

APPLICATION NOTE 16



TIPS ON TRACING COAX CABLE WITH THE KE801 LASER TRACER

The Kurth Electronic *Laser Tracer™ Plus* is a multi-media test and trace kit. One test set can help trace and troubleshoot:

- Coax
- Telephone Cable
- LAN Cable
- Fiber-optic Cable.

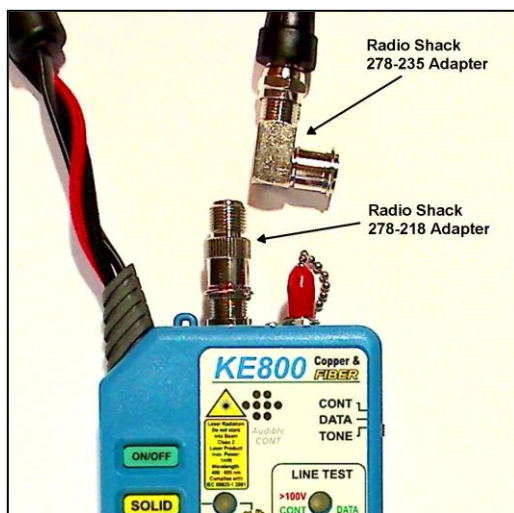
The kit includes the KE800 tester and the KE310 tracing probe. The probe can be used in all copper cable tracing applications and is compatible with any other manufacturer's tone tracing sender.



The KE800 test and trace unit has five (5) ways of connecting to cabling depending on the application. It has a number of nice features like audible short circuit tone, variable tracing tones for recognition, voltage detection and it will tone through coax splitters.

Connecting to Coaxial Cables

There are two popular ways of connecting the KE800 to coaxial cable: using the F-type connector on the top of the tester, or using the telco-style alligator clips. The clips are handy when using an adapter or when the cable doesn't have a connector on it. As with any tester, if there are going to be many connect/disconnect cycles with different sizes of cable it is good to put an inexpensive (US\$2) adapter on the tester 'F' connector that can be replaced periodically. This helps reduce wear and tear on the tester. As shown in the photo below, a Radio Shack push-on adapter works well for this.



Using the KE800 Tester

Start the KE800 by pressing the ON/OFF key (you will hear a confirming tone). Select the thing you want to do using the slide switch on the right side. TONE for tracing, DATA for working with Ethernet LAN and CONT for short circuit checks.

With coax it is good to check CONT first to see if the cable might be connected at the far end, or has a short circuit fault. A connected TV set will usually show a short (steady light and tone). You may want to disconnect that far device if you are troubleshooting or tracing. Some splitters may hide the fact that a TV is connected, so the short check isn't a guarantee. See the splitter section on the next page.

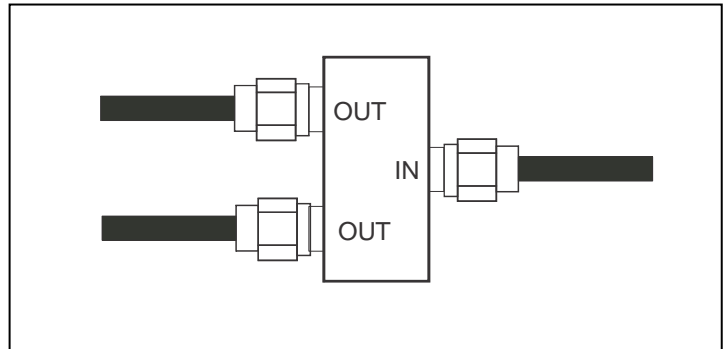
Select TONE to send a strong tracing tone to both the alligator clips and the F connector. When the KE800 is connected to a cable, the tracing tone will appear on all connections to that cable even on the far side of most splitters.

Dealing with Coaxial Cable Splitters

A splitter is a device that is used to branch a cable into 2, 4, or 8 connections. The signal on the cable will be 'split' among the connections, reducing its strength each time, but it is a simple way to share a cable source. They have one "IN" and 2 or more "OUT" connections.

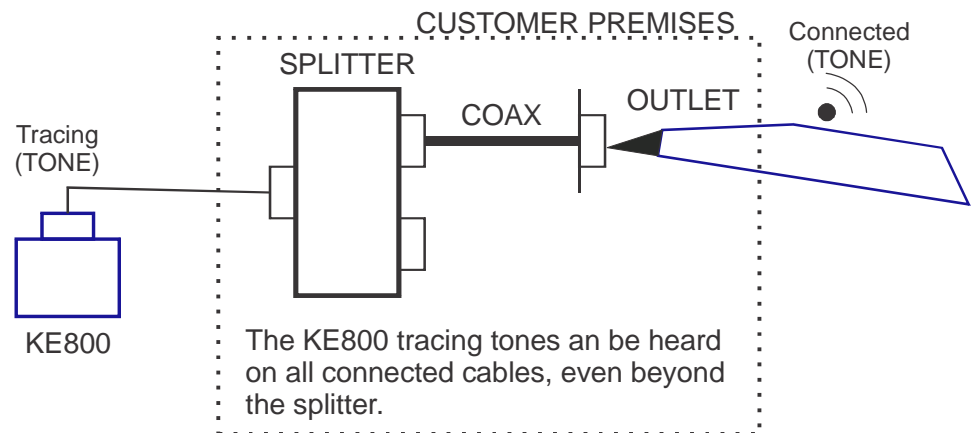
There are many types of splitters, even in a residential situation.

- CATV (bandwidth 5 MHz to 1 GHz)
- Satellite (5 MHz to 2.4 GHz)
- Power passing
- Power blocking
- AC Coupled
- Active (amp + splitter)



Each of these types behaves differently during testing, and even with different tester types.

For example, some older tone tracer designs will not send tone through the splitter and the cable will look like an 'open'. Lack of tone at the far end of the cable in that case can mean 1) wrong cable, 2) open circuit, or 3) splitter. Blocked tone is not a reliable indicator of a splitter in the circuit.



With power passing splitters like those on the department store shelf today, even a cable with a splitter going to a TV set will show a short (solid light and CONT tone). The low impedance will be detected right through the splitter.

