OMRON

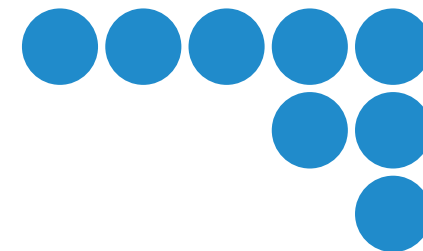**Special PC Software**

ZR-SX10

Wave Inspire RX

Software Manual

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Introduction

Precautions for Correct Use

Be sure to observe the following points when using this software with the ZR-RX connected to a PC.

• Do not connect any devices apart from a mouse or a keyboard to the other USB terminals on your PC.
• Set the PC's power-saving functions to Off.
• Set the Screen Saver to Off.
• Set the anti-virus and security software auto update functions to Off. Also, set the Windows auto update functions to Off.

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• Microsoft and Windows are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
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Meanings of Signal Words

Meanings of Symbols

Menu items that are displayed on the ZR-RX's LCD screen, and windows, dialog boxes and other GUI elements displayed on the PC are indicated enclosed by brackets "[ ]".

Visual Aids

| Important | Indicates points that are important to achieve the full product performance, such as operational precautions. |

| Note | Indicates application procedures. |

Indicates pages where related information can be found.

➤ Indicates movement through the menu hierarchy down to the desired setting item.

CONTENTS

Navigating through Wave Inspire RX

The PC software "Wave Inspire RX" is exclusively for acquiring and observing measurement data from the Portable Multi Logger ZR-RX25/RX45/RX70 on a PC.
The acquisition, observation and output (saving/printing) of measurement data can be achieved through simple operation.

Preparing ▶	Setting ▶	Observing ▶	Printing/Saving
Prepare to use Wave Inspire RX.	Set acquisition conditions in the [Acquisition Condition Settings] window.	Observe waveform data in the graph window.	Print/save waveforms displayed in the graph window.
	* When settings are made, the setting data is forcibly written to the Logger main unit.		

[Acquisition Condition Settings] window

Graph window

Output in CSV

Output to printer

Output in BMP /JPG format

BEFORE USE

- ■ Outline   p.4
- ■ USB driver   p.4
- ■ Installing Wave Inspire RX   p.8
- ■ Basic operation procedure   p.9
- ■ Initializing settings   p.11

BASIC OPERATIONS

- ■ Window names and functions   p.12

- ■ Basic operations in [Acquisition Condition Settings] window   p.17
  - ・ Selecting channels
  - ・ Setting acquisition conditions
- ■ Using grouping functions   p.19
  - ・ Setting groups

- ■ Basic operations in graph window   p.18
  - ・ Selecting waveforms
  - ・ Moving waveforms
  - ・ Enlarging (reducing) waveforms
  - ・ Moving scales
  - ・ Inserting, editing and deleting marks/comments
  - ・ Scrolling waveforms

Quick Handy Features

Saved setting data and waveform data can be loaded to Wave Inspire RX and used as desired. Other handy applications include use of setting data to set new acquisition conditions and comparison of waveform data with waveforms acquired in the past.

- ■ Loading of waveform data   p.22
- ■ Loading of setting data   p.23

- ■ Reading setting data   p.23
- ■ Setting acquisition/display conditions   p.25
- ■ Calculated waveforms   p.26
- ■ Conditional search   p.26
- ■ Auto-save setting   p.27
- ■ Starting/stopping acquisition / Starting free run   p.28

- ■ Reading waveform data   p.22
- ■ View   p.29
- ■ Performing searches   p.31
- ■ Cursors   p.32
- ■ Window operations   p.34

- ■ Saving waveform data   p.22
- ■ Saving setting data   p.23
- ■ Saving CSV data/Saving screen images   p.24
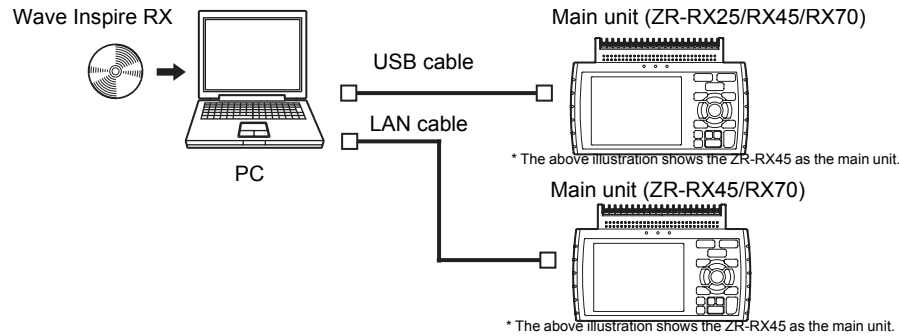- ■ Printing   p.25

ADVANCED OPERATIONS

Outline

Basic Configuration

Connect the main unit (ZR-RX25/RX45/RX70) to the PC installed with Wave Inspire RX using the USB or LAN cable(ZR-RX45/RX70).

📖 Connecting the Main Unit p.9

Wave Inspire RX

PC

USB cable

LAN cable

Main unit (ZR-RX25/RX45/RX70)

* The above illustration shows the ZR-RX45 as the main unit.

Main unit (ZR-RX45/RX70)

* The above illustration shows the ZR-RX45 as the main unit.

System Requirements

Make sure that the PC on which you plan to install Wave Inspire RX meets the following requirements.

Item	System Requirements
OS	• Windows XP SP3 • Windows Vista SP1 • Windows 7
CPU	Intel compatible processor 1 GHz or faster recommended
Memory	• Windows XP: 512 MB or more (recommended: 1 GB or more) • Windows Vista, 7: 1 GB or more (recommended: 2 GB or more)
Hard disk	At least 10 MB of free hard disk space is required for installing Wave Inspire RX.
Display	• 1024 x 768 resolution, or higher • 16-bit color or higher screen display functions (recommended: 24-bit color or more)
Other	• Hardware supporting the above OSs • USB port , LAN port • CD-ROM drive

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USB Driver

Important

Check the OS of the PC you are using, and install or update the USB driver by following the procedures appropriate for the OS.

Installing the USB Driver

To connect the ZR-RX to a PC with the USB interface, a USB driver must be installed in the PC.
This chapter explains the procedures for installing the USB driver version 2.03 later.

In the case of Windows XP

■ **Preparation before Installation**
• Confirm the ZR-RX is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
• Close all the other software.

■ **Installation Procedures**

1 Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.

2 Click the [USB driver] button on the screen of [Utility Disk Menu]. or, start D:\USB Driver\RX2xRX4x\Setup.exe.
(Double click the Setup or Setup.exe.)

Note

D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

3 Device Driver Installation Wizard starts.
Press the Next button.

4 The Software Installation dialog box opens in some cases.
Press Continue Anyway button.

5 Please wait while wizard installs the driver software.

6 The installation completes.
Press Finish button to exit the Setup.

7 **Turn on the ZR-RX and wait for a while till the initialization of device is completed.**

Connect the ZR-RX to your PC using the USB cable.

The Found New Hardware Wizard in (7) and subsequent steps starts only at the first connection. (It will never appear again after the next connection of your device to your PC.)

When the USB port to be connected is changed or the USB-HUB is used, the Found New Hardware Wiz-ard reopens in some cases.

In that case, perform step (7) and subsequent steps.

8 **The Found New Hardware Wizard starts.**

Select "No, not this time" and click the Next button.

9 **Specify the installation method.**

Select "Install the software automatically (Recommended)" and click the Next button.

10 **The Hardware Installation dialog box opens in some cases.**

Press Continue Anyway button.

11 **Please wait while wizard installs the driver software.**

12 **The installation completes.**

Click the Finish button to exit the Found New Hardware Wizard.

■ **Device Driver Confirmation Procedures**

Confirm that the USB driver is correctly installed by the procedures below.
When confirming, turn on the ZR-RX and connect it to your PC using the USB cable.

1 **Select Device Manager in the System of the Performance and Maintenance on the Control panel.**

(Control panel → Performance and Maintenance → System → Device Manager)

Select the Hardware tab and click the Device Manager button.

2 **Device Manager starts.**

Click the "+" mark to the left of "Universal Serial Bus controllers" to open the tree.

3 **Confirm the driver is recognized correctly.**

Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

In the case of Windows Vista

■ **Preparation before Installation**

• Confirm the ZR-RX is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
• Close all the other software.

■ **Installation Procedures**

1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

2 **Click the [USB driver] button on the screen of [Utility Disk Menu]. or, start D:\USB Driver\RX2xRX4x\Setup.exe.**

(Double click the Setup or Setup.exe.)

| Note |

D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

3 **User Account Control dialog may appear.**

Press Continue button when the User Account Control dialog appears.

4 **Device Driver Installation Wizard starts.**

Press the Next button.

5 **Windows Security dialog may opens.**

Press Install button.

6 **Please wait while wizard installs the driver software.**

7 **The installation completes.**

Press Finish button to exit the Setup.

8 **Turn on the ZR-RX and wait for a while till the initialization of device is completed.**

Connect the ZR-RX to your PC using the USB cable.

When you connect it for the first time, the balloon message "Installing device driver software" appears on the right bottom corner on the display, so please wait for a moment.

(It will never appear again after the next connection of your device to your PC.)

After a while, the balloon message shown below appears.

Be sure to wait till the balloon message appears.

If the balloon message does not appear after passing more than 10 min., reconnect your USB cable again.

■ **Device Driver Confirmation Procedures**

Confirm that the USB driver is correctly installed by the procedures below.
When confirming, turn on the ZR-RX and connect it to your PC using the USB cable.

1 **Select Device Manager in the System of the System and Security on the Control panel.**

(Control panel → System and Security → System → Device Manager)

2 **User Account Control dialog may apperas.**

When the User Account Control dialog is displayed, press Continue button.

3 **Device Manager starts.**

Click the white "+" mark next to the Universal Serial Bus controllers and open the tree structure.

4 **Confirm the driver is recognized correctly.**

Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

In the case of Windows 7

■ **Preparation before Installation**

• Confirm the ZR-RX is not connected to your PC using the USB cable.
  If it is connected to your PC, disconnect the USB cable.
• Close all the other software.

■ **Installation Procedures**

1 **Insert the "Utility disk" (CD-ROM) provided into the PC's CD-ROM drive.**

2 **Click the [USB driver] button on the screen of [Utility Disk Menu]. or, start D:\USB Driver\RX2xRX4x\Setup.exe.**

(Double click the Setup or Setup.exe.)

| Note |

D: drive name of CD-ROM. The letter of CD-ROM drive vary it with the CD-ROM drive of your PC.

3 **User Account Control dialog may appear.**

Press Yes button when the User Account Control dialog appears.

4 **Device Driver Installation Wizard starts.**

Press the Next button.

5 **Windows Security dialog may opens.**

Press Install button.

6 **Please wait while wizard installs the driver software.**

7 **The installation completes.**

Press Finish button to exit the Setup.

8 **Turn on the ZR-RX and wait for a while till the initialization of device is completed.**

Connect the ZR-RX to your PC using the USB cable.

When you connect it for the first time, the balloon message "Installing device driver software" appears on the right bottom corner on the display, so please wait for a moment. (It will never appear again after the next connection of your device to your PC.)

After a while, the balloon message shown below appears.

Be sure to wait till the balloon message appears.

If the balloon message does not appear after passing more than 10 min., reconnect your USB cable again.

■ **Device Driver Confirmation Procedures**

Confirm that the USB driver is correctly installed by the procedures below.
When confirming, turn on the ZR-RX connect it to your PC using the USB cable.

1 **Select Device Manager in the System of the System and Security on the Control panel.**
(Control panel → System and Security → System → Device Manager)

2 **User Account Control dialog may apperas.**
When the User Account Control dialog is displayed, press Continue button.

3 **Device Manager starts.**
Click the white triangle next to the Universal Serial Bus controllers and open the tree structure.

4 **Confirm the driver is recognized correctly.**
Confirm that the name of OMRON ZR-RX Series is registered and that there is no X or ! mark beside the name

Now the USB driver installation finishes.

Checking the Version of Your USB Driver

This section describes how to check the version of the USB driver on Windows XP.

1 **Connect the main unit to the PC using the USB cable, turn the power on, and display the [Device Manager] window.**

2 **In the window displayed, open [USB (Universal Serial Bus) Controller]. Confirm that "OMRON ZR series" is shown. Right-click it and select [Properties].**
The [Properties] window is displayed.

3 **In the window displayed, select the [Driver] tab and click the [Driver Details].**
Select "......\GTCUSBR.SYS" to check the version of the driver file.

Installing Wave Inspire RX

Uninstalling Wave Inspire RX

This section describes the procedure for uninstalling the USB driver from Windows XP.

Important

• Before installing/uninstalling Wave Inspire RX, quit all other programs that are running. If virus detection software is enabled, installation/uninstallation may take time to complete.

• When installing/uninstalling Wave Inspire RX, log in as an administrator or a user having the same privileges as an administrator for changing system settings.

1 **Completely exit Wave Inspire RX.**

2 **Select [Set Program Access and Defaults] from the [Start] menu in the PC.**
The [Add or Remove Programs] window appears.

1 **Insert the "Utility Disk" (CD-ROM) provided into the PC's CD-ROM drive.**
The [Utility Disk Menu] window appears.

3 **In the window displayed, click [Change or Remove Programs].**

2 **Click the [Wave Inspire RX (English version)] button in the [Utility Disk Menu] window.**
This starts up the Installer. Start the installation by following the Installer's instructions.
Installation of Wave Inspire RX is started. After a while, the "Installation Complete" message appears.

4 **In the window displayed, select "Wave Inspire" and click [Remove].**
The confirmation dialog appears.

5 **In the confirmation dialog, click [Yes].**

6 **In the window displayed, click [X].**
This completes the uninstallation.

3 **In the window displayed, click [Close].**
This completes the installation.

Basic Operation Procedure

This section describes the basic operation procedure.

Connecting the main unit ▶ Starting up Wave Inspire RX ▶ Acquiring data ▶ Exiting Wave Inspire RX

Connecting the Main Unit

Connecting the main unit ▶ Starting up Wave Inspire RX ▶ Acquiring data ▶ Exiting Wave Inspire RX

1 Turn the power supply on.

2 When the main unit has started up, connect it to the PC.

■ When connected by USB cable

* The above illustration shows the ZR-RX45 as the main unit.
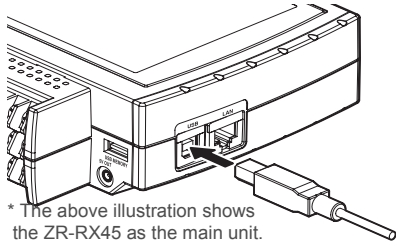
Important

Make sure that the USB cable is inserted into the correct connector. (Do not connect it to the LAN connector.)

Note

When using a USB cable, a USB driver must be installed in the PC.

📖 Installing the USB Driver p.4

■ When connected by LAN cable
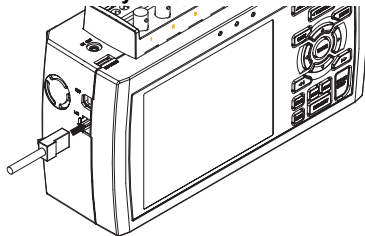
Important

Make sure that the LAN cable is inserted into the correct connector. (Do not connect it to the USB connector.)

* The above illustration shows the ZR-RX70 as the main unit.

Specifying Devices When Multiple Units Are Connected

When multiple main units are connected, [USB ID] (if connected by USB cable) or [IP address] (if connected by LAN cable) must be set as the identifier in communications between Wave Inspire RX and the main unit .
They must be set on both the main unit side and the Wave Inspire RX side.

■ Confirming/Setting the USB ID/IP address on the main unit side
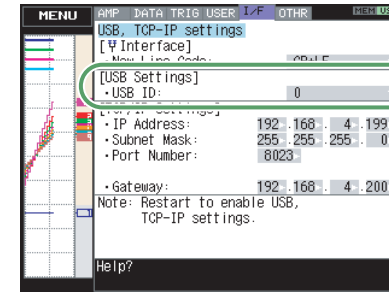
The USB ID and the IP address can be set in the following window.
ZR-RX25 [OTHR Settings] window
ZR-RX45 [I/F Settings] window
ZR-RX70 [OPT Settings] window
*The figure in the left shows ZR-RX45 [I/F Settings] window.
*ZR-RX25 is a setting only of [USB ID].
When the the the setting is changed, the main unit must be turned off and restarted to reflect the new settings.

📖 ZR-RX25 User's Manual
ZR-RX45 User's Manual
ZR-RX70 User's Manual

■ Specifying the USB ID/IP address on the PC side
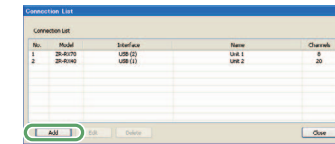
When [Acquisition]-[Conn Setup] on the menu bar is selected, the [Connection List] opens.
To connect a new main unit to the PC, click [Add]. To edit an existing connection list, select a No. and click [Edit].

■ Adding (editing) connections
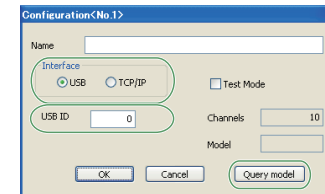
When [Add] or [Edit] is clicked, the [Configuration] window opens. If necessary, enter connection name in [Name] text box. When selecting the connection method at [Interface], set [USB ID] for USB connection, or [IP address] and [Port No.] for LAN connection, respectively.
Click [Query Model] to perform communication test with main unit and confirm the settings.
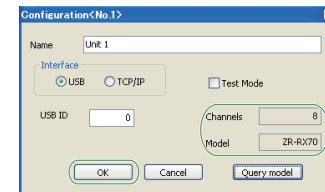
If the PC is connected normally to the main unit, the model and number of channels of the connected main unit are displayed at [Model] and [Channels]. If the PC is not successfully connected, an error message is displayed.

📖 Troubleshooting p.41

When the [Test Mode] box is checked, Wave Inspire RX behaves as if it is connected to the main unit. In the test mode, dummy values can be measured and displayed on screen. Click [OK] to configure the settings.

Starting up Wave Inspire RX

Select [All Programs]-[OMRON]-[Wave Inspire RX]-[Wave Inspire RX Ver.**] from the [Start] menu in the PC. Wave Inspire RX starts up and the main window appears.
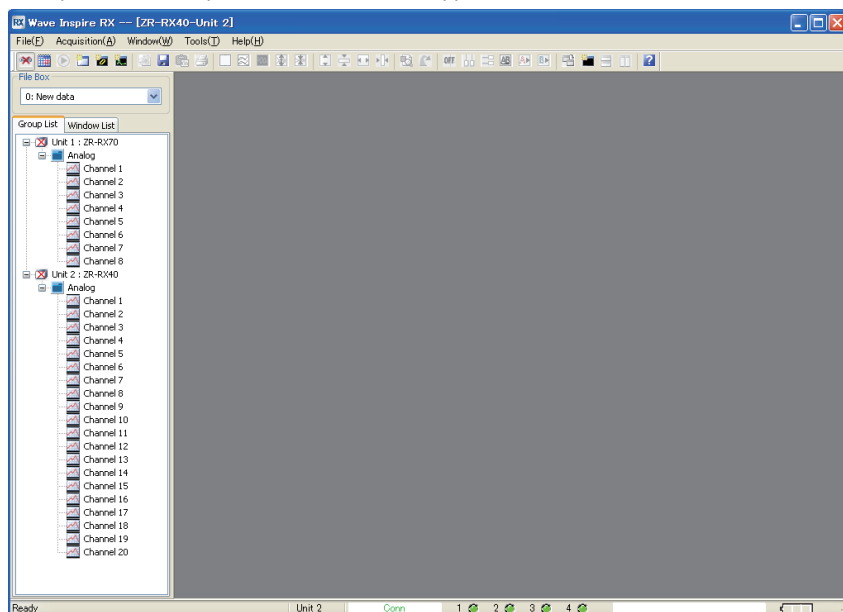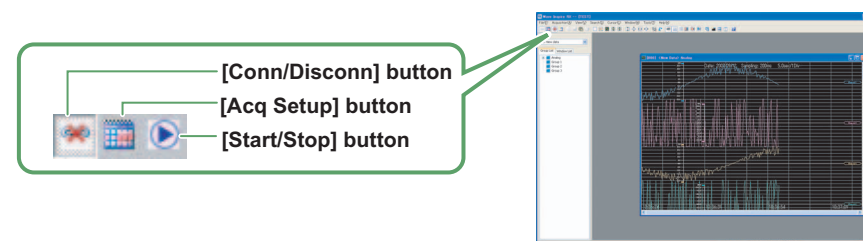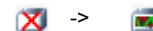

Note

- Operation at startup can be specified by [Tools]-[Options]-[Auto-save setting] on the menu bar.

  Load settings: Automatically loads the previous acquisition condition settings and waveform display states when the software is started up.
  (default: enabled)

  Connect: Automatically connects to the main unit connected to the PC, and starts communication.
  (default: enabled)
  When disabled is set, set the model to connect to by [Acquisition]-[Conn Setup] on the menu bar.

    📖 Options p.37

- When the connection is broken by a cable disconnection or the battery running out, set the model to connect to by [Acquisition]-[Conn Setup] on the menu bar.

Acquiring Data

[Conn/Disconn] button
[Acq Setup] button
[Start/Stop] button

1 Click the [Conn/Disconn] button 🔗 , or select the [Acquisition]-[Conn/Disconn] on the menu bar.
(This operation is not required when the [Conn/Disconn] button is in the 📶 (connection) state.)
This connects the PC to the main unit, and starts communication.

Note

This connects the PC to all loggers set in the [Connection List].

2 Click the [Acq Setup] button ▦ , or select the [Acquisition]-[Acq Setup] on the menu bar, or right click [Acq Setup...] with the name of the device in the group list selected.
When multiple main units are connected and set by the [Acq Setup] button or [Acquisition]-[Acq Setup] on the menu bar, the setting window appears for the device selected in the group list.

In the [Acquisition Condition Settings] window that is displayed, make the acquisition-related settings. When settings are made, the setting data is forcibly written to the main unit. Then the icon representing the device in the group list changes its status.

❌ -> 🖥️

📖 Basic Operations in the [Acquisition Condition Settings] Window p.17

3 Click the ▶ (start acquisition) button, or select [Acquisition]-[Start/Stop] on the menu bar.
Acquisition is started at the preset acquisition condition settings.

4 Click the ■ (stop acquisition) button, or deselect the [Acquisition]-[Start/Stop] on the menu bar.
Acquisition is stopped.

Exiting Wave Inspire RX

Connecting the main unit ▶ Starting up Wave Inspire RX ▶ Acquiring data ▶ **Exiting Wave Inspire RX**

Select [File]-[Exit] on the menu bar to exit Wave Inspire RX.

Note

• Operation at exit can be specified by [Tools]-[Options]-[Auto-save setting] on the menu bar.
  Save settings: Automatically saves the current acquisition condition settings and waveform display
  states when exiting the software.
    (default: enabled)
    Options p.37

• The software cannot be exited during acquisition. Before exiting the software, stop acquisition.

Initializing Settings

Wave Inspire RX settings can be returned to their defaults.

➤ [Tools]-[Initialize]

1 Deselect the [Acquisition]-[Conn/Disconn] checkbox, or click the
    (connection) button to cut communications with the main unit.

2 Select [Window]-[Close all].

3 Select [Tools]-[Initialize].
    Wave Inspire RX automatically exits. Its settings are returned to their defaults next time it starts up.

Window Names and Functions

Main Window

Name	Description
(1) Menu bar	Wave Inspire RX functions are categorized and grouped together on this menu bar so that they can be selected from a single location. Clicking a menu item on this menu bar to highlight it displays a simple description of its function on the status bar. • Description of Menus and Icons p.13 • Description of Status Bar p.15
(2) Toolbar	This toolbar groups together frequently used functions as icon buttons. Placing the mouse pointer over a button displays a simple description for that function. Description of Menus and Icons p.13

Name	Description

(3) File Box	Multiple files are managed in an integrated manner on applications.
	<New acquisition/Loading setting data>
	  Select "0: New data" and, set and load the data.
	<Loading past files>
	  Select "1: to 10:" as the storage destination, and load past saved waveform data files.
	When multiple files have been loaded, files can be selected in this file box, and the settings of the selected file are reflected in the acquisition condition settings and content of the [Group List] tab.

(4) List view	This view displays a group list and window list.
[Group List] tab	The group set in the [Acquisition Condition Settings] window and the logic, pulse and calculation selected and set by the digital inputs are displayed as a group. [Acq setup...] and [Read Settings...] can be set by selecting and right clicking the name of the devices. Channels can also be registered to observe by dragging-and-dropping them onto the XY and FFT windows.
[Window List] tab	The graph window of a group can be called up by one-touch operation by selecting a group name or window No. on the window list. Also, clicking a channel displays the corresponding window and the clicked channel in the center of the window.
(5) Status bar	The status bar displays messages, alarm information and battery status. Description of Status Bar p.15
(6) Graph window	The graph window displays a waveform of the input signal.
(7) Scroll bar	Operate this scroll bar to display information that is not displayed in the window. Horizontal and vertical scroll bars are provided to move hidden parts of windows horizontally and vertically so that they can be displayed.

Description of Menus and Icons

Menu		Icon	Description	Reference
File	Read file		Reads WDI, SVD, GBD, and WWD format waveform data files.	p.22
	Save file		Saves waveform data to WDI or CSV format file.	p.22
	Read settings	-	Reads setting-related data (acquisition condition settings/display settings).	p.23
	Save settings	-	Saves setting-related data (acquisition condition settings/display settings).	p.23
	Read reference wave	-	Read the reference waveform in the XY graph or FFT graph.	p.35 p.36
	Save as reference wave	-	Save the reference waveform currently displayed in the XY graph or FFT graph as the reference waveform.	p.35 p.36
	Save CSV		Saves waveform display states in the active window as numeric value data in CSV format files.	p.24
	Save image	-	Saves the waveform display states of the active window in BMP or JPG format files.	p.24
	Print		Prints the waveform display states and acquisition condition settings of the active window.	p.25
	Print preview	-	Displays a printed image of the page for confirmation.	p.25
	Exit	-	Exits Wave Inspire RX.	p.11
Acquisition	Conn Setup	-	Makes connection-related settings (e.g. addition of model, USB ID/IP address).	p.9
	Conn		Activates and cuts communication with the main unit.	p.10
	Acq Setup		Makes acquisition-related settings.	p.25
	Auto-save Setting	-	Makes settings relating to auto-save of waveform data after acquisition is stopped.	p.27
	Auto-save	-	Automatically saves waveform data when acquisition is stopped.	p.27

Menu		Icon	Description	Reference
	Destination	-	Specifies the storage destination folder and file name where waveform data is automatically saved.	p.28
	Start/Stop		Specifies start/stop of acquisition.	p.28
	Start free run	-	Starts free run (operation not accompanied by data acquisition).	p.28
View	Initialize graph		Returns the graph window to its defaults.	p.29
	Tile		Displays all waveforms reduced in size side by side in the graph window.	p.29
	Cascade		Displays all waveforms enlarged in size overlaying each other in the graph window.	p.29
	Narrow spacing		Narrows the waveform spacing.	p.29
	Widen spacing		Widens the waveform spacing.	p.29
	Enl V		Enlarges all waveforms or selected waveform in the vertical direction.	p.30
	Red V		Reduces all waveforms or selected waveform in the vertical direction.	p.30
	Enl H		Enlarges all waveforms in the horizontal direction.	p.30
	Red H		Reduces all waveforms in the horizontal direction.	p.30
	Full H	-	Reduces all waveforms in the horizontal direction as they fall in a Graph window.	p.30
	Clear alarm	-	Clears the alarm display.	p.31
Search	Srch Chars		Searches characteristic positions in the specified waveform.	p.31
	Alarms & Marks		Displays the alarm and mark history for confirmation.	p.31

Menu		Icon	Description	Reference
Cursor	Select	-	Makes cursor-related settings.	p.32
	Hide	OFF	Hides the cursor on the graph window.	p.32
	V cursor		Displays the vertical cursor on the graph window. Displays the cursor position at the same time.	p.33
	H cursor		Displays the horizontal cursor on the graph window. Displays the cursor position at the same time.	p.33
	Cursor A&B	AB	The A and B cursors are synchronized.	p.33
	Cursor A	A▶	Calls cursor A.	p.32
	Cursor B	B▶	Calls cursor B.	p.32
Window	Copy window		Opens the same graph window as the display setting state of the currently selected graph window.	p.34
	Add graph		Adds a graph window.	p.34
	Add XY graph		Adds an XY graph window.	p.34
	Add FFT graph		Adds an FFT graph window.	p.34
	Meas val		Opens the measurement value window.	p.34
	Close all	-	Closes all graph windows.	p.34
	Cascade	-	Displays graph windows overlaying each other.	p.34
	Tile V		Displays graph windows side by side in the vertical direction.	p.34
	Tile H		Displays graph windows side by side in the horizontal direction.	p.34
	List view	-	Toggles display/hide of the list view.	p.35
	Toolbar	-	Toggles display/hide of the toolbar.	p.35
	Status bar	-	Toggles display/hide of the status bar.	p.35
	XY graph setting	-	Configure the XY graph settings.	

Menu		Icon	Description	Reference
	FFT graph setting		Configure the FFT graph settings.	
Tools	Batch-save CSV	-	Converts saved waveform data to CSV format file.	p.37
	Options	-	Sets options.	p.37
	Auto-save setting	-	Specifies the action when the software is started up. Load settings: Automatically loads the previous acquisition condition settings and waveform display states when starting up the software. (default: enabled) Save settings: Automatically saves the current acquisition condition settings and waveform display states when exiting the software. (default: enabled) Connect: Automatically connects to the main unit connected to the PC, and starts communication. (default: enabled)	p.37
	Rel time axis	-	Sets the axis to relative time display.	p.37
	Fix H grid	-	Enables/disables fixing of the horizontal grid.	p.37
	Scroll cursor	-	Enables/disables automatic scrolling of the cursor.	p.37
	Show scale	-	Disables/enables scale display.	p.37
	Show marks	-	Disables/enables mark display.	p.37
	Reverse back	-	Reverses the background color of the graph window.	p.37
	Email setting	-	Configure Email transmission settings.	p.38
	Excel data transfer setting	-	Configure the settings on transferring measurement data to Excel in real-time.	p.38
	Initialize	-	Initializes Wave Inspire RX settings.	p.11
	Language	-	Switches the display language.	p.39

Menu		Icon	Description	Reference
Help	Show Help		Displays the PDF Help file.	p.39
	About	-	Displays the Wave Inspire RX program, version, and copyright.	p.39

Description of Status Bar

Name		Description
(1)	Message display area	This area displays messages.
(2)	Device information area	This area displays the name of a device selected currently. The information of the device is reflected in Status information area, Alarm information area, and AC battery display area. Device name changes when the other device name in the group list is selected.
(3)	Status information area	This area displays the operating status.

"Not connected" display

"Connection in progress" display

"Acquisition in progress" display

"Free run in progress" display

"Trigger wait in progress" display

"Timer wait in progress" display

Name		Description
		Note • The "Trigger wait" and "Timer wait" are displayed only when the main unit is connected to the PC. • While free run is in progress, the waveform is displayed with data not being acquired. • For details on operating status, see "Starting/Stopping Acquisition / Starting Free Run." p.28
(4)	Alarm information area	This area displays the status of the alarm output terminals. Display during non-output of an alarm: Display during alarm output to alarm 1:
(5)	AC/ battery display area	The remaining battery power on the main unit is indicated by LED color. **Note** The AC icon is displayed in the case of the AC power supply.

[Acquisition Condition Settings] Window

Name	Description	Reference
(10) [Select All] button	Selects all waveforms.	-
(11) [Deselect] button	Cancels selection of selected channels.	-
(12) Condition settings list	Displays a list of the respective acquisition conditions. The condition items in the settings list change according to the settings of each of the analog, pulse and logic inputs.	p.25
(13) [Cancel] button	Clears the settings, and closes the [Acquisition Condition Settings] window.	-
(14) [OK] button	Sends the settings to the main unit, and closes the [Acquisition Condition Settings] window. When the button is pressed, the setting data is forcibly written to the main unit. To save the setting data on the main unit, execute [Save current settings] in the main unit's file menu before establishing the connection.	-

Name	Description	Reference
(1) [Add] button	Adds a new group.	-
(2) [Del] button	Deletes a group or deletes channels currently registered to a group.	-
(3) Group list	Displays a list of the groups set in the [Acquisition Condition Settings] window, and the logic and pulse selected and set by the digital inputs as a group.	-
(4) [Operation] button	Sets the expressions for the calculated waveforms (operations between channels) and their display waveforms.	p.26
(5) [Basic] button	Makes the basic settings for the main unit.	
(6) [Trigger] button	Sets the trigger conditions. (When multiple devices are connected, the trigger conditions cannot be set.)	-
(7) Sampling Period	Set the sampling time (or sampling period).	-
(8) Digital Input	Sets enable/disable of digital input (logic/pulse).	-
(9) [Srch] button	Searches channels using a search key.	p.26

Basic Operations in the [Acquisition Condition Settings] Window

Clicking the ▦ (Acq Setup) button displays the [Acquisition Condition Settings] window. All tasks including selection of the target channel, setting of conditions and transmission of settings are contained in this window. Operations in this window are simple since they are basically performed by a click or a double-click of the mouse.

1. Click to select settings

Click the target channel.
The target channel can also be selected by clicking anywhere on the list.

Select multiple non-continuous channels

Click the channel with the Ctrl key held down.

Select multiple continuous channels

Click the 2nd channel with the Shift key held down.

To select all channels, click **Select All** .

To deselect a channel, click **Deselect** .

To select by searching data, click **Srch** .

2. Double-click to edit settings

Double-click the target item to edit its settings.

Select from list to input

Input directly

Batch-set multiple channels

Editing settings with multiple channels selected batch-changes the target items of all selected channels.

3. Click [OK] to send settings

Click [OK] to send the settings made in the [Acquisition Condition Settings] window to the main unit.

Click to display/hide detailed items
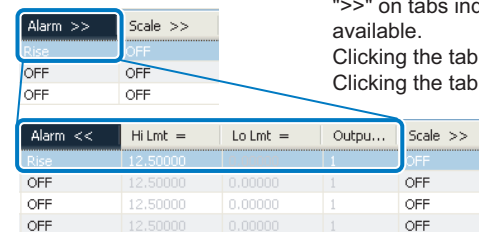
">>" on tabs indicates that additional setting items are available.
Clicking the tab displays the detailed items.
Clicking the tab again hides the detailed items.

Basic Operations in the Graph Window

In addition to observing the waveform of each channel, waveforms can be displayed enlarged and marks with comments can be inserted in the graph window.
Waveforms, scales, cursors, and marks can be grabbed directly with the mouse and moved to any position.

Important

Perform operations on waveforms with the waveform display or window size enlarged. Operations sometimes cannot be performed properly with the display reduced.

Moving scales

The scale can be dragged and moved to the desired observation location.

Inserting, editing and deleting marks and comments

Marks and comments for waveforms and comments independent of waveforms also can be inserted.
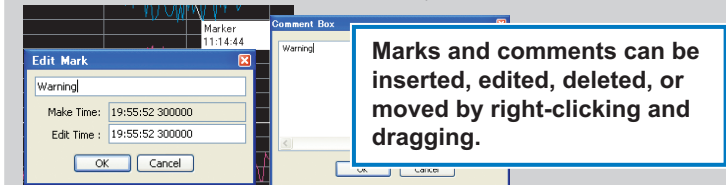
Marks and comments can be inserted, edited, deleted, or moved by right-clicking and dragging.

Inserting marks: Right-click anywhere on the window (when inserting marks in the waveform, activate the target waveform and right-click it).
Editing/deleting marks: Right-click the target mark or comment.
Moving marks: Drag the target mark or comment to move it regardless of the active/inactive state of the waveform.

Scrolling waveforms

The waveform from start through to end of data acquisition can be displayed by operating the scroll bar.

To restore the graph's display settings

Enlargement/reduction of waveforms, moving of scales and other in-window operations can be canceled and returned to their defaults by clicking the ☐ (initialize graph) button.

Selecting waveforms

Click the tag of the target waveform.
The tag is reversed, and the selected waveform is made active.

Multiple waveforms can be selected by clicking them with the Ctrl key held down.
All waveforms can be selected by clicking with the Shift key held down.
The next waveform can be selected by clicking the waveform with the Tab key held down.

* Click outside a waveform to deselect it.

Moving waveforms

Selected waveforms can be dragged and moved to the desired position.

Enlarging (reducing) waveforms

Waveforms can be enlarged using the Ctrl key and mouse wheel to make waveforms easier-to-view and facilitate observation.

Using Grouping Functions

When the grouping function is used

Even large volumes of measurement data → can be easily organized for observation.
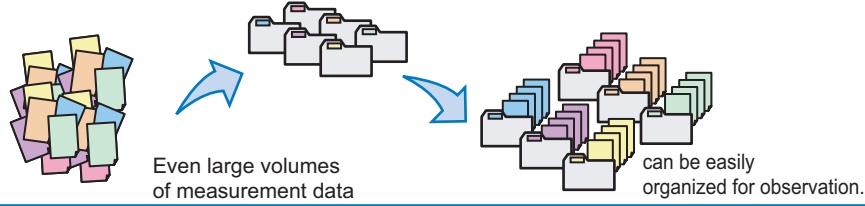
The "grouping" function is for performing observation with multiple channels set as a single group.
This function is handy, for example, in simultaneous measurement of multiple channels or mixed measurement of multiple items, since data can be freely registered to groups.
Registered groups can be easily edited by dragging-and-dropping, and the waveforms of each preset group can be displayed in a single multi-window. This also allows comparative observation between groups.
In addition, data from different types of loggers such as ZR-RX45 and ZR-RX70 can be displayed in the same graph using the grouping function.
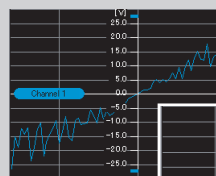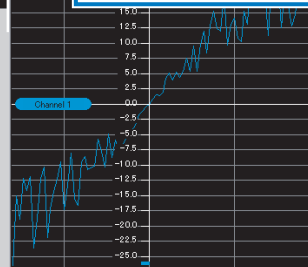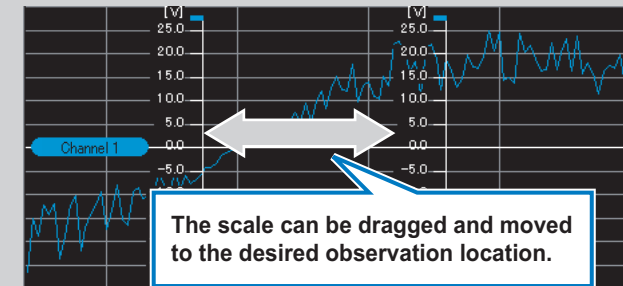
Example:

- Simultaneous measurement of multiple boards
- Mixed measurement of temperature and voltage

To compare the waveform data of individual boards

	Board 1	Board 2	Board 3
IC1 Temperature	CH1	CH5	CH9
Voltage	CH2	CH6	CH10
IC2 Temperature	CH3	CH7	CH11
Voltage	CH4	CH8	CH12

To perform observation by individual input signal (temperature/voltage)

Registering groups by individual board

Waveform display by individual group

Grouping

Board 1: CH1, CH2, CH3, CH4 → Board 1
Board 2: CH5, CH6, CH7, CH8 → Board 2
Board 3: CH9, CH10, CH11, CH12 → Board 3

Registering groups by individual input signal

Waveform display by individual group

Grouping

| Temperature | CH1 | CH5 | CH9 |
| Temperature | CH3 | CH7 | CH11 |

→ Temperature

| Voltage | CH2 | CH6 | CH10 |
| Voltage | CH4 | CH8 | CH12 |

→ Voltage
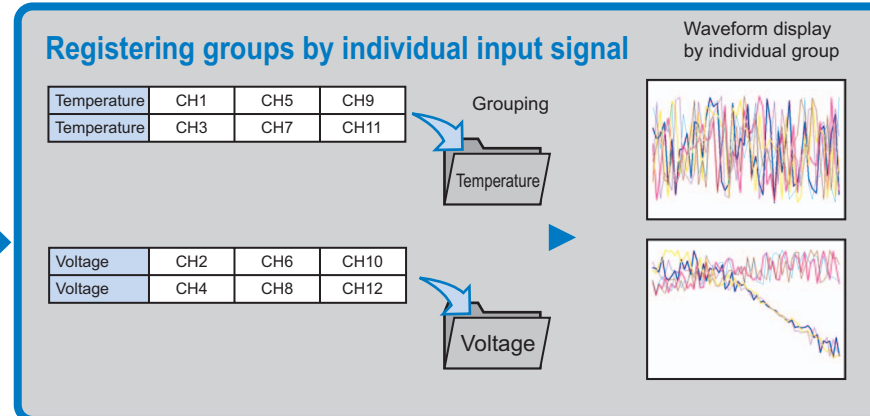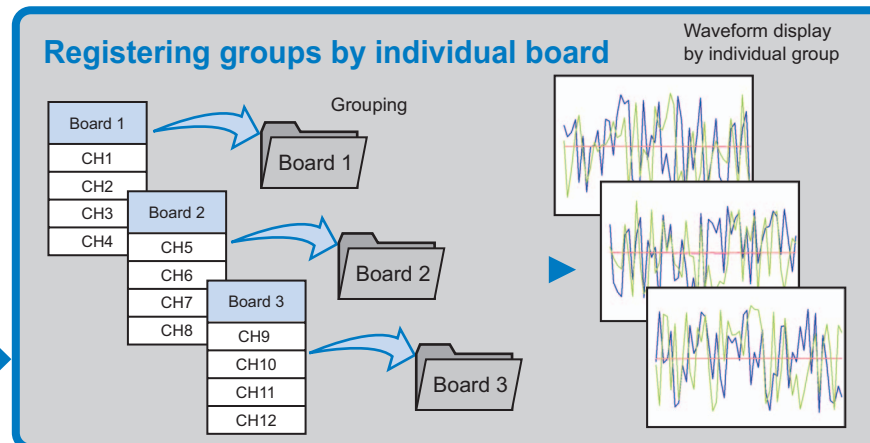
Comparative observation between groups in the single multi-window
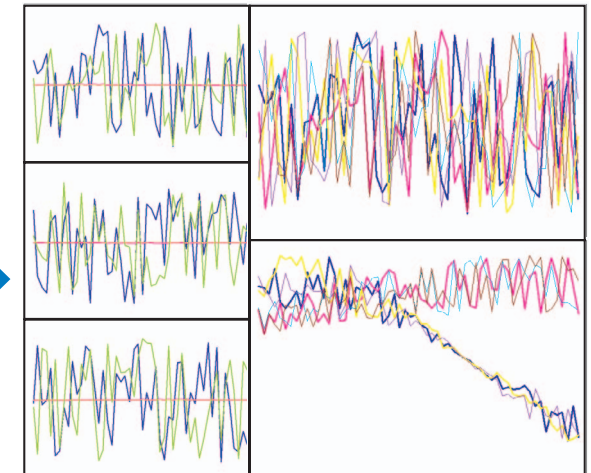
To Set the Board 1 Group

Creating groups

1 In the [Acquisition Condition Settings] window, click the [Add] button to add a group.

2 Double-click the group name, and directly rename it.

Assigning channels

3 Select the target channel, and drag-and-drop the channel to assign it to the respective group.

Drag-and-drop onto "PCB1".

4 Set the channel name and acquisition conditions.

5 Click [OK] to send the acquisition data to the main unit.

Setting graphs

6 Click the [Add graph] button to add a graph window.

Drag-and-drop "PCB1".

7 Select the target group, and drag-and-drop it onto the newly added graph window.

Click the ▶ (start/stop acquisition) button to start acquisition. The result is displayed in the single multi-window for comparative observation.

To Display the Measurement Data from Different Logger Types on the Same Graph

Creating groups

Setting graphs

1 In the [Connection List] window, click the [Add] button to simultaneously connect to ZR-RX45 and ZR-RX70.
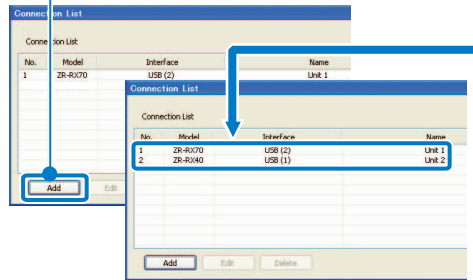
2 In the [Acquisition Condition Settings] window on ZR-RX45, select the channels to integrate and create the group.
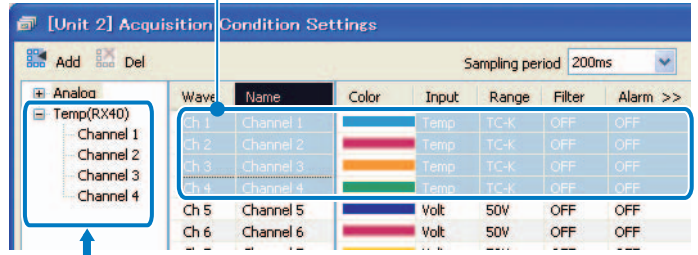
Channels 1 to 4 on ZR-RX45 grouped by "Temperature" and "Sampling Period (200ms)"

3 In the [Acquisition Condition Settings] window on ZR-RX70, select the channels to integrate and create the group.
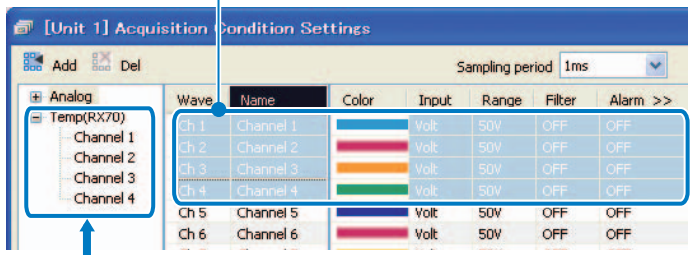
Channels 1 to 4 on ZR-RX70 grouped by "Voltage" and "Sampling Period (1ms)"

4 Click the [Add graph] button to add a graph window.
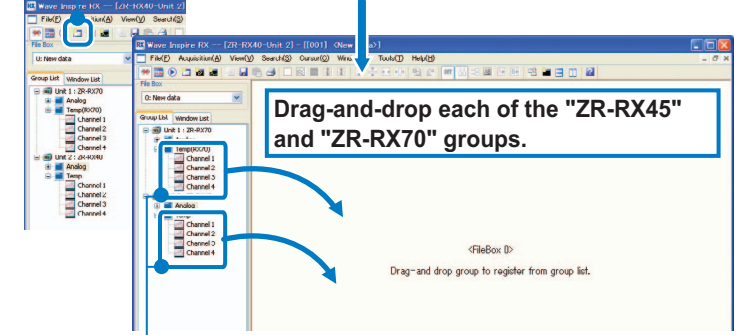
Drag-and-drop each of the "ZR-RX45" and "ZR-RX70" groups.

5 Select the target group, and drag-and-drop it onto the newly added graph window.
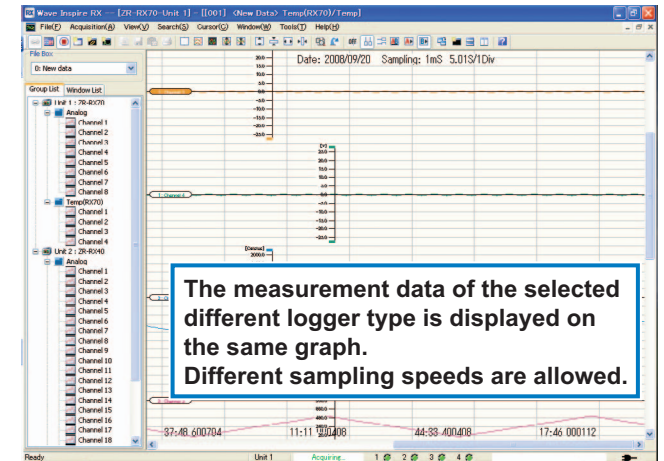
The measurement data of the selected different logger type is displayed on the same graph.
Different sampling speeds are allowed.

Important
You can register multiple groups to a graph window. However, when registering the groups under one device, you can register only one group among the ones that share channels.

File Operations

Reading/Saving Waveform Data

Read acquired waveform data, and save acquired waveform data.
Waveform data files can be saved to WDI format files or CSV format files.
Waveform data to read can be selected from SVD (WIP1), WDI (WIP2), GBD or WWD (waveform data) format files. Up to ten waveform files can be opened at the same time.

| Note | File management |

When a waveform file is saved in SVD format, an SVD format file and an SVW format file are generated. When reading files in SVD format, be sure to save and manage files in the same directory since both an SVD format file and an SVW format file are required.
  SVD format file: Acquisition condition settings and acquired data file
  SVW format file: Group information and graph display information file
  When a waveform file is saved in WDI format, a WDI format file, WWD format file and an SVW format file are generated. When reading files in WDI format, be sure to save and manage files in the same directory since WDI, WWD and SVW format files are required.
  WDI format file: Management file
  WWD format file: Waveform data file (This is generated for each measuring device.)
  SVW format file: Group information and graph display information file

Reading Waveform Data

➤ [File]-[Read file]
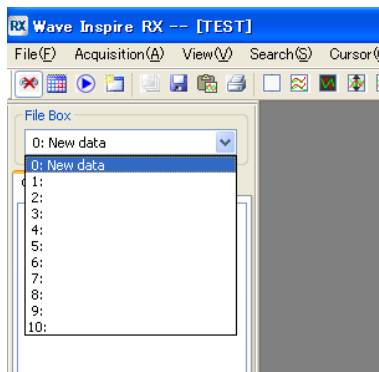
1 Select the save destination (1: to 10:) of the file to read from the [File Box].

2 Select [File]-[Read file].
The [Open] window appears.

3 Select the [Files of type] and [File name] of the file to read.
Select from the following as the file type, "WIP Files (*.wdi)","WIP Files(old) (*.svd)", "GBD Files (*.gbd)", or "WIP Backup Files (*.wwd)".

4 Click the [Open] button.

| Note | Reading files saved to main unit memory |

Read data by the following procedure.
1. Exit Wave Inspire RX, and turn the main unit off.
2. Turn the main unit on again with the START/STOP key on the main unit held down.
   Main unit memory is recognized by the PC as USB mass storage.
3. Load the target file to the PC in My Computer or Explorer.
4. Start up Wave Inspire RX.
5. Read the target file to Wave Inspire RX as a GBD format file according to the procedure in "Reading Waveform Data".

Saving Waveform Data

➤ [File]-[Save file]

Waveform data must be acquired before it is saved.

  Basic Operations in the [Acquisition Condition Settings] Window p.17

1 Select [File]-[Save file].
The [Save As] window appears.

2 Select the type of the file to save, and enter the [File name].
Select from the following as the file type, "WIP Files (*.wdi)" or "CSV Files (*.csv)."

3 Click the [Save] button.

| Note |

• When [Auto-save] is enabled, the acquired waveform data is automatically saved to file when acquisition is stopped.
        Enabling Auto-save Setting p.27
• It's possible that after the read waveform data is operated in the Graph window or changed Grouping, they are saved again.

3. ADVANCED OPERATIONS

Automatically backup of waveform data

Against the trouble like that the main unit shuts down or USB cable is broken while acquisition is in progress, Wave Inspire makes backup file automatically.
When the trouble occurs as above, refer files in a folder as bellow.

Windows Xp:	C:\Document And Setting\[User Name]\ApplicationData\ OMRON\WaveIns\backup
Windows Vista, Windows 7:	C:\Users\[User Name]\AppData\Roaming\OMRON\ WaveIns\backup

Note

- When the waveform data is saved, backup files are deleted.
- The backup file is overwritten in every 30 minutes.
- This function is to protect waveform data while acquisition is in progress. But, it's not secure the protection against all trouble case.

Reading/Saving Setting Data

Read and save the settings related to acquisition conditions and display.
Saving multiple settings beforehand allows you to easily select and simply execute the appropriate settings when performing acquisition according to a specific purpose.
Setting data files are saved in WIP format.

Note   **File management**

When setting data is saved, an WIP format file and an SWC format file are generated. When reading data using setting data, be sure to save and manage files in the same directory since both a WIP format file and an SWC format file are required.

WIP format file: Acquisition condition setting file

SWC format file: Group information and graph display information file

Reading Setting Data

➤ [File]-[Read settings]

1 **If the PC is connected to the main unit, select [Acquisition]-[Conn/Disconn] to cut the connection.**
This operation is not required if the connection is already cut.

2 **Select the save destination (0: New Data) of the file to read from the [File Box].**

3 **Select [File]-[Read settings].**
The [Open] window appears.

4 **Select the [File name] of the setting data file to read.**

5 **Click the [Open] button.**
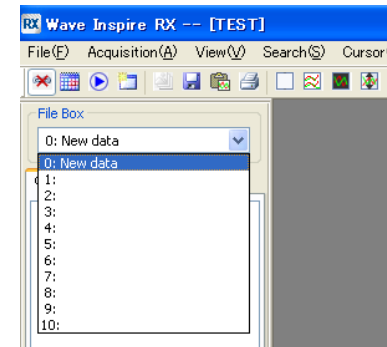
Note

When [Load settings] is enabled, the last saved setting data file is automatically loaded when Wave Inspire RX is started up.

[Tools]-[Options]-[Auto-save setting]-[Load settings] p.37

Saving Setting Data

➤ [File]-[Save settings]

1 **Select [File]-[Save settings].**
The [Save As] window appears.

2 **Enter the [File name] of the setting data file to save.**

3 **Click the [Save] button.**

Note

When [Save settings] is enabled, the setting data file (acquisition condition settings, display settings) are automatically saved when Wave Inspire RX is exited.

[Tools]-[Options]-[Auto-save setting]-[Save settings] p.37

Wave Inspire RX Software Manual   **23**

Saving CSV Data/Saving Screen Images

Save the waveform of the active graph window as numeric values or image data.
• Save CSV: Saves waveforms as numeric values in a CSV format file.
• Save image:Saves waveforms as image data in a BMP or JPG format file.

Saving CSV Files

➤   [File]-[Save CSV]

> **Note**
>
> CSV saved data does not contain operation setting data.
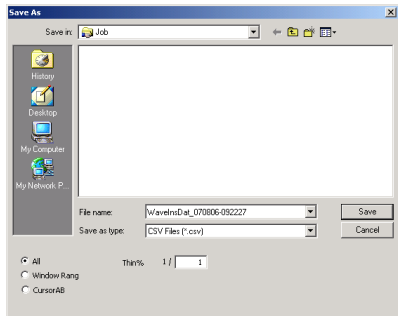
1   **Select [File]-[Save CSV].**
The [Save As] window appears.

2   **Set the thinning rate (%) and the save range.**

3   **Enter the [File name] of the file to save.**

4   **Click the [Save] button.**

Name	Description
Thin%	Sets the thinning rate (%) of the waveform data.
Save range	Selects the save range of the waveform data.
All	Saves the waveform data in the entire range.
Window Rang	Saves the waveform data in the range currently displayed in the graph window.
Cursor AB	Saves the waveform data between vertical cursors A and B.

> **Note**
>
> On the selectd graph window, the waveform data in the window display range can be copied to the Clipboard by shortcut key commands on the keyboard (Ctrl+C).

Saving Waveform Images

➤   [File]-[Save image]

1   **Select [File]-[Save image].**
The [Save As] window appears.

2   **Select the [Files of type] and enter the [File name] of the waveform image file to save.**
Select from the following as the file type, "BMP Files (*.bmp)" or "JPEG Files (*.jpg).

3   **Click the [Save] button.**

> **Note**
>
> The waveform image in the window display range can be copied to the Clipboard by shortcut key commands on the keyboard (Ctrl+I). (The thinning rate (%) is fixed at 1.)

Printing

Print the waveform display states and acquisition condition settings of the active graph window.
• Waveform display state: The waveform currently displayed in the graph window is printed.
• Acquisition condition settings:All channels currently registered in the graph window are printed.

Print Preview

➤ [File]-[Print preview]

1 **Select [File]-[Print preview].**
The [PreviewWindow] window appears.

2 **Check the printed image.**

Waveform display

Channel settings

Basic settings

Trigger settings
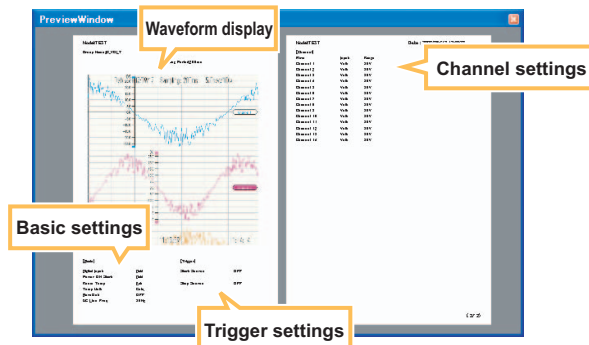
Printing
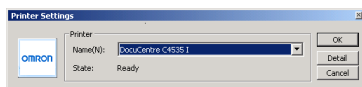
➤ [File]-[Print]

1 **Select [File]-[Print].**
The [Printer Settings] window appears on the [PreviewWindow] window.

2 **Select the printer.**

> **Note**
>
> Click the [Detail] button to set up the printer as required.

3 **Click [OK].**
Printing is executed.

Setting Acquisition and Display Conditions

➤ [Acquisition]-[Acq Setup]

In the [Acquisition Condition Settings] window, set settings for input signals (e.g. acquisition conditions, waveform display conditions and calculated waveforms), and make the basic settings for the main unit.

Condition Settings (common)

Set acquisition and waveform display basic conditions, and trigger settings, as the common settings.
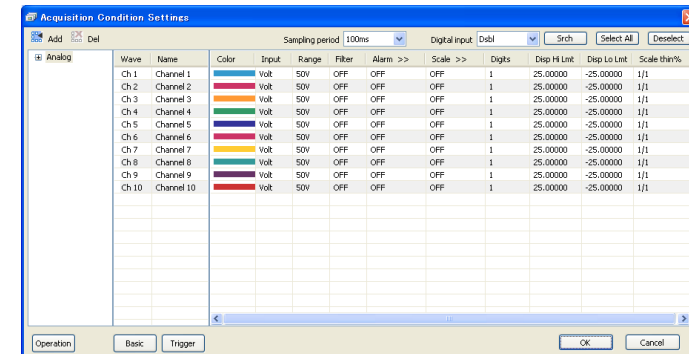
For details on the following settings, see the "User's Manual" for the data logger main unit. What can be set are different according to the type of the device.
• Condition settings for each channel
• Basic settings
• Trigger settings

> **Note**
>
> Trigger settings cannot be made when multiple loggers are connected.
> Wave Inspire RX cannot be displayed to set an external sampling of ZR-RX70.
> With repeat acquisition on Wave Inspire RX, acquired data is saved after acquisition is stopped. For this reason, there is a risk that the initial data may not be correctly acquired as a result of data loss when acquisition is started while the data is being saved. Use the repeat acquisition function of the main unit to continuously start and stop acquisition in a short period of time.

Calculated Waveforms

Sets the expressions for the calculated waveforms (operations between channels) and their display waveforms.

➤ [Acquisition] - [Acq Setup] - [Operation] button
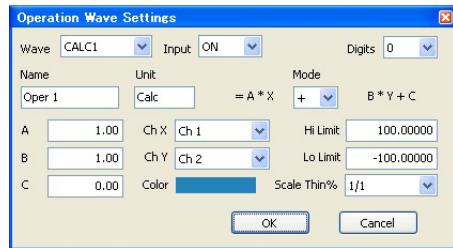
Name	Description
Wave	Selects the calculated waveform to set. Up to four calculated waveforms, CALC1 to CALC4, can be set.
Input	Sets enable/disable of calculated waveforms.
OFF	Disables calculated waveforms.
ON	Enables calculated waveforms.
Digits	Selects the number of digits past the decimal point of the calculated result. (0 to 5)
Name	Enters the name of the calculated waveform. (max. 11 characters)
Unit	Enters the unit.
Mode	Selects the operator in expressions. (+, -, x)
A B C	Enters the numeric values to substitute in A, B or C in the expression.
CH X CH Y	Selects the channel to perform the calculation on.
Color	Selects the display color of the calculated waveform.
Hi Limit	Sets the high limit at display of the calculated waveform.
Lo Limit	Sets the low limit at display of the calculated waveform.
Scale Thin%	Sets the thinning rate (%) of the display waveform scale. 1/1 (1 scale/1 grid) to 1/3 (1 scale/3 grids)

Conditional Search

Specify search conditions to search for and select a specific channel. You can perform more complicated searches by using a combination of two search keys.

➤ [Acquisition]-[Acq Setup]-[Srch] button
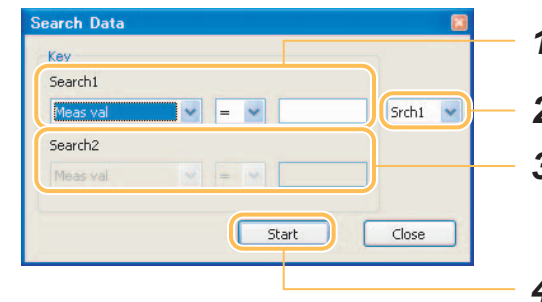
1 Set search key (1).

Item	Description
Meas Val	Searches channels by comparing the size of the measured value. (This item is displayed when acquired data exists.) Set a "symbol (>, <, =, <=, >=)" and a "numeric value" as the detailed conditions.
Name	Searches for channels by waveform name. Enter the "waveform name" as the detailed conditions.
Input	Searches for channels by input conditions. Enter the "input conditions" as the detailed conditions.
Range (V)	Searches for channels by range (voltage) conditions. Enter the "input range" as the detailed conditions.
Range (temp)	Searches for channels by range (temperature) conditions. Enter the "input range" as the detailed conditions.
Alarm Setting	Searches for channels by alarm setting conditions. Enter the "alarm setting conditions" as the detailed conditions.
Output Alarm	Searches channels by whether or not an alarm has occurred. (This item is displayed when acquired data exists.) Enter the "occurrence of alarm" as the detailed conditions.

2 **Specify a combination of search conditions**

Item	Description
Srch1	Searches for channels by the conditions set to search key (1).
AND	Searches for channels that satisfy both conditions of search key (1) and search key (2).
OR	Searches for channels that satisfy either of the conditions of search key (1) and search key (2).

Note

Click the [Start] button here only in the case of [Search1].

3 **Set search key (2) when [AND] or [OR] is selected at Step 2.**
The settings of this step are the same as those in Step 1.

4 **Click the [Start] button.**

Note

Selected channels can be registered to a group by dragging-and-dropping them to the desired group.

📖 Using Grouping Functions p.19

Auto-save Setting

Set automatic saving of waveform data after acquisition is stopped.

Note

Acquired data is also stored on the main unit when [Auto-save] is enabled. External save destinations can be changed by [Tools]-[Options]-[Data save destination].

📖 Options p.37

Enabling Auto-save Setting

When this is selected, the waveform data is automatically saved when acquisition is stopped.

➤ [Acquisition]-[Auto-save Setting]-[Auto-save]
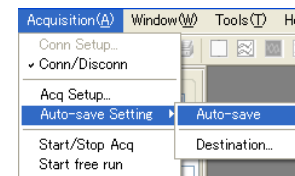
Note

As the default, the following auto-save files are generated and saved:

• **File name**

WaveInsDat_yymmdd-hhmmss.wdi (.wwd)
        └── A time stamp is automatically appended to the file name.

            yymmdd: Date (year/month/day) when acquisition was started
            hhmmss: Time (hours/minutes/seconds) when acquisition was started

📖 File management p.22

"_rep repeat No." is appended to file names when repeat acquisition is enabled (ON is selected).
    Example:
    WaveInsDat_070801-145412_rep1.wdi(.wwd)
    WaveInsDat_070801-145412_rep2.wdi(.wwd)
    WaveInsDat_070801-145412_rep3.wdi(.wwd)

• **Save destination**

c:\Documents and Settings****\My Documents\
                              └── Name of user logged into PC (in standard PC setup)

Changing the Save Destination and Renaming Files

Change the save destination folder and rename the file where waveform data is automatically saved.

➤ [Acquisition]-[Auto-save Setting]-[Destination]

File Path Setting window:

FilePath:
c:¥Documents and Settings¥omron¥My Documents   Brws...
File Name: WaveInsDat   .wdi
OK   Cancel

1 **Select [Acquisition]-[Auto-save Setting]-[Destination].**
The [File Path Setting] window appears.

2 **Set the folder to save the file to and the file name.**

| Note |

A time stamp is automatically appended to the file name even if the file is renamed.

Starting/Stopping Acquisition / Starting Free Run

Start/stop acquisition and start free run manually.

➤ [Acquisition]-[Start/Stop]

➤ [Acquisition]-[Start free run]

Operation Modes

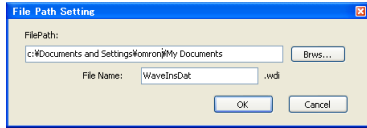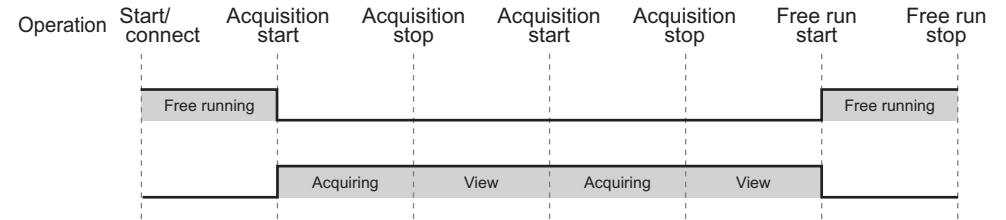| Operation Mode	Description
Free Run mode	This mode is automatically entered when the software is started up or the main unit is connected, and displays waveforms in real time. In this mode, measurement data is not acquired. This mode is exited when acquisition is started or the [Acquisition Condition Settings] window is opened. **Note** This mode is automatically entered when the software is started up only when [Load settings] (when there is auto-save data) and [Connect] are set. Otherwise, this mode must be entered manually by [Acquisition]-[Start free run].
"Acquisition in Progress" mode	Acquisition is started when an acquisition stop is instructed on the menu or when the trigger start conditions are satisfied. In this mode, measurement data is acquired. Acquisition is stopped when an acquisition stop is instructed on the menu or when the trigger stop conditions are satisfied. Measurement data is confirmed after acquisition is stopped. **Important** Wave Inspire RX cannot be exited while acquisition is in progress.
View mode	Acquired data can be viewed after it is confirmed after acquisition is stopped. In this mode, measurement data is confirmed but not saved. In this mode, the acquired data is discarded when free run or acquisition is started, or when the [Acquisition Condition Settings] window is opened. If the acquired data is required, save the data to file by [Save file]. 📖 Saving Waveform Data p.22

Observing

View

Change the view of the graph window.

Initializing Graphs

Return graphs to their defaults.

➤ [View]-[Initialize graph]

Tile/Cascade

Display the currently acquired waveforms tiled or overlaid.

> **Note**
>
> When waveforms are displayed overlaid, the scale gradations change to the scale of corresponding waveform when the waveform tag is clicked.

➤ [View]-[Tile]

➤ [View]-[Cascade]
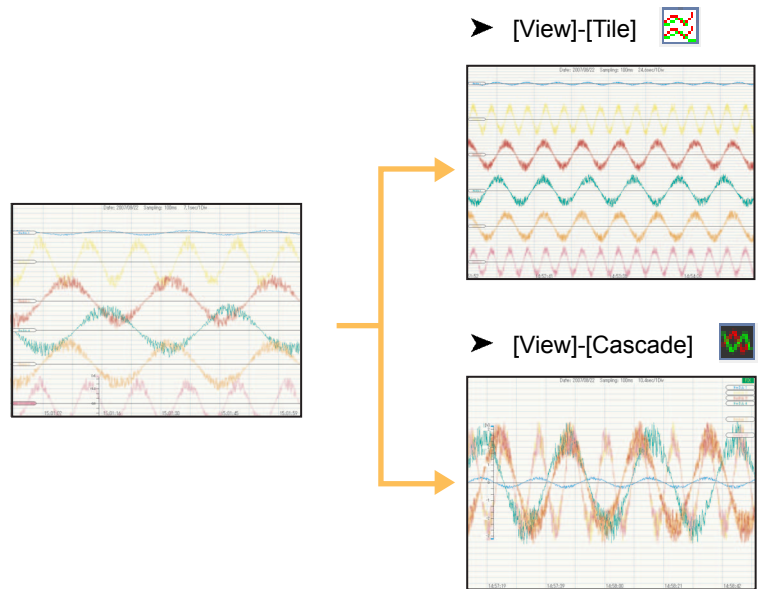
Narrowing/Widening Waveform Spacing

Narrow or widen the spacing of the waveform currently registered to the window.
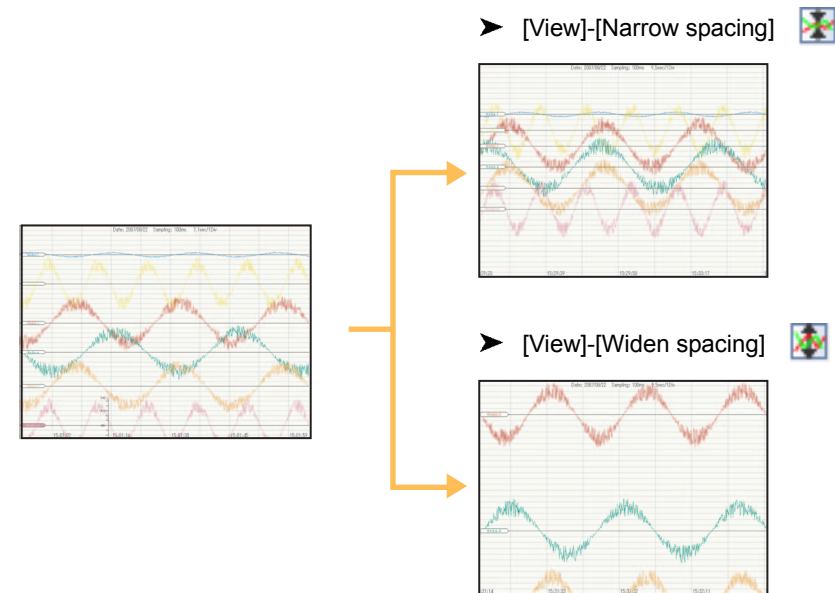
➤ [View]-[Narrow spacing]

➤ [View]-[Widen spacing]

> **Note**
>
> These operations can also be performed using shortcut key commands on the keyboard or using the mouse.
> Narrowing spacing: Shift + ↑ (or mouse wheel)
> Widening spacing: Shift + ↓ (or mouse wheel)

Enlarging/Reducing in the Vertical Direction

Enlarge/reduce graphs or waveforms in the vertical direction.
• Waveform not selected:　　Enlarges/reduces the entire graph in the vertical direction.
• Waveform selected:　　　Enlarges/reduces only the selected waveform in the vertical direction.
• Graphs displayed overlaid:Batch-enlarges/reduces all waveforms.
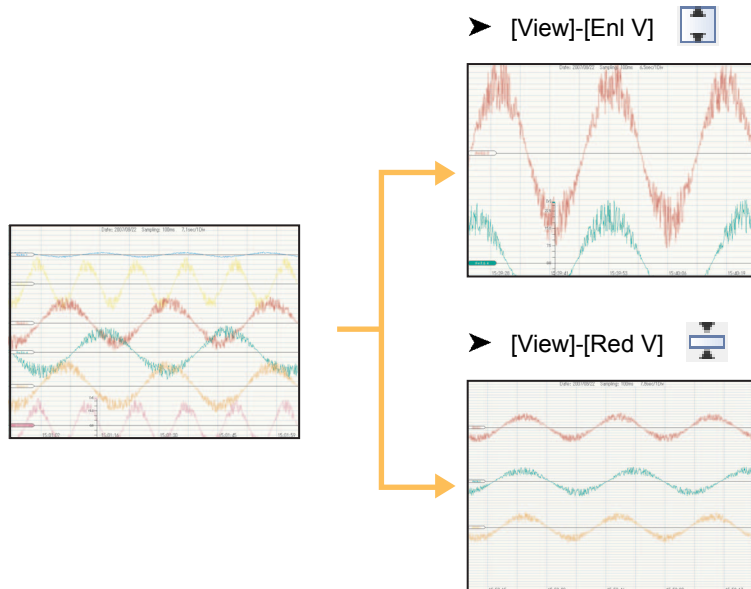
➤　[View]-[Enl V]

➤　[View]-[Red V]

Note

These operations can also be performed using shortcut key commands on the keyboard or using the mouse.
　Reduce vertically: Ctrl+↓ (or mouse wheel)
　Enlarge vertically: Ctrl+↑ (or mouse wheel)

Enlarging/Reducing in the Horizontal Direction

Enlarge/reduce the entire graph in the horizontal direction.

➤　[View]-[Enl H]

➤　[View]-[Red H]
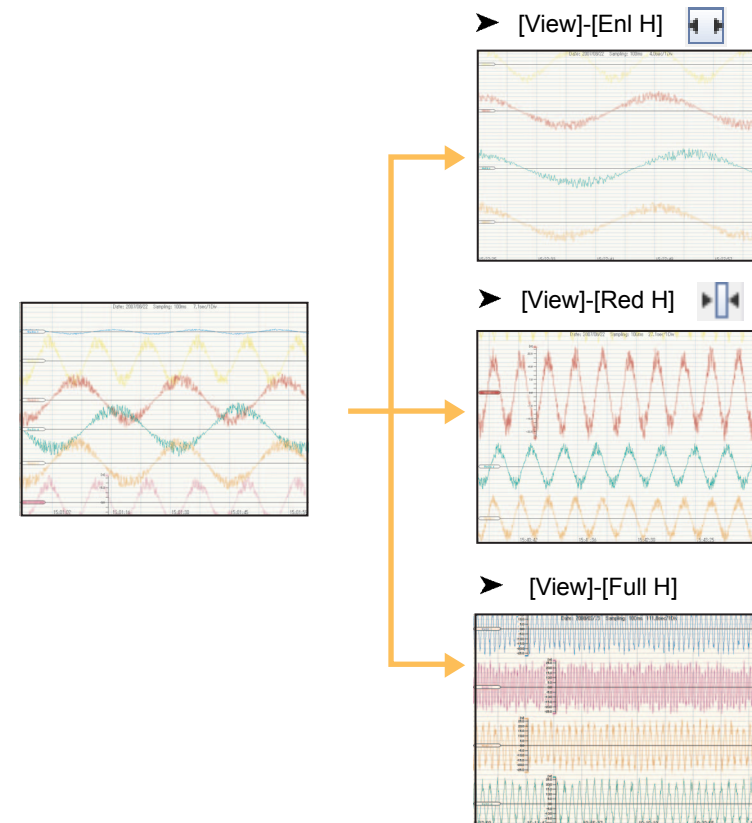
➤　[View]-[Full H]

Note

• Reduces all waveforms in the horizontal direction as they fall in a Graph window by [View]-[Full H].
• The horizontal grid can be toggled between "variable" and "fixed" by [Tools]-[Options].
　- When [Fix H grid] is selected:
　　The size of the horizontal grid does not change even if the entire graph is enlarged or reduced in the horizontal direction.
　- When [Fix H grid] is not selected:
　　The size of the horizontal grid changes when the entire graph is enlarged or reduced in the horizontal direction.

• These operations can also be performed using shortcut key commands on the keyboard.
　Reduce horizontally: Ctrl+←
　Enlarge horizontally: Ctrl+→

Clearing Alarms

Clear alarms currently displayed in the alarm information area.

➤ [View]-[Clear alarm]

Performing Searches

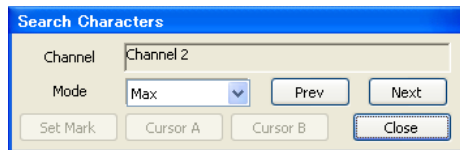Search for characteristic positions, mark positions and alarm positions in waveforms.

Searching Characteristic Positions

Search characteristic positions in waveforms. Select the target waveform before searching for characteristics.

➤ [Search]-[Srch Chars]

Name	Description
Target wave	Displays the name of the selected waveform.
Mode	Selects the search mode.
Max	Searches the position of the maximum value.
Min	Searches the position of the minimum value.
Mmax	Searches the condition "L (t-1) < L (t) > L (t+1)".
Mmin	Searches the condition "L (t-1) > L (t) < L (t+1)".
Alarm val	Searches the alarm position.
Mark val	Searches the mark position.
[Prev] button	Performs a backward search.
[Next] button	Performs a forward search.
[Set mark] button	Inserts a mark at the search position in the graph window.
[Cursor A] button	Inserts cursor A at the search position in the graph window. The [Cursor Information] window appears so that you can check the details of the cursor position.
[Cursor B] button	Inserts cursor B at the search position in the graph window. The [Cursor Information] window appears so that you can check the details of the cursor position.

Checking Alarms and Marks

Display and check the alarm and mark history.
Double-clicking an alarm or mark in the list jumps to the corresponding position on the graph window.

➤ [Search]-[Alarms & Marks]

> **Note**
>
> If no alarms have occurred or no marks have been inserted, nothing is displayed in this list and each of the buttons are inactive.

■ **List of Alarms**

The alarm range is displayed on the scale.

Alarm search point and mark
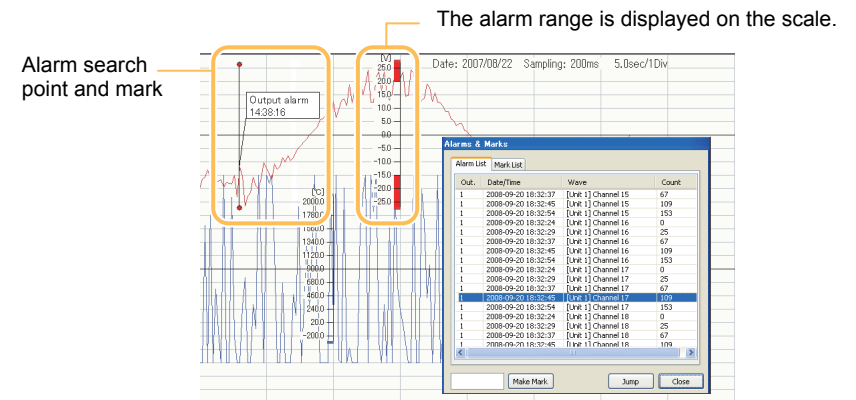
Name	Description
Out.	Displays the output No.
Date/Time	Displays the date and time of the position where the alarm occurred.
Wave	Displays the waveform name. The waveform name is displayed in the following format: [Connection Name] waveform name
Count	Displays the count value of the position where the alarm occurred.
[Make Mark] button	Select an alarm in the list, enter a comment in the entry field on the left of the button, and click the comment. The mark is inserted at the selected alarm position in the graph window. This button is active when an alarm is selected in this list.

Name	Description
[Jump] button	Selecting and clicking an alarm in the list displays the search points on the graph window. Search points disappear when the [Alarms & Marks] window is closed.

■ **List of Marks**
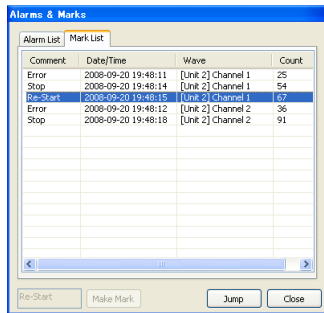
Name	Description
Comment	Displays the comment of the mark.
Date/Time	Displays the date and time of the mark position.
Wave	Displays the waveform name. The waveform name is displayed in the following format: [Connection Name] waveform name
Count	Displays the count value of the mark position.
[Jump] button	Selecting and clicking a mark in the list displays the target mark on the graph window in red.

Cursors

The cursor is used to observe the detailed numeric value of the waveform. The date/time of the cursor position, value (e.g. temperature and voltage), and difference between cursors A and B can be read.

Inserting Cursors

Insert cursors A and B in the active graph window. Inserted cursors can be moved in the four directions (left, right, top and bottom) by mouse operation.

➤ [Cursor]-[Cursor A]

➤ [Cursor]-[Cursor B]

1 **Select the waveform.**

2 **Select [Cursor A] or [Cursor B].**
Cursor A or cursor B is inserted in the graph window. At the same time, the [Cursor Information] window appears so that you can check the cursor position.

　　📖 [Cursor Information] Window p.33

Note

Cursor action when scrolling the graph window can be specified by [Tool]-[Options]-[Scroll cursor]. When this is selected, the cursor also scrolls at the same time. The cursor does not scroll when this is deselected.

Hiding Cursors

Hide cursors inserted in the graph window.

➤ [Cursor]-[Select]-[Hide]

Selecting Vertical Cursor/Horizontal Cursor

Select the type of cursor (vertical cursor/horizontal cursor) already inserted in the graph window.

➤ [Cursor]-[Select]-[V cursor]

➤ [Cursor]-[Select]-[H cursor]

| Note |

The horizontal and vertical cursors cannot be used simultaneously.

1 **Select the waveform to be observed.**

2 **Select [V cursor] or [H cursor].**

The [Cursor Information] window appears so that you can check the cursor position.

📖 [Cursor Information] Window p.33

Synchronizing Cursors A and B

When this is selected, cursors A and B can be moved simultaneously. To move cursors A and B separately, deselect this.

➤ [Cursor]-[Cursor A&B] [AB]

■ **[Cursor Information] Window**
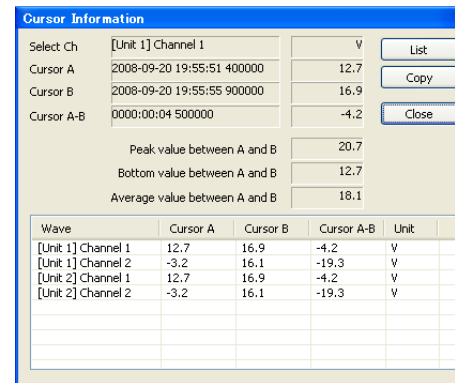
Name	Description
Select Ch	Displays the currently selected waveform name. The waveform name is displayed in the following format: [Connection Name] waveform name
Cursor A	Displays the position information of cursor A. • Year/month/day, hour, minute, second (vertical cursor only) • Value
Cursor B	Displays the position information of cursor B. • Year/month/day, hour, minute, second (vertical cursor only) • Value
Cursor A-B	Displays the difference between cursors A and B.
Peak value between A and B	Peak value between A and B is displayed.
Bottom value between A and B	Bottom value between A and B is displayed.
Average value between A and B	Average value between A and B is displayed.
List display (vertical cursor only)	Displays the waveform name, and Cursor A/Cursor B/Cursor A-B values and units for all channels currently displayed in the graph window.
[List] button (vertical cursor only)	Toggles display/hide of the channel list.
[Copy] button	Copies the observation data of the [Cursor Information] window to the Clipboard as a CSV format file.

Window Operations

The following describes window operations.

Copying Graph Windows

Open the graph window using the same display settings as those of the active graph window. This feature is used to separate the screens to perform observations under the same display conditions.

➤ [Window]-[Copy window]

Adding Graph Windows

Add graph windows.
Drag-and-drop the group to observe from the group list in the list view to register it.

➤ [Window]-[Add graph]

Adding XY Graph Windows

Display XY graphs.

➤ [Window]-[Add XY graph]

When the cursor is placed on a graph, it changes to a cross cursor and the waveform numeric values of the cursor position are displayed. (The frame changes color to the color of the channel at the cursor position.) When the channel on the Y axis, only the waveform numeric values of selected channel is displayed.
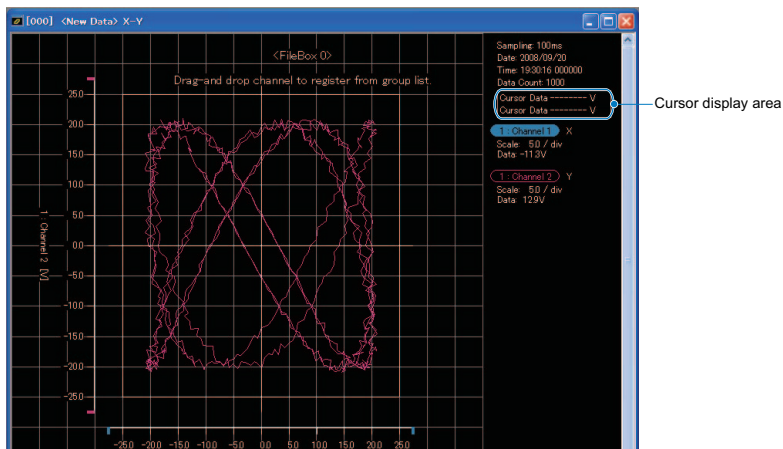
Setting XY Display p.35

Adding FFT Graph Windows

Display FFT graphs.

➤ [Window]-[Add FFT graph]

Setting FFT Display p.36

Displaying Measurement Value Windows

Display the current value, maximum value, minimum value, and average value of all acquisition channels. At all times acquired data of File Box 0 is displayed.

➤ [Window]-[Meas val]

Closing Graph Windows

Close all currently open graph windows.

➤ [Window]-[Close all]

Cleaning up Graph Windows

Re-arrange multiple graph windows to clean up the display.

➤ [Window]-[Cascade]

Displays multiple graph windows overlaying each other.

➤ [Window]-[Tile V]

Displays multiple graph windows tiled in the vertical direction.

➤ [Window]-[Tile H]

Displays multiple graph windows tiled in the horizontal direction.

Turning Each Display ON/OFF

Turn the display of the list view, toolbar and status bar ON/OFF.

➤ [Window]-[List view]

　Toggles the list view display ON/OFF.

➤ [Window]-[Toolbar]

　Toggles the toolbar display ON/OFF.

➤ [Window]-[Status bar]

　Toggles the status bar display ON/OFF.

Setting XY Display

You can check the correlation between each specific channel by making a graph with these channels assigned to the X- and Y-axes.
Channel assignments for the X- and Y-axes are canceled on the same window.

➤ [Window]-[XY graph setting]

Name	Description
Number of data points	Specifies the number of displays to appear on screen. The latest data as many as the number specified above are displayed.
Show reference wave	When this is selected, the XY graph can be displayed together with the saved reference waveform. This function is handy for comparing the XY graph with the reference waveform. Read and save the reference waveform by either of the following methods: • [File]-[Read reference wave] or [Save as reference wave] • Right-click on the XY graph
Channel select	Selects the channel to be displayed on the graph. Number of assignable channels • X-axis: 1 channel • Y-axis: Max. 5 channels Logic group channels and pulse group channels cannot be selected. Nor can the channels of the device that have different sampling period. When canceling the display, choose [no select].
Color of reference wave	Specifies the color when saving as the reference waveform.

Note

• Note that channel assignments for the X-axis 1 and Y-axis 1 cannot be canceled.
• Logic group channels and pulse group channels cannot be registered.
• Channels can also be registered to the XY graph by selecting the channel to be observed from the group list in the list view, and dragging-and-dropping it onto the observed channel display area on the right of the screen or onto "X-axis" and "Y-axis" on the graph.
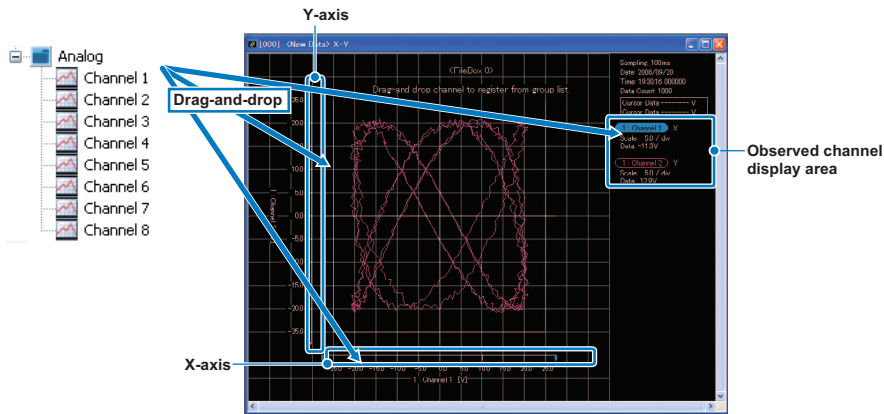
Setting FFT Display

The frequency of waveforms can be analyzed and displayed in FFT graphs.

➤ [Window]-[FFT graph setting]
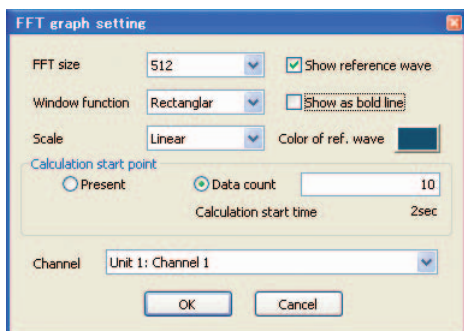
Name	Description
FFT size	Selects the number of data targeted for FFT calculation. 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144

Name	Description
Window function	Selects the window function in FFT calculations. Rectangular, Hanning, Hamming, flat-top, Blackman
Scale	Selects the Y-axis scale when displaying FFT calculations as a graph. Linear display, dB (10log) display, dB (20log) display
Show reference wave	When this is selected, the FFT graph can be displayed together with the saved reference waveform. This function is handy for comparing the FFT graph with the reference waveform. Read and save the reference waveform by either of the following methods: • [File]-[Read reference wave] or [Save as reference wave] • Right-click on the FFT graph
Show as bold line	Displays FFT waveform lines using thick lines.
Color of ref. wave	Specifies the color when saving as the reference waveform.
Calculation start point	Present :Displays the number of FFT calculations from the new data point. (realtime FFT calculation) Data count :Specifies the count at which FFT calculation is started. The calculation start time is displayed underneath this item.
Channel	Specifies the channel whose frequency is to be analyzed. Number of assignable channels: 1 Logic group channels and pulse group channels cannot be specified.

Note

Channels can also be registered to the FFT graph by selecting the channel to be observed from the group list in the list view, and dragging-and-dropping it onto the graph display area or observed channel display area on the right of the screen.
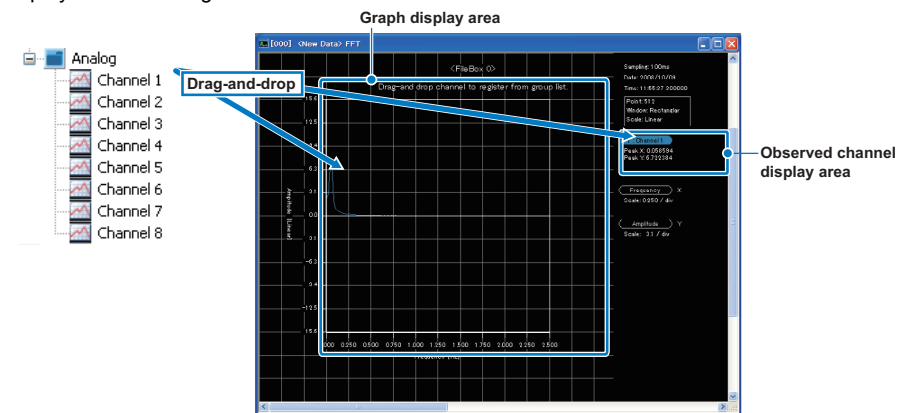
Other

Tools

Batch-convert files to CSV format files, and change the various option settings.

Batch-saving CSV Files

Select the waveform data files (SVD and WWD format) to convert in the file selection dialog box, and batch-convert them to CSV format files.

Note

Up to 500 waveform data files can be batch-converted in a single operation.

➤ [Tools]-[Batch-save CSV]
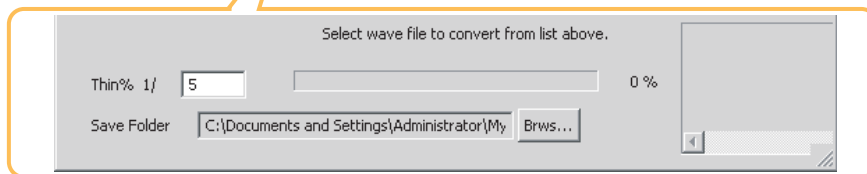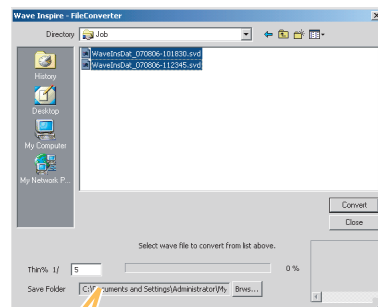
Name	Description
Thin%	Sets the thinning rate (%) of the waveform data.
Save Folder	Sets the destination to save the converted files to.

Options

➤ [Tools]-[Options]

Item		Description
Auto-save setting		Makes the automatic load, save and connection settings.
	Load settings	When this is selected, the previous acquisition condition settings and waveform display states are automatically loaded when starting up the software.
	Save settings	When this is selected, the acquisition condition settings and waveform display states are automatically saved when Wave Inspire RX is exited.
	Connect	When this is selected, the connection with the main unit connected to the PC is automatically established, and communication is started.
Rel time axis		When this is selected, the time annotation of the axes of the graph window is set to relative time. When this is not selected, the time annotation is set to absolute time.
Fix H grid		When this is selected, the horizontal grid is set to fixed when the graph window is horizontally enlarged or reduced. When this is not selected, the horizontal grid is set to variable.
Scroll cursor		When this is selected, the cursor also scrolls at the same time when the graph window is scrolled. When this is not selected, the cursor does not scroll.
Show scale		When this is selected, the scale is shown for all waveforms in the graph window. When this is not selected, the scale is shown for the selected waveform only.
Show marks		When this is selected, marks are shown in the graph window. When this is not selected, marks are not shown.
Reverse back		When this is selected, the background color of the graph window is reversed. When this is not selected, the background color is not reversed.
Email setting		Makes e-mail related settings.
Excel data transfer setting		Sets up output of measurement data to Excel in real time.

Setting Up E-mail

The operator can be notified of any alarms that are occurring by e-mail.

For example, alarms that are occurring can be confirmed without being overlooked if a notification is sent to the operator's cellphone. (An environment that supports sending of e-mails is required on the PC.)

When multiple main units are connected, e-mail is sent when one of the devices satisfies conditions to send e-mail.
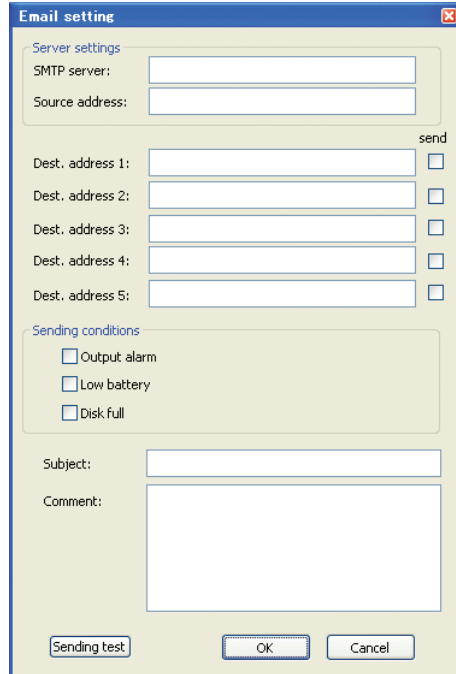
Name	Description
Server settings	Sets the SMPT server and source address.
Dest. Address	Up to five destination addresses can be set. Whether or not an e-mail is sent to a destination is dependent on the setting of the [send] checkbox on the right of each destination address.
Sending conditions	Select from the following mail send conditions: • Output alarm • Low battery • Disk full
Subject	Sets the name (subject) of the e-mail to be sent.
Comment	Sets the body text of the e-mail to be sent.

Setting Up Transfer of Data to Excel

Acquired data can be transferred to Excel file in real time and displayed as a graph.

To use this function, Microsoft Excel must be installed on the PC you are using.
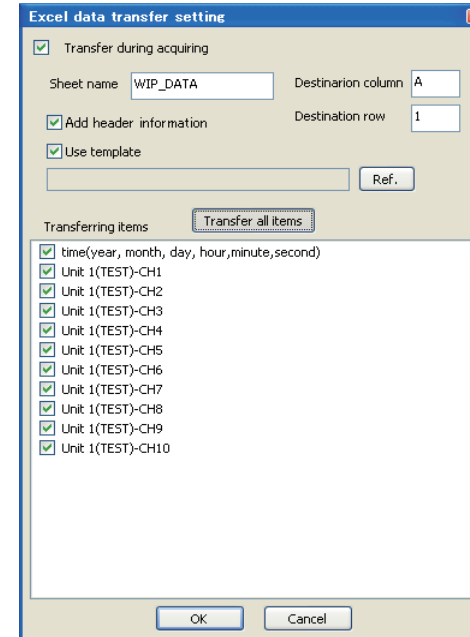
Name	Description
Transfer during acquiring	Sets enable/disable of the Excel data transfer function. Excel cannot output 65535 or more data cells.
Sheet name	Selects the destination Excel sheet (sheet in template file).
Add header information	Adds the name of the transferring item in one line to the beginning of the e-mail as header information.
Use template	Sets the template file at transfer of data to Excel.
Destination column, Destination row	Selects the start cell (column and row) in the transfer destination Excel sheet.
Transferring items	Selects the data to transfer to Excel. Up to 256 items are to be transferred.

Selecting Language

Select the Wave Inspire RX display language (Japanese/English).

■ **Windows 7, Vista**

Change the Windows language setting.

1 **Install the language pack for the language of use.**
   (1)   Select [All Programs]-[Windows Update] from the [Start] menu in the PC.
   (2)   In the window displayed, click [Check for Update Program (C)], and start up Windows Update.
   (3)   Click [Display Usable Update Programs] on the right of the window displayed.
   (4)   In the window displayed, select the of the language to install, and click the [Install] button. The language pack is automatically installed.

2 **Change the Windows' [Region and Language Options] settings.**
   (1)   Select [Control]-[Clock, Language and Region] from the [Start] menu in the PC.
   (2)   Click [Region and Language Options] in the window displayed.
   (3)   On the [Format] tab of the window displayed, select the language to apply from the [Current Format] pulldown menu, and click the [Apply] button.
   (4)   On the [Keyboard and Language] tab, click the [Change Keyboard] button to display the [Text Service and Input Language] window.
   (5)   On the [General] tab of the window displayed, select the language to apply from the [Existing Languages] pulldown menu, and click the [Apply] button.
   (6)   Click the [OK] button.
   (7)   Restart the PC to reflect the changes made to the language settings.

■ **Windows XP**

Change the language setting in Wave Inspire RX. When the language is changed, Wave Inspire RX is automatically restarted.

1 **Deselect the [Acquisition]-[Conn/Disconn] checkbox, or click the** **(connection) button to cut communications with the main unit.**

2 **Select [Window]-[Close all].**

3 **Select [Tools]-[Language].**

4 **Select [English] or [Japanese].**
   Wave Inspire RX is restarted, and the new language setting is applied.

Help

Show Help

Open the Software Manual.

➤   [Help]-[Show Help]

About

Displays the program, version, and copyright of the PC software.

➤   [Help]-[About]

List of Shortcut Key Operations

Category	Shortcut Key Operation	Description	Reference
Observing	Shift+↑ (or mouse wheel)	Narrows the waveform spacing.	p.29
	Shift+↓ (or mouse wheel)	Widens the waveform spacing.	p.29
	Ctrl+↑ (or mouse wheel)	Enlarges the entire graph or selected waveform in the vertical direction.	p.30
	Ctrl+↓ (or mouse wheel)	Reduces the entire graph or selected waveform in the vertical direction.	p.30
	Ctrl+→	Enlarges the entire graph in the horizontal direction.	p.30
	Ctrl+←	Reduces the entire graph in the horizontal direction.	p.30
	Ctrl+F	Searches the characteristic position in the specified waveform.	p.31
	Ctrl+N	Adds a graph window.	p.34
	Shift+F3	Jumps to the previous characteristic position.	p.31
	F3	Jumps to the next characteristic position.	p.31
Loading	Ctrl+O	Loads SVD, GBD, WDI, and WWD format waveform data files.	p.22
Outputting	Ctrl+S	Saves waveform data to WDI or CSV format file.	p.22
	Ctrl+C	Copies the waveform data in the window display range to the Clipboard.	p.24
	Ctrl+I	Copies the waveform image in the window display range to the Clipboard.	p.24
	Ctrl+P	Prints the waveform display state and settings of the active graph window.	p.25
Other	Home	Moves to the channel top in the active graph window.	–
	End	Moves to the channel end in the active graph window.	–
	Tab	Selects the next channel in the active graph window.	–
	Shift+Tab	Selects the previous channel in the active graph window.	–
	Wheel	Scrolls the current graph window vertically.	–

Troubleshooting

Connection

Error message	Cause	Remedy	Reference
An error occurred while querying models. Confirm the settings.	A communication error occurred.	Check to see if a LAN cable is connected to a device. Make sure that the USB ID or IP addresses of the main unit matches the USB ID or IP addresses set in the [Configuration] window.	p.9
Could not establish comm with main unit.	An error occurred in communication.	Make sure that the USB and LAN cable is properly connected. Make sure that the USB ID or IP address of the main unit matches the USB ID or IP address set in the [Configuration] window.	p.9

File

Error message	Cause	Remedy	Reference
Load data to this directory?	An attempt was made to load new waveform data to a file box already containing waveform data.	When [Yes] is selected, the currently displayed waveform data is cleared, and the new waveform data is loaded. When [No] is selected, loading of the waveform data is canceled.	p.22
Select storage destination (1 to 10) in file box.	An attempt was made to load waveform data with the storage destination of the file box set to "0: New data".	Select other than 0 (1 to 10) as the storage destination of the file box before loading the waveform data.	p.22

Acquisition Condition Settings

Error message	Cause	Remedy	Reference
Acquired data is not saved. Set acquisition?	An attempt was made to set acquisition condition without saving acquired data.	When [Yes] is selected, the process advances to regular acquisition condition settings. When [No] is selected, the process advances to acquisition condition settings, except that only display-related setting items (e.g. "Disp Hi Lmt/Disp Lo Lmt") can be changed.	p.25
Failed to set acquisition.	Either the USB cable is disconnected or the main unit is OFF. (The acquisition condition settings are not reflected on the main unit.)	Check the USB cable connection and the main unit's power supply.	p.9

Start/Stop Acquisition

Error message	Cause	Remedy	Reference
Not enough free space at main unit save destination. Cannot start acquisition.	There was not enough free space at the main unit save destination when acquisition was started.	Either change the storage destination, or increase the amount of free space at the main unit save destination. To increase free space, delete unwanted files in main unit memory from the PC by following the procedure below: 1. Exit Wave Inspire RX and turn the main unit off. 2. Turn the main unit on with the START/STOP key on the main unit held down. Main unit memory is recognized by the PC as USB mass storage. 3. Delete unwanted files in My Computer or Explorer.	p.22

Excel data transfer, Email sending

Error message	Cause	Remedy	Reference
Number of transer items exceeded the maximum column size (256) of Excel.	Number of the selected transer items exceeded the limit for Excel data transfer setting.	Make sure that the number of the selected items is 256 or less.	p.38
An error occurred while sending Email.	Email setting may be incorrect.	Check to see if a LAN cable is connected to PC properly. Check to see if the SMTP server name and the destination address are correct in [Email setting] window, and make sure the Email is sent successfully.	p.38

Menu Hierarchy Map

File
- Read file — p.22
- Save file — p.22
- Read settings — p.23
- Save settings — p.23
- Read reference wave — p.35 p.36
- Save as reference wave — p.35 p.36
- Save CSV — p.24
- Save image — p.24
- Print — p.25
- Print preview — p.25
- Exit — p.11

Acquisition
- Conn Setup — p.9
- Conn — p.10
- Acq Setup — p.25
- Auto-save Setting
  - Auto-save — p.27
  - Destination — p.28
- Start/Stop — p.28
- Start free run — p.28

View
- Initialize graph — p.29
- Tile — p.29
- Cascade — p.29
- Narrow spacing — p.29
- Widen spacing — p.29
- Enl V — p.30
- Red V — p.30
- Enl H — p.30
- Red H — p.30
- Full H — p.30
- Clear alarm — p.31

Search
- Srch Chars — p.31
- Alarms & Marks — p.31

Cursor
- Select
  - Hide — p.32
  - V cursor — p.33
  - H cursor — p.33
- Cursor A&B — p.33
- Cursor A — p.32
- Cursor B — p.32

Window
- Copy window — p.34
- Add graph — p.34
- Add XY graph — p.34
- Add FFT graph — p.34
- Meas val — p.34
- Close all — p.34
- Cascade — p.34
- Tile V — p.34
- Tile H — p.34
- List view — p.35
- Toolbar — p.35
- Status bar — p.35
- XY graph setting — p.35
- FFT graph setting — p.36

Tools
- Batch-save CSV — p.37
- Options — p.37
  - Auto-save setting
    - • Load settings
    - • Save settings
    - • Connect
  - Rel time axis
  - Fix H grid
  - Scroll cursor
  - Show scale
  - Show marks
  - Show pls/lgc waves
  - Show calc waves
  - Reverse back
  - Email setting
  - Excel Data transfer setting
- Initialize — p.11
- Language — p.39

Help
- Show Help — p.39
- About — p.39

Revision History

A manual revision code appears as a suffix to the catalog number at the bottom of the front cover of this manual.

Cat. No. Z270-E1-06

↑
Revision code
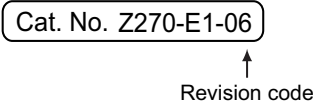
Revision code	Date	Revised content
01	October 2007	Original production
02	February 2008	Functions added as per software version upgrade (Ver.1.10)
WEB1	February 2008	Revision code is changed.
04	October 2008	Functions added as per software version upgrade (Ver.2.0)
05	October 2009	Functions added as per software version upgrade (Ver.2.3)
06	September 2010	Functions added as per software version upgrade (Ver.2.4)