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NetXpert XG

CU FO

LAN QUALIFIERS

FROM 100MB/S TO 10GB/S ETHERNET

IT Networks

itnetworks.softing.com/XG

The all-in-one cable application qualifier

Speeds from 100Mb/s to 10Gb/s Ethernet, copper, fiber, cable tests, active network tests, WiFi, POE, and reporting characterize the environment of the application qualifier.

Cable qualification means prove by testing. Prove cable performance, prove network configuration, and prove end device configuration.

In the area of WiFi access points in particular, higher and higher data rates also play an important role on the uplink port. In order to find out whether the older, existing cabling supports the higher data rates, operators can prove cable speed before commissioning access points to avoid any unpleasant surprises.

Prove and document the application speed with NetXpert XG

NETXPERT XG SERIES: THE MODELS

NetXpert XG - 1G
Entry-level

NetXpert XG - 2.5/5G
Enhanced speed performance

NetXpert XG - 10G
Max speed performance

NetXpert XG-PLUS
The flagship – Max speed performance, copper and fiber optic testing

NetXpert XG – Fiber Extension Kit
Adds fiber to a copper only tester

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GET YOUR NETWORK TO TOP SPEEDS

The NetXpert XG proves whether copper cabling supports Ethernet transmission up to 10Gb/s regardless of which cable category, patch panels, or junction boxes were used; everything in-between is tested because this is your application.

After checking the wiremap and advising of distance to opens/shorts and noting reversals/miswires, the NetXpert XG proves speed to IEEE standards by automatically running three individual tests and combining these into an overall result.

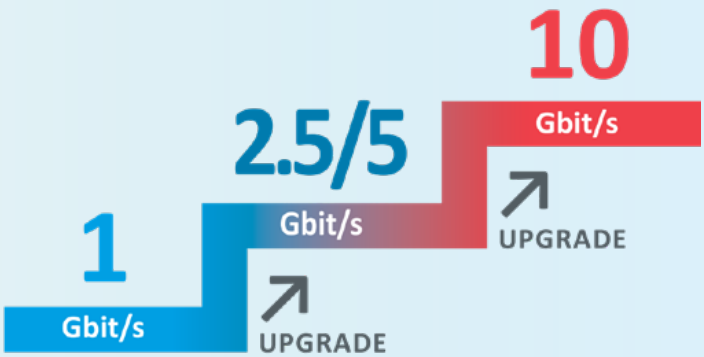
The three tests: Signal-to-noise ratio (SNR), followed by a bit error rate test (BERT), and then delay skew test. All required to prove and qualify the gigabit transmission.

Wiremap is important, but SNR can provide evidence of nearby power cables interfering with the data signal. BERT can show dropped bits caused by improper shielding or bending for copper or fiber. Delay skew indicates length differences in pairs; if there is too much delay, the receiver will not be able to assemble the data properly.

Your benefits

All-in-one, scalable application qualifier

- Prove copper or fiber cable speed up to 10Gb/s
- Prove active network configuration for copper, fiber, and WiFi
- Prove end device connectivity and find duplicate IP addresses
- Troubleshoot POE up to POE++
- Create reports and document network devices and findings
- Extend NetXpert XG capabilities with evergreen firmware updates



DESIGNED FOR THE CHALLENGES OF THE FUTURE

NetXpert XG is a scalable high-speed qualifier.

The NetXpert XG series offers easy firmware upgrades, and a licensing system enables upgrades as new features are released.

Three performance levels (1 or 2.5/5 or 10Gb/s Ethernet) are available. The purchase of a "step-up" license increases the speed testing of the device by one step.

For example, if you started with the 1 Gb/s copper version of the NetXpert, simply purchases 2 step-up licenses later to enable 10Gb/s performance. And, buy the fiber extension kit and start qualifying fiber optic lines.

Technical properties

PASSIVE CABLE TESTS

- Test against IEEE 802.3 compliance for data cabling at transmission rates up to 10Gb/s
- **Copper cabling**:
  - Determine signal-to-noise ratio (SNR)
  - Execute bit error rate test (BERT)
  - Determine delay skew
  - Measure length of cable using combined TDR and capacitive measurements for a more precise measurement and simpler troubleshooting, even with short circuits
  - Color wiring diagram shows interruption, swap, short circuits, and split pairs so they can be clearly identified
- **Fiber optic cabling**:
  - Execute bit error rate test (BERT)
  - Includes LiveLight™, a real-time, continuous trend of fiber light loss measurement so you can watch, in real-time, the loss effects of moving a connector or cable
  - Length of fiber measurement from SFP to SFP
  - Evaluate connector end faces using an optional USB fiber microscope

Standards-compliant signal-to-noise ratio (copper) and bit error rate tests (BERT)(copper and fiber) show the performance of cabling

For network discovery, simply connect NetXpert XG to a switch (copper and WiFi included in base unit, fiber if enabled)

ACTIVE ETHERNET TESTS

- PoE load test up to 90W (class 8)
- DHCP test
- Locate devices on the network (network discovery)
- Definition and storage of ping lists
- Traceroute
- LLDP/CDP detection and analysis
- WiFi scan of the available access points (2.4GHz or 5GHz with dongle)
- Detect VLANs

TROUBLESHOOTING ACTIVE NETWORKS

The NetXpert XG offers extensive tools for troubleshooting active networks. PoE up to the highest performance class (PoE ++) are tested for stability and by stress tests, devices on the network are identified (network discovery), and devices are checked for accessibility (ping and traceroute).

ENABLE PORTS FOR FIBER OPTIC TESTS

The NetXpert XG offers full flexibility regardless of whether you are testing fiber optic or copper cabling. When it comes to passive tests, a throughput test of the fiber optic cabling is also possible (with NetXpert XG-PLUS or upgrade with extension kit).

QUALIFICATION OF FIBER OPTIC CABLING

The classic measurements on fiber optic links only contain information about the attenuation and the reflection behavior, but this does not prove whether the Ethernet performance can actually be achieved. The BERT test of the NetXpert XG-PLUS proves that the cable links can run at the planned application speed, either 1Gb/s or 10Gb/s multimode or single mode.

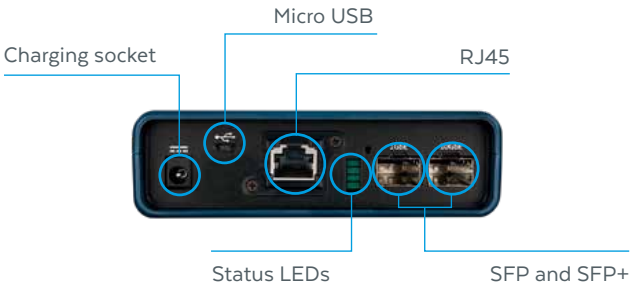
Old, existing cables can also be tested as to whether they can, for example, handle an increase in the transmission speed to 10Gb/s, or if you have to rip and replace.

AUTOMATED ASSESSMENT OF CONNECTOR END SURFACES SAVES YOU TIME AND HEADACHES

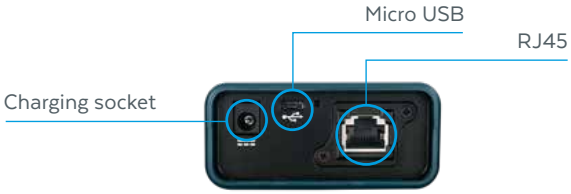
In the world of fiber optic cables, defects such as scratches or chipping, and especially dirt on the fiber end faces of connectors, are the main cause of errors and deterioration of the transmission quality on the transmission lines.

Contamination leads to increased reflections and an increase in insertion loss over the entire line. Contamination can lead to scratching or even the destruction of the fiber end faces of other connectors when connecting patch cables. Examining the connector end faces of the cabling before each plug-in operation and cleaning them adequately is essential. In combination with the optionally available electronic microscope, the NetXpert XG offers the ability to view all four connector end faces of a classic duplex cable, evaluating them against the IEC 61300-3-35 standard and including the results in the documentation as a graphic.

MAIN UNIT CONNECTIONS



AM ACTIVE REMOTE CONNECTIONS

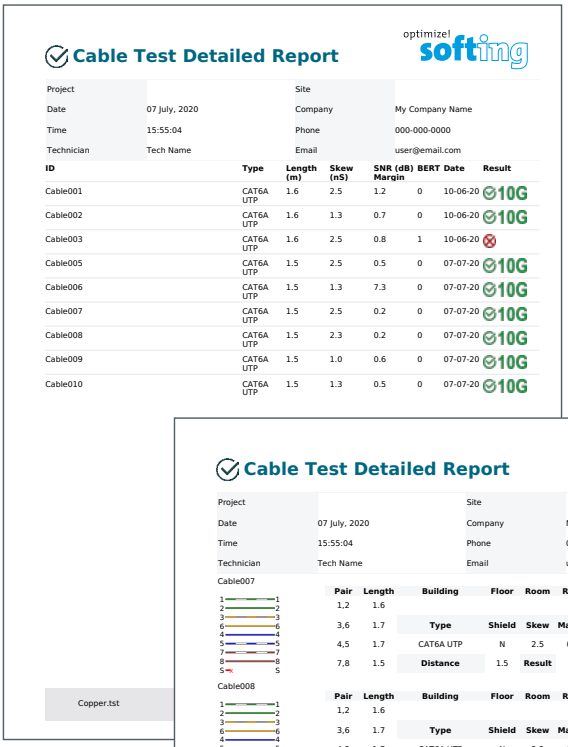


The optional fiber optic microscope can be used to quickly and easily check the connector end faces and provide an automatic “pass/fail” assessment

Project management and reporting

The NetXpert XG offers enough internal memory for even large projects and generates finished acceptance reports with all necessary information about the test. PDF reports are generated internally and can be transmitted via USB stick.

The file manager can be accessed directly from the home screen.
NetXpert XG generates detailed result reports in PDF or CSV format



Cable Test Detailed Report

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Project		Site	
Date	07 July, 2020	Company	My Company Name
Time	15:55:04	Phone	000-000-0000
Technician	Tech Name	Email	user@email.com

ID	Type	Length (m)	Skew (nS)	SNR (dB) Margin	BERT	Date	Result
Cable001	CAT6A UTP	1.6	2.5	1.2	0	10-06-20	10G
Cable002	CAT6A UTP	1.6	1.3	0.7	0	10-06-20	10G
Cable003	CAT6A UTP	1.6	2.5	0.8	1	10-06-20	⊗
Cable005	CAT6A UTP	1.5	2.5	0.5	0	07-07-20	10G
Cable006	CAT6A UTP	1.5	1.3	7.3	0	07-07-20	10G
Cable007	CAT6A UTP	1.5	2.5	0.2	0	07-07-20	10G
Cable008	CAT6A UTP	1.5	2.3	0.2	0	07-07-20	10G
Cable009	CAT6A UTP	1.5	1.0	0.6	0	07-07-20	10G
Cable010	CAT6A UTP	1.5	1.3	0.5	0	07-07-20	10G

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Cable Test Detailed Report

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Project		Site	
Date	07 July, 2020	Company	My Company Name
Time	15:55:04	Phone	000-000-0000
Technician	Tech Name	Email	user@email.com

Cable007

Pair	Length	Building	Floor	Room	Rack	Panel	Date
1,2	1.6						07-07-20
3,6	1.7	Type	Shield	Skew	Margin	BERT	
4,5	1.7	CAT6A UTP	N	2.5	0.2	0	
7,8	1.5	Distance	1.5	Result			10G

Cable008

Pair	Length	Building	Floor	Room	Rack	Panel	Date
1,2	1.6						07-07-20
3,6	1.7	Type	Shield	Skew	Margin	BERT	
4,5	1.7	CAT6A UTP	N	2.3	0.2	0	
7,8	1.5	Distance	1.5	Result			10G

Cable009

Pair	Length	Building	Floor	Room	Rack	Panel	Date
1,2	1.6						07-07-20
3,6	1.7	Type	Shield	Skew	Margin	BERT	
4,5	1.7	CAT6A UTP	N	1.0	0.6	0	
7,8	1.5	Distance	1.5	Result			10G

Cable010

Pair	Length	Building	Floor	Room	Rack	Panel	Date
1,2	1.6						07-07-20
3,6	1.7	Type	Shield	Skew	Margin	BERT	
4,5	1.7	CAT6A UTP	N	1.3	0.5	0	
7,8	1.5	Distance	1.5	Result			10G

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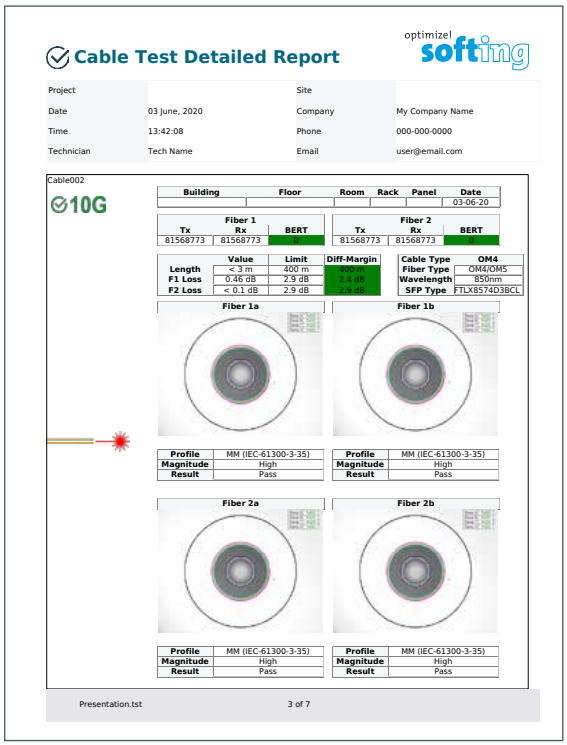

Cable Test Detailed Report

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Project		Site	
Date	03 June, 2020	Company	My Company Name
Time	13:42:08	Phone	000-000-0000
Technician	Tech Name	Email	user@email.com

Cable002

10G

Building	Floor	Room	Rack	Panel	Date
					03-06-20

Fiber 1 Tx	Fiber 1 Rx	Fiber 1 BERT	Fiber 2 Tx	Fiber 2 Rx	Fiber 2 BERT
81568773	81568773	0	81568773	81568773	0

	Value	Limit	Diff-Margin
Length	< 3 m	400 m	397 m
F1 Loss	0.46 dB	2.9 dB	2.4 dB
F2 Loss	< 0.1 dB	2.9 dB	2.9 dB

Cable Type	OM4
Fiber Type	OM4/OM5
Wavelength	850nm
SFP Type	FTLX8574D3BCL

Fiber 1a

Fiber 1b

Profile	MM (IEC-61300-3-35)
Magnitude	High
Result	Pass

Profile	MM (IEC-61300-3-35)
Magnitude	High
Result	Pass

Fiber 2a

Fiber 2b

Profile	MM (IEC-61300-3-35)
Magnitude	High
Result	Pass

Profile	MM (IEC-61300-3-35)
Magnitude	High
Result	Pass

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Which model is right for you?

Model	NetXpert XG 1G				NetXpert XG 2.5/5G				NetXpert XG 10G				NetXpert XG-PLUS			
	Active Network Tests		Passive Qualification		Active Network Tests		Passive Qualification		Active Network Tests		Passive Qualification		Active Network Tests		Passive Qualification	
Application/ Medium	CU	FO	CU	FO	CU	FO	CU	FO	CU	FO	CU	FO	CU	FO	CU	FO
Maximum speed																
10Gb/s	–	–	–	–	–	–	–	–	✓	✓	✓	–	✓	✓	✓	✓
2.5/5Gb/s	–		–		✓		✓		✓		✓		✓		✓	
1Gb/s	✓	✓	✓	–	✓	✓	✓	–	✓	✓	✓	–	✓	✓	✓	✓
WiFi	✓		–		✓		–		✓		–		✓		–	
Accessories																
Compatible with digital fiber optic video microscope	✔				✔				✔				✔			
Reporting																
Internal project management	✔				✔				✔				✔			
Creation of reports (csv, pdf, xml)	✔				✔				✔				✔			
Upgrades/Extensions																
Can be upgraded to the next speed level	✔				✔				Already at maximum speed				Already at maximum speed			
Extension kit for fiber optic measurement	✔				✔				✔				Already included			

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