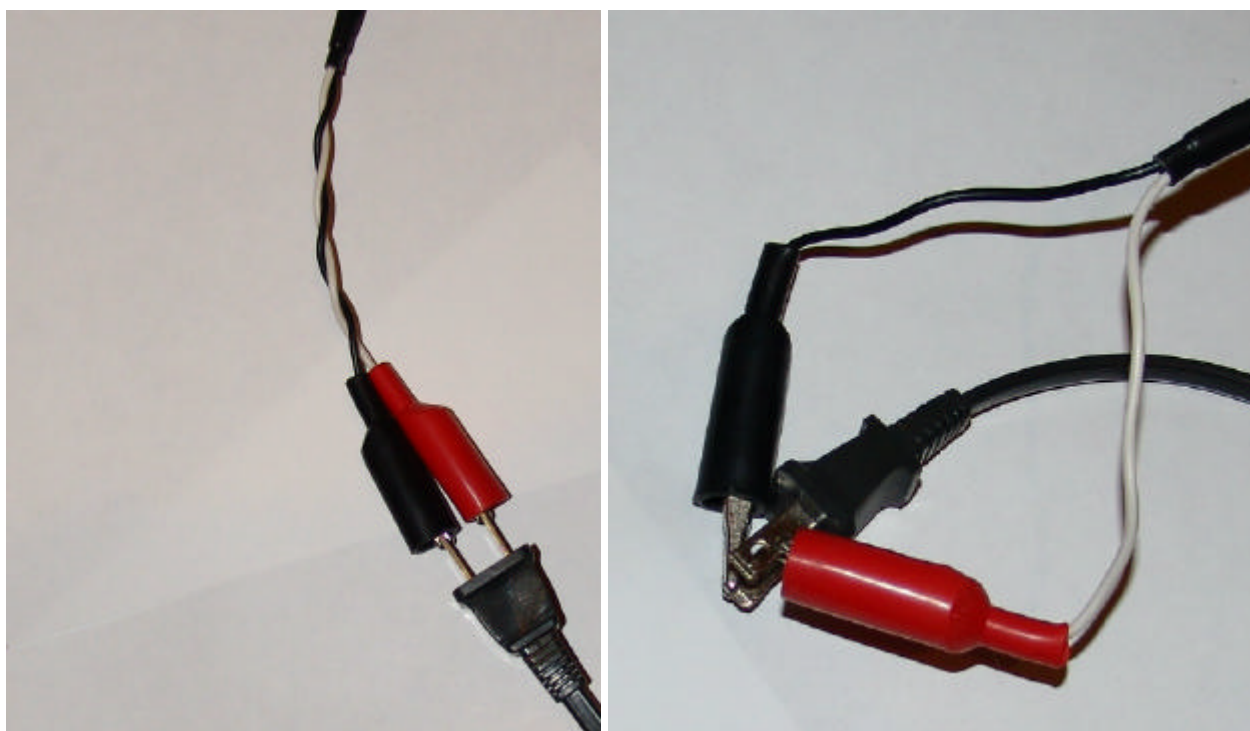


The only difference between the red (lower, larger pulse if you're seeing this in black & white) and the green trace (the other lower trace) is the output impedance setting of the TDR. The green trace is taken with the TDR set at 50 ohms, the red at 93 ohms. Because there is more of a mismatch between the TDR and the cable under test at 50 ohms, that transition uses up a little more energy. The reflected far-end pulse on the green trace being a little smaller than the red trace confirms this. There is no other noticeable difference in the shape or information the trace conveys.

A second source of mismatch is how we connect the test leads to the cable under test. We want everything to be as smooth as possible with minimal change to the spacing. In the two pictures below, we show a desired connection (left) and an improper connection. The proper connection corresponds to both the red and green (lower) pulses above and the improper connection is shown in the blue (upper) trace.



The incorrect method (right picture) creates a much larger reflection (upper, blue trace on TDR screen shot) at the leads to cable connection (solid cursor) than either of the traces from the correct connection. Also, the end reflection on the improper connection is smaller because of the energy lost at the test lead to cable under test connection.

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