HIOKI

Instruction Manual

DATA VIEWER for 3145

Contains information about PC software which can analyze the measurement data recorded by the 3145-20 NOISE HiLOGGER.

HIOKI E. E. CORPORATION

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Introduction

The following instruction manuals are included with the 3145-20 NOISE HiLOGGER. Refer to them as they pertain to your usage of the instrument.

Manual		Content
1	Measurement Guide	**Read first.** Offers an introduction to the 3145-20's basic measuring method for first time users.
2	Instruction Manual	Contains explanation and instructions regarding the instrument's operating method and functions.

CD		Content
3	"DATA VIEWER for 3145" Instruction Manual (this manual)	Contains information about PC software which can analyze the measurement data recorded by the instrument.
4	"Communications" Instruction Manual	Explains the communication functions which can be used via the LAN and RS-232C interfaces.
5	"Communication Commands" Instruction Manual	Explains the commands for remote control of the instrument via the LAN and RS-232C interfaces.

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Notation

Symbols The following symbols in this manual indicate the relative importance of cautions and warnings.

⚠CAUTION	Indicates that incorrect operation presents a possibility of injury to the user or damage to the instrument.
NOTE	Indicates advisory items related to performance or correct operation of the instrument.

(⇒ p.)	Indicates the location of reference information.
	Indicates quick references for operation and remedies for troubleshooting.
*	Indicates that descriptive information is provided below.
[ ]	Menus, commands, dialogs, buttons in a dialog, and other names on the screen and the keys are indicated in brackets.
	Dialog box represents a Windows dialog box.

Mouse Operations

Click	Press and quickly release the left button of the mouse.
Right-click	Press and quickly release the right button of the mouse.
Double click	Quickly click the left button of the mouse twice.
Drag	While holding down the left button of the mouse, move the mouse and then release the left button to deposit the chosen item in the desired position.

Outline of this Software

Measurement data recorded from a 3145-20 NOISE HiLOGGER to a PC card using the application software "DATA VIEWER for 3145" can be downloaded to a personal computer and analyzed.

Features of the "DATA VIEWER for 3145"

- **Waveform display**
  Displays measured data as waveforms.

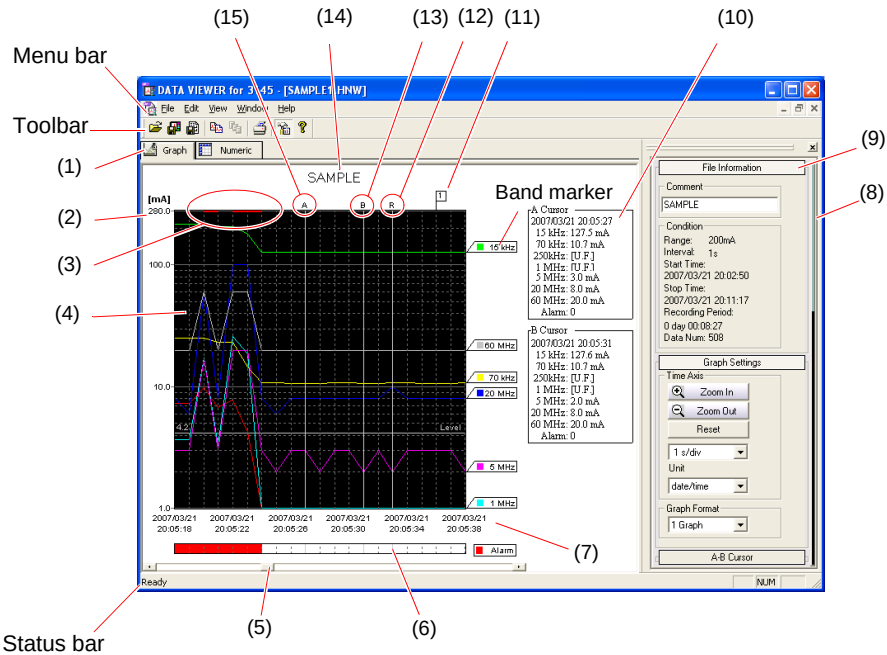
- **Search functions**
  Data searches can be made using specified conditions.

- **Text conversion**
  Converts measured data to text formats allowing for processing using spreadsheet software such Excel, etc.

- **Printing**
  Waveforms can be printed.

  For details on how to install and activate the software program "DATA VIEWER for 3145", please refer to "Chapter 8 Using the CD" in the accompanying instruction manual.

Explanation of Screens



(This figure illustrates a graph screen)

(1)	Graph - numerical value display switching tab	Switching between graph and numerical value displays for measured data. (⇒ p. 13)
(2)	Level	Graph vertical scale. Logarithmic display.
(3)	O.F. display	Red markers are used to indicate locations where measured data has overflowed. For details regarding data overflows, please refer to section "3.4 "O.F." Display and "U.F." Display" in the accompanying instruction manual.
(4)	Graph display	Displaying measured values for each band (7 waveforms) as time series graphs.
(5)	Scroll bar	Scrolling waveforms. (⇒ p. 14)
(6)	Alarm display	Displaying alarm conditions when making measurements with alarms on. Please refer to section "4.5 Using the Alarm Function" in the accompanying instruction manual.
(7)	Time	Graph horizontal scale. Displays can be chosen from time and date, number of seconds after recording has commenced, and data numbers.
(8)	Scroll bar of control bar	Scrolling the control bar up and down.
(9)	Control bar	Performing a variety of different operations. (⇒ p. 10)
(10)	Cursor value display	Displaying the measured values for the positions of cursors A/B. (Cursor values will not be displayed if cursors A/B are not displayed.)
(11)	Event marker	Event marks recorded using the NOISE HiLOGGER. (⇒ p. 20)
(12)	Search bar	Displaying the positions of search results. Search bars can be deleted by right clicking on the search bar.
(13)	B cursor	Moving by dragging with a mouse. (⇒ p. 17)
(14)	Title comment	Making settings using the **[File Information]** tab comment input box. (⇒ p. 15)
(15)	A cursor	Moving by dragging with a mouse. (⇒ p. 17)

Menu bar

File menu

Menu	Explanations
Open	Reading measured data. (⇒ p. 11)
Close	Closing measured data that is currently being displayed. (⇒ p. 12)
Save	Overwriting measured data. (⇒ p. 30)
Save As	Saving measured data under a new file name. (⇒ p. 30)
Save in CSV	Saving data in CSV format. (⇒ p. 29)
Save Graph in BMP	Saving graphs in bitmap format. (⇒ p. 31)
Save Graph in WMF	Saving graphs in Enhanced Meta File format. (⇒ p. 31)
Print Graph Setup	Making graph print settings. (⇒ p. 27)
Print Graph Preview	Displaying print previews before printing graphs. (⇒ p. 27)
Print Graph	Printing graphs. (⇒ p. 27)
Print Numeric Setup	Making settings for printing numerical values. (⇒ p. 37)
Print Numeric Preview	Displaying print previews before printing numerical values. (⇒ p. 37)
Print Numeric	Printing numerical data. (⇒ p. 37)
Exit	Closing the "DATA VIEWER for 3145".

Edit menu

Menu	Explanations
Copy Color Setting	Setting colors for graph hard copies. (⇒ p. 26)
Copy Format	Setting formats for graph hard copies. (⇒ p. 26) Select either "BMP" or "Meta File".
Copy Graph	Copying graph images to the clipboard. (⇒ p. 26)
Copy Numeric Text	Copying numerical data selected in the numerical data display screen to the clipboard. (⇒ p. 36)
Jump to Graph	Displaying graphs at selected data positions in the numerical data display screen. (⇒ p. 36)
Search Result	Redisplaying search result lists.

View menu

Menu	Explanations
Toolbar	Switching between toolbar display/nondisplay.
Status Bar	Switching between status bar display/nondisplay.
Control Bar	Switching between control bar display/nondisplay.
Graph View	Switching to graph screens.
Numeric View	Switching to numerical value displays.

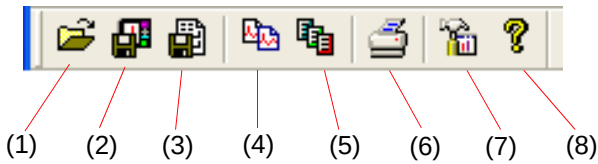
Window menu

Menu	Explanations
Cascade	Arrange windows so they overlap.
Tile	Arrange windows as non-overlapping files.
Arrange Icons	Arrange icons at the bottom of the window.

Help menu

Menu	Explanations
Version Info	Displaying software version information.

Toolbar



	Explanations	Menu bar
(1)	Open	[File] - [Open]
(2)	Save	[File] - [Save]
(3)	Save in CSV	[File] - [Save in CSV]
(4)	Copy Graph	[Edit] - [Copy Graph]
(5)	Copy Numeric Text	[Edit] - [Copy Numeric Text]
(6)	Print Graph	[File] - [Print Graph]
(7)	Control Bar	[View] - [Control Bar]
(8)	Version Information	[Help] - [Version Info]

Pop-up Menus

Pop-up menus can be displayed by right clicking on the screen.

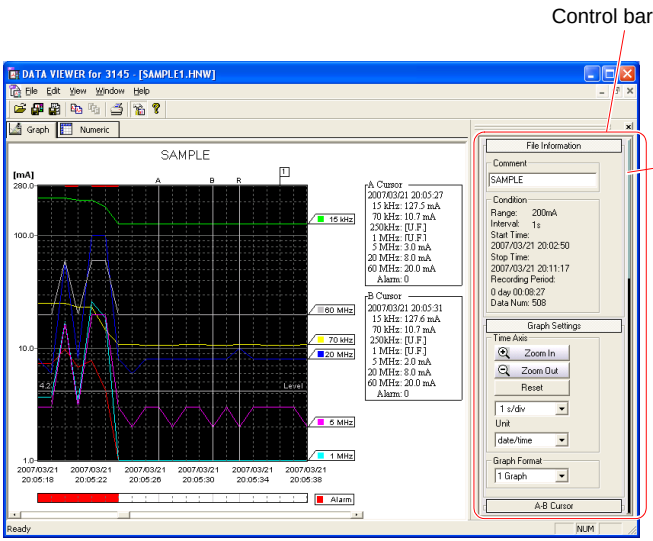
Graph screen

Menu	Explanations
Jump to A cursor Posi.	Jumping to A cursor locations.
Jump to B cursor Posi.	Jumping to B cursor locations.
Put A cursor	Placing the A cursor in a location you have right clicked.
Put B cursor	Placing the B cursor in a location you have right clicked.
15kHz to 60MHz, OFF	Highlighting the waveform of a selected band. Highlighting can be cancelled by selecting "OFF". (⇒ p. 14)

Numerical value display screens

Menu	Explanations	Menu bar
Copy Numeric Text	Copying selected numerical data to the clipboard.	[Edit]-[Copy Numeric Text]
Jump to Graph	Displaying graphs at selected data positions in the numerical data display screen.	[Edit]-[Jump to Graph]

Control Bar

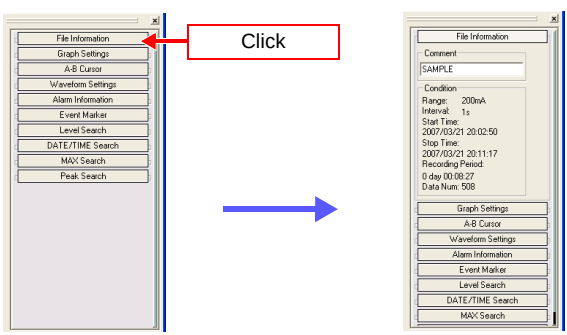


1. When the control bar is not currently being displayed, go to the Menu bar and click [View] - [Control Bar].

The control bar can also be displayed by clicking  in the toolbar.

2. Click group names to display setting items.

Setting items can be closed by clicking the group name once more.



Loading Measured Data

In order to use the PC card in your computer, please prepare a compact flash card reader or a PC card reader.

1. **Copy measured data (file extension HNW) saved to a PC card using the NOISE HiLOGGER to your computer's hard disk drive.**
Measured data can also be loaded directly from a PC card.

2. **An [Open] dialog box can be displayed by clicking [File] - [Open] in the Menu bar.**

Files can also be opened by clicking  **in the toolbar.**

3. **Click the measured data to be displayed.**

4. **A graph screen for the selected measured data can be displayed by clicking [Open] .**

NOTE

- Measured data saved to the PC card inserted in the 3145-20 NOISE HiLOGGER can also be transferred to your computer by using a LAN. For details regarding data transfer methods using a LAN, please refer to the "Communications" instruction manual (see the accompanying CD).

- When loading large-volume files
  It may not be possible to read files when file volumes exceed 100 MB due to computer memory volume and OS limitations.

Closing Measured Data

Closing measured data which is currently open.

1. **Click [File] - [Close] in the Menu bar.**

2. **If changes have been made to the opened file, the confirmation message "Save changes to document?" will be displayed.**

3. **If you wish to overwrite and close the file, click [Yes] . (⇒ p. 30)**

If you wish to close the file without overwriting, click **[No]** .
The file can be left open by clicking **[Cancel]** .

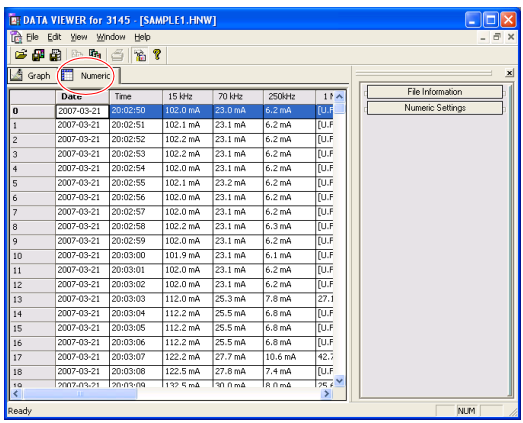
The same confirmation message will be displayed when exiting the application.

Switching between Graph and Numerical Value Displays

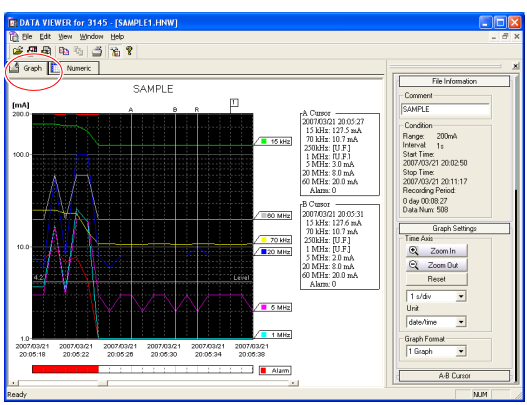
Switching between graph and numerical value displays can be carried out using the tab located at the top left hand side of the screen.

1. Clicking the graph-numerical value display switching [Numeric] tab will display the numerical value screen.

The following columns are displayed in order from left to right.
Data number, Date, Time, 15 kHz measured data, 70 kHz measured data,,, 60 MHz measured data, Alarm status, Overflow status, Event marker number, Event marker comment.



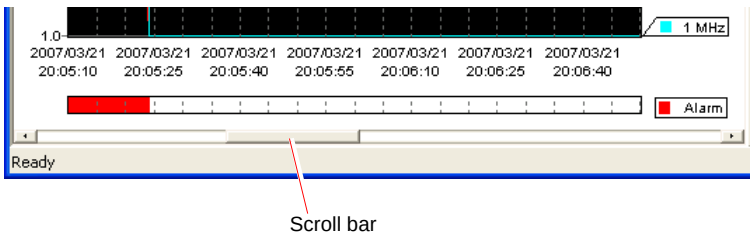
2. Clicking the graph-numerical value display switching [Graph] tab will display the graph screen.



Using the Graph Screen

Scrolling Waveforms

Waveforms can be scrolled by using a mouse to move the scroll bar located at the bottom of the screen.

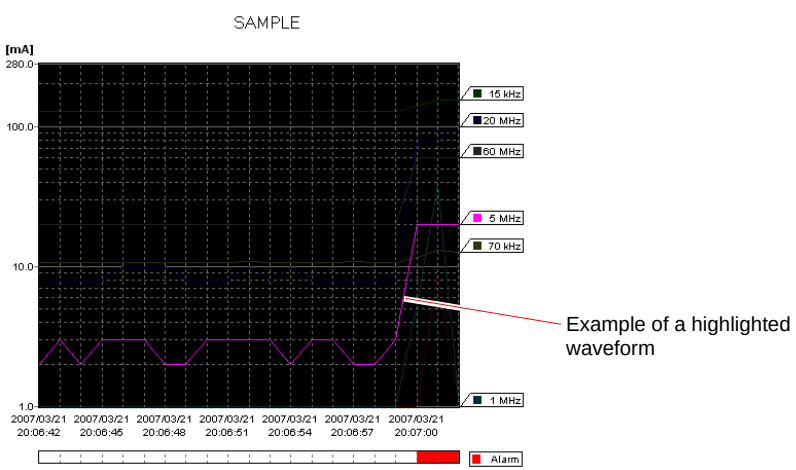


Highlighting Waveforms

1. By clicking a waveform, the colors of remaining waveforms will fade.

The band that you wish to highlight can also be selected by right-clicking the screen and selecting a band from the pop-up menu that appears.

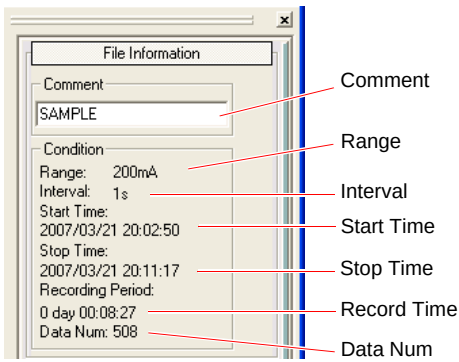
2. Waveform colors can be restored by clicking any other part of the graph screen.



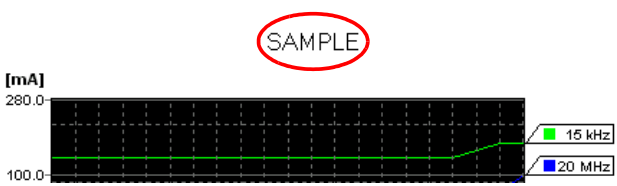
Confirming File Information

Measurement information for loaded files can be viewed.

1. Measurement conditions can be displayed by clicking [File Information] in the control bar.



2. Comments entered will be displayed in the upper center portion of the graph screen.

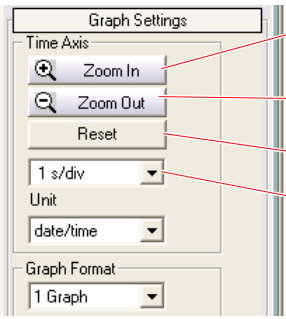


NOTE Entered comments can be saved to files by saving using the 3145 format. (⇒ p. 30)

Graph Settings

Waveform displays can be modified (compressed, expanded displays, etc.).

1. Setting items can be displayed by clicking [Graph Settings] in the control bar.



2. Set the time axis.

Settings can be chosen from time periods displayed within one screen and times per division. These settings are linked with the **[Zoom In]** and **[Zoom Out]** buttons.

Selectable items	Explanations
All	Displays all data within one screen.
Month	Displays data for one month in one screen. (When more than 30 days of data have been recorded.)
Week	Displays data for one week in one screen. (When more than 7 days of data have been recorded.)
Day	Displays data for one day in one screen. (When more than one day of data has been recorded.)
Time/div	Selecting time per division.

3. Time units can be selected from the [Unit] combo box when the time axis display needs to be altered.

Selectable items	Explanations
date/time	Time axis is displayed as date and time.
sec	Time axis is displayed in seconds.
count	Time axis is displayed in data numbers.

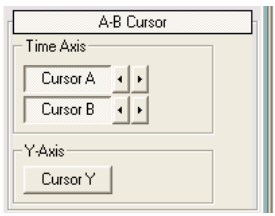
4. Select [Graph Format].

Selectable items	Explanations
1 Graph	Seven band waveforms are displayed in one graph.
7 Graph	Graphs for each of the seven band waveforms are displayed.

A-B Cursors

Measured values for the locations of the cursors can be read.

1. Setting items can be displayed by clicking [A-B Cursor] in the control bar.



2. The A cursor can be displayed by clicking [Cursor A] .

Measured values for the location of the cursor will be displayed on the right hand side of the graph.
The cursor can be hidden by clicking on **[Cursor A]** once more.

3. The cursor can be moved by clicking the / buttons to the right of [Cursor A] . (One click is equivalent to one data step.)

4. Cursor bars within waveforms can also be moved by dragging them with a mouse.

5. A menu can be displayed by right-clicking on a location in which a cursor is to be placed.

6. Cursor A will move to the right-clicked location on selecting [Put A cursor] from the menu.

(This method is valid even if the cursors are not displayed.)
The same procedure applies to Cursor B.

Displaying the Y-axis cursor

1. The horizontal cursor bar can be displayed in the graph by clicking [Cursor Y] .

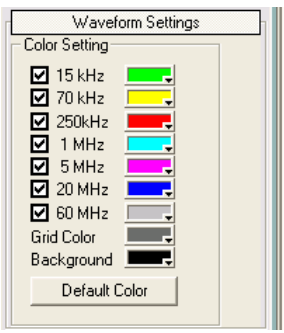
The measured value will be displayed above the far left portion of the horizontal cursor bar.
The cursor can be hidden by clicking **[Cursor Y]** once more.
The Y cursor cannot be used while the 7 Graph display function is being used.

2. The horizontal cursor bar can be moved up and down by dragging with a mouse.

Waveform Settings

Waveform colors for each band, grid colors and background colors can be modified.

1. **Setting items can be displayed by clicking [Waveform Settings] in the control bar.**



2. **Color palettes can be displayed by clicking on the color boxes of the bands to be changed.**

3. **The user then selects appropriate colors.**

If desired colors are not available in the color palettes, new colors can be created by clicking the icons located in the bottom right hand corners of the color palettes.
When returning colors to their original settings, clicking **[Default Color]** will return color settings to those when the file was first read. (All set colors)

Switching between display/nondisplay of band waveforms

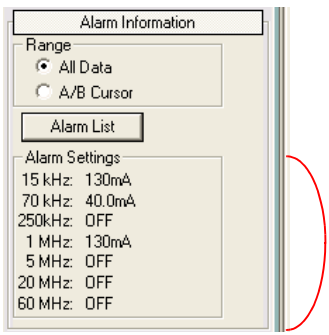
1. **Each waveform can be displayed by clicking the corresponding checkbox to place a ☑ mark.**

2. **Waveforms can be hidden by removing the ☑ marks.**

Alarm Information

In the case of data measured using alarm functions, measurement positions which include alarms can be found using searches.

1. Setting items can be displayed by clicking [Alarm Information] in the control bar.



These are alarm judgement values set for each band. Bands for which values have not been set have **[OFF]** displayed next to them.

2. Set ranges.

Selectable items	Explanations
All Data	Covers the entire data range.
A/B Cursor	When the A/B cursors are displayed, searches can be performed covering the range between the cursors.

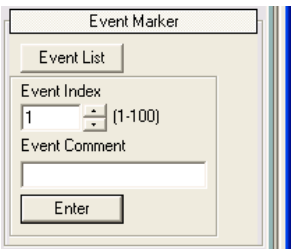
3. An alarm list can be displayed by clicking [Alarm List] .

A list is displayed showing only those points where the alarm status changes from off to on. Please refer to "Jumping to positions retrieved"(⇒ p. 25) and "Copying numerical values to the clipboard"(⇒ p. 25).

Event Markers

Searches can be made for positions labeled with event markers.

1. Setting items can be displayed by clicking [Event Marker] in the control bar.



2. An event marker list can be displayed by clicking [Event List] .

Please refer to "Jumping to positions retrieved"(⇒ p. 25) and "Copying numerical values to the clipboard"(⇒ p. 25).

Attaching comments to event markers

Comments can be attached to each event marker.

1. Select the [Event Index].

2. Enter a comment in the [Event Comment] box.

3. The comment can be attached to the event marker by clicking [Enter] .

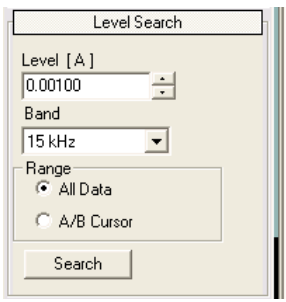
This comment will be displayed in the **[Event Comment]** column in the numerical value display screen. In addition, comments will also be printed out when graphs are printed.

NOTE
- Set comments can be saved in files by saving using the 3145 format. (⇒ p. 30)
- Comments are not displayed in graph screens.

Level Searches

Searches for positions that intersect specified levels (positions of waveforms that intersect specified levels from below) can be made.

1. Setting items can be displayed by clicking [Level Search] in the control bar.



2. Set the level.

3. Select the band to be searched.

4. Set the range.

Selectable items	Explanations
All Data	Search is performed for the entire data range.
A/B Cursor	Search is performed for the range between the A/B cursors when the cursors are displayed.

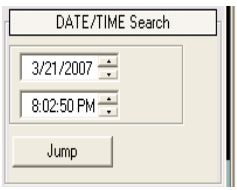
5. Searches are commenced by clicking [Search], and a result list is displayed.

Please refer to "Jumping to positions retrieved"(⇒ p. 25) and "Copying numerical values to the clipboard"(⇒ p. 25).

Date/Time Searches

Searches can be performed by specifying dates and times.

1. Setting items can be displayed by clicking [DATE/TIME Search] in the control bar.



2. Set the date and the time.

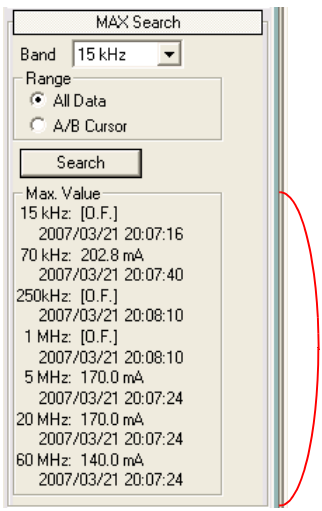
3. On clicking [Jump], the specified time position will be displayed in the left hand side of the graph.

NOTE
- The search bar (R) is not displayed in date/time searches.
- If the volume of data after the position retrieved is less than the volume that can be displayed in one screen, the position retrieved will not be displayed in the left hand side of the graph.

Maximum Searches

This function searches for the maximum value for each band.

1. Setting items can be displayed by clicking [MAX Search] in the control bar.



Maximum value and date and time for each band throughout the entire data range.

2. Select the band to be searched.

3. Set the range.

Selectable items	Explanations
All Data	Performs searches covering the entire data range.
A/B Cursor	Performs searches in the range between the cursors when the cursors are currently being displayed.

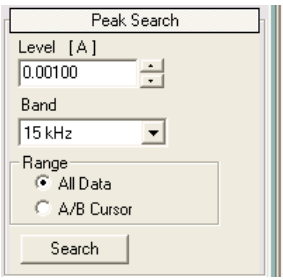
4. Searches are commenced by clicking [Search], and a result list is displayed.

The date and time represent the position of the first maximum value found.
Please refer to "Jumping to positions retrieved"(⇒ p. 25) and "Copying numerical values to the clipboard"(⇒ p. 25).

Peak Searches

This function searches for local maximum values. The measured value is determined to be a local maximum if it is larger than the values before and after it.

1. Setting items can be displayed by clicking [Peak Search] in the control bar.



2. Set the level.

3. Select the band to be searched.

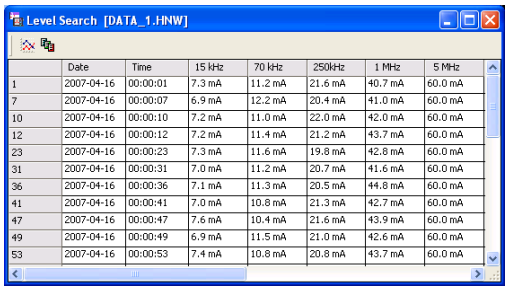
4. Set the range.

Selectable items	Explanations
All Data	Performs searches covering the entire data range.
A/B Cursor	Performs searches in the range between the cursors when the A/B cursors are currently being displayed.

5. On clicking [Search], a search is made for local maximum values above the specified level, and a result list is displayed.

Search Result List Screens

On executing a search, a screen indicating the list of search results is displayed.



	Date	Time	15 kHz	70 kHz	250kHz	1 MHz	5 MHz
1	2007-04-16	00:00:01	7.3 mA	11.2 mA	21.6 mA	40.7 mA	60.0 mA
7	2007-04-16	00:00:07	6.9 mA	12.2 mA	20.4 mA	41.0 mA	60.0 mA
10	2007-04-16	00:00:10	7.2 mA	11.0 mA	22.0 mA	42.0 mA	60.0 mA
12	2007-04-16	00:00:12	7.2 mA	11.4 mA	21.2 mA	43.7 mA	60.0 mA
23	2007-04-16	00:00:23	7.3 mA	11.6 mA	19.8 mA	42.8 mA	60.0 mA
31	2007-04-16	00:00:31	7.0 mA	11.2 mA	20.7 mA	41.6 mA	60.0 mA
36	2007-04-16	00:00:36	7.1 mA	11.3 mA	20.5 mA	44.8 mA	60.0 mA
41	2007-04-16	00:00:41	7.0 mA	10.8 mA	21.3 mA	42.7 mA	60.0 mA
47	2007-04-16	00:00:47	7.6 mA	10.4 mA	21.6 mA	43.9 mA	60.0 mA
49	2007-04-16	00:00:49	6.9 mA	11.5 mA	21.0 mA	42.6 mA	60.0 mA
53	2007-04-16	00:00:53	7.4 mA	10.8 mA	20.8 mA	43.7 mA	60.0 mA

Jumping to positions retrieved

1. **Click the data position to be jumped to in the result list.**
2. **This position in the graph can then be jumped to by clicking .**
3. **The [Search bar (R)] will be displayed in this data position.**

Copying numerical values to the clipboard

1. **Click the data position to be copied.**
2. **The numerical data can be copied to the clipboard by clicking .**
   Copying is performed in units of one line.

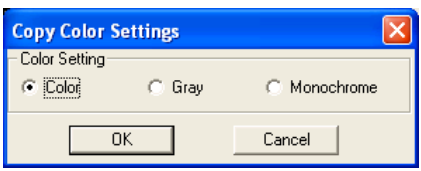
NOTE The same operations can also be performed using alarm and event marker lists.

Making Hard Copies of Graph Screens

Copy the desired graph image(s) to the clipboard. The image(s) can then be pasted to other application software (word-processing software, etc.).

1. **On clicking [Edit] - [Copy Color Setting] in the Menu bar, the dialog box [Copy Color Settings] will be displayed.**

2. **After selecting the desired hard copy color, click [OK] .**



3. **When saving data in bitmap format, click [Edit] - [Copy Format] - [BITMAP] .**

4. **When saving data in Enhanced Meta File format, click [Edit] - [Copy Format] - [MetaFile] .**

5. **By clicking [Edit] - [Copy Graph], the graph images will be copied to the clipboard.**

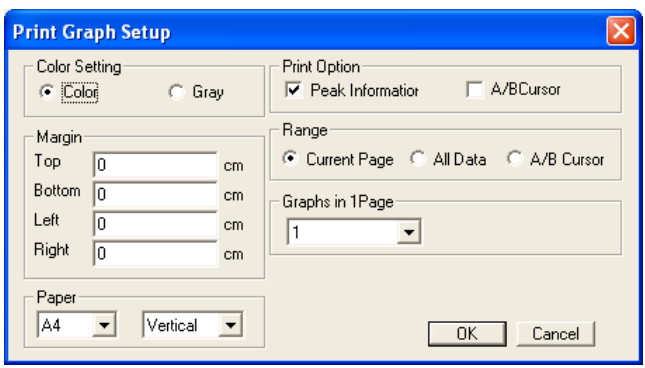
   The same operation can also be performed by clicking  in the toolbar.

Printing Graphs

Print settings

Setting content before printing graphs.

1. On clicking [File] - [Print Graph Setup] in the Menu bar, the dialog box [Print Graph Setup] will be displayed.



2. Select the desired color setting using [Color Setting] .

3. Use the [Margin] settings where necessary.

(Margins can be set from 0-2 cm.)

4. Select the type of paper and printing direction using the settings in [Paper].

Paper types can be selected from A4, B5, Letter and Legal.
Printing directions can be selected from vertical and horizontal.

5. Setting [Print Option] .

Selectable items	Explanations
Peak Information	Prints maximum values.
A/B Cursor	Prints A/B cursor values.

6. **Set the [Range] .**

Selectable items	Explanations
Current Page	Prints the range that is currently displayed on the screen.
All Data	Prints all the data.
A/B Cursor	Prints the range between cursors A and B.

7. **Select 1, 2, 4 or 8 divisions from [Graphs in 1 Page] .**

8. **Click [OK] .**

Print previews

1. **Click [File] - [Print Graph Preview] in the Menu bar.**

2. **A print preview will be displayed.**

Printing

1. **On clicking [File] - [Print Graph] in the Menu bar, a [Print] dialog box will be displayed.**

The same operation can be performed by clicking  in the toolbar.

2. **Change settings.**

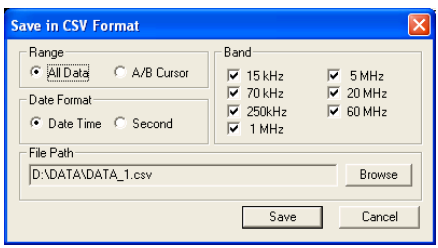
3. **Printing can be executed by clicking [OK] .**

Saving Measured Data in CSV Format

Currently displayed measured data can be converted to a CSV format and saved as a file. CSV format is a text format that can be read using spreadsheet software (Excel, etc.).

1. On clicking [File] - [Save in CSV] in the Menu bar, a [Save in CSV Format] dialog box will be displayed.

The same operation can be performed by clicking  in the toolbar.



2. Set the [Range] .

Selectable items	Explanations
All Data	Covers the entire data range.
A/B Cursor	The range between the cursors can be selected when cursors A and B are displayed.

3. Set the [Date Format] .

Selectable items	Explanations
Date Time	Renders the measured data times into a date/time format.
Second	Renders the measured data times into seconds. (Relative time from the first data measurement.)

4. The bands to be saved can be selected in the [Band] section.

5. Click [Browse] in the [File Path] section to specify the folder in which the file is to be saved and the file name.

6. The data can then be saved as a CSV format file by clicking [Save] .

Clicking **[Cancel]** will make the dialog box disappear without any tasks being performed.

Saving Measured Data in a 3145 Format

This function saves measured data using the 3145 format (file extension .HNW). The measured data which is saved is the same as the file that is currently opened, but the following items will be modified.

- Comments
- Event marker comments
- Colors of waveforms for each band
- ON/OFF displays for each band
- Waveforms display position and time axis setting

Overwriting

Click **[File] - [Save]** in the Menu bar. The same operation can also be performed by clicking  in the toolbar.

Saving under a different name

1. **On clicking [File] - [Save As] in the Menu bar, a [Save As] dialog box will be displayed.**
2. **After selecting the folder in which the file is to be saved and naming the file, click [OK] .**

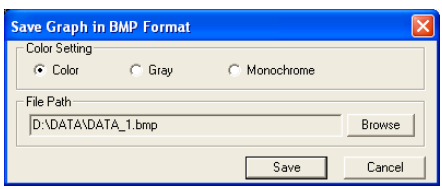
NOTE When reading files saved using this application using the 3145-20 NOISE HiLOGGER, alterations to settings performed with this application will not be included in the 3145-20 NOISE HiLOGGER.

Saving Graph Images

Saving currently displayed graph screens as BMP and Enhanced Meta Files.
The BMP format is the standard format used in Windows to store instrument and application independent images.
The Enhanced Meta File format is a vector image file format which Windows supports as standard.

Saving data in the BMP format

1. **On clicking [File] - [Save Graph in BMP] in the Menu bar, a [Save Graph in BMP Format] dialog box will be displayed.**



2. **Select the desired image color.**

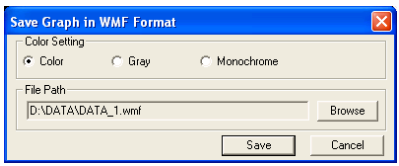
3. **Click [Browse] in the [File Path] section to specify the folder in which the file is to be saved and the file name.**

4. **The data can then be saved in a BMP format file by clicking [Save] .**

Clicking **[Cancel]** will make the dialog box disappear without any tasks being performed.

Saving data in the Enhanced Meta File format

1. **On clicking [File] - [Save Graph in WMF] in the Menu bar, a [Save Graph in WMF Format] dialog box will be displayed.**

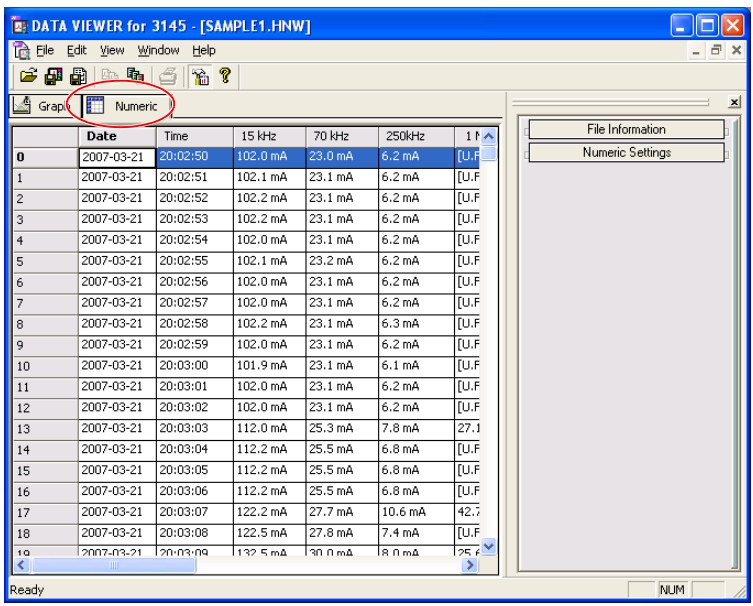


2. **Select the desired image color.**

3. **The data can then be saved as an extended meta format file by clicking [Save] .**
Clicking **[Cancel]** will make the dialog box disappear without any tasks being performed.

Manipulating the Numerical Value Display Screen

The numerical value display screen can be displayed by clicking the **[Numeric]** tab located in the upper left hand portion of the screen.



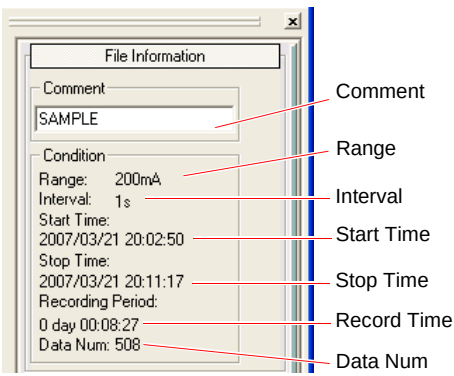
	Date	Time	15 kHz	70 kHz	250kHz	1 M
0	2007-03-21	20:02:50	102.0 mA	23.0 mA	6.2 mA	[U.F
1	2007-03-21	20:02:51	102.1 mA	23.1 mA	6.2 mA	[U.F
2	2007-03-21	20:02:52	102.2 mA	23.1 mA	6.2 mA	[U.F
3	2007-03-21	20:02:53	102.2 mA	23.1 mA	6.2 mA	[U.F
4	2007-03-21	20:02:54	102.0 mA	23.1 mA	6.2 mA	[U.F
5	2007-03-21	20:02:55	102.1 mA	23.2 mA	6.2 mA	[U.F
6	2007-03-21	20:02:56	102.0 mA	23.1 mA	6.2 mA	[U.F
7	2007-03-21	20:02:57	102.0 mA	23.1 mA	6.2 mA	[U.F
8	2007-03-21	20:02:58	102.2 mA	23.1 mA	6.3 mA	[U.F
9	2007-03-21	20:02:59	102.0 mA	23.1 mA	6.2 mA	[U.F
10	2007-03-21	20:03:00	101.9 mA	23.1 mA	6.1 mA	[U.F
11	2007-03-21	20:03:01	102.0 mA	23.1 mA	6.2 mA	[U.F
12	2007-03-21	20:03:02	102.0 mA	23.1 mA	6.2 mA	[U.F
13	2007-03-21	20:03:03	112.0 mA	25.3 mA	7.8 mA	27.1
14	2007-03-21	20:03:04	112.2 mA	25.5 mA	6.8 mA	[U.F
15	2007-03-21	20:03:05	112.2 mA	25.5 mA	6.8 mA	[U.F
16	2007-03-21	20:03:06	112.2 mA	25.5 mA	6.8 mA	[U.F
17	2007-03-21	20:03:07	122.2 mA	27.7 mA	10.6 mA	42.7
18	2007-03-21	20:03:08	122.5 mA	27.8 mA	7.4 mA	[U.F
19	2007-03-21	20:03:09	132.5 mA	30.0 mA	8.0 mA	25.6

NOTE Overflow data are displayed in red characters.

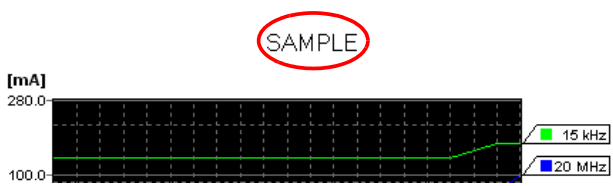
Confirming File Information

This function can be used to view measurement information for loaded files.

1. **Clicking [File Information] in the control bar will display measurement conditions, etc.**



2. **Comments entered will be displayed in the upper center portion of the graph screen.**

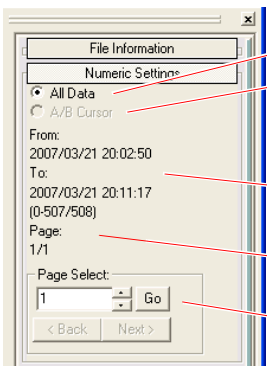


NOTE Entered comments can be saved to files by saving using the 3145 format. (⇒ p. 30)

Changing the Page Currently Displayed

A maximum of 1,000 data points can be displayed in the numerical value display screen. When the number of loaded data points exceeds 1,000, they are displayed on multiple pages.

1. **Setting items can be displayed by clicking [Numeric Settings] in the control bar.**



Displaying all measured data.

Displaying measured data between the A-B cursors displayed on the graph screen. This data can be selected when the A-B cursors are currently being displayed.

Range of the data being displayed in the current page: Displayed in dates and times, and data numbers (Start-finish / Total number of data).

Current page / Total number of pages

Setting the page to be displayed

2. **The next page can be displayed by clicking [Next] .**

3. **The previous page can be displayed by clicking [Back] .**

4. **Pages can also be displayed by entering the desired page number in the [Page Select] edit box and clicking [Go] .**

Copying Numerical Values to the Clipboard

Numerical values can be copied to the clipboard then pasted to application software including Notepad and Word. Copying is performed in units of one line.

1. **In the numerical value display screen, click the line that is to be copied to the clipboard.**
   When selecting multiple lines, click the next line to be selected while pressing the **Ctrl** key.

2. **Click the  in the toolbar to copy the data to the clipboard.**
   Copying can also be carried out by clicking **[Edit] - [Copy Numeric Text]** in the Menu bar or by right clicking on the data number and selecting **[Copy Numeric Text]** from the pop-up menu.

Jumping to a Graph

1. **Click the measured data position in the numerical value display screen which is to be displayed as a graph.**
2. **The display will jump to the waveform of the specified data position on clicking [Edit] - [Jump to Graph] in the Menu bar.**

   Jumping can also be carried out by right clicking on the data number and selecting [Jump to Graph] from the pop-up menu.

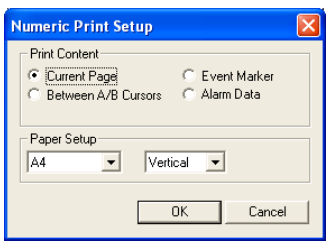
Printing Measured Values

Printing settings

Setting content before printing measured values.

1. **Display the numerical value display screen by clicking the [Numeric] tab located in the upper left hand portion of the screen.**

2. **The following dialog box will be displayed on clicking [File] - [Print Numeric Setup] in the Menu bar.**



3. **Set the [Print Content].**

Selectable items	Explanations
Current Page	The range currently being displayed in the graph screen will be printed.
Event Marker	All event marker positions will be printed.
Between A/B Cursor	The range between the A/B cursors will be printed.
Alarm Data	All the alarm positions* will be printed.

* Points where non-alarm conditions have changed to alarm conditions.

4. **Set the type of paper and the printing direction in the [Paper Setup] section.**

Paper types can be selected from A4, B5, Letter, and Legal.
Printing directions can be selected from Vertical and Horizontal.

5. **Click [OK] to confirm the settings.**

Print previews

1. **Click [File] - [Print Numeric Preview] in the Menu bar.**
2. **A print preview will be displayed.**

Printing

1. **A [Print] dialog box will be displayed by clicking [File] - [Print Numeric] in the Menu bar.**
2. **Change settings where necessary.**
3. **Printing can be exceeded by clicking [OK] .**

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