Agilent N2640A WireScope™ Pro

Mechanical Design Optimization

Knowledge Base Article

WireScope™ Pro – Designed for Stability and Durability

With its predecessor, the WireScope 350, the WireScope Pro LAN cabling analyzer shares the user interface design and its approximate form factor. The ScopeData™ Pro II analysis software which comes with the WireScope Pro is backward compatible to the WireScope 350 generation of instruments. It serves for the analysis of measurement results, database management and report generation.

Despite all commonalities, there are significant differences between the WireScope Pro and its predecessor, and other brands that follow a similar mechanical design as the 350 generation had.

The SmartProbe Pro Module Bay

While the WireScope 350 SmartProbes plugged into a connector on the top of the instrument, the SmartProbe Pro series of adapters are hosted by a module bay at the back of the WireScope Pro. Now embedded in the instrument, the SmartProbes integrate completely with the instrument's shape, and are protected against mechanical impact.

WireScope 350 and similar designs of LAN cabling analyzers could suffer from side-impact on the probes, which could break or impact the multi-pin connection to the instrument.

The Touch Screen

The WireScope Pro touch screen has tight robustness specifications. The screen passes the 1-Million-Times Hitting Test (a polyacetal stylus is hitting the screen's center with a load of 3 N), and the 100,000-Times Sliding Test (a polyacetal stylus strikes the same area with a load of 2 N and 100 mm/second speed).

There are many user interface design related advantages of touch screens, which have lead to their use in countless portable devices that became part of our daily lives. Details are described in a knowledge base article – see publication number 5989-7931EN.

A touch screen disadvantage sometimes discussed is fingerprints left on the screen, which could compromise the display clarity. Those, however, are addressed by state-of-the-art surface technology and easy cleaning procedures.

For the most cited disadvantage, increased instrument vulnerability, there is actually no evidence in Agilent's warranty and repair statistics. Touch screens, however, should never be "operated" with sharp pointed objects such as screw drivers. Better use the stylus supplied with the instrument.

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The USB Flash Drive

Another significant difference between the WireScope Pro and its predecessor is the data transfer media it uses. While CompactFlash™ cards like the one used by the WireScope 350 are common with professional cameras, few laptops or notebook PCs come with CompactFlash™ interfaces. CardBus™ to CompactFlash™ adapters exist, but some companies do not allow their use on business PCs.

USB drives, like with the WireScope Pro, have become the most commonly used portable storage media. On top of their broad compatibility with PCs of all sizes and classes, they are fast – most PCs now have USB 2.0 interfaces – and cost efficient. Storage capacities seem to grow unlimited, at the same price.

There is a risk, however, associated with USB flash drives, as with USB connected WiFi or Bluetooth adapters: they stand out of the PC's or instrument's shape, and can become victim to an accident. Broken host connectors, or broken flash drives may be the result. To minimize the risk of SMT soldering pads lifted off, WireScope Pro is equipped with a through-hole mounted USB host port. Should the USB flash drive be hit while sitting in the port, it's rather the USB flash drive that will break, not the WireScope Pro's circuit board – this is avoiding expensive repairs.

Mission Successfully Completed

The WireScope Pro combines the proven advantages of the WireScope 350, like the easy to learn user interface concept, with a much more rugged mechanical design suitable to field and construction site use.

During the re-design, even details like the instrument's flip stand have been reviewed and improved. Since the installed base of instruments has grown to a significant number, the repair and warranty statistics prove that the mission has been successfully completed.

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