Measurement Guide

High Accuracy Power Meter (HIPM) (Option19)

MS2090A Field Master Pro™
MS2080A Field Master™
MS2070A Field Master™
MS2085A Site Master™
MS2089A Site Master™

High Accuracy Power Meter **Option 19**

Notes	Power Meter measurements require a supported Anritsu USB power sensor that is sold separately. Not all instrument models offer every option or every measurement within a given option. Refer to the Technical Data Sheet of your instrument for available options and supported measurements.

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Table of Contents

Chapter 1—General Information

1-1 Introduction . . . 1-1
Related Manuals . . . 1-1
1-2 Option Description . . . 1-2
1-3 Document Conventions . . . 1-2
User Interface Navigation . . . 1-2
Illustrations . . . 1-2
1-4 Calibration and Verification . . . 1-2
1-5 Contacting Anritsu for Sales and Service . . . 1-2

Chapter 2—High Accuracy Power Meter (Option 19) Overview

2-1 Introduction . . . 2-1
2-2 Selecting the Applications/Modes . . . 2-2
2-3 Main Menu . . . 2-3
Using Menus . . . 2-3
2-4 High Accuracy Power Meter GUI Overview . . . 2-4
Status Panel . . . 2-7
Status Panel (Inline Power Sensors) . . . 2-7

Chapter 3—HIPM Measurements

3-1 Introduction . . . 3-1
3-2 General Measurement Setup . . . 3-2
Example Measurement Setup . . . 3-3
3-3 AMPLITUDE Menu . . . 3-4
3-4 AMPLITUDE Menu (MA24103A/105A) . . . 3-5
3-5 SWEEP Menu . . . 3-6
3-6 SETUP Menu . . . 3-6
3-7 SETUP Menu (inline power sensor) . . . 3-7
3-8 ZERO/CAL Menu . . . 3-10
3-9 LIMIT Menu . . . 3-11
3-10 LIMIT Menu (MA24103A/105A) . . . 3-11
3-11 Presetting the Analyzer . . . 3-12
PRESET Menu . . . 3-12
3-12 Saving and Recalling Measurements . . . 3-13
Saving a Measurement . . . 3-13
Recalling a Measurement . . . 3-14
FILE Menu . . . 3-15

Chapter 1 — General Information

1-1 Introduction

This measurement guide covers the Anritsu High Accuracy Power Meter (Option 19) calibration and setup measurements for Field Master Series and Site Master instruments. Instruments with Option 19 and an appropriate Anritsu power sensor can be used to make high accuracy power measurements.

Related Manuals

For additional information and literature covering your product, visit the product page of your instrument and select the Library tab:

http://www.anritsu.com/en-US/test-measurement/products/ms2090a

http://www.anritsu.com/en-us/test-measurement/products/ms2080a

http://www.anritsu.com/en-us/test-measurement/products/ms2070a

https://www.anritsu.com/en-US/test-measurement/products/ms208xa

Product Information, Compliance, and Safety

Read the Product Information, Compliance, and Safety Guide for important safety, legal, and regulatory notices before operating the equipment, PN: 10100-00069.

User Guide

For a complete overview of the instrument hardware and system functions, refer to your instrument user guide. The user guide provides information on the following topics:

- Listing of all related documentation such as measurement guides, programming and maintenance manuals.
- Instrument Care, maintenance and calibration
- External Connections to the top and side panels
- Power Requirements and Battery Information
- System settings such as Wi-Fi, GNSS(GPS), date/time, language settings, etc.
- Other advanced settings and tools such as file management, screenshot settings, port setup, and option configuration.
- Diagnostics and software updates

1-2 Option Description

This section provides a brief overview of the available options covered in this guide.

Note	Not all instrument models offer every option. Some options are available as a time-limited trial. For example, High Accuracy Power Meter is offered as a 90-day time-limited option by ordering Option 9019. The option start time begins when the user first activates the option. Please refer to the Technical Data Sheet of your instrument for information on purchasing and activating time-limited options.

The High Accuracy Power Meter Option 19 uses an external USB power sensor (sold separately) to facilitate high accuracy power measurements using Field Master Series instruments as the host controller. Refer to Table 2-1, "USB Power Sensors in Chapter 2.

1-3 Document Conventions

The following conventions are used throughout the instrument documentation set.

User Interface Navigation

The instrument user interface consists of menus, buttons, toolbars, and dialog boxes. Elements in navigation paths are separated as follows: SETUP > RUN/HOLD > HOLD.

Illustrations

Screen-captured images contained in this document are provided as examples. The chapters included in this measurement guide provide information on advanced measurement features, instrument settings and menu overviews, for a featured option. The actual displays, screen menus, and measurement details may differ based on the instrument, model, firmware version, installed options, and current instrument settings.

1-4 Calibration and Verification

The instrument comes fully calibrated from the factory and there are no field-adjustable components. Anritsu recommends annual calibration and performance verification by local Anritsu service centers. Accredited calibration to ISO17025 and ANSI/NCSL Z540-1 are available and can include a calibration certificate, test report, and uncertainty data. Contact Anritsu sales and service centers for more information.

1-5 Contacting Anritsu for Sales and Service

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Chapter 2 — High Accuracy Power Meter (Option 19) Overview

2-1 Introduction

This chapter provides a general overview of the Anritsu High Accuracy Power Meter (HIPM) application and its user interface. The Field Master Series and Site Master instruments installed with Option 19 when connected with an appropriate Anritsu power sensor can be used to make high accuracy power measurements. For more details on the HIPM measurements refer to Chapter 3, "HIPM Measurements".

Option 19 provides accurate, true RMS measurements for both CW and complex digitally modulated signals. Table 2-1 lists the compatible with Anritsu power sensors.

Note	The Anritsu power sensor is not included with Option 19. A high accuracy power sensor must be purchased separately and the instrument must have compatible firmware that supports your installed sensor. Visit www.anritsu.com for details.

Table 2-1. USB Power Sensors

Model	Description	Frequency Range	Connector (50 Ω)	Data Sheet (for complete specifications)
MA24103A[a]	Inline Peak USB Power Sensor	25 MHz to 1 GHz	Type N(f)	11410-00621
MA24105A[a]	Inline Peak USB Power Sensor	350 MHz to 4 GHz	Type N(f)	11410-00621
MA24106A	High Accuracy RF Power Sensor	50 MHz to 6 GHz	Type N(m)	11410-00424
MA24108A	Microwave USB Power Sensor	10 MHz to 8 GHz	Type N(m)	11410-00504
MA24118A	Microwave USB Power Sensor	10 MHz to 18 GHz	Type N(m)	11410-00504
MA24126A	Microwave USB Power Sensor	10 MHz to 26 GHz	Type K(m)	11410-00504
MA24208A	Universal USB Power Sensor	10 MHz to 8 GHz	Type N(m)	11410-00841
MA24218A	Universal USB Power Sensor	10 MHz to 18 GHz	Type N(m)	11410-00841
MA24330A	Microwave CW USB Power Sensor	10 MHz to 33 GHz	Type K(m)	11410-00906
MA24340A	Microwave CW USB Power Sensor	10 MHz to 40 GHz	Type K(m)	11410-00906
MA24350A	Microwave CW USB Power Sensor	10 MHz to 50 GHz	Type V(m)	11410-00906

a. The MA24103A/105A provides additional measurement capabilities.

2-2 Selecting the Applications/Modes

The instrument applications/modes are selected from the 9-dot icon or the current application/mode icon. To select an application/mode, press the 9-dot icon in the title bar or the current application icon to display the available applications and modes, illustrated in Figure 2-1. Simply touch the desired application/mode icon to load the new application/mode. The analyzers available for selection depend on the options that are installed and activated on your instrument. Some measurements and views are accessed via other measurement setup menus.

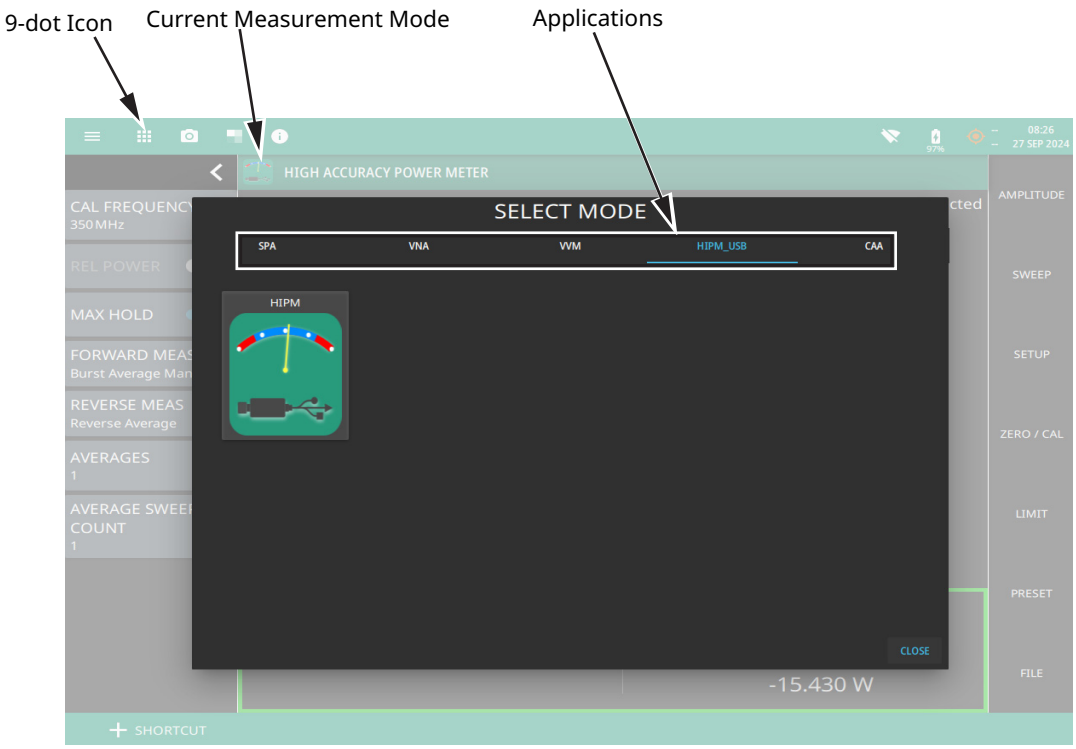
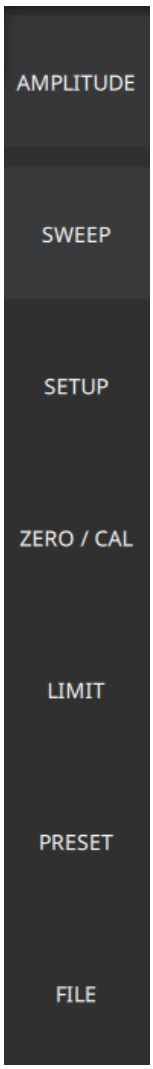


Figure 2-1. Instrument Application and Modes

2-3 Main Menu

The main menu is the primary access point for all instrument controls and measurement selections. The main function for each main menu button is described below.



AMPLITUDE: Provides access to all amplitude-related settings including external gain/loss, relative power, max/min display settings. Refer to Section 3-3 “AMPLITUDE Menu” on page 3-4 for traditional power sensors. Refer to Section 3-4 “AMPLITUDE Menu (MA24103A/105A)” on page 3-5 for inline power sensors.

SWEEP: Enables choosing the measurement mode and set the sweep to run or hold positions. Refer to Section 3-5 “SWEEP Menu” on page 3-6.

SETUP: Provides measurement controls for making HIPM measurements. Refer to Section 3-6 “SETUP Menu” on page 3-6 while working with Microwave/ High accuracy RF power sensors. Refer to Section 3-7 “SETUP Menu (inline power sensor)” on page 3-7, while working with Inline peak power sensors.

ZERO/CAL: Enables zeroing the sensor, set the calibration frequency and select a predefined signal standard. Refer to Section 3-8 “ZERO/CAL Menu” on page 3-10.

LIMIT: Enables setting upper and lower limits values plus turning on/off the alarm that is activated when the limits are exceeded. Refer to Section 3-9 “LIMIT Menu” on page 3-11 while working with traditional USB power sensors. Refer to Section 3-10 “LIMIT Menu (MA24103A/105A)” on page 3-11, while working with inline peak power sensors.

PRESET: Presets all the set parameters to default values. Refer to Section 3-11 “Presetting the Analyzer” on page 3-12.

FILE: Used to save and recall instrument setups and measurements. Refer to Section 3-12 “Saving and Recalling Measurements” on page 3-13.

Figure 2-2. Main Menu

Using Menus

Instrument setup, control, and measurement functions are performed through the use of menus. Menu behaviors are summarized below:

- Pressing a main menu button opens an associated menu.
- The name of the button pressed in the main menu is reflected in the title bar of the resulting menu.
- Menu buttons can change for various measurement settings, instrument setup parameters, and measurement views.
- Pressing the corresponding main menu button for a menu closes the menu.
- Touching status data, a parameter field, or label in the display area opens the corresponding menu and the associated keypad for editing that parameter setting.
- Pressing Accept, Cancel, or the X in the upper right corner closes the menu or keypad.

2-4 High Accuracy Power Meter GUI Overview

This section illustrates the main graphical displays and status panel menu presented for the high accuracy power meter. For a basic power measurement example, refer to Section 3-2 “General Measurement Setup” on page 3-2. For a general overview of the instrument and its user interface, refer to “Instrument Overview” chapter of the user guide. The screenshot below shows the GUI display of microwave/high accuracy RF power sensors.

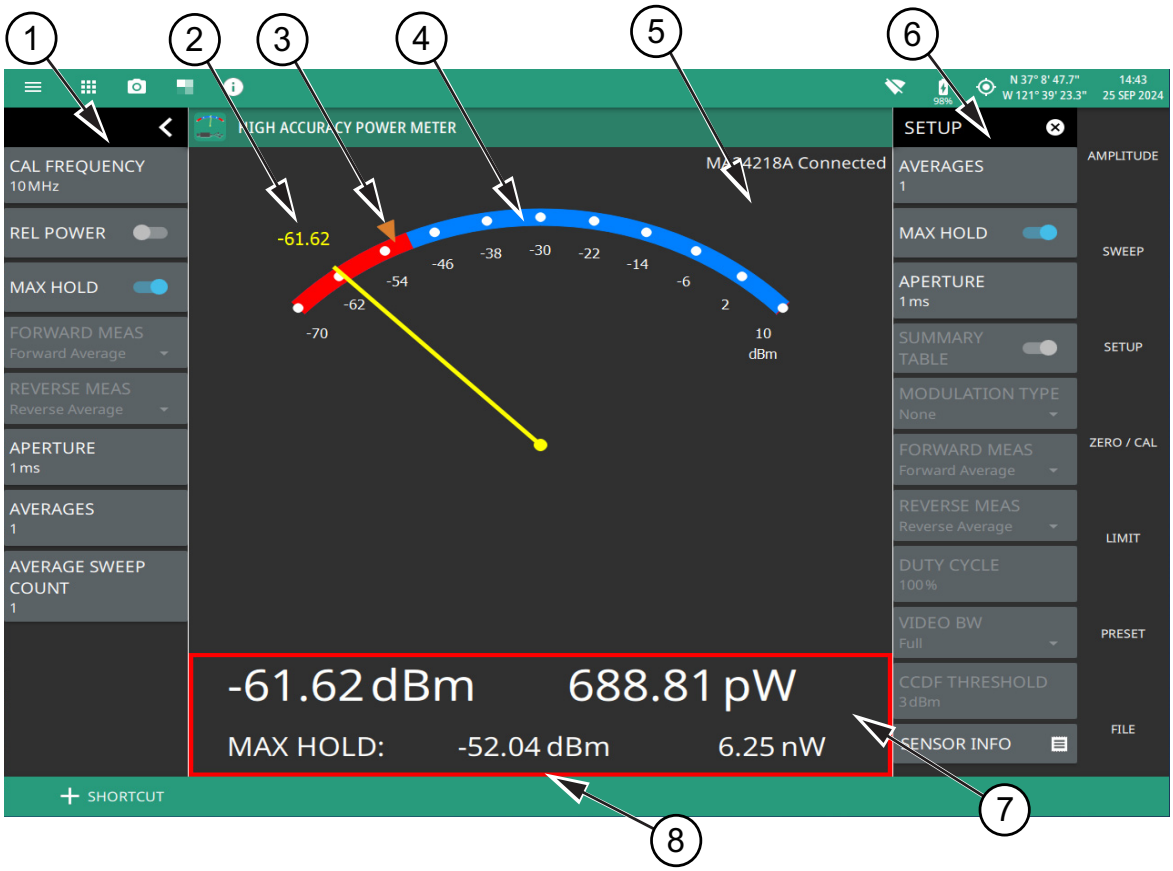
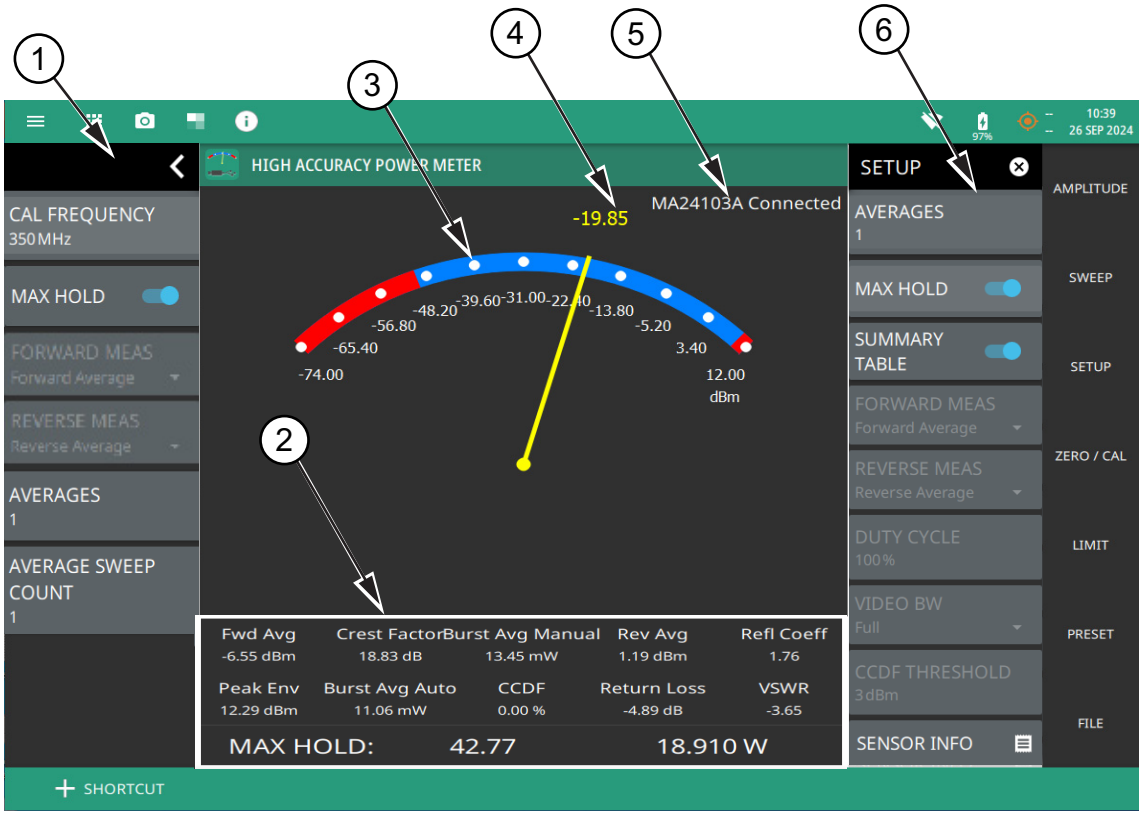


Figure 2-3. High Accuracy Power Meter Display (1 of 2)

1. The status panel provides quick access to common settings used for power meter measurements. Refer to “Status Panel” on page 2-7.
2. The current power measurement (in dBm or watts) or the current relative power in dB or percentage. The number here tracks the analog meter pointer for normal USB power sensors.
3. The MAX HOLD marker indicated by a brown arrow head indicates the maximum power value. The max hold value is also displayed in the table below the meter.
4. The limits indicated by red/blue transitions on the meter denote the upper and lower limit values. When the pointer is in the blue region it indicates that the measured power is under the set limits and the measurement is passing; when the pointer is in the red region, the measurement is failing the limit.
5. The connected sensor model number and status is displayed here.
6. The setup menu provides access to the main measurement setup parameters. Refer to “SETUP Menu” on page 3-6.
7. The measurement table shows the current and max hold power measurements in both dBm and watts, or relative power in dB and percent (%). for normal USB power sensors.
8. The measurement table border is shown in red for failing limits or green for passing limits.

Figure 2-3. High Accuracy Power Meter Display (2 of 2)

The screenshot below shows the GUI display of inline peak power sensor and specifically MA24103A as an example.

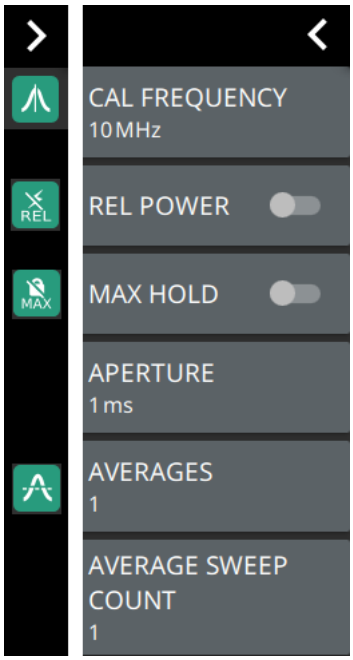


1. The status panel provides quick access to common settings used for power meter measurements. Refer to “Status Panel (Inline Power Sensors)” on page 2-7.
2. The summary table toggle when turned on lists most of the forward and reverse measurements except burst average auto and CCDF. Note that Forward and Reverse measurements tiles are disabled when the toggle is turned on.
3. The limits indicated by red/blue transitions on the meter denote the upper and lower limit values. When the pointer is in the blue region it indicates that the measured power is under the set limits and the measurement is passing; when the pointer is in the red region, the measurement is failing the limit.
4. The current power measurement number (in dBm or watts) or the current relative power in dB or percentage. The number here tracks the analog meter pointer for normal USB power sensors.
5. The connected sensor model number and status is displayed here.
6. The setup menu provides access to the main measurement setup parameters. Refer to “SETUP Menu (inline power sensor)” on page 3-7 for inline power sensors.

Figure 2-4. High Accuracy Power Meter Display - Inline Power Sensor

Status Panel

The status panel and features illustrated in this section are unique to power sensors only. Select the Chevron icon to collapse the status panel and view the corresponding minimized status panel.



CAL FREQUENCY: Sets the measurement frequency. The frequency value is sent to the power sensor to apply the appropriate calibration factor.

REL POWER: Toggles relative power On or Off. This measurement shows the relative level of the desired base power level input to your instrument. For example, if you are measuring a 10 dBm signal, and REL POWER is enabled, then a drop to 7 dBm will show as –3 dB and 50 %. Relative power is disabled when working with inline power sensors.

MAX HOLD: Max Hold retains the highest power level measurement.

APERTURE: Aperture is defined as the total time the power sensor observes the input signal in order to complete one power measurement. This tile applies to MA24108/MA24118/MA24126A models only. For MA24106A power sensor models APERTURE MODE is displayed. Refer to "SETUP Menu" on page 3-6.

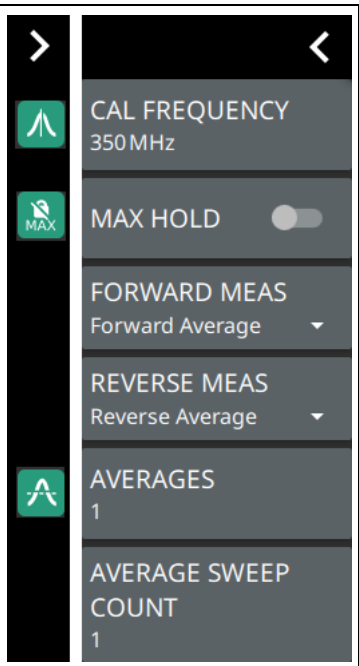
AVERAGES: Sets the number of measurements to be averaged.

AVERAGE SWEEP COUNT: It is the total number of average sweep count. The value is incremented after every sweep until it becomes equal to the set Averages value.

Figure 2-5. High Accuracy Power Meter Status Panel with Minimized Status Panel

Status Panel (Inline Power Sensors)

The status panel and features illustrated in this section are unique to inline power sensors only. Select the Chevron icon to collapse the status panel and view the corresponding minimized status panel.



CAL FREQUENCY: Sets the measurement frequency. The frequency value is sent to the power sensor to apply the appropriate calibration factor.

MAX HOLD: Max Hold retains the highest power level measurement.

FORWARD MEAS: Sets forward measurement mode for inline power sensors (MA24103A, MA24105A). Select an appropriate measurement from the list.

REVERSE MEAS: Sets reverse measurement mode for inline power sensors (MA24103A, MA24105A). Select an appropriate measurement from the list.

AVERAGES: Sets the number of measurements to be averaged.

AVERAGE SWEEP COUNT: It is the total number of average sweep count. The value is incremented after every sweep until it becomes equal to the set Averages value.

Figure 2-6. High Accuracy Power Meter Status Panel with Minimized Status Panel

Chapter 3 — HIPM Measurements

3-1 Introduction

This chapter covers the Anritsu High Accuracy Power Meter (Option 19) measurements for in use with Field Master Series and Site Master handheld instruments. Instruments with Option 19 and an appropriate Anritsu power sensor can be used to make high accuracy power measurements.

3-2 General Measurement Setup

The instrument displays the power values in both dBm and watts, and offers the following measurement features:

- Relative Power displays power changes with respect to a desired reference value in both dB and % (percent).
- Limit values can be turned on as needed to indicate if a measurement is within or outside specified limits.
- Averages provides a settable number of a running average count.
- Max Hold retains the highest power level measurement.
- External Gain and Loss setting allows power level compensation for passive losses (such as cable loss or attenuators) or active gains (such as RF power amplifiers).
- Zeroing the sensor improves accuracy by removing measured system noise. Refer to Table 3-1 for the power range in which accuracy is improved. Calibration factors can be used to correct both efficiency and mismatch loss.
- Inline power sensors enable forward and reverse measurements, forward/reverse upper/lower limits.

Caution	Ensure the power level that you are measuring does not exceed the input rating of the power sensor being used or damage may result. Additional attenuators can be used to ensure that the power does not exceed the specified measurement range.

Table 3-1. Power Range for Improving Accuracy via Zeroing to Remove Noise

Sensor	Power Range
MA24103A	+3 dBm to +51.76 dBm
MA24105A	+3 dBm to +51.76 dBm
MA24104A	+3 dBm to +13 dBm
MA24106A, MA24108A, MA24118A, MA24126A	–30 dBm to –40 dBm
MA24208A, MA24218A	–45 dBm to –60 dBm
MA24330A, MA24340A, MA24350A	–50 dBm to –70 dBm

Example Measurement Setup

This measurement example uses an Anritsu MA24106A power sensor and an attenuator for a high power measurement.

1. Connect the USB cable between the sensor and your instrument. When the sensor is connected, a notification in the top toolbar will identify the sensor model number.
2. Select the On/Off key to turn on your instrument.
3. Select the High Accuracy Power Meter by selecting the 9-dot icon or from the current application icon to display the available applications/modes (see Figure 2-1). Select the HIPM_USB application, then touch the HIPM icon to load the new mode.
4. Open the ZERO/CAL menu and enter the CAL FREQUENCY, or select Signal Standards to select a particular standard. Calibration factors are stored in the power sensor for the corresponding measurement frequency.

Note	When using a signal standard, the channel number is not required because the calibration factor frequencies are rounded to the nearest 500 MHz.

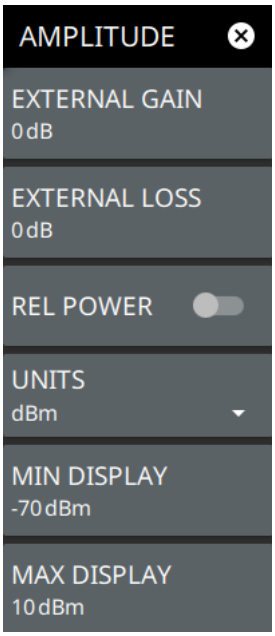
5. With sensor RF input connector disconnected from any other device, press Zero to zero the sensor. This step is recommended when making power measurements below –20 dBm.
6. Open the Amplitude menu and enter the EXTERNAL LOSS value of the attenuator.

Note	With no loss or gain offset, the maximum value for the display is the upper measurement range, which is +20 dBm. With an offset, such as with 10 dB of attenuation, the upper value can be set to +30 dBm. With an offset of xx dB, the upper value can be set to +20 dBm plus xx dB.

7. Connect the power sensor to the RF output of the device to measure and read the power level on the instrument display.

3-3 AMPLITUDE Menu

Access AMPLITUDE menu from the main menu. This amplitude menu is unique to traditional USB power sensors.



EXTERNAL GAIN: Sets the external gain value. Minimum is 0 dB and the maximum value is 100 dB.

EXTERNAL LOSS: Sets the external loss value. Minimum is 0 dB and the maximum value is 100 dB.

REL POWER: Turns relative power on or off. This measurement shows the relative level of the desired base power level input to your instrument. The power level becomes 0 dB when toggled on. For example, if you are measuring a 10 dBm signal, and REL POWER is enabled, then a drop to 7 dBm will show as –3 dB and 50 %.

UNITS: Selects the measurement units of either dBm or watts.

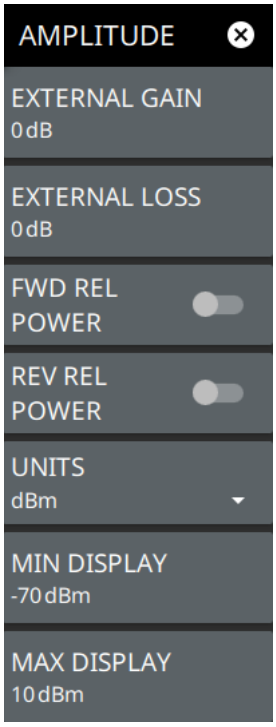
MIN DISPLAY: Sets the minimum value of the analog scale.

MAX DISPLAY: Sets the maximum value of the analog scale.

Figure 3-1. High Accuracy Power Meter AMPLITUDE Menu

3-4 AMPLITUDE Menu (MA24103A/105A)

Access AMPLITUDE menu from the main menu. This amplitude menu is unique to inline power sensors MA25103A/105A.



EXTERNAL GAIN: Sets the external gain value. Minimum is 0 dB and the maximum value is 100 dB. Changes to the external gain will update the display min and max values and limit upper and lower values.

EXTERNAL LOSS: Sets the external loss value. Minimum is 0 dB and the maximum value is 100 dB. Changes to the external loss will update the display min and max values and limit upper and lower values.

FWD REL POWER: Enables or disables the forward relative power level. When turned on, power readings are made relative to the power value that was measured at the time it is turned on. The forward relative power state will turn off automatically when forward measurement mode is changed. When measurement mode is CCDF or CREST, turning on relative is not allowed.

REV REL POWER: Enables or disables the reverse relative power level. When turned on, power readings are made relative to the power value that was measured at the time it is turned on.The reverse relative power state will turn off automatically when reverse measurement mode is changed, and only applies when Reverse Average measurement is selected.

UNITS: Selects the measurement units of either dBm or watts.

MIN DISPLAY: Sets the minimum value of the analog scale.

MAX DISPLAY: Sets the maximum value of the analog scale.

Figure 3-2. High Accuracy Power Meter AMPLITUDE Menu (MA24103A/105A)

3-5 SWEEP Menu

Access SWEEP menu from the main menu. From Sweep menu you can choose measurement mode, RUN/HOLD option or set the mode to single. This SWEEP menu holds good for both traditional and inline power sensors.

MEAS MODE: Sets the measurement to Continuous or Single mode. Continuous will cycle through the average count continuously. Single will cycle through the average count just once and then switch to Hold mode. Single measurements must be triggered each time by using the Single button below.

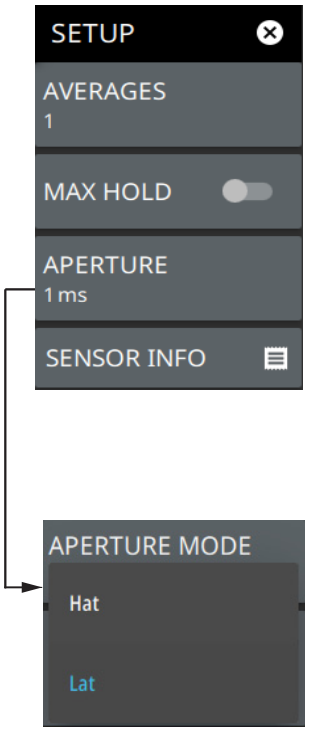
RUN/HOLD: Sets the current measurement to Run or Hold. In Run mode, the power meter takes measurements according to the MEAS MODE setting. In Hold mode, the power meter finished the current measurement and then stops measuring.

SINGLE: Triggers a measurement when the MEAS MODE is set to Single.

Figure 3-3. High Accuracy Power Meter Sweep Menu

3-6 SETUP Menu

Access Setup menu from the main menu to set parameters to make HIPM measurements. This setup menu is unique to traditional USB power sensors.



AVERAGES: Sets the number of measurements to be averaged.

MAX HOLD: Sets the displayed measurement to show the maximum measured power when enabled, and places a marker on the scale at the maximum measured value. Note that changing any parameter resets this feature. If averaging is selected (AVERAGES > 1), then Max Hold displays the maximum value of non-averaged data.

APERTURE: Aperture is defined as the total time the power sensor observes the input signal in order to complete one power measurement. This tile applies to MA24108/MA24118/MA24126A models only.

APERTURE MODE: Sets the aperture mode to low aperture time (LAT) or high aperture time (HAT). The time aperture setting defines a time window that has a similar effect to averaging on power measurements when testing noisy signals. This tile applies to MA24106A power sensor models only.

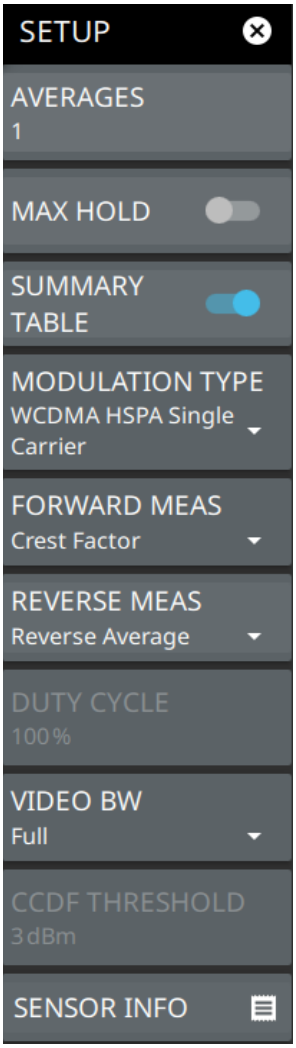
SENSOR INFO: Displays details of the power sensor connected to the analyzer.

Note that the disabled options only apply to inline power senors.

Figure 3-4. High Accuracy Power Meter SETUP Menu

3-7 SETUP Menu (inline power sensor)

This setup menu is unique only to MA24105A inline peak power sensor. The MODULATION TYPE setting is not available in MA24103A models.



AVERAGES: Sets the number of measurements to be averaged.

MAX HOLD: Sets the displayed measurement to show the maximum measured power when enabled, and places a marker on the scale at the maximum measured value. Note that changing any parameter resets this feature. If averaging is selected (AVERAGES > 1), then Max Hold displays the maximum value of non-averaged data.

SUMMARY TABLE: Displays both forward and reverse measurement type readings when the toggle is turned on. When toggled off, the forward and reverse measurement readings are displayed in the measurement table.

Note that when SUMMARY TABLE toggle is turned on ALARM functionality in the LIMIT menu is disabled. Refer to "LIMIT Menu (MA24103A/105A)" on page 3-11.

MODULATION TYPE: Selects the one of the following modulation type for Inline power sensors only. The modulation type is used to apply correction factor that refines the Peak Envelope Power (PEP) calculation. It is enabled only when FORWARD MEAS is set to Peak power Envelope or Crest Factor:

- GSM GPRS EDGE
- WCDMA HSPA Single Carrier
- WCDMA HSPA Multi Carrier
- ISDB T
- CDMA IS95 2000 EVDO

FORWARD MEASUREMENT: Selects one of the following forward direction measurements:

- **Forward Average:** Measures the average power in the forward direction.
- **Crest Factor:** Measures the crest factor in the forward direction. Crest Factor is a ratio of average power to Peak Envelope Power (PEP). See Figure 3-6.
- **Burst Average Manual:** Measures the average power within the signal bursts (in the forward direction). You must manually define the duty cycle of the bursts in order to complete the averaging calculation.
- **Peak Envelope Power:** Measures the peak power in the forward direction.The PEP is the highest single power measurement from within the envelope power readings. Detecting the PEP correctly requires that the modulating signal's change in amplitude is at a rate within the video bandwidth of the sensor. See Figure 3-7.
- **CCDF:** Measures the value of the Complementary Cumulative Distribution Function (CCDF). A Cumulative Distribution Function (CDF) describes the probability that the signal power is less than or equal to a threshold value. The Complementary Cumulative Distribution Function (CCDF) describes the probability that the signal power is greater than a threshold value. See Figure 3-8.
- **Burst Average Auto:** Measures the average power within the signal bursts (in the forward direction). In auto, the sensor determines the duty cycle of the bursts in order to complete the averaging calculation.

Figure 3-5. HIPM SETUP Menu (inline power sensor)

	REVERSE MEASUREMENT: Selects one of the following reverse direction measurements: • **Reverse Average:** Measures average power in the reverse direction. • **Reflection Coefficient:** Measures the reflection coefficient (reflected power / forward power) • **Return Loss:** Measures the return loss. **VSWR:** Measures the voltage standing wave ratio (VSWR).**DUTY CYCLE:** Sets the duty cycle, is activated only when the forward measurement is set as Burst Average Manual. The duty cycle range lies between 0.1% to 100% **VIDEO BW:** Sets the video bandwidth as Full, 4 kHz or 200 kHz. **CCDF THRESHOLD:** Sets the CCDF threshold and is activated only when forward measurement is set as CCDF. The threshold range is from 3 dBm to 54.77 dBm. This option is enabled only when FORWARD MEAS is set to CCDF. **SENSOR INFO:** Displays details of the power sensor connected to the instrument.

Figure 3-5. HIPM SETUP Menu (inline power sensor)

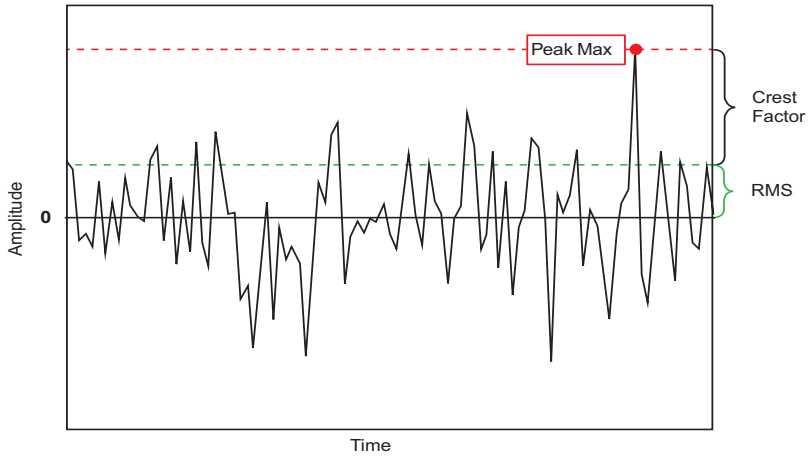


Figure 3-6. Crest Factor Measurement

$$\text{CrestFactor} = \frac{|x_{peak}|}{x_{RMS}}$$

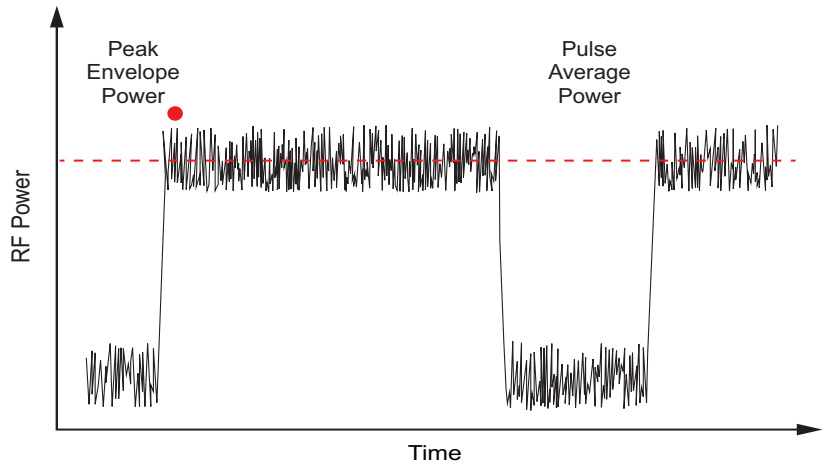


Figure 3-7. Peak Envelope Power (PEP) Measurement

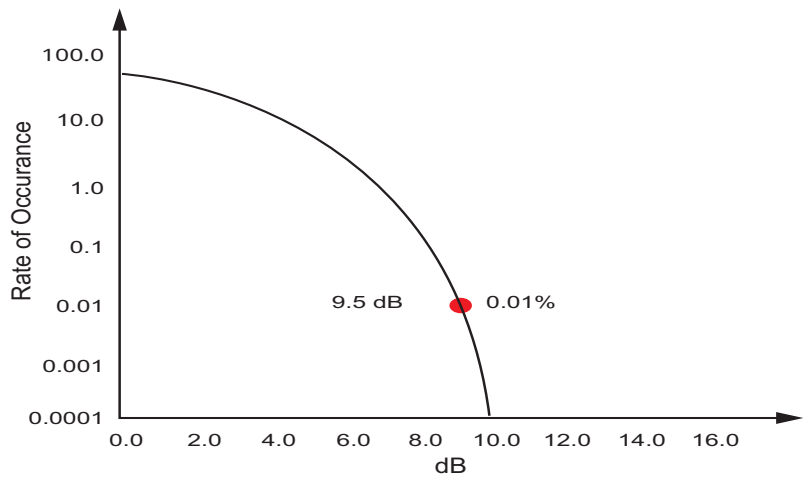
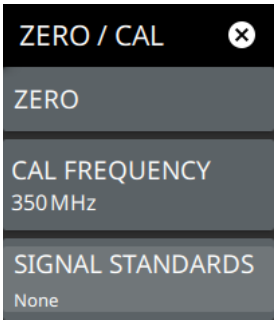


Figure 3-8. CCDF Measurement

3-8 ZERO/CAL Menu

Access ZERO/CAL menu from the main menu. Zeroing the sensor is required in order to make low-level measurements. Before zeroing the sensor, connect it to the DUT (device under test) test port and remove RF power from the connection to a level 20 dB below the noise floor of the power sensor. The Zero/Cal menu also includes signal standards sub-menu that enables choosing a desired band from the predefined list. This menu holds good for both traditional and inline power sensors.



ZERO: With no power applied to the sensor and pressed On, the sensor is set to zero. This is recommended when making power measurements below –20 dBm.

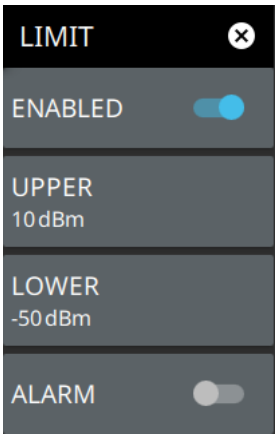
CAL FREQUENCY: Sets the measurement frequency. The frequency value is sent to the power sensor to apply the appropriate calibration factor.

SIGNAL STANDARDS: Opens a list of predefined signal standards.

Figure 3-9. High Accuracy Power Meter ZERO/CAL Menu

3-9 LIMIT Menu

Access the LIMIT menu from the main menu. Use the limit menu to set upper/lower limit range and enable the ALARM toggle to get audio alert when the measurement fails. This limit menu is unique only to the traditional power sensors.



ENABLED: Toggles limit testing On or Off. When limits are enabled, The border around the measurement data table shows green for a passing, and red for a failing, measurement.

UPPER: Sets the upper limit of the analog scale.

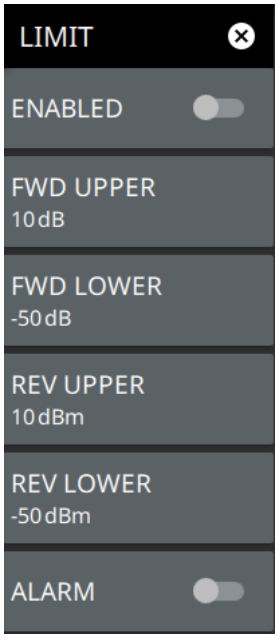
LOWER: Sets the lower limit of the analog scale.

ALARM: Toggles an audible alarm when crossing a limit. Use the SETTINGS menu (from the three bar icon in the toolbar) to adjust the volume.

Figure 3-10. High Accuracy Power Meter LIMIT Menu

3-10 LIMIT Menu (MA24103A/105A)

This limit menu is unique only to inline peak sensors.



ENABLED: Toggles limit testing On or Off. When limits are enabled, The border around the measurement data table shows green for a passing, and red for a failing, measurement.

FWD UPPER: Sets the forward upper limit of the analog scale.

FWD LOWER: Sets the forward lower limit of the analog scale.

REV UPPER: Sets the reverse upper limit of the analog scale.

REV LOWER: Sets the reverse lower limit of the analog scale

ALARM: Toggles an audible alarm when crossing a limit. Use the SETTINGS menu (from the three bar icon in the toolbar) to adjust the volume.

Note that the alarm functionality is disabled when the SUMMARY TABLE toggle in the SETUP menu is tuned ON. Refer to "SETUP Menu (inline power sensor)" on page 3-7.

Figure 3-11. High Accuracy Power Meter LIMIT Menu ((MA24103A/105A)

3-11 Presetting the Analyzer

Access PRESET menu from main menu. This menu holds good for both traditional and inline power sensors.

The PRESET menu sets certain settings to the default state. Preset only affects the current analyzer settings. Preset does not affect user files or system settings such as networking settings. For other reset options, such as a complete factory reset of the instrument, refer to “Reset Settings” section in Instrument overview chapter of the instrument’s user guide. To recover from system software faults, refer to
Appendix A, “Instrument Messages and Troubleshooting” chapter of the instrument’s user guide.

PRESET Menu

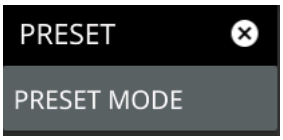
	**PRESET MODE:** Presets all of the current analyzer settings to default values.

Figure 3-12. PRESET Menu

3-12 Saving and Recalling Measurements

The instrument can save measurement setups, native trace and CSV trace data, and screenshots. You can recall setup and native trace files. For other file operations such as copy, move, and directory management, refer to “File Management” section of Instrument Overview chapter of the corresponding user guide.

Saving a Measurement

To save a measurement or setup, refer to Figure 3-13:

1. Select FILE > SAVE AS...
2. If desired, press the save location to change the destination.
3. Enter the desired file name using the touchscreen keyboard.
4. Select the type of file to save from the selection list.
5. Select SAVE to save the file.

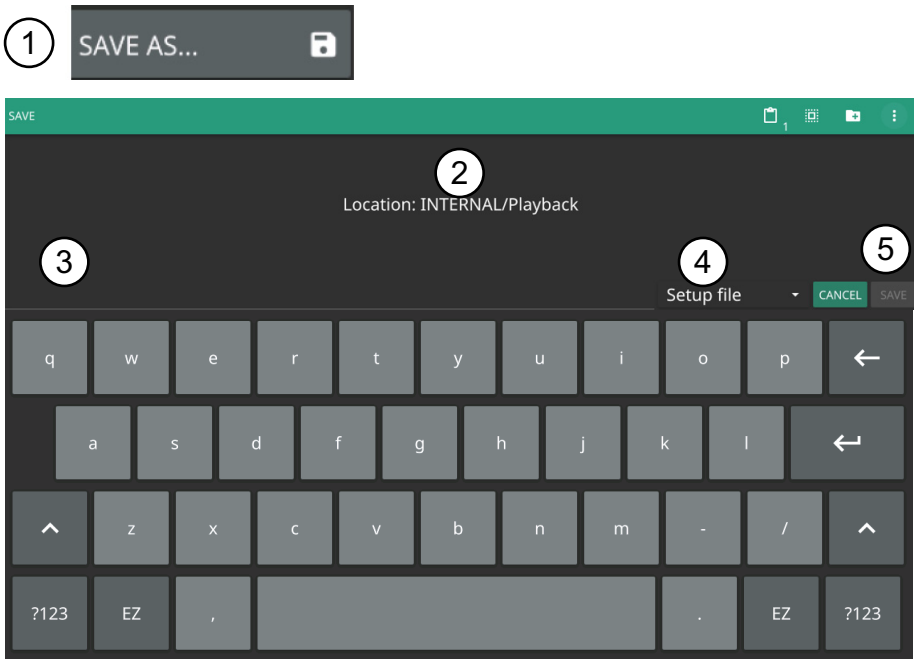


Figure 3-13. File Save Dialog

Once a file has been saved, the QUICK SAVE feature can be used to quickly save the same type of file with an incrementing number appended to the end of the original file name.

Recalling a Measurement

You can recall a saved setup and native trace measurement. When recalling a setup, the instrument setup and operating state will be restored as it was when the setup was saved. When recalling a trace measurement, the instrument setup and on-screen measurement data will be restored as it was when the trace data was saved.

To recall a measurement or setup, refer to Figure 3-14:

1. Select FILE > RECALL...
2. Select the file location.
3. Use the file type filter to shorten the list if needed.
4. Select the desired file from the displayed list.
5. Select OPEN to recall the file.

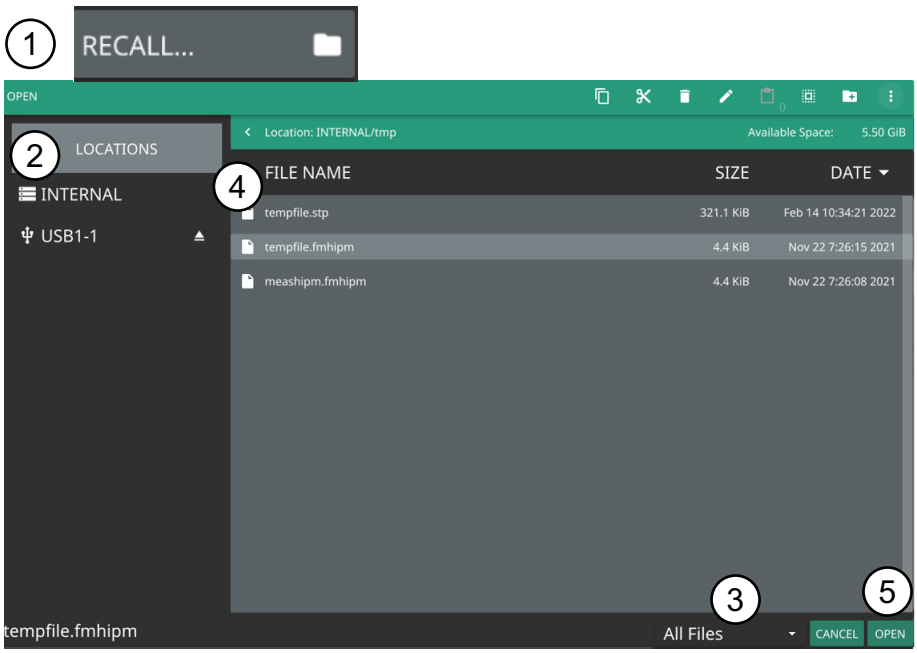
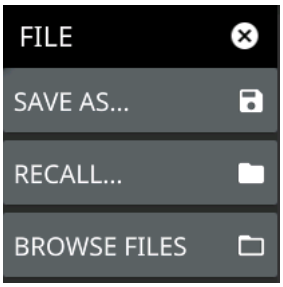


Figure 3-14. File Open Dialog

When a measurement is recalled, the measurement state will be set to hold. To restore active measurements, select SETUP > RUN/HOLD > Run.

FILE Menu

Access FILE menu from main menu. This menu holds good for both traditional and inline power sensors.



SAVE AS: Opens the Save dialog to manually enter a file location, enter a file name, and to set the file type to be saved. Depending on the selected measurement, you can save the following:

- Setup: Saves the current instrument setup (stp file type).
- Measurement: Saves the measurement point data and the current instrument setup (fmhipm file type).
- CSV: Saves the point data in comma separated value format (csv file type). This format is useful for further analysis using other software tools.
- Screenshot: Saves a screenshot of the current measurement (png file type).

RECALL: Opens the Recall File dialog to retrieve a file from a desired location. Only supported files will be displayed depending on the currently set measurement. When measurement point data is recalled, the instrument will change the settings to match the settings of the saved measurement. The data will be recalled with the measurement in Hold mode. To exit the recalled data, simply change the measurement mode back to Run from the SETUP menu.

BROWSE FILES: Opens “File Management” section of Instrument Overview chapter of the user guide

Figure 3-15. FILE Menu

10580-00492 F

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