How to Identify and Locate Copper Faults Simply and Quickly

The OneExpert™ OneCheck™ TDR empowers every technician to identify and locate copper faults with lightning-fast results and real-time updates.

Test Challenge

A TDR (time-domain-reflectometer) is a great tool to identify and locate copper faults. Any technician sent out for installation, repair, or maintenance should be able to use such a tool. First line field technicians not addressing copper faults will leave non-reliable service, cause additional operational costs on a repeat visit, and ultimately result in customer unhappiness and threat of churn.

While TDR is a tool to help identify, locate, and fix typical copper faults as shown in Figure 1, it is traditionally only used by more experienced field technicians. It typically requires many configuration steps like range definition, pulse width, cable gauge, gain, and finally results require skills for analysis and interpretation.

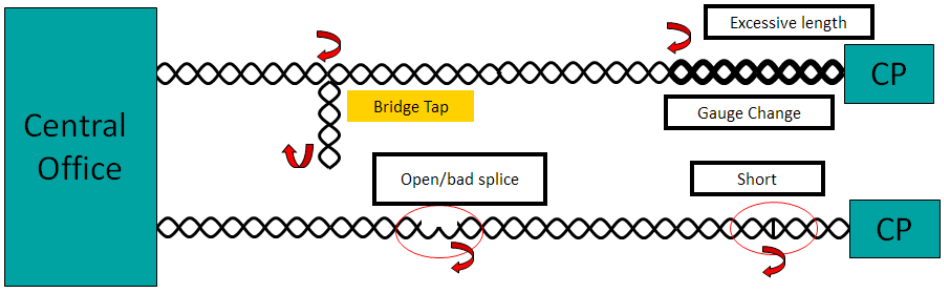

Figure 1 - Typical faults that can be identified with a TDR include opens, shorts, bridge taps, and splices.

Addressing the Challenge with the OneExpert

Using the OneCheck™ TDR feature set on the ONX-580 series, technicians can identify copper faults such as opens, short, bridge tabs, and splices. With one button operation, the technician gets real-time updates using patented Time Varying Gain and Adaptive Pulse Width test methodology. Results are provided in graphical and table text format showing the identified fault type and measured distance to the fault.

A typical test example is shown in Figure 2 by using the Standard TDR mode on the ONX-580. Compared to previous TDRs this is already very simple in operation by using the Quick Range™ selection. It starts off with the shortest range and the technician just "adds more range" through the Quick Range selector until the end of the cable has been identified. The example here shows a first event as splice at around 100m (screen #2). The end of the cable is detected a little more than 200m away (screen #3) and as no other events have been identified beyond that point (screen #4). The technician finally narrows down the range again (screen #5). As a second step the gain might need adjustment to "zoom in and out" (screen #6). As a third step the technician measures the location of the events by moving the cursor to these events (screen #7 and #8).

With OneCheck TDR in Figure 3 everything runs automatically. Within a few seconds the ONX-580 reports two events as splice and open and provides the distance to these events – fast, consistent, and complete!

Figure 2 – Manual TDR operation with the ONX-580 is easy using Quick Range selection, though still requires going through a few loops for settling on the correct range and gain settings. Finally it requires the technician to analyze the TDR trace.

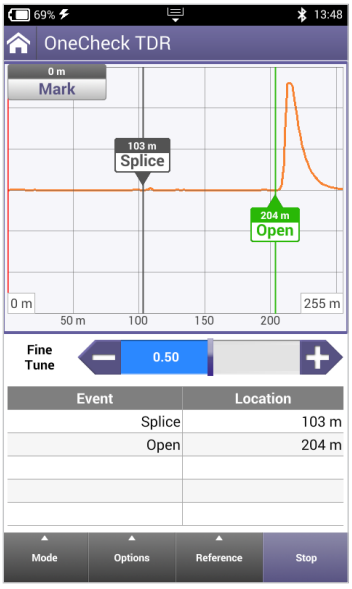

Figure 3 – OneCheck TDR identifies and locates faults instantly and automatically.

Conclusion

Built on patented ONX-580 SmartGain™ TDR mode with Quick RangeTM, Time Varying Gain and Adaptive Pulse with technology, the OneExpert OneCheck TDR empowers every technician to identify and locate copper faults. It provides incredible fast results with real-time updates. As illustrated in Figure 4, the process time is 10 times faster and technicians can directly take actions upon results.

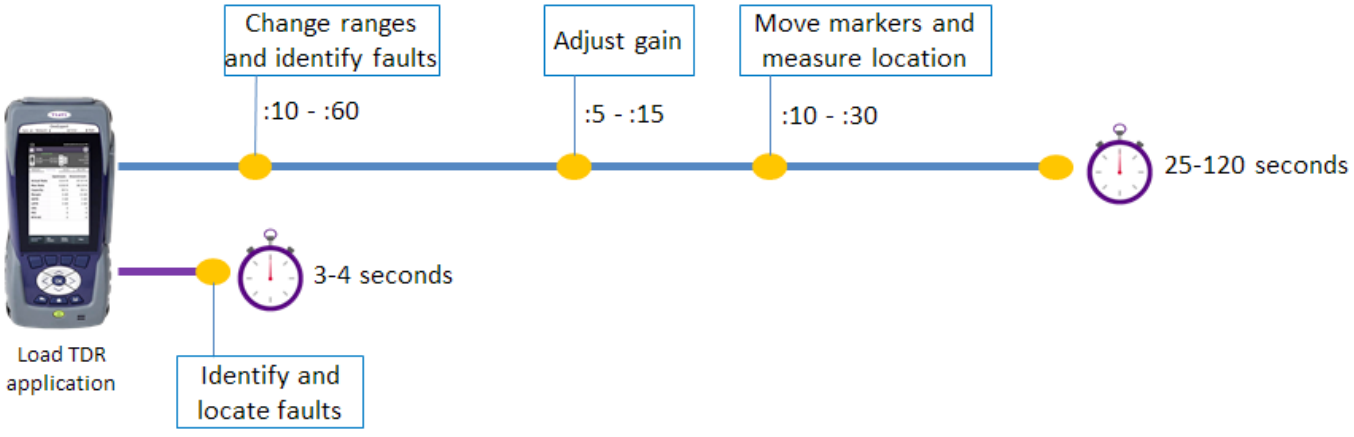

Figure 4 – OneCheck TDR is 10 times faster than manual TDR operation or other automated TDR tools.

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