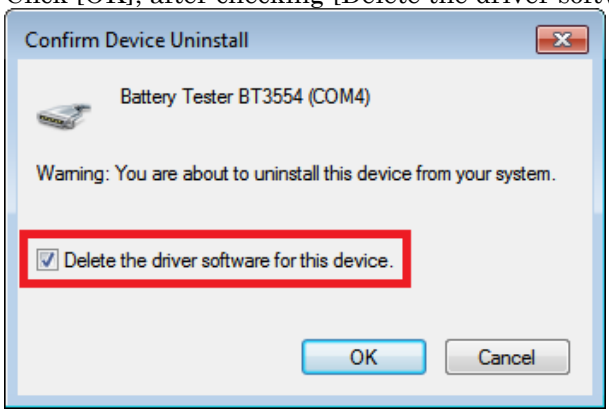
5. Click [Device Manager].



6. Select [Battery Tester BT3554], after expanding [COM and LPT] tree. Click [Uninstall] in the right-click menu.



7. Click [OK], after checking [Delete the driver software for the device].



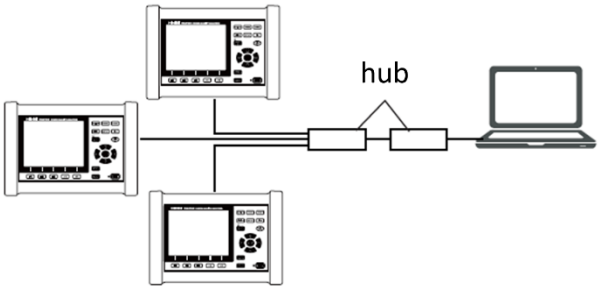
8. The USB driver package has been deleted.

To communicate with instruments by LAN cable
(PQ3100, PQ3198, PW3335, PW3336, PW3337, PW3360,PW3365, PW3390, PW6001, PW8001 MR6000, LR8400 series, LR8410, LR8450, LR8101,LR8102)、BT5525, BT4560-50,BT6065,BT6075,ST5680,IM3523A,RM3545A, DM7275, DM7276

Before starting the real-time measurement function, you need to connect your computer and the measurement instruments with LAN cable, then configure the network settings properly. This section describes how to connect PQ3100 products in a local network and in an existing network.

※ To configure the network settings of measurement instruments, see the instruction manual of each product.
※ To check or configure the network settings of the computer, see the following section.
➢ APPENDIX. CHECK OR CONFIGURE THE NETWORK SETTINGS OF THE COMPUTER

Connect your computer and the instruments in a local network

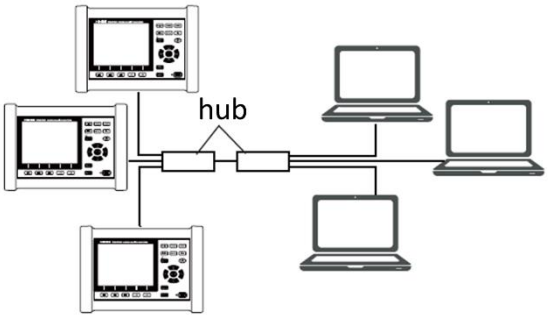


If you configure the instruments in a local network, using private IP addresses is recommended. Please make sure that each address does not overlap.

e.g. To configure the IP addresses in the network of 192.168.1.0/24

IP Addresses	Computer	192.168.1.1
	Instrument #1	192.168.1.2
	Instrument #2	192.168.1.3
	Instrument #3	192.168.1.4
Subnet Mask		255.255.255.0
Default Gateways	Computer	___.___.___.___
	Instruments	0.0.0.0

Connect your computer and the instruments in an existing network



If you configure the instruments in an existing network, you need to consult with your system administrator and get all the IP addresses for the target instruments. Please make sure that the IP addresses are assigned within the network of your computer belonging and each IP address does not overlap.
Note the assigned network settings in the following list.

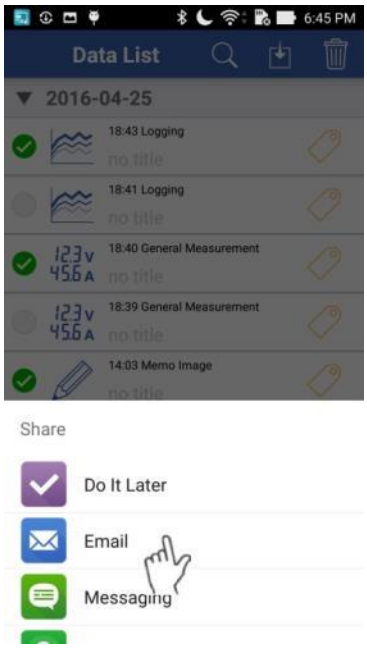
IP Addresses		
	Instrument #1	___.___.___.___
	Instrument #2	___.___.___.___
	Instrument #3	___.___.___.___
Subnet Mask		___.___.___.___
Default Gateway		___.___.___.___

Import data from files

Import data from GENNECT Cross for Android/iOS

1. In GENNECT Cross for Android/iOS, select the data to send in the list of [Data] and then tap [Send] button.

2. Select the way to send data. Select "Email" for an example.

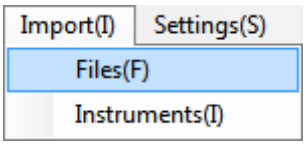


* You can also send data using any cloud services installed on the device. See the manuals of the service for detail.

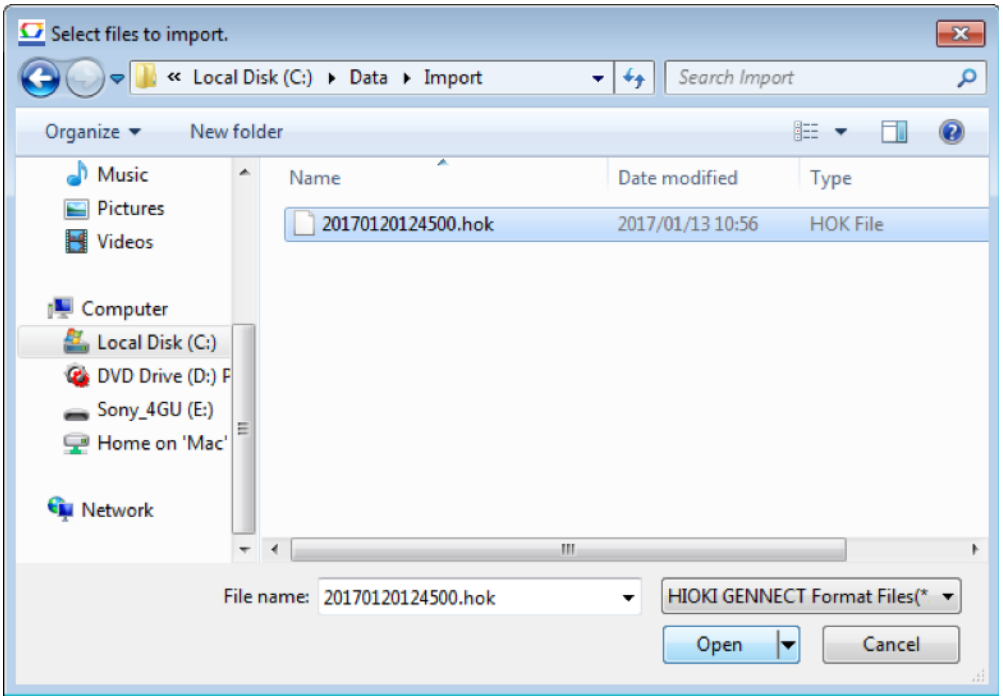
*You can also send data by saving data to the storage of the device, then extract the data from the device to the computer. See the manuals of the device for detail.

3. In GENNECT One, import data that has been sent by e-mail.

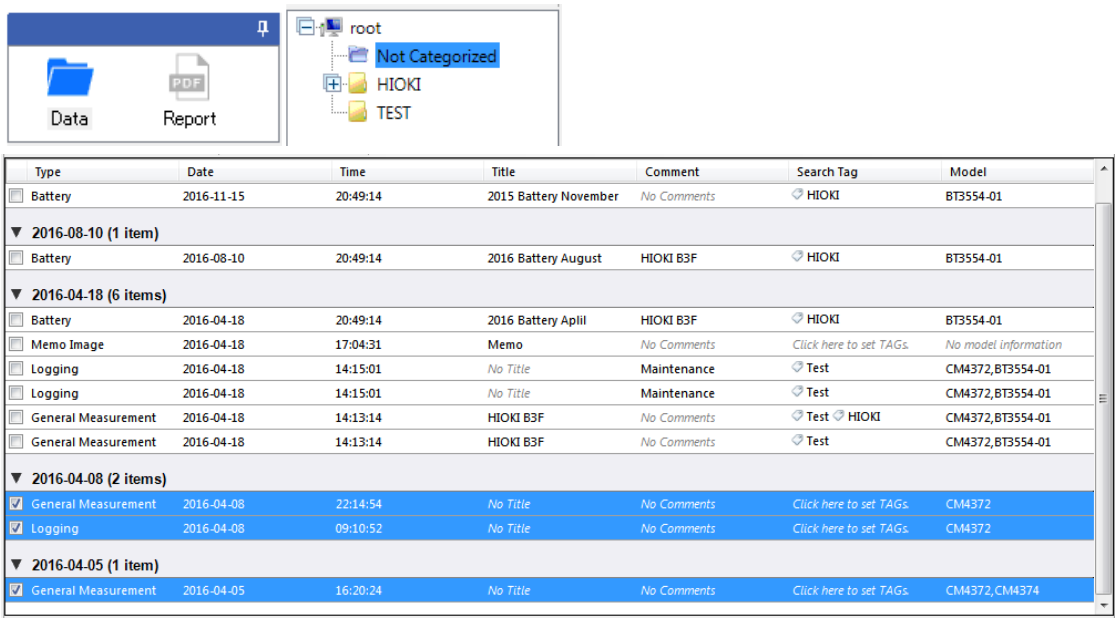
4. Select [Import]-[Files] in the menu.



5. Click [Open] button, after selecting the data that has been sent.



6. The data that has been imported are saved in the data list of [Data] and the [Not Categorized] group.

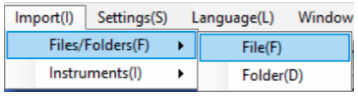


Import data from CSV files (Battery Tester/POWER ANALYZER)

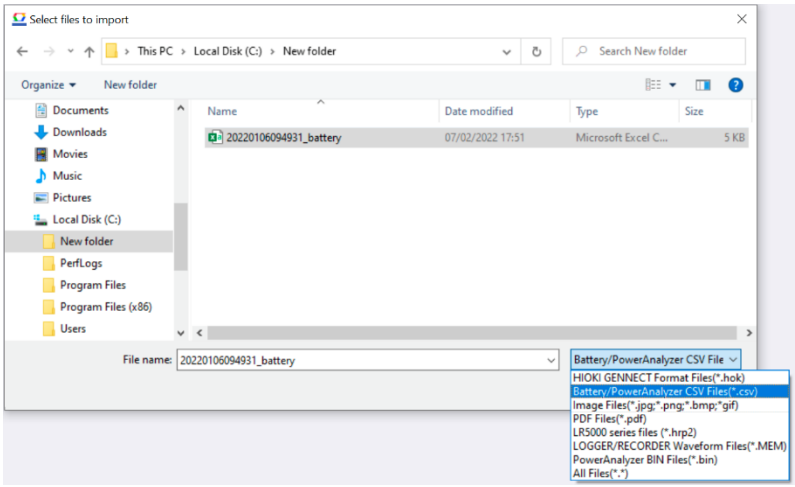
Following types of CSV files are supported.

- ✓ CSV files for BATTERY TESTER BT3554 measurement data
- ✓ CSV files for BATTERY HiTESTER 3554 measurement data
- ✓ CSV files for POWER ANALYZER PW3390/PW6001/PW8001 measurement data, waveform data

1. Select [Import]-[Files/Folders]-[File] in the menu.

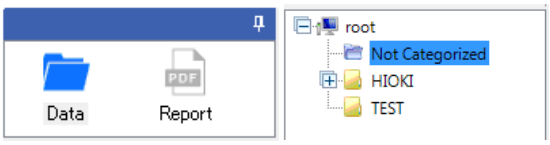


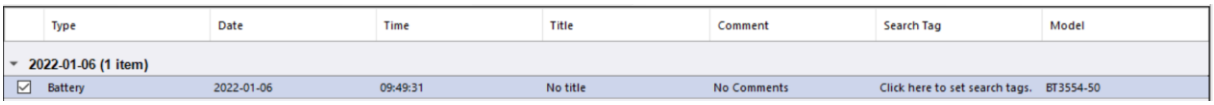
2. [Select files to import] window is displayed. Change the filter for file extension to [Battery/PowerAnalyzer CSV Files].



3. Click [Open] button, after selecting the data to import.

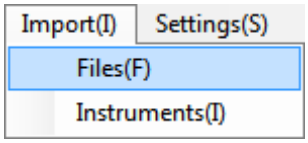
4. The data that has been imported are saved in the data list of [Data] and the [Not Categorized] group.



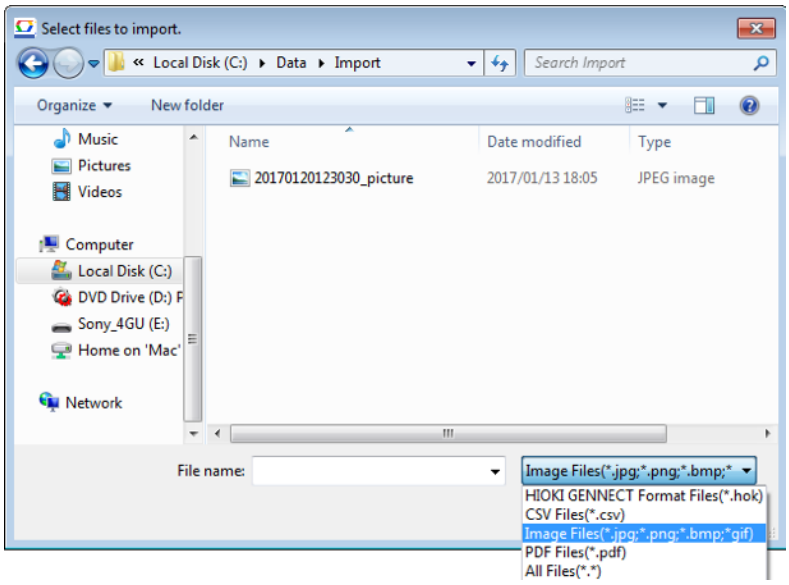


Import image data

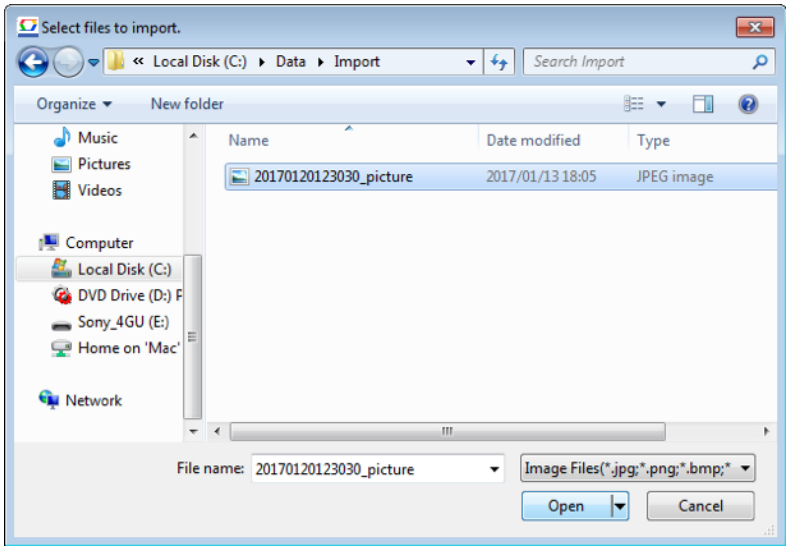
1. Select [Import]-[Files] in the menu.



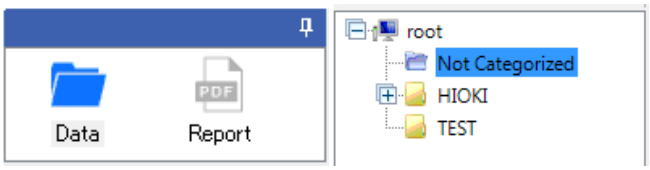
2. [Select files to import] window is displayed. Change the filter for file extension to [Image Files].

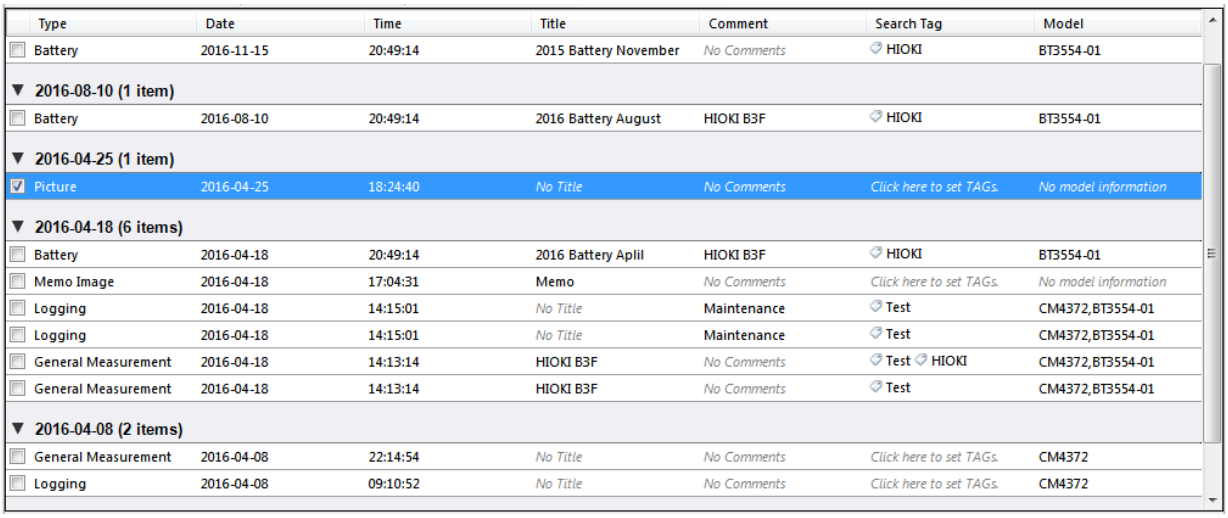


3. Click [Open] button, after selecting the data to import.



4. The data that has been imported are saved in the data list of [Data] and the [Not Categorized] group.

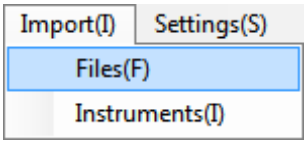




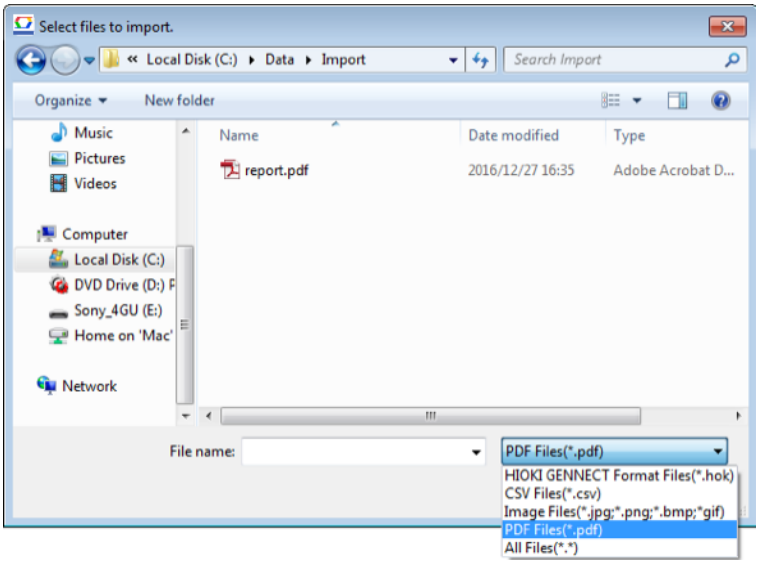
Type	Date	Time	Title	Comment	Search Tag	Model
Battery	2016-11-15	20:49:14	2015 Battery November	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery August	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-25 (1 item)						
Picture	2016-04-25	18:24:40	No Title	No Comments	Click here to set TAGs.	No model information
▼ 2016-04-18 (6 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TAGs.	No model information
Logging	2016-04-18	14:15:01	No Title	Maintenance	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	Maintenance	Test	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test	CM4372,BT3554-01
▼ 2016-04-08 (2 items)						
General Measurement	2016-04-08	22:14:54	No Title	No Comments	Click here to set TAGs.	CM4372
Logging	2016-04-08	09:10:52	No Title	No Comments	Click here to set TAGs.	CM4372

Import PDF data

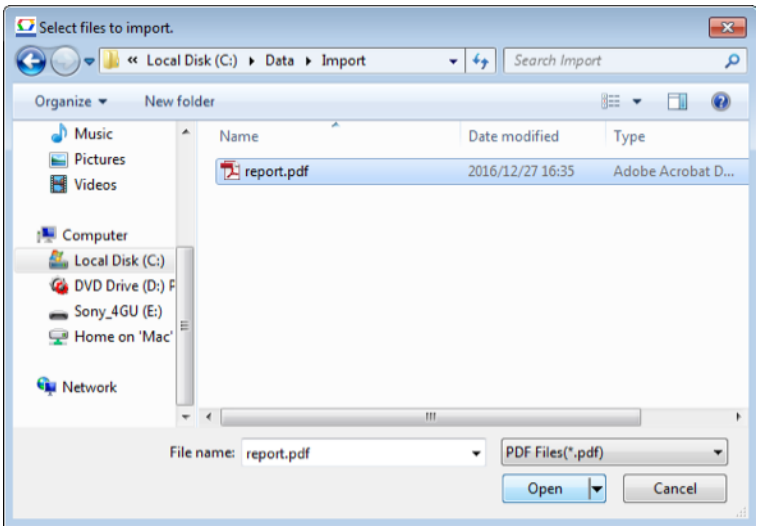
1. Select [Import]-[Files] in the menu.



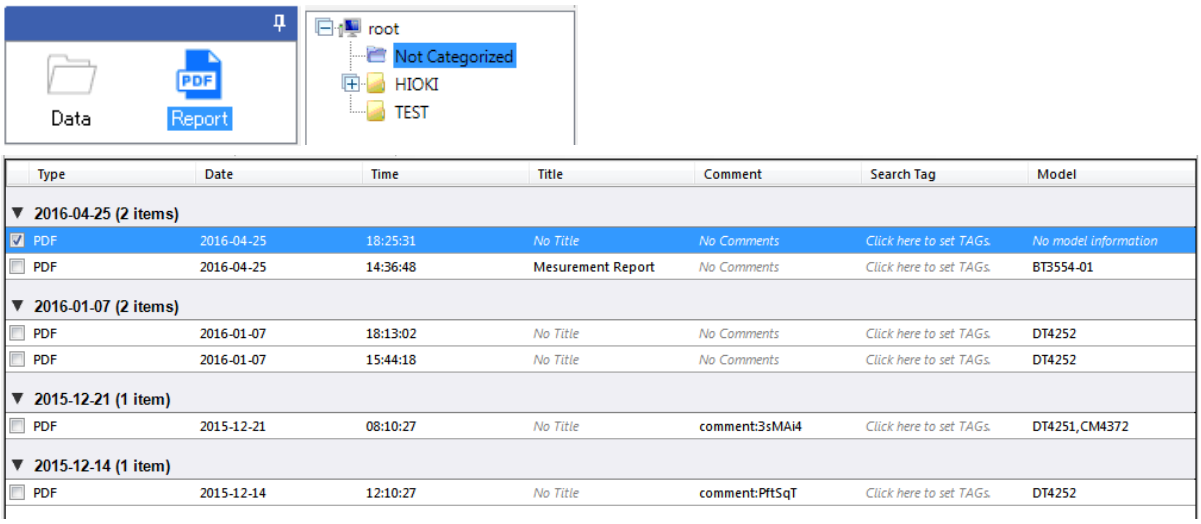
2. [Select files to import] window is displayed. Change the filter for file extension to [PDF Files].



3. Click [Open] button, after selecting the data to import.



4. The data that has been imported are saved in the data list of [Report] and the [Not Categorized] group.



Loading LR5000 Series Measurement Files

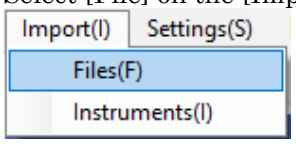
The application can load measurement files (.hpr2) acquired from Data Mini LR5000 series instruments using the LR5000 Utility (*1).

(*1) The LR5000 Utility is a desktop application that comes with Data Mini LR5000 series products.

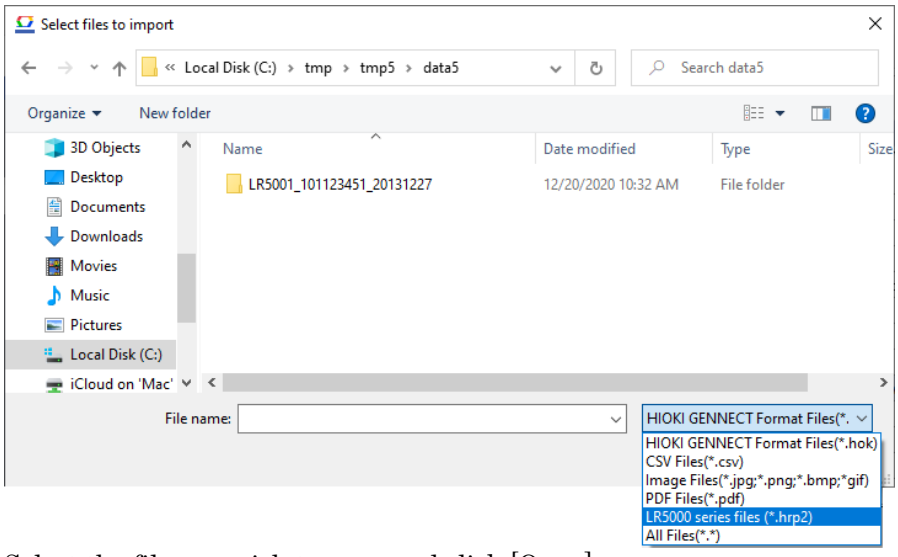
Data format	Extension	Supported instruments		Remarks
LR5000 series measurement data	.hrp2	LR5000 series	LR5001, LR5011, LR5021 LR5031 LR5041, LR5042, LR5043 LR5061	**(*2)** **(*3)**

(*2) Data Mini LR5000 series measurement files must be saved on the computer before they can be loaded by the application.
(*3) For more information about how to save Data Mini LR5000 series measurement files on a computer, see the LR5000 series help.

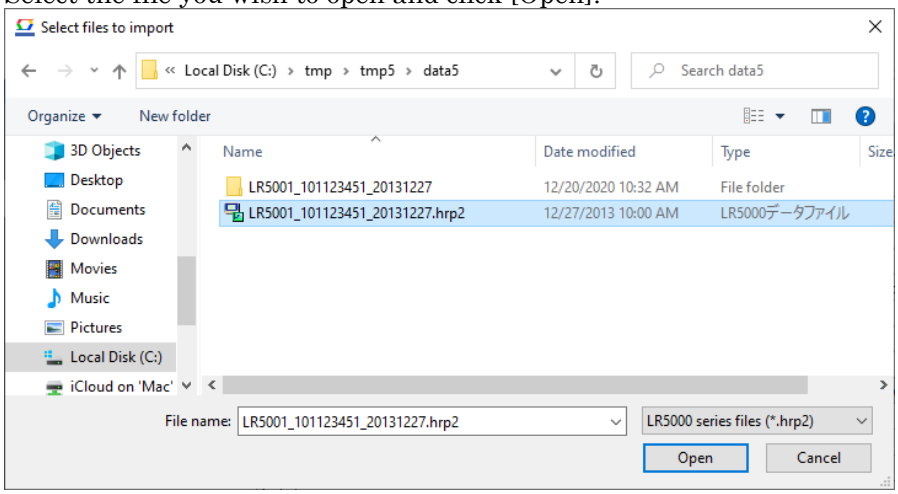
1. Select [File] on the [Import] menu.



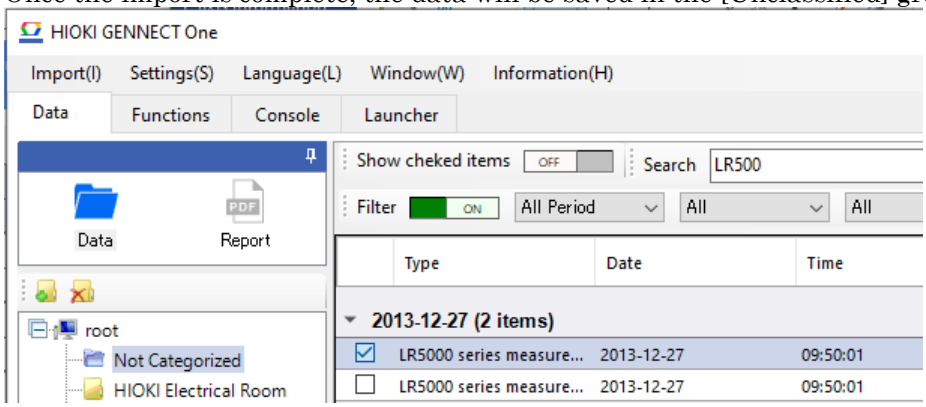
2. Change the filter on the file selection screen to [LR5000 series files (*.hrp2)].



3. Select the file you wish to open and click [Open].



4. Once the import is complete, the data will be saved in the [Unclassified] group under [Data].



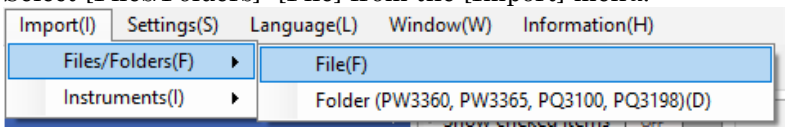
Loading measurement files from a logger or Memory HiCorder

GENNECT One can be used to load measurement files from a logger (LR8400, LR8401, LR8402, LR8410, LR8416, LR8450, LR8101 or LR8102) or Memory HiCorder (MR6000,MR8847A).

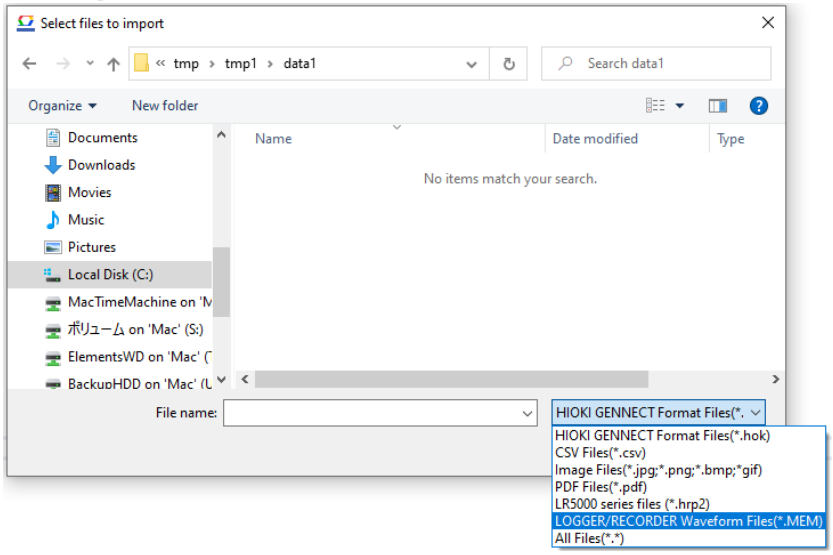
Data format	Type (extension)	Supported instruments
Logger binary waveform	File (.MEM)	LR8400, LR8401, LR8402
		LR8410, LR8416
		LR8450, LR8450-01
		LR8101, LR8102

Memory HiCorder binary waveform		MR6000,MR8847A

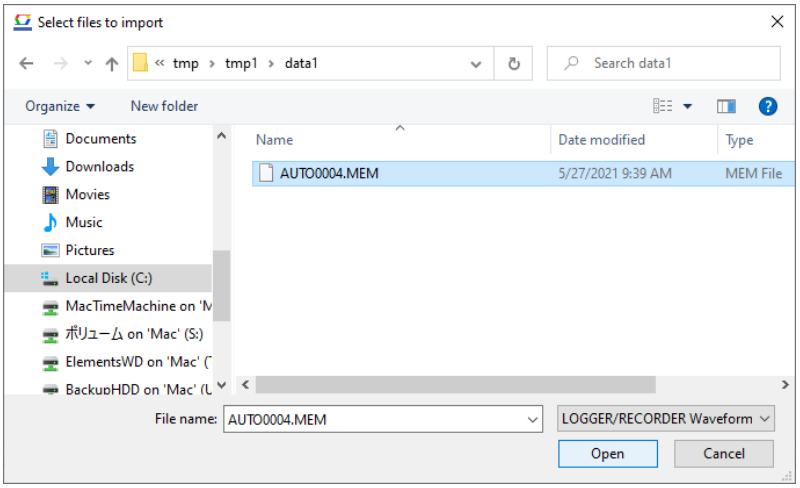
1. Select [Files/Folders]–[File] from the [Import] menu.



2. Change the filter on the [Select Files to Import] dialog box to [LOGGER/RECORDER waveform files (.MEM)].



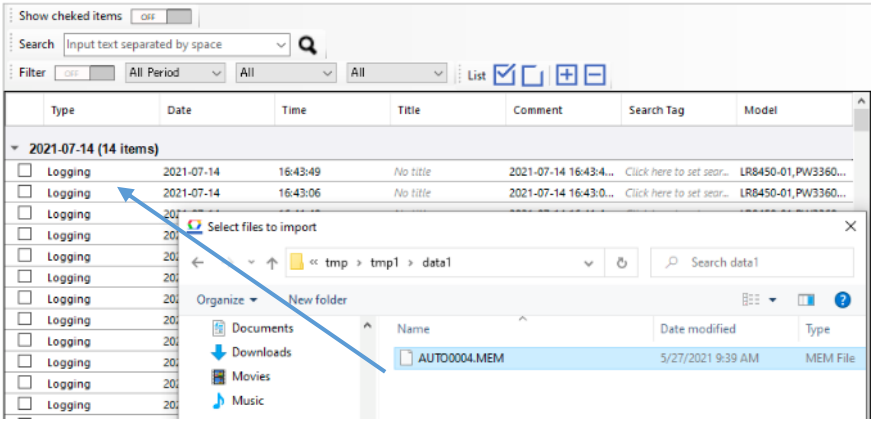
3. Select the file you wish to open and click [Open].



4. Once the import is complete, the data will be saved in the [Unclassified] group under [Data].

Tip

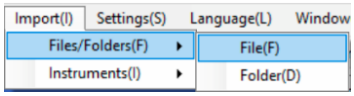
You can also load a measurement folder by dragging and dropping measurement data files onto the data list.



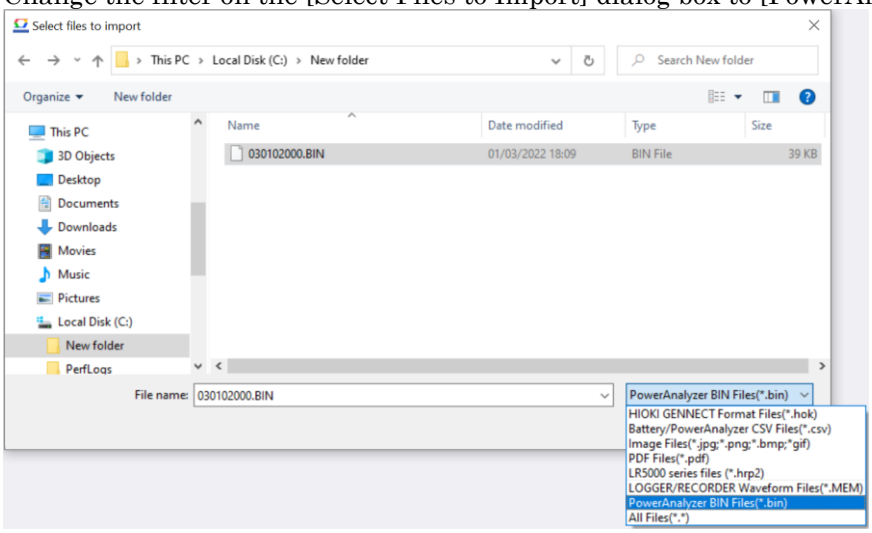
Loading Power Analyzer (PW8001) BIN files

GENNECT One can be used to load BIN files of Power Analyzer (PW8001).

1. Select [Files/Folders]–[File] from the [Import] menu.

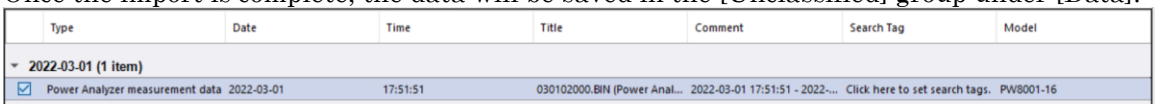


2. Change the filter on the [Select Files to Import] dialog box to [PowerAnalyzer BIN Files (.bin)].



3. Select the file you wish to open and click [Open].

4. Once the import is complete, the data will be saved in the [Unclassified] group under [Data].



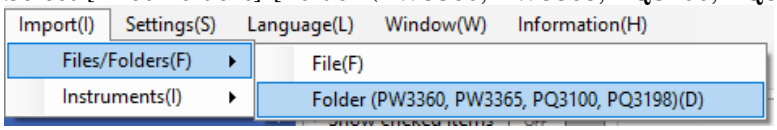
Loading measurement files from a Power Logger or Power Quality Analyzer

GENNECT One can be used to load measurement files from a Power Logger (PW3360 or PW3365) or Power Quality Analyzer (PW43100 or PQ3198).

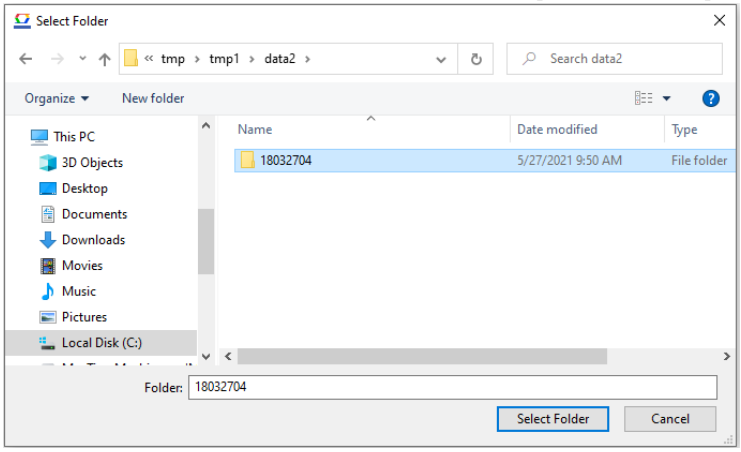
Data format	Type	Supported instruments
Power logger data folder	Folder	PW3360 PW3365

Power Quality Analyzer data folder		PQ3100 PQ3198

1. Select [Files/Folders]-[Folder (PW3360, PW3365, PQ3100, PQ3198)] from the [Import] menu.



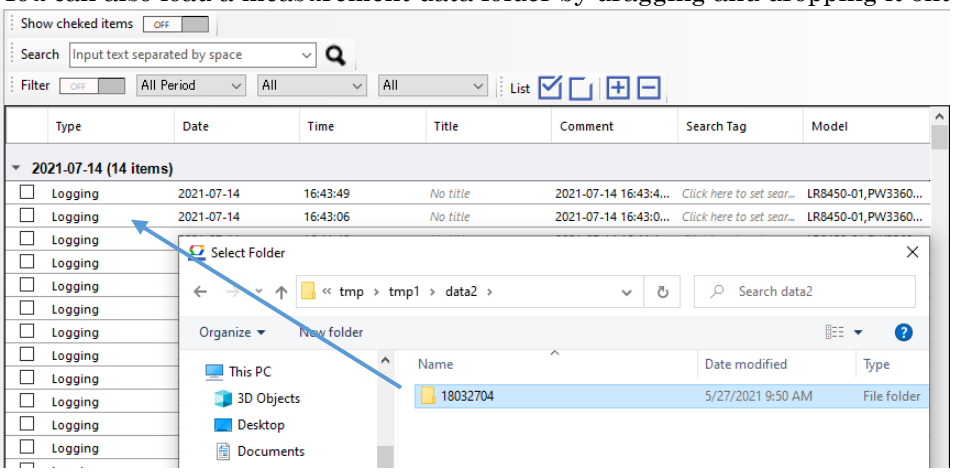
2. Select the measurement data folder on the [Select Folder] dialog box and click the [Select Folder] button.



3. Once the import is complete, the data will be saved in the [Unclassified] group under [Data].

Tip

You can also load a measurement data folder by dragging and dropping it onto the data list.



Import data from the measurement instruments

Import data from Battery Tester (BT3554/BT3554-01/BT3554-50)

1. Connect the Battery Tester with the computer.

※ To communicate with the Battery Tester by USB connection cable, the USB driver package must be installed on the computer.

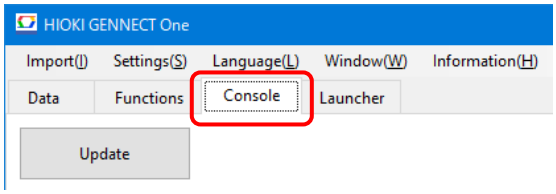
※ See INSTALL THE USB DRIVER PACKAGE for how to install the USB driver of BT3554 series.

※ See the instruction manual for how to install the USB driver of the earlier product 3554.

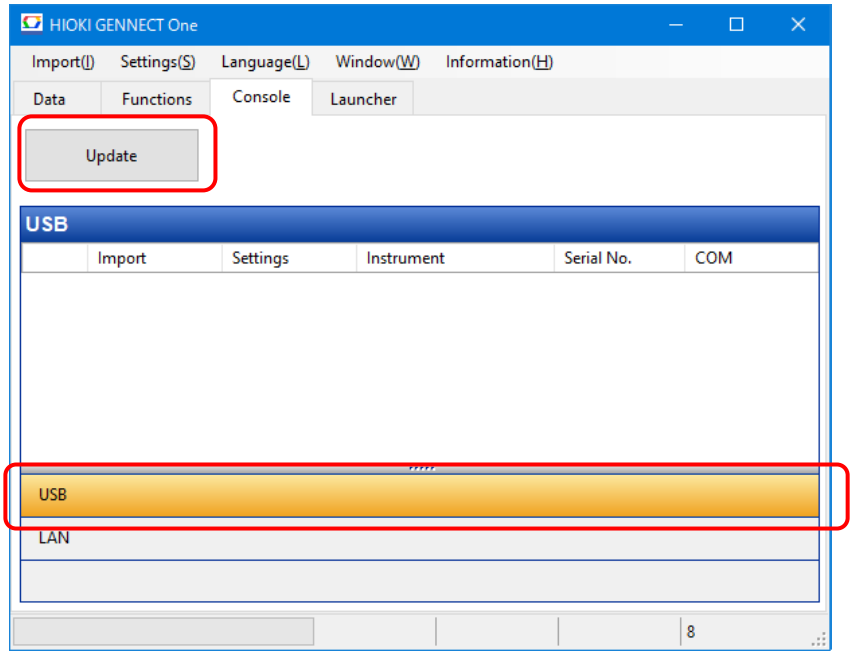
※ **Please note that the earlier product 3554 is NOT supported by Windows 8 or later.**

2. Open GENNECT One.

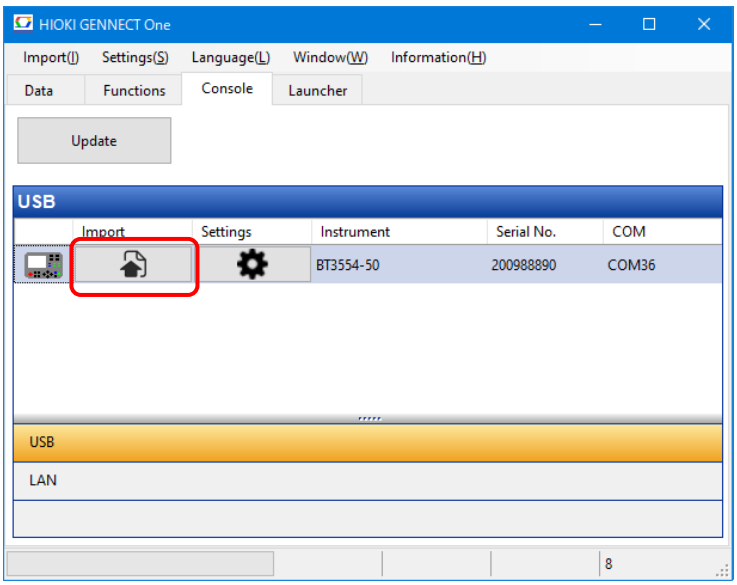
3. Select [Console] tab.



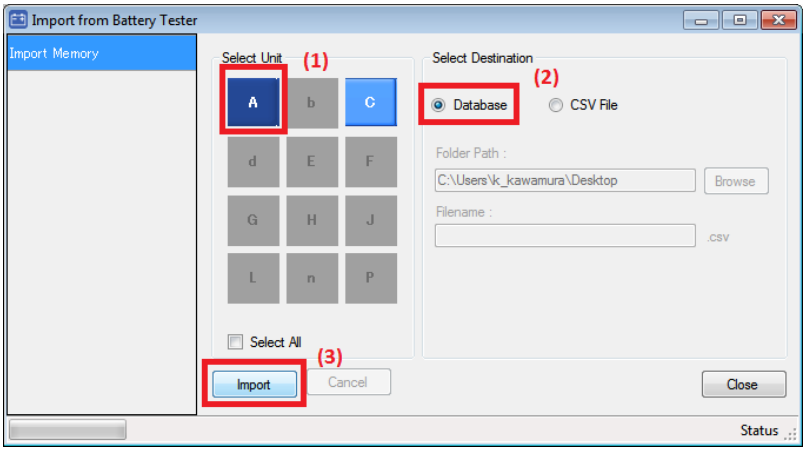
4. Choose the [USB] interface and then click [Update] button.



5. To start the instrument setting, choose the connected instrument from the list and then click button.

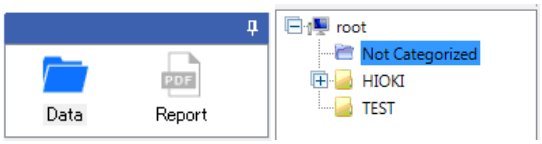


6. [Import from Battery Tester] window is displayed. Click [Import] button, after choosing the memory unit to import and selecting [Database] for the destination.



* If the [CSV File] is selected for the destination, the data in not save in GENNECT One. The data is saved as a CSV file.

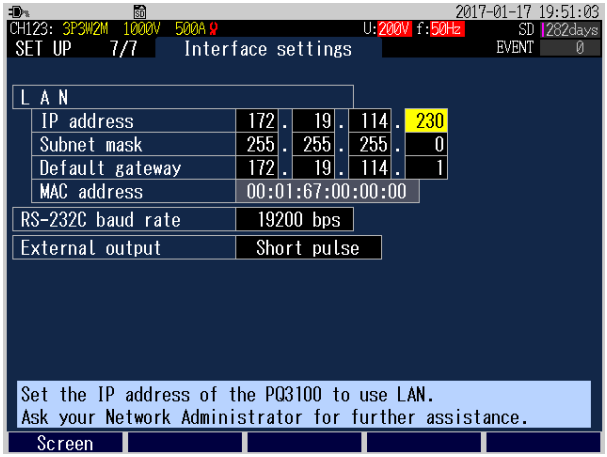
7. The data that has been imported from Battery Tester are saved in the data list of [Data] and the [Not Categorized] group.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
Battery	2016-11-15	20:49:14	2015 Battery November	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery August	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-19 (1 item)						
Battery	2016-04-19	14:36:23	No Title	No Comments	Click here to set TAGs.	BT3554-01

Import data from PQ3100 POWER QUALITY ANALYZER

1. To communicate with the PQ3100 POWER QUALITY ANALYZER, do LAN settings of [Interface Settings] on the instrument.



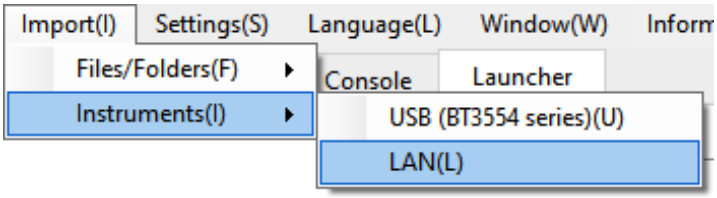
*In this example, set IP address to "172.19.114.230", subnet mask to "255.255.255.0" and default gateway to "172.19.114.1".

*See the instruction manual of PQ3100 POWER QUALITY ANALYZER for how to do LAN settings.

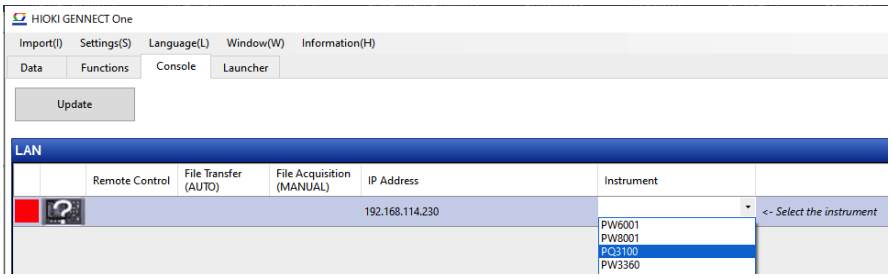
2. Connect the PQ3100 POWER QUALITY ANALYZER with the computer by the LAN cable.

3. Open GENNECT One.

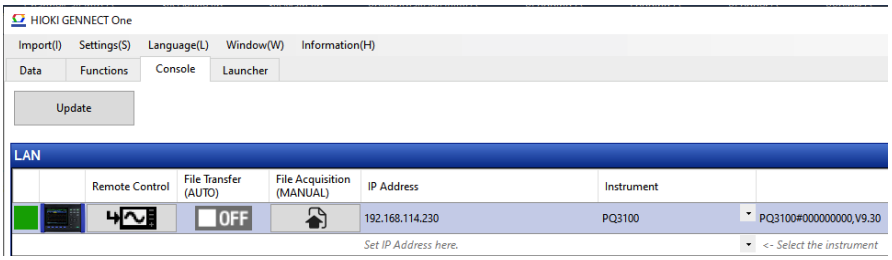
4. Select [Import]-[Instruments]-[LAN] in the menu.



5. The [Console] tab is displayed. If measuring instruments is not displayed, input the IP address set in step 1. to the [IP Address] box and select "PQ3100" from the drop-down list.

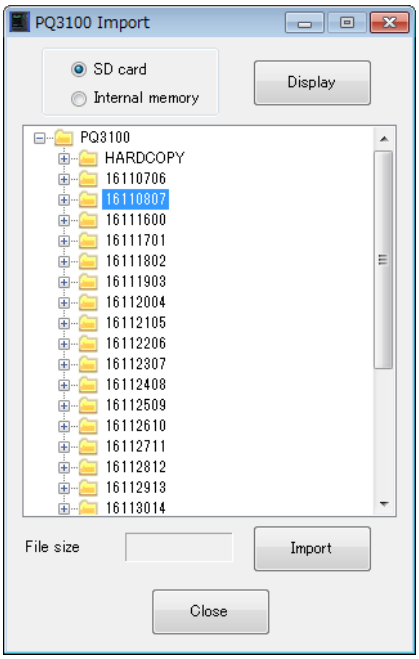


6. Once a connection has been established, the instrument icon is displayed.



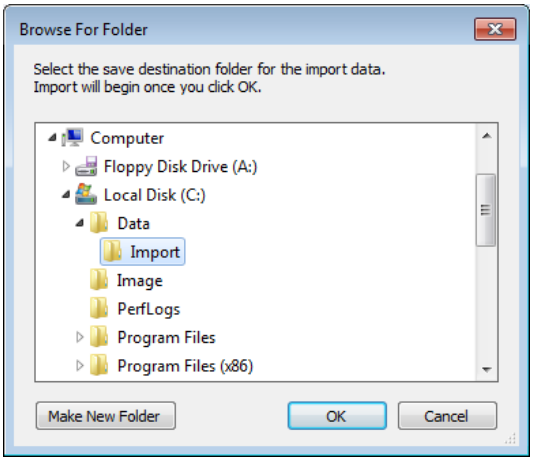
7. Click the [File Acquisition (MANUAL)] button ( ).

8. Select a folder to import, and then click [Import] button.



* Please not that you cannot select the folder that does not include measurement files.

9. [Browse For Folder] window is displayed. Select the directory for saving data and then click [OK] button.



*If you want to continue importing data, repeat step 8 and step 9.

*If you want to finish importing data, click [Close] button in the [PQ3100 Import] window.

10. The data that has been imported from PQ3100 is saved in the data list of [Data] and the [Not Categorized] group.

Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2017-01-18 (1 item)						
☑ PQ3100 Measurem...	2017-01-18	08:29:42	No title	No Comments	Click here to set sear...	PQ3100
▼ 2016-10-19 (1 item)						
☐ Battery	2016-10-19	08:25:22	No title	No Comments	Click here to set sear...	BT3554-01

Import measurement data from other compatible instruments.

See below for more information about the procedure for importing measurement data from other compatible measurement instrument.

➢ Manually Acquiring Files from an Instrument (File Acquisition [MANUAL])

View data

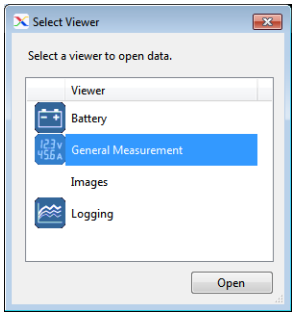
View General Measurement data

Open data

1. Select [Data] and a data group, then select [General Measurement] data by checking data on the data list.

Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
☐ Battery	2016-11-15	20:49:14	2015 Battery Nov...	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
☐ Battery	2016-08-10	20:49:14	2016 Battery Aug...	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (6 items)						
☐ Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
☑ Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
☐ Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
☐ Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
☑ General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
☑ General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

2. Click [Open] button.

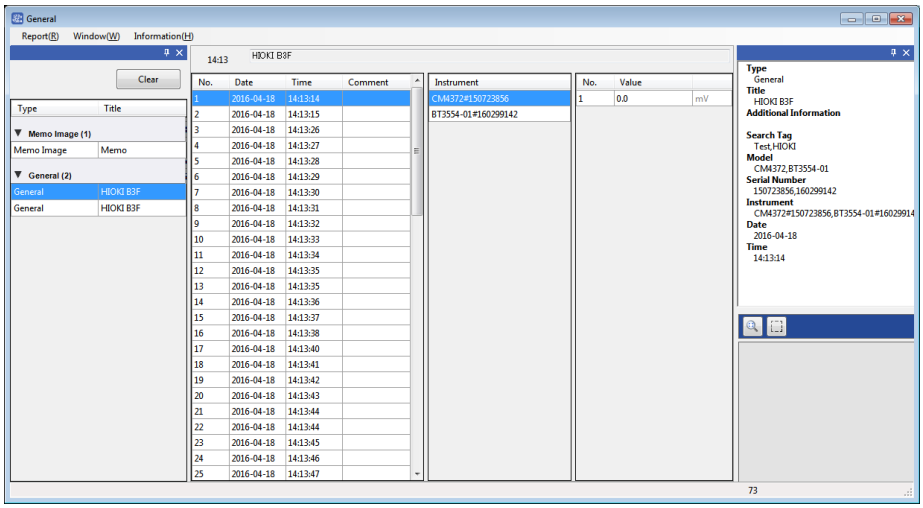


*The [General Measurement] window can display two data types: [General Measurement] or Images.

*If more than one data types are selected, [Select Viewer] window is displayed. Double-click on [General Measurement],

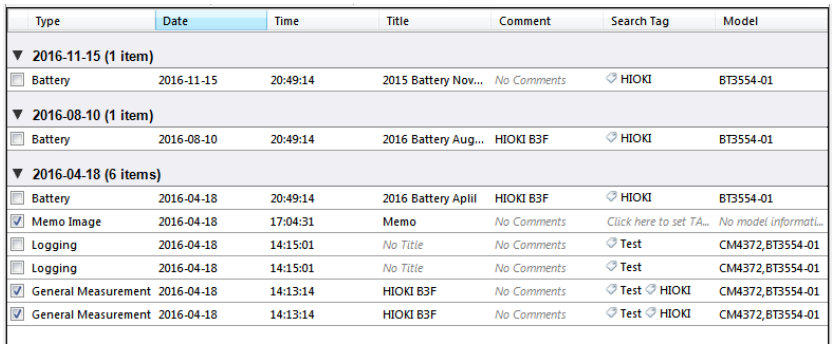
or select [General Measurement] and click [Open] button to show [Battery] window.

3. [General Measurement] window is displayed.



Add data

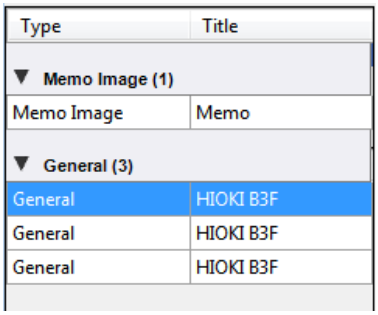
1. Select [Data] and a data group, then select [General Measurement] data by checking data on the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
Battery	2016-11-15	20:49:14	2015 Battery Nov...	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery Aug...	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (6 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

2. Drag and drop the checked data to [General Measurement] window.

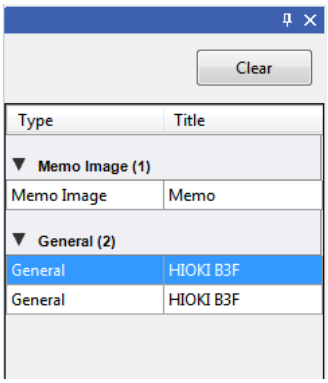
3. Data is added to the data management list in [General Measurement] window.



Type	Title
▼ Memo Image (1)	
Memo Image	Memo
▼ General (3)	
General	HIOKI B3F
General	HIOKI B3F
General	HIOKI B3F

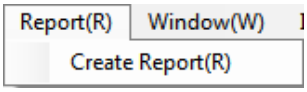
Create General Measurement Data Report

1. Select one data in the data management list of [General Measurement] window.

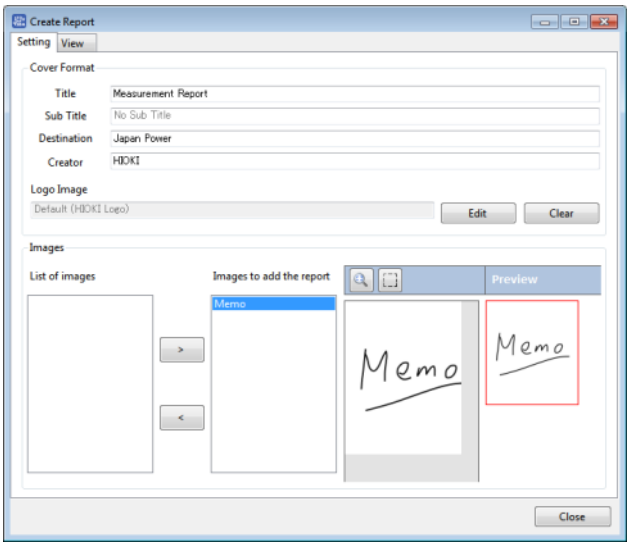


*Select [General Measurement] data to create report. All the images loaded in the [General Measurement] window are available in [Create Report] window.

2. Select [Report]-[Create Report] in the menu.

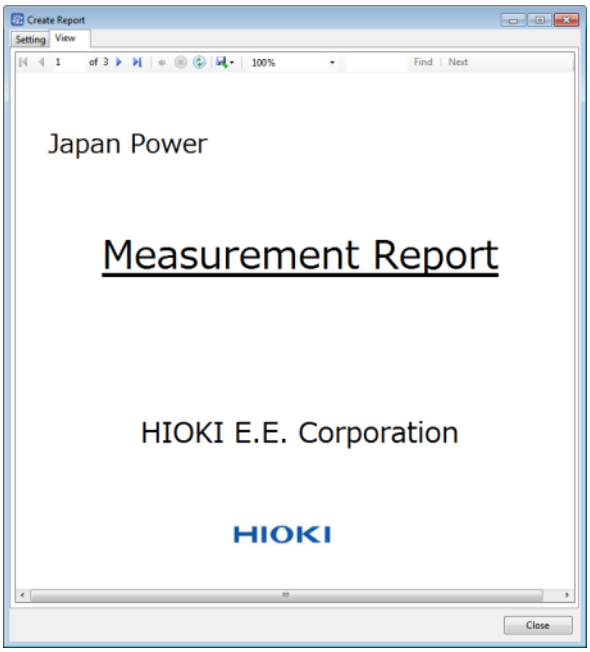


3. [Create Report] window is displayed. Set the cover format of the report in [Cover Format].

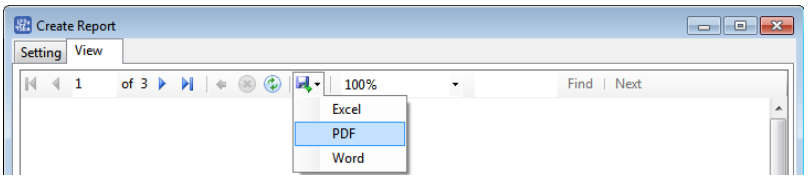


*To include images loaded in [General Measurement] window on report, add images from [list of images] to [Images to add the report].

4. Select [View] tab. After a little while, the preview of the report is displayed.



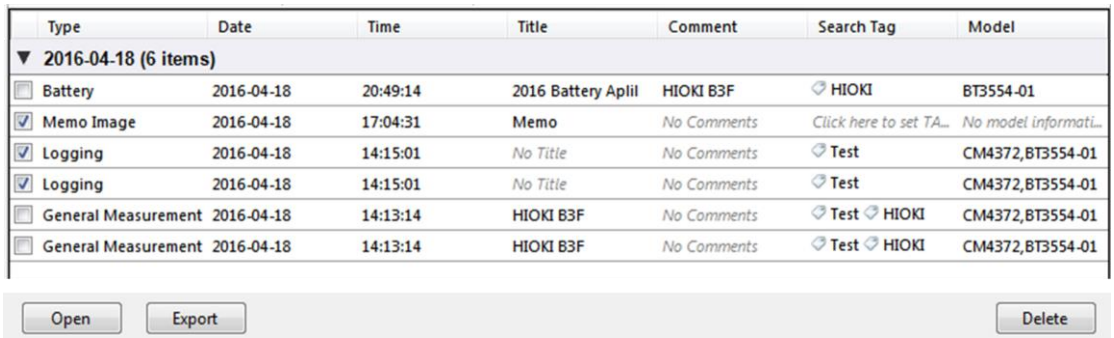
5. Click [Export] button and choose the export format. After selecting the export destination, the report is exported.



View Logging data

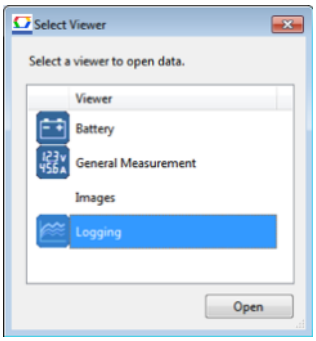
Open data

1. Select [Data] and a data group, then select [Logging] data by checking data on the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-04-18 (6 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

2. Click [Open] button and select [Logging].

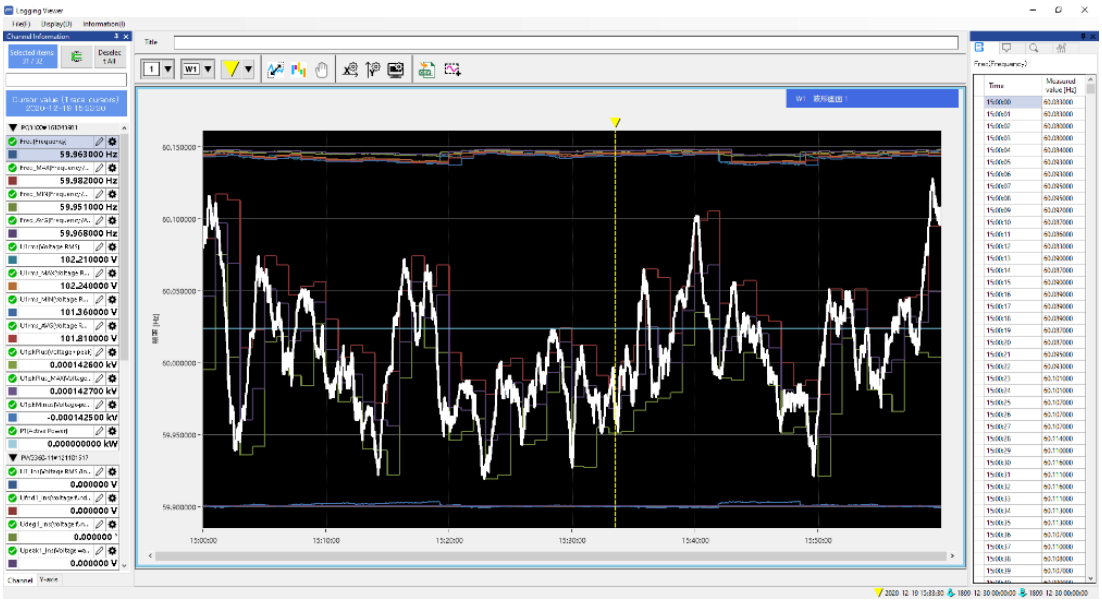


*The [Logging] window can display two data types: [Logging] or Images.

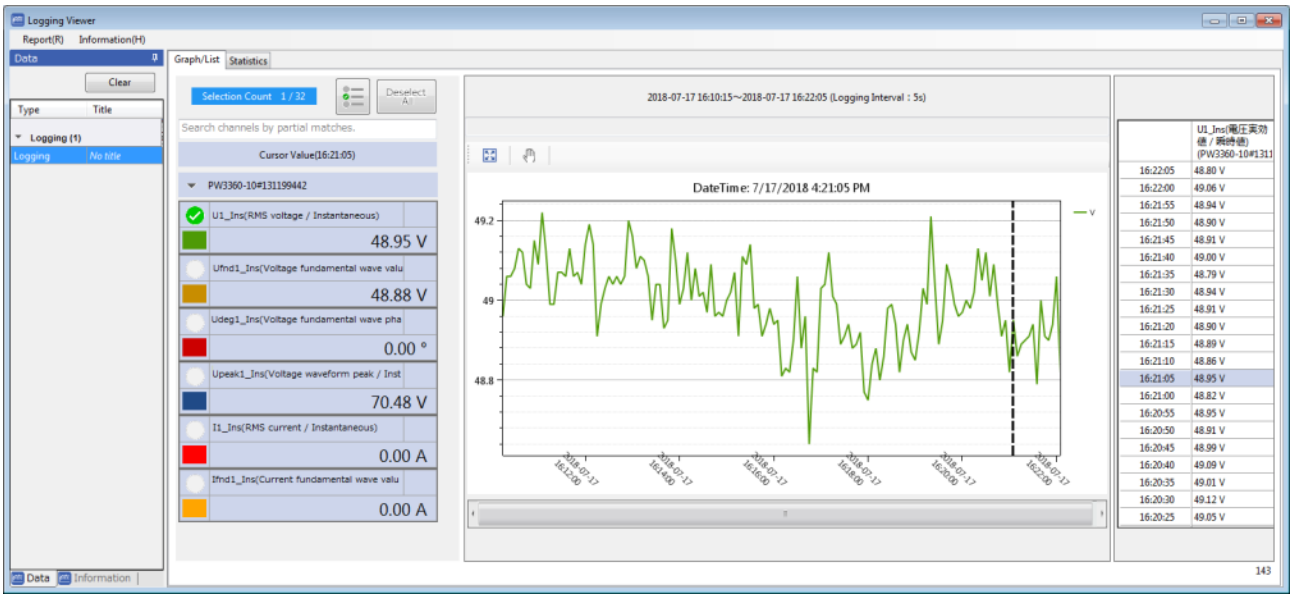
*If more than one data types are selected, [Select Viewer] window is displayed. Double-click on [Logging], or select [Logging] and click [Open] button to show [Logging] window.

3. [Logging] window is displayed.

Up to 32 measurement channels can be displayed on the graph.



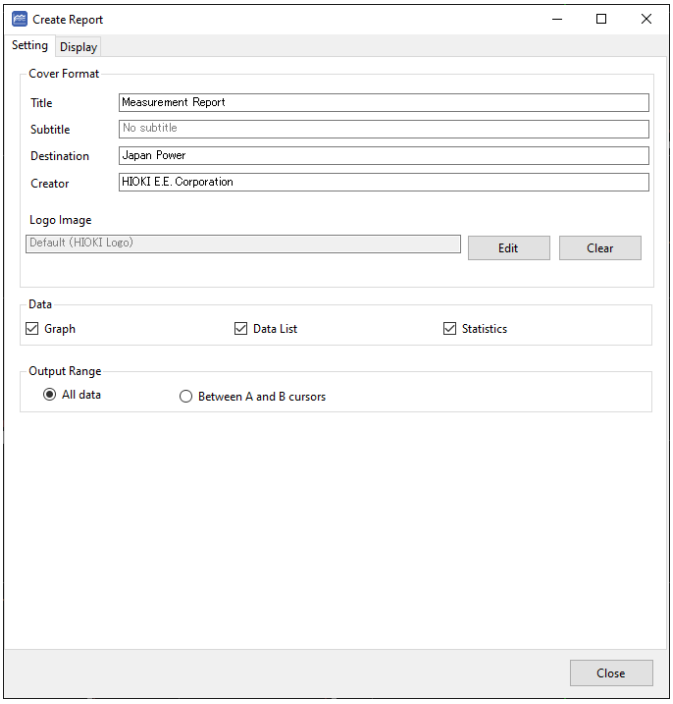
* The logging data acquired with version 3.20 or earlier of GENNECT One, the following logging viewer will open.



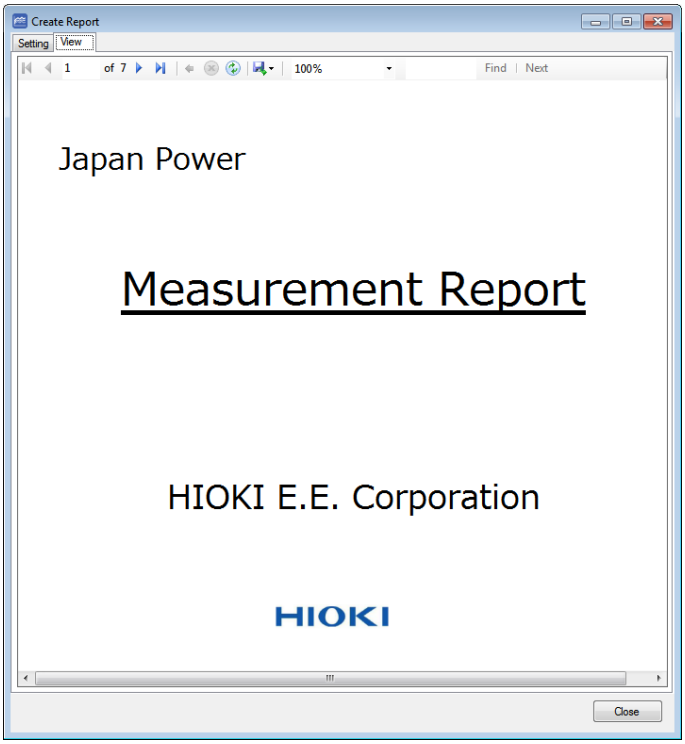
Create Logging Data Report

1. Select [Report]-[Create Report] in the menu.

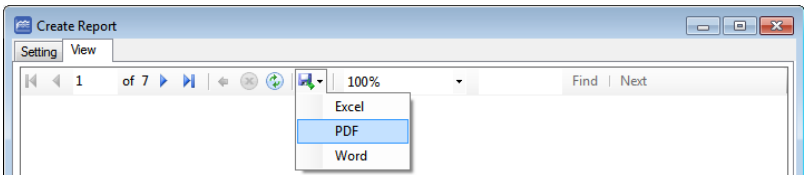
2. [Create Report] window is displayed. Set the cover format of the report in [Cover Format].



3. Select [View] tab. After a little while, the preview of the report is displayed.



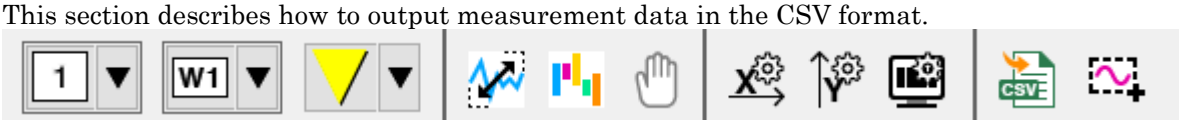
4. Click [Export] button and choose the export format. After selecting the export destination, the 39eport is exported.

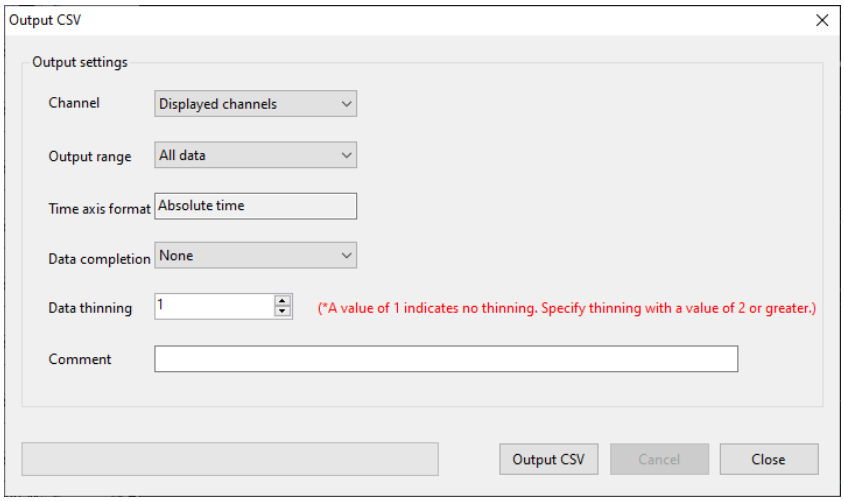


*You can choose from three formats: Excel, PDF, and Word.

Output measurement data to CSV file

This section describes how to output measurement data in the CSV format.



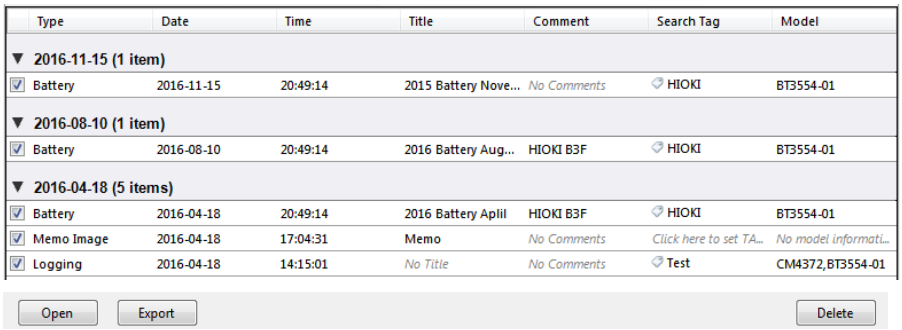


Item		Description
Output settings	Channel	Specifies the measurement parameters (channels) to output as a CSV file. Displayed channels: Of the measurement parameters (channels) loaded in the Time-series Viewer, output the measurement parameters (channels) that are being displayed on the waveform display screen. All channels: Output all measurement parameters (channels) loaded in the Time-series Viewer.
	Output range	Specifies the time range to output as a CSV file. All data: Output the entire time range. Between A and B cursors: Output the time range defined by the A and B cursors.
	Time axis format	Indicates whether the time format being output to the CSV file is absolute or relative. *This setting can be changed using the [Display Numerical Axis] button on the waveform toolbar. *This setting cannot be changed on this screen.
	Data completion	Specifies whether to complete measured values for times for which there is no measurement data before outputting data with measurement parameters (channels) with different interval times in the data being output. No: Do not complete measured values for times without measurement data. Complete using last measured data: Complete measured values using the last measured value for times without measurement data.
	Data thinning	Specifies whether to thin intermediate data points when outputting the data to a CSV file. 1: No data thinning 2: Outputting 1 point for every 2 points 3: Outputting 1 point for every 3 points …
	Number of decimal places	Specifies the number of decimal places applied to measured values.
	Comment	Specifies a comment to include in the CSV comment header.
[Output CSV] button		Outputs the data to a CSV file.
[Cancel] button		Cancels the CSV output operation.
[Close] button		Closes the dialog box.

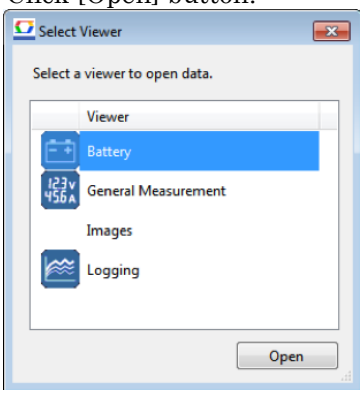
View Battery data

Open data

1. Select [Data] and a data group, then select [Battery] data by checking data on the data list.



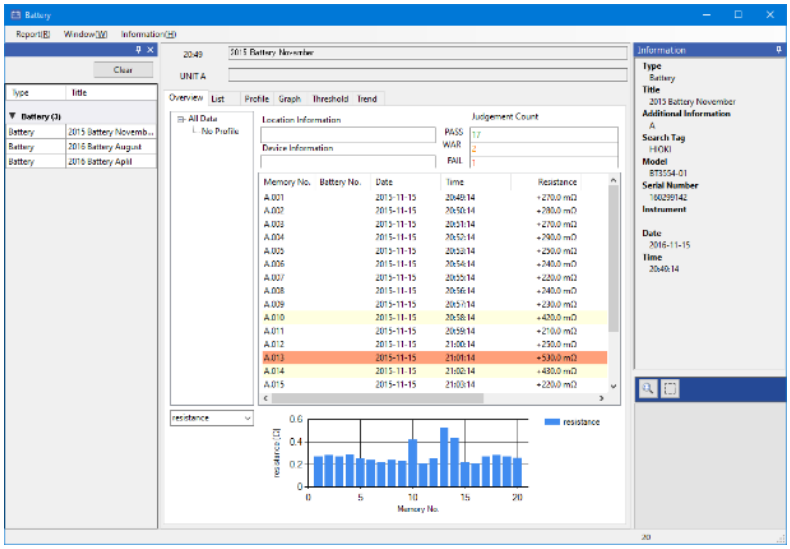
2. Click [Open] button.



*The [Battery] window can display two data types: [Battery] or Images.

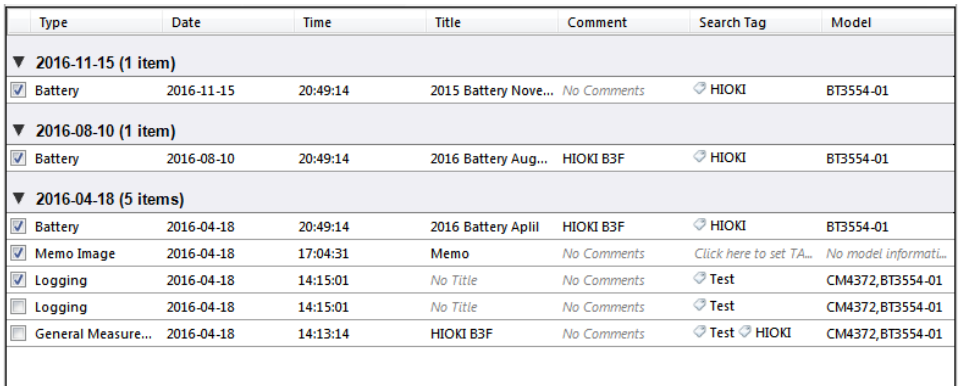
*If more than one data types are selected, [Select Viewer] window is displayed. Double-click on [Battery], or select [Battery] and click [Open] button to show [Battery] window.

3. [Battery] window is displayed.



Add data

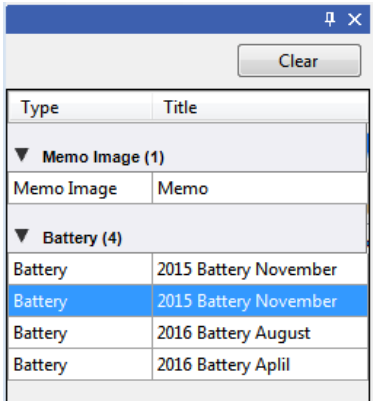
1. Select [Data] and a data group, then select [Battery] data by checking data on the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
☑ Battery	2016-11-15	20:49:14	2015 Battery Nove...	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
☑ Battery	2016-08-10	20:49:14	2016 Battery Aug...	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (5 items)						
☑ Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
☑ Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
☑ Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
☐ Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
☐ General Measure...	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

2. Drag and drop the checked data to [Battery] window.

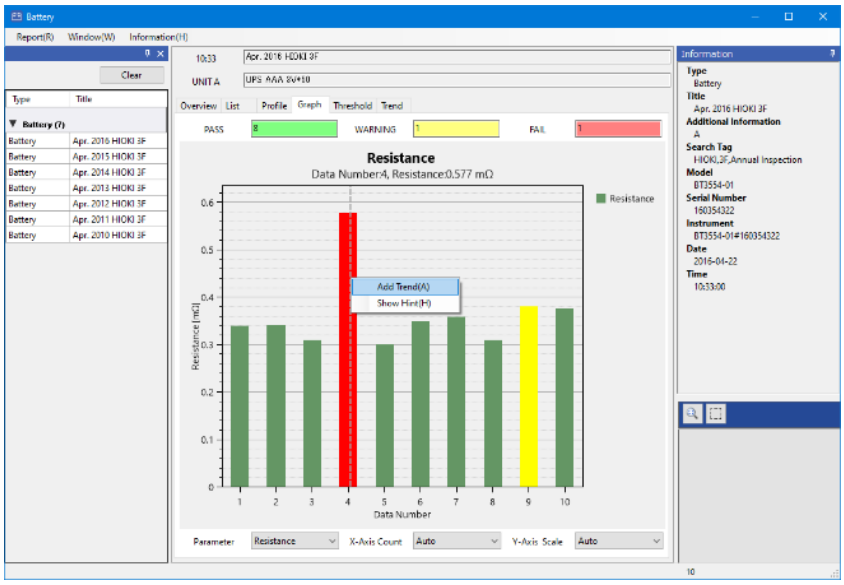
3. Data is added to the data management list in [Battery] window.



Type	Title
▼ Memo Image (1)	
Memo Image	Memo
▼ Battery (4)	
Battery	2015 Battery November
Battery	2015 Battery November
Battery	2016 Battery August
Battery	2016 Battery Aplil

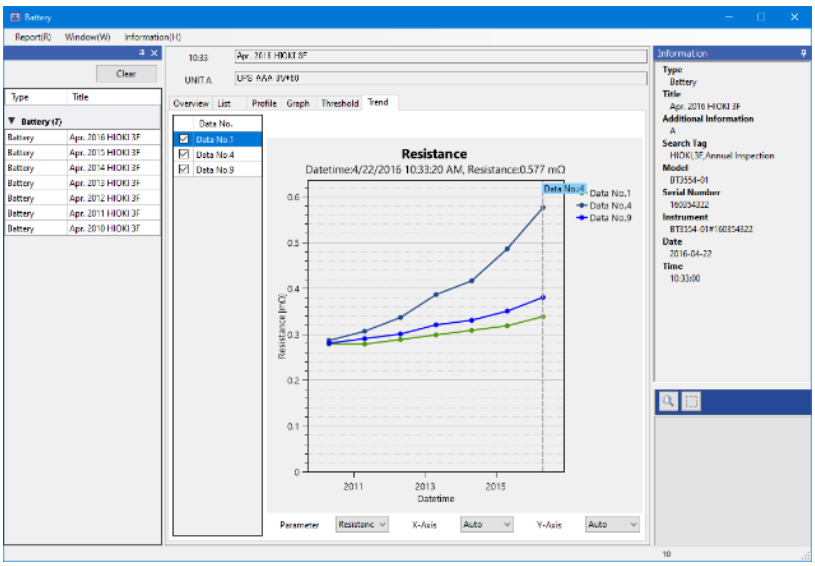
Check the trend of the measured data

1. Select [Add Trend] in the right-click menu of the graph in [Graph] tab.



*You can also select [Add Trend] in the right-click menu of the measured data list in [List] tab.

2. Select [Trend] tab. The measured values of the selected data number are displayed in time series for all the battery data that are read into [Battery] window.



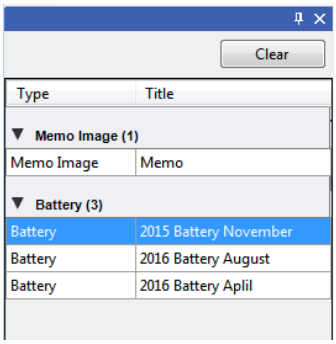
*In the example above, you can understand that the resistance value of the data number 4 increases gradually as time process.

*To check the trend of the measured data, you need to load more than two [Battery] measurement results that are measured in different times.

*To check the trend of the battery cell, the measurement results loaded need to be of the identical battery block.

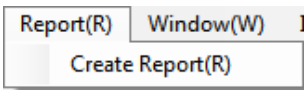
Create Battery Data Report

1. Select one data in the data management list of [Battery] window.



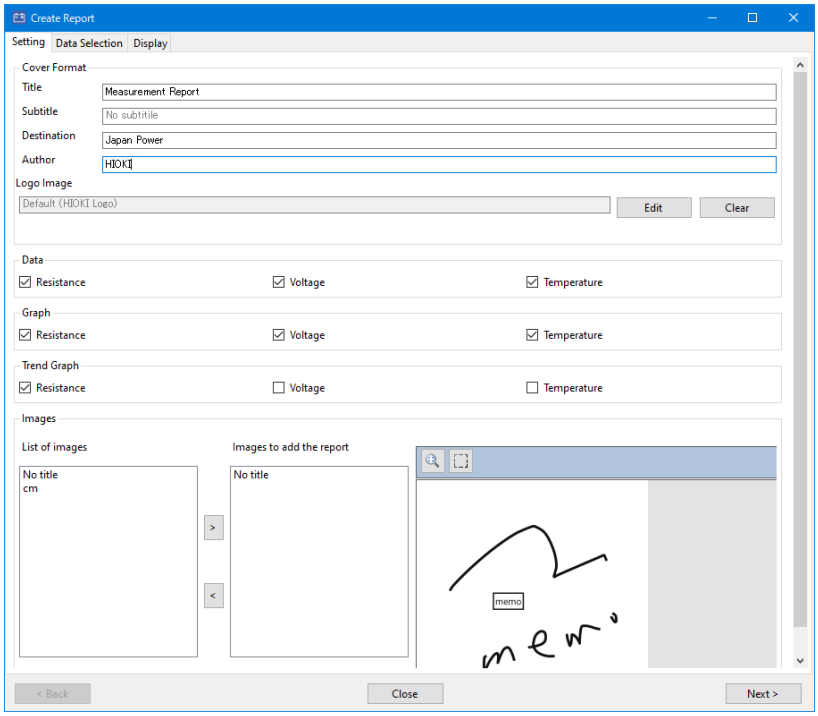
*Select [Battery] data to create report. All the images loaded in the [Battery] window are also available in [Create Report] window.

2. Select [Report]-[Create Report] in the menu.

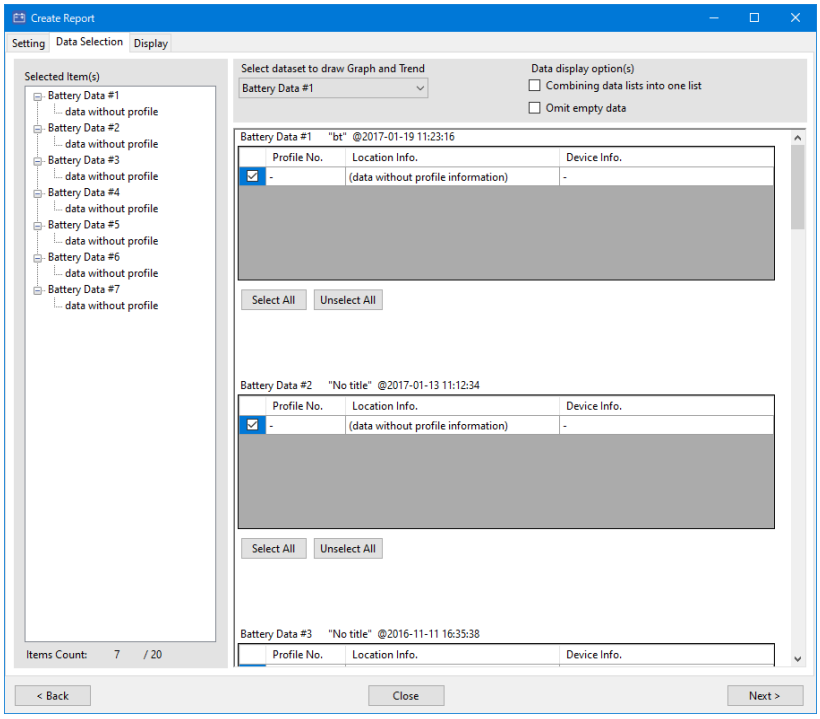


3. [Create Report] window is displayed. Set the cover format of the report in [Cover Format].
4. Set the type of list and graph to output in [Data], [Graph] and [Trend Graph].

5. To include images loaded in [Battery] window on report, add images from [list of images] to [Images to add the report].

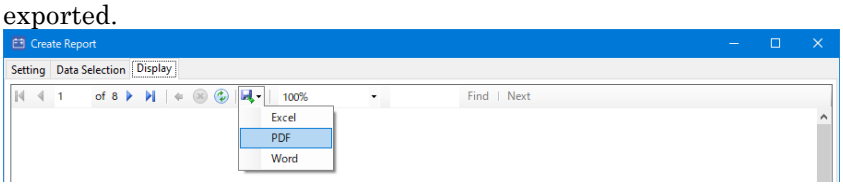


6. Select the data on the [Data Selection] tab.



7. Select [View] tab. After a little while, the preview of the report is displayed.

8. Click [Export] button and choose the export format. After selecting the export destination, the report is exported.



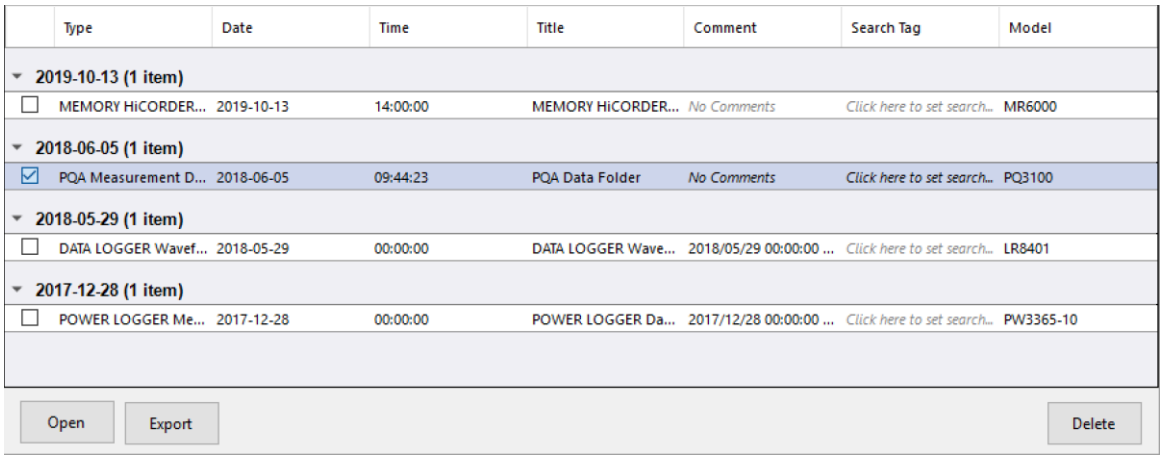
*You can choose from three formats: Excel, PDF, and Word.

View PQ3100, PQ3198 POWER QUALITY ANALYZER data

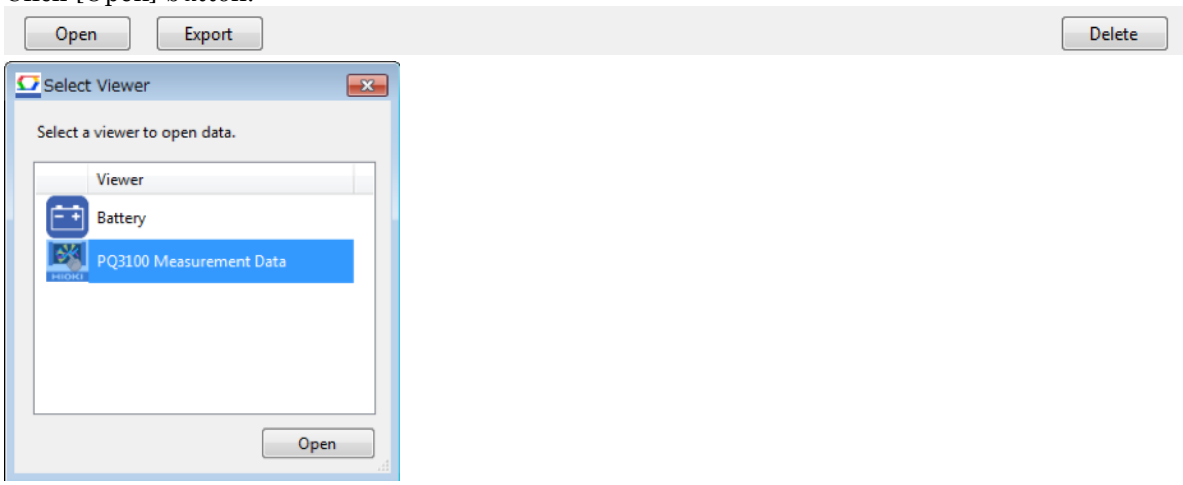
***To open the measurement data of PQ3100, PQ3198 POWER QUALITY ANALYZER, the application software [PQ ONE] needs to be installed.**
*See the instruction manual of the PQ3100 POWER QUALITY ANALYZER for how to install "PQ ONE".

Open data

1. Select [Data] and a data group, then select [PQA Measurement Data] by checking data on the data list.

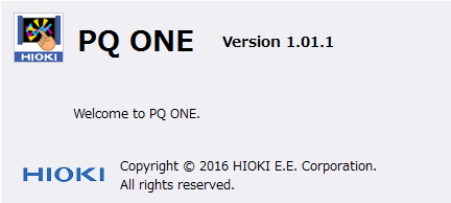


2. Click [Open] button.

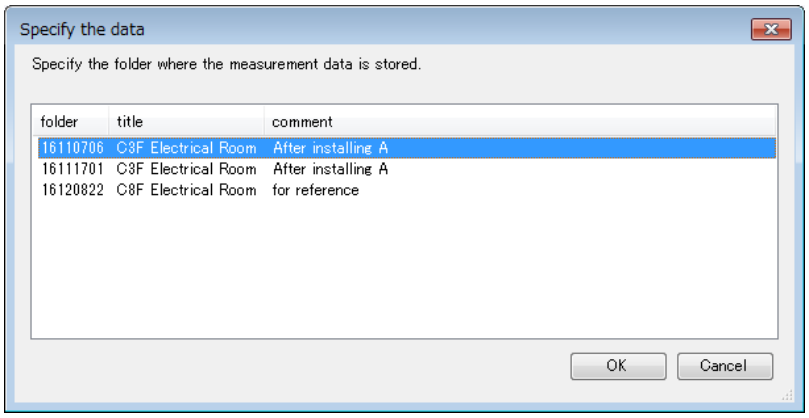


*If more than one data types are selected, [Select Viewer] window is displayed. Double-click on [PQA Measurement Data], or select [PQA Measurement Data] and click [Open] button to show the data.

3. The splash window of "PQ ONE" is displayed.



4. [Specify the data] window is displayed. Select a measurement data folder to show and then click [OK] button.



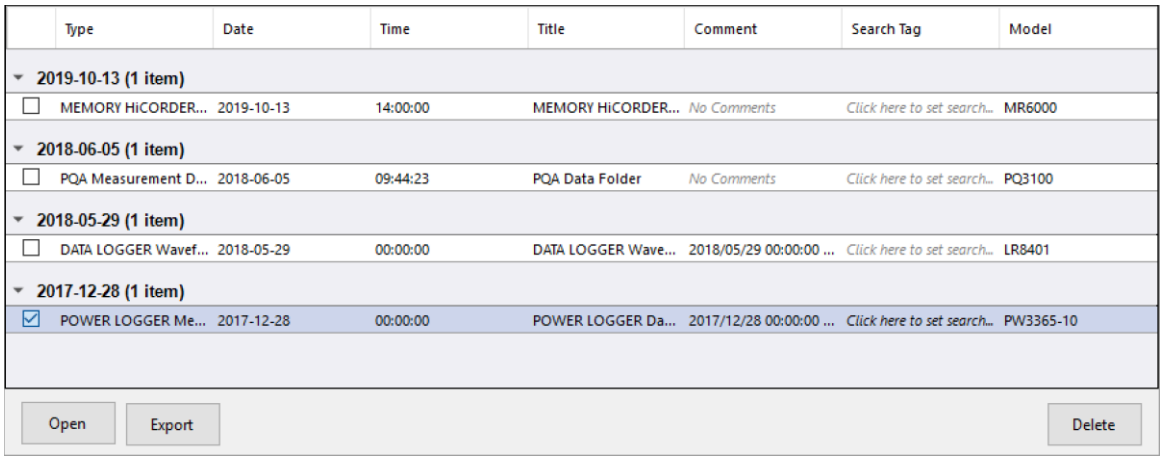
5. The measurement data is displayed in "PQ ONE".

View PW3360, PW3365 POWER LOGGER Data

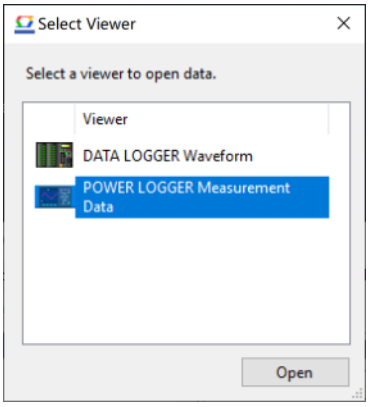
- To open the measurement data of PW3360, PW3365 POWER LOGGER, the application software [Power Logger Viewer (SF1001)] needs to be installed.
- The Power Logger Viewer SF1001 version supported by GENNECT One is V4.50.0 or later. If you are using V4.00.0 or earlier, please upgrade to the latest version.
- Refer to the power logger viewer SF1001 manual for installation instructions.

Open data

1. Select [Data] and a data group, then select [POWER LOGGER Measurement data] by clicking data on the data list.



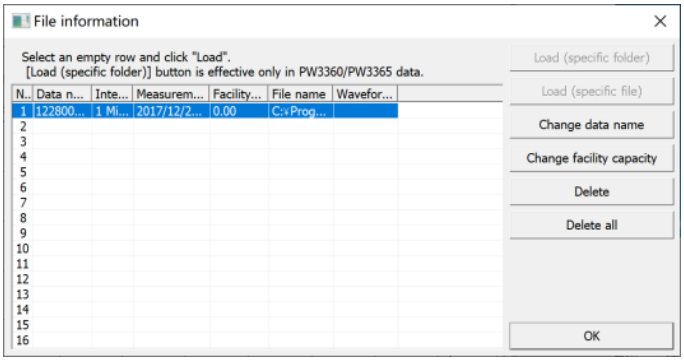
2. Click [Open] button.



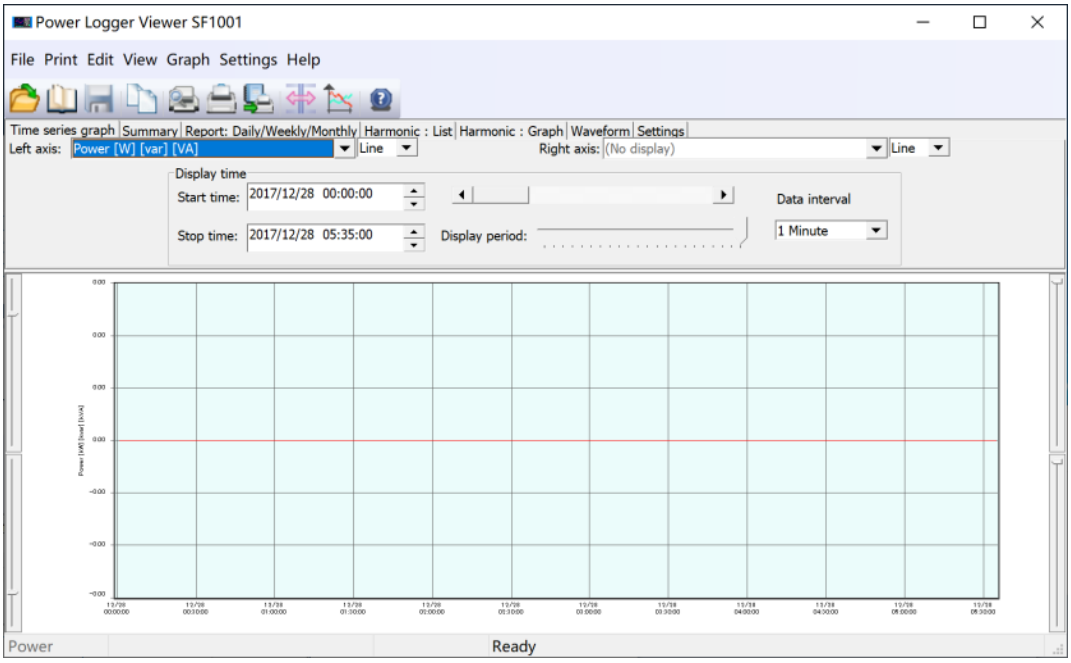
※ If more than one data tapes are selected, [Select Viewer] windows is displayed. Double click on [POWER LOGGER Measurement Data] or select [POWER LOGGER Measurement Data] and click [Open] button to show the data.

3. The splash window of [SF1001 Power Logger Viewer] is displayed.

4. [File Information] window is displayed after loading selected data. Click [OK] button.



5. The measurement data is displayed in "SF1001 Power Logger Viewer".



View PW3390, PW6001, PW8001 POWER ANALYZER CSV Data (PW Assistant)

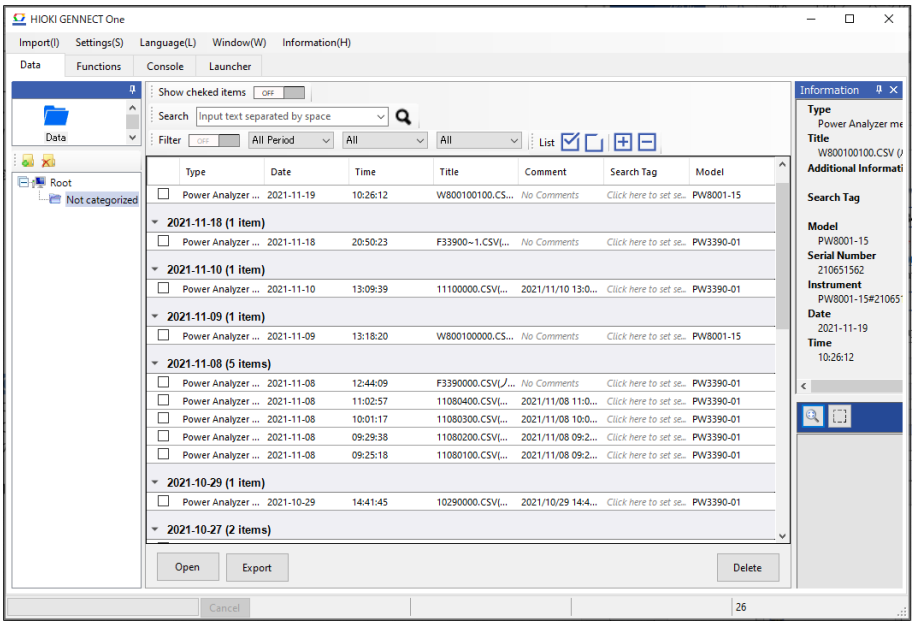
・PW Assistant allows you to create graphs using Microsoft Excel from the CSV data saved by the power analyzers PW3390, PW6001, and PW8001. In order to view graphs using Microsoft Excel, you need to have Microsoft Excel installed on your computer.
・In order to view the power analyzer CSV data in "PW Assistant", the version of GENNECT One needs to be V4.30 or later.

Notes
・Microsoft Excel is a registered trademark or a trademark of Microsoft Corporation in the United States and other countries.
・CSV data saved or edited by other than Power Analyzer cannot be read by PW Assistant.
・The maximum size of CSV data that can be opened by PW Assistant is 500MB. It is not possible to open data larger than that. Also, when opening large files in Microsoft Excel, it will take some time to process the data.

Open Measurement Data

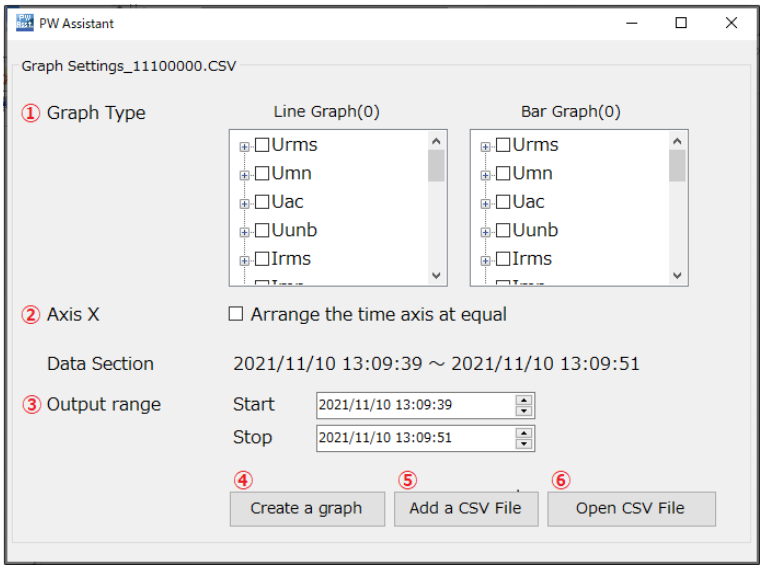
Select the CSV data of the measurement data measured by the power analyzer (PW3390, PW6001, and PW8001) and make the necessary settings for graph display, and the graph of the measurement data will be displayed in Microsoft Excel.

1. Select [Data] and a data group, then select [Power Analyzer measurement data] by checking data on the data list, and click [Open] button.



2. The setting screen is displayed in [PW Assistant].

   Set the graph display contents.



① Set the type of the graph.

The maximum number of graphs that can be displayed is 16 for both [Line graph] and [Bar graph].

You cannot select more than 16 items.

② Set the X axis.

Checking [Arrange the time axis at equal] will display a graph with a constant time interval for the X-axis setting when the measurement data saved by the power analyzer is manually saved data.

Applies when the selected graph is a line graph only.

③ Set the Output range.

The set section is the graph display range and CSV output range.

Both the start time and stop time cannot be set outside the displayed data section.

④ [Create a graph] button

After setting ① to ③, click this button to launch Microsoft Excel and create a new Excel book.

A new Excel book will be created and the graph will be displayed.

In the [Data] sheet, copy the data from the imported CSV file.

In the [Graph] sheet, create and display a graph based on the settings in the Graph Settings column.

Notes

・The graph display function creates and displays a graph in Microsoft Excel. You need to have Microsoft Excel installed on your computer to use this function.

・Some items in the output data, such as Status data, will not be copied.

⑤ [Add a CSV File] button

After setting ① to ③, click this button to output the measurement items selected in the graph type and the data range set in the graph display section to a CSV file.

Notes

・Some items in the output data, such as Status data, will not be copied.

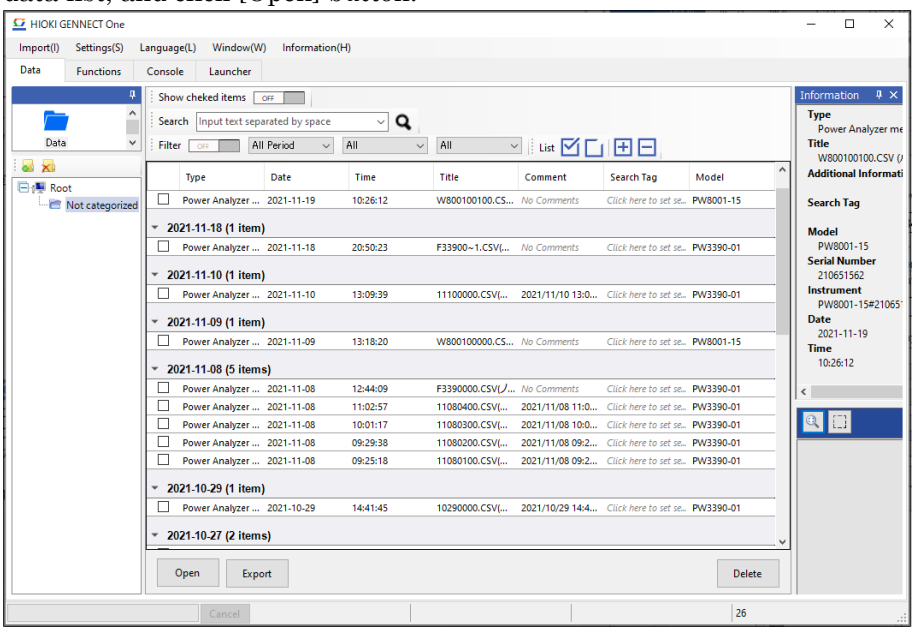
⑥ [Open CSV File] button

Copy the CSV data selected in the PW Assistant to the specified location and open it in the CSV viewer.

Open Waveform Data

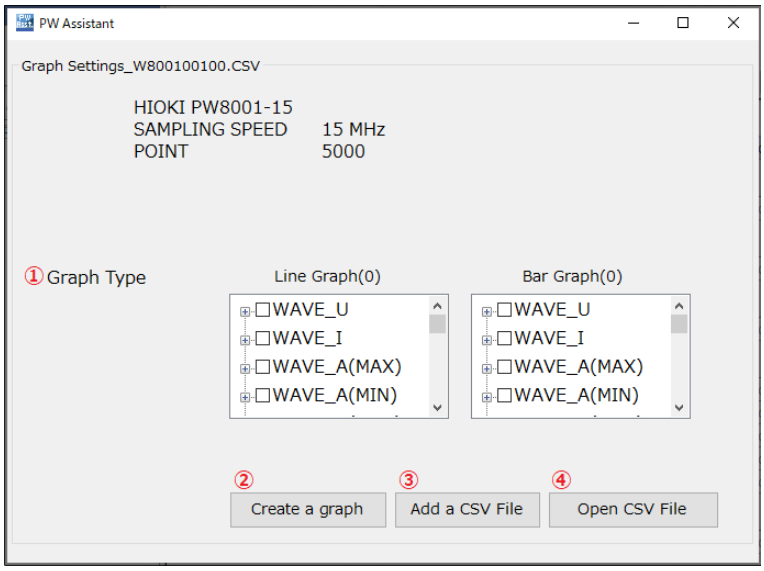
Select the CSV data of the waveform data, FFT data, and noise data measured by the power analyzer (PW3390, PW6001, and PW8001), and select the items required for graph display to display the graph of the measurement data in Microsoft Excel.

1. Select [Data] and a data group, then select [Power Analyzer waveform data] by checking data on the data list, and click [Open] button.



2. The setting screen is displayed in [PW Assistant].

   Set the graph display contents.



① Set the type of the graph.

The maximum number of graphs that can be displayed is 16 for both [line graphs] and [bar graphs].

You cannot select more than 16 items.

② [Create a graph] button

After setting ①, click this button to launch Microsoft Excel and create a new Excel book.

A new Excel book will be created and the graph will be displayed.

In the [Data] sheet, copy the data from the imported CSV file.

In the [Graph] sheet, create and display a graph based on the settings in the Graph Settings column.

Notes

・The graph display function creates and displays a graph in Microsoft Excel. You need to have Microsoft Excel installed on your computer to use this function.

③ [Add a CSV File] button

After setting ①, click this button to output the measurement items selected in the graph type and the data range set in the graph display section to a CSV file.

④ [Open CSV File] button

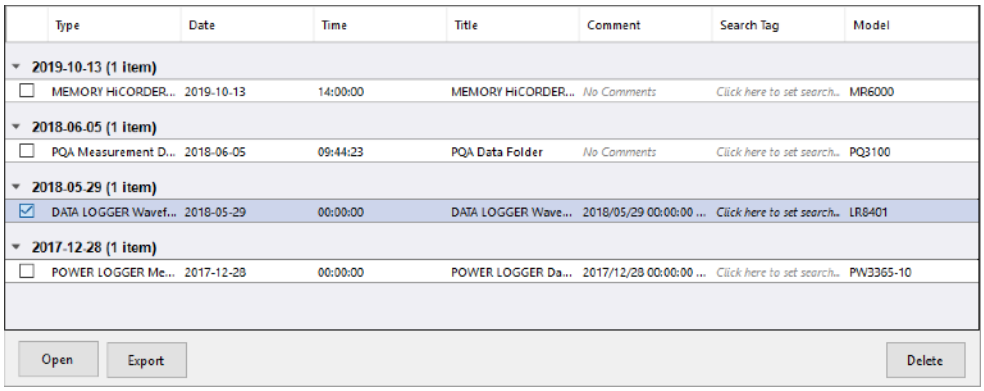
Copy the CSV data selected in the PW Assistant to the specified location and open it in the CSV viewer.

View LR8400, LR8401, LR8402, LR8410, LR8450, LR8101,LR8102 DATA LOGGER Waveform

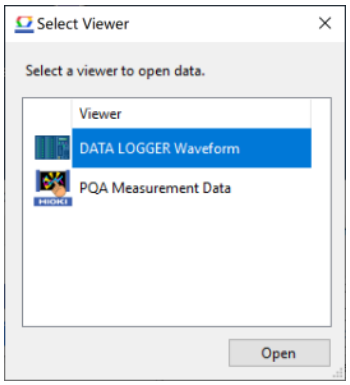
- To open the waveform data of LR8400, LR8401, LR8402, LR8410, LR8450, LR8101,LR8102 DATA LOGGER, the application software [Logger Utility SF1000] needs to be installed.
- Refer to the Logger Utility manual for installation instructions.

Open data

1. Select [Data] and a data group, then select [Data LOGGER Waveform] by clicking data on the data list.

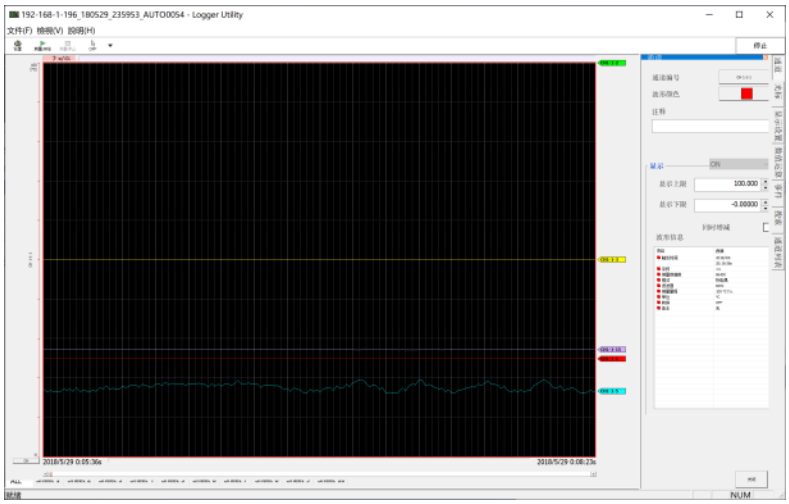


2. Click [Open] button.



※ If more than one data tapes are selected, [Select Viewer] windows is displayed. Double click on [DATA LOGGER Waveform] or select [DATA LOGGER Waveform] and click [Open] button to show the data.

3. The waveform data is displayed in [Logger Utility SF1000].

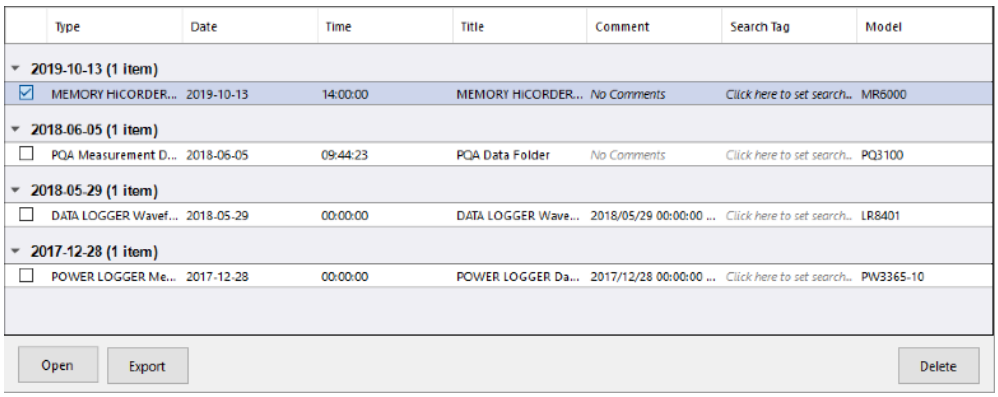


View MR6000,MR8847A MEMORY HiCORDER Waveform

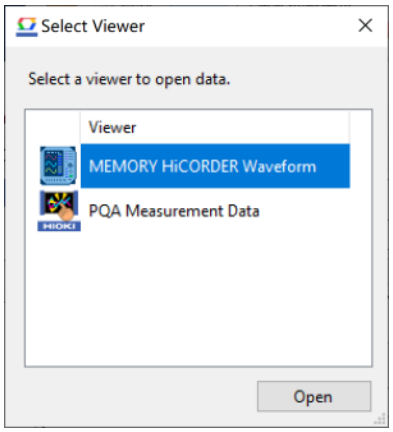
- To open the waveform data of MR6000 ,MR8847A MEMORY HiCORDER, the application software [Wave Viewer (Wv)] or [Wave processor (9335)] or [MR6000Viewer] needs to be installed.
- Refer to the MR6000 MEMORY HiCORDER manual for installing [Wave Viewer (Wv)].
- Refer to the "Wave Processor 9335" manual for installing [Wave Processor (9335)].
- Refer to the "MR6000Viewer"manual for installing [MR6000Viewer].

Open data

1. Select [Data] and a data group, then select [MEMORY HiCORDER Waveform] by clicking data on the data list.

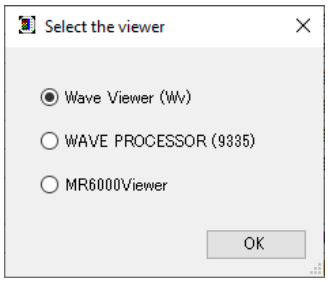


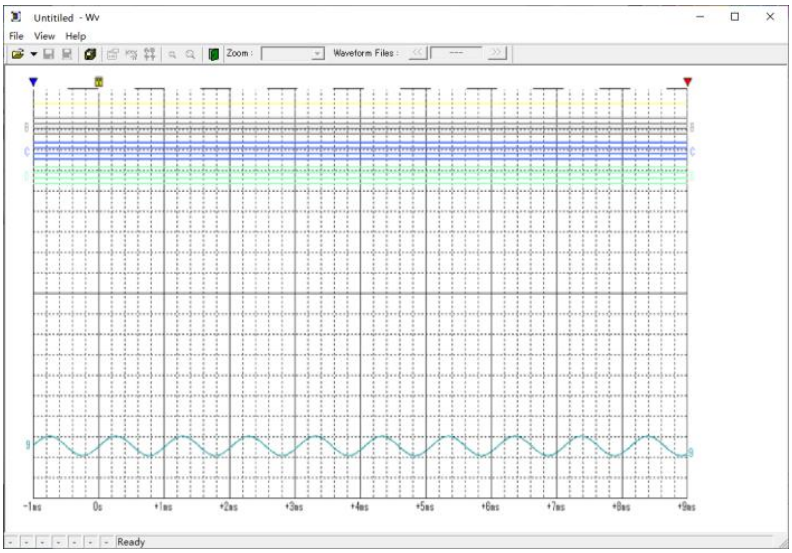
2. Click [Open] button.

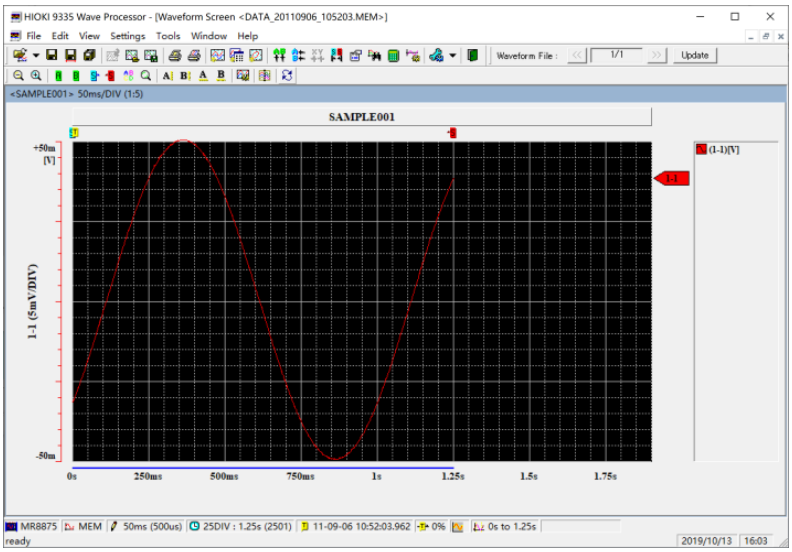


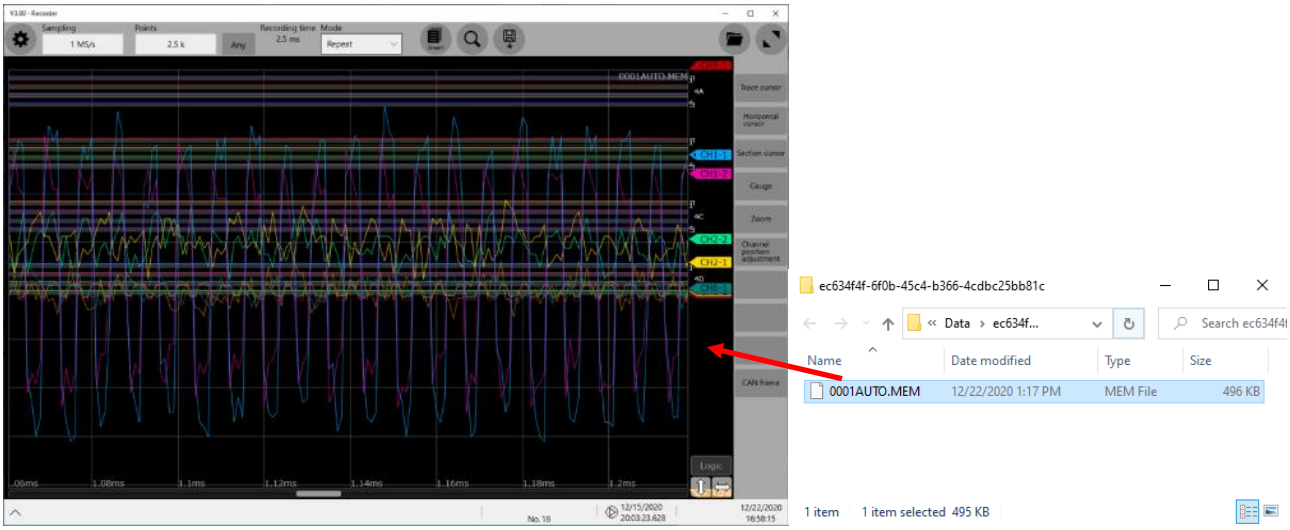
※ If more than one data tapes are selected, [Select Viewer] window is displayed. Double click on [MEMORY HiCORDER Waveform] or select [MEMORY HiCORDER Waveform] and click [Open] button to show the data.

3. The waveform data is displayed in [Wave Viewer (Wv)] or [Wave Processor (9335)] or [MR6000Viewer].



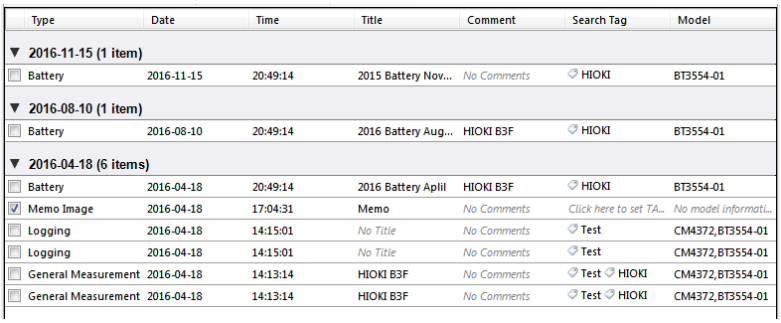

Untitled - Wv
File View Help
Zoom :
Waveform Files :
Ready


HIOKI 9335 Wave Processor - [Waveform Screen <DATA_20110906_105203.MEM>]
File Edit View Settings Tools Window Help
Waveform File :
Update
<SAMPLE001> 50ms/DIV (1:5)
SAMPLE001
+50m [V]
-50m
1-1 (5mV/DIV)
(1-1)[V]
1-1
0s
250ms
500ms
750ms
1s
1.25s
1.5s
1.75s
MR8875
MEM
50ms (500us)
25DIV : 1.25s (2501)
11-09-06 10:52:03.962
0% 0s to 1.25s
ready
2019/10/13
16:03


Sampling
1 MS/s
Points
2.5 k
Any
Recording time
2.5 ms
Mode
Repeat
0001AUTO.MEM
Trace cursor
Horizontal cursor
Section cursor
Gauge
Zoom
Channel position adjustment
CAN frame
Logic
1.06ms
1.08ms
1.1ms
1.12ms
1.14ms
1.16ms
1.18ms
1.2ms
No. 18
12/15/2020 20:03:23.628
12/22/2020 16:58:15
ec634f4f-6f0b-45c4-b366-4cdbc25bb81c
Data › ec634f...
Search ec634f4f
Name
Date modified
Type
Size
0001AUTO.MEM
12/22/2020 1:17 PM
MEM File
496 KB
1 item
1 item selected 495 KB

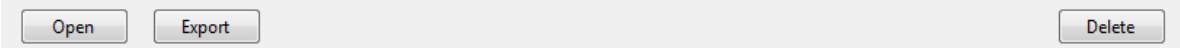
View Image

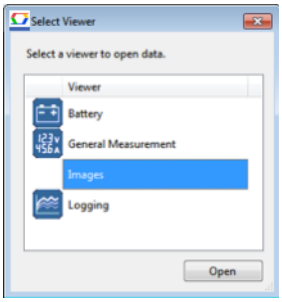
1. Select [Data] and a data group, then select Image data by checking data on the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
Battery	2016-11-15	20:49:14	2015 Battery Nov...	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery Aug...	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (6 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

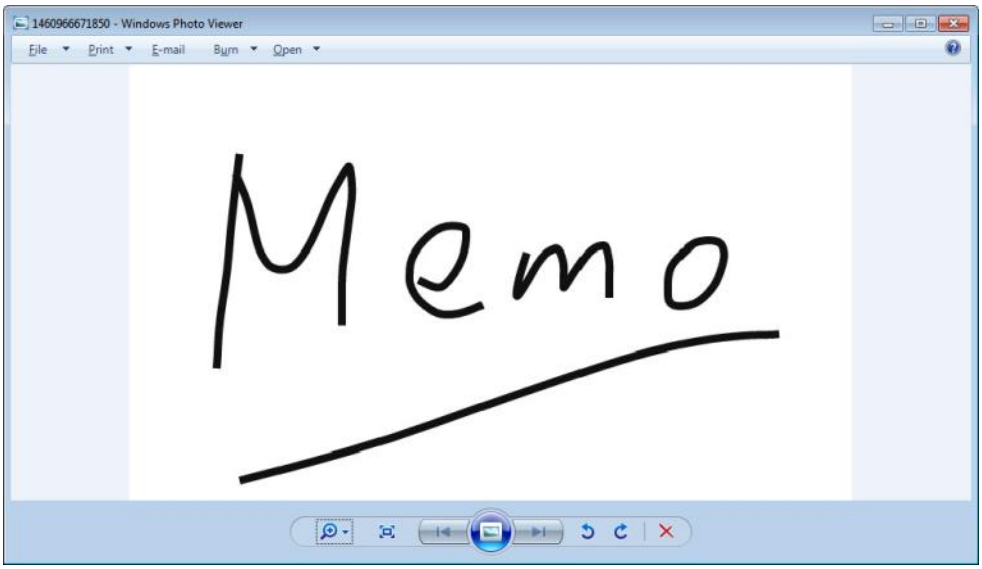
2. Click [Open] button.





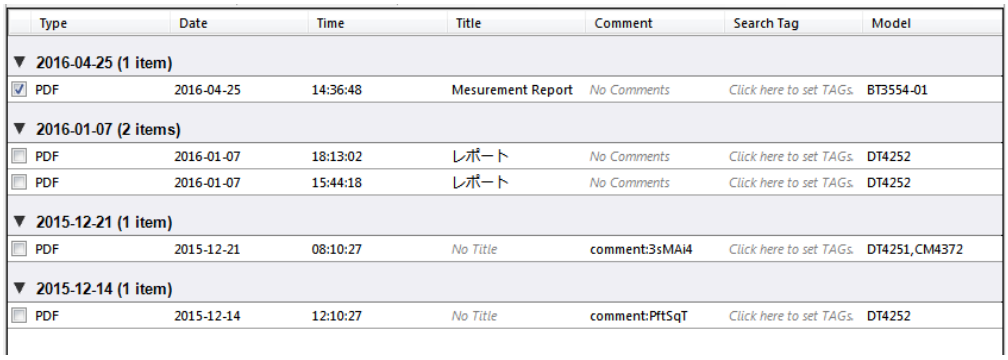
*If more than one data types are selected, [Select Viewer] window is displayed. Double-click on [Image], or select [Image] and click [Open] button to show [Logging] window.

3. The default image viewer program on the computer is launched. The selected data is displayed in the viewer.



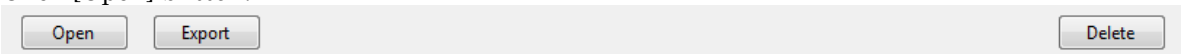
View PDF Report

1. Select [Report] and a data group, then select Image data by checking data on the data list.

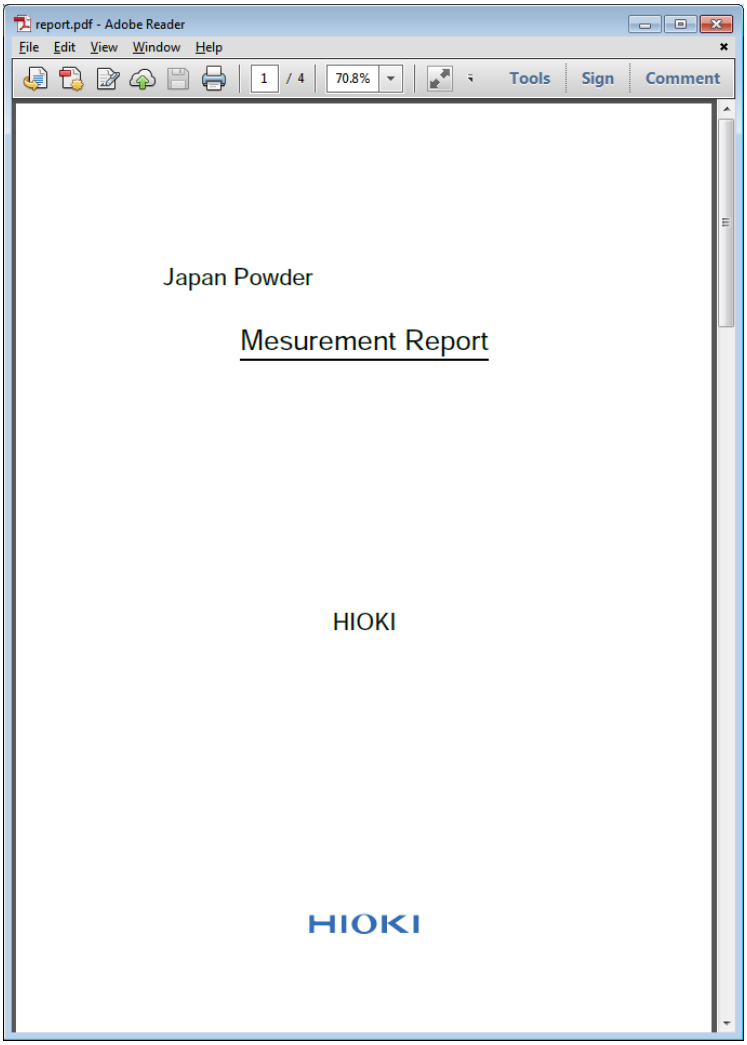


Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-04-25 (1 item)						
☑ PDF	2016-04-25	14:36:48	Mesurement Report	No Comments	Click here to set TAGs.	BT3554-01
▼ 2016-01-07 (2 items)						
☐ PDF	2016-01-07	18:13:02	レポート	No Comments	Click here to set TAGs.	DT4252
☐ PDF	2016-01-07	15:44:18	レポート	No Comments	Click here to set TAGs.	DT4252
▼ 2015-12-21 (1 item)						
☐ PDF	2015-12-21	08:10:27	No Title	comment:3sMAi4	Click here to set TAGs.	DT4251,CM4372
▼ 2015-12-14 (1 item)						
☐ PDF	2015-12-14	12:10:27	No Title	comment:PftSqT	Click here to set TAGs.	DT4252

2. Click [Open] button.



3. The default PDF viewer program on the computer is launched. The selected data is displayed in the viewer.



Viewing Measurement Data with the Time-series Viewer

・By importing measurement data to the Time-series Viewer format, it is possible to render measurement data from different instruments as part of a single time series for viewing and analysis.

Supported Data Formats

The Time-series Viewer supports the following data formats:

Data format	Supported instruments	Firmware version	Remarks
Data logger waveforms (binary)	LR8400 series	—	(*1)
	LR8410		
	LR8101, LR8102		
Data logger waveforms (binary) (*3)	LR8450,LR8450-01	Ver. 1.50 or later	(*1), (*3)
Power logger measurement data (measurement data folders)	PW3360	—	(*1)
	PW3365		
Power Analyzer measurement data (binary)	PW8001	Ver. 1.00 or later	(*1)
LR5000 series measurement data (HRP2 format)	LR5000 series	—	(*2)

(*1) Measurement data must be added to the GENNECT One Data List before it can be opened using the Time-series Viewer. For more information about how to add measurement data to the GENNECT One Data List, see the following:

- "Manually Acquiring Files from an Instrument (File Acquisition [MANUAL])"
- "Automatically receive instrument files (File Transfer [AUTO])"

(*2) LR5000 measurement data must be added to the GENNECT One Data List before it can be opened using the Time-series Viewer. For more information about how to add LR5000 measurement data to the GENNECT One Data List, see the following:

- "Loading LR5000 Series Measurement Files"

(*3) Binary format waveform files measured with CAN unit of the LR8450/-01 can only be viewed in the Time-series Viewer.

Limitations

Time-series Viewer Limitations

Item	Limitation	Remarks
Measurement parameters (loadable)	Up to 512	
Measurement parameters (graph display)	Up to 32	
Number of graph display views	Up to 8	
Number of graph display divisions	Up to 2	

Workflow

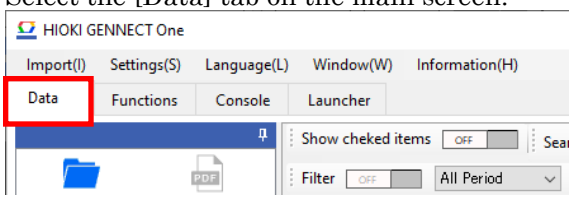
Selecting Measurement Data (p.61)

Selecting Measurement Parameters and Opening Them with the Time-series Viewer (p.62)

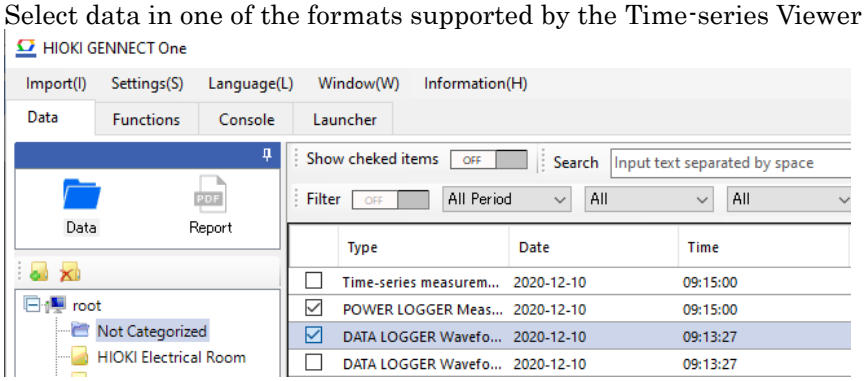
Using the Time-series Viewer (p.64)

Selecting Measurement Data

1. Select the [Data] tab on the main screen.



2. Select data in one of the formats supported by the Time-series Viewer from the Data List.



Note

*For more information about the data formats supported by the Time-series Viewer, see the following:

- "Supported Data Formats"

*Measurement data must be added from the Instrument to GENNECT One data list before it can be opened using the Time-series Viewer. For more information about how to add measurement data to the GENNECT One Data List, see the following:

- "Manually Acquiring Files from an Instrument (File Acquisition [MANUAL])"
- "Automatically receive instrument files (File Transfer [AUTO])"

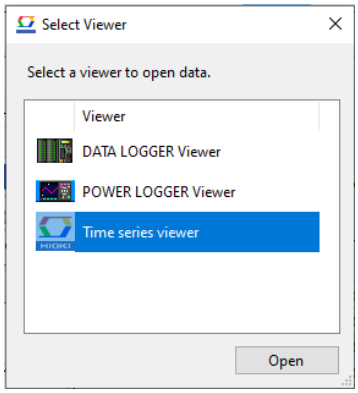
LR5000 measurement data must be added to the GENNECT One Data List before it can be opened using the Time-series Viewer. For more information about how to add LR5000 measurement data to the GENNECT One Data List, see the following:

- "Loading LR5000 Series Measurement Files"

3. Click the [Open] button.

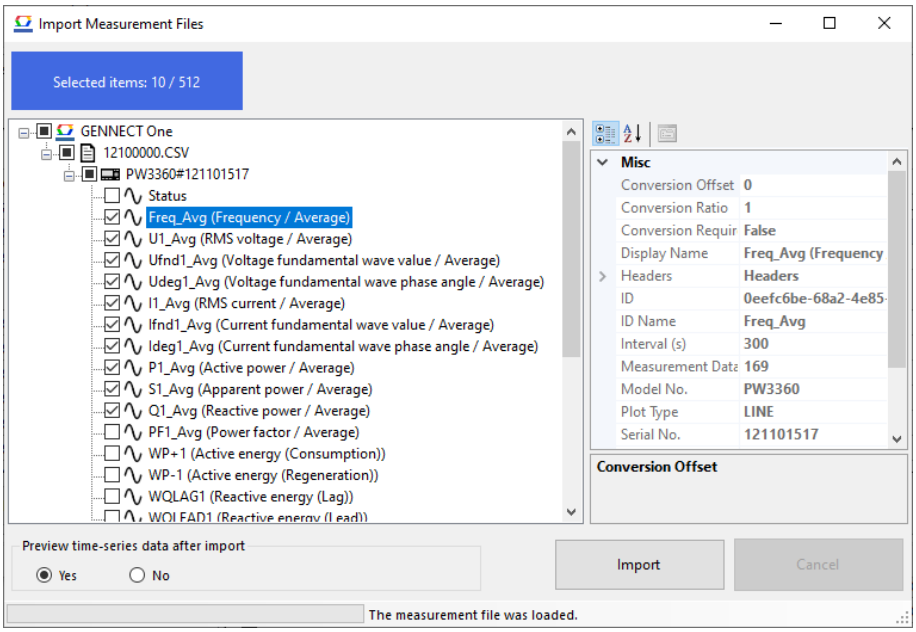
Note

*If the data is supported by viewers other than the Time-series Viewer, the [Select Viewer] screen will appear. Either double-click [Time-series Viewer] or select [Time-series Viewer] and click the [Open] button.



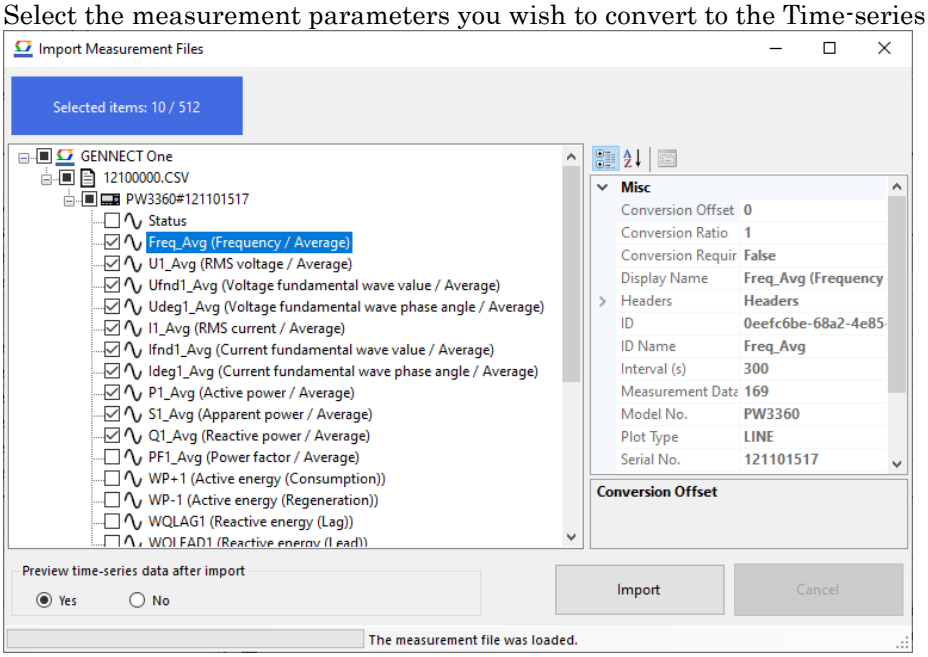
*To cancel conversion to the Time-series Viewer format, click the [Cancel] button.

4. The [Import Measurement Files] screen will be displayed.



Selecting Measurement Parameters and Opening Them with the Time-series Viewer

1. Expand the tree on the left side of the [Import Measurement Files] screen.
2. Select the measurement parameters you wish to convert to the Time-series Viewer format (up to 512).

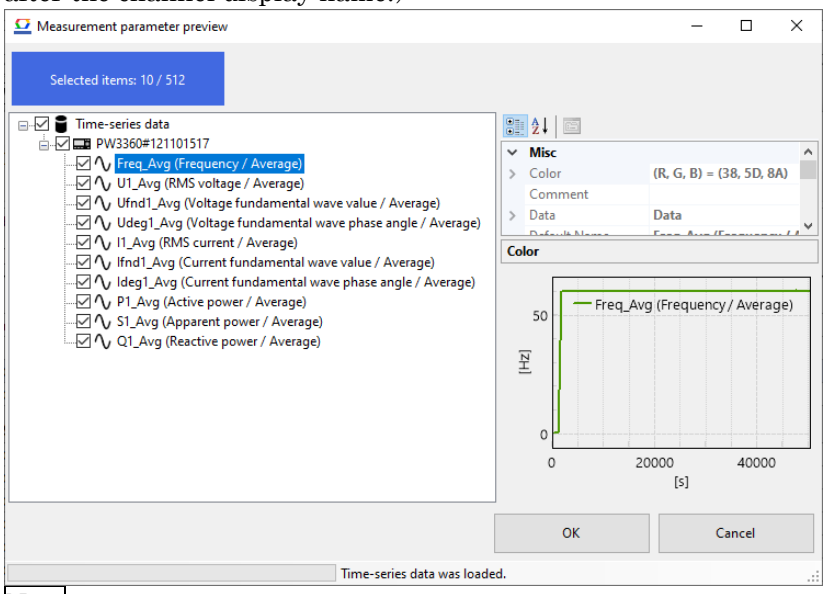


3. Click the [Import] button.
   The selected measurement parameter(s) will be converted to the Time-series Viewer format.
   Once the import operation is complete, the following message will be displayed: "Import operation completed."

   Note
   *If you selected [No] under [Preview time-series data after import], the Time-series Viewer will open after the import operation completes.
   *If you selected [Yes] under [Preview time-series data after import], the process will proceed to the next step.

4. The [Measurement Parameter Preview] screen will be displayed.

5. Expand the tree on the left side to display a list of imported measurement parameters.
(If a comment is stored for each channel in the data logger, the comment will appear in parentheses after the channel display name.)



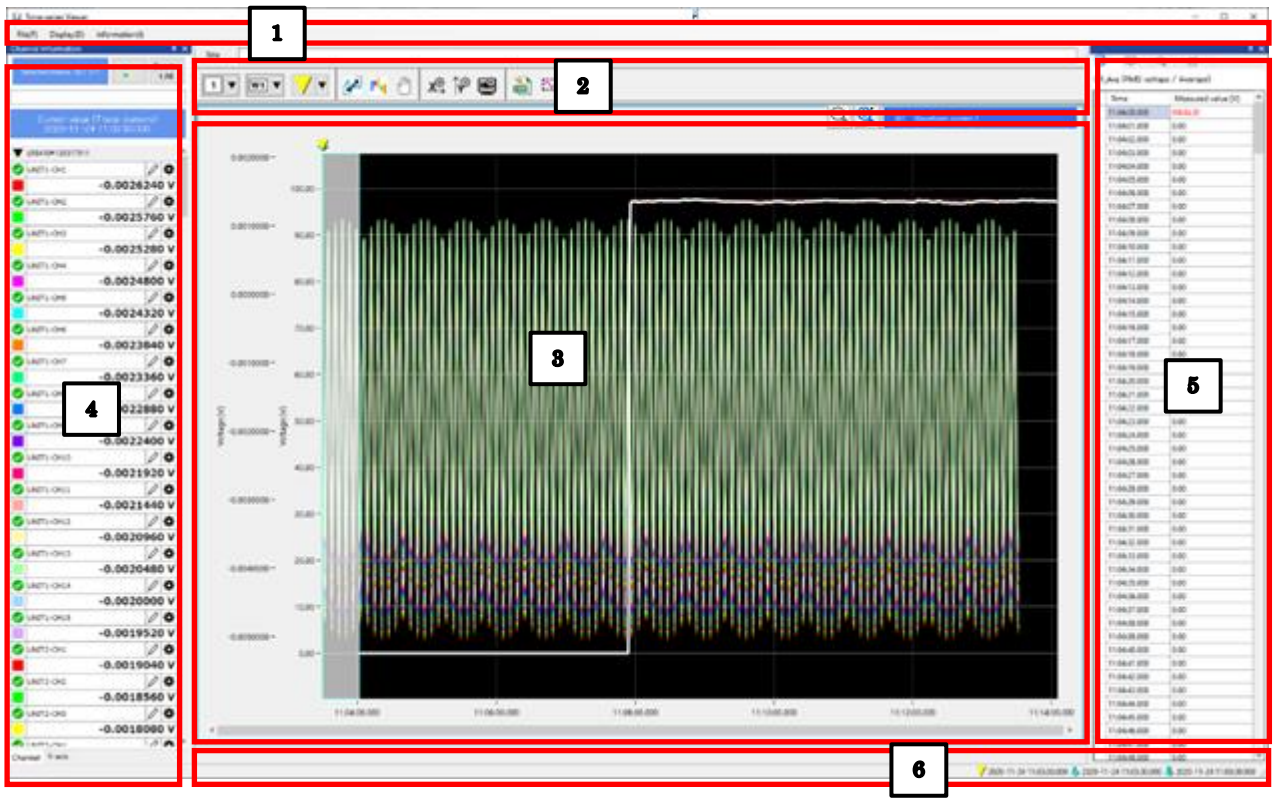
Note
*Click a measurement parameter to display a preview of the waveform that has been converted to the Time-series Viewer format at the bottom right of the screen.
*Deselect the checkbox to the left of any measurement parameter you do not wish to load into the Time-series Viewer.

6. Click the [OK] button to open the selected measurement parameters in the Time-series Viewer.

Note
*Click the [Cancel] button to cancel the measurement parameter preview and return to the [Import Measurement Files] screen.

Using the Time-series/Logging Viewer

Interface element names



No.	Name	Description	Details
1	Menu bar	The menu bar provides access to the menus used by the application.	p.64
2	Waveform tool buttons	These buttons provide access to tools for displaying and manipulating waveforms.	p.65
3	Waveform display screen	This part of the window displays waveforms. It allows you to zoom in and out, scroll, and otherwise interact with waveforms.	p.72
4	Channel Information panel	The channel information panel allows you to select measurement parameters (channels) and display and edit measured values and settings.	p.75
5	Data analysis panel	The data analysis panel allows you to analyze measurement data with functionality including the measurement Data List, Event List, waveform search, statistical analysis, and AB Cursor Value List.	p.80
6	Status bar	The status bar displays cursor information.	p.88

1 Menu Bar

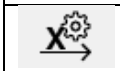
The application provides the following menu commands:

Item			Description
File	Save		Saves the current state of the Time-series Viewer.
	Exit		Exits the Time-series Viewer.
Display	Waveforms	Highlighting	Toggles waveform highlighting on and off. On: Highlight the waveform with focus. Off: Do not highlight the waveform with focus.
		Number of Views	Changes the number of views on the waveform display screen.
	Window		Toggles display of the following windows: ・Channel information ・Data analysis ・Status bar

	Cursors	Toggles display of the following cursors: ・A and B cursors ・Horizontal A and B cursors
	Events	Toggles display of the following events: ・User events ・Search events
Information	Version Information	Displays version information for the application.

②Waveform Tool Buttons

These buttons provide access to tools for displaying and manipulating waveforms.

	Name	Description	Details
	Number of Waveform Views	Changes the number of views on the waveform display screen. You can choose from the following settings: 1 view (no splitting of the screen), 2 views.	
	Switch Windows	Switches the active window on the waveform display screen among W1 through W8. For more information about window switching, see: ■ Switching Windows (p.66)	p.66
	Toggle Cursor	Switches the active cursor among the following: trace cursor, A cursor, and B cursor. For more information about how to move cursors, see: ■ Moving Cursors (p.66)	p.66
	Display All	Displays waveforms on the waveform display screen in their entirety.	
	Adjust Position	Adjusts the position of the vertical axis of the waveforms being displayed on the waveform display screen. For more information about adjusting the position, see: ■ Adjusting the Position of the Waveform's Vertical Axis (p.73)	p.73
	Move	Toggles move mode on and off. On: Dragging the mouse's left button moves (scrolls) the waveform. Off: Dragging the mouse's left button enlarges the waveform's rectangle.	
	Display Time Axis	Switches the method used to display the time axis. Absolute time: Switches the time axis display method to absolute time. The absolute time display uses the following format: Relative time (auto): Switches the time axis display method to elapsed time using the start position of each measurement parameter's waveform as the zero point. The elapsed time is displayed using units that are determined automatically based on the waveform's overall duration. Relative time (seconds): Switches the time axis display method to elapsed time using the start position of each measurement parameter's waveform as the zero point. Elapsed time is displayed in seconds. Relative time (point): The display method of the time axis changes to the number of data points starting from the start position in the waveform of each measurement item.	

Waveform's overall duration	Waveform's overall minimum interval	Display format
1 day or more	1 second or more	yyyy-MM-dd HH:mm:ss
	Less than 1 second	yyyy-MM-dd HH:mm:ss.fff
Less than 1 day	1 second or more	HH:mm:ss
	Less than 1 second	HH:mm:ss.fff

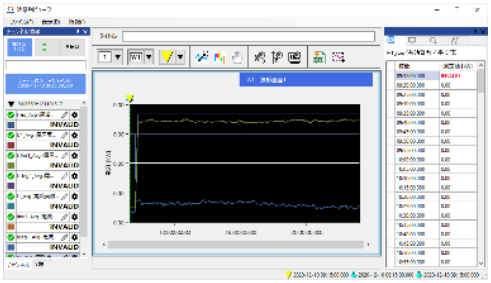
	Display Numerical Axis	Switches the method used to display the numerical axis. Separate axis for each channel: Displays a separate numerical axis for each measurement parameter (channel). Single axis for all channels: Displays a single numerical axis for all displayed measurement parameters (channels).	
	Display Settings	Configures display settings for the waveforms being displayed on the waveform display screen. For more information about display settings, see: ■ Configuring Waveform Display Settings (p.67)	p.67
	Output CSV	Outputs measurement data in CSV format. For more information about CSV output, see: ■ Outputting Measurement Data as a CSV File (p.70)	p.70
	Save Waveform Image	Copies an image of the waveforms being displayed on the waveform display screen to the clipboard. Saves an image of the waveforms being displayed on the waveform display screen to a file. For more information about saving waveform images, see: ■ Saving Waveform Images (p.71)	p.71
	Power analysis mode	Opens the [Power analysis mode] window. This button will be displayed if PW8001 measurement data contains harmonic data. For more information about power analysis mode, see ■ Displaying Power Analysis Mode (p.89).	p.89

Switching Windows

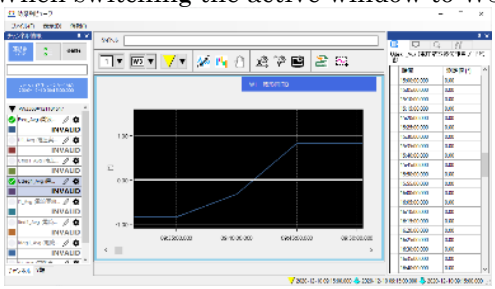
This section describes how to switch the active window on the waveform display screen among W1 through W8.
The Time-series Viewer can maintain up to eight windows with combinations of different waveforms in different display states (displayed measurement parameters or display range). By switching windows, you can call up each window's display state.

Example 1: With one waveform view

- With W1 as the active window

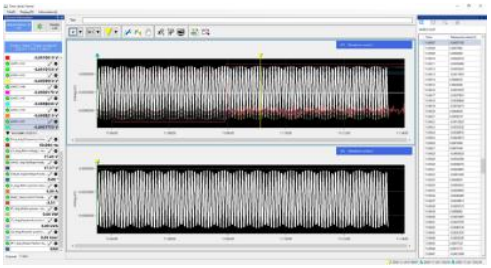


- When switching the active window to W3

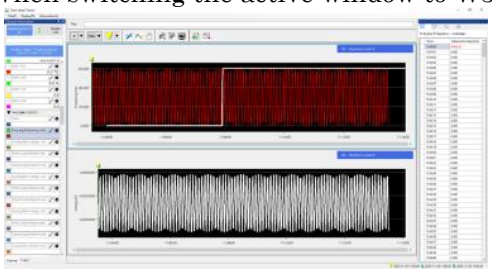


Example 2: With two waveform views

- With W1 as the active window



- When switching the active window to W3



Moving Cursors

This section describes how to switch the active cursor among the following: trace cursor, A cursor, and B cursor.

	Types of cursors	Description
	Trace cursor	This cursor is used to trace measured values.
	A cursors	These cursors are used to set ranges. There are two types: ・A and B cursors (used to set a range in the time axis direction) ・Horizontal A and B cursors (used to set a range in the numerical axis direction) Note The horizontal A and B cursors set a range in the numerical axis direction for each measurement parameter.
	B cursors	

Cursors can be moved using either of the following two methods:

Method 1: Drag the cursor mark or cursor line with the left mouse button.

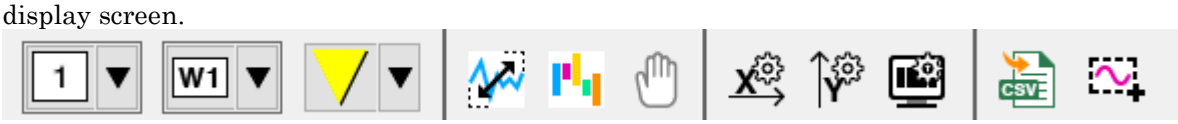
*The cursor will track measurement points for the currently active measurement parameter as it moves.

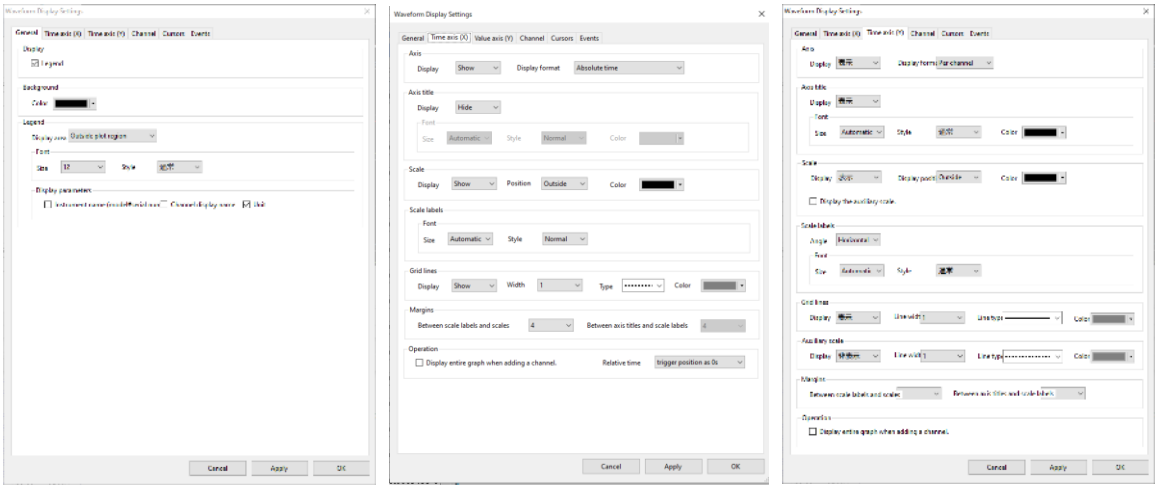
Method 2: Switch cursors with the [Toggle Cursor] button and then click the top part of the waveform display area.

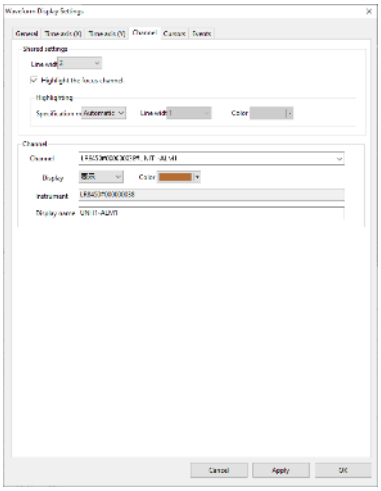
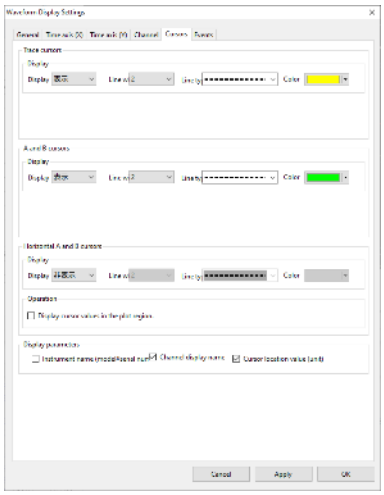
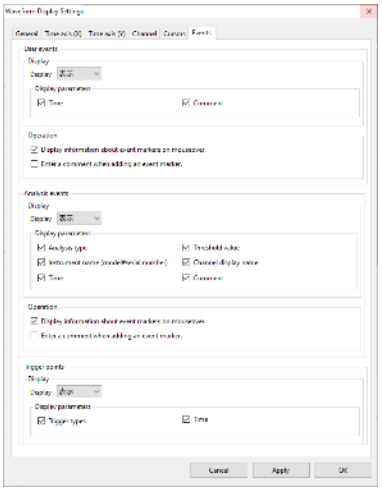
*The cursor will move to the measurement point for the measurement parameter (channel) that currently has focus that is closest to the position at which you clicked.
*The horizontal A and B cursors cannot be moved using this method.

Configuring the Display

This section describes how to configure display settings for the waveforms being displayed on the waveform display screen.





See the tables below for settings available on each screen.

■[General] tab

Setting		Description
Display	Legend	Specifies whether to display the legend on the waveform display screen.
Background	Color	Specifies the background color to use for the waveform display screen.
Legend	Display area	Specifies where to display the legend. Inside plot region Outside plot region
	Font	Specifies the font size and style to use for the legend.
	Display parameters	Specifies what to show in the legend. (Multiple values can be selected.) Instrument name (model#serial number) Channel display name Unit

■[Time axis (X)] tab

Setting		Description
Axis	Display	Specifies whether to display the axis.
	Display format	Specifies the display format to use for the axis. Absolute time Relative time
Axis title	Display	Specifies whether to display the axis title.
	Font	Specifies the font size, style, and color to use for the axis title.
Scale	Display	Specifies whether to display the scale.
	Display position	Specifies where to display the scale. Outside: Display outside the time axis. Inside: Display inside the time axis. Intersection: Display so that the scale intersects with the time axis.
	Color	Specifies the color to use for the scale.
Scale labels	Font	Specifies the font size and style to use for the scale label.
Grid lines	Display	Specifies whether to display grid lines.
	Line width	Specifies the thickness to use for grid lines.
	Line type	Specifies the line type to use for grid lines.
	Color	Specifies the color to use for grid lines.
Margins	Between scale labels and scales	Specifies the margin to leave between the scale label and scale line.
	Between axis titles and scale labels	Specifies the margin to leave between the axis title and scale label.
Operation	Display entire graph when adding a channel.	On: Change to the overall display in the time axis direction when the selected measurement parameter changes. Off: Do not change to the overall display in the time axis direction when the selected measurement parameter changes.
	Relative time	Sets the reference position for displaying 0s when the time axis format is "relative time". Trigger position as 0s The beginning as 0s

■[Numerical axis (Y)] tab

Setting		Description
Axis	Display	Specifies whether to display the axis.

	Display format	Specifies the display format to use for the axis. Per channel: Display a separate numerical axis for each measurement parameter (channel). Same for all channels: Display a single numerical axis for all displayed measurement parameters (channels).
Axis title	Display	Specifies whether to display the axis title.
	Font	Specifies the font size, style, and color to use for the axis title.
Scale	Display	Specifies whether to display the scale.
	Display position	Specifies where to display the scale. Outside: Display outside the time axis. Inside: Display inside the time axis. Intersection: Display so that the scale intersects with the time axis.
	Color	Specifies the color to use for the scale.
	Display the auxiliary scale.	Specifies whether to display the auxiliary scale.
Scale labels	Angle	Specifies the angle at which to display the scale label.
	Font	Specifies the font size and style to use for the scale label.
Grid lines	Display	Specifies whether to display grid lines.
	Line width	Specifies the thickness to use for grid lines.
	Line type	Specifies the line type to use for grid lines.
	Color	Specifies the color to use for grid lines.
Auxiliary grid lines	Display	Specifies whether to display auxiliary grid lines.
	Line width	Specifies the thickness to use for auxiliary grid lines.
	Line type	Specifies the line type to use for auxiliary grid lines.
	Color	Specifies the color to use for auxiliary grid lines.
Margins	Between scale labels and scales	Specifies the margin to leave between the scale label and scale line.
	Between axis titles and scale labels	Specifies the margin to leave between the axis title and scale label.
Operation	Display entire graph when adding a channel.	On: Change to the overall display in the value axis direction when the selected measurement parameter (channel) changes. Off: Do not change to the overall display in the value axis direction when the selected measurement parameter (channel) changes.

■[Channel] tab

Setting		Description
Shared settings	Line width	Specifies the line with to use when displaying waveforms on the waveform display screen.
	Highlighting	Specifies whether to highlight the waveform for the measurement parameter (channel) with focus.
	Highlighting--Specification method	Automatic: Use the application defaults for highlighted waveforms' line width and display color. User: Specify the line width and display color to use for highlighted waveforms.
	Highlighting--Line width	Specifies the line with to use for highlighted waveforms.
	Highlighting--Color	Specify the color to use for highlighted waveforms.
Channel	Channel	Specifies the measurement parameter (channel) to which to apply the settings.
	Display	Specifies the selection state of the measurement parameter (channel).
	Color	Specifies the waveform display color to use for the measurement parameter (channel).
	Instrument name	Displays the instrument name for the measurement parameter (channel). *This setting cannot be changed.
	Display name	Specifies the display name for the measurement parameter (channel).

■[Cursors] tab

Setting		Description
Trace cursor	Display	Specifies whether to display trace cursors and the line width, line type, and color to use when displaying them.
	Operation	Specifies whether to display cursor values in the plot region.
A and B cursors	Display	Specifies whether to display the A and B cursors and the line width, line type, and color to use when displaying them.
	Operation	Specifies whether to display cursor values in the plot region.
Horizontal A and B cursors	Display	Specifies whether to horizontal A and B cursors and the line width, line type, and color to use when displaying them.
	Operation	Specifies whether to display cursor values in the plot region.
Display parameters	Display parameters	Specifies the parameters to display as cursor values. (Multiple values can be selected.) Instrument name (model#serial number) Channel display name

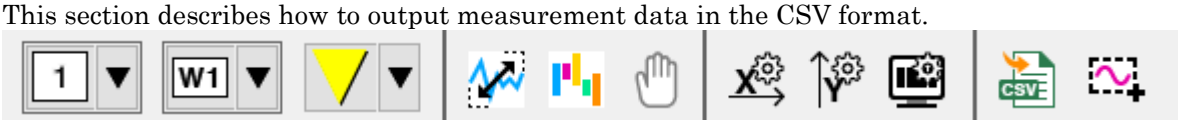
		Cursor location value (unit)

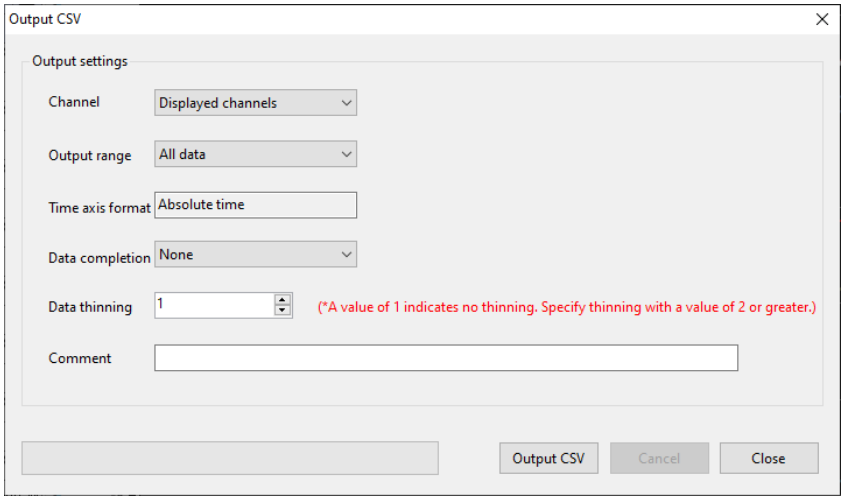
■[Events] tab

Setting		Description
User events	Display--Display	Specifies whether to display user event marks.
	Display--Display parameters	Specifies the parameters to display as user event mark information. (Multiple values can be selected.) Time Comment
	Operation	Specifies whether to enable operation related to user event marks. (Multiple values can be selected.) Display information about event marks on mouseover. Enter a comment when adding an event marker.
Search events	Display--Display	Specifies whether to display search event marks.
	Display--Display parameters	Specifies the parameters to display as search event mark information. (Multiple values can be selected.) Analysis type Threshold value Instrument name (model#serial number) Channel display name Time Comment
Trigger point marks	Display	Specifies whether to display trigger marks.
	Dislay--Display parameters	Specifies the parameters to display as trigger point mark information. (Multiple values can be selected.) Trigger type Time

Outputting Measurement Data as a CSV File

This section describes how to output measurement data in the CSV format.



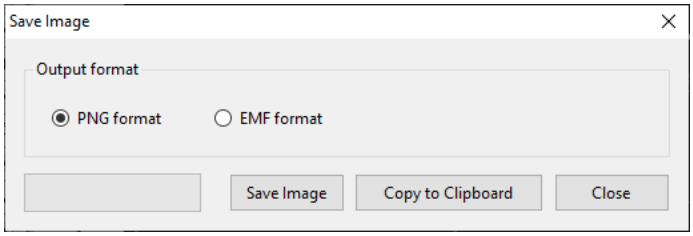


Item		Description
Output settings	Channel	Specifies the measurement parameters (channels) to output as a CSV file. Displayed channels: Of the measurement parameters (channels) loaded in the Time-series Viewer, output the measurement parameters (channels) that are being displayed on the waveform display screen. All channels: Output all measurement parameters (channels) loaded in the Time-series Viewer.
	Output range	Specifies the time range to output as a CSV file. All data: Output the entire time range. Between A and B cursors: Output the time range defined by the A and B cursors.
	Time axis format	Indicates whether the time format being output to the CSV file is absolute or relative. *This setting can be changed using the [Display Numerical Axis] button on the waveform toolbar. *This setting cannot be changed on this screen.
	Data completion	Specifies whether to complete measured values for times for which there is no measurement data before outputting data with measurement parameters (channels) with different interval times in the data being

		output. No: Do not complete measured values for times without measurement data. Complete using last measured data: Complete measured values using the last measured value for times without measurement data.
	Data thinning	Specifies whether to thin intermediate data points when outputting the data to a CSV file. This setting is not available when there are measurement parameters (channels) with different interval times in the data being output. Example: 1: No data thinning 2: Outputting 1 point for every 2 points 3: Outputting 1 point for every 3 points ...
	Number of decimal places	Specifies the number of decimal places applied to measured values.
	Comment	Specifies a comment to include in the CSV comment header.
[Output CSV] button		Outputs the data to a CSV file.
[Cancel] button		Cancels the CSV output operation.
[Close] button		Closes the dialog box.

Outputting Waveform Images

・This section describes how to copy an image of the waveforms being displayed on the waveform display screen to the clipboard.
・It also describes how to save an image of the waveforms being displayed on the waveform display screen to a file.



Item	Description
Output format	Specifies the format to use when outputting the image. PNG format: Specifies PNG as the image output format. y: Specifies EMF (enhanced metafile) as the image output format.
[Save Image] button	Saves the image to the file.
[Copy to Clipboard] button	Copies the image to the clipboard.
[Close] button	Closes the dialog box.

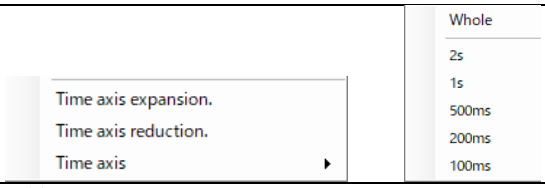
3 Waveform Display Screen

This area of the screen displays waveforms.
It allows you to zoom in and out, scroll, and otherwise interact with waveforms.

Zooming in / Zoom out / Move Waveform

This section describes how to zoom in / zoom out /move a waveform.

Operations	Descriptions
Zoom in/out (Mouse wheel)	**■Zoom in/out** - Rotate the mouse wheel on the waveform screen to expand and contract the entire waveform both vertically and horizontally. **■Zoom in/out horizontally** - Rotate the mouse wheel on the bottom 5% of the waveform screen to zoom in/out the entire waveform horizontally. - Rotate the mouse wheel on the time axis (X-axis) to zoom in/out the entire waveform horizontally. **■Zoom in/out vertically** - Rotate the mouse wheel on the 5% left side of the waveform screen to zoom in/out the entire waveform vertically. - Rotate the mouse wheel on the value axis (Y-axis) to zoom in/out vertically the entire waveform of the channel belonging to the value axis.
Zoom in (Rectangle area)	**■Zoom in** Drag the left mouse button on the waveform screen to zoom in the entire waveform with the rectangle area . **■Zoom in horizontally** Drag the left mouse button on the bottom 5% of the waveform screen to zoom in the entire waveform with the rectangle area horizontally. Drag the left mouse button on the time axis (X-axis) to zoom in the entire waveform with the rectangle area horizontally. **■Zoom in vertically** Drag the left mouse button on the 5% left side of the waveform screen to zoom in the entire waveform with the rectangle area vertically. Drag the left mouse button on the value axis (Y-axis) to zoom in with the rectangle area the entire waveform of the channel that belongs to the value axis. **■Restore rectangular expansion** Click the right mouse button on the waveform screen, and then click Restore Rectangle expansion (Restore rectangular expansion.), you can return the rectangle magnification that was executed just before.
Display All	Click on the Display All ( ) button to display the entire waveform. Double-click the left mouse button on the waveform screen to display the entire waveform. Input [ESC] key to display the entire waveform.
Zoom in and out (button)	**■Zoom in and out horizontally.** • ( ) Click the button to zoom in horizontally (time axis direction). • ( ) Click the button to shrink the image horizontally (in the time axis direction).
Zoom in and out (List)	**■Zoom in and out horizontally.** Click the right mouse button on the waveform screen and click "Time Axis Expansion" to expand the waveform in the horizontal direction (time axis direction). Click the right mouse button on the waveform screen and click the "Time Axis Shrink" button to shrink the waveform in the horizontal direction (time axis direction). Click on a time value displayed by clicking on the time axis, the section of the time value is displayed as a waveform.

	
Moving (Scroll bar)	**■Move horizontally** Move the scroll bar at the bottom of the waveform screen to move the waveform horizontally.
Moving (Keystrokes)	Move the entire waveform by keystrokes. **■Move horizontally** [Shift]+[→] key: Move the entire waveform to the right. [Shift]+[Ctrl]+[→] keys: Move the entire waveform to the right in fine increments. [Shift]+[←]: Move the entire waveform to the left. [Shift]+[Ctrl]+[←] keys: Move the entire waveform to the right in fine increments. **■Move vertically** [Shift]+[↑] keys: Move the entire waveform upwards. [Shift]+[Ctrl]+[↑] keys: Move the entire waveform upwards in fine increments. [Shift]+[↓] keys: Move the entire waveform downwards. [Shift]+[Ctrl]+[↓] keys: Move the entire waveform downward in fine increments.

Displaying the Entire Waveform

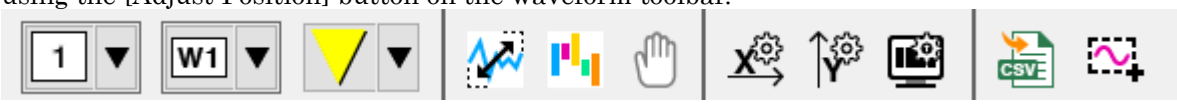
This section describes how to display waveforms in their entirety.

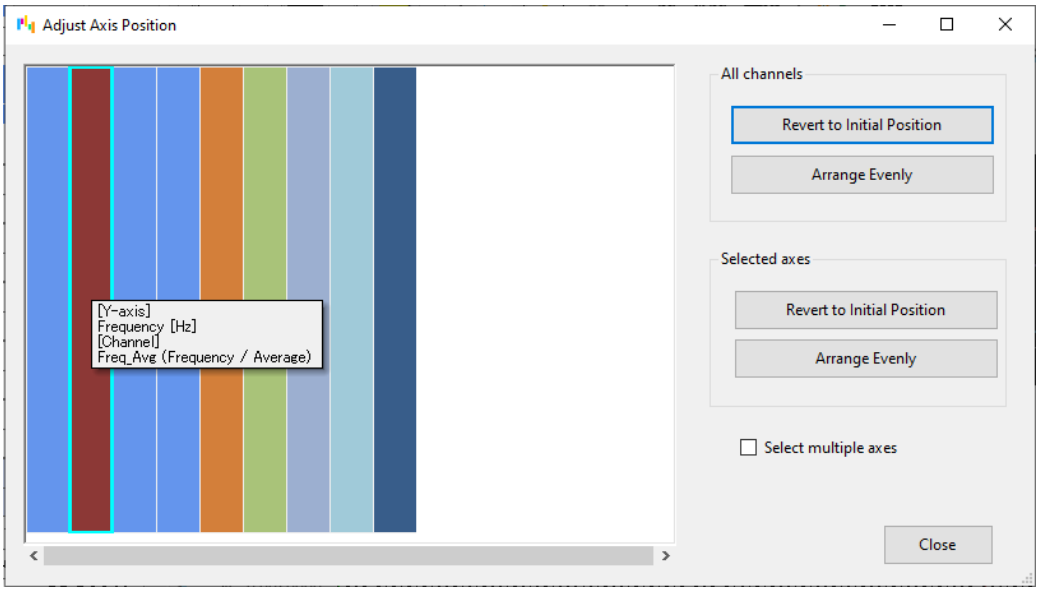
■Click the [Display All] button
Click the [Display All] button on the waveform toolbar.
The entire waveform will be displayed on the waveform display screen.

■Double-click the mouse
Double-click the left mouse button within the plot area of the waveform display screen.
The entire waveform will be displayed on the waveform display screen.

Adjusting the Position of the Waveform

This section describes how to adjust the position of the waveform displayed on the waveform display screen using the [Adjust Position] button on the waveform toolbar.





Item		Description
Axesl position adjustment area		This area has a set of scroll bars for adjusting the display range and the display position of numerical axes in the vertical direction. Adjusting the display range ・Drag the scroll bar with the left mouse button to select a measurement parameter (channel). (The selected scroll bar will gain focus and turn light blue.) ・Adjust the display range in the numerical axis direction by rotating the mouse wheel over the selected scroll bar. Adjusting the display position ・Drag the scroll bar with the left mouse button to select an axis. (The selected scroll bar will gain focus and turn light blue.) ・Adjust the display position in the numerical axis direction by dragging the left mouse button above the selected scroll bar.
All axes	Revert to Initial Position	Resets the display range and display position in the vertical direction to the full display for all axes.
	Arrange Evenly	Automatically arranges the display range and display position in the vertical direction for all axes so that they are spaced evenly.
Selected axes	Revert to Initial Position	Resets the display range and display position in the vertical direction to the full display for the selected axes.
	Arrange Evenly	Automatically arranges the display range and display position in the vertical direction for selected axes so that they are spaced evenly.
[Select multiple channels] checkbox		On: Allow multiple axis to be selected. You'll be able to adjust the position of multiple axes within the axes position adjustment area at the same time. Off: Allow only one axis to be selected at a time.
[Close] button		Closes the dialog box.

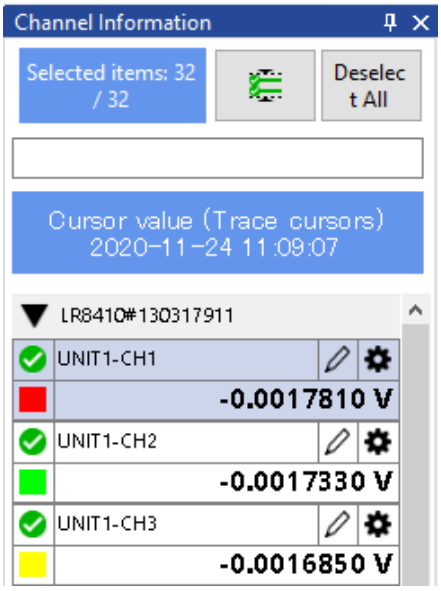
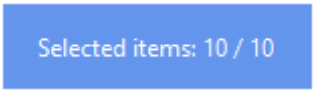
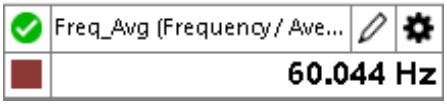
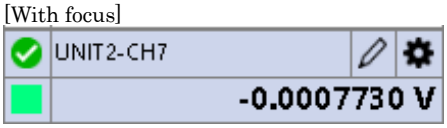
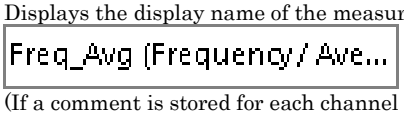
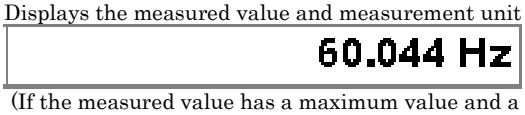
Adding, Editing, and Deleting User Event Marks

This section describes how to add, edit, and delete user event marks.
Click the right mouse button within the plot area on the waveform display screen or over a user event mark to display a context menu providing access to this functionality.

Context menu command	Description
Add a user event.	Adds a user event mark at the click location.
Edit a user event.	Edits the comment of the specified user event mark.
Delete a user event.	Deletes the specified user event mark.
Delete all user events.	Deletes all user event marks on the waveform display screen.

④Channel Information Panel

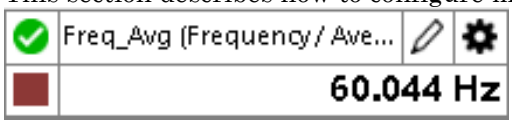
The channel information panel allows you to select measurement parameters (channels) and display or edit measured values and settings.

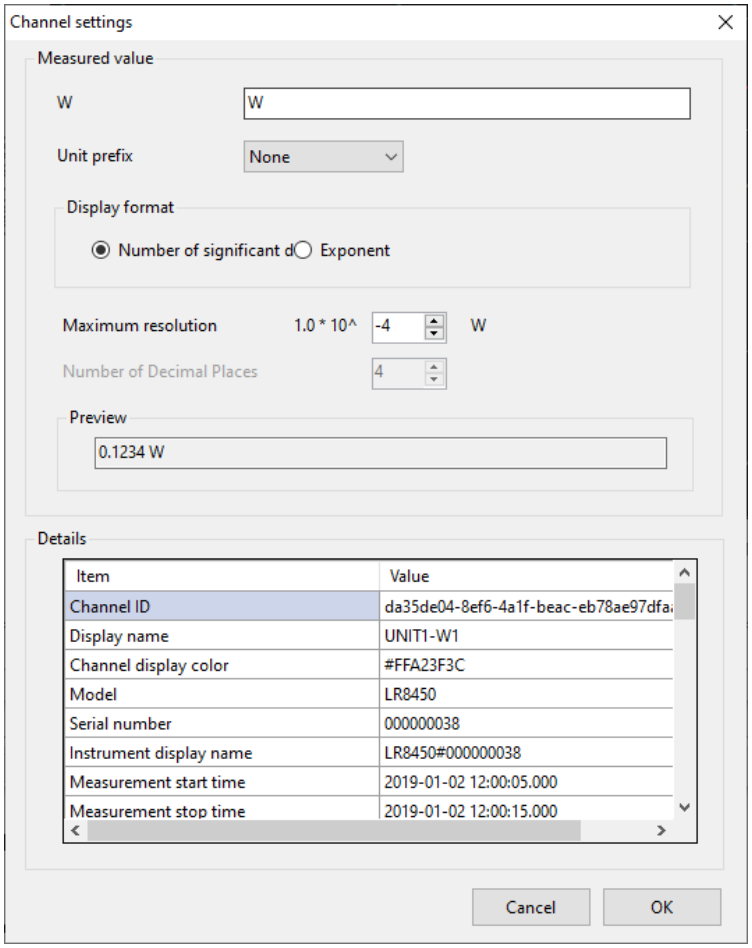
Item	Description
	■Number of selected items Displays the number of measurement parameters (channels) that have been selected on the waveform display screen. You can select up to 32 measurement parameters (channels).  ■Display only selected channels Displays only selected measurement parameters (channels).  ■Deselect All Deselects all selected measurement parameters (channels).  ■Refine Refines the parameters shown on the channel Information panel by measurement parameter display name (channel display name).  ■Cursor value display Displays cursor values for trace cursors and A/B cursors.  ■Instrument panel Displays measurement parameters (channels) grouped by instrument. You can collapse and expand the list of associated measurement parameters by clicking an instrument. 
[Without focus]  [With focus] 	■Checkbox On: Display the waveform on the waveform display screen. Off: Do not display the waveform on the waveform display screen.  ■Channel display name Displays the display name of the measurement parameter (channel).  (If a comment is stored for each channel in the data logger, the comment will appear in parentheses after the channel display name.) ■Measured value Displays the measured value and measurement unit at the cursor location.  (If the measured value has a maximum value and a minimum value, the two values will be displayed.) ■Edit channel display name Allows you to edit the display name of the measurement parameter (channel). 

	■Channel settings Configures the measurement parameter (channel). ⚙ For more information, see "Configuring Channels" (p.XX).

Configuring Channels

This section describes how to configure measurement parameters (channels).





Item		Description
Measured value	Unit	Displays and sets the measured value unit.
	Unit prefix	Displays and sets the measured value unit and unit prefix.
	Maximum resolution Number of decimal places	Displays and sets the maximum resolution for measured values. If the display format is set to [Number of significant digit] Specifies the maximum resolution for measured values regardless of the unit prefix. Specifies the value x in 1.0×10^{x}. If the display format is set to [Exponent] Specifies the number of decimal places for the mantissa of measured values expressed as exponents. 1.2345E+03 Mantissa
	Display format	Specifies the display format to use for measured values. Numuber of significant digit: Example: 0.001 Exponent: Example: 1.000E-03

	Preview	Displays a preview of how measured values will be displayed using the current settings. For more information about displayed measured values, see: ■ Measured Value Settings and Displayed Measured Values (p.77)
Details		Provides detailed information about the measurement parameter (channel).

Measured Value Settings and Displayed Measured Values

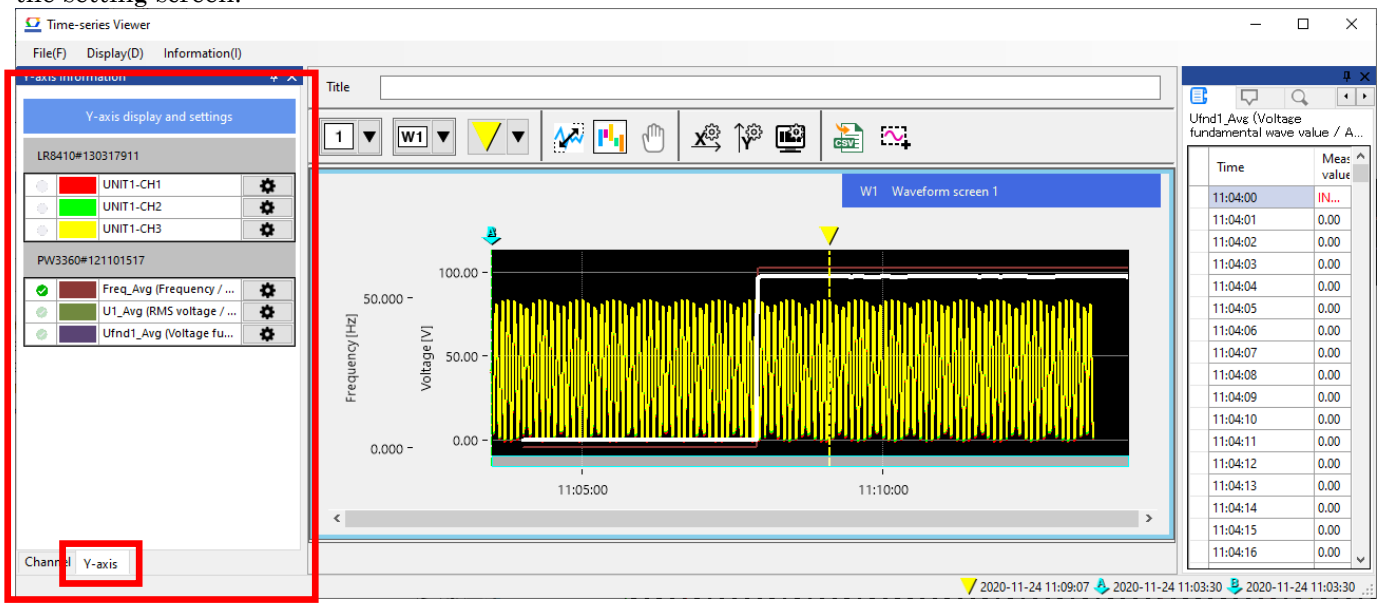
This section provides several examples of the relationship between measured value settings and displayed measured values.

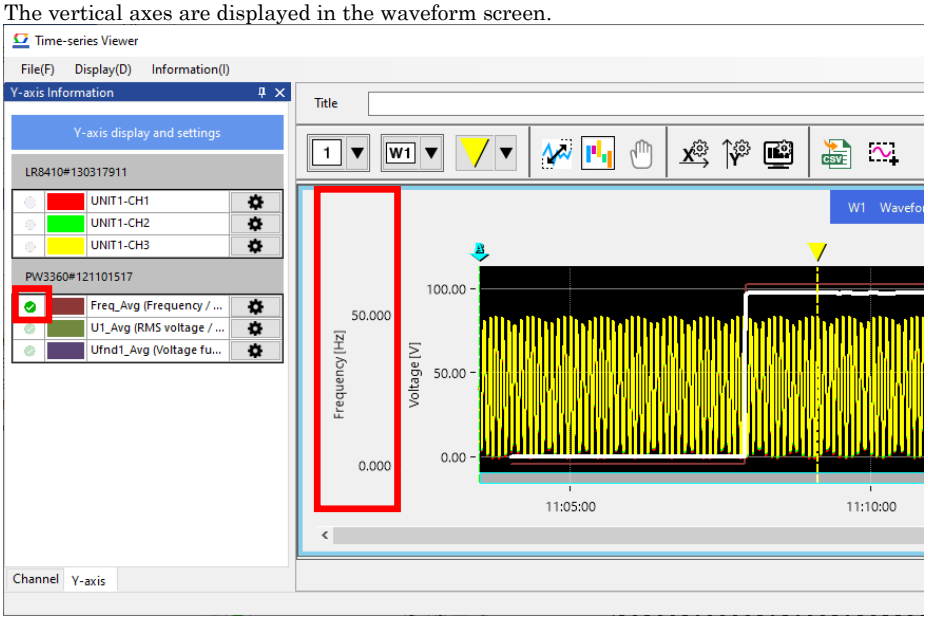
	Measured value (*1)	Measured value settings		Displayed measured value
Example 1	123.45 V	Unit prefix	None	123.5 V
		Display format	Decimal	
		Maximum resolution	-1	
Example 2	1234.56 W	Unit prefix	None	1234.6 W
		Display format	Decimal	
		Maximum resolution	-1	
Example 3	1234.56 W	Unit prefix	k	1.2346 kW
		Display format	Decimal	
		Maximum resolution	-1	
Example 4	0.123456 V	Unit prefix	None	123.46E-03 V
		Display format	Exponent	
		Number of decimal places	2	
Example 5	0.123456 V	Unit prefix	m	123.46E+00 mV
		Display format	Exponent	
		Number of decimal places	2	

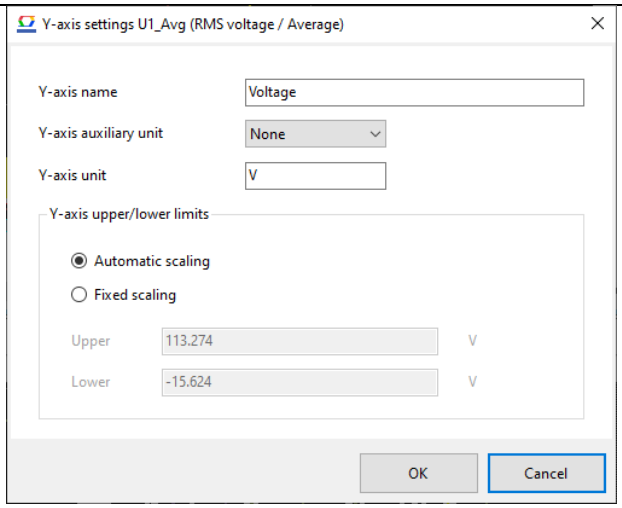
*1 Indicates measured values regardless of the unit prefix.

Changing the display of value axes (vertical axes).

This section describes how to change the display of the vertical axes.
Click the [Y-Axis] tab of the [Channel Information] screen to display the [Y Axis Settings] screen.
You can also right-click on the waveform screen and select [Display Y-axis setting] in the menu to display the setting screen.



Operations	Descriptions
Show multiple vertical axes	Select the check box of the channel which you want to display new vertical axis. All groups of channels that belong to the same vertical axis as the selected channel are selected. The vertical axes are displayed in the waveform screen.  * You cannot turn off the display of the vertical axis that has the current focus on the waveform screen.
Change the display settings for the vertical axis	Click the [Settings] button . The [Vertical Axis Settings] screen is displayed.



Change the vertical axis name and/or other settings.
Click the OK button to change the vertical axis display settings.

Grouping of vertical axis

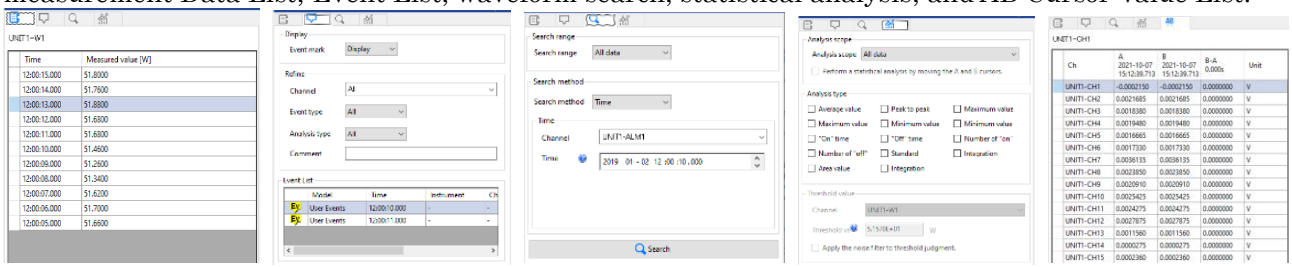
In this viewer, the vertical axes are grouped by the settings of each channel.
See below for the relationship between each channel's settings and the vertical axes.

For automatic scale			
Channel settings		Corresponding features	Vertical axis
-1.	Axis name	Vertical Axis Configuration (p.78)	Consider all channels that match settings to be on the same value axis.
-2.	Unit prefix	Vertical Axis Configuration (p.78) Channel settings (p.76)	
-3.	Unit	Vertical Axis Configuration (p.78) Channel settings (p.76)	
-4.	Display format (Significant Digits / Exponent)	Channel settings (p.76)	
-5.	Resolution	Channel settings (p.76)	
-6.	Number of Decimal Places	Channel settings (p.76)	

For a fixed scale			
Channel settings		Corresponding features	Vertical axis
-1.	Axis name	Vertical Axis Configuration (p.78)	Consider all channels that match settings to be on the same value axis
-2.	Unit prefix	Vertical Axis Configuration (p.78) Channel settings (p.76)	
-3.	Unit	Vertical Axis Configuration (p.78) Channel settings (p.76)	
-4.	Display format (Significant Digits / Exponent)	Channel settings (p.76)	
-5.	Resolution	Channel settings (p.76)	
-6.	Number of Decimal Places	Channel settings (p.76)	
-7.	Upper limit	Vertical Axis Configuration (p.78)	
-8.	Lower limit	Vertical Axis Configuration (p.78)	

5 Data Analysis Panel

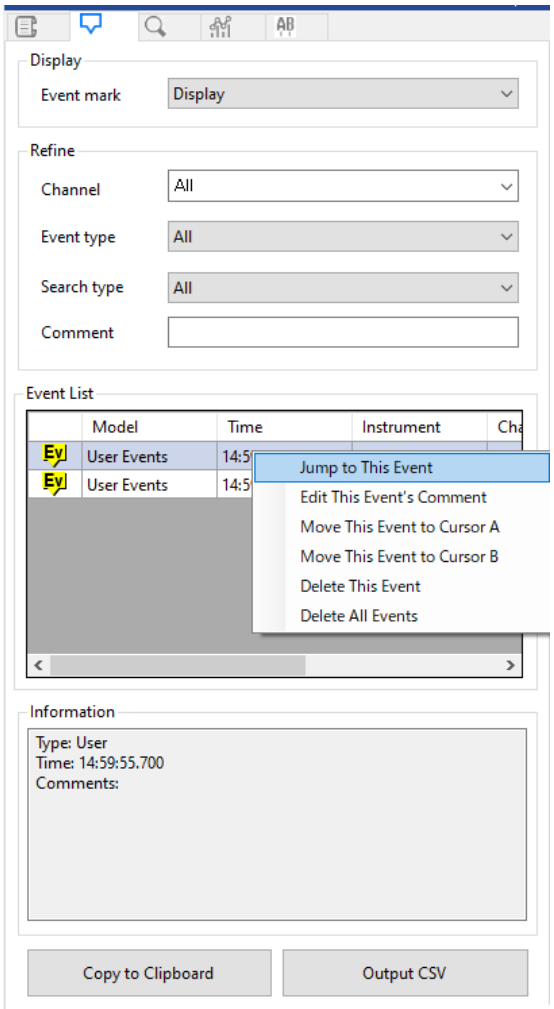
The data analysis panel allows you to analyze measurement data with functionality including the measurement Data List, Event List, waveform search, statistical analysis, and AB Cursor Value List.



Panel name	Description
Measurement Data List	Displays measurement data for each measurement parameter (channel) as a list. Measurement data for the measurement parameter (channel) that currently has focus on the waveform display screen or channel information screen will be shown.
Event List	Allows you to display, edit, search for, and delete events added with the Time-series Viewer. For more information about the Event List, see: * Displaying, Editing, Searching for, and Deleting Events (p.80)
Search	Searches the waveform for each measurement parameter (channel) being displayed on the waveform display screen. For more information about search functionality, see: * Searching Waveforms (p.82)
Analysis	Performs statistical analysis for the measurement parameters (channels) being displayed on the waveform display screen. For more information about analysis functionality, see: * Performing Statistical Analysis (p.85)
AB Cursor Value List	AB Cursor Value List Displays the AB cursor value of the measurement item (channel) displayed on the waveform display screen. The channel name, A cursor value, B cursor value, B-A value, and unit are displayed. For more information about the AB Cursor Value List, see * AB Cursor Value List (p.88).

Displaying, Editing, Searching for, and Deleting Events

This section describes how to display, edit, search for, and delete events added with the Time-series Viewer.
For more information about how to add event marks to the Time-series Viewer, see:
* Adding, Editing, and Deleting User Event Marks (p.74)
* Searching Waveforms (p.82)



Item		Description
Display	Event mark	Toggles display of event marks on the waveform display screen.
Refine	Channel	Refines the Event List by measurement parameters (channels).
	Event type	Refines the Event List by event type. All User events Analysis events
	Analysis type	Refines the Event List by analysis type. All Time Maximum position Minimum position Maximum local position Minimum local position Level Window Amount of change
	Comment	Refines the Event List by comment.
Event List	Event List	Displays events as a list. The list includes each event's type, time, instrument name, channel display name, analysis type, and comment.
	Context menu	The following context menu commands are available for the Event List: ■Jump to This Event Jumps to the selected event position on the waveform display screen. ■Edit This Event's Comment Edits the comment for the selected event. ■Move Cursor A to This Event Moves the A cursor to the selected event position. ■Move Cursor B to This Event Moves the B cursor to the selected event position. ■Delete This Event Deletes the selected event. ■Delete All Events Deletes all events in the Event List.
Information		Displays information about the selected event.
[Copy to clipboard] button		Copies information about the selected event to the clipboard.
[Output CSV] button		Output information about the selected event to the CSV file.

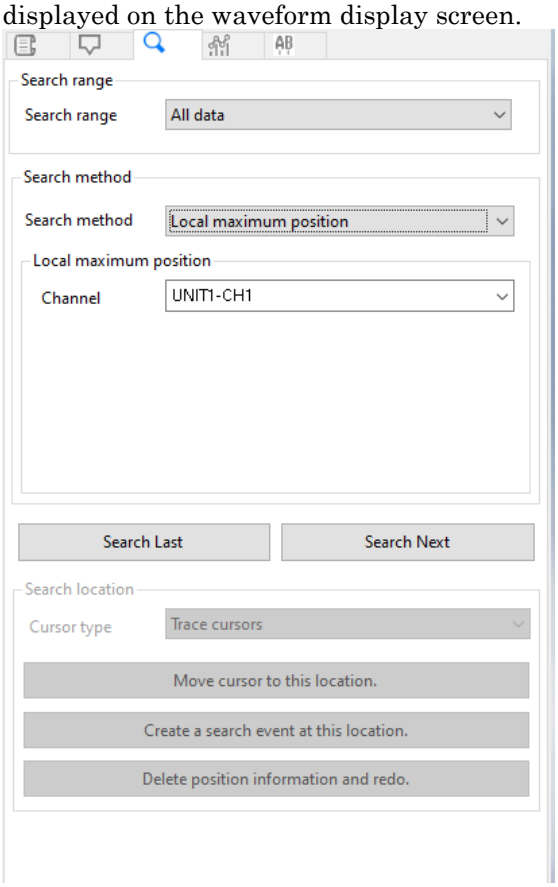
User Event Marks and Search Event Marks

This section describes user event marks and analysis event marks.

Item		Description
	User event mark	This mark indicates events that are set at a user-specified location on the waveform display screen. A separate Event List is maintained for user events on each of the waveform windows (W1 through W8). Time and comment information is stored for each event. *Switching between [Relative time] and [Absolute time] under the [Time axis display] settings causes all user events for the window in question to be deleted. For more information about how to add user event marks to the Time-series Viewer, see: ■ Adding, Editing, and Deleting User Event Marks (p.74)
	Search event mark	This mark indicates events that are set for individual measurement parameters. Time, instrument, channel, analysis type, and comment information is stored for each event. For more information about how to add search event marks to the Time-series Viewer, see: ■ Searching Waveforms (p.82)

Searching Waveforms

This section describes how to search the waveform for each measurement parameter (channel) being displayed on the waveform display screen.



Item	Description
Search range	Specifies the search range. All data: Output the entire time range. Between A and B cursors: Search the time range defined by the A and B cursors.
Search method	Specifies the search method. The following methods can be specified: Time, Maximum position, Minimum position, Maximum local position

		Minimum local position Level Window Amount of change For more information about search methods, see: ■ Search Methods (p.83)
Search location	Cursor type	Specifies the cursor type. Trace cursor A cursor B cursor
	[Move Cursor to This Location] button	Moves the cursor to the search location.
	[Create Search Event at This Location] button	Creates an search event at the search location.
	[Delete Position Information and Redo] button	Deletes the search position information and repeats the search.

Search Methods

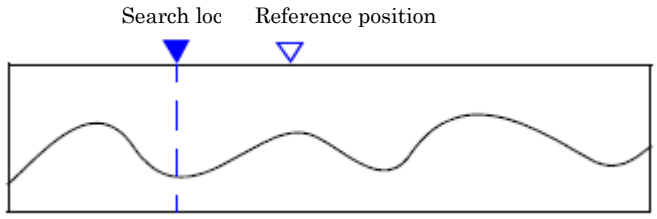
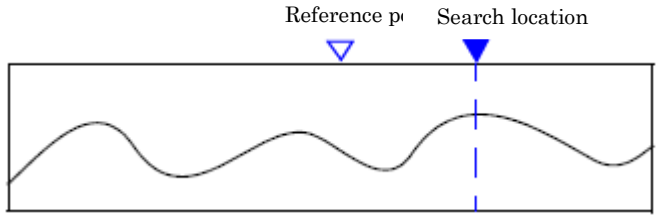
■Time

Item	Description
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
Time	Specifies a time.
[Search] button	Performs the search. A search point (flag mark) will be created at the specified time position.

■Maximum position, minimum position

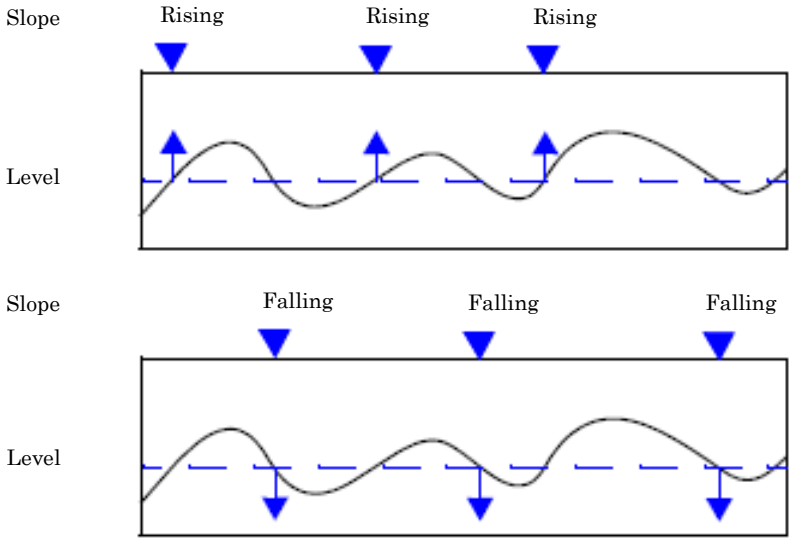
Item	Description
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
[Search] button	Performs the search. A search point (flag mark) will be created at the maximum position or minimum position for the specified measurement parameter (channel).

■Local maximum position, minimum maximum position

Item	Description
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
[Search Last] button	Searches for the local maximum position or local minimum position for the specified measurement parameter (channel). A search position (flag mark) will be created at the local maximum position or local minimum position that exists before the current search position (which serves as the reference position). 
[Search Next] button	Searches for the local maximum position or local minimum position for the specified measurement parameter (channel). A search position (flag mark) will be created at the local maximum position or local minimum position that exists after the current search position (which serves as the reference position). 

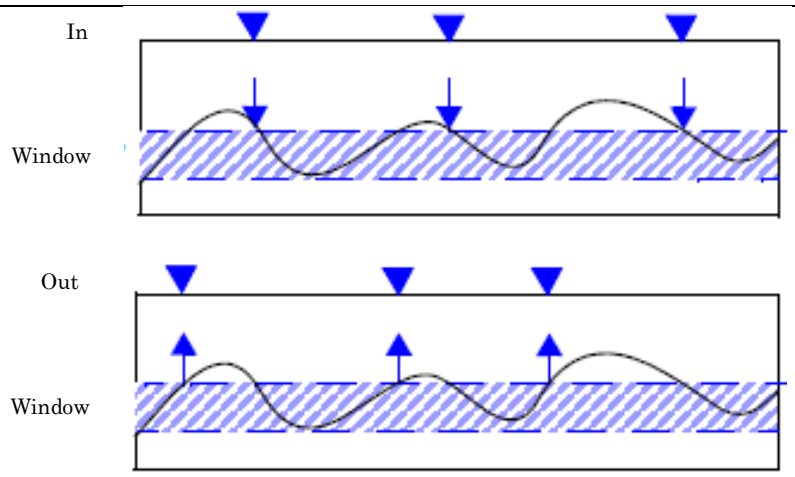
■Level

Item	Description

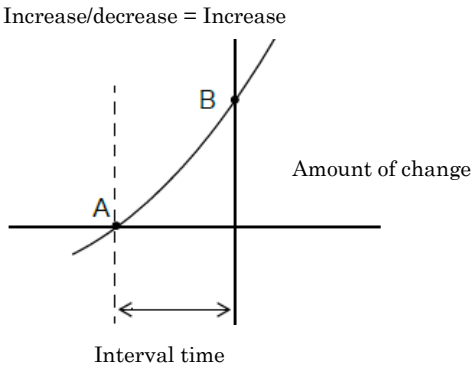
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
Level	Sets the level (threshold value). You can also set the level by moving the position of the horizontal A cursor on the waveform display screen.
Slope	Sets the slope. Rising: Search for the position at which the waveform crosses the specified level in the rising direction. Falling: Search for the position at which the waveform crosses the specified level in the falling direction.
[Search Last] button	Searches for the position at which the waveform crosses the specified measurement parameter (channel) level. A search position (flag mark) will be created at the level position that exists before the current search position (which serves as the reference position).
[Search Next] button	Searches for the local maximum position or local minimum position for the specified measurement parameter (channel). A search position (flag mark) will be created at the level position that exists after the current search position (which serves as the reference position).
Remarks	

■Window

Item	Description
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
Upper limit value	Sets the upper limit value. You can also set the upper limit value by moving the position of the horizontal A cursor on the waveform display screen.
Lower limit value	Sets the lower limit value. You can also set the lower limit value by moving the position of the horizontal B cursor on the waveform display screen.
In/out	Searches for the position at which the specified measurement parameter (channel) enters (exits) the window area specified by upper and lower limit values. In: Searches for the position at which the waveform enters the window area. Out: Searches for the position at which the waveform exits the window area.
[Search Last] button	Searches for the position at which the waveform crosses the specified measurement parameter (channel) level. A search position (flag mark) will be created at the window position that exists before the current search position (which serves as the reference position).
[Search Next] button	Searches for the local maximum position or local minimum position for the specified measurement parameter (channel). A search position (flag mark) will be created at the window position that exists after the current search position (which serves as the reference position).
Remarks	

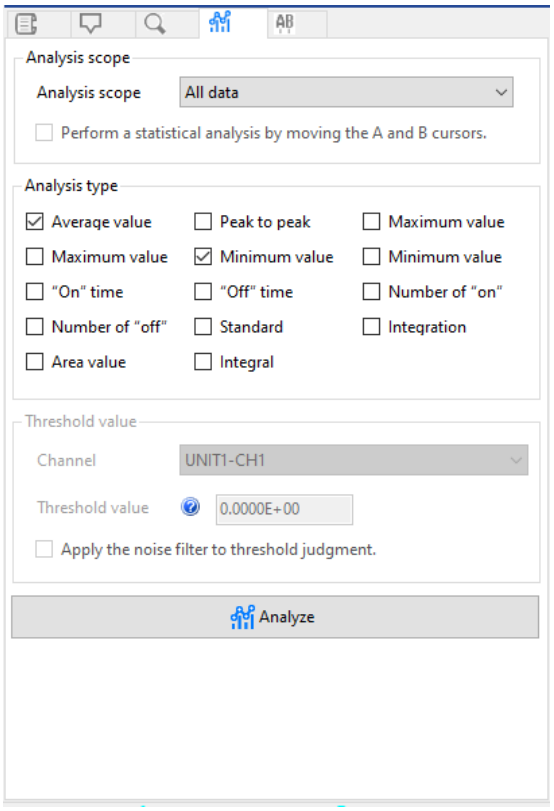
	

■Amount of change

Item	Description
Channel	Specifies a measurement parameter (channel). You can select any measurement parameter (channel) displayed on the waveform display screen.
Amount of change	Sets the amount of change. Searches for a position at which the waveform has changed by an amount that is greater than or equal to the amount of change specified during one interval.
Interval	Displays the interval time for the specified measurement parameter (channel). This setting cannot be changed.
Increase/decrease	Specifies the type (increase/decrease). Increase: Searches for the position at which the waveform has increased by an amount that is greater than or equal to the specified amount of change. Decrease: Searches for the position at which the waveform has decreased by an amount that is greater than or equal to the specified amount of change.
[Search Last] button	Searches for a position at which at which the specified measurement parameter (channel) has changed by an amount that is greater than or equal to the amount of change. A search position (flag mark) will be created at the change position that exists before the current search position (which serves as the reference point).
[Search Next] button	Searches for the local maximum position or local minimum position for the specified measurement parameter (channel). A search position (flag mark) will be created at the change position that exists after the current search position (which serves as the reference point).
Remarks	

Performing Statistical Analysis

This section describes how to perform statistical analysis for the measurement parameters (channels) being displayed on the waveform display screen.

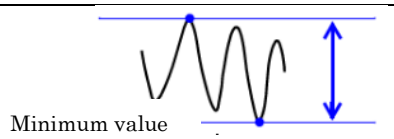
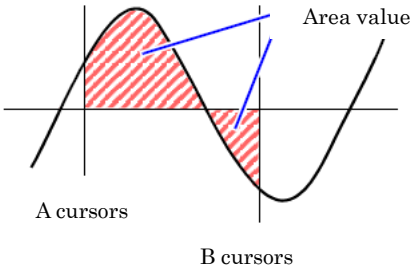


Item		Description
Analysis scope	Analysis scope	Specifies the analysis scope. All data: Analyze the entire time range. Between A and B cursors: Analyze the time range defined by the A and B cursors.
	The statistical analysis is performed by moving the A and B cursors.	On: Perform a statistical analysis at the time to which the A and B cursors were moved. Off: Perform a statistical analysis at the time the [Analyze] button was clicked.
Analysis type		Specifies the type of analysis to perform. The following analyses can be specified: Average value, Peak-to-peak value, Maximum value, Maximum value time, Minimum value, Minimum value time, Number of "on" events, "On" time, Number of "off" events, "Off" time, Standard deviation, Integration, Area value, Integral For more information about analysis types, see: ■ Types of Statistical Analysis (p.86)
[Analyze] button		Performs a statistical analysis using the specified range and analysis type.

Types of Statistical Analysis

Model	Description
Average value	Calculates the average value of the waveform data. $AVE = \frac{1}{n}\sum_{i=1}^{n} di$ AVE : Average value n : Number of data points di : ith data point
Peak-to-peak value	Calculates the value between the maximum value and the minimum value (peak-to-peak value).

Maximum value

	
Maximum value	Calculates the maximum value of the waveform data.
Maximum value time	Calculates the time at which the waveform data reached the maximum value.
Minimum value	Calculates the minimum value of the waveform data.
Minimum value time	Calculates the time at which the waveform data reached the minimum value.
Number of "on" events	Counts how many times the waveform data's measured value rose above the threshold value.
"On" time	Calculates the time for which the waveform data's measured value rose above the threshold value.
Number of "off" events	Counts how many times the waveform data's measured value fell below the threshold value.
"Off" time	Calculates the time for which the waveform data's measured value fell below the threshold value.
Standard deviation	Calculates the standard deviation for the waveform data. $\sigma = \sqrt{\frac{1}{n}\sum_{i=1}^{n}(di - AVE)^2}$ σ : Standard deviation AVE : Average value n : Number of data points di : ith data point
Integration	Calculates the integrated value for the waveform data. $SUM = \sum_{i=1}^{n} di$ SUM : Integrated value n : Number of data points di : ith data point
Area value	Calculates the area enclosed by the waveform data's zero position and the waveform. When the A and B cursors have been specified, calculates the area between the A and B cursors. $S = \sum_{i=1}^{n} \lvert di \rvert \bullet h$ S : Area value n : Number of data points di : ith data point $h = \Delta t$: Interval time 
Integral value	Calculates the integral for the waveform data. $INT = \sum_{i=1}^{n} di \times \Delta t$ INT : Integral value n : Number of data points di : ith data point Δt : Interval time

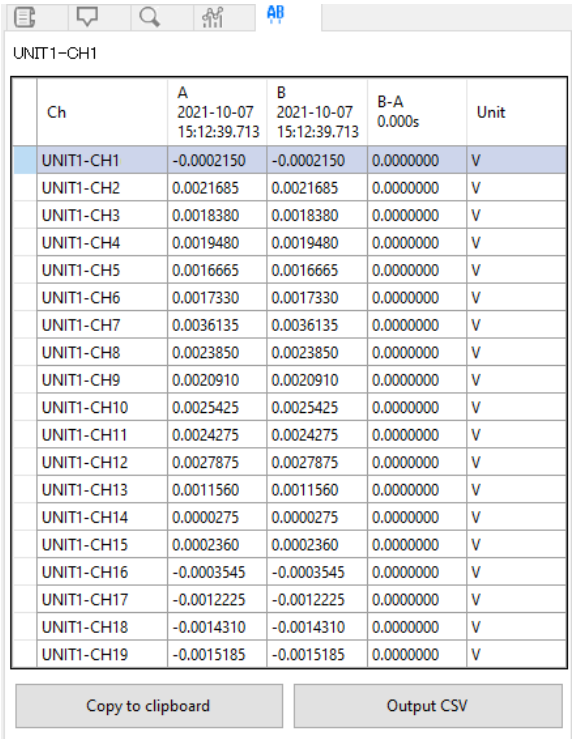
■Setting Threshold Values

When calculating the number of "on" events, "on" time, number of "off" events, and "off" time, you must set a threshold for each measurement parameter (channel).

Item	Description
Channel	Specifies the channel (measurement parameter) for which the threshold is being set.
Threshold value	Specifies the threshold for the specified channel. You can also set the upper limit value by moving the position of the horizontal A cursor on the waveform display screen.
Apply the noise filter to threshold judgment.	On: Once the measured value crosses the threshold, do not perform on/off judgment again until the measured value has not crossed the threshold for 10 intervals. Off: Perform on/off judgment whenever the measured value crosses the threshold.

AB Cursor Value List

Displays the AB cursor value of the measurement item (channel) displayed on the waveform display screen.

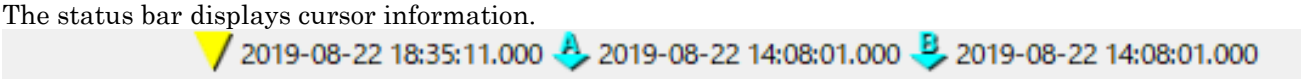


Ch	A 2021-10-07 15:12:39.713	B 2021-10-07 15:12:39.713	B-A 0.000s	Unit
UNIT1-CH1	-0.0002150	-0.0002150	0.0000000	V
UNIT1-CH2	0.0021685	0.0021685	0.0000000	V
UNIT1-CH3	0.0018380	0.0018380	0.0000000	V
UNIT1-CH4	0.0019480	0.0019480	0.0000000	V
UNIT1-CH5	0.0016665	0.0016665	0.0000000	V
UNIT1-CH6	0.0017330	0.0017330	0.0000000	V
UNIT1-CH7	0.0036135	0.0036135	0.0000000	V
UNIT1-CH8	0.0023850	0.0023850	0.0000000	V
UNIT1-CH9	0.0020910	0.0020910	0.0000000	V
UNIT1-CH10	0.0025425	0.0025425	0.0000000	V
UNIT1-CH11	0.0024275	0.0024275	0.0000000	V
UNIT1-CH12	0.0027875	0.0027875	0.0000000	V
UNIT1-CH13	0.0011560	0.0011560	0.0000000	V
UNIT1-CH14	0.0000275	0.0000275	0.0000000	V
UNIT1-CH15	0.0002360	0.0002360	0.0000000	V
UNIT1-CH16	-0.0003545	-0.0003545	0.0000000	V
UNIT1-CH17	-0.0012225	-0.0012225	0.0000000	V
UNIT1-CH18	-0.0014310	-0.0014310	0.0000000	V
UNIT1-CH19	-0.0015185	-0.0015185	0.0000000	V

AB Cursor Value List	Displays the channel name, A cursor value, B cursor value, B-A value, and unit. (If the measured value has a maximum value and a minimum value, the two values will be displayed in two lines.
Copy to clipboard	Copies the contents of the AB Cursor Value List to the clipbord.
Output CSV	Outputs the contents of the AB Cursor Value List to a file.

6 Status Bar

The status bar displays cursor information.

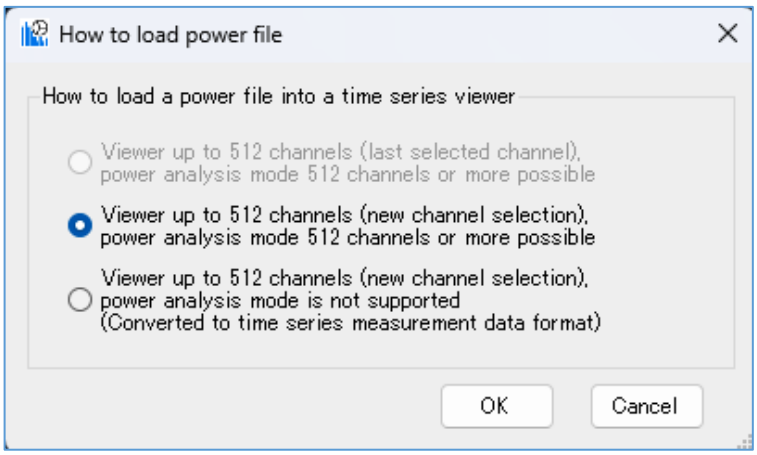


Displaying Power Analysis Mode (PW8001 only)

You can view data in power analysis mode if the measurement data loaded by the Time-series Viewer contains harmonic measurement data.
To use power analysis mode, you must be using GENNECT One Ver. 5.20 or later.

1. Click the [Power Analysis] tool button in the Time-series Viewer.

2. Select how to open the power quality analyzer measurement data.



Option	Description
Last selected channel	Displays the measurement parameters selected when power analysis mode was last opened in the Time-series Viewer. All harmonic data saved in the power quality analyzer measurement data will be displayed in power analysis mode.
New channel selection (up to 512 channels)	Allows you to select new parameters for up to 512 channels to display in the Time-series Viewer. All harmonic data saved in the power quality analyzer measurement data will be displayed in power analysis mode.
New channel selection (Converted to time series measurement data format)	Allows you to select new parameters for up to 512 channels to display in the Time-series Viewer. This selection is not supported in power analysis mode.

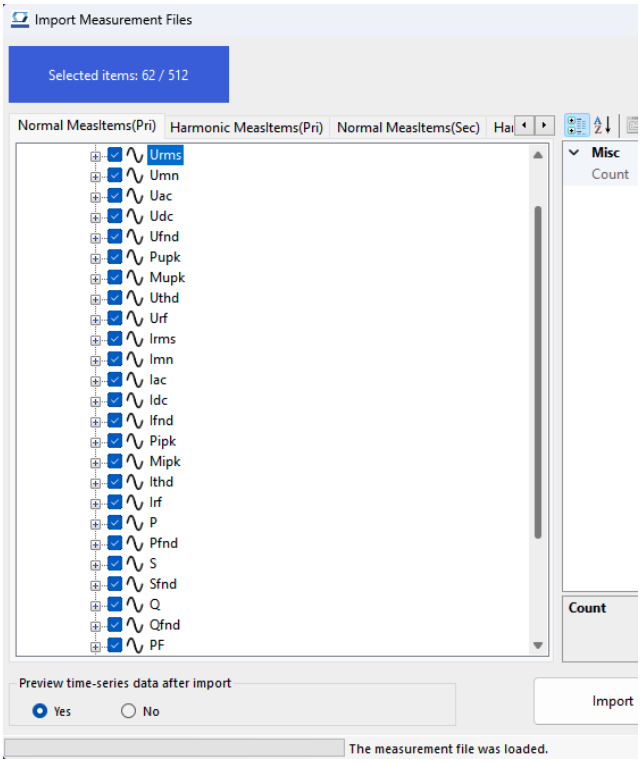
3. Select the measurement parameters you wish to import to the Time-series Viewer.

   Regardless of which parameters are selected here, you can review saved harmonic data on the power analysis function screen.

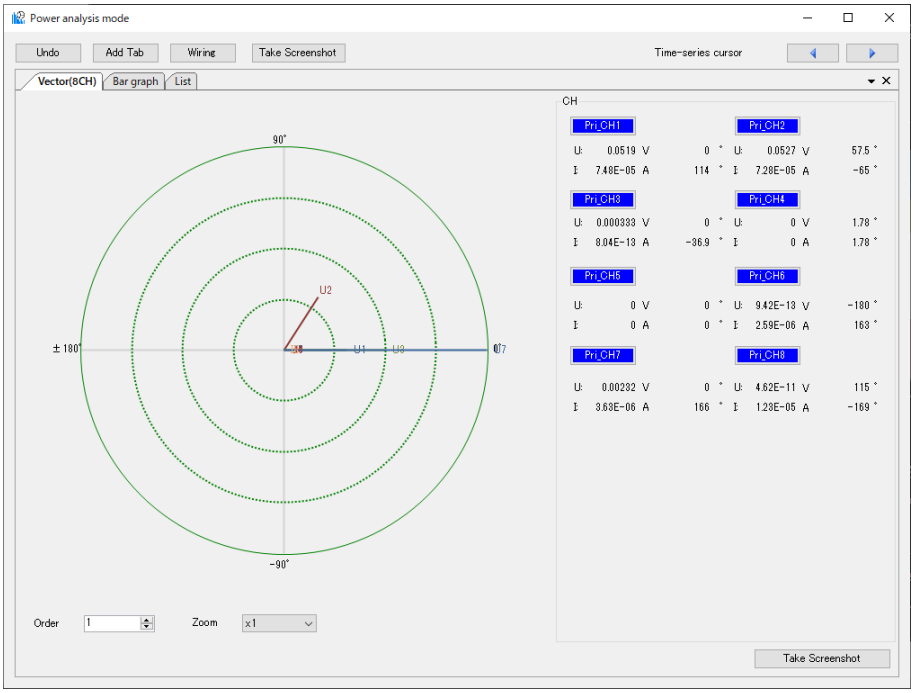
   PW8001 measurement parameters are shown on the [Basic measurement parameters] and [Harmonic measurement parameters] tabs.

   For optically synchronized data, primary-side measurement parameters are shown on the [Basic measurement parameters (Pri)] and [Harmonic measurement parameters (Pri)] tabs, while secondary-side measurement parameters are shown on the [Basic measurement parameters (Sec)] and [Harmonic measurement parameters (Sec)] tabs. (The PW8001's optically synchronized measurement function is

available in firmware versions Ver. 2.00 and later.)



4. The [Power analysis mode] window will be displayed.



Supported model(s)

Power Quality Analyzer PW8001

Notes

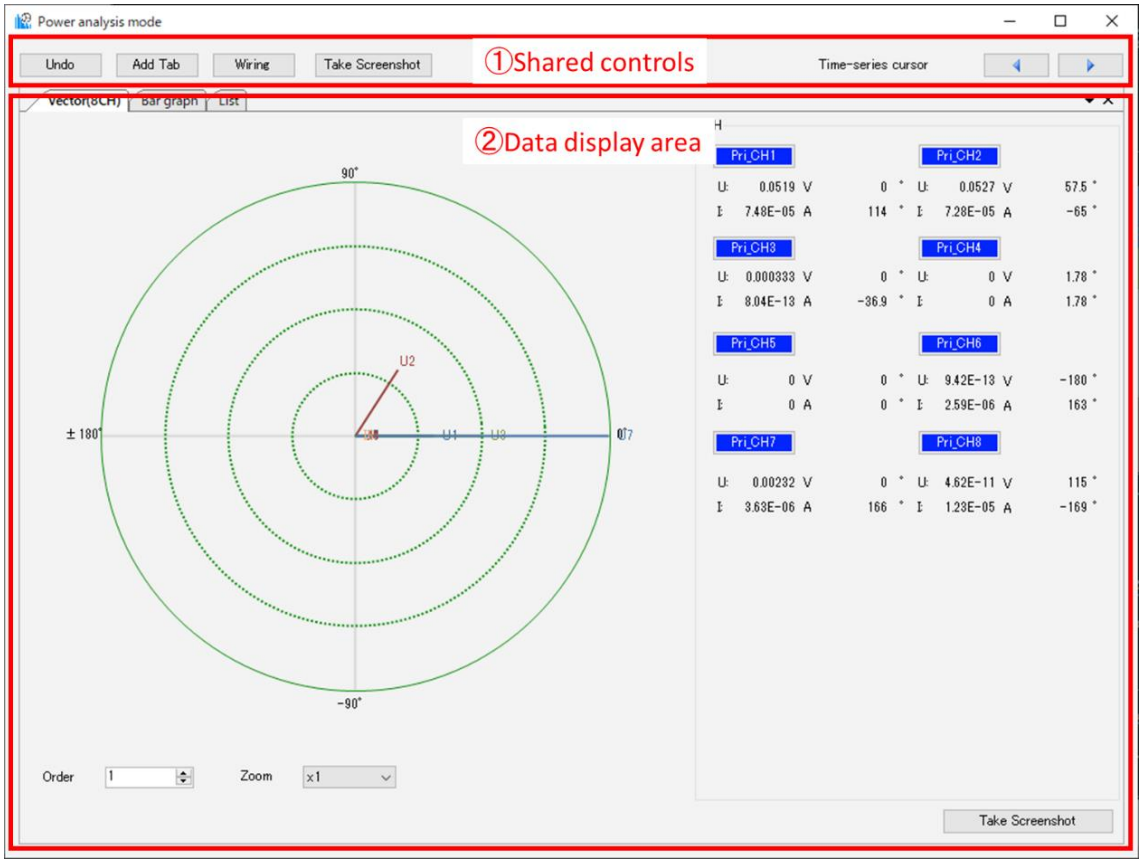
·This function button will not be displayed if the BIN file for the loaded PW8001 power quality analyzer measurement data does not contain harmonic data.

Harmonic data not saved in the BIN file will be treated as being in a "data empty" state and will not be displayed by the power analysis function. Only saved parameters and orders will be displayed.

·This function button will not be displayed if BIN files for multiple sets of PW8001 power quality analyzer measurement data have been selected in the data list.
·This function button will not be displayed if time-series measurement data created with GENNECT One was opened.
·If the connection settings differ from the power quality analyzer's connection settings, the application will not be able to generate an accurate display. Wiring settings will be automatically applied for BIN files saved by PW8001 firmware Ver. 1.53 and later.
·Processing to open large files is time-consuming.

Window Layout

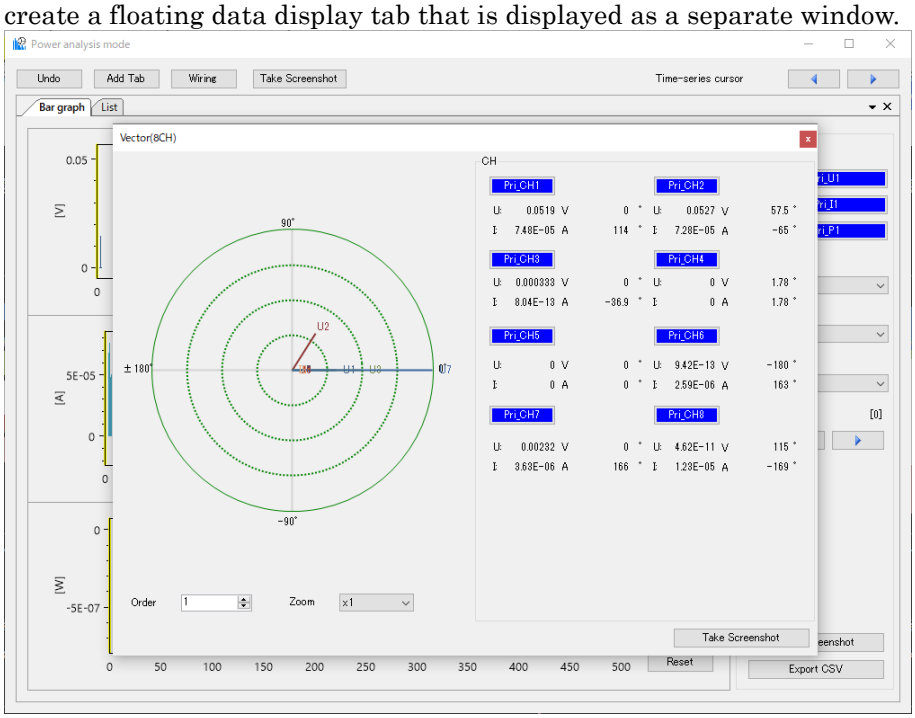
The window layout shown below is used for power analysis mode.
The names and functions of interface elements are described.



Name	Functionality
① Shared controls	Displays shared controls for the [Power analysis mode] window. Use these controls to configure connection settings, add data display tabs, revert data display tabs to their previous positions, and make cursor movements in the Time-series Viewer. For more information, see the following: ➢ Configuring connection Settings
② Data display area	Displays harmonic data from the loaded power quality analyzer measurement data. The display includes harmonic vectors, harmonic bar graphs, and a list of harmonic values. The harmonic data window can be positioned as desired. For more information, see the following: ➢ Viewing Harmonic Vectors

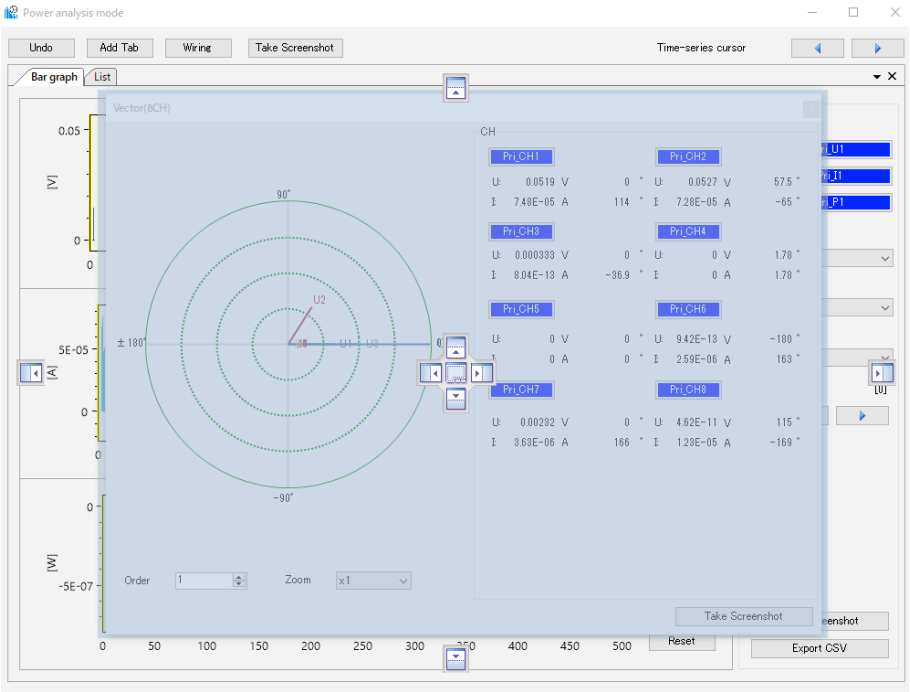
Undocking a Data Display Tab from the Main Window

You can undock a data display tab from the main window and display it as a separate window.
Click the data display tab you wish to display as a separate window and drop it onto the main window to create a floating data display tab that is displayed as a separate window.



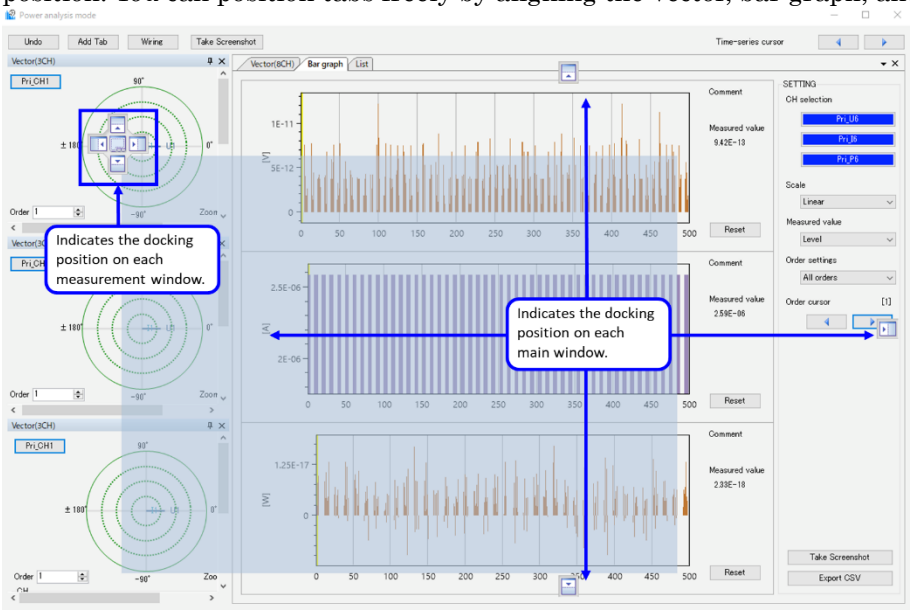
Docking a Data Display Tab in the Main Window

You can dock a floating data display tab in the main window.
Drag a floating data display tab and drop it in the center of the main window to dock it in the data display area.



Specifying Where to Dock a Data Display Tab

You can specify where in the main window to dock a data display area tab.
Drag a data display area tab and drop it on the cursor shown in the main window to dock it at the desired position. You can position tabs freely by aligning the vector, bar graph, and list windows as you wish.



Reverting Window Positions

Click the [Undo] button in the shared controls to undock all docked and floating tabs and revert all data displays to tabs.

Configuring connection Settings

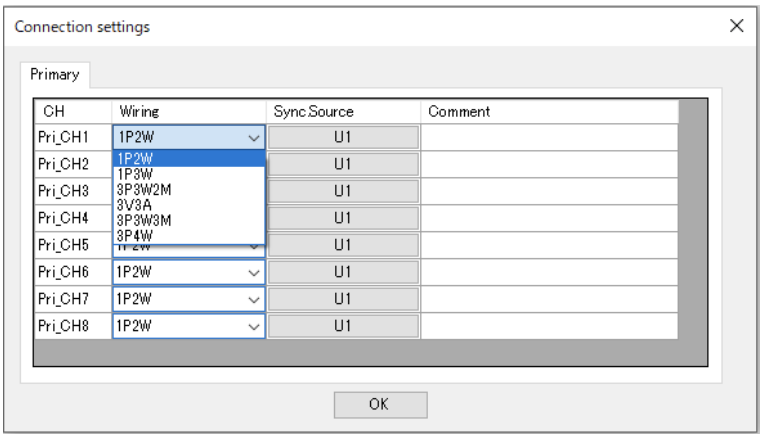
If the data shown in power analysis mode was saved by a PW8001 operating on firmware earlier than Ver. 153, you'll need to configure the wiring settings. If the settings differ from the power quality analyzer's wiring settings, the application will not be able to generate an accurate display. Wiring settings do not need to be configured for PW8001 firmware Ver. 1.53 or later since they will be applied automatically. 3. Proceed to the synchronization source settings.

1. Click the [Connection settings] button to configure the power quality analyzer's connection settings.

Name	Description
Primary (Pri)	Describes the channel configuration and associated data when making measurements with one PW8001.
Secondary (abbreviation: Sec)	Describes the secondary channel configuration and associated data when two PW8001s performed optically synchronized measurement. (The PW8001's optically synchronized measurement function is available in firmware versions Ver. 2.00 and later.)

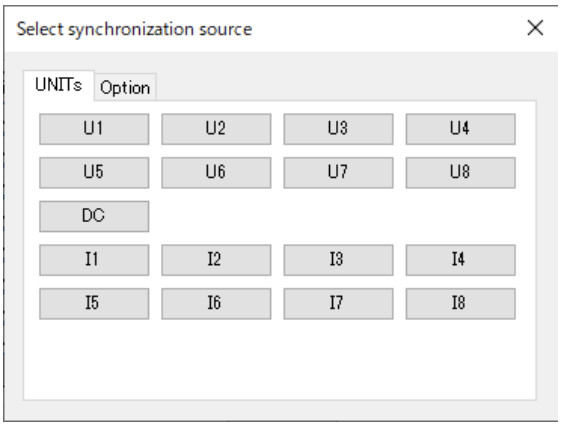
2. Once the [Connection settings] window opens, select the connection for each PW8001 channel with the [Wiring] field. Specify the connection corresponding to the loaded data.

   Only connections supported by the PW8001 can be specified (1P2W, 1P3W, 3P3W2M, 3V3A, 3P3W3M, and 3P4W).



3. In the [Sync.Source] field, select the synchronization source for each connection selected in Step 2.

   The selected synchronization source will be displayed in the harmonic data display area.



4. You can enter comments concerning the selected connection in the [Comment] field.

   Entered comments will be shown on the bar graph screen.

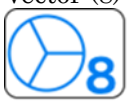
   Maximum number of characters that can be entered: 50 Single-byte characters

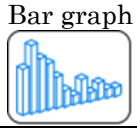
5. Click the [OK] button to close the connection settings.

Note
If the configured connections differ from the loaded data's connections, the application will not be able to generate an accurate display.

Adding a Data Display Tab

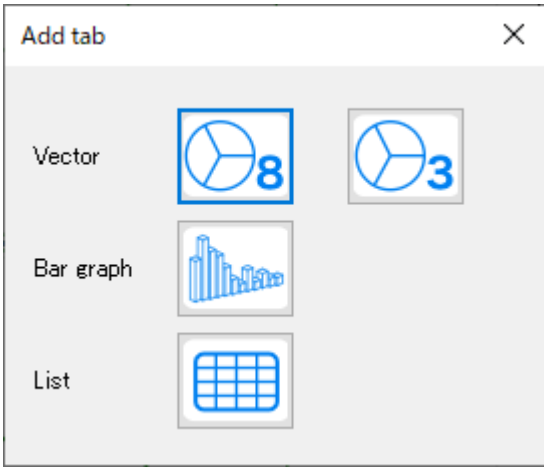
This section describes the name and functionality of each data display area screen.

Name and Icon	Functionality
Vector (8) 	Displays eight channels of voltage and current harmonic data as a vector diagram and measured values. Maximum number of additional tabs: 4
Vector (3)	Displays three channels of voltage and current harmonic data as a vector diagram and measured values. Maximum number of additional tabs: 4

	
Bar graph 	Displays harmonic data for each parameter as a bar graph. You can check measured values for specific orders using the cursor function. Maximum number of additional tabs: 3
List 	Displays harmonic data for each parameter as a list of values. Maximum number of additional tabs: 3

1. Click the [Add Tab] button.

2. Click the button for the screen you wish to add on the window that opens.



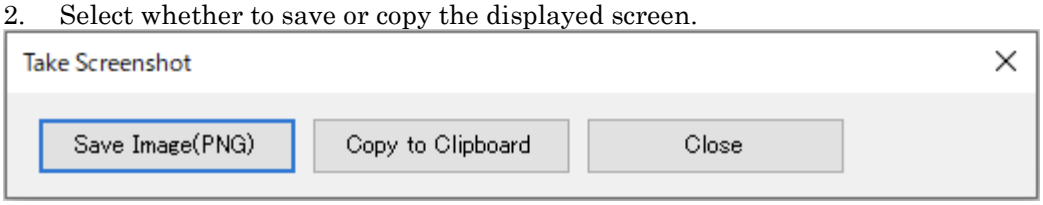
3. The selected screen will be added to the data display area.

Saving the Displayed Screen (Screenshot)

This section describes how to save or copy the contents of the power analysis window to the clipboard as a PNG image.

1. Click the [Take Screenshot] button.

2. Select whether to save or copy the displayed screen.



Controlling the Time-series Viewer Cursor

The power analysis window displays the harmonic data at the Time-series Viewer cursor's position.
You can control the Time-series Viewer's cursor from the power analysis window.

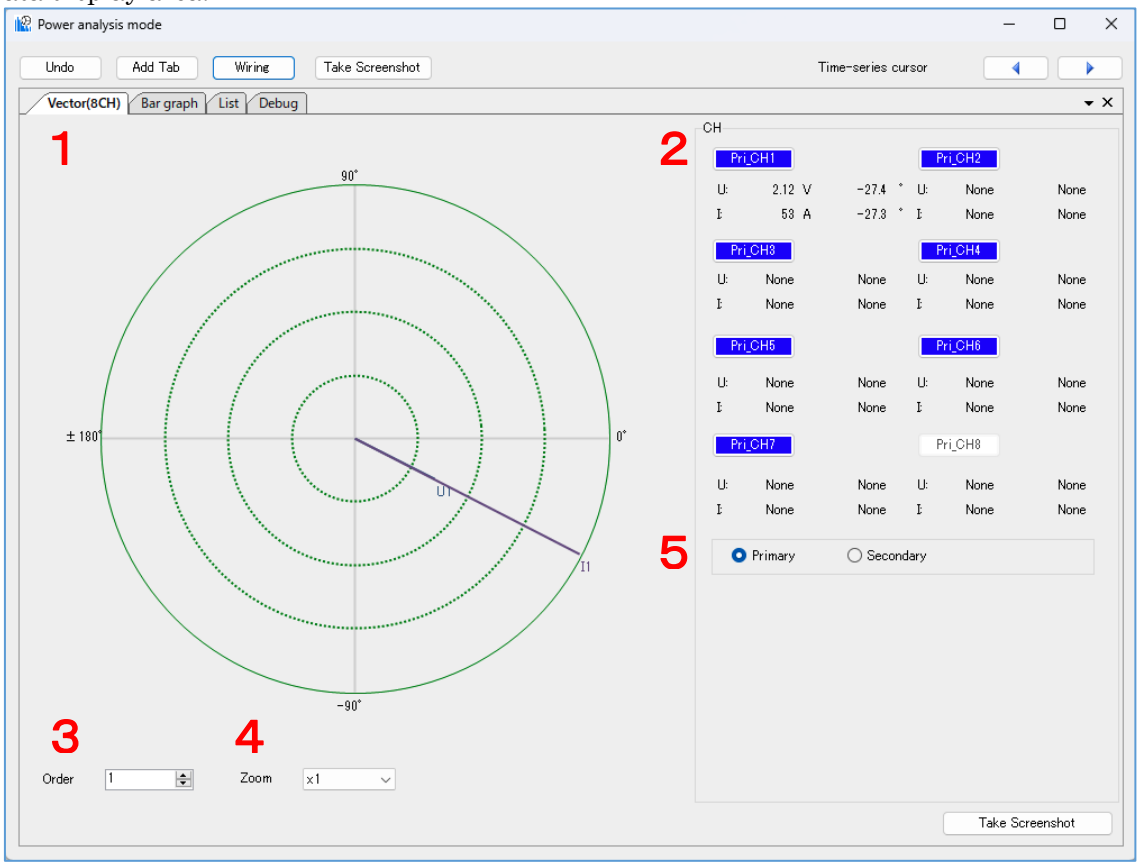
1. Click the [⍰] or [⍰] button for the Time-series Viewer cursor to move it.

2. The data shown in the data display area will be updated to show the data at the Time-series Viewer cursor's position.

When the shared control buttons are selected, you can also control the Time-series Viewer's cursor using the left and right arrow keys on the keyboard.

Viewing Harmonic Vectors

The harmonic vector screen displays harmonic data measured with the power quality analyzer as a vector diagram.
Select [Vector] from the [Add Tab] button on the [Power analysis mode] window to add a [Vector] tab to the data display area.



1. Select the [Vector] tab on the [Power analysis mode] window.
   [Vector8] represents a screen displaying voltage and current vectors as well as measured values for 8 channels, while [Vector3] represents a screen displaying voltage and current vectors as well as measured values for 3 channels.

2. You can change which channels are displayed by clicking the [CH] buttons.
   ·On the [Vector8] tab, turning off a CH button will hide the vectors for that channel.
   ·On the [Vector3] tab, turning off a CH button will hide the vectors for that channel.

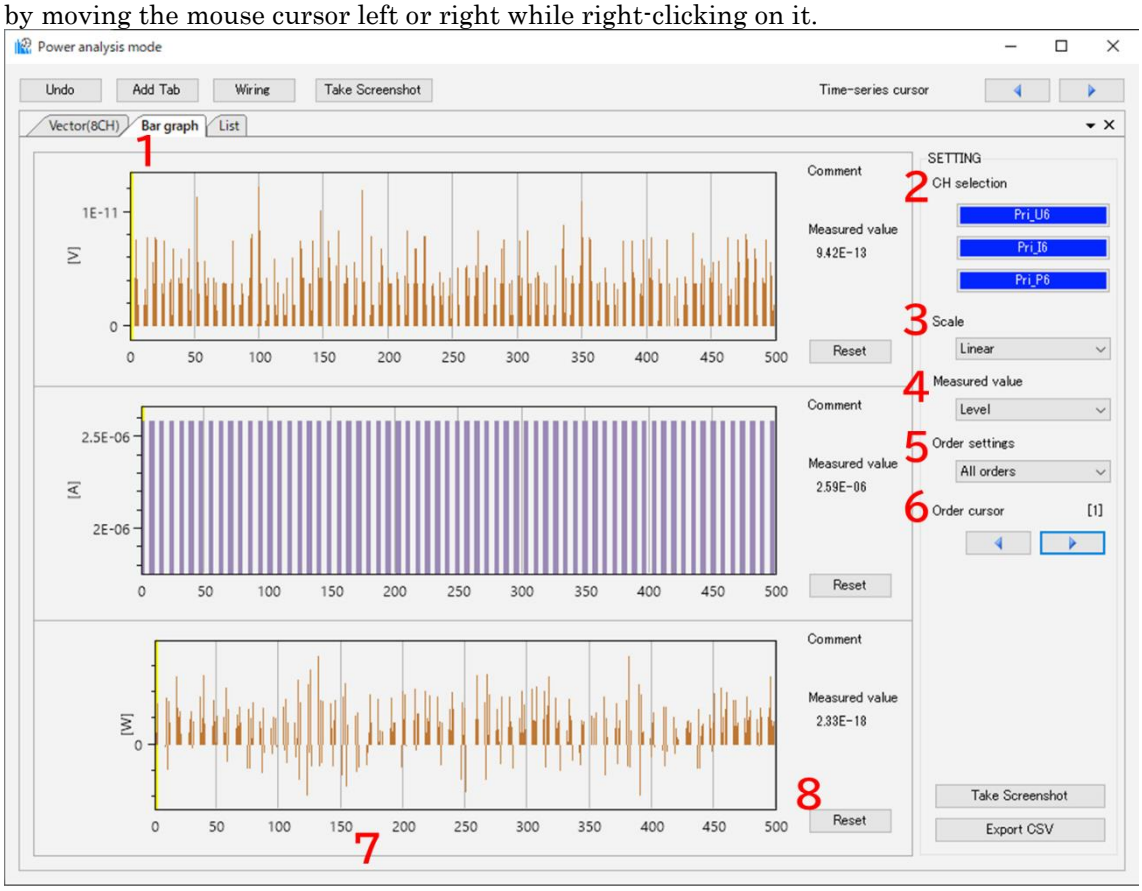
3. Specifying an order will display the voltage and current vectors as well as measured values for that order.
   Data cannot be displayed for orders that do not exist in the loaded data. (The screen will display "Data Empty.")

4. You can change the size of the vectors in the vector diagram by selecting [Zoom].

5. If the loaded data consists of optically synchronized data, you can select whether to display the primary-side data or the secondary-side data. (PW8001 Ver. 2.00 or later)

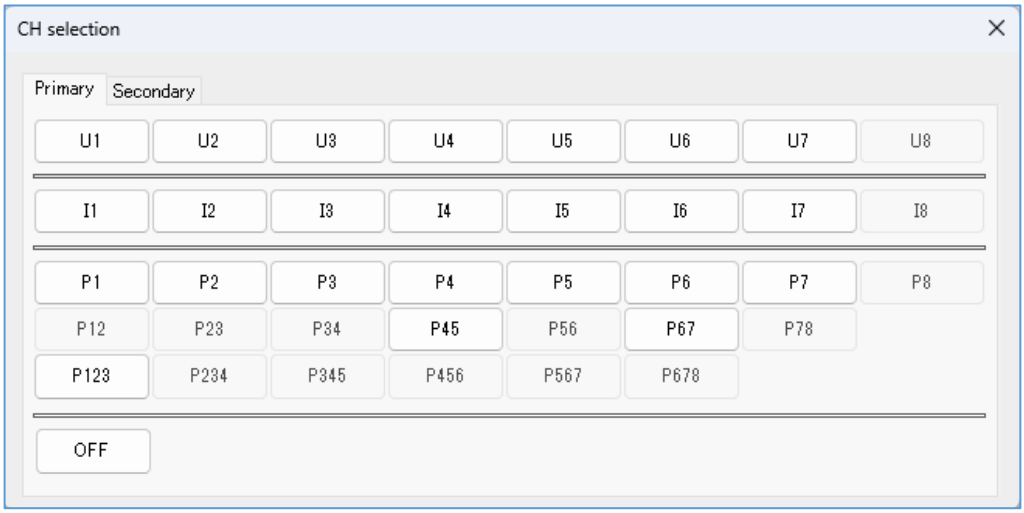
Viewing Harmonic Bar Graphs

The harmonic bar graph screen displays harmonic data measured with the power quality analyzer as a series of bar graphs.
Select [Bar Graph] from the [Add Tab] button on the [Power analysis mode] window to add a [Bar Graph] tab to the data display area.
You can enlarge a bar graph by dragging and dropping the mouse on top of it, and you can scroll a bar graph by moving the mouse cursor left or right while right-clicking on it.



1. Select the [Bar Graph] tab on the [Power analysis mode] window.

2. Click a [CH selection] button to display the [CH selection] window.
   From the [CH selection] window, select the parameter for which to display a bar graph.



Selecting [OFF] will hide the bar graph.

You cannot set all three graphs to [OFF] at the same time.

You cannot select channels that do not exist on the PW8001.

3. Configure the [Scale] setting.

Option	Description
Linear	Generates a linear display. The display will include low levels. When [Phase angle] is selected for [Measured value], the vertical axis cannot be changed from [Linear].
Log	Generates a logarithmic display.

4. Set the [Measured value].

Option	Description
Amplitude	Displays levels for each order's harmonics.
Content percentage	Displays each order's harmonics as percentages, where the fundamental wave component is 100%.
Phase angle	Displays the harmonic active power phase angle, defined as the difference between the harmonic current and voltage phases.

5. Select the order to display with [Order settings].

Option	Description
All orders	Displays all orders (0 to 500).
Odd orders	Displays the 0th order and odd orders 1 through 499.
Even orders	Displays the 0th order and even orders 2 through 500.

6. Move the order cursor displayed on the bar graphs with [Order cursor].

① [▯] button

Moves the order cursor to the right.

When the [▯] button is in the active state, you can move the order cursor to the right using the keyboard's right arrow key.

② [▯] button

Moves the order cursor to the left.

When the [▯] button is in the active state, you can move the order cursor to the left using the

keyboard's left arrow key.

③ Mouse operation

You can move the order cursor by aligning the mouse cursor with the order cursor and dragging and dropping it.

7. Display comments.

Comments specified under connection settings will be shown in this field.

8. [Reset]

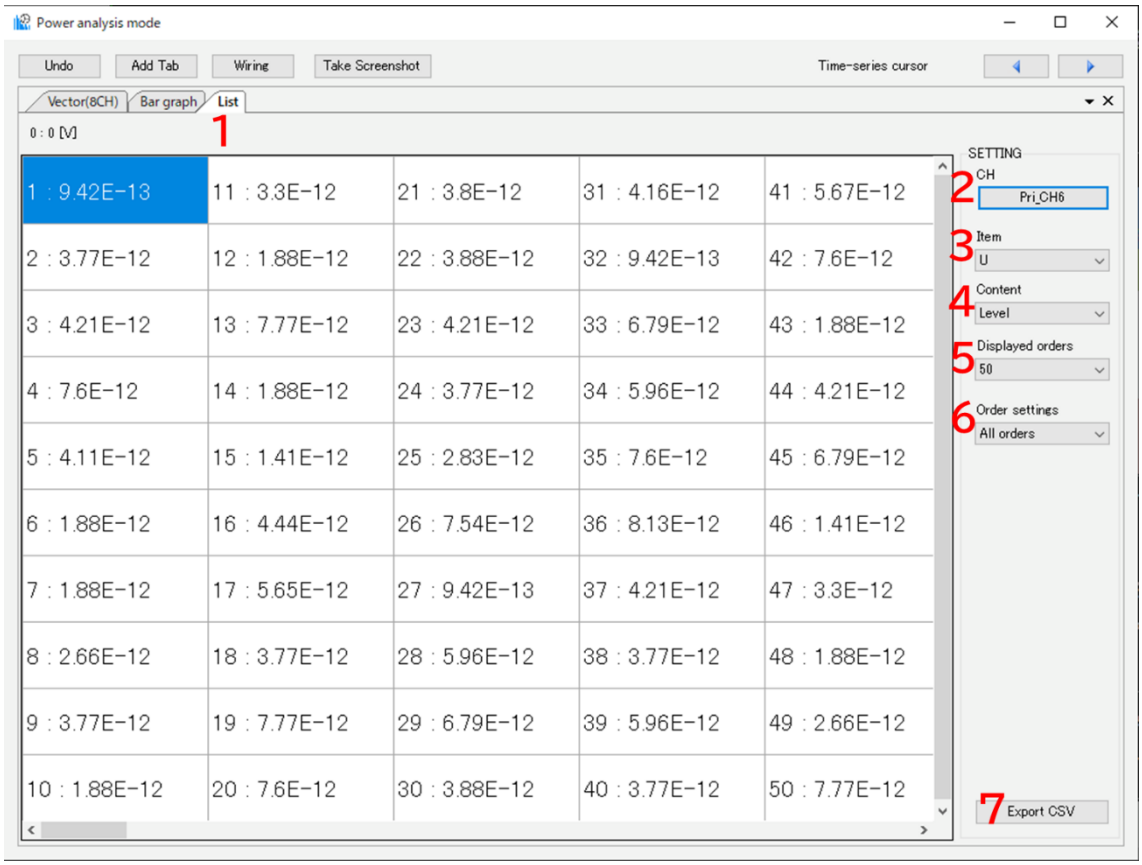
Reverts any bar graphs that have been zoomed in or out to their initial zoom factor.

- **About Interharmonics**

  When the data is saved in IEC standard mode and there is interharmonic data,
  The [Interarmonics] (ON/OFF) button is displayed on the bar graph screen.
  When [ON] is selected, the RMS values of current and voltage, and the interharmonic components of the content are displayed in a light blue graph.
  With the order cursor, the cursor moves in 0.5-order increments to check the values of the interharmonics.
  Since there is no interharmonic measurement item in the power measurement item, only the harmonic components are displayed.
  Also, when [Measured Value] is set to [Phase Angle], [Interharmonics] is set to [OFF].

Viewing the Harmonic List display

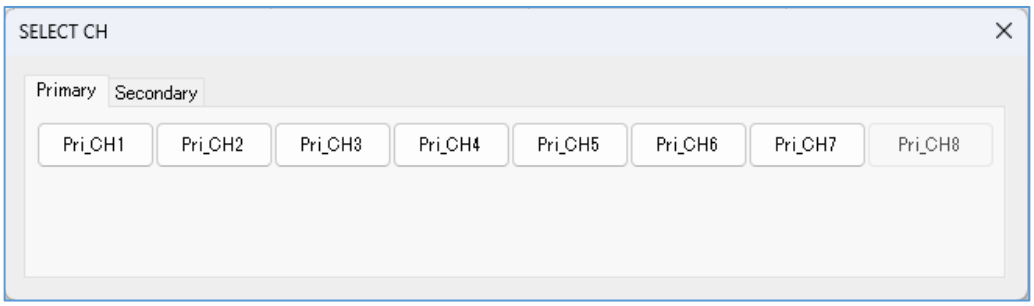
The harmonic list screen displays harmonic data measured with the power quality analyzer as a list of values.
Select [List] from the [Add Tab] button on the [Power analysis mode] window to add a [List] tab to the data display area.
[None] will be used for display and CSV output if there is no data to display in the loaded file.



1. Select the [List] tab on the [Power analysis mode] window.

2. Click a [CH selection] button to display the [CH selection] window.

   From the [CH selection] window, select the parameter for which to display the list.



   You cannot select channels that do not exist on the PW8001.

3. Set [U/I/P].

   Options: U/I/P

4. Set the [Measurement parameter].

Option	Description
Amplitude	Displays levels for each order's harmonics.
Content percentage	Displays each order's harmonics as percentages, where the fundamental wave component is 100%.
Phase angle	Displays the harmonic active power phase angle, defined as the difference between the harmonic current and voltage phases.

5. Set the [Displayed orders].

   Selects the orders to display on one screen. You can view data by scrolling horizontally.

   Options: 50/100/200

6. Select the order to display with [Order settings].

Option	Description
All orders	Displays all orders (0 to 500).
Odd orders	Displays the 0th order and odd orders 1 through 499.
Even orders	Displays the 0th order and even orders 2 through 500.

7. Exports the data as a CSV file.
   Outputs the displayed harmonic parameters as a CSV file.

- **About Interharmonics**
  When the data is saved in IEC standard mode and there is interharmonic data,
  The [Interharmonics] (ON/OFF) button is displayed on the list screen.
  When [ON] is selected, the RMS values of current and voltage, and the interharmonic components of the content are displayed next to the harmonic measurements.
  Items for which the interharmonic list can be displayed are the RMS values of voltage and current and the content ratio.
  When other items are selected, [Interharmonics] is set to [OFF].

Organize data

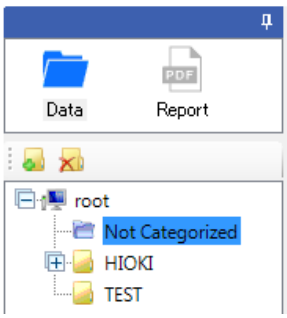
・In [Data Switch Window], you can manage the loaded data in the data group.

・To organize data, make a new data group, and then drag and drop the data to the group. The data group is managed in the tree style structure.

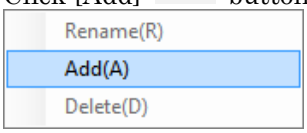
Add the data group

Here explains how to add a new group under the [root] as an example.

1. Select a data group.

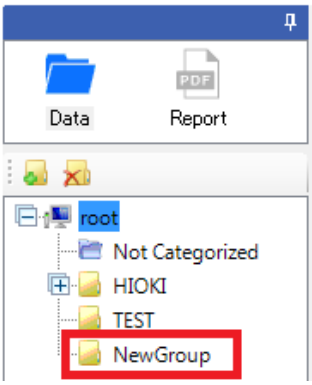


2. Click [Add] button.



*The data group is also added by selecting [Add] in the right-click menu.

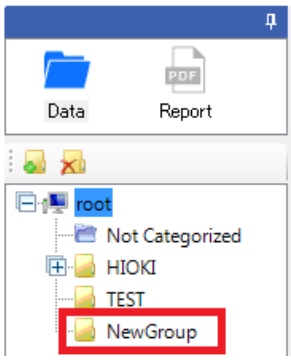
3. A new data group has been added under the [root].



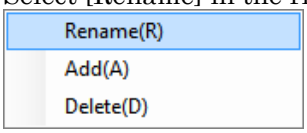
*You cannot add any data group under the [Not Categorized] group.

Rename the data group

1. Select a data group.



2. Select [Rename] in the right-click menu.



*You cannot rename the [root] group.

*You cannot rename the [Not categorized] group.

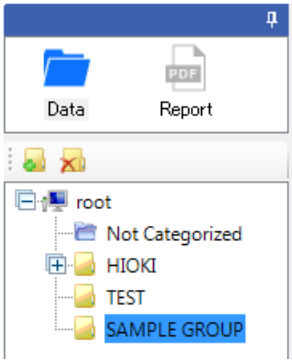
3. Input text as the group name.

*You cannot set the empty text.

*You cannot set the text that has only white spaces.

You cannot set the special characters like [＼(backslash)], [. (period)], [(asterisk)] and [' (apostrophe)].

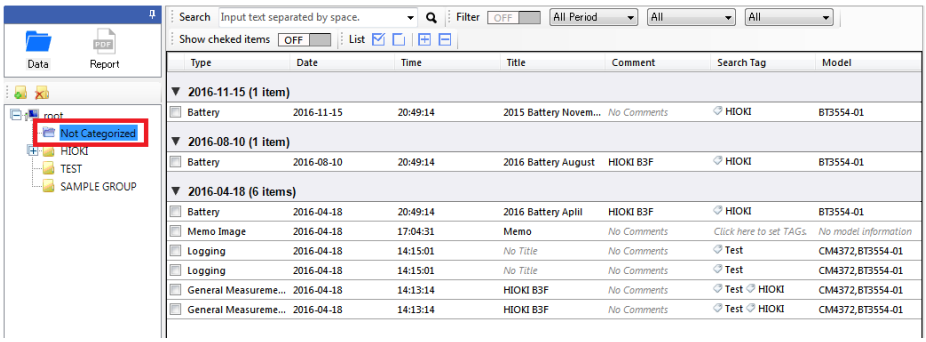
4. The data group has been renamed.



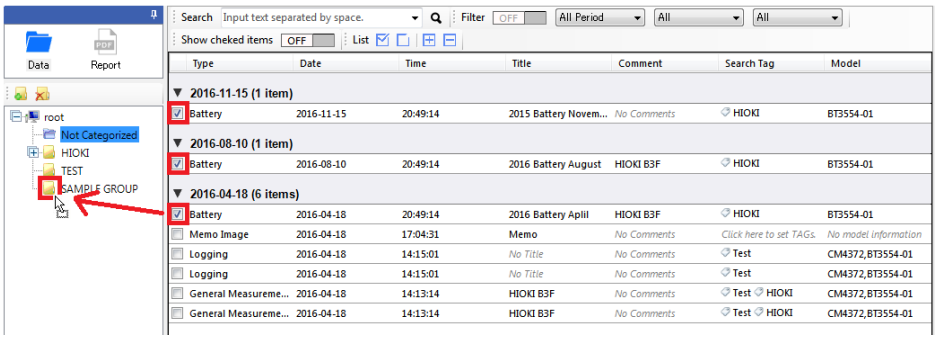
Move data to the data group

Here explains how to move data from the [Not Categorized] group to the [SAMPLE GROUP] group as an example.

1. Select the [Not Categorized] group.



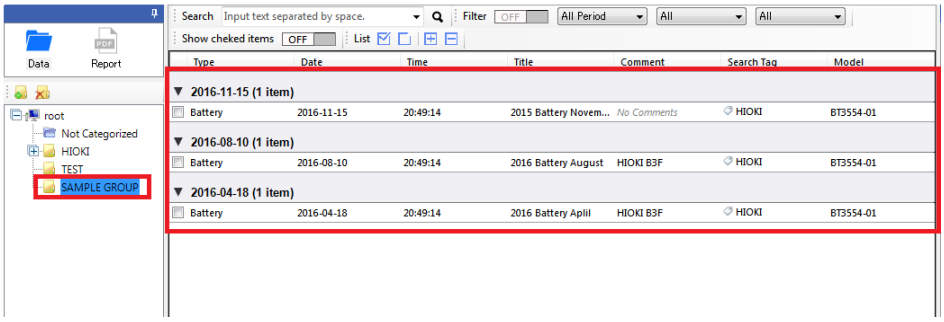
2. Check the data to move in the data list.
3. With the left button of the mouse pressed down, move the mouse pointer toward the [SAMPLE GROUP] group. (drag operation)
4. As the mouse pointer approaches the [SAMPLE GROUP] group, the mouse cursor allow  appears. Move the cursor to the [SAMPLE GROUP] group and release the left button of the mouse. (drop operation)



*Move the tip of cursor to the folder icon or the text of the group.

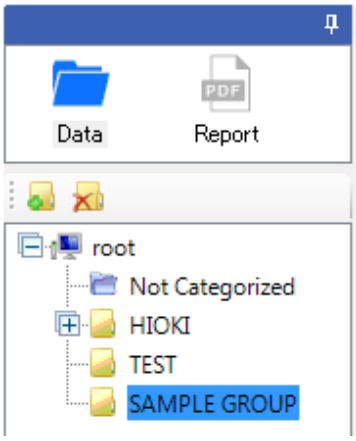
*You cannot move data to the [root] group.

5. Data has been moved to the [SAMPLE GROUP] group.

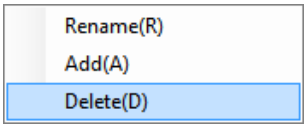


Delete the data group

1. Select a group.



2. Click the [Delete] button. 

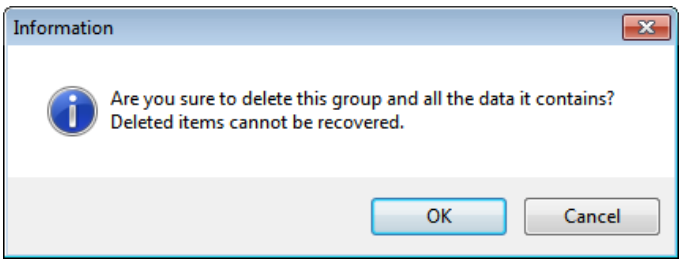


*The data group is also deleted by selecting [Delete] in the right-click menu.

*You cannot delete the [root] group.

*You cannot delete the [Not Categorized] group.

3. The confirmation message is displayed. Click [OK] button to delete the group.



*If a group is deleted, the data that is included in the group are also deleted.

Manipulate data list

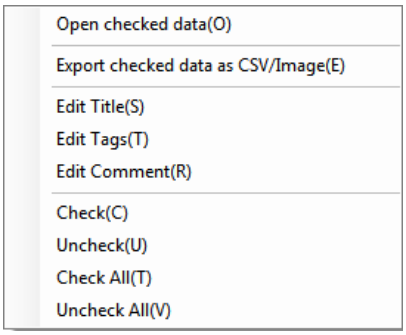
In the data list of the main window, you can see the detailed information on the data, search/ refine the data, edit the comment/title/search tags.

Here explains basic function for manipulating the data list.

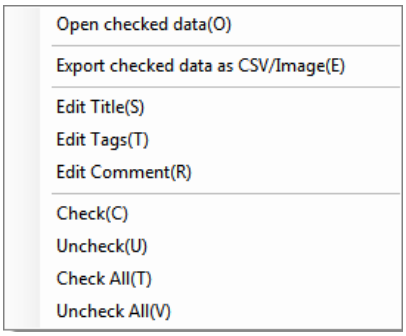
Check/Uncheck data

You can specify the data for the operations like saving, deleting, moving.

1. You can check/uncheck the data by clicking the checkbox in the data list.
   *You can also check/uncheck the data by selecting [Check]/[Uncheck] in the right-click menu.



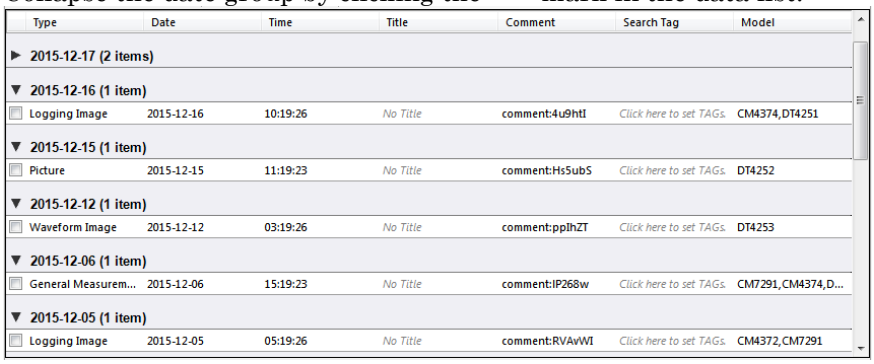
2. You can check/uncheck all the data in the data list by clicking [Check All] icon or [Uncheck All] icon in the tool bar.
   Button: Check All data
   Button: Uncheck All data
   *You can also check/uncheck all the data in the data list by selecting [Check All]/[Uncheck All] in the right-click menu.



Collapse/Expand data list

The data is listed in the group that has the same date.
This group can be collapsed or expanded by the operation of the mouse.

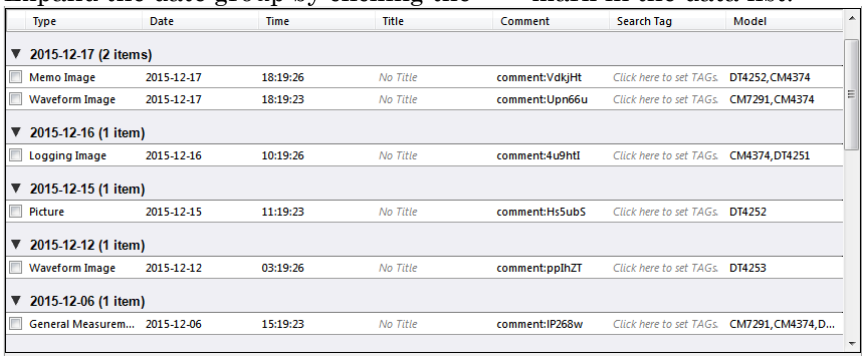
1. Collapse the date group by clicking the ▼ mark in the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▶ 2015-12-17 (2 items)						
▼ 2015-12-16 (1 item)						
Logging Image	2015-12-16	10:19:26	No Title	comment:4u9htI	Click here to set TAGs.	CM4374,DT4251
▼ 2015-12-15 (1 item)						
Picture	2015-12-15	11:19:23	No Title	comment:Hs5ubS	Click here to set TAGs.	DT4252
▼ 2015-12-12 (1 item)						
Waveform Image	2015-12-12	03:19:26	No Title	comment:ppIhZT	Click here to set TAGs.	DT4253
▼ 2015-12-06 (1 item)						
General Measurem...	2015-12-06	15:19:23	No Title	comment:IP268w	Click here to set TAGs.	CM7291,CM4374,D...
▼ 2015-12-05 (1 item)						
Logging Image	2015-12-05	05:19:26	No Title	comment:RVAvWI	Click here to set TAGs.	CM4372,CM7291

*You can also collapse the date group by double-clicking on the any point of the group header.

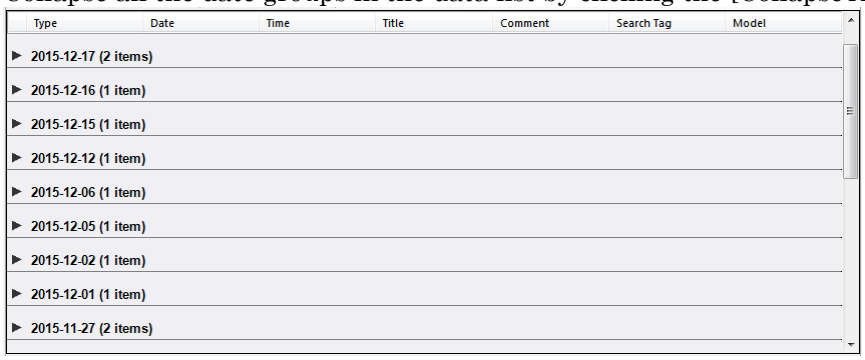
2. Expand the date group by clicking the ▶ mark in the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2015-12-17 (2 items)						
Memo Image	2015-12-17	18:19:26	No Title	comment:VdkjHt	Click here to set TAGs.	DT4252,CM4374
Waveform Image	2015-12-17	18:19:23	No Title	comment:Upn66u	Click here to set TAGs.	CM7291,CM4374
▼ 2015-12-16 (1 item)						
Logging Image	2015-12-16	10:19:26	No Title	comment:4u9htI	Click here to set TAGs.	CM4374,DT4251
▼ 2015-12-15 (1 item)						
Picture	2015-12-15	11:19:23	No Title	comment:Hs5ubS	Click here to set TAGs.	DT4252
▼ 2015-12-12 (1 item)						
Waveform Image	2015-12-12	03:19:26	No Title	comment:ppIhZT	Click here to set TAGs.	DT4253
▼ 2015-12-06 (1 item)						
General Measurem...	2015-12-06	15:19:23	No Title	comment:IP268w	Click here to set TAGs.	CM7291,CM4374,D...

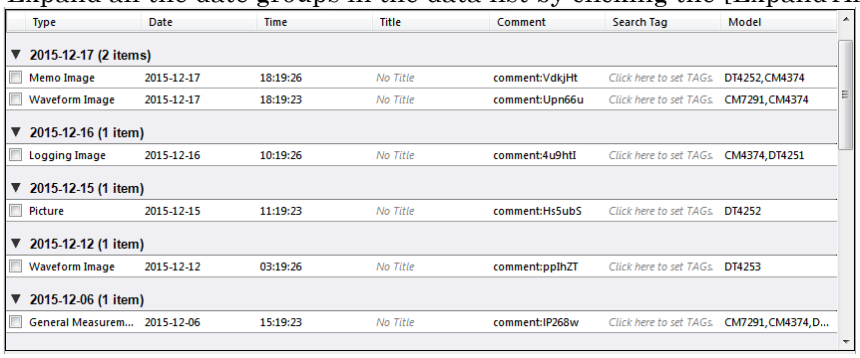
*You can also expand the date group by double-clicking on the any point of the group header.

3. Collapse all the date groups in the data list by clicking the [Collapse All] icon in the tool bar.



Type	Date	Time	Title	Comment	Search Tag	Model
▶ 2015-12-17 (2 items)						
▶ 2015-12-16 (1 item)						
▶ 2015-12-15 (1 item)						
▶ 2015-12-12 (1 item)						
▶ 2015-12-06 (1 item)						
▶ 2015-12-05 (1 item)						
▶ 2015-12-02 (1 item)						
▶ 2015-12-01 (1 item)						
▶ 2015-11-27 (2 items)						

4. Expand all the date groups in the data list by clicking the [Expand All] icon in the tool bar.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2015-12-17 (2 items)						
Memo Image	2015-12-17	18:19:26	No Title	comment:VdkjHt	Click here to set TAGs.	DT4252,CM4374
Waveform Image	2015-12-17	18:19:23	No Title	comment:Upn66u	Click here to set TAGs.	CM7291,CM4374
▼ 2015-12-16 (1 item)						
Logging Image	2015-12-16	10:19:26	No Title	comment:4u9htI	Click here to set TAGs.	CM4374,DT4251
▼ 2015-12-15 (1 item)						
Picture	2015-12-15	11:19:23	No Title	comment:Hs5ubS	Click here to set TAGs.	DT4252
▼ 2015-12-12 (1 item)						
Waveform Image	2015-12-12	03:19:26	No Title	comment:ppIhZT	Click here to set TAGs.	DT4253
▼ 2015-12-06 (1 item)						
General Measurem...	2015-12-06	15:19:23	No Title	comment:IP268w	Click here to set TAGs.	CM7291,CM4374,D...

Refine data by the criteria settings

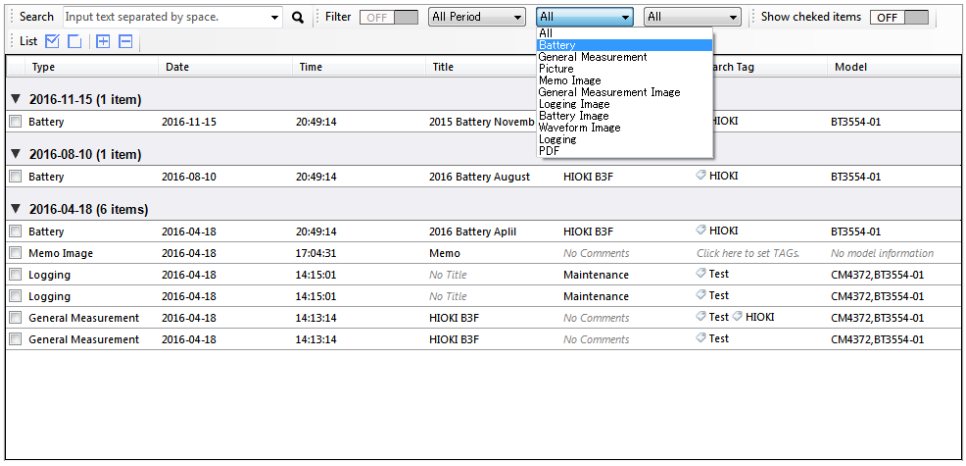
You can refine the data that is displayed in the data list by the criteria settings.

There are three criteria for refining the data: date, data type and instrument.

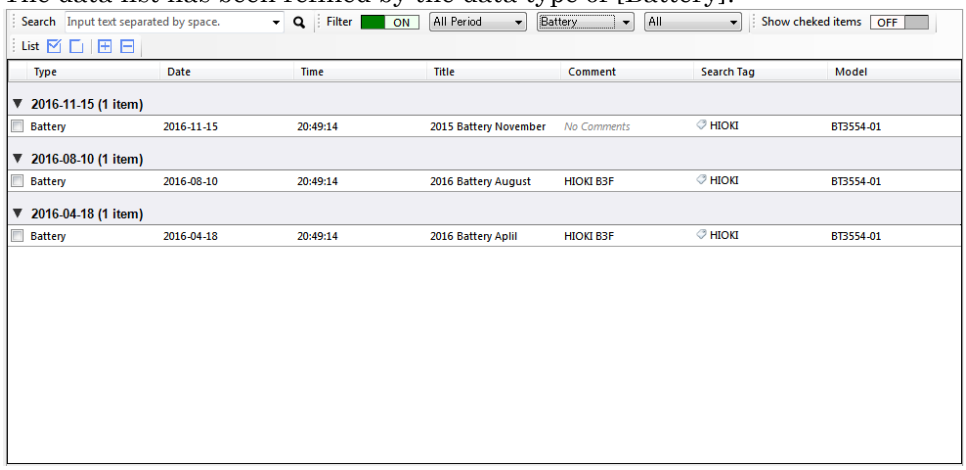
Here explains how to refine the data by selecting [Battery] in the data type criteria as an example.

1. Click the second combo box in the [Filter] tool bar.

2. Select the [Battery] from the drop-down list.



3. The data list has been refined by the data type of [Battery].



*If a refinement has been applied to the data list, the switch of the [Filter] is turned on 

*If a refinement has been applied to the data list, the checked state of the data list is cleared.

*If [Filter] is turned off 

, the refinement that is applied to the data list is cleared.

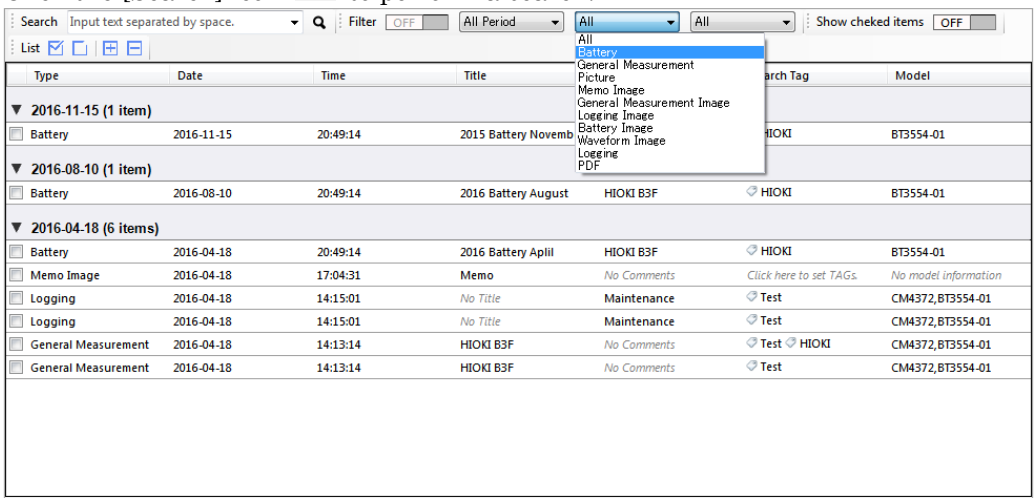
Search data by text

You can search data in the data list by text. The target for a search is all the data displayed in the data list.

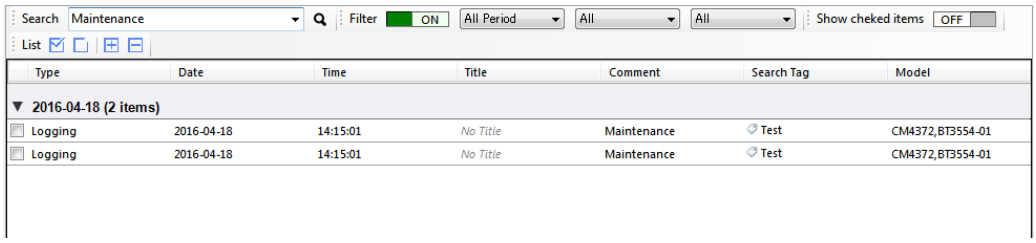
1. Input the text in the text box of [Search].

*If you set multiple texts with spaces, the search is performed by "AND" condition.

2. Click the [Search] icon to perform a search.



3. The result of a search is displayed in the data list.



*If a refinement has been applied to the data list, the switch of the [Filter] is turned on 

*If a refinement has been applied to the data list, the checked state of the data list is cleared.

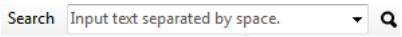
*If the switch of the [Filter] is turned off 

, the refinement that is applied to the data list is cleared.

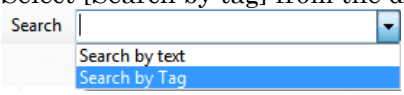
Search data by search tag

You can search data in the data list using search tags. The target for a search is all the data displayed in the data list.

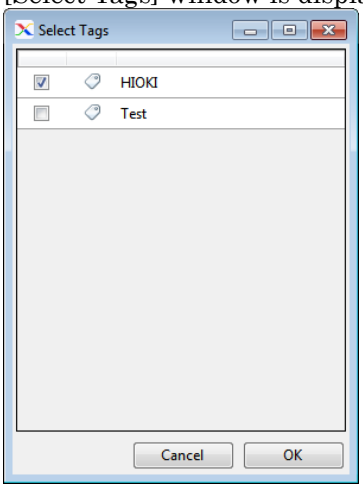
1. Click ▼mark on the text box of the [Search].



2. Select [Search by tag] from the drop-down list.

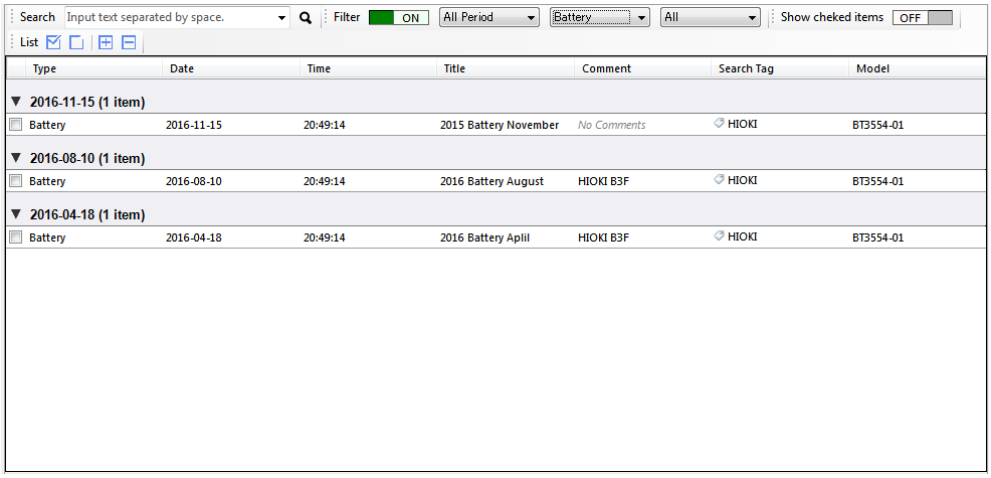


3. [Select Tags] window is displayed. Click [OK] button, after selecting the tags to search by checking.



*If you set multiple tags, the search is performed by "AND" condition.

4. The result of a search is displayed in the data list.



*If a refinement has been applied to the data list, the switch of the [Filter] is turned on 

*If a refinement has been applied to the data list, the checked state of the data list is cleared.

*If the switch of the [Filter] is turned off 

, the refinement that is applied to the data list is cleared.

Edit title/comment

Here explains how to edit comment in the data list.

1. Select a data in the data list.

2. Click twice on a cell of the [Comment] to start editing.
   *You can also start editing by pressing [F2] key after clicking the cell of the [Comment] column.
   *You can also start editing by selecting [Edit Comment] in the right-click menu.

3. Edit the comment.

Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
Battery	2016-11-15	20:49:14	2015 Battery November	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery August	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (6 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TAGs.	No model information
Logging	2016-04-18	14:15:01	No Title	This is a minor comment	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01
General Measurement	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

4. Press [Enter] key to finish editing.

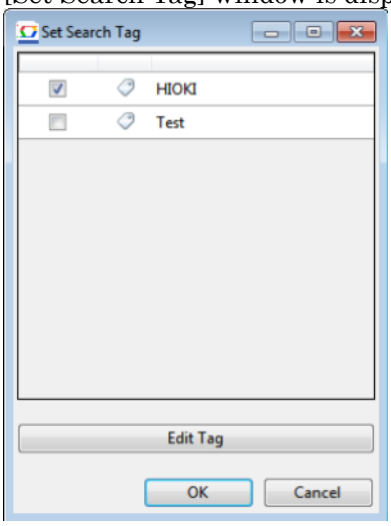
Set search tag

You can set search tags to the data in the data list.

1. Select a data in the data list.

2. Click a cell of the [Search Tag] column.

3. [Set Search Tag] window is displayed. Click [OK] button, after selecting tags to set by clicking.



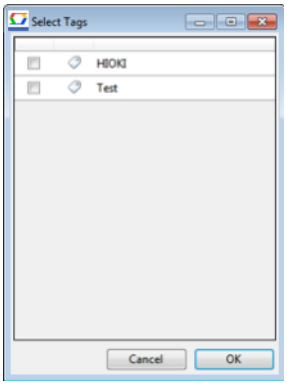
*If you would like to add new tags or delete the existing tags, click [Edit Tag] button.

4. The tags are set to the data.

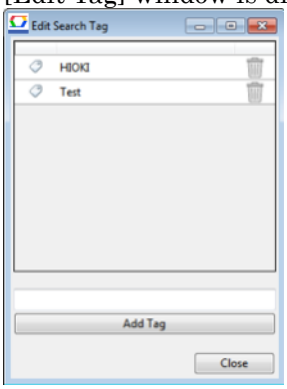
Edit search tag

You can add new search tags or delete existing tags.

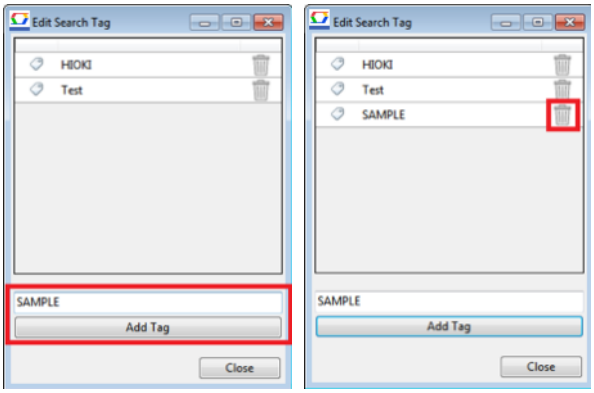
1. Select a data in the data list.
2. Click a cell of the [Search Tag] column.
3. [Set Search Tag] window is displayed. Click [Edit Tag] button.



4. [Edit Tag] window is displayed.



5. To add a new tag, click [Add Tag] button after setting a tag text.
6. To delete the existing tag, click the [Delete] icon.



*Even after the existing tag in the [Edit Tag] window, the tag that is set to the data in the data list still exists

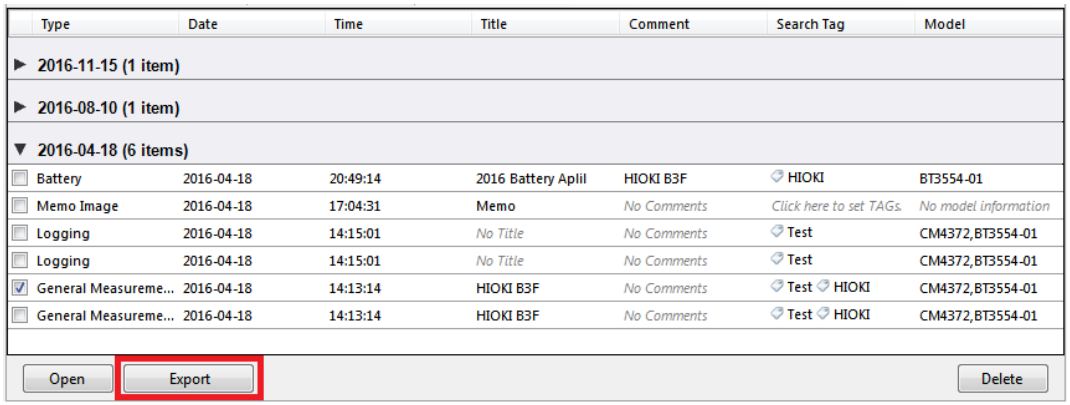
*Tags that is deleted in the [Edit Tag] window are not used for searching.

Output data

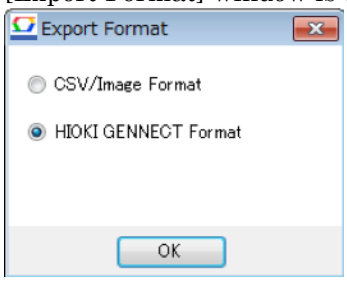
Output data in HOKI GENNECT Format（.hok）

This section describes how to output one measured data in HIOKI GENNECT Format（.hok）.

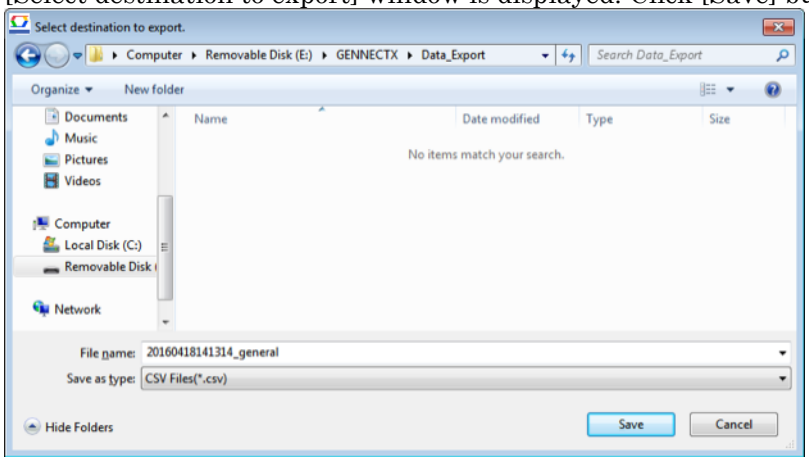
1. Select [Data] and a data group, then select one data by checking data on the data list and click [Export] button.



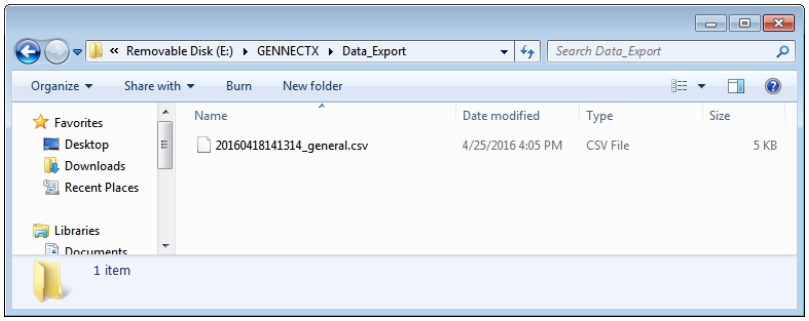
2. [Export Format] window is displayed. Select [HIOKI GENNECT Format] and click [OK].



3. [Select destination to export] window is displayed. Click [Save] button, after specifying the file.



4. Data has been saved as HIOKI GENNECT Format(.hok).



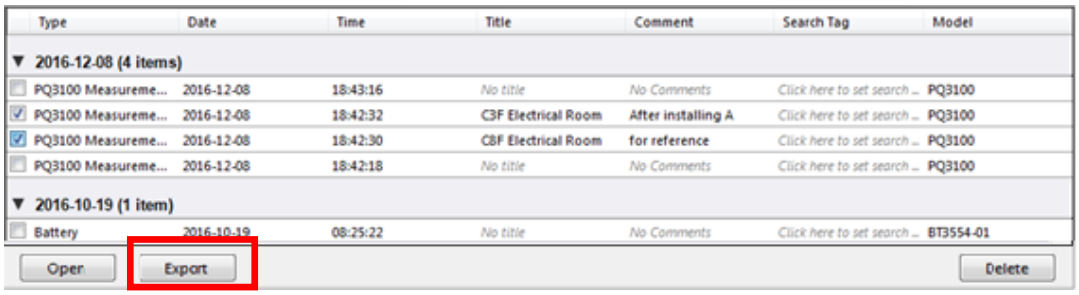
Output data in ZIP Format

This section describes how to output measurement file in ZIP format.

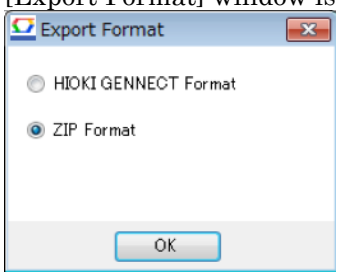
This feature supports following data types.

- ✓ PQA Measurement Data
- ✓ POWER LOGGER Measurement Data
- ✓ Power Analyzer measurement data
- ✓ DATA LOGGER Waveform
- ✓ MEMORY HiCORDER Waveform
- ✓ LR5000 series measurement data
- ✓ Various Photos / Images (excluding Logging image and Battery image)
- ✓ Report

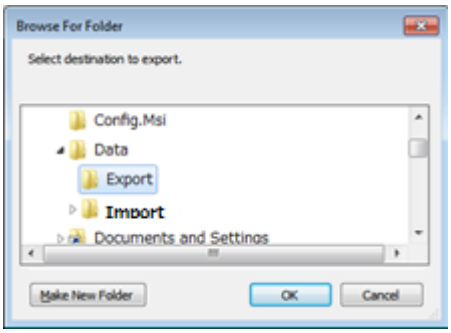
1. Select [Data] and a data group, then select one data by checking data on the data list and click [Export] button.



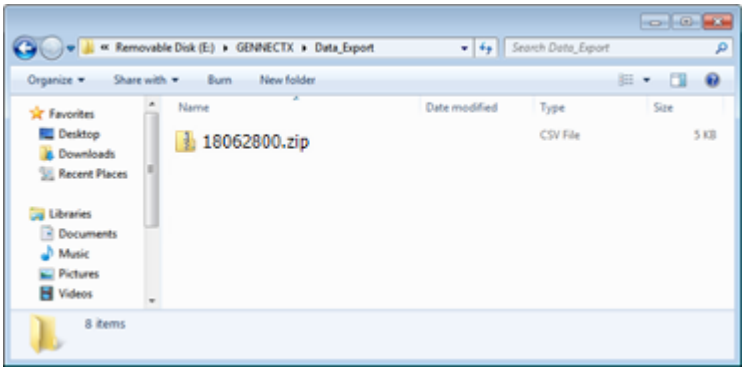
2. [Export Format] window is displayed. Select [ZIP Format] and click [OK].



3. [Browse For Folder] window is displayed. Click [OK] button, after specifying the folder.



4. Data has been saved in ZIP format.



Output data in CSV/Image format

This section describes how to output data in CSV/Image format.
CSV output feature supports following data types.

- ✓ General Measurement
- ✓ Battery
- ✓ Time series measurement data
- ✓ Instrument data

This function converts the measurement device data in the following table into a CSV file in time series format and outputs it.
(*1) The format is different from the CSV file that can be saved in the measurement device itself.
Data files with more than 512 channels can be exported in CSV format.

Data format	Supported instruments	Firmware version	Remarks
Data logger waveforms (binary)	LR8400 series	—	(*1)
	LR8410		
	LR8101,LR8102		
	LR8450,LR8450-01	Ver. 1.50 or later	
Power logger measurement data (measurement data folders)	PW3360	—	(*1)
	PW3365		
Power Analyzer measurement data (binary)	PW8001	Ver. 1.00 or later	(*1)
LR5000 series measurement data (HRP2 format)	LR5000 series	—	(*1)

Image output feature supports following data types.

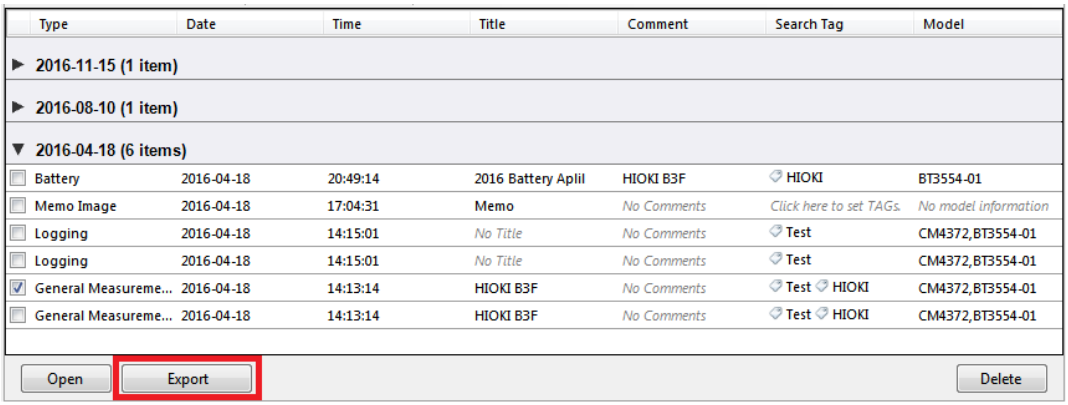
- ✓ Photo, Image Memo, General Measurement Screenshot
- ✓ Logging Image, Battery Image, Waveform Screenshot

Output data in CSV/Image format (Single data selection)

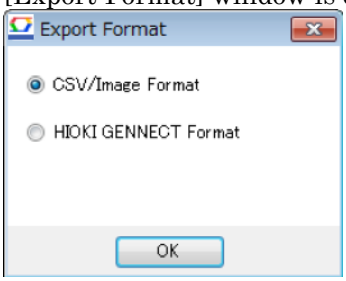
This section describes how to output one measured data in CSV format.

1. Select [Data] and a data group, then select one data by checking data on the data list and click [Export]

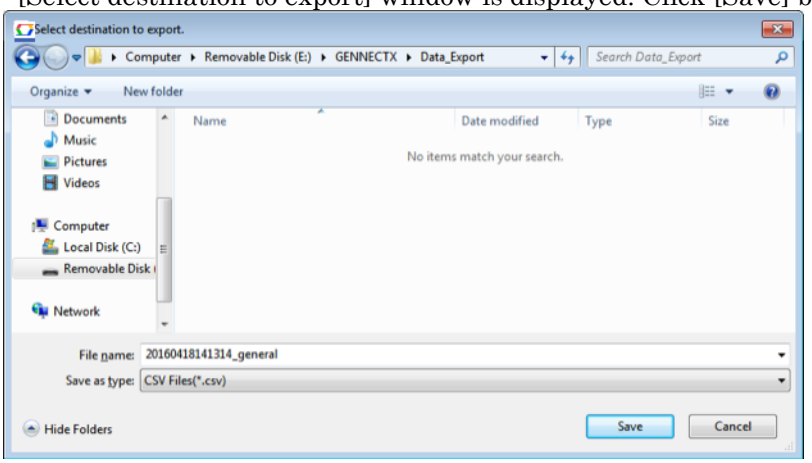
button.



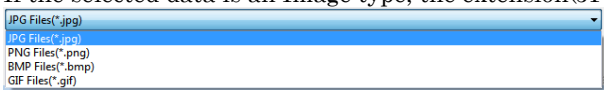
2. [Export Format] window is displayed. Select [CSV/Image Format] and click [OK].



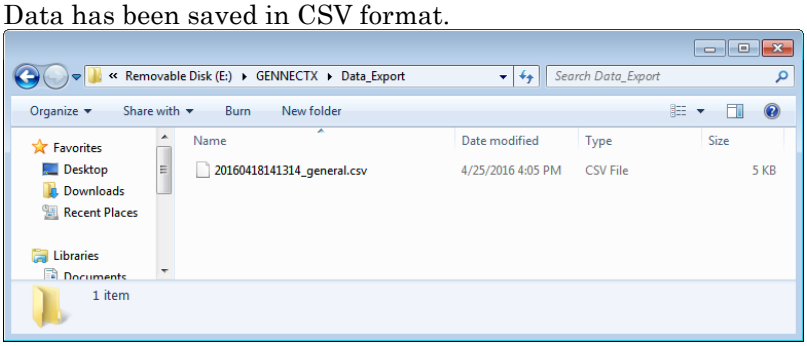
3. [Select destination to export] window is displayed. Click [Save] button, after specifying the file.



※ If the selected data is an Image type, the extension(JPG/PNG/BMP/GIF) can be specified in [Save as type].



4. Data has been saved in CSV format.

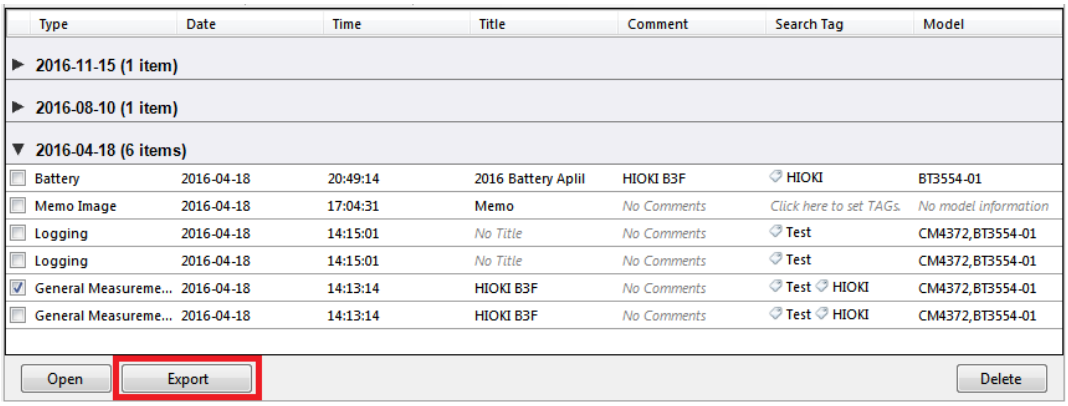


*If the selected data contains Image type, all the image data is saved in Image format.

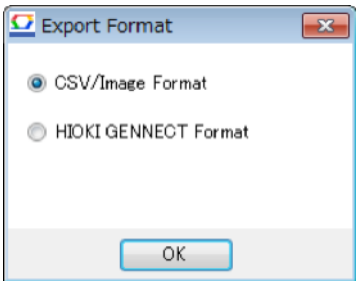
Output data in CSV/Image format (Multiple data selection)

This section describes how to output the multiply selected data in CSV/Image format.

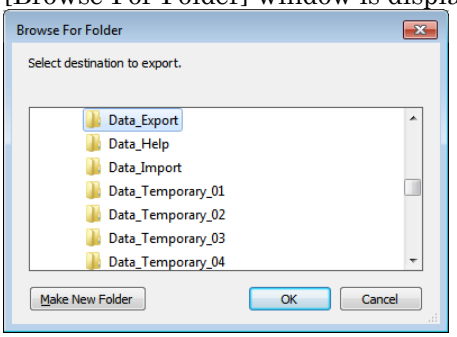
1. Select [Data] and a data group, then select one data by checking data on the data list and click [Export] button.



2. [Export Format] window is displayed. Select [CSV/Image Format] and click [OK].

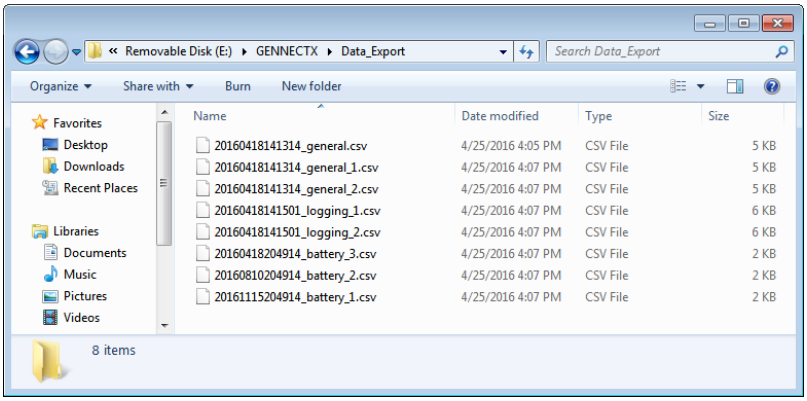


3. [Browse For Folder] window is displayed. Click [OK] button, after specifying the folder.



※ If the multiple data is exported, the extension(JPG/PNG/BMP/GIF) of the image data is saved in PNG format.

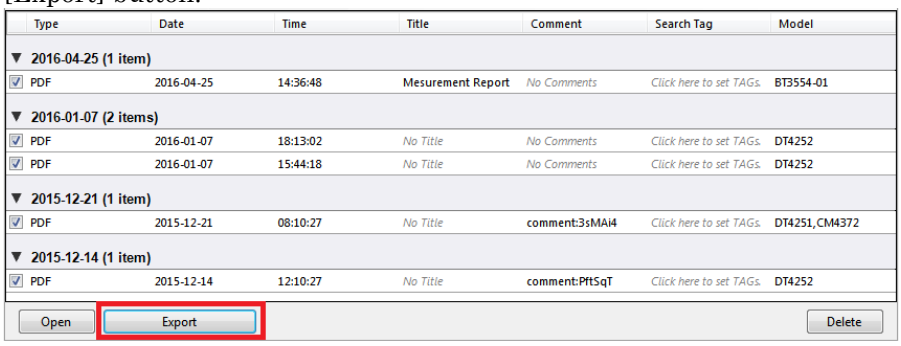
4. Data has been saved.



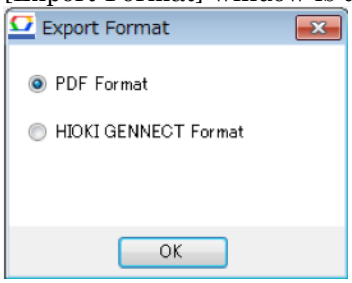
Output PDF file

Output PDF file (Single data selection)

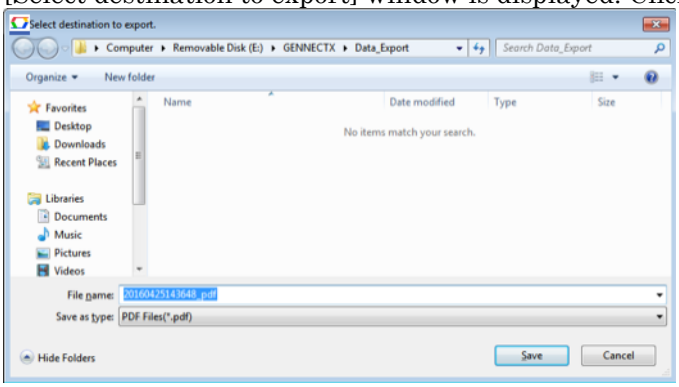
1. Select [Report] and a data group, then select one data by checking data on the data list and click [Export] button.



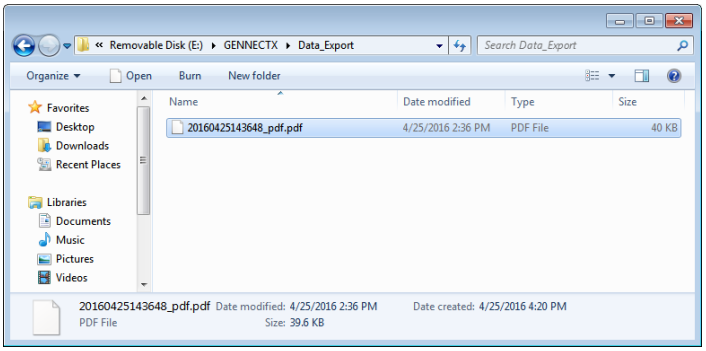
2. [Export Format] window is displayed. Select [PDF Format] and click [OK].



3. [Select destination to export] window is displayed. Click [Save] button, after specifying the file.

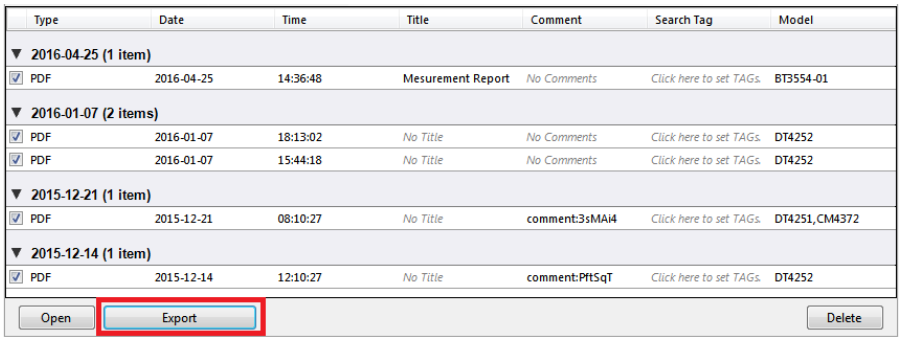


4. Data has been saved as PDF.

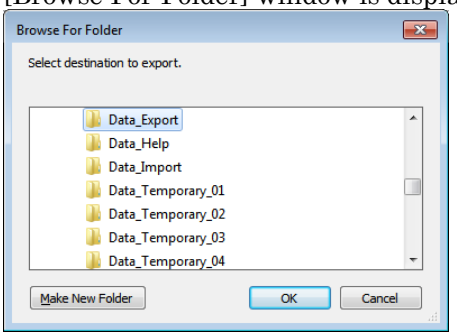


Output PDF files (Multiple data selection)

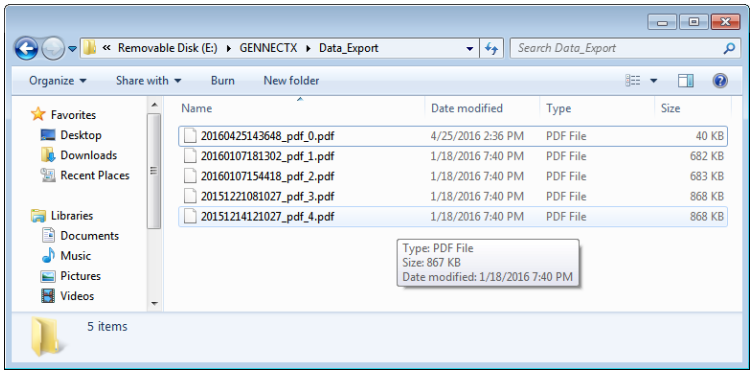
1. Select [Report] and a data group, then select one data by checking data on the data list and click [Export] button.



2. [Browse For Folder] window is displayed. Click [OK] button, after specifying the folder.

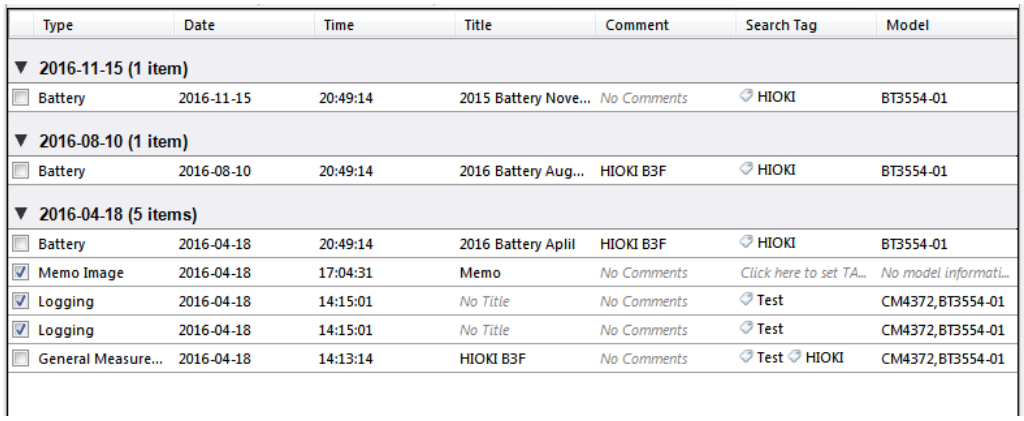


3. Data has been saved as PDF.



Delete data

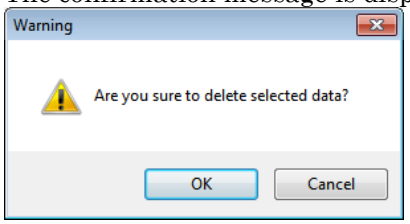
1. Select the data to delete by checking data on the data list.



Type	Date	Time	Title	Comment	Search Tag	Model
▼ 2016-11-15 (1 item)						
Battery	2016-11-15	20:49:14	2015 Battery Nove...	No Comments	HIOKI	BT3554-01
▼ 2016-08-10 (1 item)						
Battery	2016-08-10	20:49:14	2016 Battery Aug...	HIOKI B3F	HIOKI	BT3554-01
▼ 2016-04-18 (5 items)						
Battery	2016-04-18	20:49:14	2016 Battery Aplil	HIOKI B3F	HIOKI	BT3554-01
Memo Image	2016-04-18	17:04:31	Memo	No Comments	Click here to set TA...	No model informati...
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
Logging	2016-04-18	14:15:01	No Title	No Comments	Test	CM4372,BT3554-01
General Measure...	2016-04-18	14:13:14	HIOKI B3F	No Comments	Test HIOKI	CM4372,BT3554-01

2. Click [Delete] button.

3. The confirmation message is displayed. Click [OK] button to delete the data.



Changing instrument settings (instrument configuration modification function)

·Acquire the current settings from the instrument.
·Change the instrument settings.
·The time when the settings are acquired (when launching [Instrument Settings]) is used as the time, which cannot be changed.
*If an instrument's settings cannot be changed due to its status, for example because it is recording (automatically saving data), make changes after placing it in a state that allows settings to be changed.
*Refer to the following for information on the battery tester's setting functions.

- Settings for Battery Tester BT3554/BT3554-01/BT3554-50

Supported instruments

The instrument configuration modification function supports the following instruments:

Model	Name	Firmware version	URL
PW3360	Clamp On Power Logger	Ver. 3.21 or later	https://www.hioki.com/en/products /detail/?product_key=5589
PW3365	Clamp On Power Logger	Ver. 2.10 or later	https://www.hioki.com/en/products /detail/?product_key=5565
PW3335	Power Quality Analyzer	Ver. 1.11 or later	https://www.hioki.com/global/products /power-meters/single-phase-ac-dc/id_5831
PW3336	Power Quality Analyzer	Ver. 1.23 or later	https://www.hioki.com/global/products /power-meters/3phase-ac-dc/id_5805
PW3337	Power Quality Analyzer	Ver. 1.23 or later	https://www.hioki.com/global/products /power-meters/3phase-ac-dc/id_5929
BT5525	Battery Insulation Tester	V1.02 or later	https://www.hioki.com/global/products /electrical-safety-testers/insulation/id_1265405
BT6065 BT6075	Precision Battery Tester	V1.01 or later	https://www.hioki.com/sg-en/products /resistance-meters/battery/id_1266730
DM7275 DM7276	Precision DC Voltmeter	V1.09 or later	https://www.hioki.com/sg-en/products /resistance-meters/battery/id_6551
LR8450 LR8450-01	MEMORY HiLOGGER	V2.21 or later	https://www.hioki.com/sg-en/products /resistance-meters/battery/id_6535
LR8101 LR8102	DATALOGGER	V1.50 or later	https://www.hioki.com/sg-en/products /resistance-meters/battery/id_1266484

Limitations

Instrument configuration modification function has following limitations.

feature	limitation	remarks
Number of units that can be operated simultaneously.	1 unit	
Number of units that can be set for other devices simultaneously.	1 unit	

Instrument configuration modification function has following limitations about the network configuration.

feature	limitation	remarks
Interface	LAN	

Network range for auto instrument detection.	□.□.□.2 – □.□.□.254 ※The network range must be in the same range as the computer.	
DHCP	Not supported	

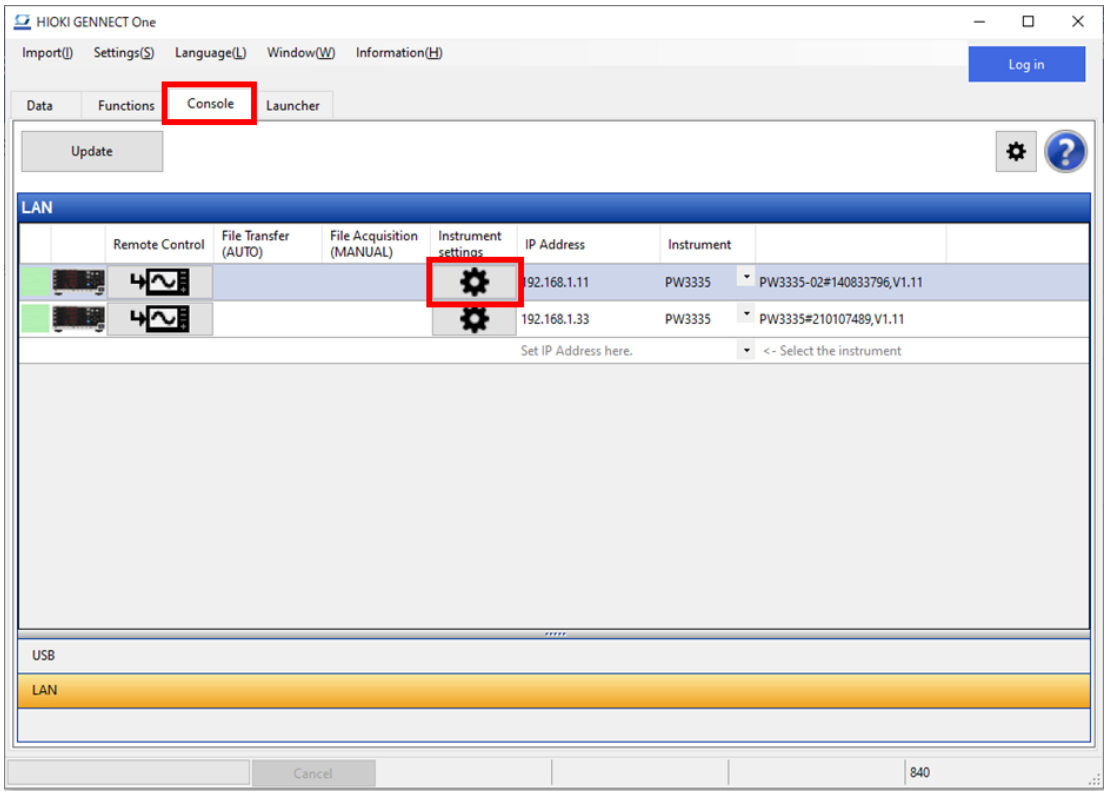
Workflow

Connect an instrument to a computer with a LAN cable (p.17)

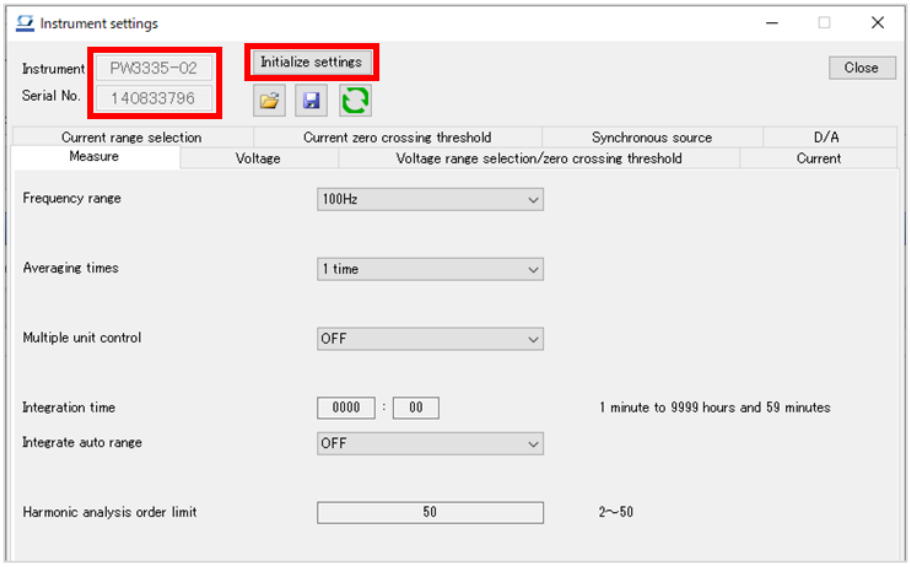
Change the instrument's settings (p.123)

Change the instrument's settings

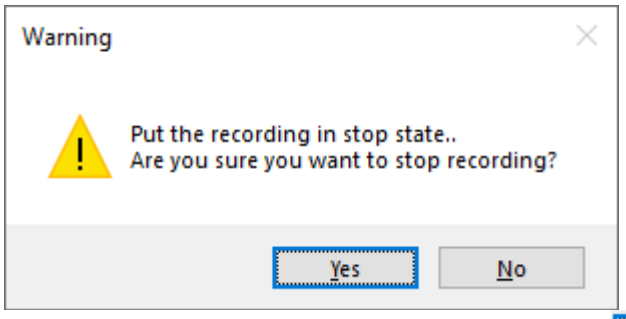
1. Select the [Console] tab on the main screen.



2. Select the [LAN] navigation bar.
3. Click the [Hardware settings] ( ) button.
4. The [Instrument Settings] screen will open. The model and serial number of the selected instrument will be shown. When the settings from an instrument are acquired and the window is opened, the instrument's settings will be displayed.



However, a warning message will be shown if the instrument is in a state that does not allow settings to be configured (for example, when recording is in progress).



To change the instrument's settings, select [Yes] (Yes) to place the instrument in a state that allows changes to settings.

5. You can initialize the instrument by clicking the [Initialize settings] button (Initialize settings).

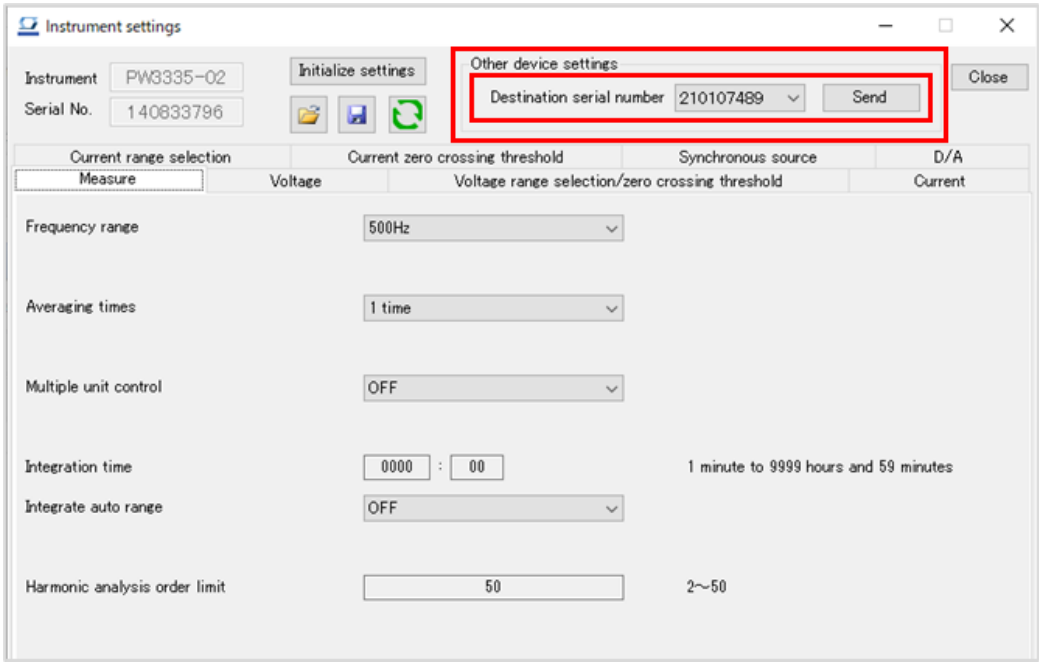
6. For more information about instrument settings, position the cursor over the box for changing a setting to display a description of the setting in question. A description is shown to the right of some settings boxes.

   Positioning the cursor over a setting for which the caution mark ( ) is shown will display precautionary information concerning the setting.
   To change the settings page, click one of the tabs (for example, MEAS 1 MEAS 2 REC 1 REC 2 SYS FTP PULSE).
   Instrument settings are configured by either selecting an option (for example, 500A) or entering text (for example, 0001.00). To configure a setting that involves selecting an option, click the setting to display the options and then select one to configure the instrument accordingly. To configure a setting that involves entering text, click the setting to open an input window, enter the desired text, and click the [Accept] button (Accept) to configure the instrument accordingly.
   Once the setting has been applied to the instrument, a message indicating that fact (The setting has been saved.) will be shown to the right of the settings box.

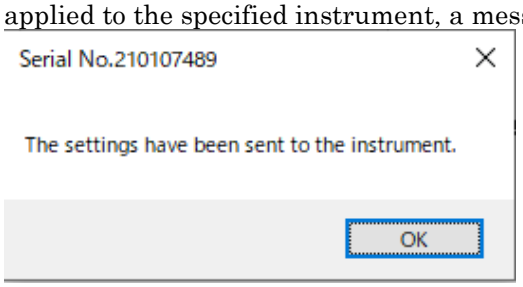
7. To save the current instrument settings, click the button for saving the settings as a file ( ). When the

[Save File] window opens, specify the destination folder and filename and save the file.

8. To load a previously saved file of instrument settings, click the button for loading a settings file ( ). When the [Load File] window opens, specify the file and filename and load the settings, which will be applied to the instrument. In general, you must use settings with an instrument of the same hardware configuration.
   However, when loading a settings file with an instrument like the PW337 whose functionality varies with the installed options, note the following:
   ·When you load a settings file saved for an instrument not equipped with an option on an instrument that is equipped with that option, settings for the option will not change.
9. If the settings shown in the application no longer match those shown on the [Instrument Settings] screen because the instrument has been operated directly, click the button for reacquiring all settings ( ). The instrument's settings and the settings shown on the [Instrument Settings] screen will then match.
10. If there are multiple instances of the same instrument to connect to, other instruments' settings will be shown on the [Instrument Settings] screen.



To use the instrument's settings to configure another instrument, select the serial number of the instrument you wish to configure and click the [Send] button (Send). Once the settings have been applied to the specified instrument, a message indicating that fact will be shown.



However, when configuring an instrument like the PW337 whose functionality varies with the installed options, note that only the settings shown in the instrument settings will be applied to the instrument.

11. Click the [Close] button (Close) to exit the [Instrument Settings] screen.

Settings for Battery Tester BT3554/BT3554-01/BT3554-50

1. Connect the Battery Tester with the computer.

※ To communicate with the Battery Tester by USB connection cable, the USB driver package must be installed on the computer.

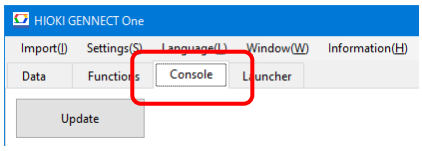
※ See INSTALL THE USB DRIVER PACKAGE for how to install the USB driver of BT3554 series.

※ See the instruction manual for how to install the USB driver of the earlier product 3554.

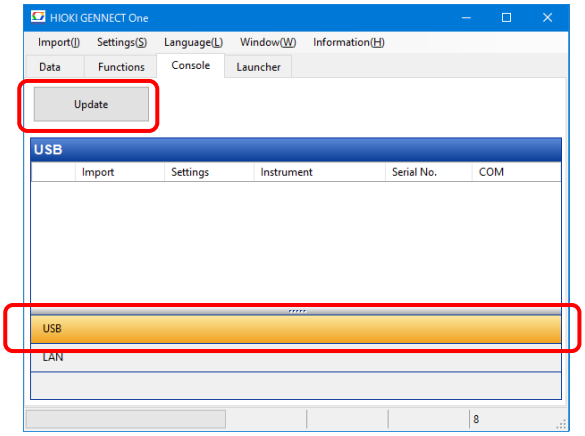
※ **Please note that the earlier product 3554 is NOT supported by Windows 8 or later.**

2. Open GENNECT One.

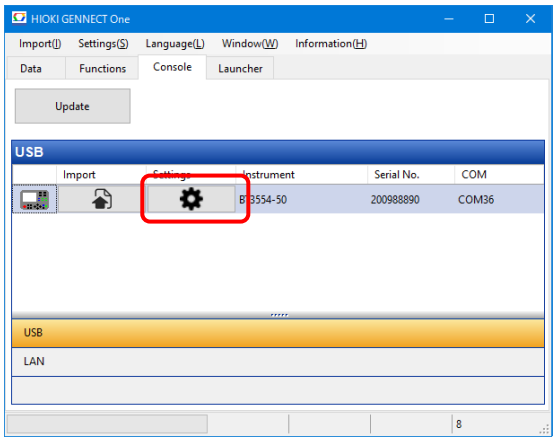
3. Select [Console] tab.



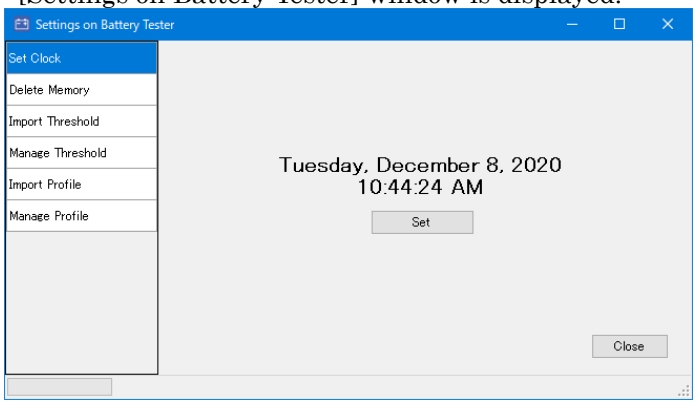
4. Choose the [USB] interface and then click [Update] button.



5. To start the instrument setting, choose the connected instrument from the list and then click button.

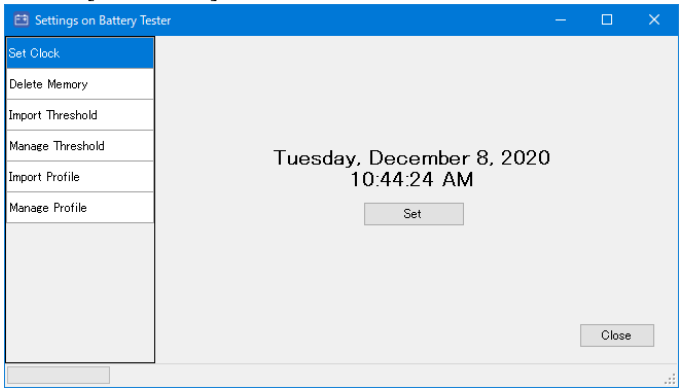


5. [Settings on Battery Tester] window is displayed.

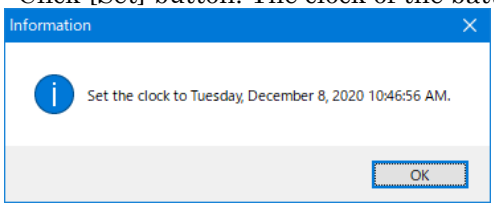


Set the clock on instrument

1. Select [Set Clock].

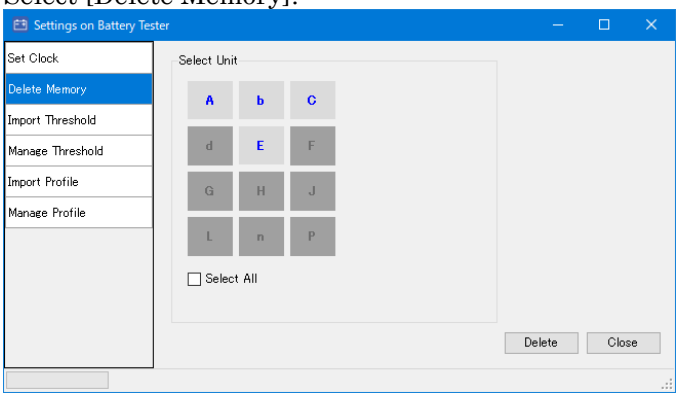


2. Click [Set] button. The clock of the battery tester is set by the computer.

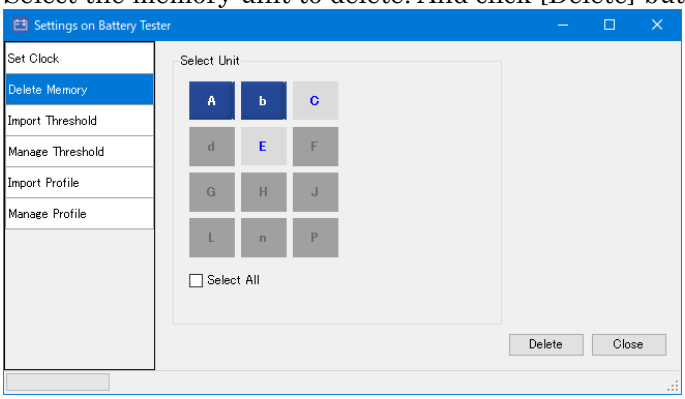


Delete Memory on instrument

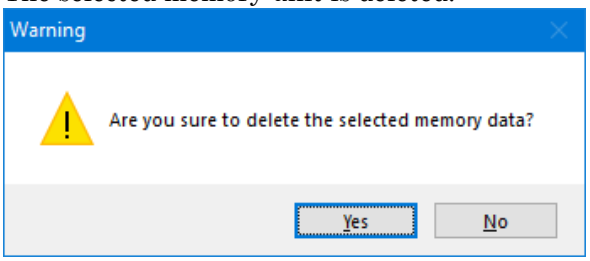
1. Select [Delete Memory].

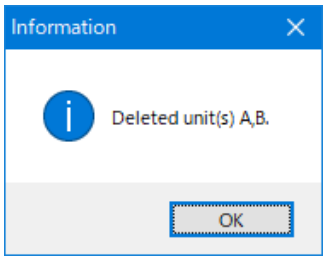


2. Select the memory unit to delete. And click [Delete] button.



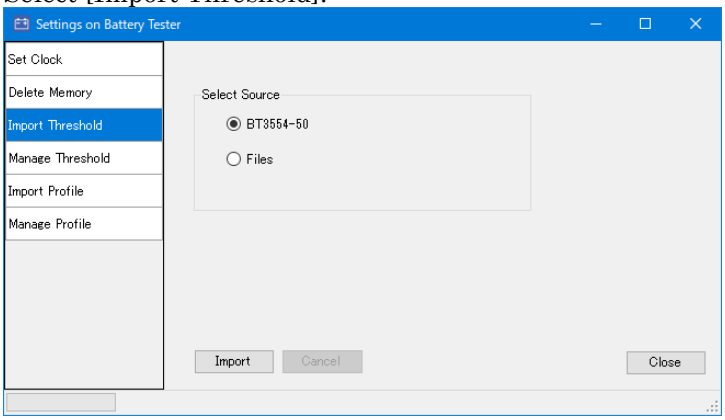
3. The selected memory unit is deleted.



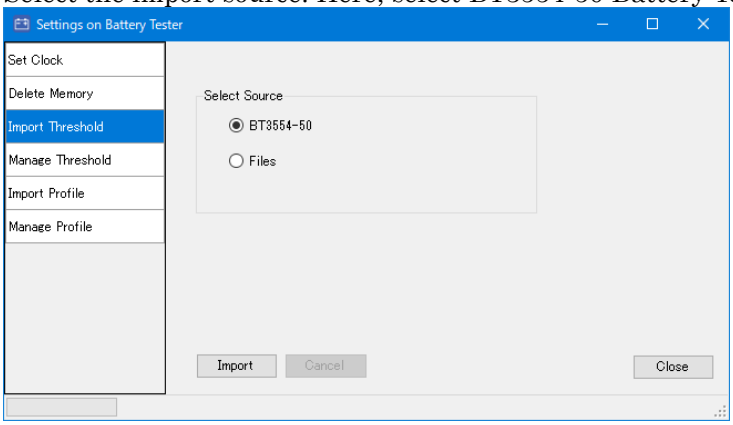


Import Threshold

1. Select [Import Threshold].

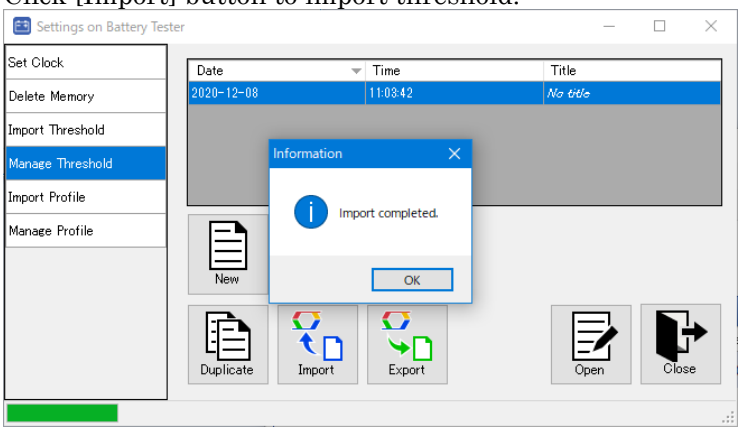


2. Select the import source. Here, select BT3554-50 Battery Tester as the source.



*If you would like to import threshold from GENNECT Cross for Android/iOS, select [File] as the source.

3. Click [Import] button to import threshold.

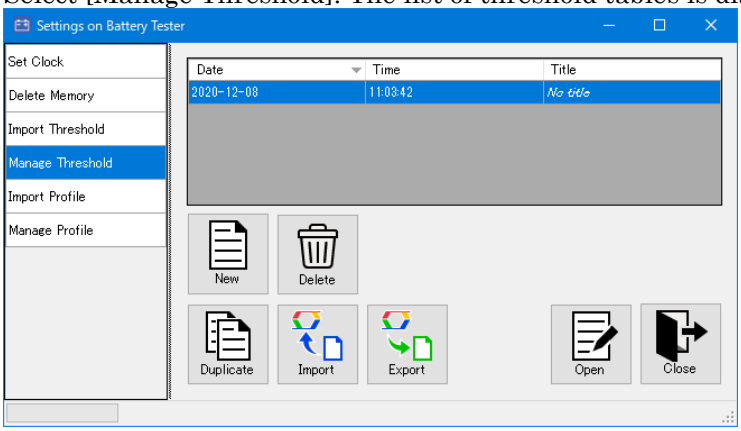


How to share and manage threshold tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following

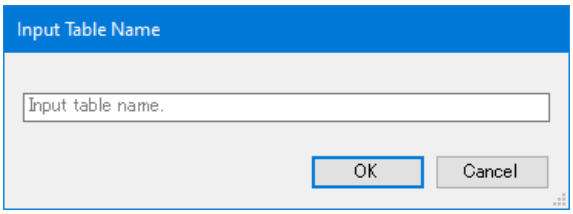
- Share battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)
- Manage battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)

Create the new threshold table

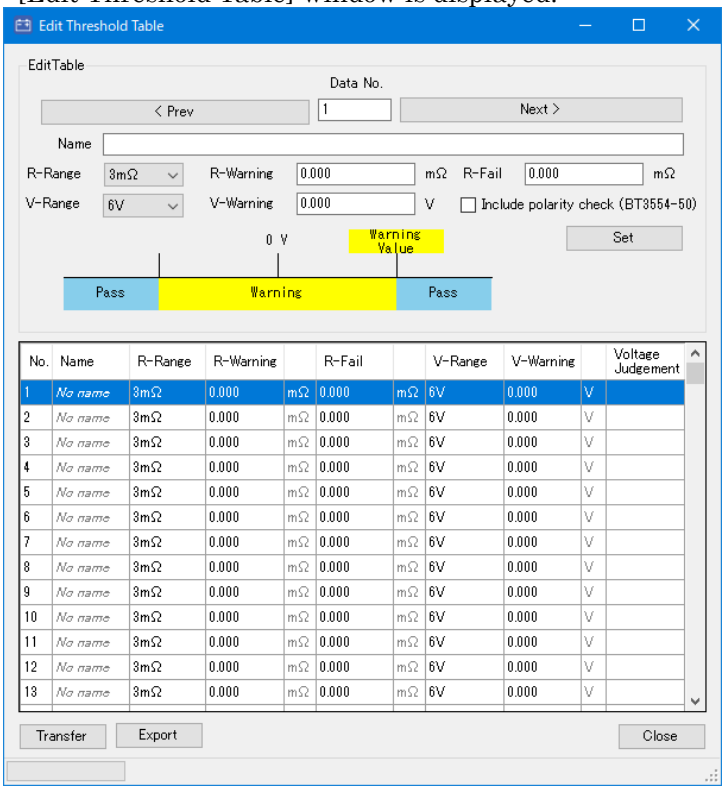
1. Select [Manage Threshold]. The list of threshold tables is displayed.



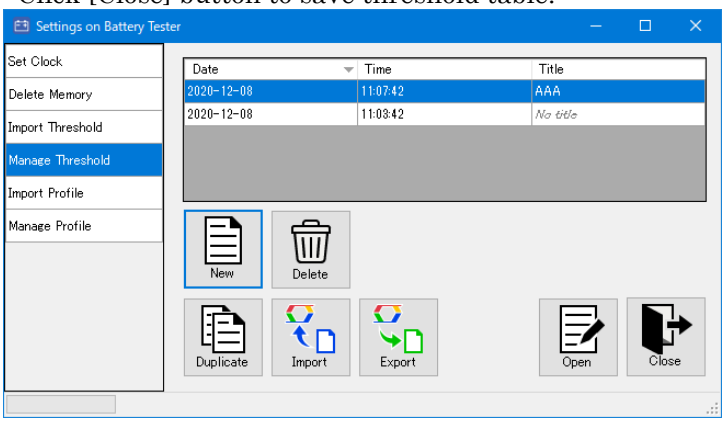
2. Click [New] button. [Input Table Name] window pops up. Set the name of the new threshold table.


Input Table Name
Input table name.
OK
Cancel

3. [Edit Threshold Table] window is displayed.



4. Click [Close] button to save threshold table.

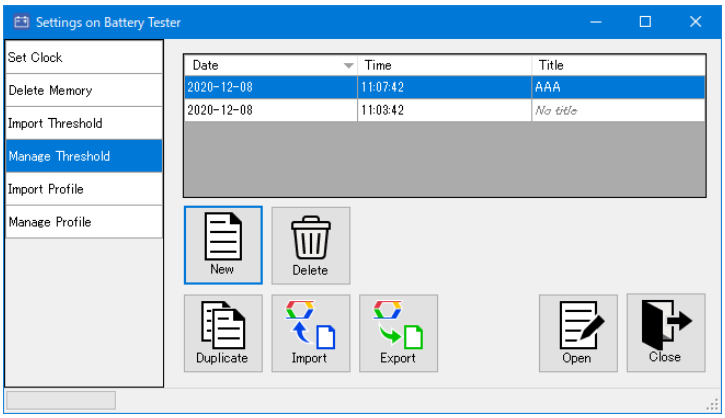


How to share and manage threshold tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following

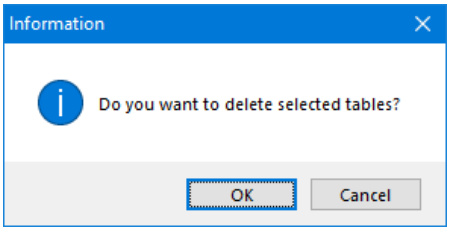
- Share battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)
- Manage battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)

Delete the threshold table

1. Select [Manage Threshold]. The list of threshold tables is displayed.



2. Click [Delete] button. The confirmation message is displayed. Click [OK] button to delete the threshold table.

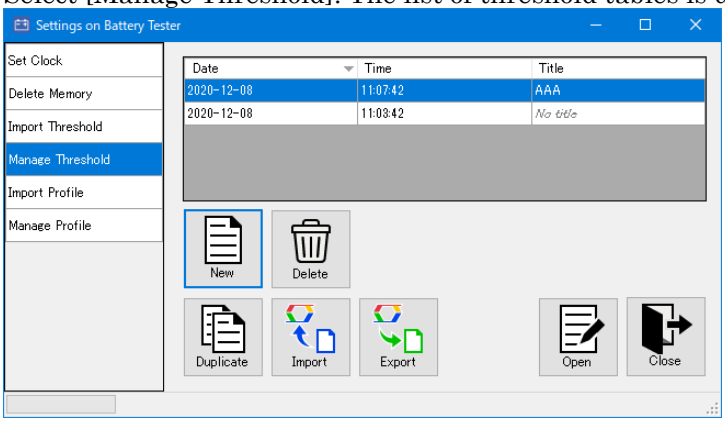


How to share and manage threshold tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following

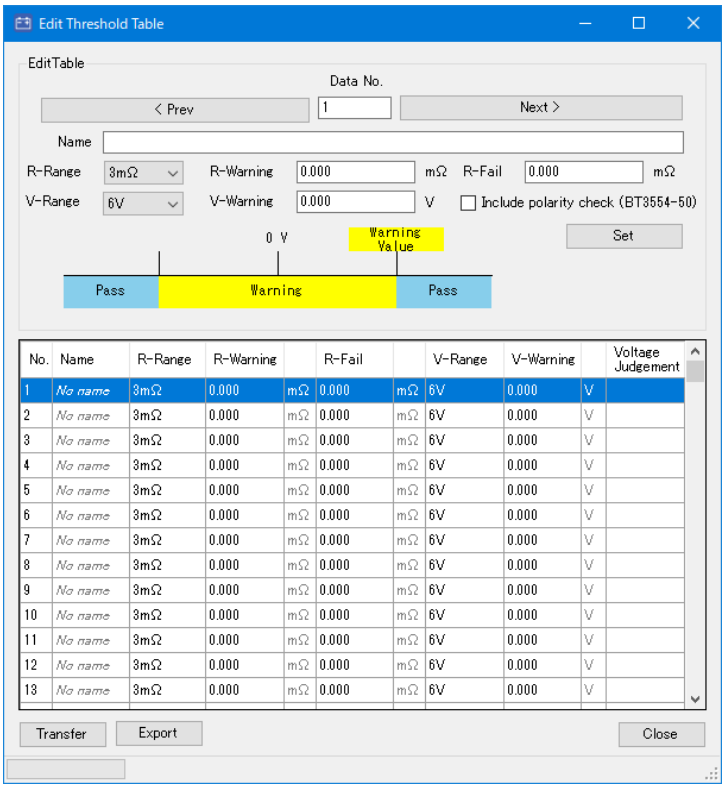
- Share battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)
- Manage battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)

Transfer the threshold table to Battery Tester

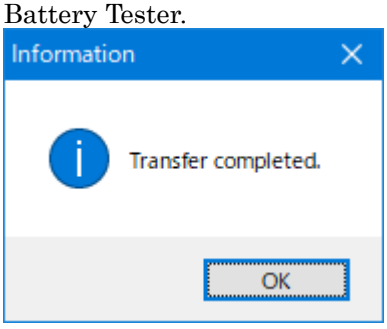
1. Select [Manage Threshold]. The list of threshold tables is displayed.



2. Click [Open] button. [Edit Threshold Table] window is displayed.

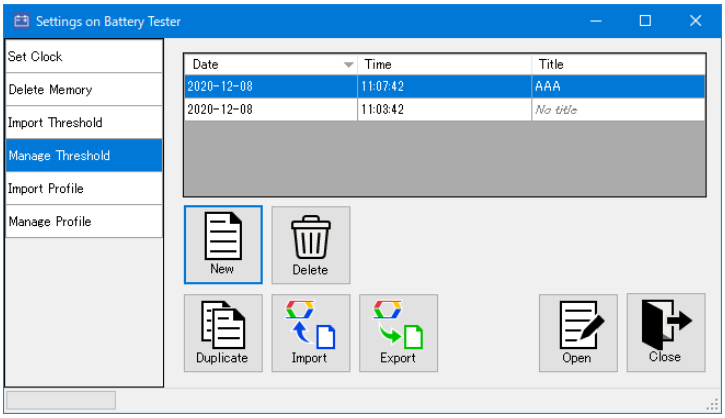


3. Click [Transfer] button. All data in the threshold table (From No.1 to No.200) will be transferred to Battery Tester.



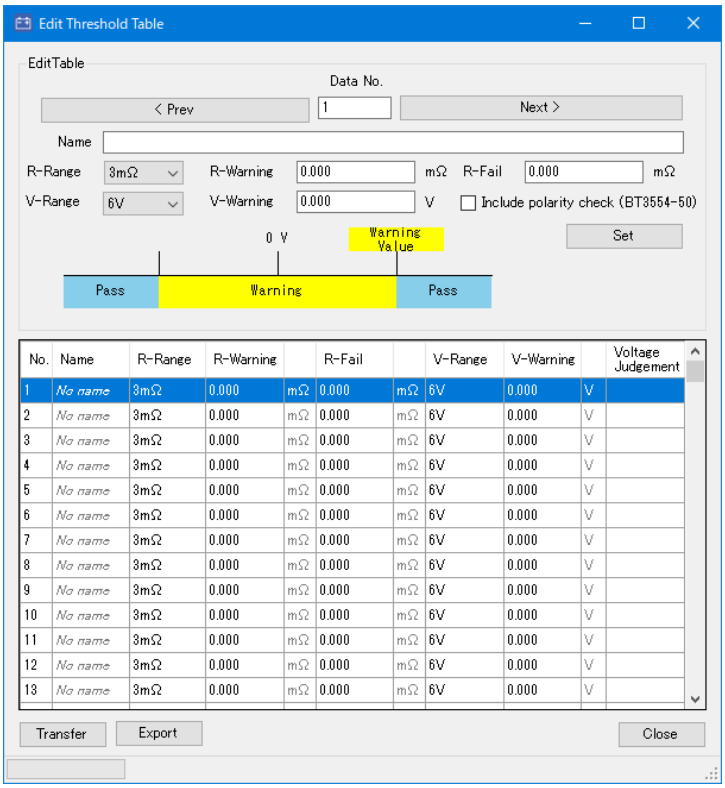
Edit the threshold table

1. Select [Manage Threshold]. The list of threshold tables is displayed.

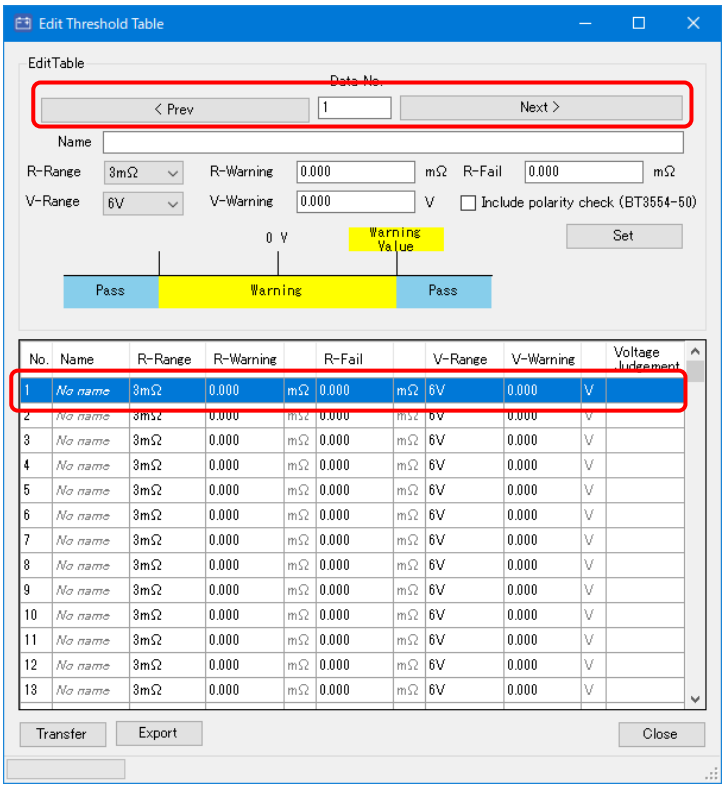


2. You can duplicate the table in the list by clicking the [Duplicate] button.
3. You can import from a file (hok format) by clicking the [Import] button.
4. You can export to a file (hok format) by clicking the [Export] button.

5. Click [Open] button. [Edit Threshold Table] window is displayed.



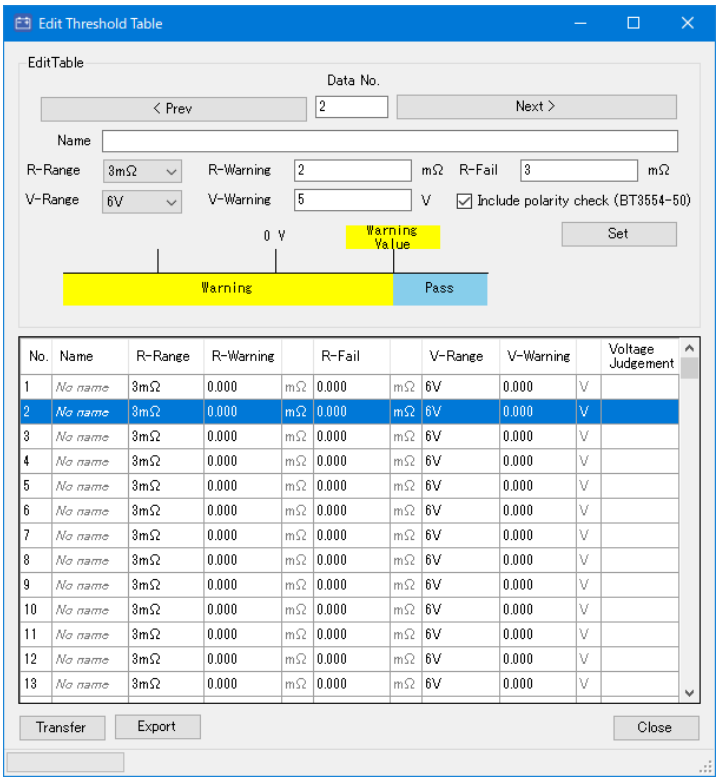
6. Select the threshold to edit by clicking.



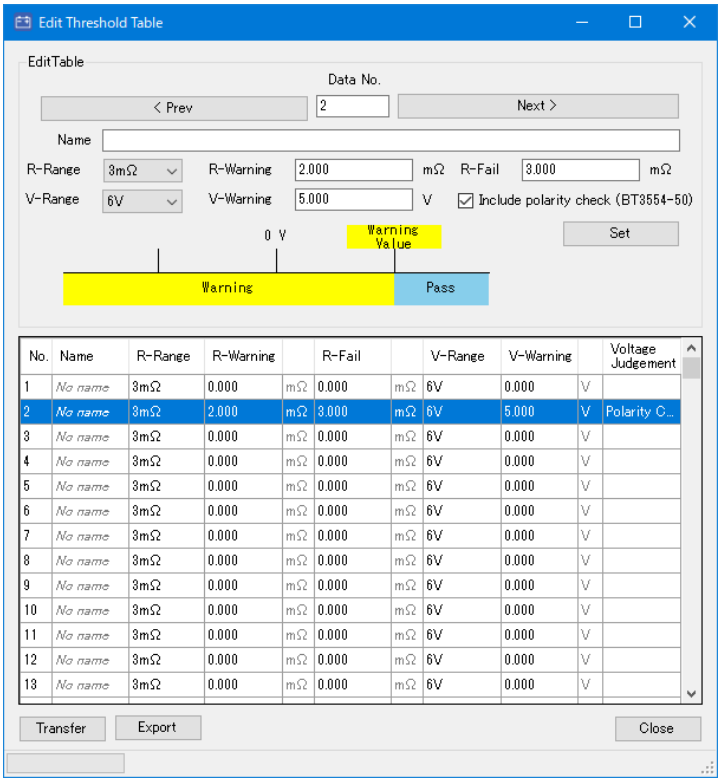
*Data is also selected in number order, by clicking.

*Data is also selected by setting data number.

7. Click [Set] button, after setting Name, R Range, R Warning, R Fail, V Range, V Warning and Voltage Judgement (BT3554-50).

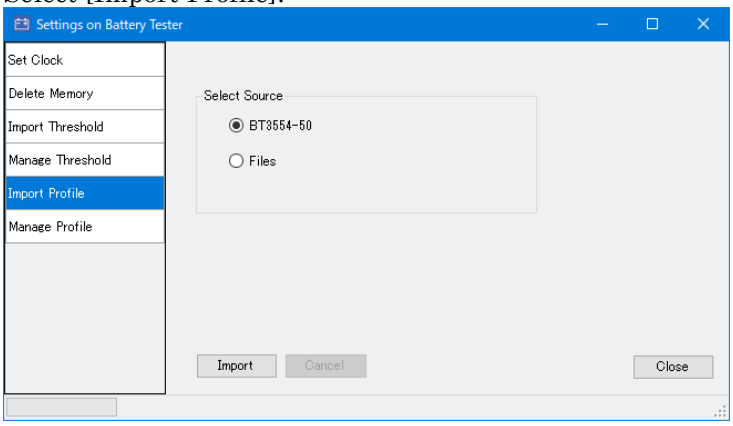


8. The threshold has been set to the data of No.2.

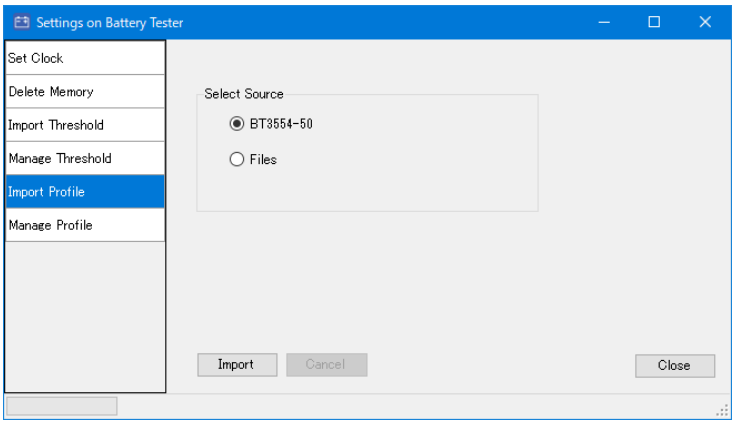


Import Profile (BT3554-50)

1. Select [Import Profile].

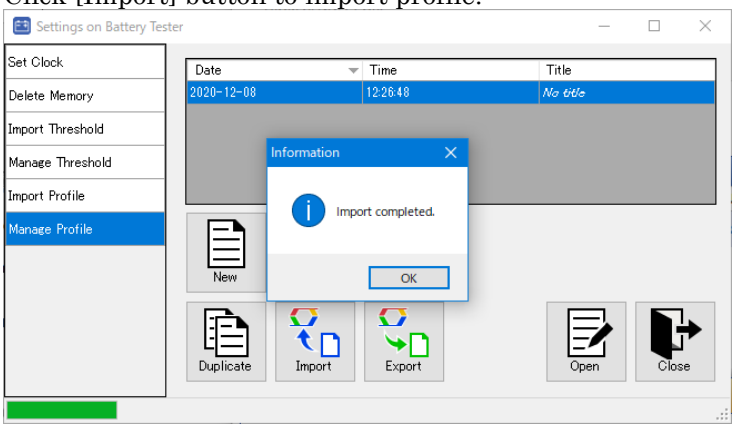


2. Select the import source. Here, select BT3554-50 Battery Tester as the source.



*If you would like to import profile from GENNECT Cross for Android/iOS, select [File] as the source.

3. Click [Import] button to import profile.

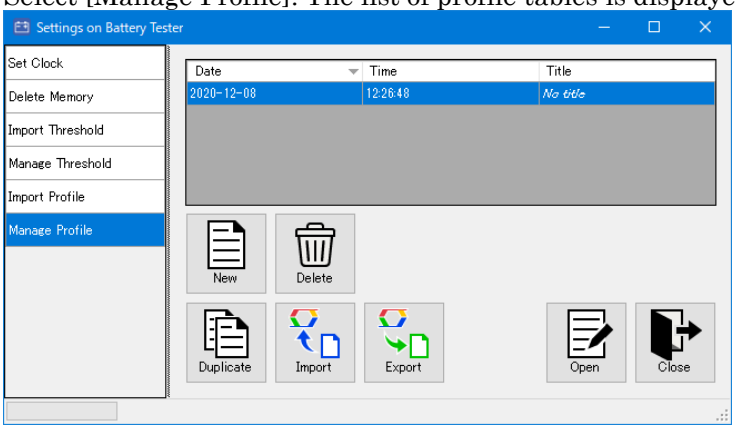


How to share and manage profiles tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following.

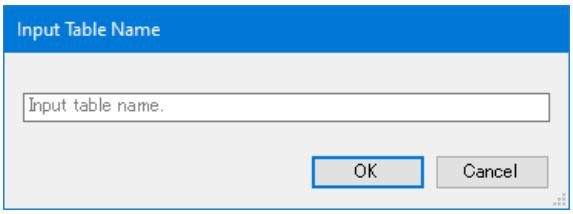
- Share battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)
- Manage battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)

Create the new profile table (BT3554-50)

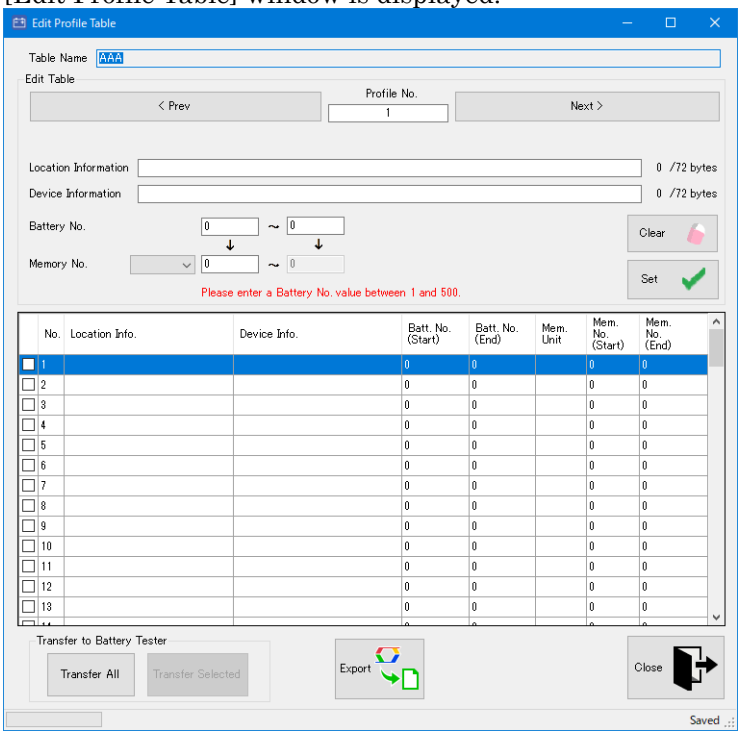
1. Select [Manage Profile]. The list of profile tables is displayed.



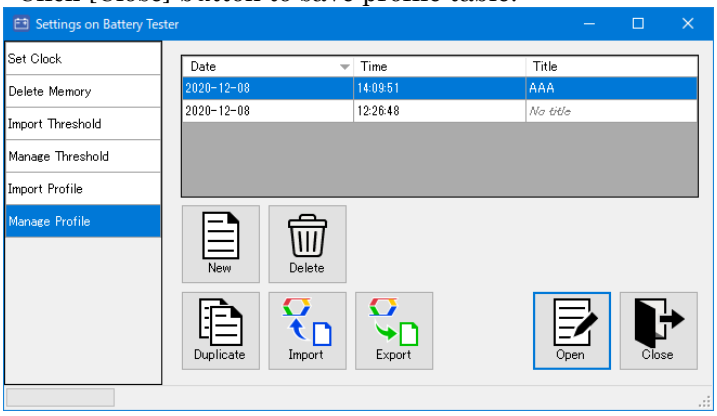
2. Click [New] button. [Input Table Name] window pops up. Set the name of the new profile table.



3. [Edit Profile Table] window is displayed.



4. Click [Close] button to save profile table.

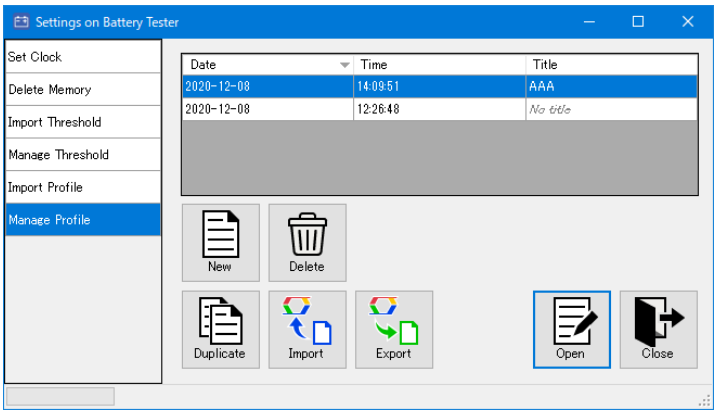


How to share and manage profiles tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following.

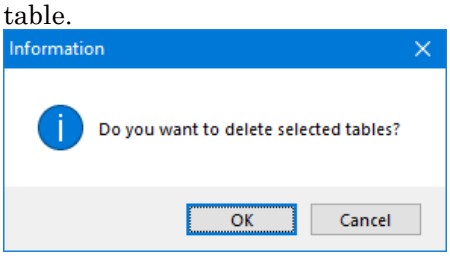
- Share battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)
- Manage battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)

Delete the profile table (BT3554-50)

3. Select [Manage Profile]. The list of profile tables is displayed.



4. Click [Delete] button. The confirmation message is displayed. Click [OK] button to delete the profile table.

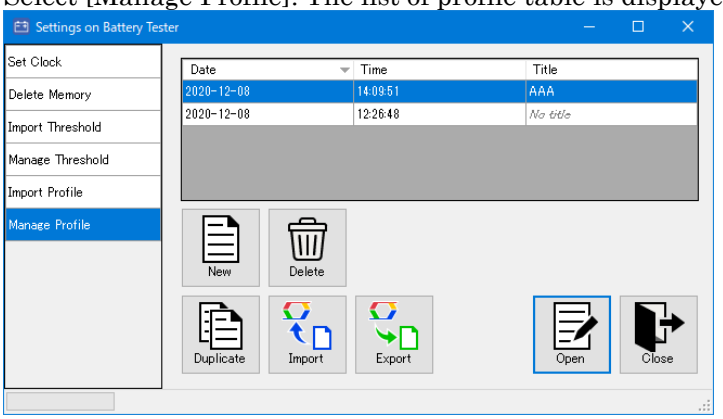


How to share and manage profiles tables in the cloud (GENNECT Cloud Standard/Pro subscribers can use this feature), please refer to the following.

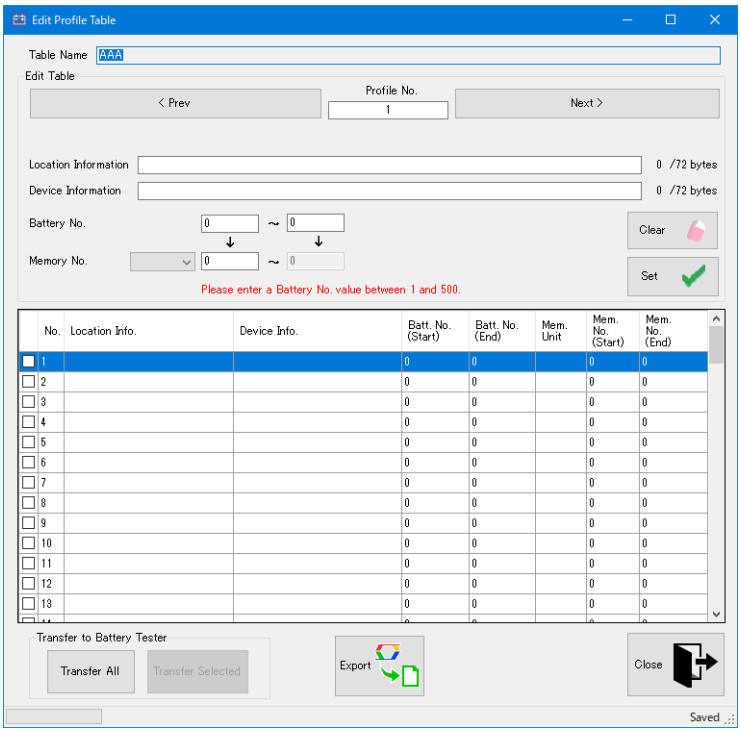
- Share battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)
- Manage battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)

Transfer the profile table to Battery Tester (BT3554-50)

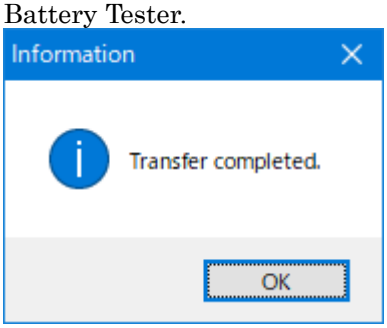
1. Select [Manage Profile]. The list of profile table is displayed.



2. Click [Open] button. [Edit Profile Table] window is displayed.

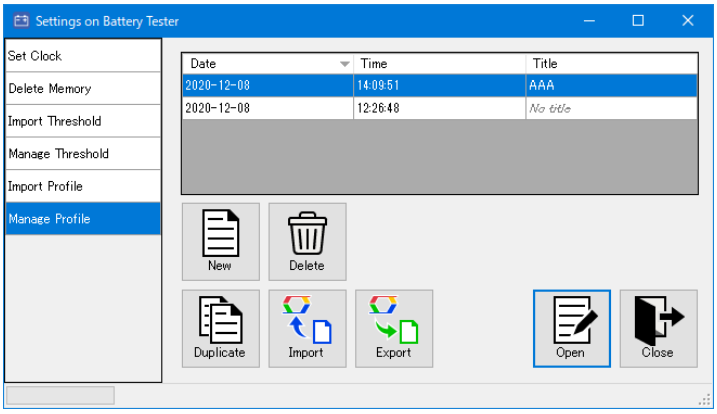


3. Click [Transfer All] or [Transfer Selected] button. Data in the profile table will be transferred to Battery Tester.



Edit the profile table (BT3554-50)

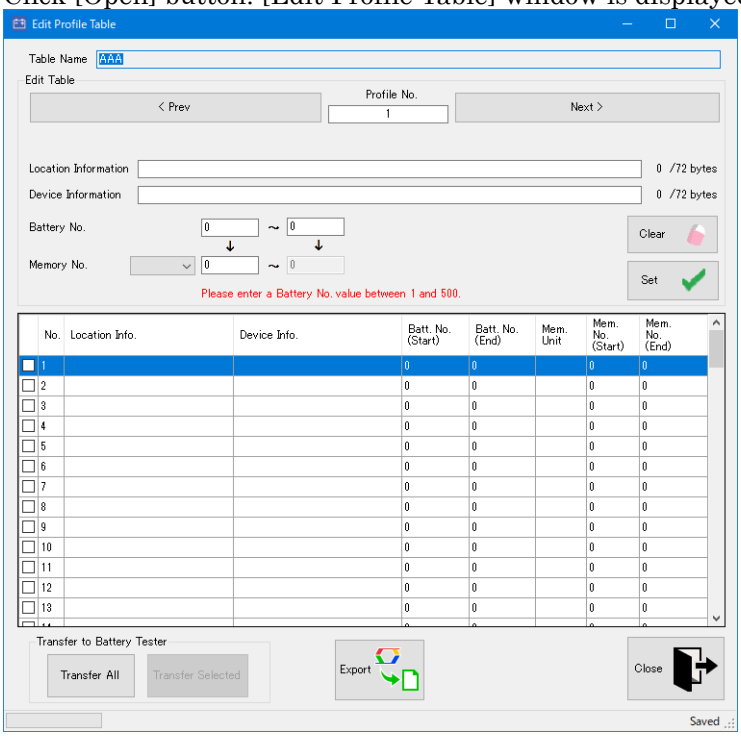
1. Select [Manage Profile]. The list of profile table is displayed.



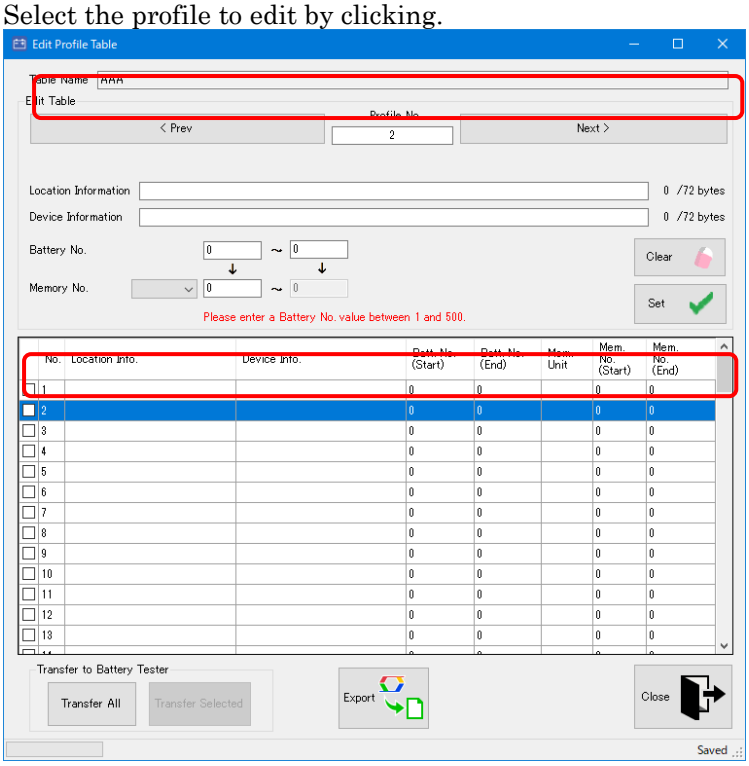
2. You can duplicate the table in the list by clicking the [Duplicate] button.
3. You can import from a file (hok format) by clicking the [Import] button.

4. You can export to a file (hok format) by clicking the [Export] button.

5. Click [Open] button. [Edit Profile Table] window is displayed.



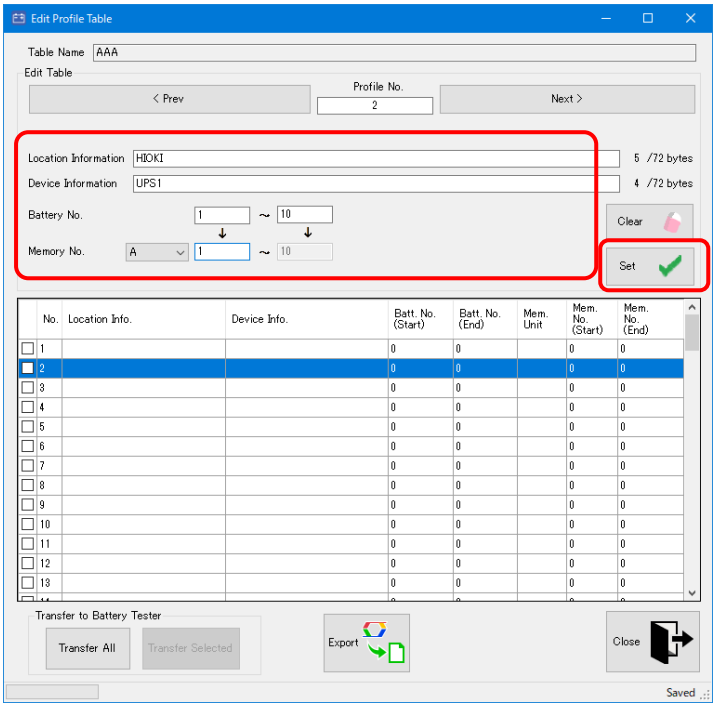
6. Select the profile to edit by clicking.



*Data is also selected in number order, by clicking.

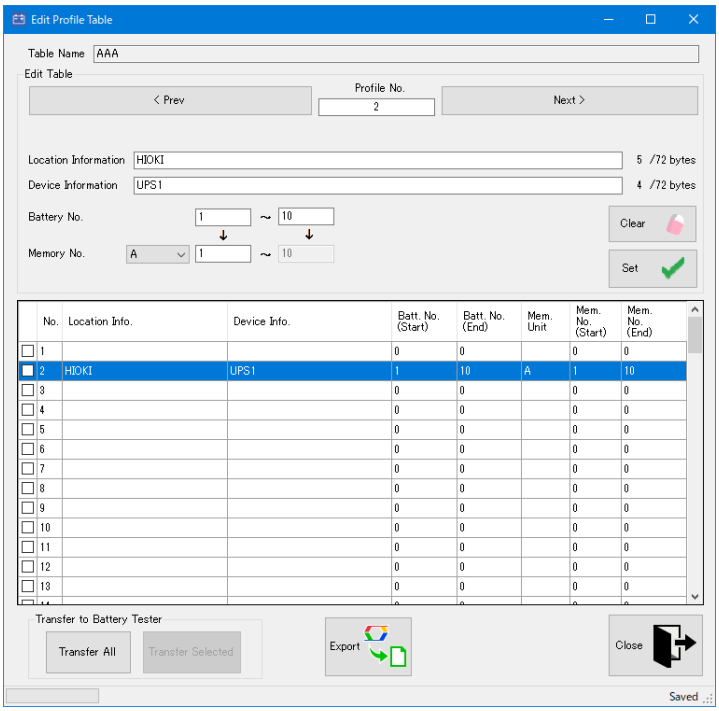
*Data is also selected by setting data number.

7. Click [Set] button, after setting Location Information, Device Information, Battery No.(Start), Battery No. (End), Memory Unit and NO.



*To clear the contents, click the [Clear] button.

8. The profile has been set to the data of No.2.



Measured values with the logging feature (Logging Function [LAN])

・[Logging] feature monitors or log measured values with measurement channels and logging interval specified.

・This feature saves the measurement files in the application's database.

※ This feature supports the real-time measurement via LAN communication.

※ See the following sections to see the measured data or to export measured data in the CSV format.

- View Logging data
- Output measurement data to CSV file

See the following sections for details on how to use the Time-series(Logging) Viewer

- Using the Time-series/Logging Viewer

※ Since V5.10, logging can be started up to 8 times at the same time.

Supported instruments

[Logging] (real-time measurement) feature supports following instruments.

Model Name	Product Name	Firmware Ver.	URL
PQ3100 *1	POWER QUARITY ANALYZER	V2.10 or Later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198 *1,*2	POWER QUALITY ANALYZER	V1.10 or Later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3335 *2,*3,*6	POWER METER	V1.11 or later	https://www.hioki.com/global/products/power-meters/single-phase-ac-dc/id_5831
PW3336 *2,*3,*6	POWER METER	V1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5805
PW3337 *2,*3,*6	POWER METER	V1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5929
PW3360 *1	CLAMP ON POWER LOGGER	V3.10 or Later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365 *1	CLAMP ON POWER LOGGER	V2.00 or Later	https://www.hioki.com/en/products/detail/?product_key=5565
PW3390 *2	POWER ANALYZER	V2.00 or Later	https://www.hioki.com/en/products/detail/?product_key=6413
PW6001 *2	POWER ANALYZER	V3.02 or Later	https://www.hioki.com/en/products/detail/?product_key=5796
PW8001 *2,*4,*5,*7	POWER ANALYZER	V1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
LR8400, LR8401, LR8402 *1	MEMORY HiLOGGER	V1.21 or Later	https://www.hioki.com/en/products/detail/?product_key=5613
LR8410 *1	WIRELESS LOGGING STATION	V1.42 or Later	https://www.hioki.com/en/products/detail/?product_key=5697
LR8450, LR8450-01 *1,*8	MEMORY HiLOGGER	V1.20 or Later	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102 *1,*8	DATA LOGGER	V1.00 or Later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000 *1	MEMORY HiCORDER	V2.12 or Later	https://www.hioki.com/en/products/detail/?product_key=6439
BT5525 *1	BATTERY INSULATION TESTER	V1.00 or Later	https://www.hioki.com/global/products/electrical-safety-testers/insulation/id_1265405
BT4560-50 *1	BATTERY IMPEDANCE METER	V1.00 or Later	https://www.hioki.com/sg-en/products/resistance-meters/battery/id_5897 (Models with LAN interface only)
BT6065, BT6075 *1	PRECISION BATTERY TESTER	V1.00 or Later	https://www.hioki.com/sg-en/products/resistance-meters/battery/id_1266730

ST5680 *1	DC HIPOT TESTER	V1.00 or Later	https://www.hioki.com/global/products/electrical-safety-testers/hipot/id_1265574
IM3523A *1	LCR METER	V1.02 or Later	https://www.hioki.com/global/products/lcr-meters/10-mhz/id_1265475 (Models with LAN interface only)
RM3545A*1	RESISTANCE METER	V1.00 or Later	https://www.hioki.com/global/products/resistance-meters/resistance/id_1266279 (The RM3545A does not support measurement time longer than 1 minute, so reduce the measurement SPEED, AVERAGE, DELAY, OVC, and number of channels so that the measurement time is less than 1 minute.) (LAN communication port only supports the default value of 23)
DM7275, DM7276 *1	PRECISION DC VOLTMETER	V1.09 or Later	https://www.hioki.com/sg-en/products/benchtop-dmm/dc-voltmeters/id_6551 (LAN communication port only supports the default value of 23)

***1 If the measurement of instrument is stop state when the measurement is started by this function, it will shift to the start state.**
***2 If the measurement of instrument is stop state when the measurement is started by this function, it will shift to the start state.**
***3 All of the analysis data of the measurement instrument is reset by starting the measurement with this feature. It is recommended to use this feature after the recording and analysis of the measurement data has been completed (Data reset state).**
***4 All of the integrated data of the measurement instrument is reset by starting the measurement with this feature. It is recommended to use this feature after the recording and analysis of the integration data has been completed (Data reset state).**
***5 If the setting of integration by each wiring is enabled on the instrument when measurement is started using this function, The setting is changed to integration by all wires.**
***6 If the version of this application is less than V5.10, acquisition of harmonic items is not supported. Please upgrade this application to V5.10 or later.**
***7 Do not use "," or ";" as a unit when setting the user-defined function (UDF) of the main unit.**
***8 Do not use "," or ";" as a unit when setting the waveform calculation and scaling functions of the main unit.**

Limitations

[Logging] (real-time monitoring/logging) feature has following limitations.

feature	limitation	remarks
Number of concurrent logging executions	8	Since V5.10
Maximum number of channels	512 channels + 16 channels (inter-channel calculation channels)	Up to 32 channels can be displayed on the graph and the data list. * When multiple logging is executed, the total number of logging channels must not exceed the limit.
Maximum number of instruments	30 instruments	* When multiple logging is executed, the number of logging connected measuring instruments must not exceed the limit. * When multiple logging is executed, the same instrument cannot be specified for multiple logging.
Interface	LAN	
Logging Interval	1/2/5/10/30 s 1/2/5/10/30 min 1 hour	The application determines the minimum logging interval by measuring the time for getting measured values of selected channels.
Maximum number of inter-channel calculation channels	16 (Z1 to Z16)	* When multiple logging is executed, the total number of channels for inter-channel calculations must not exceed 16 channels.
Data segmentation	1 day/1 hr.	
Automatic output (daily report) save interval	1 day	When logging is enabled: → Automatically generated daily at 23 hr. 59 min. 59 sec. When logging stopped: → Automatically generated when logging stops

Automatic output (CSV) save interval	1 day/1 hr. *As determined by data segmentation setting	When logging is enabled: → 1 day: Automatically generated daily at 23 hr. 59 min. 59 sec. → 1 hr.: Automatically generated daily at XX hr. 59 min. 59 sec. When logging stopped: → Automatically generated when logging stops
Automatic output (daily report) format	Excel	

[Logging] (real-time monitoring/logging) feature has following limitations about the network configuration.

feature	limitation	remarks
Interface	LAN	
Network range for auto instrument detection.	□.□.□.2 – □.□.□.254 ※The network range must be in the same range as the computer.	
DHCP	Not supported	

Overview of the measurement

Follow the steps below to start or stop logging.

To communicate measurement instruments by LAN cable (p.17)

Start logging (p.146)

↓

Select instrument(s) (p.147)

↓

Select channels (p.148)

↓

Configure the logging settings (p.152)

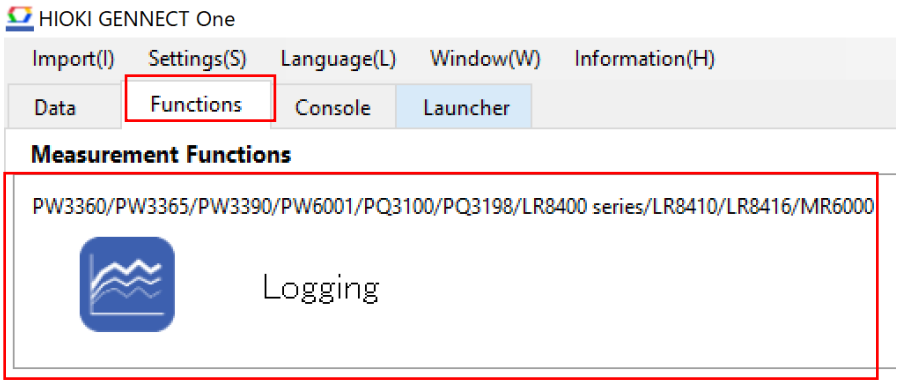
↓

Stop logging (p.155)

Start logging

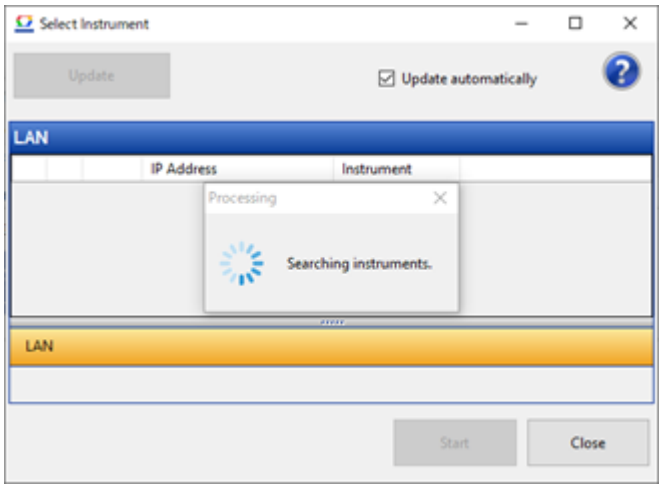
Start logging

1. Click [Measurement], then click [Logging].

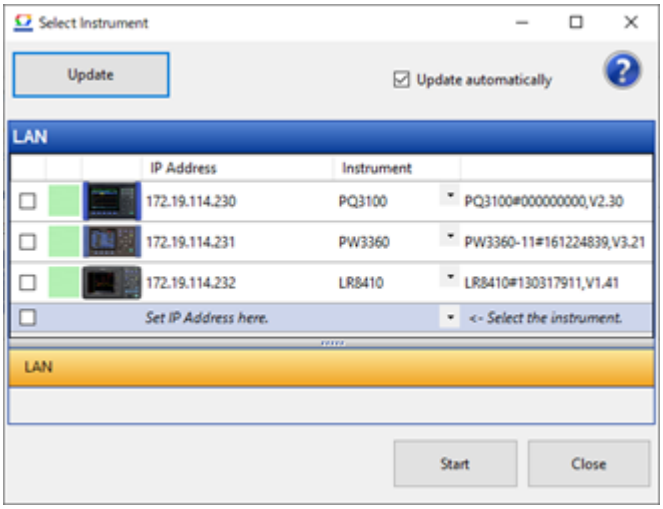


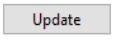
Select instrument(s)

1. [Select Instrument] window is displayed.
   "Searching instruments" message will be displayed until the application finishes searching the instruments connected to the computer.



2. The instruments found in the step 1 will be listed.

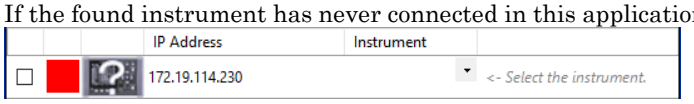


※ To search instruments again, click 

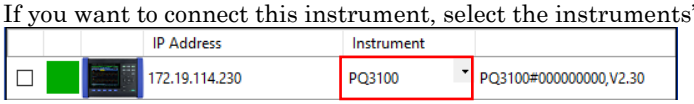
button.

※ When the "Update Automatically" checkbox is turned OFF, automatic search for measuring instruments is not performed when this screen is opened.
When the "Update Automatically" checkbox is checked ON, automatic search for measuring instruments is performed when this screen is opened.

※ If the found instrument has never connected in this application, the instrument will be listed like following.

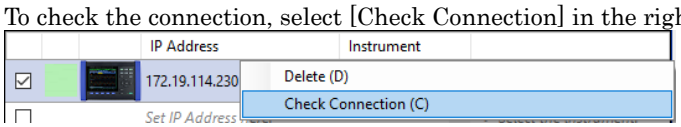


If you want to connect this instrument, select the instruments' model in the [instrument] combo box.

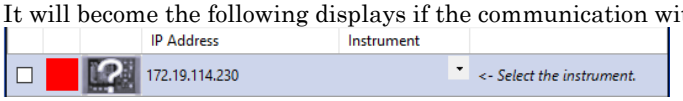


※ If you want to add the instrument that has not been found in the [Update], input the IP address directly in the [Set the IP address] textbox and select the instruments' model in the [instrument] combo box.

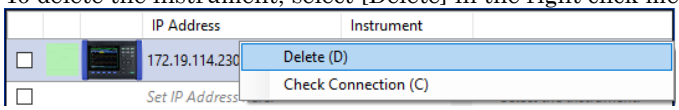
※ To check the connection, select [Check Connection] in the right click menu.



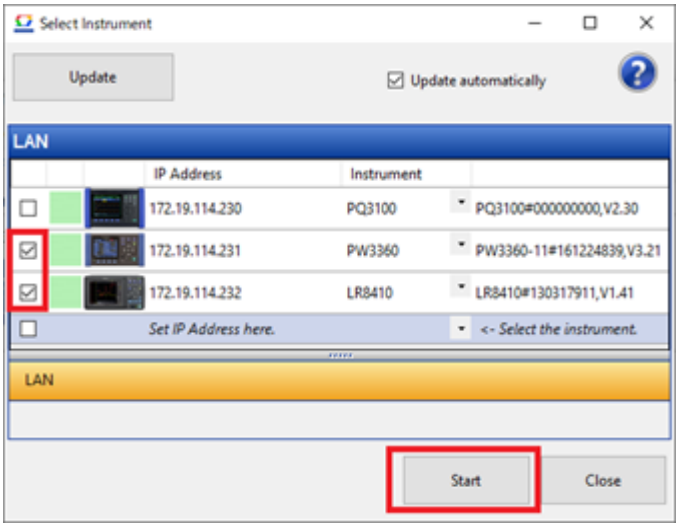
It will become the following displays if the communication with the instruments is disrupted.



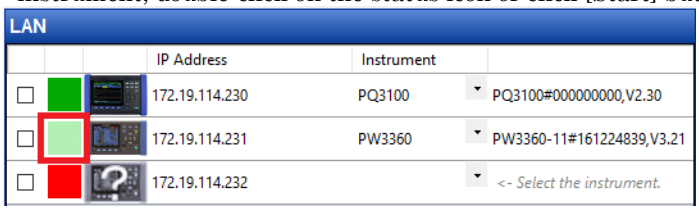
※ To delete the instrument, select [Delete] in the right click menu.



3. Select the instruments for logging. Click [Start] to go to next step.



※ The status with light-green color means that the instrument is discovered but not connected. To connect the instrument, double-click on the status icon or click [Start] button.



Connected: Green (■)

Discovered: Light-green (■)

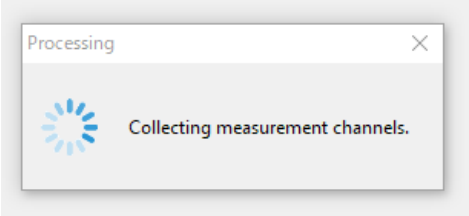
Disconnected: Red (■)

Select channels (Setting Calculation Channels)

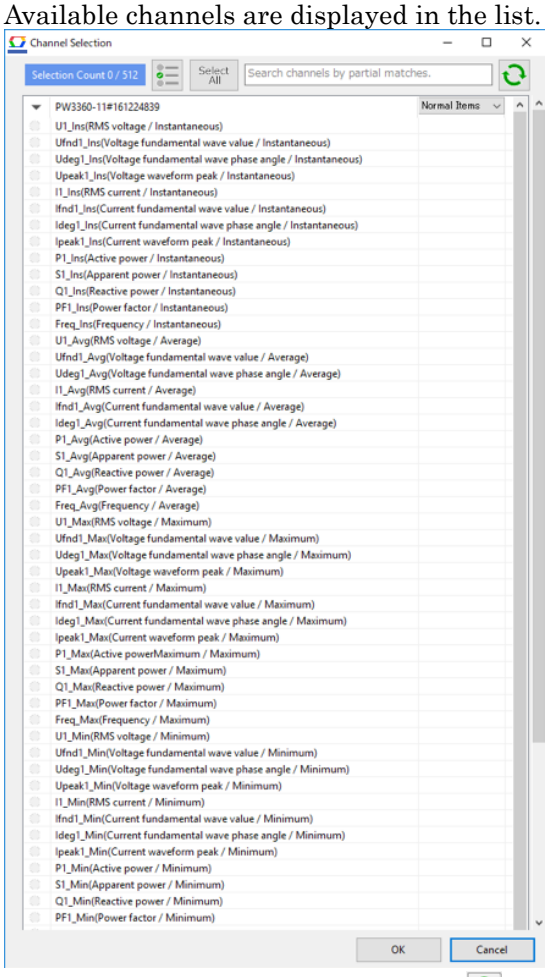
1. [Channel Selection] window is displayed.

   "Collecting measurement channels." message will be displayed until the application finishes collecting

the available channels of instruments.



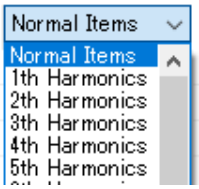
2. Available channels are displayed in the list.



※ To search available channels again, click button.

※ In PQ3100,PQ3198,PW3360,PW3365,PW3335*,PW3336*,PW3337*,PW8001 (with harmonics analysis only), you can select the harmonics measurement channels by selecting the drop down list of measurement items.

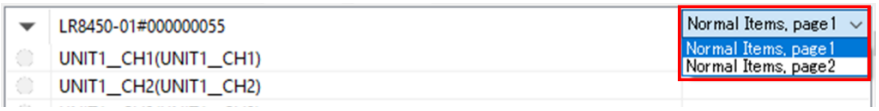
***If the version of this application is less than V5.10, the acquisition of harmonic items for PW3335, PW3336, and PW3337 is not supported. Please upgrade this application to V5.10 or later.**



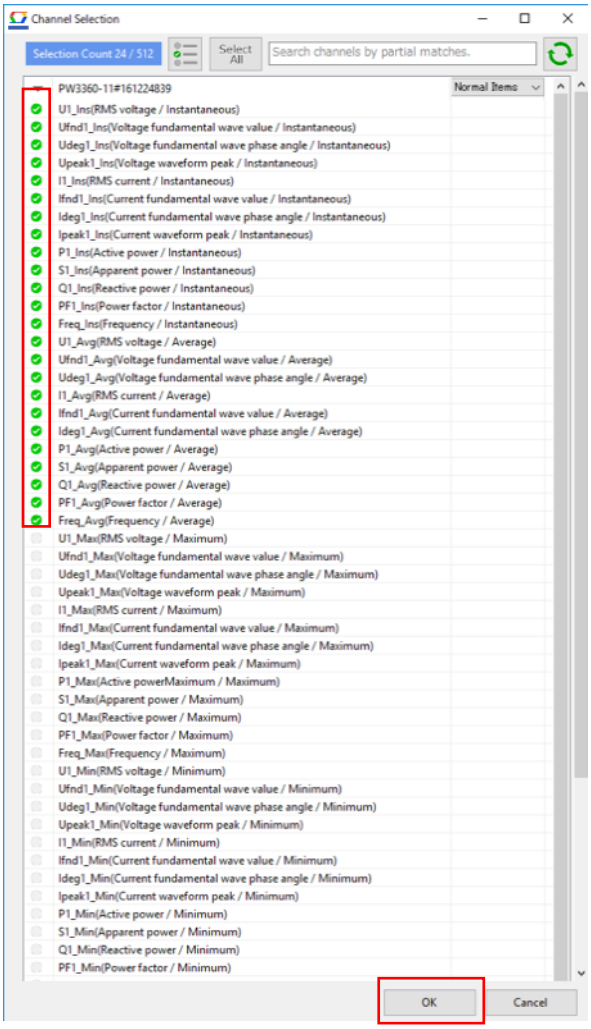
※ Measurement items of some instruments, such as PW3336, PW8001, PQ3198 are displayed with an identification name (e.g. PWP, MUpk). Please refer to the following for the correspondence between the identification name and the measurement item name.

➢ Identification name and measurement item name in Logging and Dashboard function

※ If the number of measurement parameters for normal items exceeds 1200, the page will be divided into multiple pages. In such a case, select the page to be displayed in the combobox and switch pages.



3. Select the measurement channels by clicking check-boxes. Click [OK].



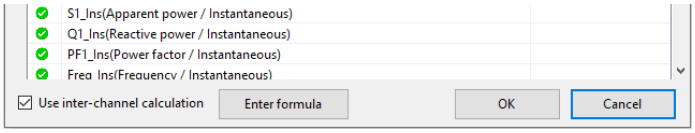
※ **Up to 512 channels can be selected for logging measurement.**

※ To filter the channels by channel name, input the filter text in the [Search channels by partial matches] text box.

※ To filter the channels to checked channels only, click button.

※ To select all channels displayed or to deselect all channels displayed, click button.

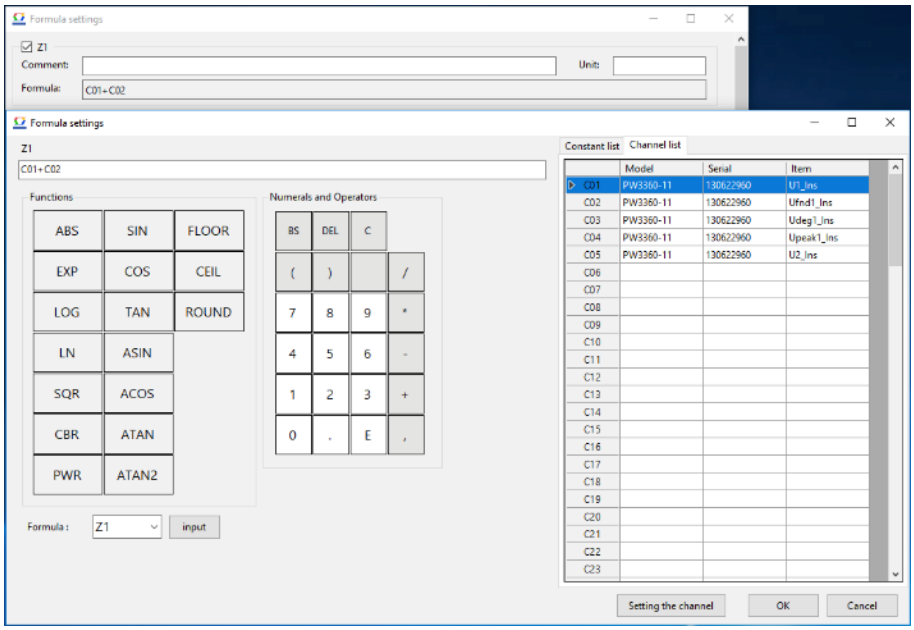
4. To use selected measurement channels to perform an inter-channel calculation, select the [User inter-channel calculation] checkbox and click the [Enter Formula] button.



5. To use selected measurement channels to perform an inter-channel calculation, set the formula on the [Formula Settings] dialog box.

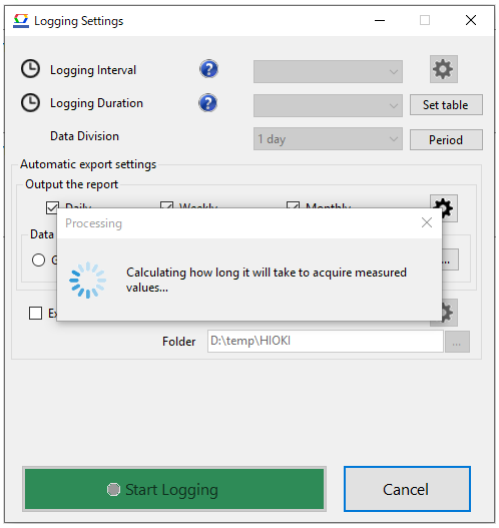
   See below for more information about the [Formula Settings] dialog box.

   - Configuring detailed settings for inter-channel calculations

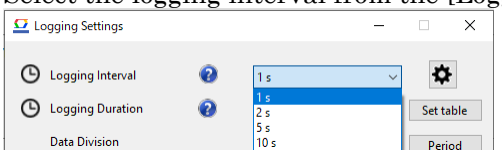


Configure the logging settings

1. [Logging Settings] window is displayed.
   "Measuring the time for data acquisition" message will be displayed until the application finishes measuring the time for data acquisition.



2. Select the logging interval from the [Logging Interval] combo box.



※ Although the logging interval can be selected from 1s/2s/5s/10s/30s/1min/2min/5min/10min/30min/1hour., the minimum logging interval is determined by the application from the result of measuring the time for data acquisition.

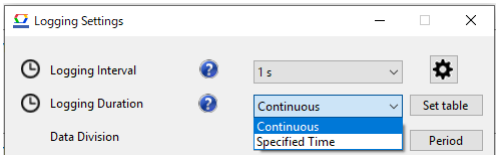
※ [Data Division] will be changed if you select the [Logging Interval]. Logging data will be divided and saved when the time span has elapsed that is displayed in the [Data Division].

※ Logging specified in the logging schedule must be less than 1 minute.
Logging intervals exceeding 1 minute cannot be registered in the table.

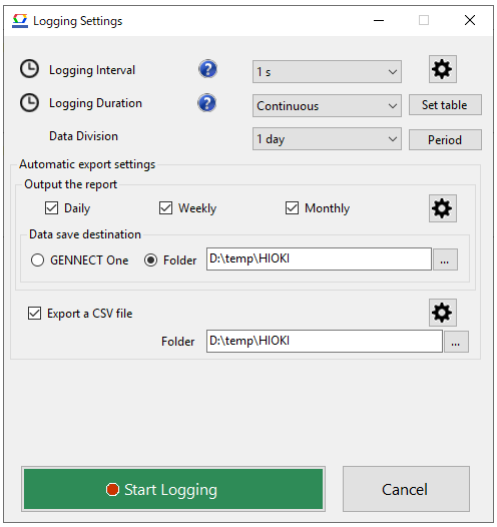
3. Select the logging duration in the [Logging Duration] combobox.

Continuous: Continue logging until the logging is stopped manually.

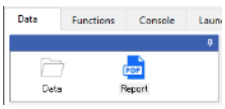
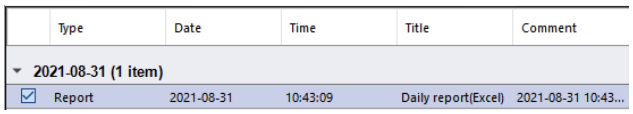
Specified Time: Specify the duration between 1s and 30days23hours59min59s.

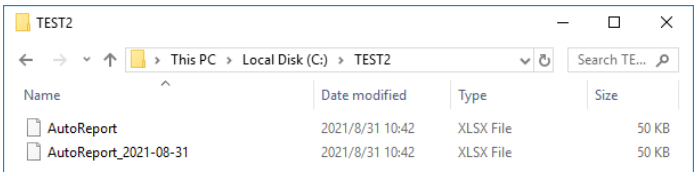


4. In [Data Division], select the interval at which the logging data is split and saved.
Choose from 1 day / 1 hour for data dividing.



5. Configure settings related to the reports (Daily/Weekly/Monthly).
and .CSV automatic output under [Automatic Output Settings].

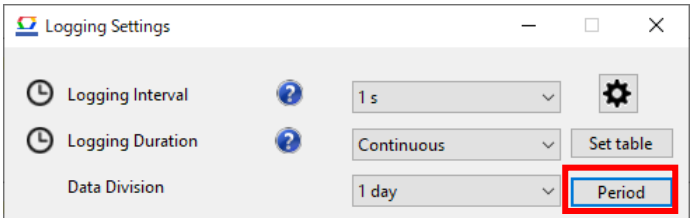
Item		Description
Output report	Daily/Weekly/ Monthly *1	On: Automatically output the selected reports. Off: Do not automatically output the selected reports.
	Data save destination	Specifies where to save the reports. GENNECT One: ·Save the reports in the GENNECT One data list.   Folder:

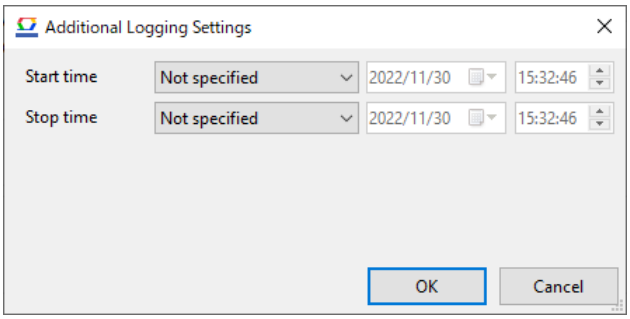
		·Save the reports in a user-selected directory. Click the [...] button to select the directory in which to save the reports. 
	Detailed settings	Configures detailed settings related to automatic output of the reports. See below for more information about the settings. ➢ Configuring detailed settings for automatic output (daily/weekly/monthly reports)
Output CSV	On/off	On: Automatically output CSV files based on the logging data segmentation time (1 day/1 hr.). Off: Do not automatically output CSV files based on the logging data segmentation time (1 day / 1 hr.).
	Data save destination	·CSV files are saved in a user-selected directory. Click the [...] button to select the directory in which to save daily reports.
	Detailed settings	Configures detailed settings related to automatic output of CSV files. See below for more information about the settings. ➢ Configuring detailed settings for automatic output (CSV)

*1 : If multiple logging or logging schedules are set to output the same file name at the same time, the file name may be changed and saved.

6. To specify the start and end time of logging, click the "Period" button and set the additional logging settings that will be displayed.

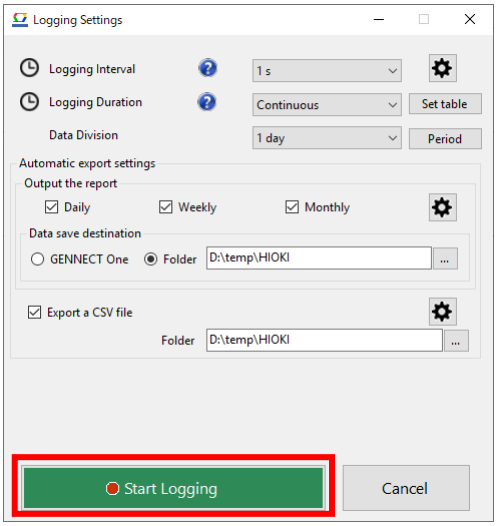
※ Logging specified in the logging schedule must be less than 1 minute.
Logging intervals exceeding 1 minute cannot be registered in the table.





Item	Description
Start time	Not specified : Logging starts immediately when the [Start Logging] button is clicked. Specify : Logging will start at the specified time when the [Start Logging] button is clicked.
Stop time	Not specified : Logging will not stop automatically. Specify : Automatically stops logging at the specified time.

7. To start logging, click [Start Logging].
   [Logging] windows will be displayed and logging will be started.



Stop logging

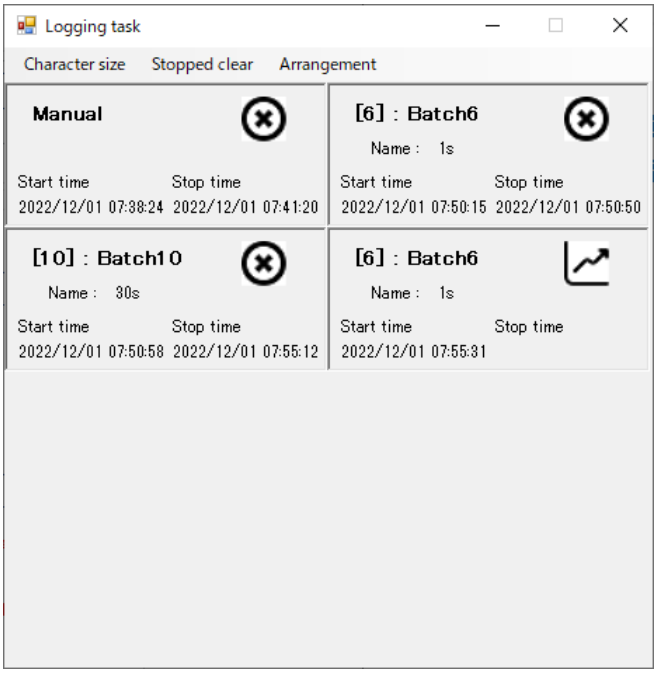
1. To stop logging, click [Stop Logging].
   Logging will be stopped and data will be saved in the data list of the application.

Display logging tasks

When logging is started or the [Settings]-[Logging Task] menu is selected, the logging task screen is displayed.

- The logging task screen displays information on logging that is currently being performed and logging that has been completed.
- Double-clicking on the logging information displayed in the logging task screen activates the corresponding logging screen.

Screen layout



① Logging type

In case of normal logging start, "Manual" is displayed.

If logging is started from a logging table, the batch number is displayed as "[1]:Batch1"

② Batch name (when logging is started from the logging table)

Displays the batch name registered in the logging table.

③ Start time

Displays the time when logging was actually started.

④ End time

Displays the time when logging actually ended.

⑤ Logging status icon

The icon is displayed while logging is in progress and after logging has stopped.

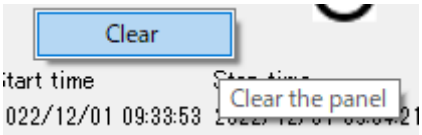
The  icon is displayed while logging is in progress, and the  icon is displayed after logging has stopped.

About the Menu

The following menus are available on the logging task screen

Menu	Description
Character size	You can select the size of the displayed characters from four types (small, standard, medium, and large). The screen size is also changed according to the character size.
Stopped clear	Clears all display sections after logging has been stopped.
Arrangement	You can select from four types of display arrangement (one vertical row, two columns, four columns, or one horizontal row).

Right-click on the display after logging has stopped, and the [Clear] menu will appear.
Selecting the [Clear] menu will clear only the specified display.



Screen layout

① [Monitor]
・Displays the current measured value or the measured value that is selected in the data list.
The measurement channels that has been checked in the [Monitor] will be displayed in the graph(①) and the data list (②).
※Up to 32 channels can be displayed in the graph and the data list.
※To change the channel name, click button.

・Filter to checked button ( ) : Filters the channels to checked channels only.
・Deselect all button (Deselect All) : Deselects all channels.
・Filter by channel name : filters the channels by channel name, input the filter text in the [Search channels by partial matches] text box.

② [Graph]
Graph up to 600 data points are displayed. If data points exceed 600, the track bar will be displayed for changing the graph area to display.

・Display all area button ( ) : Reset the display area and change into the display mode that always show the latest value. Double-clicking on the graph or pressing down the [Esc] key has the same feature.
・Move button ( ) : Changes the operation mode into the mode that moves the graph area when it is zoomed. Dragging with the mouse right button down has the same feature.

③ [Data List]
Moving the cursor over the graph will highlight the corresponding data line in the list.

④ [Title]
Input the title for the logging data.

Waveform Tool Buttons

These buttons provide access to tools for displaying and manipulating waveforms.

	Name	Description
	Toggle Cursor	Switches the active cursor among the following: trace cursor, A cursor, and B cursor.
	Display All	Displays waveforms on the waveform display screen in their entirety.
	Adjust Position	Adjusts the position of the vertical axis of the waveforms being displayed on the waveform display screen.
	Move	Toggles move mode on and off. On: Dragging the mouse's left button moves (scrolls) the waveform. Off: Dragging the mouse's left button enlarges the waveform's rectangle.
	Display Time Axis	Switches the method used to display the time axis. Absolute time: Switches the time axis display method to absolute time. The absolute time display uses the following format: "HH:mm:ss" Relative time (auto): Switches the time axis display method to elapsed time using the start position of each measurement parameter's waveform as the zero point. The elapsed time is displayed using units that are determined automatically based on the waveform's overall duration. Relative time (seconds): Switches the time axis display method to elapsed time using the start position of each measurement parameter's waveform as the zero point. Elapsed time is displayed in seconds. Relative time (point): The display method of the time axis changes to the number of data points starting from the start position in the waveform of each measurement item.
	Display Numerical Axis	Switches the method used to display the numerical axis. Separate axis for each channel: Displays a separate numerical axis for each measurement parameter (channel). Single axis for all channels: Displays a single numerical axis for all displayed measurement parameters (channels).
	Display Settings	Configures display settings for the waveforms being displayed on the waveform display screen.
	Save Waveform Image	Copies an image of the waveforms being displayed on the waveform display screen to the clipboard. Saves an image of the waveforms being displayed on the waveform display screen to a file.

Manipulate the waveform

This section describes how to zoom in / zoom out /move a waveform.

Operations	Descriptions
Zoom in/out (Mouse wheel)	**■Zoom in/out** - Rotate the mouse wheel on the waveform screen to expand and contract the entire waveform both vertically and horizontally. **■Zoom in/out horizontally** - Rotate the mouse wheel on the bottom 5% of the waveform screen to zoom in/out the entire waveform horizontally. - Rotate the mouse wheel on the time axis (X-axis) to zoom in/out the entire waveform horizontally. **■Zoom in/out vertically** - Rotate the mouse wheel on the 5% left side of the waveform screen to zoom in/out the entire waveform vertically. - Rotate the mouse wheel on the value axis (Y-axis) to zoom in/out vertically the entire waveform of the channel belonging to the value axis.
Zoom in (Rectangle area)	**■Zoom in** Drag the left mouse button on the waveform screen to zoom in the entire waveform with the rectangle area . **■Zoom in horizontally** Drag the left mouse button on the bottom 5% of the waveform screen to zoom in the entire waveform with the rectangle area horizontally. Drag the left mouse button on the time axis (X-axis) to zoom in the entire waveform with the rectangle area horizontally. **■Zoom in vertically** Drag the left mouse button on the 5% left side of the waveform screen to zoom in the entire waveform with the rectangle area vertically. Drag the left mouse button on the value axis (Y-axis) to zoom in with the rectangle area the entire waveform of the channel that belongs to the value axis. **■Restore rectangular expansion** Click the right mouse button on the waveform screen, and then click Restore Rectangle expansion (Restore rectangular expansion.), you can return the rectangle magnification that was executed just before.
Display All	Click on the Display All ( ) button to display the entire waveform. Double-click the left mouse button on the waveform screen to display the entire waveform. Press [ESC] key to display the entire waveform.
Zoom in and out (button)	**■Zoom in and out horizontally.** • ( ) Click the button to zoom in horizontally (time axis direction). • ( ) Click the button to shrink the image horizontally (in the time axis direction).
Zoom in and out (List)	**■Zoom in and out horizontally.** Click the right mouse button on the waveform screen and click "Time Axis Expansion" to expand the waveform in the horizontal direction (time axis direction). Click the right mouse button on the waveform screen and click the "Time Axis Shrink" button to shrink the waveform in the horizontal direction (time axis direction). Click on a time value displayed by clicking on the time axis, the section of the time value is displayed as a waveform. Time axis expansion. Time axis reduction. Time axis ▸ Whole 2s 1s 500ms 200ms 100ms
Moving (Scroll bar)	**■Move horizontally** Move the scroll bar at the bottom of the waveform screen to move the waveform horizontally.
Moving (Keystrokes)	Move the entire waveform by keystrokes. **■Move horizontally**

	[Shift]+[→] key: Move the entire waveform to the right. [Shift]+[Ctrl]+[→] keys: Move the entire waveform to the right in fine increments. [Shift]+[←]: Move the entire waveform to the left. [Shift]+[Ctrl]+[←] keys: Move the entire waveform to the right in fine increments. ■**Move vertically** [Shift]+[↑] keys: Move the entire waveform upwards. [Shift]+[Ctrl]+[↑] keys: Move the entire waveform upwards in fine increments. [Shift]+[↓] keys: Move the entire waveform downwards. [Shift]+[Ctrl]+[↓] keys: Move the entire waveform downward in fine increments.

Using the logging schedule

By using a logging schedule, logging can be started automatically with start and end times set in advance.

- The logging information to be registered in the schedule is managed in a logging table.
- The logging information registered in the logging table can be specified in a schedule, and up to eight logging events can be automatically started.
- Logging information registered in the logging table can be used to start normal logging.
- The conditions for logging to be activated in the logging table and schedule are the same as those for normal logging operation.

  See below for conditions：

  ➢ Limitations (Logging)

Workflow

Use the logging schedule in the following steps.

Set logging settings to logging table (p.162)

↓

Register logging settings set in the logging table as a logging schedule (p.169)

↓

Start logging schedule (p.166)

↓ **Logging automatically starts/stops at specified times**

Stop logging schedule (p.166)

Logging table

Select [Settings]-[Logging Table] menu to display the Logging Table screen.

The Logging Table screen is used to manage logging information to be registered in the schedule.

- The following logging settings are not saved in the logging table.

  It also cannot be specified in the logging run from the logging table.

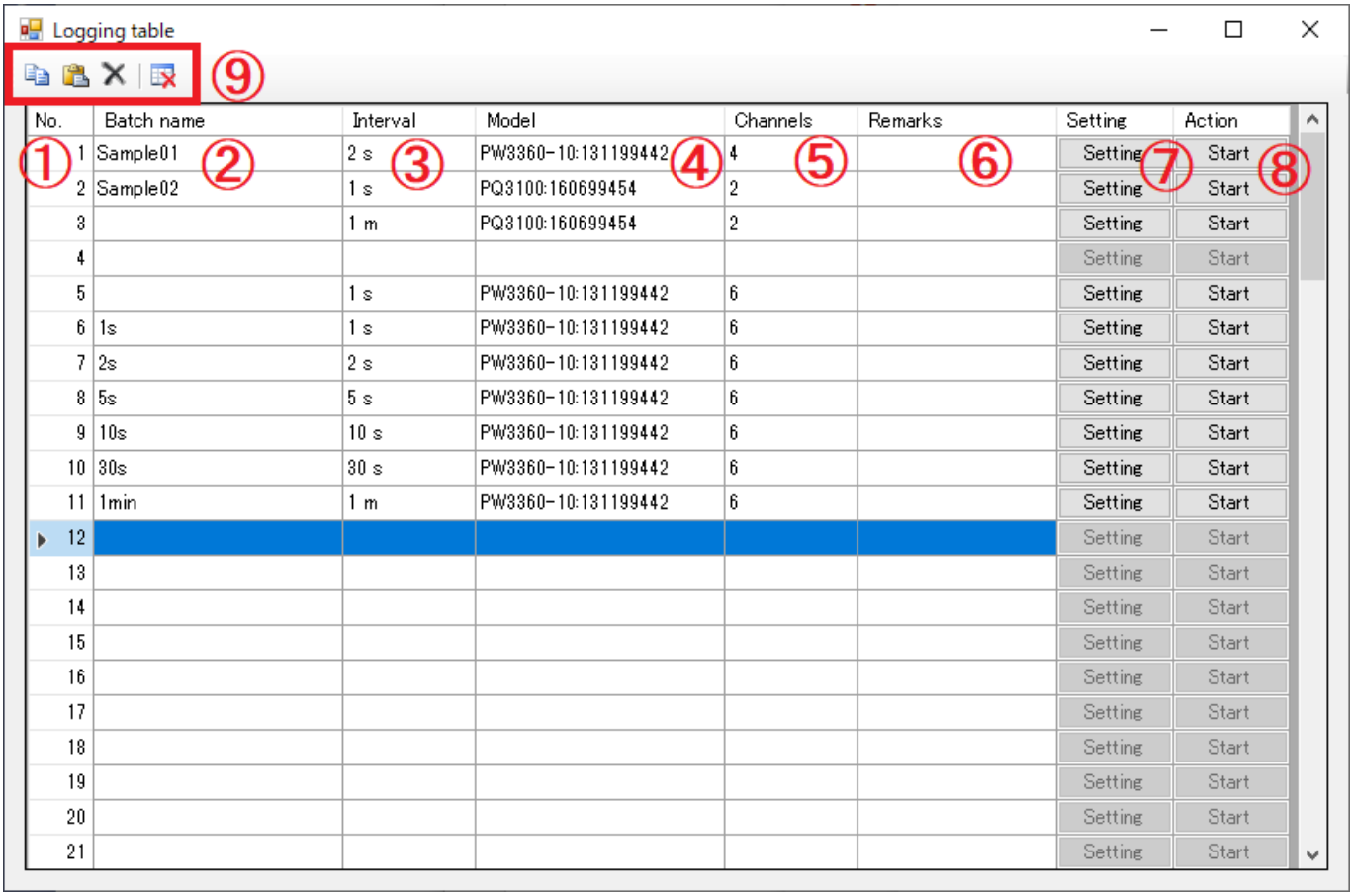
  Logging start time (fixed to "Not specified")

  Logging stop time (fixed to "Not specified")

  Logging duration time (fixed to "Continuous ")
- The logging interval must be 1 minute or less for logging that can be performed on a logging schedule.

  For this reason, logging interval settings exceeding 1 minute cannot be registered in the logging table.

Screen layout



① Batch No.

Batch number for table management.

The batch name can be edited on the table.

② Batch name

A name can be given to the logging settings registered in the logging table.

The batch name can be edited on the table.

③ Interval

The logging interval of the logging settings registered in the logging table is displayed.

④ Model

Displays the models used in the logging settings registered in the logging table in the "Model name : Serial number" format.

If multiple models are used, they are separated by commas.

⑤ Channels

Displays the number of items (excluding inter-channel calculation channels) specified in the logging settings registered in the logging table.

⑥ Remarks

A character string can be set as batch information.

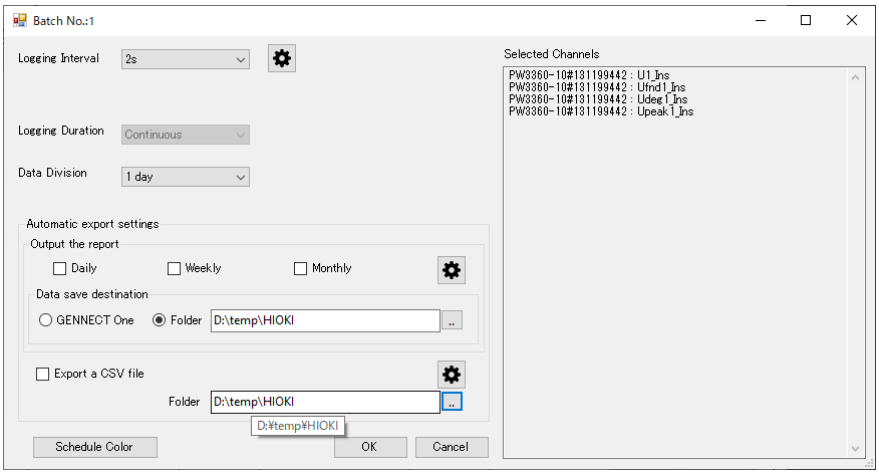
The Remarks column can be edited on the table.

⑦ [Settings] button

Clicking the [Settings] button allows you to change some of the logging settings registered in the logging table.

Please refer to the following for detailed information on logging settings.

- Configure the logging settings
- Opening the automatic output settings

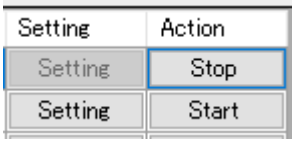


* Logging intervals exceeding 1 minute cannot be set.

⑧ [Start] button

Clicking the [Start] button starts normal logging using the logging settings registered in the logging table.

- When logging is started, the [Start] button changes to the [Stop] button and the [Settings"] button becomes inactive.



- When logging is stopped with the [Stop] button, whether the measurement of the measurement device is stopped or not depends on the "Instrument stops when logging stops" setting in the [Logging/Dashboard] tab of the Application Common Settings.

  See below for details on the "Instrument stops when logging stops" setting.

  - Configure the logging settings

- When logging is started, logging information is displayed in the logging task.

  See below for details on logging settings.

  - Display logging tasks

⑨ Toolbar

The following operations can be performed from the toolbar.

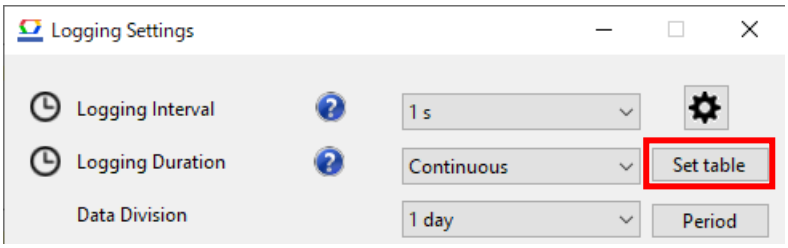
The operations available on the toolbar can also be selected in the pop-up menu.

Menu	Description
Copy	Copies the settings of the selected rows.
Paste	Copies the settings of the copied rows to the selected rows.
Clear	Clears the settings of the selected rows.
All clear	Clears all logging table contents.

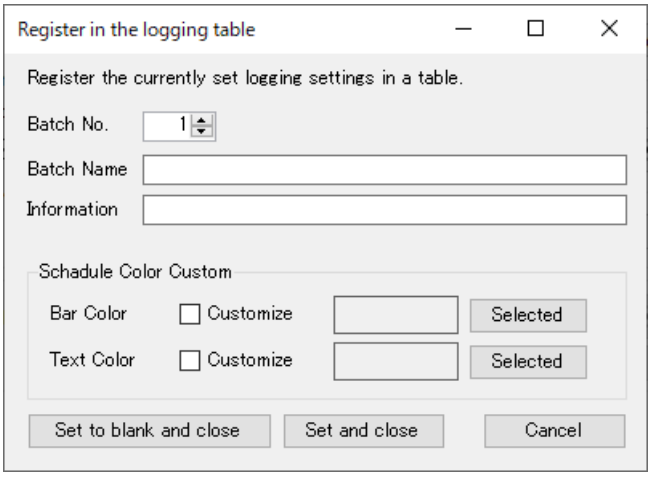
Register logging table

Registration to a logging table is performed from the logging settings screen.

Click the "Set Table" button on the logging setup screen to display the logging table registration screen.



When an item is set in the logging table registration screen and the [Set to blank and close] or [Set and close] button is clicked, the logging settings will be registered in the logging table.



Item	Description
Batch No.	Specify the batch number to be registered. The initial value is the lowest number among the table's unregistered numbers.
Batch name	Name the logging information to be registered.
Remarks	You can enter supplementary information about the logging information to be registered.
Schedule Color Setting	The color of logging schedule information displayed on the logging schedule screen can be specified individually. If not specified individually, the information will be displayed in the overall color.

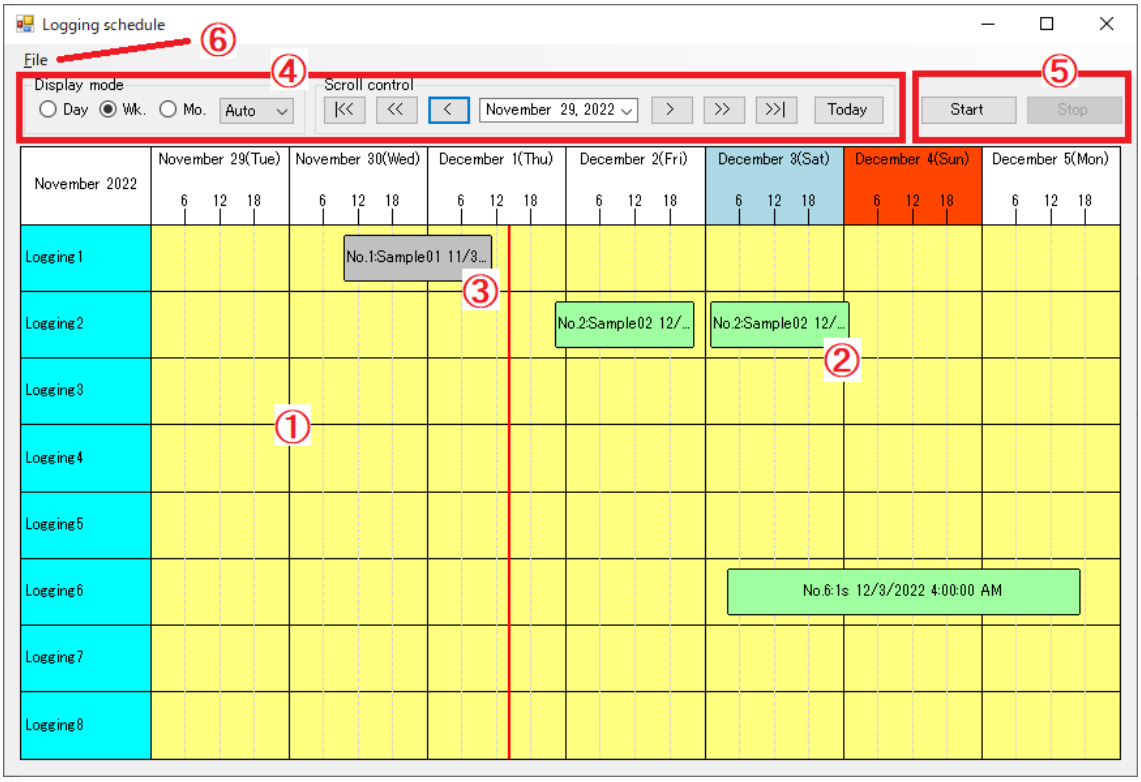
	When the "Customize" checkbox is ON, the logging schedule information is displayed in the color shown in the left frame. The color can be changed on the color selection screen that opens when the "Select Color" button is clicked.	
	Bar Color	Set the display color of the logging schedule information before/while it is running.
	Text Color	Set the text color of logging schedule information.

Logging Schedule

Select [Settings]-[Logging Schedule] to display the logging schedule screen.
The logging schedule screen allows you to register logging information managed in the logging table on the schedule to automatically start up to eight logging operations.

* When a logging schedule is executed, logging, dashboard, and remote operation modes cannot be executed. Similarly, logging schedule cannot be started while logging, dashboard, or remote monitoring mode is being executed.
* The contents of the logging table can be changed or overwritten after the schedule is registered. Please be careful when changing the logging table contents registered in the schedule.

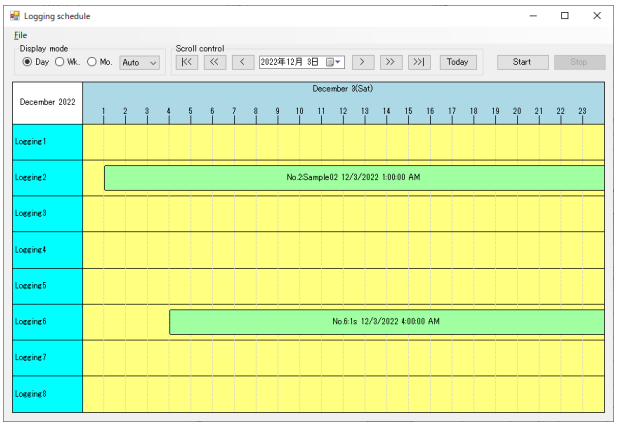
Screen layout

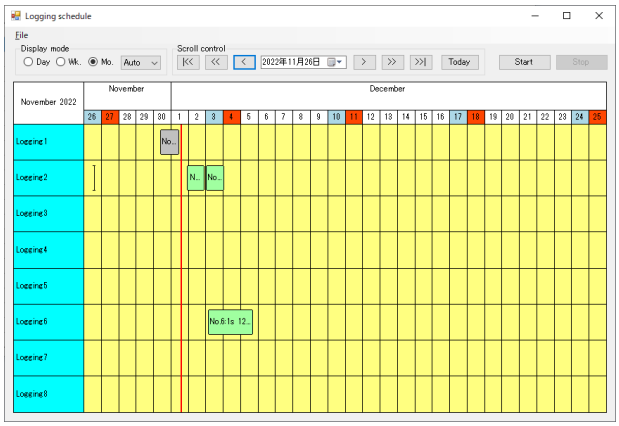


① Schedule registration area

Displays the currently registered schedule status.

- Logging 1-8 indicates each logging schedule, and each logging schedule is processed in parallel.
- The area display range can be switched to 1 day, 1 week, or 1 month by changing the display mode.
- In the case of daily or weekly display, the date and time are displayed in the column headers.
- The red vertical line on the area indicates the current time.

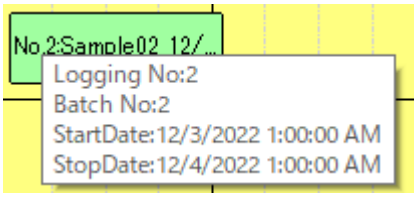




② Logging schedule information before start/beginning of logging

This indicates the logging schedule information to be executed or the logging schedule information that is currently being executed.

- If the string is only halfway through the display, the information is displayed with a tooltip when the mouse cursor is placed on the string.



③ Logging schedule information after stop

This indicates the logging schedule information after the logging has been stopped.

Logging schedule information that has not been executed and the current time has passed the logging start time is also displayed in this way.

- If the string is only halfway through the display, the information is displayed with a tooltip when the mouse cursor is placed on the string.

④ Operation Controls

This control is used to switch the logging schedule display and to control the display range.

Item	Description	
Display mode	Display Switching ○ Day ◉ Wk. ○ Mo.	Select the schedule display to 1-day, 1-week, or 1-month display.

		The display period of the 1 month display follows the setting of the 1 month display period combo box on the right.
	Designation of 1 month display period Auto	Set the display period of 1 month. Auto: Displayed for the number of days in the month from the first day of the display. When the display range is changed, the display period is linked to the first day. 28th/29th/30th/31st : The display range is fixed to the specified number of days.
Scroll control	Reference Date November 29, 2022	Set the Reference date. Day display : The reference date is the display date. Week/Month display: The reference date is the display start date.
	< button	Change the reference date to one day earlier.
	<< button	Change the reference date to one week earlier.
	|<< button	Change the reference date to one month earlier. The amount of change follows the designation of the one-month display period.
	> button	Change the reference date to one day later.
	>> button	Change the reference date to one week later.
	>>| button	Change the reference date to one month later. The amount of change follows the designation of the one-month display period.
	Today button	Set the reference date to today's date. Today's date follows the PC clock.

⑤ [Start]/[Stop] button

Clicking the [Start] button starts the logging schedule.

When the [Stop] button is pressed, the logging schedule is stopped, and all logging in progress at that time is stopped.

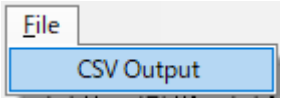
- When logging is stopped with the [Stop] button, whether the measurement of the measurement device is stopped or not depends on the "Instrument stops when logging stops" setting in the [Logging/Dashboard] tab of the Application Common Settings.

  See below for details on the "Instrument stops when logging stops" setting.

  ➢ Configure the logging settings

⑥ [File] menu

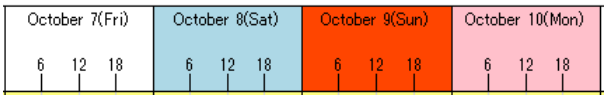
The following operations can be performed from the [File] menu.



Menu	Description
CSV Output	The schedule contents can be output in CSV format. The output file cannot be read and the schedule cannot be reproduced. The logging schedule is output in the following order: logging schedule No., batch No., start time, end time. Output example : ScheduleNo.,BatchNo.,StartTime,StopTime 3,3,2022-09-29 19:11:00,2022-09-30 20:00:00 5,5,2022-09-29 19:43:00,2022-09-29 20:00:00 6,1,2022-09-29 20:05:00,2022-09-29 20:06:00 5,2,2022-09-29 20:03:00,2022-09-29 21:00:00

Designate Holidays for Schedules

You can designate holidays other than Saturday and Sunday for schedule display.



From left: weekdays, Saturdays, Sundays, holidays

How to specify :

Create a "holidays.csv" file in the folder containing the executable file (GENNECTX.exe), enter the dates you wish to display as holidays, and save the file.

The format is "YYYYY-MM-DD, (comments as necessary)" on a line, and add the number of days as necessary.

Example)

It can be written as

```
2022-11-23,
2022-11-24,
2022-11-25,
2022-11-26,
2022-11-27,
```

or

```
2022-11-23, holiday
2022-11-24, holiday
2022-11-25, holiday
2022-11-26, holiday(Sat.)
2022-11-27, holiday(Sun.)
```

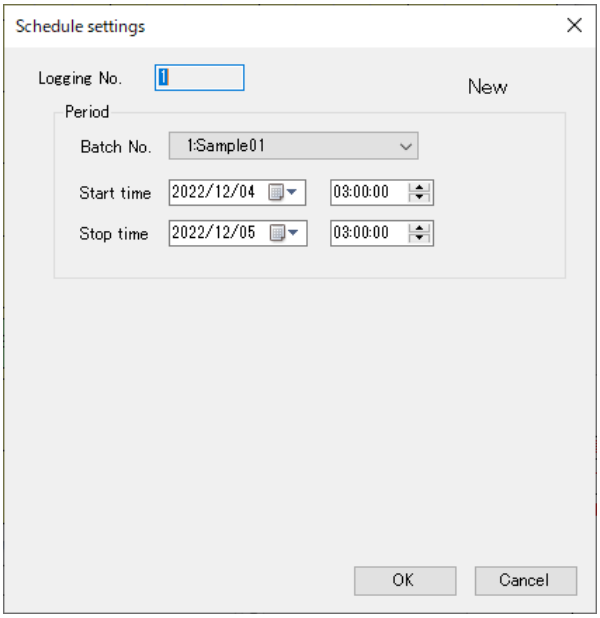
Register a schedule

In the schedule registration area, left-click on the area where there is no logging schedule information, and the schedule registration screen will appear.

The schedule registration screen can also be displayed by selecting [Add new] from the pop-up menu.

- If you set the necessary items and click the [OK] button, the information will be displayed on the schedule screen as logging schedule information.
- If the start time is set before the current time, the schedule cannot be registered.

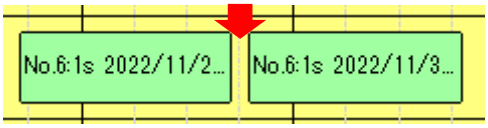
- The same instrument cannot be used in multiple schedules at the same time. The same instrument cannot be used in more than one schedule at the same time.
- Other logging conditions are the same as normal logging operation.
  Please refer to the following for more information.
  - Limitations (Logging)



Item	Description	
Logging No.	The logging schedule No. is automatically set from the clicked position.	
Period	Batch No.	Specify the batch No. to be used. ・The logging information currently registered in the logging table is displayed as a combo box item as "Batch No. : Batch name".
	Start time *1	Set the time to start logging. ・The logging preparation state is usually entered 2 minutes before the start time, and measurement starts at the start time. ・If the schedule is started later than 2 minutes before the start time, logging preparation will begin immediately, and if measurement can be started after the logging start time, measurement will begin at that time. ・If the schedule is started after the start time, logging will not be performed.
	Stop time	Set the time to automatically stop logging. ・The measurement of the instrument will be stopped when logging is stopped or not according to the "Instrument stops

		when logging stops" setting in the [Logging/Dashboard] tab of the Common Application Settings.

*1 : For registration within the same logging schedule, the next start time must be at least 3 minutes after the previous end time.



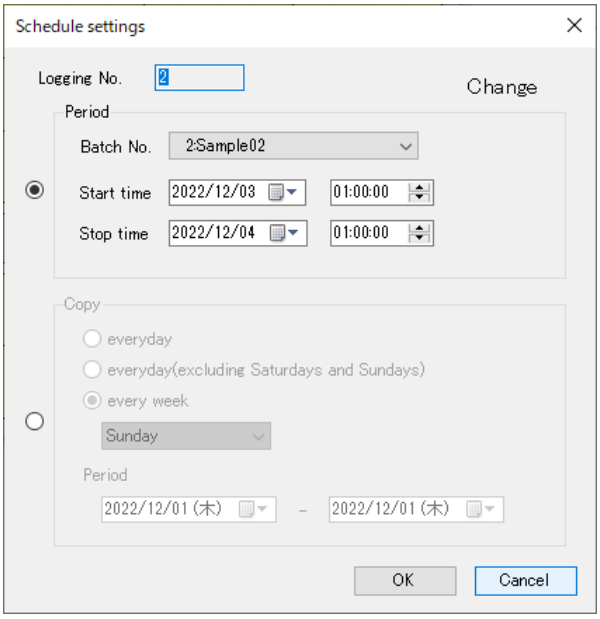
Change/copy a schedule

Left-click on logging schedule information in the schedule registration area to display the schedule change screen.

The Change Schedule screen can also be displayed when the [Edit] menu item in the pop-up menu is selected.

The Change Schedule screen allows you to copy the logging schedule.

- After setting the necessary items, click the "OK" button to change/copy the designated logging schedule information.
- If the start time is set before the current time, the schedule cannot be registered.
- Executed schedules cannot be edited or copied.



To change the schedule, select the upper radio button on the left side of the screen.

Item	Description	
Logging No.	The logging schedule No. is automatically set from the clicked position.	
Period	Batch No.	Specify the batch No. to be used. ・ The logging information currently registered in the logging table is displayed as a combo box item as "Batch No. : Batch name".

	Start time	Set the time to start logging. ・ The same conditions apply as for schedule registration.
	Stop time	Set the time to automatically stop logging. ・ The measurement of the instrument will be stopped when logging is stopped or not according to the "Instrument stops when logging stops" setting in the [Logging/Dashboard] tab of the Common Application Settings.

To make a schedule copy, select the lower radio button on the left side of the screen.

Item	Description	
Copy *1	everyday everyday (excluding Saturdays and Sundays) every week	Select the copy method. For a multi-day schedule, only weekly can be selected. Everyday : Copy every day of the specified period. Everyday (excluding Saturday and Sunday) : Copy every day of the specified period except Saturday and Sunday. Weekly : Copies the schedule to the day of the week specified in the day of the week combo box.
	Day of the week combo box Sunday	Specify the day of the week to copy if weekly is selected. When copying a multi-day schedule, the start time will be the specified day of the week.
	Period	Set the copying period. If the copy period is before the current time, the schedule cannot be copied.

*1 : The copy operation has the following conditions.

The copying period can be specified only after the copy-source time.

The copying period can be specified only after the current time.

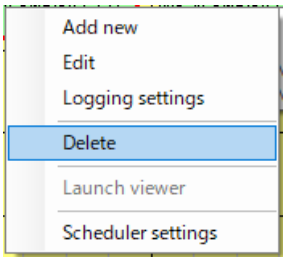
The copy period can be specified only after the current time.

Delete a schedule

There are three types of logging schedule information deletion: "Individual schedule deletion", "Logging schedule batch deletion", and "Logging schedule all deletion".

① Individual schedule deletion

- Select the [Delete] from the pop-up menu that appears when logging schedule information is selected, and the selected logging schedule information can be deleted.

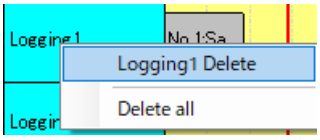


② Logging schedule batch deletion

- If you right-click on a row header in the schedule registration area and select [Logging X Delete] (X:1-8) from the pop-up menu, you can delete the logging schedule information in the schedule column displayed in the menu.

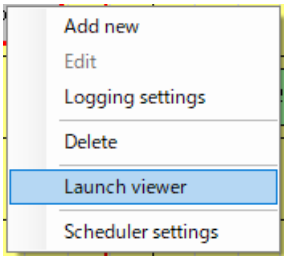
③ Logging schedule all deletion

- If you right-click on a row header in the schedule registration area and select [Delete All] from the pop-up menu, you can delete logging schedule information registered in the schedule.



Launch viewer

The results of an executed logging schedule can be viewed in the Logging Viewer.
Select the logging schedule information you wish to view and select [Launch viewer] from the pop-up menu to start the Logging Viewer.
If the logging results are split into multiple files, the first logging result saved will be displayed.

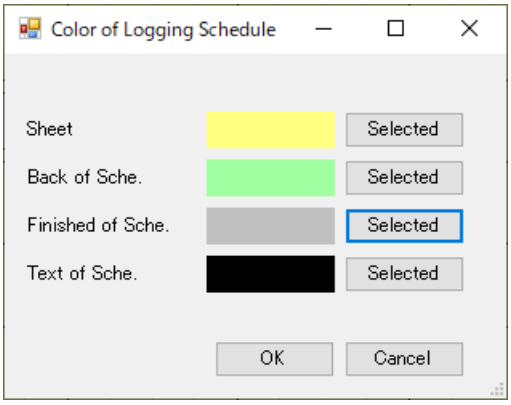


Logging schedule color settings

The display color of the logging schedule screen can be changed.

- Select [Scheduler settings] from the pop-up menu, and the "Color of Logging Schedule" screen will appear.
- Click the [OK] button to apply the color change.

・ Click the [Selected] button to open the color selection screen.



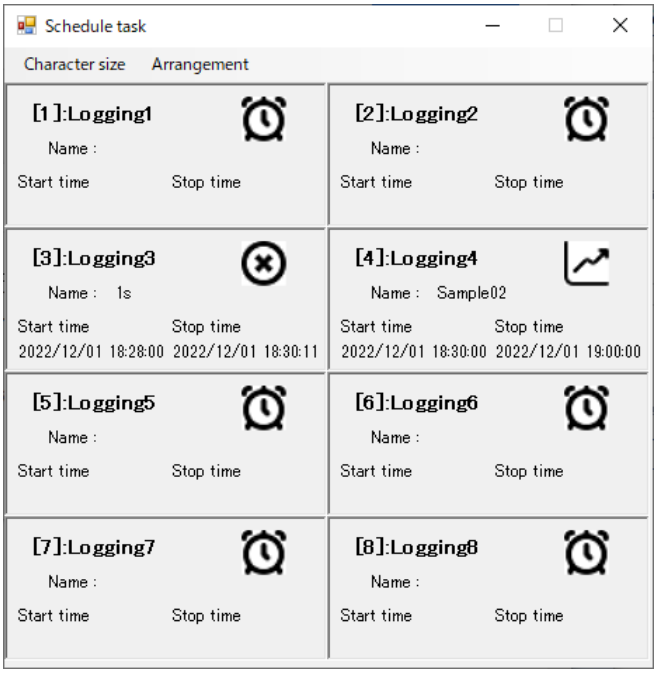
Item	Description
Sheet	Set the background color of the schedule registration area.
Back of Sche.	Set the display color of the logging schedule information before starting/while running. ・ This color can be specified for each batch, and if set, the batch setting will take precedence.
Finished of Sche.	Set the display color of logging schedule information after stopping.
Text of Sche.	Set the text color of logging schedule information. ・ This color can be specified for each batch, and if set, the batch setting will take precedence.

Display scheduled tasks

When a logging schedule is started or the [Settings]-[Scheduled Tasks] menu is selected, the Scheduled Tasks screen will appear.

- The logging schedule status is displayed on the Scheduled Tasks screen.
- Double-clicking on the logging information display during logging activates the logging screen during logging.
- Double-clicking on the logging information display after logging has stopped will open the corresponding logging data in the logging viewer.
- If the logging data is divided and saved in multiple pieces, the first logging data will be opened.

Screen layout



① Logging schedule No.

Logging schedule No. is displayed as "[1]:Logging 1".

② Batch name

Displays the batch name of the batch No. specified in the logging schedule.

When a schedule is not specified, it is displayed blank.

③ Start time

Displays the time when logging was actually started.

When a schedule is not specified, it is displayed blank.

④ End time

While logging is in progress, the scheduled logging end time is displayed.

After logging is finished, the actual time when logging is finished is displayed.

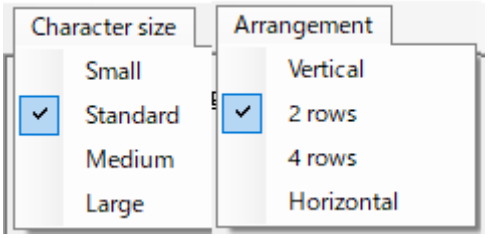
⑤ Logging status icon

The icon is displayed while logging is in progress and after logging has stopped.

The  icon is displayed while logging is in progress, the  icon is displayed after logging has stopped, and the  icon is displayed when logging is not specified.

About the Menu

The following menus are available on the scheduled tasks screen



Menu	Description
Character size	You can select the size of the displayed characters from four types (small, standard, medium, and large). The screen size is also changed according to the character size.
Arrangement	You can select from four types of display arrangement (one vertical row, two columns, four columns, or one horizontal row).

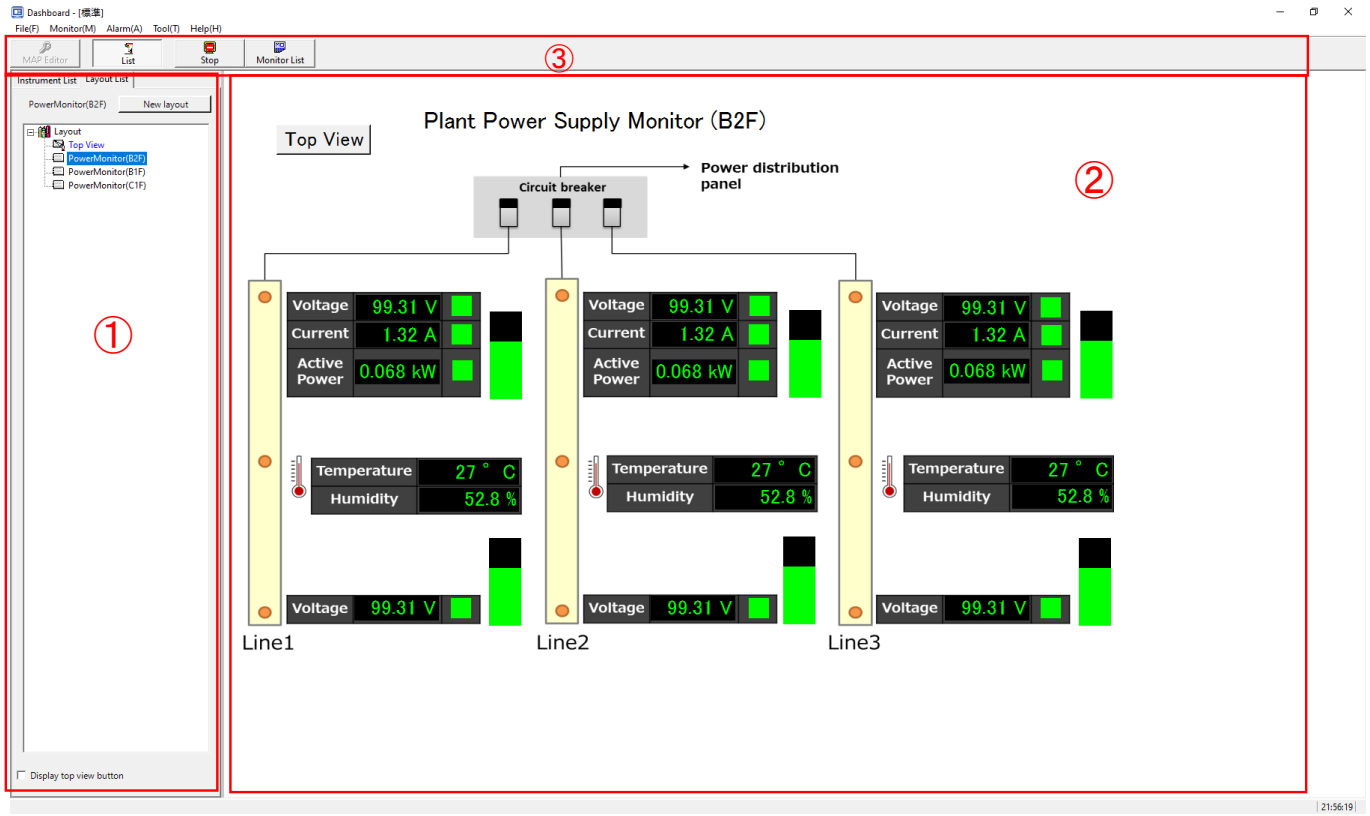
Monitor Measured Values (Dashboard Function [LAN])

Overview

・The dashboard function allows you to monitor the status of measurements in an easy-to-understand, visual manner by placing measured values on a user-specified background image.

・You can set a threshold value for each measurement item and save alarm information on the computer if the measured value exceeds the threshold range.

※ Monitoring of measured values over a LAN is supported.



① **Instrument list/layout list**

- Instrument list: Displays instruments registered in the Map Editor in a tree format.
- Layout list: Displays previously saved layouts in a tree format.

② **Layout area**

Using background image and layout items, create the appearance of the monitoring system here.

③ **Toolbar**

- Map Editor: Allows you to search for instruments, select channels (measurement items), and configure advanced instrument settings.
- List: Toggles display of the instrument and layout list.
- Monitor Start/Stop: Starts and stops monitoring of measured values.
- Monitor List: Displays a list of measured values for the channels (measurement items) being monitored.

- Top View: Switches the layout to the [Top View].

Supported Instruments

・The real-time measurement function supports the following instruments.

Model	Name	Firmware version	URL
PQ3100 *1	POWER QUARITY ANALYZER	Ver. 2.10 or later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198 *1,*3	POWER QUARITY ANALYZER	Ver. 1.10 or later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3335 *2,*4,*6	POWER METER	Ver. 1.11 or later	https://www.hioki.com/global/products/power-meters/single-phase-ac-dc/id_5831
PW3336 *2,*4,*6	POWER METER	Ver. 1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5805
PW3337 *2,*4,*6	POWER METER	Ver. 1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5929
PW3360 *1	CLAMP ON POWER LOGGER	Ver. 3.10 or later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365 *1	CLAMP ON POWER LOGGER	Ver. 2.00 or later	https://www.hioki.com/en/products/detail/?product_key=5565
PW3390 *2	POWER ANALYZER	Ver. 2.00 or later	https://www.hioki.com/en/products/detail/?product_key=6413
PW6001 *2	POWER ANALYZER	Ver. 3.02 or later	https://www.hioki.com/en/products/detail/?product_key=5796
PW8001 *2,*4,*5,*7	POWER ANALYZER	Ver. 1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
LR8400, LR8401, LR8402 *1	MEMORY HiLOGGER	Ver. 1.21 or later	https://www.hioki.com/en/products/detail/?product_key=5613
LR8410 *1	WIRELESS LOGGING STATION	Ver. 1.42 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=911
LR8450, LR8450-01 *1,*8	MEMORY HiLOGGER	Ver. 1.20 or later	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102 *1,*8	DATA LOGGER	Ver. 1.00 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000 *1	MEMORY HiCORDER	Ver. 2.12 or later	https://www.hioki.com/en/products/detail/?product_key=6439
BT5525 *1	BATTERY INSULATION TESTER	V1.00 or Later	https://www.hioki.com/global/products/electrical-safety-testers/insulation/id_1265405
BT4560-50 *1	BATTERY IMPEDANCE METER	V1.00 or Later	https://www.hioki.com/sg-en/products/resistance-meters/battery/id_5897 (Models with LAN interface only)
BT6065, BT6075 *1	PRECISION BATTERY TESTER	V1.00 or Later	https://www.hioki.com/sg-en/products/resistance-meters/battery/id_1266730
ST5680 *1	DC HIPOT TESTER	V1.00 or Later	https://www.hioki.com/global/products/electrical-safety-testers/hipot/id_1265574
IM3523A *1	LCR METER	V1.02 or Later	https://www.hioki.com/global/products/lcr-meters/10-mhz/id_1265475 (Models with LAN interface only)
RM3545A*1	RESISTANCE METER	V1.00 or Later	https://www.hioki.com/global/products/resistance-meters/resistance/id_1266279 (The RM3545A does not support measurement time longer than 1 minute, so reduce the measurement SPEED, AVERAGE, DELAY, OVC, and number of channels so that the measurement time is less than 1 minute.) (LAN communication port only supports the default value of 23)
DM7275, DM7276 *1	PRECISION DC VOLTMETER	V1.09 or Later	https://www.hioki.com/sg-en/products/benchtop-dmm/dc-voltmeters/id_6551 (LAN communication port only supports the default value of 23)

***1. If the measurement of instrument is stop state when the measurement is started by this function, it will shift to the start state.**
***2. If the measurement of instrument is stop state when the measurement is started by this function, it will shift to the start state.**

*3. All of the analysis data of the measurement instrument is reset by starting the measurement with this feature. It is recommended to use this feature after the recording and analysis of the measurement data has been completed (Data reset state).
*4. All of the integrated data of the measurement instrument is reset by starting the measurement with this feature. It is recommended to use this feature after the recording and analysis of the integration data has been completed (Data reset state).
*5. If the setting of integration by each wiring is enabled on the instrument when measurement is started using this function, the setting is changed to integration by all wires.
*6 If the version of this application is less than V5.10, acquisition of harmonic items is not supported. Please upgrade this application to V5.10 or later.
*7 Do not use "," or ";" as a unit when setting the user-defined function (UDF) of the main unit.
*8 Do not use "," or ";" as a unit when setting the waveform calculation and scaling functions of the main unit.

Limitations

Limitations on real-time measurement (logging/monitoring)

Item	Limitation	Remarks
Maximum number of channels	512 + 16 (inter-channel calculation channels)	
Maximum number of connected instruments	30	
Communications interface	LAN	
Monitor interval	1/2/5/10/30 sec. 1/2/5/10/30 min. 1 hr.	The minimum logging interval is determined by measuring the time required for the application to acquire measured values.

Limitations on communications

Item	Limitation	Remarks
Interface	LAN	
Network range for automatic search	_._._.2 to _._._.254 *Automatic search is limited to the same network range as the computer.	
DHCP	Not supported	
Logging interval	1/2/5/10/30 sec. 1/2/5/10/30 min. 1 hr.	*Only when monitor value saving (logging) is enabled *Logging interval is linked to monitor interval.
Maximum number of inter-channel calculation channels	16 (Z1 to Z16)	
Data segmentation	1 day/1 hr.	*Only when monitor value saving (logging) is enabled
Automatic output (daily report) save interval	1 day	*Only when monitor value saving (logging) is enabled When logging is enabled: → Automatically generated daily at 23 hr. 59 min. 59 sec. When logging stopped: → Automatically generated when logging stops

Automatic output (CSV) save interval	1 day/1 hr. *As determined by data segmentation setting	*Only when monitor value saving (logging) is enabled When logging is enabled: → 1 day: Automatically generated daily at 23 hr. 59 min. 59 sec. → 1 hr.: Automatically generated daily at XX hr. 59 min. 59 sec. When logging stopped: → Automatically generated when logging stops
Automatic output (daily report) format	Excel	*Only when monitor value saving (logging) is enabled

Workflow

Start and stop the measured value monitor as described below.

Connect the instrument(s) to the computer with a LAN cable (p.**17**)

Launch the dashboard (p.**181**)

↓

Launch the Map Editor (instrument selection) (p.**181**)

↓

Search for instruments (p.**182**)

↓

Select channels (p.**183**)

↓

Configure advanced instrument settings (p.**186**)

↓

Exit the Map Editor (instrument selection) (p.**188**)

↓

Create an instrument layout (p.**190**)

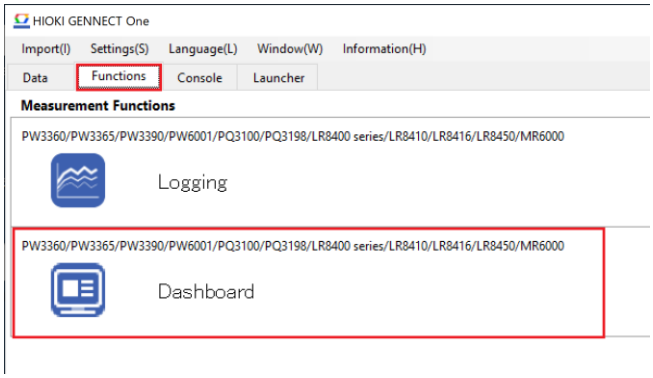
↓

Start or stop the measured value monitor (p.**215**)

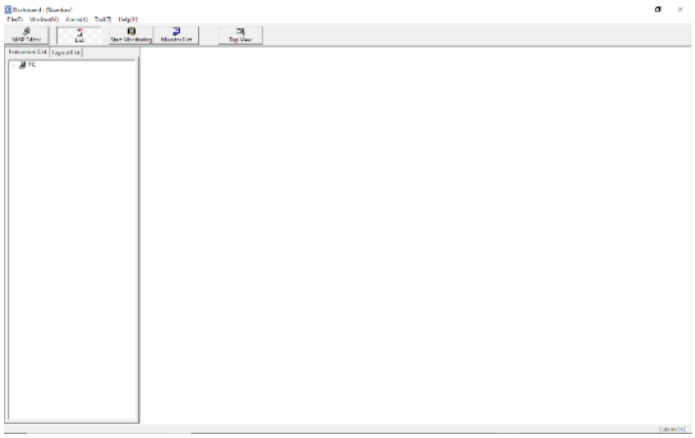
Launch the Dashboard

Launch the Dashboard

1. Click the [Function] tab and then click [Dashboard].



2. The [Dashboard] screen will be displayed.



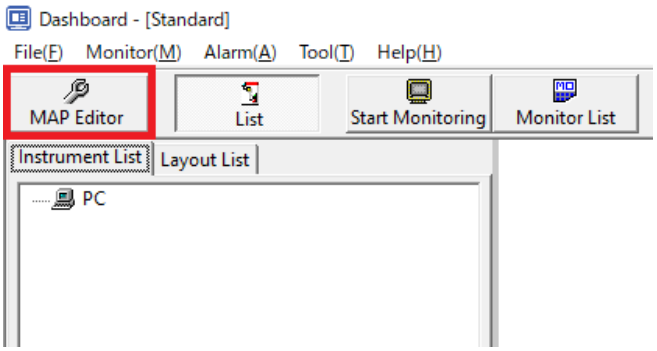
Launch the Map Editor (instrument selection)

To monitor measured values, you must first choose which instruments and measurement items to monitor. This task is accomplished by launching [Map Editor (Instrument Selection)] under the [Dashboard Function].
The Map Editor (instrument selection) provides the following functionality:

- Searching for instruments (p.182)
- Choosing channels (p.183)
- Configuring advanced instrument settings (p.186)

Launch the Map Editor (Instrument Selection)

1. Click the [Map Editor] button.



2. The [Map Editor (Instrument Selection)] screen will be displayed.

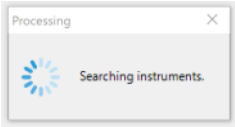
Search for Instruments

This section describes how to search for instruments whose measured values you wish to monitor.
To use this function, you must have connected one or more instruments to the computer with LAN cables.
For more information about how to connect instrument to the computer with LAN cables, see "To communicate with instruments by LAN cable" (p.17).

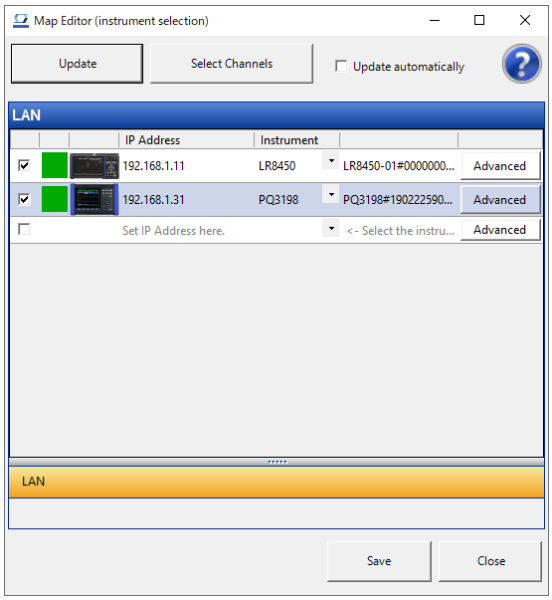
1. The application will start searching for instruments when you open the [Map Editor (Instrument Selection)] screen.

   You can search again for instruments after launching the [Map Editor (Instrument Selection)] screen by clicking the [Update] button.

   The application will display a [Searching instruments] message while searching for instruments that are connected to the computer via the LAN.



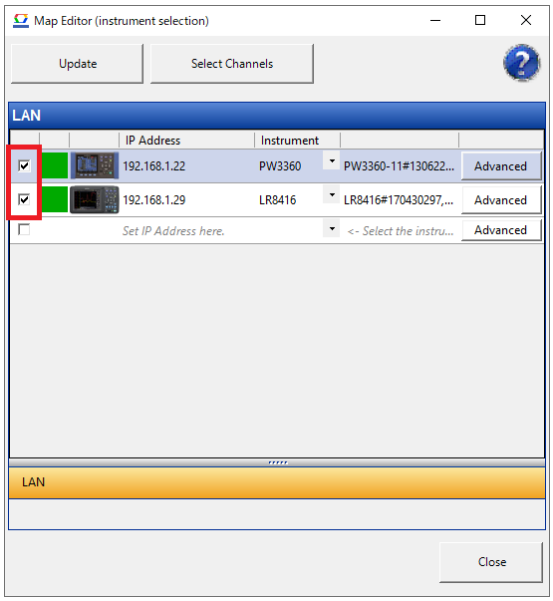
2. A list of instruments found by the search will be displayed.



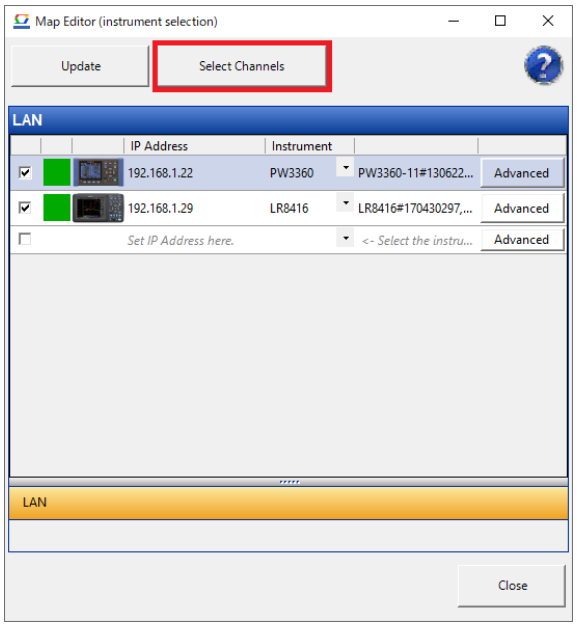
Select Channels(Setting Calculation Channels)

This section describes how to select the measurement items (measurement channels) whose measured values you wish to monitor.
To use this function, you must have connected one or more instruments to the computer with LAN cables.
For more information about how to connect instrument to the computer with LAN cables, see "To communicate with instruments by LAN cable" (p.17).

1. Select the instruments whose measurement items (measurement channels) you wish to measure from the list.

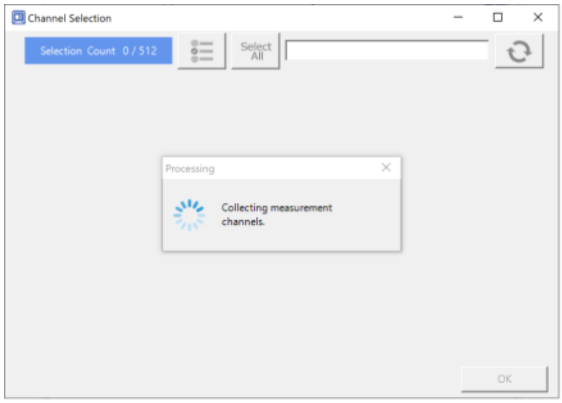


2. Click the [Select Channels] button.

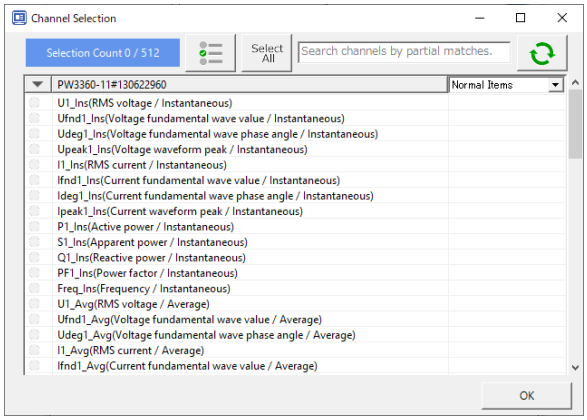


3. The [Channel Selection] screen will be displayed.

   A [Collecting measurement channels] message will be displayed.



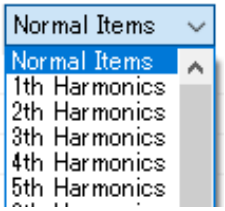
4. A list of enabled measurement channels for the instruments selected on the [Map Editor (Instrument Selection)] screen will be displayed.



*You can search again for measurement channels by clicking the button.

* In PQ3100,PQ3198,PW3360,PW3365,PW3335*,PW3336*,PW3337*,PW8001 (with harmonics analysis only), you can select the harmonics measurement channels by selecting the drop down list of measurement items.

***If the version of this application is less than V5.10, the acquisition of harmonic items for PW3335, PW3336, and PW3337 is not supported. Please upgrade this application to V5.10 or later.**

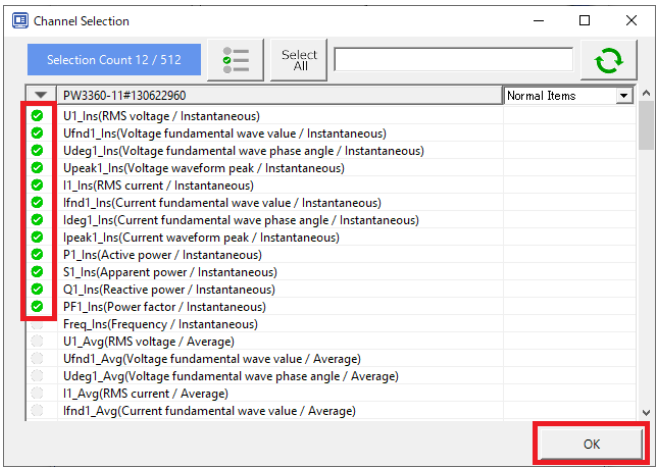


* Measurement items of some instruments, such as PW3336, PW8001,PQ3198 are displayed with an identification name (e.g. PWP, Mupk). Please refer to the following for the correspondence between the identification name and the measurement item name.

➢ Identification name and measurement item name in Logging and Dashboard function

* If the number of measurement parameters for normal items exceeds 1200, the page will be divided into multiple pages. In such a case, select the page to be displayed in the combobox and switch pages.

5. Select the checkboxes for the measurement channels you wish to monitor.
Click the [OK] button to exit the channel selection process.



*You can select up to 512 channels.

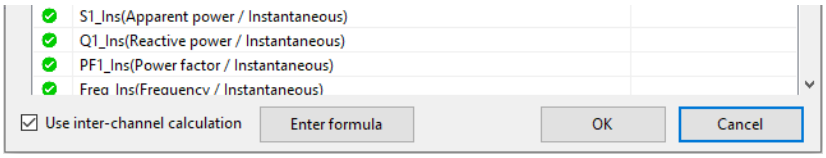
*You can refine the measurement channels shown in the list using the search box at the top of the window.

*You can limit the measurement channels shown in the list to those channels that are already been selected by clicking the  button.

*You can select or deselect all channels by clicking the 

button.

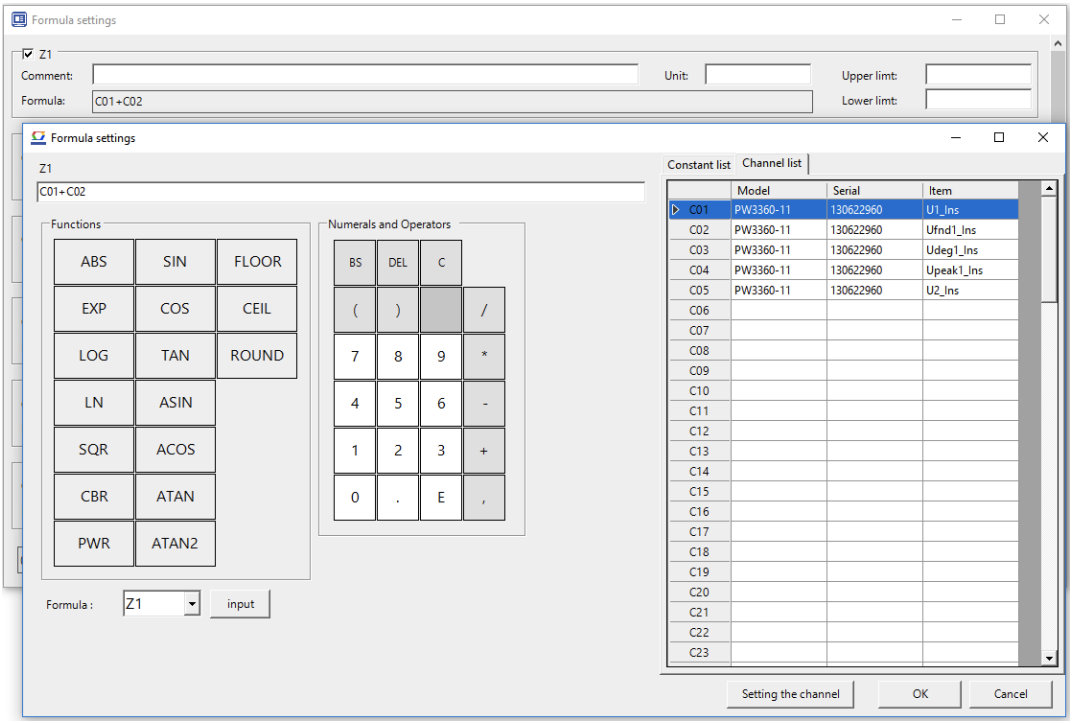
6. To use selected measurement channels to perform an inter-channel calculation, select the [User inter-channel calculation] checkbox and click the [Enter Formula] button.



7. To use selected measurement channels to perform an inter-channel calculation, set the formula on the [Formula Settings] dialog box.

   See below for more information about the [Formula Settings] dialog box.

   ➢ Configuring detailed settings for inter-channel calculations

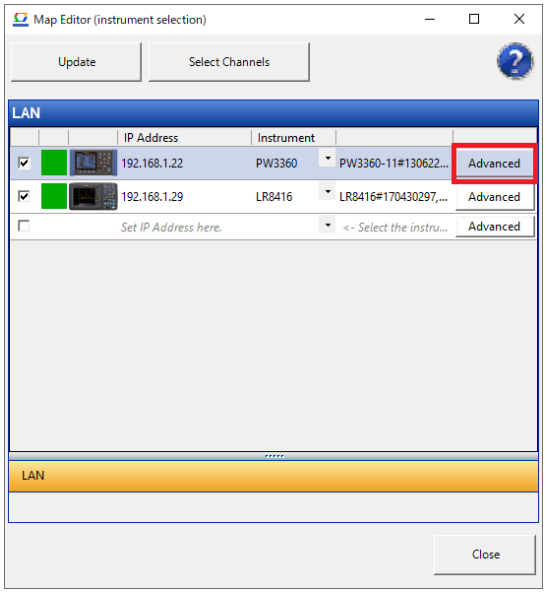


Configure Advanced Instrument Settings

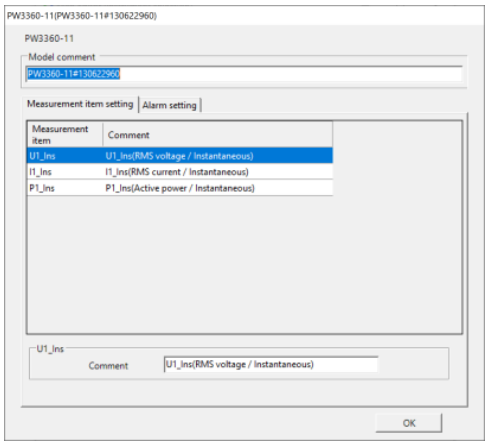
The following tasks can be accomplished on the advanced instrument settings screen:
- Editing instrument comments
- Editing measurement item comments
- Configuring measurement item thresholds

Before using this functionality, you must have searched for instruments and selected measurement channels.

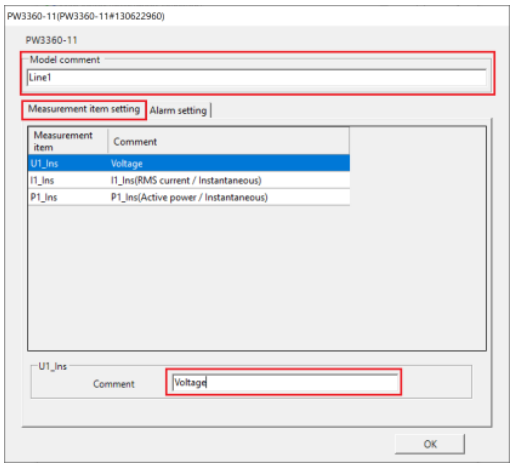
1. Click the [Advanced] button.

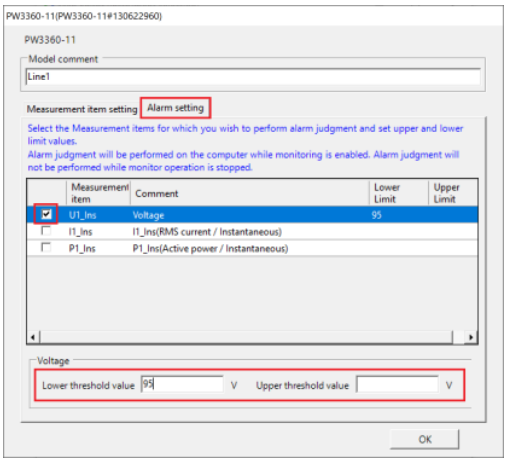


2. A screen allowing you to configure advanced instrument settings will be displayed.

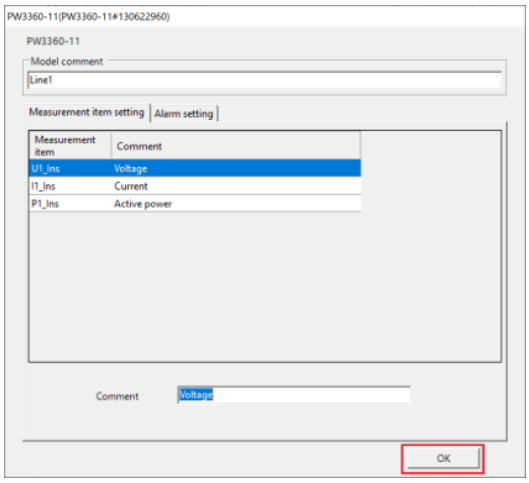


3. Edit the instrument model and measurement item comments and configure threshold settings for measurement items.





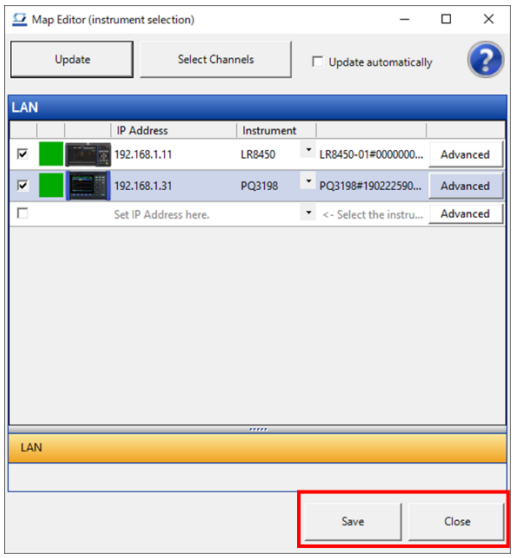
4. Exit the advanced instrument settings screen by clicking the [OK] button.



Model comment	Displays the name used to identify the instrument. Enter an easy-to-understand comment.
Measurement item comment	Displays the name used to identify the measurement item. Enter an easy-to-understand comment.

Exit the Map Editor (instrument selection)

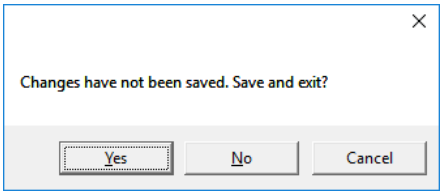
1. Click the [Save] button to save the changes made in the [Map Editor (Instrument Selection)] screen, or click the [Close] button to discard the changes.



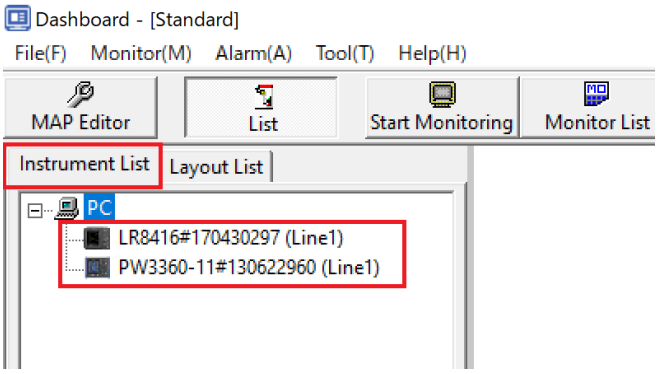
*In V5.30 and earlier, when you click the [Close] button, you will get the message [Changes have not been saved. Save and exit?] will be displayed. In this case,

・Click [Yes] to save any changes you made to the Map Editor and exit.

・Click [No] to discard any changes you made to the Map Editor and exit.



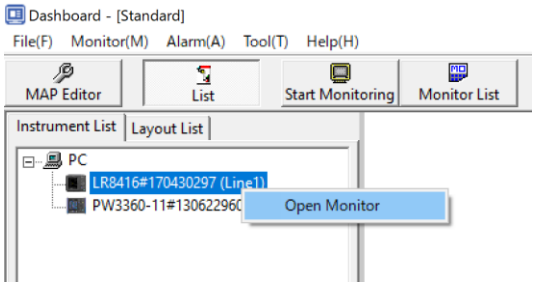
2. The [Map Editor (Instrument Selection)] screen will close, and any instruments registered in the Map Editor will be shown in the [Instrument List] tree.



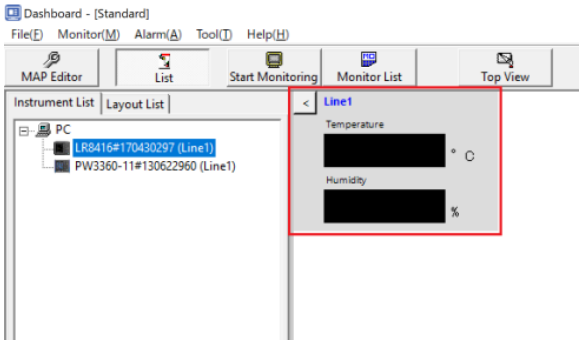
Create an Instrument Layout (Basic Instructions)

This section describes how to create a layout as a way to display the status of measurement in an easy-to-understand, visual manner.
These basic instructions describe how to create a layout for monitoring measured values easily using the Monitor Window.
To create a measured value layout, you must first select instruments and measurement channels as described in "Launch the Map Editor (Instrument Selection)" (p.181 to 188).

1. Select the instrument whose measured values you wish to monitor in the [Instrument List].
2. Select [Open Monitor] on the context menu displayed when you right-click the mouse.

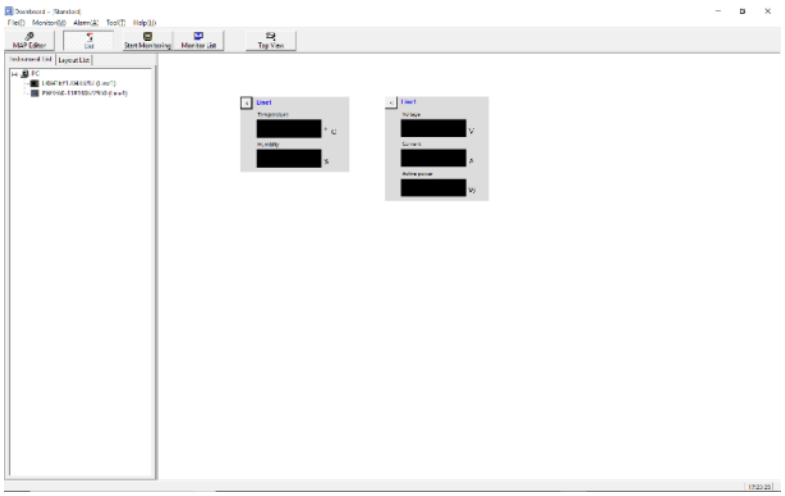


3. The [Monitor Window] will be displayed in the layout area on the right.



4. Drag the [Monitor Window] with the left mouse button and position it in the desired location.

5. Repeat steps 1. through 4. for all instruments.

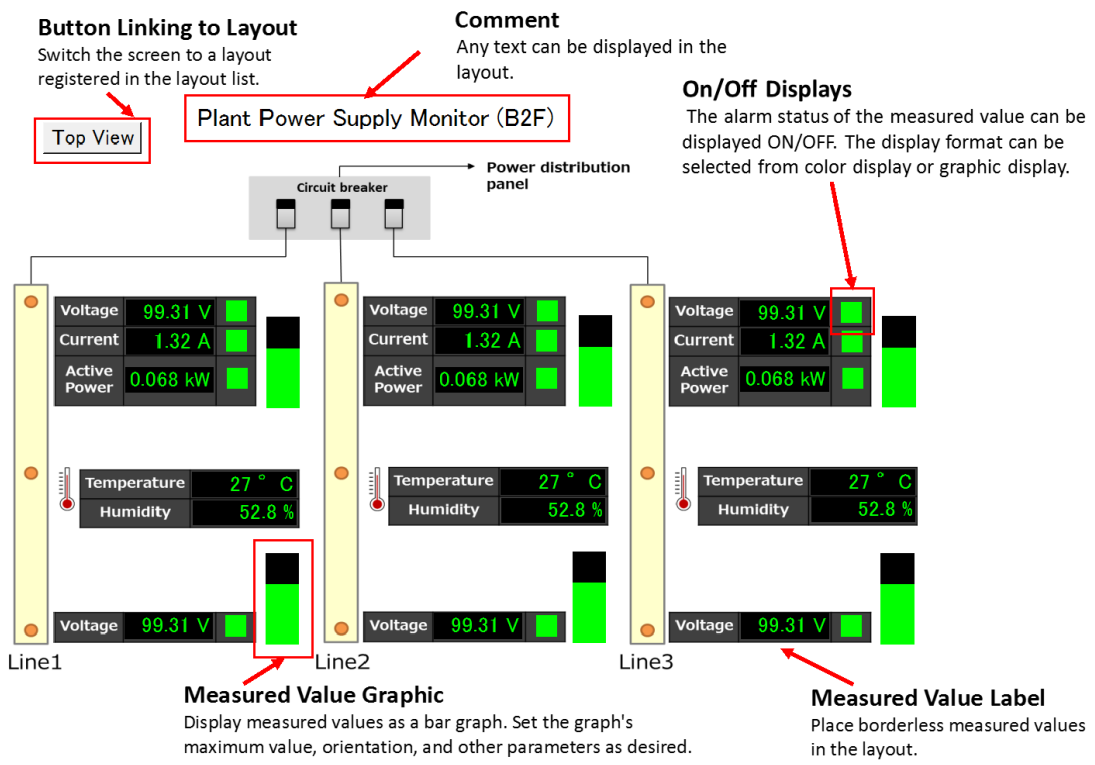


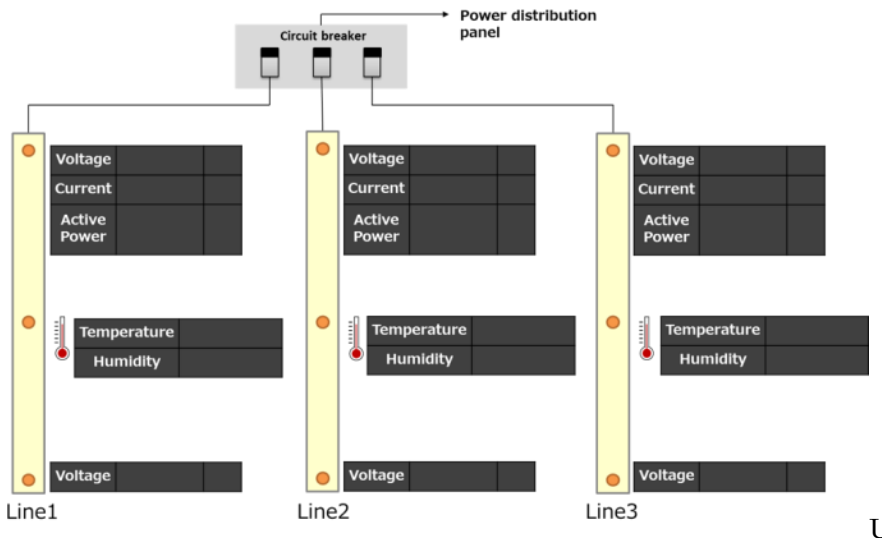
Created an Instrument Layout (Advanced Instructions)

This section describes how to create a layout as a way to display the status of measurement in an easy-to-understand, visual manner.
These advanced instructions describe how to create an even more visually pleasing layout.
To create a measured value layout, you must first select instruments and measurement channels as described in "Launch the Map Editor (Instrument Selection)" (p.181 to p.188).

Layout overview

Using layout items, you can create a layout screen depicting the monitoring system as shown in the figure below.





User-created background image

Workflow

1. Determine the screen size (p.**192**)
2. Paste in a background image (p.**193**)
3. Position layout items (p.**194**)
4. Lock a layout (p.**201**)
5. Save the layout (p.**201**)

Delete a layout (p.**202**)

Move a layout (p.**203**)

Layout context menu (p.**204**)

Layout item context menu (p.**204**)

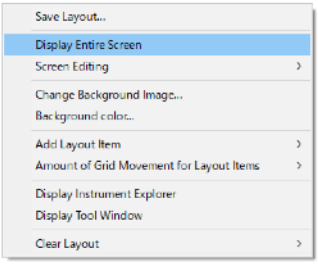
Determine the Screen Size (for Full Screen)

This section describes how to determine the layout screen size.

If you plan to display the entire layout screen, display the entire screen and then display the screen size.

1. Display the entire layout (full screen).

1-1. Right-click the layout and select [Display Entire Screen].

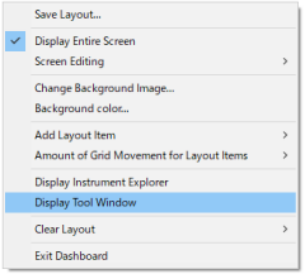


1-2. The layout will be displayed so that it fills the screen.

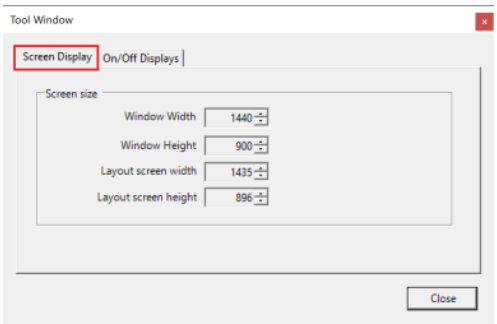
Note: To return to the original size, select [Display Entire Screen] again or press the ESC key.

2. Display the screen size.

2-1. Right-click the layout and select [Display Tool Window].



2-2. The [Tool Window] will be displayed. Select the [Screen Display] tab.

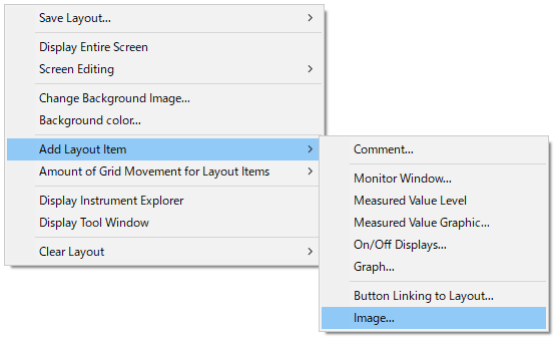


2-3. The [Window Width] and [Layout screen height] indicate the layout screen size (unit: px).

Paste in a Background Image

This section describes how to register a background image by setting the position and size of the created image.

1. Right-click the layout and select [Add Layout Item]-[Image].

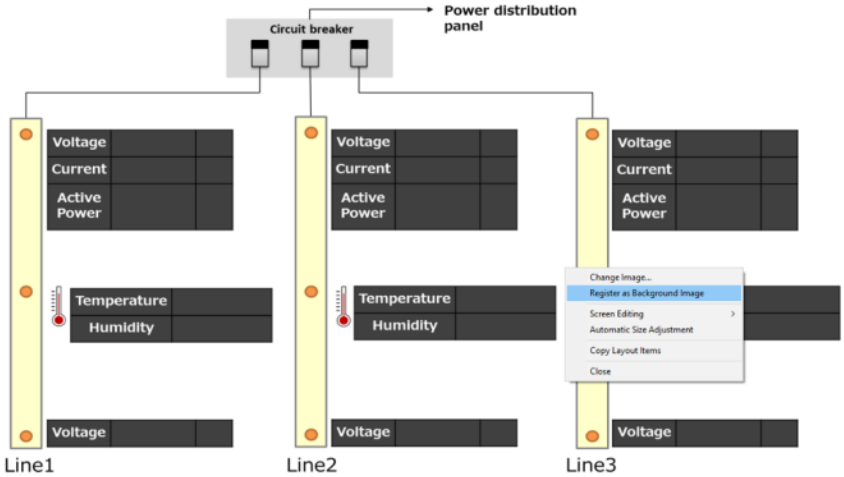


2. Select the image file you wish to paste and click [Open].
3. Using the mouse, change the position and size of the image.

   You can change the size of the image while maintaining its aspect ratio by dragging the corner of the image with the mouse.

3. Once you have positioned the image as desired, right-click the image.

Select [Register as Background Image] to register the image as the background image.



*For more information about the image context menu, see p.214.

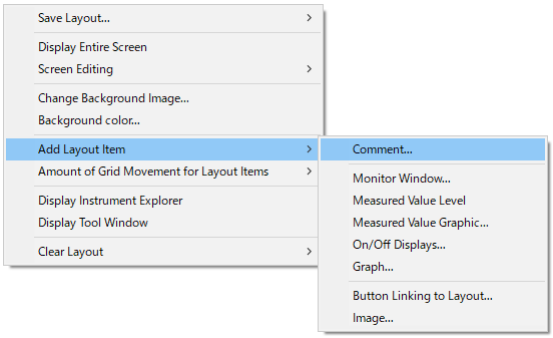
Position Layout Items

This section describes how to position layout items on a background image.

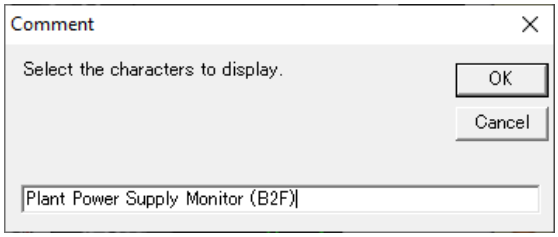
Position layout items (comments)

This section describes how to display comments on the layout.

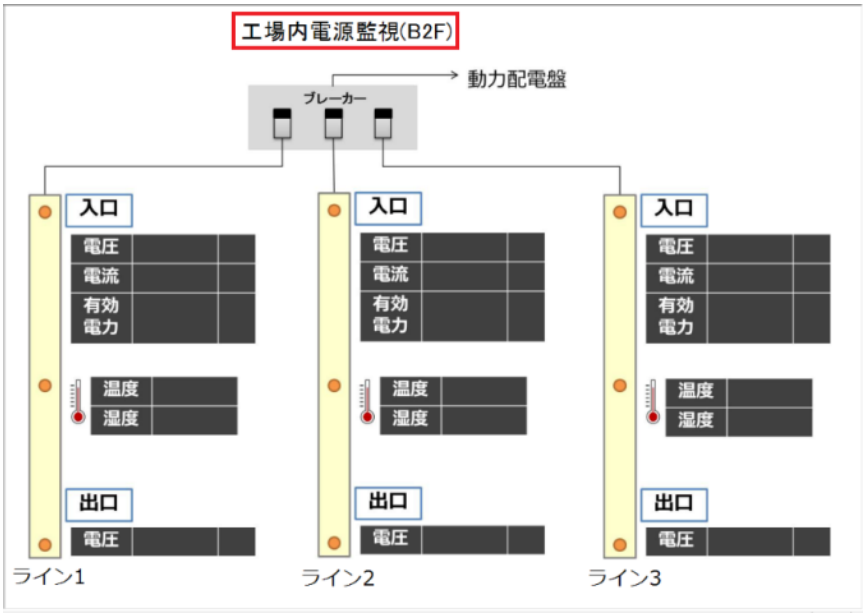
1. Right-click the layout and select [Add Layout Item]-[Comment].



2. Enter a comment and click [OK].



4. Using the mouse, position the comment as desired.



*For more information about the comment context menu, see p.204.

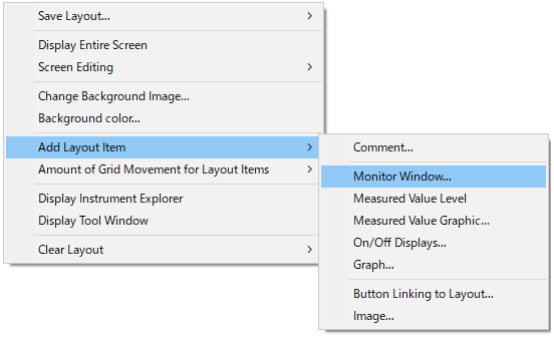
Position layout items (monitor windows)

This section describes how to place a [Monitor Window] in the layout.

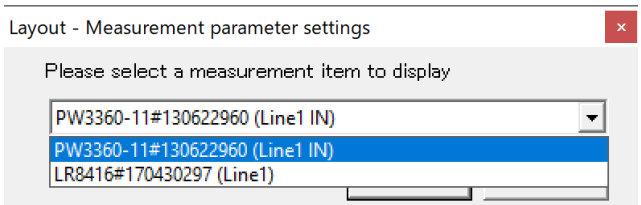
Note: The following applies to monitor windows and measured value labels.

Item type	Border	Display unit	Displayed parameter
Monitor windows	Yes	Instrument	Measurement item selected in [Channel Selection]
Measured value label	None	Measurement item	Measurement item selected in [Channel Selection]

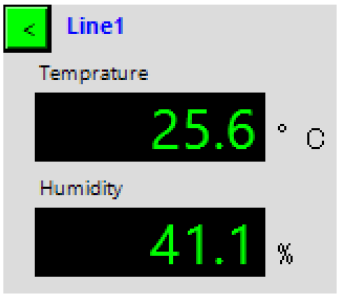
1. Right-click the layout and select [Add Layout Item]-[Monitor Window].



2. A window for adding a monitor window will be displayed. You can select any instrument included in the instrument list.



3. Using the mouse, position the monitor window as desired.



*For more information about the monitor window context menu, see p.205.

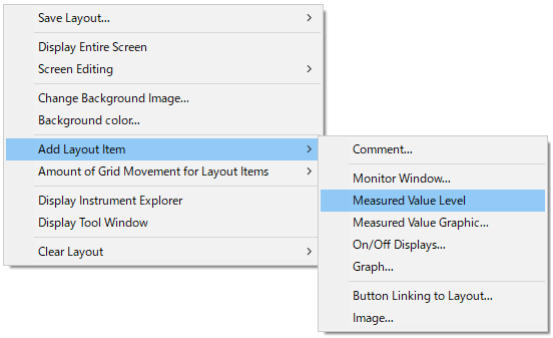
Position layout items (measured value labels)

This section describes how to place a borderless [Measured Value Label] in a layout.

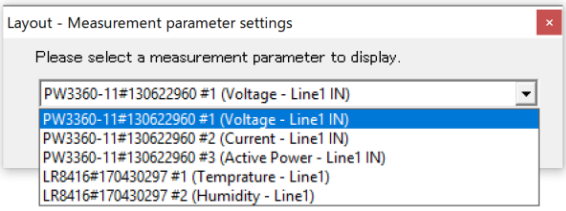
Note: The following applies to monitor windows and measured value labels.

Item type	Border	Display unit	Displayed parameter
Monitor windows	Yes	Instrument	Measurement item selected in [Channel Selection]
Measured value label	None	Measurement item	Measurement item selected in [Channel Selection]

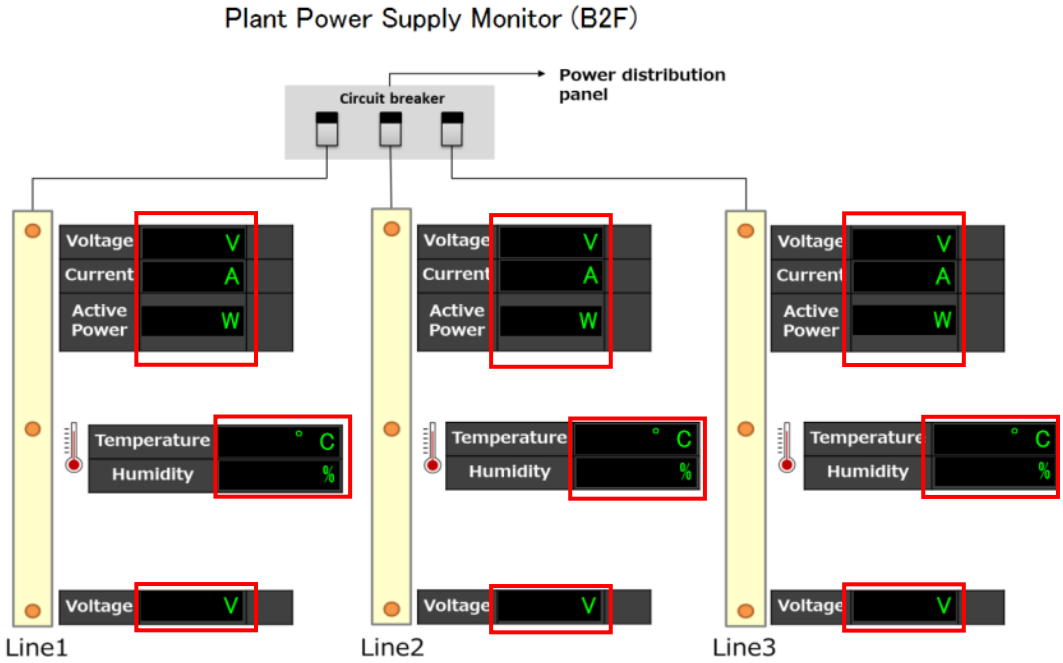
1. Right-click the layout and select [Add Layout Item]-[Measured Value Label].



2. A window for adding a measured value label will be displayed. You can select any measurement item included in the instrument list as long as it has also been selected in [Channel Selection]. Specify the measurement item to display and click [OK].



3. Using the mouse, position the measured value label as desired.

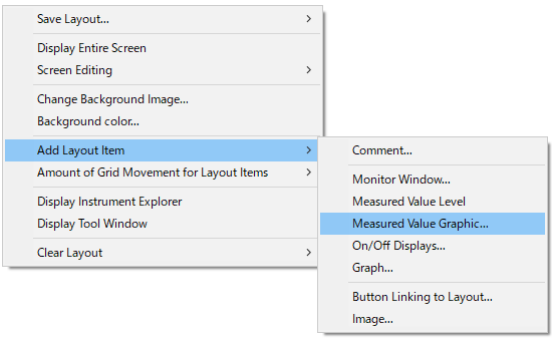


*For more information about the measured value label context menu, see p.205.

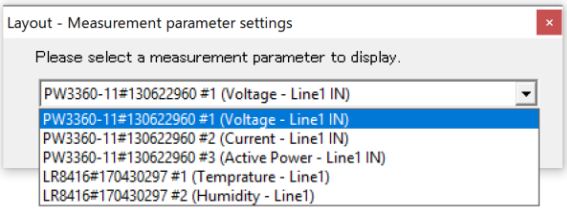
Position layout items (measured value graphics)

This section describes how to place a [Measured Value Graphic] in a layout.

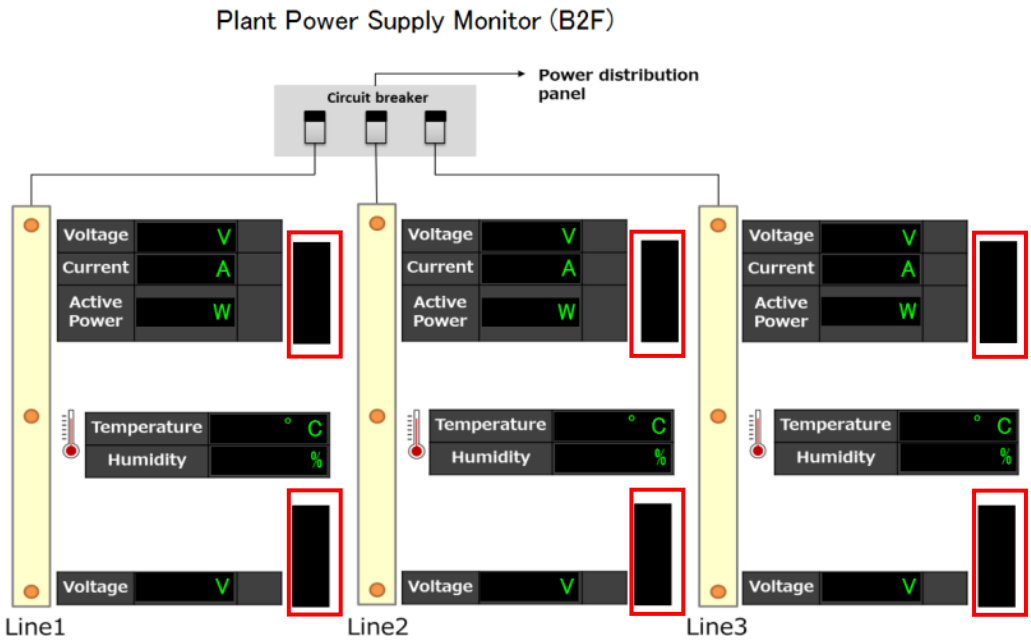
1. Right-click the layout and select [Add Layout Item]-[Measured Value Graphic].



2. A window for adding a measured value graphic will be displayed. You can select any measurement item included in the instrument list as long as it has also been selected in [Channel Selection]. Specify the measurement item to display and click [Settings].



3. Using the mouse, change the position and size of the measured value graphic as desired.

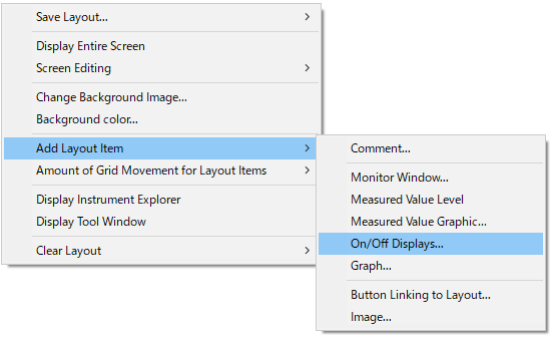


*For more information about the measured value graphic context menu, see p.206.

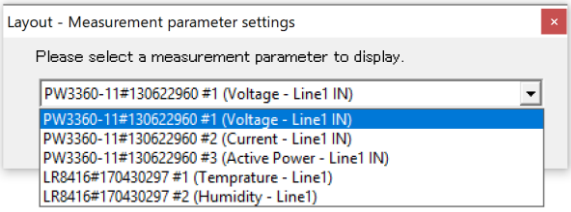
Position layout items (on/off displays)

This section describes how to place an [On/Off Display] in the layout.

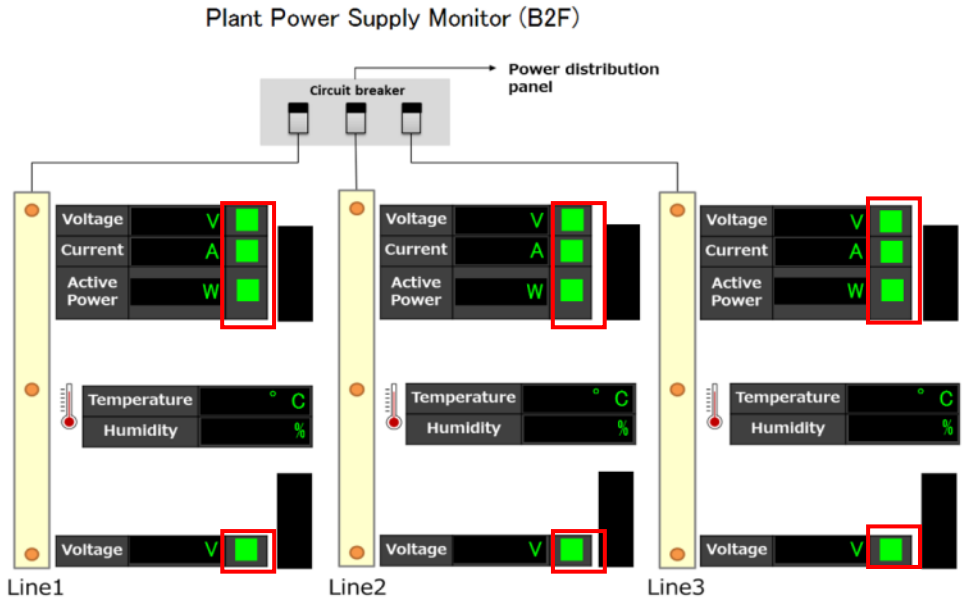
1. Right-click the layout and select [Add Layout Item]-[On/Off Display].



2. A window for adding an on/off display will be displayed. You can select any measurement item included in the instrument list as long as it has also been selected in [Channel Selection]. Specify the measurement item to display and click [Settings].



3. Using the mouse, position the on/off display as desired.



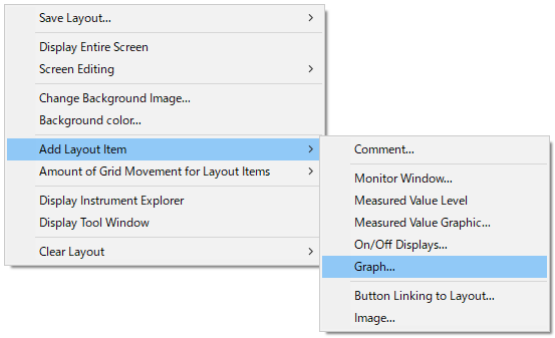
*For more information about the on/off display context menu, see p.207.

Position layout items (graph)

This section describes how to place an [graph] in the layout.

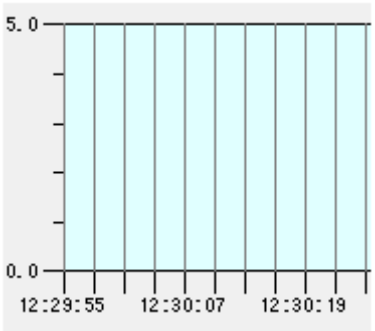
* The graph display automatically scrolls from right to left, and graph values that disappear from the display cannot be viewed later.

1. Right-click the layout and select [Add Layout Item]-[graph].



2. A window for adding a graph window will be displayed.

3. Using the mouse, position the graph window as desired.

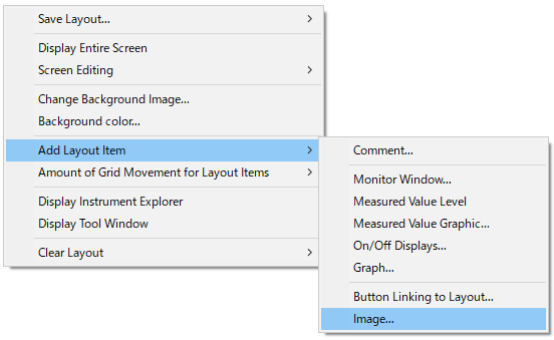


*For more information about the graph context menu, see p.208.

Position layout items (images)

This section describes how to place an [Image] in the layout.

4. Right-click the layout and select [Add Layout Item]-[Image].



5. Click the image file you wish to paste and click [Open].

6. Using the mouse, change the position and size of the image as desired.

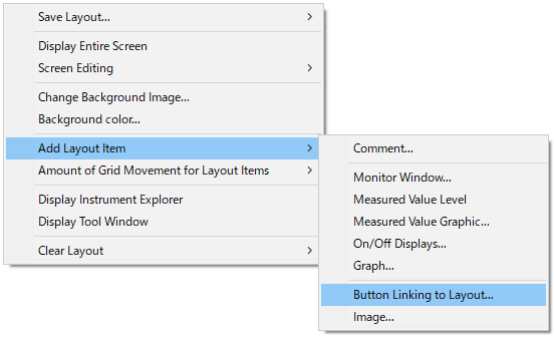
*For more information about the image context menu, see p.214.

Position layout items (layout link buttons)

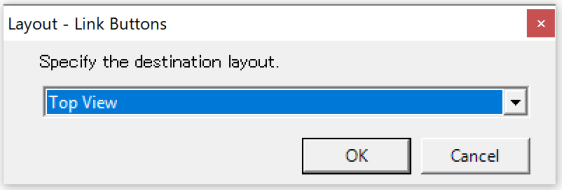
This section describes how to place a [Button Linking to Layout] in a layout so that you can switch among multiple screens for monitoring purposes.

Note: If you're only using a one-screen layout, there is no need to use layout link buttons.

1. Right-click the layout and select [Add Layout Item]-[Button Linking to Layout].

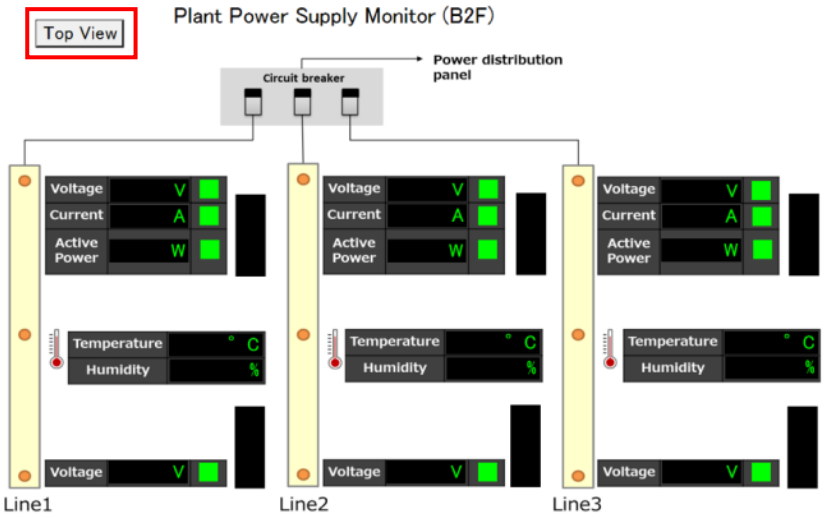


2. A window for adding a layout link button will be displayed. Specify the link destination and click [OK].



3. Using the mouse, position the layout link button as desired.

You can move to the link destination by clicking the layout link button.

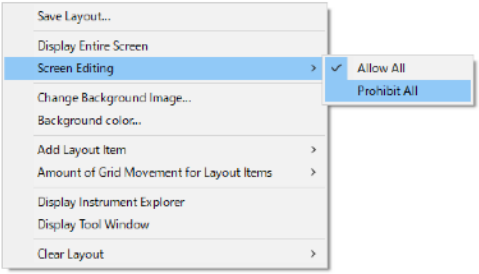


*For more information about the layout link button context menu, see p.214.

Lock a Layout

This section describes how to lock the layout screen and disable editing of all layout items.

1. Right-click the layout and select [Screen Editing]-[Prohibit All].



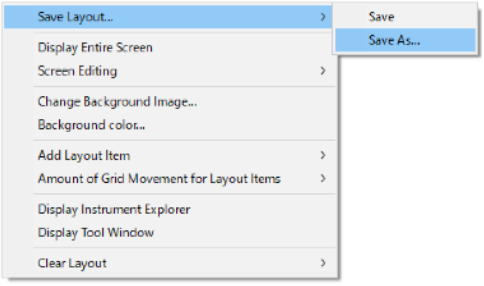
2. Editing of all layout items in the layout will be prohibited.

Save a Layout

This section describes how to save a layout once you've finished populating it with layout items.

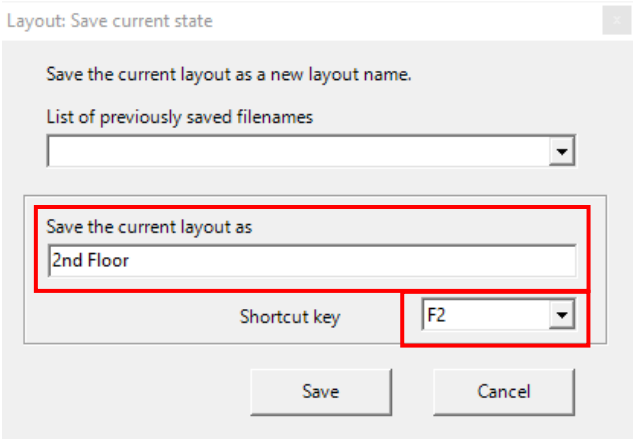
Note: Always save a layout after making changes.

5. Right-click the layout and select [Save Layout]-[Save As…].



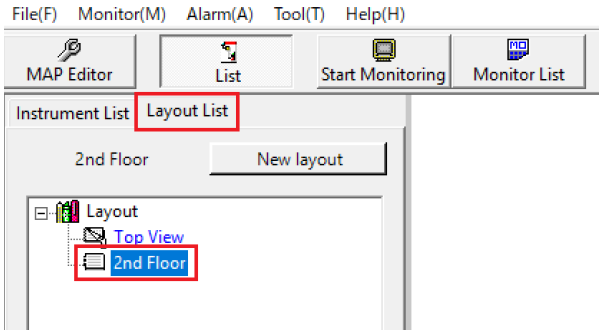
6. When the save screen is displayed, enter the [Current filename].

   If you wish to use a shortcut key to switch among layouts, set the desired key (F1 to F7).



7. Click the [Save] button.

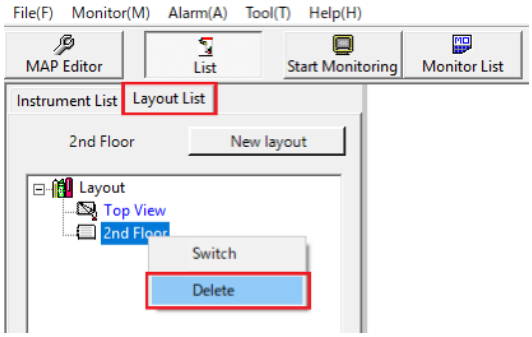
   Once you save a layout, it will appear in the [Layout List].



Delete a Layout

This section describes how to delete a previously created layout.

8. In the layout list, right-click the layout you wish to delete and select [Delete].



9. The layout and all layout items it contains will be deleted.

Switch to a Layout

This section describes how to switch among layouts.

Method 1 Double-click the layout you wish to view in the Layout List.

Method 2 Right-click the layout you wish to view in the Layout List and select [Go].
Method 3 Click a [Button Linking to a Layout] that has been placed in a layout*1.
Method 4 Press a shortcut key that has been assigned to a layout (F1 to F7)*2.

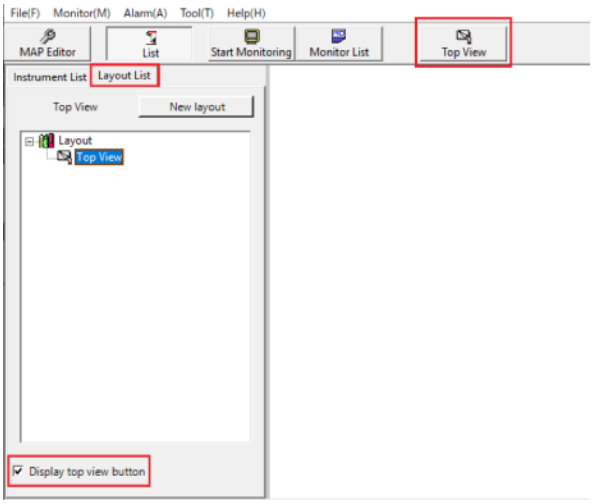
*1 For more information about how to configure layout link buttons, see p.200
*2 For more information about how to assign shortcut keys, see p.201.

Note: Switching to the top view

The [Top View] in the Layout List is a special layout. You can display a button for switching to the top view in the toolbar. You can switch to the top view by clicking the top view button.

How to display the top view button

Select the [Display top view button] checkbox underneath the layout list.



Layout Context Menu

The layout context menu offers the following commands:

Context menu command		Description
Save Layout	Save	Save the layout by overwriting the current layout.
	Save As	Save the current layout under a new name. (p.201)
Display Entire Screen		Display the layout so that it fills the screen (full screen). (p.192)
Screen Editing		Enable or disable movement of all monitor windows and editing of all layout items.
Change Background Image		Paste a background image into the layout. (p.193)
Background color		Set the background color.
Add Layout Item		Add a layout item. (p.194)
Amount of Grid Movement for Layout Items		・Set the amount of movement for items in the layout. ・You can align layout items by setting the amount of grid movement.
Display Instrument Explorer		Display the Instrument Explorer. (p.203)
Display Tool Window		・Display the screen size. (p.192) ・Configure operation of on/off displays. (p.234)
Clear Layout	Clear Background Image	Clear the layout's background image.
	Clear Monitors/Layout Items	Clear all monitor windows and layout items.
	Clear All	Clear the layout.
	Clear All Layout Item Displayed Measurement Item Settings	Clear all settings of displayed measurement items in the [measured value labels], [measured value graphics], and [on/off displays] parts among the layout items.

Layout Item Context Menus

Layout item (comment) context menu

The layout item (comment) context menu offers the following commands:

Context menu command	Description
Change Comment	Change the comment.
Screen Editing	Enable or disable editing of the comment.
Text Display Position	Set the text display position.
Automatic Size Adjustment	Automatically adjust the size.
Font	Change the comment's font.
Text Color	Change the comment's text color.
Background Color	Change the comment's background color.

Copy Layout Items	Create a copy of the comment. *The copy will inherit the attributes of the copied comment (comment contents, text display position, size, font, text color, and background color).
Close	Close the comment.

Layout item (monitor window) context menu

The layout item (monitor window) context menu offers the following commands:

Context menu command	Description
Change Displayed Measurement Items	Change the measurement items shown in the monitor window.
Screen Size	Select the screen size.
Screen Editing	Enable or disable editing of monitor window.
Measured Value Color	Change the monitor value's text color.
Background Color	Change the monitor window's background color.
Display Digit Number Settings	Sets the auxiliary unit and the number of display digits (automatic, customized) for the measurement
Copy Monitor	Create a copy of the monitor window. *The copy will inherit the attributes of the copied monitor window (displayed parameters, screen size, measured value color, and background color).
Close	Close the monitor window.

Layout item (measured value label) context menu

The layout item (measured value label) context menu offers the following commands:

Context menu command	Description
Display Units	Set whether to display the measurement units.
Change Displayed Measurement Item	Change the measurement item to display.
Screen Editing	Enable or disable editing of the measured value label.
Text Display Position	Set the text display position.
Automatic Size Adjustment	Automatically adjust the size.
Font	Change the measured value label's font.
Measured Value Color	Change the measured value label's text color.
Background Color	Change the measured value label's background color.
Display Digit Number Settings	Sets the auxiliary unit and number of display digits (automatic, customized) for measured values.
Copy Layout Items	Create a copy of the measured value label. *The copy will inherit the attributes of the copied measured value label (unit display status, displayed parameter, instrument settings, text display position, size, font, measured value color, and background color).

Close	Close the measured value label.

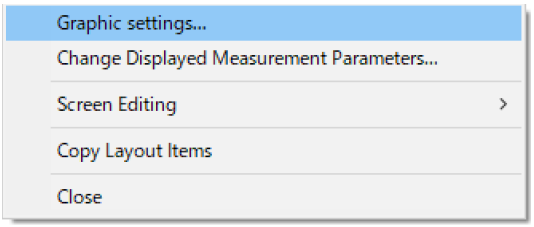
Layout item (measured value graphic) context menu

The layout item (measured value graphic) context menu offers the following commands:

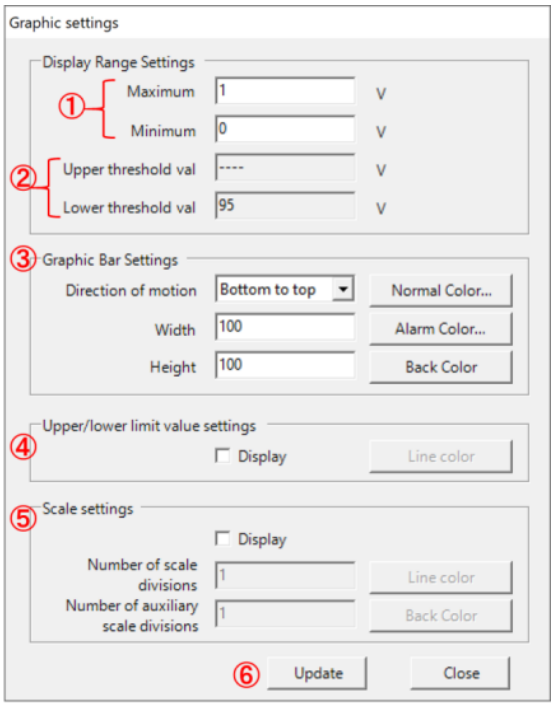
Context menu command	Description
Graphic Settings(*1)	Set the display range, upper and lower limit value display, and scale display.
Change Displayed Measurement Item	Change the measurement item displayed.
Screen Editing	Enable or disable editing of the measured value graphic.
Display Digit Number Settings	Sets the auxiliary unit and number of display digits (automatic, customized) for measured values.
Copy Layout Items	Create a copy of the measured value graphic. *The copy will inherit the attributes of the copied measured value graphic (graphic settings, displayed parameter, and instrument settings).
Close	Close the measured value graphic.

*1: About graphic settings

1. Right-click the measured value graphic and select [Graphic Settings].



2. The [Graphic Settings] screen will be displayed.



① Allows you to set the maximum and minimum values for the display range.

② Displays the upper and lower limit value settings. (The upper and lower limit value settings can be changed on the instrument advanced settings screen [p.186].)

③ Allows you to set the graphic bar's orientation, color, and size.

④ Allows you to set whether to display the upper and lower limit values.

⑤ Allows you to set the scale display.

⑥ Click the [Update] button to update the measured value graphic display.

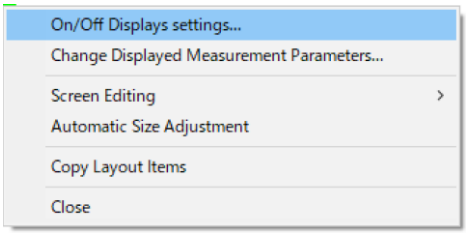
Layout item (on/off display) context menu

The layout item (on/off display) context menu offers the following commands:

Context menu command	Description
Configure On/Off Display	Define the on/off state and configure settings such as on/off images and colors.
Change Displayed Measurement Item	Change the measurement items shown.
Screen Editing	Enable or disable editing of the on/off display.
Automatic Size Adjustment	Automatically adjust the size.
Display Digit Number Settings	Sets the auxiliary unit and number of display digits (automatic, customized) for measured values.
Copy Layout Items	Create a copy of the on/off display. *The copy will inherit the attributes of the copied on/off display (image settings, displayed parameters, and instrument settings).
Close	Close the on/off display.

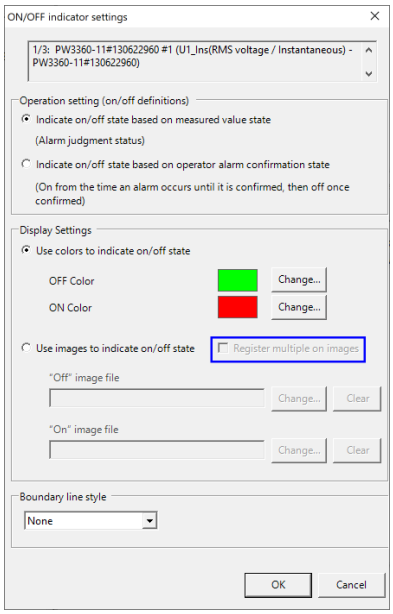
*1 About on/off display settings

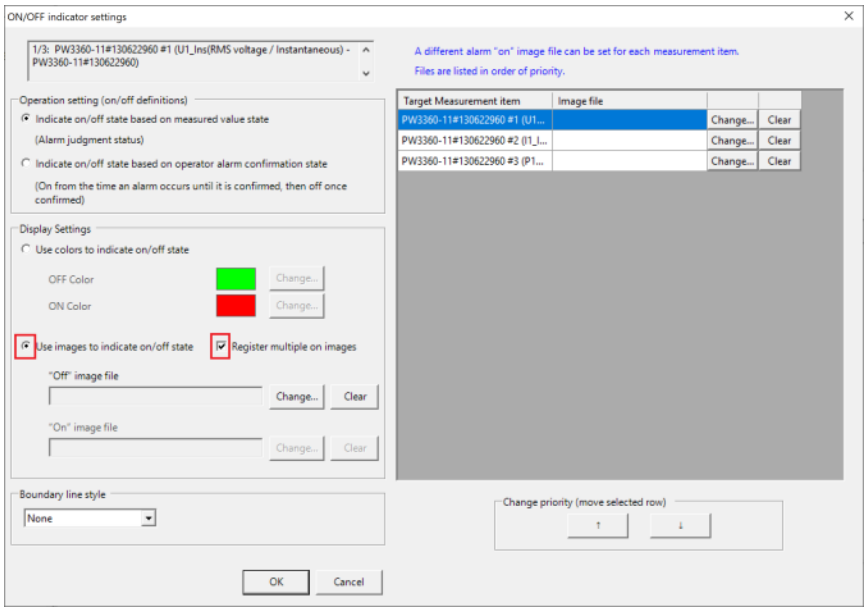
1. Right-click the on-off display and select [Configure On/Off Display].



2. The [On/Off Display Settings] screen will be displayed.

   Define the on/off state and configure settings such as on/off colors and images and the border style.





   *The [Register multiple on images] checkbox (outlined in blue below) will only be displayed if the on/off display has been set up with multiple measurement items. To set up an on/off display with multiple measurement items, use the Instrument Explorer (p.226).

   *Selecting the [Register multiple on images] checkbox will cause the window to be expanded so that you can set an "on" image file for each measurement item.

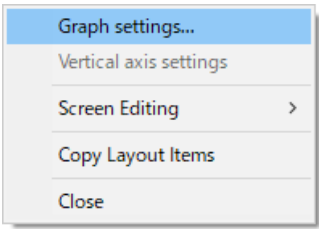
Layout item (graph) context menu

The layout item (graph) context menu offers the following commands:

Context menu command	Description
Configure graph setting	Configure various settings for the graph display.
Vertical axis setting	Selects one of the displayed graph items as the basis for the vertical axis.
Screen Editing	Enable or disable editing of the on/off display.
Copy Layout Items	Create a copy of the graph display. *The copy will inherit the attributes of the copied graph display.
Close	Close the graph display.

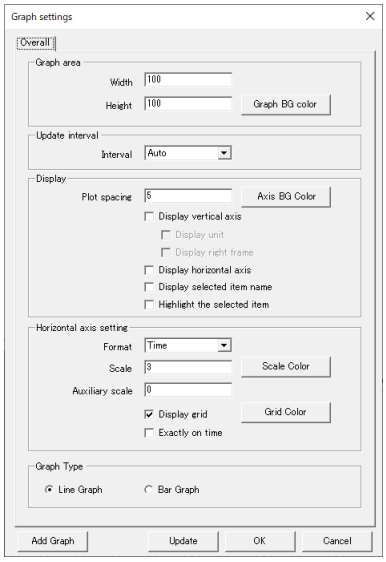
*1 About graph display settings

1. Right-click the graph display and select [Graph settings].



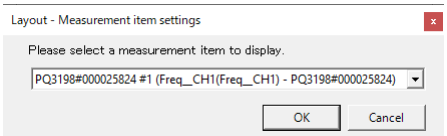
2. The [Graph settings] screen will be displayed.

   The [Overall] tab is used to configure the display settings for the overall graph.



Settings		Description
Graph area	Width	Sets the width of the graph display area. If a vertical axis is displayed, the width of the graph area will be larger than the specified value. The width can also be changed directly by mouse operation.
	Height	Sets the height of the graph display area. If the horizontal axis is displayed, the height of the graph area will be larger than the specified value. The height can also be changed directly by mouse operation.
	[Graph Background Color] button	Sets the graph background color. Clicking the button displays the [Color] dialog box.
Update interval	Interval (*1)	The graph update interval can be specified. If Auto, the graph display is updated at the same interval as the monitoring interval. If 1min to 1hour is specified, the representative value of the update interval is used as the graph display value. The representative value is set in "Graph Setting"-"Displayed Values" in the [Graph 1]-[Graph 8] tab.

Display	Plot spacing	Sets the plot spacing of the graph in pixels. The larger the value, the wider the plot spacing. * 1 means plotting with no spacing, 2 means plotting with 1 pixel spacing.
	Display vertical axis	On: The vertical axis is displayed on the left side of the graph display area. Off: The vertical axis is not displayed.
	Display unit	On: Displays the unit of measure for the selected item at the top of the vertical axis display. Off: The unit is not displayed. Effective when the vertical axis display is on.
	Display right frame	On: Display the right frame of the graph. Off: The right frame of the graph is not displayed. Effective when vertical axis display is on.
	Display horizontal axis	On: The horizontal axis is displayed at the bottom of the graph display area. Off: The horizontal axis is not displayed.
	Display selected item name	On: Displays the name of the selected item at the top of the graph. Off: The name of the selected item is not displayed.
	Highlight the selected item	On: The graph line of the item on which the vertical axis is based is displayed 2 pixels thicker than the specified value. Off: The graph line of the item on which the vertical axis is based is not highlighted.
	[Axis background color] button	Sets the background color of the vertical axis, horizontal axis, and the area around the graph display area. Clicking the button displays the [Color] dialog box.
Horizontal axis setting	Format	Scale labels can be selected for the horizontal axis. The display interval of labels is determined automatically. Time: Labels are displayed in time format (hh:mm:ss). Date: Labels are displayed in date/time format (yyyy/MM/dd hh:mm:ss). Point: Labels are displayed in the order of measurement data (from 1). Scale only: Displays only the scale without labels.
	Scale	Specifies numerical values for the scale interval.
	Auxiliary scale	Specifies numerical values for the auxiliary scale interval.
	Display grid	On: Vertical grid lines are displayed along the scale in the graph display area. Off: Vertical grid lines are not displayed in the graph display area.
	[Scale Color] button	Sets the color of the horizontal axis scale label. Clicking the button displays the [Color] dialog box.
	[Grid Color] button	Sets the color of the vertical grid lines. Clicking the button displays the [Color] dialog box.
	Exactly on time (*1)	On: Plots a graph from the delimited time. (*2) Off: Plots a graph from the monitor start time.
Graph Type	Line Graph	Displays all graphs as line graphs.

	Bar Graph	Displays items in Graph 1 as a bar graph, and line graphs for all items except Graph 1.
[Add Graph] button (*1)		Add a graph item. Clicking the button displays the [Layout-Measurement item settings] dialog box.  Select the measurement item you wish to display and press the [OK] button to add the [Graph x] (x:1-8) tab to the Graph Settings screen.
[Update] button		Clicking the [Update] button will apply the changed settings to the graph display. Changes made to all tabs are reflected in the graph display.
[OK] button		When you press the button, the changed settings will be reflected in the graph display and the graph setting screen will close.
[Cancel] button		Press the button to close the graph setting screen. Changes made after pressing the [Update] button will not be reflected in the graph display.

*1: Cannot be operated when the monitor is running.

*2: About the "Exactly on time"

The dashboard monitor start time is subject to the following conditions:

・When the monitor interval is less than 1 minute:

The monitor starts at the timing when 00 seconds in seconds is measured.

Example: If the monitor interval is 5 sec, the monitor starts at the timing of 00 sec, 05 sec, 10 sec, ..., 50 sec, and 55 sec.

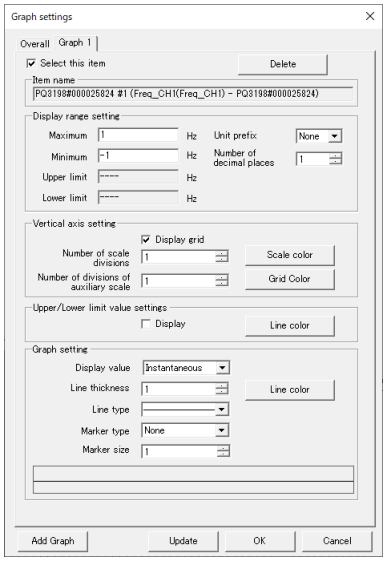
・When the monitoring interval is 1 minute or longer:

The monitoring starts at the timing when 00 seconds is measured.

For this reason, the "Exactly on time" setting is ignored if the monitor interval is specified to be 2 minutes or longer and monitoring is started because the timing of 00 minutes in minutes may not be measured due to the specification when the monitor interval is 2 minutes or longer.

Example: If monitoring is started at 08:00:30 with a monitoring interval of 2 minutes, monitor values are obtained as follows: 08:01:00, 08:03:00, ... , 08:59:00, 09:01:00, ... and therefore graphs cannot be drawn based on 9:00:00.

The [Graph x] (x:1-8) tab is used to set the display settings for each graph item.



Settings		Description
Select this item		Set the item to be used as the basis for the vertical axis. One item is always selected. This can also be set in the [Vertical Axis Setting] menu of the right-click menu. On: This item is used as the basis for the vertical axis. When this item is turned on, the other items that were used as the basis for the vertical axis are turned off. Off: Indicates that this item is not the basis for the vertical axis. If you want to turn it off, please turn on other items.
[Delete] button (*1)		Deletes the item on the displayed tab from the graph display. If the deleted item was the basis for the vertical axis, Graph 1 is designated as the basis. If all items are deleted, the display returns to the initial view.
Item name		Displays the name of the selected measurement item. The measurement item cannot be changed on this screen.
Display range setting	Maximum	Sets the maximum value of the vertical axis display range.
	Minimum	Sets the minimum value for the vertical axis display range.
	Upper limit	The upper limit setting is displayed. To change the upper limit setting, go to the instrument advanced settings screen (p.186).
	Lower limit	The lower limit setting is displayed. To change the lower limit setting, go to the instrument advanced settings screen (p.186).
	Unit prefix	Specify the auxiliary units used in the graph display.
	Number of decimal places	Specify the number of decimal places for numerical values used in the graph display.
Vertical axis setting (*2)	Display grid	On: Horizontal grid lines are displayed along the scale in the graph display area. Off: Horizontal grid lines are not displayed in the graph display area.

	Number of scale divisions	Specifies numerically the number of scale divisions on the vertical axis. (Range: 1 to 99) * When 1 is specified, no scale is set between the maximum and minimum values.
	Number of divisions of auxiliary scale	Specifies numerically the number of auxiliary scale divisions on the vertical axis. (Range: 1 to 99) When 1 is specified, no auxiliary scale is provided between the scales.
	[Scale color] button	Sets the color of the vertical axis scale labels. Clicking the button displays the [Color] dialog box.
	[Grid color] button	Sets the color of the horizontal grid lines. Clicking the button displays the [Color] dialog box.
Upper/Lower limit value settings	Display	On: Upper and lower limit lines are displayed in the graph display area. Off: Upper and lower limit lines are not displayed in the graph display area.
	[Line color] button	Sets the color of the upper and lower limit lines. Clicking the button displays the [Color] dialog box.
Graph settings	Display value (*1) (*3)	Specify the graph representative value. Instantaneous: The graph value is the instantaneous value acquired during the update interval. Average: The graph value is the average of the instantaneous values acquired during the update interval. Maximum: The maximum value of the instantaneous values acquired during the update interval is used as the graph value. Minimum: The minimum value of the instantaneous values acquired during the update interval is the graph value. * If the update interval is automatic or the update interval is the same as (or shorter than) the monitoring interval, the graph representative value is the instantaneous value.
	Line thickness	Specifies the numerical thickness of the graph line. (Range: 1 to 99) This setting is common for line graphs and bar graphs.
	Line type	You can select the line type for the graph from the following options. Solid, Dashed, Dotted, Single-dash, Double-dash
	Marker type	You can select a marker type for a line graph from the following options. None, Circle, Square, Triangle
	Marker size	Specifies the numerical size of the markers on a line graph. (Range: 1 to 99) If it is the same as (or smaller than) the line thickness, the marker will not be displayed.
	[Line color] button	Sets the colors of graph lines and markers. Clicking the button displays the [Color] dialog box.

Please refer to the [General Settings] tab description for the [Add Graph], [Update], [OK], and [Cancel] button actions.

*1: Cannot be operated when the monitor is running.

*2: The units and number of decimal places used for the vertical axis of a graph display are not linked to the setting of the number of digits displayed in the monitor window, etc.

*3: Even if the display value settings are changed after the monitor is executed, the graph will display the data as it was at the time the monitor was executed.
The graph will be cleared the next time the monitor is started.

Layout item (image) context menu

The layout item (image) context menu offers the following commands:

Context menu command	Description
Change Image	Load an image.
Register as Background Image	Register an image as a background image.
Screen Editing	Enable or disable editing of the image.
Automatic Size Adjustment	Revert to the size of the image at the time it was loaded.
Copy Layout Items	Create a copy of the image. *The copy will inherit the attributes of the copied image (image and size).
Close	Close the image.

Layout item (layout link button) context menu

The layout item (layout link button) context menu offers the following commands:

Context menu command	Description
Change Link Destination	Change the link destination of the layout link button.
Change Text	Change the text of the layout link button.
Screen Editing	Enable or disable editing of the layout link button.
Text Display Position	Set the text display position.
Automatic Size Adjustment	Automatically adjust the size of the layout link button.
Font	Change the font used for the text of the layout link button.
Text Color	Change the text color of the layout link button.
Background Color	Change the background color of the layout link button.
Copy Layout Items	Create a copy of the layout link button. *The copy will inherit the attributes of the copied button (link destination, text display position, size, font, text color, and background color).
Close	Close the layout link button.

Start or Stop the Measured Value Monitor

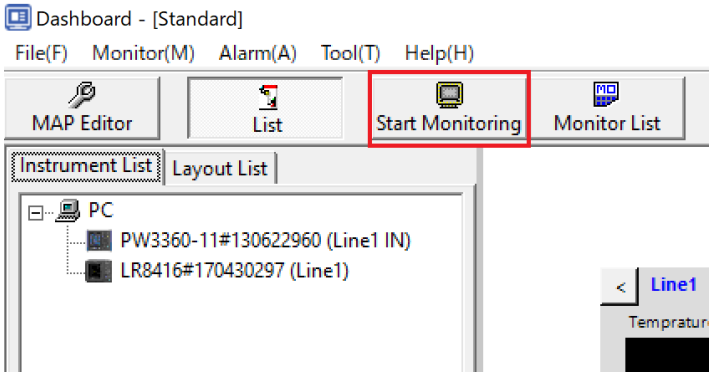
This section describes how to start and stop the measured value monitor.

Start the measured value monitor

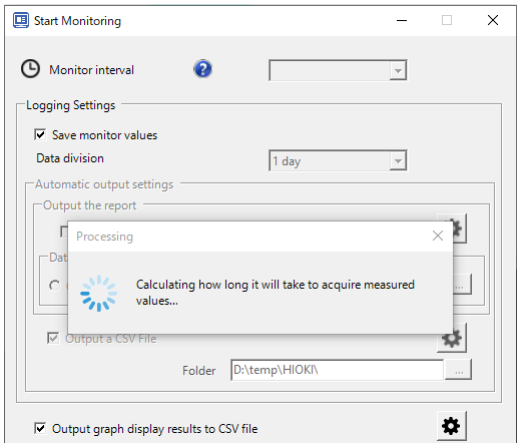
Verify that the tasks listed below have been completed before starting the measured value monitor.
If any tasks remain incomplete, complete them as described in "Workflow" (p.180).

- The instrument has been connected to the PC with a LAN cable.
- A list of instruments is displayed on the [Map Editor (Instrument Selection)] screen.
- The instrument connection status is either "Connected" (shown in green) or "Found" (shown in light green).
- One or more measurement channels have been selected under [Channel Selection] on the [Map Editor (Instrument Selection)] screen.
- One or more layout items (monitor window, measured value label, etc.) have been placed in the layout.

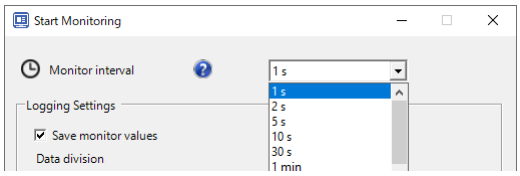
1. Click the [Start Monitoring] button on the toolbar.



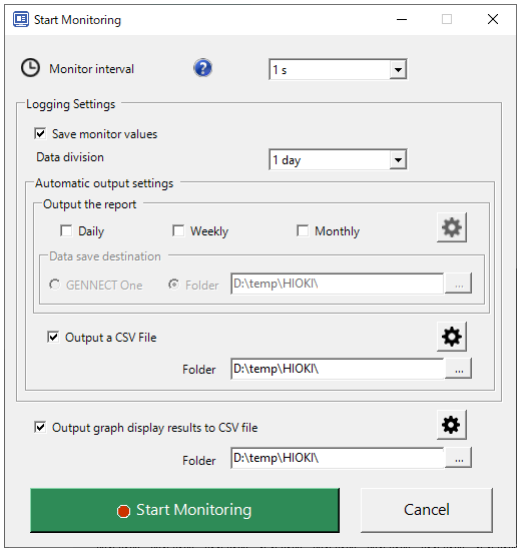
2. The [Start Monitoring] screen will be displayed.
   After the [Start Monitoring] screen is displayed, the following message may be displayed: [Calculating how long it will take to acquire measured values…]. The application will automatically calculate the minimum monitor interval while the message is being displayed.

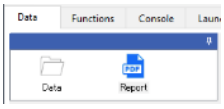
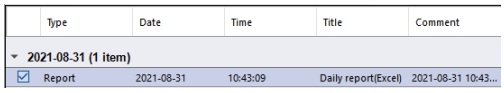


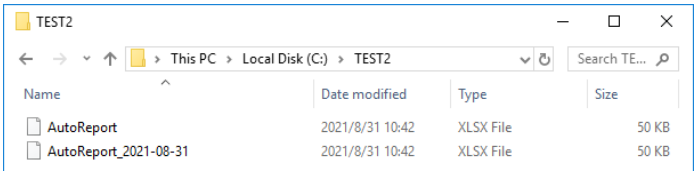
3. Select the desired monitor interval from the [Monitor interval] drop-down list on the [Start Monitoring] screen.



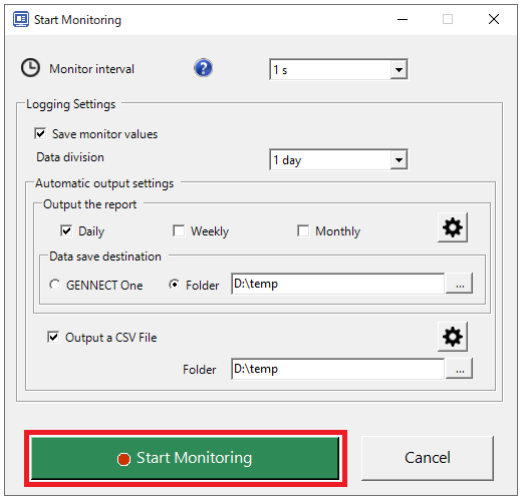
4. Configure settings related to monitor value saving (logging), data segmentation, and daily report and .CSV automatic output under [Logging settings].



Settings			Description
Logging settings	Save monitor values (on/off)		On: Save (logs) monitor values. Recorded measurement data will be saved in the data list in the logging format. Off: Do not save monitor values. When the measured values in layout elements are updated, only alarm information will be updated.
	Data division		1 day: Segment and save logging data in 1-day blocks. 1 hr.: Segment and save logging data in 1-hour blocks.
Automatic output settings	Output report	Daily/Weekly/ Monthly	On: Automatically output the selected reports. Off: Do not automatically output the selected reports.
		Data save destination	Specifies where to save the reports. GENNECT One: ·Save the reports in the GENNECT One data list.  

			Folder: ·Save the reports in a user-selected directory. Click the [...] button to select the directory in which to save the reports. 
		Detailed settings	Configures detailed settings related to automatic output of the reports. See below for more information about the settings. ➢ Configuring detailed settings for automatic output (daily/weekly/monthly reports)
	Output CSV	On/off	On: Automatically output CSV files based on the logging data segmentation time (1 day/1 hr.). Off: Do not automatically output CSV files based on the logging data segmentation time (1 day/1 hr.).
		Folder	·CSV files are saved in a user-selected directory. Click the [...] button to select the directory in which to save daily reports.
		Detailed settings	Configures detailed settings related to automatic output of CSV files. See below for more information about the settings. ➢ Configuring detailed settings for automatic output (CSV)
CSV output of graph display results		On/Off	On: Graph values are automatically output to a CSV file. Off: Graph values are not output.
		Folder	·CSV files are saved in a user-selected directory. Click the [...] button to select the directory in which to save daily reports.
		Detailed settings	Configures detailed settings related to automatic output of CSV files. See below for more information about the settings. ➢ Configuring detailed settings for automatic output (CSV)

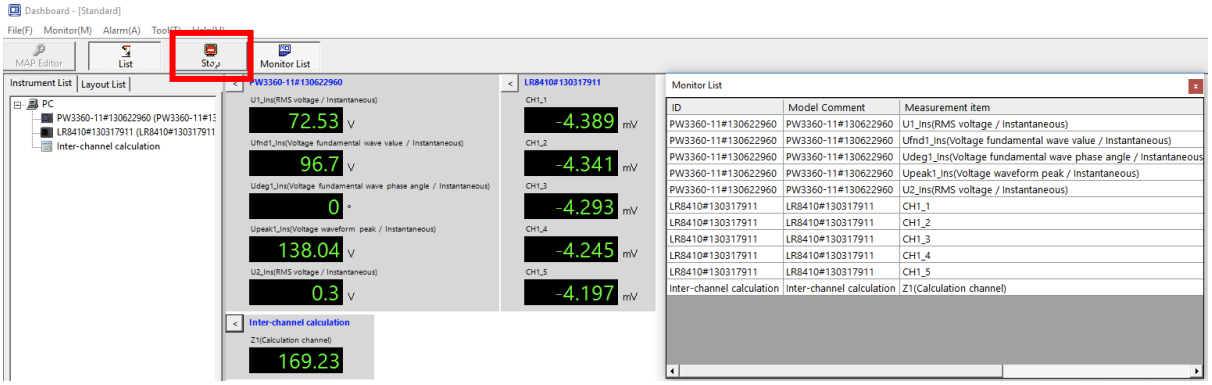
5. Click the [Start Monitoring] button on the [Start Monitoring] screen.



6. Monitoring of measured values will start.

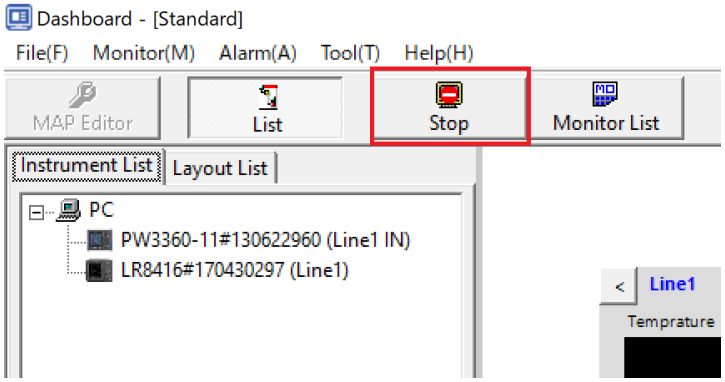
・Once monitoring starts, the layout items (monitor windows, measured value labels, etc.) will be updated.

・You can display the [Monitor List] screen by clicking [Monitor List] on the toolbar. The [Monitor List] screen displays a list of measurement items and monitor values.



Stop the Measured Value Monitor

1. Click the [Stop Monitoring] button on the toolbar.



2. Monitoring of measured values will stop.

Manage Instrument Lists

Instrument lists group together information about instruments, measurement items, layouts, and alarm settings.

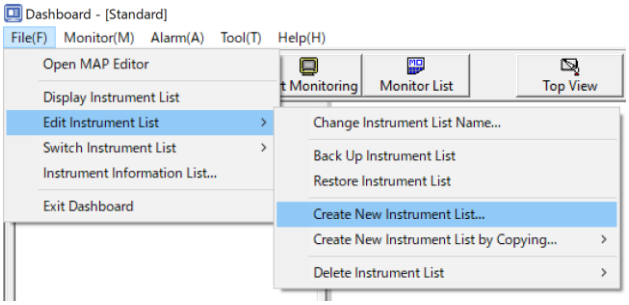
Although it is possible to create multiple instrument lists, by default there is a single instrument list with the name "Standard."

You can create new lists, create new lists by copying existing lists, delete lists, switch lists, back up lists, and restore lists. This section describes each of these operations.

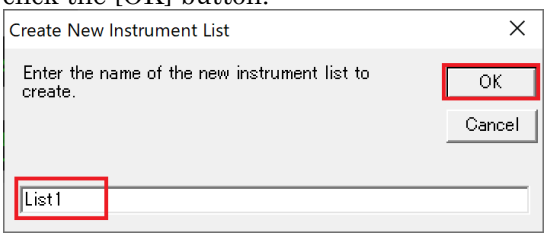
Create a New Instrument List

This section describes how to create a new instrument list.

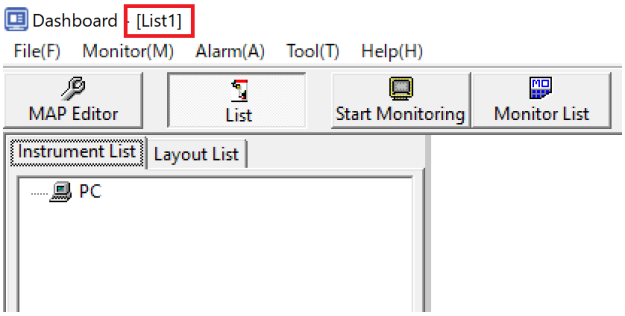
1. Select [Edit Instrument List]-[Create New Instrument List] in the [File] menu.



2. When the [Create New Instrument List] screen is displayed, enter a name for the instrument list and click the [OK] button.



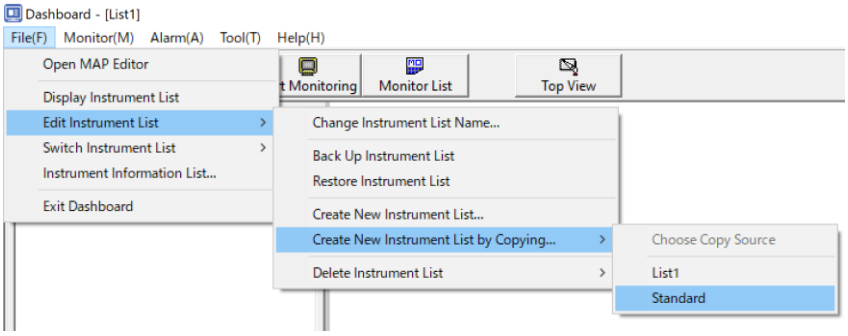
3. The new instrument list will be created.



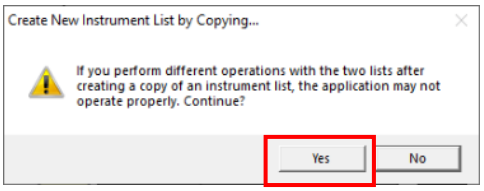
Create a New Instrument List by Copying

This section describes how to create a new instrument list by copying an existing instrument list.

1. Select [Edit Instrument List]-[Create New Instrument List by Copying] in the [File] menu and select the name of the instrument list you wish to copy.

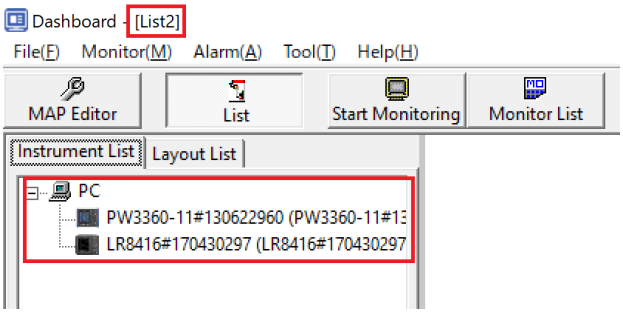


2. The [Create New Instrument List by Copying] screen will be displayed. Click [Yes].



3. When the [Create New Instrument List by Copying] screen is displayed, enter a name for the instrument list and click the [OK] button.

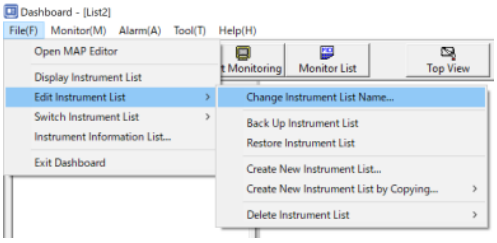
4. The new instrument list will be created.



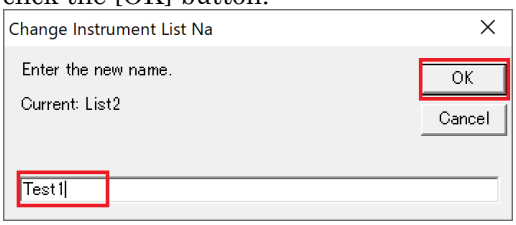
Rename an Instrument List

This section describes how to rename the currently selected instrument list.

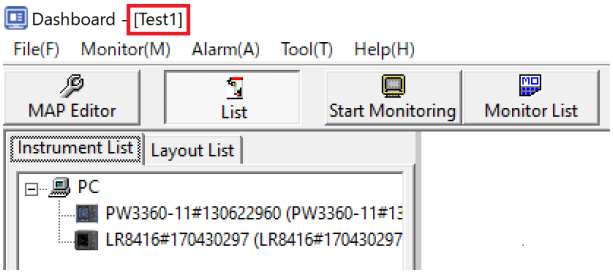
1. Select [Edit Instrument List]-[Change Instrument List Name] in the [File] menu.



2. When the [Change Instrument List Name] screen is displayed, enter a name for the instrument list and click the [OK] button.



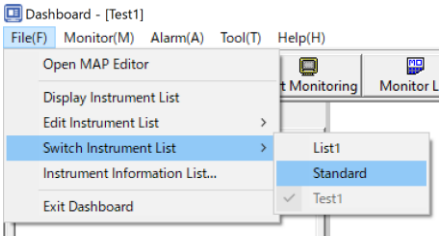
3. The instrument list's name will be changed



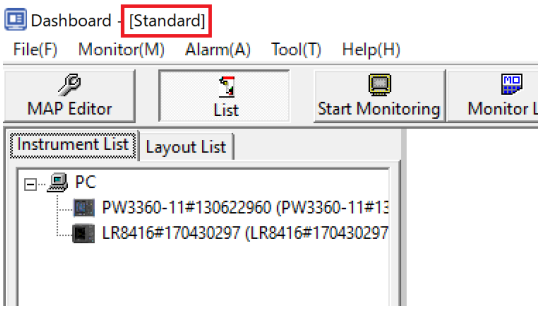
Switch Instrument Lists

This section describes how to switch instrument lists.

1. Select [Switch Instrument List] in the [File] menu and select the name of the instrument list you wish to activate.



2. The application will switch to the selected instrument list.

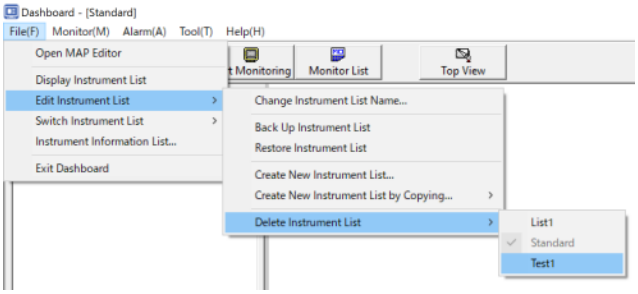


Delete an Instrument List

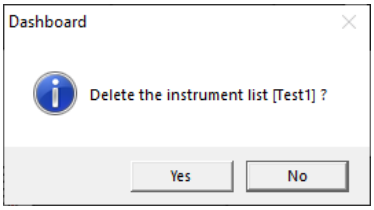
This section describes how to delete an instrument list.

1. Select [Edit Instrument List]-[Delete Instrument List] in the [File] menu and select the instrument list you wish to delete.

   *You cannot select the currently selected instrument list. If you wish to delete the currently selected instrument list, switch to a different instrument list and then delete the desired instrument list.



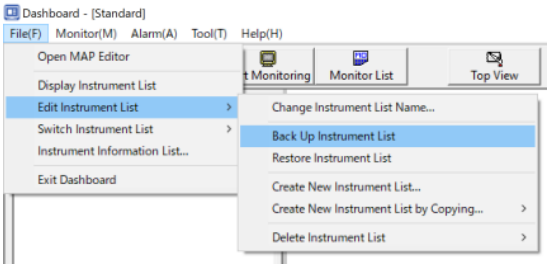
2. The [Collecting measurement channels] message will be displayed.
   To delete the list, click [Yes].



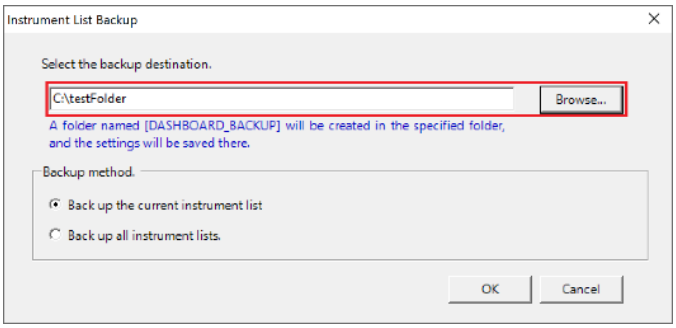
Back Up an Instrument List

This section describes how to back up an instrument list.

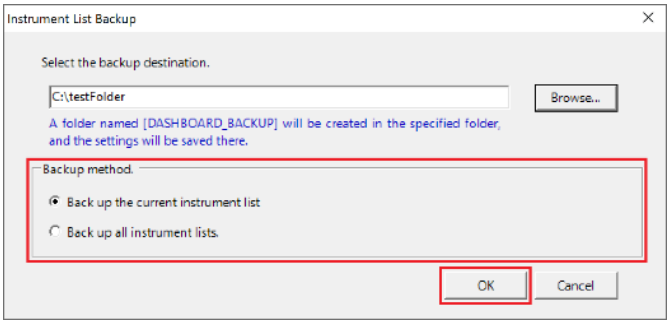
1. Select [Edit Instrument List]-[Back Up Instrument List] in the [File] menu.



2. When the [Instrument List Backup] screen is displayed, specify the save destination folder.



3. Select which instrument list(s) to back up under [Backup method] and click the [OK] button.



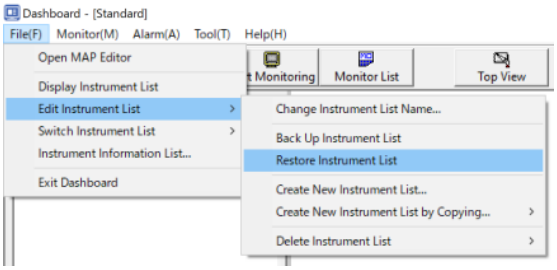
4. The instrument list(s) will be backed up in a file.

   *A backup folder named "DASHBOARD_BACKUP" will be created in the specified save destination folder.

Restore an Instrument List

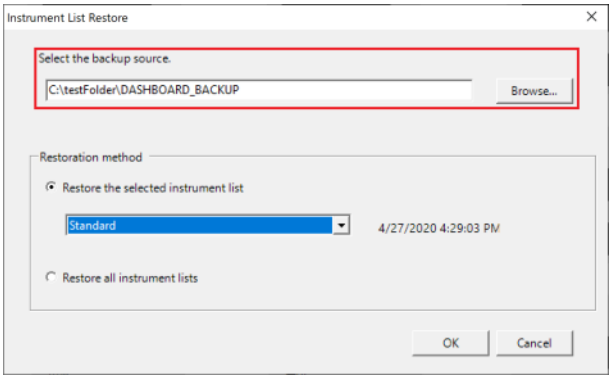
This section describes how to restore an instrument list from a file.

1. Select [Edit Instrument List]-[Restore Instrument List] in the [File] menu.

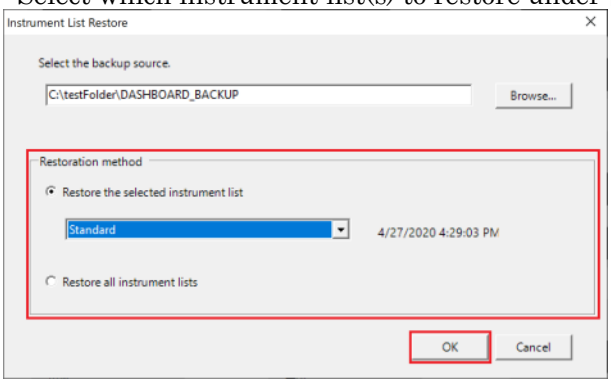


2. When the [Instrument List Restore] screen is displayed, specify the folder in which the backup was saved.

   *Specify the backup folder named "DASHBOARD_BACKUP."



3. Select which instrument list(s) to restore under [Restoration method] and click the [OK] button.



4. The instrument list(s) will be restored from the file.

Other Functionality

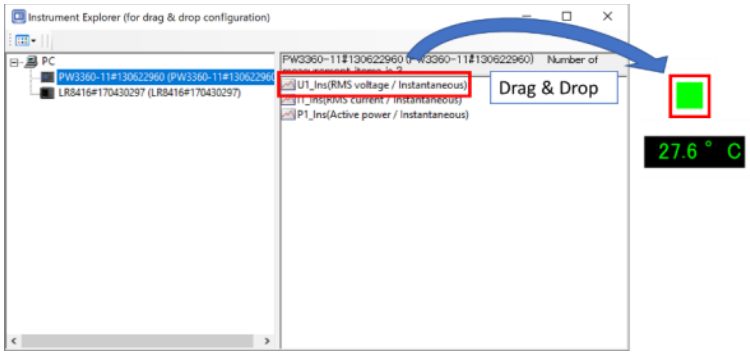
Use the Instrument Explorer to Apply Settings to Layout Items

10. This section describes how to use previously registered instrument settings to easily set measurement items for layout items.1. Right-click the layout and select [Display Instrument Explorer].

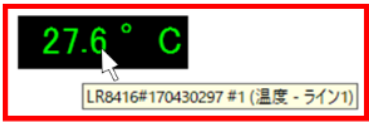
    2. The [Instrument Explorer] will be displayed.

    3. Drag and drop settings onto layout items to configure measurement items.

    Measurement items will be applied to layout items along with threshold values and other settings configured on the measurement items' advanced settings screens.



*You can review current displayed measurement items by moving the cursor to a layout item while the layout has focus.



Note: Configuring displayed measurement item settings with the Instrument Explorer

Item type	Able to configure displayed measurement item settings with the Instrument Explorer?	Number of measurement items that can be set (per item)
Monitor windows	No	
Measured value labels	Yes	1 only
Measured value graphics	Yes	1 only
On/off displays	Yes	Multiple*
Graph	No	

*If multiple measurement items have been set for an on/off display, OR logic will be applied to the "ON" judgment conditions.

Replacing instruments

When using an instrument whose serial number differs from the previously used instrument, you can continue to use the layout and other settings.

Although use of a different instrument ordinarily precludes inheriting layout, selected channels,

model/measurement parameter comments, alarm upper and lower limit values, and other settings, this function allows you to inherit settings as long as the new instrument has the same model name as the old instrument.

It's convenient in situations like the following:

·When you wish to replace an instrument but continue using a previously created layout

·When you wish to share a created layout with one computer and connect an instrument of the same model to use with another computer

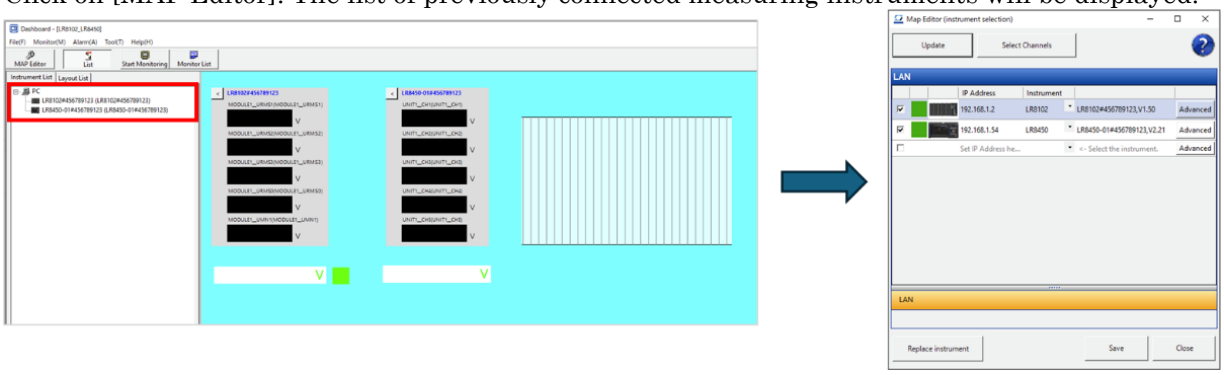
Replaceable instruments

·If the measuring instrument model (such as PQ3100, LR8450) is the same and the settings and module configuration of the measuring instrument are the same, the measuring instrument can be replaced.

·Replacement is possible even between measuring instruments with different firmware versions, but it is recommended to use the latest firmware version.

Operating Procedure

1. Launch the dashboard and display the list (layout) of the measuring instruments you want to replace.
2. Click on [MAP Editor]. The list of previously connected measuring instruments will be displayed.

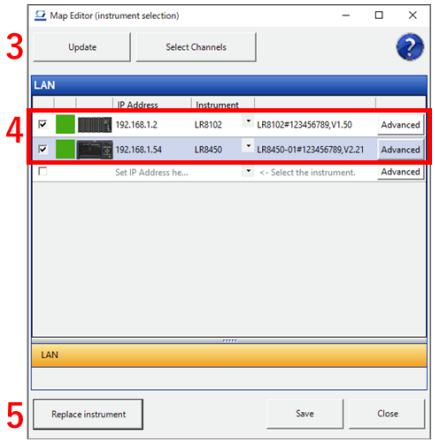


3. Connect the new measuring instrument to the PC using a LAN cable. Select [Update] on the [Map Editor] screen and make sure all instruments are connected.

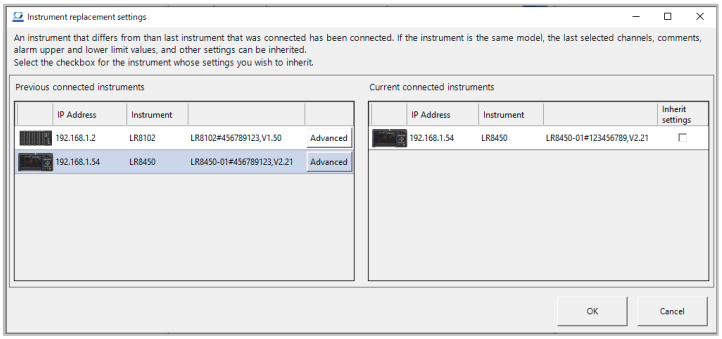
   *In this image, the same IP address is used for measuring instruments with the same model name, but different IP addresses can also be used without any issues.

4. Select the measuring instruments among the connected ones that you want to inherit the previous settings from, and check them. Multiple selections are possible.

5. Click the [Replace instruments] button.



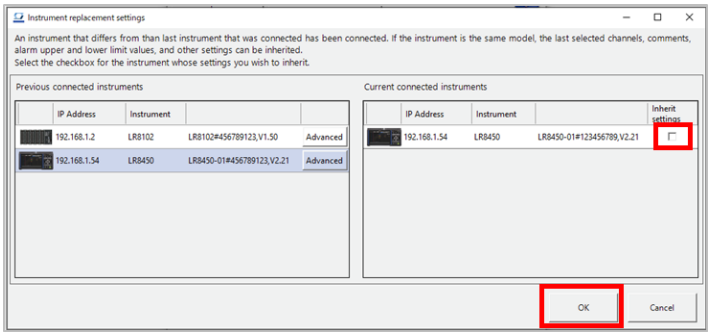
6. if there's one or more instrument that could replace one of the connected instruments used last time, the [Instrument replacement settings] screen will be displayed.



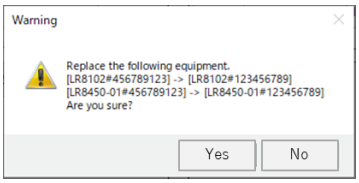
When you click on any measuring instrument in the [Previously Connected Instruments] list, the replaceable measuring instruments will be displayed in the [Currently Connected Measuring Instruments] section.

*By clicking [Advanced], you can check the setting information such as selected channels, model comments, alarm upper and lower limits, etc., for the selected measuring instrument.

7. Check the [Inherit Settings] box for the measuring instrument you want to replace. After checking the box for all the measuring instruments you want to replace, click [OK].



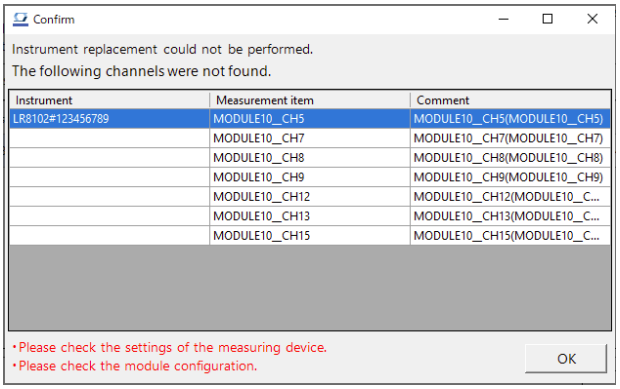
8. A confirmation message will be displayed. If the content is correct, click [Yes].



*Please note that when the replacement is executed, the layout parts assigned to the measurement items (channels) of the measuring instruments that were not set for replacement will behave as follows.

Monitor Window	This will be removed from the layout.
Others	The measurement items will remain unassigned and stay in the layout. Example of display for a measurement value label : ??

*If there are one or more measurement items that were selected previously but could not be found in the currently connected measuring instruments, the replacement cannot be executed, and the following screen will be displayed.



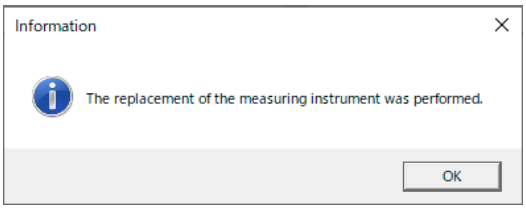
To execute the replacement of the measuring instruments, please check the following items and then click [OK] again on the [Instrument Replacement Settings] screen.:

-The settings of the measuring instruments are the same before and after the replacement.

-The module configuration is the same before and after the replacement.

-There are no issues with the LAN connection between the measuring instruments and the PC.

9. If the replacement is successful, a message saying "The replacement of measuring instrument was performed." will be displayed.



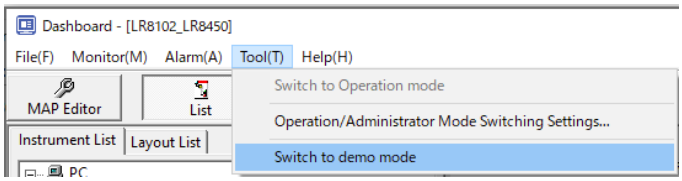
10. The measuring instrument will be replaced, and the layout and other settings will be inherited.

Using demo mode

Demo mode allows you to display fictional measured values for previously created layout elements so that you can verify the function's operation.
It can be used even when no instruments are connected to the computer.

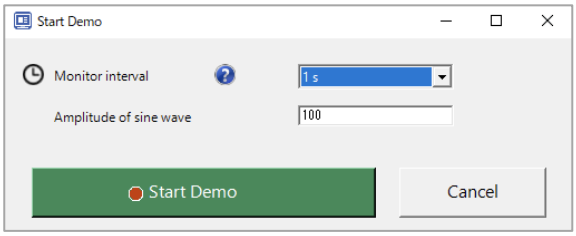
*Starting demo mode does not start instrument recording.
*The monitor values shown in demo mode are not saved on the computer.
*It's necessary to create a layout before using demo mode.

1. Select [Switch to demo mode] on the [Tool] menu.



2. The interface will switch to the demo mode toolbar. Click the [Start demo] button.

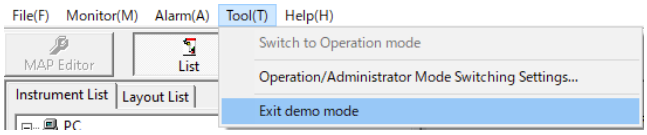
3. The [Start demo] screen will be displayed. Configure demo mode and click [Start demo].



Monitor interval	Sets the interval at which to update monitor values. ((1/2/5/10/30 sec., 1 min.)
Sine wave amplitude	Sets the sine wave amplitude to output in demo mode. (-3E+38 to +3E+38)

4. Fictional monitor values will be displayed in the layout elements.
5. Click [End demo] to stop monitor value updates.

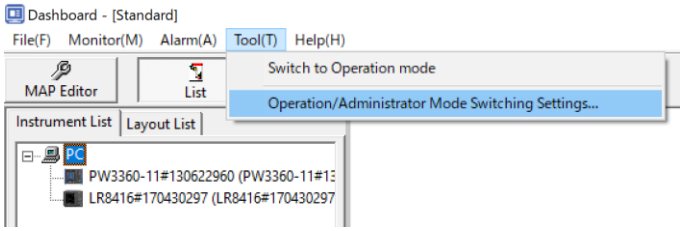
6. Select [Exit demo mode] on the [Tool] menu to exit demo mode.



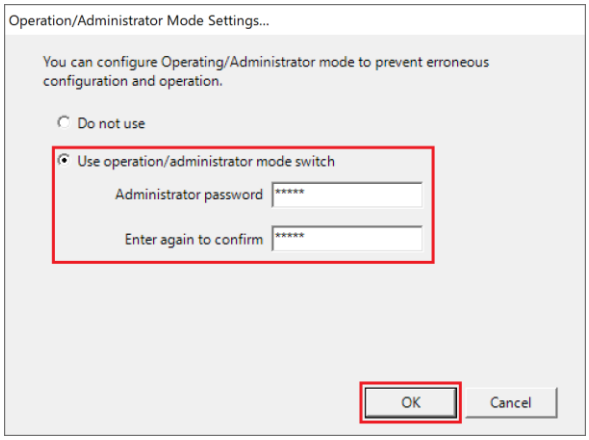
Set Administrator Mode

This function restricts the ability to change settings to users who know the password. Users who do not know the password are only able to access the measured value monitor.

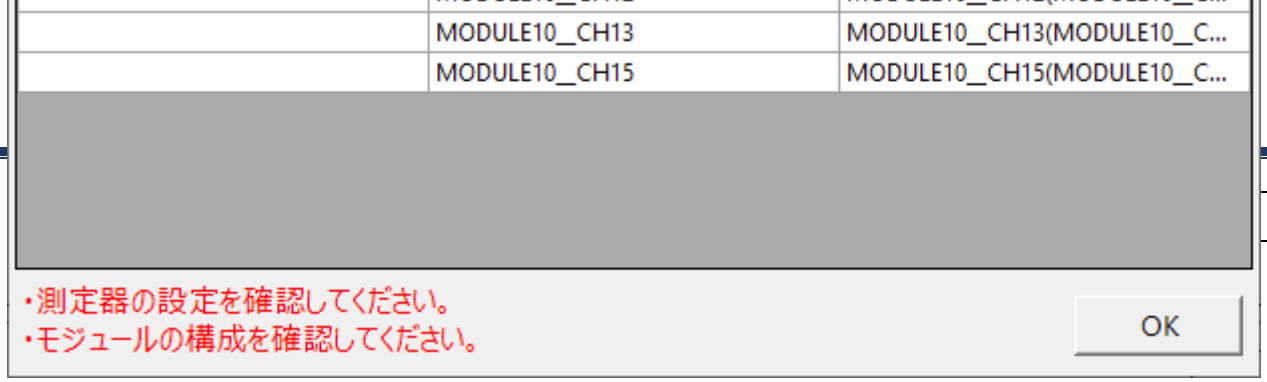
1. Select [Operation/Administrator Mode Switching Settings] in the [Tool] menu.



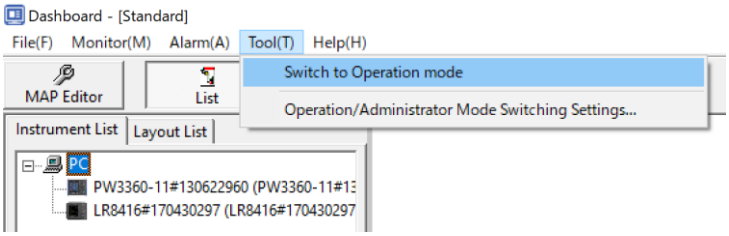
2. The [Operation/Administrator Mode Switching Settings] screen will be displayed.
   Select [User operation/administrator mode switch], enter the password twice, and click the [OK] button.



Operation mode	・This mode allows users (operators) who do not know the password to use dashboard functionality. ・These users can only access the measured value monitor.
Administrator mode	・This mode allows users (administrators) who know the password to use dashboard functionality.



1. Select [Switch to Operation Mode] in the [Tool] menu.

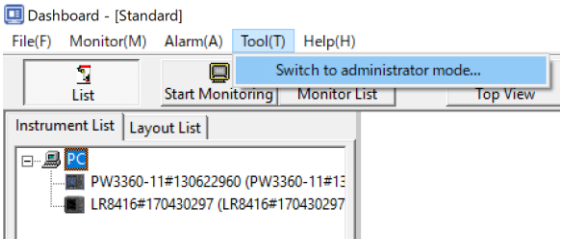


2. The dashboard function will switch to operation mode.

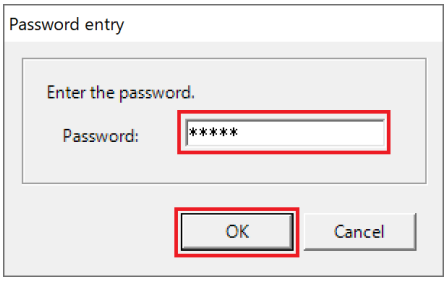
   Users will only be able to access the measured value monitor.

Switch from operation mode to administrator mode

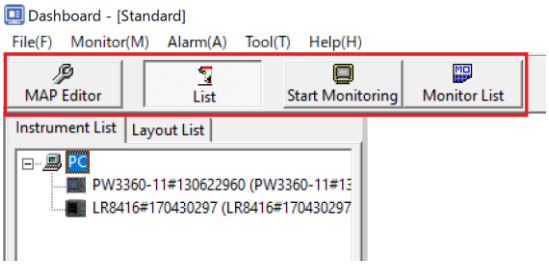
1. Select [Switch to Administrator] in the [Tool] menu.



2. The [Password entry] screen will be displayed. Enter the password and click the [OK] button.



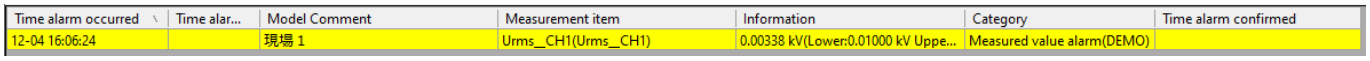
3. The dashboard function will switch to administrator mode.
   Users will have access to all functionality.



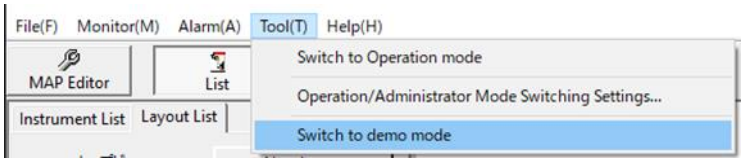
Using demo mode

Demo mode allows you to display fictional measured values for previously created layout elements so that you can verify the function's operation.
It can be used even when no instruments are connected to the computer.

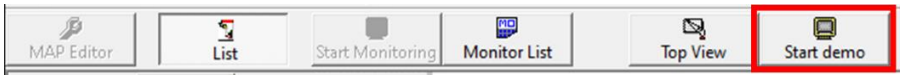
*It's necessary to create a layout before using demo mode.
*Starting demo mode does not start instrument recording.
*The monitor values shown in demo mode are not saved on the computer.
*An alarm item that occurred during the demo mode is displayed with the classification [Measured value alarm (DEMO)]. This item is deleted from the alarm history when the alarm history window is opened/closed or when the monitor/demo is started.



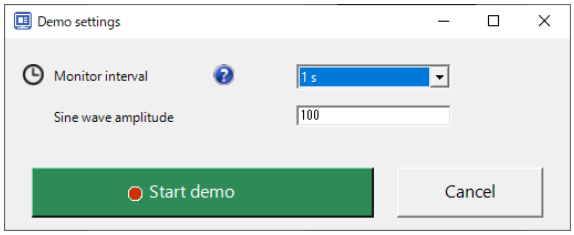
1. Select [Switch to demo mode] on the [Tool] menu.



2. The interface will switch to the demo mode toolbar. Click the [Start demo] button.



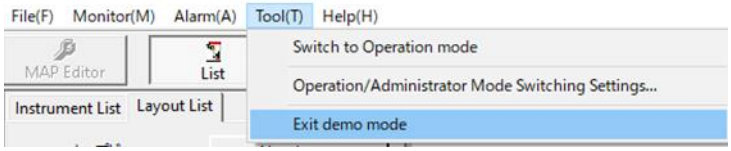
3. The [Demo settings] screen will be displayed. Configure demo mode and click [Start demo].



Monitor interval	Sets the interval at which to update monitor values. ((1/2/5/10/30 sec., 1 min.)
Sine wave amplitude	Sets the sine wave amplitude to output in demo mode. (-3E+38 to +3E+38)

4. Fictional monitor values will be displayed in the layout elements.
5. Click [End demo] to stop monitor value updates.

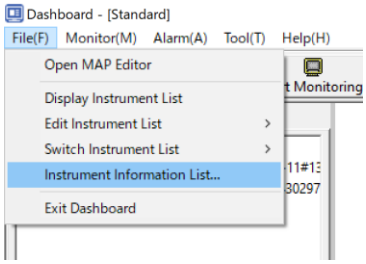
6. Select [Exit demo mode] on the [Tool] menu to exit demo mode.



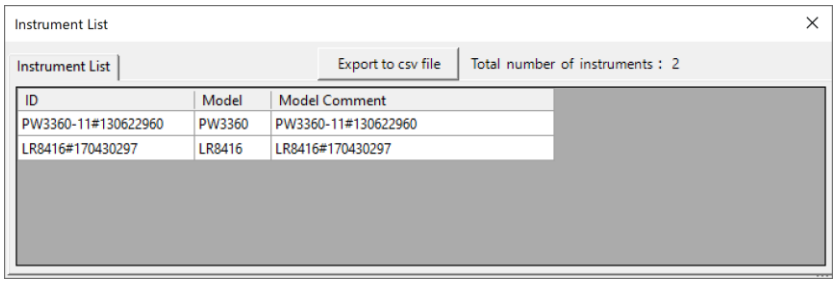
Review Instrument Information

This section describes how to review instrument information on a single screen.

1. Select [Instrument Information List] in the [File] menu.



2. The [Instrument List] screen will be displayed.

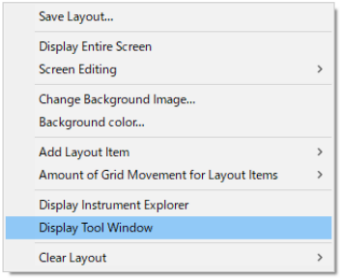


ID	Indicates the instrument ID. A unique ID is automatically assigned to each instrument.
Model	Indicates the instrument model.
Model comment	Displays the instrument name as set on the instrument's advanced settings screen (p.187).

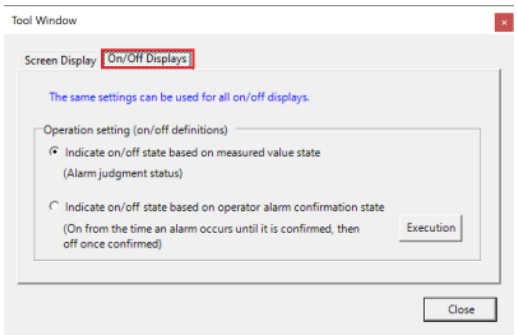
Configuring On/Off Display Operation

This section describes how to use the same operation settings (on/off definition settings) for all on/off displays included in the layout.

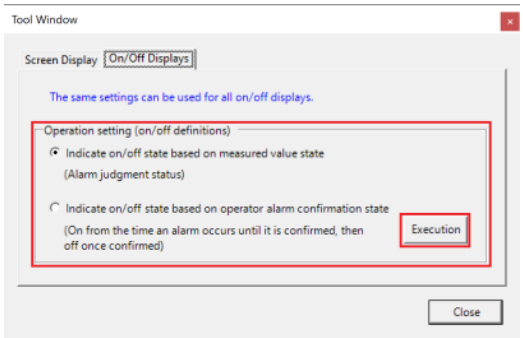
1. Right-click the layout and select [Display Tool Window].



2. The [Tool Window] will be displayed. Select the [ON/ OFF Displays] tab.



3. Choose the desired on/off display operation and click the [Execution] button.



Indicate on/off state based on measured value state	・The display will turn on if the measured value exceeds the threshold range. ・The display will turn on if the measured value falls beneath the threshold range.
Indicate on/off state based on operator alarm confirmation state	・The display will turn on if the measured value exceeds the threshold range. ・The display will turn off if the operator alarm state is [Confirmed].

Alarm Function

Overview

The alarm function saves alarm information in the event that a measured value exceeds the threshold range while the measured value monitor is being used.

Threshold values can be set for each measurement item on the instrument's advanced settings screen. Alarm judgment is performed by the computer.

Note: Measurement data cannot be used in alarm judgment if a communications error has occurred between the computer and the instrument.

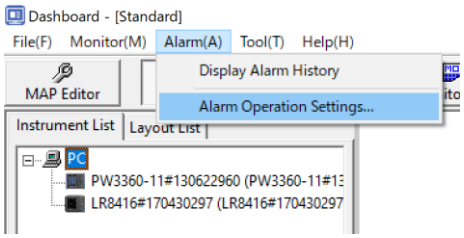
Note: In order to use alarm judgment, you must first configure the alarm settings on the instrument's advanced settings screen.

For more information about alarm settings, see "Configure Advanced Instrument Settings" (p.186).

Configure Alarm Operation

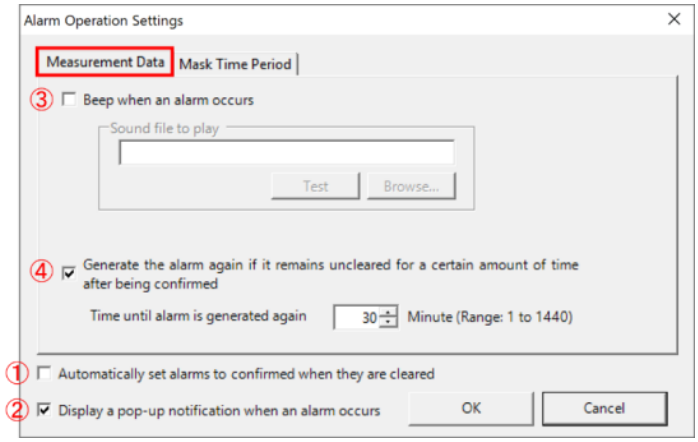
This section describes how to configure alarm operation.

1. Select [Alarm Operation Settings] in the [Alarm] menu.



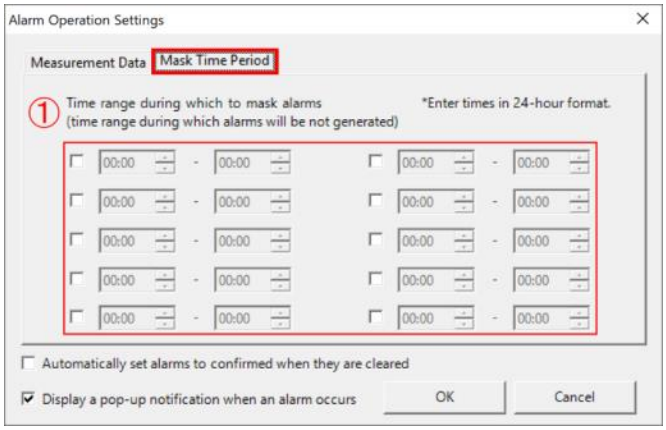
2. The [Alarm Operation Settings] screen will be displayed.

[Alarm Operation Settings]-[Measurement Data] tab



Item	Description
1	Select if you wish to automatically set each alarm to the confirmed state when it is cleared.
2	Select if you wish to display a pop-up alarm history when an alarm occurs.
3	Select if you wish to play an audio alert when an alarm occurs and select the audio file to play.
4	・Select if you wish to generate an alarm if an alarm has not been cleared after the set amount of time has elapsed after it is confirmed. ・Set the amount of time after which to generate the second alarm in the above instance.

[Alarm Operation Settings]-[Mask Time Period] tab



Item	Description
1	Set the time period during which to suppress alarms.

Note

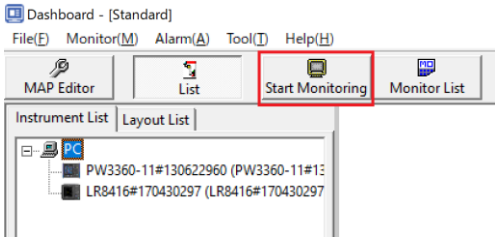
・The valid setting range is 00:00 to 23:59.

・The minimum setting unit is 1 min.

Use the Alarm Function

This section describes how to start using the alarm function.

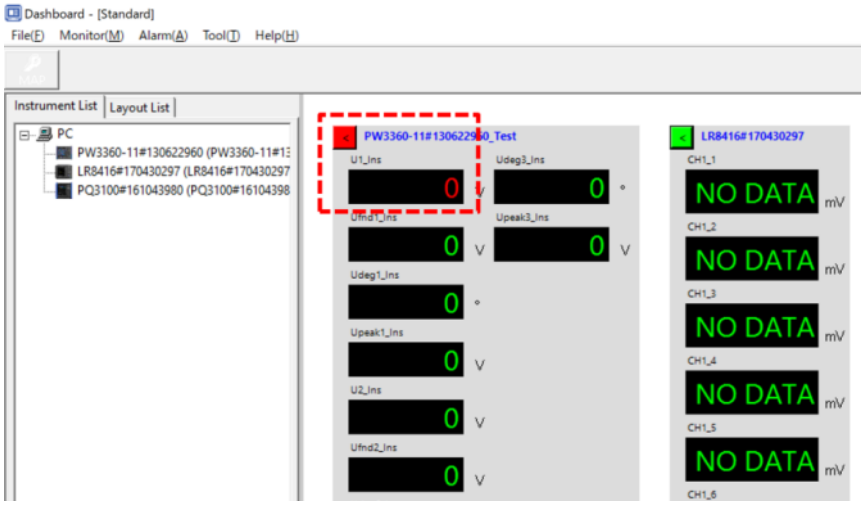
1. Click the [Start Monitoring] button on the toolbar.



Monitoring of measured values will start.
If alarm settings have been configured for a measurement item, an alarm will be deemed to have occurred if a measured value exceeds the threshold value.

When an alarm occurs, the monitor display for the measured value that triggered the alarm will change.

2.



Note

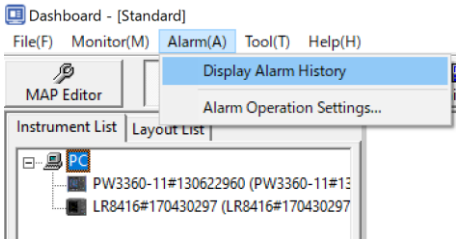
・Measurement data cannot be used in alarm judgment if a communications error has occurred between the computer and the instrument.

・If the alarm audio setting has been configured, the computer will play a sound when an alarm occurs. To mute the sound, click the alarm on the [Alarm log] screen. The alarm sound will stop once all alarms have been confirmed.

Display the Alarm History

This section describes how to display the alarm history.

1. Select [Display Alarm History] in the [Alarm] menu.



2. The [Alarm log] screen will be displayed.

Note

・Unconfirmed alarms are shown in yellow.

・Clicking an alarm will clear it, and the date and time will be entered into the [Time alarm confirmed] field.

・You can display the [Alarm log] screen as a pop-up window when an alarm occurs. For more information about this setting, see "Configure Alarm Operation" (p.236).

Item	Description

1	Date	Allows you to select the date for which you wish to view alarms.
2	Time alarm occurred	Displays the time at which the alarm occurred.
3	Time alarm cleared	Displays the time at which the alarm was cleared.
4	ID	Displays the instrument name and serial number.
5	Model Comment	Displays the model comment that was set for the instrument (p.187).
6	Measurement item	Displays the measurement item comment that was set for the measurement item (p.187).
7	Information	Displays the monitor value (measured value) and alarm setting values (upper and lower limit values) at the time the alarm occurred.
8	Category	Displays [Measured value alarm] as the alarm category.
9	Time alarm confirmed	Records the confirmation time when you click a row describing an alarm.
10	Confirm All	Click to set all alarms for the day in question to "confirmed."

Configuring detailed settings for inter-channel calculations

·The logging and dashboard functions allow you to perform calculations using predetermined formulas and display the calculation results. Up to 16 calculations can be performed simultaneously.

·See below for more information about the procedure for enabling inter-channel calculations with the logging function.

➢ Select channels (Setting Calculation Channels)

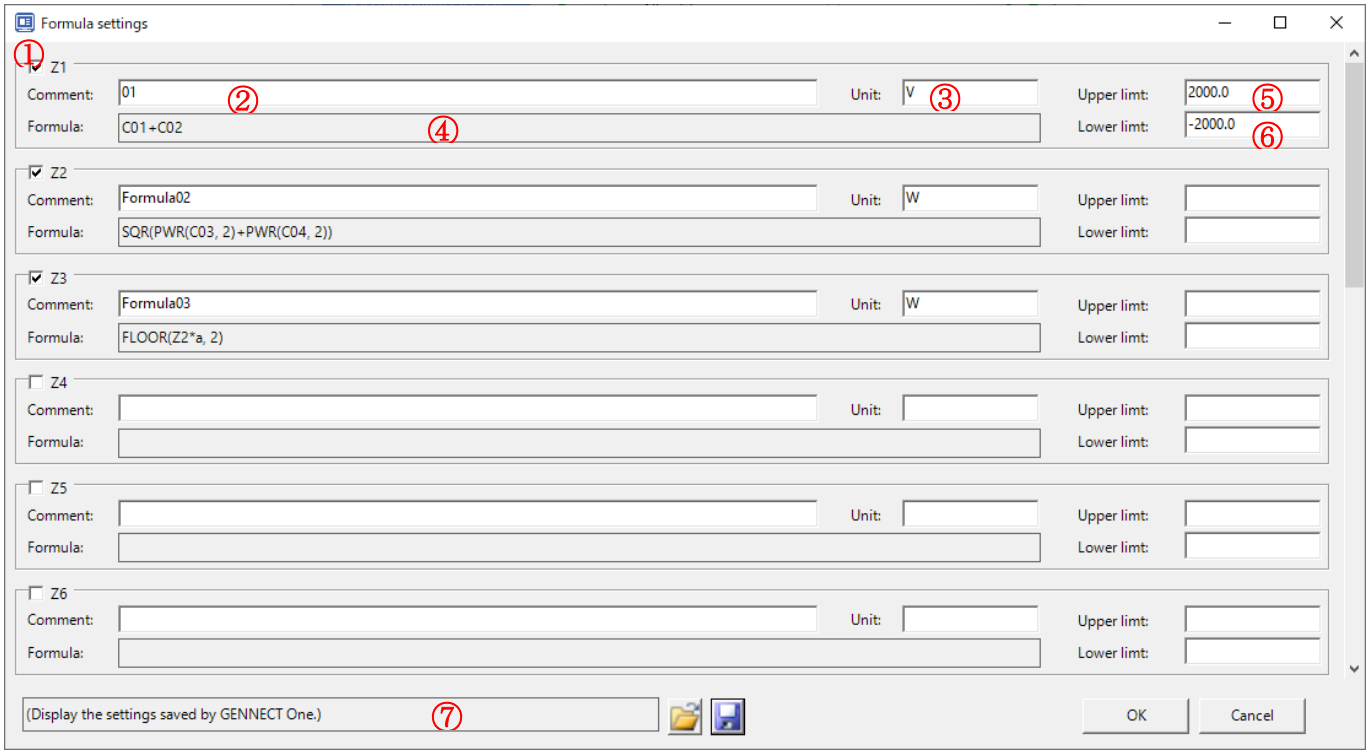
·See below for more information about the procedure for enabling inter-channel calculations with the dashboard function.

➢ Select Channels(Setting Calculation Channels)

Setting a calculation formula

Entering information about a calculation formula

Click the [Enter Formula] button on the logging or dashboard function's [Channel Settings] dialog box to display the [Formula Settings] dialog box.



①Formula name checkbox

The formulas are named as follows: Z1 to Z16.

Calculation results for the formulas whose checkboxes have been selected will be displayed by the logging or dashboard function.

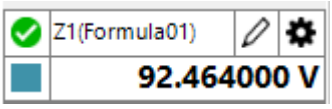
Each checkbox's selection status is saved separately by the logging and dashboard functions.

②Comment

③Unit

Comments and units can be entered directly, and they're shown in the following format in the calculation results: "Formula name (comment)."

The same comment and one unit are saved by the logging and dashboard functions (the same pair of settings apply to both).



④Formula

The formula can be set on the [Formula Entry (Individual)] dialog box, which is displayed by clicking the formula display area.

Calculation results based on the set formula will be displayed by the logging or dashboard function.

The same formula is used by both the logging and dashboard functions.

See below for more information about how to enter formulas.

➢ Entering formulas

⑤Upper limit value
⑥Lower limit value

The upper and lower limit values are threshold value settings used by the dashboard's alarm function.

The upper and lower limit values are not displayed by the logging function.

Values can also be specified using exponents, and leaving a value blank means that no threshold value has been specified.

See below for more information about the alarm function.

➢ Alarm Function

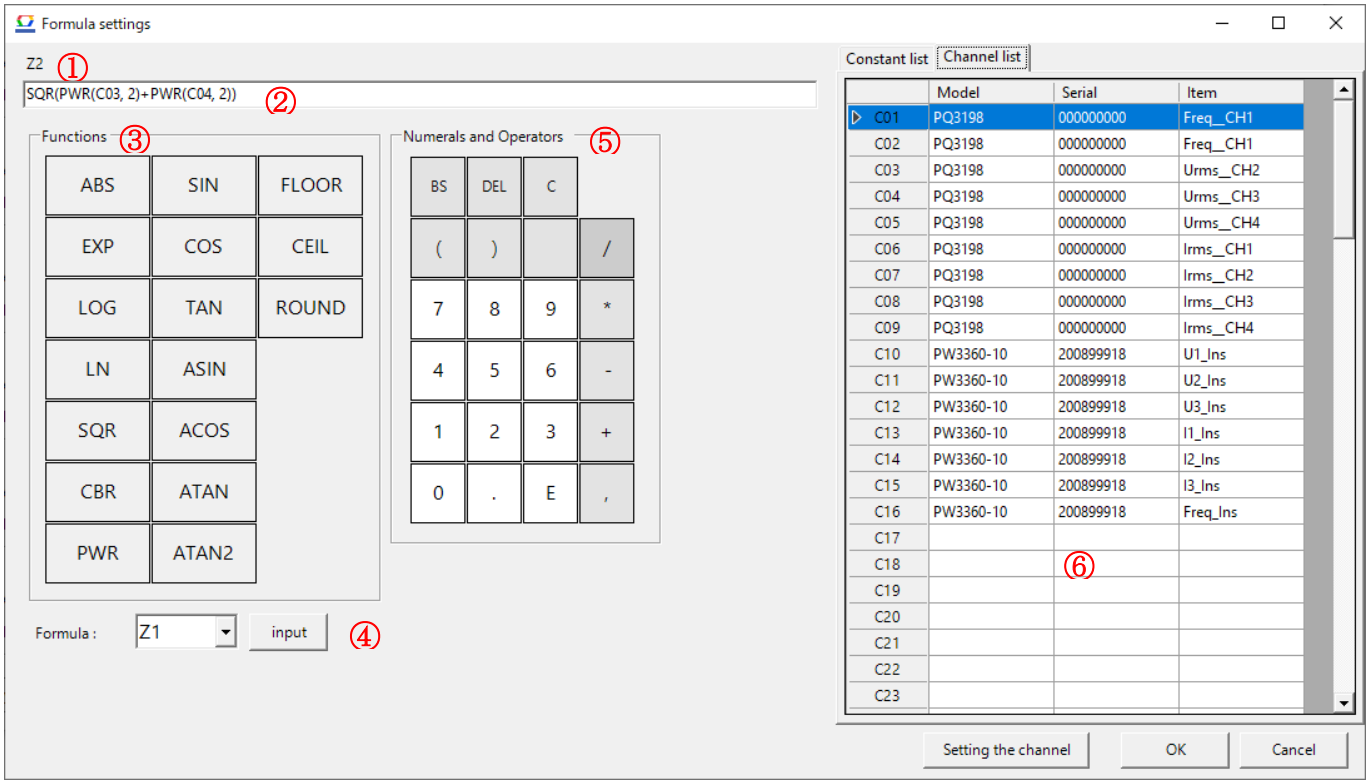
⑦Formula settings file

You can save and load formula settings (formulas, constants, and channel settings) to and from files.

Files are saved in the TSV (tab-delimited text file) format.

Entering a formula

You can edit formulas on the [Formula Entry (Individual)] dialog box.



①Formula name

Displays the name of the formula being edited.

②Formula

Allows you to edit the formula that will be used to generate the calculation results displayed by the logging or dashboard function.

You can enter formulas either directly or using interface elements ③through ⑥.

The following can be specified as part of a formula:

Numerical values (including in exponential notation), symbols (the four arithmetic operations, parentheses, etc.), operators (function name and parameter combinations), formula names, channel names, and constant names

③Operator entry

Displays buttons for operators (function names) that can be used in formulas.

Click a button to insert the operator and an opening parenthesis into the formula.

See below for more information about operators.

- List of operators

④Formula name entry

Select the formula name in the drop-down menu and click the [Input] button to enter the specified formula name into the formula.

You can specify Z1 to Z16 as formula names, but the formula will be set so that it is not calculated if the formula cannot be finalized.

Example: If you set Z1 to Z3 and Z3 to Z1, the checkbox will be deselected so that no calculation is performed because the formula cannot be finalized.

⑤Numerical value and symbol entry

Click a button to enter the text of the button label (values, four arithmetic operations, etc.) into the formula.

The comma symbol is used to specify function parameters, and the period is used as the decimal point symbol.

⑥Constant and channel entry

You can specify constants or channels to use and enter them into the formula.

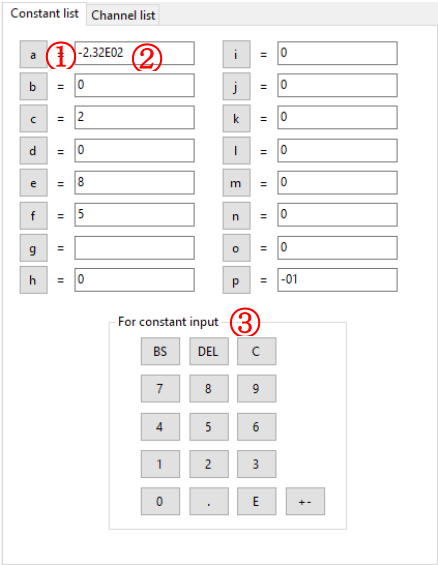
Use the tabs to switch between the settings panels.

See below for more information about each panel.

- Setting a constant
- Setting a channel to use

Setting a constant

You can assign constants to the lowercase letters *a* through *p*, for example when you wish to use a constant as a common value in multiple formulas.



①Constant name button

Click to enter a constant name (*a* through *p*) into the formula.

②Constant value entry

Allows you to directly edit the constant.

Values can also be specified using exponents, and leaving a value blank or entering an invalid value is the same as specifying the value 0.

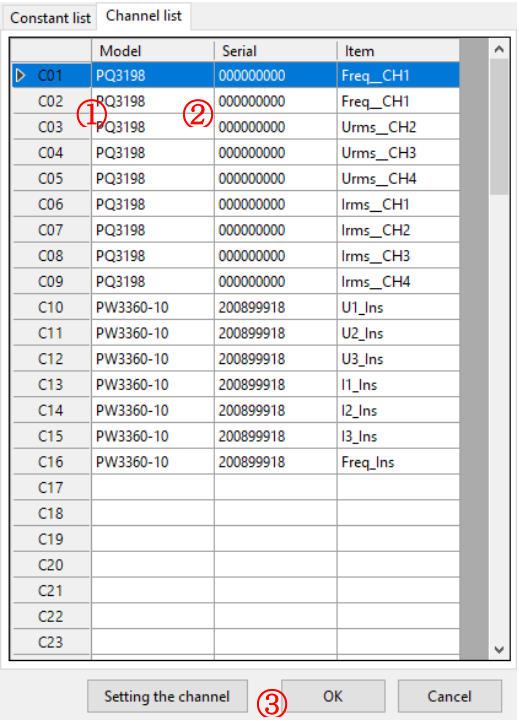
③Value entry

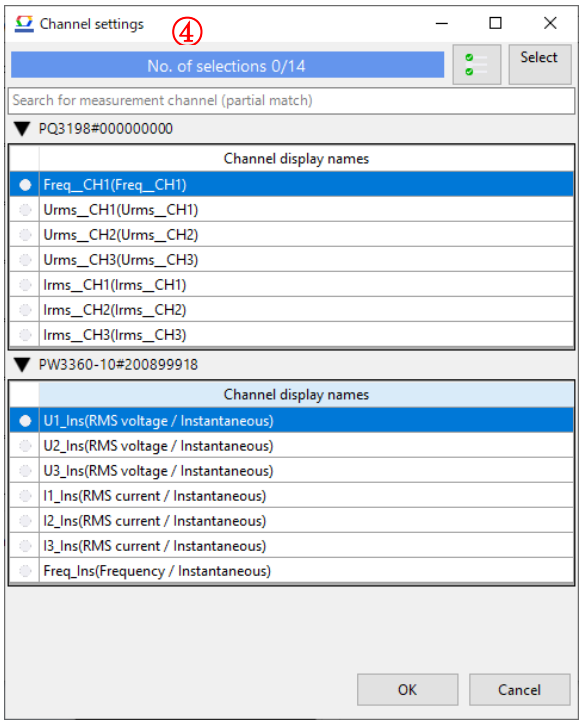
Click a button to enter the text of the button label into the constant value field.

Click the [+-] button to change the sign.

Setting a channel to use

You can assign channels for use in formulas.
A total of 99 channels (C01 to C99) can be specified.
If a channel that has not been selected on the logging or dashboard funct'on's [Channel Settings] dialog box is specified, the calculation results will be displayed as an invalid value.





①Channel name

Click a channel name (C01 to C99) to enter it into the formula.

②List of channel settings

Displays a list of currently set channels.

This list cannot be edited directly.

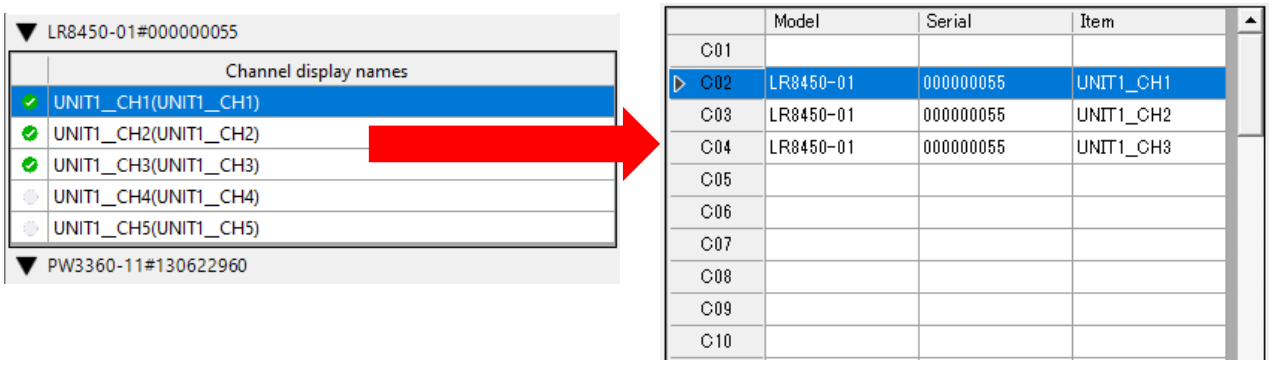
③[CH Setting] button

Click the button to display the [Channel Settings] dialog box (④).

④[Channel Settings] dialog box

Displays a list of the channels that have been selected on the logging or dashboard function's [Channel Settings] screen.

Selecting the checkbox of a channel you wish to use will add the selected channel information above the row selected in the list of channel settings.



List of operators

Operator name	Number of parameters Example operator	Calculation description
ABS	1 ABS(x)	Returns the absolute value of parameter 1. (Negative values become positive.)
EXP	1 EXP(x)	Returns the exponent to which the base e must be raised to obtain parameter 1 (parameter 1 as a power of *e*).
LOG	1 LOG(x)	Returns the base 10 logarithm of parameter 1, which must be positive.
LN	1 LN(x)	Returns the natural logarithm of parameter 1, which must be positive.
SQR	1 SQR(x)	Returns the square root of parameter 1.
CBR	1 CBR(x)	Returns the cube root of parameter 1.
PWR	2 PWR(x, y)	Returns the exponent to which the base parameter 1 must be raised to obtain parameter 2. (The symbol ^ cannot be used.)
SIN	1 SIN(x)	Returns the sine of parameter 1. (Specify the parameter in degrees.)
COS	1 COS(x)	Returns the cosine of parameter 1. (Specify the parameter in degrees.)
TAN	1 TAN(x)	Returns the tangent of parameter 1. (Specify the parameter in degrees.)
ASIN	1 ASIN(x)	Returns the arc sine of parameter 1, which must be greater than or equal to -1 and less than or equal to 1, in the range of -90° to 90°.
ACOS	1 ACOS(x)	Returns the arc cosine of parameter 1, which must be greater than or equal to -1 and less than or equal to 1, in the range of -90° to 90°.
ATAN	1 ATAN(x)	Returns the arc tangent of parameter 1 in the range of -90° to 90°.
ATAN2	2 ATAN2(x, y)	Returns the arc tangent of the value obtained by dividing parameter 2 by parameter 1 in the range of -90° to 90°.
FLOOR	2 FLOOR(x, y)	Returns the value obtained by rounding down parameter 1 to the number of decimal places specified by parameter 2.
CEIL	2 CEIL (x, y)	Returns the value obtained by rounding up parameter 1 to the number of decimal places specified in parameter 2.
ROUND	2 ROUND (x, y)	Returns the value obtained by rounding off parameter 1 to the number of decimal places specified by parameter 2.

*Formula examples included in the explanation use *x* to indicate the first parameter and *y* to indicate the second parameter.

Configuring detailed settings for automatic output (daily/weekly/monthly reports)

·This section describes the basic specifications for automatic output (daily/weekly/monthly reports), along with detailed settings.

·See below for more information about the procedure for enabling automatic output (reports) with the logging function.

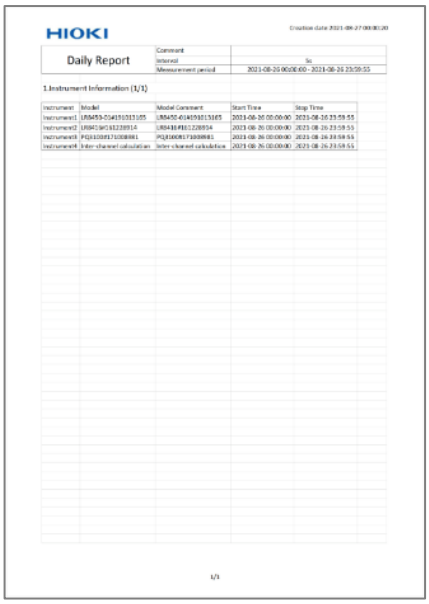
➢ Configure the logging settings

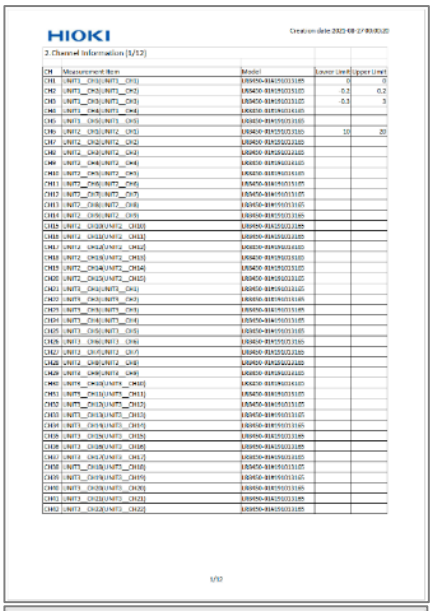
·See below for more information about the procedure for enabling automatic output (reports) with the dashboard function.

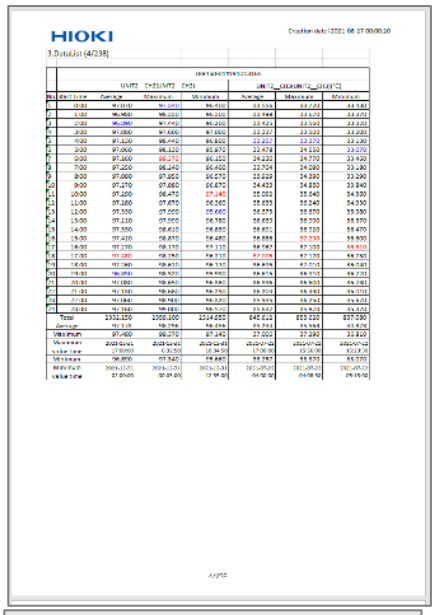
➢ Start or Stop the Measured Value Monitor

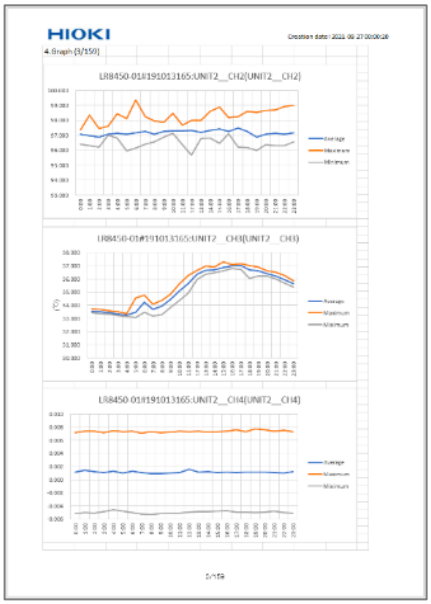
Basic report specifications

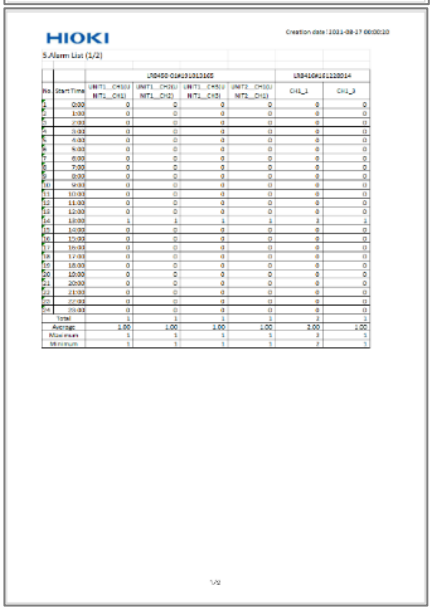
<Example of daily report output>

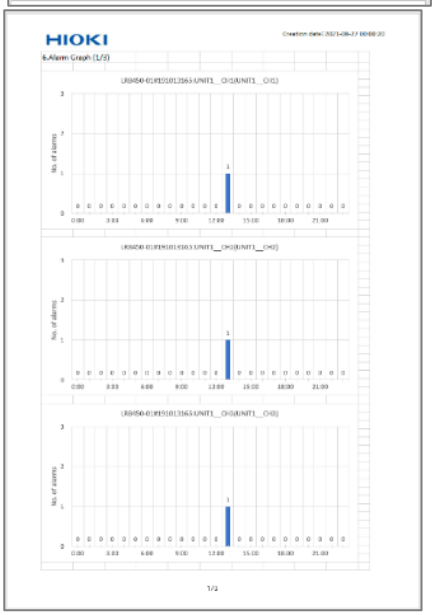


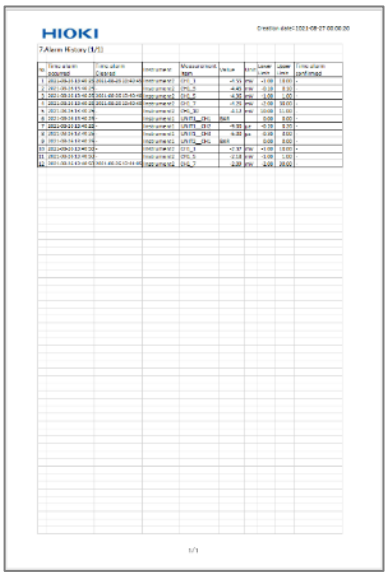










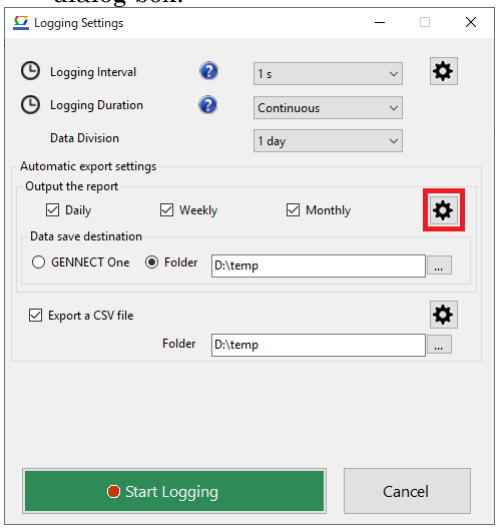


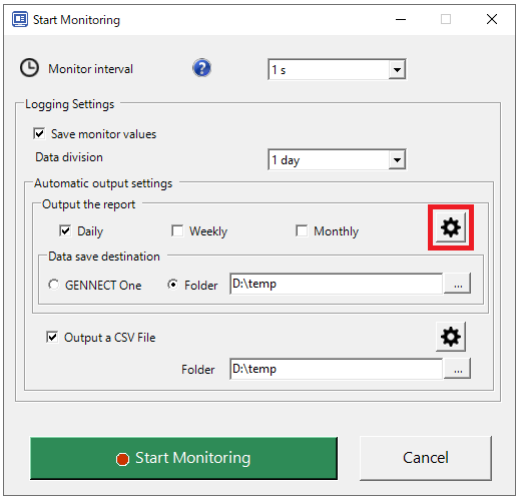
Report contents		Description
1	Instrument information	Outputs information for all instruments selected in the [Channel Selection] dialog box as a table.
2	Channel Information	Outputs information for all channels selected in the [Channel Selection] dialog box as a table. If upper and lower limit values have been set for the channel, outputs the set values*1.
3	Data list	Calculates the average, maximum, and minimum values for each channel at the specified interval (30 min. or 1 hr.) and outputs them as a table.
4	Graph	Calculates the average, maximum, and minimum values for each channel at the specified interval (the same interval as the data list) and outputs them as a graph. Three graphs (for three channels) are output per page.
5	Alarm list*1	Outputs the number of alarm events during each channel's statistical interval (30 min. or 1 hr.) and outputs them as a table.
6	Alarm graph*1	Outputs the number of alarm events during each channel's statistical interval (the same interval as the alarm list) and outputs them as a bar graph. Three graphs (for three channels) are output per page.
7	Alarm history*1	Outputs information about all the alarms that occurred during the measurement period as a table in the order they occurred.

*1: Output available only when using the dashboard function.

Opening the automatic output settings

1. Click the button [⚙] shown in the red rectangle below on the [Logging Settings] or [Start Monitoring] dialog box.

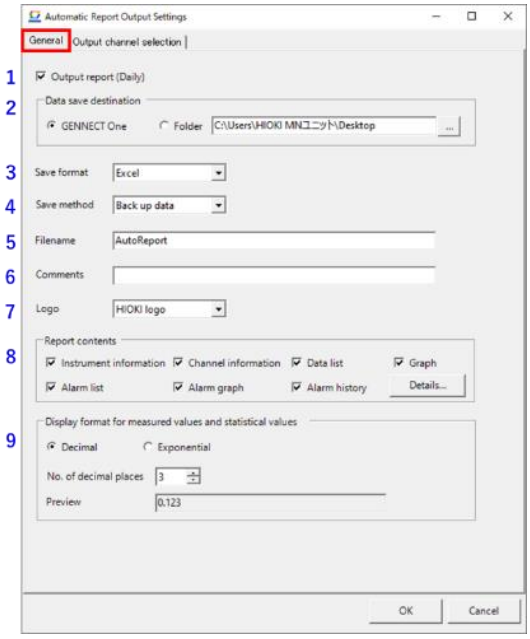


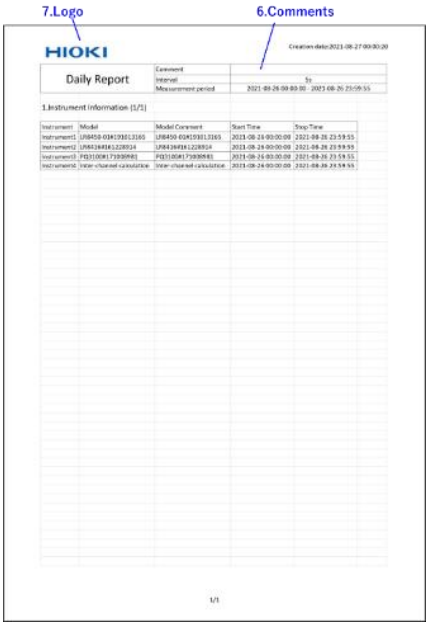


2. The [Automatic Report Output Settings] dialog box will open.

Configuring detailed settings for automatic output

Configuring [General] settings





Setting			Description
1	Output report (Daily)		Specifies whether to output the reports.
2	Data save destination	GENNECT One	Outputs reports to the GENNECT One data list.
		Folder	Outputs reports to a user-specified folder.
3	Save format	Excel	Outputs reports in the Excel format.
4	Save method*3	Back up data	The following two files will be created. 1. ·File:<FilenameBody>.<Extension>. 2. Backup file: <FilenameBody>_<FilenameSuffix>.<Extension>. *If there are multiple files with the same suffix, a sequential number will be appended to the end of the filename to generate a unique name.
		Do not back up data	·Always overwrites the most recent file with the following filename: <FilenameBody>.<Extension>.
5	Filename*3		Specifies the string to use as the <FilenameBody>. The default value is "AutoReport."
6	Comments		Specifies the comment to output to reports.
7	Logo	Hioki logo	Outputs the Hioki logo to reports.
		No logo	Outputs no logo to reports.
		User-specified image	Outputs a user-specified image as the logo.
8	Report contents		Instrument information Channel information Data list Graph Alarm list*1 Alarm graph*1 Alarm history*1 Specifies which of the above contents to output to the report. (Multiple contents may be selected).*2 Click [Details] to open the [Report contents Detailed Settings] dialog box.
9	Display format for measured values and statistical values	Decimal	Outputs measured values and statistical values to reports (data lists and graphs) as decimal values.
		Exponent	Outputs measured values and statistical values to reports (data lists and graphs) as exponential values.
		Number of decimal places	Specifies how many decimal places to include in measured values and statistical values being output to reports (data lists and graphs).

*1: Setting applies only when using the dashboard function. Not displayed when using the logging function.

*2: If the [Instrument information] checkbox is not selected, only the daily report title portion of the report will be output.

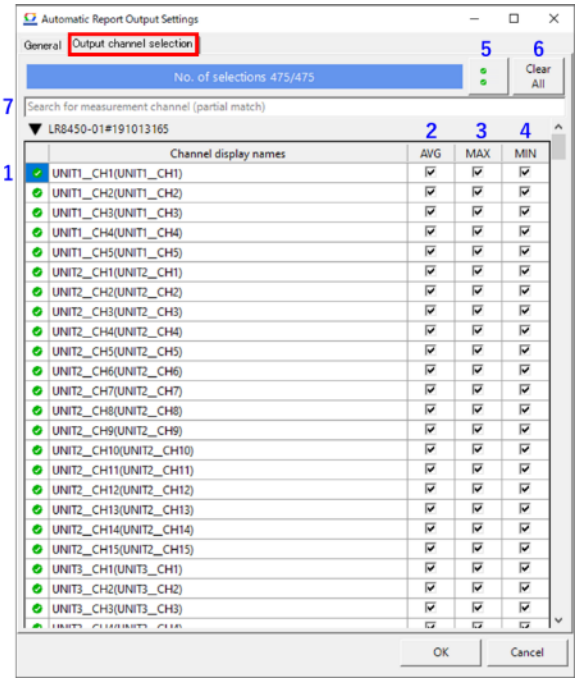
*3: Filename rules
Example) Filename (FilenameBody): AutoReport, Measurement start date: 2021-08-31

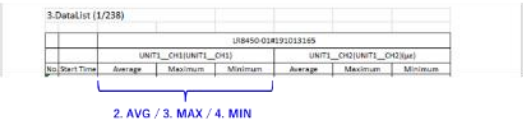
・If the save method is "Back up data""
"AutoReport.xlsx" and a backup file: AutoReport_2021-08-31.xlsx will be created.
If "AutoReport.xlsx" exists in the specified destination, it will be overwritten.
If the backup file: AutoReport_2021-08-31.xlsx exists in the specified destination, a sequential number will be appended to the end of the filename, such as "AutoReport_2021-08-31_1.xlsx".

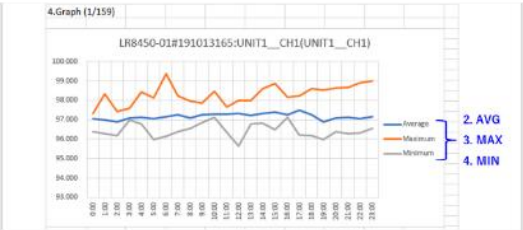
・If the save method is "Do not back up data"
Only "AutoReport.xlsx" will be created.
If "AutoReport.xlsx" exists in the specified destination, it will be overwritten.

Configuring [Output channel selection] settings

·Select channels to output to reports from the channels that have been selected for logging.
·Channels whose checkbox is deselected here will also be saved as logging data.
·You can specify whether to output the average, maximum, and minimum values for the statistical interval (30 min. or 1 hr.) for each channel.

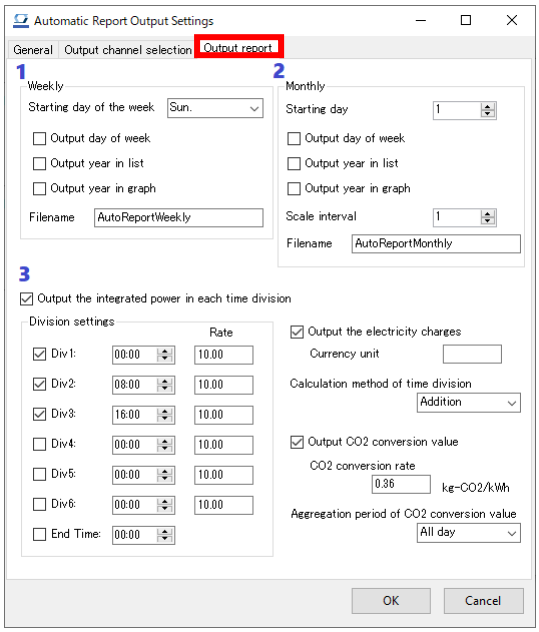






Item		Description
1		Select the checkboxes of the channels you wish to output to the report.
2	AVG	Select this checkbox if you wish to output the average value for each statistical interval (30 min. or 1 hr.).
3	MAX	Select this checkbox if you wish to output the maximum value for each statistical interval (30 min. or 1 hr.).
4	MIN	Select this checkbox if you wish to output the minimum value for each statistical interval (30 min. or 1 hr.).
5		Allows you to limit the measurement channels displayed in the list to only those that have been selected.
6	Clear All	Allows you to select all or clear all channels (Item 1).
7	Search for measurement channel (partial match)	Allows you to refine the measurement channels displayed in the list by channel name.

Configuring detailed output settings on the [Output report] tab



	Setting		Description
1	Weekly report	Starting day of the week	Specify the first day of the week report.
		Output day of week	Specify whether to output the day of the week on the date.
		Output year in list	Specifies whether to output the date in the list as a year, month, and day.
		Output year in graph	Specifies whether to output the date of the graph as a year, month, and day.
		filename	Specify the file name of the weekly report.
2	Monthly report	Starting day	Specify the first day of the monthly report.
		Output day of week	Specify whether to output the day of the week on the date.
		Output year in list	Specifies whether to output the date in the list as a year, month, and day.
		Output year in graph	Specifies whether to output the date of the graph as a year, month, and day.
		Scale interval	Specifies the scale interval on the horizontal axis (day) of the graph.
		filename	Specify the file name of the monthly report.
3	Demand list settings*1	Output the integrated power in each time division *2, 3	Output active energy values for each time division.
		Division settings *2	Division 1 - 6: Specify whether the time division is valid or invalid. End Time: Specify the valid or invalid and end time of the division end time. * You can specify the start time and electricity rate for the time division settings. * The start time and end time are specified in hours.
		Output the electricity charges *2, 3, 4, 5, 6	Output the electricity charges by time division using the active electric energy and electricity rate. * Only electricity charges can be output without outputting the integrated power in each time division.
		Currency unit *2, 4, 5, 6	Specify the currency unit of electricity charges.
		Calculation method of time division *2, 3, 4, 5, 6	You can select the method for calculating the active energy for each time division. Average: Outputs hourly average values of time division values, electricity charges, and CO2 conversion values. Addition: Outputs time division values, electricity charges, and CO2 conversion values as integrated values.
		Output CO2 conversion value *2, 3	Output the active energy during the period converted into CO2 emissions.
		CO2 conversion rate *2	Specify the conversion rate of the CO2 conversion value.
		Aggregation period of CO2 conversion value	You can select the aggregation period for CO2 conversion values. All day :

			Display in 24-hour aggregation. Only period： Aggregate and display only the specified time period.

*1: If you select to output items such as integrated power, integrated demand power, and demand power from the measurement items of PW3360, PW3365, PQ3100, and PQ3198, the [Demand list] tab will be added to the report.
*2: If you select to output the demand active power (consumption) from the measurement items of PW3360, PW3365, PQ3100, PQ3198, the target row will be added at the bottom of the [Demand list].

CO2 conversion value(Per hour) (0.3600kg-CO2/kW)	[kg-CO2]	25.596
Time division1(Per hour) (00:00-08:00)	[kW]	71.100
Electric charge1(Per hour) (10.00/kW)	Reference value	711.000

Output example

*3: When the calculation method of time division is set to "Average," CO2 conversion value, the integrated power in each time division, and the electricity charges are calculated values per hour.
The aggregated value within the specified period can be calculated by multiplying the time within the specified period.
*4: When the calculation method of time division is specified as "Addition", the output column will change as shown in the figure below.

CO2 conversion value(Integrated) (0.3600kg-CO2/kWh)	[kg-CO2]	25.596
Time division1(Integrated) (00:00-08:00)	[kWh]	71.100
Electric charge1(Integrated) (10.00YEN/kWh)	Reference value	711.000

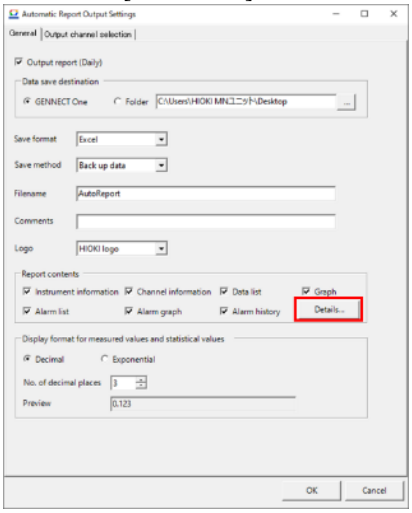
Output example

*5: The output value of the electricity charge is a reference purposes only.
(Output values cannot be used for billing or to establish power use.)
*6: This value differs from the electricity charges (ENERGY COST) parameter output by the PW3360, and PW3365.

Configuring detailed output settings for report contents

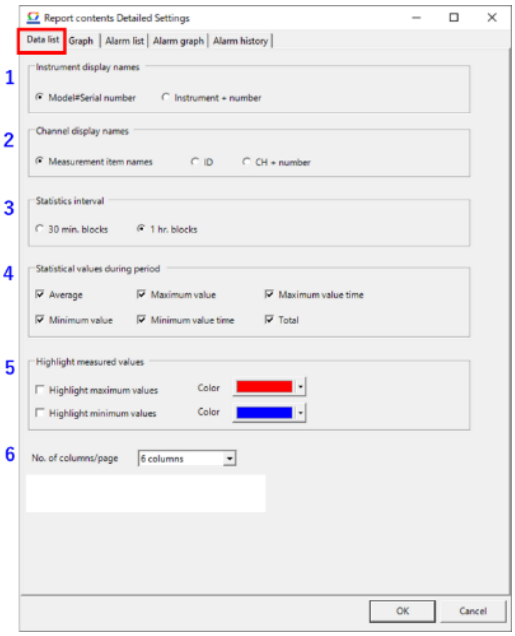
·You can configure more detailed output settings for report output parameters (data list, graph, alarm list, alarm graph, and alarm history).

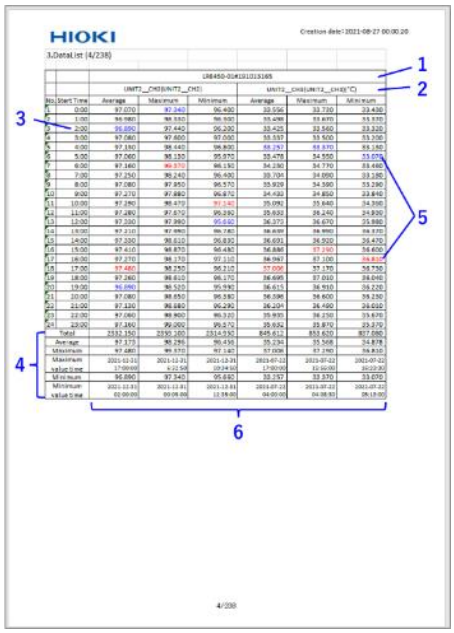
1. Click the [Details…] button on the [Automatic Report Output Settings] dialog box.



2. The [Report contents Detailed Settings] dialog box will open.
   See below for more information about the settings on each tab.

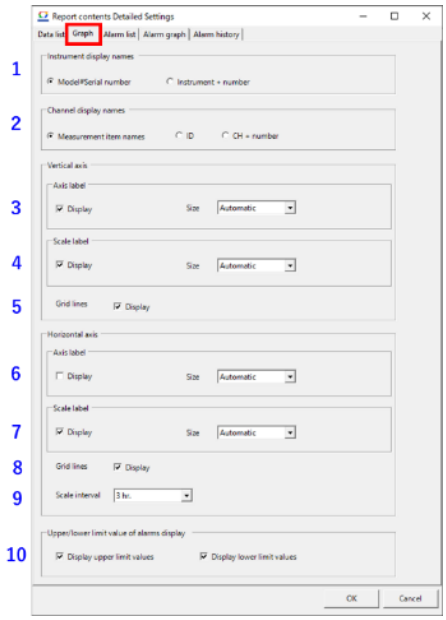
Configuring detailed output settings on the [Data list] tab

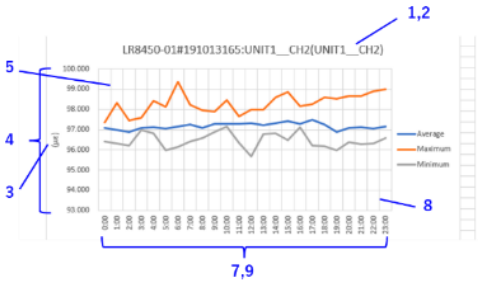




Setting			Description
1	Instrument display names	Model#Serial number	Outputs instrument display names in the format "Model#Serial number."
		Instrument + number	Outputs instrument names in the format "Instrument 1," "Instrument 2," "Instrument 3," etc. The numbers are the same as those used in [Instrument information].
2	Channel display names	Measurement item names	Outputs the channel-specific measurement parameter as the channel display name. Example: U1_Ins_Avg (voltage RMS / average value)
		ID	Outputs the channel-specific ID as the channel display name. Examples: U1_Ins_Avg
		CH + number	Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc. The numbers are the same as those used in [Channel information].
3	Statistical interval	30 min. blocks	Outputs average, maximum, and minimum values calculated every 30 min.
		1 hr. blocks	Outputs average, maximum, and minimum values calculated every 1 hr.
4	Statistical values during period		Specifies whether to output the average value, maximum value, time at which maximum value occurred, minimum value, time at which minimum value occurred, and total for the measurement period. (Multiple checkboxes may be selected.)
5	Highlight measured values	Highlight maximum values	Specifies whether to highlight maximum values during the measurement period using color.
		Color	Specifies the color to use to highlight maximum values.
		Highlight minimum values	Specifies whether to highlight minimum values during the measurement period using color.
		Color	Specifies the color to use to highlight minimum values.
6	No. of columns/page	3, 6, or 9 columns	Specifies the number of data list columns to output per page.

Configuring detailed output settings on the [Graph] tab

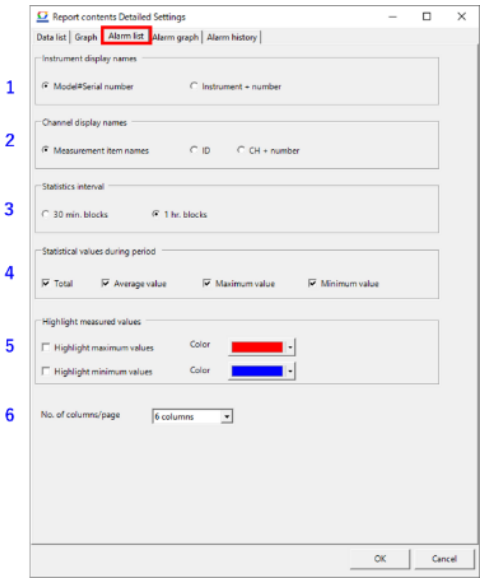


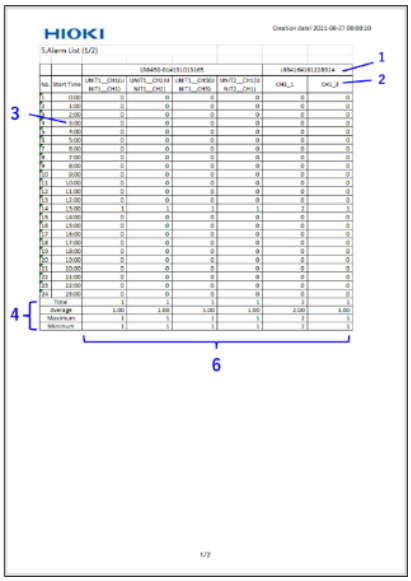


	Setting		Description
1	Instrument display names	Model#Serial number	Outputs instrument display names in the format "Model#Serial number."
		Instrument + number	Outputs instrument names in the format "Instrument 1," "Instrument 2," "Instrument 3," etc.
2	Channel display names	Measurement item names	Outputs the channel-specific measurement parameter as the channel display name. Example: U1_Ins_Avg (voltage RMS / average value)
		ID	Outputs the channel-specific ID as the channel display name. Examples: U1_Ins_Avg
		CH + number	Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc.
3	Vertical axis – Axis label	Display	Specifies whether to display an axis label for the vertical axis.
		Size	Specifies the font size (in points) to use for the axis label for the vertical axis.
4	Vertical axis – Scale label	Display	Specifies whether to display a scale label for the vertical axis.
		Size	Specifies the font size (in points) to use for the scale label for the vertical axis.
5	Vertical axis – Grid lines	Display	Specifies whether to display grid lines for the vertical axis.
6	Horizontal axis – Axis label	Display	Specifies whether to display an axis label for the horizontal axis.
		Size	Specifies the font size (in points) to use for the axis label for the horizontal axis.
7	Horizontal axis – Scale label	Display	Specifies whether to display a scale label for the horizontal axis.
		Size	Specifies the font size (in points) to use for the scale label for the horizontal axis.
8	Horizontal axis – Grid lines	Display	Specifies whether to display grid lines for the horizontal axis.
9	Horizontal axis – Scale interval	1 hr. / 3 hr.	Specifies the scale interval for the horizontal axis.
10	Upper/lower limit value of alarms display*1	Display upper limit values	Specifies whether to display upper limit values of alarms on graphs.
		Display lower limit values	Specifies whether to display lower limit values of alarms on graphs.

*1: Setting applies only when using the dashboard function. Not displayed when using the logging function.

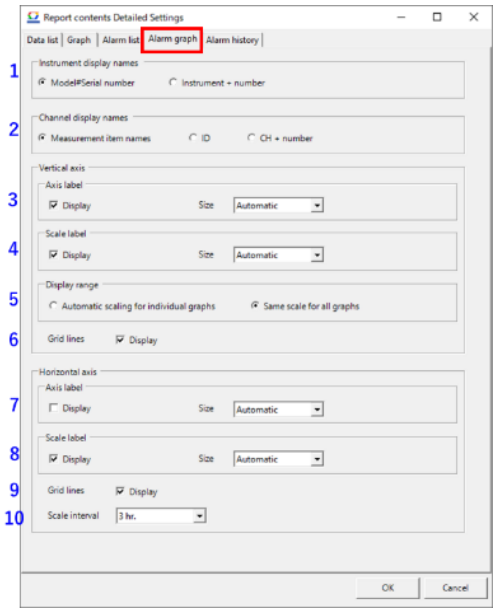
Configuring detailed output settings on the [Alarm list] tab

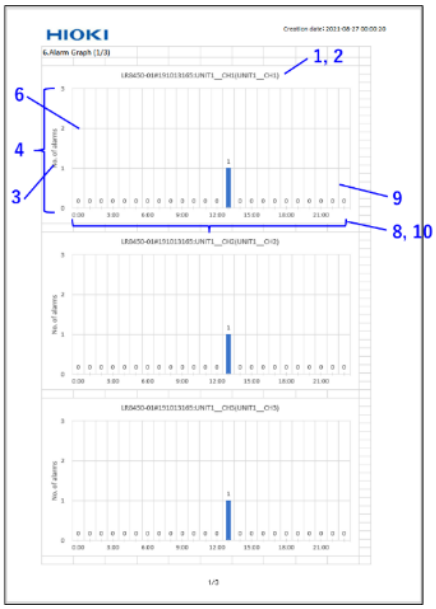




	Setting		Description
1	Instrument display names	Model#Serial number	Outputs instrument display names in the format "Model#Serial number."
		Instrument + number	Outputs instrument names in the format "Instrument 1," "Instrument 2," "Instrument 3," etc.
2	Channel display names	Measurement item names	Outputs the channel-specific measurement parameter as the channel display name. Example: U1_Ins_Avg (voltage RMS / average value)
		ID	Outputs the channel-specific ID as the channel display name. Examples: U1_Ins_Avg
		CH + number	Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc.
3	Statistical interval	30 min. blocks	Outputs the number of alarm events per 30 min.
		1 hr. blocks	Outputs the number of alarm events per 1 hr.
4	Statistical values during period		Specifies whether to output the average value, maximum value, minimum value, and total for the measurement period. (Multiple checkboxes may be selected.)
5	Highlight measured values	Highlight maximum values	Specifies whether to highlight maximum values during the measurement period using color.
		Color	Specifies the color to use to highlight minimum values.
		Highlight minimum values	Specifies whether to highlight minimum values during the measurement period using color.
		Color	Specifies the color to use to highlight minimum values.
6	No. of columns/page	3, 6, or 9 columns	Specifies the number of data list columns to output per page.

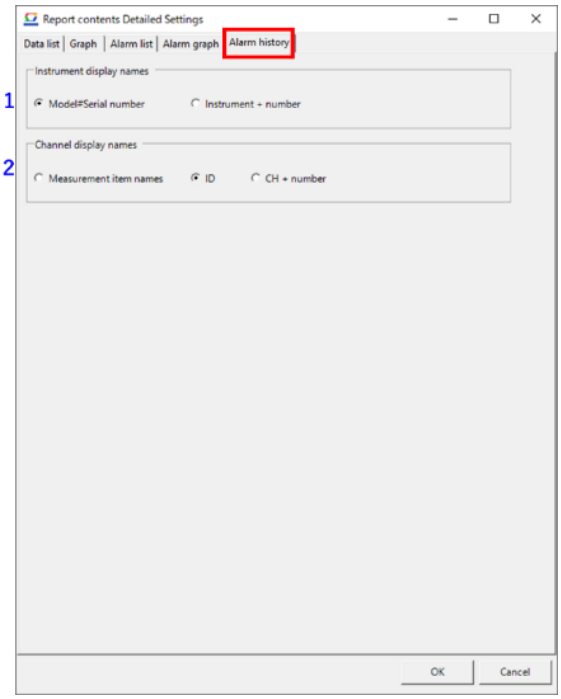
Configuring detailed output settings on the [Alarm graph] tab

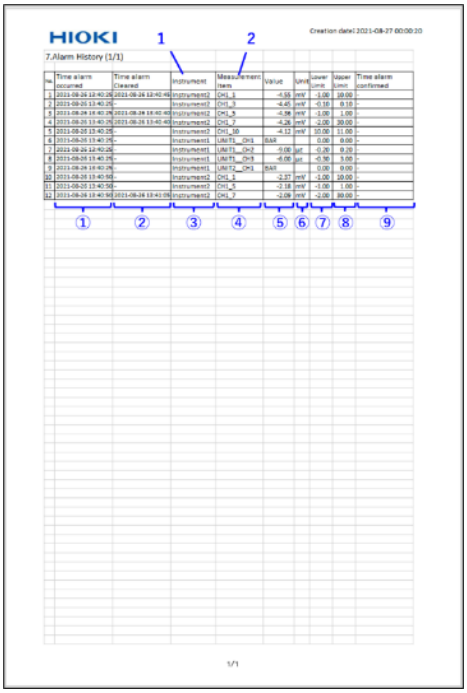




	Setting		Description
1	Instrument display names	Model#Serial number	Outputs instrument display names in the format "Model#Serial number."
		Instrument + number	Outputs instrument names in the format "Instrument 1," "Instrument 2," "Instrument 3," etc.
2	Channel display names	Measurement item names	Outputs the channel-specific measurement parameter as the channel display name. Example: U1_Ins_Avg (voltage rms / average value)
		ID	Outputs the channel-specific ID as the channel display name. Examples: U1_Ins_Avg
		CH + number	Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc.
3	Vertical axis – Axis label	Display	Specifies whether to display an axis label for the vertical axis.
		Size	Specifies the font size (in points) to use for the axis label for the vertical axis.
4	Vertical axis – Scale label	Display	Specifies whether to display a scale label for the vertical axis.
		Size	Specifies the font size (in points) to use for the scale label for the vertical axis.
5	Vertical axis – Display range	Automatic scaling for individual graphs	Automatically specifies the vertical axis display range for each graph.
		Same scale for all graphs	Uses the display range for the graph with the greatest display range (out of all graphs being output) as the vertical axis display range for all graphs.
6	Vertical axis – Grid lines	Display	Specifies whether to display grid lines for the vertical axis.
7	Horizontal axis – Axis label	Display	Specifies whether to display an axis label for the horizontal axis.
		Size	Specifies the font size (in points) to use for the axis label for the horizontal axis.
8	Horizontal axis – Scale label	Display	Specifies whether to display a scale label for the horizontal axis.
		Size	Specifies the font size (in points) to use for the scale label for the horizontal axis.
9	Horizontal axis – Grid lines	Display	Specifies whether to display grid lines for the horizontal axis.
10	Horizontal axis – Scale interval	1 hr. / 3 hr.	Specifies the scale interval for the horizontal axis.

Configuring detailed output settings on the [Alarm history] tab





	Setting		Description
1	Instrument display names	Model#Serial number	Outputs instrument display names in the format "Model#Serial number" in the report's "Instrument" column.
		Instrument + number	Outputs instrument names in the format "Instrument 1," "Instrument 2," "Instrument 3," etc., in the report's "Instrument" column.
2	Channel display names	Measurement item names	Outputs the channel-specific measurement parameter as the channel display name in the report's "Measurement item" column. Example: U1_Ins_Avg (voltage RMS / average value)
		ID	Outputs the channel-specific ID as the channel display name in the report's "Measurement item" column. Examples: U1_Ins_Avg
		CH + number	Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc., in the report's "Measurement item" column.

·[Alarm history] output contents

Item		Description
①	Time alarm occurred	Displays the time and date at which the alarm occurred.
②	Time alarm cleared	Displays the time and date at which the alarm was cleared (when the measured value moved from outside the upper/lower limit values to within the upper/lower limit values).
③	Instrument	Displays the instrument name.
④	Measurement item	Displays the channel display name.
⑤	Value	Displays the measured value (monitor value) when the alarm occurred.
⑥	Unit	Displays the measured value's unit.
⑦	Lower limit	Displays the lower limit value set for the channel.
⑧	Upper limit	Displays the upper limit value set for the channel.
⑨	Time alarm confirmed	Displays the time and date at which the alarm was reviewed.

Configuring detailed settings for automatic output (CSV)

·This section describes the detailed settings for automatic output (CSV).

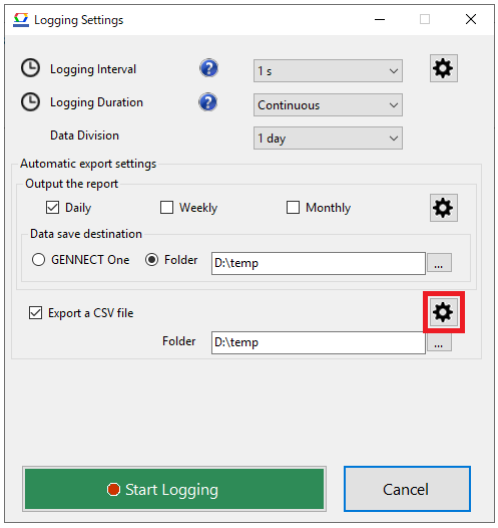
·See below for more information about the procedure for enabling automatic output (CSV) with the logging function.

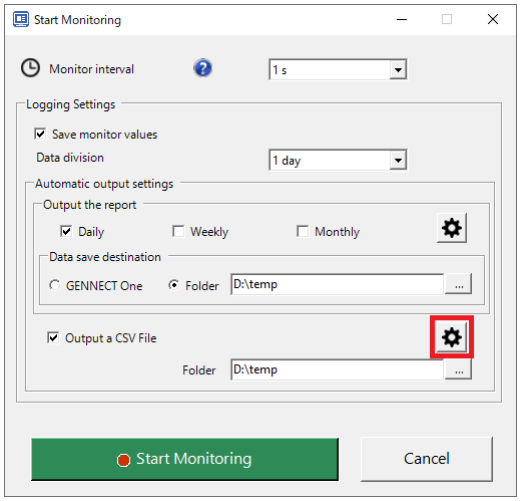
➢ Configure the logging settings

·See below for more information about the procedure for enabling automatic output (CSV) with the dashboard function.

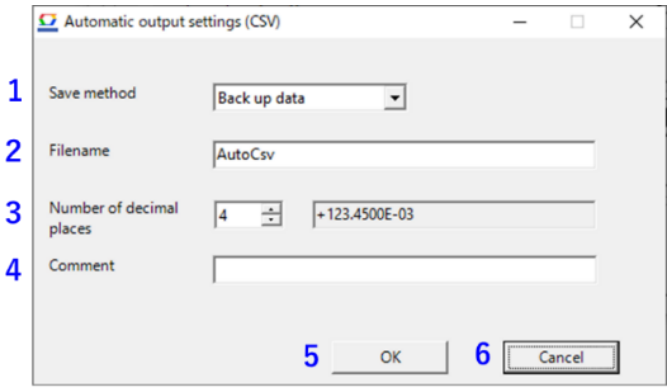
➢ Start or Stop the Measured Value Monitor

1. Click the button [⚙] shown in the red rectangle below on the [Logging Settings] or [Start Monitoring] dialog box.





2. The [Automatic output settings (CSV)] dialog box will open.



	Item		Description
1	Save method*1	Back up data	The following two files will be created. 1. ·File:<FilenameBody>.<Extension>. 2. Backup file: <FilenameBody>_<FilenameSuffix>.<Extension>. *If there are multiple files with the same suffix, a sequential number will be appended to the end of the filename to generate a unique name.
		Do not back up data	·Always overwrites the most recent file with the following filename: <FilenameBody>.<Extension>.
2	Filename*1		Specifies the string to use as the <FilenameBody>. The default value is "AutoCsv."
3	Number of decimal places		Specifies how many decimal places to include in measured values being output to the CSV file.

4	Comment		Specifies a string to include in the CSV file's comment header.
5	[OK] button		Saves the settings in the dialog box and closes the window.
6	[Cancel] button		Discards the settings in the dialog box and closes the window.

*1: Filename rules
Example) Filename (FilenameBody): AutoReport, Measurement start date and time: 2021-08-31 12:34:56

・If the save method is "Back up data"
"AutoCsv.xlsx" and a backup file: AutoCsv_2021-08-31_12-34-56.xlsx will be created.
If "AutoCsv.xlsx" exists in the specified destination, it will be overwritten.
If the backup file: AutoCsv_2021-08-31_12-34-56.xlsx exists in the specified destination, a sequential number will be appended to the end of the filename, such as "AutoCsv_2021-08-31_12-34-56_1.xlsx".

・If the save method is "Do not back up data"
Only "AutoCsv.xlsx" will be created.
If "AutoCsv.xlsx" exists in the specified destination, it will be overwritten.

Manually Outputting Reports (Daily, Weekly, and Monthly Reports)

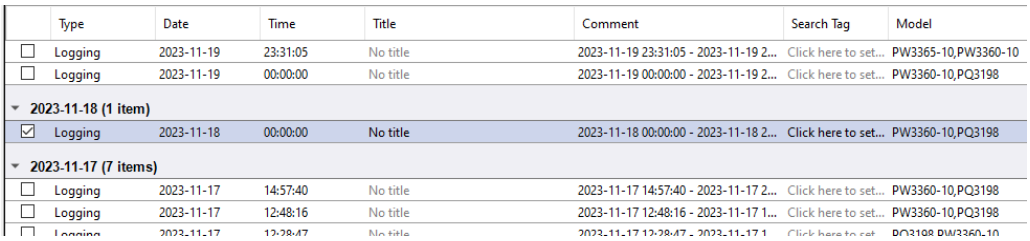
Reports (daily, weekly, and monthly reports) can be generated automatically from logging data using the logging/dashboard function.

See below for example output.

➢ Basic report specifications

Procedure

1. Select the [Data] and [Group], and then select logging data to display a pop-up menu.



	Type	Date	Time	Title	Comment	Search Tag	Model
☐	Logging	2023-11-19	23:31:05	No title	2023-11-19 23:31:05 - 2023-11-19 2...	Click here to set...	PW3365-10,PW3360-10
☐	Logging	2023-11-19	00:00:00	No title	2023-11-19 00:00:00 - 2023-11-19 2...	Click here to set...	PW3360-10,PQ3198
2023-11-18 (1 item)							
☑	Logging	2023-11-18	00:00:00	No title	2023-11-18 00:00:00 - 2023-11-18 2...	Click here to set...	PW3360-10,PQ3198
2023-11-17 (7 items)							
☐	Logging	2023-11-17	14:57:40	No title	2023-11-17 14:57:40 - 2023-11-17 2...	Click here to set...	PW3360-10,PQ3198
☐	Logging	2023-11-17	12:48:16	No title	2023-11-17 12:48:16 - 2023-11-17 1...	Click here to set...	PW3360-10,PQ3198

※ You can also select multiple sets of data to output.

※ If you select data other than logging data, no report will be generated.

※ If you select multiple sets of logging data, no report will be generated unless all selected data satisfies the following conditions:

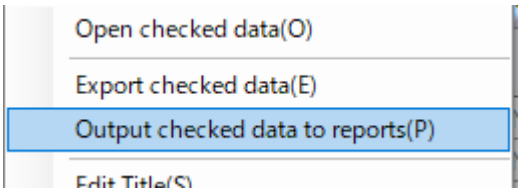
·All data is associated with the same instrument and serial number.

·All logging measurement parameters are the same.

·There is no overlap in the logging data's measurement period.

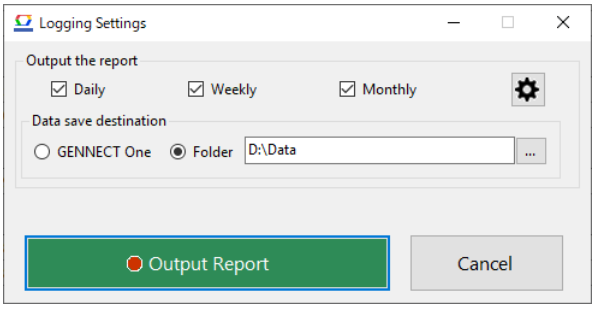
·All data has the same logging interval.

2. Select [Generate report from selected data] from the pop-up menu.



3. When the screen with report output settings is displayed, specify the output format, folder, and other information and then click [Output Report].

Click the [⚙] button to configure detailed settings such as the output filename.



※ For more information about detailed report output settings, see below.

- Configuring detailed settings for automatic output

4. A file in the selected format will be generated in the specified folder.

※ The report (daily, weekly, and monthly) output function performs the same processing whether it is invoked automatically or manually. Consequently, filename rules and operation such as whether the file is backed up are the same as for automatically generated files.
For more information about filename rules, see below.

- Configuring [General] settings

Manually Acquiring Files from an Instrument (File Acquisition [MANUAL])

・Acquire files from an instrument's external storage or external media.
・With the exception of the PQ3100, files cannot be acquired from an instrument's internal memory.
・ While the measurement device is under recording (automatic saving), it may affect the measurement of the main unit of the measurement device. Stop the recording (automatic saving) of the measurement device before acquiring the file with this function.

Supported Instruments

・The manual file acquisition function supports the following instruments.

Model	Name	Firmware version	URL
PQ3100	POWER QUARITY ANALYZER	Ver. 2.30 or later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198	POWER QUARITY ANALYZER	Ver. 1.10 or later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3360	CLAMP ON POWER LOGGER	Ver. 3.20 or later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365	CLAMP ON POWER LOGGER	Ver. 2.10 or later	https://www.hioki.com/en/products/detail/?product_key=5565
PW3390	POWER ANALYZER	Ver. 2.01 or later	https://www.hioki.com/en/products/detail/?product_key=6413
PW6001	POWER ANALYZER	Ver. 3.02 or later	https://www.hioki.com/en/products/detail/?product_key=5796
PW8001	POWER ANALYZER	Ver. 1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
LR8400, LR8401, LR8402	MEMORY HiLOGGER	Ver. 1.28 or later	https://www.hioki.com/en/products/detail/?product_key=5613
LR8410	WIRELESS LOGGING STATION	Ver. 1.42 or later	https://www.hioki.com/en/products/detail/?product_key=5697
LR8450, LR8450-01	MEMORY HiLOGGER	Ver. 1.20 or later	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102	DATA LOGGER	V1.00 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000	MEMORY HiCORDER	Ver. 2.12 or later	https://www.hioki.com/en/products/detail/?product_key=6439

Limitations

Limitations on manual file acquisition

Item	Limitation	Remarks
Number of instruments from which files can be acquired simultaneously	1	

Communications interface	LAN	
Communications protocol	FTP	

Limitations on communications

Item	Limitation	Remarks
Interface	LAN	
Network range for automatic search	_._._.2 to _._._.254 *Automatic search is limited to the same network range as the computer.	
DHCP	Not supported	

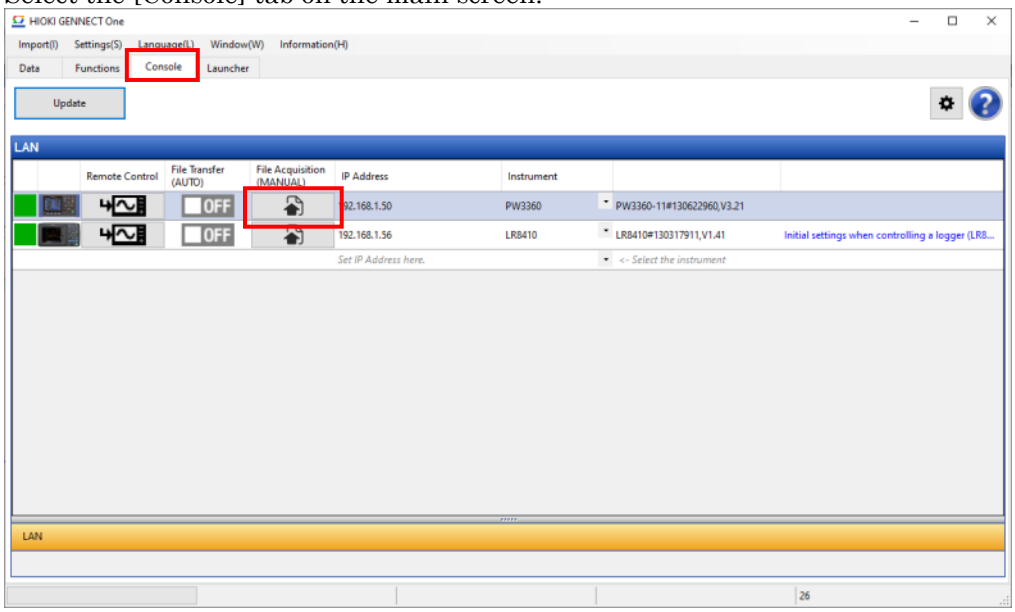
Workflow

Connect the instrument(s) to the computer with a LAN cable (p.17)

Start manual file acquisition (p.261)

Start manual file acquisition

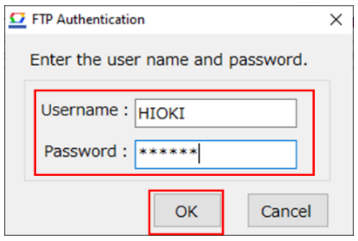
1. Select the [Console] tab on the main screen.



2. Select the [LAN] navigation bar.

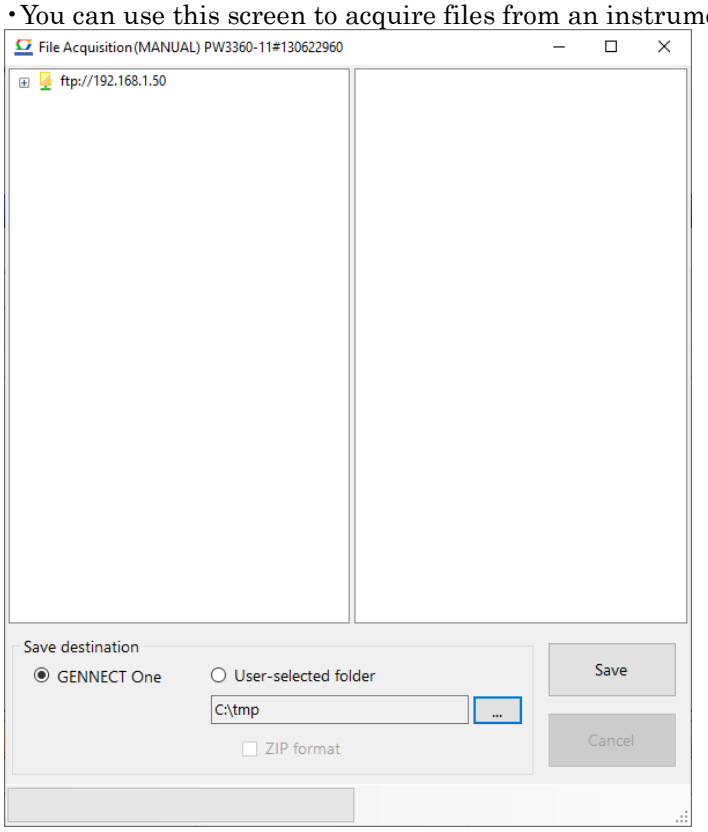
3. Click the [File Acquisition (MANUAL)] button ( ).

4. If authentication has been enabled for the instrument's FTP server, the [FTP Authentication] screen will be displayed.
   Enter the username and password and click the [OK] button.



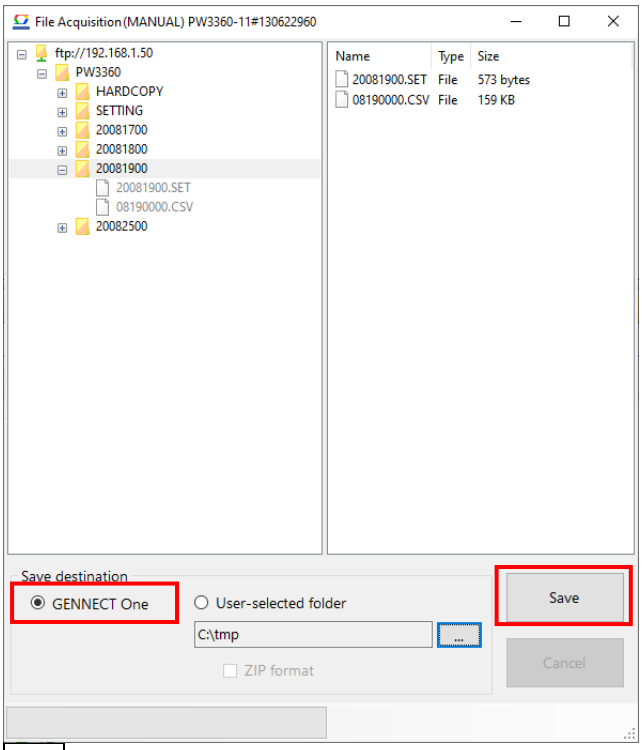
5. The [File Acquisition (MANUAL)] screen will open.

・You can use this screen to acquire files from an instrument's external storage or external media.



Note
*This example describes how to select and manually acquire files from a PW3360.

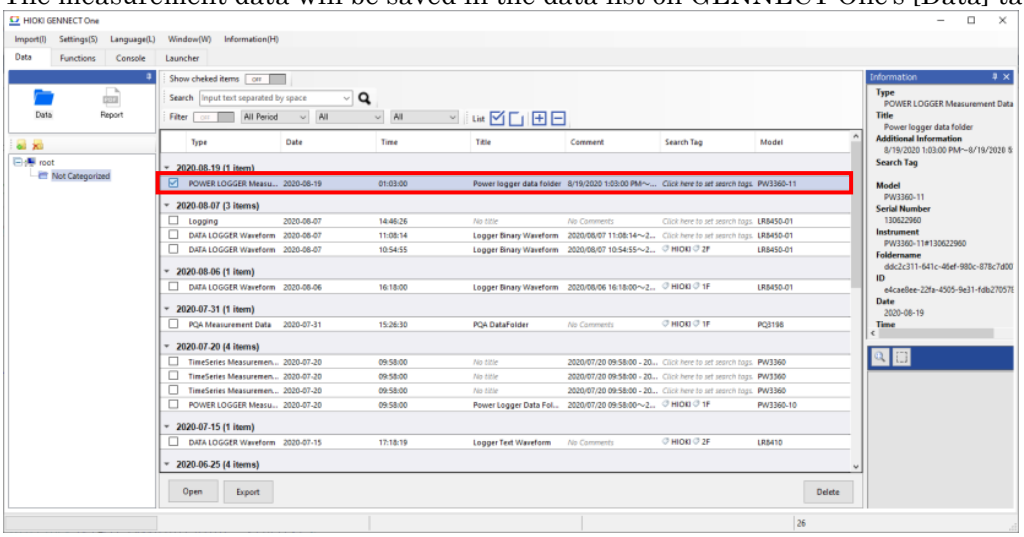
6. Click the "ftp://192.168.1.50" root folder in the tree on the left side of the screen to expand the folder. Next, expand other folders in the hierarchy and select the measurement (date) folder.



Note
*See "List of Target Files" below for more information about the types of measurement files that can be selected for each instrument.

7. Select [GENNECT One] under [Save destination] and click the [Save] button.
Note
*You may be unable to select [GENNECT One] as the [Save destination] for some file types. See "List of Target Files" below for more information.

8. The measurement data will be saved in the data list on GENNECT One's [Data] tab.



Note
*You can save the measurement data folder in the desired folder by selecting [User-selected folder] as the [Save destination] and clicking the [Save] button.
*You can compress the measurement data folder as a ZIP file and save it in the desired folder by selecting the [ZIP format] checkbox when [User-selected folder] is selected as the [Save destination].
*The type of data that is saved (file or folder) varies by instrument. See "List of Target Files" below for more information.

List of storage media supported by the manual file acquisition function

Instrument		Supported storage media			
Model	Name	Internal memory/SSD	SD card	USB drive	CF card
PQ3100	POWER QUALITY ANALYZER	Yes (Internal Memory)	Yes	—	—
PQ3198	POWER QUALITY ANALYZER	—	Yes	—	—
PW3360	CLAMP ON POWER LOGGER	—	Yes	—	—
PW3365	CLAMP ON POWER LOGGER	—	Yes	—	—
PW3390	POWER ANALYZER	—	—	Yes	Yes
PW6001	POWER ANALYZER	—	—	Yes	—
PW8001	POWER ANALYZER	—	—	Yes	—
LR8400, 01, 02	MEMORY LOGGER	—	—	Yes	Yes
LR8410, 16	WIRELESS LOGGING STATION	—	Yes	Yes	—
LR8450, -01	MEMORY LOGGER	—	Yes	Yes	—
LR8101, LR8102	DATA LOGGER	—	Yes	Yes	—
MR6000	MEMORY HICORDER	Yes (SSD)	Yes	Yes	—

List of target files

Instrument		Selected data		Save destinations		Saved data	
Model	Name	Model	Extension	GENNECT One	User-selected folder	Model	Remarks
PQ3100	POWER QUALITY ANALYZER	Folder	—	Yes	Yes	Folder	(*2)
PQ3198	POWER QUALITY ANALYZER	Folder	—	Yes	Yes	Folder	(*2)
PW3360 PW3365	CLAMP ON POWER LOGGER	Folder	—	Yes	Yes	Folder	(*2)
PW3390 PW6001	POWER ANALYZER	Files	CSV	Yes	Yes	Files	(*3)
			Other	—	Yes		
PW8001	POWER ANALYZER	Files	BIN	Yes	Yes	Files	(*3)
			CSV	Yes	Yes		
			PNG	Yes	Yes		
			SET	Yes	Yes		
			MAT	Yes	Yes		
			DBC	Yes	Yes		
LR8400, 01.02 LR8410	MEMORY LOGGER WIRELESS LOGGING STATION	Files	MEM	Yes	Yes	Files	(*3)
			CSV	Yes/— (*1)	Yes		
			TXT	—	Yes		
			SET	—	Yes		
			Other	—	Yes		
LR8450,-01	MEMORY LOGGER	Files	MEM	Yes	Yes	Files	(*3)
			CSV	Yes/— (*1)	Yes		
			MF4	Yes	Yes		
			TXT	—	Yes		
			SET	—	Yes		
			Other	—	Yes		
LR8101 LR8102	DATA LOGGER	Files	MEM	Yes	Yes	Files	(*3)
			CSV	Yes/— (*1)	Yes		
			MF4	Yes	Yes		
			Other	—	Yes		
MR6000	MEMORY HICORDER	Files	CSV	Yes/— (*1)	Yes	Files	(*3)
			MF4	Yes	Yes		
			TXT	—	Yes		
			SET	—	Yes		
			Other	—	Yes		
			DAT	Yes	Yes		
			CFG	Yes	Yes		
			Other	—	Yes		

(*1) Numerical calculation result files cannot be saved to GENNECT One.
(*2) The selected measurement folder (date folder) will be saved.
(*3) The selected measurement folder will be saved.

Automatically receive instrument files (File Transfer [AUTO])

・The file transfer (AUTO) function uses an FTP link between the instrument and your PC to transfer files created by the instrument to the PC. Transferred files are saved in the application's database.
・Recording media such as an SD memory card or CF card must be inserted into the instrument.
・This function is used to acquire instrument measurement files after setting up an FTP server on your PC.
***Measurement files cannot be acquired by GENNECT One while your PC is not on.**
***Measurement files will not be saved on MR6000, PW3360, PW3365, PQ3100, PQ3198, LR8450, PW8001 if that instrument's file transfer (AUTO) function is enabled. Verify that you were able to receive measurement files with GENNECT One before turning off your PC.**
***It will take about 7 minutes for the measurement file transferred from the measurement instrument to be reflected in the data list.**
***If another FTP server already exists on your PC, you will not be able to acquire measurement files using this function.**
***If your security software is set to restrict communication to your PC, you may not be able to use this feature to acquire measurement files. In this case, you need to refer to your security software's manual and set it to allow FTP communication from the instrument to your PC (port number range: 21,65000-65020).**

Supported instruments

The file transfer (AUTO) function supports the following instruments:

Model number	Name	Supported versions	URL
PQ3100 *1	POWER QUARITY ANALYZER	V2.30 or later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198 *1,*3	POWER QUARITY ANALYZER	V1.10 or later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3360 *1	CLAMP ON POWER LOGGER	V3.20 or later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365 *1	CLAMP ON POWER LOGGER	V2.10 or later	https://www.hioki.com/en/products/detail/?product_key=5565
PW8001 *2,*4,*5 *6	POWER ANALYZER	V1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
LR8400, LR8401, LR8402 *1	MEMORY HiLOGGER	V1.28 or later	https://www.hioki.com/en/products/detail/?product_key=5613
LR8410 *1	WIRELESS LOGGING STATION	V1.42 or later	https://www.hioki.com/en/products/detail/?product_key=5697
LR8450, LR8450-01 *1,*5	MEMORY HiLOGGER	V1.20 or later	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102 *1,*5	DATA LOGGER	V1.00 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000	MEMORY HiCORDER	V2.10 or later	https://www.hioki.com/en/products/detail/?product_key=6439

***1. Start/stop measurement of the instrument when this function is started/stopped.**
***2. Start/stop integration of the instrument when this function is started/stopped.**
***3. All of the analysis data of the measurement instrument is reset when starting/stopping this feature. It is recommended to use this feature after the recording and analysis of the measurement data has been completed (Data reset state).**
***4. All of the integrated data of the measurement instrument is reset by starting/stopping this feature. It is recommended to use this feature after the recording and analysis of the integration data has been completed (Data reset state).**
***5. When this function starts, the start/stop control setting (trigger, start/stop time control) of the measurement instrument is released and measurement starts.**

***6 Measurement is not started/stopped when the connection-specific integration or time control function (actual time, timer) is enabled when this function is started/stopped (except in remote monitoring mode).**

Limitations

Limitations on the file transfer (AUTO) function

Aspect of function's operation	Limitation	Remarks
Maximum number of connected instruments	15	
Communications interface	LAN	
Maximum time until received files are visible Interface	7min.	Maximum time for a file that has been successfully received via FTP to show up in the application's database

Limitations on communications

Aspect of function's operation	Limitation	Remarks
Interface	LAN	
Automatic search network scope	□.□.□.2 – □.□.□.254 *Limited to same network scope as computer.	
DHCP	Not supported	

Using the function

Connect the instrument and PC with a LAN cable (p.17)

Enable the file transfer (AUTO) function (p.268)

↓

Disable the file transfer (AUTO) function (p.271)

Check or change file transfer (AUTO) function settings (p.272)

Enable the file transfer (AUTO) function

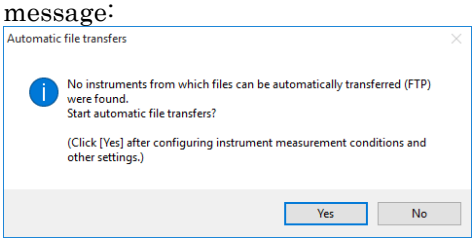
The instrument will start measurement automatically once the settings have been configured. Before enabling the file transfer (AUTO) function, configure the instrument's measurement condition settings and connect it to the device or circuit to be measured.

Enable on application launch

This option starts file transfers for the target instrument if the application is launched while connected to an instrument supported by the file transfer (AUTO) function.

1. Launch GENNECT One.

2. If GENNECT One detects that an instrument supported by the file transfer (AUTO) function is connected to the PC but that automatic file transfers are not enabled, it will display the following message:



3. [Click [Yes] to enable the file transfer (AUTO) function for the target instrument.
4. This processing may take several minutes. For more information about this processing, see "Enabling file transfer (AUTO) (details)".

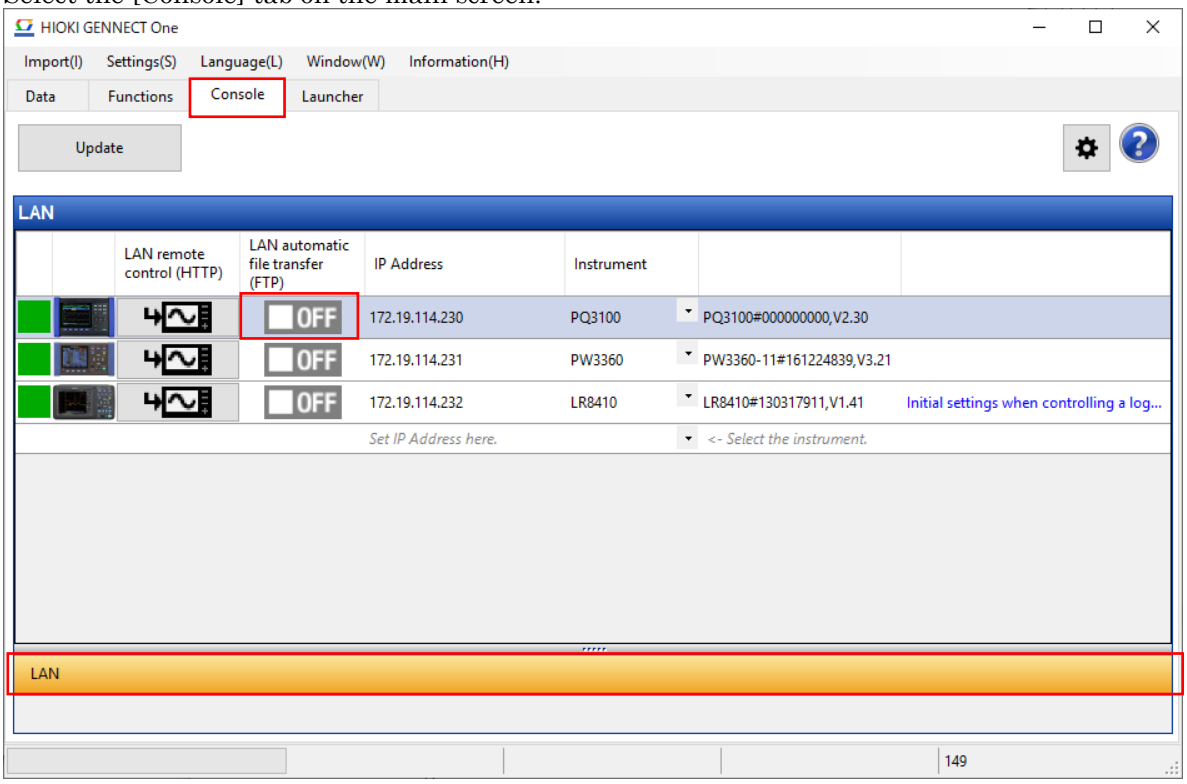
5. Once file transfer (AUTO) is started, the instrument will start measurement.

   *For the MEMORY HiCORDER MR6000, enabling file transfer (AUTO) will not cause the instrument to start measurement. Press the instrument's [START] button or use the LAN remote control function to start measurement.

Configure settings from the [Console] tab

You can start file transfers for the target instrument by setting the [File Transfer (AUTO)] button to [ON] for the connected instrument on the [Console] tab's instrument settings screen.

1. Select the [Console] tab on the main screen.



2. Select the [LAN] navigation bar.

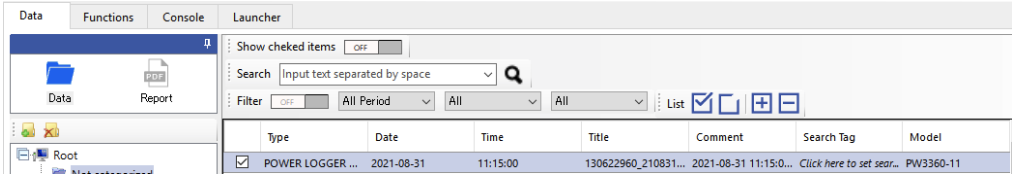
3. Click the [File Transfer (AUTO)] button (OFF) to enable it (ON).

4. The file transfer (AUTO) setting for the target instrument will be enabled.

   This processing may take several minutes. For more information about this processing, see "Enabling file transfer (AUTO) (details)".

5. Once file transfer (AUTO) is enabled, the instrument will start measurement.
   *For the MEMORY HiCORDER MR6000, enabling file transfer (AUTO) will not cause the instrument to start measurement. Press the instrument's [START] button or use the LAN remote control function to start measurement.

6. When the measurement device creates a measurement file, the measurement file is transferred to the PC.
   * The transfer timing is either when the measurement device stops measuring, or when the measurement file/folder is split by the device.
   * The measurement file is automatically set to be split once a day, except for the recorder (MR6000) and Power Analyzer (PW8001).
   * It will take about 7 minutes for the measurement file transferred from the measurement instrument to be reflected in the data list.

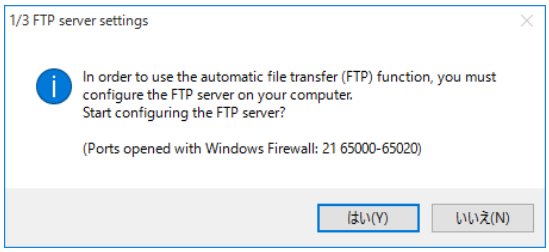


Enabling file transfer (AUTO) (details)

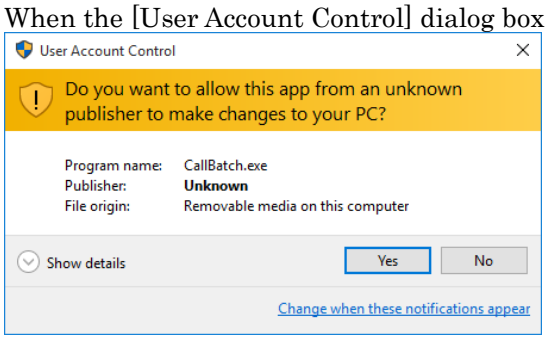
Setting up the FTP server (if not yet set up)

Set up the FTP server on your PC if you have not already done so.

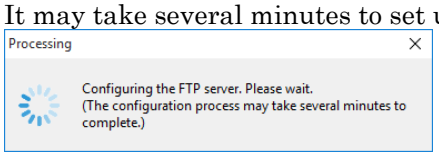
Click [Yes] on the confirmation dialog box that is displayed.
*The FTP server setup process will not start if you click [No].



Setting up the FTP server requires administrator privileges.
When the [User Account Control] dialog box is displayed, click [Yes].



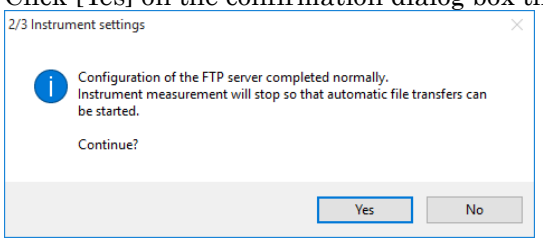
It may take several minutes to set up the FTP server.



If the FTP server setup process fails, you can display a detailed description of any errors that occurred.
See List of error codes for a description of how to configure the server manually.

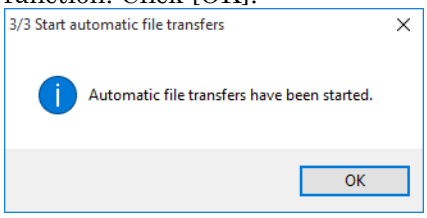
Instrument settings

Instrument settings necessary for transferring files will be configured automatically.
Click [Yes] on the confirmation dialog box that is displayed.



*If measurement has already begun, it will need to be stopped in order to start file transfer (AUTO).
*File transfer (AUTO) will not start if you click [No].

Configuration of the instrument settings completes the process of preparing to use the file transfer (AUTO) function. Click [OK].



When the instrument creates a file, it will be automatically transferred to the PC and saved in the application's database.

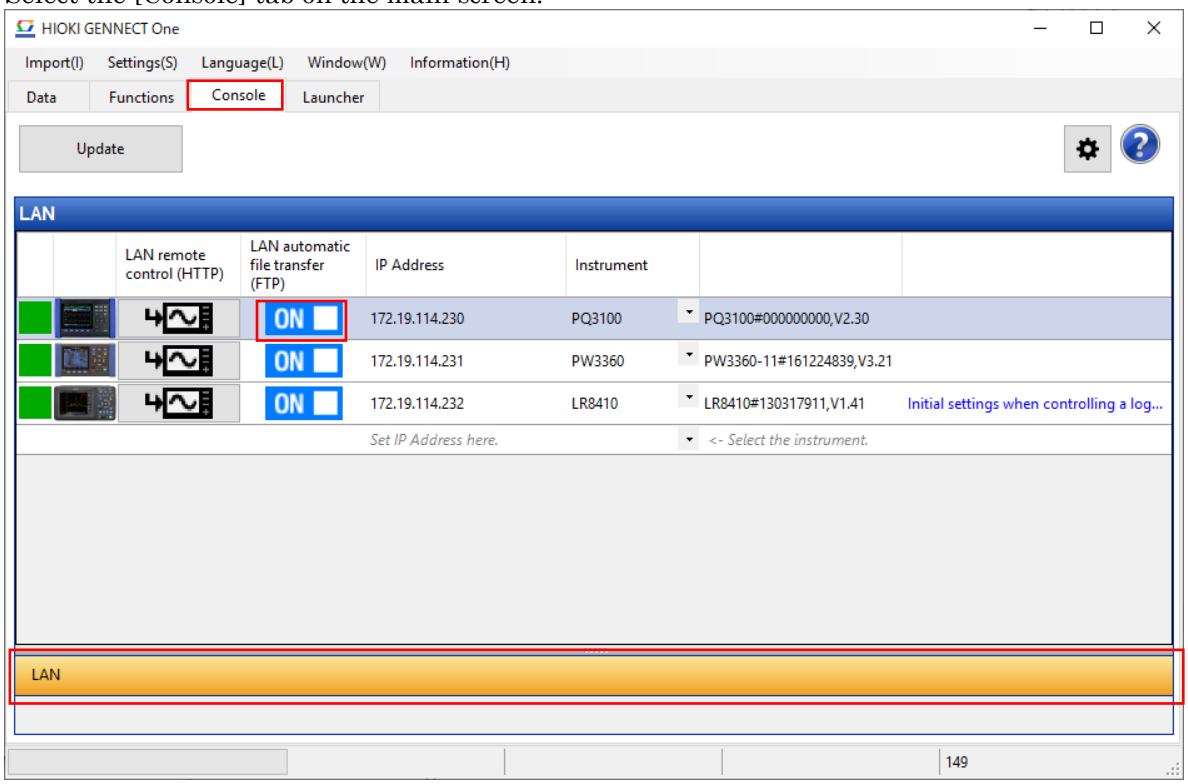
Disable file transfer (AUTO)

As long as file transfer is enabled, the instrument will attempt to send files, even if it is no longer connected to the PC. If using the instrument while not connected to a PC, it is recommended to disable file transfer (AUTO).

Configuring the setting from the [Console] tab

You can stop file transfers by setting the [File Transfers (AUTO)] button to [OFF] for the connected instrument on the [Console] tab's instrument settings screen.

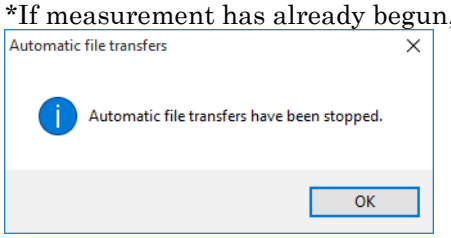
1. Select the [Console] tab on the main screen.



2. Select the [LAN] navigation bar.

3. Click the [File Transfer (AUTO)] button (ON) and disable it (OFF).

4. The file transfer setting for the target instrument will be disabled.
   This processing may take several minutes.
   *If measurement has already begun, it will need to be stopped in order to start file transfer (AUTO).

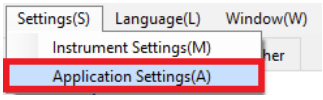


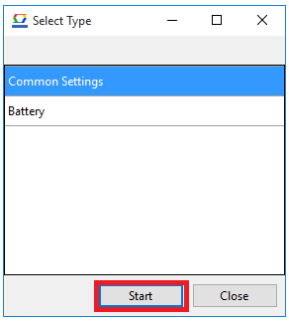
Check or change the file transfer (AUTO) setting

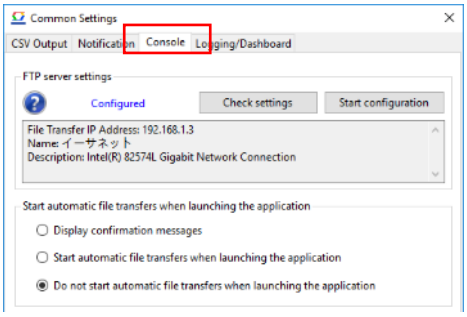
This section describes how to check or change file transfer (AUTO) settings.

1. Display the [Common Settings]-[File transfer (AUTO)] settings dialog box by either of the methods shown below.

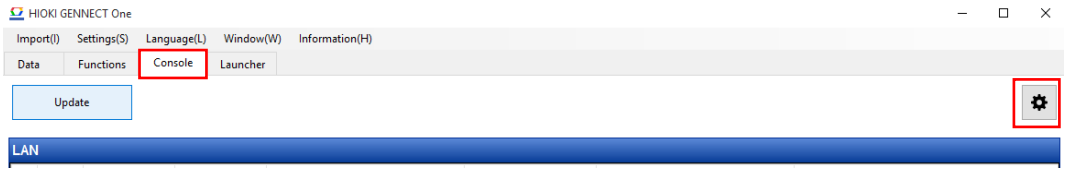
➢ Select the [Settings] menu on the main screen and choose [Application Settings]. Then choose [Common Settings] and click [Start]. When the [Common Settings] dialog box is displayed, select the [Console] tab.



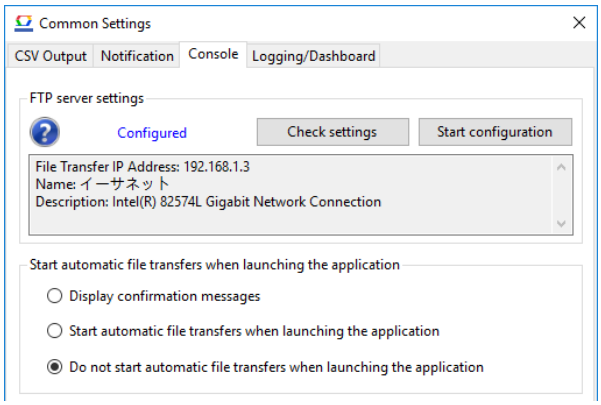




➢ Select the [Console] tab on the main screen and click the settings button ( ).



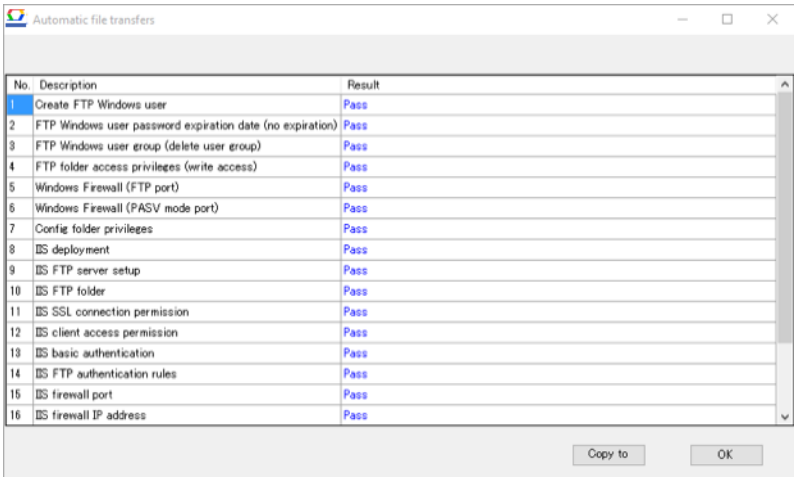
2. The [Common Settings]-[Console] dialog box will be displayed.
   Configure the settings shown below.



Set up or check the FTP server

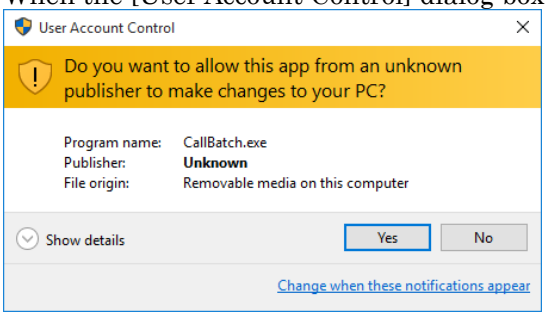
This section describes how to check the settings that control the FTP server used by the file transfer (AUTO) function and how to set up the FTP server.

- Click the [Check settings] button to check whether the FTP server has been properly configured.
  A list of FTP server settings will be displayed.
  If the message "PASS" is indicated for all settings, your PC's FTP server has been configured properly.

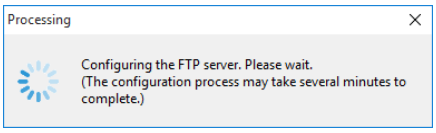


- Click the [Start] button to set up a new FTP server.
  If the [Check settings] function indicates that your PC's FTP server has not been configured properly, use this function to set up the FTP server. This processing may take several minutes.

  Setting up the FTP server requires administrator privileges.
  When the [User Account Control] dialog box is displayed, click [Yes].



  It may take several minutes to set up the FTP server.



Enable at application launch ([Start file transfer (AUTO) when launching the application])

You can set whether to start file transfers (AUTO) when the application is launched.
The [Start file transfer (AUTO) when launching the application] setting provides the following options:

- [Display confirmation messages]
  Choose whether to start file transfer (AUTO) on a dialog box when the application detects an instrument supported by the file transfer (AUTO) function at launch.

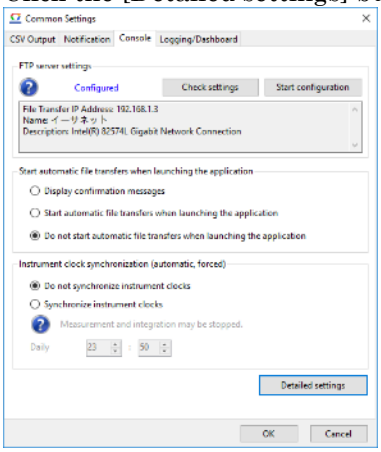
- [Start file transfer(AUTO) when launching the application]
  Start automatic file transfers when the application detects an instrument supported by the LAN automatic file transfer function at launch.

- [Do not start file transfer(AUTO) when launching the application]
  Do not start file transfer(AUTO) when launching the application.

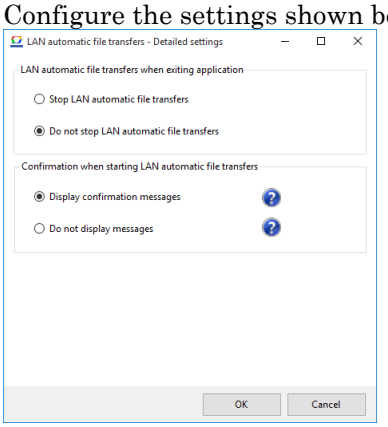
Change detailed settings

This section describes how to change detailed settings related to file transfer (AUTO).

1. Click the [Detailed settings] button on the [Common Settings]-[Console] dialog box.



2. The [File transfer (AUTO) – Detailed settings] dialog box will be displayed.
   Configure the settings shown below.



Setting when exiting the application ([File transfer(AUTO) when exiting application])

You can set whether to disable file transfer (AUTO) when closing the application. The [File transfer(AUTO) when exiting application] setting provides the following options:

- [Stop file transfer(AUTO)]
  Exit the application after stopping LAN automatic file transfers for all instruments.
  *Disabling LAN automatic file transfers while measurement is in progress will stop measurement and transfer any files created up to that point in time. It may take several minutes for the application to close depending on file size and communications status.

- [Do not stop file transfer(AUTO)]
  Exit the application without stopping LAN automatic file transfers for instruments.

Display of confirmation dialog boxes before configuring instruments ([Confirmation when starting file transfer(AUTO)])

You can set whether a confirmation dialog box will be displayed when starting or stopping file transfer(AUTO). The [Confirmation when starting file transfer(AUTO)] setting provides the following options:

- [Display confirmation messages]
  Display a confirmation dialog box when starting or stopping file transfer(AUTO).

- [Do not display messages]
  Do not display a confirmation dialog box when starting or stopping file transfer(AUTO).

Instrument save settings

Enabling the file transfer (AUTO) function causes instruments to be configured with model-specific save settings as follows:

Model	Name	Automatic save settings	File save timing
PQ3100 (*1)	POWER QUARITY ANALYZER	・Recording interval: 1 sec. to 5 min. ・Recording start method: Repeat, 2000-01-01 ・Recording stop method: Repeat, 2079-12-31 ・Recording time period: 00:00 to 24:00 ・Delete file after FTP transfer: ON ・Folder/file name setting: Automatic	・When an event occurs as defined by conditions set with instrument ・Daily at 00:00 ・When measurement stops ・When the time-axis file reaches 20 MB
PQ3198 (*2)	POWER QUARITY ANALYZER	・Actual time control: Exactly ・Repeat recording: 1 day ・Start time: 00:00; end time: 00:00 ・Repeat count: Unlimited (configurable only in GENNECT) ・Delete file after FTP transfer: ON ・Folder/file name setting: Automatic	・Daily at 00:00 ・When measurement stops (Files cannot be sent while an event is occurring.)
PW3360, PW3365 (*3)	CLAMP ON POWER LOGGER	・Recording measurement start method: Repeat ・Recording repeat interval: 2000-01-01 to 2079-12-31 ・Recording repeat time: 00:00 to 24:00 ・Delete file after FTP transfer: ON ・When folder division is OFF, change it to DAY. ・Save file/folder name: AUTO-NAME	・When an event occurs as defined by conditions set with instrument ・Daily at 00:00 ・When measurement stops ・When the time-axis file reaches 20 MB
PW8001	POWER ANALYZER	・Auto-save operation: ON ・Delete files after upload: ON ・Manual save settings - Save to FTP server: OFF	・When measurement stops ・When [DATA RESET] ・When the file size reaches 500MB When waveform is saved When saving a setting file When saving a screen copy (*Manually saved measurement data is not

			compatible with File Transfer (AUTO).
LR8400,LR8401,LR8402 LR8410	MEMORY HiLOGGER WIRELESS LOGGING STATION	・Recording time setting: Continuous recording ・Automatic save setting: Waveform or CSV (numerical files not supported) ・Delete save: ON ・Segmented save: ON*/regular *Changes as follows: Segmented save: Regular Segment time: 1 day Reference time: 00:00	・When the time set as the segmented save time is reached ・When measurement stops
LR8450, LR8450-01	MEMORY HiLOGGER	・Recording time setting: Continuous recording ・Automatic save setting: Waveform or CSV (numerical files not supported) or MDF format ・Delete save: ON ・Segmented save: ON* *Changes as follows: Segment time: 1 day Reference time: Start time [Automatic FTP data transmission settings] ・Connection protection: OFF ・Delete sent file：ON	・When the time set as the segmented save time is reached ・When measurement stops
LR8101, LR8102	DATA LOGGER	・Recording Time Setting: Continuous recording ・Automatic save setting: ON, MEM format (*1) ・Delete save: ON ・Segmented save: ON - Segment time: 1 day - Reference time: 0:00 ・Connection protection: OFF ・Delete sent files: ON	・When the time set as the segmented save time is reached ・When measurement stops *1: Depending on the recording interval and the number of channels used, the Auto-Save setting may not be able to be turned ON. For more details, please refer to the instrument's user manual.
MR6000	MEMORY HiCORDER	・Real-time saving: OFF ・Delete save: ON*	・When measurement completes according to the

		*Changes as follows when the automatic save setting target is disabled: Waveform save: ON Save type: Binary Save method: Delete File segments: 64 MB ・Segmented save setting If 0 when setting is binary: Changes to 64. If 0 when setting is text: Changes to 1000000. ・Save filename: AUTO	instrument's setting conditions using the automatic save function (Automatic transfer of files generated by real-time saving is not supported.)

*1: Starting from GENNECT One v5.40, the PQ3100 will start file transfer without changing the auto save setting in the following cases
- When the recording start method is "Time specified" and the recording stop method is "Manual".
- When the recording start method is "Repeat".

The " Folder/file name setting " will be changed to "automatic" even in the above settings.

*2: Starting from GENNECT One v5.40, PQ3198 will start file transfer without changing the auto save setting in the following cases
- When the Time Start is set to "Exactly" and Repeat Record is set to "1 day".
- When the Time Start is set to "Time" and the Repeat Record is "OFF" or "1 day".

*3: Starting from GENNECT One v5.40, PW3360 and PW3365 will start file transfer without changing the auto save setting in the following cases.
- When the recording start method is "TIME" and the recording stop method is "MANUAL".
- When the recording start method is "REPEAT".

List of error codes

In the event you are unable to configure setting when starting file transfer (AUTO) , refer to the corresponding error code and message and configure the setting manually.

Error code	Message	Solution (manual setting) *Requires administrator privileges.
001	Failed to create FTP user.	・Right-click [Local Users and Groups] under [Control Panel]-[System and Security]-[Administrative Tools]-[Computer Management]-[System Tools] and select [New User]. Username: ONE_FTP Password: P@SSW0RD00 ・Deselect the [User must change password at next logon] checkbox. ・Deselect the [Password never expires] checkbox.
002	Failed to set FTP user password.	・[Control Panel]-[System and Security]-[Administrative Tools]-[Computer Management]-[System Tools]-[Local Users and Groups] —If ONE_FTP does not exist, refer to the solution for error 001 to create the user. —If ONE_FTP exists, right-click and select the [Password never expires] checkbox.

003	Failed to change FTP user settings.	・[Control Panel]-[System and Security]-[Administrative Tools]-[Computer Management]-[System Tools]-[Local Users and Groups] —If ONE_FTP does not exist, refer to the solution for error 001 to create the user. ・Right-click on ONE_FTP and select [Users] under [Properties]-[Group] and select [Delete]. Verify that [Users] has been deleted and click [OK].
004	Failed to change FTP folder settings.	・Go to the GENNECT One installation path (default path: C:¥Program Files (x86)¥HIOKI¥HIOKI GENNECT Cross¥FTP) and right-click on the "hioki_one_ftp" folder. ・Select [Properties]-[Edit]. ・If there is no ONE_FTP group or user name, select [Add], enter [ONE_FTP] under [Enter name of selected object], and click [OK]. ・Select ONE_FTP and select the [Full control] checkbox under [Permissions].
005	Failed to configure Windows Firewall (for FTP use).	・Select the receive rule and then select [New Rule] under [Control Panel]-[System and Security]-[Windows Firewall]-[Advanced Settings]. Rule type: [Port] Protocol: [TCP] Target: [Specific local port], [21] Operation: [Allow the connections] Profile application: [Domain], [Private], [Public] (select all three) Name: [GENNECT One] and [Complete]
006	Failed to configure Windows Firewall (for PASV mode use).	・Select the receive rule and then select [New Rule] under [Control Panel]-[System and Security]-[Windows Firewall]-[Advanced Settings]. Rule type: [Port] Protocol: [TCP] Target: [Specific local port], [65000 to 65020] Operation: [Allow connections] Profile application: [Domain], [Private], [Public] (select all three) Name: [GENNECT One (PASV)] and [Complete]
007	Failed to set the config folder.	・If the FTP server has not yet been installed, set after successfully installing the FTP server (refer to error code 101 below). ・Double-click "C:¥Windows¥System32¥inetsrv¥config." (If an access permission dialog box is displayed, click [Continue].) ・Right-click the "config" folder and select [Properties]-[Security]-[Edit]. ・If "Everyone" is not included as a group or user name, select [Add]. ・Enter [Everyone] under [Enter name of selected object], and click [OK]. ・Select [Everyone] and select the [Full control] checkbox under [Permissions].

		(If a security dialog box is displayed, click [Yes].)
101	Failed to deploy the FTP server.	・Select [Control Panel]-[Programs and Functions]-[Enable or Disable Windows Functionality]. ・Select the [FTP Server], [FTP Service], [Web Management Tools], and [IIS Management Console] checkboxes under [Internet Information Services] and click [OK].
102	Failed to set up the FTP server.	・Select [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Select [Site] and then choose [Add FTP site]. ・Set the FTP site name to "one.hioki.co.jp," the physical path to "<GENNECT One installation path>¥hioki_one_ftp" (default path: C:¥Program Files (x86)¥HIOKI¥HIOKI GENNECT Cross¥FTP¥hioki_one_ftp) and click [Next]. ・Set SSL to [Enable] (the default setting is not enabled) and click [Next]. ・Set authentication to [Basic] and access permissions to [Specified users]. Specify [ONE_FTP], select both the [Read] and [Write] checkboxes, and click [Finish].
103	Failed to set the FTP server folder.	・Select [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [Manage FTP site/advanced settings]. ・Set the physical path to "<GENNECT One installation path>¥hioki_one_ftp" (default path: C:¥Program Files (x86)¥HIOKI¥HIOKI GENNECT Cross¥FTP¥hioki_one_ftp) and click [OK].
104	Failed to configure SSL connections for the FTP server.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP SSL settings]. ・Select the [Allow SSL connections] checkbox as the SSL policy and click [Apply].
105	Failed to enable FTP server connections.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP Ipv4 address and domain restrictions]. ・Click [Edit function settings], set [Access to unidentifiable clients] to [Allow], and click [OK].
106	Failed to configure FTP server authentication.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager].

		・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP authentication]. ・Click [Basic authentication] and then click [Enable].
107	Failed to configure FTP server authentication rules.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP approval rules]. ・Click [Add permission rule] and select the [Specified users] checkbox. Enter[ONE_FTP], select both the [Read] and [Write] access privilege checkboxes, and click [OK].
108	Failed to set the FTP server's firewall port.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Click the local host at the top of the connections and then double-click [FTP firewall support]. ・Enter [65000-65020] as the [Data channel port range] and click [Apply].
109	Failed to set the FTP server's firewall IP address.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP firewall support]. Enter the PC's IP address in the [Firewall's external IP address] field and click [Apply].
110	Failed to set the FTP server's log fields.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP log]. ・Click [Select W3C fields]. Select the [Date], [Time], [Client IP address (c-ip)], [Method (cs-method)], and [Full path (x-fullpath)] checkboxes and click [Apply].
111	Failed to set the FTP server's log save folder.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager]. ・Expand [Sites], right-click on [one.hioki.co.jp], and select [FTP log]. ・Click [Browse] under [Directory] and select [<GENNECT One installation path>¥ftpLog] (default path: C:¥Program Files (x86)¥HIOKI¥HIOKI GENNECT Cross¥FTP¥ftpLog) (if folder does not exist, add it by clicking [New folder]) and click [Apply].
201	Communications ports are limited by Windows Firewall.	・Select [Receive rules] under [Control Panel]-[System and Security]-[Windows Firewall]-[Advanced Settings]. ・Disable the rule restricting port numbers 21 and 65000 through 65020.
301	Unable to communicate with the FTP server.	・Launch [Control Panel]-[System and Security]-[Administrative Tools]-[Internet Information Services (IIS) Manager].

		・Select [Sites]. Select sites whose status is shown as [Started (ftp)] and then click [Stop]. Select [one.hioki.jp] and click [Start].

Control an instrument (Remote control [LAN])

・LAN remote control provides functionality for controlling an instrument using the instrument's HTTP server function.
・Other functions cannot be used while an instrument is being remote-controlled.

Supported instruments

・The LAN remote control function supports the following instruments:

Model number	Name	Supported versions	URL
PQ3100	POWER QUARITY ANALYZER	V2.30 or later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198	POWER QUARITY ANALYZER	V1.10 or later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3335	POWER METER	V1.11 or later	https://www.hioki.com/global/products/power-meters/single-phase-ac-dc/id_5831
PW3336	POWER METER	V1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5805
PW3337	POWER METER	V1.23 or later	https://www.hioki.com/global/products/power-meters/3phase-ac-dc/id_5929
PW3360	CLAMP ON POWER LOGGER	V3.20 or later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365	CLAMP ON POWER LOGGER	V2.10 or later	https://www.hioki.com/en/products/detail/?product_key=5565
PW3390	POWER ANALYZER	V2.00 or later	https://www.hioki.com/en/products/detail/?product_key=6413
PW6001	POWER ANALYZER	V3.02 or later	https://www.hioki.com/en/products/detail/?product_key=5796
PW8001	POWER ANALYZER	V1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
※LR8400,LR8401,LR8402	MEMORY HiLOGGER	V1.28 or later	https://www.hioki.com/en/products/detail/?product_key=5613
※LR8410	WIRELESS LOGGING STATION	V1.42 or later	https://www.hioki.com/en/products/detail/?product_key=5697
LR8450, LR8450-01	MEMORY HiLOGGER	V1.20 or later	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102	DATA LOGGER	V1.00 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000	MEMORY HiCORDER	V2.10 or later	https://www.hioki.com/en/products/detail/?product_key=6439

*In order to use the remote control function with an instrument such as the Data Logger LR8400 that uses Java™, you will need to install Java™ on your PC and register the instrument as an exception in your browser. For more information, see the page describing Java™ settings.

➢ Configure Java™ on your computer

Limitations

Limitations on LAN remote control

Aspect of function's operation	Limitation	Remarks
Communications interface	LAN	

Limitations on communications

Aspect of function's operation	Limitation	Remarks
Interface	LAN	
Automatic search network scope	□.□.□.2 – □.□.□.254 *Limited to same network scope as computer.	
DHCP	Not supported	

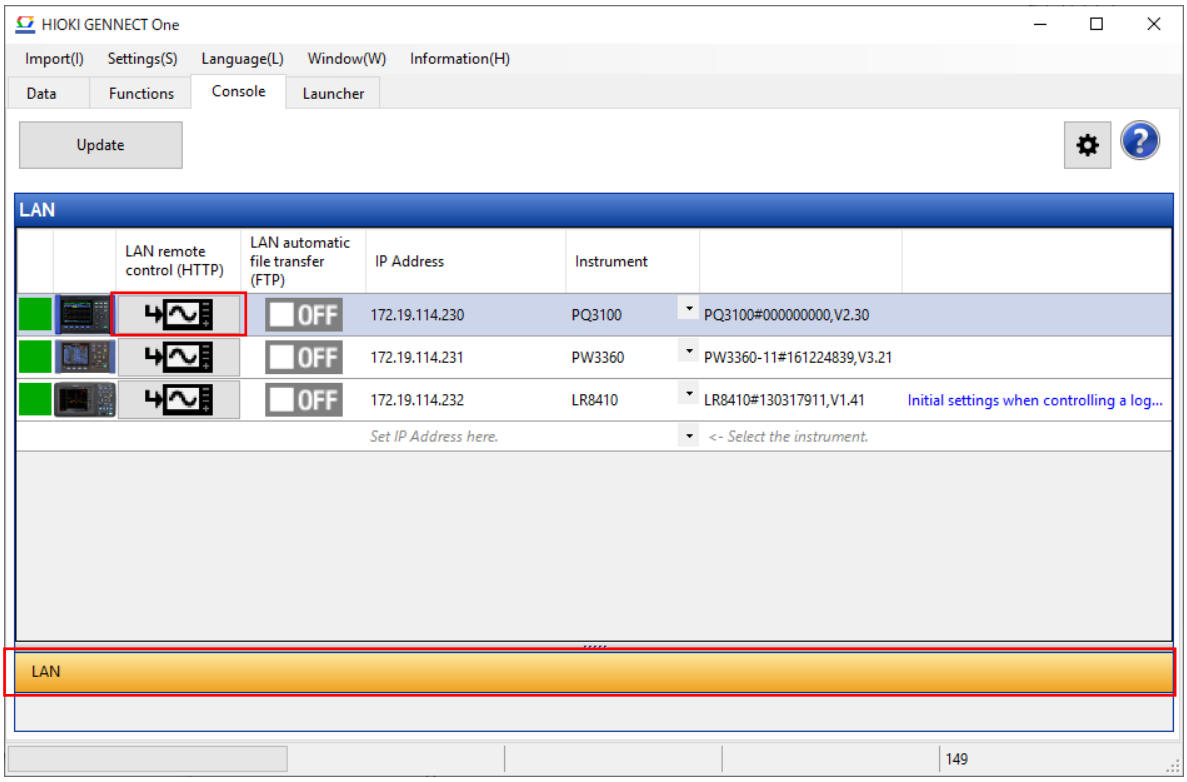
Using the function

Connect the instrument and PC with a LAN cable (p.17)

Start remote control (p.284)

Start remote control

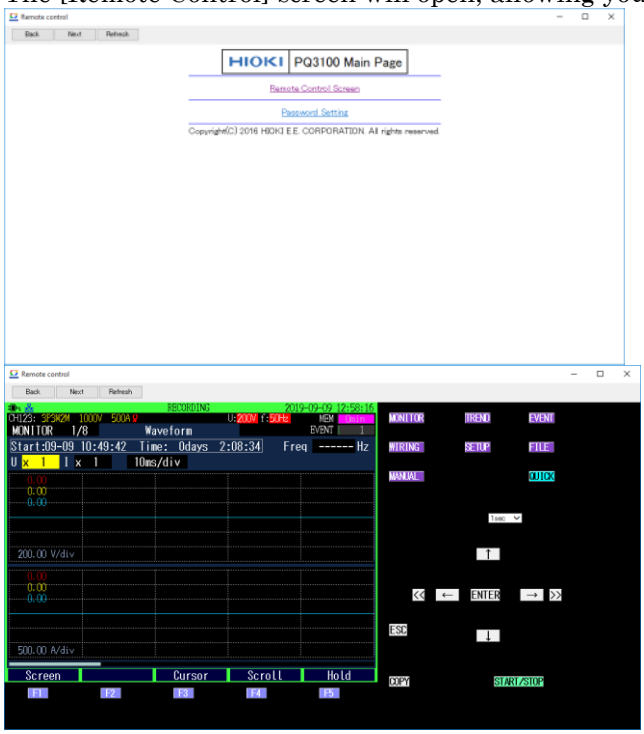
1. Select the [Console] tab on the main screen.



2. Select the [LAN] navigation bar.

3. Click the [LAN remote control] button ( ).

4. The [Remote Control] screen will open, allowing you to control the instrument.



5. If the instrument screen is not displayed, click the [Refresh] button on the top of the screen several times.
*Other functions cannot be used while the remote control window is open.

Synchronize Instrument Clocks [LAN]

・This section describes how to synchronize instrument clocks.
・For more detailed information about the specific manner in which this feature operates for individual instrument models, see [Synchronizing Instrument Clocks: Details].
・If you synchronize an instrument's clock while it is recording or integrating values, there may be a blank interval in the recorded measurement data. It is recommended to stop recording and integration before synchronizing an instrument's clock.

Supported instruments

・Functionality for synchronizing instrument clocks supports the following instruments:

Model name	Product name	Firmware version	URL
PQ3100	POWER QUARITY ANALYZER	Ver. 2.30 or later	https://www.hioki.com/en/products/detail/?product_key=6387
PQ3198	POWER QUARITY ANALYZER	Ver. 1.10 or later	https://www.hioki.com/en/products/detail/?product_key=6503
PW3360	CLAMP ON POWER LOGGER	Ver. 3.20 or later	https://www.hioki.com/en/products/detail/?product_key=5589
PW3365	CLAMP ON POWER LOGGER	Ver. 2.10 or later	https://www.hioki.com/en/products/detail/?product_key=5565
PW3390	POWER ANALYZER	Ver. 2.00 or later	https://www.hioki.com/en/products/detail/?product_key=6413
PW6001	POWER ANALYZER	Ver. 3.02 or later	https://www.hioki.com/en/products/detail/?product_key=5796
PW8001 *1 *2	POWER ANALYZER	Ver. 1.00 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
LR8400, LR8401, LR8402	MEMORY HiLOGGER	Ver. 1.28 or later	https://www.hioki.com/en/products/detail/?product_key=5613
LR8410	WIRELESS LOGGING STATION	Ver. 1.42 or later	https://www.hioki.com/en/products/detail/?product_key=5697
LR8450	MEMORY HiLOGGER	Ver. 1.20 or later	https://www.hioki.com/en/products/detail/?product_key=6535
R8101, LR8102	DATA LOGGER	Ver. 1.00 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
MR6000	MEMORY HiLOGGER	Ver. 2.12 or later	https://www.hioki.com/en/products/detail/?product_key=6439
ST5680	DC HIPOT TESTER	V1.00 or Later	https://www.hioki.com/global/products/electrical-safety-testers/hipot/id_1265574
RM3545A	RESISTANCE METER	V1.00 or Later	https://www.hioki.com/global/products/resistance-meters/resistance/id_1266279 (LAN communication port only supports the default value of 23)
DM7275, DM7276	PRECISION DC VOLTMETER	V1.09 or Later	https://www.hioki.com/sg-en/products/benchtop-dmm/dc-voltmeters/id_6551

			(LAN communication port only supports the default value of 23)

*1. All of the integrated data of the measurement instrument is reset by setting the instrument clock with this feature. It is recommended to use this feature after the recording and analysis of the integration data has been completed (Data reset state).
*2 This function is not executed when the connection-specific integration or time control function (actual time, timer) is enabled.

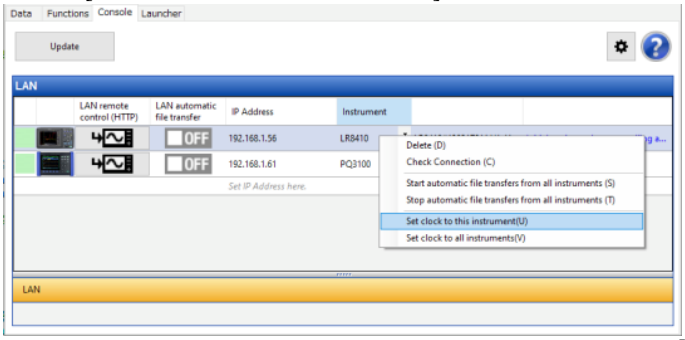
Instructions (synchronizing the time from the [Console] tab)

·Manually set the clock of the instrument registered in the [Console] tab to the PC time.
·See below for more information.

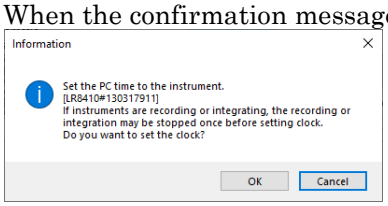
➢ Synchronizing Instrument Clocks: Details

1. To specify an instrument and set its clock

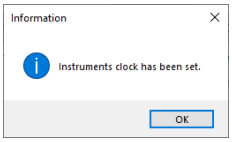
-1. Select the [Console] tab.
-2. Right-click the instrument whose clock you wish to set.
-3. Select [Set clock to this instrument] in the menu.



-4. When the confirmation message is displayed, click the [OK] button.

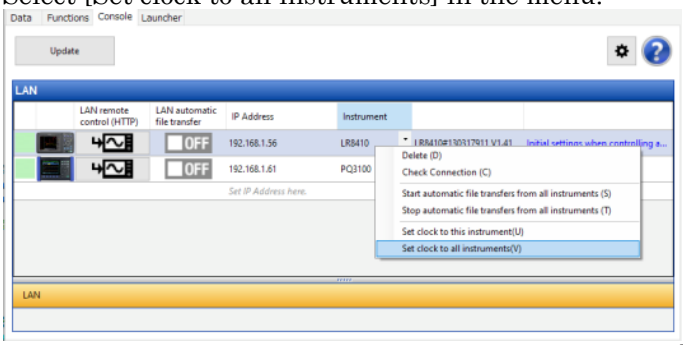


-5. The instrument's clock will be synchronized with the computer's clock.

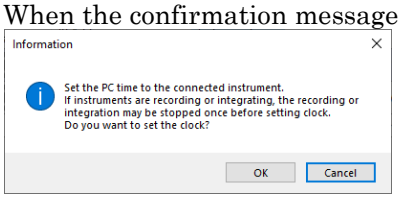


2. To synchronize all connected instruments' clocks

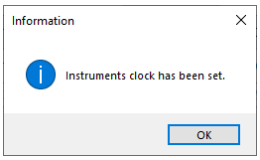
-1. Select the [Console] tab.
-2. Right-click on the instrument list.
-3. Select [Set clock to all instruments] in the menu.



-4. When the confirmation message is displayed, click the [OK] button.



-5. All connected instruments' clocks will be synchronized with the computer's clock.



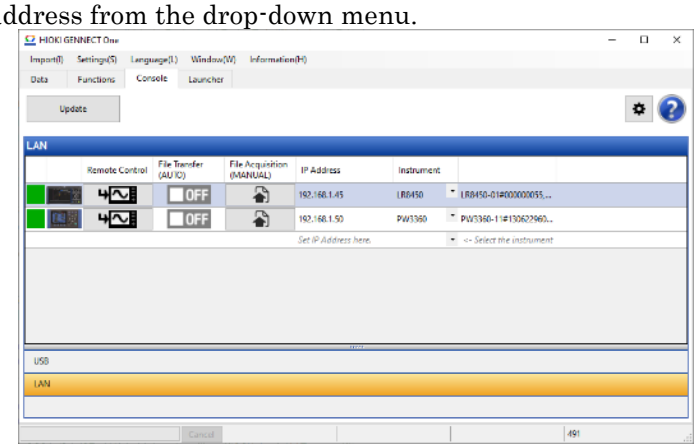
Instructions (configuring automatic time synchronization)

·This section describes how to synchronize the clocks of instruments registered on the [Console] tab to a PC daily at a user-specified time.
·Instrument times will not be synchronized after you exit GENNECT One.
·Depending on the instrument model and firmware version, synchronizing the time may cause measurement or integration to stop. In this case, a new file will be created when the time is synchronized.
·See below for more information.

➢ Synchronizing Instrument Clocks: Details

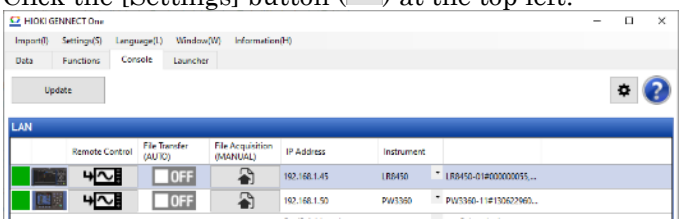
1. Register the instrument on the [Console] tab.

-1. Select the [Console] tab.
-2. Click [Search for Instrument] or enter the instrument's IP address and register it.
*If registering the instrument for the first time, you will need to select the instrument corresponding to the IP address from the drop-down menu.

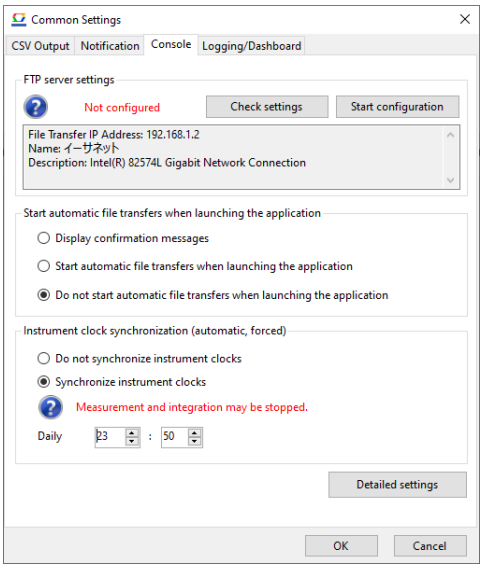


2. Configure automatic time synchronization.

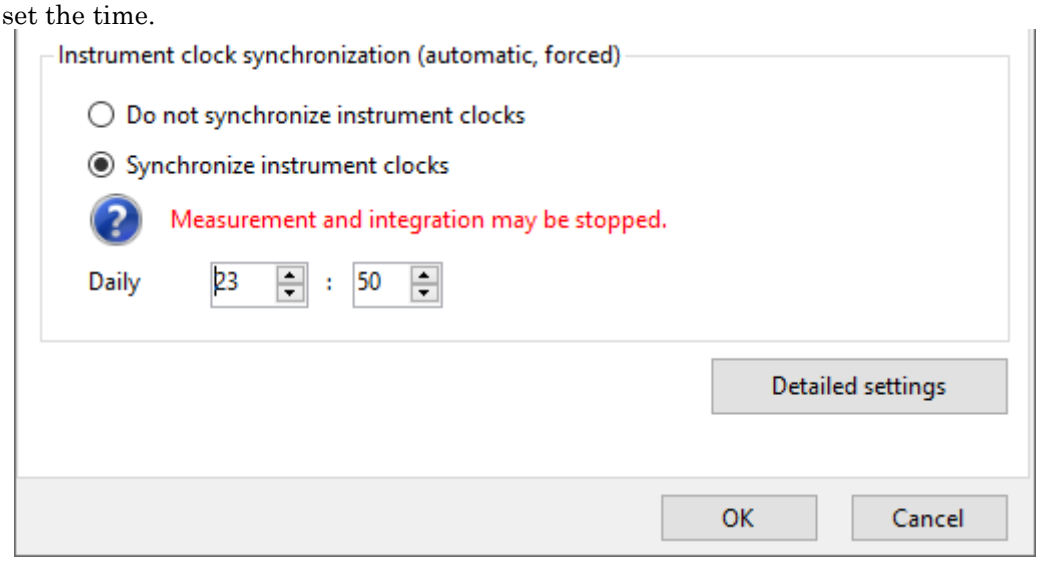
-1. Click the [Settings] button ( ) at the top left.



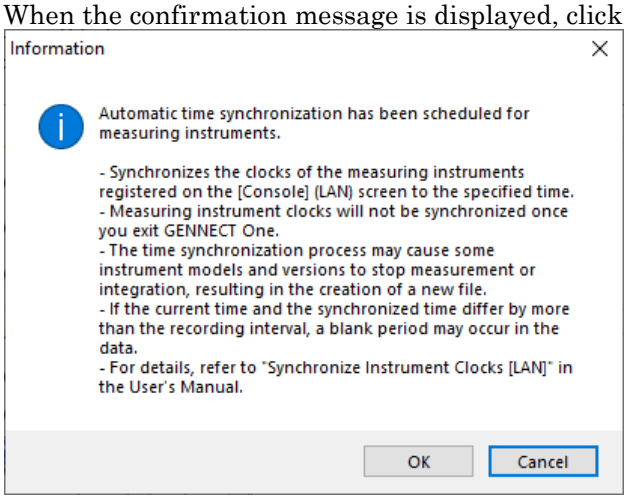
-2. The [Console] tab on the [Common Settings] dialog box will be displayed.



-3. Select [Synchronize instrument clocks] under [Instrument clock synchronization (automatic, forced)] and set the time.



-4. When the confirmation message is displayed, click the [OK] button.



-5. While GENNECT One is running, the clocks of the instruments registered on the HIOKI GENNECT One [Console] tab will be synchronized daily at the specified time.

Synchronizing Instrument Clocks: Details

This section describes how individual instruments' clocks are set. The delay introduced by LAN communications is not taken into account when setting instruments' clocks.

Model	Name	Detailed clock synchronization operation	
PQ3100	POWER QUARITY ANALYZER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	[Ver. 2.10] If the instrument is recording, recording is stopped when the clock is set and then restarted. [Ver. 2.20 or later] The clock is set without stopping recording, even if the instrument is recording. (*1) (*2)
PQ3198	POWER QUARITY ANALYZER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	The clock is set without stopping recording, even if the instrument is recording. (*1) (*3)
PW3360	CLAMP ON POWER LOGGER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	[Ver. 3.20 and later] If the instrument is recording, recording is stopped when the clock is set and then restarted. [Ver. 3.21 or later] The clock is set without stopping recording, even if the instrument is recording. (*1) (*4)
PW3365	CLAMP ON POWER LOGGER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	[Ver. 2.00 or earlier] If the instrument is recording, recording is stopped when the clock is set and then restarted. [Ver. 2.10 or later] The clock is set without stopping recording, even if the instrument is recording. (*1) (*4)
PW3390	POWER ANALYZER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:00" (*5)

		Operation during recording:	If the instrument is integrating values, integration is stopped when the clock is set and then restarted.
PW6001 PW8001	POWER ANALYZER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is integrating values, integration is stopped when the clock is set and then restarted.
LR8400, LR8401, LR8402, LR8450, LR8450-01 LR8410 LR8101, LR8102	MEMORY HiLOGGER WIRELESS LOGGING STATION DATA LOGGER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is recording, recording is stopped when the clock is set and then restarted.
MR6000	MEMORY HiCORDER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is recording, recording is stopped when the clock is set and then restarted.
ST5680	DC HIPOT TESTER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is recording, recording is stopped when the clock is set and then restarted.
RM3545A	RESISTANCE METER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is recording, recording is stopped when the clock is set and then restarted.
DM7275, DM7276	MEMORY HiCORDER	Reference time:	Computer time
		Timing:	When the reference time reaches "hh:mm:ss.000"
		Operation during recording:	If the instrument is recording, recording is stopped when the clock is set and then restarted.

(*1) If the reference time and instrument time differ by more than the recording interval, there may be a blank interval in the recording data. It is recommended to stop recording before synchronizing an instrument's clock.
(*2) Recording may stop and then restart when setting the clock in the following circumstances:
-If the instrument is in the event IN, KEEP, or OUT state, or if the instrument is saving fluctuation data
-If the interval save time is set to 150 or 180 cycles
-If flicker is set to any value other than OFF
-If the reference time and instrument time differ by more than 5 min.
(*3) Recording may stop and then restart when setting the clock in the following circumstances:

-If the instrument is in the event IN, KEEP, or OUT state, or if the instrument is saving fluctuation data
-If the reference time and instrument time differ by more than 1 min.
(*4) Recording may stop and then restart when setting the clock in the following circumstances:
-If the reference time and instrument time differ by more than 5 min.
(*5) Setting the clock may result in a wait time of up to 1 min. as the system waits until XX:XX:00 to set the clock.

Configure IP addresses for LR8101 and LR8102 DATA LOGGER

By launching this tool from GENNECT One, you can discover multiple LR8101 and LR8102 DATA LOGGERs connected to the PC with LAN cable and set the IP address and subnet mask of the [LAN1] interface of LR8101 and LR8102 at once.

Note

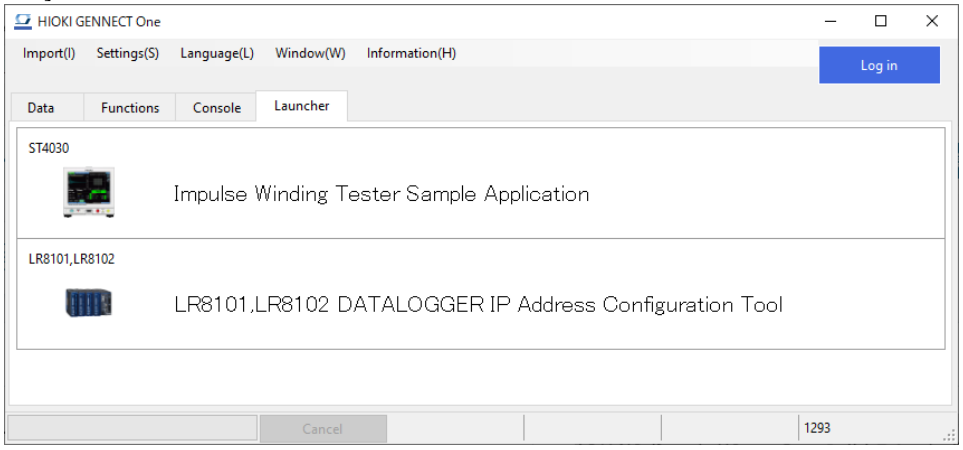
- **When using this tool, connect the PC and the [LAN1] interface of the LR8101,LR8102 with a LAN cable and turn on the instrument.**
- **If the IP address of the PC and that of the LR8101,LR8102 overlap, the instrument cannot be discovered. It is recommended that the IP address of the PC be set in advance to an IP address other than the factory default IP address (192.168.1.2) of the LR8101,LR8102.**

Supported Instruments

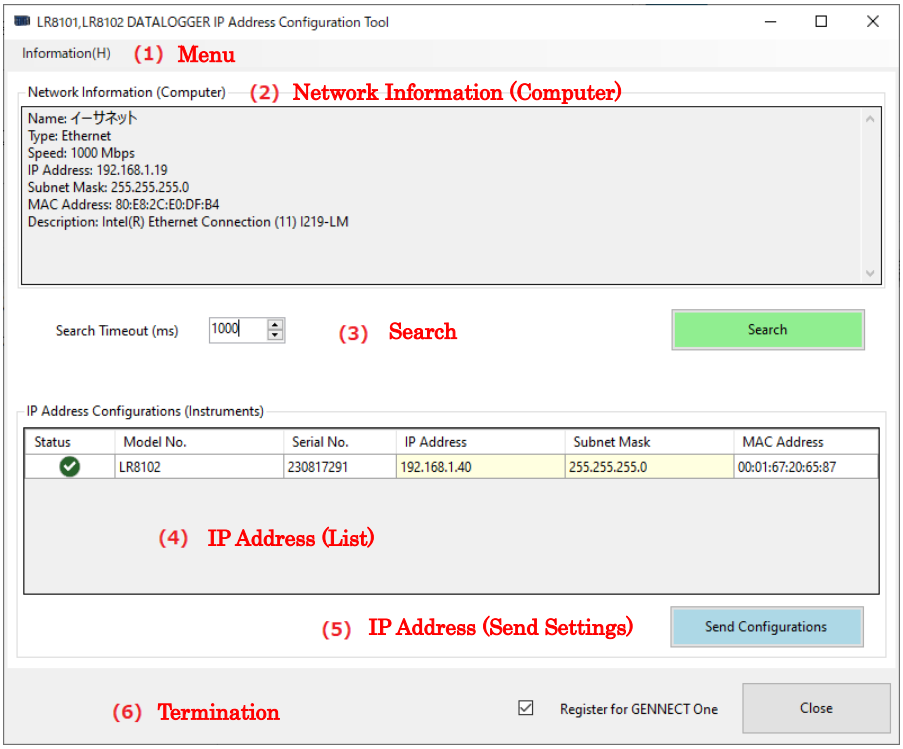
Model	Name	Firmware version	URL
LR8101, LR8102	DATA LOGGER	Ver 1.00 or later	N/A

Launching

Select the [Launcher] tab in GENNECT One and click [LR8101,LR8102 DATALOGGER IP Address Configuration Tool].



Function Description



(1) Menu

Item	Item	Description
Information	Version	Displays version information of this tool.

(2) Network Information (Computer)

Item	Description
Network Information (Computer)	Displays network connection information where LR8101 and LR8102 were discovered.

(3) Search

Item	Description
Search Timeout (ms)	Sets the search result waiting time in milliseconds for LR8101 and LR8102.
[Search] button	Searches for the LR8101 and LR8102 connected to the PC via LAN cable and displays them in the list under [IP Address Setting (Instrument)]. The list also displays the communication status of the LR8101 and LR8102.

(4) IP Address Settings (List)

Item	Edit	Description
Status	—	Displays an icon indicating communication status. See Communication Status for details.
Model No.	—	Displays the model number.
Serial No.	—	Displays the serial number.
IP Address	Yes	Display and edit the IP address.
Subnet Mask	Yes	Display and edit the subnet mask.
MAC Address	—	Displays the MAC address.

(5) IP Address Settings (Send Settings)

Item	Description
[Send Configuration] button	Send the IP address and subnet mask settings to LR8101 and LR8102. Then, a communication check is performed and is reflected in the communication status display.

(6) Termination

Item	Description
[Register for GENNECT One] checkbox	ON: The connection information of LR8101 and LR8102 with communication status of is registered in the instrument list in the [Console] tab of GENNECT One and exits this tool. OFF: Exits this tool without registering the connection information of LR8101 and LR8102 to GENNECT One.
[Close] button	Exits this tool.

Communication Status

Icon	Description
	Communication with the measuring instrument was comfirmed.
	Communication with the measuing instrument cloud not be confirmed. Note - **Mouse over the icon to display the message. When establishing communication between the instrument and the PC, pay attention to the message and set the IP address and subnet mask of the instrument.** - **Immediately after changing the IP address by [Send Configuration] button, the communication between the computer and the instrument may not be confirmed due to the cache data held by the computer. In this case, please wait for about 30 seconds until the cache data is updated, and then click [Search] button.**

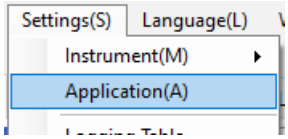
Application settings

Configure the common settings

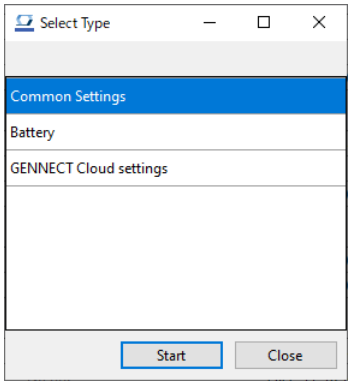
Configure the settings for CSV Export

This section describes how to perform the settings of the decimal symbol and the list separator symbol that is used when data is exported as CSV.

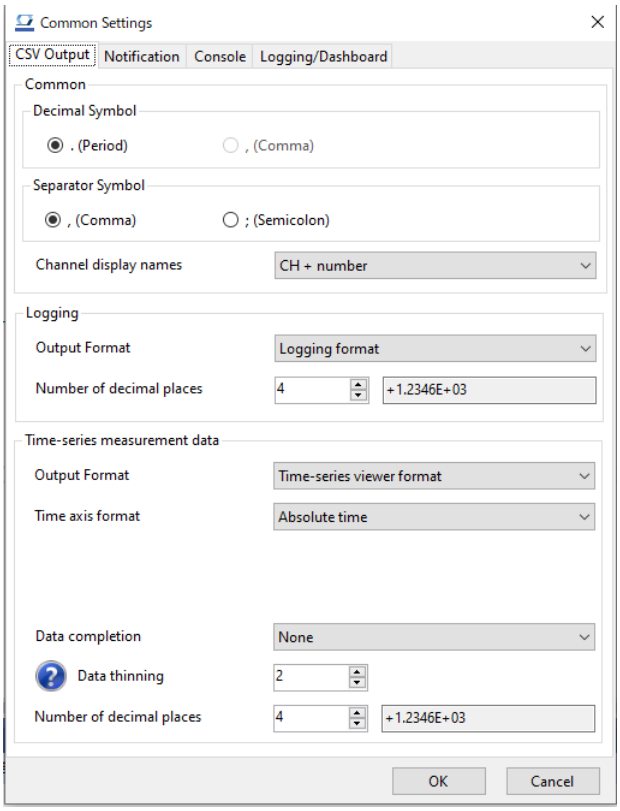
1. Select [Settings]-[Application] in the menu.



2. [Select Type] window is displayed. Click [Start] button, after selecting [Common Settings].



3. The [CSV Output] tab on the [Common Settings] dialog box will be displayed.



Item	Description	
Common	Decimal point symbol	Sets the decimal point symbol to use for numerical values output to CSV files. Period (".") Comma (",")
	Data separator symbol	Sets the character to use as a delimiter in CSV files. Comma (",") Semicolon (";")
Logging	Output format	Sets the CSV output format to use for logging data. Logging format Time-series data format
	Number of decimal places	Sets the number of decimal places to use for measured values being output to logging data CSV files.
	Channel display names	Sets the Channel display names in CSV files. CH + number: Outputs the channel display name in the format "CH 1," "CH 2," "CH 3," etc. The numbers are the same as those used in [Channel information]. ID Name: Outputs the channel-specific ID as the channel display name. Examples: Urms1 ID Name + Model#Serial number: Outputs the channel-specific ID + Model#Serial numberas the channel display name. Examples: Urms1-PW8001-12#230312345
Time-series measurement data	Output format	Displays the CSV output format for time-series data. Time-series data format

	Time axis format	Sets the display format for time stamps in time-series data. Absolute time Relative time
	Relative time display format	Sets the time display format to use when the time-series axis format has been set to [Relative time]. Automatic s (seconds) point
	Relative time	Sets the reference position for displaying 0s when the time axis format is "relative time". Trigger position as 0s The beginning as 0s
	Data completion	Specifies whether to complete measured values for times for which there is no measurement data when measurement parameters (channels) with different interval times exist in the time-series data being output to a CSV file. None: Do not complete measured values for times for which there is no measurement data. Complete using last measured value: Complete measured values for times for which there is no measurement data using the last measured value.
	Data thinning	Specifies whether to thin intermediate data points when outputting time-series data to a CSV file. Example: 1: No data thinning 2: Output 1 point for every 2 points. 3: Output 1 point for every 3 points. ...
	Number of decimal places	Specifies the number of decimal places to use for measured values for time-series data being output to a CSV file.

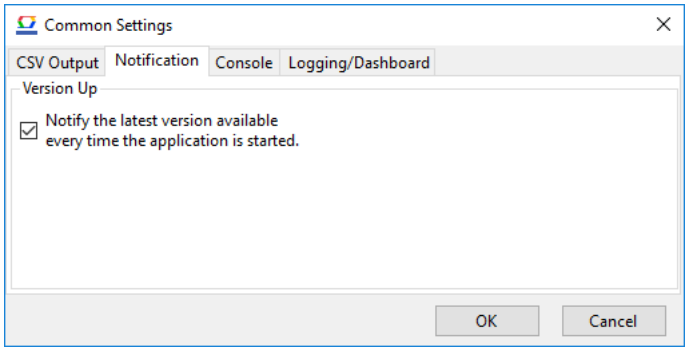
*You can not select [,(Comma)] for both [Decimal Symbol] and [Separator Symbol].

See Output data in CSV/Image format for how to output measured data as CSV.

4. Click [OK] button.

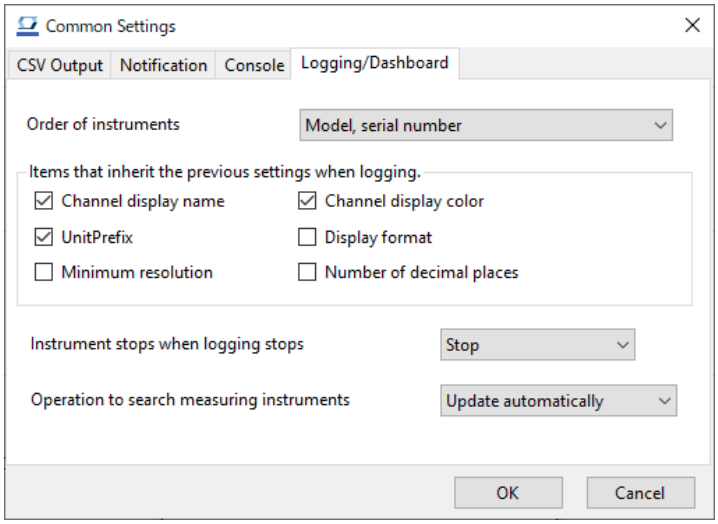
Configure the setting for Version Up Notification

1. Check the [Notify the latest version available every time the application started] if you want to be informed of the latest version available every time you start the application.



Configuring logging/dashboard settings

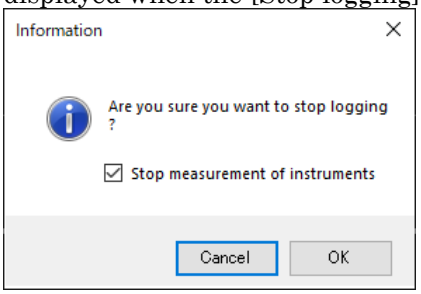
This section describes how to configure logging/dashboard settings.



Item	Description	
Order of instruments	Model, serial number	Order instruments by model and then serial number when displaying them in logging data.
	Instrument list	Order instruments as they are shown in the instrument list when displaying them in logging data.
Items that inherit the previous settings when logging.	Checked and ON	Channel display name, Channel display color, Unit prefix、Display format, Minimum resolution、Number of decimal places When each item is checked and turned ON, logging is performed with the previous settings inherited.
	Unchecked and OFF	Channel display name, Channel display color, Unit prefix、Display format, Minimum resolution、Number of decimal places When each item is unchecked and turned OFF, logging is performed with the default settings without inheriting the previous settings.
Instrument stops when logging stops (*1)	Not stop	Stops logging without stopping the measurement of the target instrument when logging stops.
	stop	Stops the measurement of the target instrument when logging stops and ends logging.
Operation to search measuring instruments	No update automatically	When the selection screen for logging and other measurement devices is opened, automatic search for measurement devices is not performed.
	Update automatically	Automatic search for measuring instruments is performed when the selection screen for logging and other

		measuring instruments is opened.

*1: Specify the stop operation other than when the [Stop Logging] button at the bottom left of the logging viewer is pressed.
For the stop operation when the [Stop logging] button is pressed, select the operation in the message displayed when the [Stop logging] button is pressed.

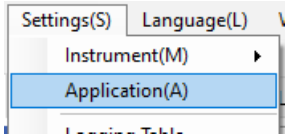


Configure the settings for battery tester

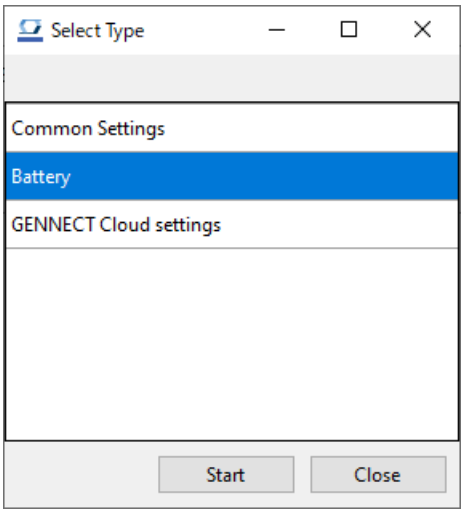
Manage Threshold

Here explains how to create/edit/delete the threshold or profile table without USB communication with Battery Tester.

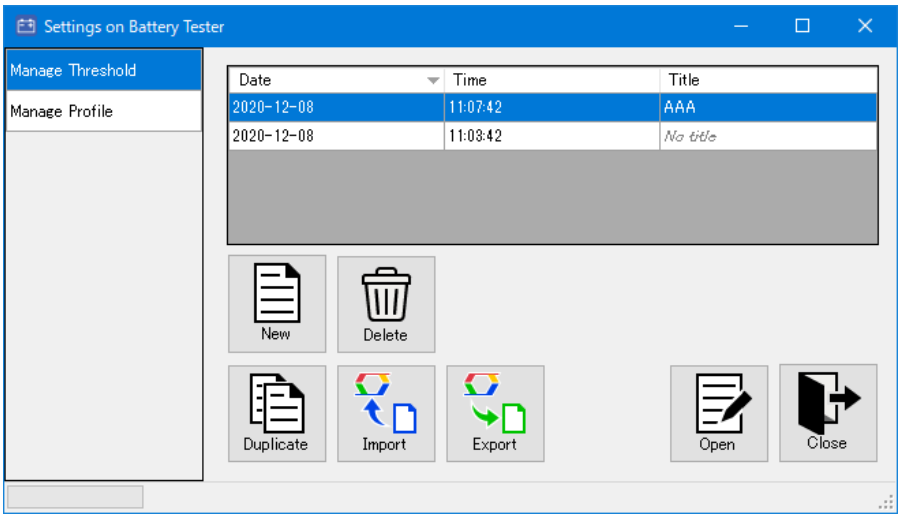
1. Select [Settings]-[Application] in the menu.



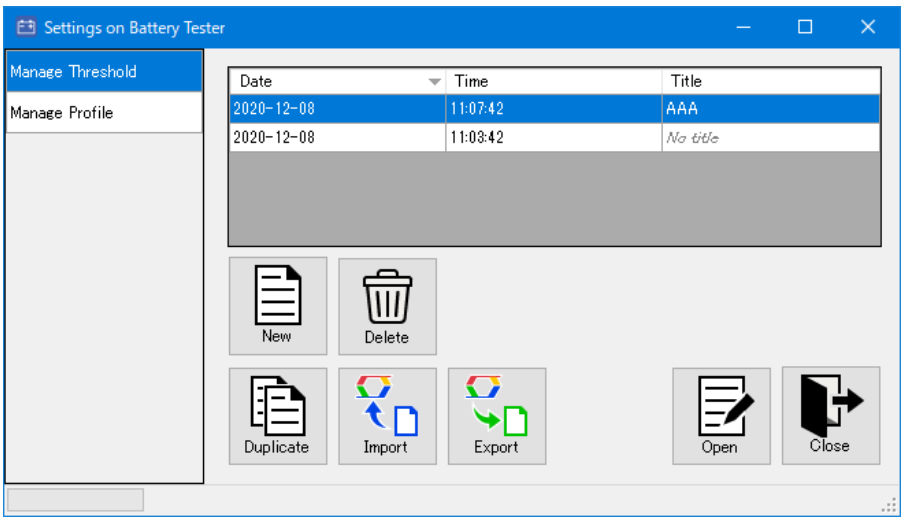
2. [Select Type] window is displayed. Click [Start] button, after selecting [Battery].



3. [Settings on Battery Tester] window is displayed.



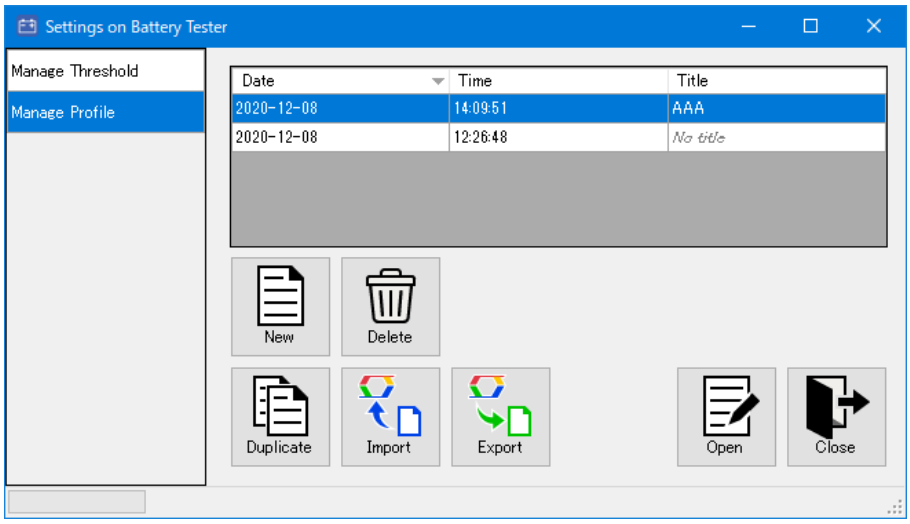
4. Select [Manage Threshold] to create/edit/delete the threshold table.



*See below for how to manage the threshold.

- CREATE THE NEW THRESHOLD TABLE
- EDIT THE THRESHOLD TABLE
- DELETE THE THRESHOLD TABLE

5. Select [Manage Profile] to create/edit/delete the profile table.



*See below for how to manage the profile.

- CREATE THE NEW PROFILE TABLE (BT3554-50)
- EDIT THE PROFILE TABLE (BT3554-50)
- DELETE THE PROFILE TABLE (BT3554-50)

Linking GENNECT One to GENNECT Cloud

GENNECT Cloud is a dedicated cloud service operated by HIOKI.
By using this application with GENNECT Cloud, you can remotely monitor or operate (Remote monitoring mode) instruments connected to a computer and share files with another user in your account.
For more information, see the following:

➢ GENNECT Cloud - GENNECT One

*To link GENNECT One to GENNECT Cloud, you'll need the following:

- **Internet connectivity for your PC**
- A GENNECT Cloud account
  If you don't have an account, please create one.

➢ Preparing to Use GENNECT Cloud

- **The ability to receive email**
  Please enable your email client to receive messages from the @mail.gennect.net (if you are outside of China) or @mail.gennect.cn (if you are inside of China) domain.

About Internet Connection

An Internet connection is required to use the functions linking GENNECT Cloud. Before using this function, please make sure that the PC on which this application is installed is connected to the Internet.

Note

If your network has access restrictions, some of the functions may not be available. Please consult your network administrator and consider removing the restriction.

Network requirements for lines used for GENNECT One

If you are using GENNECT Cloud outside of China

Function Name	Network Destination (Domain)	Network Requirements
Check or download the latest installer.	Application Server (app.hioki.com)	[HTTPS] Communication using outbound TCP:443 port is permitted **(*1) (*2).**
Login, File Sharing	GENNECT Cloud (cloud.gennect.net) (app.gennect.net)	[HTTPS] Communication using outbound TCP:443 port is permitted **(*1) (*2).**
Remote monitoring mode	AWS IoT Core (iot.cloud.gennect.net)	[MQTTS] Communication using outbound TCP:443 port and TLS intercommunication is allowed to AWS IoT Core (iot.cloud.gennect.net) **(*1).** No TLS decryption is performed on the route **(*3)**.
Remote control of instruments (Console function)	(cloud-relay.gennect.net)	[SSH] Communication using outbound TCP:443 port is allowed to cloud-relay.gennect.net **(*1).**

If you are using GENNECT Cloud in China

Function Name	Network Destination (Domain)	Network Requirements
Check or download the latest installer.	Application Server (one.gennect.cn)	[HTTPS] Communication using outbound TCP:443 port is permitted **(*1) (*2).**
Login, File Sharing	GENNECT Cloud	[HTTPS]

	(gennect.cn) (app.gennect.net)	Communication using outbound TCP:443 port is permitted **(*1) (*2)**.
Remote monitoring mode	AWS IoT Core (iot.cloud.gennect.cn)	[MQTTS] Communication using outbound TCP:443 port and TLS intercommunication is allowed to AWS IoT Core (iot.cloud.gennect.cn) **(*1)**. No TLS decryption is performed on the route **(*3)**.
Remote control of instruments (Console function)	(cloud-relay.gennect.cn)	[SSH] Communication using outbound TCP:443 port is allowed to cloud-relay.gennect.cn **(*1)**.

(*1) Permit access to this domain if there are access restrictions by filtering software or other means.
(*2) Permit file downloads and uploads to this domain if there are restrictions on file downloads and uploads.
(*3) If TLS decryption traffic detection is in place on the path of your network, configure this domain to allow communication without TLS decryption (use of allow rules with Server Name Indication (SNI) is recommended).

Preparing to Use GENNECT Cloud

GENNECT Cloud offers four plans: Free, Standard, Pro, and Trial. The Free and Trial plans are both free of charge. Standard and Pro plans are fee-based.
See below for more information about available plans.

- GENNECT Cloud license plans

The procedure for creating a user account differs for the Trial plan and the other plans.

To use the GENNECT Cloud Free, Standard, or Pro plan

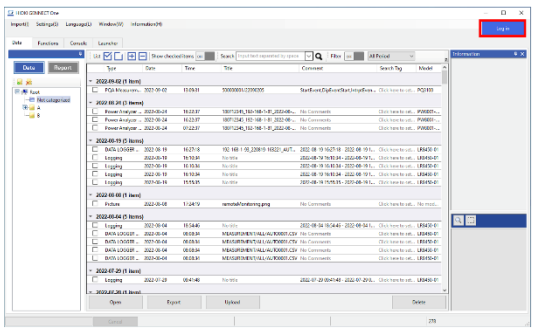
Access the GENNECT Cloud website to create an account.
If you are using the GENNECT Cloud integration function outside of China, please access https://cloud.gennect.net/app/ , if you are using it in China, please access https://gennect.cn/app/.

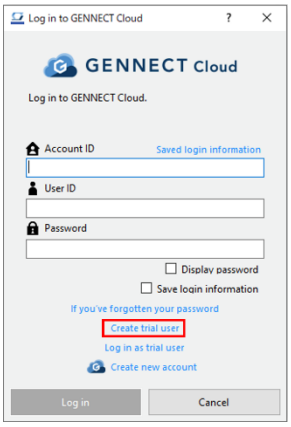
Please refer to the GENNECT Cloud online help for details.
https://www.gennect.net/en/cloud/manual/1-2

To use the GENNECT Cloud Trial plan

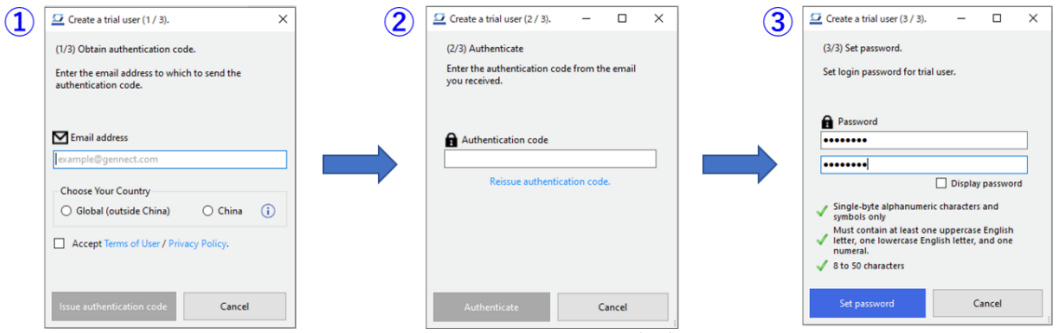
This application is used to create users for GENNECT Cloud Trial plan accounts.

1. Click the [Log In] button at the top right of the application window.
2. The [Log in to GENNECT Cloud] window will be displayed. Click [Create a trial user].





3. The [Create a trial user] window will be displayed.

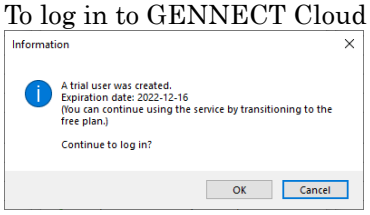


① Enter an email address and select your country (*1). Review the Terms of User and Privacy Policy and select the [Accept Terms of User / Privacy Policy] checkbox. Click [Issue authentication code]. A 6-digit authentication code will be sent to the email address you entered.
(*1) Select [Global] if you use the GENNECT Cloud integration function outside of China, or [China] if you use it within China.

② Enter the authentication code and click [Authenticate].
Click [Reissue authentication code] to send another authentication code to the email address you entered.

③ Set a password.
Enter a password that is at least 8 characters in length. Passwords may include single-byte numerals, English uppercase letters, and English lowercase letters. Enter the same password again in the [Enter again] field and click [Set password].

4. Once the user has been created, the message [The trial user was created.] will be displayed.
To log in to GENNECT Cloud using the newly created Trial user, click [OK].

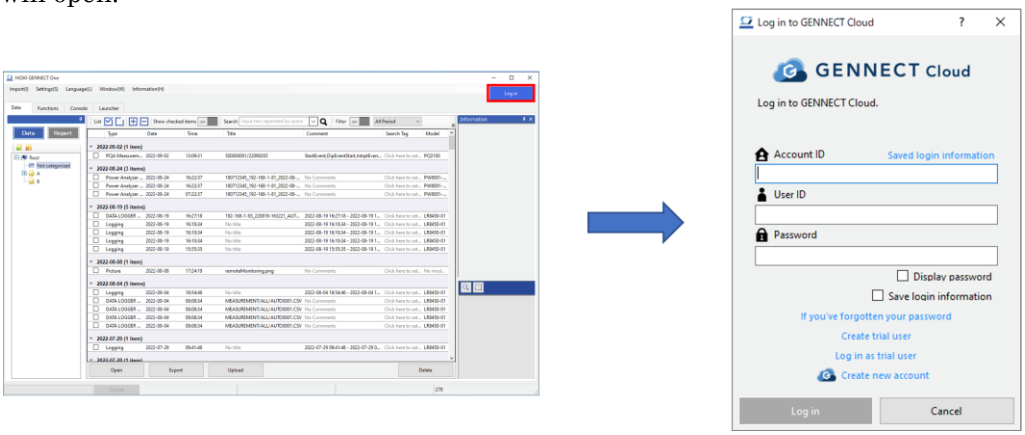


Logging In to GENNECT Cloud

*If you don't have a GENNECT Cloud account, please create one first.

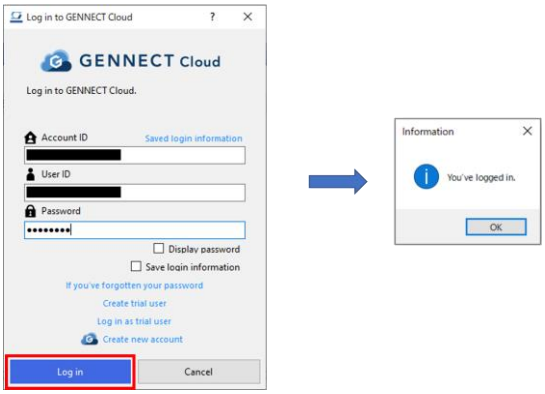
➢ Preparing to Use GENNECT Cloud

1. Launch GENNECT One.
2. Click the [Log In] button at the top right of the application window. The [Log in to GENNECT Cloud] window will open.



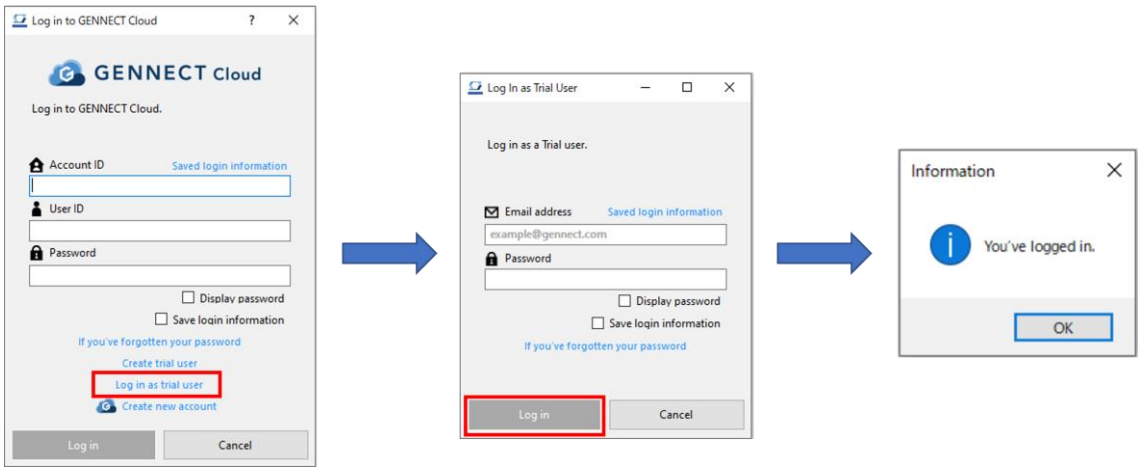
If you're using a GENNECT Cloud Free, Standard, or Pro plan

Enter your [Account ID], [User ID], and [Password] and click the [Log In] button.
If the login is successful, the message [You've logged in.] will be displayed.



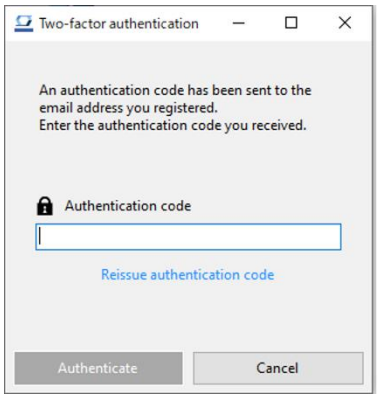
If you're using the GENNECT Cloud Trial plan

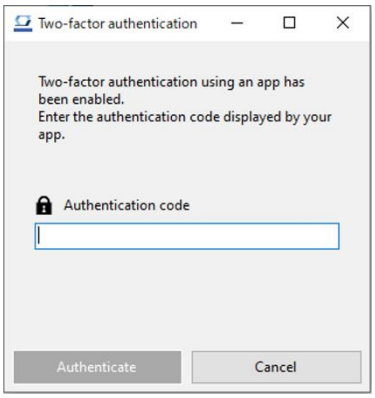
1. Click [Log in as trial user] on the [Log in to GENNECT Cloud] window.
2. The [Log in as a trial user] window will be displayed. Enter the [Email address] and [Password] you used to create the trial user and then click the [Log In] button.
   If the login is successful, the message [You've logged in.] will be displayed.



If you've enabled two-factor authentication

If you've enabled two-factor authentication, a window asking you to enter an authentication code will be displayed.





- **If you've enabled two-factor authentication using email:**
  Enter the authentication code that was sent to the email address you registered and click [Authenticate].

- **If you've enabled two-factor authentication using an app:**
  Enter the authentication code displayed by the two-factor authentication app you're using (Authy, etc.) and click [Authenticate].

For more information about how to enable two-factor authentication, please see the GENNECT Cloud online help.

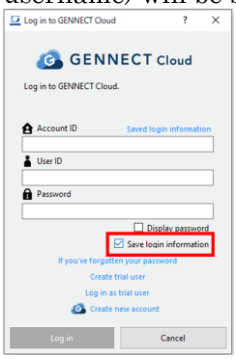
➢ (Application) Enabling two-factor authentication for a user | GENNECT Cloud
https://www.gennect.net/en/cloud/manual/10-3

Saving/deleting login information

You can save the information needed to log in to GENNECT Cloud (account ID and user ID) in the application. If you save your login information, you can eliminate the need to enter your account ID and user ID the next time you log in.

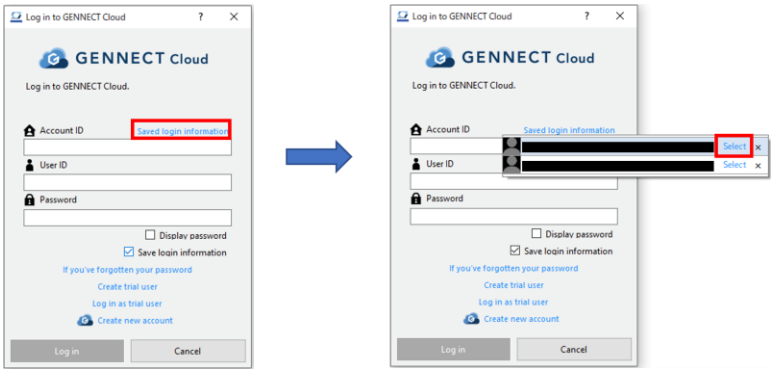
Saving login information

1. Log in with the [Save login information] checkbox selected on the [Logging In to GENNECT Cloud] window. Once you've successfully logged in, your user information (account ID, user ID, user icon, and username) will be saved in the application.



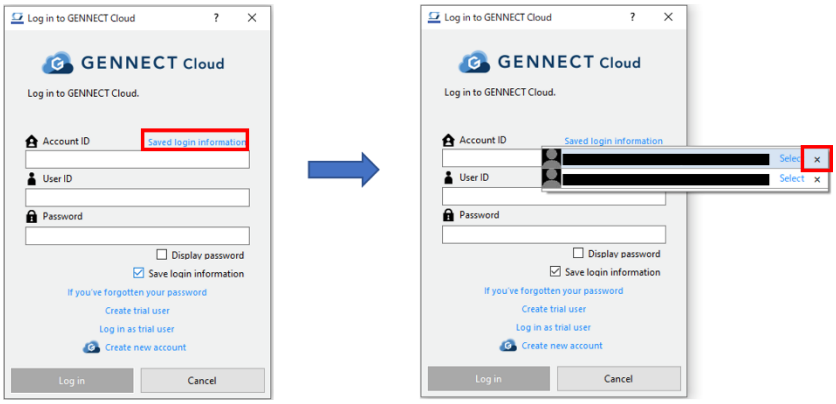
Using saved login information

1. Click [Saved login information] on the [Log in to GENNECT Cloud] window.
2. A list of saved login information will be displayed. Select the login information you wish to use and click [Select].



Deleting saved login information

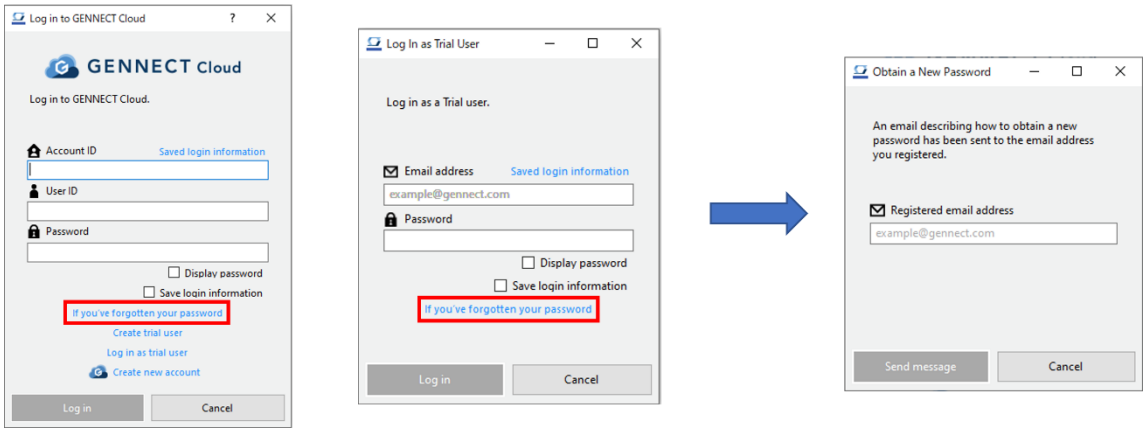
1. Click [Saved login information] on the [Log in to GENNECT Cloud] window.
2. A list of saved login information will be displayed. Select the login information you wish to delete and click [Delete].



Obtaining a New Password

An email including a link for obtaining a new password will be sent to the email address you registered with GENNECT Cloud. You can set a new password by following the URL for obtaining a new password.
*To obtain a new password for a user who has not registered an email address, please contact your account administrator.

1. Click [If you've forgotten your password] on the [Log in to GENNECT Cloud] or [Log in as trial user] window.
2. When the [Obtaining a new password] window opens, enter the email address you registered and click [Send message].
3. The message will be sent to the email address you entered. Follow the instructions on the web page accessed via the URL in the email to set a new password.


Log in to GENNECT Cloud
GENNECT Cloud
Log in to GENNECT Cloud.
Account ID
Saved login information
User ID
Password
Display password
Save login information
If you've forgotten your password
Create trial user
Log in as trial user
Create new account
Log in
Cancel
Log In as Trial User
Log in as a Trial user.
Email address
Saved login information
example@gennect.com
Password
Display password
Save login information
If you've forgotten your password
Log in
Cancel
Obtain a New Password
An email describing how to obtain a new password has been sent to the email address you registered.
Registered email address
example@gennect.com
Send message
Cancel

Sharing and Managing Data with GENNECT Cloud

By logging in to GENNECT Cloud (*1), you can link GENNECT One to GENNET Cloud together to share and manage measurement data among multiple users.

The application can be used with GENNECT Cloud to provide the following data sharing and management functionality:

- Sharing measurement files on a local PC by uploading them to the cloud
- Downloading measurement files from the cloud to a local PC
- Opening measurement files stored in the cloud via GENNECT One
- Outputting measurement files stored in the cloud on a local PC
- Sharing logging data automatically output by the logging and dashboard functionality by automatically uploading it to the cloud (*2)
- Upload and share threshold and profile information of battery testers BT3554, BT3554-01 and BT3554-50 on the cloud (GENNECT Cloud Standard/Pro plans)

***1: For more information about how to log in to GENNECT Cloud from GENNECT One, see the following:**

➢ Logging In to GENNECT Cloud

***2: Automatic uploading of logging data will stop if the upper limit on cloud storage space is reached. It is recommended to use this function with a GENNECT Cloud Standard or better plan.**

For more information about the GENNECT Cloud storage space allowance for each plan, see the following:

➢ GENNECT Cloud license plans

For more information about how to enable automatic uploading of logging data, see the following:

➢ [Logging data] tab

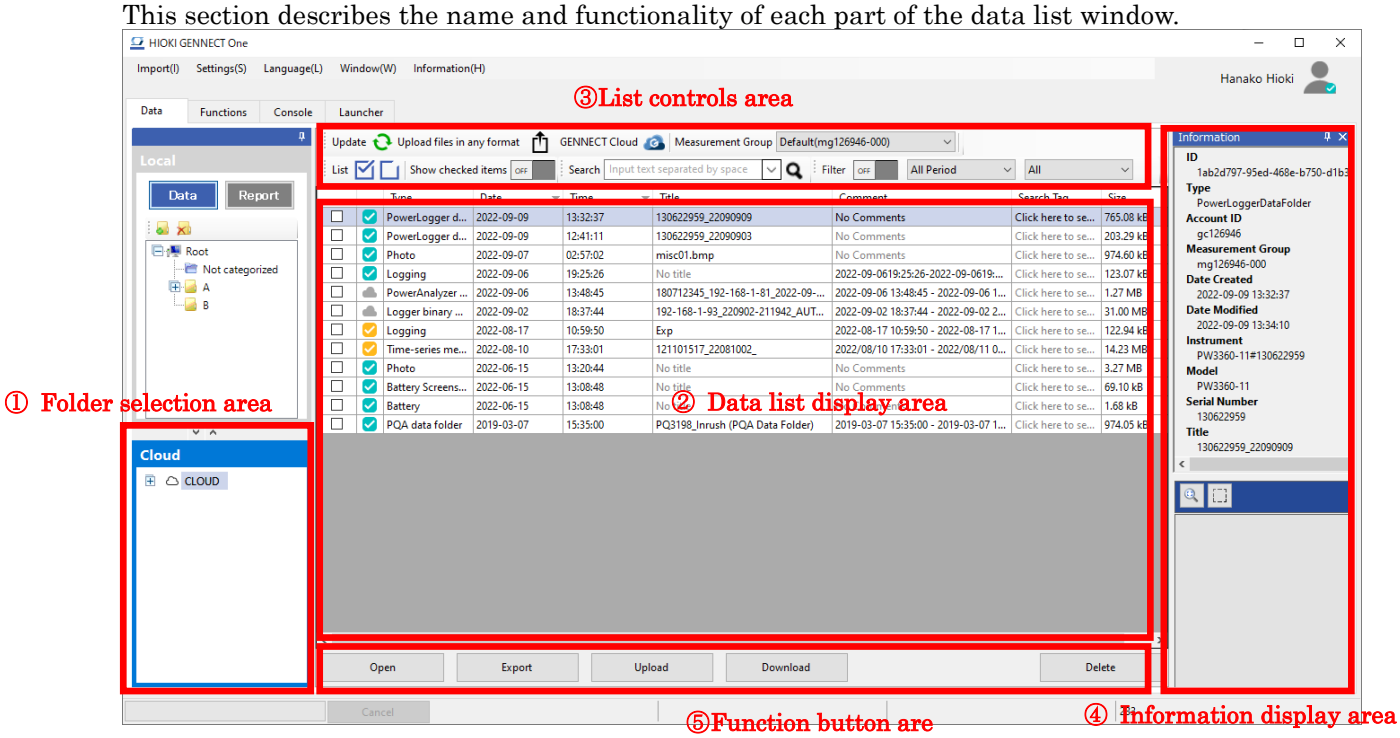
Limitations

Limitations by GENNECT Cloud plan

Item	Limitation	Remarks
Number of users	GENNECT Cloud plan: Number of users Trial: 1 Free: 3 Standard: 10 Pro: 100	Please refer to the GENNECT Cloud online help for details.
Storage space	GENNECT Cloud plan: Storage space Trial: 512 MB Free: 5 GB Standard: 50 GB Pro: 500 GB	Please refer to the GENNECT Cloud online help for details.
Number of measurement groups	GENNECT Cloud plan: Number of measurement groups Trial: 1 Free: 1 Standard: 10 Pro: 100	Please refer to the GENNECT Cloud online help for details.
Number of file shares -Battery Threshold, -Battery profile information	GENNECT Cloud plan: Number of file shares Standard: 30 Pro: 100	This feature is only available on GENNECT Cloud Standard or Pro plans. For more information on this feature, please refer to the following ➢ Share and manage battery tester threshold and profile information in the cloud (GENNECT Cloud Standard / Pro plans)

Window layout (overall)

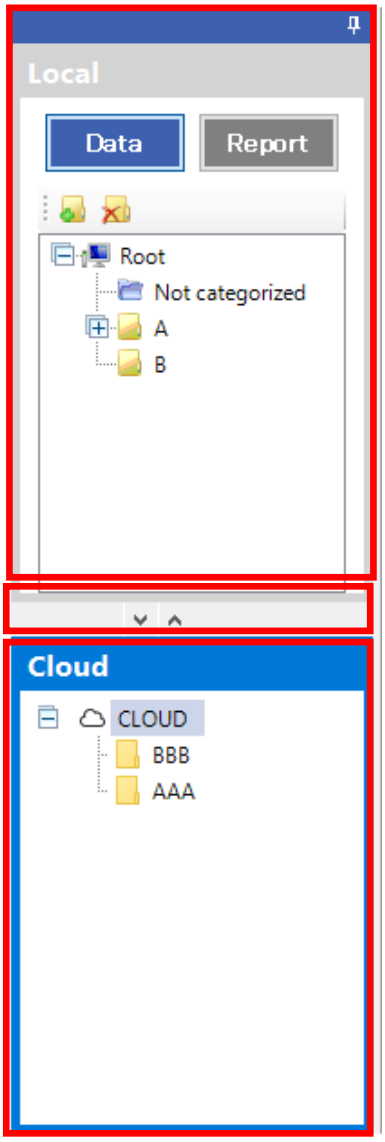
Once Logging In to GENNECT Cloud, the [Data] tab will show the following information.
This section describes the name and functionality of each part of the data list window.



Name	Functionality
①Folder selection area	Selects the folder level for measurement data stored in GENNECT Cloud. Select a folder level to change the content shown in the data list display area. For more information, see the following: ➢ Window layout and functionality (①Folder selection area)
②Data list display area	Displays a list of measurement data linked to GENNECT Cloud. The data list includes the following information: status, which indicates the upload state; data type; file size; and instrument model. You can also edit the data title, comment, and tags. For more information, see the following: ➢ Window layout and functionality (②Data list)
③List controls area	Allows you to perform operations including updating the data list, changing the measurement group, and manipulating folders. For more information, see the following: ➢ Window layout and functionality (③List controls area)
④Information display area	Displays detailed information about the measurement data selected in the data list along with image file thumbnails. For more information, see the following: ➢ Display layout and functionality (④Information display area)
⑤Function button area	Provides operations for linking GENNECT Cloud with data, including uploading, downloading, and deleting measurement files. For more information, see the following: ➢ Display layout and functionality (⑤Function button area)

Window layout and functionality (□Folder selection area)

When you log in to GENNECT Cloud, you can switch the display between two types of data list.



Folder selection area (local)

Select a folder to display a list of measurement data saved on the local PC in the data list display area.
While you're logged in, you can upload measurement files that exist only on the local PC to GENNECT Cloud.

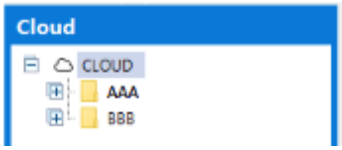
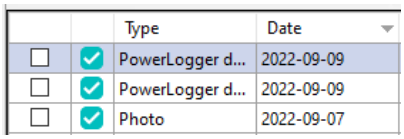
"Expand" buttons

Expands the folder selection area (local).
Expands the folder selection area (cloud).

Folder selection area (cloud)

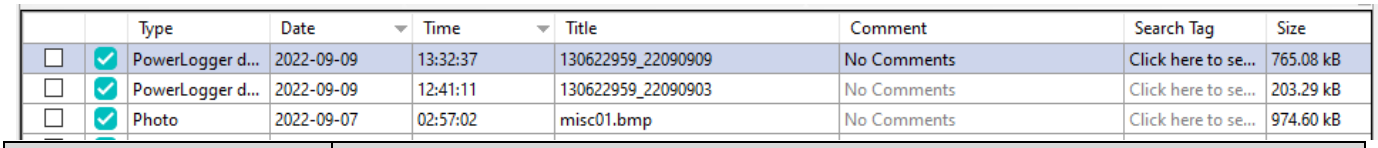
Select a folder to display a list of measurement data linked to GENNECT Cloud in the data list display area.

Switching between cloud and local data lists

Name	Functionality
Data list (local)	Select the folder tree labeled [Local] to display a list of measurement data saved on the local PC. If you're logged in to GENNECT Cloud, you can click the [Upload] button to upload measurement data saved only on the local PC. Uploaded measurement data can be managed using the GENNECT Cloud drive window or the GENNECT One data list (cloud).
Data list (cloud)	Select the folder tree labeled [Cloud] to display a list of measurement data linked to GENNECT Cloud. This data list allows you to view and manage measurement data that has been shared with other users in the same account.  

Window layout and functionality (□Data list)

The data list (cloud) consists of a list of measurement data linked to GENNECT Cloud.



		Type	Date	Time	Title	Comment	Search Tag	Size
☐	☑	PowerLogger d...	2022-09-09	13:32:37	130622959_22090909	No Comments	Click here to se...	765.08 kB
☐	☑	PowerLogger d...	2022-09-09	12:41:11	130622959_22090903	No Comments	Click here to se...	203.29 kB
☐	☑	Photo	2022-09-07	02:57:02	misc01.bmp	No Comments	Click here to se...	974.60 kB

<table>
<tr><th>Item</th><th>Functionality</th></tr>
<tr><td>Checkbox</td><td>Used to select measurement data when performing operations such as uploading, downloading, outputting, or deleting data.</td></tr>
<tr><td>Status</td><td>Displays a status icon indicating the status of the link between the measurement data and GENNECT Cloud.
The following statuses are indicated:
<table>
<tr><th>Icon</th><th>Description</th></tr>
<tr><td>☑</td><td>[Full synchronization]
Files exist both in the cloud and in local storage, and measurement data content is identical.</td></tr>
<tr><td>☑</td><td>[Partial synchronization]
Files exist both in the cloud and in local storage, and measurement data content differs. The status can be changed to [Full synchronization] by either downloading changes in the cloud to the [Data list (cloud)] or uploading changes in the [Data list (cloud)] to the cloud.</td></tr>
<tr><td>☁</td><td>[Not downloaded]
Files only exist in cloud storage.
Files stored in the cloud can be downloaded from GENNECT One.</td></tr>
<tr><td>📁</td><td>[Not uploaded]
Files only exist in local storage.
Files from another user in the same account can be downloaded by uploading files from GENNECT Cloud.</td></tr>
<tr><td>!</td><td>[Not uploaded (different terminal)]
Files only exist in the local storage of a different terminal.
This display is only generated when a remote GENNECT One session (remote monitoring mode) or a GENNECT Remote gateway is operating while configured to share only file attributes with the cloud.
To download this file, you must first upload the file from the GENNECT Cloud web application. Then the file can be downloaded from GENNECT One.</td></tr>
</table></td></tr>
<tr><td>Data type</td><td>Displays the type of measurement data.</td></tr>
<tr><td>Creation time and date</td><td>Indicates the time and date at which the measurement data was created, using the local PC's timezone.</td></tr>
<tr><td>Title</td><td>Displays and allows editing of the title of the measurement data.
You can edit the comment by double-clicking the cell.</td></tr>
<tr><td>Comment</td><td>Displays and allows editing of comments for the measurement data.
You can edit the comment by double-clicking the cell.</td></tr>
<tr><td>Tag</td><td>Displays and allows editing of tags for the measurement data.
You can edit or select the tags by double-clicking the cell.</td></tr>
<tr><td>Size</td><td>Displays the measurement data's file size.</td></tr>
<tr><td>Model</td><td>Displays the model of instrument related to the measurement data.</td></tr>
</table>

Window layout and functionality (□List controls area)

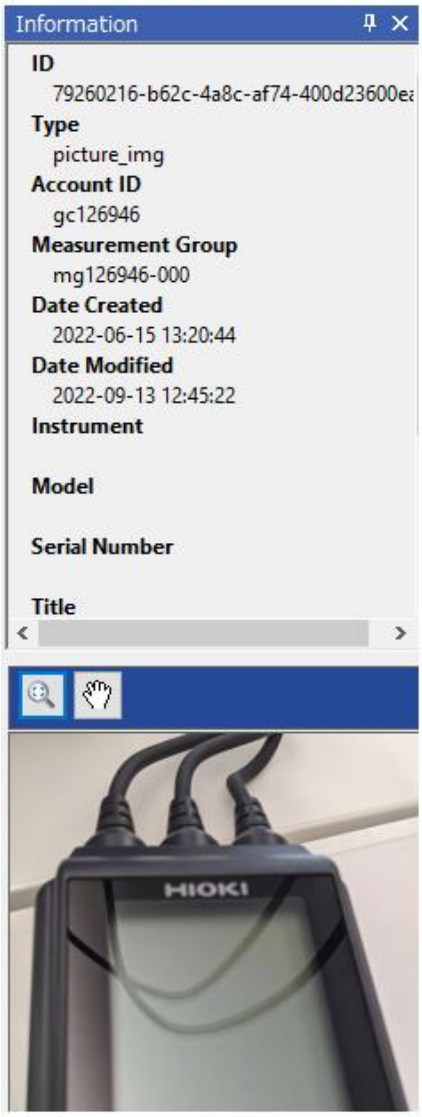
Allows you to perform operations including updating the data list, changing the measurement group, and manipulating folders.

Name	Functionality
[Update] button	Acquires information from GENNECT Cloud and updates the data list.
[Upload user file] button	Uploads a user-specified file other than measurement data to GENNECT Cloud.
[GENNECT Cloud] button	Opens the GENNECT Cloud web application in a web browser. Please refer to the GENNECT Cloud online help for details about the GENNECT Cloud web application. ➢ GENNECT Cloud Manual
[Measurement group] selection drop-down menu Default(mg126946-000)	Selects the measurement group to display in the data list. By default, the [Default] measurement group is selected. Please refer to the GENNECT Cloud online help for details about measurement groups. ➢ GENNECT Cloud Manual
[Select all] button	Selects all measurement data displayed in the data list.
[Clear all] button	Deselects all measurement data displayed in the data list.
[Display only selected] button OFF	On: Displays only measurement data in the data list that has been selected. Off: Displays all measurement data in the data list, regardless of whether it has been selected.
[Search] box Input text separated by space	Enter text to use as keywords for refining the measurement data shown in the data list. If using multiple search words, separate them with single-byte spaces. (OR condition)
[Search] button	Displays only measurement data in the data list that partially matches the text entered in the [Search] box.
[Filter] button OFF	On: This button will turn on when you click the [Search] button or display a narrowed range of measurement data by changing the [Date], [Data type], [Instrument model] drop-down menu. Off: Displays measurement data after canceling all of the conditions used to narrow the range of displayed data as described above.
[Date] selection drop-down menu All Period	All dates: Displays measurement data without narrowing it by date. 1 day: Displays measurement data after narrowing the range to data whose update time and date fall within the last day. 1 week Displays measurement data after narrowing the range to data whose update time and date falls within the last week. 1 month Displays measurement data after narrowing the range to data whose update time and date fall within the last month. Specified date: Displays measurement data after narrowing the range to data from the specified interval. By default, [All dates] is selected.

[Data type] selection drop-down menu All	Displays measurement data after narrowing the range based on the [Data type]. By default, [All] is selected.
[Instrument model] selection drop-down menu All	Displays measurement data after narrowing the range based on the [Instrument model]. By default, [All] is selected.

Display layout and functionality (□Information display area)

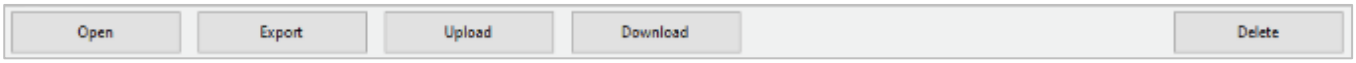
Displays detailed information about the measurement data selected in the data list. If the selected measurement data is an image file, displays a thumbnail image.



Display layout and functionality (□Function button area)

Provides operations for linking GENNECT Cloud with data, including uploading, downloading, and deleting measurement files.
For more information about procedures for sharing and managing GENNECT One measurement data after linking it to GENNECT Cloud, see the following:

- Creating links between GENNECT One and GENNECT Cloud measurement data
- Managing measurement data in the data list (cloud)



Name	Functionality
[Open] button	Opens the measurement data selected in the data list in GENNECT One. If the measurement file does not exist on the local PC, it will be downloaded from GENNECT Cloud. For more information, see the following: ➢ Opening the measurement data in GENNECT One
[Output] button	Outputs the measurement data selected in the data list to an external file. If the measurement file does not exist on the local PC, it will be downloaded from GENNECT Cloud and then output. For more information, see the following: ➢ Outputting measurement data as a file
[Upload] button	Uploads the measurement data selected in the data list to GENNECT Cloud. For more information, see the following: ➢ Uploading measurement data to GENNECT Cloud
[Download] button	Downloads the measurement data selected in the data list to GENNECT One from GENNECT Cloud. For more information, see the following: ➢ Downloading measurement data from GENNECT Cloud
[Delete] button	Deletes the measurement data displayed in the data list after asking the user to select the method of deletion. Methods of deletion: Delete only local files — Deletes only measurement data stored on the local PC. This method can be used to save local storage, since deleted measurement data can be reacquired by downloading it again. Methods of deletion: Delete both local and cloud files — Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud. For more information, see the following: ➢ Deleting measurement data

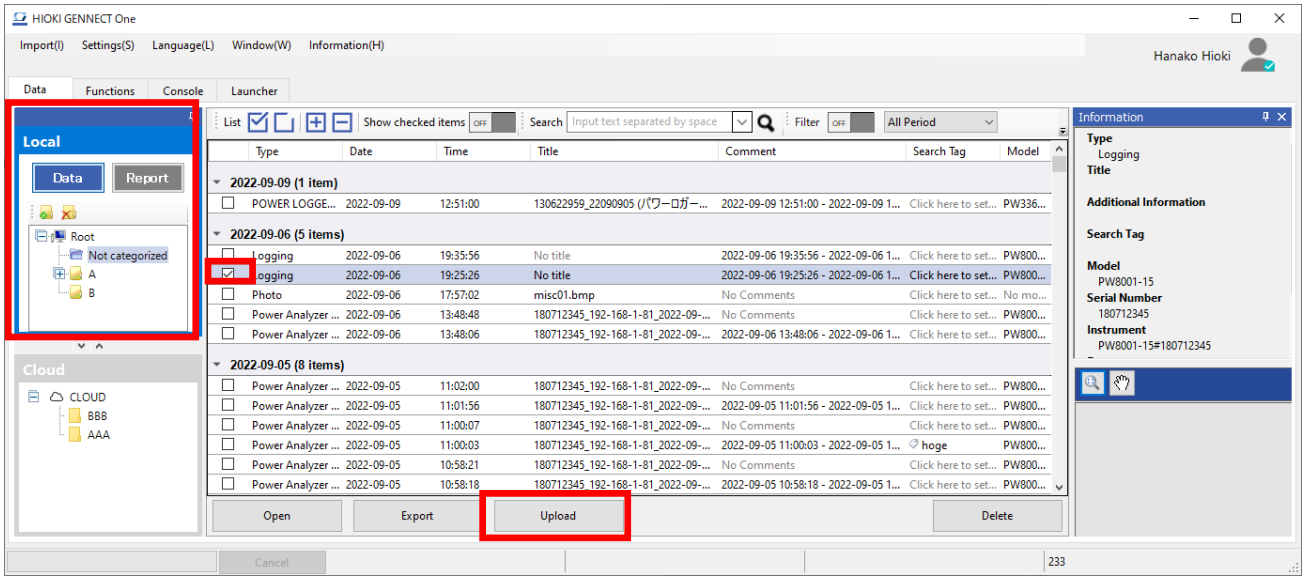
Creating links between GENNECT One and GENNECT Cloud measurement data

This section describes the procedure for creating links between GENNECT One and GENNECT Cloud measurement data.

Uploading measurement data from the data list (local) to GENNECT Cloud

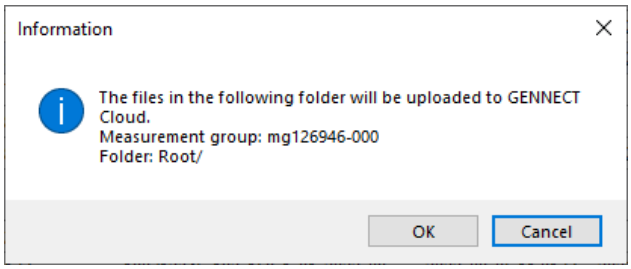
This section describes how to upload measurement data stored in the GENNECT One data list (local) to GENNECT Cloud. Uploaded measurement data will be reflected on the GENNECT Cloud drive window and in the GENNECT One data list (cloud), creating a data link with GENNECT Cloud. Measurement data for which a data link has been created can be shared with other users in the same account.

1. Log in to GENNECT Cloud.
2. Open the data list (local).
3. Select measurement data in the data list (local) and click the [Upload] button.



4. A window asking you to confirm the measurement group and folder to which to upload the data will be displayed. **(*1)**

Review the upload destination in GENNECT Cloud and click the [OK] button.

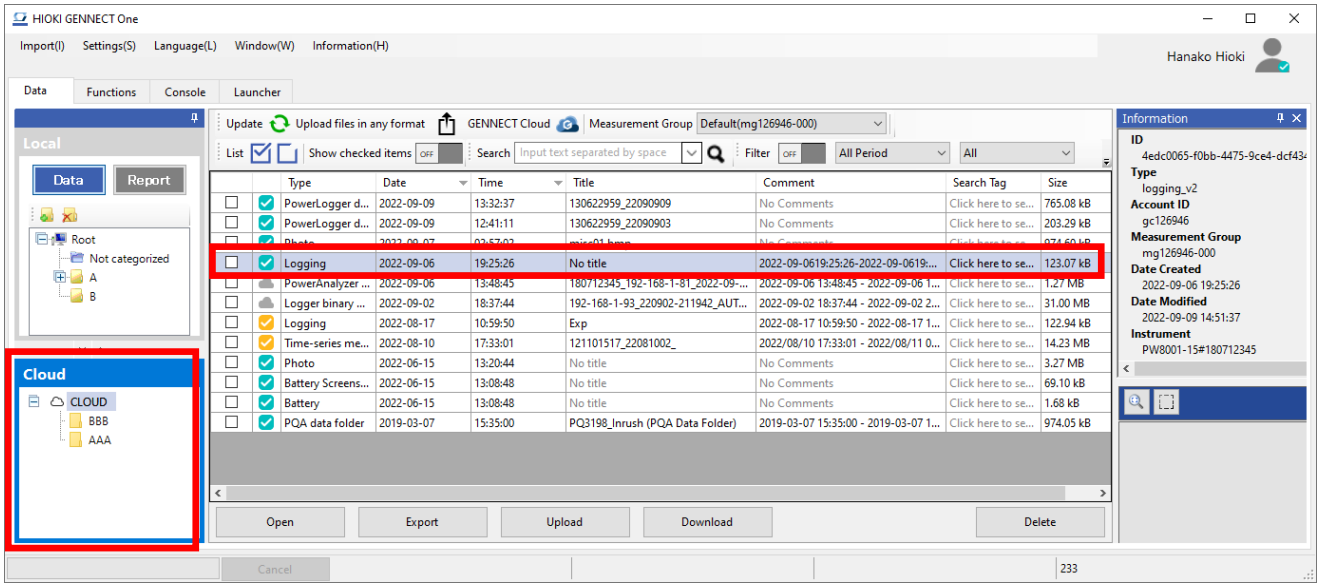


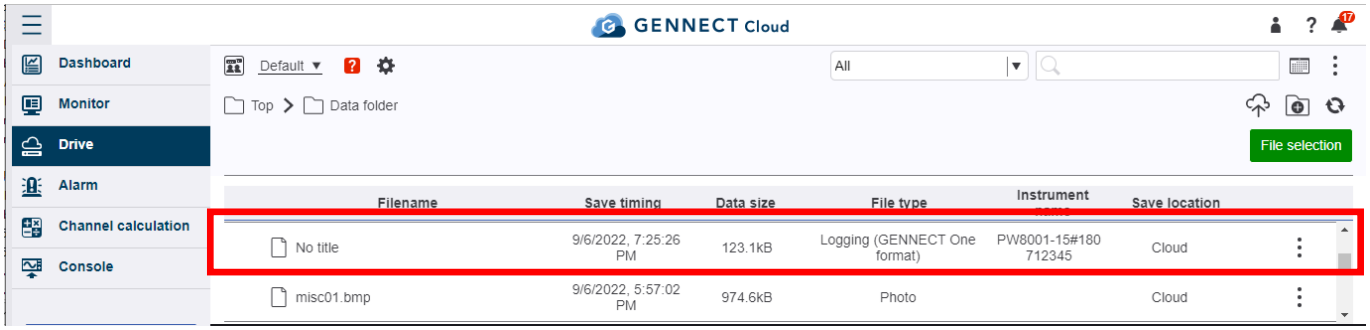
5. Wait for the upload to complete.

6. Measurement data uploaded to GENNECT Cloud will be reflected in the following and made available to be shared with other users in the same account:

·GENNECT One data list (cloud) window

·GENNECT Cloud drive window





Note

***1: For more information about changing the destination measurement group and folder when uploading measurement data from the data list (local), see the following:**

- [Data list (local)] tab

Managing measurement data in the data list (cloud)

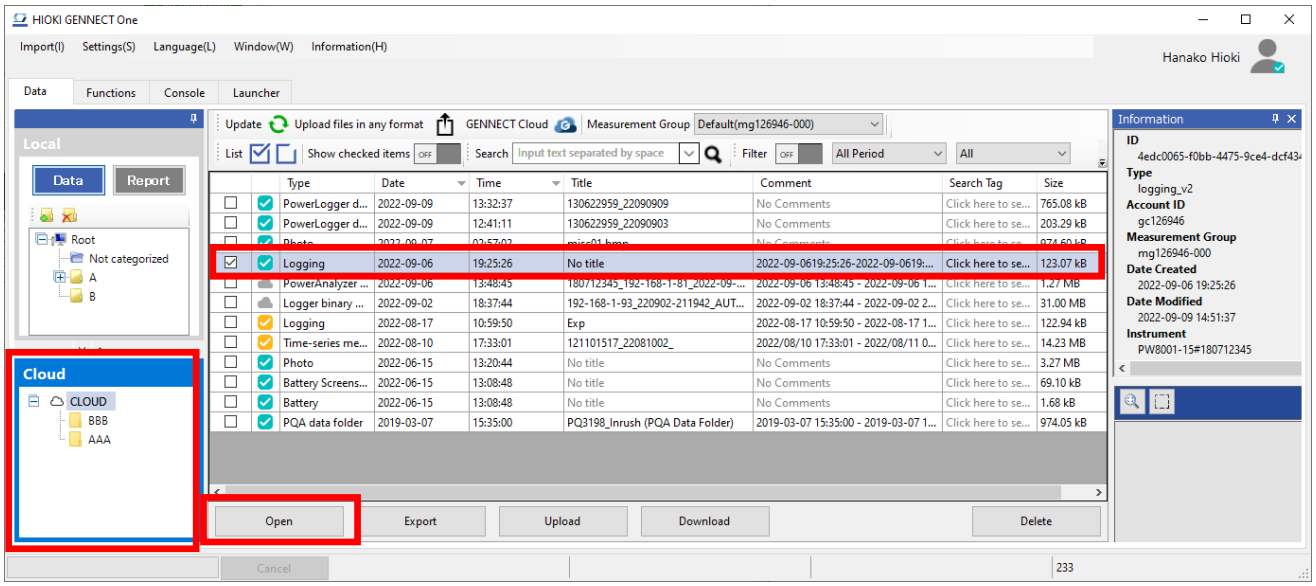
This section describes how to view and manage (output, upload, download, and delete) measurement data that has been shared within an account in the GENNECT One data list (cloud).

Opening the measurement data in GENNECT One

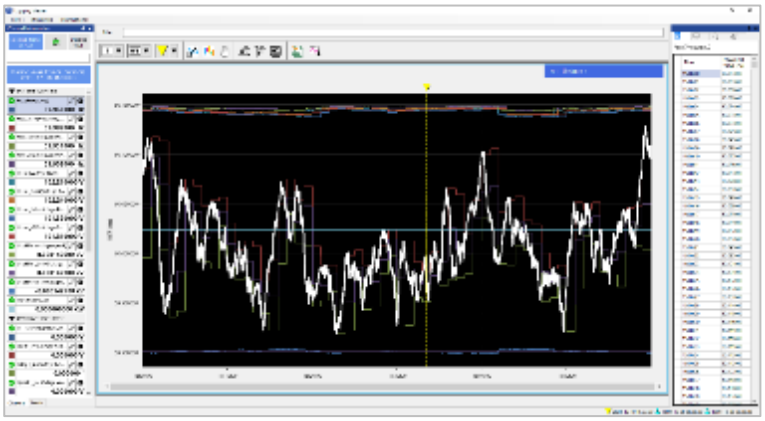
This section describes the procedure for opening measurement data that has been shared within an account in the GENNECT One data list (cloud) in GENNECT One.

Status	Operation
[Full synchronization]	The measurement data saved in local storage will be opened in GENNECT One.
[Partial synchronization]	A dialog box confirming whether you wish to download the measurement data from GENNECT Cloud to your local storage will be displayed. **(*2)** **If you do not download the data:** The measurement data saved in local storage will be opened in GENNECT One. **If you download the data:** The measurement data downloaded from GENNECT Cloud to your local storage will be opened in GENNECT One.
[Not downloaded]	The measurement data downloaded from GENNECT Cloud to your local storage will be opened in GENNECT One.
[Not uploaded]	The measurement data saved in local storage will be opened in GENNECT One.
[Not uploaded (different terminal)]	The measurement data cannot be opened from GENNECT One. **(*1)**

1. Select measurement data in the data list (cloud) and click the [Open] button.



2. A viewer suited to the type of measurement data that you selected will open, allowing you to view the measurement data. If the measurement file does not exist on the local PC, it will be downloaded from GENNECT Cloud. **(*1)(*2)**



Note

***1: If the measurement file does not exist in GENNECT Cloud's storage (if the status is either [Not uploaded] or [Not uploaded (different terminal)]), it will not be possible to download the measurement file. You can download the file by uploading it from either the GENNECT Cloud web application or a terminal that is linked to GENNECT Cloud.**

***2: If you have selected measurement data for which measurement files with different content exist in GENNECT Cloud storage and on the local PC (if the status is [Partial synchronization]), a message confirming whether you wish to update the local PC file will be displayed. For more information about settings for changing this operation, see the following:**

- [Data list (cloud)] tab

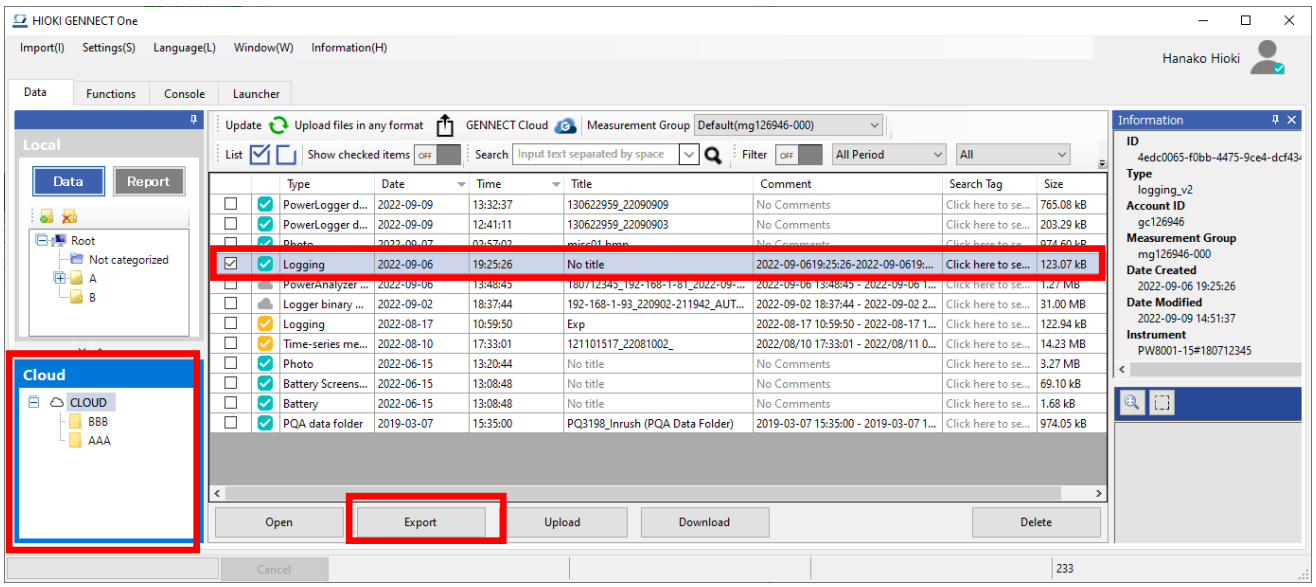
Outputting measurement data as a file

This section describes the procedure for outputting measurement data that has been shared within an account in the GENNECT One data list (cloud) as a file.

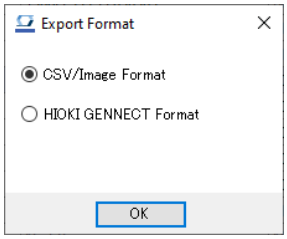
Status	Operation
[Full synchronization]	The measurement data saved in local storage will be output from GENNECT One.
[Partial synchronization]	A dialog box confirming whether you wish to download the measurement data from GENNECT Cloud to your local storage will be displayed. **(*3)** **If you do not download the data:** The measurement data saved in local storage will be output from GENNECT One. **If you download the data:** The measurement data downloaded from GENNECT Cloud to your local storage will be output from GENNECT One.
[Not downloaded]	The measurement data downloaded from GENNECT Cloud to your local storage will be output from GENNECT One.
[Not uploaded]	The measurement data saved in local storage will be output from GENNECT One.

[Not uploaded (different terminal)]	The measurement data cannot be output from GENNECT One. **(*2)**

1. Select measurement data in the data list (cloud) and click the [Open] button.



2. Select the output format and click the [OK] button. **(*1)**



3. Specify the save destination and click the [OK] button. If the measurement file does not exist on the local PC, it will be downloaded from GENNECT Cloud. **(*2)(*3)**

4. The measurement file will be saved to the specified save destination.

Note

***1: The CSV and image formats cannot be selected for some data types. For more information about the data types for which outputting to the CSV format is supported, see the following:**

- Output data in CSV/Image format

***2: If the measurement file does not exist in GENNECT Cloud's storage (if the status is either [Not uploaded] or [Not uploaded (different terminal)]), it will not be possible to download the measurement file.**

***3: If you have selected measurement data for which measurement files with different content exist in GENNECT Cloud storage and on the local PC (if the status is [Partial synchronization]), a message confirming whether you wish to update the local PC file will be displayed. For more information about settings for changing this operation, see the following:**

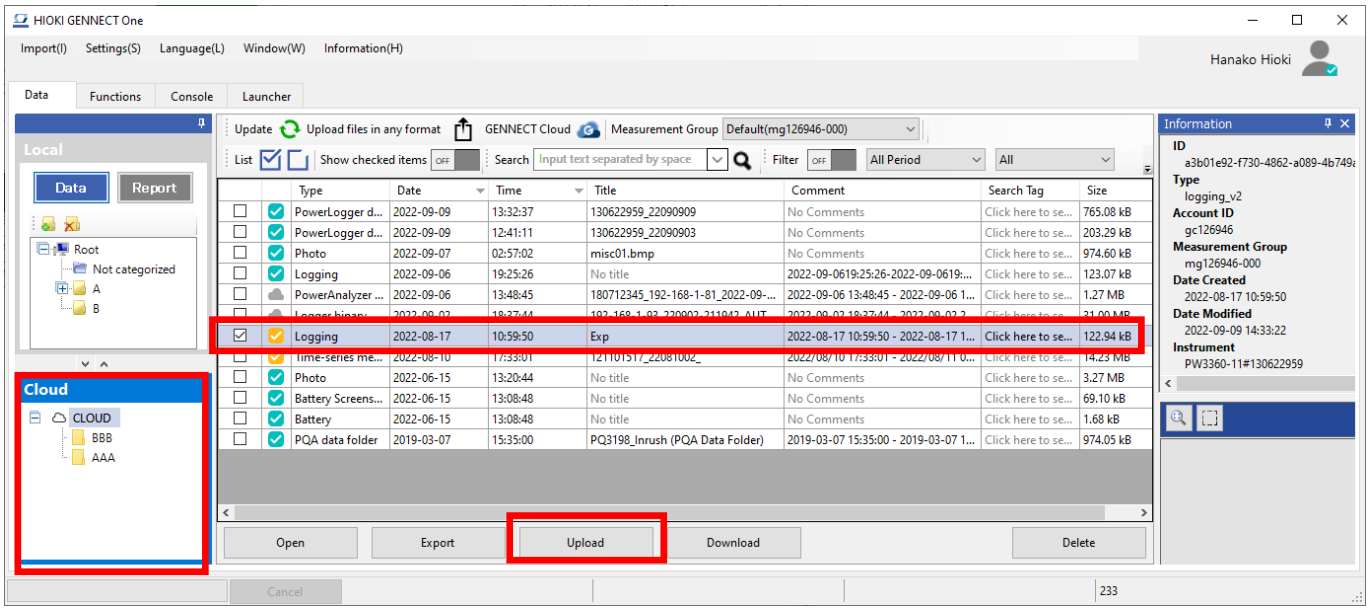
- [Data list (cloud)] tab

Uploading measurement data to GENNECT Cloud

This section describes the procedure for uploading measurement data in the GENNECT One data list (cloud) whose status is either [Not uploaded] or [Partial synchronization] to GENNECT Cloud.

Status	Operation
[Full synchronization]	The measurement data is up to date. The measurement data will not be uploaded. **(*1)**
[Partial synchronization]	A dialog box confirming whether you wish to upload measurement data from your local storage to GENNECT Cloud will be displayed. **(*3)** **If you do not upload the data:** The measurement data will not be uploaded to GENNECT Cloud. **If you upload the data:** The measurement data will be uploaded to GENNECT Cloud.
[Not downloaded]	The measurement data does not exist in your local storage. The measurement data will not be uploaded. **(*2)**
[Not uploaded]	The measurement data will be uploaded to GENNECT Cloud.
[Not uploaded (different terminal)]	The measurement data does not exist in your local storage. The measurement data will not be uploaded. **(*2)**

1. Select measurement data whose status is either [Not uploaded] or [Partial synchronization] in the data list (cloud) and click the [Upload] button.



2. Wait for the upload to complete. **(*1)(*2)**

When the upload completes, the status of the measurement data will change to [Full synchronization].

Note

***1: Measurement data whose contents are identical to data files in GENNECT Cloud (with a status of [Full synchronization]) will not be uploaded.**

***2: If the measurement file does not exist in local storage (if the status is either [Not uploaded] or [Not uploaded (different terminal)]), the measurement data will not be uploaded.**

***3: If the measurement data consists of measurement files with different content in GENNECT Cloud storage and on the local PC (if the status is [Partial synchronization]), a message confirming whether you wish to update the GENNECT Cloud file will be displayed. For more information about settings for changing this operation, see the following:**

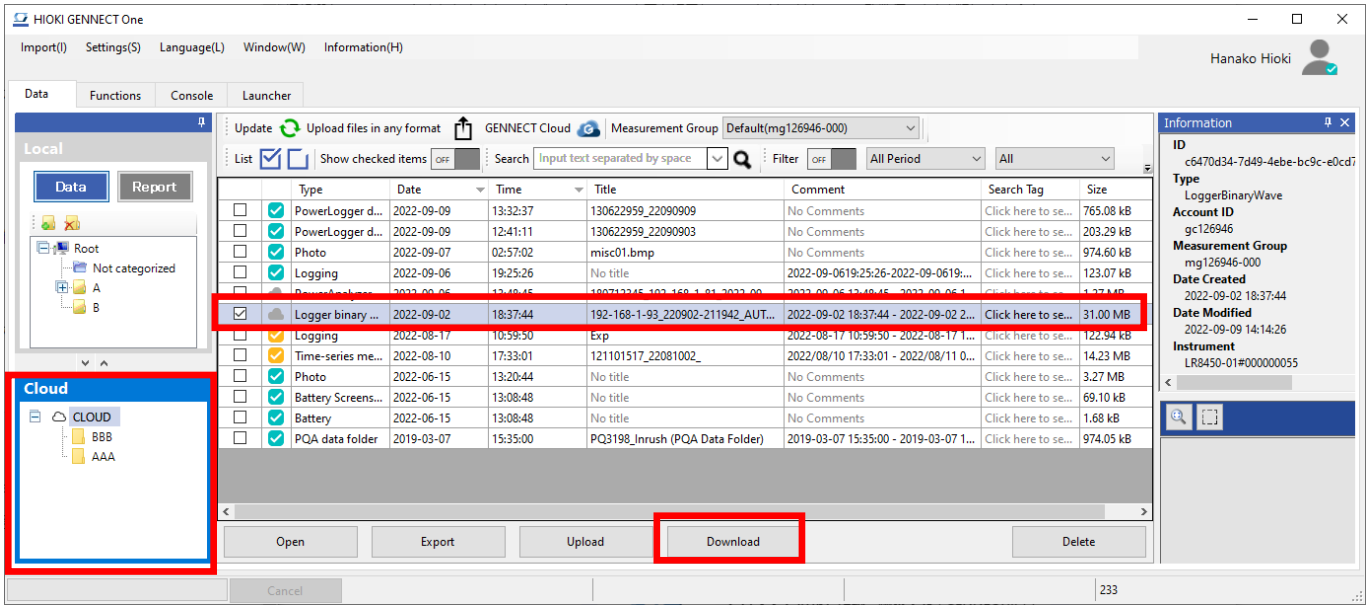
- [Data list (cloud)] tab

Downloading measurement data from GENNECT Cloud

This section describes the procedure for downloading measurement data in the GENNECT One data list (cloud) whose status is either [Partial synchronization] or [Not downloaded] from GENNECT Cloud to GENNECT One.

Status	Operation
[Full synchronization]	The measurement data is up to date. The measurement data will not be downloaded. **(*1)**
[Partial synchronization]	A dialog box confirming whether you wish to download the measurement data from GENNECT Cloud to your local storage will be displayed. **(*3)** **If you do not download the data:** The measurement data will not be downloaded. **If you download the data:** The measurement data will be downloaded from GENNECT Cloud to local storage.
[Not downloaded]	The measurement data will be downloaded from GENNECT Cloud to local storage.
[Not uploaded]	The measurement data does not exist in GENNECT Cloud storage. The measurement data will not be downloaded. **(*2)**
[Not uploaded (different terminal)]	The measurement data cannot be downloaded from GENNECT One. **(*2)**

1. Select measurement data whose status is either [Partial synchronization] or [Not downloaded] in the data list (cloud) and click the [Download] button.



2. Wait for the download to complete. **(*1)(*2)**

When the download completes, the status of the measurement data will change to [Full synchronization].

Note

***1: Measurement data whose contents are identical to data files in GENNECT Cloud (with a status of [Full synchronization]) will not be downloaded.**

***2: If the measurement file does not exist in GENNECT Cloud's storage (if the status is either [Not uploaded] or [Not uploaded (different terminal)]), it will not be possible to download the measurement file. You can download the file by uploading it from either the GENNECT Cloud web application or a terminal that is linked to GENNECT Cloud.**

***3: If you have selected measurement data for which measurement files with different content exist in GENNECT Cloud storage and on the local PC (if the status is [Partial synchronization]), a message confirming whether you wish to update the local PC file will be displayed. For more information about settings for changing this operation, see the following:**

- [Data list (cloud)] tab

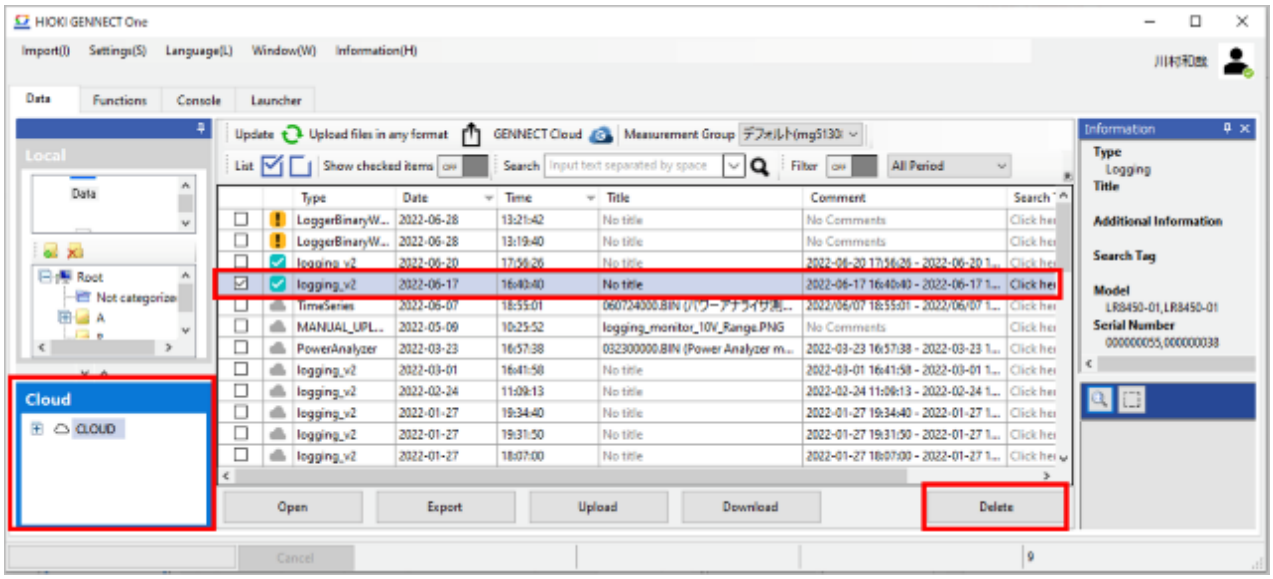
Deleting measurement data

This section describes the procedure for deleting measurement data that has been shared within an account in the GENNECT One data list (cloud).

Status	Operation
[Full synchronization]	A dialog box asking you to confirm the method of deletion will be displayed. **(*1)**
[Partial synchronization]	**Delete only local files:** Deletes only measurement data stored on the local PC. This method can be used to save local storage, since deleted measurement data can be reacquired by downloading it again.
[Not downloaded]	**Delete both local and cloud files:**

	Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud.
[Not uploaded]	Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud. **(*2)**
[Not uploaded (different terminal)]	Measurement data cannot be deleted from GENNECT One. **(*3)**

1. Select measurement data in the data list (cloud) and click the [Delete] button.



2. A dialog box asking you to confirm the method of deletion will be displayed(*1)(*2)(*3). Select the desired method of deletion and click the [OK] button.

Methods of deletion	Description
Delete only local files	Deletes only measurement data stored on the local PC. This method can be used to save local storage, since deleted measurement data can be reacquired by downloading it again.
Delete both local and cloud files	Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud.

3. The measurement data will be deleted.

Note

***1: In the default state, a dialog box asking you to confirm the method of deletion will be displayed. For more information about settings for changing this operation, see the following:**

- [Data list (cloud)] tab

***2: If the status of the selected measurement data is [Not uploaded], a dialog box asking you to confirm whether you wish to delete the data will be displayed. Deleting measurement data whose status is [Not uploaded] will cause links between**

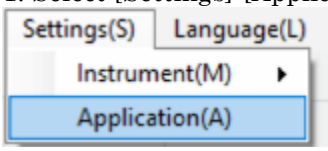
GENNECT Cloud and the measurement data to be lost. If you anticipate needing to download the measurement data again, upload it to GENNECT Cloud and delete only the local file.

*3: Measurement data whose status is [Not uploaded (different terminal)] cannot be deleted from GENNECT One. Such files must be deleted from either the GENNECT Cloud web application or another terminal that is linked to GENNECT Cloud.

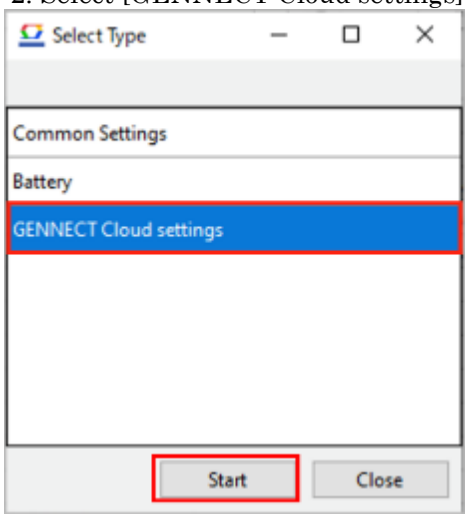
Configuring Application Settings Related to GENNECT Cloud

This section describes settings that apply to links between GENNECT One and GENNECT Cloud.

1. Select [Settings]-[Application].

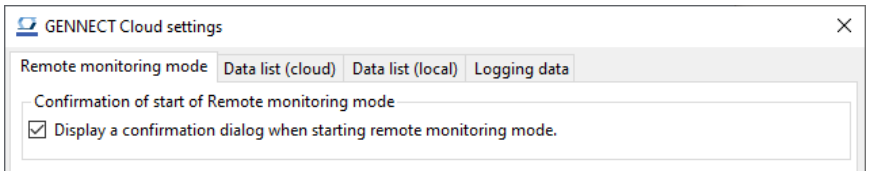


2. Select [GENNECT Cloud settings] and click [Start] to display the settings window.



[Remote monitoring mode] tab

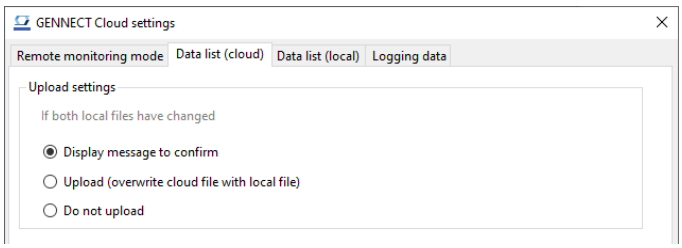
This tab allows you to change settings related to GENNECT One's remote monitoring mode.

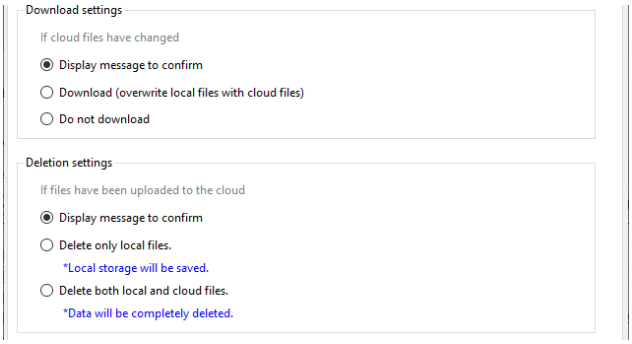


Setting	Value	Description
Remote monitoring mode start confirmation		
Display a confirmation dialog when starting remote monitoring mode	On	Display a confirmation dialog when starting remote monitoring mode.
	Off	Do not display a confirmation dialog when starting remote monitoring mode.

[Data list (cloud)] tab

This tab allows you to change settings related to the data list (cloud).

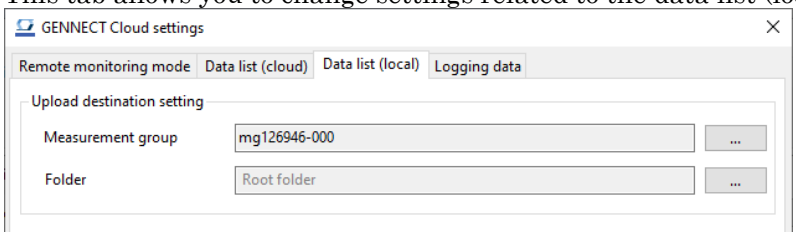




Setting	Value	Description
Upload settings		
If local files have changed	Display message to confirm	Display a confirmation dialog when uploading.
	Upload	Always overwrite GENNECT Cloud measurement data by uploading local measurement data.
	Do not upload	Never upload measurement data to GENNECT Cloud.
Download settings		
If cloud files have changed	Display message to confirm	Display a confirmation dialog when downloading.
	Download	Always overwrite local measurement data with GENNECT Cloud measurement data.
	Do not download	Never download measurement data from GENNECT Cloud.
Deletion settings		
If files have been uploaded to the cloud	Display message to confirm	Display a message confirming the method of deletion.
	Delete only local files.	Always delete only local measurement data. (Setting for saving local storage space)
	Delete both local and cloud files	Always delete both local and cloud measurement data. (Setting for deleting all data)

[Data list (local)] tab

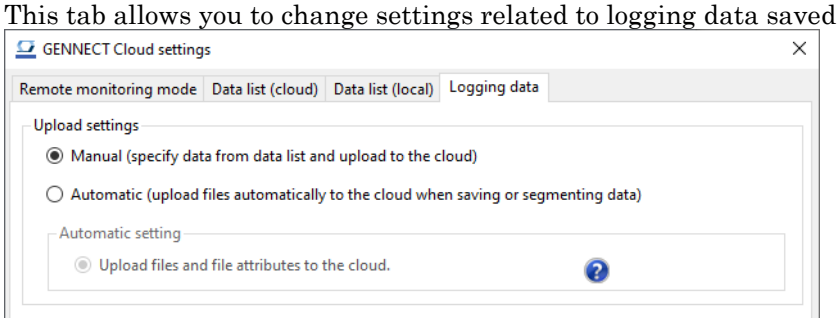
This tab allows you to change settings related to the data list (local).



Setting	Instructions	Description
Upload destination setting		
Measurement group	Select by clicking [...] button	When uploading from the data list (local) to GENNECT Cloud, specify the measurement group to which to upload the data. When not specified, data will be uploaded to the [Default] measurement group.
Folder	Select by clicking [...] button	When uploading from the data list (local) to GENNECT Cloud, specify the data folder to which to upload the data. When not specified, data will be uploaded to the root folder on the GENNECT Cloud [Drive] window ([Data folder]).

[Logging data] tab

This tab allows you to change settings related to logging data saved by the logging and dashboard functions.

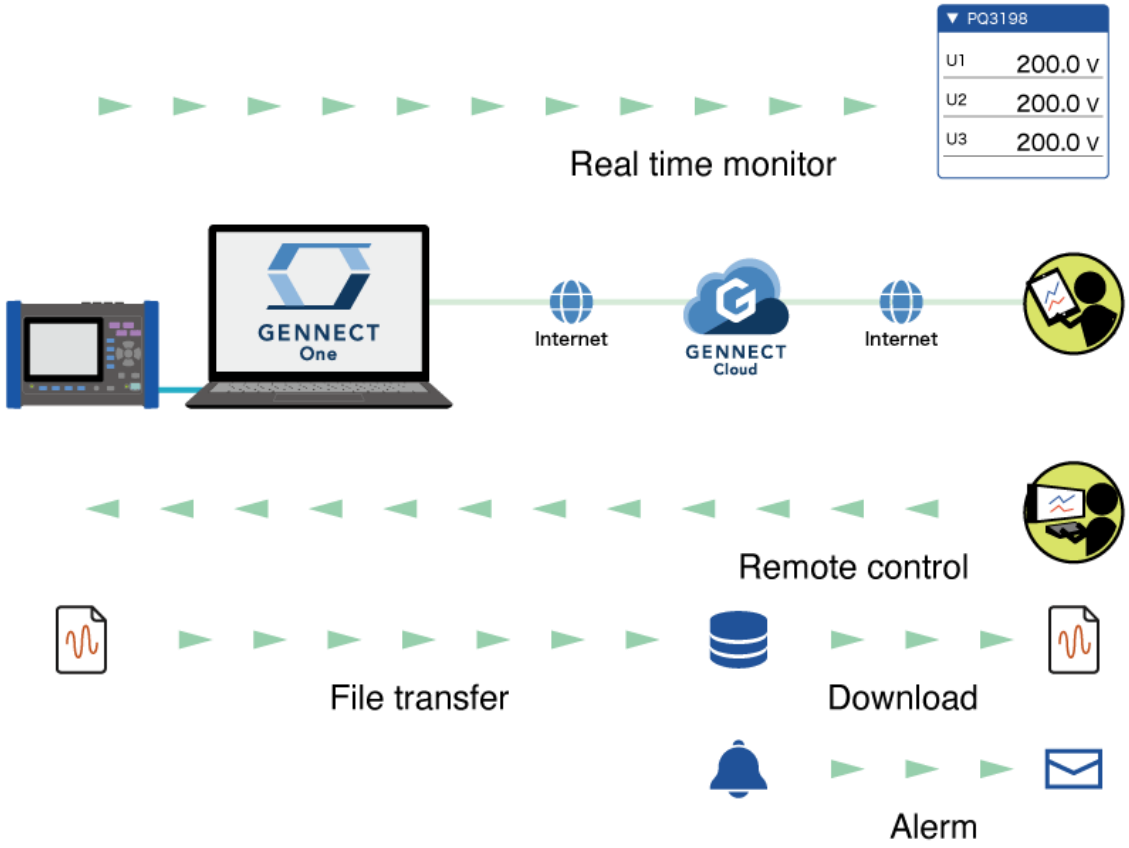


Setting	Value	Description
Upload settings	Manual	Do not upload data to GENNECT Cloud automatically. Data will be saved in the data list (local). Please upload manually as desired.
	Automatic	Upload saved or segmented logging data to GENNECT Cloud automatically.
Automatic setting	Upload files and file attributes to the cloud.	When saving and segmenting logging data, upload files and file attributes (information about links to GENNECT Cloud) to GENNECT Cloud. **(*1)(*2)** ***1: Once your GENNECT Cloud storage is full, logging data will no longer be uploaded automatically.** ***2: This setting is valid only when the [Upload settings]-[Automatic] setting is enabled.**

Using Remote Monitoring Mode

Overview

Remote monitoring mode allows you to access instruments connected to a computer from a remote location using GENNECT Cloud.
For details about GENNECT Cloud functionality, please see the GENNECT Cloud online help (https://www.gennect.net/en/cloud/manual/1-1).



Real-time monitor

The real-time monitor saves measured values for channels selected from instruments' measurement parameters to the cloud server. The measurement interval is fixed at 1 min.
This manual refers to data saved in this manner as "GENNECT acquisition data."
·Measured values updated in real time can be reviewed in a web browser.
·You can select a channel and interval and graph associated measured value. ·Values from multiple instrument models can be grouped together in a single graph.
·Measured values can be downloaded in the CSV format.

Remote control

Remote control functionality allows you to operate an instrument safely from a remote location by using its built-in HTTP server function.

Transferring and downloading files

Measurement data files that are saved on an instrument can be transferred automatically to a local computer. Files transferred to a computer can be remotely acquired via the cloud. This manual refers to such measurement data as "instrument data files."
When using this function, the instrument settings are changed for file transfer. See below for details.

➢ Instrument save settings

It takes about 7 minutes until the instrument data file transferred from the instrument is available for acquisition.

Alarm

Alarm notifications are generated when GENNECT acquisition data satisfies alarm conditions and when instrument data files are uploaded. Notification methods include LINE, Slack, Microsoft Teams, GENNECT Cross, and web application displays.

Workflow

Remote monitoring mode can be started and stopped using the following procedure:

Connect an instrument to a computer with a LAN cable (p.17)

Start remote monitoring mode (p.332)

Check the connection environment and log in (p.333)

Set the measurement group (p.333)

Select instruments (p.334)

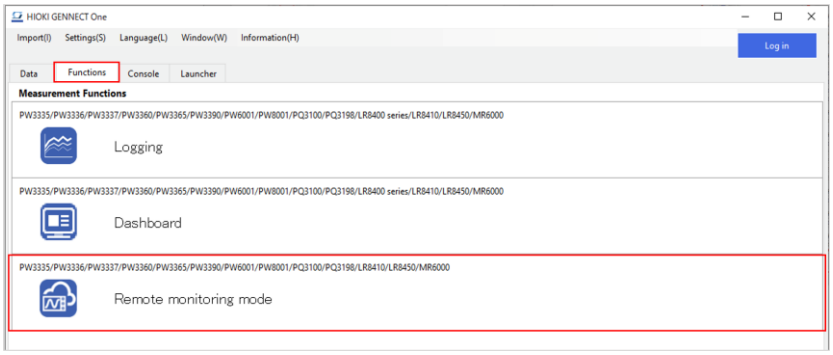
Select channels (p.336)

Exit remote monitoring mode (p.338)

Starting remote monitoring mode

Starting remote monitoring mode

1. Click the [Function] tab and then click [Remote monitoring mode].



Checking the communications environment and logging in

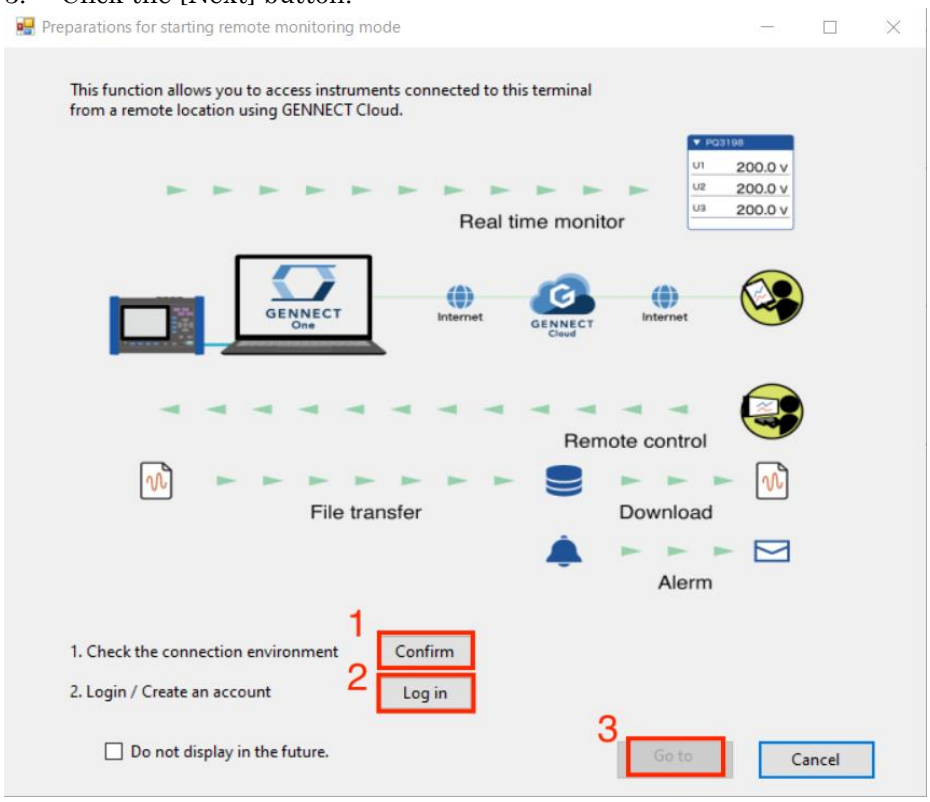
The [Preparations for starting remote monitoring mode] window will be displayed.

1. Click the [Confirm] button next to [Check the connection environment] as necessary.
You can verify that your environment supports use of remote monitoring mode.
If it doesn't, you won't be able to use remote monitoring mode.
If your network has access restrictions, please consult your network administrator and consider removing the restrictions.
Network Requirements：
Communication using outbound TCP: 443 port and TLS intercommunication must be allowed to AWS IoT ("iot.cloud.gennect.net"*).
Supported example：
-1. Disable SSL Decryption and other functions for "iot.cloud.gennect.net"* (port 443)
-2. Allow access to this service if it is restricted by filtering software

*If you use this function outside of China: "iot.cloud.gennect.net"
*If you use this function in China: "iot.cloud.gennect.cn"

2. Click the [Log in] button to log in to GENNECT Cloud.
This step can be skipped if you're already logged in. If you don't have a GENNECT Cloud account, please create one first.
- Preparing to Use GENNECT Cloud
- Logging In to GENNECT Cloud

3. Click the [Next] button.



Setting the measurement group

All data in GENNECT Cloud belongs to a measurement group, which is the unit by which data is managed. For more information about measurement groups, see the online help (https://www.gennect.net/en/cloud/manual/12-1).

1. Select the measurement group to which you wish to upload GENNECT acquisition data and

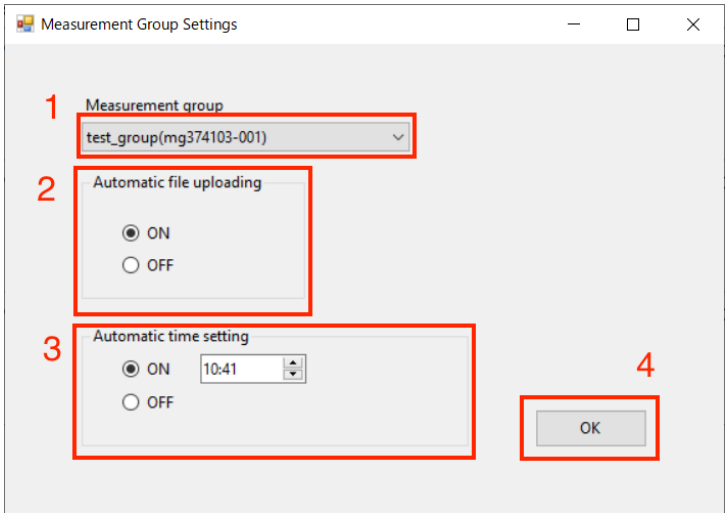
instrument data files.

2. Configure automatic file uploads. This setting allows generated instrument data files to be uploaded to the cloud.
   ON: Upload instrument data files automatically. Please note that some instrument models and settings will result in larger file sizes, which will use large amounts of mobile data. Automatic uploading is limited to files that are 128 MB or less in size.
   OFF: Store instrument data files on the computer and do not upload them automatically.

3. Configure automatic time synchronization.
   Enabling this setting will synchronize instruments' clocks once a day. Depending on the instrument model and firmware version, synchronizing the time may cause measurement or integration to stop. In this case, a new file will be created when the time is synchronized. See below for more information.

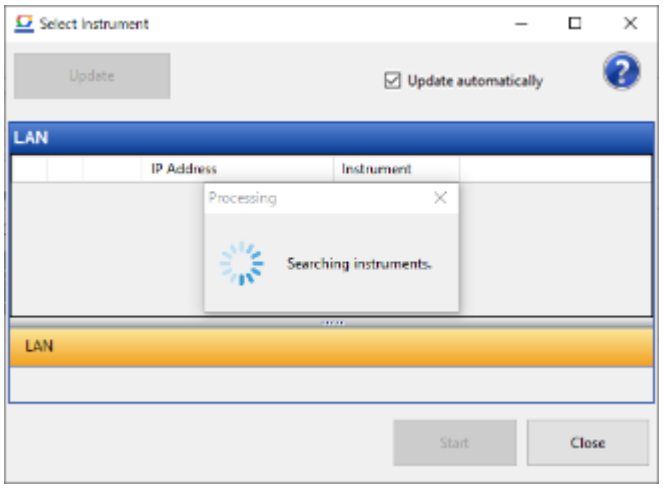
➢ Synchronizing Instrument Clocks: Details

4. Click the [OK] button.

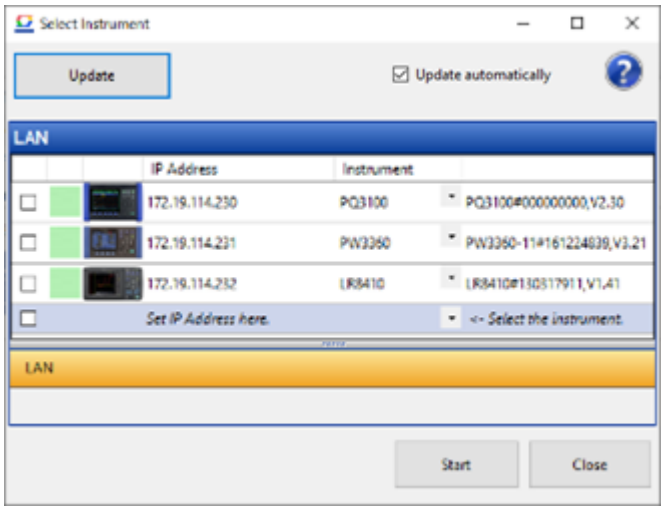


Selecting instruments

1. The [Select instrument] window will be displayed.
The application will display the [Searching instruments] message while searching for instruments that are connected to the computer via the LAN.



2. A list of the instruments found during the search made in the previous step will be displayed.

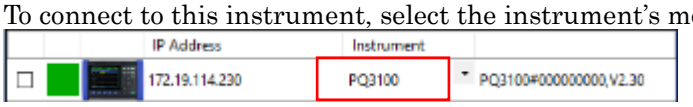


※ You can search again by clicking the [Update] button.

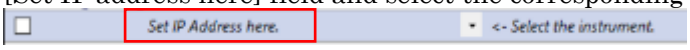
※ When the "Update Automatically" checkbox is turned OFF, automatic search for measuring instruments is not performed when this screen is opened.
When the "Update Automatically" checkbox is checked ON, automatic search for measuring instruments is performed when this screen is opened.

※ If the search results include an instrument that has never been connected to the application, it will be shown as follows:

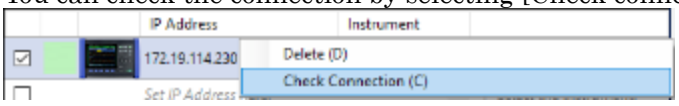
To connect to this instrument, select the instrument's model in the [Instrument] drop-down menu.



※ To manually add an instrument that was not found by the search, specify the IP address directly in the [Set IP address here] field and select the corresponding instrument in the drop-down menu.

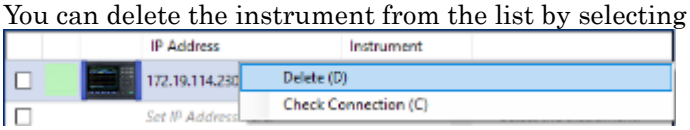


※ You can check the connection by selecting [Check connection] in the context menu.

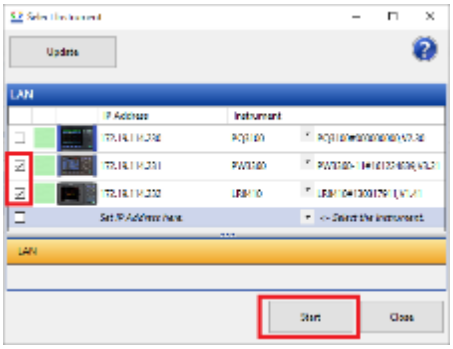


If the application is unable to verify a connection with the instrument, for example because the LAN cable is disconnected, the instrument will be shown as follows:

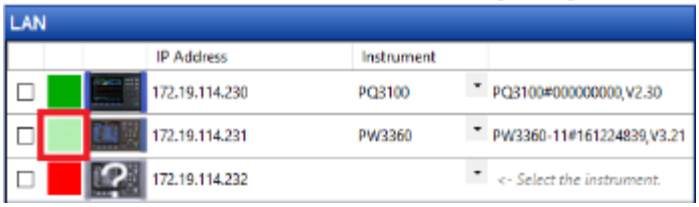
※ You can delete the instrument from the list by selecting [Delete] in the context menu.



3. Select the checkbox for each instrument you wish to use in remote monitoring mode.
Click the [Start] button to continue.



※ A light-green connection status indicates the instrument was found but is not currently connected. Double-click the status icon or click the [Start] button to connect to the instrument.

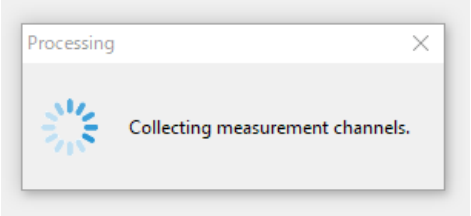


Connected: Green (■)
Found: Light green (■)
Not found: Red (■)

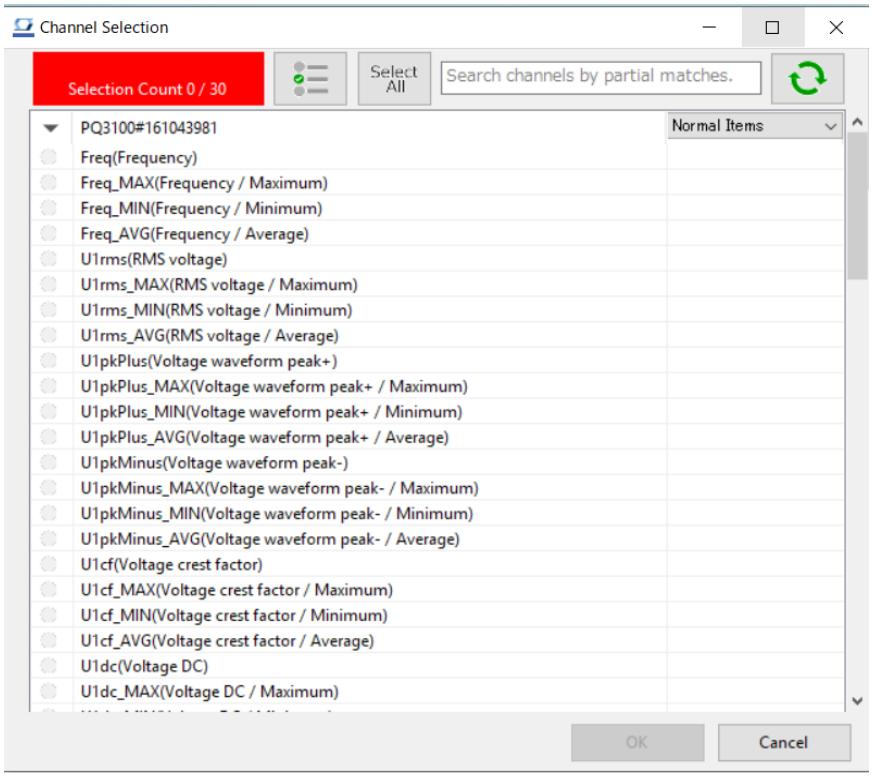
※ You can select up to three instruments with GENNECT Cloud Free, or up to eight instruments with GENNECT Cloud Standard/Pro.

Selecting Channels

1. The [Channel Selection] window will be displayed. The "Collecting measurement channels" message will be displayed.



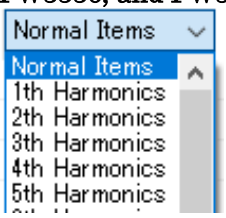
2. A list of enabled measurement channels for the instruments selected on the [Select instrument] window will be displayed.



※ You can search again for measurement channels by clicking the button.

※ In PQ3100,PQ3198,PW3360,PW3365,PW3335*,PW3336*,PW3337*,PW8001 (with harmonics analysis only), you can select the harmonics measurement channels by selecting the drop down list of measurement items.

***If the version of this application is less than V5.10, the acquisition of harmonic items for PW3335, PW3336, and PW3337 is not supported. Please upgrade this application to V5.10 or later.**

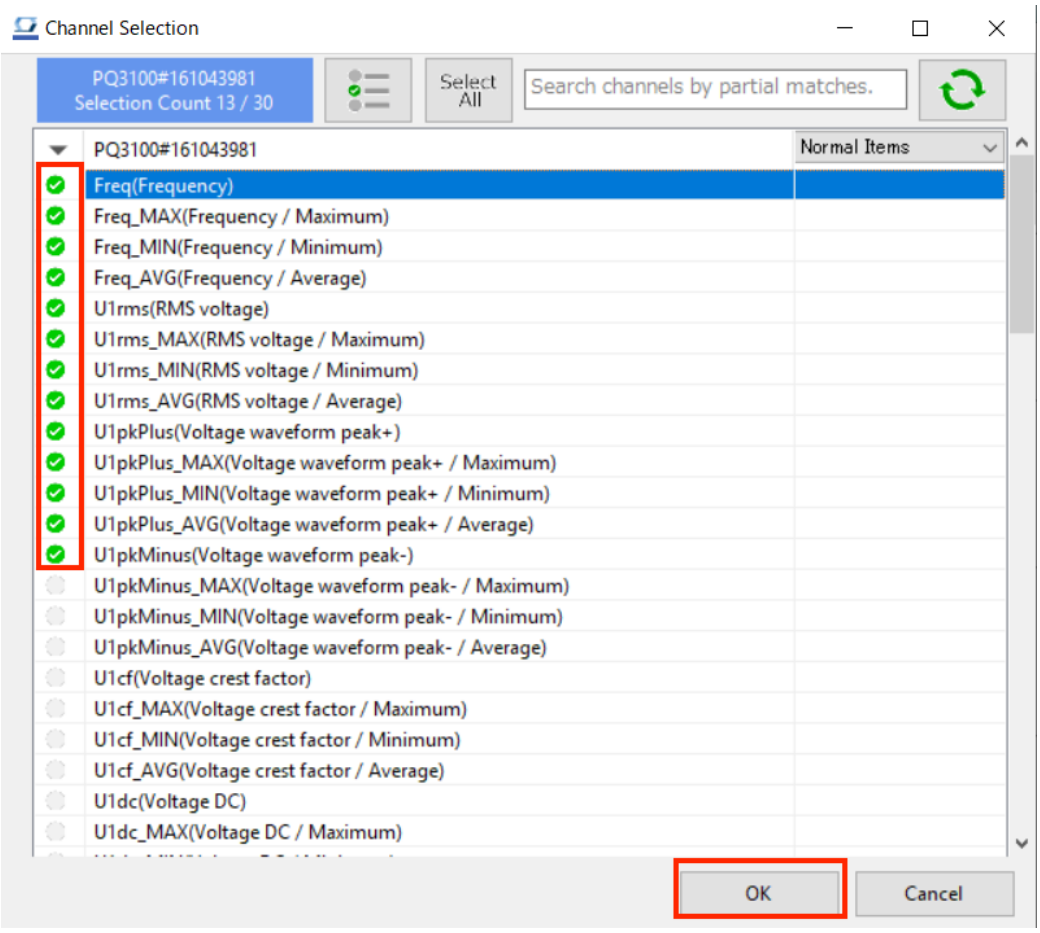


※ Measurement parameters for some instruments, for example the PW3336, PW8001, and PQ3198, will be displayed by identifier (PWP, MUpk, etc.). For more information about the relationship between identifiers and measurement parameter names, see the following:

- Identification name and measurement item name in Logging and Dashboard function

※ If the number of measurement parameters for normal items exceeds 1200, the page will be divided into multiple pages. In such a case, select the page to be displayed in the combobox and switch pages.

3. Select the checkbox for each measurement channel you wish to log.Click the [OK] button to continue.



※ The number of channels that can be selected is as follows:

Plan	Number of channels (per instrument)
Trial	10
Free	30
Standard	30
Pro	100

※ You can narrow down the measurement channels shown in the list using the search box at the top of the window.

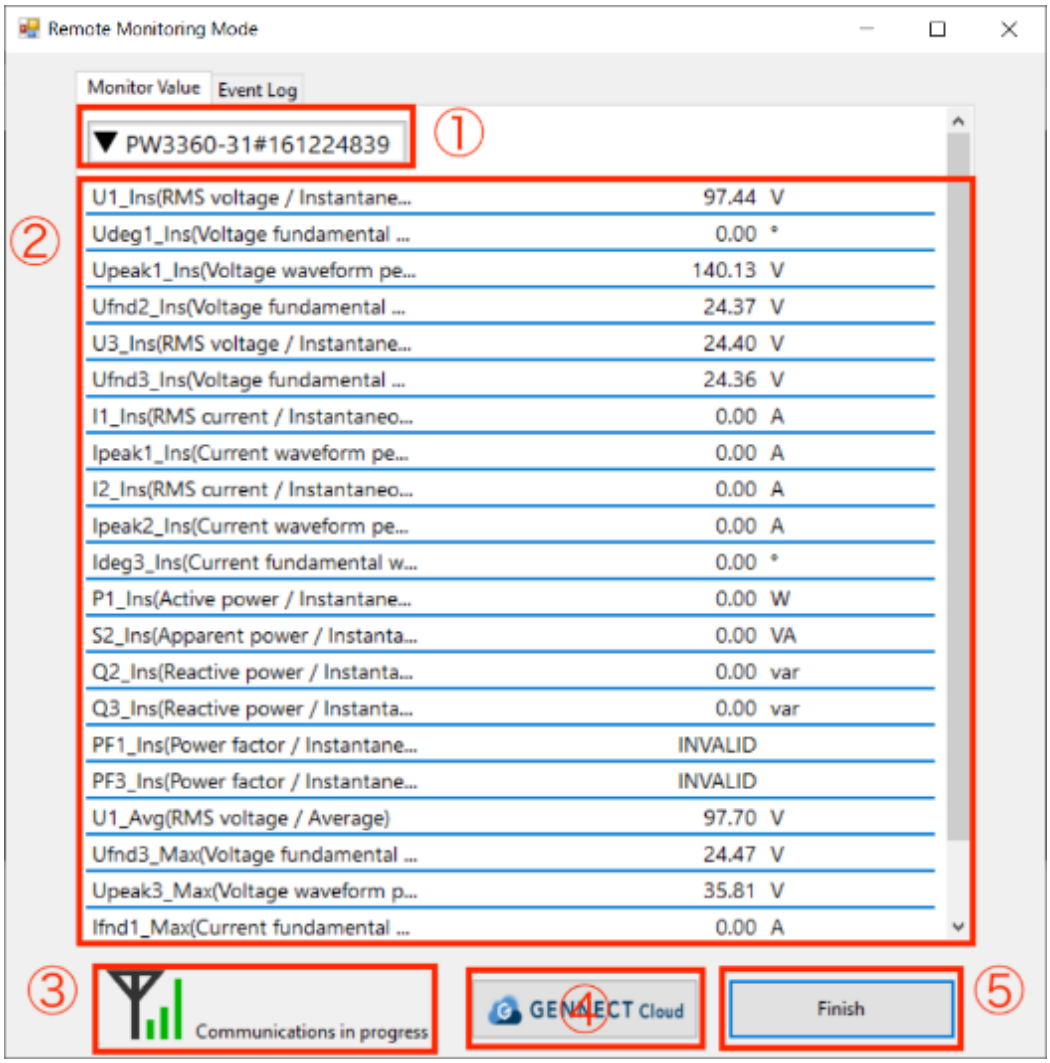
※ You can limit the measurement channels shown in the list to those channels that have already been selected by clicking the  button.

※ You can select or deselect all channels by clicking the  button.

Exiting remote monitoring mode

1. Click the [Finish] button to exit remote monitoring mode.
When you exit remote monitoring mode, uploading of GENNECT acquisition data and instrument data files to the cloud will stop.

Window layout



①Instrument name display
Click here to hide/unhide area ②

②Measurement channel and measured value display
This area displays the current measured value for each channel.

③Internet connection environment icon
If an Internet connection is available, the icon shown in the screenshot will be shown.

If not, the icon will be shown.

④"Open in browser" button
Click this button to open the GENNECT Cloud web application.

⑤Exit button
Click this button to exit remote monitoring mode.

Controlling an Instrument (Remote Control [Cloud])

By logging in to GENNECT Cloud(*1), you can control, via GENNECT Cloud, instruments connected to a remotely located gateway (a device that connects using GENNECT Remote) or another computer on which GENNECT One has been installed.

*1: For more information about how to log in to GENNECT Cloud from GENNECT One, see the following:

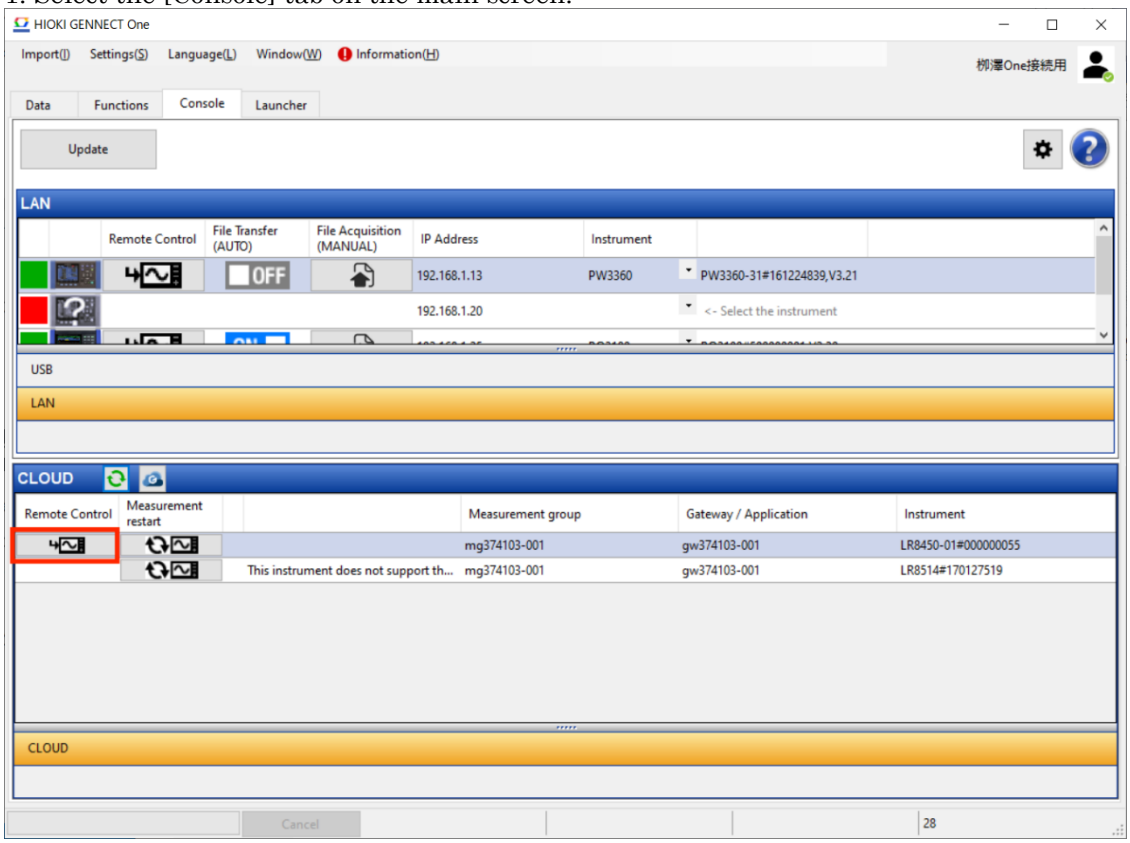
- Logging In to GENNECT Cloud

Supported instruments

Model	Name	Firmware version	URL
PQ3100	Power Quality Analyzer	Ver. 2.30 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1651
PQ3198	Power Quality Analyzer	Ver. 2.00 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1766
PW3335	Power Meter	Ver. 1.11 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=660
PW3336	Power Meter	Ver. 1.23 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=405
PW3337	Power Meter	Ver. 1.23 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=287
PW3360	Clamp On Power Logger	Ver. 3.21 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=235
PW3365	Clamp On Power Logger	Ver. 2.10 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=228
PW3390	Power Quality Analyzer	Ver. 2.00 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1678
PW6001	Power Quality Analyzer	Ver. 3.02 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=649
PW8001	Power Quality Analyzer	Ver. 1.00 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1907
LR8450, LR8450-01	Memory HiLogger	Ver. 1.50 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1794 https://www.hioki.co.jp/jp/products/detail/?product_key=1808
LR8101, LR8102	Data Logger	Ver. 1.00 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1266484
MR6000	Memory HiCorder	Ver. 3.11 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=1716
MR8875	Memory HiCorder	Ver. 2.17 or later	https://www.hioki.co.jp/jp/products/detail/?product_key=860

Starting remote control

1. Select the [Console] tab on the main screen.



2. Click the [Remote control] button ( ) on the [Cloud] panel.

3. The [Remote Control] screen will open, allowing you to control the instrument.

Restarting the instrument

1. Select the [Console] tab on the main screen.

2. Click the [Restart measurement] button ( ) on the [Cloud] panel.

3. The target instrument will restart.

Open in browser

1. Select the [Console] tab on the main screen.

2. Click the button ( ) on the [Cloud] panel.

3. The GENNECT Cloud web application will open in your browser.

Update the firmware of the instrument

The firmware of instruments connected to a PC over a LAN can be updated to the latest version through PC operation. (※1, ※2)

・Automatically checks if the firmware of the connected measuring instrument is the latest version and displays the status with an icon. (※1)
・Since the latest firmware is downloaded from the GENNECT Cloud, version upgrades can be performed only by operating the application. (※1, ※2)

※1. Internet connection for PC is required.
※2. Login to GENNECT Cloud is required.

➢ Logging In to GENNECT Cloud

Supported Instruments

Model	Name	Firmware version	URL
LR8450, LR8450-01	MEMORY HiLOGGER	Ver. 2.20 or later(*1)	https://www.hioki.com/en/products/detail/?product_key=6535
LR8101, LR8102	DATA LOGGER	V1.50 or later	https://www.hioki.com/en/products/detail/?product_key=1266484
PW8001	POWER ANALYZER	Ver. 1.50 or later	https://www.hioki.com/global/products/power-meters/power-analyzer/id_412384
BT6065 BT6075	Precision Battery Tester	V1.01 or later	https://www.hioki.com/sg-en/products/resistance-meters/battery/id_1266730

***1: This function is not supported for aircraft with the following serial numbers**
LR8450: Serial number is 210317114 or earlier
LR8450-01: Serial number is 210322039 or earlier。

Limitations

Restrictions on firmware upgrade functionality

Item	Limitation	Remarks
Communications interface	LAN	USB communication is not supported.
Number of instruments that can be upgraded simultaneously	1 unit	

Specifications for each measuring instrument

Model	Requirement of recording media for measuring instruments	What to do if the instrument is turned off during the upgrade
LR8450, LR8450-01 LR8101, LR8102	Unnecessary	The measuring instrument needs to be repaired.
PW8001	USB memory must be inserted	The measuring instrument needs to be repaired.
BT6065 BT6075	Unnecessary	Restart the instrument to recover.

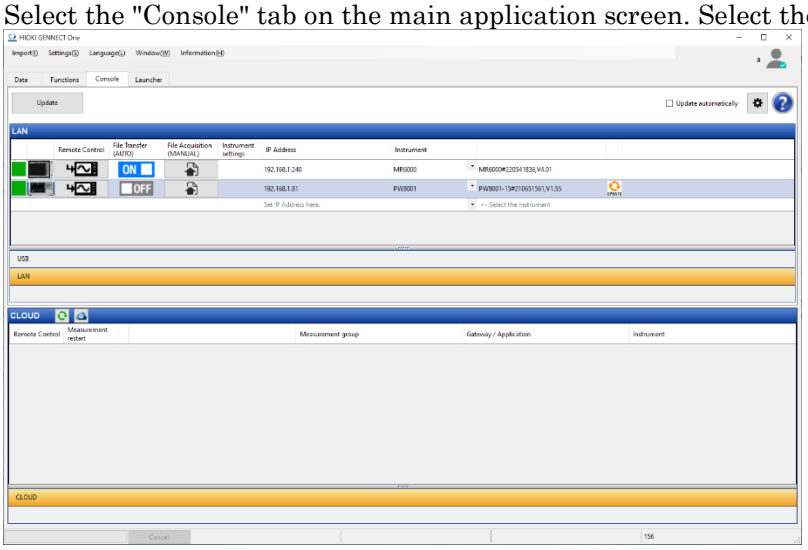
Workflow

Connect an instrument to a computer with a LAN cable (p.17)

Perform version upgrades of the instrument (p.344)

Operating Procedure

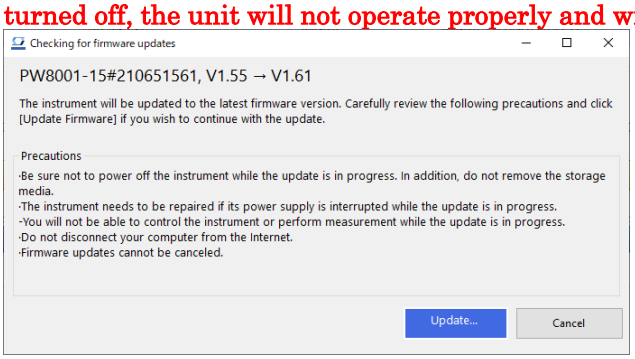
1. Select the "Console" tab on the main application screen. Select the [LAN] navigation bar.



2. Execute "Update". If the instrument supports the firmware upgrade function, an icon will appear next to the version number.

icon	Description
	Firmware is already at the latest version.
UPDATE	The latest firmware is available. Click this icon to open the firmware upgrade confirmation window.
	Failed to obtain the latest version due to a communication error. Please check the connection between the PC and the instrument or the Internet connection of the PC.

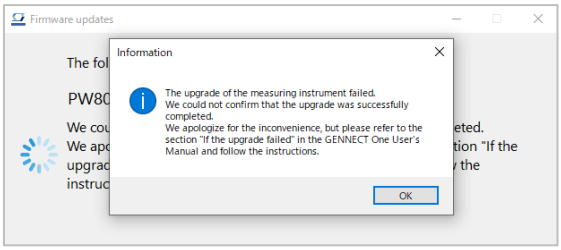
3. Click the [UPDATE] status icon to display the [Confirm Firmware Version Upgrade] screen.
4. Read the notes in the screen carefully and click "Execute" if you wish to execute the firmware upgrade.
※Never turn off the power to the unit while upgrading. Also, do not remove any media. If the power is turned off, the unit will not operate properly and will require repair.



5. When the upgrade is successfully completed, the message "The upgrade was successfully completed." is displayed when the upgrade is successfully completed.
If the upgrade fails, the reason for the failure will be displayed as a message, so please follow the on-screen guidance.

If the upgrade failed

After executing the version-up of the measuring instrument, the following message will appear if you cannot confirm that the version-up has been successfully completed. In this case, please take the actions described in the table for each measuring instrument.



In this case, please check the connection a few minutes after the message is displayed.

➢ [Check Connection] of Instruments

After checking the connection,

・If the version number is updated to the latest one, the upgrade has been successfully completed.

・If your version number is not up-to-date, please try upgrading again.

・If the instrument does not appear on the console screen or there is an error in communication with the instrument, please check the following for each instrument

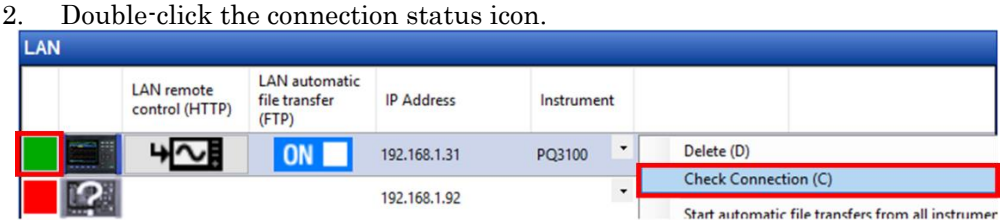
Model	Contents of response
LR8450 LR8450-01 LR8101 LR8102 PW8001,	Make sure the instrument is turned on. ・If the power is on, reboot the system and check the connection again. ・If the instrument is not powered on, check to see if it can be turned on. If the power does not turn on, the instrument needs to be repaired. Please contact your nearest sales office.
BT6065 BT6075	Restart the instrument and try the upgrade again.

[Check Connection] of Instruments

The console screen shows the firmware version of the LAN-connected instrument.
If the version number of the instrument displayed on the console screen differs from the version number displayed on the main unit (e.g., if the firmware of the instrument has been manually upgraded), it is necessary to [Check Connection] in order to update the information displayed on the console screen.

You can [check connection] of the measuring instrument by one of the following methods.。

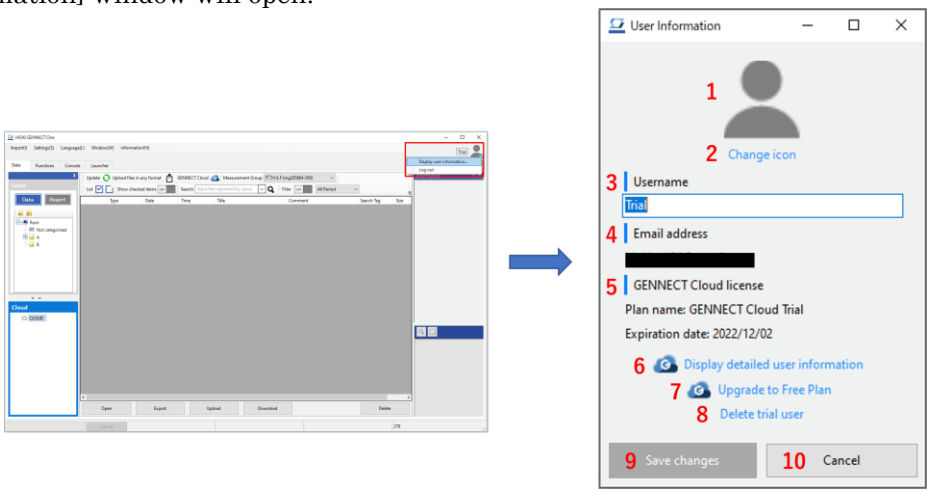
1. Select the instrument and choose "check connection" from the menu that appears by right-clicking.
2. Double-click the connection status icon.



Reviewing and Editing User Information and Account Information

This section describes how to review and edit information for the user logged in to GENNECT Cloud in the application as well as information for the account to which the user belongs.

1. Log in using the account and user whose information you wish to review or edit. (Reference: Logging In to GENNECT Cloud)
2. Click the icon at the top right of the application's main window and click the displayed [Display user information...] menu item.
The [User Information] window will open.



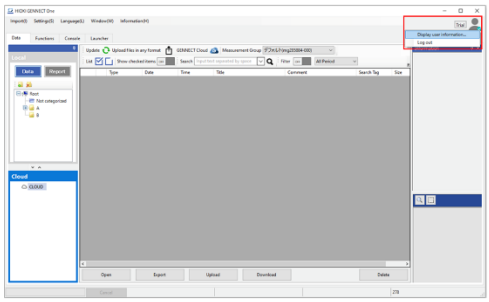
*Only the information in the table below can be reviewed and edited in the application. More detailed information can be reviewed and edited on the GENNECT Cloud web page.

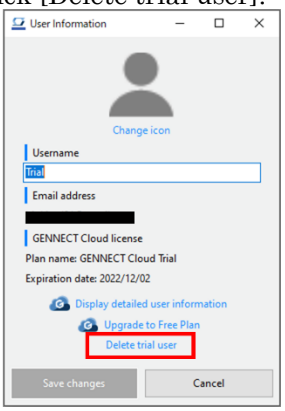
	Item	Description
1	User icon	Displays a user-configured icon.
2	Change icon	Displays a menu related to the icon. ·[Select icon...]: Specifies an image file to use as the user icon. Image files in the JPG, PNG, GIF, and BMP format with a file size of less than 1 MB are supported. ·[Initialize icon]: Changes the user icon to the default icon.
3	Username	Sets a string to use as the user's display name. (1 to 50 characters)
4	Email address	Displays the registered email address.
5	GENNECT Cloud license	Displays the plan name and expiration date for the GENNECT Cloud subscription. If the expiration date is less than 31 days away, an exclamation point ("!") will be shown to indicate that the expiration date is approaching.
6	Display detailed user information	Accesses the GENNECT Cloud web page to allow review and editing of more detailed user and account information. *The page will open in your browser.
7	Upgrade to Free plan *Trial plan only	Upgrade the logged-in account from the Trial plan to the Free plan. Accesses the GENNECT Cloud web page to complete the necessary procedure. Please see Upgrading the Trial plan to the Free plan for details.
8	Delete Trial user *Trial plan only	Deletes the logged-in Trial user. Please see Deleting the trial user for details.
9	Save changes	Saves changes made in this window. *This button is available when the icon or username has been edited.
10	Cancel	Closes the window without saving changes.

Deleting the trial user

This section describes how to delete the trial user using the application.
Deleting the trial user will cause all data saved in the cloud to be deleted, and you will no longer be able to access data in the [GENNECT Cloud] folder in the data list. **Be sure to back up any data as necessary before deleting the trial user.**

1. Log in as the trial user you wish to delete. (Reference: Logging In to GENNECT Cloud)
2. Click the icon at the top right of the application's main window and click the displayed [Display user information...] menu item.
   The [User Information] window will be displayed. Click [Delete trial user].

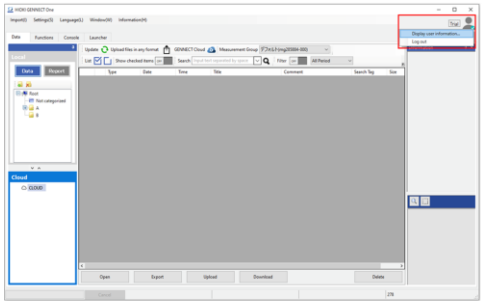


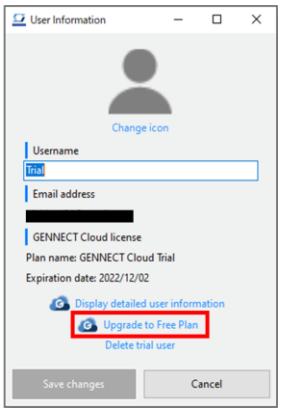


Upgrading the Trial plan to the Free plan

The Trial plan has an expiration date. If you wish to continue to use the service after the Trial plan expires, please switch to the Free plan before the expiration date. **If you do not switch to the Free plan before the expiration date, all data saved in the cloud will be deleted, and you will no longer be able to access data in the [GENNECT Cloud] folder in the data list. Once the expiration date has passed, you will no longer be able to transition to the Free plan.**

1. Log in as the trial user you wish to switch to the Free plan. (Reference: Logging In to GENNECT Cloud)
2. Click the icon at the top right of the application's main window and click the displayed [Display user information...] menu item.
3. The [User Information] window will be displayed. Click [Switch to Free plan].
4. When your browser opens, follow the instructions on the page to switch to the Free plan.





Share and manage battery tester threshold and profile information in the cloud (GENNECT Cloud Standard / Pro plans)

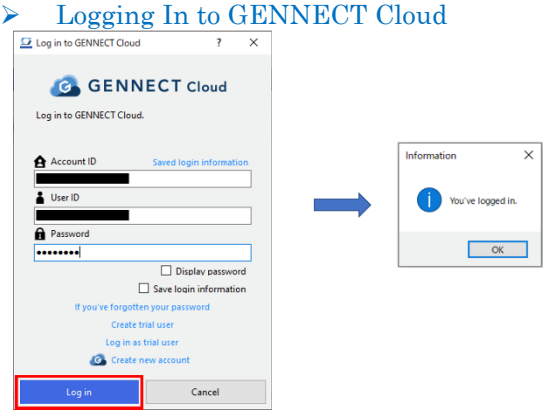
This feature requires a subscription to a GENNECT Cloud Standard or Pro plan.
Battery tester threshold tables can be shared with other users in the same account.
See below for the number of threshold tables and profile information tables that can be shared for each GENNECT Cloud plan.

GENNECT Cloud plan	File name	Max. number
Standard	Battery threshold table	30
	Battery profile table	30
Pro	Battery threshold table	100
	Battery profile table	100

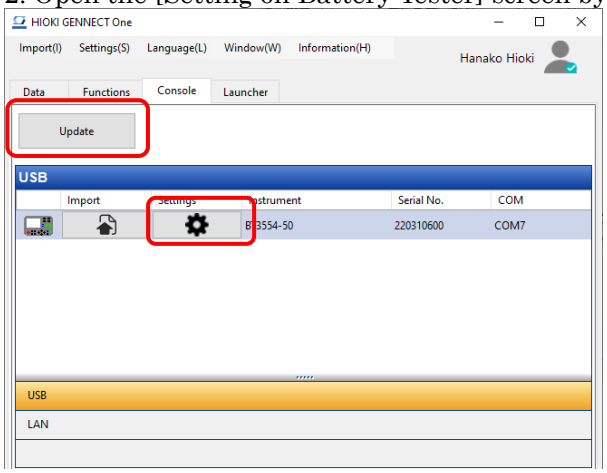
Share battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)

1. Log in to GENNECT Cloud from GENNECT One.
   For details, please refer to the following.

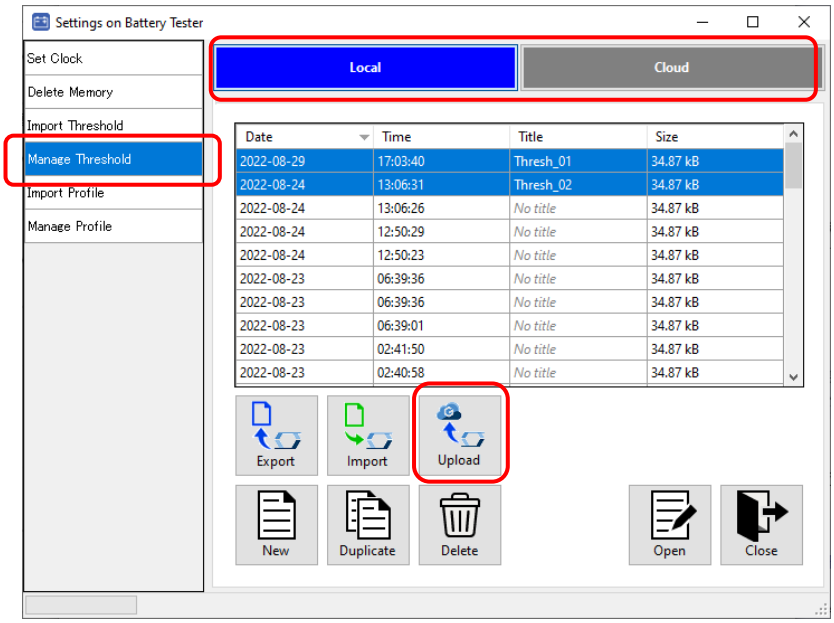
➢ Logging In to GENNECT Cloud



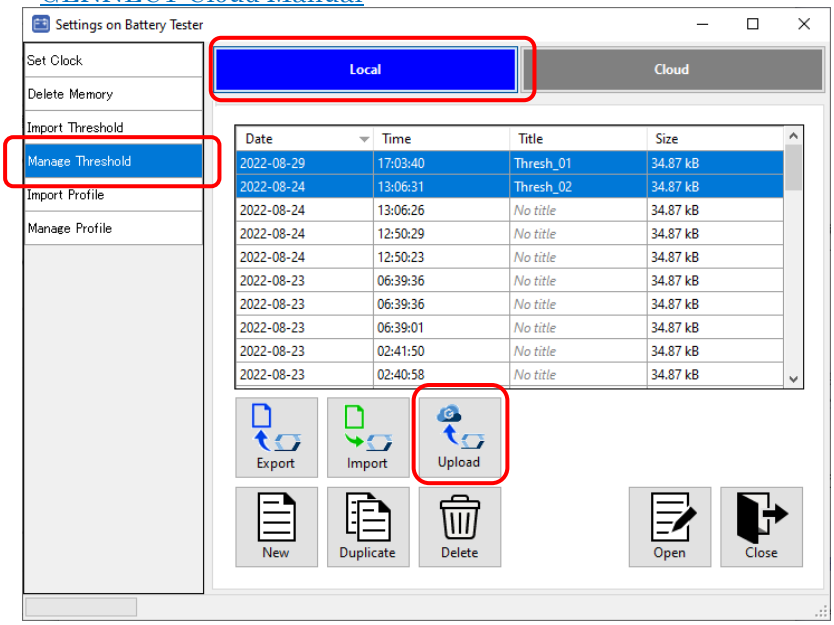
2. Open the [Setting on Battery Tester] screen by clicking the "Settings" button in [Console]-[USB].

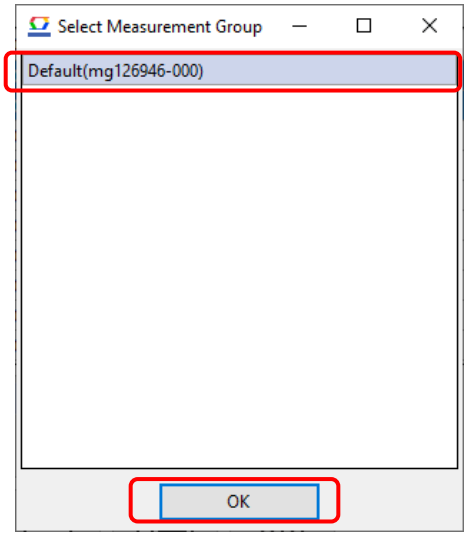


3. If logged in to GENNECT Cloud, you will see the [Local] and [Cloud] function buttons on the [Manage Thresholds] screen.
   In addition, the [Upload] button is displayed on the [Local] screen.

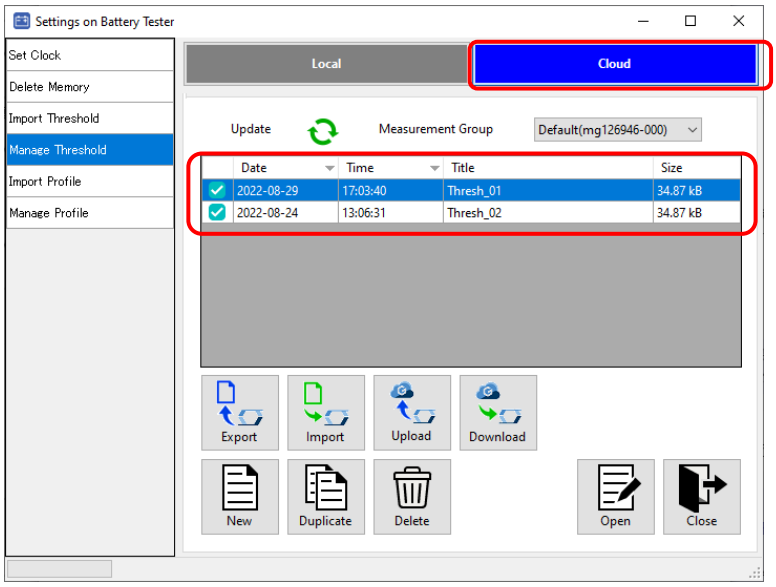


4. On the [Local] screen, select the local threshold table you wish to share and click the [Upload] button.
   At this time, the [Select measurement group] screen will appear, so select the measurement group to upload to.
   Please refer to the GENNECT Cloud online manual for more information about measurement groups.
   GENNECT Cloud Manual





5. The selected threshold tables will be uploaded to the [Cloud] screen.

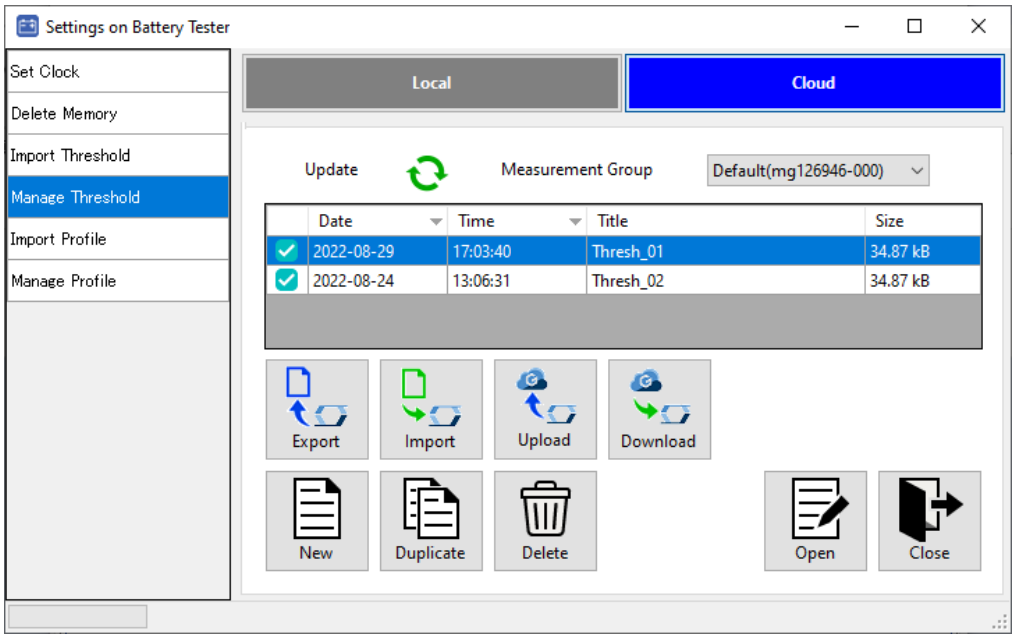


Manage battery tester thresholds in the cloud (GENNECT Cloud Standard / Pro plans)

You can manage threshold tables that are shared with another user in the same account.
Threshold tables are managed on the [Cloud] screen of the [Manage Thresholds] screen.
See below for the file status icons that appear on the [Cloud] screen.

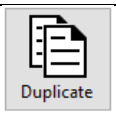
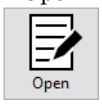
Status icon	Description
	[Full synchronization] Files exist both in the cloud and in local storage, and measurement data content is identical.
	[Partial synchronization] Files exist both in the cloud and in local storage, and measurement data content differs. The status can be changed to [Full synchronization] by either downloading changes in the cloud to the [Data list (cloud)] or uploading changes in the [Data list (cloud)] to the cloud.
	[Not downloaded] Files only exist in cloud storage. Files stored in the cloud can be downloaded from GENNECT One.

For more information on the functionality of the [Cloud] screen, please see below.



No.	Function name	Description
①	Update 	Update the [cloud] management screen with the latest information.
②	Measurement group 	Switches the measurement group, so that the information related to the measurement group will be displayed in [Cloud] screen. Please refer to the GENNECT Cloud online manual for more information about measurement groups. [GENNECT Cloud Manual]

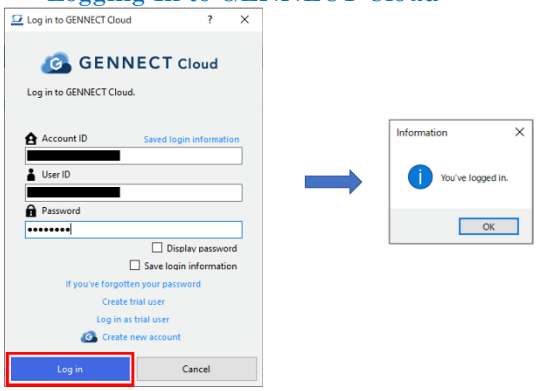
No.	Function name	Description
②	Export 	Export the selected threshold table to a file (hok format). If the status is [Not Downloaded], the file is downloaded from GENNECT Cloud and exported.
③	Import 	Import the selected threshold table from a file (hok format). Imported thresholds are uploaded to the GENNECT Cloud.
⑤	Upload 	Upload the threshold table with status [Partial Synchronization] to GENNECT Cloud and overwite it. Upload to the measurement group currently displayed in [Measurement group].
⑦	Download 	Download threshold tables with status [Not Downloaded] or [Partial Synchronization] from GENNECT Cloud.
⑦	New 	Create a new threshold table. The created threshold table will be uploaded to GENNECT Cloud.
⑧	Duplicate	Duplicate the selected threshold tables. The replicated threshold tables will be uploaded to GENNECT Cloud.

<table>
<tr><td></td><td> 
</td><td></td></tr>
<tr><td>⑨</td><td>Delete
 
</td><td>Delete the selected threshold table.
There are two methods of deletion
<table>
<tr><th>Method</th><th>Description</th></tr>
<tr><td>Delete only local files</td><td>Deletes only measurement data stored on the local PC. This method can be used to save local storage, since deleted measurement data can be reacquired by downloading it again.</td></tr>
<tr><td>Delete both local and cloud files</td><td>Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud.</td></tr>
</table></td></tr>
<tr><td>⑩</td><td>Open
 
</td><td>Open the selected threshold table.
[Edit Threshold Table] window opens.
In the [Edit Threshold Table] window, you can edit the threshold table.
You can also transfer the threshold table to the battery tester with the [Transfer] button.</td></tr>
<tr><td>⑪</td><td>Close
 
</td><td>Close the [Settings on Battery Tester] window.</td></tr>
</table>

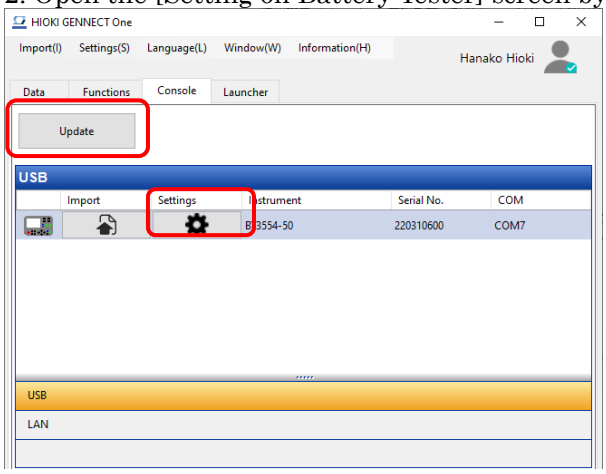
Share battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)

1. Log in to GENNECT Cloud from GENNECT One.
   For details, please refer to the following.

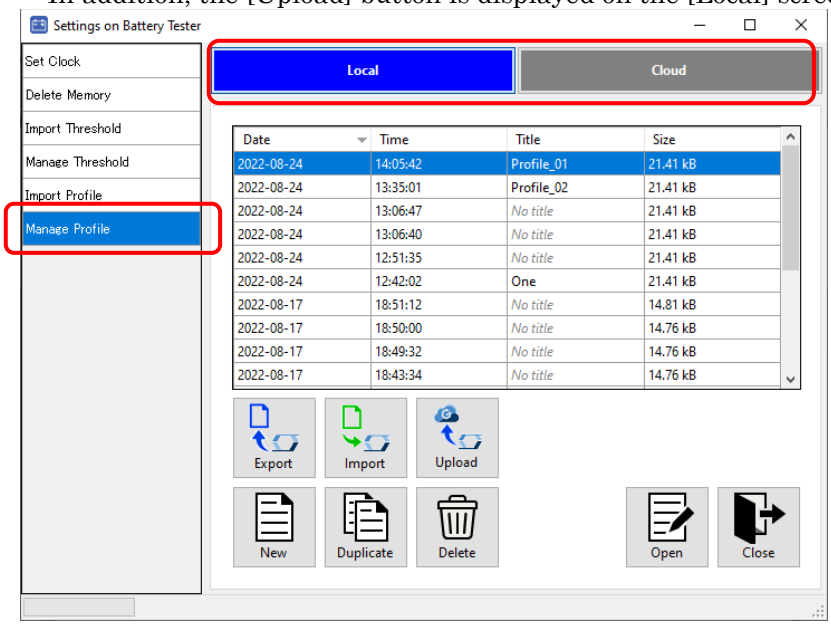
➢ Logging In to GENNECT Cloud



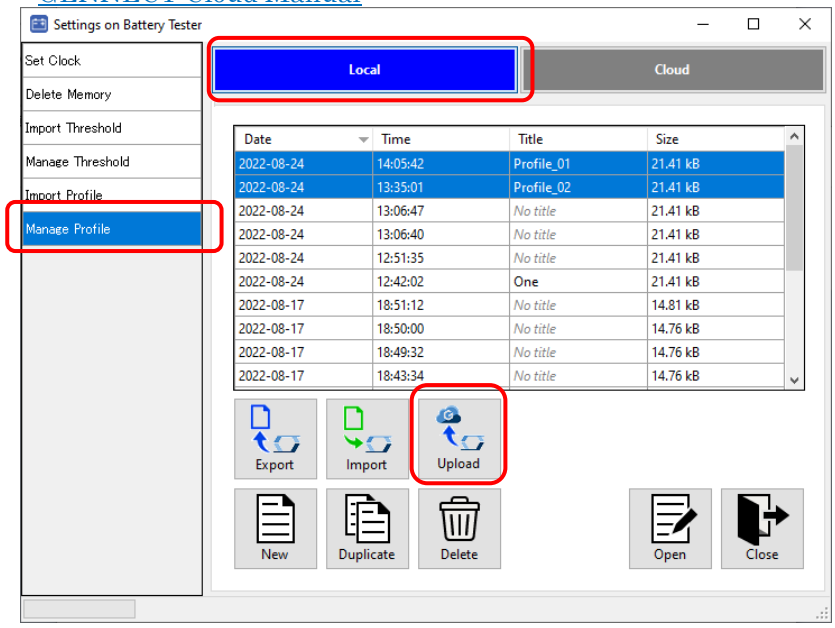
2. Open the [Setting on Battery Tester] screen by clicking the "Settings" button in [Console]-[USB].

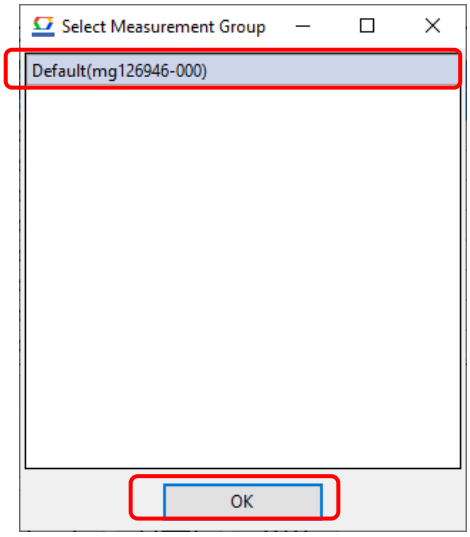


3. If logged in to GENNECT Cloud, you will see the [Local] and [Cloud] function buttons on the [Manage Profiles] screen.
   In addition, the [Upload] button is displayed on the [Local] screen.

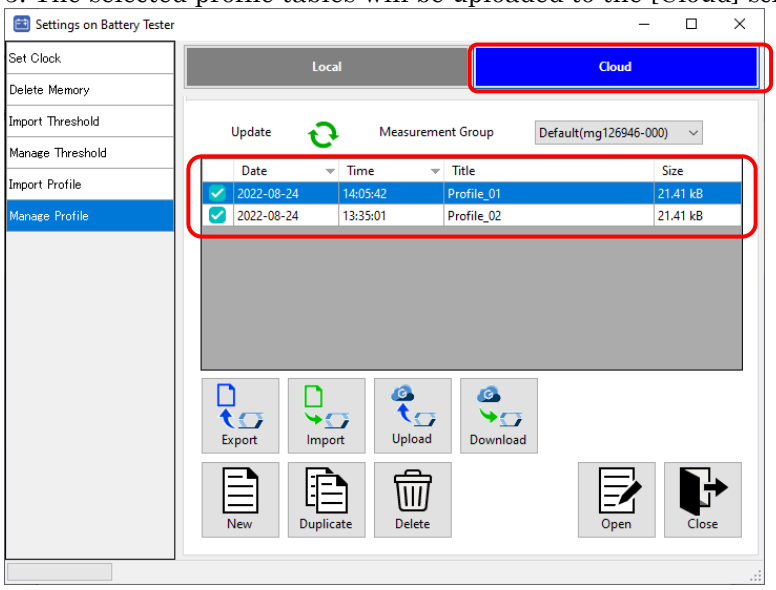


4. On the [Local] screen, select the local profile table you wish to share and click the [Upload] button.
   At this time, the [Select measurement group] screen will appear, so select the measurement group to upload to.
   Please refer to the GENNECT Cloud online manual for more information about measurement groups.
   GENNECT Cloud Manual





5. The selected profile tables will be uploaded to the [Cloud] screen.



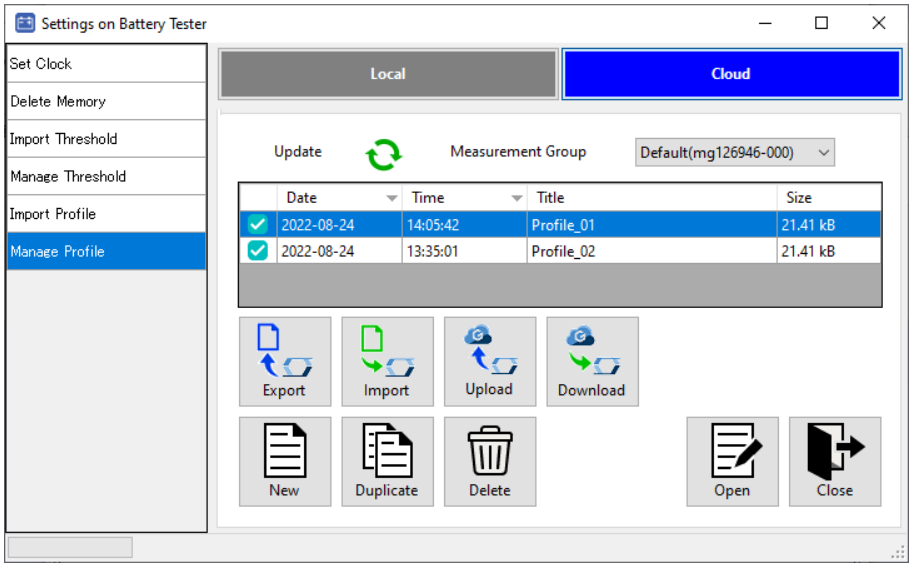
Manage battery tester profiles in the cloud (BT3554 only, GENNECT Cloud Standard / Pro plans)

You can manage profile tables that are shared with another user in the same account.
Profile tables are managed on the [Cloud] screen of the [Manage Profiles] screen.
See below for the file status icons that appear on the [Cloud] screen.

Status icon	Description
	[Full synchronization] Files exist both in the cloud and in local storage, and measurement data content is identical.

	[Partial synchronization] Files exist both in the cloud and in local storage, and measurement data content differs. The status can be changed to [Full synchronization] by either downloading changes in the cloud to the [Data list (cloud)] or uploading changes in the [Data list (cloud)] to the cloud.
	[Not downloaded] Files only exist in cloud storage. Files stored in the cloud can be downloaded from GENNECT One.

For more information on the functionality of the [Cloud] screen, please see below.



No.	Function name	Description
①	Update	Update the [cloud] management screen with the latest information.
②	Measurement group Default(mg126946-000)	Switches the measurement group, so that the information related to the measurement group will be displayed in [Cloud] screen. Please refer to the GENNECT Cloud online manual for more information about measurement groups. GENNECT Cloud Manual

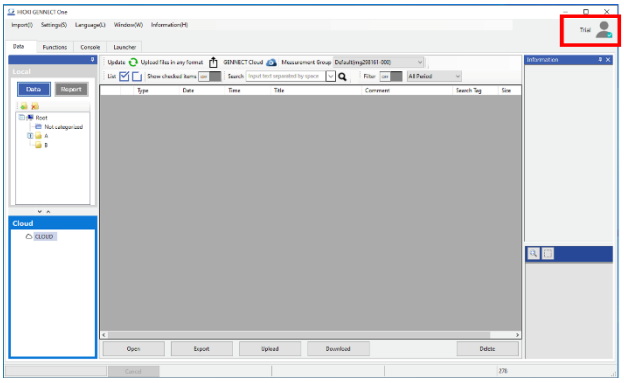
No.	Function name	Description
③	Export Export	Export the selected profile table to a file (hok format). If the status is [Not Downloaded], the file is downloaded from GENNECT Cloud and exported.
④	Import Import	Import the selected profile table from a file (hok format). Imported profiles are uploaded to the GENNECT Cloud.
⑤	Upload Upload	Upload the profile table with status [Partial Synchronization] to GENNECT Cloud and overwite it. Upload to the measurement group currently displayed in [Measurement group].
⑥	Download	Download profile tables with status [Not Downloaded] or [Partial Synchronization] from GENNECT Cloud.

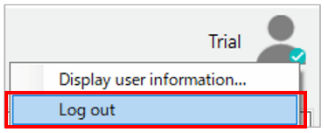
<table>
<tr><td></td><td> 
</td><td></td></tr>
<tr><td>⑦</td><td>New
 
</td><td>Create a new profile table.
The created profile table will be uploaded to GENNECT Cloud.</td></tr>
<tr><td>⑧</td><td>Duplicate
 
</td><td>Duplicate the selected profile tables.
The replicated profile tables will be uploaded to GENNECT Cloud.</td></tr>
<tr><td>⑨</td><td>Delete
 
</td><td>Delete the selected profile table.
There are two methods of deletion
<table>
<tr><th>Method</th><th>Description</th></tr>
<tr><td>Delete only local files</td><td>Deletes only measurement data stored on the local PC. This method can be used to save local storage, since deleted measurement data can be reacquired by downloading it again.</td></tr>
<tr><td>Delete both local and cloud files</td><td>Completely deletes measurement data stored on the local PC as well as measurement data stored in GENNECT Cloud.</td></tr>
</table></td></tr>
<tr><td>⑩</td><td>Open
 
</td><td>Open the selected profile table.
[Edit Profile Table] window opens.
In the [Edit Profile Table] window, you can edit the profile table. You can also transfer the profile table to the battery tester with the [Transfer] button.(*1)</td></tr>
<tr><td>⑪</td><td>Close
 
</td><td>Close the [Settings on Battery Tester] window.</td></tr>
</table>

(*1) The profile table can be transferred only to Battery Tester BT3554-50.

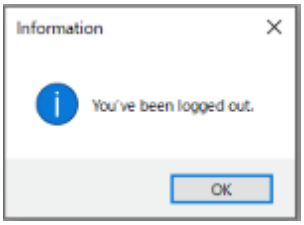
Logging Out

1. Click the icon at the top right of the application's main window.
2. When the menu is displayed, click [Log out].



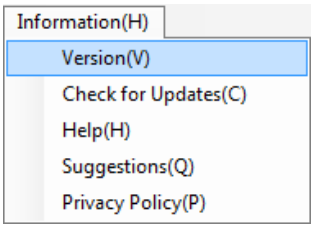


3. Once you are successfully logged out, the message [You've been logged out.] will be displayed.

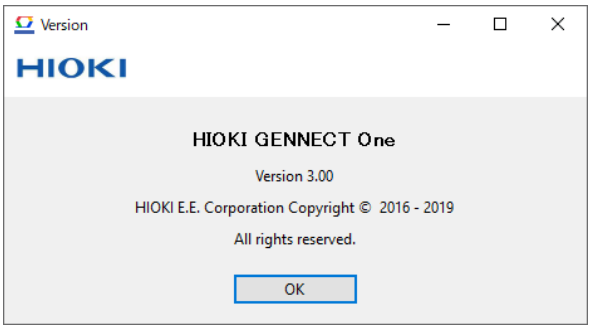


Show Version

1. Select [Information]-[Version] in the menu.



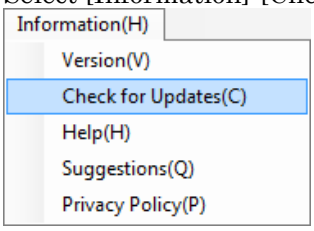
2. The version information of GENNECT One is displayed.



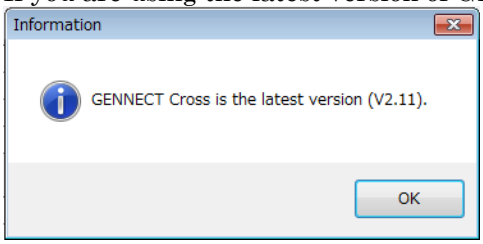
Check for Updates

* An Internet connection is required for this function.

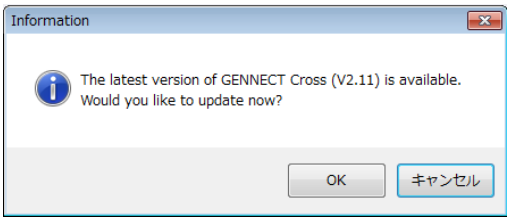
1. Select [Information]-[Check for Updates] in the menu.



2. If you are using the latest version of GENNECT One, the following message appears.

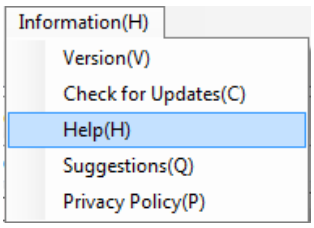


3. If a latest version of GENNECT One is available, the following message appears.
   Click [OK] button to download the latest version.

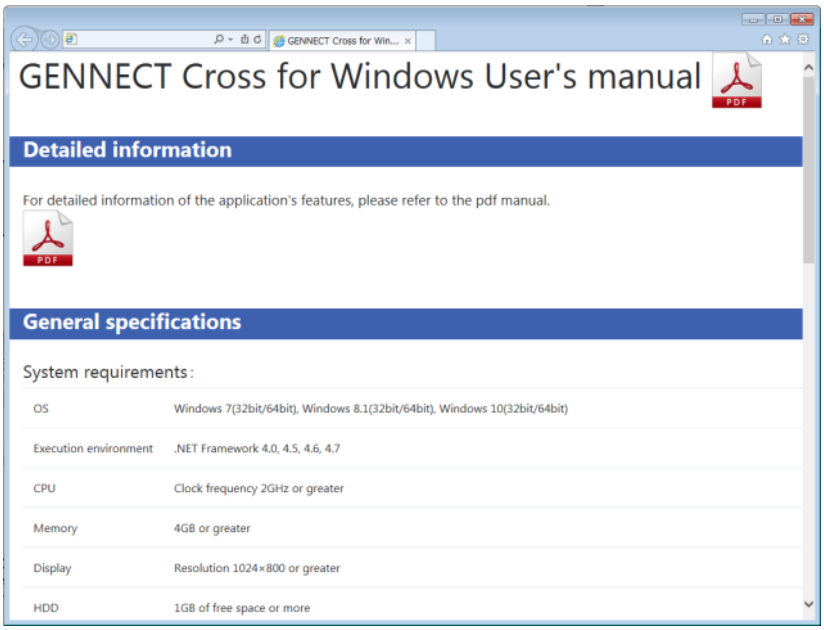


Show Help

1. Select [Information]-[Help] in the menu.



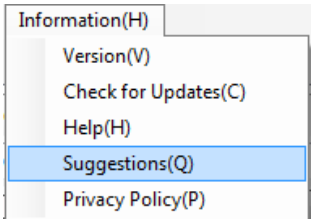
2. The user's manual will be displayed in the browser.



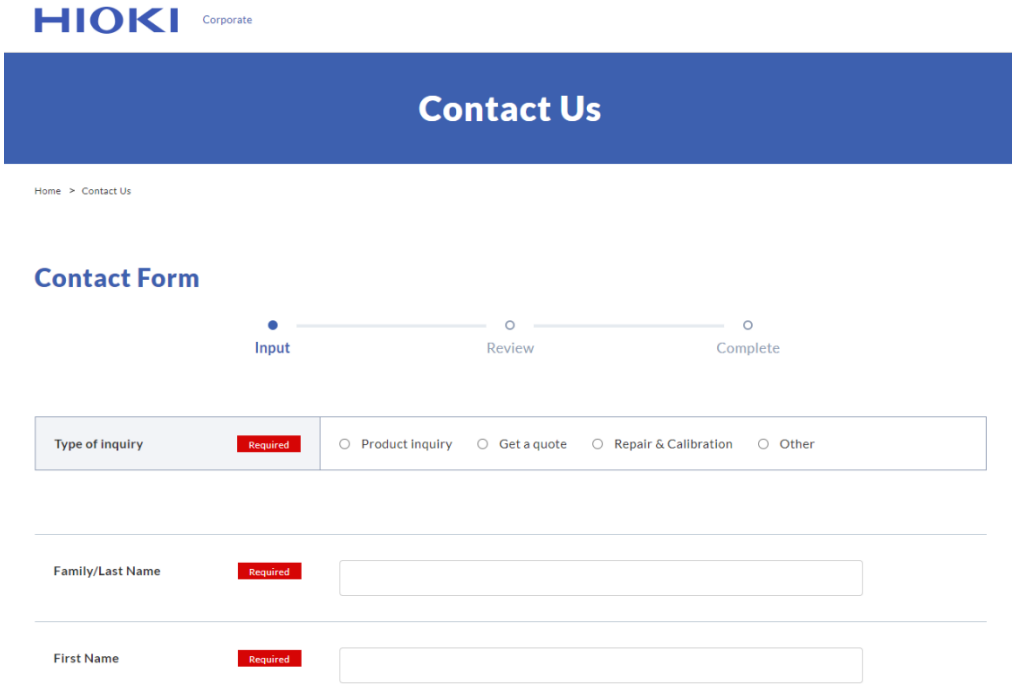
Show Inquiry form

* An Internet connection is required for this function.

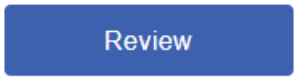
1. Select [Information]-[Suggestions] in the menu.



2. The inquiry form will be displayed in the browser.



3. Please fill in the necessary information, scroll down the screen and click the [Review] button to send your inquiry to us.

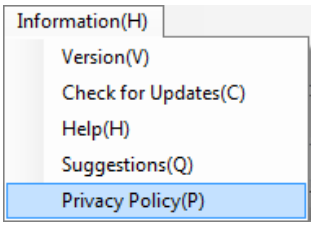


4. We will reply to your inquiry to the email address you provided.

Show Privacy Policy

* An Internet connection is required for this function.

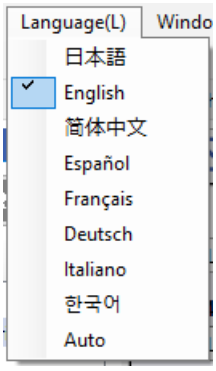
1. Select [Information]-[Privacy Policy] in the menu.



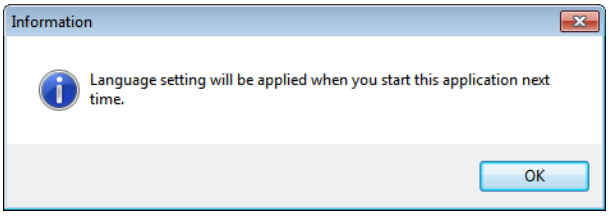
2. GENNECT One privacy policy will be displayed in the browser.

Change the language settings

1. Select [Language] in the menu. Select the language from the drop-down list.



2. The confirmation message is displayed. Click [OK] button to apply the language setting.



*If [AUTO] is selected, the program chooses the appropriate language based on the OS settings.

*The language setting is applied when you start the application next time.

Uninstall the application

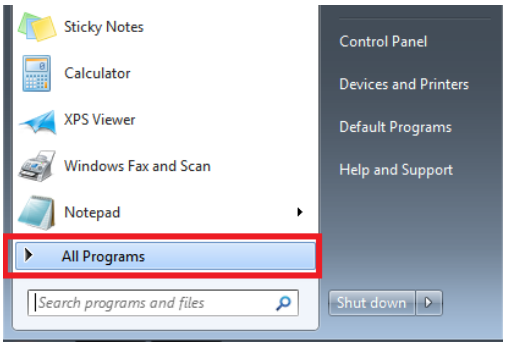
Here explains how to uninstall the application. There are two ways to do this.

・Uninstall from [All Programs]
・Uninstall from [Control Panel]

Uninstall from [All Programs]

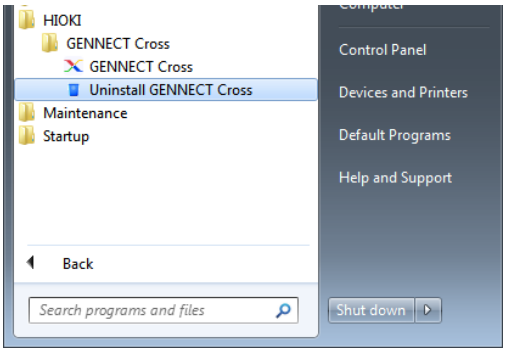
1. Click [Start] button.

2. Click [All Programs].

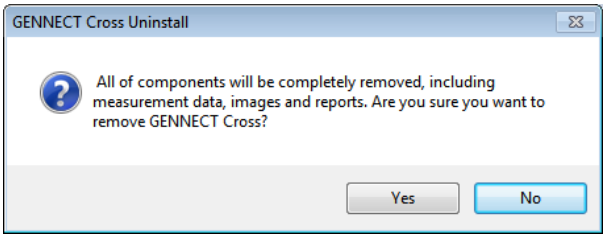


3. Click [HIOKI]-[HIOKI GENNECT One].

4. Click [Uninstall GENNECT One].



5. The Confirmation message is displayed. Click [Yes] to uninstall.

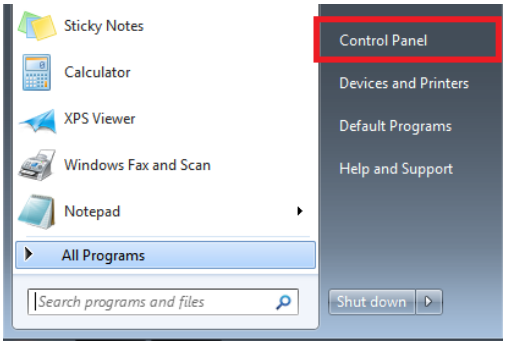


6. ア The application has been uninstalled.

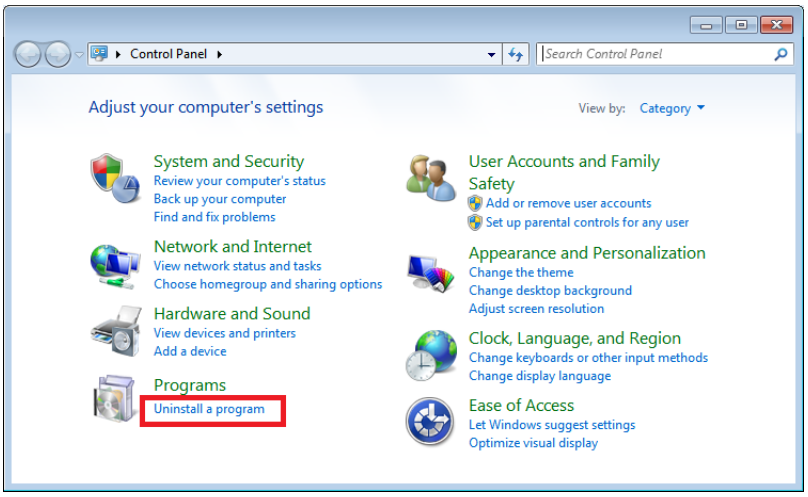
Uninstall from [Control Panel]

1. Click [Start] button.

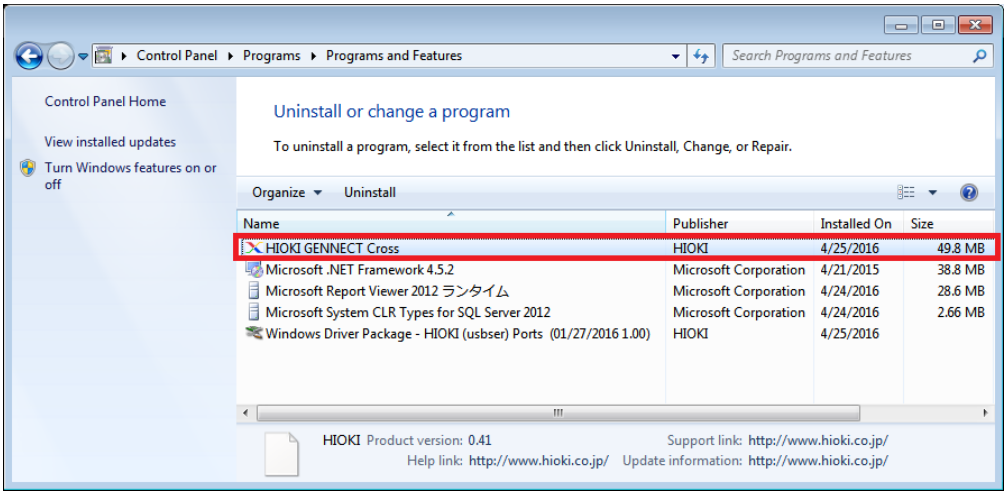
2. Click [Control Panel].



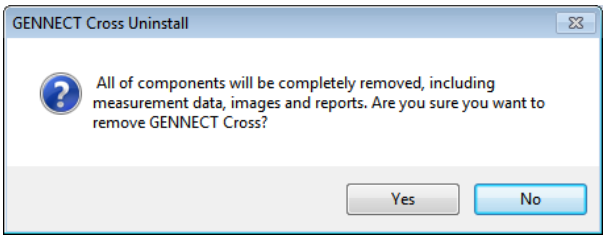
3. Click [Program]-[Uninstall Program].



4. Double-click on [HIOKI GENNECT One] in the program list.



5. The Confirmation message is displayed. Click [Yes] to uninstall.



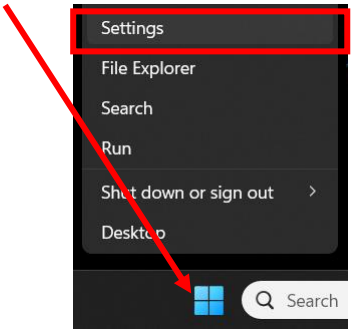
6. The application has been uninstalled.

Appendix

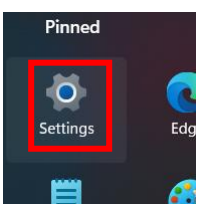
Check or configure the network settings of the computer

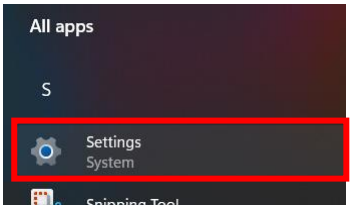
This section describes how to check or configure network settings in Windows 11.

1. Open the Windows 11 settings window. To open the settings screen, do one of the following：
   - Right-click the Windows [Start] button and select the [Settings] menu.

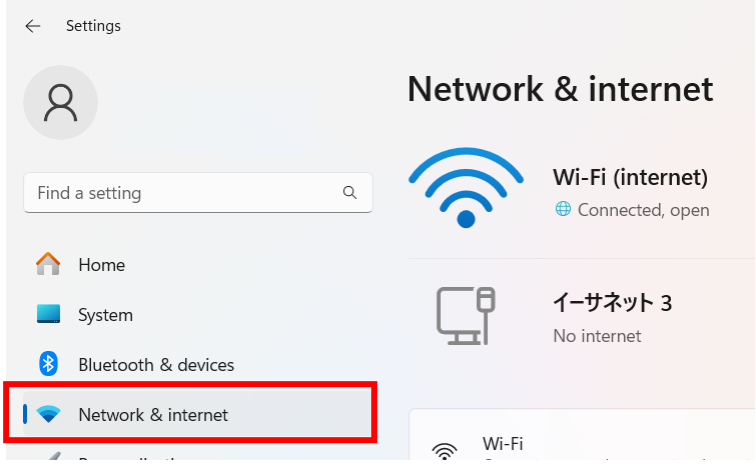


   - Click the Windows [Start] button, then click the [Settings] icon on the Start menu.
     If the icon is not pinned, click the [All Apps] button in the upper left corner and select the [Settings] menu.

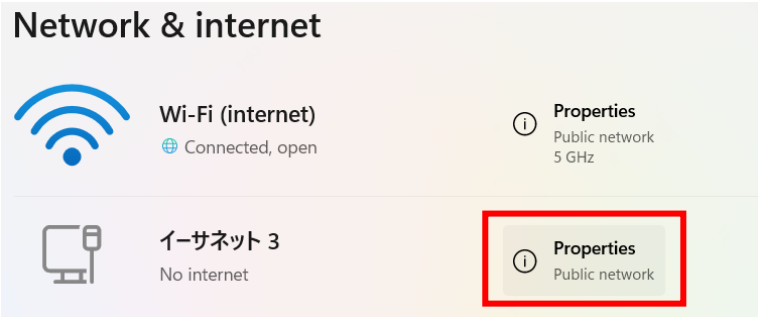




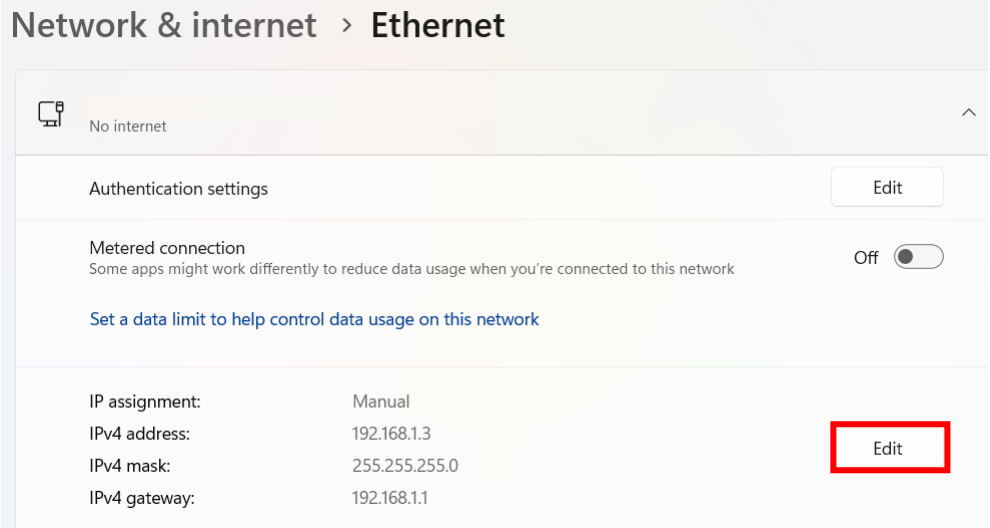
2. Click on [Network & Internet] on the left side of the Settings screen to display the Network & Internet screen.



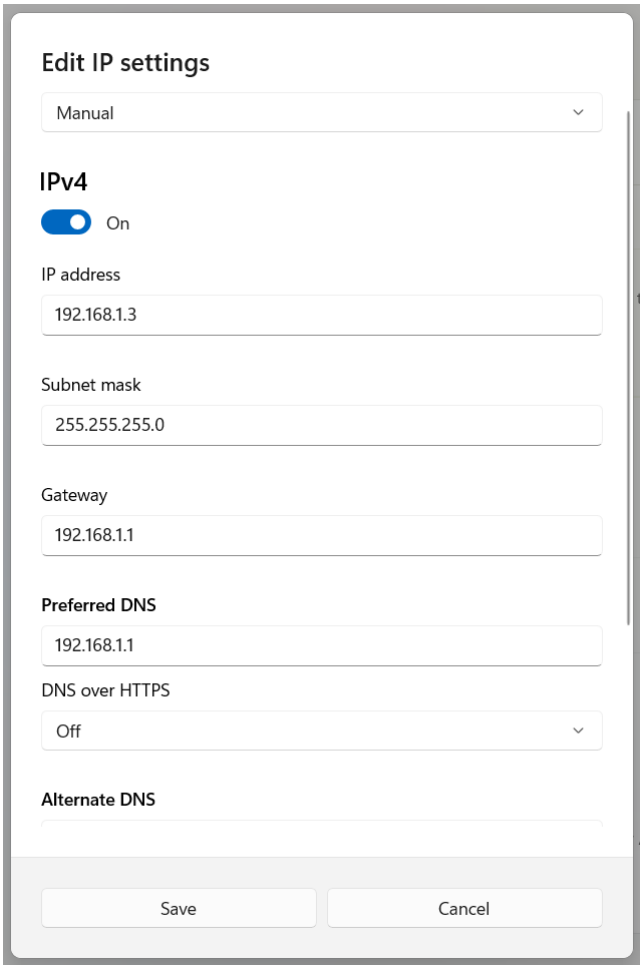
3. Click on [Network & Internet] on the left side of the Settings screen to display the Network & Internet screen.



4. Click the [Edit] button in the IPv4 Settings Display column to display the Edit IP Settings screen.



5. Check the network settings. If you wish to change the settings, edit the configuration items and click the [Save] button.



Identification name and measurement item name in Logging and Dashboard function

PW3335, PW3336, PW3337

Identification name	Measurement item name
U/I	Voltage/Current RMS
P	Active power
UMN/IMN/PMN/SMN/QMN/PFMN	Voltage/Current/Active power/Apparent power/Reactive power/Power factor MEAN
UDC/IDC/PDC	Voltage/Current/Active power DC
UAC/IAC/PAC/SAC/QAC/PFAC	Voltage/Current/Active power/Apparent power/Reactive power/Power factor AC
UFND/IFND/PFND/SFND/QFND/PFFND	Voltage/Current/Active power/Apparent power/Reactive power/Power factor fundamental wave value
DEGAC	Power phase angle AC
DEGFND	Power phase angle fundamental wave value
FREQU/FREQI	Voltage/Current frequency
UPK/IPK	Voltage/Current waveform peak
EFF1	Efficiency1
EFF2	Efficiency2
UCF/ICF	Voltage/Current crest factor
ITAV/PTAV	Time average current/active power
ITAVMN/ PTAVMN	Time average current/active power MEAN
ITAVDC/ PTAVDC	Time average current/active power DC
URF/IRF	Voltage/Current ripple rate
UTHD/ITHD	Voltage/Current total harmonic distortion
PWP/ MWP	Integ. active power in positive/negative direction
WP	Integ. active power in positive and negative direction
PWPMN/ MWPMN	Integ. active power in positive/negative direction MEAN
WPMN	Integ. active power in positive and negative direction MEAN
PWPDC/ MWPDC	Integ. active power in positive/negative direction DC
WPDC	Integ. active power in positive and negative direction DC
IH	Integ. current in positive and negative direction
IHMN	Integ. current in positive and negative direction MEAN
PIHDC/ MIHDC	Integ. current in positive/negative direction DC
IHDC	Integ. current in positive and negative direction DC
HUL/HIL	Harmonic voltage/current level
HPL	Harmonic active power level
HUD/HID	Harmonic voltage/current content percentage
HPD	Harmonic active power content percentage
HUP/HIP	Harmonic voltage/current phase angle
HPP	Harmonic voltage and current phase difference

PW8001

Identification name	Measurement item name
Urms/Irms	Voltage/Current RMS
Umn/Imn	Voltage/Current MEAN
Udc/Idc	Voltage/Current DC
Uac/Iac	Voltage/Current AC
Ufnd/Ifnd/Pfnd/Sfnd/Qfnd/PFfnd	Voltage/Current/Active power/Apparent power/Reactive power/Power factor fundamental wave value
PUpk/PIpk	Voltage/Current waveform peak (positive)
MUpk/MIpk	Voltage/Current waveform peak (negative)
Uthd/Ithd	Voltage/Current total harmonic distortion
Urf/Irf	Voltage/Current ripple rate
P	Active power
S	Apparent power
Q	Reactive power
PF	Power factor
Udeg/Ideg/DEG	Voltage/Current/Power phase angle
FU/FI	Voltage/Current frequency
PIH/MIH	Integ. current in positive/negative direction
IH	Integ. current in positive and negative direction
PWP/MWP	Integ. active power in positive/negative direction
WP	Integ. active power in positive and negative direction
ETIME	Total elapsed time for integration
Eff	Efficiency

Loss	Loss
Tq	Torque
Spd	Rotation speed
Pm	Motor power
Slip	Slip
MTCH	Free input during independent input mode operation
UDF	User-defined function
Pst	Short-term flicker value
PstMax	Maximum short-term flicker value
Plt	Long-term flicker value
PinstMax	Maximum instantaneous flicker value
PinstMin	Minimum instantaneous flicker value
DC	Relative steady-state voltage change
DMax	Maximum relative voltage change
TMax	Period while the relative voltage change exceeds the threshold
HF	Harmonic synchronous frequency
HUL/HIL	Harmonic voltage/current level
HPL	Harmonic active power level
HUD/HID	Harmonic voltage/current content percentage
HPD	Harmonic active power content percentage
HUP/HIP	Harmonic voltage/current phase angle
HPP	Harmonic voltage and current phase difference
IHUL/IHIL	Interharmonic voltage/current level
IHUD/ IHID	Interharmonic voltage/current content percentage

*Measurement items in blue cells can be obtained only for devices equipped with the motor analysis option.
*Measurement items in yellow cells can be obtained only when IEC harmonic mode is set.
*The identification name of the measurement item of the secondary unit when using optical link mode is the one with "SC" added to the end of the identification name in the table above.
Example: UrmsSC1: RMS voltage of CH1 of the secondary unit, PSC2: Effective power of CH2 of the secondary unit

PQ3198

Identification name	Measurement item name
Freq	Frequency
Urms/Irms	Voltage/Current RMS
Upk+/Ipk+	Voltage/Current waveform peak (positive)
Upk-/Ipk-	Voltage/Current waveform peak (negative)
Uthd-F/Ithd-F	Voltage/Current total harmonic distortion（Fundamental wave value）
Uthd-R/Ithd-R	Voltage/Current total harmonic distortion（RMS）
UharmH/IharmH	High-order harmonic voltage/current component
P	Active power
S	Apparent power
Q	Reactive power
PF	Power factor
KF	K factor
Eff	Efficiency
Uunb/Iunb	Voltage/Current negative-phase unbalance factor
Uunb0/Iunb0	Voltage/Current zero-phase unbalance factor
WP+/ WP-	Active energy (Consumption/Regeneration)
WQ_LAG/ WQ_LEAD	Reactive energy (Lag/Lead)
Msv	Mains signaling voltage (Level)
Msv%	Mains signaling voltage (Content rates)
Dv10/Dv10max	ΔV10 flicker（every 1 minute/1-hour maximum value）
Pst/Plt	IEC flicker（short/long interval voltage flicker）
Uharm/Iharm/Pharm	Harmonic voltage/current level
Pharm	Harmonic active power level
Uharm%/Iharm%	Harmonic voltage/current content percentage
Pharm%	Harmonic active power content percentage
Uphase/Iphase	Harmonic voltage/current phase angle
Pphase	Harmonic voltage and current phase difference