RA Viewer
RA23-701
Instruction Manual

CONTENTS

1. Overview **2**

2. Installation **2**

3. Uninstallation **4**

4. Operating instructions **4**

5. Cautions **4**

6. Copyright **4**

7. Operation Manual for RA Viewer **5**

7.1.Start and Close *5*

7.2.Openning *5*

7.3.Replay Data Selection *6*

7.4.Digital Indication *7*

7.5.Signal Settings *8*

7.6.Jump *9*

7.7.Time Axis Magnification *11*

7.8.Output Setup *12*

7.9.X-Y Waveform Display *13*

1.Overview

RA23-701 the viewer of data recorded by RA2000 series on the PC. It displays waveforms by same user interface of RA2000 series, and users can do data saving in CSV/binary files and search of max/min value.

Features

Similar operability of the RA2000 series
CSV or binary file conversion
Search Max / Min value

Readable data

Data files recorded by RA1000 series and RA2000 series (*.FSD, *.FPP, *.DRT, *IDX).

NOTE: The file of the *.DAT form saved by RA1000 series can save as *.DRT form by the [COPY SET] screen of the RA1000 series.

System requirements

Microsoft Windows2000 Professional / XP(Professional / Home Edition)
PentiumⅢ800MHz processor or higher
256MB RAM or higher
XGA(1024 to 768) high definition display or higher
65536(16 bits) display colors or higher

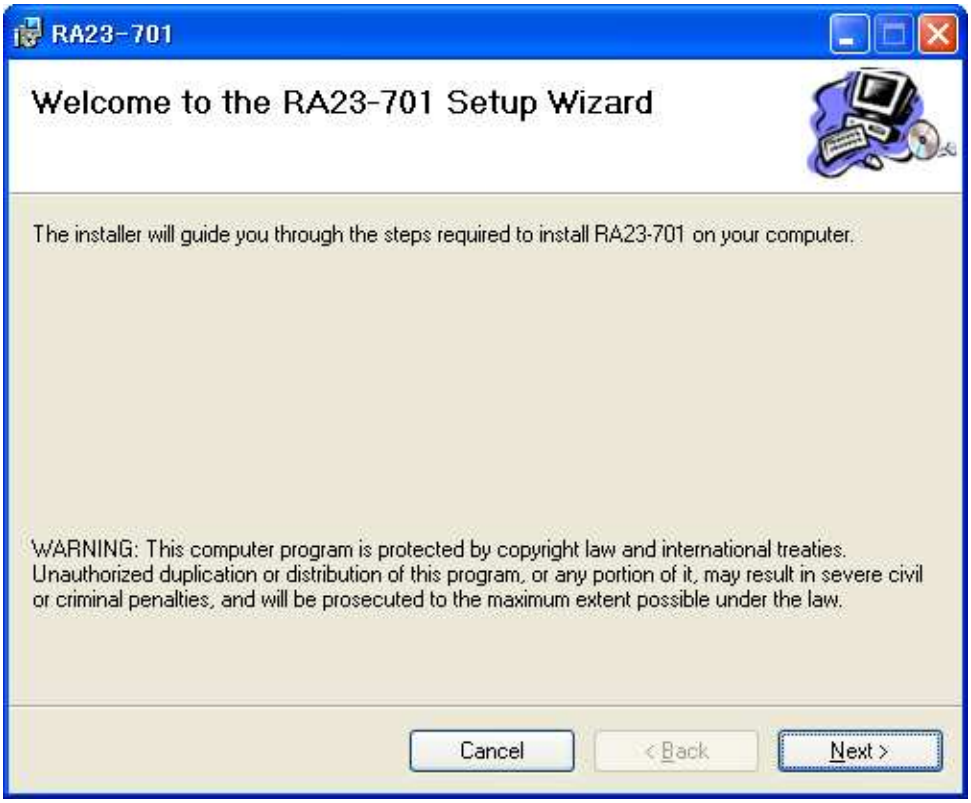
2.Installation

This program can be download from NEC Avio website (http://www.nec-avio.co.jp/).
Double-click a self-extracting executable file and an Installer will show up.

NOTE: The program should be installed by an authorized person who can access the system.

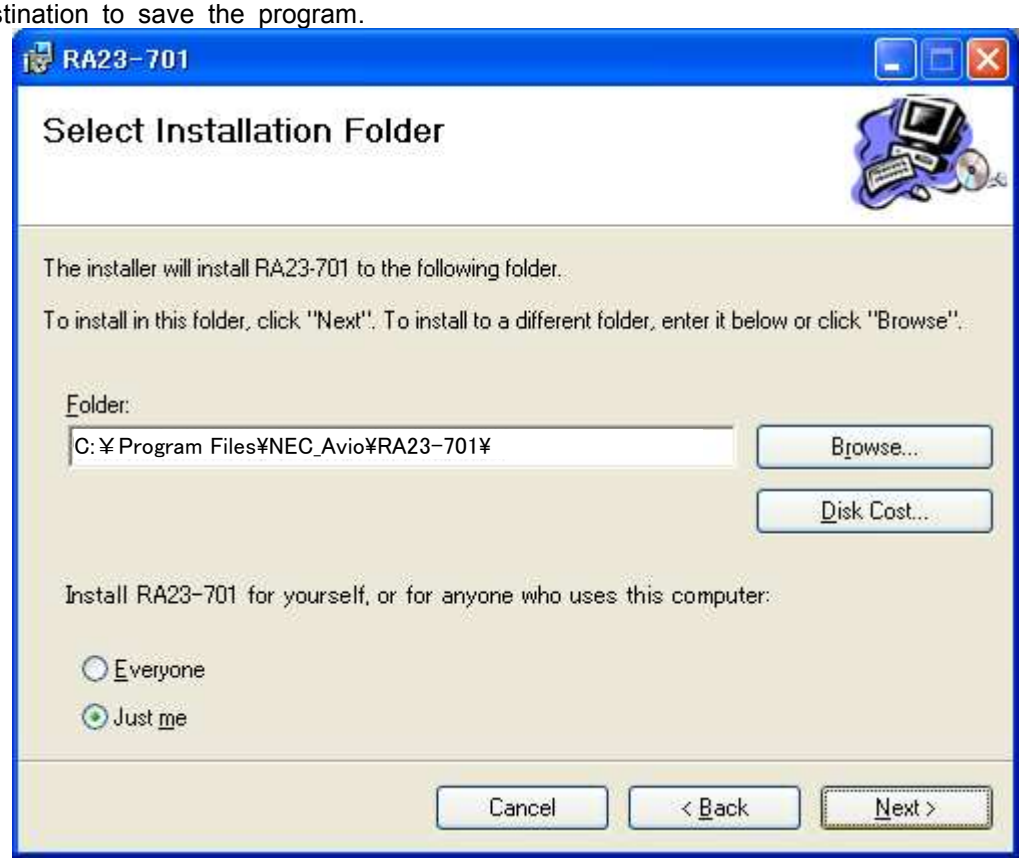
2.1. Start up the Installer

Open the program folder and double-click Setup.Exe file. The installer shows up as below.
Click Next to start installation.

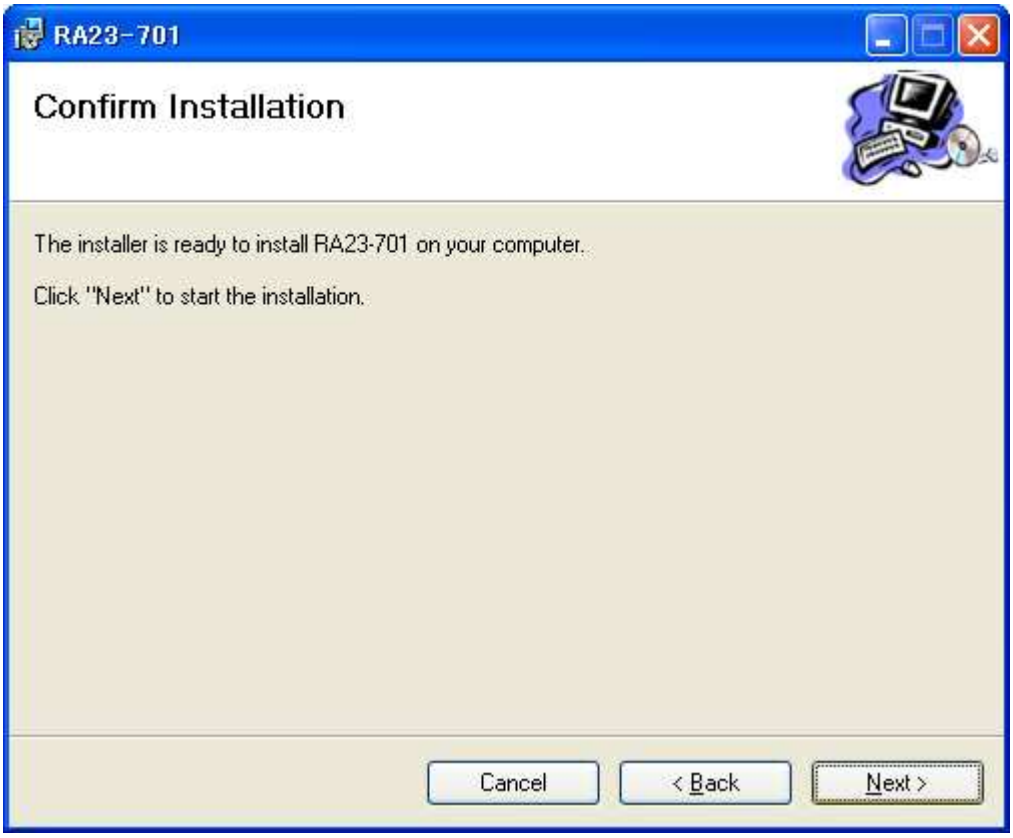


2.2. Installation Setup

Select destination to save the program.



Click “Next” and below screen will show up. If okay to start the installation, click “Next”.



3.Uninstallation

Go to [Start] – [Settings] – [Control Panel] – [Add/Remove Programs]. Select RA23-701 from the list and click Change/Remove.

4.Operating instructions

Basic operation is same as RA2000 series. Please refer to the section 14 Replay Display of instruction manuals of RA2300 (95691-2341-0000) or RA2800 (95691-2471-0000).
The touch-panel operation on RA2000 series is substituted by the keyboard for the PC.

Keyboard	Operation
[F1] or [←]	Rotating the jog dial (left turn)
[F2] or [→]	Rotating the jog dial (right turn)
[F3]	Cursor X1 / X2 : Switching between cursors X1 and X2
[F4]	Scroll : Scrolling displayed waveform
[F5]	Fine Tuning : Controlling movement speed of cursor and scroll
[F6]	Monitor setup Window open :
[ALT] + [F4]	Close the application

5.Cautions

- Please use the high-resolution display at 1280 x 1024 (SXGA) or better. If the resolution is lower, a part of display will be lost.
- Please do not change settings of Display Properties while this program is in operation.
- Please set the font size as normal on the Display Properties. This program cannot be displayed properly with the larger fonts.

NOTE: This program may show an invalid operation if resolution is changed at the Display Properties.

6.Copyright

1. All rights reserved by NEC Avio Infrared Technologies Co., Ltd. Reproduction, copying or modifying any or the whole part of this program, without a prior written consent of NEC Avio Infrared Technologies Co., Ltd, is prohibited by law.

2. Contents of this program are subject to change for improvement without prior notice.

3. Should you have any question or concern, please contact your local distributor.
The distributor list is available at http://www.nec-avio.co.jp/
(check the list of Data Acquisition System).

7.Operation Manual for RA Viewer

7.1.Start and Close

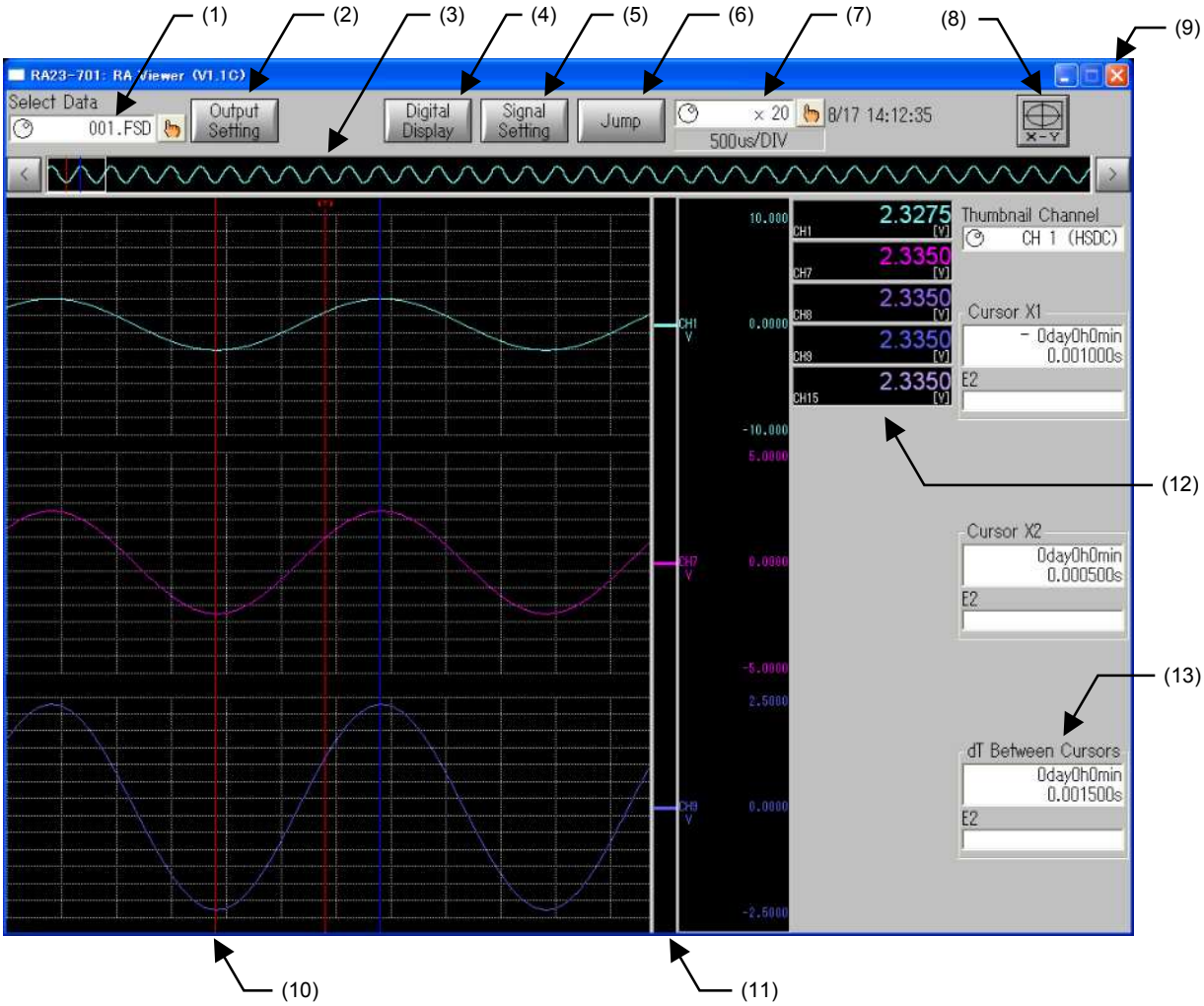
To start RV Viewer RA23-701, please double-click the icon above

or select from start menu to take bellow steps.
GO to [Start] — [Program(P)] — [NEC_Avio] — [RA23-703 Viewer]

To close RV Viewer RA23-703, please double-click the icon right side of application, or type "ALT" + "F4".

7.2.Openning

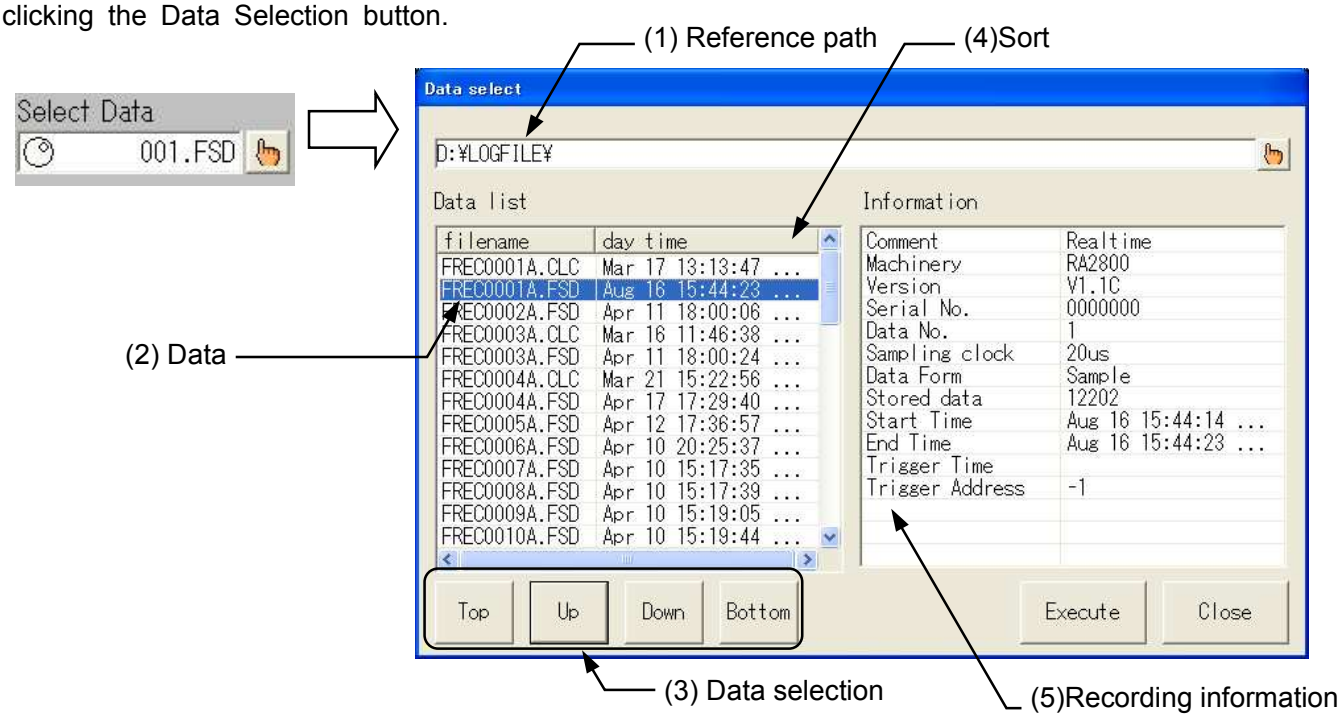
The data which is recorded by AR2000-series, will be shown by selecting from among files in PC monitors.



(1)Data Selection	Selects referencing data	☞7.3.Replay Data Selection
(2)Output Selection	Outputs to chart or file	☞7.8.Output Setup
(3)Thumbnail	Displays Y-T waveform display area	☞7.3.Replay Data Selection
(4)Digital Indication	Switches digital indication	☞7.4.Degital Indication
(5)Signal Setup	Sets each signal channel	☞7.5.Signal Settings
(6)Jump	Executes time axis jump	☞7.6.Jump
(7)Time Axis Scaling	Enlarges or compresses time axis	☞7.7.Time Axis Magnification
(8)X-Y Display	Switches X-Y waveform display	☞7.9.X-Y Waveform Display
(9)Close	Close the program	
(10)Y-T Display	Switches Y-T waveform display	
(11)Position	Indicates zero position for each signal	
(12)Scale	Displays scale for amplitude axis	
(13)Digital Indication	Indicates value at cursor position	☞7.4.Degiatl Indication
(14)Cursor position info	Indicates cursor position info	☞7.4.Degital Indication

7.3.Replay Data Selection

To select the screen to be displayed on the Replay monitor, open the following screen by clicking the Data Selection button.



(1)Reference path

This indicates data reference target path. By clicking the icon, it will be possible to change the path.

(2)Glance of data files

This shown all these files in selected reference path.

(3)Data selection

This changes selected data file.

(4) Data list sorting

This will sort by file names and data. Clicking once sorts data in ascending order. Clicking again sorts data descending order.

(5)Recording information

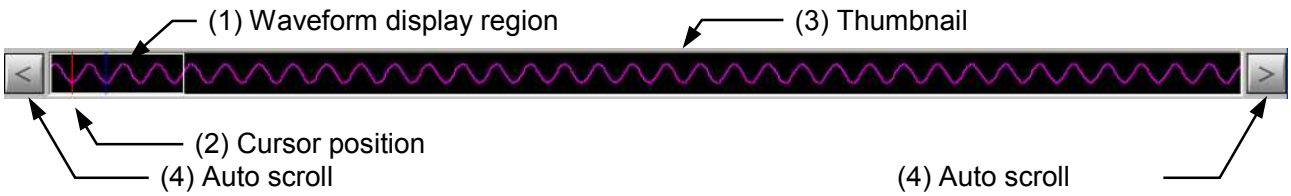
This indicates the portion of recorded data, which is selected among data file.
Please refer when you select the data file.

TIPS

Trigger address value
Some memory block values are displayed on recording data after trigger recording. However, “-1” is displayed in the case of forced termination of recording.

7.3.1.Waveform Display Region

The thumbnail that indicates waveform display region is displayed on the Replay Monitor screen and the Y-T waveform.



(1)Waveform Display Region

This is the time axis domain currently being displayed.

(2)Cursor position

Cursor positions X1 and X2 are indicated. Cursor positions X1 is colored in Red and X2 is colored in blue.

(3)Thumbnail

Full data for a channel recorded is displayed in a compressed form. Also, clicking the thumbnail portion can move the display position of the Y-T waveform.

TIPS A Channel, which is displayed on the thumbnail, can be specified. For more information, see 15. “Display and Printing”. By using [F1] or [←]+[F2] or [→] to move selected file up and down.

(4)Auto scroll

This scrolled the region of the display automatically. By clicking a thumbnail display portion, auto-scrolling stops.

7.3.2.Shift of Waveform Display Region

To shift the waveform display region, refer to the following methods.

- **Operation with thumbnail**
  By clicking the thumbnail display portion, the waveform display region can be shifted. The auto-scroll buttons located on both sides allows one-way scrolling.

- **Shift through jump faction**
  Jump to the trigger detection point or making point is available. Moreover, jump to the maximum or minimum point for each channel is available. For more details, please refer by clicking [7.6Jump].

7.3.3.Shift of Cursor Position

To shift the cursor position, refer to the following methods.

- **Shift through screen touch**
  By holding [F3] key with clicking the portion of waveform, a cursor shift will be effective on the Operation Panel. Re-type [F3] key allows switching cursor positions X1 to X2.

7.4.Digital Indication

This is for setting for digital indication of cursor position information and measured values.

7.4.1.Digital Indication

Measured values are indicated in digits.

While cursor X1 being moving its position, the display indicates the position of Cursor X1. While cursor X2 being moving its position, the display indicates the Position of cursor X2.

- **Others**
  Measurement values at the top of the waveform display region are displayed [left edge] during the time excepting when the cursor is moving as well as when waveform display position is moving.

TIPS If the recording data is the peak format, one data consists of two values: maximum and minimum value. To specify the digital value in either of maximum and minimum values, you can set up the indication by typing [F6] (Display/Printing).

7.4.2.Cursor Display Information

This portion indicates the position information of cursors X1 and X2 and the time difference between cursors (ΔT).

7.4.3.Digital Indication Switching

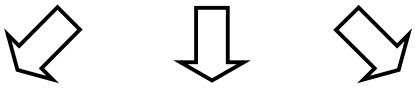
By clicking the "Digital Display" button on the upper part of the Replay monitor, contents of indication can be switched.

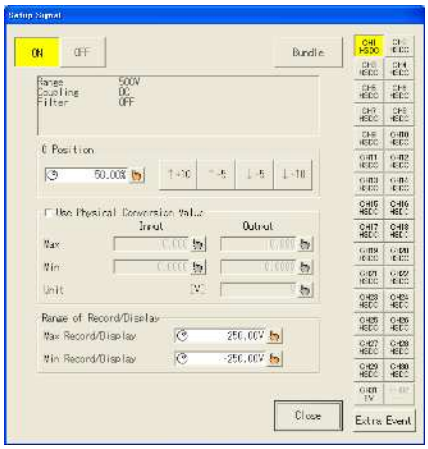
By clicking each time, the indication changes the following order.
[No Indication] → [Digital Value] → [Cursor Value] → [Digital Value + Cursor Value] → [No Indication]

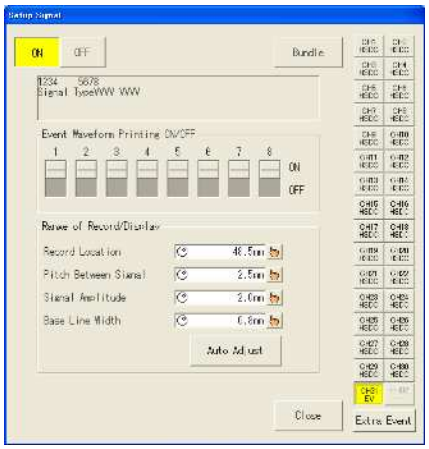
TIPS Switching for Digital indication can be set up by typing [F6] (Display/Printing) key in the Display and Printing screen.

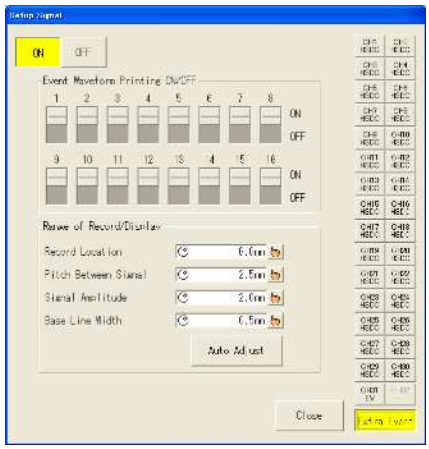
7.5.Signal Settings

It is possible to confirm the recording conditions for channel of the signal that are recorded as data and change the setup for waveform display. Press the Signal Setting button on the upper part of the Replay screen. The Setup Screen appears. The contents differ depending on the amp type.







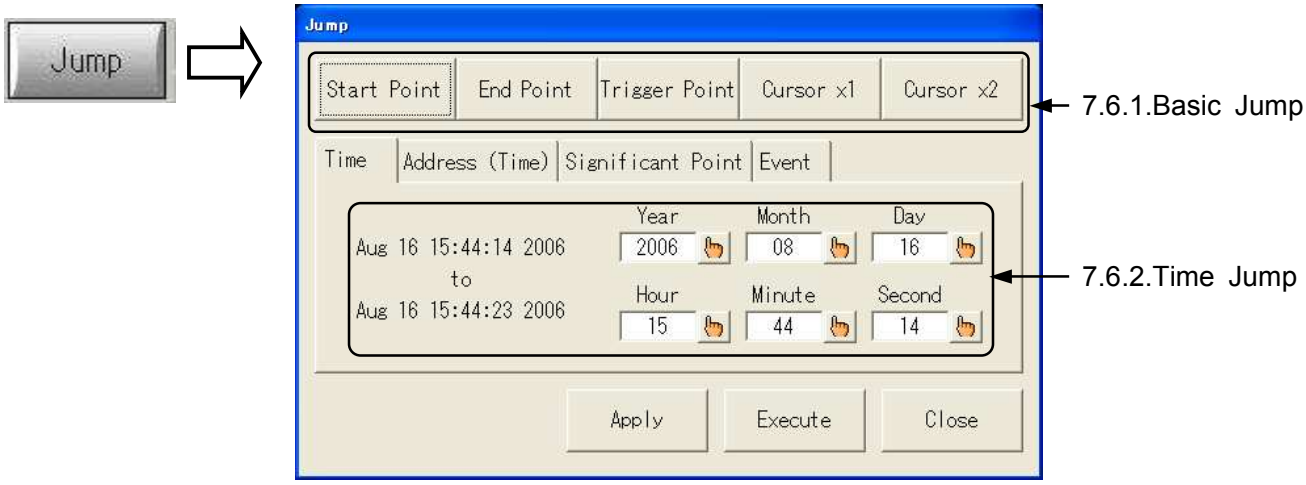


Analog amp setup screen	Event amp setup screen	Recorder event setup screen
・ Waveform ON/OFF setting ・ Zero position setting ・ Physical unit conversion setting ・ Other recording condition display	・ Waveform ON/OFF setting ・ ON/OFF setting by signal ・ Event waveform adjustment ・ Signal type display	・ Waveform ON/OFF setting ・ ON/OFF setting by signal ・ Event waveform adjustment

TIPS Operations of Signal Setup screen is the same as those of the Amp screen.
For more details, see 7. Amp Units

7.6.Jump

Jump of Y-T waveform display position can be made after the time axis position is specified. Clicking the Jump button on the upper part of the Replay screen, displays the following screen.



7.6.1.Basic Jump

Basic jump operation is made.

Start point:	Jump to recording data start point
End point:	Jump to the end point of the recording data
Trigger detection point:	Jump to the trigger detection point for recording data If there is no trigger detection point, jump is made to the start point.
Cursor X1/X2:	Jump to current cursor position

TIPS Jump is executed when the button is clicked.

7.6.2.Time Jump

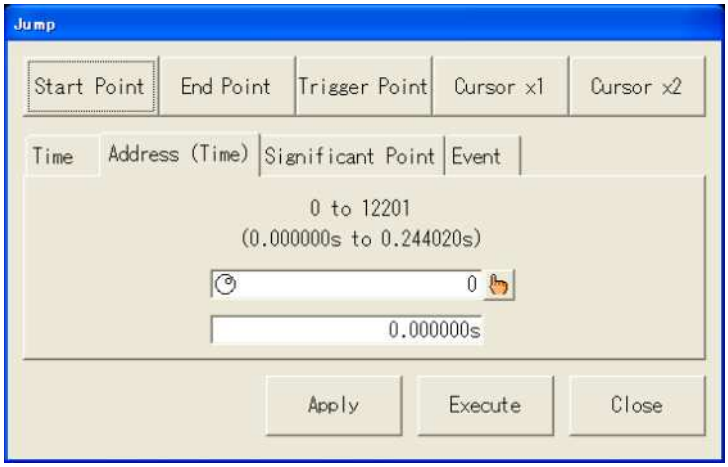
Jump is executed after the waveform display position is specified.
Specify the time using the Time tab on the Jump screen. Clicking either the Apply button or OK button to execute a jump.

TIPS When the Apply button is clicked, the jump screen does not close, even after the jump execution. To execute consecutive jumps, this button is useful.

NOTE If the recording rate of the recording data is external sync, time jump cannot be made because the time axis cannot represent as time. Please use "7.6.3.Address Jump" etc.

7.6.3.Address Jump

Jump can be executed after waveform position is specified in address. Display the Address tab on the Jump screen, and then specify the address. Clicking either the Apply button or OK button to execute a jump.



7.6.4.Maximum/Minimum Search & Jump

Searching for maximum and minimum values for among all channels is available. Jump to the position where search is executed, is possible after listing the result.

Operation steps for the maximum and minimum values search are as follows.

(1)Use the Max and Min tab on the jump screen.

(2)Specify the search range.

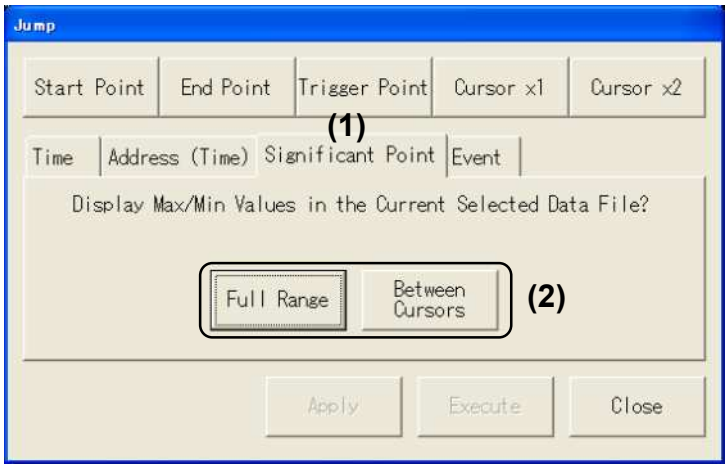
Choose All or Between Cursors. Clicking either of buttons begins searching, and after the searching, a list appears.

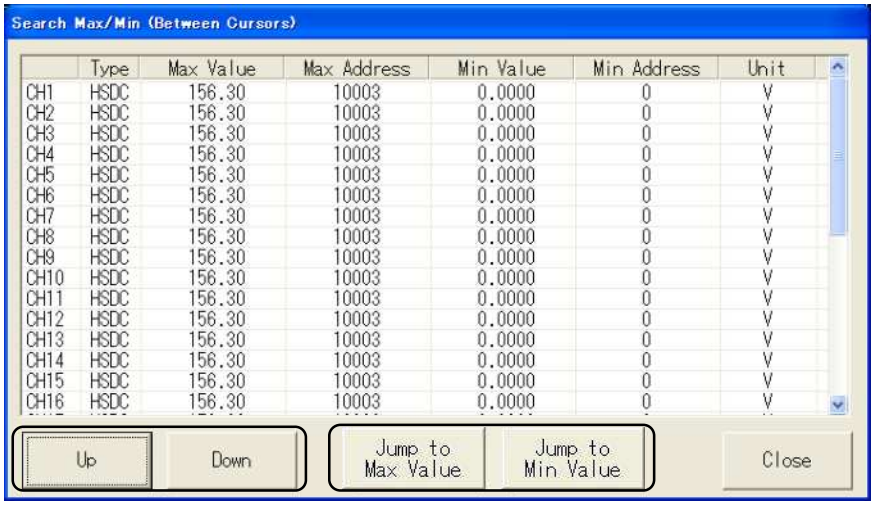
(3)Select a channel

Select a target channel. Selection can be made by a direct clicking of listed portion.

(4)Jump to maximum value or minimum value is made.

Clicking a button to execute a jump.





	Type	Max Value	Max Address	Min Value	Min Address	Unit
CH1	HSDC	156.30	10003	0.0000	0	V
CH2	HSDC	156.30	10003	0.0000	0	V
CH3	HSDC	156.30	10003	0.0000	0	V
CH4	HSDC	156.30	10003	0.0000	0	V
CH5	HSDC	156.30	10003	0.0000	0	V
CH6	HSDC	156.30	10003	0.0000	0	V
CH7	HSDC	156.30	10003	0.0000	0	V
CH8	HSDC	156.30	10003	0.0000	0	V
CH9	HSDC	156.30	10003	0.0000	0	V
CH10	HSDC	156.30	10003	0.0000	0	V
CH11	HSDC	156.30	10003	0.0000	0	V
CH12	HSDC	156.30	10003	0.0000	0	V
CH13	HSDC	156.30	10003	0.0000	0	V
CH14	HSDC	156.30	10003	0.0000	0	V
CH15	HSDC	156.30	10003	0.0000	0	V
CH16	HSDC	156.30	10003	0.0000	0	V

7.6.5.Event Jump

Marking information that located in the recorded data is searched and jump is executed.

(1)The Event tab on the Jump screen is displayed.

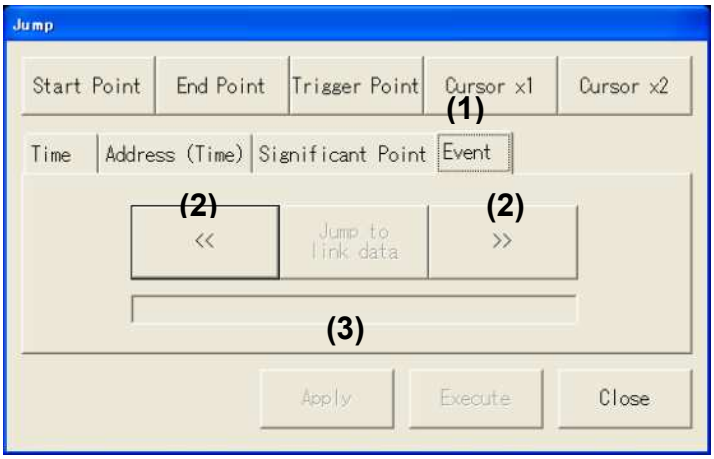
(2)Marking jump is executed when a search direction button is clicked.

NOTE

The event jump needs the data which it included E2 in.
To include E2 in the recording data, the following setting is available.

NOTE

Marking jump is a jump to the marked address that is closest to the direction that is specified by jump target address (Waveform, x1, x2). Also, a trigger mark is regarded as a mark. If the mark is not found, jump to the start/end point is made.

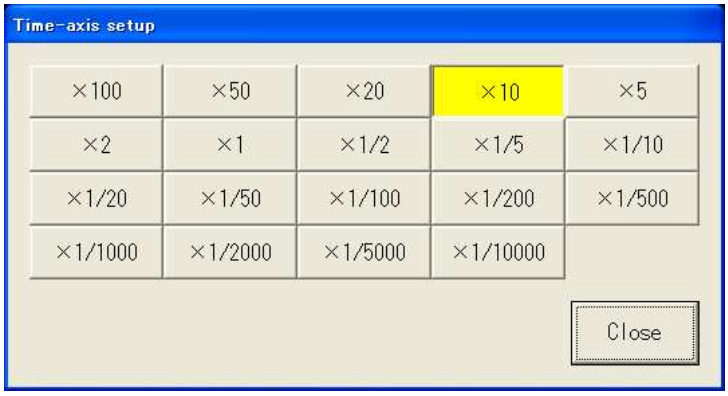


(3)Jump to link data is made.

When this button is clicked after the marking jump is executed while the data file (Extension of FPP) recorded in the Multi Recorder mode is displayed, a jump to the link data (memory recording data) is executed.

7.7.Time Axis Magnification

To enlarge or compress the time axis, click [Time Axis] button.
The following screen appears.



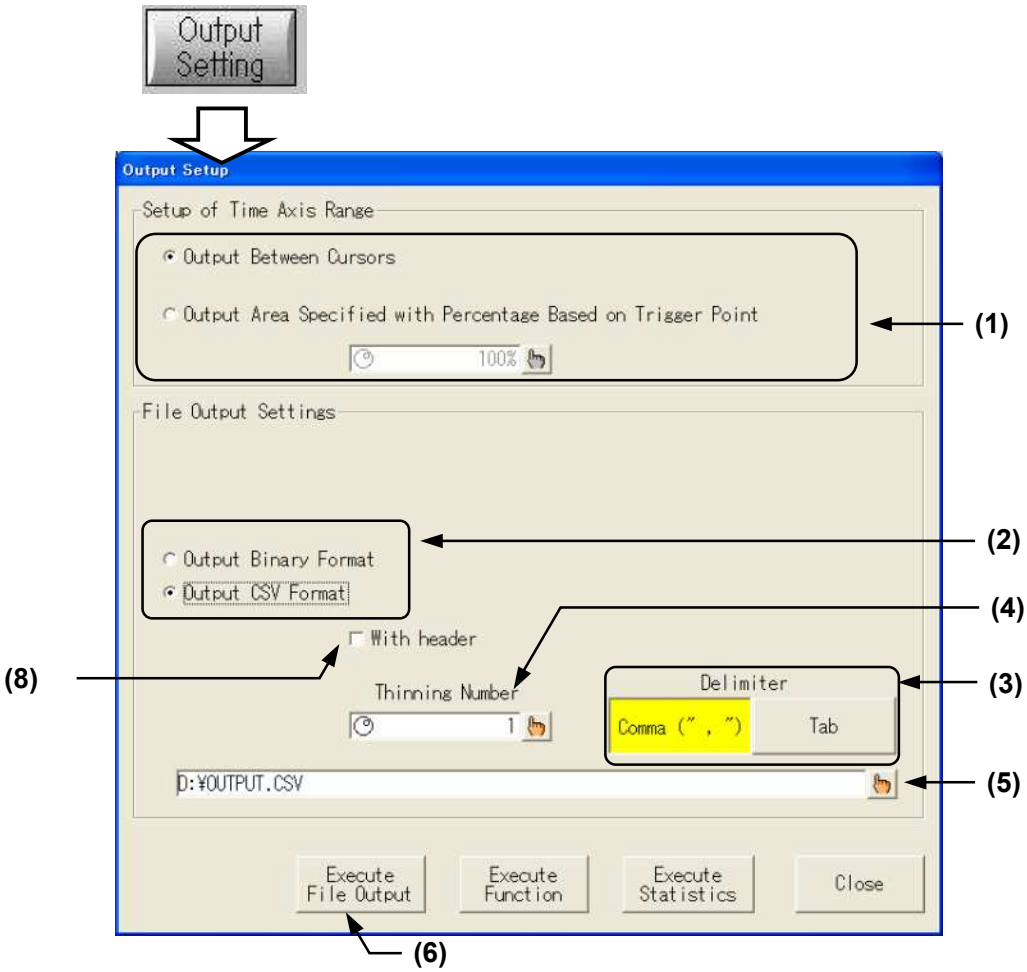
Click the close button. After the screen is closed, the selected time axis scaling factor will be effective.

TIPS

Scaling factor can be changed without seeing the screen through the following steps.
1) By clicking the left side of the time axis scaling button, a scaling factor will be highlighted.
2) Type [F1] or [←]+[F2] or [→] to change the value.
Time axis for waveform display will be enlarged or compressed, proportion to the scaling factor.
3) Peak data cannot be expanded.

7.8.Output Setup

Displayed data can be printed out or exported into a file. To execute data output, click the output Setup button on the upper part of the Replay screen. Then the following screen opens. To output the waveform to chart paper immediately, click the Copy button.



7.8.1.Specifying Output Time Range

Use the (1) section to specify the data output time-axis range. Select from among “Between cursors” or “Specifying in percentage in reference to the trigger point” If “Specifying in percentage in reference to the trigger point” is selected, specify percentage.

TIPS To output all, select “Specifying in percentage in reference to the trigger point” and choose 100 for percentage.

7.8.2.Specifying File Save Format

Use the (2) section to specify the format at file save. Select “Binary” or “CSV”. If “CSV” is selected, the number of skip and delimiter can be specified. When data is saved is the CSV for mat, you can check (7), “Use Header”, then the header information such as amp setup as well as data can be saved.

NOTE The file extension will be DRT that is output in the binary format. The binary saved file can be referenced in the Replay screen.

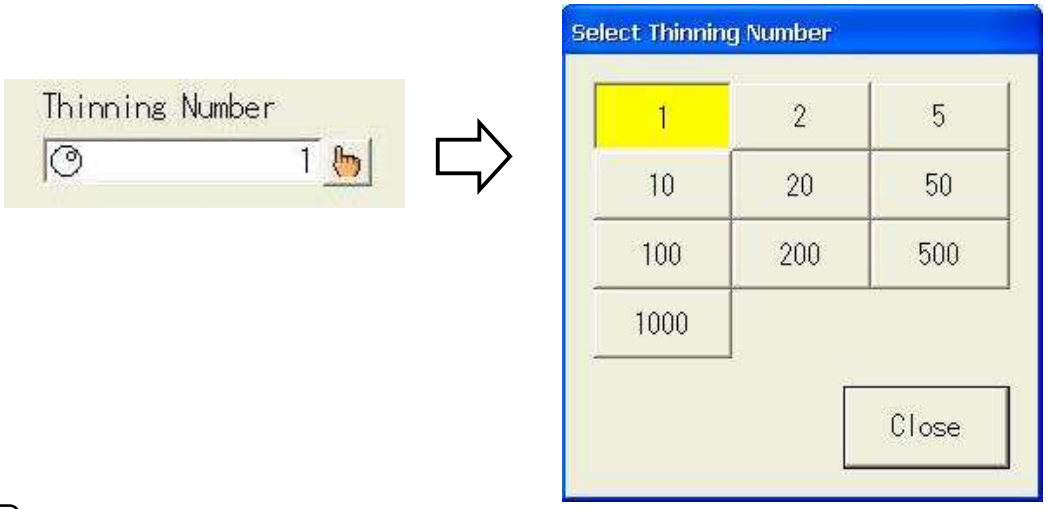
NOTE The file extension that is output in the CSV format will be CSV. The CSV saves file cannot be referenced in the Replay screen.

7.8.3.Specifying CSV Delimiter

Use the (3) to specify the delimiter upon the CSV save. Select comma or tab.

7.8.4.Specifying Number of Skip in CSV

Use the (4) section to specify the number of skips in CSV save.



TIPS Data will be rough if skipping is specified but it is possible to make file size small.

7.8.5.Specifying File Save Destination

Use the (5) section to specify the file save destination.

TIPS The output file extension will be fixed. (Binary save = DRT, CSV save = CSV)

7.8.6.Execution of Data Output

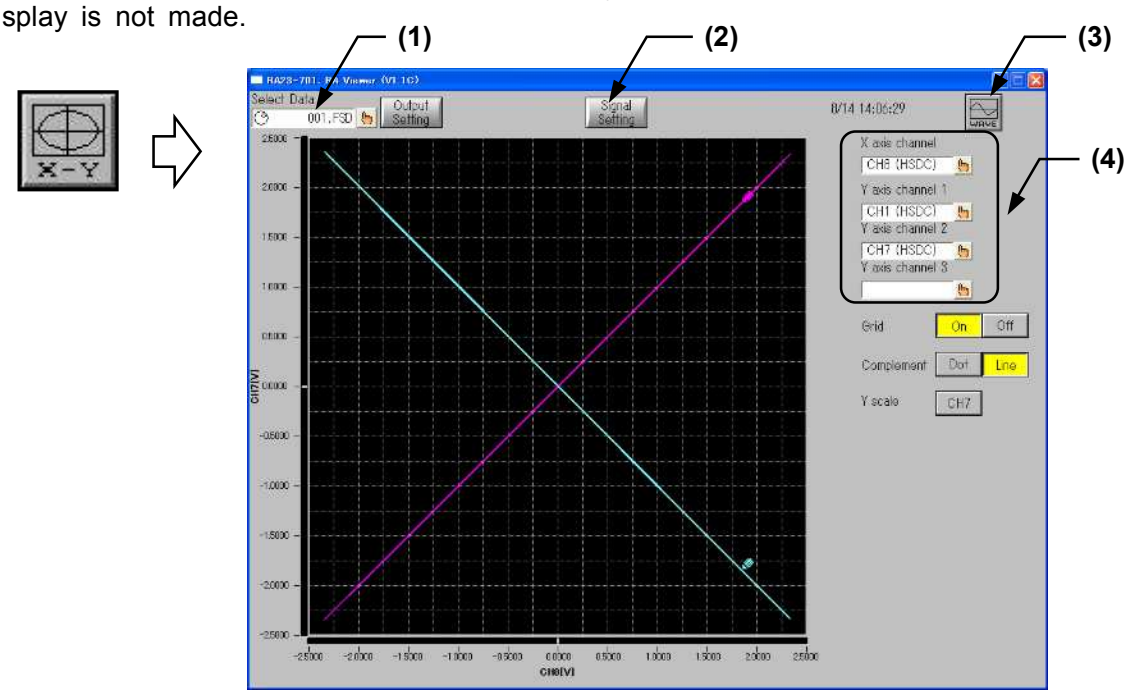
File save is made with the (6) button.

TIPS Output can be stopped with the “Stop button” on the Operation Panel. If the file save operation is terminated, the file save is being canceled.

NOTE During the data output, the other operations do not start. Do not disconnect the connection to a drive during file save.

7.9.X-Y Waveform Display

To display replay data in the X-Y graph, click the X-Y icon on the top of the screen. If the recorded data is the Sample format, X-Y display is made; if the data is the Peak format, X-Y display is not made.



(1)Data selection

This portion displays the data file name whose data is being displayed. Clicking this section to be able to select the data file to be referenced. The operations are the same as those for Y-T waveform display. For more details, see “7.3.Replay data selection”.

NOTE

The X-Y display is available only in the Sample format data. Choose the Sample format data, accordingly.

(2)Signal setting

Signal setting information is displayed. The zero position and physical unit conversion settings are available.

(3)Switching to Y-T waveform display

Display is returned to the Y-T waveform display.

(4)Specifying X-Y axis channel

Specification of the X-Y axis channel is made.

RECORD

First Edition : August 2005
3rd Edition : March 2007

NEC Avio Infrared Technologies Co., Ltd