RION CO., LTD.

RIONOTE FFT Analysis Program

SX-A1FT

Instruction Manual



Manuals Provided with This Program

The following manuals are provided with this program.

SX-A1FT Instruction Manual (This Manual)
Describes how to operate and configure the FFT Analysis Program "SX-A1FT".

HTML for Instruction Manual Application
The HTML help that describes settings for SX-A1FT.

Overview of This Manual

This manual mainly describes the functions and operations of SX-A1FT. When the measuring system is used with another device, be sure to read the manual of the program for the operation.

SX-A1FT Overview
Describes the overview of this program.

Screen Layout
Describes the layout of the screen displayed.

Starting/Exiting the SX-A1FT
Describes how to start and exit this program.

Measurement
Describes the measurement related operations using this program such as how to start and stop measurement.

Operating the Project
Describes the project related operations such as how to open and delete a project.

Operating Recall and Waveform Analysis Screens
Describes the operations on the Recall and Waveform analysis screens such as how to check settings.

Waveform Analysis
Describes the waveform analysis related operations such as how to execute the analysis and output files.

Operating Graphs
Describes the graph operations on the Measurement or Recall screen.

Settings
Describes how to configure the setting items on the Measurement settings or Input settings screen.

Specifications

Provides the specifications of this program.

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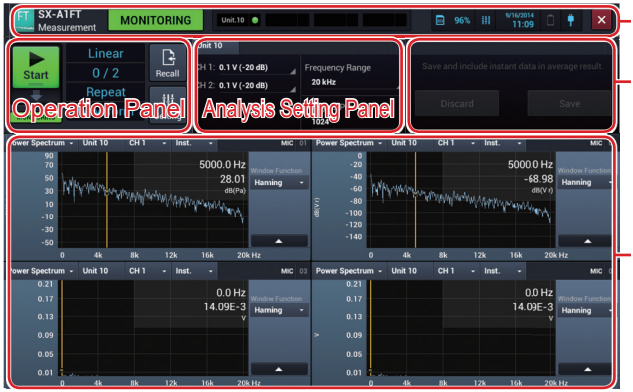
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SX-A1FT Overview

The SX-A1FT is the FFT analysis program that runs on the RIONOTE.
FFT analysis of the wave data recorded by SX-A1WR can be performed using this program.

Screen Layout

Measurement Screen Layout





MEMO	- The screen above is an example of the display with four graphs.

Status Bar
Displays the registered amplifier status, date and time, and battery status.

Operation Panel
Displays the buttons for starting, stopping, and pausing measurement, and some measurement conditions.

Analysis Setting Panel
You can change some measurement settings.

Repeat Trigger Measurement Operation Panel
Select save or re-measurement of data at the end of measurement. It is displayed when the trigger mode is [Repeat].

FFT Graph Display Area
Displays the FFT analysis results of waveform data being input in a graphic form. The number of graphs to display can be changed to one, two or four by changing the setting. You can also check the abnormal state during recording, such as OVERLOAD.

Tacho Display Panel
This is displayed when the tacho display is enabled. This is not displayed when a tacho display enabled amplifier is not connected. Also, it is not displayed when the trigger mode is [Repeat].

Recall Screen Layout



Status Bar

Displays the selected project name, date and time, and battery status.

Operation Area

Displays the button to enter the Recall settings screen and measurement conditions.

Analysis Setting Area

Displays the measurement settings of the currently opened project. You cannot change them.

FFT Graph Display Area

Displays the FFT analysis results of the currently opened project in a graphic form. The number of graphs to display can be selected from one, two and four.

Waveform Analysis Screen Layout



Status Bar

Displays the status of a registered unit, date and time, and the battery status.

Operation Area

Displays the start and stop buttons of waveform analysis, and the buttons for the settings and for moving to the File selection screen.

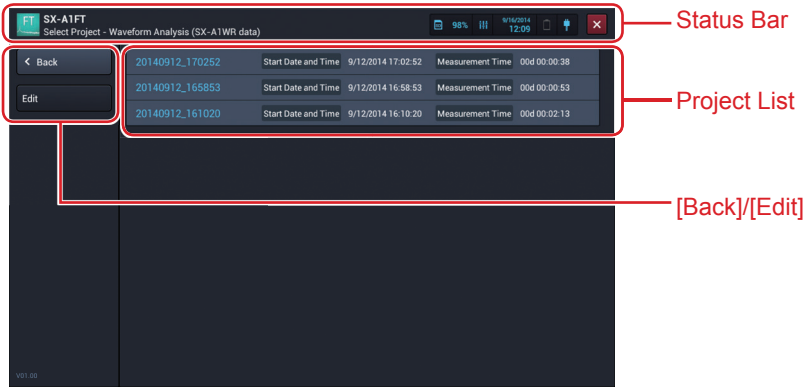
Time-Value Graph View Area

Displays the Time-Value graph of the currently opened waveform data.

FFT Graph Display Area

Displays the FFT analysis results of waveform data being input in a graphic form. The number of graphs to display can be changed to one, two or four by changing the setting. You can also check the abnormal state during recording, such as OVERLOAD.

Project Select Screen Layout



Status Bar

Displays the date and time and the battery status.

[Back]

Tap the button to return to the previous screen.

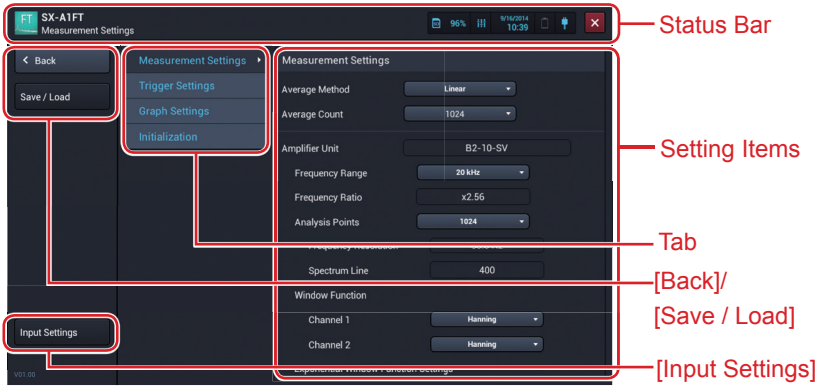
[Edit]

Tap the button to display the screen to change a project name or delete a project.

Project List

Displays the list of saved projects.

Configuration Screen Layout



Status Bar

Displays the date and time and the battery status.

[Back]

Tap the button to return to the previous screen.

[Save / Load]

Tap the button to display the screen to save the settings. This button appears when you move from the Measurement screen to the Setting screen.

[Input Settings]

Tap the button to display the Input settings screen. This button appears when you move from the Measurement screen to the Setting screen.

Tab

Displays the setting items for each purpose.

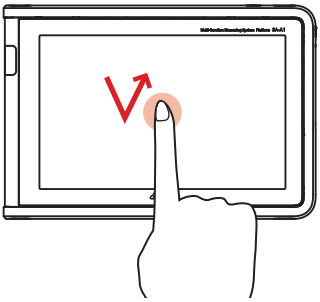
Setting Items

Displays the setting items of the selected tab.

Basic Operation

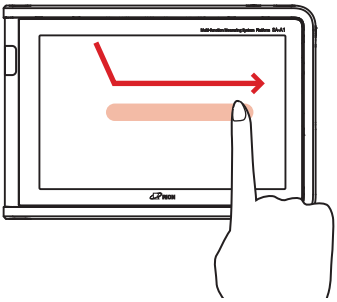
Important	- The touch panel is designed to be gently touched by fingers or stylus pen. Do not press the panel hard with fingers or touch it with a sharp object (such as ballpoint pen/pin). - Please note that the touch panel may not work correctly or cause malfunction on the following conditions. - Operation with a glove - Operation with a nail tip - Operation while putting foreign objects on the touch panel - Operation with a protective film or label attached on the touch panel - Operation with a water droplet or condensation on the touch panel - Operation with wet or sweaty fingers

Tap/Double-Tap



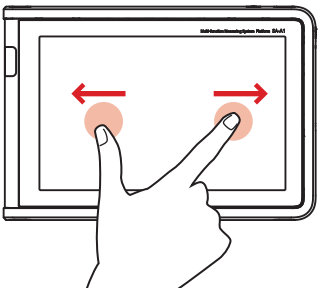
Tap is to lightly touch the screen with a finger and immediately release the finger. Tap is used to select an item or icon displayed on the screen. Double-tap is to tap twice quickly.

Slide



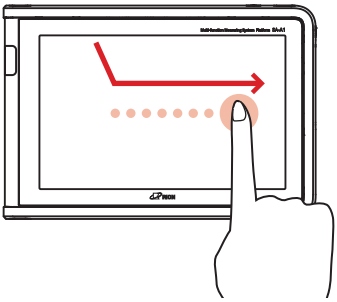
When all of data cannot be displayed on the screen, you can move the finger to the desired direction while lightly touching the screen. Slide is used to scroll the screen or switch pages. It is also used to move a gauge or bar to adjust the volume and brightness.

Pinch



You can open two fingers (pinch out) or close (pinch in) while touching the screen. It can be used to zoom in or out of a graph.

Drag

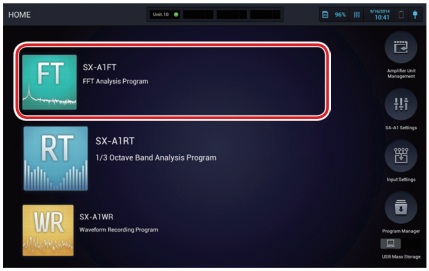


You can drag an item or icon to move to the desired location while lightly touching the screen.

Starting/Exiting the SX-A1FT

Starting the SX-A1FT

1. **Tap [SX-A1FT] on the HOME screen.**



The SX-A1FT starts and the Measurement screen appears.

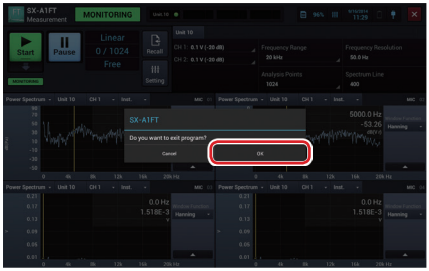
MEMO	- You may not see [SX-A1FT] displayed on the screen if multiple programs are installed. In this case, slide the programs up or down on the HOME screen to display [SX-A1FT].

Exiting the SX-A1FT

1. **Tap [X] on the right side of the status bar.**



2. **Tap [OK].**



MEMO	- You cannot exit the SX-A1FT during measurement.

Measurement

Starting Measurement

1. Slide [Start] down.



Measurement is started and the data is saved on the SD memory card.

Important - Do not power off or pull out the SD memory card during measurement.

MEMO

- Depending on the Trigger Mode you selected, the operation after starting measurement becomes as follows.

  Free: Starts measurement immediately. Measurement stops after the specified measurement time.

  Single: Puts in a trigger standby state. Measurement starts when trigger conditions are met. Measurement stops after the specified measurement time.

  Repeat: Puts in a trigger standby state. Measurement starts when trigger conditions are met. The trigger standby state is entered again when Discard or Save is selected for the frame data at the start. Measurement will end when data save is repeated for the set count.
- Depending on the settings of the trigger mode or the average method, another operation may be required to save measurement results. For details, see "Saving Measurement Results" (P.24).
- For details on how to configure the trigger mode, see "Configuring the Trigger Mode" (P.59).
- When you start measurement, [Start] changes to [Stop].
- The screen displays [MEASUREMENT] under the button during measurement. The screen displays [STANDBY] during a trigger standby period.
- Tap [Setting] during measurement to display the current setting.
- You cannot change the settings during measurement.

Stopping Measurement

1. Slide [Stop] down.

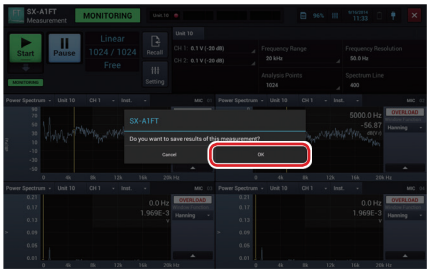


MEMO	- Use this operation to stop measurement manually before the specified average count. - When you stop measurement, [Stop] changes to [Start] and the screen displays [MONITORING].

Saving Measurement Results

When the trigger mode is set to a mode other than [Repeat], the screen displays a confirmation message to save measurement results at the end of measurement.

Tap [OK] to save the measurement results. Tap [Cancel] to return to the Measurement screen without saving measurement results.



MEMO	- For details on how to configure the average method, see "Configuring the Average Method and Average Count" (P.52).

When the trigger mode is set to [Repeat], save or re-measurement should be selected at the end of measurement.

Tap [Discard] to return to the trigger standby state without saving measurement results. In this case, the repeat count is not incremented. Tap [Save] to return to the trigger standby state after saving measurement results. When reaching the specified repeat count, measurement stops.



MEMO	- After the end of the first measurement, tapping [Stop] to stop measurement before tapping [Discard] or [Save] will not cause measurement results to be saved.

Pausing Screen Update

When a pause is executed, the screen update will stop. When measurement is being performed, it will also stop.

1. **Tap [Pause].**



Screen update stops temporarily. “PAUSE” is displayed during a pause period.

MEMO	- When measurement is started during pause, the pause will be canceled.

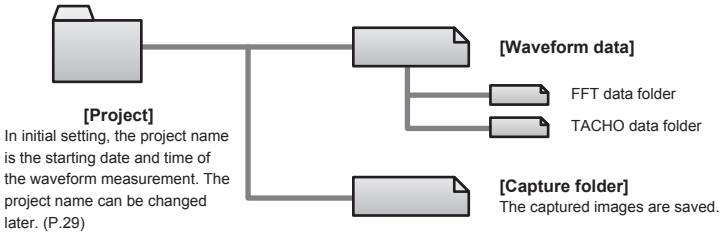
2. **Tap [Pause] again.**

Screen update resumes.

Operating the Project

Project

Project is a folder to save data such as a measured record. All data regarding measured records are saved in the same project.
The project name is saved as the starting date and time of recording measurement but can be changed to any name later.



MEMO	- To use the project, which was transferred from a SD memory card to a computer, again on this unit, save the program on a SD memory card without creating a folder.

Opening the Project

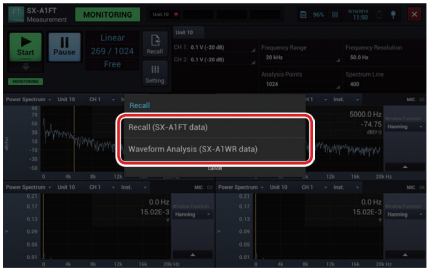
1. **Tap [Recall] on the Measurement screen.**



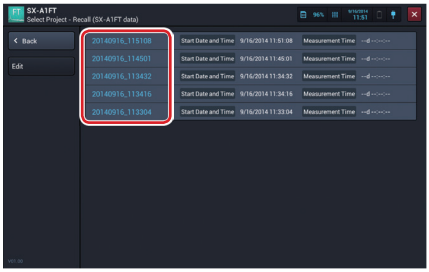
The data selection screen is displayed.

2. **Tap [Recall (SX-A1FT data)] to open the recall data.**

   Tap [Waveform Analysis (SX-A1WR data)] to open the SX-A1WR data for waveform analysis.



3. **Tap the name of the project you want to open.**



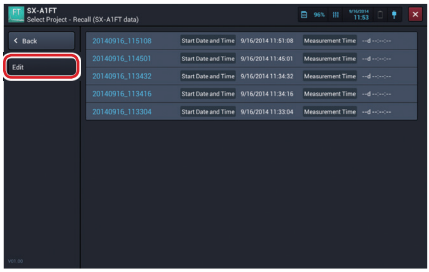
The Recall or Waveform analysis screen appears and displays wave data of the selected project.

Changing the Project Name

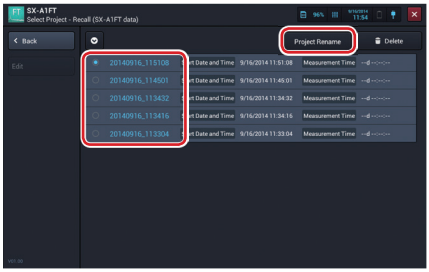
1. **Tap [Recall] on the Measurement screen.**

2. **Tap [Recall (SX-A1FT data)] or [Waveform Analysis (SX-A1WR data)].**

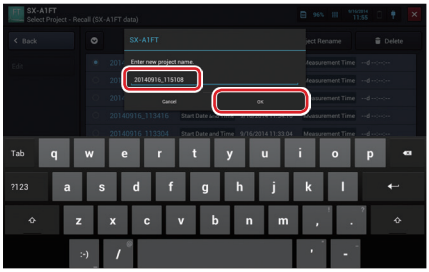
3. **Tap [Edit].**



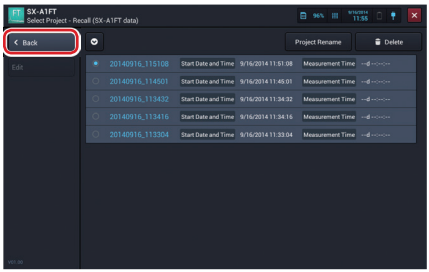
4. **Tap the project of which you want to edit the name and tap [Project Rename].**



5. **Enter the name and tap [OK].**



6. **Tap [Back].**

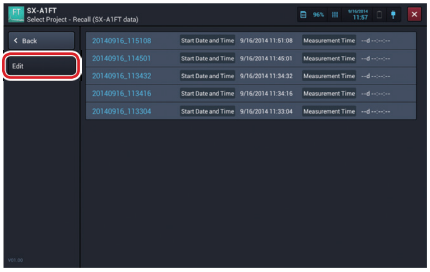


Deleting the Project

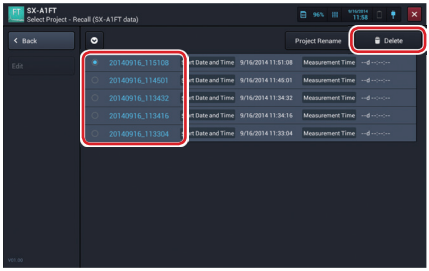
1. **Tap [Recall] on the Measurement screen.**

2. **Tap [Recall (SX-A1FT data)] or [Waveform Analysis (SX-A1WR data)].**

3. **Tap [Edit].**

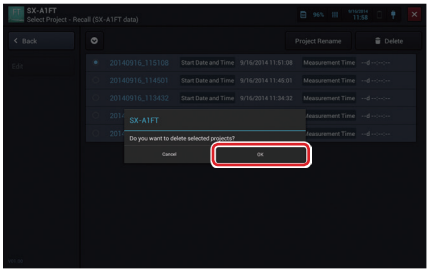


4. **Tap the project to delete and tap [Delete].**



MEMO	- You can select multiple projects. - When the project is selected, [●] appears to the left of the project. - Tap the selected project again to cancel the selection. - Tap [ ] to select all projects.

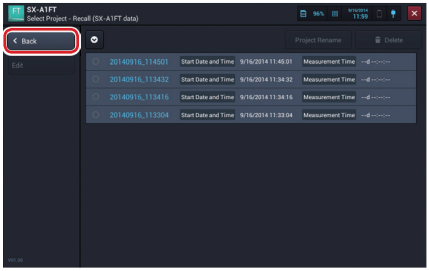
5. Tap [OK].



Important

- If you delete the project, you cannot restore data. Check if data is unnecessary before deleting.

6. Tap [Back].



Checking the Data Settings

1. **Open a project and display the Recall or Waveform analysis screen. (P.27)**

2. **Tap [Setting].**



The measurement settings of data are displayed.

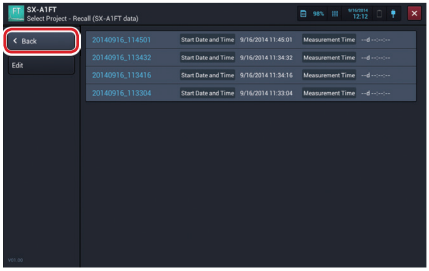
Closing the Recall Screen

1. **Tap [Back] on the Recall or Waveform analysis screen.**



The Select project screen is displayed.

2. **Tap [Back].**



The Measurement screen is displayed.

Waveform Analysis

Performing Waveform Analysis

Select the range for waveform analysis and perform analysis.

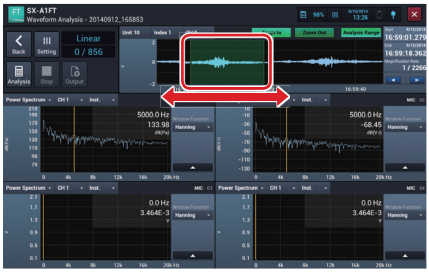
1. **Open a project and display the Waveform analysis screen. (P.27)**

2. **Tap [Analysis Range].**

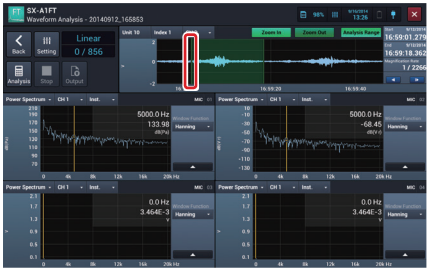


MEMO	- Tap [Analysis Range] to enable [Zoom In] and [Zoom Out]. - Tap [Zoom In] to zoom in the selected range. - Tap [Zoom Out] to zoom out the selected range.

3. **To move the analysis range, slide the selected range to the left or right while tapping.**

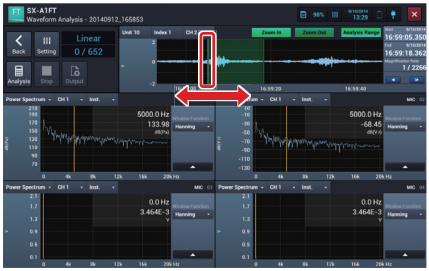


4. **To change the analysis starting time, touch the starting line of the analysis range.**



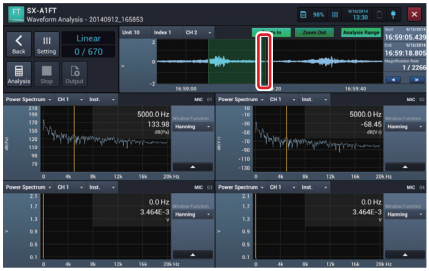
The color of the starting line changes, enabling the move of the line.

5. **Slide the starting line to the desired time.**



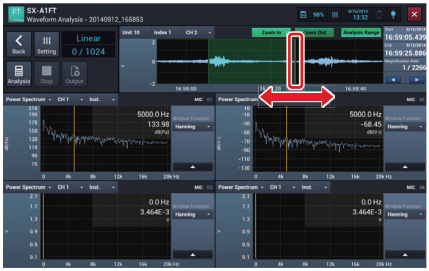
MEMO	- You can also use [◄] or [►] to move the starting line.

6. **To change the analysis ending time, touch the ending line of the analysis range.**



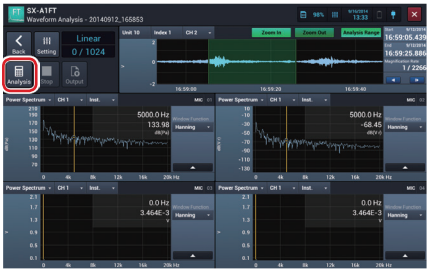
The color of the ending line changes, enabling the move of the line.

7. **Slide the ending line to the desired time.**



MEMO	- You can also use [◄] or [►] to move the ending line.

8. Tap [Analysis].



The selected range is analyzed.

MEMO	- To stop calculation, tap [Stop] on the operation panel.

Outputting Waveform Analysis Results

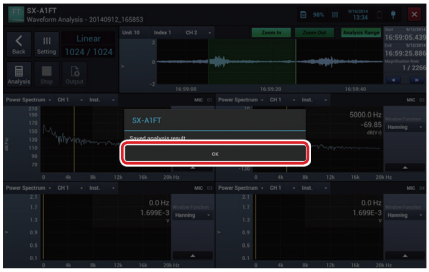
A result can be output after performing a waveform analysis.

1. Tap [Output].



The selected range is output.

2. Tap [OK].



MEMO	- The output binary data is saved in the project folder. - The output binary file can be converted into a text file using SA-A1 file converter.

Operating Graphs

Zooming in on the Graph View

1. **Pinch out on the graph on which you want to zoom in.**



MEMO	- The zoomed in graph is returned to previous display by double-tapping a graph.

Zooming out of the Graph View

1. **Pinch in on the graph of which you want to zoom out.**



MEMO	- The zoomed out graph is returned to previous display by double-tapping a graph.

Using the Single Graph View

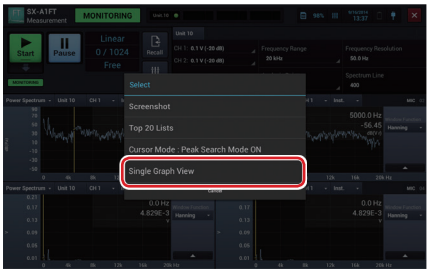
When using the multiple graph display (two or four graphs), you can zoom in on the selected graph for the single graph view.

MEMO	- You can zoom in on a graph when using the multiple graph view. You cannot zoom in when using the single graph view. - The number of graphs to display can be selected from [Graph Settings] in [Measurement Settings]. (P.60)

1. Tap [▲] on the graph on which you want to zoom in.



2. Tap [Single Graph View] on the graph.



The selected graph is displayed all in the graph display area.

MEMO	- The graph view can also be switched by double-tapping a graph.

Returning the Graph to the Multiple View

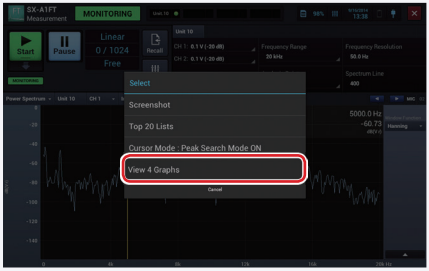
You can return the graph view displayed all in the graph display area (single graph view) to the original multiple view.

MEMO	- You can zoom out of a graph when using the multiple graph view. You cannot zoom out when using the single graph view.

1. Tap [▲] on the graph of which you want to zoom out.



2. Tap [View 2 Graphs] (or [View 4 Graphs]).



The graph is returned to the multiple view.

MEMO	- The graph view can also be switched by double-tapping a graph.

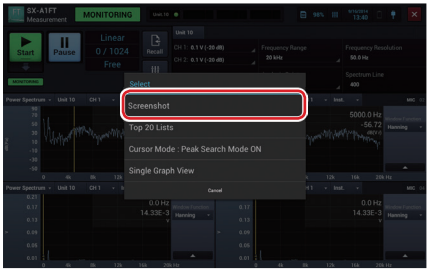
Capturing the Graph

Graph capture is a function to save a graph currently displayed in a PNG format image file.

1. **Tap [▲] on the graph you want to capture.**



2. **Tap [Screenshot].**



MEMO	- A captured graph image file is highlighted and saved. - A file of graph image captured during measurement is saved in the project folder. - A file of graph image captured other than during measurement is saved in the [Others] folder created in a SD memory card. - You can use the function key to capture all graphs currently displayed on the screen.

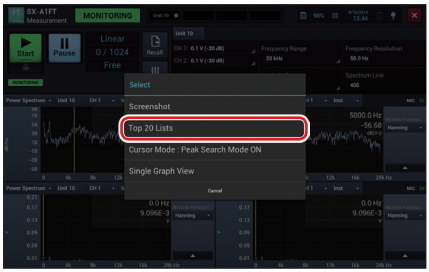
Switching the Graph View to the Top 20 List

The graph view can be switched to the top 20 list (shows the frequencies and levels of top 20 bands in descending order of level).

1. **Tap [▲] on the graph.**



2. **Tap [Top 20 Lists].**



Switches to the numeric list view.

MEMO	- To return to the graph view, tap [▲] again and select [Graph View].

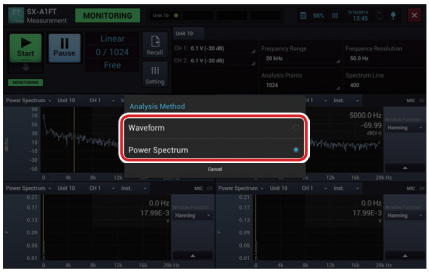
Changing the Display Contents on Graphs

The graph of the selected analysis method, channel, and window function is displayed. Changing each item enables you to change the graph view.

1. **Tap analysis method to change it.**



2. **Tap the analysis method to display.**

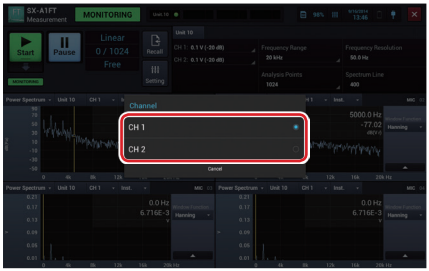


MEMO	- When the analysis method is changed, the displayed graph type may be changed accordingly.

3. **Tap the channel number to change the channel.**



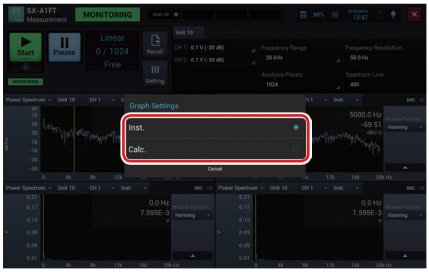
4. **Tap the channel number to display.**



5. **Tap the view mode name to change the graph type.**



6. Tap the name of the graph type to display.



MEMO	- Select [Inst.] to display the calculation results of time-domain waveforms and of each FFT frame. - Select [Calc.] to display the average result of the measurement performed until that point during measurement. When measurement is not performed, the average result of previous measurement will be displayed. When no previous result is found, this item will be blank.

7. To change the window function, tap [Window Function].



8. **Tap the window function you want to configure.**

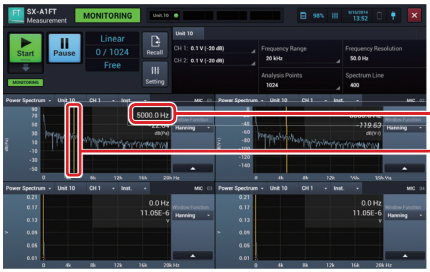


MEMO	- You cannot change the window function on the Recall screen. - You cannot change the window function during waveform analysis. - The real-time measurement value of frequencies is displayed in the upper right of each graph.

Moving the Cursor

To move the frequency cursor on the graph, slide the cursor to the left or right while tapping. The cursor can also be moved by tapping a desired point on the graph.

By tapping the value of the frequency displayed on the graph you want to change, you can directly input the desired frequency to specify the cursor position.



Tap to configure the value of the frequency

Slide to configure the cursor position

When the graph is displayed in one screen, you can also operate the cursor with the button displayed in the upper right of the graph. Tap [◄] will cause the cursor to move to the left at intervals of frequency resolution. Tap [►] will cause the cursor to move to the right at intervals of frequency resolution.



MEMO	- When the graph is displayed in two or four screens, [◄] and [►] will not be displayed. - When [Cursor Mode : Peak Search Mode OFF] is selected, the cursor can be moved. While [Cursor Mode : Peak Search Mode OFF] is selected, the cursor is displayed in yellow.

Switching the Cursor Mode

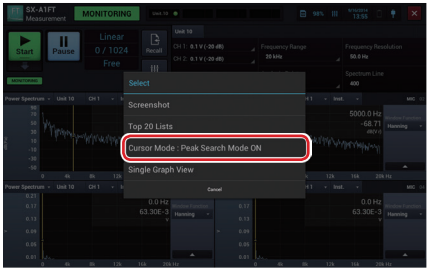
Switch the cursor mode. Cursor modes come in the following two types:

- Cursor Mode (Peak Search Mode ON): Point the cursor to the spectrum with the largest value in all lines.
- Cursor Mode (Peak Search Mode OFF): Move the cursor to any position to fix it.

1. **Tap [▲] on the graph for which you want to switch the cursor mode.**



2. **Tap [Cursor Mode : Peak Search Mode ON].**



The peak search mode is turned on.

MEMO	- While [Cursor Mode : Peak Search Mode ON] is selected, the cursor is displayed in pink. - To return to the previous cursor mode, tap [▲] again and select [Cursor Mode : Peak Search Mode OFF]. - When [Power Spectrum], [Cross Spectrum (Amplitude)], or [Transfer Func. (Amplitude)] is selected as the analysis method, the cursor mode can be changed.

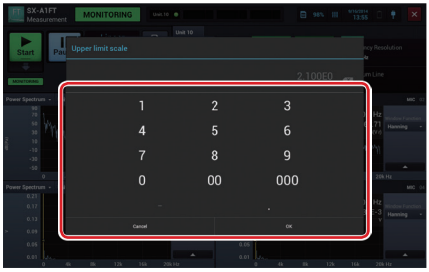
Changing the Y Axis Scale of Graph

Tap the upper part of Y axis label to change the maximum scale, or tap the lower part of it to change the minimum scale.

1. **Tap the upper or lower part of Y axis label.**



2. **Enter a scale value and tap [OK].**



MEMO	- Change of the maximum/minimum scale of Y axis is available for the following analysis methods.
	  - Power Spectrum
	  - Cross Spectrum (Amplitude)
	  - Transfer Func. (Amplitude)
	  - Phase

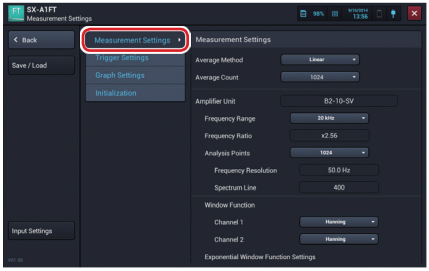
Settings

Configuring the Average Method and Average Count

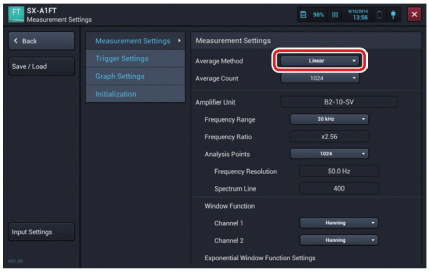
Configure the average method and average count for measurement.

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

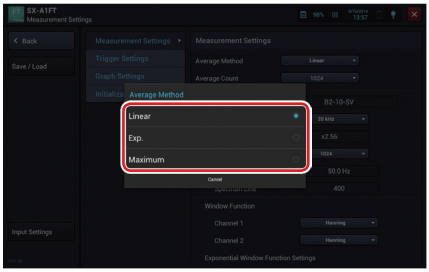
2. **Tap [Measurement Settings].**



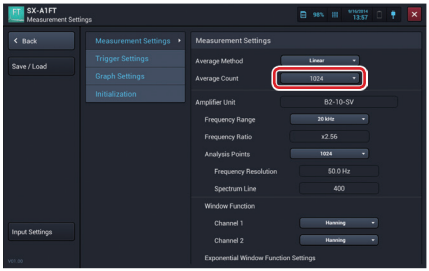
3. **Tap [▼] on [Average Method] .**



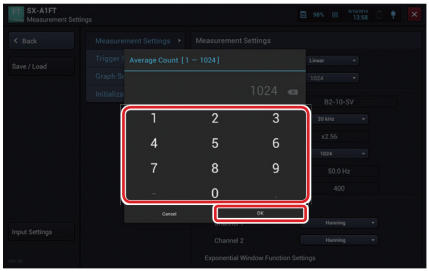
4. **Tap the average method you want to configure.**



5. **Tap [▼] on [Average Count].**



6. Enter the average count and tap [OK].

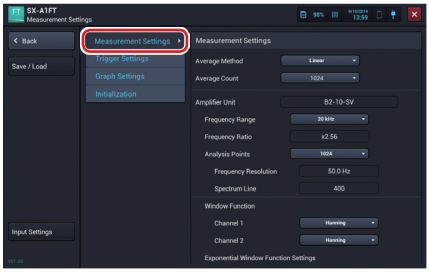


MEMO	- When the trigger mode is [Repeat], the average count will have the same value as the repeat count. - You can also change the average method by tapping it on the Measurement or Waveform analysis screen. - You can also change the average count by tapping it on the Measurement or Waveform analysis screen.

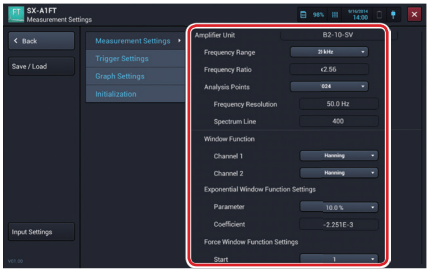
Configuring the Amplifier Unit

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

2. **Tap [Measurement Settings].**



3. **Configure each item for [Amplifier Unit].**



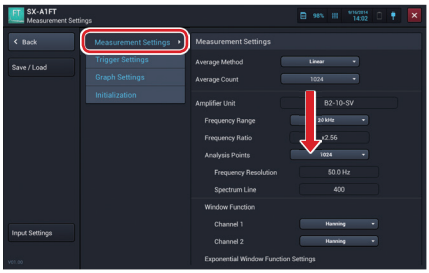
MEMO	- The setting items on the Measurement settings screen are different from those on the Waveform analysis settings screen. - For details on settings for each item, see "Manual" provided with this unit.

Configuring the Channel Pair

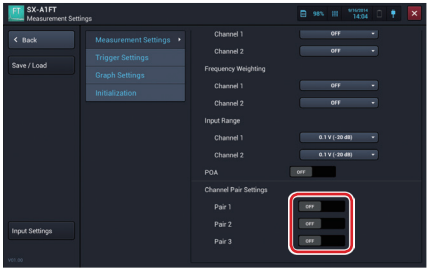
Configure the channel pair.

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

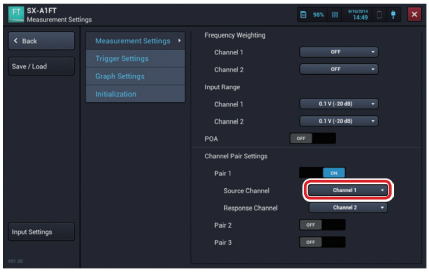
2. **Tap [Measurement Settings] and scroll the screen down.**



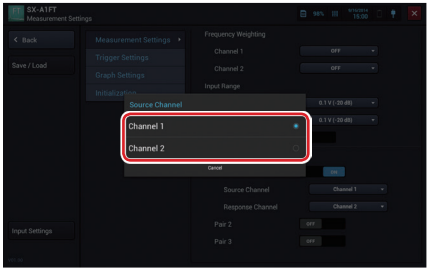
3. **On [Channel Pair Settings], tap the pair number you want to configure as a pair, and switch its setting to [ON].**



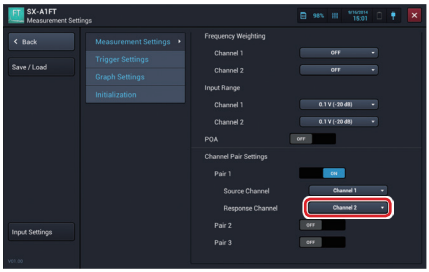
4. **In the pair switched to [ON], tap [▼] on [Source Channel].**



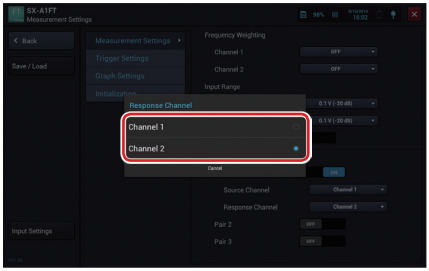
5. **Tap the name of the channel you want to configure as the source of the pair.**



6. **In the pair switched to [ON], tap [▼] on [Response Channel].**



7. **Tap the name of the channel you want to configure as the response channel of the pair.**

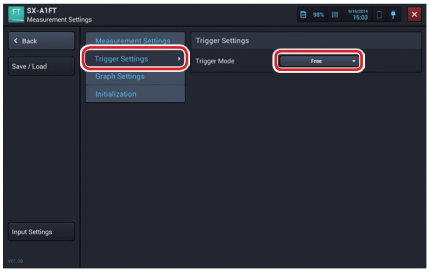


MEMO	- The same channel cannot be configured for [Source Channel] and [Response Channel]. You cannot return to the Measurement screen when the same channel is set. - An invalid channel number is not displayed. - To return the channel pair setting to [OFF], tap [ON].

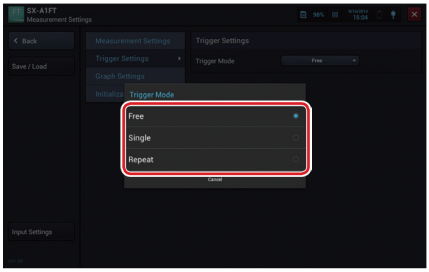
Configuring the Trigger Mode

1. **Tap [Setting] on the Measurement screen.**

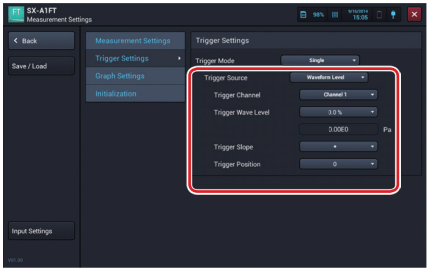
2. **Tap [Trigger Settings] and tap [▼] on the right side of [Trigger Mode].**



3. **Tap the trigger mode to configure.**



4. **If you select [Single] or [Repeat], configure the trigger conditions.**

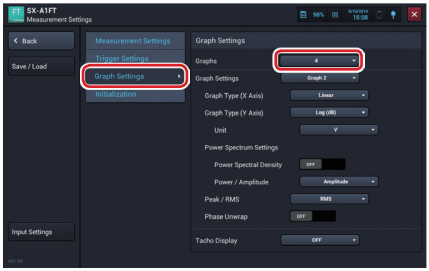


MEMO	- For details on settings for each item, see "Manual" provided with this unit.

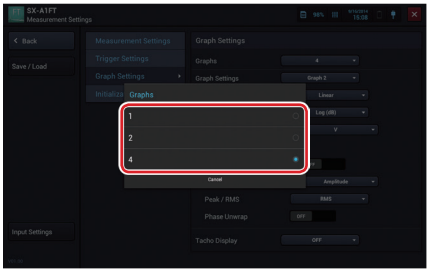
Configuring the Number of Graphs to Display

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

2. **Tap [Graph Settings] and tap [▼] on the right side of [Graphs].**



3. **Tap the number of graphs to display.**

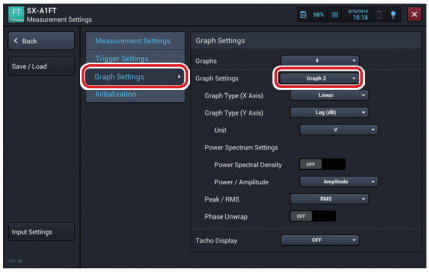


Configuring X Axes and Y Axes Display on the Graph

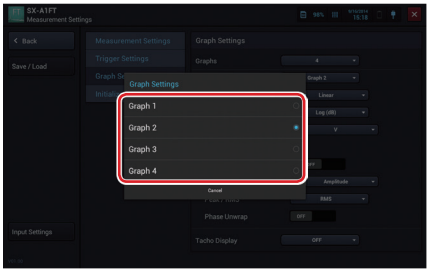
Configure contents to display on the X and Y axes of the graph. You can configure one to four graphs separately.

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

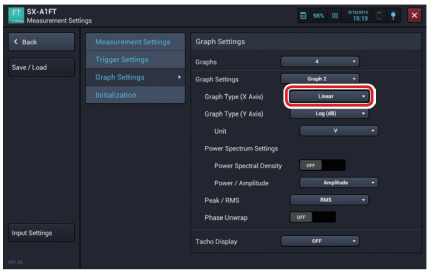
2. **Tap [Graph Settings] and tap [▼] on [Graph Settings].**



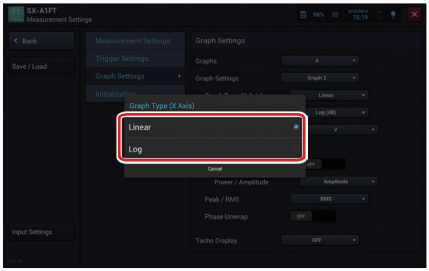
3. **Tap the graph number to configure.**



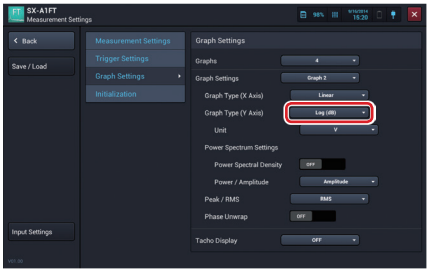
4. **Tap [▼] on [Graph Type (X Axis)].**



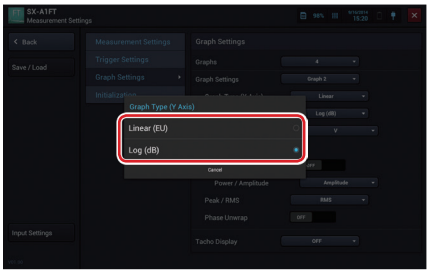
5. **Tap the item to display on the X axis.**



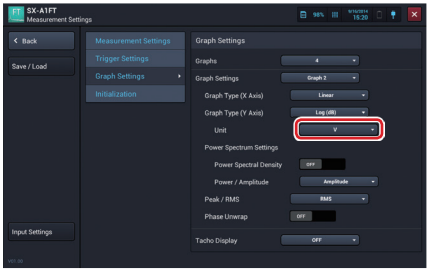
6. **Tap [▼] on [Graph Type (Y Axis)].**



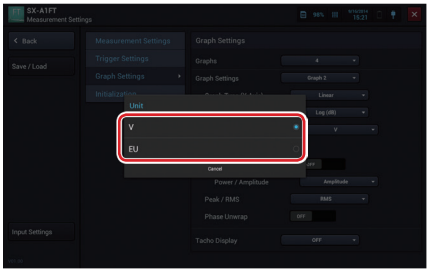
7. **Tap the item to display on the Y axis.**



8. **Tap [▼] on [Unit].**



9. **Tap the unit to display on the graph.**

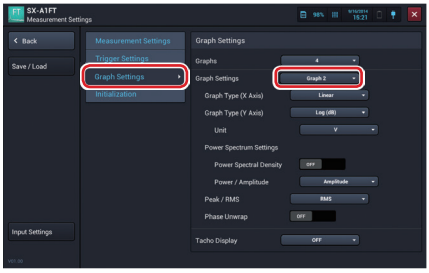


Configuring Power Spectrum on the Graph

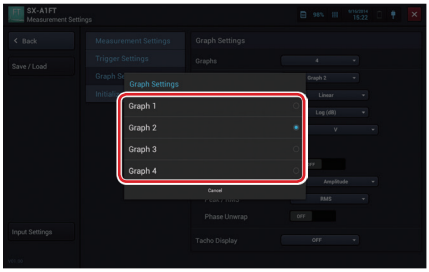
Configure the display method of power spectral density to display on the graph. You can configure one to four graphs separately.

1. **Tap [Setting] on the Measurement or Waveform analysis screen.**

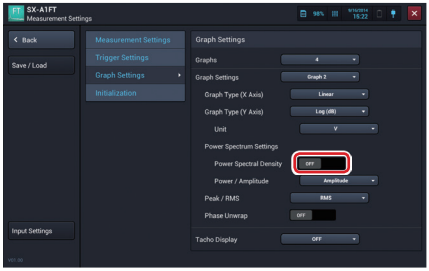
2. **Tap [Graph Settings] and tap [▼] on [Graph Settings].**



3. **Tap the graph number to configure.**

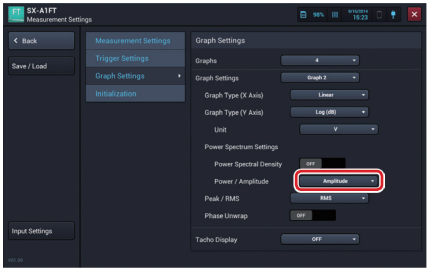


4. **Tap [Power Spectral Density] and switch its setting to [ON] or [OFF].**

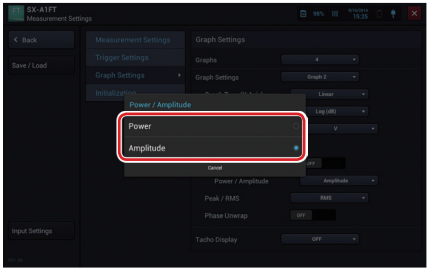


MEMO	- When [ON] is selected, [Power / Amplitude] is set to [Power] and [Peak / RMS] to [RMS].

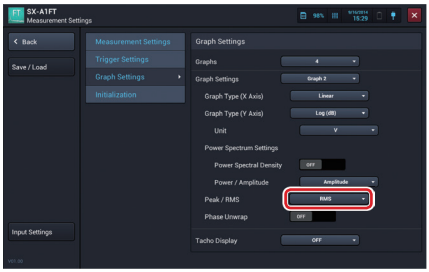
5. **When [Power Spectral Density] is switched to [OFF], tap [▼] on [Power / Amplitude].**



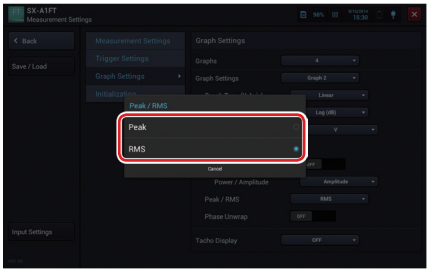
6. **Tap the item to configure.**



7. **When [Power Spectral Density] is switched to [OFF], tap [▼] on [Peak / RMS].**



8. **Tap the item to configure.**

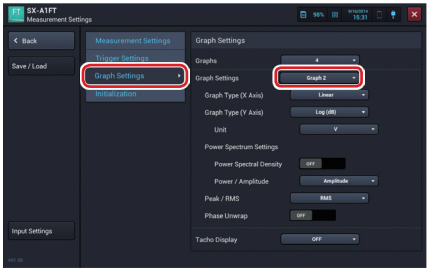


Configuring Phase Unwrap on the Graph

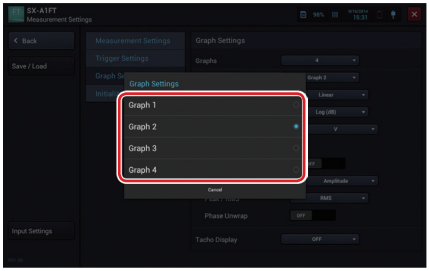
Configure whether or not to apply phase unwrap to the entire application. You can configure one to four graphs separately.

1. **Tap [Setting] on the Measurement screen.**

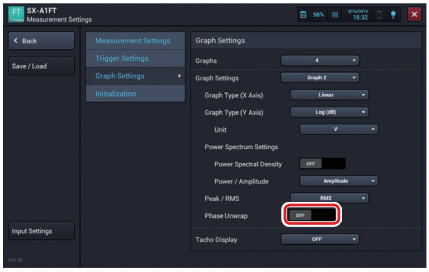
2. **Tap [Graph Settings] and tap [▼] on [Graph Settings].**



3. **Tap [▼] on [Graph Settings] and tap the graph number to configure.**



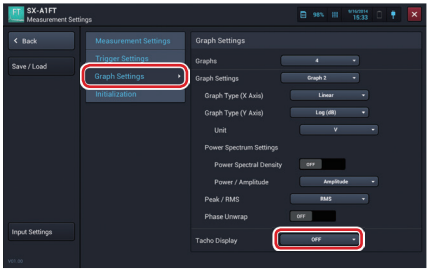
4. **To enable phase unwrap, tap [Phase Unwrap] and switch its setting to [ON].**



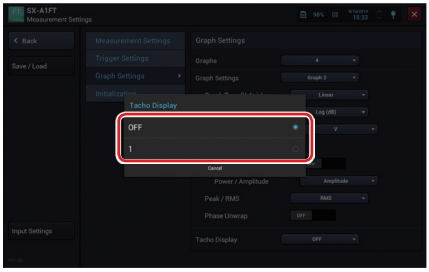
Configuring Tacho Display on the Graph

1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Graph Settings] and tap [▼] on [Tacho Display].**



3. **To display tacho, tap the [1]; otherwise tap [OFF].**

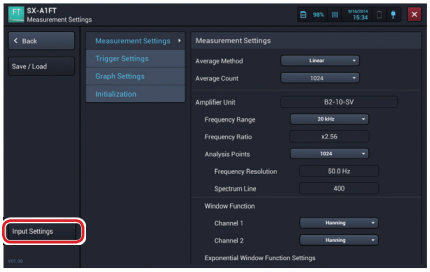


MEMO	- This is not displayed when [Repeat] is selected for [Trigger Mode] in [Trigger Settings]. Also, this item cannot be set unless the tacho pulse input is enabled by [Channel] in [Input Settings]..

Calibrating

1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Input Settings].**

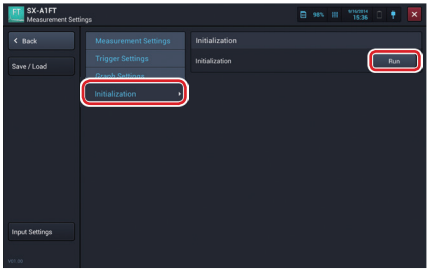


MEMO	- For details on Input Settings, see "Configuring the Calibration" in the RION-OTE Instruction Manual.

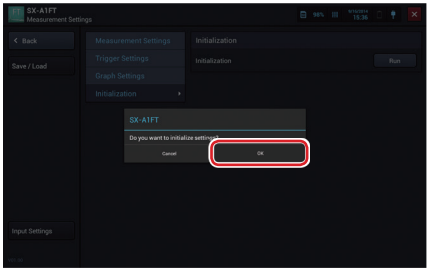
Initializing the Settings

1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Initialization] and then [Run].**



3. **Tap [OK].**



The default settings are as follows.

Item		Default
Measurement Settings	Average Method	Linear
	Average Count	1024
	Frequency Range	20 kHz
	Analysis Points	1024
	Window Function	Hanning
	Exponential Window Function Settings Parameter	10.0
	Force Window Function Settings Start	1
	Force Window Function Settings End	1024
	Integral/Differential Filter	OFF
	Frequency Weighting	OFF
	Input Range	10 V (20 dB)
	POA	OFF
	POA Lower Frequency	50 Hz
	POA Upper Frequency	20000 Hz
	Channel Pair Settings	OFF
Trigger Settings	Trigger Mode	Free
	Trigger Source	Waveform Level
	Trigger Channel	Channel1
	Trigger Wave Level	30%
	Trigger Slope	+
	Trigger Position	0
	Trigger Rotational Speed	201
	Repeat Count	2

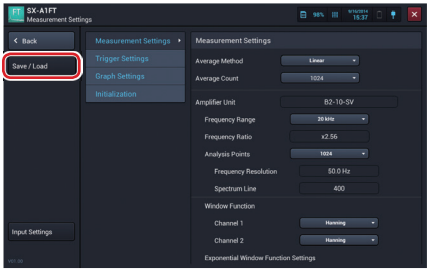
Item		Default
Graph Settings	Graphs	2
	Graph Settings	Graph1
	X Axis	Linear
	Y Axis	Linear
	Y Axis Unit	V
	Power Spectrum Settings	
	Power Spectral Density	OFF
	Power / Amplitude	Amplitude
	Peak / RMS	Peak
	Phase Unwrap	OFF
Measurement Screen	Analysis Method	Power Spectrum
	Graph Settings	Inst.
	Peak Search	OFF

Save the Current Settings

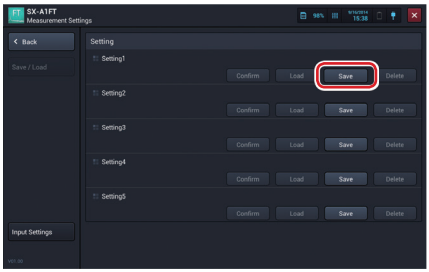
You can save settings configured in the Measurement settings screen. This allows you to load and restore the settings whenever you want. It is useful to save frequently-used settings.

1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Save / Load].**

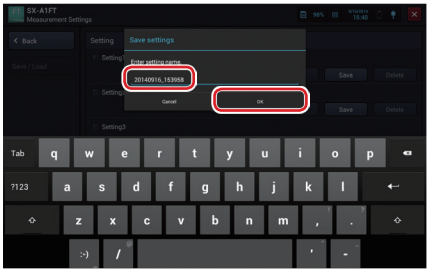


3. **Tap [Save].**

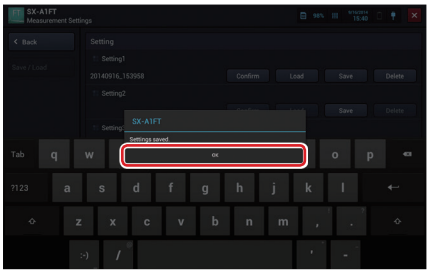


MEMO	- If you tap [Save] in a memo already saved, new settings overwrite the old settings.

4. Enter the name to save and tap [OK].



5. Tap [OK].



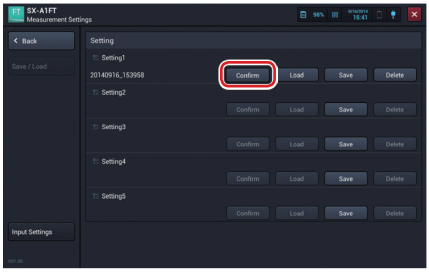
MEMO	- You can save up to five settings.

Confirming the Saved Settings

1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Save / Load].**

3. **Tap [Confirm] in the settings to check.**



4. **Check the settings and then tap [Close].**

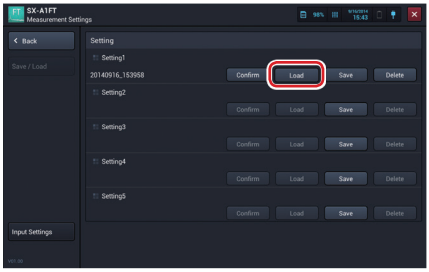


Load the Settings

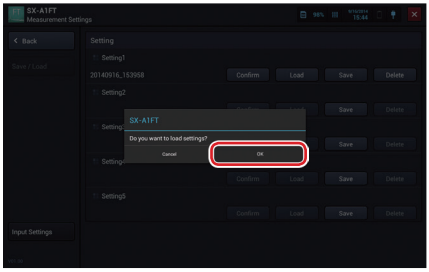
1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Save / Load].**

3. **Tap [Load] in the settings to load.**

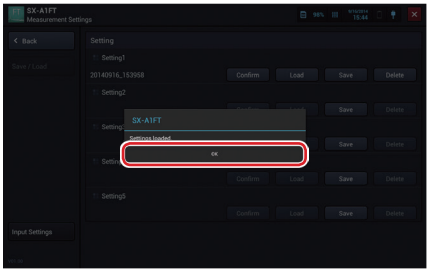


4. **Tap [OK].**



The settings are loaded.

5. **Tap [OK].**



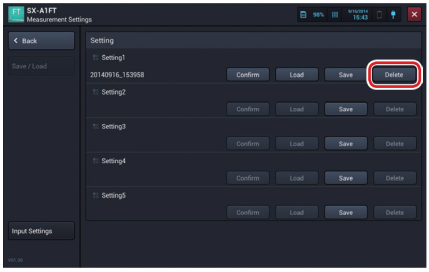
MEMO	- If you load the settings, the current settings will be deleted.

Delete the Settings

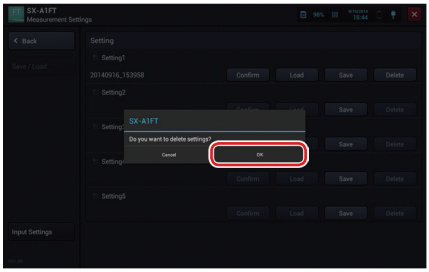
1. **Tap [Setting] on the Measurement screen.**

2. **Tap [Save / Load].**

3. **Tap [Delete] in the settings you want to delete.**

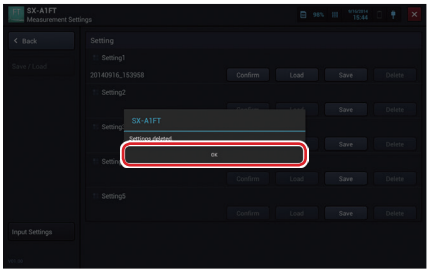


4. **Tap [OK].**



The settings are deleted.

5. **Tap [OK].**



Specifications

Frequency Ratio

× 2.56

Frequency Range

20 kHz, 10 kHz, 5 kHz, 2 kHz, 1 kHz, 500 Hz, 200 Hz, 100 Hz

Analysis Points

32768, 16384, 8192, 4096, 2048, 1024, 512, 256

32768 points are available only for WAVE file analysis.

Analysis Data Type

Pair Calculation Disabled

Waveform

Power Spectrum

Pair Calculation Enabled

Waveform

Power Spectrum

Cross Spectrum (Amplitude)

Transfer Func. (Amplitude)

Phase

Coherence

Pair Calculation: An analysis performed on a pair of source and response channels.

Graph Display

Graph Display

Display a time-domain waveform and FFT analysis result with graphs.

Up to four graphs are displayed simultaneously.

Graph Settings

Number of graphs displayed:

1, 2, 4

X axis type: Linear, Log

Y axis type: Linear (EU), Log (dB)

Y axis unit: V, EU

Power Spectrum Settings:

Power Spectral Density:

ON, OFF

Power/Amplitude Display:

Power, Amplitude

Peak/RMS: Peak, RMS

* Setting for power spectrum or cross spectrum (amplitude)

Phase Unwrap: OFF, ON

Cursor Display

Display the cursor on a graph.

Display a label indicating the cursor position.

Peak Search Mode

Make the cursor follow a peak in all spectrum lines.

Cursor Frequency Direct Input

Enter a frequency to move the cursor to the specified frequency position.

Overload Display

Display the Inst. Over indication when an excessive signal is input during monitoring or analysis.

Once an instantaneous overload occurs during measurement, the indication of excessive calculation value is displayed after Inst. Over lights up.

Maximum/Minimum Scale Change for Y Axis

The maximum and minimum scale values of Y axis can be changed by tapping within the Y axis display area of a graph.

Tacho Display The SX-A1FT screen shows tacho display when the tacho pulse input is enabled by the input setting application of RI-ONOTE.

The tacho display includes underrange display as well as overload display. The overload and underrange conditions are as follows:

Overload: 600000 rpm or more
Underrange: 200 rpm or less

Real-time FFT Analysis

Perform FFT analysis and save the average result on a SD memory card inserted to RIONOTE.

The time-domain waveform or instantaneous frame results are not saved.

Average Method

Linear, Exponential, Max

Average Count

1 to 1024

Window Function

Rectangular, Hanning, Flat top, Exponential, Force

Exponential setting

Parameter 0.1% to 99.9%

Force Window Function Settings

Start point 1 to Analysis points

End point Start point to Analysis points

Integral/Differential Filter

OFF, 1st-order differential, 2nd-order differential, 1st-order integral, 2nd-order integral

POA Settings

Lower Frequency

Upper Frequency

Set the interval of frequency resolution.

Channel Pair Settings

Up to three pairs can be set for pair calculation.

Trigger Measurement

Measurement starts when trigger conditions are met.

This function is enabled only when a real-time FFT analysis is performed.

Trigger Measurement Settings

Trigger Mode: Free, Single, Repeat

Trigger Source: Waveform level, External, Tacho pulse

(The tacho pulse trigger is enabled in the modes other than repeat trigger.)

Settings for Waveform Level Trigger

Trigger Channel

Trigger Slope: +, -

Trigger Wave Level: -99.9 to +99.9%

Trigger Position: -Analysis points/2 to Analysis points/2

Repeat Count: 2 to 1024

Settings for External Trigger

Trigger Position: -Analysis points/2 to Analysis points/2

Repeat Count: 2 to 1024

* Setting item for repeat trigger

Settings for Tacho Pulse Trigger

Trigger Rotational Speed: 201 to 599999

Trigger Slope: +, -

The tacho pulse trigger is available only when the tacho pulse input is enabled.

Recall
Provides the real-time analysis and displays waveform analysis results from WAVE file.

Waveform Analysis
Read a WAVE file recorded by SX-A1WR to perform FFT analysis.
The average result obtained by the analysis is saved on a SD memory card inserted to RIONOTE.
The time-domain waveform or instantaneous frame results are not saved.

Average Method
Linear, Exponential, Max

Average Count
1 to 1024

Overlap
75.0%, 50.0%, 25.0%, 0.0%
The overlap setting is enabled only for waveform analysis.

Window Function
Rectangular, Hanning, Flat top, Exponential, Force

Exponential setting
Parameter 0.1 to 99.9%

Force Window Function Settings
Start point 1 to Analysis points
End point Start point to Analysis points

Integral/Differential Filter
OFF, 1st-order differential, 2nd-order differential, 1st-order integral, 2nd-order integral

Frequency Weighting
OFF, A weighting, user 1, user 2

POA Settings
Lower Frequency
Upper Frequency
Set the interval of frequency resolution.

Channel Pair Settings

Up to three pairs can be set for pair calculation.

Analysis Range Selection

Display a read WAVE file as a Time-Value graph, and select a range within the Time-Value graph display area to perform analysis.

Function Button

Screen Capture

Capture the entire screen and save it as an image file.

Pause/Unpause

Stop screen update temporarily.

Measure Start/Stop

Start analysis by pressing the function button during monitoring.

Stop analysis by pressing the function button again during measurement.

Initialization Initialize the settings.

Media SD memory card (512 MB)

Dimensions and Weight

32 mm (L) x 24 mm (W) x 2.1 mm (T)

Approx. 5 g

Supplied accessories

Inspection certificate	1



http://www.rion.co.jp/

No. 58840