



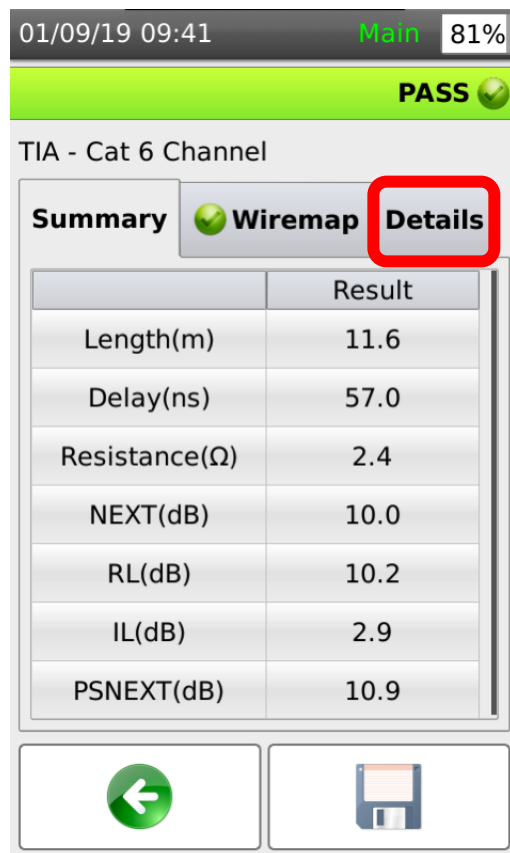
Locating Return Loss Problems

This article describes how to locate the source of a failure of Return Loss when doing copper cable certification. Ideally, cabling links have a uniform 100 ohm impedance. In reality, the impedance will vary. We will start with the assumption you have run a cable certification test and now want to see whether your return loss results are due to a specific point in the link (often a connection) or whether the return loss issue is distributed throughout the link (means the cable is the problem).

Finding Return Loss Problems

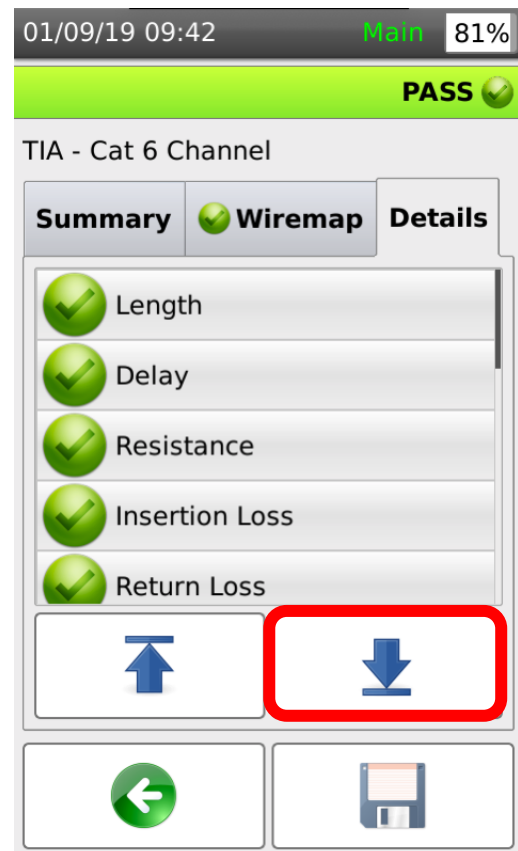
1. Start with Autotest Summary

Note in this example that the length of the cabling is 11.6m. While this is a PASS, it will illustrate the method

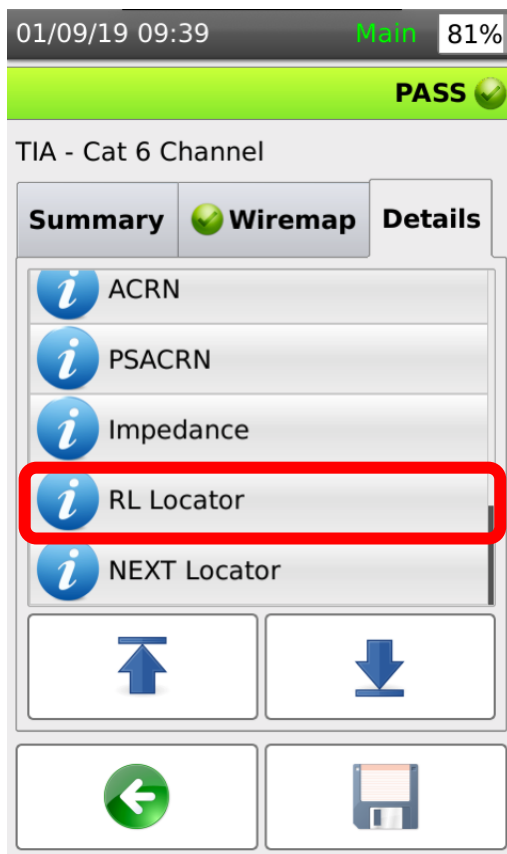


Press the Details softkey

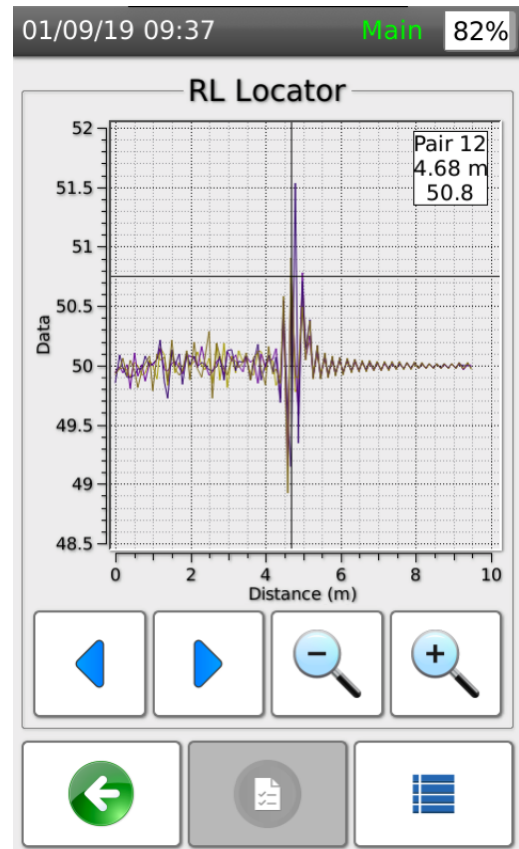
2. From this screen, press the down arrow 3x to get to the RL Locator



3. Press RL Locator

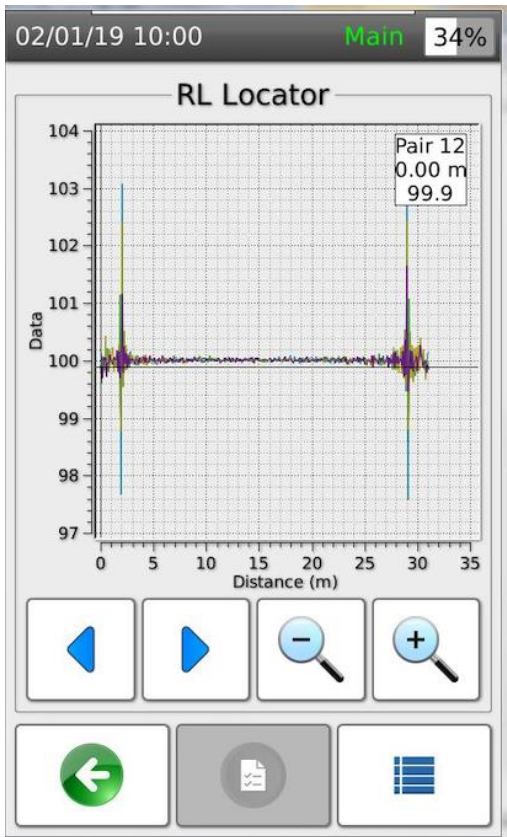


4. Test Result Screen



The worst RL result is displayed, in this case on pair 12. The worst Return Loss is about 4.5m away from the MAIN unit where the return loss is higher than everywhere else on the link. However, if you look at the numbers, there is really only about +/- 1 dB of difference, so it's not really significant.

In the next example below, we can see a link where there a 3dB variance in RL at the end connection points. This could easily be enough to fail a marginal link.



If instead we saw a wide variation throughout the link, not concentrated at connections, that would suggest the cable has poor RL performance.