# SWR Site Analyzer

Version 1.10

## Quick Start Guide

This Quick Start Guide is applicable to SWR Site Analyzer. The VNA Site Analyzer has a separate Quick Start Guide
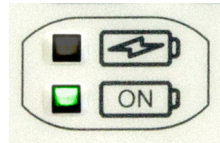
### SWR Site Analyzer

This model has both SWR & Return Loss meters and a Frequency Domain Reflectometer (FDR).

### General

Frequency range 100KHz to 1.5GHz, user customizable color LCD, powered by 8AA NIMH rechargeable cells, has both Broadband Calibration and Frequency Specific Calibration Processes. 50 memory slots for saving test results or setups(calibrations), and works with our Site Analyzer PC Vision™ software.

### Power and Charging

SWR Site Analyzer comes with 8AA NIMH cells installed and pre-conditioned. New they will operate the instrument for 3.5 to 4.0 hours continuously between charges. The instrument can also be powered and recharging at the same time using the AC Charger/Adapter.

Power LED is lit indicating the instrument is ON. Charging LED indicators are as follows:

**OFF** – No charging power in or charger aborted due to charging error; cells to hot or cold to take a charge.
⚠ **SEE MANUAL**

**Slow, Short blink** - Battery check mode. The charger is 'PINGing' the batteries to check chargeability status.
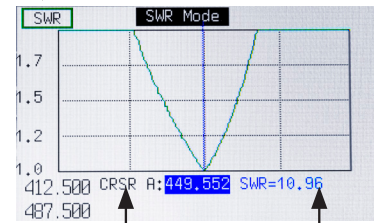
**Slow, Long blink** - Charger is in slow charge. If the unit is ON, this is the highest rate it will charge.

**Double blink** - Charger is in rapid charge mode. (around 700mA at 15v).

**ON solid** - Batteries are 90%plus charged. Unit is ready for use.

## SWR or RL Screen

Use SWR/RL Key to switch between SWR & Return Loss & Scale Key to change SWR or Return Loss ranges
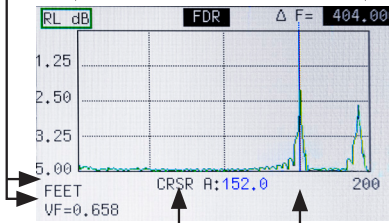
Use CRSR Key to activate Cursor's frequency & data. Use Left/Right Arrows to position them
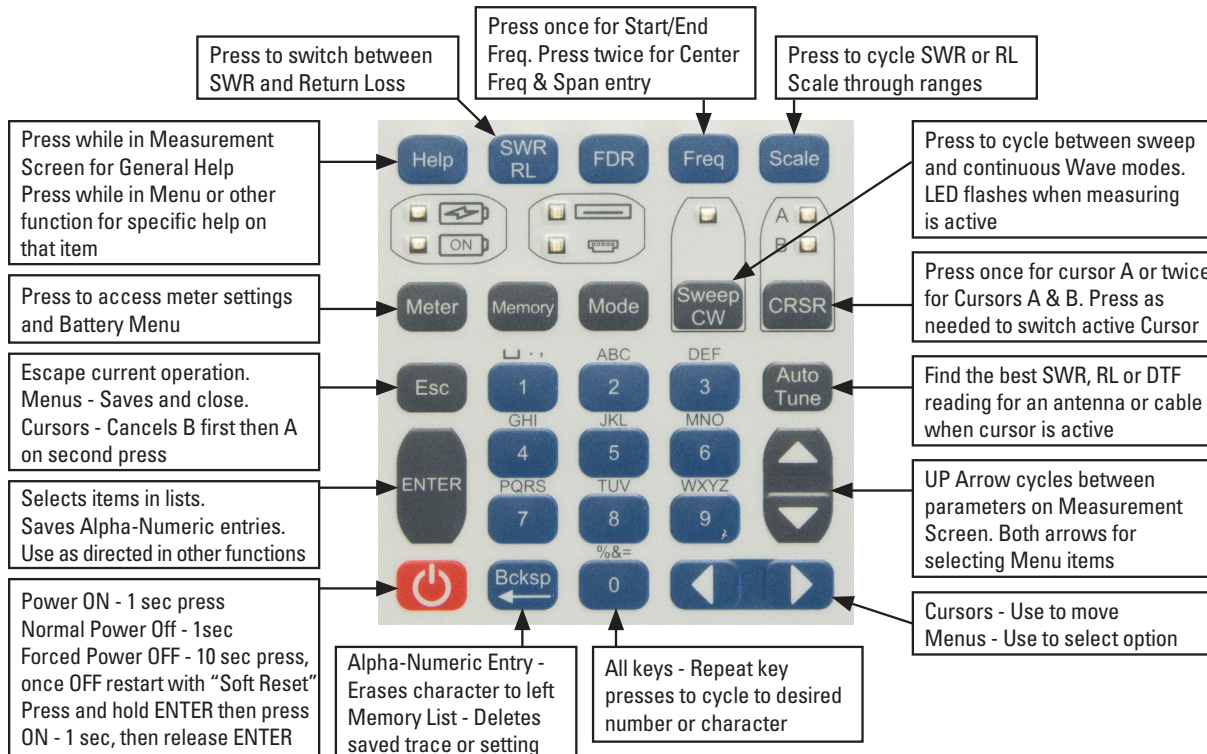
## FDR Screen
### 190 ft cable with fault at 162 ft

Use Up Arrow key to select parameter to change and ENTER to make changes. Use SCALE Key to change SWR or Return Loss ranges

Use CRSR Key to activate Curser's distance & reflection readings. Use Left/Right Arrows to position them

Press to switch between SWR and Return Loss

Press once for Start/End Freq. Press twice for Center Freq & Span entry

Press to cycle SWR or RL Scale through ranges

Press while in Measurement Screen for General Help Press while in Menu or other function for specific help on that item

Press to access meter settings and Battery Menu

Escape current operation. Menus - Saves and close. Cursors - Cancels B first then A on second press

Selects items in lists. Saves Alpha-Numeric entries. Use as directed in other functions

Power ON - 1 sec press Normal Power Off - 1sec Forced Power OFF - 10 sec press, once OFF restart with "Soft Reset" Press and hold ENTER then press ON - 1 sec, then release ENTER

Alpha-Numeric Entry - Erases character to left Memory List - Deletes saved trace or setting

All keys - Repeat key presses to cycle to desired number or character

Press to cycle between sweep and continuous Wave modes. LED flashes when measuring is active

Press once for cursor A or twice for Cursors A & B. Press as needed to switch active Cursor

Find the best SWR, RL or DTF reading for an antenna or cable when cursor is active

UP Arrow cycles between parameters on Measurement Screen. Both arrows for selecting Menu items

Cursors - Use to move Menus - Use to select option

## Other Keypad Functions

**FDR** – Frequency Domain Reflectometer

**Memory and USB Port LEDs:** Top – LED ON indicates writing to or recalling data from Site Analyzer's memory. Bottom – PC comms LED

**Memory** – Press to Name and Save or Recall saved test results or instrument settings

**Mode** – For selecting: Cable Null, Limit lines and Sweep time.

**About Limit Lines:** Set Pass/Fail limits for SWR, RL or FDR Screen to get a graphical indication of when your measurement are within limits that you specified.

**About Calibration Selection**

There are two types of calibrations: "Broadband Calibration" and "Frequency-Specific Calibration."

### Broadband Calibration

This is a calibration of the instrument's full frequency range that can be saved and used for any testing frequency band selected. If you desire to have this calibration available, you need to perform the cal with or without a test lead.
*See Operating Manual for instructions.*

### Frequency-Specific Calibration

(More accurate than Broadband)

**Step 1** Press Mode key and select CALIBRATIONS, Use left/right arrow keys to select FREQ SPECIFIC option. Press ESC key to save and exit

**Step 2** From SWR or RL measurement screen, press the FREQ Key. Press once for Start-End Frequency entry or twice for Center Frequency-Span entry.

**Step 3** Enter the desired frequencies

**Step 4** Press ENTER key, to begin the Frequency-Specific Calibration process

### Frequency Specific Calibration (Cont.)

When prompted for OPEN, attach test lead and/or adapter (if any) that will be used with all measurements, (Use of OPEN terminator is optional with frequencies below 1GHz) and press ENTER.

**Step 5** When prompted, attach the short, then 50 Ω terminators at the end of the test lead or at N connector. Press ENTER after each terminator is attached.

**Step 6** At the end of the calibration process, the instrument is ready for use.

**Step 7** (optional) This frequency-specific calibration can be saved to the instrument's memory for future recall: Press MEMORY Key and select SAVE SETTINGS and press ENTER.

**Step 8** Enter the name you wish to save and press ENTER to save the settings

## Start Measurement Process

### SWR or Return Loss Measuring

1. Connect the test lead and/or adapter, if they are to be removed from the measurements.

2. Press the SWR/RL key to select desired measurement.

3. Either select Broadband Calibration or perform the "Frequency Specific Calibration" (instructions on this guide's Front Right panel).

4. When calibration is complete connect the antenna or other device to be tested (aka DUT).

5. Use the Scale key to adjust the SWR or Return Loss scale for the best plot presentation.

6. Press the Cursor key to select Cursor A or A & B with ∆ reading. Use the Autotune for the cursor to seek to the lowest SWR or RL reading. Or use Left/Right Arrow keys to adjust Cursor positions manually as desired.

7. If Broadband Calibration was used, the frequency band can be adjusted without recalibration.

   *(cont. on next column).*

### Measurement Process (cont.)

8. If Frequency Specific Calibration was used you will need to disconnect the DUT from the test lead and/or adapter, or N connector, press Freq key, select new frequency range and perform the Frequency Specific Calibration with the new frequency range.

9. SWR/RL key will switch between those two measurements with no recalibration. Use the Scale key to cycle the scale to the best plot presentation.

10. (Optional) To save the plot press the MEMORY key and use alpha numeric keys to enter a name, then press ENTER to save.

## FDR Measurements

NOTE: FDR has its own Calibration process as part of the measurement procedure. It can NOT use the Broadband Calibration.

1. Press the FDR key to select FDR Measurement Screen.

2. Attach any test lead only if one is to be used. Do NOT attach the cable to be tested at this time.

3. First, if the VF= is not highlighted use the UP Arrow key to highlight and press ENTER.

4. Enter the cable's VF then press ENTER or press the FDR key, select a cable from the cable list, press ENTER, then press ENTER to save and exit

5. NOTE: Steps 3 & 4 must be completed before Steps 6 & 7 to correctly compute the ∆F.

6. Select ∆F in the upper right corner, with the up arrow. press ENTER.

*(cont. on next column).*

### FDR Measurements (cont.)

7. In the Distance & Frequency Dialog box, enter the approximate cable length (plus about 10-15%), and the frequency at which to measure the antenna return loss (if there is no antenna, or if you don't desire to make this measurement, leave the F0 = 0). Press ENTER to save and exit

8. The instrument will now proceed to the calibration cycle. apply the open, load and short in turn as prompted

9. At the Measurement Screen use the UP Arrow key to highlight the SWR or RL parameter. Use ENTER to switch to desired parameter: SWR or RL and Scale key to adjust the scale so the cable's trace is visible.

10. Use the Cursors to mark any high readings as potential faults. The AUTO TUNE key can be used to find the highest peak. NOTE: end of cable reading should be the last high reading at the cable's end distance.

11. (Optional) Press MEMORY key to name and save the trace.

## Performance Issue

**Need Help** - If your Site Analyzer does not appear to be performing correctly or responding to key commands try a Soft Reset

**Step 1** Turn the Site Analyzer OFF. If a 1 second press of the ON/OFF key does not respond, press and hold the ON/OFF key for 10 seconds then release to force a shutdown.

**Step 2** Press and hold the ENTER key

**Step 3** Press ON/OFF to power up the Site Analyzer

**Step 4** 1 second later release ENTER key

**NOTE:** Default "Factory Settings" will be restored and firmware reset to correct any issues.

If you are still having an issue, please contact our Technical Support at 800-258-7805 US & Canada or +1-760-931-8979 M-F 800am-4:30pm US Pacific Time, or Email: techsupport @aeatechnology.com



## AEA Technology, Inc.

*Testing Made Simple*

5933 Sea Lion Pl, Ste 112
Carlsbad, CA 92010
1-800-258-7805 or +1-760-931-8979
**www.aeatechnology.com**
Email: techsupport@aeatechnology.com