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Easier Testing for Gigabit Compliance

Ethernet Speed Certification LAN Qualifier and Network Diagnostics

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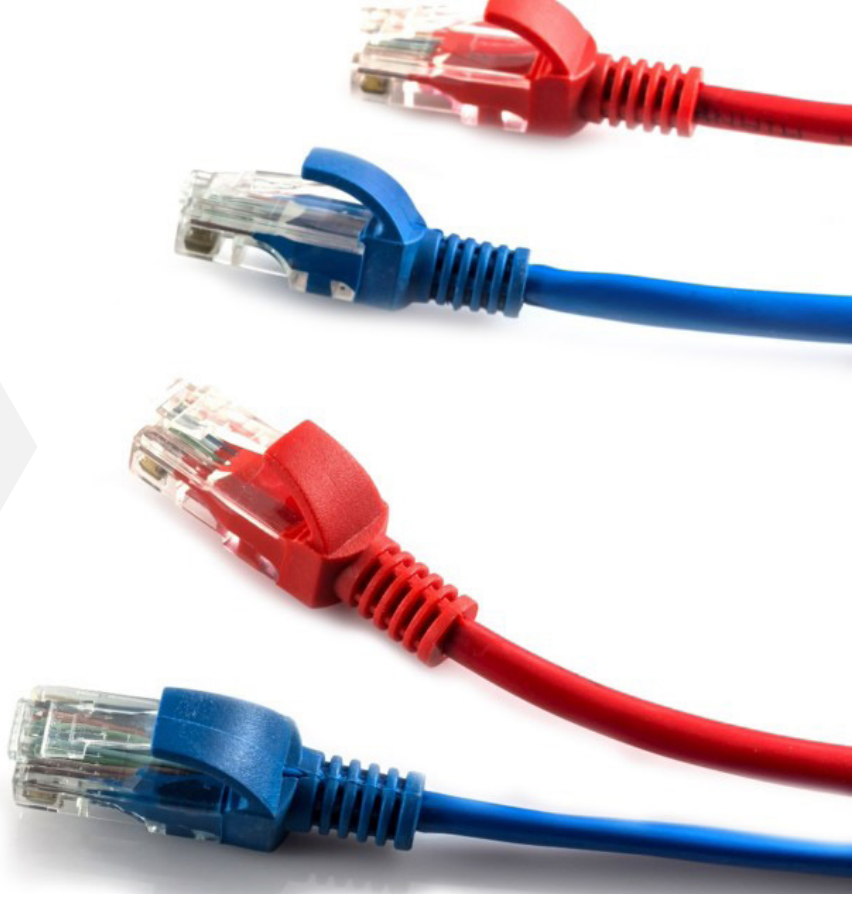

Field testing passive networks intended for later use as Gigabit networks can be a complicated, prolonged and costly business. By carrying out three simple test - Bit Error Rate, Signal to Noise Ratio and determining delay skew - you can check for suitability and cable quality. By taking this approach, you can not only almost instantly find out whether the network is performing as it should but you can also track errors and document the system. Today's ever-growing bandwidth demands mean a vast increase in the number of network cables used for communication (data, telephone, coaxial, audio...) as well as building management (security, access, alarms...). The importance of Ethernet is growing and its role is expanding.

As systems are increasingly linked together, and Moves, Adds and Changes become more frequent, it is vital to ascertain whether individual cables and bundles are working in accordance with specs and to make sure there are no bottlenecks along the line. This testing is more complex than it may seem at first glance. Installers are required to present 'proof of performance' documentation and perform pre-tests. The IEEE 802.3ab 1000BASE-T standard gives minimum requirements on multiple test parameters for verifying Gigabit devices.

If network testing is late, inaccurate or incomplete, much can go wrong. This can drive up the cost of the network. Testing must be an integrated part of the design and rollout processes. Connections are often separately checked for certification, qualification and verification. You are trying to be certain that the cabling system is compliant with the industry standards, can support required network speeds and is it connected correctly. A fourth common element is active troubleshooting. Of these, certification might be considered the most rigorous. Based on TIA and ISO standards, these either 'Pass' or 'Fail' for a measured connection.

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Multiple Tests for Greater Accuracy

Operators and installers simply want to know whether a cabling network works and can support Gigabit bandwidth, not only for newly installed networks, but also when existing networks are changed or extended. Qualification can be completed by measuring a few carefully selected parameters from the relevant transmission standards and using these basic tests to get valuable results.

However, if tests show that a network doesn't live up to expectations, it is handy to find out where the problem is and get an indication of what's causing it - without extensively testing LF and RF parameters. Short circuits, miss wires and split pairs will all affect system performance - so identifying these is crucial to taking effective steps to remedying failure.

Checking for Bit Error Rate (BER), Signal to Noise Ratio (SNR) and determining delay skew are common test methods. By performing all three in a single session and cross-referencing the results, test accuracy is increased by a considerable degree. Most of the professional test devices normally used for this are, however, very costly. Without NetXpert, you would need to carry around multiple expensive devices and not all of these are suited for harsh environments.

Cost-effective Cable Testing and Ethernet Speed Certification

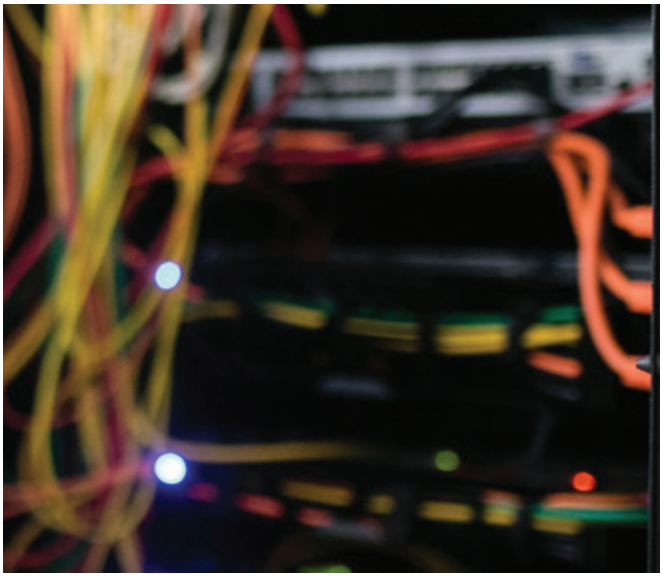
That's where NetXpert 1400 comes in. This small, portable, rugged device can test for BER, SNR and delay skew but is up to five times cheaper than other devices. It has been specifically designed for checking smaller installations, such as SOHO networks, clinics, law firms and soon. Operation requires no special skills. The cost-effective NetXpert 1400 allows installers and operators to quickly and easily find out whether their network cabling systems qualifies for IEEE 802.3ab standard compliant Gigabit Ethernet, and also enables troubleshooting of active networks. A 'Pass/Fail' result indicates whether existing cabling link supports data rates up to 1Gbit/s.

NetXpert 1400

Verifying Links

NetXpert allows the user to verify whether cabling links will support a maximum data rate of up to 1Gbit/s irrespective of the category of the cables, patch panels, or outlets installed. Performing standards-based tests with real data as per IEEE 802.3ab and bit error rate tests (BERT) the NetXpert 1400 tests the error-free data transmission up to 1Gbit/s. Adding to this, parameters affecting signal quality can be displayed including signal-to-noise ratio (SNR) and delay skew. Delay skew in a 4-pair cable indicates the signal time delay between pairs and can impact Gigabit Ethernet performance.

Continuity test results of all 8 wires and the shielding are displayed in wire map format in full color while showing cable faults such as opens, shorts, miss wires, and split pairs in a clear and easy to understand way. Cable length and distance to the cable fault are determined using advanced TDR (Time Domain Reflectometer) and capacitance technology.



1GB ETHERNET APPROVED

The NetXpert 1400 provides a complete solution for cable qualification and troubleshooting of active networks, enabling rapid, simple verification and documentation of the capability of cabling links to support Gigabit Ethernet operation compliant with the IEEE 802.3ab standard

Network Testing and Diagnosis

Featuring a bundle of active network testing capabilities, the NetXpert 1400 assists you with verifying network configuration and troubleshooting networks as any moves, adds & changes (MACs) performed will require a renewed verification.

The NetXpert 1400 verifies, when connected to a telecommunications outlet, if a link can be established to the switch and which connection speeds are supported (up to 1Gbit/s). The Ping test detects the availability of individual and lists of IPv4 and IPv6 addresses and any user-selectable URLs. User can also choose from a range of other network tests, such as LLDP/CDP and VLAN discovery and comprehensive PoE tests, including a load test.

The full-color touch screen and 4 additional buttons make the NetXpert 1400 easy to use while the high resolution color screen guarantees excellent readability in any environment. Its rugged design is ideally suited for rough environments. Results can be saved in the NetXpert 1400 and detailed, full color reports can be generated for documentation purposes. Internally stored test data can be moved via USB Flash to a PC or tablet in PDF or CSV format and printed without special software.

> Testing network links by combining three key parameters means accurate results with an easy-to-use, portable and rugged device and is the fastest, most cost effective way to verify whether cabling links will support a maximum data rate of up to 1Gbit/s.
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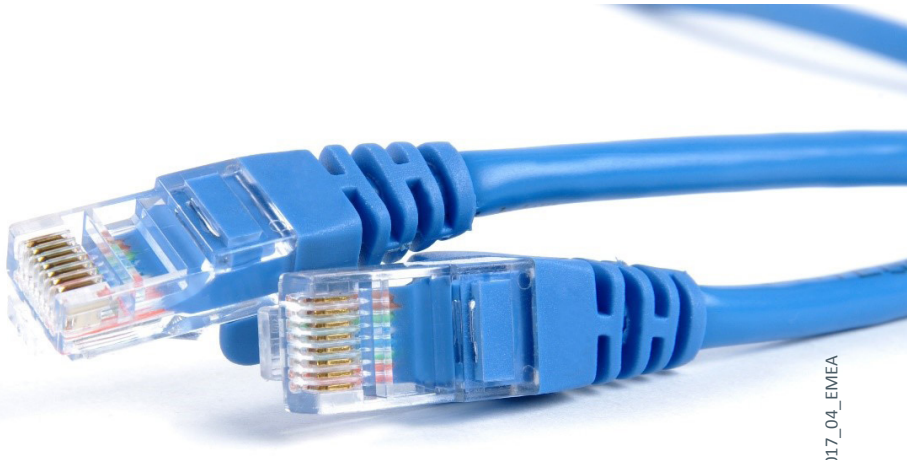

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