User's Manual

Application Software
WTViewerFreePlus

2nd Edition

YOKOGAWA ◆

Yokogawa Meters & Instruments Corporation

This user's manual explains the handling precautions, features, and operating procedures of WTViewerFreePlus. To ensure correct use, please read this manual thoroughly before beginning operation.

After reading this manual, keep it in a safe place.
For the handling precautions, features, and operating procedures of the WT310/WT310HC/WT330, see the WT310/WT310HC/WT330 User's Manual or Getting Started Guide.

For information on how to use Windows, see the relevant manuals.

Notes

- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functionality. The figures given in this manual may differ from those that actually appear on your screen.
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Revisions

- January 2013 1st Edition
- October 2013 2nd Edition

Notes about Using This Software

Storing the CD-R

Keep the original CD-R (software) supplied with the WT310/WT310HC/WT330 in a safe place.

To use this software, install it on a PC hard disk, and run it from the PC.

Notes on Using the Software

- To allow a WT to communicate with a PC through the WT's USB interface, a USB driver must be installed in the PC. When you install the software in the PC, the USB driver is also installed automatically.

  If a National Instrument's (NI's) USB driver is already installed in a Windows XP or Windows Vista system, you must switch the USB driver using the OS device manager (see page 3-6).

- You can connect up to four WTs to a PC and use the software to control the WTs.

- When you connect a WT to the PC and use the software to control the WT, you cannot use multiple types of communication interface at the same time.

- Do not perform the following operations while using the software. Doing so may cause errors.
  - Use another software application to operate the WT
  - Operate the WT directly

- The software may not be able to continue if the PC enters standby or hibernation mode. Disable standby and hibernation modes when you use the software.

- If a connection error occurs, turn off the WT and then turn it back on.

How to Use This Manual

Structure of the Manual

This manual contains 10 chapters and an index.

Chapter	Title	Description
1	Product Overview	
		Describes the features of the product and the system requirements for using the product.
2	Configuring WT's Communication Control Settings	
		Describes how to connect the WT to a PC.
3	Installation and Starting and Exiting the Software	
		Describes how to install and start the software.
4	WT-PC Communication	
		Describes how to configure the settings for WT-PC communication.
5	WT Configuration	
		Describes how to configure the WT measurement conditions and other settings.
6	Displaying Measured Data	
		Describes how to display measured data.
7	Saving and Loading Setup Parameters	
		Describes how to save and load setup parameters.
8	Other Features	
		Describes the help feature and how to view the software version information.
9	Troubleshooting	
		Describes error messages.
10	Specifications	
		Provides the software specifications.
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Software Version That This Manual Covers

This manual describes WTViewerFreePlus software version 1.11.

For instructions on how to view the software version, see section 8.2.

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1.1   Product Overview

You can use the software to connect the WT310/WT310HC/WT330 (hereafter referred to as the WT)
to a PC and use the following features.
- Retrieve, display, and save data that the WT has measured and setup parameters.
- Remotely control the WT.

You can connect up to four WTs to a PC and use the software to control the WTs.

Compatible Measuring Instruments

You can use the software with the following YOKOGAWA measuring instruments.

Product Name	Model
WT310	WT310
WT310HC	WT310HC
WT330	WT332, WT333

Menus

The software has the following menus.

Connection: Used to configure the communication between the WT and PC.

Setting: Used to set WT's measurement conditions.

Measure: Used to display measured results in bar graphs, trend graphs, etc.

File: Used to save and load setup parameters.

Exit: Used to close the software.

You can use the following menus of the software to process data.
The details of each feature are provided below.

Connection

You can connect a WT to the PC in which the software is installed through a communication interface. You can select any of the four available interfaces and search for devices to view the WTs that you can connect to.

Setting

You can configure the WT settings, such as the voltage range, current range, and wiring system.

Measure

Use this menu to display data that the WT has measured in the following manner.

Types of Display Screens

The following types of display screens are available.

Numeric

Displays WT's measurement data numerically. For models with the harmonic measurement option (/G5), harmonic measurement data is also displayed.

Numeric List

Lists harmonic measurement data for each harmonic order.
Numeric lists can be displayed when the WT is equipped with the harmonic measurement option (/G5).

Numeric Matrix

Displays WT's measurement data for each element.

Waveform

Displays waveform display data that has been collected from the WT.
Waveforms can be displayed when the WT is equipped with the harmonic measurement option (/G5).

Trend

Displays changes in measured data over time on a trend graph.

Bar Graph

Displays measured harmonic components for each harmonic order.
Bar graphs can be displayed when the WT is equipped with the harmonic measurement option (/G5).

WT Data Update Interval and the Software's Data Collection Interval

The operation window of the software has a start button for starting measured data collection, a stop button, and a update button for updating measured data.

When you click the start button, the software starts collecting measured data. When it finishes collecting the data, it waits for data to be updated on the WT. When the WT finishes updating the data, the software starts collecting data from the WT again. The software repeats this operation until you click the stop button.

WT Data Update Interval < Software's Data Collection Interval

When the WT data update interval is shorter than the time it takes for the software to collect one set of measured data, there will be pieces of data that the software will not collect.
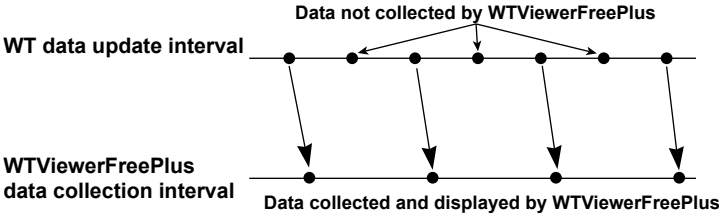
WT Data Update Interval > Software's Data Collection Interval

When the WT data update interval is longer than the time it takes for the software to collect one set of measured data, the software collects data after the data on the WT is updated, so the data displayed on the software will appear to be in sync with the WT data update interval.
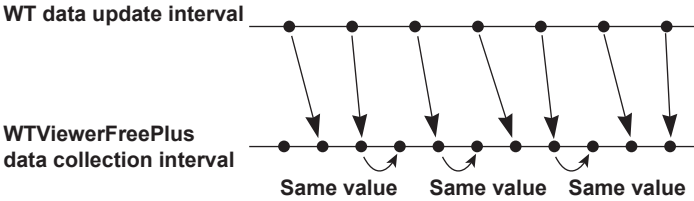
If you click the stop button while data is being collected, the software will collect the entire data before it stops. Therefore, there will be a time lag until the display on the software stops after you click the stop button.

If you click the update button, the software will update the measured data once. The measured data is collected when the displayed data on the PC is updated. It is not when the data on the WT is updated. The display update interval on the PC depends on the CPU, memory, and the number of data values you want to display.

Saving Measured Data

You can save numeric data and waveform display data to a CSV file.
To save WT setup parameters and the software setup parameters, use the Save menu, which is described later.

File

You can save and load WT setup parameters and the software setup parameters.

Exit

Use this menu to close the software.

1.2 Workflow

The following figure shows the software workflow.

```
              ( Start the software. )        (chapter 3)
                        |
                   [icon]
                        |
              [Configure the connection.]    (chapter 4)
                        |
                   [icon]
                        |
                     Online
                        |
              [Configure the WT.]            (chapter 5)
                        |
                   [icon]
                        |
        ┌───────────────────────────────────────────┐
        │     Display measured data.                 │
        │  [Select the display screen.] (section 6.1)│
        │                                            │
        │  [Start data collection.] Click the start  │
        │                           button.          │
        │                           (section 6.1)    │
        │                                            │
        │   ┌──→                                     │
        │   │ [Measured data display] (sections 6.1  │
        │   │                          to 6.7)       │
        │   │                                        │
        │  No ◇ Stop measurement?                    │
        │   │                                        │
        │  Yes                                       │
        │  Click the stop button.                    │
        │  (section 6.1)                             │
        └───────────────────────────────────────────┘
                        |
                   [icon]
                        |
              [Save setup parameters.]       (chapter 7)
                        |
                   [icon]
                        |
              ( Exit the software. )         (chapter 3)
```

1.3 System Requirements

PC

- **CPU**

  Pentium 4 1.5 GHz or faster recommended

- **Memory**

  2 GB or more recommended

- **HDD**

  1 GB free space or more

Operating System

English version of Microsoft Windows XP (SP3 or later)[1], Windows Vista,[1] or Windows 7[2]

1 32-bit versions are supported.

2 32-bit versions and 64-bit versions are supported.

Communication Board

- **GP-IB**

  NI (National Instruments)

  - PCI-GPIB or PCI-GPIB+[1]
  - PCIe-GPIB or PCIe-GPIB+[1]
  - PCMCIA-GPIB or PCMCIA-GPIB+[1, 2]
  - GPIB-USB-HS[3]

    1 NI-488.2 driver Ver. 1.60 or later (except Ver. 2.3)

    2 Not supported on Windows Vista or Windows 7

    3 Use driver NI-488.2M Ver. 2.8.1 or later.

- **RS-232**

  An available PC COM port

- **Ethernet**

  An Ethernet port that supports 10BASE-T or 100BASE-TX

- **USB**

  A USB port that supports USB Revision 1.1 or higher

Display, Printer, and Mouse

- **Screen Resolution**

  1024×768 dots or higher

- **Operating System**

  Operating system mentioned above

WT Main Unit

Product Name	Model
WT310	WT310
WT310HC	WT310HC
WT330	WT332, WT333

2.1   Connecting the WT to a PC

CAUTION

Be sure to turn off the PC and the WT before you connect or remove communication cables. Otherwise, erroneous operation may result, or the internal circuitry may break.

When Using the USB Interface
Connect the USB port for PCs (type B connector) on the rear panel of the WT to the PC.

When Using the GP-IB Interface
The WT is equipped with an IEEE St'd 488-1978 24-pin GP-IB connector. Use a GP-IB cable that conforms to this standard.
Connect the cable to the GP-IB connector on the rear panel of the WT.
Use an appropriate connector to connect the other end of the cable to the PC.

When Using the Serial (RS-232) Interface
Before connecting the WT to the PC using a cable, open Device Manager on your PC to check the communication port that you can use. Connect the interface cable to the COM port that you can use. Use an appropriate connector to connect the cable to the PC.

When Using the Ethernet Interface
To connect the WT to the PC, use a straight UTP (Unshielded Twisted-Pair) or STP (Shielded Twisted-Pair) cable through a hub or similar device. Connect the cable to the ETHERNET port on the rear panel of the WT. The data rate varies depending on the product. Use a hub, cables, and network card that are appropriate for the data rate.
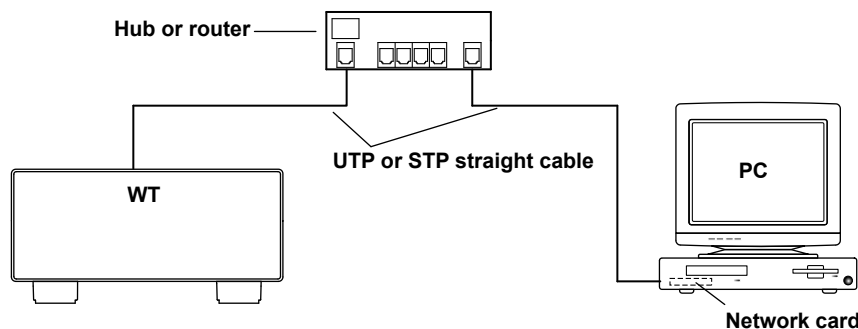
Note
- When you connect to a 100BASE-TX network, use a category 5 or better cable.
- Do not connect the WT to the PC directly. Direct communication is not guaranteed to work.

2.2 Setting USB Control Parameters

Procedure

There are no USB control parameters.

To view the serial number that is used in USB TMC communication, see section 1.4 in the WT310/WT310HC/WT330 Communication Interface User's Manual (IMWT310-17EN).

Explanation

Each device that is connected through USB has its own unique ID in the USB system. This ID is used to distinguish between different devices. The WT310/WT310HC/WT330 ID is its instrument number. When you connect the WT to the PC, make sure that the WT ID does not overlap with those of other devices.

Note

- When you connect a WT to the PC and use the software to control the WT, you cannot use multiple types of communication interface at the same time.
- You can connect up to four WTs to a PC and use the software to control the WTs.
- The WT may not operate properly if the WT is connected to the PC through converters (such as a GP-IB to USB converter or RS-232 to USB converter). For more details, contact your nearest YOKOGAWA dealer.

2.3   Setting GP-IB Control Parameters

Procedure

Follow the procedure in section 2.4 in the WT310/WT310HC/WT330 Communication Interface User's Manual (IMWT310-17EN) to set the GP-IB control parameters.

Explanation

Setting the Address

Set the WT address within the following range.
1 to 30

Each device that is connected in a GP-IB system has its own unique address. This address is used to distinguish between different devices. Therefore, you must assign a unique address to the WT310/WT310HC/WT330 when you connect it to a PC or other device.

Note

- When the controller (PC) is using the GP-IB bus, do not change the address of any connected devices.
- When you connect a WT to the PC and use the software to control the WT, you cannot use multiple types of communication interface at the same time.
- You can connect up to four WTs to a PC and use the software to control the WTs.
- On the PC end, use a GP-IB board (or card) made by NI (National Instruments). For details, see page xiv.
- The WT may not operate properly if the WT is connected to the PC through converters (such as a GP-IB to USB converter or RS-232 to USB converter). For more details, contact your nearest YOKOGAWA dealer.

2.4   Setting RS-232 Control Parameters

Follow the procedure in section 3.4 in the WT310/WT310HC/WT330 Communication Interface User's Manual (IMWT310-17EN) to set the RS-232 control parameters.

Explanation

Setting RS-232 Control Parameters

To use the software through the RS-232 interface, set the handshaking method, data format, baud rate, and terminator.

Note

- When the controller (PC) is using the RS-232 interface, do not change the above settings of any connected devices.
- When you connect a WT to the PC and use the software to control the WT, you cannot use multiple types of communication interface at the same time.
- You can use the software to control a single WT that is connected to the PC. Do not connect multiple WTs to the PC.
- The WT may not operate properly if the WT is connected to the PC through converters (such as a GP-IB to USB converter or RS-232 to USB converter). For more details, contact your nearest YOKOGAWA dealer.

2.5　Setting Ethernet Control Parameters

Procedure

Follow the procedure in section 4.4 in the WT310/WT310HC/WT330 Communication Interface User's Manual (IMWT310-17EN) to set the Ethernet control parameters.

Explanation

Setting Ethernet Control Parameters

To use the software over a network, set the TCP/IP parameters.

Note

- When the controller (PC) is using the Ethernet interface, do not change the TCP/IP settings of any connected devices.
- When you connect a WT to the PC and use the software to control the WT, you cannot use multiple types of communication interface at the same time.
- You can connect up to four WTs to a PC and use the software to control the WTs.
- The WT may not operate properly if the WT is connected to the PC through converters (such as a GP-IB to USB converter or RS-232 to USB converter). For more details, contact your nearest YOKOGAWA dealer.

3.1 Installation and Uninstallation

Installation

Prepare the CD-R that contains the software. Before installing the software, close all programs that are currently running.

If an older version of WTViewerFreePlus is installed, uninstall it from Control Panel (see page 3-9).

The following procedure explains how to install the software on Windows 7. The windows that appear will vary depending on the operating system.

1. Turn on the PC and start Windows. Log on as an administrator.

2. Insert the installation disk that contains this software into the CD drive.

3. On the PC, select the CD drive.

Installing WTViewerFreePlus

4. Double-click WTViewerFreePlus_Installer.exe. The installer starts. Follow the instructions on the screen, and then click **Next**.

5. If you agree with the license agreement, select **I Agree**, and click **Next**.

   Otherwise, select **I Do Not Agree**. The installation will be canceled.
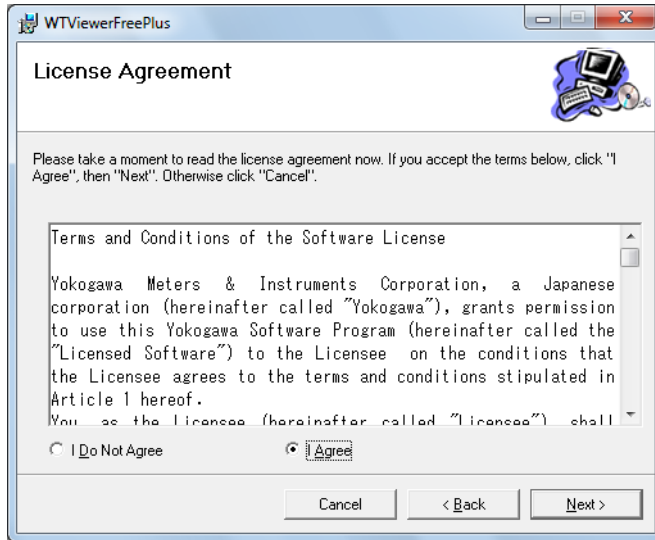
5. Select the installation destination, and click **Next**.

   Click **Browse** to specify the destination. The default installation destination is as follows:
   - Windows 32-bit version
       C:\ProgramFiles\YOKOGAWA\WTViewerFreePlus
   - Windows 64-bit version
       C:\ProgramFiles(x86)\YOKOGAWA\WTViewerFreePlus
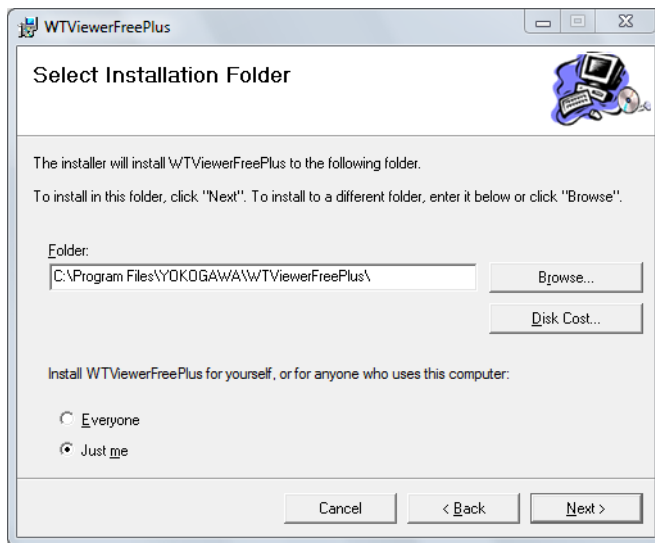
6. A screen prompting you to start the installation appears. If the installation settings are okay, click **Next**. The software is installed.

Click **Back** if you want to change the installation settings.

Click **Cancel** to cancel the installation.
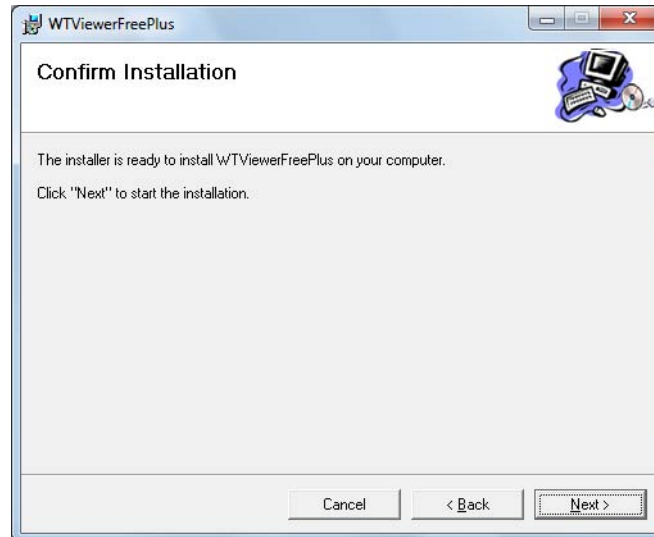
7. On Windows Vista or Windows 7, the "User Account Control" window will appear during the installation. Click **Allow** or **Yes** to continue the installation. The installation will continue.

8. When the software installation finishes normally, the following screen appears. Click Finish to complete the installation. YOKOGAWA > WTViewerFreePlus > WTViewerFreePlus will be added to All Programs in the Windows Start menu.
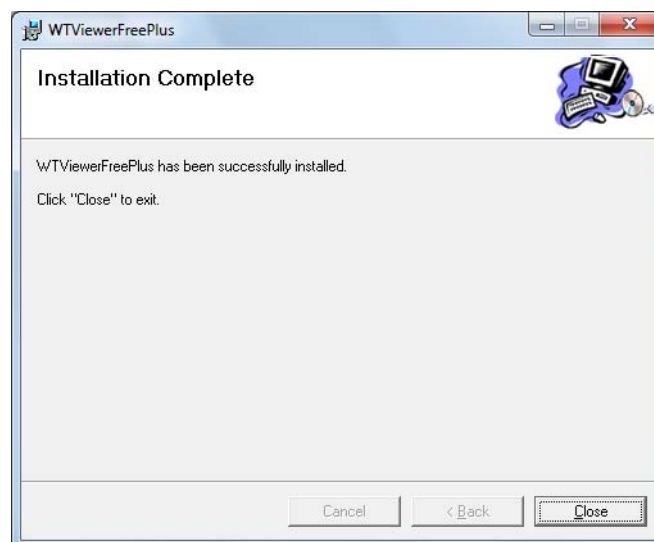
Next, the YKMUSB driver installation wizard starts automatically.

Installing YKMUSB (USB Driver)

1. Follow the instructions on the screen, and then click **Next**.
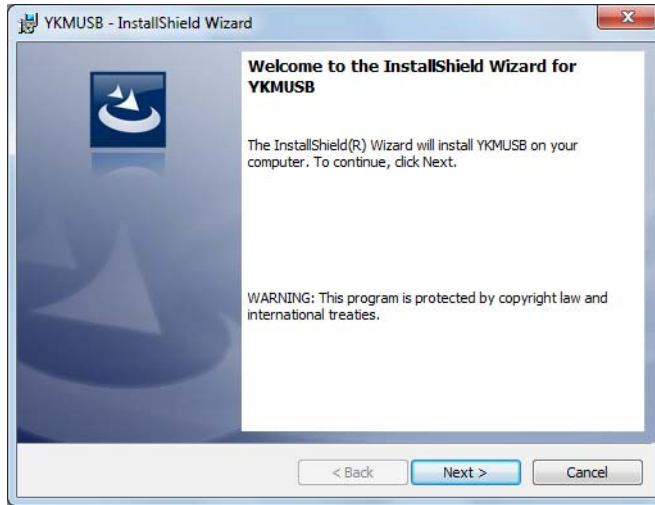
2. If the USB cable is connected to the PC, remove the cable, and click **Next**.
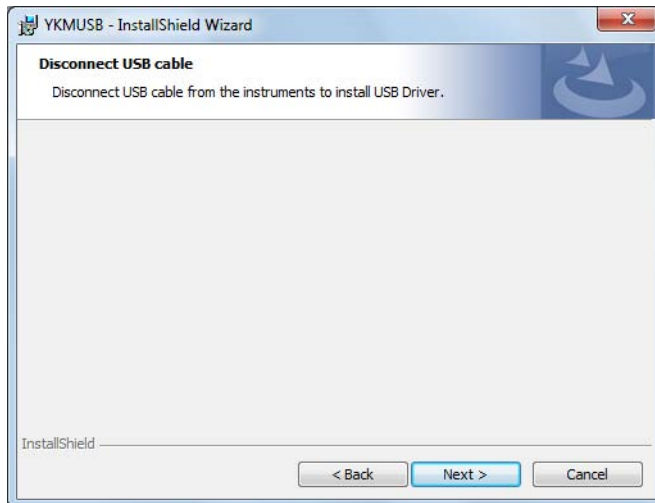
3. A screen prompting you to start the installation appears. If the installation settings are okay, click **Install**. The software is installed.

Click **Back** if you want to change the installation settings.

Click **Cancel** to cancel the installation.
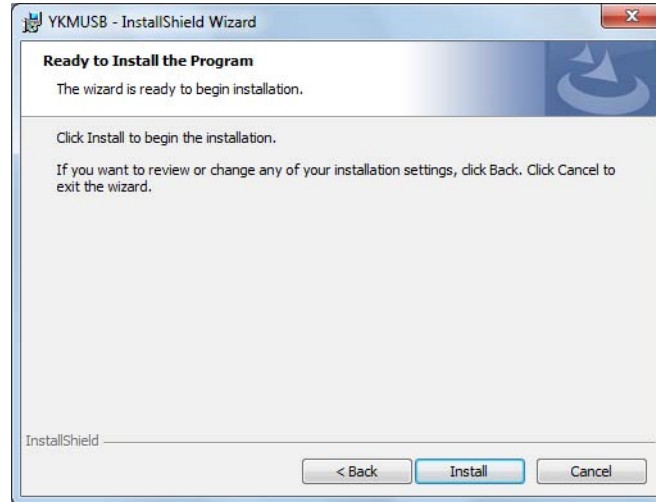
4. On Windows Vista or Windows 7, the "User Account Control" window will appear during the installation. Click **Allow** or **Yes** to continue the installation. The installation will continue.

5. On Windows Vista or Windows 7, a "Window Security" window will appear during the installation. Click **Install**. The installation will continue.

6. When the software installation finishes normally, the following screen appears. Click Finish to complete the installation.
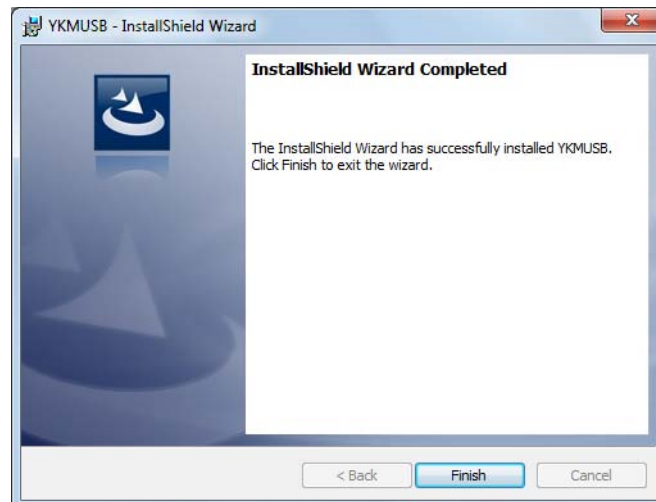
If a National Instrument's (NI's) USB driver is already installed in a Windows XP or Windows Vista system, you must switch the USB driver using the OS device manager according to the procedure on the next page.

Changing the USB Driver

If a National Instrument's (NI's) USB driver is already installed in a Windows XP or Windows Vista system, you must switch the USB driver using the OS device manager according to the procedure on the next page.

This procedure is not necessary on Windows 7.

1. Turn on the WT, and connect the WT to the PC using a USB cable.

2. On the task bar, click **Start**, right-click **My Computer**, and click **Manage**.

3. Click **Device Manager**.

4. Right-click **USB Test and Measurement Device (IVI)*** under **USB Test and Measurement Devices**.* The Hardware Update Wizard starts.

   * The folder name varies depending on the type of USB driver, which is made by NI (National Instruments).
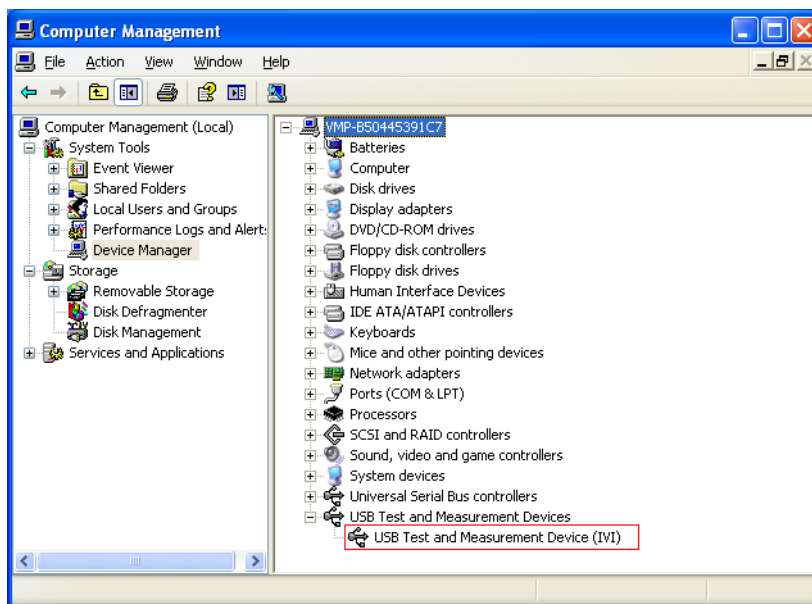
5. Select **No, not this time**, and then click **Next**.

6. Select **Install from a list or specific location**, and then click **Next**.
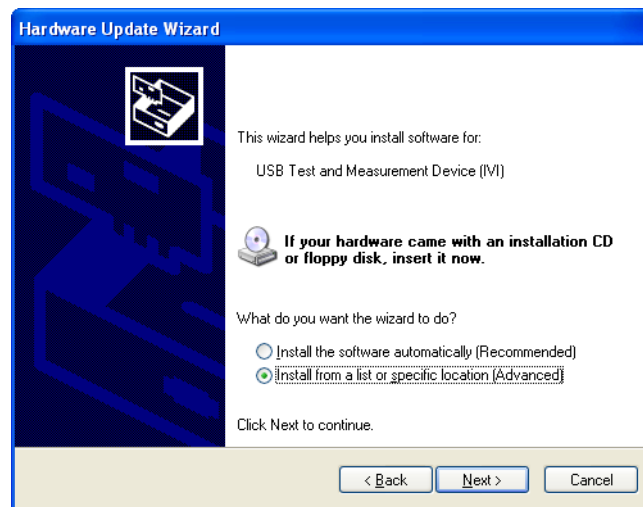
7. Select **Don't search. I will choose the driver to install**, and then click **Next**.
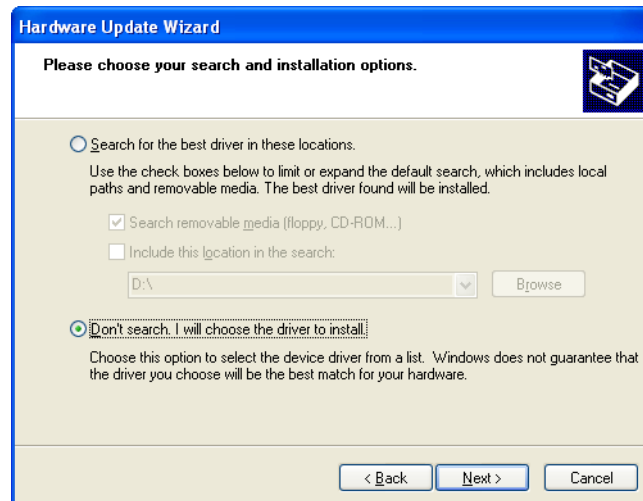
8. Select **WT Series USB Devices**, and click **Next**. The software is installed.
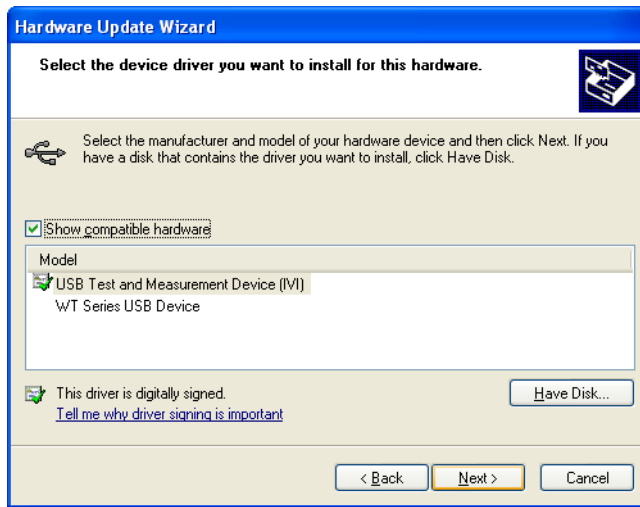
9. When the software installation finishes normally, the following screen appears. Click **Finish** to complete the installation.

10. Keep the USB cable connected between the WT and PC, turn off the WT, and then turn it back on.

The USB driver folder will be changed as follows.
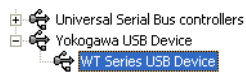
Uninstallation

This section explains how to uninstall the software on Windows 7.

1. On the taskbar, click **Start** and then **Control Panel**.

2. Double-click **Uninstall a program** in the Control Panel.

Uninstalling WTViewerFreePlus

3. Right-click **WTViewerFreePlus**, and then click **Uninstall**.

4. A uninstallation confirmation screen appears.

    Click **Yes** to uninstall WTViewerFreePlus.

    Click **No** to cancel.

5. On Windows Vista or Windows 7, the "User Account Control" window will appear during the uninstallation. Click **Allow** or **Yes** to continue the installation. The uninstallation will continue.

Uninstalling YKMUSB (USB Driver)

6. On the uninstallation window, right-click **YKMUSB**, and then click **Uninstall**. The uninstallation will proceed in a similar manner as described above.

3

Installation and Starting and Exiting the Software

3.2 Starting and Exiting the Software

Preparation before Starting the Software

Do the following before you start the software.
- Turn on the WT310/WT310HC/WT330.
- Connect communication cables, and set communication interface parameters. (See chapter 2.)

Starting the Software

1. To start the software, click the **Start** button, **All Programs**, **YOKOGAWA**, **WTViewerFreePlus**, and then **WTViewerFreePlus**.

When the software starts, the Connection menu will appear.
Proceed to chapter 4, "WT-PC Communication."
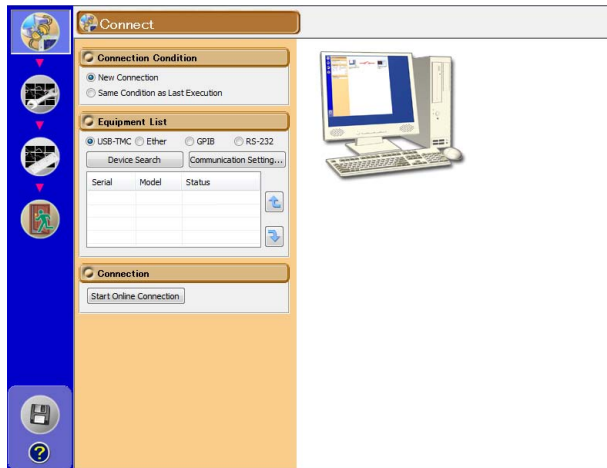
Exiting the Software

1. Click in the menu area. The exit screen appears.
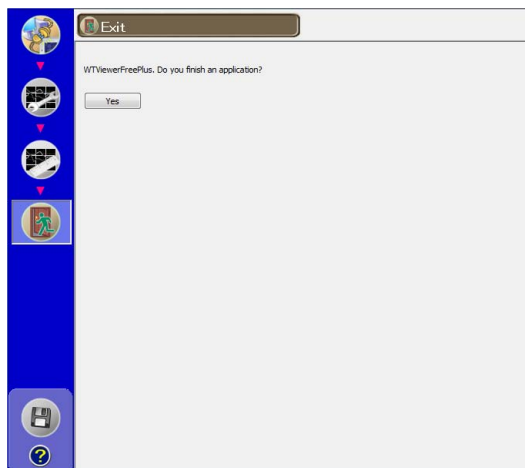
2. Click **Yes**. The software will close.

4.1   Configuring a New Set of WT-PC Communication Parameters (New connection)

1. Click in the menu area. The Connection screen appears.

When you start the software, this screen appears automatically.
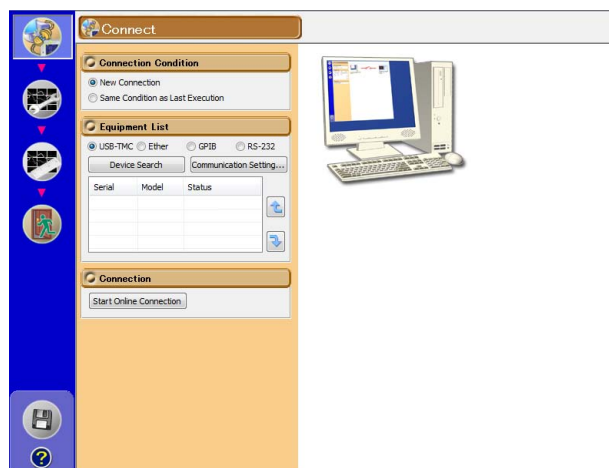
If you have connected the WT through the GP-IB, RS-232, or Ethernet interface, the following message appears. Follow the procedure on the next page to set the communication parameters.
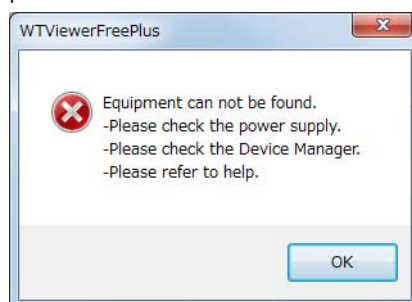
If the above message appears even after you set the communication parameters, check the following items.
- Is the WT turned on?
- Is the communication interface cable connected?
- If a National Instrument's (NI's) USB driver is already installed in a Windows XP or Windows Vista system, you must switch the USB driver using the OS device manager (see page 3-6).

If you are using a communication interface other than the USB interface, the following message appears.
(When you start the software for the first time, this screen will always appear.)
Click **OK**, and configure the communication interface by following the Communication Setting dialog box.
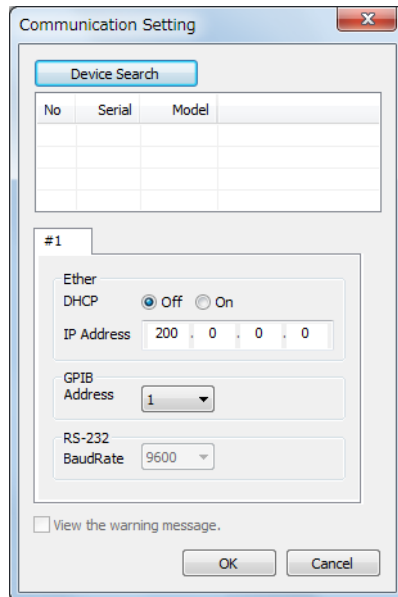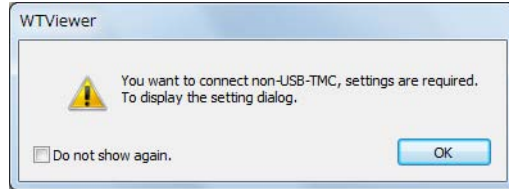
Connection Condition

2. To create a new connection, click **New Connection**.
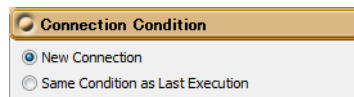
Equipment List

Connection Procedure

3. Select how to connect the WT to the PC from USB-TMC, Ether, GPIB, and RS-232.

4. Click **Device Search**.

The serial number (instrument number) and model of the WTs that you can connect to appear.
Proceed to step 6.

Displays the serial number (instrument number) and model of the WTs that you can connect to.
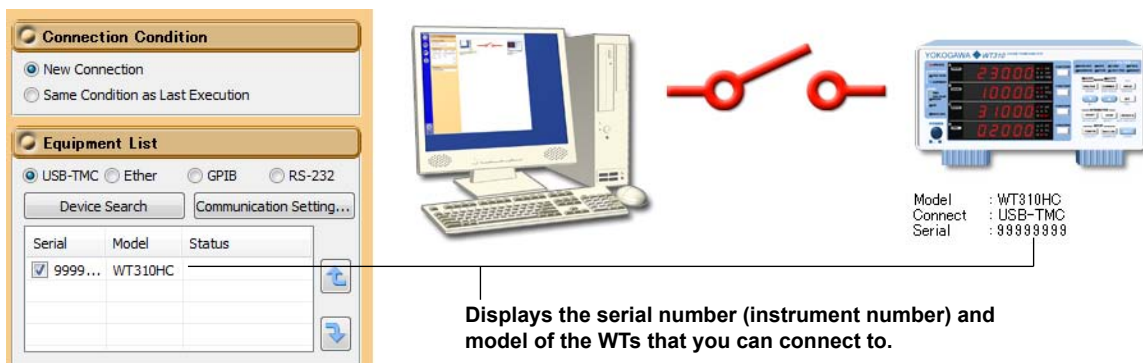
Note

If you connect the WT to the PC through the USB interface, turn on the WT, and then start the software, a list of connectable WTs will appear.

Connecting the WT to the PC through the USB Interface Temporarily to Configure the WT's GP-IB, RS-232, or Ethernet Settings

4. Click **Communication Setting**, and then configure the communication settings.

Ethernet settings

GPIB setting

RS-232 setting
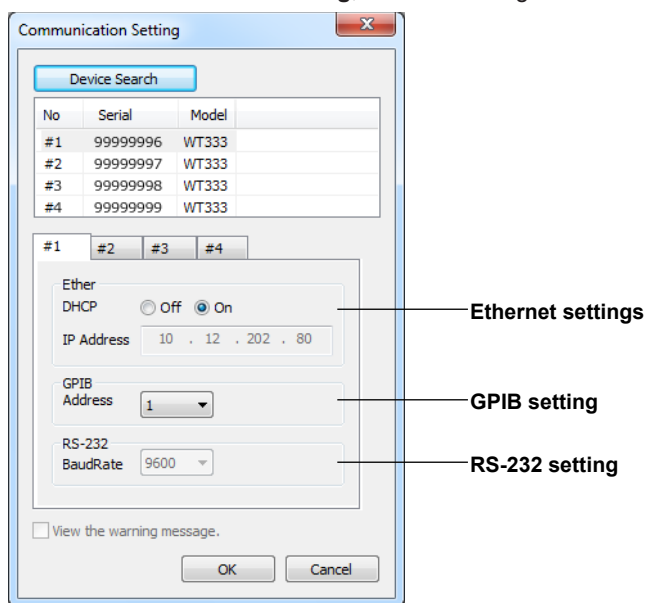
5. Click **Device Search**.

The serial number (instrument number) and model of the WTs that you can connect to appear.
Select from the list or switch the tabs to select the target device, and change the communication settings.

4

WT-PC Communication

Starting the Connection

6. Click **Start Online Connection**. The communication with the peer WT begins.
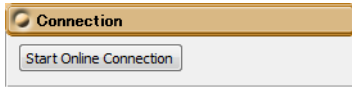
When the connection is established and the WT and PC are online, an illustration indicating this state appears.
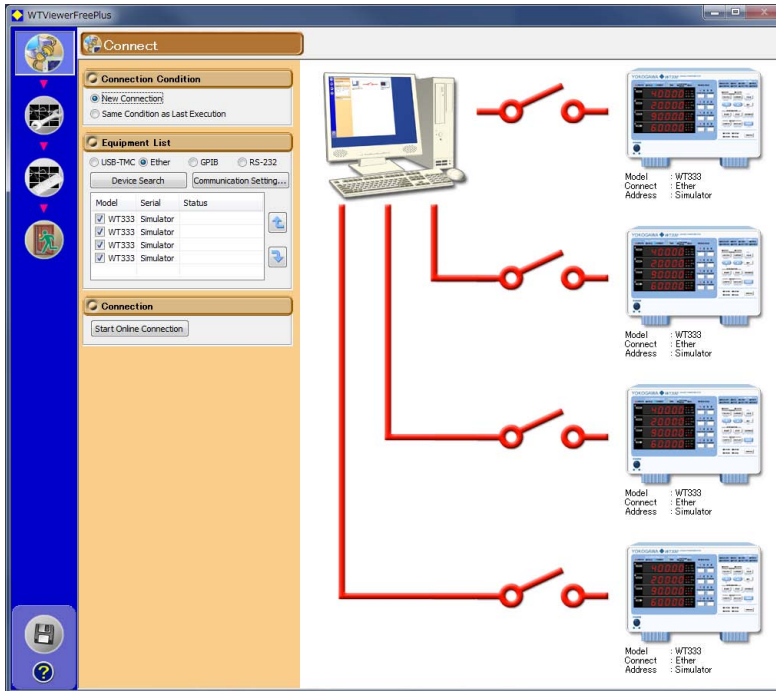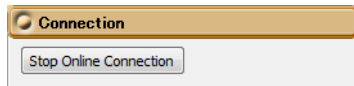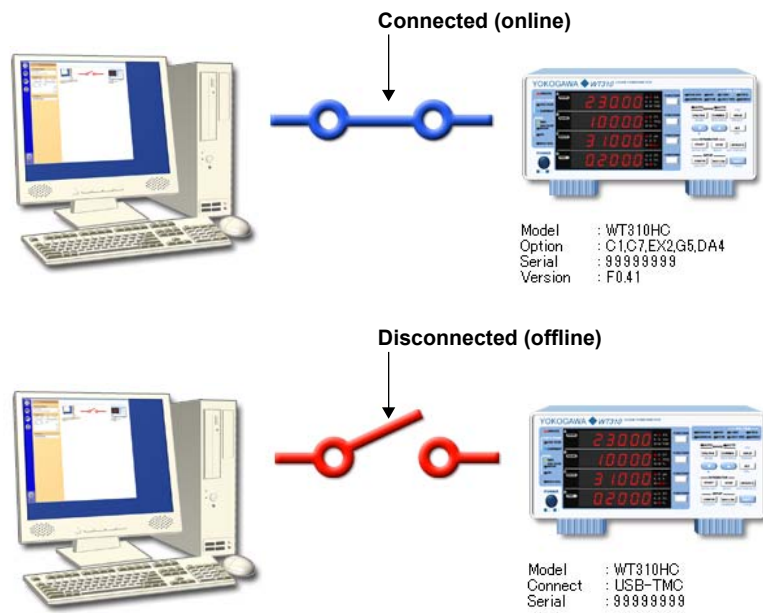

Note

- You cannot proceed to Setting, Measure, or File until an online connection is established.
- If any of the following circumstances apply when you click Start Online Connection, a communication error will occur.
  - The peer WT is not ready to measure.
  - The GP-IB address, IP address, user name, or password is incorrect.
  - There is no response from the peer WT.
  - When multiple WTs are connected, not all the WT models or options are the same.

4.2 Using the Same Communication Settings as the Last Time

1. Click in the menu area. The Connection screen appears.

2. In the Connection Condition dialog box, click **Same Condition as Last Execution**.
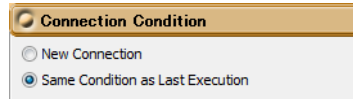
Note
You cannot select "Same Condition as Last Execution" the first time you start the software.

Starting the Connection

3. Click **Start Online Connection**. The communication with the peer WT begins.
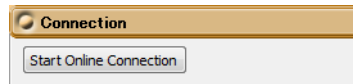
Note
- You cannot proceed to Setting, Measure, or File until an online connection is established.
- If any of the following circumstances apply when you click Start Online Connection, a communication error will occur.
  - The peer WT is not ready to measure.
  - The GP-IB address, IP address, user name, or password is incorrect.
  - There is no response from the peer WT.
  - You are trying to connect to a different WT from the last time.
  - When multiple WTs are connected, not all the WT models or options are the same.

4.3 Switching to Offline

1. Click in the menu area. The Connection screen appears.

2. While online, click **Stop Online Connection**. The connection between the WT and PC is disconnected.

When the connection is cut and the WT and PC are offline, an illustration indicating this state appears.

Connected (online)

Model	: WT310HC
Option	: C1,C7,EX2,G5,DA4
Serial	: 99999999
Version	: F0.41

Disconnected (offline)

Model	: WT310HC
Connect	: USB-TMC
Serial	: 99999999

5.1   WT Configuration

1. Click in the menu area. The Setting screen appears.
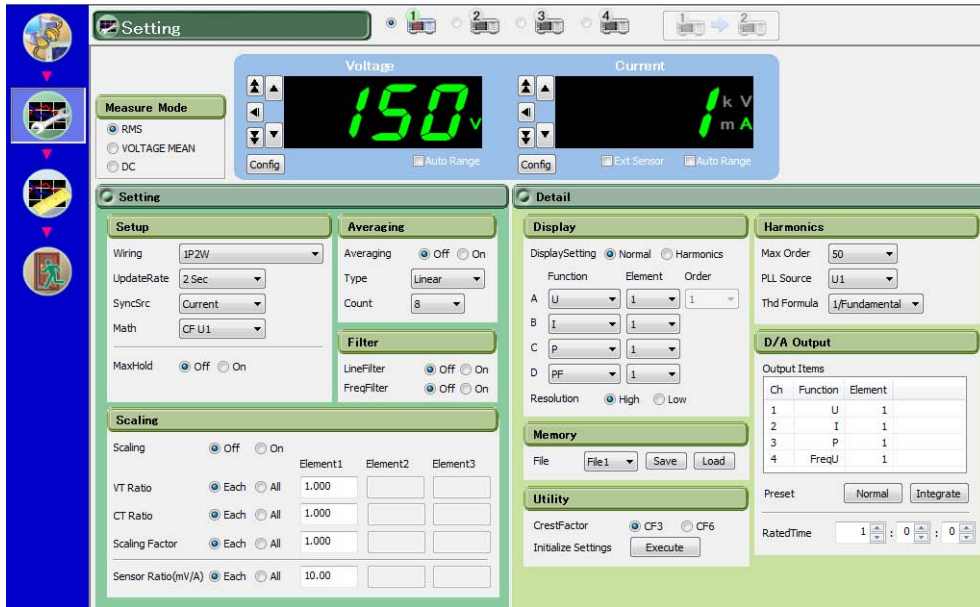
Notes on Operation

Note the following points when you use the software to configure the WT.

- For details on settings, see the WT User's Manual IM WT310-01EN.

  There are two ways to view the WT User's Manual.
    - Use the help feature. For details, see page 8-2.
    - View the PDF file in the Manuals folder on the CD-R.

- To display the waveform, bar graph, or trend display, set the measurement function and element on the numeric or harmonic list screen beforehand.

Examples of Setting screens are provided in the remainder of this section.

Target Bar

When selected first WT

When selected except for first WT

Copy the settings of the first WT to the selected WTs.

Displays the target WT. You will be able to access all the WTs that are connected. The settings of the selected WT are displayed in the window.
You can copy the settings of the first WT to other WTs.

Measurement Mode and Range Settings

Select from a list of measurement ranges.

15V
30V
60V
150V
✓ 300V
600V

Switches to the maximum measurement range

Increases the measurement range

Select the measurement mode.

Set the voltage range.

Set the current range.

Voltage

300 v

Current

1 k V
m A

Measure Mode
○ RMS
○ VOLTAGE MEAN
○ DC

Config | Auto Range

Config | Ext Sensor | Auto Range

Turns on or off auto range

Switches to the external sensor range
Select this check box when you are using an external sensor for current input. External sensor range options will appear in the current range selection box. The sensor conversion ratio box will also be enabled.
(Valid when the external sensor input option is installed.)

Decreases the measurement range

Switches to the minimum measurement range

Set measurement range skip (range configuration).

Turns on or off range configuration

Range Configuration

☐ Range configuration used

Voltage Range Configuration

15V ☑
30V ☑
60V ☑
150V ☑
300V ☑
600V ☑

Peak Over Jump
OFF ▼

Current Range Configuration

Direct Input
1A ☑
2A ☑
5A ☑
10A ☑
20A ☑
40A ☑

Ext Sensor Input
Ext 50mV ☑
Ext 100mV ☑
Ext 200mV ☑
Ext 500mV ☑
Ext 1V ☑
Ext 2V ☑

Peak Over Jump
OFF ▼

Peak Over Jump
OFF ▼

Default | OK | Cancel

If you set measurement range skip as shown below, the measurement range will jump from 1 A range to 20 A range.

Measurement range

1A ☑
2A ☐
5A ☐
10A ☐
20A ☑
40A ☑

Set peak over jump.
Specify the measurement range to switch to when a peak over-range occurs in auto range mode. For example, in auto range mode, if you want the range to change to 20 A when an excessive input occurs during measurement, set this to 20A.

Resets the settings in the Range Configuration dialog box to their defaults.

- The figure above is an example for a WT310HC with the /EX2 option with the crest factor set to 3.
- On the WT310, the following current ranges cannot be set to skip because of the overcurrent protection feature.
    - When the crest factor is 3: 1 A
    - When the crest factor is 6: 0.5 A
- For details on settings, see chapter 2 in the WT User's Manual IM WT310-01EN.

Measurement Condition Setting Box

Set the measurement period.

Set the MATH function.

Linear: Moving average
Exponential: Exponential average

Select All to set all elements at once.
Select Each to set the value for each element.

External current sensor scaling constant

For details on settings, see chapter 2 in the WT User's Manual IM WT310-01EN.

Detail Setting Box

WT display settings

Turns on or off harmonic data

1/Fundamental: IEC
1/Total: CSA

Set the output items.
Click the Function and Element cells, and set each item using the combo box that appears.

Save or load setup parameters.

Initializes the WT setup parameters.
Communication settings are not initialized.

Default settings for integration

Default settings for normal measurement
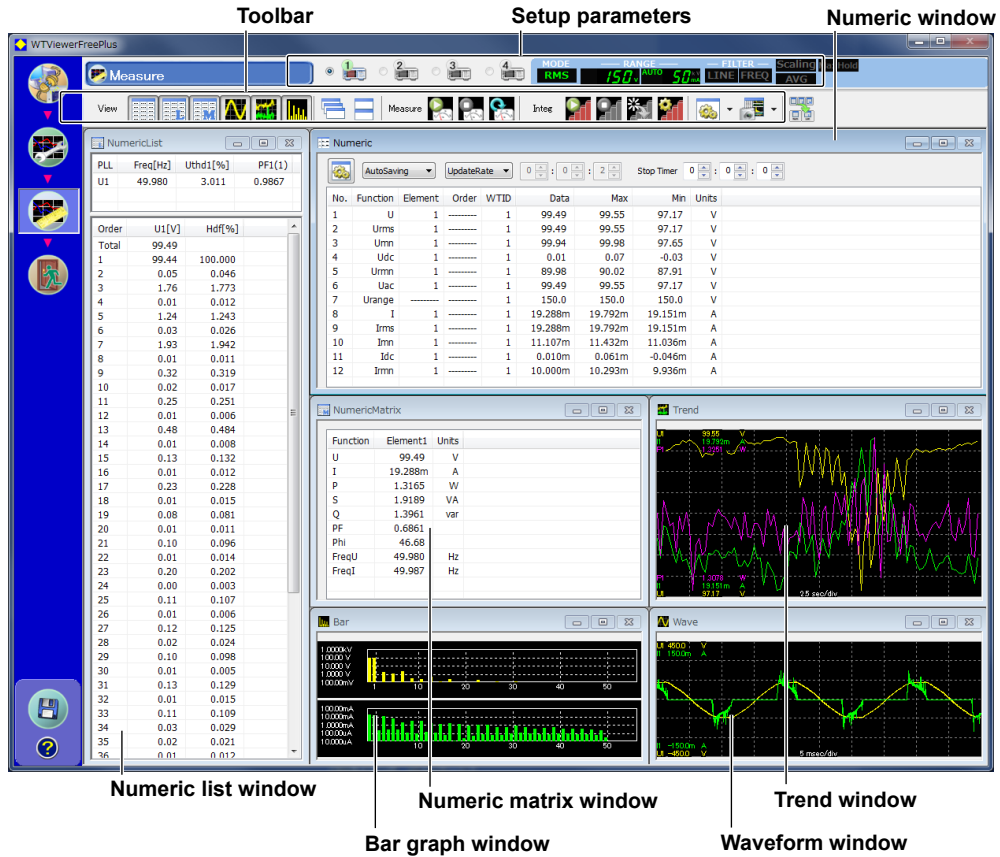
For details on settings, see the following chapters in the WT User's Manual IM WT310-01EN.
- Display: Chapters 4 and 6
- Harmonics: Chapter 6
- Memory: Section 7.2
- D/A Output: Section 8.4
- Utility: Section 2.7 (crest factor), section 8.2 (initialization)

5

WT Configuration

6.1   Measurement Screen

1. Click [icon] in the menu area. The measurement screen appears.

Toolbar · Setup parameters · Numeric window

Numeric list window · Numeric matrix window · Bar graph window · Trend window · Waveform window

Unavailable icons, setting boxes, and setup parameters appear dimmed.

Setup Parameters

Target bar · Copy button · Measurement mode · Line filter · Frequency filter · Scaling · MAX hold · Voltage range · Current range · Averaging

Target Bar
Displays the target WT. You will be able to access all the WTs that are connected.
If multiple WTs are connected, the button for copying the settings of the first WT to other WTs will be enabled.

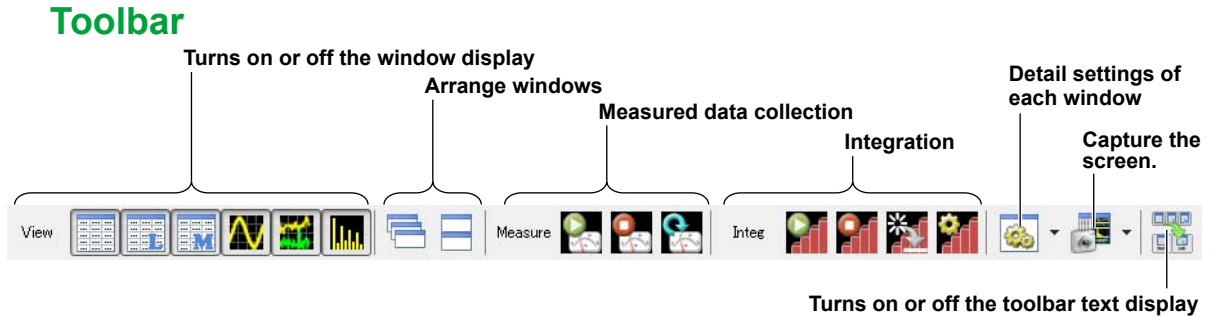### Measurement Mode, Voltage Range, and Current Range
The current settings are displayed. For details on changing the settings, see chapter 5.

6

Displaying Measured Data

Line Filter, Frequency Filter, Scaling, MAX Hold, and Averaging
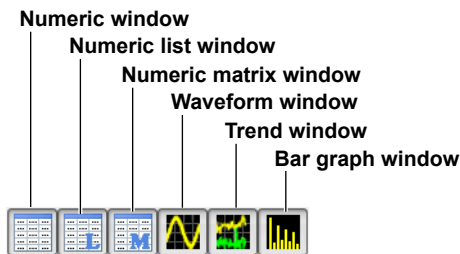
- ON: Displayed in green
- OFF: Displayed in gray

For details on changing the settings, see chapter 5.

Toolbar

Turns on or off the window display

Arrange windows

Measured data collection

Integration

Detail settings of each window

Capture the screen.

Turns on or off the toolbar text display

Turning On and Off the Window Display (View Icons)

Turns on or off each window display.

- Models with the harmonic measurement (/G5 option)

Numeric window

Numeric list window

Numeric matrix window

Waveform window

Trend window

Bar graph window

- Models without the harmonic measurement (/G5 option)

Arranging Windows

Cascade

Tile

Cascade

- Displayed windows are cascaded so that all the window titles can be seen.
- The active window will be shown in front of all cascaded windows.
- The order in which the windows are cascaded varies depending on the types of windows that are being displayed.

Tile

- All displayed windows are tiled.
- The order in which the windows are arranged varies depending on the types of windows that are being displayed. The numeric list window is always shown vertically in the left edge.

Collecting Measured Data (Measurement Icons)

Start: Starts measured data collection
Stop: Stops measured data collection
Update: Collects measured data once

Starting Measured Data Collection

The software collects data from the WT after the data on the WT is updated and then displays the data. While data is being collected, the Integ-Setup icon, View-Set icon, and Snapshot icon are unavailable.

Collecting Measured Data Once

The software collects data from the WT once and then displays the data.

Before collection is started or when Stop is clicked

When Start is clicked

When Update is clicked

All icons are unavailable until the data collection is complete.

Note

To collect measured data for windows other than those that are currently shown, click the relevant viewer icons to show the windows, and then start data collection.

Stopping Measured Data Collection

Stops collecting measured data from the WT.

Integration

Start: Starts integration
Stop: Stops integration
Reset: Resets integration
Setting: Set integration parameters.

Starting Integration

Integration on all elements installed in the WT will start.

Check the following points before starting integration.
- Set measurement functions and elements so that integrated values appear in the numeric window.
- The software must collect values integrated on the WT; otherwise integrated values will not appear even if you start integration. Therefore, start data collection first, and then start integration.

6

Displaying Measured Data

Pausing and Stopping Integration

Integration on all elements installed in the WT will be paused.

- If you click Stop before the specified integration time is reached, integration is paused. If you click Start in this condition, integration will resume.
- If integration is paused or if the specified integration time has been reached and integration is finished, click Reset and then Start to reset and start integration from the beginning.

Resetting Integration

Integration on all elements installed in the WT will be reset.

- If you click Reset, the integrated data in the WT will be cleared, but the integrated values of this software will remain.
- If integrated values are displayed in the numeric window of the software, the integrated values will remain displayed. If you start integration again, the integrated values will be updated.

Setting Integration Parameters

The integration setting dialog box appears.

Click
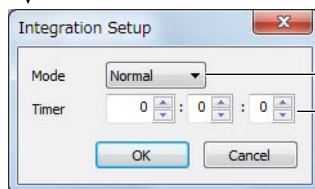
Integration mode

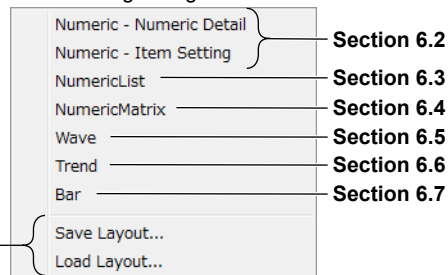**Integration timer (hour:minute:second)**

Detail Settings of Each Window (View-Set icon)

Click here to show the detail setting dialog box for the active window.
The example below is the numeric list setting dialog box.
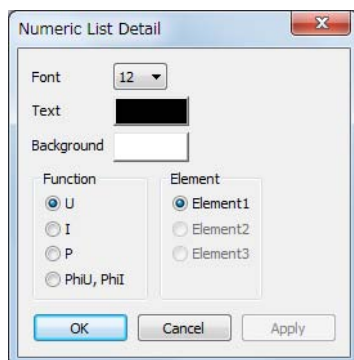
Click here to show a menu for selecting the detail setting dialog box.

Numeric - Numeric Detail	**Section 6.2**
Numeric - Item Setting	
NumericList	**Section 6.3**
NumericMatrix	**Section 6.4**
Wave	**Section 6.5**
Trend	**Section 6.6**
Bar	**Section 6.7**
Save Layout...	
Load Layout...	

Save the layout of each measurement window to a file.
File name extension: mvl
Saved layout information can also be loaded.

Note

Numeric window settings, trend window settings, and integration settings are shared among all the connected WTs.

Numeric list window settings, numeric matrix window settings, bar graph window settings, waveform graph window settings, and window layout settings are set separately for each WT.

Capturing the Screen (Snapshot icon)

Click here to capture the entire screen in BMP format.

Click here to select the window to capture in BMP format.

Numeric
NumericList
NumericMatrix
Wave
Trend
Bar
Screen
Wave Data(CSV)...

Save waveform display data in CSV format.

Location Where Files Are Saved In

The files are saved to the C:\ProgramFiles\YOKOGAWA\WTViewerFreePlus\DATA folder. You cannot change the location.

File Names

The following file names are used. You cannot change them.

*   Entire screen

    Screen_All_yyyymmddhhmmss.bmp

*   A specific window

Numeric:	Screen_Numeric_yyyymmddhhmmss.bmp
Numeric list:	Screen_NumericList_yyyymmddhhmmss.bmp
Numeric matrix:	Screen_NumericMatrix_yyyymmddhhmmss.bmp
Waveform:	Screen_Wave_yyyymmddhhmmss.bmp
Trend:	Screen_Trend_yyyymmddhhmmss.bmp
Bar graph:	Screen_Bar_yyyymmddhhmmss.bmp

    yyyymmddhhmmss is a 14-digit number consisting of the year, month, day, hour, minute, and second. The year is four digits; the hour is based on a 24-hour clock.

Turning On or Off the Toolbar Text Display (Toolbar icon)

The toolbar text display toggles on and off every time you click the icon.
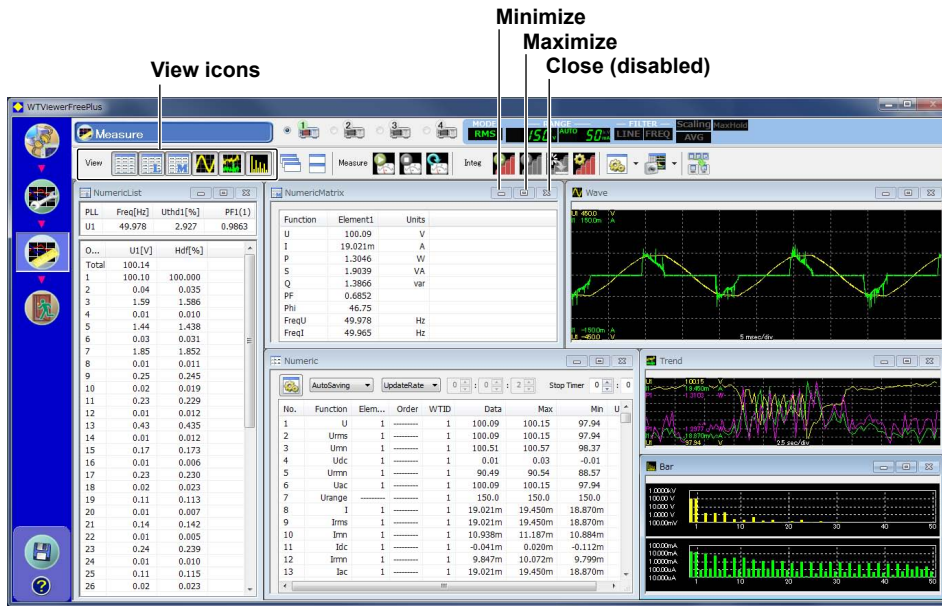
Text display: OFF

Text display: ON
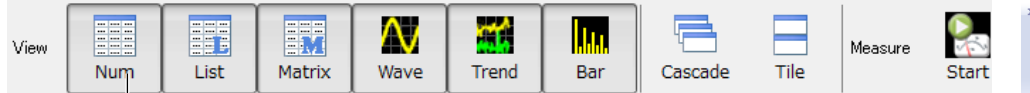
Toolbar text

Click here to show the icons that do not fit on the screen.

Setup integrate
View setting
Save screen
Show or hide the ToolBar Text

6

Displaying Measured Data
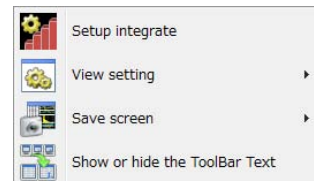
Measurement Screen

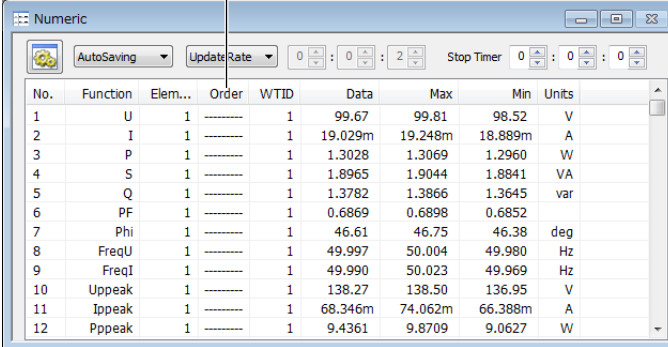When you start the software for the first time, all possible windows are displayed tiled.

- You can maximize or minimize any measurement window.
- After you maximize a window, you can click a window arrange icon (Cascade or Tile) to clear the maximization and arrange the windows as specified.
- To close a measurement window, click the corresponding view icon. The close button at the upper right of each measurement window is disabled.
- Right-click the measurement window to display the detail setting dialog box of the window. This is not possible when measured data collection is in progress.
- Numeric list window, waveform window, and bar graph window can be displayed when the WT is equipped with the harmonic measurement option (/G5).
- The measured results of the WT selected on the target bar are displayed in each window except for the numeric window and trend window in which the measured results of the WT specified in each window are displayed.

6.2 Numeric Display

The numeric display shows measured data numerically. You can customize the types of functions to display, the display order, the font size, the color, and so on.

Numeric Data Display Area

Numeric data display area

Function
Displays the functions.
For the function symbols and definitions, see section 1.1, "Items That This Instrument Can Measure" in the WT User's Manual IM WT310-01EN.

Element
Displays the elements.

Order
Displays the harmonic order of numeric data when the harmonic data display is set to ON (see section 5.1).
"-----" is displayed when the harmonic data display is set to OFF or for functions that harmonic orders cannot be specified.

WT ID
Displays the ID of the WT from which data was collected.

Max and Min
Displays the maximum and minimum values of each display item, obtained through the comparison of numeric data that has been collected from the WT. When a measurement is started, these values are initialized with the first measured data.

Setting the Display Items

You can change the function, element, harmonic order, and WT ID display items by following the procedure below. You cannot change them while measured data collection is in progress.

You can also set the display items using the item setting dialog box, which is described on page 6-11.

1. Click a Function, Element, Order, or WT ID cell. A combo box appears.

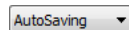2. Select the item you want to display.
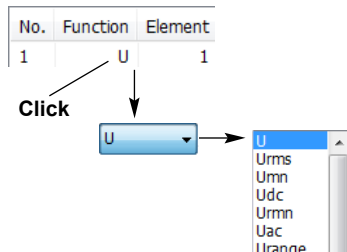
Saving Measured Data
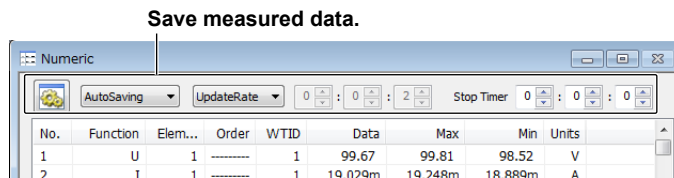
The items set in the numeric display are saved.

You cannot save measured data on the numeric list display, numeric matrix display, trend display, or bar graph display. To do so, use this window (numeric display window).

Save Method

Set how to save measured data.

*   OFF: Measure data is not saved.
*   AutoSaving: Measured data is saved automatically at a fixed period.
*   ManualSaving: Save measured data manually.

If you select AutoSaving or ManualSaving, the displayed measured data are saved to CSV files. You can open these files using a spreadsheet program (such as Excel).

Set the save destination and file name using the detail setting dialog box (see page 6-9).

AutoSaving
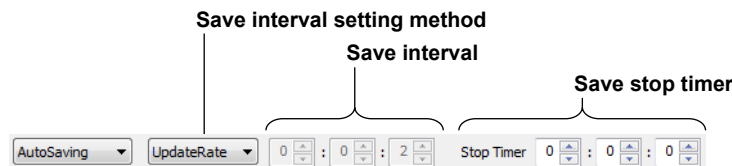
Save Interval Mode

*   UpdateRate: Measured data is saved at the WT data update interval.
*   Custom: Measured data is saved at the interval that you specify.

Save Interval

This setting is enabled if you set the save interval mode to Custom.

Selectable range: 2 seconds to 23 hours 59 minutes 59 seconds

Save Stop Timer

Set the length of time to run auto saving.

- **When the Timer Is Set to 0:0:0**

  Auto saving of measured data continues until you stop the collection of measured data.

- **When the Timer Is Not Set to 0:0:0**

  Auto saving of measured data continues for the specified length of time. The timer counts down as time elapses. When the save stop timer reaches 0:0:0, auto saving of measured data stops.

ManualSaving
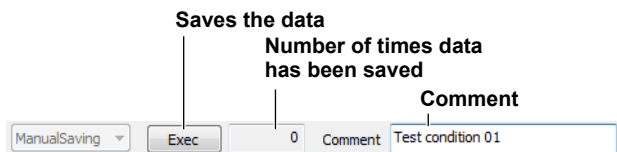
Saving Data

While measured data collection is in progress, click this button to save measured data.
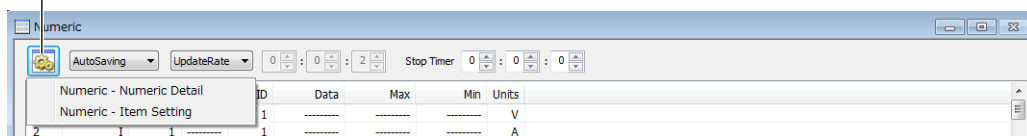
Number of Times Data Has Been Saved

Shows the number of times data has been saved.

Comment

Set a comment that you want to include in the saved files.

Detail Setting Dialog Box

Detail setting dialog box display button

Click the button for displaying the detail setting dialog box and click Numeric Detail, or right-click the numeric window to display the detail setting dialog box. Note that you cannot display the detail setting dialog box when measured data collection is in progress.
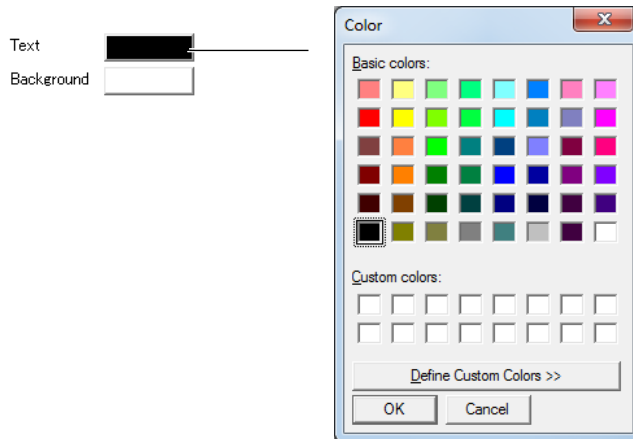
6

Displaying Measured Data
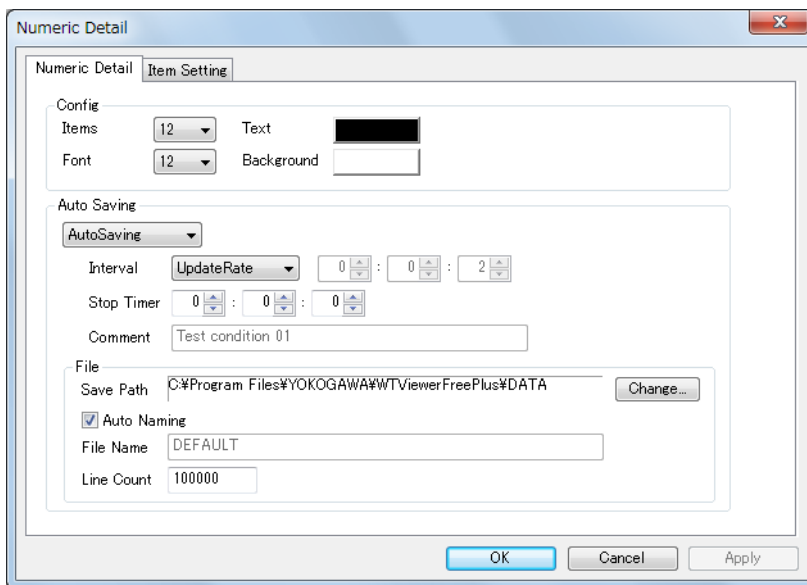
Items

Select the number of numeric data items to display from 12, 24, 48, and 200.

Font

Set the font size to a value between 6 to 40 in steps of 2.

Text and Background

Select the text and background colors.

Auto Naming

If you select the Auto Naming check box, files are saved with the name Auto_yyyymmddhhmmss.csv. yyyymmddhhmmss is a 14-digit number consisting of the year, month, day, hour, minute, and second. The year is four digits; the hour is based on a 24-hour clock.

File Name

To specify the file name, clear the Auto Naming check box, and enter the file name.
• File Name: You can assign any name that is allowed on your PC.
• Extension: .csv

Line Count

If the number of numeric data entries saved to a file reaches the number specified by Line Count, a new file is created with a name whose number at the end of the name is incremented. This process is repeated (e.g., DEFAULT_0001.csv, DEFAULT_0002.csv, . . ., DEFAULT_9999.csv).

Item Setting Dialog Box

You can select which items to display in the numeric window in this dialog box.
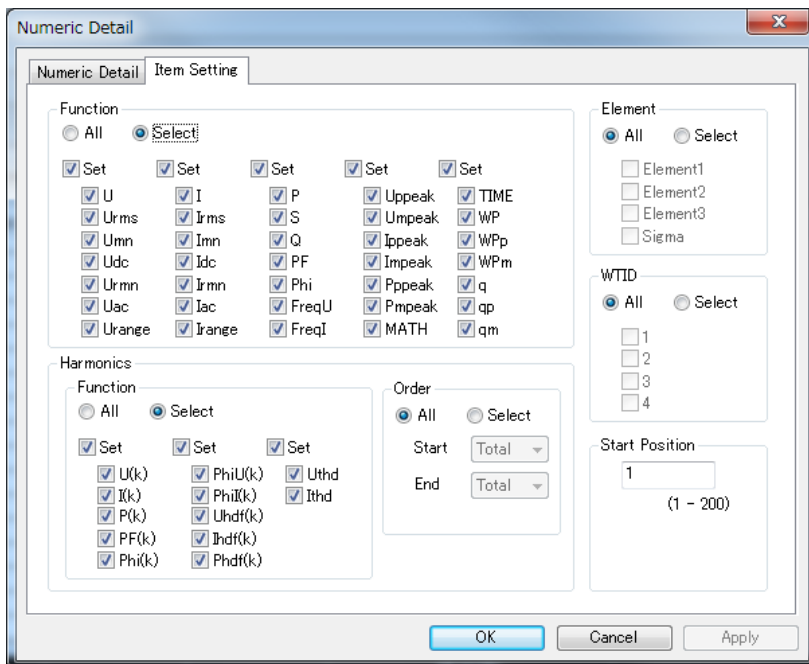
Function / Harmonics Function

- If you select **All**, all functions will be selected. The check boxes of each function will remain unchanged and will appear dimmed.
- If you select **Select**, you can select functions individually.
- If you select a **Set** check box, all the check boxes of the functions in the column will be selected. If you clear it, all the check boxes of functions will be cleared.

Element

- If you select **All**, all elements will be selected. The check boxes of each element will remain unchanged and will appear dimmed.
- If you select **Select**, you can select elements individually.

Order

- If you select **All**, all harmonic orders will be selected. The combo box conditions will remain unchanged and will appear dimmed.
- If you select **Select**, you can set the start and end harmonic orders.

WT ID

- If you select All, the IDs of all connected WTs will be selected.
- If you select Select, you can select any WT ID of your choice.

Note
Functions, elements, and harmonic orders that cannot be selected depending on the WT specifications, options, or other conditions will be unavailable.

6

Displaying Measured Data

Start Position

Set the line number in the numeric data display that you want to start applying the above settings to.

Selectable range: 1 to the value specified in the Items box.

Applying the Settings

Click **OK** or **Apply** to apply the settings to the numeric display. Items that cannot be set are not displayed (skipped).

6.3　Numeric List Display

The numeric list display lists harmonic measurement data for each harmonic order.
The numeric list window can be displayed when the WT is equipped with the harmonic measurement option (/G5).

PLL
Shows the function and element assigned to be the PLL source.

Freq
Shows the PLL source frequency.

THD or Phase Angle
Shows any of the following depending on the function that you selected in the detail setting dialog box (see the next page).
- When voltage (U) is selected: THD of voltage (total harmonic distortion), Uthd1*
- When current (I) is selected: THD of current, Ithd1*
- When power (P) is selected: No display (------ is displayed)
- When phase angle (Phi) is selected: Phase difference between the fundamental voltage and current, Phi1*(1)
  * The number is the element number selected in the detail setting dialog box.

PF
Shows the power factor PF1*(1) of the fundamental wave (1st harmonic). The number on the right is the element number.
* The number is the element number selected in the detail setting dialog box.

Order
Shows the harmonic order.
Total is the total value of all components from harmonic order 1 to the maximum order.

Measured Data of Each Harmonic Order

Shows the measured values of the functions and elements that you selected in the detail setting dialog box.

- When voltage (U) is selected: Shows U and Uhdf (hdf: harmonic distortion factor)

PLL	Freq[Hz]	Uthd1[%]	PF1(1)
U1	49.989	2.633	0.9995

Order	U1[V]	Hdf
Total	100.84	
1	100.81	100.000
2	0.03	0.032

- When current (I) is selected: Shows I and Ihdf

PLL	Freq[Hz]	Ithd1[%]	PF1(1)
U1	50.005	140.086	0.9995

Order	I1[A]	Hdf
Total	0.1103	
1	0.0641	100.000
2	0.0004	0.696

- When power (P) is selected: Shows P and Phdf

PLL	Freq[Hz]	---------	PF1(1)
U1	50.007	---------	0.9995

Order	P1[W]	Hdf
Total	19.20	
1	19.30	---------
2	0.00	---------

- When phase difference (PhiU and PhiI) is selected: Shows PhiU and PhiI
  - PhiU: Phase angles of the 2nd harmonic to the 50th harmonic voltages with respect to the fundamental voltage
  - PhiI: Phase angles of the 2nd harmonic to the 50th harmonic current with respect to the fundamental current
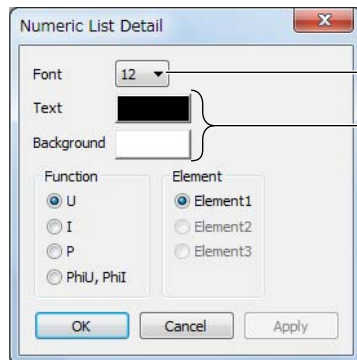
PLL	Freq[Hz]	Phi1(1)	PF1(1)
U1	49.956	-1.76	0.9997

Order	PhiU1[deg]	PhiI1[deg]
Total	---------	---------
1	---------	---------
2	127.01	-177.03

Detail Setting Dialog Box

Right-click the numeric list window to display the detail setting dialog box of the window. This is not possible when measured data collection is in progress.
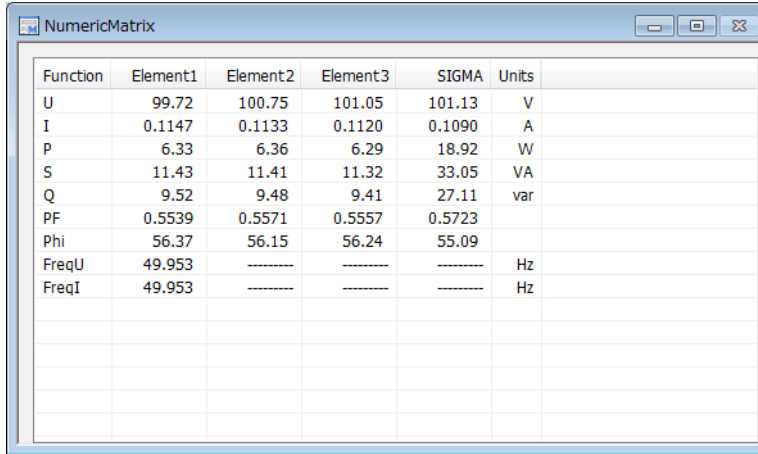
Font: see page 6-10.

Text color and background color: see page 6-10.

Saving Measured Data

You can save measured data on the numeric display window. See section 6.2, "Numeric Display."

6.4 Numeric Matrix Display

The numeric matrix display shows measured data of each element in a matrix.

Function	Element1	Element2	Element3	SIGMA	Units
U	99.72	100.75	101.05	101.13	V
I	0.1147	0.1133	0.1120	0.1090	A
P	6.33	6.36	6.29	18.92	W
S	11.43	11.41	11.32	33.05	VA
Q	9.52	9.48	9.41	27.11	var
PF	0.5539	0.5571	0.5557	0.5723	
Phi	56.37	56.15	56.24	55.09	
FreqU	49.953	----------	----------	----------	Hz
FreqI	49.953	----------	----------	----------	Hz

Function

The functions are displayed in the following fixed order.
U, I, P, S, Q, λ, φ, FreqU, FreqI

Detail Setting Dialog Box

Right-click the numeric matrix window to display the detail setting dialog box of the window. This is not possible when measured data collection is in progress.

Numeric Matrix Detail

Font   12
→ **Font: see page 6-10.**

Text
Background
→ **Text color and background color: see page 6-10.**

OK   Cancel   Apply

Saving Measured Data

You can save measured data on the numeric display window. See section 6.2, "Numeric Display."

6.5 Waveform Display

The waveform display shows waveform display data that has been collected from the WT.
Waveforms can be displayed when the WT is equipped with the harmonic measurement option (/G5).

Upper limit of display range ———

Lower limit of display range ———

X-axis (time axis) scale
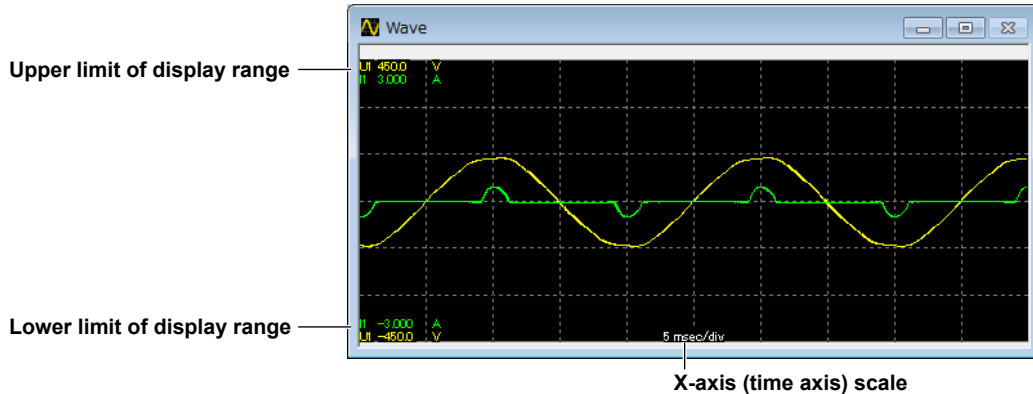
Detail Setting Dialog Box

Right-click the waveform window to display the detail setting dialog box of the window. This is not possible when measured data collection is in progress.

Shows or hides all channels at once
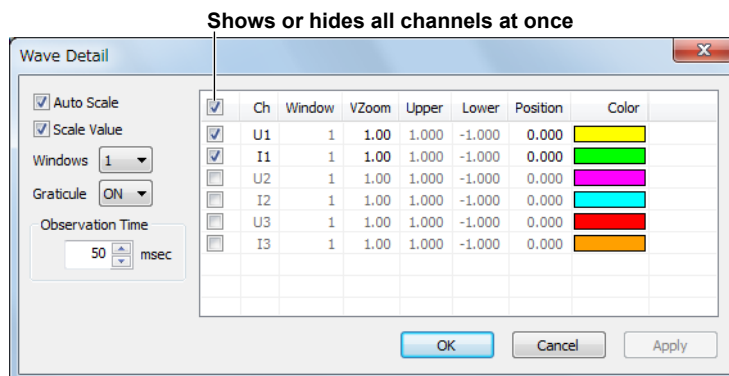
Auto Scale

- When the check box is selected, the scale values change automatically.
- When the check box is not selected, you can click upper or lower limit cells to display combo boxes to set the upper and lower limits of the display range for each channel.

Scale Value

Select whether to show the upper and lower limits on the left edge of the waveform display area.

Windows

Set the number of waveform windows to show in the range of 1 to 6. If you set this value to 2 or more, you can click the Window cells to display combo boxes where you can specify which waveform display area (counted from the top) to display the waveform in.

Graticule
Select whether to show the graticule in the waveform display area.

Observation Time
Set the X-axis (time axis) in the waveform display area. You can set the value in 10 ms steps in the following range.
10 ms to the upper limit of the data update interval

Ch
Select the waveforms to display using the check boxes.

Window
When you divide the waveform display into windows, select which area (counted from the top) to display the waveform in.
1. Click a Window cell. A combo box appears.
2. Select the window.

VZoom
Set the vertical zoom factor of the waveform.
1. Click a VZoom cell. A combo box appears.
2. Set the vertical zoom factor.

Upper and Lower
If the Auto Scale check box is not selected, set the upper and lower limits of the display range.
1. Click a Upper or Lower cell. A combo box appears.
2. Set the limit of the display range.

Position
Set the vertical display position of the waveform in the waveform display area. The vertical center of the window is 0. The upper limit is 100%; the lower limit is –100%.
1. Click a Position cell. A combo box appears.
2. Set the waveform display position.

Color
Select the waveform color.
1. Click a color cell. A combo box appears.
2. Select the waveform color.

6.6   Trend Display

The trend display shows changes in measured data over time on a trend graph.

Upper limit of display range

Lower limit of display range

X-axis (time axis) scale
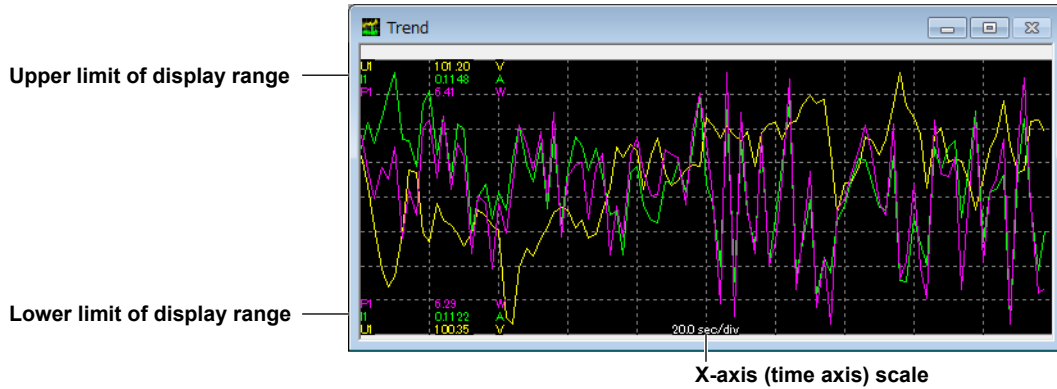
Detail Setting Dialog Box

Right-click the trend window to display the detail setting dialog box of the window. This is not possible when measured data collection is in progress.

Shows or hides all trends at once
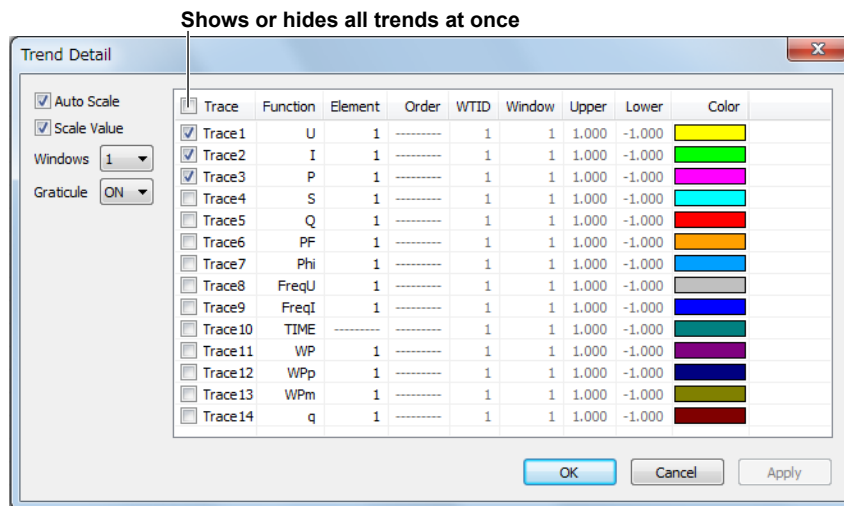
Auto Scale

- When the check box is selected
  The scale values change automatically.
- When the check box is not selected
  You can click upper or lower limit cells to display combo boxes to set the upper and lower limits of the display range for each channel.

Scale Value

Select whether to show the upper and lower limits on the left edge of the trend display area.

Windows

Set the number of trend windows to show in the range of 1 to 6. If you set this value to 2 or more, you can click the Window cells to display combo boxes where you can specify which trend display area (counted from the top) to display the trend in.

Graticule

Select whether to show the graticule in the trend display area.

Trace

Select the trends to display using the check boxes.

Function

Select which function to display the trend of.

1. Click a Function cell. A combo box appears.

2. Select the function.

Element

Select which element to display the trend of.

1. Click an Element cell. A combo box appears.

2. Select the element.

Order

Select the harmonic order of numeric data to display the trend of when the harmonic data display is set to ON (see section 5.1).
"-----" is displayed when the harmonic data display is set to OFF or for functions that harmonic orders cannot be specified.

1. Click an Order cell. A combo box appears.

2. Select the harmonic order.

WT ID

This is the ID of the WT to display the trend of.

1. Click the WT ID column. A combo box appears.

2. Select a WT ID.

Window

When you divide the trend display into windows, select which area (counted from the top) to display the trend in.

1. Click an Order cell. A combo box appears.

2. Select the window.

Upper and Lower

If the Auto Scale check box is not selected, set the upper and lower limits of the display range.

1. Click a Upper or Lower cell. A combo box appears.

2. Set the limit of the display range.

Color

Select the trend color.

1. Click a color cell. A combo box appears.

2. Select the trend color.

Saving Measured Data

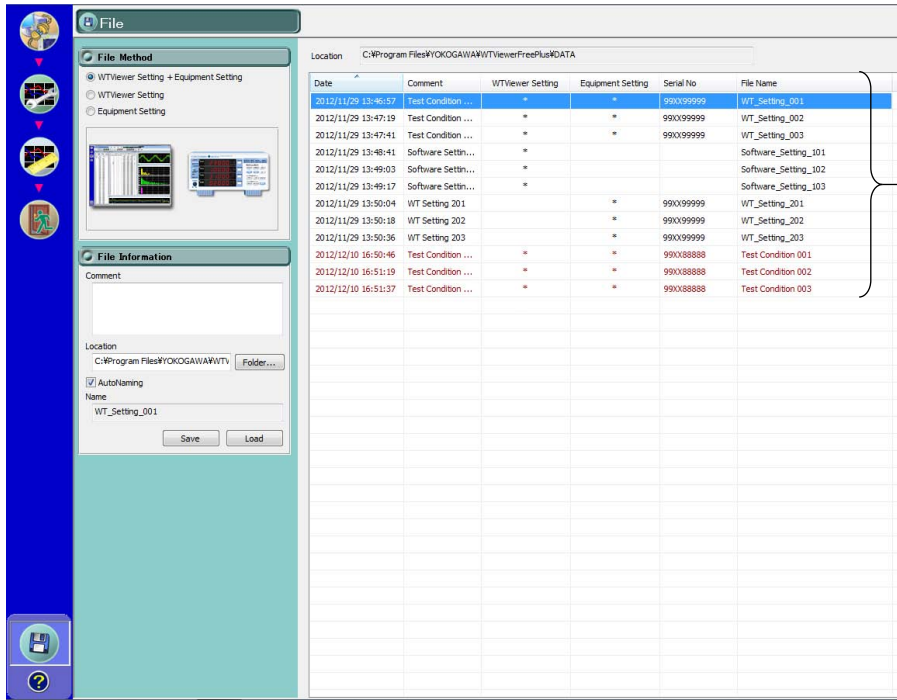You can save measured data on the numeric display window. See section 6.2, "Numeric Display."

6.7   Bar Graph Display

The bar graph display shows harmonic measurement data for each harmonic order in a bar graph.
The bar graph window can be displayed when the WT is equipped with the harmonic measurement
option (/G5).
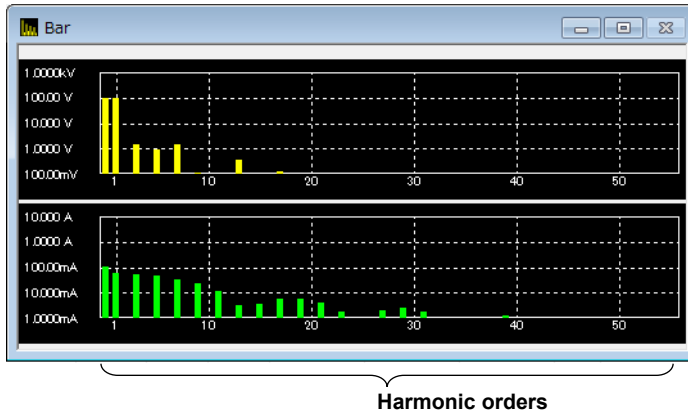
Harmonic orders

Detail Setting Dialog Box

Right-click the bar graph window to display the detail setting dialog box of the window. This is not
possible when measured data collection is in progress.

Shows or hides all bar graphs at once
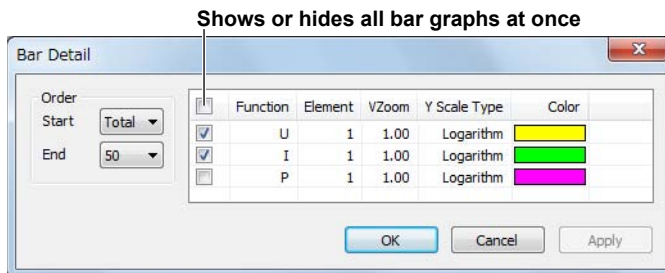
Start and End

Select the harmonic order of the numeric data to display.

- Start harmonic order: 0 to 40
- End harmonic order: 10 to 50

The difference between the start and end harmonic orders must at least be 10.

Function

Select the bar graph to display using the check boxes.
The bar graph is displayed for the combination of the functions and elements that you select.
Up to three bar graphs can be displayed.

Element

Select which element to display the bar graph of.

1. Click an Element cell. A combo box appears.

2. Select the element.

VZoom

Set the vertical zoom factor of the bar graph.

1. Click a VZoom cell. A combo box appears.

2. Set the vertical zoom factor.

Saving Measured Data

You can save measured data on the numeric display window. See section 6.2, "Numeric Display."

7.1   Saving and Loading Setup Parameters

1. Click in the menu area. The File screen appears.

Saved-data list

Selecting the Type of File to Save
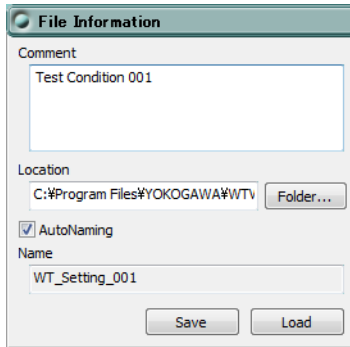
Select the type of data to save from the following:
*   WTViewer Setting + Equipment Setting
*   WTViewer Setting: The software setup parameters will be saved.
*   Equipment Setting: The WT setup parameters will be saved.

The illustration will change depending on the item that you select.

7

Saving and Loading Setup Parameters

Setting the Save Conditions

```
┌─────────────────────────────────────┐
│ ◯ File Information                   │
│  Comment                            │
│  ┌───────────────────────────────┐  │
│  │ Test Condition 001            │  │
│  │                               │  │
│  │                               │  │
│  │                               │  │
│  └───────────────────────────────┘  │
│  Location                           │
│  ┌──────────────────────┐ ┌───────┐ │
│  │ C:¥Program Files¥YOKOGAWA¥WT│ │Folder...│ │
│  └──────────────────────┘ └───────┘ │
│  ☑ AutoNaming                       │
│  Name                               │
│  ┌───────────────────────────────┐  │
│  │ WT_Setting_001                │  │
│  └───────────────────────────────┘  │
│       ┌────────┐   ┌────────┐       │
│       │  Save  │   │  Load  │       │
│       └────────┘   └────────┘       │
└─────────────────────────────────────┘
```

Comment

You can enter a comment if you like. You can enter up to 100 characters.

Location

Specify the folder to save the file.

AutoNaming

If you select the Auto Naming check box, files are saved with the name Auto_yyyymmddhhmmss.csv. yyyymmddhhmmss is a 14-digit number consisting of the year, month, day, hour, minute, and second. The year is four digits; the hour is based on a 24-hour clock.

Name

To specify the file name, clear the Auto Naming check box, and enter the file name.
- File Name: You can assign any name that is allowed on your PC.
- Extension: .cfg

Save Button

Executes the saving of data.

Load Button

Loads the data that is selected in the saved-file list.

If a file that cannot be loaded is selected, a warning will appear.

Conditions Necessary for Loading Files

The following conditions must match those of the WT.
- Model
- Suffix code (/EX1, /EX2, /G5, /DA4, /DA12)

Saved-File List

Date and time when the file was saved

Path to the file save destination folder

An asterisk appears when the file data type is set to WTViewer Setting.

An asterisk appears when the file data type is set to Equipment Setting.
If multiple WTs are connected, an asterisk is displayed for each WT.

Instrument number of the WT that was connected when the file was saved

Date	Comment	WTViewer S...	Equipment...	Serial No	File Name
2013/08/12 14:58:39	Software Setting 1	*			Software_Setting 1
2013/08/12 14:58:55	Software Setting 2	*			Software_Setting 2
2013/08/12 15:00:38	Soft and WT Setting 001	*	*	99XX9999	Soft_and_WT_Setting 001
2013/08/12 15:01:01	WT Setting 001		*	99XX9999	WT_Setting 001
2013/08/12 15:04:06	Soft and WT Setting 101	*	*	99XX9999	Soft_and_WT_Setting 101
2013/08/12 15:52:42		*			Auto_20130812155229
2013/08/12 15:52:58		*			Auto_20130812155245
2013/08/12 15:54:02		*	*	99XX9999	Auto_20130812155346
2013/08/08 13:17:12		*	****	99XX9996;99XX9997;99XX9998;99XX9999	Auto_20130808131702
2013/08/12 14:43:47	Soft and WT Setting 003	*	***	99XX9997;99XX9998;99XX9999	Soft_and_WT_Setting 003
2013/08/12 14:51:34	WT Setting 004		****	99XX9996;99XX9997;99XX9998;99XX9999	WT_Setting 004
2013/08/12 14:52:45	Soft and WT Setting 004	*	****	99XX9996;99XX9997;99XX9998;99XX9999	Soft_and_WT_Setting 004
2013/08/12 14:57:57	WT Setting 002		**	99XX9998;99XX9999	WT_Setting 002
2013/08/12 14:58:15	Soft and WT Setting 002	*	**	99XX9998;99XX9999	Soft_and_WT_Setting 002
2013/08/12 15:06:52	Soft and WT Setting 104	*	****	99XX9996;99XX9997;99XX9998;99XX9999	Soft_and_WT_Setting 104
2013/08/12 15:52:14		*	**	99XX8888;99XX8889	Auto_20130812155155
2013/08/12 15:53:16			**	99XX8888;99XX8889	Auto_20130812155307

Location: C:¥Program Files¥Yokogawa¥WTViewerFreePlus¥DATA

In the saved-file list, files that cannot be loaded are displayed in red.

Note

If multiple WTs are connected and the following items are different from those in the setup data to be loaded, the setup data file
cannot be loaded.

- The WT models are different.
- The WT options are different.
- The number of connected WTs is different.

  However, if the setup data you are trying to load is for connecting one WT and the models and options of all the currently connected WTs are the same, the setup data will be loaded from the file to all connected WTs.

7

Saving and Loading Setup Parameters

# 8.1   Help Feature

Displaying Help

Click the help 🔵 button. If Adobe Reader is installed on your PC, it will start, and the PDF of the software user's manual will open. You can look up how to use the software and terminology.
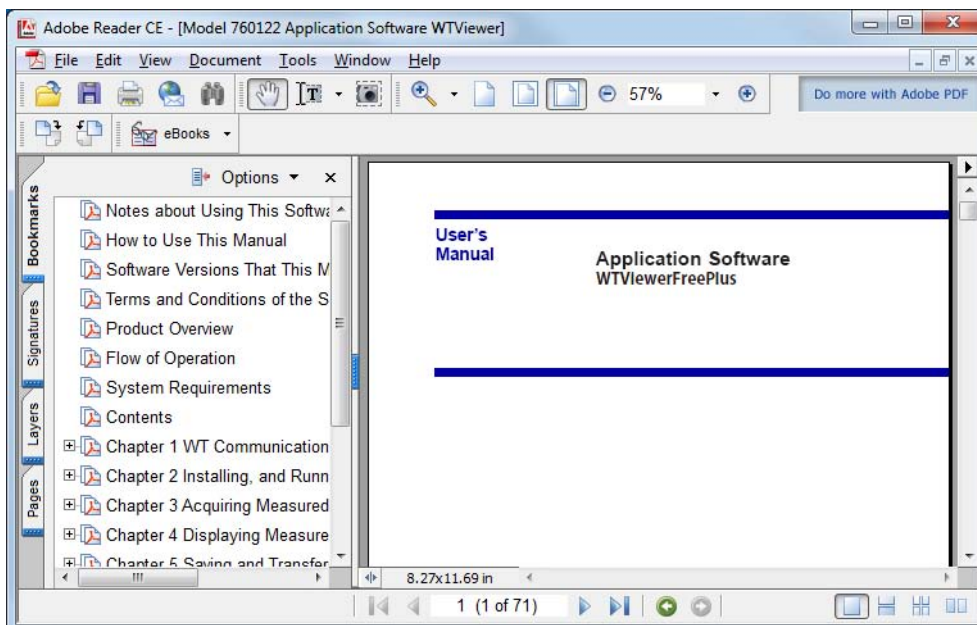
Displaying Alteration Notices

If alteration notices are available, you can view them by following the procedure below.

1. Right-click the help 🔵 button.

2. Click **Alterations of User's Manual**.

Shows alterations to the manual

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Other Features
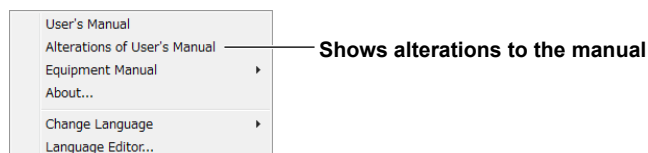
Obtaining the Latest User's Manual and Alteration Notices

To obtain the PDFs of the latest user's manual and alteration notices, visit the YOKOGAWA website indicated below, click **Y-LINK** to show the manual download page. Download the user's manual and alteration notices for the software from this page.

http://tmi.yokogawa.com/service-support/

Change the file name of the manual or alternation notice to that shown below, and overwrite the existing file in the Manuals folder in the software installation folder that you specified in the procedure described on page 3-2. Then, you will be able to view the file by clicking User's Manual or Alteration of User's Manual on the Help menu.

* User's manual file name: EN_WTViewerFreePlus Users Manual.pdf
* Alteration notice file name: EN_WTViewerFreePlus Alterations.pdf

Note

* You can download Adobe Reader from the Adobe website.
* The latest user's manual and alteration notice that you can download from the YOKOGAWA website correspond to the latest version of this software. If necessary, update the software. You can download updates to the software from the YOKOGAWA website indicated above.
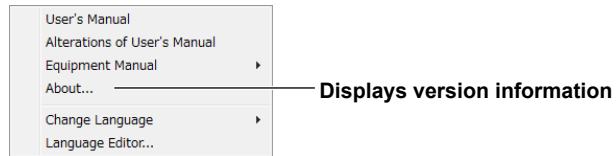
View the WT310/WT310HC/WT330 User's Manual

1. Right-click the help [?] button.

2. Click **Equipment Manual**.

3. Click the manual you want to view.

```
User's Manual
Alterations of User's Manual
Equipment Manual            ▶        Getting Started Guide
About...                              WT User's Manual
                                     Communication Interface
Change Language             ▶
Language Editor...
```
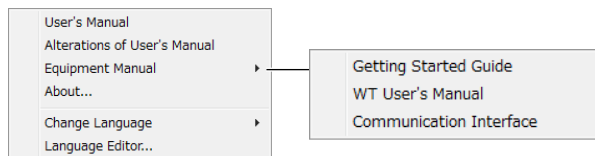
* Getting Started Guide
  Describes the installation procedure, precautions, specifications, etc.
* User's Manual
  Describes how to use the various features of the WT.
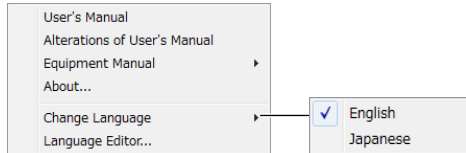* Communication Interface
  Describes communication commands.

8.2 Viewing the Version Information

1. Right-click the help ? button.

2. Click **About**.

```
User's Manual
Alterations of User's Manual
Equipment Manual           ▶
About...                   ─────── **Displays version information**

Change Language            ▶
Language Editor...
```

```
About WTViewerFreePlus                                    [x]

WTViewerFreePlus version

   [◆]  WTViewerFreePlus Version 1.01
        Copyright (C) 2012 Yokogawa Meters & Instruments Corporation

                                              [   OK   ]
```
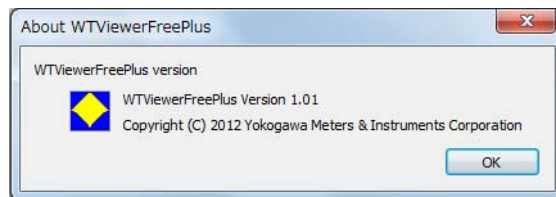
8.3 Setting the Displayed Language

1. *1.* Right-click the help ⑦ button.

2. *2.* Click **Change Language**.

3. *3.* Select the language you want to use.

```
User's Manual
Alterations of User's Manual
Equipment Manual            ▶
About...
Change Language             ▶      ✓  English
Language Editor...                     Japanese
```

Note

Depending on the operating system, some language fonts may not be installed. In such cases, if you change the language, text will not be displayed properly. To display the text properly, you need to install appropriate fonts in the operating system.

Customizing the Displayed Language

To customize the displayed language, edit the language file by following the procedure in section 8.4.

If there is a language file that you create (custom file), the submenu will appear as follows:

```
User's Manual
Alterations of User's Manual
Equipment Manual            ▶
About...
Change Language             ▶      ✓  English
Language Editor...                     Japanese
                                       Custom
```
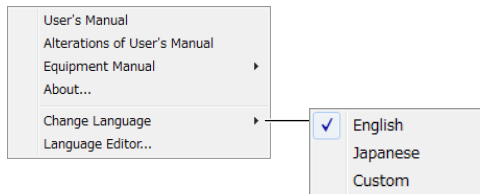
Select **Custom** to load the custom file.

8.4 Editing the Displayed Language

You can edit the text that is displayed in the dialog boxes and windows of the software.

Editing the Displayed Language

1. Right-click the help ❓ button.

2. Click **Language Editor**.

User's Manual
Alterations of User's Manual
Equipment Manual ▸
About...

Change Language ▸
Language Editor... ── **Edit the displayed language**

3. In the Language Editor dialog box, click the cells in the Current column to edit the text to display.

Click

Edit the character string to display.
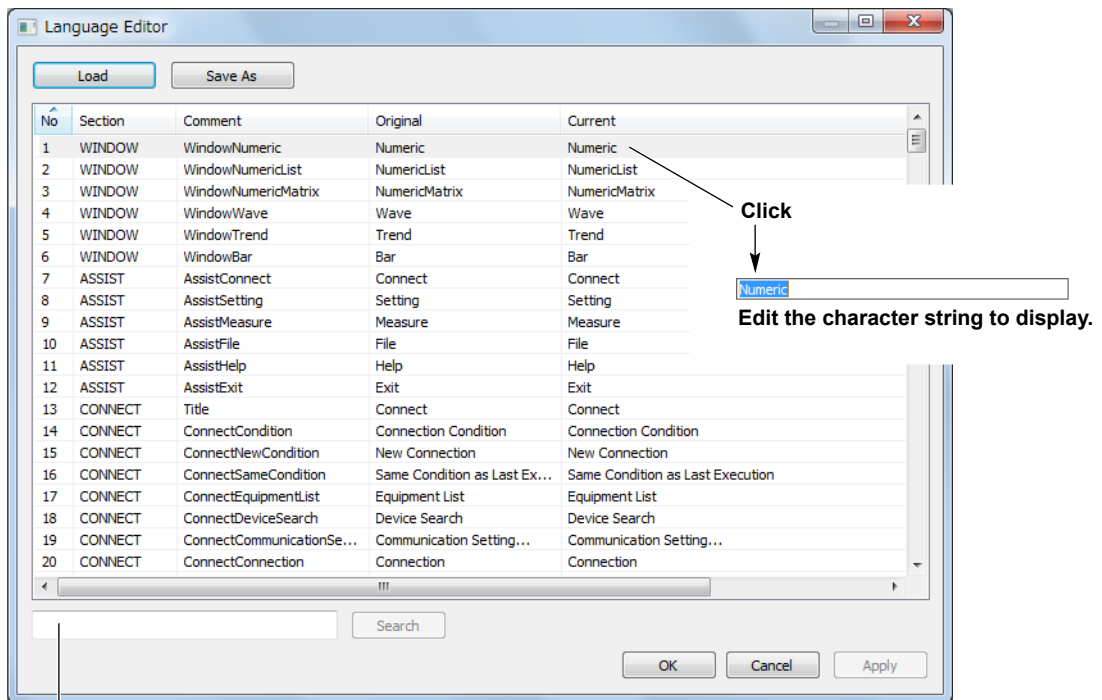
You can search for a character string by entering the string here and clicking Search.

Saving the Edited Language Information

Click **Save As** to save the edited language information to a file. The file name extension is .lang.

Note
The English and Japanese language information files are in the following folder.
C:\Program Files\Yokogawa\WTViewerFreePlus\Language

Loading Saved Language Information

Click **Load** to load a language information file into the Language Editor dialog box.

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Other Features

9.1   If a Problem Occurs

If a message appears on the screen, see section 9.2, "Error Messages." If servicing is necessary, or if the instrument does not operate properly even after you have attempted to deal with the problem according to the instructions in this section, contact your nearest YOKOGAWA dealer.

Problems and Solutions

Unable to communicate with the WT using USB.

Using Device Manager, check whether the USB driver is appropriate for the WT series. If the driver is not appropriate, switch to the appropriate USB driver (see page 3-6).

Unable to communicate with the WT using GP-IB.

Communication may not work properly on GP-IB cards other than those of NI (National Instruments). Use a GP-IB card by NI (see page 1-6).

Unable to change the Function, Element, and Order settings in the dialog boxes.

Click a Function, Element, or Order cell to show a combo box.
Then select the appropriate item.

Waveforms, bar graphs, or trends do not appear even when data collection is started.

Stop data collection (see section 6.1), select the items you want to show using the view buttons on the toolbar, open the relevant windows, and start data collection.

Waveforms are not displayed.

Change the **VZoom** and **Position** values in the detail setting dialog box (see section 6.5).

Waveform or trend traces overflow from the screen.

In the detail setting dialog box, select the **Auto Scale** check box, or change the **Upper**, **Lower**, and **VZoom** values to appropriate values (see section 6.5 or 6.6).

Even when the **UpdateRate** on the Setting screen is changed, the display update interval of the software does not change.

The display update interval of the software is not synchronized to the display update interval of the WT. It is dependent on the performance of your PC and the communication interface (USB, GP-IB, RS-232, or Ethernet). If the WT data update interval is set to a short value such as 100 ms, the software cannot keep up, and some of the data points that the WT is measuring will not be collected. If you want to synchronize the display update interval between the WT and software, configure your environment by referring to the items below.

• The less number of data points that the software has to collect from the WT, the shorter the display update interval.

• The communication interfaces listed in descending order by data rate are as follows: USB, Ethernet, GP-IB, RS-232.

• Use a faster PC.

Example:
The display update interval of the WT and that of the software may match if you use the GP-IB, Ethernet, or USB interface and set the WT display update interval to 100 ms.

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Troubleshooting

9.2 Error Messages

Message	Corrective Action
Equipment can not be found. • Please check the power supply. • Please check the Device Manager. • Please refer to help.	Check the following items. • Is the WT turned on? • Is the GP-IB, RS-232, Ethernet, or USB cable connected properly? • If you are using GP-IB, are the GP-IB addresses in the same system all unique? Is the GP-IB address set on the WT the same as the GP-IB address set in WTViewerFreePlus? Is the GP-IB driver installed correctly in your PC? • If you are using RS-232, are the communication parameters, such as the baud rate, set to the same values on the WT and WTViewerFreePlus? • If you are using Ethernet, are the IP address, user name, and password set to the same values on the WT and WTViewerFreePlus? • If you are using USB, are the ID used in the same system all unique? Is the ID set on the WT the same as the ID set in WTViewerFreePlus? Is the USB driver installed correctly in your PC? • If you are using USB, is the USB driver is appropriate for the WT series?
Integrate timer is out of range Updaterate is out of range Stop timer is out of range Rated time is out of range Wave observe is out of range Please input a value from 0.001 to 9999.	The value that you tried to set is outside the allowed range. Set a value within the allowed range.

10.1 Specifications

Item	Specifications
Data formats that the software can save to	
	The following table lists the data formats (extensions) that the software can save to. Note that CSV files cannot be loaded into the software.
	Setup parameters[1] CFG format (.cfg)
	Numeric data CSV format (.csv)
	Waveform display data CSV format (.csv)
	1 Setup parameters cannot be saved to CSV files.
Data formats that the software can load from	
	The following table lists the data formats that the software can load from. Data saved with the auto saving feature explained in section 4.1 cannot be loaded into the software.
	Model WT310, WT310HC, WT330
	Setup Parameters CFG format (.cfg)
	Numeric data[2] —
	Waveform display data[2] —
	2 Numeric data and waveform display data cannot be loaded into the software.
Data display update interval	Depends on the PC processing speed, the communication interface in use, and the number of data points that the software is collecting from the WT.

Screens	Numeric
	  Displays the numeric data that the software collects from the WT
	Numeric list[3]
	  Lists the harmonic data that the software collects from the WT
	Numeric Matrix
	  Displays the numeric data that the software collects from the WT for each element in a table
	Waveform[3]
	  Displays the waveform display data that the software collects from the WT
	Bar Graph[3]
	  Displays bar graphs of the harmonic components for each harmonic order during harmonic measurement
	Trend
	  Displays the numeric data that the software collects from the WT as trend graphs
	3 Harmonic measurement option must be installed in the WT.

WT Configuration	All functions that are available as communication commands
System Requirements	See section 1.3.

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Specifications

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