

# RA3100 Ver.2.2.0

## Introducing improvements and additional features

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November 8, 2024 A&D Company, Ltd.

## ■ Additional functions

CSV file output

## ■ Improved functions

Cursor function on playback screen

- Y-T waveform cursor operation supported during thumbnail display
- Cursor display in thumbnails
- Display of all channel measured values for Y-T waveform cursor

Support for any chart speeds

- Select the notation of sampling speed and printer speed
- Arbitrary chart speed support

Customization of digital display

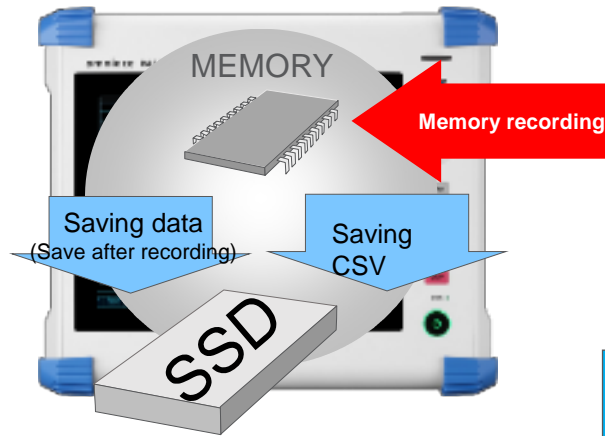
Batch execution of single channel functions

## ■ Specification changes

# CSV file output

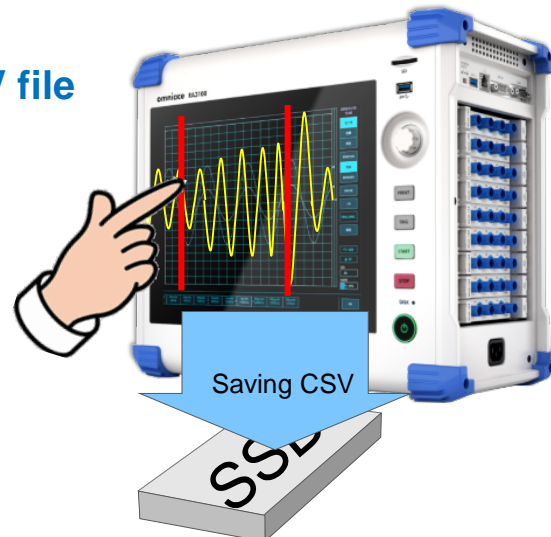
## Automatic saving to CSV file

Data can be saved to SSD in CSV format when saving data after memory recording.

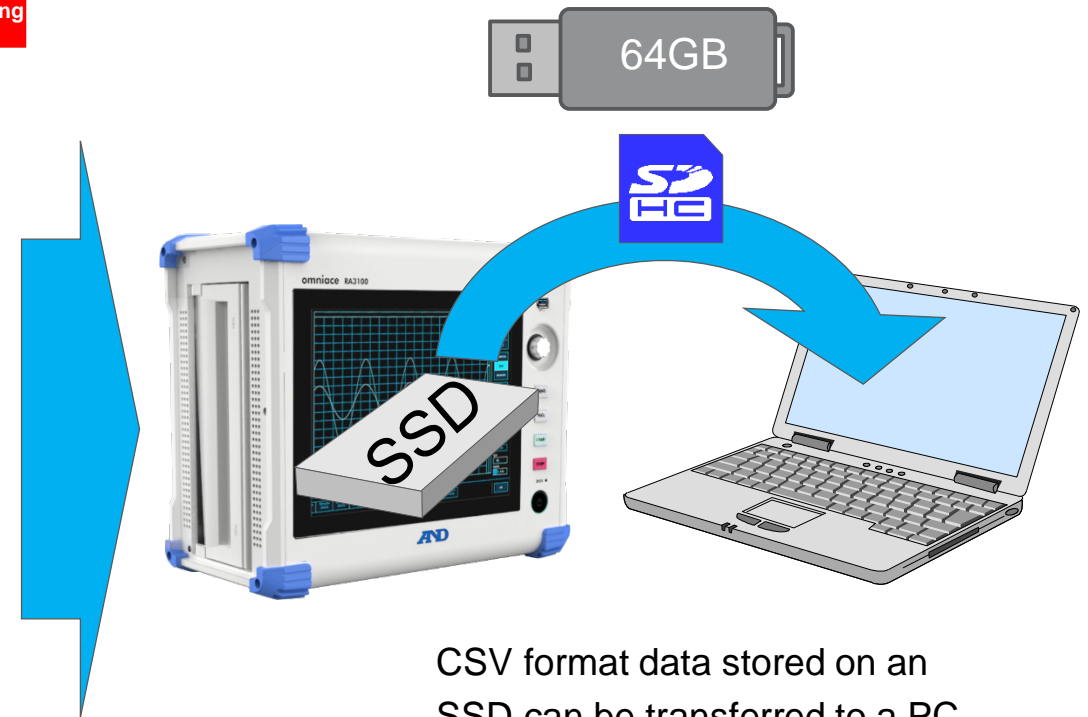


## Saving specified section to CSV file

In playback display, a specified section of data can be saved in CSV format to an SSD.



## Specifying section and saving to CSV file



CSV format data stored on an SSD can be transferred to a PC via SD card or USB memory.

# CSV file output

([Setup] - [Recording setup])

## CSV file auto-save settings

At the end of memory recording, the recorded data is automatically saved in CSV format.

- CSV output: ON/OFF selection
- Output range: 1 to 100% before/after trigger point
- Recording blocks: All blocks
- Destination: SSD
- Folder name: Automatic (save date and time)

A CSV file for each memory block is saved in a folder named  
YYMMDD-HHMMSS-0000.

The screenshot displays the 'Setup - Recording setup' interface with the following settings:

- Mode: Standard
- Data name: New Record
- Automatic numbering: OFF
- Recording time: 0 d 0 h 0 min 10 s 0 ms (Maximum time)
- Start time: 01/01/2000 12:00 AM
- Interval time: 0 d 0 h 1 min 10 s
- Number of Recording times: 212
- Printer: ON (1s/div (100S/s), P-P)
- Real-time printing: ON (SHEET 1)
- SSD: ON (100ms/div (1kS/s), NORMAL)
- Memory: ON (200µs/div (500kS/s), NORMAL)
- Points: 2 k (Recording time 4ms)
- Recording blocks (memory divisions): 10
- Endless mode: ON
- Pre-Trigger: 50 %
- Thumbnail: 1/10
- CSV output: ON**
- Output range (Ref. to trigger): 100 %**

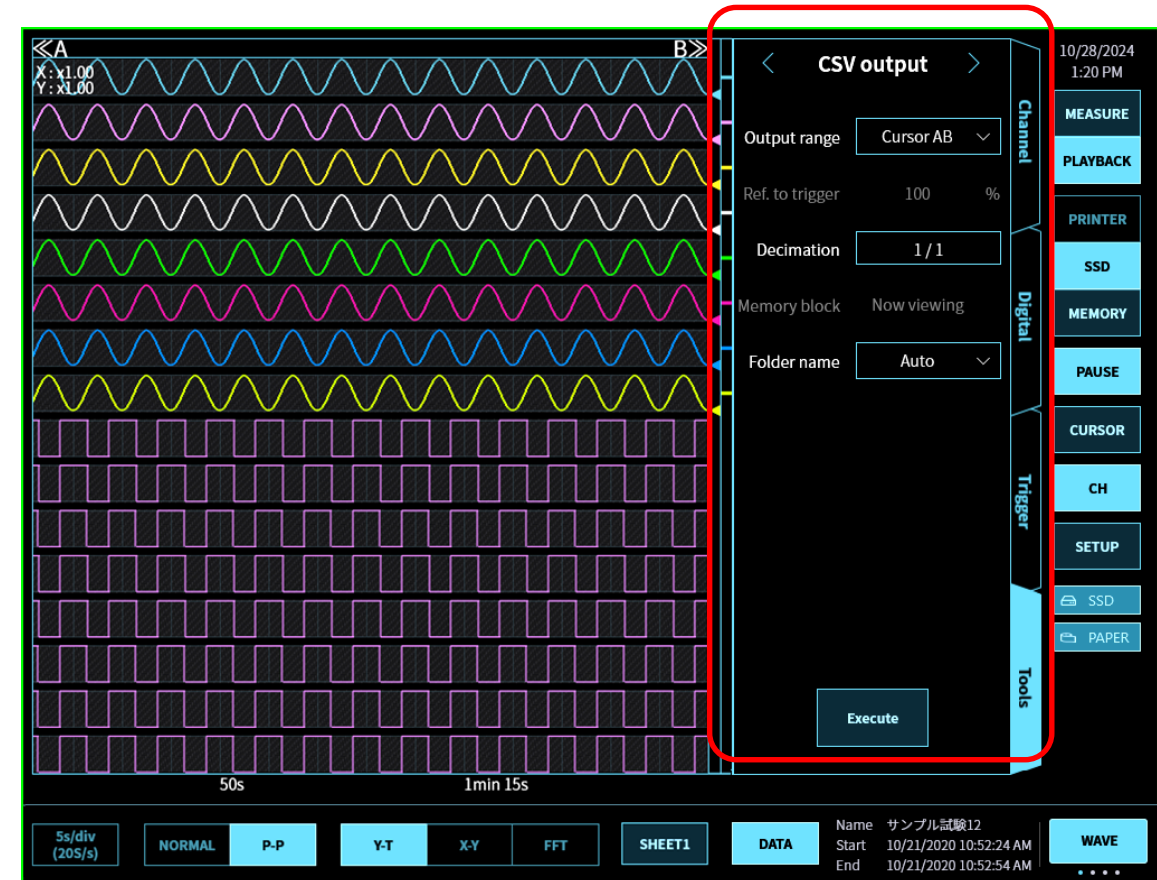
# CSV file output

([PLAYBACK] - [CH] - [Tools] - [CSV output])

## Specifying section and saving to CSV file

Saves between cursor data of the Y-T waveform in a CSV file.

- Target data: Memory recorded data, SSD recorded data, printer recorded data
- Output range: B/W AB, ALL, Ref. to trigger
- Decimation: 1/1 to 1/1000
- Recording blocks: Display block, all blocks  
(at Memory recording)
- Destination: SSD
- Folder name: Auto (playback data save date and time)  
Manual (single-byte alphanumeric characters, and some symbols)
- Execute: Executes the save.

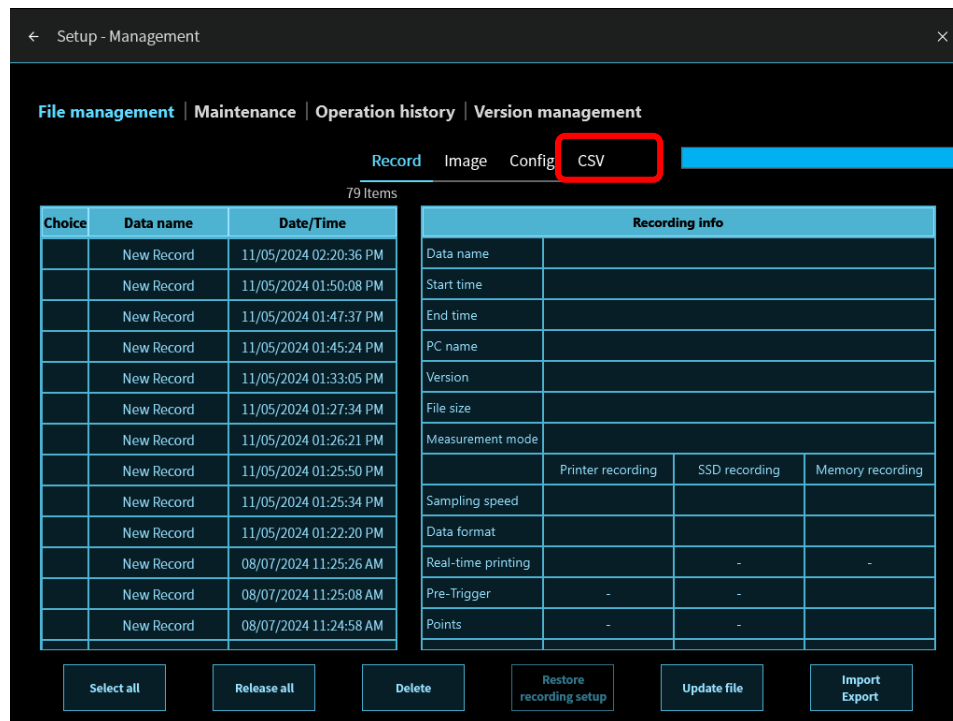


# CSV file output

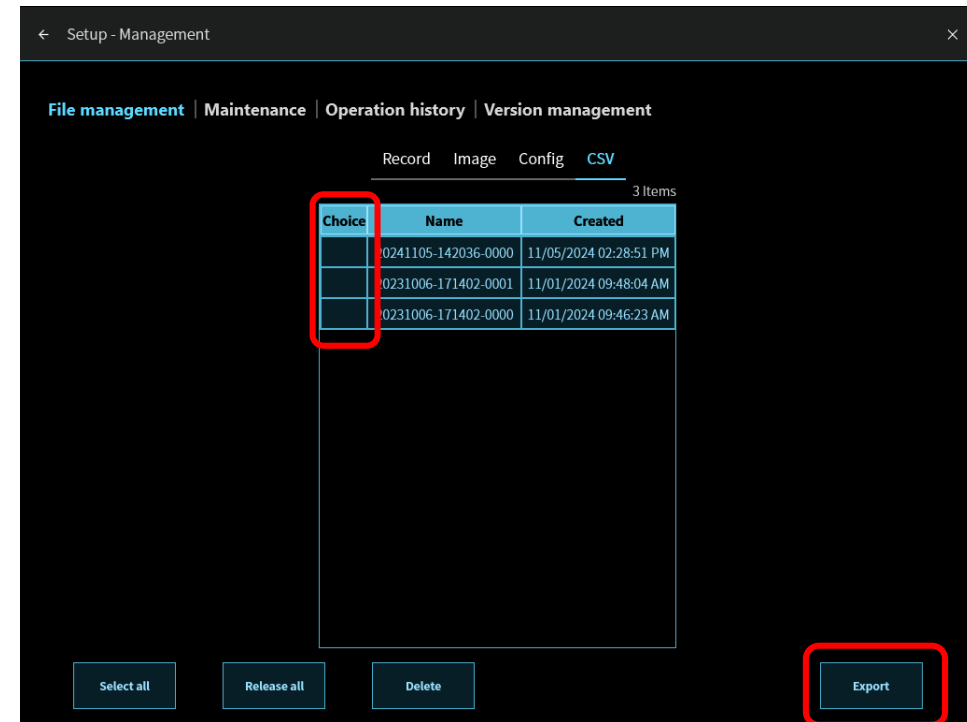
([Setup] - [Management] - [File Management] - [CSV])

## Exporting CSV files

CSV format data stored on an SSD can be transferred to a PC via SD card or USB memory.



In File management, file operations can be performed on recorded data, screen images, measurement condition data, and CSV data.



Select [CSV] to see the folder containing the CSV data. Select the desired folder and tap the [Export] key to copy it to USB memory or an SD card.

# CSV file output

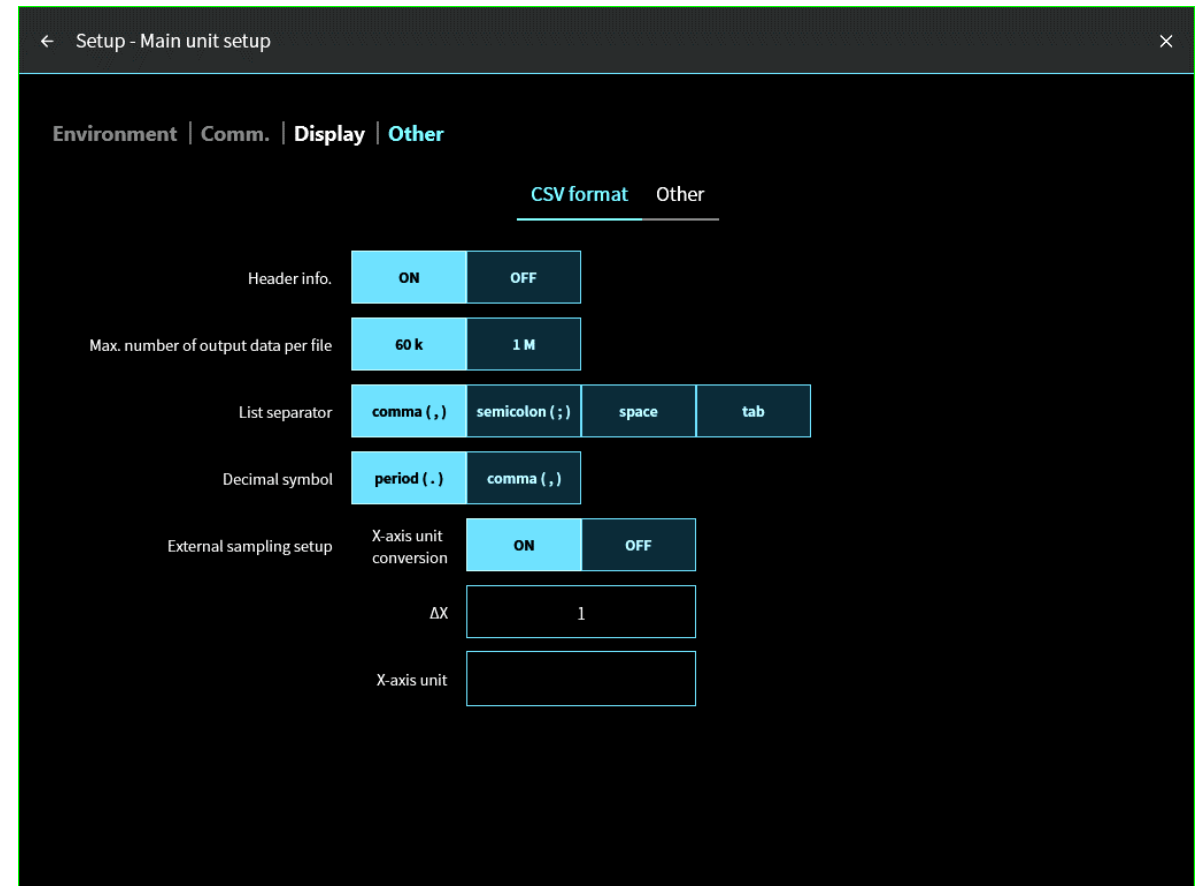
([Setup] - [Main unit setup] - [Other] - [CSV format])

## CSV data output format settings

- Header info. (module information, etc.): ON, OFF
- Max. number of output data per file: 60k, 1M
- List separator: comma (,), semicolon (;), space, tab
- Decimal symbol: period (.), comma (,)
- External sampling setup

In the case of data recorded by external sampling,  
X-axis expression can be set.

- X-axis unit conversion: ON, OFF
- $\Delta X$ : Interval of 1 sampling on X axis
- X-axis unit conversion: X-axis unit(text input)



# Cursor function on playback screen

([PLAYBACK] - Data reading - [CURSOR])

- Added a cursor operation menu to the side menu.  
The cursor can be operated and measured values for all channels can be displayed.
- The cursor is also displayed on the Thumbnail.

The image shows two screenshots of the AND oscilloscope playback screen. The left screenshot shows the main playback screen with a cursor menu overlaid on the right side. The right screenshot shows the side menu with the CURSOR key highlighted.

**Switching to CURSOR operation menu**

**Added [CURSOR] key**

	A	B	A-B
X: x1.00	000d 00h 00min 02s	000d 00h 00min 03s	000d 00h 00min 01s
Y: x1.00	600ms 000μs 000ns	749ms 000μs 000ns	149ms 000μs 000ns
S1-CH1	16.2500 V	23.4312 V	7.1812 V
S1-CH2	16.2500 V	23.4312 V	7.1812 V
S1-CH3	16.2500 V	23.4312 V	7.1812 V
S1-CH4	16.2500 V	23.4312 V	7.1812 V
S2-CH1	16.2500 V	23.4312 V	7.1812 V
S2-CH2	16.2500 V	23.4312 V	7.1812 V
S2-CH3	16.2500 V	23.4312 V	7.1812 V
S2-CH4	16.2500 V	23.4312 V	7.1812 V
S3-CH1	16.2500 V	23.4312 V	7.1812 V
S3-CH2	16.2500 V	23.4312 V	7.1812 V
S3-CH3	16.2500 V	23.4312 V	7.1812 V
S3-CH4	16.2500 V	23.4312 V	7.1812 V
S4-CH1	16.2500 V	23.4312 V	7.1812 V
S4-CH2	16.2500 V	23.4312 V	7.1812 V
S4-CH3	16.2500 V	23.4312 V	7.1812 V
S4-CH4	16.2500 V	23.4312 V	7.1812 V
S5-CH1	16.2500 V	23.4312 V	7.1812 V
S5-CH2	16.2500 V	23.4312 V	7.1812 V
S5-CH3	16.2500 V	23.4312 V	7.1812 V
S5-CH4	16.2500 V	23.4312 V	7.1812 V
S6-CH1	16.2500 V	23.4312 V	7.1812 V
S6-CH2	16.2500 V	23.4312 V	7.1812 V
S6-CH3	16.2500 V	23.4312 V	7.1812 V
S6-CH4	16.2500 V	23.4312 V	7.1812 V
S7-CH1	16.2500 V	23.4312 V	7.1812 V
S7-CH2	16.2500 V	23.4312 V	7.1812 V
S7-CH3	16.2500 V	23.4312 V	7.1812 V
S7-CH4	16.2500 V	23.4312 V	7.1812 V
S8-CH1	16.2500 V	23.4312 V	7.1812 V
S8-CH2	16.2500 V	23.4312 V	7.1812 V
S8-CH3	16.2500 V	23.4312 V	7.1812 V
S8-CH4	16.2500 V	23.4312 V	7.1812 V
S9-CH1	16.2500 V	23.4312 V	7.1812 V
S9-CH2	16.2500 V	23.4312 V	7.1812 V
S9-CH3	16.2500 V	23.4312 V	7.1812 V
S9-CH4	16.2500 V	23.4312 V	7.1812 V

10/28/2024  
1:54 PM

Close

2s 500ms 3s 000ms 3s 500ms 4s 000ms

S1-CH1  
1/10 THUMBNAIL

2024 PM  
SURE  
BACK  
ENTER  
SD  
MEMORY  
PAUSE  
CURSOR  
CH  
SETUP  
SSD  
PAPER  
USB

4s 500m

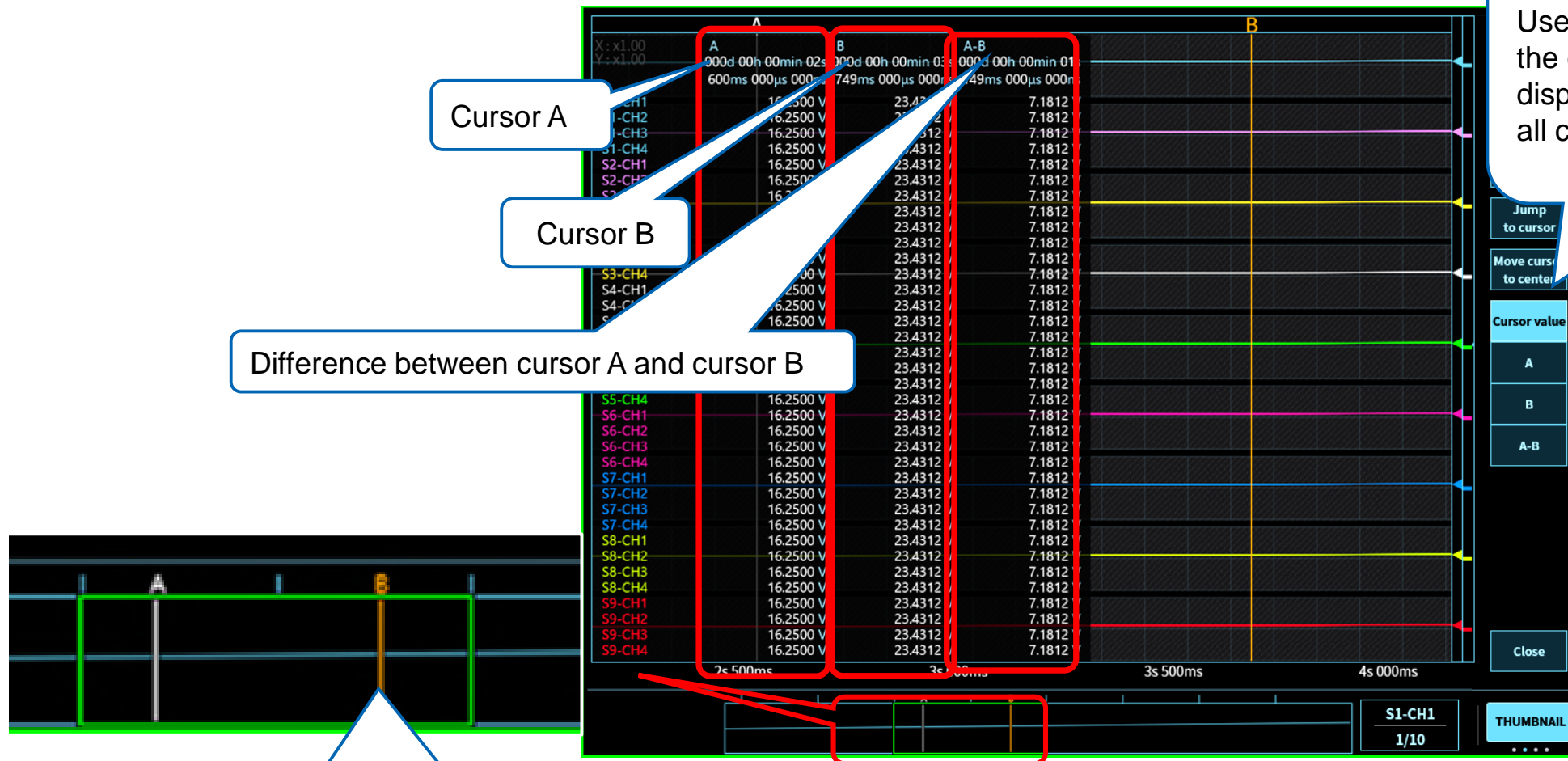
S1-CH1  
1/10 THUMBNAIL



# Cursor function on playback screen

[PLAYBACK] - Data reading - [CURSOR]

- The measured values of all channels are displayed by cursor.



Use the [Cursor value] key in the cursor operation menu to display measured values for all channels

Cursor also displayed in Thumbnail

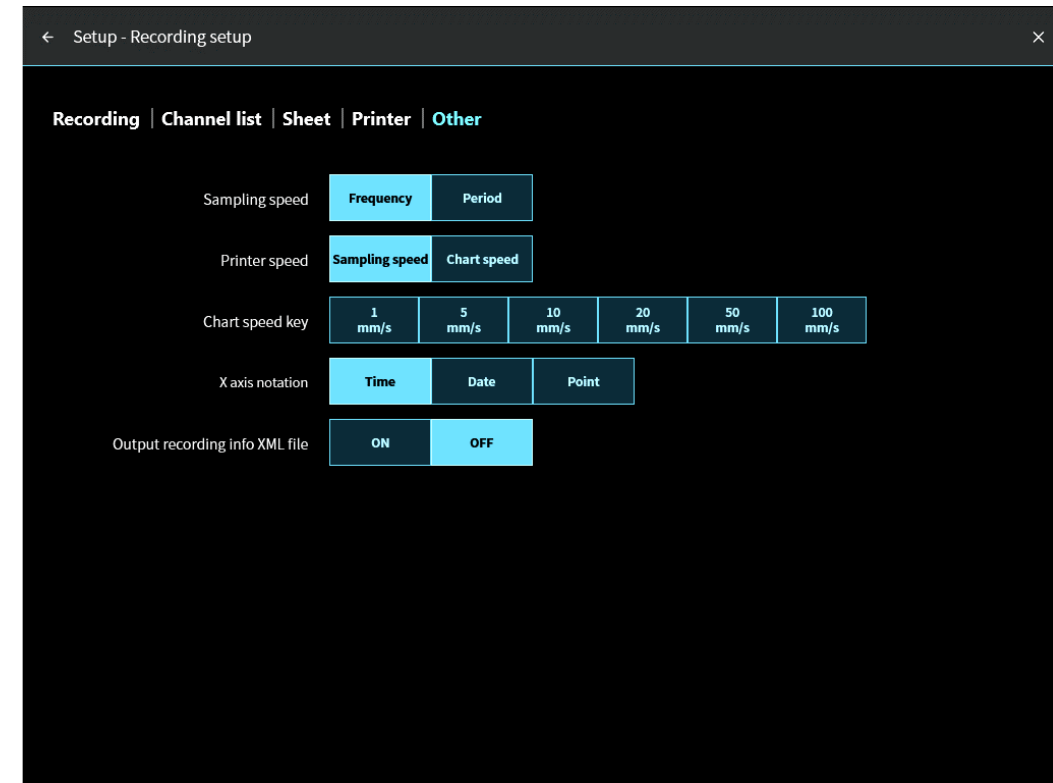
# Support for any chart speeds

([Setup] - [Recording setup] - [Other])

For Sampling speed notation, [Frequency] or [Period] can be selected.

For Printer speed notation, [Frequency] or [Period], and [Chart Speed] can be selected.

		SSD	MEMORY	PRINTER	PEN REC
		Sampling Speed		Printer speed	
Frequency	100 ms/div (1 kS/s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Period	100 ms/div (1 ms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chart speed	100 mm/s	×	×	<input type="radio"/>	<input type="radio"/>



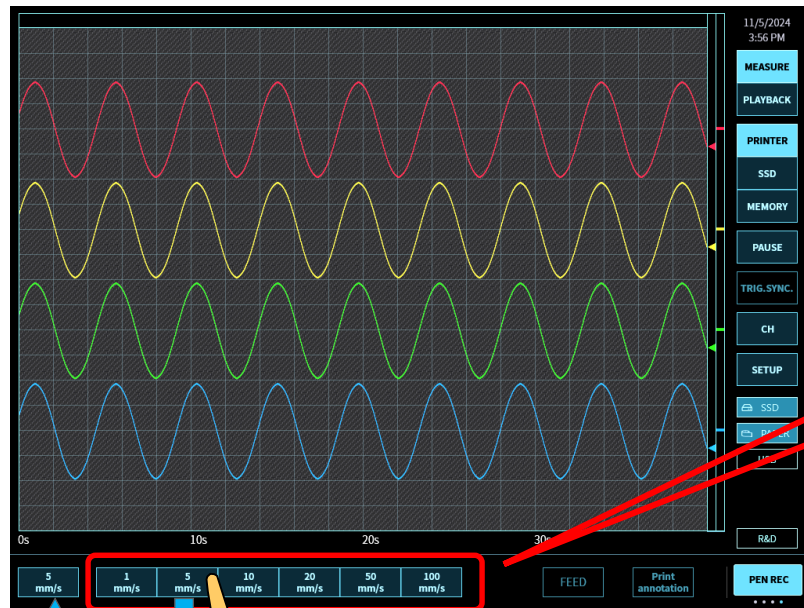
The notations that can be set differ depending on the recording destination.

# Support for any chart speeds

([Setup] - [Recording setup] - [Other])

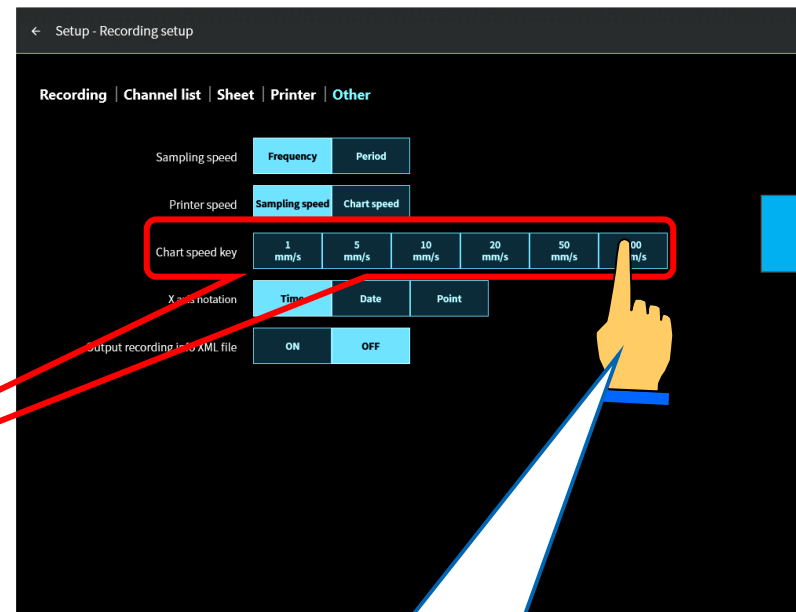
## Arbitrary chart speed setting (1)

In PEN Recording, there are 6 Chart speed keys to which you can register an arbitrary value.

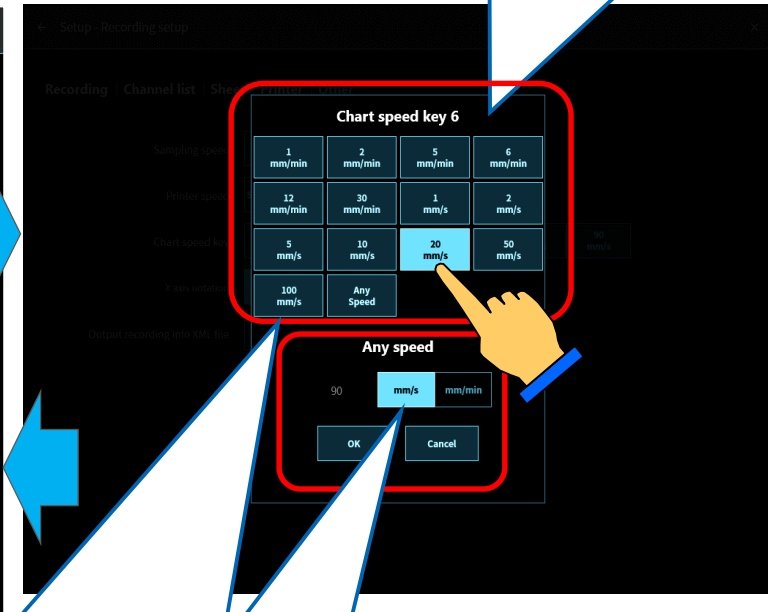


Tap a [Chart speed key (6 types)] to change the chart speed.

## How to register a value



Tap the speed you want to change.



To register a value, select a speed in the menu and tap the [OK] key.

To set a different value to those in the menu, register an arbitrary value with the [Any Speed] key. An arbitrary chart speed can be registered in increments of 1 to 100 mm/s or 1 to 100 mm/min.

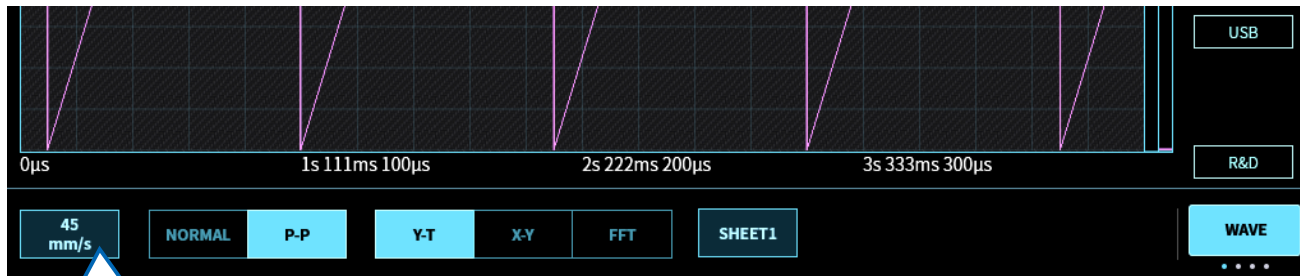
# Support for any chart speeds

[MEASURE] - [PRINTER] - [WAVE]

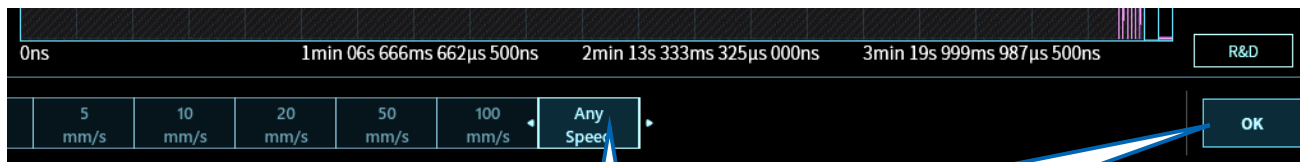
## Arbitrary chart speed setting (2)

In Printer Recording, you can select [Recording Speed] using the below recording speed keys.

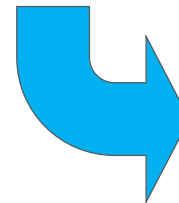
If the recording speed you want to set is not shown, you can set an arbitrary value.



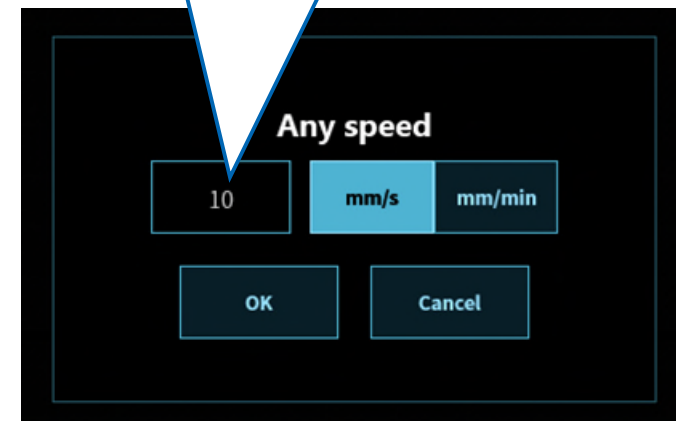
Tap the Recording Speed key.



Select [Any Speed] and tap the [OK] key.



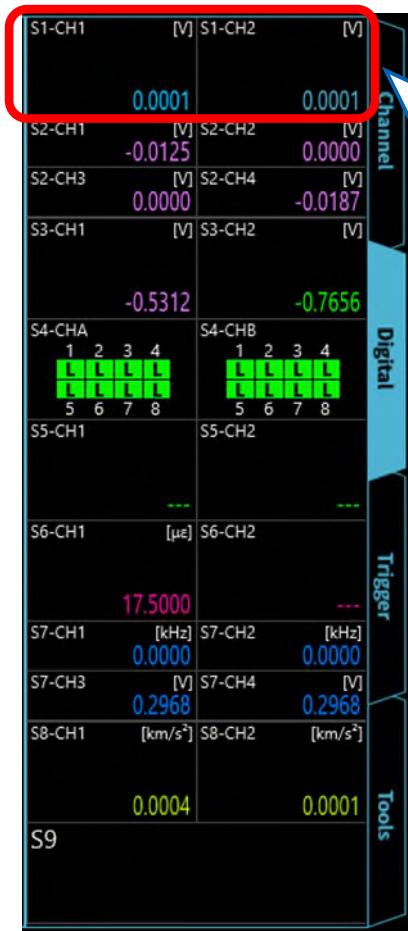
Set an arbitrary chart speed



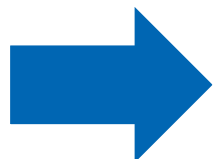
# Customization of digital display

[Setup] - [Recording setup] - [Other]

For **Digital display**, in addition to the [1 slot/frame] display method, [1 channel/frame] has been added. This allows larger text and signal names to be displayed.



1 frame has channel information of 1 slot



1 channel per frame display was added

Channel display positions can be rearranged.

- 1 channel per frame display  
Large text and signal names can be displayed.
- The conventional display of 1 slot per frame can also be selected.
- Display up to 9 frames per screen  
Display scrolls when more than 9 frames are selected.
- Channel display order can be set arbitrarily

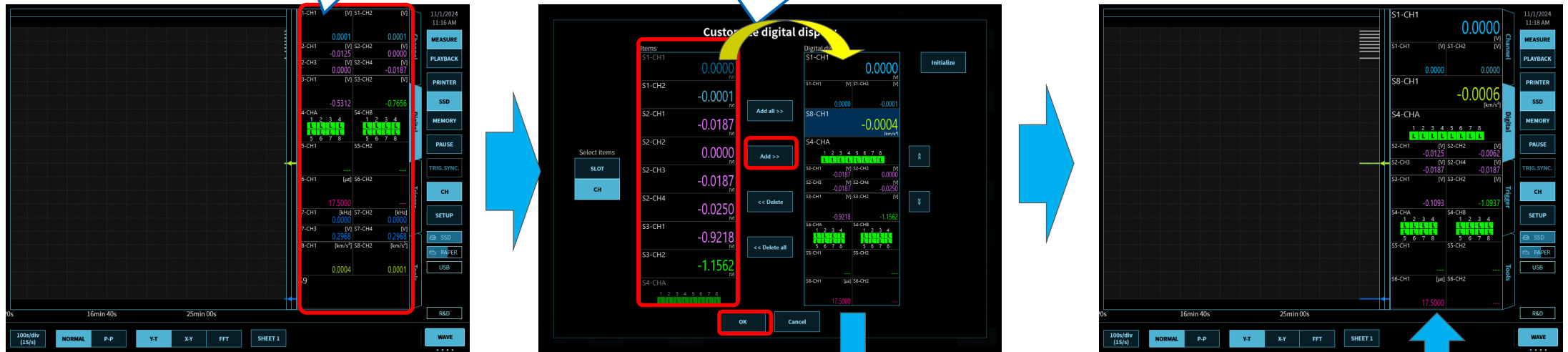
# Customization of digital display

## How to set the digital display (numerical display)

Tap the digital display area to switch to the customize screen.

Select the item you want to display and tap the [Add>>] key to add it to the digital display on the right.

Tap the [OK] key to return to the measurement monitor screen.



# Batch execution of single channel functions

Batch execution of all channels is possible for each of the following functions:

- **Zero cancel Execute**

  - 2ch Voltage Module: RA30-101

  - 4ch Voltage Module: RA30-102

  - 2ch High Speed Voltage Module: RA30-103

  - 2ch High Voltage Module: RA30-107

  - 4ch Voltage Module: RA30-113

- **BAL Execute**

- **Bridge Check**

  - 2ch AC Strain Module: RA30-104

- **TEDS Readout**

  - 2ch Acceleration Module: RA30-109

Execute all channels at once by pressing a key.



# Specifications changed

## Communication commands

- S02: Memory recording configuration and querying  
This command now supports CSV file output.
- S04: Printer recording configuration and querying  
This command now supports custom chart speeds.
- S36: Print parameter configuration and querying  
The data range of the recording speed has been changed.
- S38: Chart speed key configuration and querying  
This command has been removed.
- E01: Zero cancel; E22: BAL execution; E23: Bridge check; E24: TEDS readout  
When "F" is specified for a slot or channel, now the command will only be executed for channels with measurement enabled.
- I10: Recording data count readout  
The CSV data count has been added.



## Other

The order of the list displayed on the file management screen has been changed to descending order of creation date/time.

