

R8000 Cable Fault Quick Start Guide

The Cable Fault analyzer kit comes with the following items:

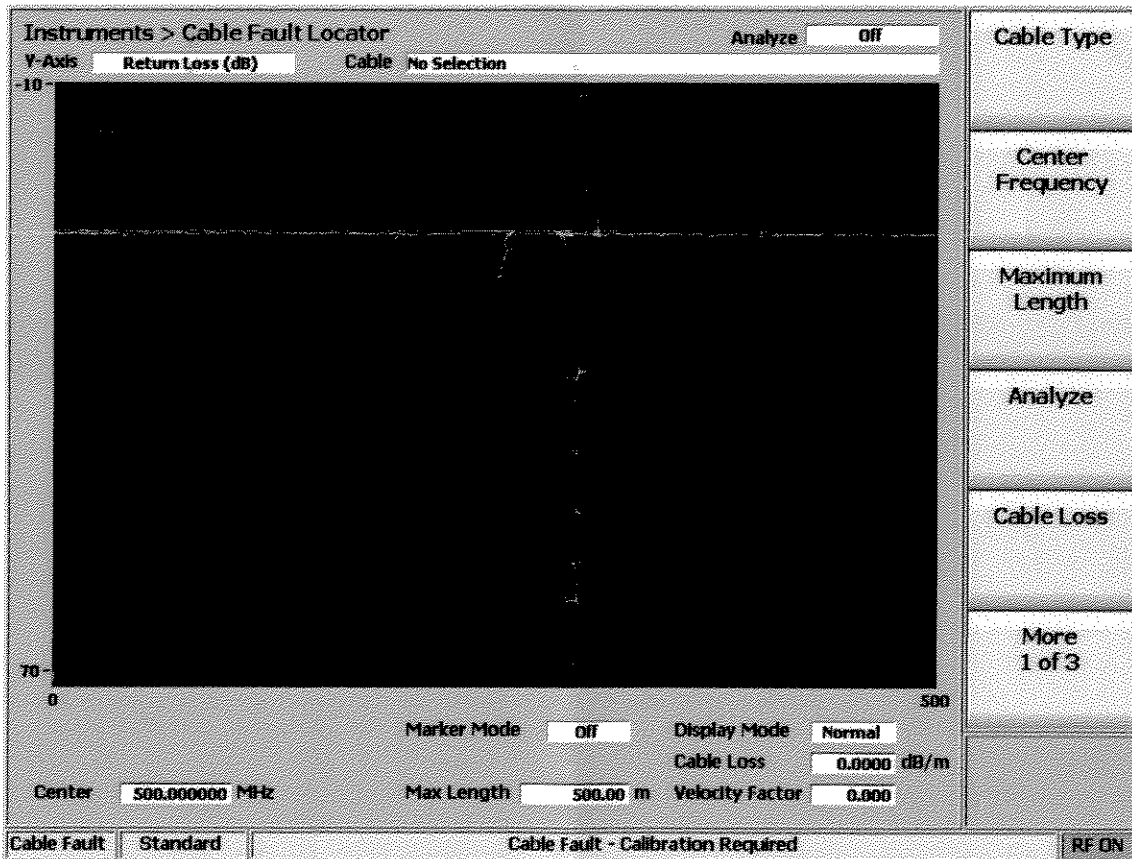
- (2) 1 ft Male BNC cables
- (1) Resistive RF power splitter
- (1) 50 Ohm BNC load

Setup and Operation

To start the R8000 Cable Fault Locator:

- Press the “Instrument” key
- Select the “Cable Fault Locator...” vertical softkey (selecting the “Other Meters” option may be necessary)

The Cable Fault Locator instrument should now be displayed as shown in the figure below.



For an accurate measurement, four parameters must be entered for the cable to be tested:

- **Center Frequency:** The cable fault locator analyzes a cable by measuring signal reflections as the R8000 sweeps its generator over a frequency band. The center frequency defines the center of the band. Ideally, the center frequency will be the center of the operational frequency of the cable under test.

- Cable Loss: Defines how much power is lost in the cable per unit length. The parameter is used to compensate the return loss measurement.
- Velocity Factor: The relative velocity of an electromagnetic wave in the cable compared to c , the velocity of light. Usually the velocity factor ranges from about 0.66 to 0.80.
- Max Length: Estimated length of the cable plus a safety factor. Under estimating the length of the cable can cause imperfections to appear at the wrong location. Over estimating results in loss of distance resolution.

Once the parameters mentioned above are entered, a cable sweep may be done. The start of a new analysis requires a calibration of the test setup. Whenever the Max Length, Center Frequency, or Velocity Factor changes, a calibration must be done. The Cable Fault instrument will force a recalibration if it notes a calibration is necessary.

To calibrate the instrument:

- Connect one port of the power splitter to the R8000's GEN port using one of the supplied BNC cables
- Connect one port of the power splitter to the R8000's ANT port using the other supplied BNC cable
- Connect the 50 Ohm termination to the remaining port of the power splitter.
- Begin a calibration sweep (either as instructed by the onscreen instructions or by selecting the "Analyze" and "Calibrate" softkeys).

After calibration is complete a cable may be swept to locate faults. To test a cable:

- Remove the 50 Ohm load from the resistive power splitter
- Connect the cable to test in its place.
- Select the "Analyze" softkey
- From the horizontal softkey group, select "Single Sweep"
- When the sweep completes, the screen will update with a plot of return loss versus distance