Field Fox Calibration and Testing

Revised 2026/08/02

Note: [text] indicates physical buttons and (text) indicates an on-screen option.

Note: Start and Stop Frequencies must be set separately for both IL and VSWR.

Calibrate for Insertion Loss

[Mode] > (Power Meter USB) *_This is the mode for measuring Insertion Loss_.

[Freq/Dist] > (Src Start) > Enter start frequency > (GHz) or (MHz)

[Freq/Dist] > (Src Stop) > Enter stop frequency > (GHz) or (MHz)

[1 Measure] > (Src Power Measure)

Connect test cable to Field Fox Port 1. Connect Power Sensor USB to Field Fox USB port.

Connect Power Sensor N-Type Connector to the end of the test cable, adding any adapters that will be used for the circuit under test.

> (Measure) > Let the marker run across the graph until you are returned to the previous options.

> (Src Data -> Mem) > (Done) *_This saves the calibration data for the power sensor_.

[1 Measure] > (Gain) *_This sets the Field Fox to measure dB Gain/Loss_ *_The next steps check accuracy of calibration_.

[Scale/Amptd] > (Autoscale) > Let the marker run across the graph one complete time.

[Run/Hold] > “Hold” will appear in red text on the left of the screen, indicating that the Field Fox is no longer taking measurements.

[Scale/Amptd] > (Autoscale)

[Mkr/Tools] > (Minimum) > IF the minimum is less (more negative) than -0.1 (upper right of the screen), then ensure physical connections are tight, and restart insertion loss calibration steps from [1 Measure] > (Src Power Measure). Otherwise, if greater (more positive) than -0.1, continue. *_A number closer to 0 is better_.

*NOTE: Sometimes the Field Fox will not automatically find the actual minimum from [Mkr/Tools]. If this happens, press [Marker] > Use the physical wheel to locate the real minimum.

Calibrate for VSWR

[Mode] > (CAT/TDR) **This is the Mode for measuring VSWR.*

[1 Measure] > (VSWR)

[Freq/Dist] > (Src Start) > Enter start frequency > (GHz) or (MHz)

[Freq/Dist] > (Src Stop) > Enter stop frequency > (GHz) or (MHz)

[5 Cal] > (Mechanical Cal)

> (Change DUT Connectors) > Select Type N

> If necessary, (Change Gender) to match Cal Kit.

> (Next) > Select 85518A or 85515A or whichever Cal Kit you are going to use.

> (Finish)

> (Start Calibration) > Follow instructions on screen.

1. Connect test cable to Field Fox Port 1.
2. Connect Cal Kit OPEN to test cable, adding any adapters that will be used for the circuit under test. > (Measure)
3. Change the Cal Kit OPEN to the Cal Kit SHORT > (Measure)
4. Change the Cal Kit SHORT to the Cal Kit LOAD > (Measure)
5. (Finish)

[1 Measure] > (VSWR) **The next steps check accuracy of calibration.*

[Scale/Amptd] > (Autoscale)

[Run/Hold] > “Hold” will appear in red text on the left of the screen, indicating that the Field Fox is no longer taking measurements.

[Scale/Amptd] > (Autoscale)

[Mkr/Tools] > (Peak) > IF the peak is greater than 1.019 (upper right of the screen), then ensure physical connections are tight, and restart VSWR calibration steps from [5 Cal]. Otherwise, if less than 1.02, continue. **A number closer to 1 is better.*

Set Title for Insertion Loss

[7 System] > (Display) > (Title) > Enter the Title of the graph. For example, “DDG129 R-RA123_IL” or if measuring at multiple frequency ranges, “DDG129 R-RA123_IL 1.0G-2.0G”

Measure Insertion Loss

[Mode] > (Power Meter USB) **This is the mode for measuring Insertion Loss*.

Connect test cable to Field Fox Port 1. Connect other end of test cable to circuit under test.

Connect local Range Extender to Field Fox USB port using USB cable.

Connect Power Sensor USB to distant Range Extender USB port.

The Range Extenders should be connected to each other via a CAT5 cable.

Connect Power Sensor N-Type Connector to the distant end of the circuit under test.

[1 Measure] > (Gain) **This sets the Field Fox to measure dB Gain/Loss*

[Run/Hold] > “Hold” will no longer appear in red text on the left of the screen. If it does appear, press [Run/Hold] again.

[Scale/Amptd] > (Autoscale) > Let the marker run across the graph one complete time.

[Run/Hold] > “Hold” will appear in red text on the left of the screen, indicating that the Field Fox is no longer taking measurements.

[Scale/Amptd] > (Autoscale)

[Mkr/Tools] > (Minimum) *NOTE: Sometimes the Field Fox will not automatically find the actual minimum from [Mkr/Tools]. If this happens, press [Marker] > Use the physical wheel to locate the real minimum.

Save Graph for Insertion Loss

*NOTE: Ensure Frequency Range and Title and Minimum Marker are correct before saving.

[9 Save/Recall] > (File Type) > (Trace+State)

> (Save) > Enter the same text as the Title > (Done)

[9 Save/Recall] > (File Type) > (Picture (PNG))

> (Save) > Enter the same text as the Title > (Done)

Set Title for VSWR

[7 System] > (Display) > (Title) > Enter the Title of the graph. For example, “DDG129 R-RA123_VSWR” or if measuring at multiple frequency ranges, “DDG129 R-RA123_VSWR 1.0G-2.0G”

Measure VSWR

[Mode] > (CAT/TDR) **This is the mode for measuring VSWR.*

Connect test cable to Field Fox Port 1. Connect other end of test cable to circuit under test.

Connect Cal Kit LOAD to the distant end of the circuit under test.

[1 Measure] > (VSWR)

[Run/Hold] > “Hold” will no longer appear in red text on the left of the screen. If it does appear, press [Run/Hold] again.

[Scale/Amptd] > (Autoscale) > Let the Field Fox take measurements for 5 seconds.

[Run/Hold] > “Hold” will appear in red text on the left of the screen, indicating that the Field Fox is no longer taking measurements.

[Scale/Amptd] > (Autoscale)

[Mkr/Tools] > (Peak)

Save Graph for VSWR

*NOTE: Ensure Frequency Range and Title and Peak Marker are correct before saving.

[9 Save/Recall] > (File Type) > (Trace+State)

> (Save) > Enter the same text as the Title > (Done)

[9 Save/Recall] > (File Type) > (Picture (PNG))

> (Save) > Enter the same text as the Title > (Done)