Universal Category 6 Link and Channel SmartProbes

Agilent’s new Universal Link and Channel SmartProbes may be the only test adapters you need for category 6 certification. And now they’re included with every test set we sell.

Link Testing with the WireScope 350

In the past, when category 6 plugs and jacks from different manufacturers did not interoperate, test equipment vendors had to supply manufacturer-specific link cords. Today, the impressive progress in the performance of category 6 connecting hardware allows us to introduce the Universal Link SmartProbe for testing links. Agilent’s extensive testing with the latest connecting hardware demonstrates that most installations are well supported with the Universal Link SmartProbe. This is great news for the WireScope customers who no longer need to spend extra money on special test cords.

Of course we still offer manufacturer-specific category 6 Link SmartProbes. In fact we’ve got the largest selection in the industry available from stock.

Accuracy Considerations – Basic Link vs. Permanent Link

The latest standards emerging from both TIA and ISO introduce a new model for link testing – the Permanent Link. The WireScope 350 supports Permanent Link testing in accordance with these new standards. In Basic Link Testing, the adapter cord is part of the link under test. In Permanent Link Testing, the adapter cord is part of the tester.

The new Permanent Link model makes good sense. The Basic Link model adds cord errors to your measurement, while the Permanent Link model requires the manufacturers to calibrate them out.

The Agilent Permanent Link test cord is rendered completely “invisible” through careful compensation techniques. All WireScope 350 link cords – Universal and manufacturer-specific – offer TIA Level III accuracy.
How Long Does the Link Probe Last?
The plug at the end of the test cord limits the cord’s useful life because plugs develop defects with use. A common defect is the loss of spring action, rendering connections unreliable and affecting the accuracy of all measurements. The cord itself is typically not a problem if it is well designed. The Agilent link cord is robust and rigid. It provides consistent Level III performance under various types of stress, bending and coiling. The weak link, as in all test cords, is the plug.

The counter built into each Agilent SmartProbe lets the WireScope automatically determine the wear on the link probe and issue a warning.

Channel Testing with the WireScope 350
Even though category 6 is now a mature specification, testing category 6 channels remains a challenge. Why is channel testing to category 6 so different from channel testing to earlier cabling categories? The answer comes down margins. Because category 6 test margins are so slim, complete cancellation of the channel test interface is necessary in order to pass the test.
A channel test adapter mated with a plug at the end of the channel represents an extra connection not included in the budget for the category 6 channel test limit. Without proper compensation, this extra connection can significantly affect NEXT and return loss measurements causing installations to fail.

**Auto-Cancellation Technology – ACT**

To address the issue of category 6 channel testing, Agilent has developed Auto-Cancellation Technology, ACT. ACT is a novel method for complete removal of the channel test interface from the measured data.

Removing the mated connection at the channel test interface is not simple because the properties of this connection depend on the properties of the plug. In the ideal world, all plugs would be similar, giving us one predictable quantity to subtract. In reality, the plugs differ significantly and each one must be measured before compensation can be performed. The Auto-Cancellation Technology automatically determines the specific compensation parameters for a wide variety of modular plugs used in the channels.

ACT is implemented with a combination of hardware and software and is available with the Agilent Channel SmartProbes and release 2.1 of the WireScope software. This innovative technology has been put to a thorough test with all the known brands and categories of components and has proven to yield accurate results in all cases while maximizing category 6 measurement margins.

ACT supports all categories of installations up to category 6. The accuracy of the WireScope 350 channel configuration exceeds TIA Level III requirements for channel accuracy.