

9334

LOGGER COMMUNICATOR

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Introduction

Thank you for purchasing the HIOKI "Model 9334 LOGGER COMMUNICATOR". To obtain maximum performance from the disc, please read this manual first, and keep it handy for future reference.

Trademarks

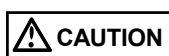
- Pentium is a registered trademark of Intel Corporation.
- Windows and Internet Explorer is a registered trademark of Microsoft Corporation.

Notes on Use

Follow these precautions to ensure safe operation and to obtain the full benefits of the various functions.

- Always hold the disc by the edges, so as not to make fingerprints on the label side or scratch the printing.
- Never touch the recorded side of the disc. Do not place the disc directly on anything hard.
- Do not wet the disc with volatile alcohol or water, as there is a possibility of the label printing disappearing.
- To write on the disc label surface, use a spirit-based felt pen. Do not use a ball-point pen or hard-tipped pen, because there is a danger of scratching the surface and corrupting the data. Do not use adhesive labels.
- Do not expose the disc directly to the sun's rays, or keep it in conditions of high temperature or humidity, as there is a danger of warping, with consequent loss of data.
- To remove dirt, dust, or fingerprints from the disc, wipe with a dry cloth, or use a CD cleaner. Always wipe radially from the inside to the outside, and do no wipe with circular movements. Never use abrasives or solvent cleaners.
- In the interests of ongoing product developments, there may be minor discrepancies between screen displays and the operating instructions, and in the data conversion process.
- HIOKI cannot accept any responsibility for the results of using this disc.

The following symbols are used in this Instruction Manual to indicate the relative importance of cautions and warnings.



Indicates that incorrect operation presents possibility of injury to the user or damage to the instrument.

Indicates advisory items related to performance or correct operation of the instrument.

Chapter 1

Overview

1.1 Product Overview

The 9334 LOGGER COMMUNICATOR comes with the following functions.

1. Real-time data acquisition

By connecting the MEMORY HiLOGGERS to a LAN, a single measurement can be used to acquire data from up to 16 MEMORY HiLOGGERS.

When you are acquiring data, in addition to waveforms, you can also confirm values and alarms in real-time.

2. Various search functions

In addition to event markers, you can search for a variety of items, including dates and maximum values.

3. Waveform display

Using a MEMORY HiLOGGER, you can display waveform files saved to a PC card on the screen. Binary data can also be saved in CSV format. This is convenient because it allows data to be used with spreadsheets and other software.

4. Logger monitoring function

By connecting MEMORY HiLOGGERS to a LAN, you can monitor or control those MEMORY HiLOGGERS on a single PC.

1.2 Specifications

General specifications

Supplied media	One CD-R
Supported recorders	HIOKI 8420-01, 8420-51, 8421-01, 8421-51, 8422-01, 8422-51
Operating environment	IBM PC/AT compatible computer Windows 95/98/Me/NT 4.0/2000/XP (with LAN installed and TCP/IP available)
Communication	Ethernet, TCP/IP

Functional specifications

- Supports connection of up to 16 MEMORY HiLOGGERS
- Displays waveforms, values, and alarms during real-time transfers
- Waveform file display (supports MEM format binary files)
- Scroll function
- Zoom display
Allows you to zoom in and out on the voltage and time axes.
- Display channel settings
You can display up to 512 analog channels, up to 256 logic channels, and up to 64 pulse input channels.
- Cursor function
Allows you to display the time difference and potential difference between cursors A and B, as well as the time and electrical potential at each cursor's position.
- Parameter calculation function (can select section or cursor interval)
Allows you to calculate the average, peak, maximum, and minimum measurements, as well as the maximum time, minimum time, ON time, OFF time, number of times turned ON, number of times turned OFF, standard deviation, integration, and area values.
- Various search functions
Possible searches: Event marker, time, maximum measurement, minimum measurement, peaks, valleys, alarm, level, window, and volume of change.
- Marking function
Allows you to insert event markers while making measurements.
- Conversion to CSV format (with cropping and interval specification)
- Print function
Allows you to print waveform images.
- Input comments
Allows you to insert comments in the desired positions.
- Logger monitoring function
You can monitor or control those MEMORY HiLOGGERS.

Chapter 2

Setup

2.1 System Requirements

Using the 9334 requires the following minimum hardware and software configuration.

Computer

- IBM PC/AT compatible
- Pentium 133 MHz (Pentium 200 MHz or more recommended)
- 64 MB RAM (256 MB RAM recommended)
- 5 MB of free hard disk space

Operating system

- Microsoft Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, or Windows XP
- Internet Explorer 4.01 or later

LAN

- Physical LAN installation
- Communication using TCP/IP

CD-ROM drive

- Used for installation.

Display

- Display function capable of 1024 x 768 or higher resolution
- Uses a small font. (If you use a large font, it may alter the display.)
To change display settings, open Control Panel by pointing to Settings on the Start menu. Then, double-click Display and click the Settings tab in the **Display** dialog box.



During data acquisition, transferring large quantities of waveform data from the MEMORY HiLOGGER requires a corresponding amount of hard disk space. Available hard disk capacity provided should be sufficient for the expected volume of data.

2.2 Installing and Removing the Software

Installation

Use the following procedure to install the software.

1. Close all running applications.
2. Insert the supplied CD-R disc into the CD-ROM drive.
3. Run the setup file on the CD-R.
Click Run on the Start menu, then type R:\9334ENGLISH\setup.exe and click OK. (Substitute the appropriate letter for R if your CD-ROM drive uses a different name.)
4. The 9334 installer starts: follow the directions on the screen to complete the installation.
5. If Internet Explorer 4.01 or later is not installed, install it. For the latest version of Internet Explorer, see the Microsoft Web site, or a computer magazine.

NOTE

When installing the software, if other programs are running it may not be possible to complete the installation properly. Close all other programs before beginning the installation. In particular, if any anti-virus program is running, it may prevent the installation even though this software is not a virus. In this case, make the appropriate settings in the anti-virus program to allow the installation to proceed.

Removal

Use the following procedure to remove the software.

1. On the Windows Start menu, point to Settings and click Control Panel.
Double-click the **Add/Remove Programs** icon, to display the **Add/Remove Programs Properties** dialog box.
2. On the **Install/Uninstall** tab of the dialog box, click **9334 LOGGER COMMUNICATOR** in the list of applications, then click **Add/Remove**.

This runs the uninstaller, which removes the 9334 software. All the transferred data files remain, but can be removed manually when they are no longer required.

2.3 Upgrading the MEMORY HiLOGGER Software

To use the 9334 LOGGER COMMUNICATOR, the software in the MEMORY HiLOGGER must be 9334 compatible. First check the MEMORY HiLOGGER software version number; you can find it on the System screen of the MEMORY HiLOGGER.

9334-compatible versions are Ver 1.01 or later (8420-01, 8421-01), Ver 1.00 or later (8422-01), or Ver 3.00 or later (8420-51, 8421-51, 8422-51). When the MEMORY HiLOGGER software is not compatible with a 9334, upgrade it.

1. Prepare a PC card (Flash ATA card) that has been certified for use with MEMORY HiLOGGERS. For PC cards whose use is certified for these devices, refer to the MEMORY HiLOGGER Operating Instructions. Further, make sure that the PC card is compatible with the computer you are using. At least 2 MB of free space is required when using a PC card.
2. Insert the supplied CD-R disc into the CD-ROM drive.
3. Copy the upgrade file from the CD-R to the PC card. The upgrade files are located in each model's folder. The upgrade file for the 8420-01 and 8421-01 is "8420V110.PRG" (located in the 8420V110 folder). The upgrade file for the 8422-01 is "8422V103.PRG" (located in the 8422V103 folder). The upgrade file for the 8420-51, 8421-51, and 8422-51 is "8420V300.PRG" (located in the 8420-50V300 folder).
If a 9334-compatible version of the MEMORY HiLOGGER software is already present, no upgrade is required. However, be careful not to install an older version inadvertently.
4. Prepare the MEMORY HiLOGGER for the upgrade. Ensure that a stable power supply for the upgrade operation is used, if possible using an uninterruptible power supply. This is important, because if the power fails during the upgrade operation, the instrument must be returned for repair.
5. Carry out the upgrade.
Insert the PC card into the MEMORY HiLOGGER and press the **Card** key to display the File screen. The upgrade files on the PC card are shown in the File screen. Select an upgrade file, then read the file. The MEMORY HiLOGGER starts the upgrade. This process takes about 2 minutes: During this interval, simply wait for the process to finish. When the upgrade is completed, the MEMORY HiLOGGER automatically restarts. The upgrade is then complete.



During the upgrade operation, do not turn off the MEMORY HiLOGGER's power. If the power is turned off during the upgrade operation, the instrument must be returned for repair.

2.4 LAN Settings



Before connecting to the LAN for the first time, it is important to complete the Interface settings. If the instrument is connected to the LAN without making these settings, IP address conflicts with other devices on the network or other problems may occur.

Preparations for the settings

First, when connecting to an existing network, it is necessary to obtain the settings from the network administrator. You will need to obtain the following from your network administrator.

- Host name

This is the name of the MEMORY HiLOGGER on the network. It must be distinct from the host names of all other devices on the network.

- IP address

This is the identifying address of the MEMORY HiLOGGER. It must be distinct from the addresses of all other devices on the network.

- Subnet mask

This specifies the class (size) of the network.

- Default gateway

If communications between the MEMORY HiLOGGER and the computer pass through a gateway, specify it.

- TCP/IP port number

This is the port used for TCP/IP communications between the MEMORY HiLOGGER and the computer. Normally, the default 880x ports can be used, but if these ports are already used by a different program on the computer, specify different ports.

When the port number is specified as "880x" the ports used are as follows:

- Port 8800: for the logger communicator
- Port 8801: reserved
- Port 8802: for control by communication commands
- Ports 8803 to 8809: reserved

Use unavailable ports on the computer running the 9334 software.

Note that the ports are mapped to IP addresses, and do not have any relation to the ports used by other devices on the LAN.

Host Name (up to 12 characters) : _____

IP Address : _____._____._____._____

Subnet Mask : _____._____._____._____

Default Gateway (present or not present, when present)

: _____._____._____._____

TCP/IP Port Number : ____X

You can set the upper three decimal digits of the port address (the rightmost digit is set internally by this device).

Of course, if you are assembling a stand-alone network with no connections to an existing network, you can still obtain the address information from the administrator, or assign the setup values yourself if there is no administrator. An IP address within the following range is recommended when setting up a stand-alone network: 192.168.0.0 to 192.168.255.255.

However, the last number on the right may not be 0 or 255, so we recommend setting the controller device (such as the PC) to 192.168.0.1, and setting this instrument to 192.168.0.2.

If several MEMORY HiLOGGERs are connected, the last number should be incremented by one for each instrument (for example, the next instrument would be 192.168.0.3). The Host Name should be carefully selected to be unique among the Host Names assigned to all the other devices.

Otherwise, the following settings should be satisfactory:

Subnet Mask : 255.255.255.0

Default Gateway : OFF

Port Number : 880X

MEMORY HiLOGGER Settings

Carry out the MEMORY HiLOGGER settings in the Settings screen. For more on how to display the Settings screen, refer to the MEMORY HiLOGGER Operating Instructions.

Do not change the settings during a communications session.

The screenshot shows a terminal window titled 'Copy&Comm' with a timestamp '03-10-25 00:00:00'. It features two tabs: 'COPY' and 'COMM', with 'COMM' being the active tab. The main display area is titled 'Communication Interface 10BASE-T' and contains the following settings:

Host Name	[h8421a]
DHCP	OFF
IP Address	192.168. 0. 2
Subnet Mask	255.255.255. 0
Port	880X
Gateway	OFF 0. 0. 0. 0
Gateway Name	[]
DNS	OFF 0. 0. 0. 0
< back (1/4) more >	

At the bottom right of the screen, there is a 'Back...' button.

- Make sure that you enter the host name.
- The delimiter and header settings are used for control by communications commands.

Computer Settings

Using this software requires that the computer have a LAN connection installed. For details on the LAN settings, consult Windows Help, or the documentation supplied with your computer's LAN card. The computer must also have TCP/IP.

Chapter 3

Startup

3.1 Starting and Closing the Logger Communicator

To start the Logger Communicator, first click the **Start menu** button, then point successively to **[Programs]**, **[HIOKI]**, **[9334 Logger Communicator]**, and finally click **[Logger Communicator]**.

To close the logger communicator, on the **[File]** menu click **[Exit]**.

You can also click the **Close** button on the upper right corner of the window, or click the **toolbar** button shown on the left.



Menu bar

Toolbar

Status Bar

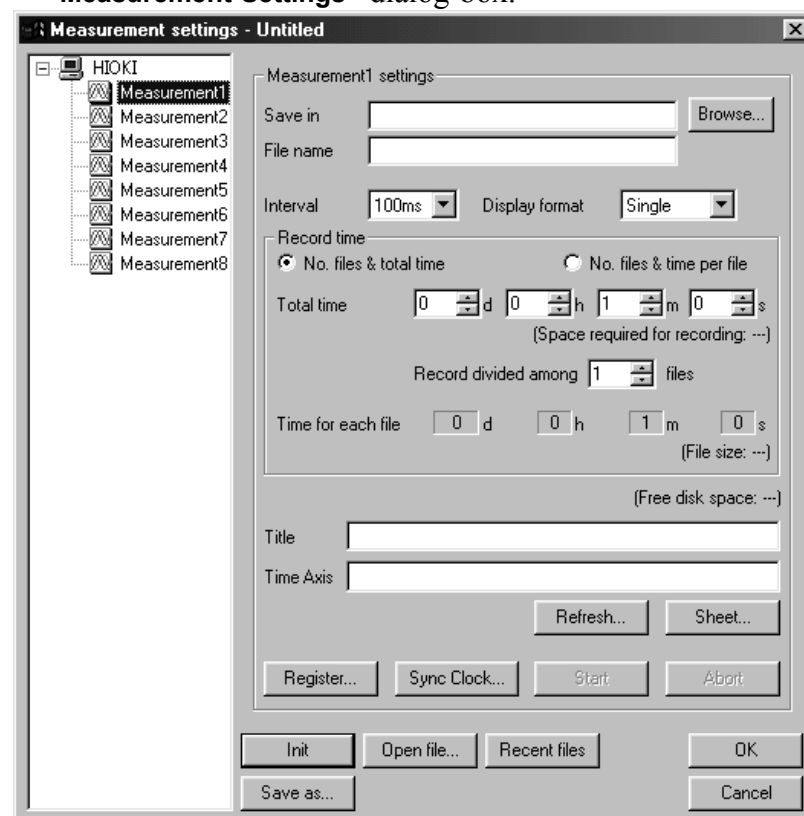
Chapter 4

Real-time Data Acquisition

4.1 Preparing for Real-time Data Acquisition

Complete the following settings before starting real-time data acquisition:

1. Measurement systems
 2. IP addresses of MEMORY HiLOGGERS used for data acquisition
- These settings are made in the "**Measurement Settings**" dialog box. On the menu, click [**Measurement**], then click [**Settings**] to display the "**Measurement Settings**" dialog box.



The icons for Measurement 1 to Measurement 8 appear in the left box of the "**Measurement Settings**" dialog box. These icons represent the eight measurement systems. Up to 16 MEMORY HiLOGGERS are configured in those systems. Data acquired from the loggers allocated to each system are stored in the file set for the system. The measurement systems are independent and data is acquired independently in real-time.

4.1.1 Measurement System Settings

Click one of the measurement system icons (Measurement 1 to Measurement 8) in the tree view of the "**Measurement Settings**" dialog box. The "**Settings**" page of the clicked measurement system will appear on the right. This page allows various settings; such as selecting the file for saving acquired data, the recording interval, and recording period. These settings apply to all MEMORY HiLOGGERS allocated to the measurement system.

Setting Location and Filename

To set the location and the file for saving acquired data, type in the path and filename, or use the <**Browse**> button. Click the <**Browse**> button to display the "**Browse**" dialog box and choose the folder there.

Setting Recording Interval

Select a recording interval from the following presets:

100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min., 2 min., 5 min., 10 min., 20 min., 30 min., and 1 hr.

Setting Split Screen

Select the number of split screens from the following presets:

1, 2, 4, 8, and 16

Setting Recording Period

There are two methods of setting the recording period: selecting the number of files that segmentize the Total Time, and selecting the number of files with recording time per file.

1. No. files & total Time

Set the total recording time and number of files for recording data within the time. For example, if the total recording time is set to one day and the number of files is set to 24, data is recorded in each file for one hour.

Record time

☒ No. files & total time ☐ No. files & time per file

Total time: 1 d 0 h 0 m 0 s
(Space required for recording: ---)

Record divided among 24 files

Time for each file: 0 d 1 h 0 m 0 s
(File size: ---)

2. No. files & time per file

Set the recording time for one file and number of files. For example, if the recording time for one file is set to 1 hour and the number of files is set to 24, data is recorded in each file for one hour.

Record time

☐ No. files & total time ☒ No. files & time per file

Time for each file: 0 d 1 h 0 m 0 s
(File size: ---)

Record repeated in 24 files

Total time: 1 d 0 h 0 m 0 s
(Space required for recording: ---)

When multiple files are set using either method above, the files are named using the set filename with serial numbers added.

Ex) Filename.HLW, Filename1.HLW, Filename2. HLW ... (HLW is the extension.)

NOTE

The maximum size of a file is 200MB. When acquiring more than 200MB of data, be sure to split the data into several files. No measurement data will be lost when switching between files.

Setting Title

You can name the measurement systems.

Setting Time Axis Title

You can set a title that is displayed on the time axis of a waveform graphic.

Setting Automatic Update

Click **<Refresh>** button to display "**Auto Refresh Setting**" dialog box. Check "**Auto Refresh during real-time suspension**" and set the updating interval. The waveform display will be updated when the set time elapses during real-time suspension.

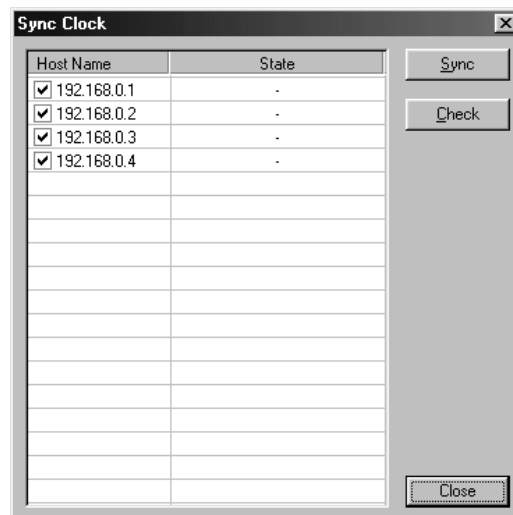
Check "**Auto change waveform sheet while measuring**" and set the changing interval. The waveform sheet will be changed when the set time elapses during real-time measuring.

Setting Waveform Display Sheet Name

Click the **<Sheet>** button to display the "**Sheet Name**" dialog box. You can name up to 16 waveform sheets (S1 to S16).

Time synchronization

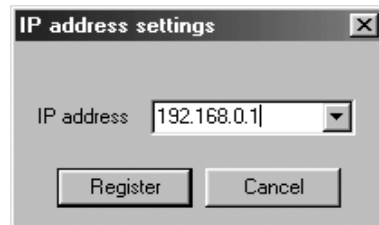
Click the **<Sync Clock>** button to display the setting dialog box.



Put a check mark to select a logger to synchronize. Then, click the **<Sync>** button to synchronize the time of the logger with the time of the PC.

4.1.2 Setting IP Address of MEMORY HiLOGGER Used for Data Acquisition

Click a measurement system icon in the left box of the "**Measurement Settings**" dialog box to display the "**Settings**" page of the measurement system. Click the <**Register**> button to display the "**IP Address Settings**" dialog box.



Type in the IP address of the MEMORY HiLOGGER to be used for data acquisition, then click the <**Register**> button. The MEMORY HiLOGGER is then registered for the measurement system and the logger icon appears under the measurement system icon.

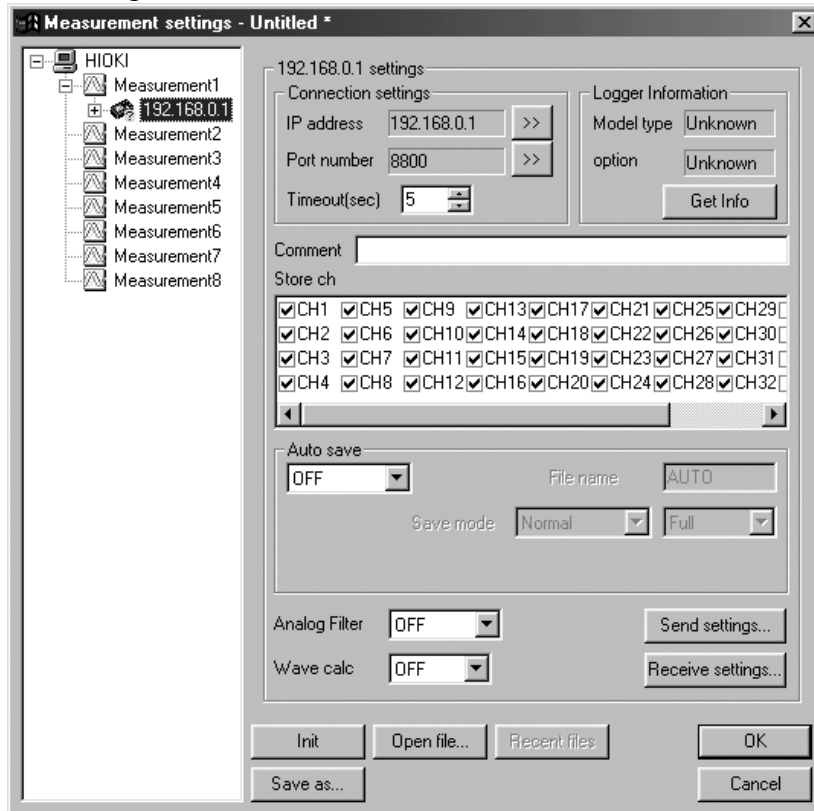


For details on the settings of MEMORY HiLOGGERS, see 4.1.3, "Settings of MEMORY HiLOGGERS," and 4.1.4, "Settings of Measurement Channels and Modules."

To delete a registered MEMORY HiLOGGER, select its icon and press the **Delete** key.

4.1.3 Settings of MEMORY HiLOGGERS

Click the icon of a MEMORY HiLOGGER registered for a measurement system. The "Settings" page for the MEMORY HiLOGGER will then appear. On this page, you can send or receive setting data with the MEMORY HiLOGGER, and edit the general MEMORY HiLOGGER settings.



Setting IP address and Port number

To change the IP address or port number of a MEMORY HiLOGGER, click the <...> button. The "Change" dialog box will then appear. Type in a new address or port number.

For the port number, use the number set on the MEMORY HiLOGGER with the low-order digit changed to 0. For instance, when "880X" is set on the MEMORY HiLOGGER, change the "X" to "0" and use "8800" instead.

Obtaining Logger Information

After registering a MEMORY HiLOGGER for a measurement system, you must obtain such logger information as the Model number and connected device. Click the <Get Info> button to communicate with the MEMORY HiLOGGER. The Model number and connected device will then be displayed. In case of no response, check for proper LAN cable connection and whether the IP address and port number are correct.

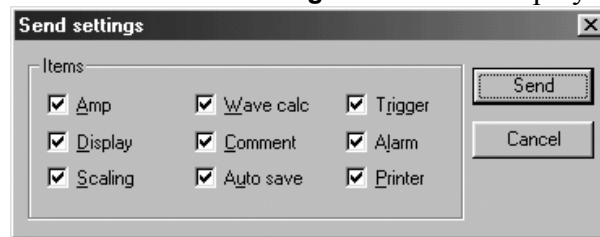
Setting Timeout

When Logger Communicator is communicating with a MEMORY HiLOGGER and there is no response from the MEMORY HiLOGGER for a certain time, a timeout occurs and the line is disconnected. If the LAN is busy, however, data transfer may take longer than usual and a timeout may occur even if there is no connection problem. If a timeout occurs often, set a higher timeout limit. This setting doesn't apply during data acquisition. Instead, the timeout is controlled based on an internally calculated recording interval.

Sending Settings

Send the settings made on the 9334 to the MEMORY HiLOGGER.

Click the <**Send Settings**> button to display the "**Send Settings**" dialog box.

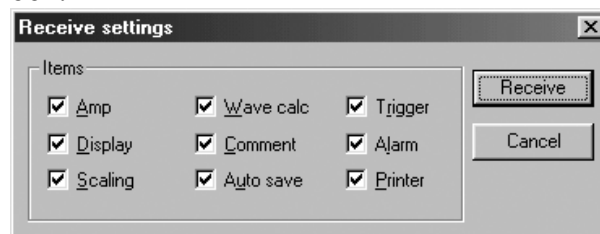


Check the settings you want to send, then click the <**Send**> button. The settings will then be sent to the MEMORY HiLOGGER.

Receiving Settings

Obtain the settings from the MEMORY HiLOGGER to the 9334.

Click the <**Receive Settings**> button to display the "**Receive Settings**" dialog box.



Check the settings you want to receive, then click <**Receive**> button. The settings will then be sent from the MEMORY HiLOGGER.

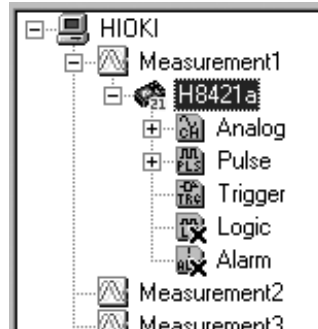
Other

The setting items of the comment and measurement channel are the same as those for the MEMORY HiLOGGER. For details, refer to the MEMORY HiLOGGER instruction manual.

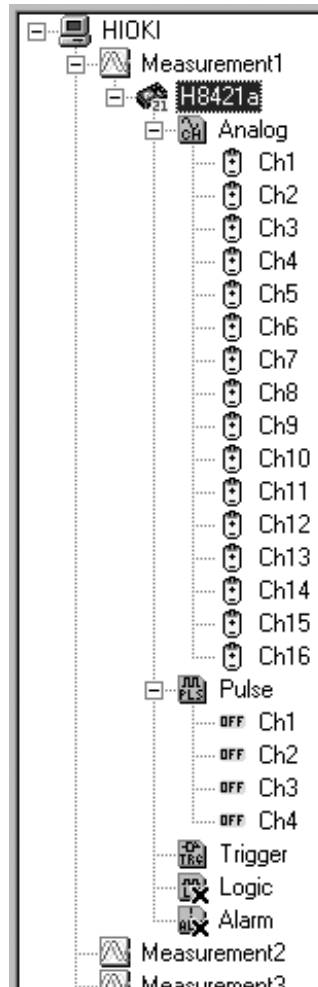
Data saved on a PC card by autosaving is saved in binary format only. Data cannot be saved on a PC card in text format during real-time data acquisition using the 9334.

4.1.4 Settings of Measurement Channels and Modules

Double-click the icon of the MEMORY HiLOGGER registered for a measurement system or click the plus (+) mark of the icon. The analog, pulse, trigger, logic, alarm, and printer icons will then appear under the logger icon. (Note that the logic, alarm and printer icons will not appear unless the 8992 PRINTER UNIT and 8993 DIGITAL I/O UNIT are connected to the MEMORY HiLOGGER.)



Double-click an icon (e.g., analog or pulse icon) or click the plus mark to display the channel icons.



Click the channel, trigger, logic, alarm, or printer icon to display the related "Settings" page. The setting items are similar to those for the MEMORY HiLOGGER. For details, refer to the MEMORY HiLOGGER instruction manual. The following settings, however, are not included or differ from those for the MEMORY HiLOGGER.

Setting Display Sheet

On the **"Settings"** page for each analog or pulse channel or the logic **"Settings"** page, you can set the display sheet used to display the waveform. Click the **<Sheet>** button to display the **"Select Sheet"** dialog box. Check the sheet you want to use to display the channel. You can display a waveform on multiple sheets.

Setting ON/OFF Calculation Threshold

The **"Settings"** page for each analog channel allows you to set the threshold for ON/OFF calculation. For details, see 5.4.4, "Displaying Cursor Interval Calculation Results."

Setting Sound Alarm

The **"Settings"** page for the alarm allows you to set the sound alarm function (i.e., playing back a WAV file at alarm output).

Check **<Sound Alarm>** and set the WAV file. To set the file, type in the path of the file or use the **<Browse>** button. Click the **<Browse>** button to display the **"Open"** dialog box, then choose a WAV file there.

To play back a WAV file, a soundboard must be installed on the PC.

Setting Trigger

The same trigger settings as the Memory HiLOGGER is possible, but some settings are not applicable in the real-time data acquisition.

For details, see 4.2.1, "Starting Real-Time Data Acquisition".

4.1.5 Saving a Setting File

You can save the settings made in the **"Measurement Settings"** dialog box as a file. Click the **<Save as...>** button to display the **"Save As"** dialog box.

Choose a location at which to save the file, type in the filename, then click the **<Save>** button.

The **<Init>** button initializes all settings made in the **"Measurement Settings"** dialog box.

The **<Open file...>** button is used to open an existing setting file. Click the button to display the **"Open"** dialog box. Choose a setting file in the dialog box and open it.

The **<Recent files>** button displays a list of files you have recently worked on. Click any file in the list to open it.

The **<OK>** button saves the settings made in the **"Measurement Settings"** dialog box to the currently selected file, overwrites the file, selects the setting file as the effective measurement settings, then closes the dialog box.

The **<Cancel>** button cancels the settings made in the **"Measurement Settings"** dialog box and closes the box.



Real-time data acquisition is performed using the settings in the setting file selected as the currently effective measurement settings. The status bar displays the name of the setting file selected as the currently effective measurement settings.

To set another setting file as the currently effective measurement settings, open the file in the **"Measurement Settings"** dialog box, then click the **<Apply>** button. You can also set the file by choosing **[File]** on the menu bar, then clicking **[Open Setting File]**. The **"Open"** dialog box will then appear. Choose and open the file you want to set as the currently effective measurement settings.

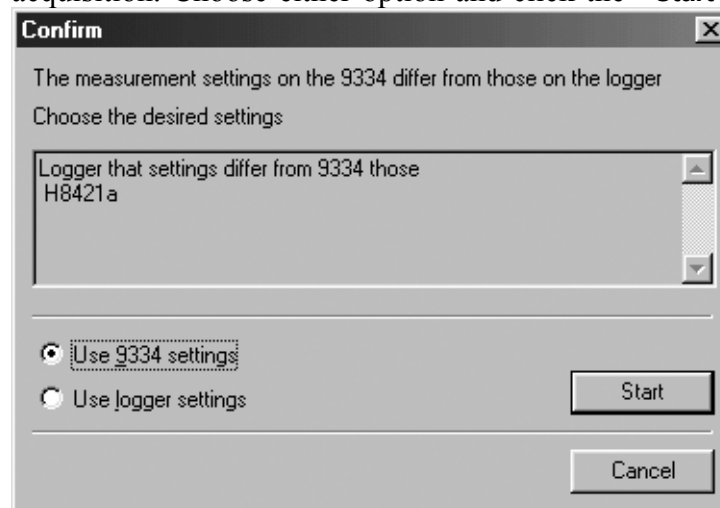
4.2 Starting/Aborting Real-Time Data Acquisition

4.2.1 Starting Real-Time Data Acquisition

You can start real-time data acquisition upon completing the measurement system settings and registering MEMORY HiLOGGERS allocated to the measurement system.

Choose [**Measurement**] on the menu bar. Click <**Start**> to display a menu showing [**Start 1 - 8**]. On this menu, click the number of the measurement system you want to use to start data acquisition. Data acquisition will then begin.

After starting data acquisition, the 9334 checks the settings of MEMORY HiLOGGERS registered for the measurement system for matching with those of the 9334. If the settings of any MEMORY HiLOGGER differ from those of the 9334, the "**Confirm**" dialog box will appear. You can choose the settings of the 9334 or those of MEMORY HiLOGGERS for data acquisition. Choose either option and click the <**Start**> button.



When "**Use 9334 settings**" is selected, the 9334 sends its settings to the MEMORY HiLOGGER before starting data acquisition.

When "**Use logger settings**" is selected, the 9334 receives the settings from the MEMORY HiLOGGER before starting data acquisition. The setting file is then overwritten with the settings received.

The <**Cancel**> button stops measurement.

In the real-time data acquisition, the trigger settings are effective when only one MEMORY HiLOGGER is registered in the measurement system.

However, the trigger settings are automatically reset to "**SINGLE**" for trigger mode and "**0d 00h 00m 00s**" for pre-trigger.

In case of multiple MEMORY HiLOGGER's are registered in the measurement system, the trigger function cannot be used. All the trigger settings of MEMORY HiLOGGER are reset when the real-time data acquisition is started in this case.

NOTE

(In case of only one MEMORY HiLOGGER is registered in the measurement system) When there is a stop trigger during the real-time data acquisition, the measurement on the Memory HiLOGGER stops immediately but the 9334 stops measurement after confirming no additional data is transferred from the Memory HiLOGGER for a certain period. Therefore, there is a time lag to stop measurement. Also, the waveform file of the 9334 has one additional data after the last data when the measurement is stopped by a stop trigger.

4.2.2 Aborting Real-Time Data Acquisition

Choose [**Measurement**] on the menu bar, then click [**Abort**] to display [**Abort 1 - 8**]. Click the number of the measurement system you want to use to stop data acquisition. Data acquisition will then end.

4.3 Screens During Real-Time Data Acquisition

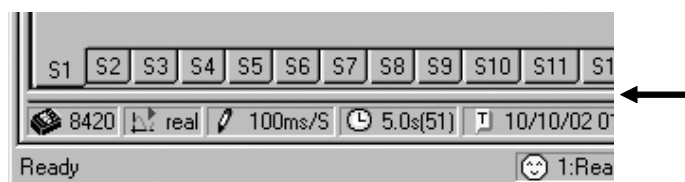
4.3.1 Waveform Viewer



After data acquisition has started, the waveform viewer begins to display real-time waveforms received from MEMORY HiLOGGERS.

Clicking the button shown at the left during data acquisition will interrupt the updating of waveforms (called real-time suspension). During real-time suspension, you can scroll the screen to view the previous waveforms. Clicking the button again during real-time suspension will cause the viewer to start updating the waveforms again. Even when the updating of waveforms is interrupted, the 9334 continues acquiring and saving data in a file.

Click and drag the top of the status bar of the waveform viewer upward to display the information screen. This screen shows the measurement start time, end time, progress, files that have completed data recording, and the measurement log.



The <**Waveform**>, <**Calculate**>, <**Search**>, <**EventMark**> and <**Info**> buttons are located on the left side of the information screen. Clicking any of these buttons will display the related setting page so that you can change the settings. (Note that some settings cannot be changed during data acquisition). For details, see Chapter 5, "Operating The Waveform Viewer." You can choose to display or not display the information screen. Click [**Screen**] on the menu bar, then click [**Information Screen**] to display the Information Screen.

4.3.2 Monitor Viewer

On the Monitor viewer, the instantaneous value for each channel is digitally displayed in real-time. However, the Monitor viewer can only be displayed while data is being loaded.

To display the Monitor viewer, on the [Screen] menu, click [Monitor View].

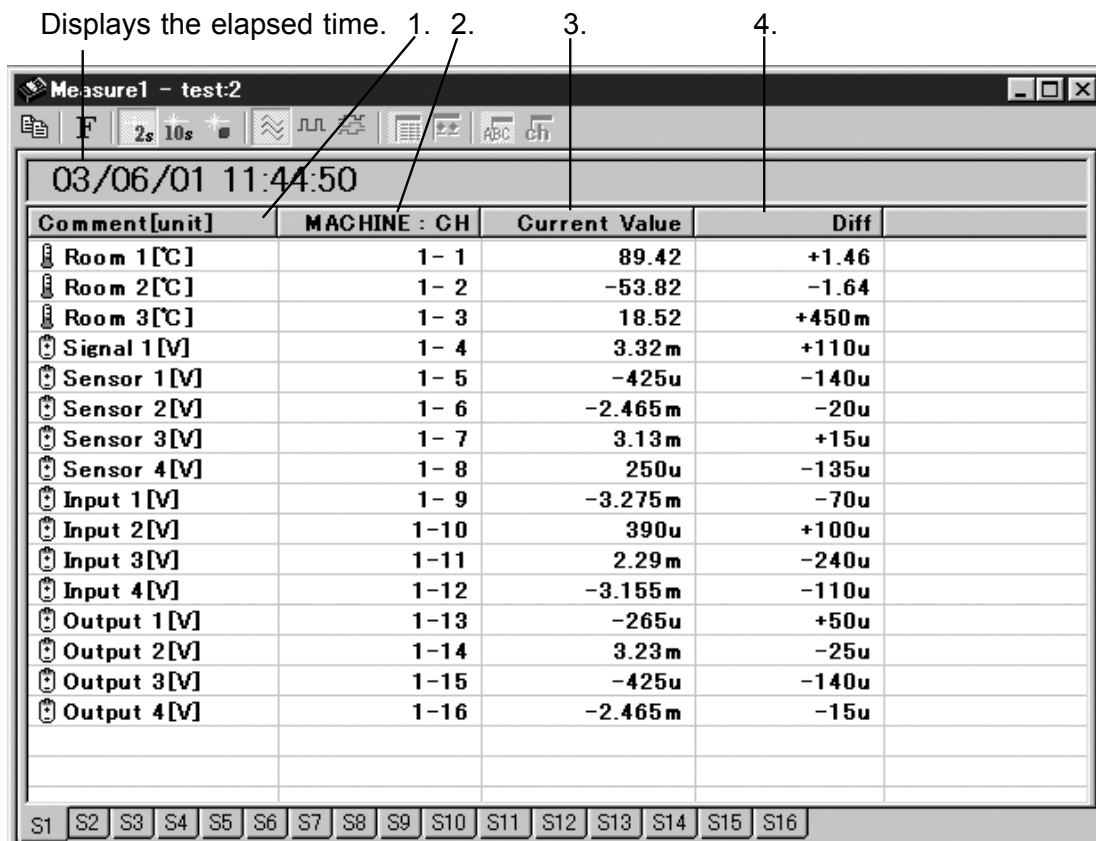


You can also click the **toolbar** button displayed on the left. A new screen is displayed each time you click the button.

To change the contents of the display, on the [View] menu, point to [Unit], then click [Analog], [Pulse], or [Logic] and change the contents of the display to Analog, Pulse, or Logic.

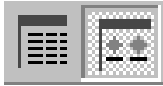


You can also click the **toolbar** buttons shown on the left. Starting from the left: Analog Display, Pulse Display, and Logic Display are shown.



1. Displays the channel as a comment. If no comment is set, only the unit is shown.
2. Displays the model and channel numbers. For example, channel 3 on the first machine is displayed as "1-3".
3. Displays the current measurement value. The data is constantly updated at the time interval that you set.
For Logic Display, High status is displayed as "1", and Low status as "0".
4. Displays the difference between the current measurement value and the measurement value for the previous sample.

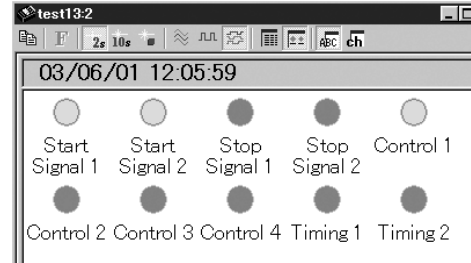
For Logic Display, you can choose from 2 formats: Detailed Display and Large Display. On the [View] menu, point to [Logic], then click [Detail] or [Large]. For Large, High status is displayed "red", and Low status "green".



You can also click the **toolbar** buttons shown on the left. From the left, Detailed Display and Large Display are shown.

Comment[unit]	MACHINE : CH	Current Value	Diff
Start Signal 1	1- 1	0	0
Start Signal 2	1- 2	0	0
Stop Signal 1	1- 3	1	0
Stop Signal 2	1- 4	1	0
Control 1	1- 5	0	0
Control 2	1- 6	1	0

Detailed Display



Large Display

For Large Display, you can select from 2 channel display formats: Comment Display and Channel Display. On the [View] menu, point to [CH Comment], then click [Comment] or [CH].



You can also click the **toolbar** buttons shown on the left. Starting from the left: Comment Display, and Channel Display are shown.

Changing the Display Update Interval

You can select from 3 display update intervals: 2 seconds, 10 seconds, and Hold.

To select a display update interval, on the [View] menu, point to [Interval], then click [2 Sec], [10 Sec], or [Hold].



You can also click the **toolbar** buttons shown on the left. Starting from the left: 2 Seconds, 10 Seconds, and Hold are shown.

Changing Font

On the [View] menu, click [Font] to display the dialog box for fonts, then change the font.



You can also click the **toolbar** button shown on the left.

Copying

On the [Edit] menu, click [Copy] to copy the display values (text format) to the clipboard, then paste them into another program.



You can also click the **toolbar** button shown on the left.

4.3.3 Alarm Viewer

The Alarm viewer displays the alarm output status in real-time. However, the Alarm viewer can only be displayed while data is being loaded. (Valid only when the 8993 DIGITAL I/O UNIT is connected.)

To display the Alarm viewer, on the [**Screen**] menu, click [**Alarm View**].



You can also click the **toolbar** button displayed on the left. A new screen is displayed each time you press the button.

You can select from 3 display formats: Detailed Display, Large Display, and Small Display.

On the [**View**] menu, point to [**Logic View**], then click [**Details**], [**Large**], or [**Small**].



You can also click the **toolbar** button shown on the left.

From the left, Large Display, Small Display, and Detailed Display are shown.

1. 5. 2. 3. 4.

Comment[unit]	MACHINE : CH	Current Value	Alarm Count	Alarm Time
1-1	1-1	1	2	27.5Sec
1-2	1-2	0	2	29Sec
1-3	1-3	1	2	31.5Sec
1-4	1-4	1	2	21Sec
1-5	1-5	0	2	20.5Sec
1-6	1-6	0	2	25Sec
1-7	1-7	1	2	23Sec

Detailed Display

Comment[unit]	MACHINE : CH	Current Value	Alarm Count	Alarm Time
1-1	1-1	1	2	27.5Sec
1-2	1-2	0	2	29Sec
1-3	1-3	1	2	31.5Sec
1-4	1-4	1	2	21Sec
1-5	1-5	0	2	20.5Sec
1-6	1-6	0	2	25Sec
1-7	1-7	1	2	23Sec
1-8	1-8	0	2	24Sec
1-9	1-9	0	2	26Sec

Small Display

1. Displays the current alarm output status in color. When an alarm is output it displays red, and when no alarm is output it displays green.
2. Displays the current alarm output status in numerical values. When an alarm is output, "1" is displayed, and when no alarm is output, "0" is displayed.
3. Displays the number of times an alarm was output from the start of measurement until the present.
4. Displays the total time an alarm was output from the start of measurement until the present.
When the alarm hold is set to On in the "**Alarm Settings**" screen, the amount of time that elapsed since the alarm was first output until the present is displayed.
5. Displays the amount of time that has elapsed since measurement started until the present. Select a display format on the [**View**] menu by pointing to [**Time Notation**], then clicking [**Absolute**], [**Relative**], [**Sec**], or [**Sampling No.**] For details on display formats, refer to 5.2.2 "Changing the Format of the Time Axis."



Select an alarm for the MEMORY HiLOGGER that is displayed on the tab. M1 is the first MEMORY HiLOGGER, and M2 is the second MEMORY HiLOGGER.

If you select ALL, the alarms for all of the MEMORY HiLOGGERS that are connected will be displayed.



Light mode settings

If light mode is set to On, you can easily confirm alarms visually, because the entire background of the Alarm viewer lights red when an alarm is output for any channel.

To activate the light mode function, on the [View] menu, click [Lighting]. You can also click the **toolbar** button shown on the left.



Changing Font

On the [View] menu, click [Font] to display the dialog box for fonts, then change the font.

You can also click the **toolbar** button shown on the left.



Copying

On the [Edit] menu, click [Copy] to copy the display values (text format) to the clipboard, then paste them into another program.

You can also click the **toolbar** button shown on the left.

Chapter 5

Operating The Waveform Viewer

5.1 Opening a Waveform File

5.1.1 Opening a Waveform File

On the 9334 LOGGER COMMUNICATOR, you can open real-time data waveform files (with extension HLW) and MEMORY HiLOGGER waveform files (with extension MEM).

Click [**File**] on the menu bar, then click [**Open Waveform File**] to display the "Open" dialog box. Open the "Files of Type" drop-down list and choose a file type. The files of the selected type will then be displayed. Choose the file you want to open and click the <Open> button. The file will be read into the 9334 and the waveform displayed.

5.1.2 Overwriting Waveforms

Each HLW file stores the conditions under which a waveform is displayed on the waveform viewer. For a MEM file, a waveform setting file (with extension HLC) is created with the same filename as that of the MEM file and the display conditions are saved in this file. (The HLC file is automatically read out when the MEM file is opened).

When the waveform viewer is displayed, click [**File**] on the menu bar, then click [**Save Waveform File**]. The previous conditions are then overwritten by the current waveform display conditions. The new display conditions will be used when the file is next opened.

Click [**File**] on the menu bar, choose [**Preferences**], and then check [**Autosave Waveform Display Conditions**]. The current waveform display conditions will then be automatically saved and the previous conditions overwritten each time the waveform viewer is closed.

NOTE

HLW files saved on the network computer cannot be overwritten.

5.1.3 Applying Display Conditions to Measurement Settings

Upon opening an HLW file, you can apply the display conditions for the waveform viewer to the measurement settings of real-time data acquisition, so that when real-time data acquisition is next performed, the waveforms are viewed under current display conditions.

While the waveform of an HLW file is displayed, click [**Measurement**] on the menu bar, then click [**Apply Display Conditions**]. The display conditions will then be applied to settings for the measurement system to which the same MEMORY HiLOGGER is registered. The same MEMORY HiLOGGER means the logger used when the HLW file is created (when performing real-time data acquisition).

The display conditions applied are only those that can be edited in the "**Measurement Settings**" dialog box.

5.2 Making Changes to the Time Axis

5.2.1 Changing the Size of the Time Axis



On the [**View**] menu, click [**Zoom In**] or [**Zoom Out**]. The time axis is magnified or reduced.

You can also click either of the two **toolbar** buttons shown on the left. Starting from the left: Reduce Display and Magnify Display are shown. You can also right-click anywhere inside the Waveform Viewer and select [**Zoom In**] or [**Zoom Out**].

5.2.2 Changing the Format of the Time Axis

You can change the format of the time axis. You can choose from the following 5 format types:

1. Absolute Time: Displays the date and time.
2. Relative Time: Displays the time elapsed since measurement started and the time.
3. Seconds: Displays the time elapsed since measurement started and the time in seconds.
4. Sampling Number: Displays the sampling point.
5. Division: Displays the number of DIVs.

On the [**View**] menu, click [**Time Notation**], then click a display format.



You can also click any of the **toolbar** buttons shown on the left.

Starting from the left: the **Absolute Time**, **Relative Time**, **Seconds**, **Sampling Number** and **Division** buttons are shown.

You can also right-click near the time axis scale and click [**Time Notation**] from the shortcut menu.

5.2.3 Changing the Type of Display

You can change the way the time axis scale is displayed. You can choose from the following 3 types of display:

1. Grid: Displays the scale in a grid format.
2. Upper and Lower: Displays the scale only on the left and right edges of the time axis.
3. None: Does not display the scale.

To make settings, right-click near the scale on the time axis and click **[Type]**, then click **[Grid]**, **[Upper / Lower]**, or **[None]** from the shortcut menu.

5.2.4 Changing the Character Color and Font

You can change the color and font of the characters of the time axis scale. To do this, right-click near the time axis scale, click **[Text Color]** or **[Font]**, and the **Settings** dialog box appears.

5.3 Making Changes to the Voltage Axis

5.3.1 Changing the Magnification of the Voltage Axis

You can change the magnification of the voltage axis. To magnify the axis, click **[Voltage Axis Magnification]** on the **[View]** menu.



You can also click the **toolbar** button shown on the left, then click anywhere inside the waveform viewer. Each time you click, the magnification increases one notch.

To gradually reduce the magnification, hold down the **[SHIFT]** key and click anywhere inside the waveform viewer.

5.3.2 Changing the Gage Type

You can change the way the gage is displayed. You can choose from the following 4 types:

1. None: Does not display the gage.
2. Upper and Lower: Displays one gage with the scale on the upper and lower edges.
3. Detail: Displays one gage with its scale in a grid format.
4. Multi: Displays multiple gages.



You can also click any of the **toolbar** buttons shown on the left. Starting from the left: None, Upper and Lower, Detail, and Multi are shown.

You can also right-click near the gage and point to **[Type]**, then click

[None], [Upper / Lower], [Detail], or [Multi].

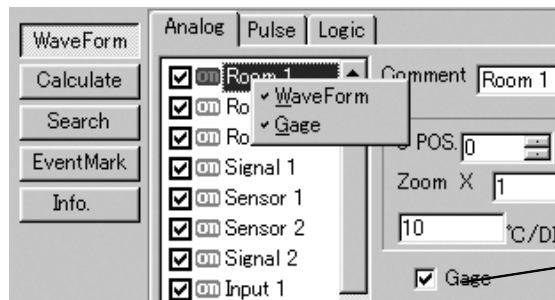
If you want to change the number of gages displayed when the gage display format is set to Multi, right-click near the gage and point to [Type], then click [Gage Num] to display the "Gage Number" dialog box.

You can also make to activate and deactivate the gage for each channels in the Information screen. To display the Information screen at the bottom of the screen, click [Information Screen] on the [Screen] menu, .



You can also click the **toolbar** button shown on the left.

For example, when you click the <Waveform> button on the left of the Information screen, you can activate or deactivate the gages of the corresponding channels. To do this, right-click the channel for which you want to activate or deactivate the gage and on the shortcut menu, click [Gage] as illustrated below.



You can also activate or deactivate gages by clicking here.

5.3.3 Changing Fonts, Vertical Fonts, and Character Color

To make these changes, right-click near the gage, then click [Text Color], [Font], or [Vertical Font] on the shortcut menu to display the **Settings** dialog box.

1. Font: Horizontal area font
2. Vertical Font: Vertical area font

5.4 Using Cursors

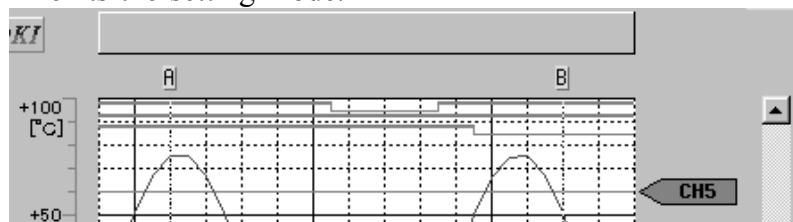
You can use cursors A and B to display cursor positions, dates, times, and various types of cursor interval calculation results.

5.4.1 Positioning Cursors



Click the **toolbar** buttons shown on the left, then move the mouse pointer in the waveform viewer so it appears as a black arrow. Click the desired position to set the cursor and an A mark or B mark appears at the top of the waveform viewer.

If you click the button on the toolbar once more, the logger communicator exits the setting mode.



To move the cursors, drag the A mark or B mark to a different location.



During real-time measurement, you cannot position the cursors. However, you can position them when the waveform display update is temporarily interrupted (refer to 4.2 "Starting a Real-time Data Acquisition Program").

5.4.2 Activating and Deactivating Cursors

On the [**View**] menu, click [**Cursor A**] or [**Cursor B**] to activate or deactivate the corresponding cursor.

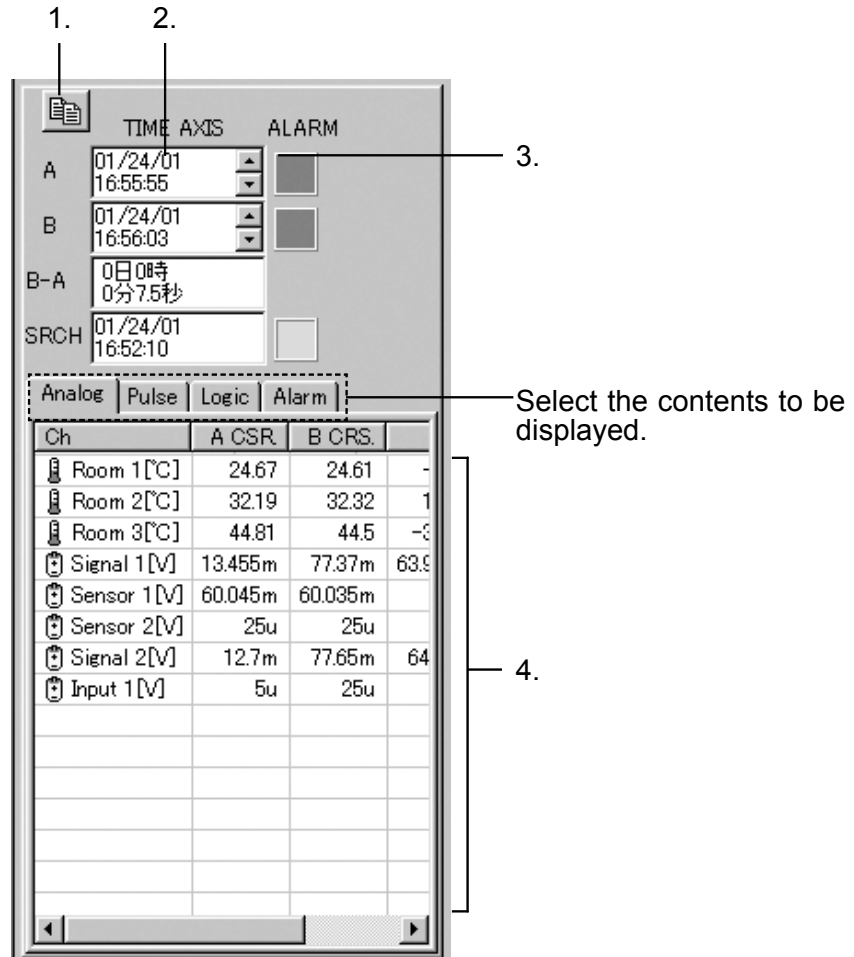


You can also click the **toolbar** buttons shown on the left.

5.4.3 Displaying Cursor Position Values and Times



On the [**Screen**] menu, click [**Cursor Screen**] shown on the left to display the Cursor screen on the right of the screen. Click the **toolbar** button shown the Cursor screen.



Drag the edge of the Waveform Display screen or Cursor screen left or right to change the size of the Cursor screen.

1. Click this to copy the display values to the clipboard (text format). You can then paste them into another program.
2. Displays the position of the cursor on the time axis.
3. Displays the alarm output of the cursor position.
Green: No alarm.
Red: One or more of the alarms are assigned to the corresponding cursor.
4. Displays the measurement value at cursor A and B's respective positions.
 - Displays the channels of the selected sheet.
 - Alarms are split into sheets and displayed as follows: Sheet 1 is the first MEMORY HiLOGGER, and Sheet 2 is the second MEMORY HiLOGGER.

5.4.4 Displaying Cursor Interval Calculation Results

First, display the Information screen (refer to 5.3.2 "Changing the Gage Type").

Next, click <**Calculate**> on the left of the Information screen to display the calculation results.

You can also drag the edge of the Waveform Display screen or Information screen up or down to change the size of the Information screen.

CH	Average	P-P	Max.	MaxTime	Min.	MinTime	OnTime	OffTime	OnCount	OffCount
Room 1	24.7479	370m	24.92	51Sec	24.55	234Sec	300Sec	0Sec	0	0
Room 2	32.43715	14.13	42.27	45.5Sec	28.14	150Sec	300Sec	0Sec	0	0
Room 3	45.92314	19.7	54.06	79Sec	34.36	179.5Sec	300Sec	0Sec	0	0
Signal 1	187.32113u	158.01m	78.92m	42.5Sec	-79.09m	47.5Sec	151Sec	149Sec	29	30
Sensor 1	60.04355m	75u	60.08m	92Sec	60.005m	76Sec	300Sec	0Sec	0	0
Sensor 2	19.6589u	70u	55u	87Sec	-15u	15Sec	284.5Sec	15.5Sec	29	29
Signal 2	126.87188u	158.45m	79.1m	173Sec	-79.35m	57.5Sec	151Sec	149Sec	29	30

1. You can select from Analog, Pulse, Logic, or Alarm.
2. Displays the calculation range.
 Display both A and B cursors on the Waveform Display screen: Calculates the interval between cursors A and B.
 Display only A cursor on the Waveform Display screen: Calculates the interval between cursor A and the end measurement.
 Display only B cursor on the Waveform Display screen: Calculates the interval between the start measurement and cursor B.
 Do not display the cursors on the Waveform Display screen: Calculates all ranges.
3. After data is acquired, click to calculate.
4. Click to copy the calculation results to the clipboard (text format). You can paste them into another program.
5. Click to calculate in real-time. Calculations are done automatically during measurement. (The cursor interval cannot be calculated.)
6. You can select the time display format.
7. Adjust the filter settings to avoid calculation errors due to noise. The filter range is 10 samples. The filter is only available when calculating the ON Time, OFF Time, ON Count, and OFF Count. The filter is not available when calculating logic or alarms. The filter should be turned OFF while measuring.
8. You can select a channel whose threshold values for ON time, OFF time, ON Count, and OFF Count are set.
9. Sets the threshold values for calculating ON Time, OFF Time, ON Count, and OFF Count. These cannot be set while measuring. Make sure you set them before measuring (refer to 4.1.1 "Measurement System Settings").

Calculations

Average:	The average value of the set calculation range.
P - P:	The peak-to-peak value (maximum value to minimum value) of the set calculation range.
Max:	The maximum value of the set calculation range.
Max Time:	The time until the maximum value of the set calculation range.
Min:	The minimum value of the set calculation range.
Min Time:	The time until the minimum value of the set calculation range.
ON Time:	The total time during which the measurement value is higher than the set threshold value of the set calculation range. Cannot be calculated for pulse.
OFF Time:	The total time during which the measurement value is lower than the set threshold value of the set calculation range. Cannot be calculated for pulse.
ON Count:	The number of times that the measurement value rose above the set threshold value of the set calculation range. Cannot be calculated for pulse.
OFF Count:	The number of times that the measurement value dropped below the set threshold value of the set calculation range. Cannot be calculated for pulse.
Standard Deviation:	The standard deviation of the set calculation range.
Integral:	The integral value of the set calculation range.
Area:	The total surface area covered by waveforms and origins of the set calculation range.

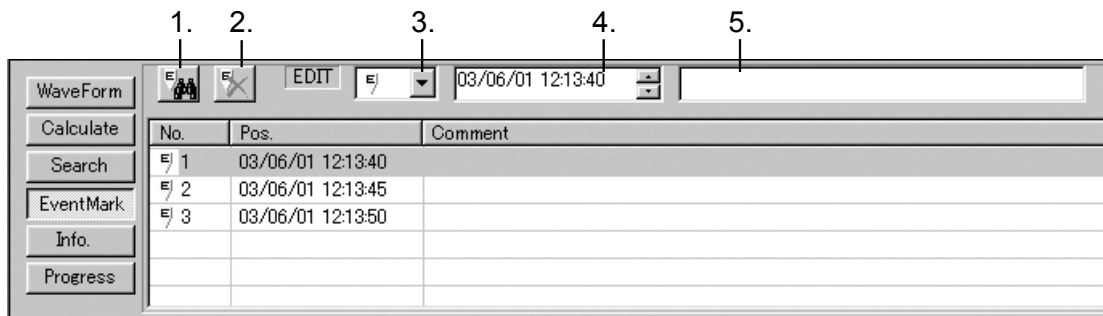
5.5 Search Functions

5.5.1 Event Marker Search Function

If event markers are inserted in the Waveform Display screen, you can search for a specified event marker, then jump to that position to display the waveform.

First, display the Information screen (refer to 5.3.2 "Changing the Gage Type").

To display the Event Search screen, click Event Mark on the left of the Information screen.



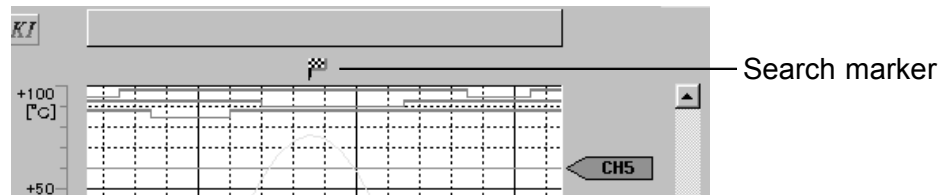
1. Click here to search for an event marker. Click the event marker that you are searching for in the event marker list.
2. Click here to delete event markers. Click the event marker that you want to delete in the event marker list.
3. You can select the kind of maker for the event marker.
4. Displays the position of the event marker that you selected in the event marker list. If you change the numerical value here, the event marker moves to that position.
5. Type a comment. Click an event marker in the event marker list, and then type a comment. The comment is displayed in the comment column in the event marker list.



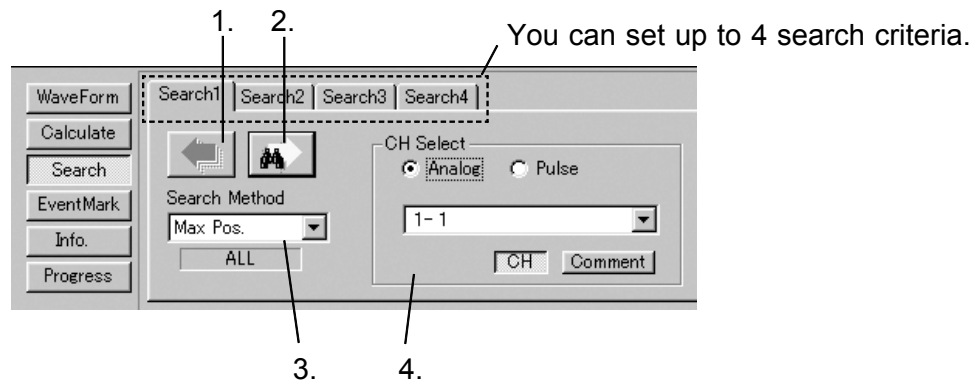
You cannot search for event markers while measuring in real-time. However, you can search for them when the waveform display update is temporarily interrupted (refer to 4.2.1 "Starting Real-Time Data Acquisition").

5.5.2 Other Search Functions

In addition to jumping to event markers, you can display a waveform by jumping to points that fulfill the waveform conditions that you specify. A search marker is displayed in the search position.



To display the Settings screen for search criteria, click **<Search>** on the left of the Information screen.



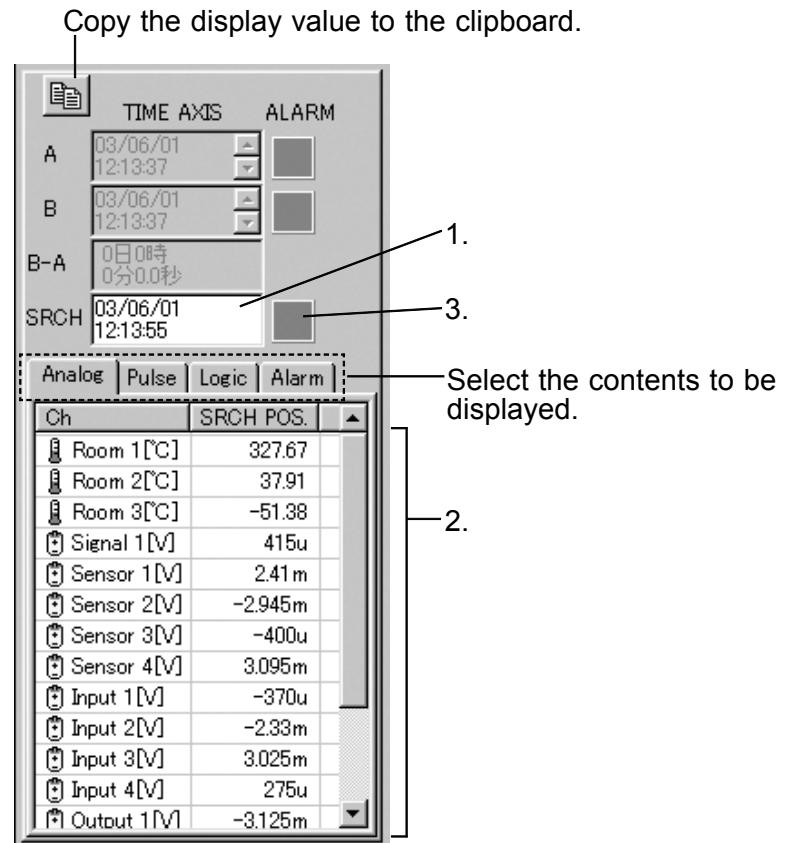
1. Click here to search for a point. To jump to a point that fulfills the search criteria that you have set and display the relevant waveform, click here to search the previous screen (the next screen to the left). Each time you click here, the previous screen is searched.
2. Click here to search for a point. Each time you click here, the next screen (the next screen to the right) is searched for points that fulfill the search criteria that you have set, and if any points are found the screen jumps to that point and displays the relevant waveform.
3. Selects a search mode. You can select from the following 9 search modes:
 - TIME AXIS: Jumps to the set date.
 - Max Pos: Jumps to the maximum measurement value of the channel being searched.
 - Min Pos: Jumps to the minimum measurement value of the channel being searched.
 - Peaks: Jumps to the peaks of the channel being searched.
 - Valleys: Jumps to the valleys of the channel being searched.
 - Alarm: Jumps to the set alarm output condition.
If you select All Alarms in Alarm Settings, display jumps to the positions on all alarm channels where even one alarm has been output.
 - Level: Jumps to the point at which the waveform rises above or falls below the set level for the channel being searched.
 - Window: Jumps to a point within the set upper and lower limits (or to a point outside the range) of the channel being searched.
 - Slope: Jumps to the point of increase for the inclination (inclination per sampling interval) of the set waveform (or the point of decrease) of the channel being searched.

4. Sets items such as channels and search criteria. (The figure shows how to search for the maximum measurement.)

NOTE

You cannot use search functions while measuring in real-time. However, you can search for them when the waveform display update is temporarily interrupted (refer to 4.2.1 "Starting Real-Time Data Acquisition").

If the Cursor screen is displayed, you can display the date of the search point and the measurements for each channel.



5.6 Other Display Modifications

5.6.1 Changing the Origin and Magnification of Displayed Waveforms

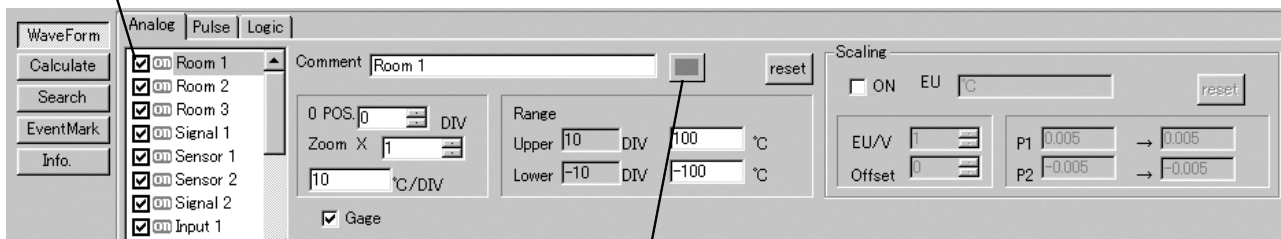
First, display the Information screen (refer to 5.3.2 "Changing the Gage Type").

Next, click **<Waveform>** on the left of the Information screen and the display position, magnification, and scaling settings screens appear. Click the channel number that you want to modify, then set the origin, magnification, and scaling.

After you have entered the various values, press the **[Enter]** key to apply the settings.

To learn more about scaling, refer to the MEMORY HiLOGGER Operating Instructions.

Switches waveform display On and Off.



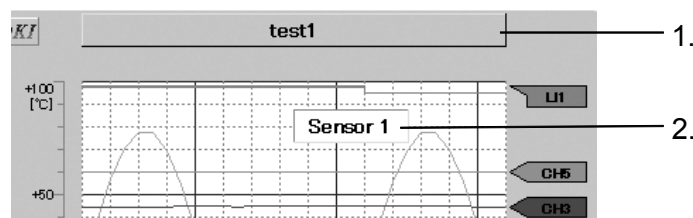
Click here to change the display color.

Screen range: Sets the upper and lower edge values on the Waveform screen.

If you scroll vertically using the vertical scroll bar on the Waveform screen, the screen changes accordingly.

The screen range is -100 DIV to 100 DIV. You can also change the upper and lower values as desired. (Changes are reflected in the origin and magnification.)

5.6.2 Including Comments



1. You can type comments here. Double-click to switch to the edit comment mode, then type your comment. If you want to change the character color or font, right-click the comment, click **[Text Color]** or **[Font]**, then change the settings.



- You can also type comments wherever you like on the Waveform Display screen. To do so, click the **toolbar** button shown on the left, and, while holding down the left mouse button on the position where you want to insert the comment, set the insert comment range, then type the comment. If you click the button on the toolbar once more, the logger communicator exits this mode.



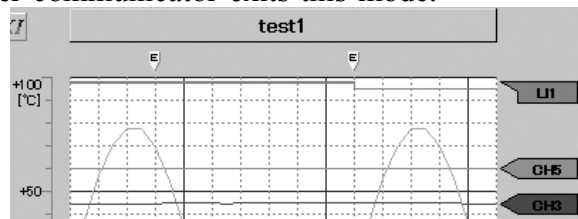
You cannot type comments while measuring in real-time. However, you can insert them when the waveform display update is temporarily interrupted (refer to 4.2.1 "Starting Real-Time Data Acquisition").

5.6.3 Inserting Event Markers

You can use the event marker function to attach event markers to acquired data (either during or after acquisition) for later recall. (refer to 5.5, "Search Functions")



Click the **toolbar** button shown on the left, then move the mouse pointer into the Waveform Viewer so it appears as a black arrow. Click the desired position to display the event marker "E" mark on the top edge of the Waveform Viewer. If you click the button on the toolbar once more, the logger communicator exits this mode.

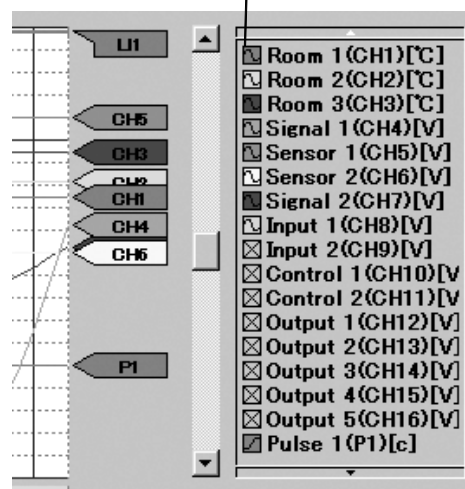


5.6.4 Displaying Waveform Legends

On the [View] menu, click [Wave Remark] to display the waveform legend on the right of the Waveform Display screen.

You can also right-click the voltage axis scroll bar.

Click to switch the display On and Off.



If you want to change the size of the legend display frame, right-click anywhere inside the display frame, click [Resize], then drag the display frame with the mouse.

5.6.5 Setting the Legend Channel Format

You can choose a legend channel format from the following 3 types:

1. Comment: Displays the comments set for each channel.
2. Channel: Displays the channel number.
3. Settings: Displays the input type and the range.

On the **[View]** menu, point to **[Channel Notation]**, click **[Comment]**, **[Channel]**, or **[Setting]**, then make the settings.

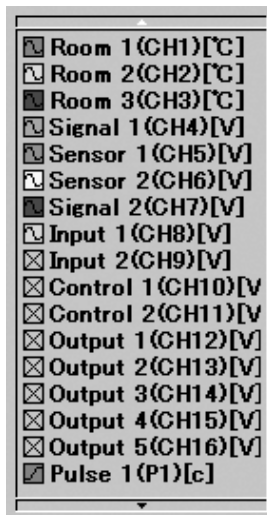


You can also click the **toolbar** buttons shown on the left.

Starting from the left: Comment, Channel, and Settings are shown.

You can also right-click anywhere inside the legend display frame, point to **[Channel Notation]**, then click **[Comment]**, **[Channel]**, or **[Setting]**.

Similarly, to change the character color and font, right-click anywhere inside the legend display frame, click **[Text Color]** or **[Font]**, then make the changes.



Comment

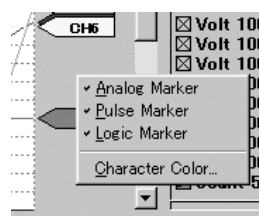


Channel



Settings

5.6.6 Turning the Channel Marker On and Off



Right-click the channel marker, then click **Analog**, **Pulse**, or **Logic** to activate or deactivate the display.

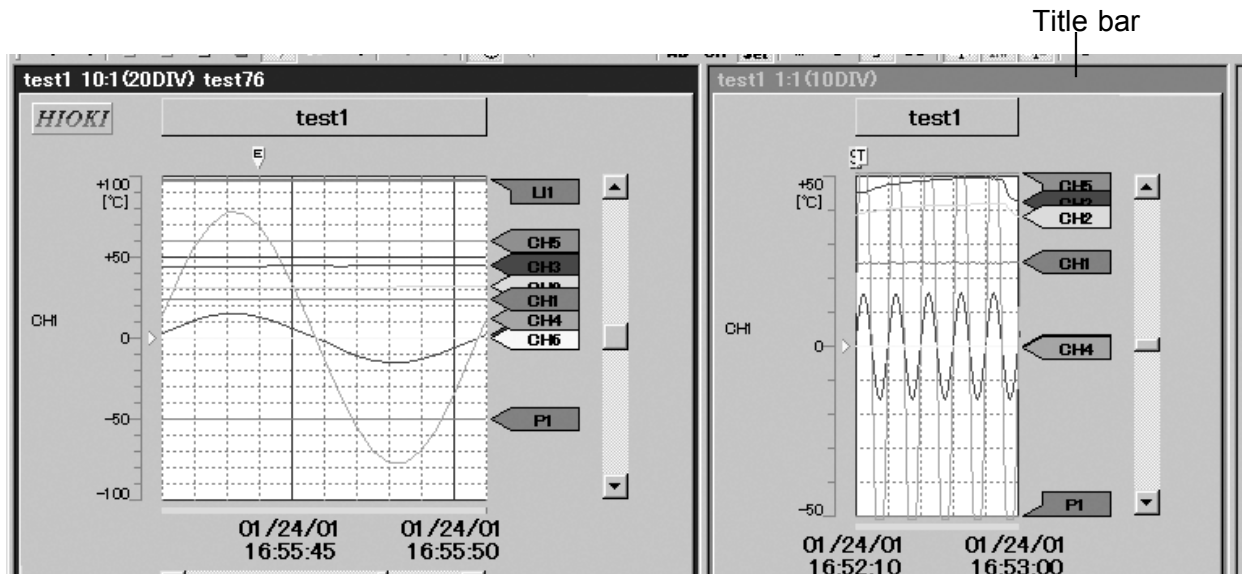
You can also click **[Text Color]** to change the character color of the channel marker.

5.6.7 Split-Screen Settings

On the [**Screen**] menu, click [**Split Waveform Screen**] to split the Waveform Display screen vertically into 2. You can now edit the various screens.



You can also click on the **toolbar** button shown on the left or right-click anywhere inside the Waveform Viewer, then click [**Split**] from the shortcut menu.



To split the screen while data is being acquired in real-time, display the real-time waveform currently being read on the left of the screen, then display the most recent waveform on the right. Further, to change the waveform on the right of the screen, right-click near a corner on the right screen, then click [**Refresh**] to update to the most recent waveform.



You can also activate the right screen and click the **toolbar** button shown on the left. To activate the screen, click anywhere on the right screen.



During real-time measurement, the cursor cannot be set. If the screen is split during real-time measurement, the cursor cannot be set for the waveform screen on the right only.

5.6.8 Creating New Waveform Display Screens

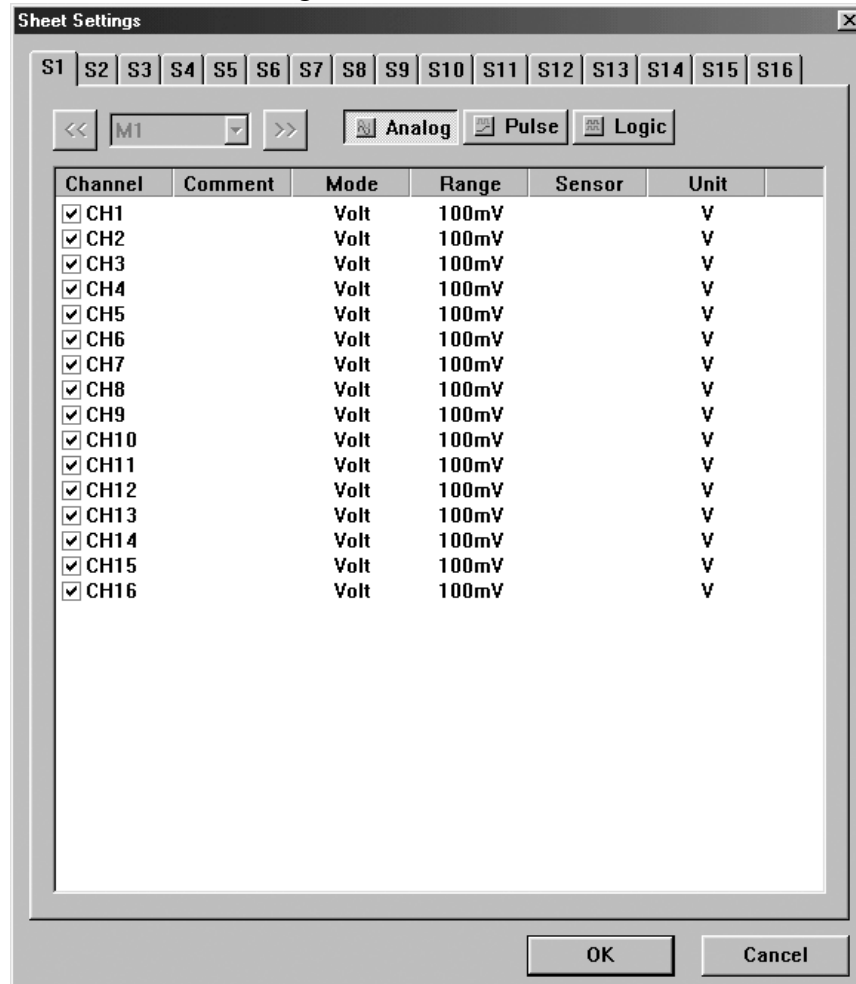
You can create a new Waveform Display screen that is identical to the existing one. You can edit identical waveforms from various other screens.



You can also click the **toolbar** button displayed on the left.

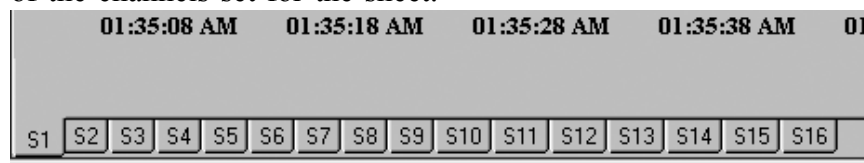
5.6.9 Settings of Waveform Display Sheet

You can display waveforms on up to 16 sheets (S1 to S16). Waveforms of the same channel can be shown on multiple sheets. A single sheet can display up to 64 analog channels, 32 pulse channels, or 32 logic channels. Click [**Screen**] on the menu bar, then click [**Sheet Settings**] to display the "Sheet Settings" dialog box.



Choose a sheet tab (S1 - S16), click the **<Analog>**, **<Pulse>**, or **<Logic>** button, then check the channels you want to display on the sheet. When using an HLW file, select a MEMORY HiLOGGER in the drop-down list (M1 to M16) to set channels for each logger. Click **<OK>** to apply the settings.

Click a sheet tab on the waveform display screen to display the waveforms of the channels set for the sheet.



Right-click a tab to display the pop-up menu. Click [**Edit Sheet Name**] to display the "Enter Sheet Name" dialog box so that you can set a name for the sheet.

5.6.10 Setting Split-Chart

Right-click on the waveform display screen to display the pop-up menu. Click [**Graph Num**] and choose a number of splits from 1 to 16 Screens. The waveform display screen will be split horizontally into the selected number of charts.

The channels to display which charts are set on the "**Display Settings**" page of the information screen.

5.6.11 Displaying Waveform Information

You can confirm waveform information for files that are currently open or being loaded, and a variety of information for analog, pulse, logic, and alarm settings.

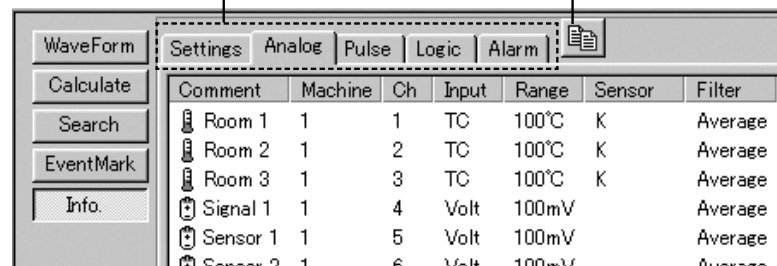
First, display the Information screen (refer to 5.3.2 "Changing the Gage Type").

Next, click <Info> on the Information screen to display the waveform information for the currently displayed sheet.

For alarms, treat the information for S1 as the first MEMORY HiLOGGER and information for S2 as the second MEMORY HiLOGGER.

Select the contents to be displayed.

Click to copy the display value to the clipboard.



Comment	Machine	Ch	Input	Range	Sensor	Filter
Room 1	1	1	TC	100°C	K	Average
Room 2	1	2	TC	100°C	K	Average
Room 3	1	3	TC	100°C	K	Average
Signal 1	1	4	Volt	100mV		Average
Sensor 1	1	5	Volt	100mV		Average
Sensor 2	1	6	Volt	100mV		Average

Chapter 6

Operating The Logging Viewer

6.1 Displaying the Logging Viewer

When a waveform file has been read into the 9334 and the waveform viewer is displayed, clicking [**S**creen] on the menu bar and choosing [**L**ogging View] displays the logging view of the waveform file.

6.2 Numerical Value Display Screen

To change the contents of the display, on the [View] menu, point to [Unit], then click [Analog], [Pulse], [Logic], or [Alarm] and change the contents of the display to Analog, Pulse, Logic, or Alarm.



You can also click either of the **toolbar** buttons shown on the left. Starting from the left: Analog Display, Pulse Display, Logic Display, and Alarm Display are shown.

Absolute	Room 1 [°C]	Room 2 [°C]	Room 3 [°C]	Signal 1 [V]	Sensor 1 [V]	Sensor 2 [V]	Signal 2 [V]	Input 1 [V]	Input 2 [V]
01/24/01 16:55:50	24.71	32.08	45.12	-35.29m	60.045m	30u	-34.75m	5u	-2.7
01/24/01 16:55:50	24.71	32.18	45.22	-11.91m	60.045m	30u	-11.35m	20u	-2.7
01/24/01 16:55:51	24.7	32.22	45.34	12.61m	60.03m	20u	13.5m	10u	-2.5
01/24/01 16:55:51	24.7	32.23	45.3	35.89m	60.055m	25u	36.65m	-5u	-2.5
01/24/01 16:55:52	24.73	32.25	45.26	55.63m	60.045m	15u	56.05m	0	-2.1
01/24/01 16:55:52	24.71	32.21	45.26	69.95m	60.04m	15u	70.4m	20u	-2.4
01/24/01 16:55:53	24.69	32.17	45.31	77.74m	60.035m	0	77.95m	10u	-2.2
01/24/01 16:55:53	24.7	32.24	45.3	77.87m	60.05m	0	77.75m	5u	-1.5
01/24/01 16:55:54	24.67	32.25	45.26	70.325m	60.05m	25u	70m	25u	-1.2
01/24/01 16:55:54	24.69	32.16	45.01	56.195m	60.04m	5u	55.65m	0	-1.7
01/24/01 16:55:55	24.65	32.15	44.8	36.61m	60.04m	15u	36.1m	15u	-2.0
01/24/01 16:55:55	24.67	32.19	44.81	13.455m	60.045m	25u	12.7m	5u	-2.0
01/24/01 16:55:56	24.66	32.28	44.91	-11.005m	60.035m	15u	-12m	0	-1.8
01/24/01 16:55:56	24.64	32.26	44.9	-34.395m	60.035m	25u	-35.15m	25u	-1.4
01/24/01 16:55:57	24.64	32.32	44.75	-54.45m	60.045m	25u	-55.1m	10u	-1.2
01/24/01 16:55:57	24.67	32.3	44.67	-69.24m	60.045m	30u	-69.85m	-5u	-1.0
01/24/01 16:55:58	24.67	32.19	44.57	-77.605m	60.025m	10u	-77.9m	20u	-8
01/24/01 16:55:58	24.66	32.18	44.65	-78.21m	60.025m	5u	-78.45m	0	-8
01/24/01 16:55:59	24.61	32.18	44.75	-70.715m	60.04m	30u	-70.5m	15u	-8
01/24/01 16:55:59	24.62	32.24	44.86	-56.64m	60.03m	20u	-56.25m	-10u	-8
01/24/01 16:56:00	24.63	32.25	44.96	-37.085m	60.025m	35u	-36.6m	0	-7
01/24/01 16:56:00	24.63	32.21	45.02	-13.915m	60.03m	10u	-13.35m	10u	-7
01/24/01 16:56:01	24.66	32.24	45.06	10.625m	60.04m	10u	11.4m	15u	-7
01/24/01 16:56:01	24.65	32.26	44.8	34.07m	60.05m	10u	34.85m	25u	-7

Displays the alarm output status.
Red: Alarm output is active.
Green: No alarm.

For Logic Display, High status is displayed as "1", and Low status as "0". For Alarm Display, "1" is displayed when an alarm is active, and "0" is displayed when no alarm is active. Also for Alarm Display, Sheet 1 (S1) is displayed as the first MEMORY HiLOGGER and Sheet 2 (S2) as the second MEMORY HiLOGGER.

Changing the Channel Display

You can select from 2 types of channel display formats: Comment Display and Channel Display. If a comment is not set for every channel, [CH] is selected, even if you click [Comment].

When CH is selected, channel 3 on the first machine is displayed as "1-3". On the [View] menu, point to [CH Comment], then click [Comment] or [CH].



You can also click the **toolbar** buttons shown on the left. Starting from the left: Comment Display, and Channel Display are shown.

Changing the Display Interval

You can make cropping settings, then change the display interval for the time elapsed.

On the **[View]** menu, point to **[Thin Out]**, then click **[1/1]**, **[1/2]**, **[1/5]**, **[1/10]**, **[1/100]**, or **[1/1000]**.



You can also click the **toolbar** buttons shown on the left.

Changing Waveform Formats for Time Elapsed

For details on display formats, refer to 5.2.2 "Changing the Format of the Time Axis."

On the **[View]** menu, point to **[Time Notation]**, then click **[Absolute Time]**, **[Relative Time]**, **[Sec]**, or **[Sampling No.]**.



You can also click the **toolbar** buttons shown on the left. Starting from the left: Absolute Time, Relative Time, Seconds, and Sampling Number are shown.

Tracing Settings (during measurement)

When the tracing function is active, you can update the display so that the time elapsed follows the values. If this function is inactive, the display is not updated until the data is completely loaded, even if values are displayed all the way to the bottom of the display screen.

To activate or deactivate the tracing function, on the **[View]** menu, click **[Trace]**.



You can also click the **toolbar** button shown on the left.

Copying

On the **[Edit]** menu, click **[Copy]** to copy the display values of the selected lines (text format) to the clipboard, then paste them into another program.



You can also click the **toolbar** button shown on the left.

Click lines to select them.

To select more than one line, hold the **[Ctrl]** key while you click other lines that you want to select.

You can select a block of lines by selecting the first line, then holding the **[Shift]** key while you select the last line of the block.

Chapter 7

Conversion To CSV File and Merging Files

7.1 Conversion to CSV File

You can convert waveform data to a CSV file. By converting data to CSV format, you can read and utilize the data on spreadsheet applications. Data can be fully or partially converted.

7.2 Full Conversion

Click [**File**] on the menu bar, then click [**Convert All**] to display the "**Convent All**" dialog box.

Type in the filename, set any necessary options, then click the <**Save**> button.

7.3 Partial Conversion

Specify an area of data to be converted on the waveform viewer.



Set the save start position. Click the **toolbar** button as shown on the left. Move the mouse pointer to the waveform display area. The pointer will change into a black arrow. Click the position where you want to start conversion. A light-blue "**S**" mark will then appear above the waveform display area.

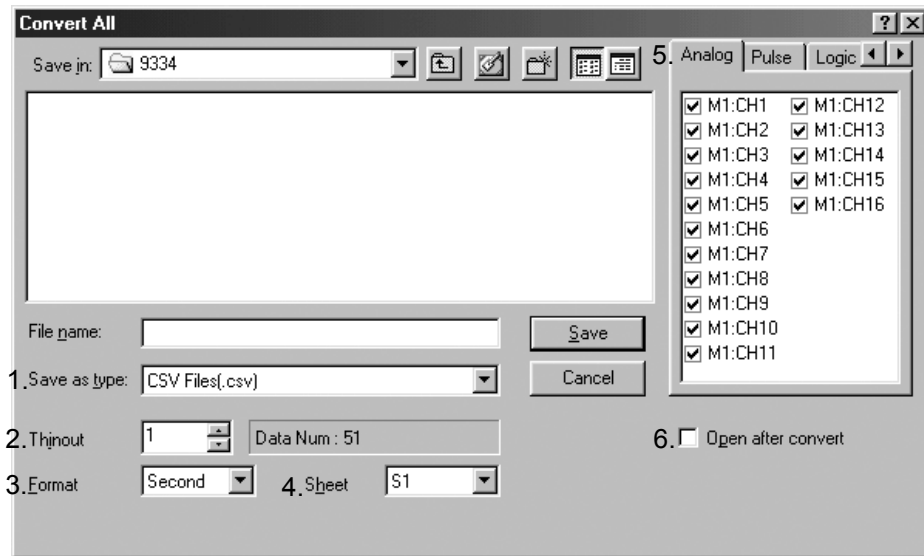


Set the save end position. Click the **toolbar** button as shown on the left. A red "**S**" mark will then appear above the waveform display area.

The area between the two "**S**" marks above will be converted into a CSV file. To change the area, drag the "**S**" marks.

Click [**File**] on the menu bar, then click [**Convert Between Cursors**] to display the "**Convert Between Cursors**" dialog box. Type in the filename, set any necessary options, then click the <**Save**> button.

7.4 Conversion Options



1. Save as type

Select a file type from comma-separated, space-separated, and tab-separated value format.

Choose from the "**Files of Type**" drop-down list.

2. Thinout

Select a number of sampling to set the conversion interval.

3. Format

Select a time axis format from Seconds, Date, Trig Time, and Point.

Choose from the "**Time Axis Format**" drop-down list.

4. Sheet

Select a sheet from the "**Conversion Sheet**" drop-down list. The data of channels set for the selected sheet will be converted.

When [**All Sheets**] is selected, the data of all channels will be converted.

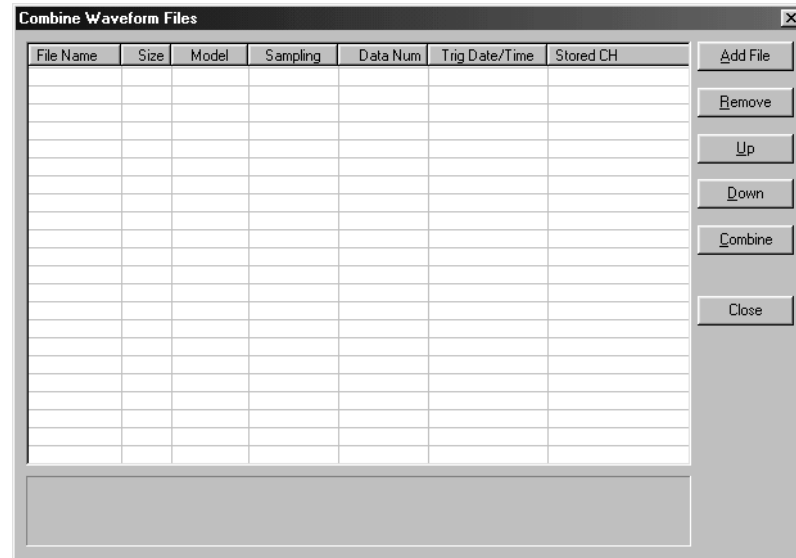
5. Conversion Channel

The channels set for the sheet selected from the "**Conversion Sheet**" drop-down list are listed to the right of the dialog box. Tick Check the channels you want to use to convert the data.

6. Open after convert

Check "**Open after conversion**" to start up the applications software associated with CSV file (or Text file) after conversion and open the converted file.

From the [File] menu, select [**Combine Waveform Files**] to display the "Combine Waveform Files" dialog box.



If you click the **<Combine>** button, the file dialog box opens. Specify the name of a file and whether you want to store the file.

Chapter 8

Printing

You can print out measurement data saved on a PC card from the MEMORY HiLOGGER (as MEM format binary file) and measurement data acquired by Logger Communicator (as HLW format binary file).

8.1 Detail Printing

8.1.1 Print Reference

While the window of the waveform file you want to print is active, click [**File**] on the menu bar, choose [**Waveform Detail Print**], then [**Print**] to display the "Print" dialog box. Complete the settings of the printer and printing area, then click the <OK> button. The printer will then start printing using the current print reference settings.

8.1.2 Detail Print Preview

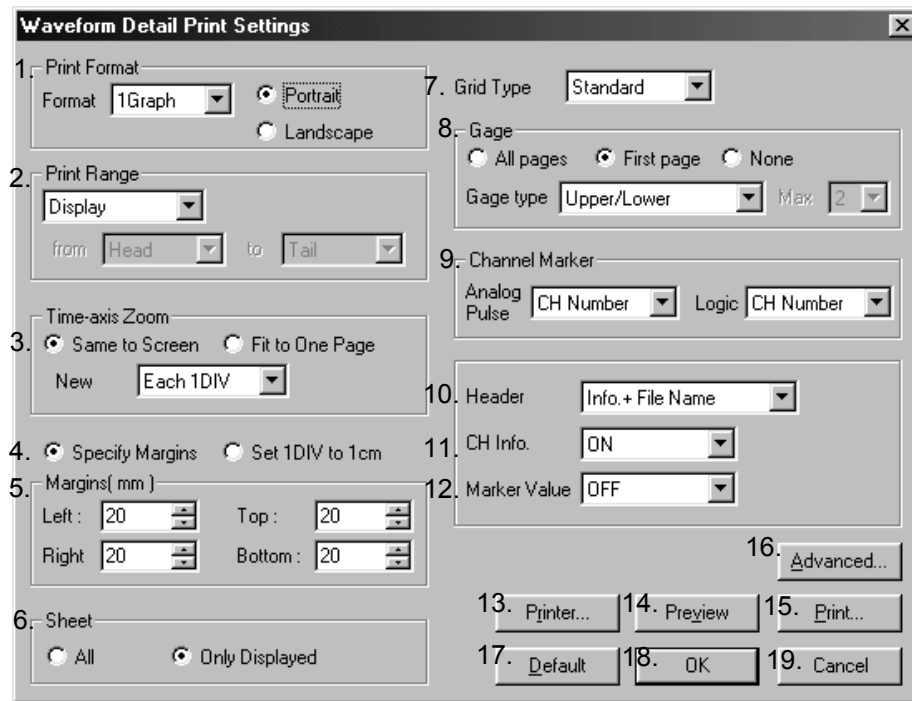
While the window of the waveform file you want to preview the print image is active, click [**File**] on the menu bar, choose [**Waveform Detail Print**], then [**Preview**]. A preview of the print image will then be displayed according to the current print preference settings.



When using Windows 95/98/Me, note that the image may not be printed correctly on A3 paper due to OS specifications. Therefore, increase the page margins to reduce the print area when printing on A3 paper.

8.1.3 Detail Printing Settings

Click [**File**] on the menu bar, choose [**Waveform Detail Print**], then [**Page Settings**]. The "**Waveform Detail Print Settings**" dialog box will then appear as shown below. The settings made in this dialog box will be applied to the printing of all waveform files.



1. Print Format

Select a print format.

Set a number of partitions on the waveform chart by selecting one from [**1 Graph**] to [**16 Graphs**] in the "**Format**" box for printing channels allocated to each chart. The allocation of each channel is determined according to the split chart settings.

The selection of [**2 Rows**] to [**16 Rows**] determines the number of lines for printing the chart. The print area on a page can be lengthened in the time axis direction. Increasing the number of lines reduces the number of logic waveforms that can be printed (and waveforms with smaller position numbers are printed first).

"**Portrait**" and "**Landscape**" are printing directions.

2. Print range

Set the area to print.

[**Display**] prints the area currently displayed on the screen.

Selecting [**All**] prints entire Waveform.

[**Selection**] specifies an area from choices "**Head**", "**Tail**", "**Cursor A**", "**Cursor B**." Note that a cursor not displayed (cursor A or B) cannot be selected.

3. Time-axis Zoom

Selecting [**Same as Screen**] prints data using the same time axis magnification as that of the chart shown on the screen. Any data exceeding one page will be printed on multiple pages.

[**Fit to One Page**] automatically reduces the time axis magnification so that the data is printed on one page only.

Selecting [**Each 1DIV**] for the "Page Break" setting causes the printer to end a page at every division. Selecting [**Each 5DIV**] causes the printer to end a page at every five divisions. These options cannot be selected when [**Fit to One Page**] is selected.

4. Specify margins/Set 1DIV to 1cm

[**Specify Margin**] allows you to specify the left, right, top, and bottom margins in units of 1 mm. The chart size will be reduced according to the margins set.

[**Set 1DIV to 1cm**] prints the data with a grid set to 1 cm. With some printers, all data may not be printed.

Printing with a grid of 1 cm is only available for printing on A4 and A3 paper. When printing on other size of paper, choose [**Specify Margin**].

5. Margins

Set the left, right, top, and bottom margins in increments of 1 mm.

6. Sheet

Set the sheet to print. Choose [**All**] or [**Only Displayed**].

7. Grid type

Select a type of grid from [**OFF**], [**Standard**], [**Detail**], and [**Time-axis**].

8. Gage

Select a type of gage from [**Upper / Lower**] and [**Detail**]. [**Upper / Lower**] prints the upper and lower limit values of each channel only. [**Detail**] prints the upper and lower limit values and the values on all scale graduations. One gage is printed for every channel. Therefore, print areas for waveforms will be reduced when there are many channels.

[**Max**] sets the maximum number of detail gages to print per chart. If there are more channels than the maximum number set, the gages will be printed for channels with higher display priority. Note that some printing formats may provide fewer gages than specified in this setting.

9. Channel Marker

Set a print method for the channel markers of analog and logic waveforms. Choose [**OFF**], [**CH Number.**], or [**Comment**]. Selecting [**Comment**] without setting a comment for a channel will only print the CH No. for that channel.

10. Header

Specify the information you want to include in the header. Select "**Measurement Info.**", "**Info.+Title Comment**", or "**Info.+File Name.**"

11. CH Info.

Set whether to print channel information (e.g., range and display magnification). Choose [**OFF**] or [**ON**].

12. Marker Value

Specify whether you want to print measurement value at cursor A and B, event marker respective positions. Select "**OFF**", "**Cursor**", "**Event Marker**" or "**Both**".

13. Printer...

The "**Printer Settings**" dialog box will appear.

14. Preview

The print preview will be displayed according to the current detail print settings.

15. Print...

The "**Print**" dialog box will appear to initiate printing.

16. Advanced...

The "**Advanced Settings**" dialog box will appear. This box allows you to select a line for the chart, a character font, or to edit various other settings.

17. Default

Initialize the detailed print setting.

18. OK

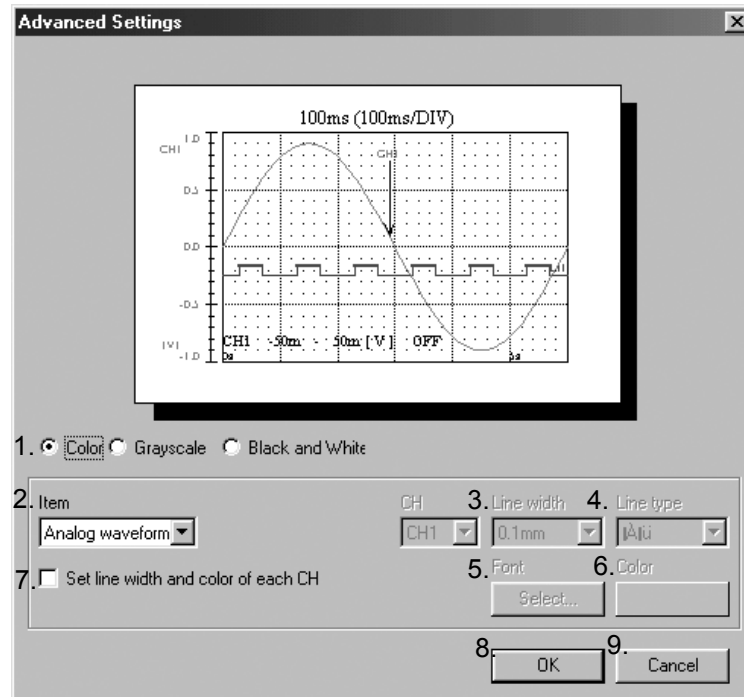
End the setting.

19. Cancel

Close the dialog box without applying the changes. Clicking the <**Preview**> button applies the changes made thus far. Clicking the <**Cancel**> button after performing Preview does not retain the settings made before the Preview.

8.1.4 Advanced Settings

Click the <Advanced...> button in the "Waveform Detail Print Settings" dialog box to display the "Advanced Settings" dialog box. This box allows you to select a line for the chart, a character font, or to edit various other settings as shown below.



1. Print Color

Select from [Color], [Gray scale], or [Black and white].

2. Item

Select a portion of the chart to which to apply the new settings. The following settings are applied to the portion selected here.

3. Line Width

Select a width of the line used for the waveform and grid.

4. Line Type

Select the type of line used for printing the grid, vertical line, and horizontal line (Solid line/Dot line).

5. Font

Click the <Select...> button to open the "Font" dialog box. Select a character font.

6. Color

Click the <Color> button to open the "Color" dialog box. Select a color.

7. Set line width and color of each CH.

This setting is available when [Analog waveform], [Pulse waveform], or [Logic waveform] is selected for the "Item" setting.

Selecting this option allows you to configure the setting of each channel. Note that the line width and color shown on the screen will be used when this option is not selected.

8. OK

End the setting.

9. Cancel

Close the "**Advanced Settings**" dialog box without applying the changes.

8.2 Screen Printing

8.2.1 Screen Printing

While the window of the waveform file you want to print is active, click [**File**] on the menu bar and choose [**Screen Print**], then [**Print**]. The "**Print**" dialog box will then appear. Complete the printer settings and click the <**OK**> button. The printer will start printing using the current screen print settings.

8.2.2 Screen Print Preview

While the window of the waveform file you want to preview is active, click [**File**] on the menu bar, choose [**Screen Print**], then [**Preview**]. A preview will be displayed according to the current screen print settings.

8.2.3 Screen Printing Settings

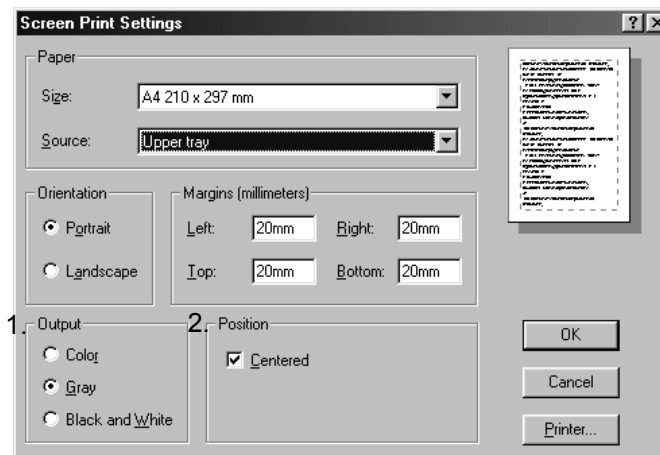
Click [**File**] on the menu bar, choose [**Screen Print**], then [**Page Settings**]. The "**Screen Print Settings**" dialog box will then appear. The settings made in this dialog box will be applied to the screen printing of all waveform files.

1. Output Color

Choose an output color option from [**Color**], [**Gray Scale**], and [**Black and White**].

2. Position

When [**Print in the center of paper**] is checked, the image is printed in the center of paper.



8.3 Logging Printing

8.3.1 Logging Printing

While the logging window of the waveform file you want to print is active, click [**File**] on the menu bar and choose [**Logging Print**]. The "**Print**" dialog box will then appear. Complete the printer settings and click the <OK> button. The printer will start printing using the current logging print settings.

8.3.2 Logging View Print Preview

While the logging window of the waveform file you want to preview is active, click [**File**] on the menu bar, then choose [**Logging Print Preview**]. A preview will be displayed according to current logging print settings.

8.3.3 Logging Print Settings

Click [**File**] on the menu bar, then choose [**Page Settings**].to display the "**Logging Print Settings**" dialog box. The settings made in this dialog box will be applied to the logging printing of all waveform files. Parameters on the "**Logging Print Settings**" dialog box are following.

1. Orientation

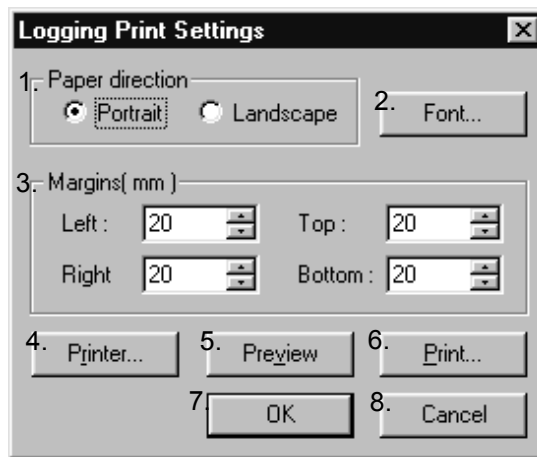
Set the page orientation. Choose [**Portrait**] or [**Landscape**].

2. Font

Click the <**Font**> button to open the "**Font**" dialog box. Select a printing font.

3. Margins

Set the left, right, top, and bottom margins in units of 1 mm.



4. Printer

Display the "**Set Printer**" dialog box.

5. Preview

A print preview is displayed according to the current logging print settings.

6. Print

Displays the **print** dialog box to let you begin printing.

7. OK

Click **OK** to finish entering settings.

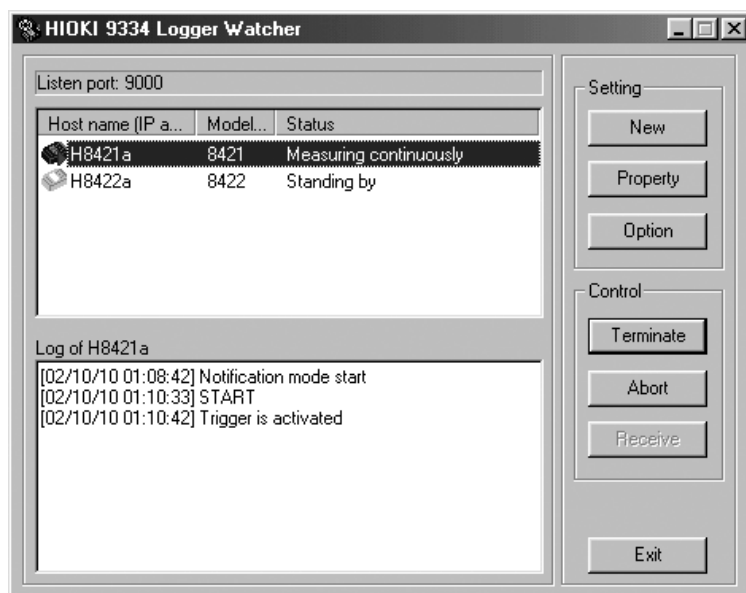
8. Cancel

The dialog box is closed, without saving the changes you entered just now. (If you used Preview to preview the print image, changes made by that point are applied. Selecting Cancel after preview will not restore the original settings in place before the preview.)

Chapter 9

Logger Monitoring

You can monitor and control multiple MEMORY HiLOGGERS on a single PC via a LAN. You can also send waveform data stored in logger memory to the PC.



9.1 Startup

Click the <Start> button on Windows. Choose [Programs] - [HIOKI] - [9334 Logger Communicator] - [Logger Monitoring] to start up the logger-monitoring program (Logger Watcher).

To quit the program, click the <Exit> button or click the **close** button in the top-right corner of the window.

9.2 Monitoring Settings

Before starting logger monitoring, register a logger to monitor on the logger-monitoring program and complete necessary settings (including IP address).

9.2.1 New Logger Registration

Click the <**Register**> button to display the "**Register**" dialog box. Complete the settings of the logger to monitor as shown below.

Connection

IP Address

Type in the IP address of the logger to monitor.

Port

Set the port number used for communications with the logger. If the port number setting has not been edited on the logger, leave the "**8800**" default setting. For details, see 2.4, "LAN Settings."

Timeout

Set the timeout limit to use during communications with the logger. If the logger doesn't respond within the seconds set here, the line will be disconnected.

Start watching at starting up

Selecting this option will automatically begin monitoring when the logger-monitoring program starts up.

Waveform receiving settings

Set at every reception/Set in advance

When [**Set at every reception**] is selected, you will be prompted for "**Save Folder**" location and "**Filename**" every time you receive waveform data.

When [**Set in advance**] is selected, waveform data will be received according to the "**Save Folder**" and "**Filename**" settings made beforehand.

Save Folder

This setting is available when selecting [**Set in advance**]. Type in the name of the folder to save received waveform files. Clicking the ">>" button displays the "**Browse**" dialog box so that you can select a folder there.

File Name

This setting is available when selecting [**Set in advance**]. Type in the filename for received waveform files. The files are saved using the set filename with added serial numbers.

OK/Cancel

Click the <**OK**> button to register the logger for the logger-monitoring program and display it in the list.

Click the <**Cancel**> button to cancel the settings.

9.2.2 Changing Monitoring Settings

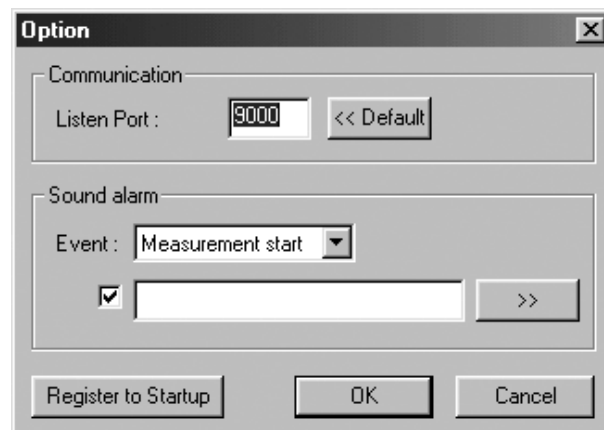
You can change the monitoring settings of loggers registered for the logger-monitoring program. Select a logger you want to change the monitoring settings from the list. Click the <**Properties**> button to display the "**Properties**" dialog box. The settings in this dialog box are the same as those in the "**Register**" dialog box.

9.2.3 Deleting a Registered Logger

Select a logger you want to delete from the list, then press the Delete key.

9.3 General Settings

Click the <**Option**> button to display the "**Option**" dialog box. This dialog box allows you to edit the general settings of the logger-monitoring program as shown below.

**Listen Port**

Set a port number used to receive events from the loggers. If the port number setting has not been edited on the logger, leave this at the "9000" default setting. For details, see 2.4, "LAN Settings."

Click the <**Default**> button to reset the port number to "9000."

Sound alarm

You can set a sound alarm to play a set sound (WAV file) when receiving an event from a logger. Select an event from the "**Event**" drop-down list, check the box, then type in the path of the WAV file in the edit box.

Clicking the < **Browse...** > button displays the "**Browse**" dialog box so that you can select the WAV file there.

If the box is not checked, a sound won't be played for the event. For types of events, see 9.4.1, "Starting/Ending Monitoring."

Register to startup

Click the <**Register to startup**> button to add the logger-monitoring program to the Windows startup menu.

OK/Cancel

Click the <**OK**> button to apply the settings.

Click the <**Cancel**> button to close the dialog box without applying the settings.

9.4 Control

When a logger is registered for monitoring, the logger can be controlled on a PC. For example, you can start and end monitoring, start and interrupt measurement, and receive waveform data in logger storage memory.

9.4.1 Starting/Ending Monitoring

Select a logger from the list and click <**Watch**>. Monitoring of the logger will begin and current logger status will be displayed under "**Status**" on the list. The following types of status will be displayed:

Standing by

The logger is idle.

Waiting for trigger

The logger is waiting for a trigger.

Measuring

The logger is performing measurement. The measurement end time will be displayed.

Measuring continuously

The logger is performing continuous measurement.

Saving text

The logger has completed measurement and it is now saving text data to a PC card.

If the status changes during monitoring, the logger sends out an event and the status on the list will be changed. The event will be recorded in the log. An event log is created separately for each registered logger. To display the log of a logger, select the logger from the list.

Loggers will send the following events:

Measurement start

Sent when measurement is started.

Trigger notification

Sent when a trigger is activated.

Measurement end

Sent when the set recording time of measurement has been reached.

Text saving end

Sent when text data has been saved to a PC card.

Measurement abort

Sent when measurement is interrupted.

Real-time measurement start

Sent when real-time measurement is started via the 9334 LOGGER COMMUNICATOR. When this event is received, the 9334 stops monitoring the logger.

Alarm

Sent when an alarm occurs. (8420-01, 8421-01 Ver2.00 or later)

Notification mode start

Sent when monitoring by the logger-monitoring program is started by operation on the logger.

Notification mode end

Sent when monitoring by the logger-monitoring program is ended by operation on the logger.

Listener change

Sent when another logger-monitoring program starts monitoring. When this event is received, the 9334 stops monitoring the logger.

Selecting the monitored logger on the list and clicking [**End Monitor**] ends monitoring.

9.4.2 Starting/Aborting Measurement

You can start or abort measurement of the logger being monitored.

Select the logger you want to control from the list, then click the <**Storage**> or <**Abort**> button.

9.4.3 Receiving Waveform Data

You can receive waveform data saved in the storage memory of the logger being monitored.

Select the logger you want to receive the waveform data from the list, then click the <**Receive**> button. The "**Receive Waveform Data**" dialog box will then appear provided that [**Set at every reception**] is selected on "**Properties**" for the logger. Type in the location where to save the data and the filename. Then click the <**Receive**> button.

After the data has been received, the path of the file will appear on the log. Move the mouse pointer to the line where the file path is displayed, and double-click it to open the file on the 9334 LOGGER COMMUNICATOR. You can also right-click the line to open a pop-up menu. Choose [**Open**] or [**Explorer**] to open the file or to browse using Explorer.

9.5 Starting/Ending Monitoring by Operating the Logger

You can control the logger-monitoring program on a logger to start or end logger monitoring. On page 2 of the logger communications settings, enter the IP address of the PC, which runs the logger-monitoring program in "**IP Address**" of [**Monitor Server**] and enter the number set as the "**Listen Port**" No. (default 9000) of the monitoring program's general settings in "**Port**". Then turn ON [**Monitor Server**] to start monitoring by the logger-monitoring program.

Any logger not registered for the logger-monitoring program will be automatically registered. Turn OFF [**Monitor Server**] to end monitoring.

9.6 Other

When an event is received from a logger not selected from the list (i.e., when the log of the logger is not displayed), "**Status**" will be displayed in red to report an event received from that logger. When you select the logger in red and display its log, the logger's color will revert to the normal color.

HIOKI 9334 LOGGER COMMUNICATOR

Instruction Manual

Publication date: January 2004 Revised edition 2

Edited and published by HIOKI E.E. CORPORATION

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Printed in Japan 9334A981-02

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9334A981-02 04-01H



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