netAlly

DATA SHEET

EtherScope™ nXG

Portable Network Expert

Overview

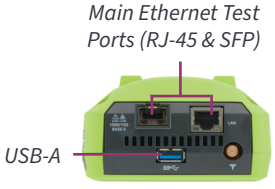
The EtherScope nXG Portable Network Expert is a multi-technology, all-in-one handheld network tester that enables engineers and technicians to get more done faster, from deployment to maintenance and documentation of their ever-changing Wi-Fi and Ethernet access networks. With its simple operation, yet in-depth visibility, and the ability to remotely access and control EtherScope nXG, engineers can now fully enable and leverage the “local hands” of field technicians to expedite problem-solving.

- Test, verify, and troubleshoot technology upgrades, NBASE-T, 10G and Wi-Fi 5/6 networks with advanced Android-based troubleshooting apps and purpose-built test hardware
- Verify up to 10G Ethernet link performance for critical servers, uplinks and key end devices, and validate Wi-Fi network performance
- Empowers technicians who may not have access to network management systems or other engineer-level tools, to assess and document complex network deployments with multiple VLANs and Wi-Fi SSIDs
- Enables remote engineers to troubleshoot and collaborate with on-site technicians to solve tough problems at remote sites, saving time and cost of travel
- Seamlessly consolidate and manage field test data, and integrate with network management systems via complimentary Link-Live Cloud Service

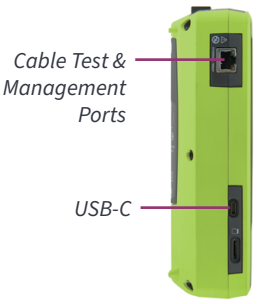
Key Features

All-in-one to address new technology upgrades

The EtherScope nXG has two sets of native Wi-Fi network interfaces: a 4x4 adapter that scan and test Wi-Fi networks, and a 1x1 adapter for remote control connection and testing. Both interfaces support 802.11a/b/g/n/ac and can show analysis of utilization and status of Wi-Fi channels, SSIDs, BSSIDs, access points, client devices, and interferers. The EtherScope nXG provides visibility of Wi-Fi 6 devices.



The EtherScope nXG has two Ethernet ports. The main test RJ-45 port supports Multi-Gig networks from 10/100/1000Mbps to 2.5/5/10G to verify link speed and duplex advertised and connected. It can request and verify PoE power under load from up to 90W PSE’s. Alternatively, it can interface to fiber networks via single/multi-mode SFP+ to test 1/10Gbps fiber-based Ethernet. The second RJ-45 management port connects to 10/100/1000Mbps Ethernet for remote control, and conducts network scanning and tests where needed. It is also the port for cable testing.



The EtherScope nXG has built-in Bluetooth v5/BLE and USB interfaces to discover and configure nearby devices.

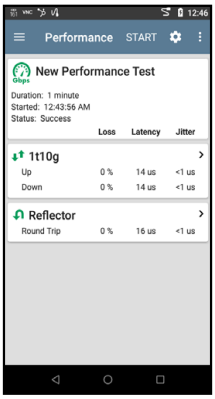
10G copper/fiber wired and Wi-Fi performance tests for critical links and key devices

The EtherScope nXG can stress critical network links, such as switch ports to servers/storage/Wi-Fi access points, uplinks or WAN links, with up to four simultaneous data streams at up to 10G line-rate. It verifies the link's compliance to service level agreements (SLA) based on throughput, packet loss, delay and jitter against peers such as EtherScope nXG(s), OneTouch™ 10G(s), OptiView® XG(s) or a software reflector agent(s).

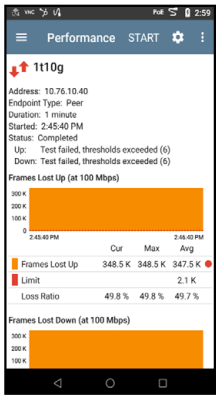
The EtherScope nXG uses the popular iPerf v3 network test algorithm to test against the NetAlly Test Accessory. It determines TCP or UDP application throughput through its Wi-Fi or wired interfaces.

Settings for data streams and thresholds for VoIP or video service can be stored and recalled where needed, saving configuration time.

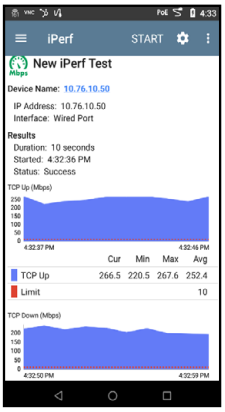
For key servers/services in the cloud or Internet, engineers can pre-define tests and thresholds to verify their connectivity and performance using ping, TCP connect, HTTP, or FTP. Continuous testing with response time measurements is available to verify consistency and identify intermittent issues. These tests can be easily recalled by field technicians to reduce configuration time or mistakes, to get more done faster.



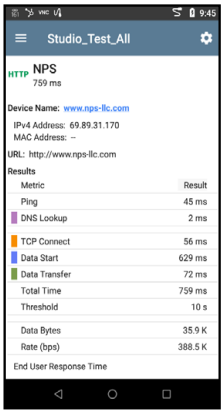
Performance test with up to 4 streams and 4 end points



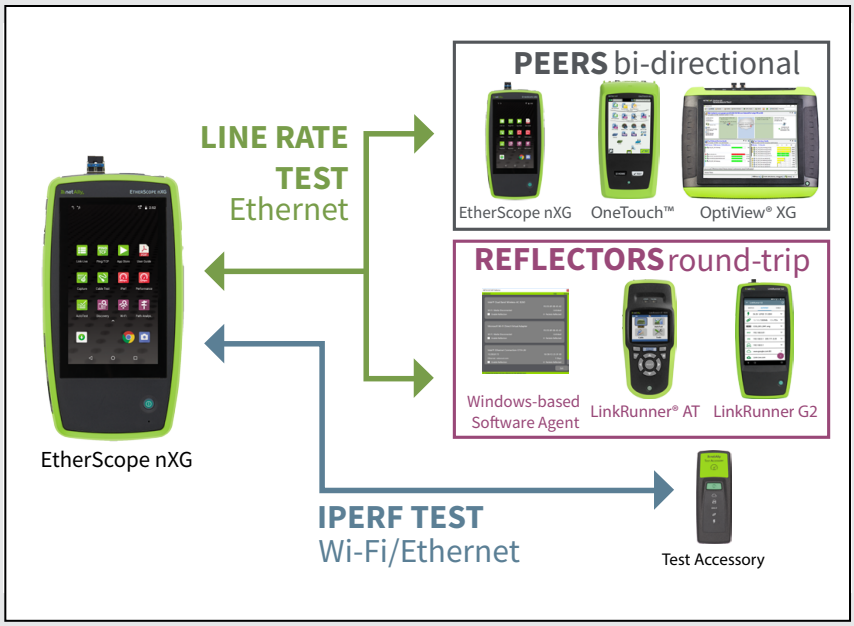
Frame loss, jitter, and latency charted



iPerf throughput test with TCP or UDP frames

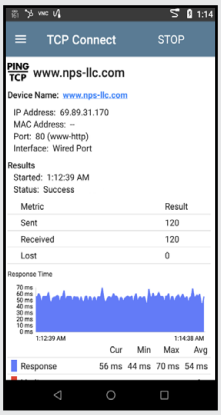


HTTP test against a webserver



Performance Test Relationships

EtherScope nXG can conduct performance tests through various end-points



TCP Connect Test

TCP Connect Test showing response time over time

Auditing and documenting network security and health

The EtherScope nXG automatically discovers your network through its dual set of Wi-Fi and Ethernet test interfaces immediately upon power-up. The discovery provides quick security and health audits of the network devices across multiple VLANs and all Wi-Fi channels.

Devices are classified and correlated to provide complete visibility of their name, network addresses, VLAN, SSID, device type, and where available, traffic statistics. Discovery results can be directly uploaded to the complimentary Link-Live Cloud Service for storage or converted to CSV/PDF files as documentation.

The EtherScope correlates the discovery result from the wired and Wi-Fi networks so that it is possible to show the name and IP address of Wi-Fi devices connected to the network. EtherScope nXG makes it easy to discover the actual identity of a Wi-Fi device while most other Wi-Fi tools only show the MAC address.

EtherScope nXG's discovery can be enriched by accessing SNMP MIBs of infrastructure devices. It shows details such as device configuration summary, interface configuration and traffic detail, SSIDs supported by WLAN Controllers, and devices directly connected to switches. Community strings entered are concealed from view.

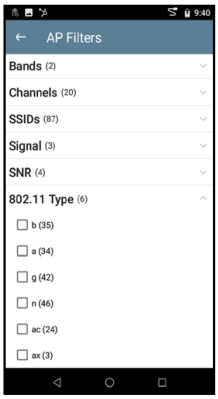
Discover possible security risks caused by users and others: 2nd DHCP offers indicating possible rogue servers, APs with different security schemes, unknown switches granting access to multiple devices, rogue Wi-Fi devices probing the network, and hidden SSIDs.

The EtherScope nXG discovery automatically detects problems. It shows possible cause(s) for each problem detected, and it has integrated troubleshooting tools to investigate further to get to root cause.

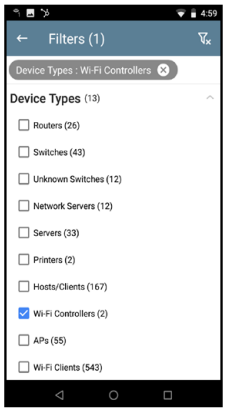
Did you know?

You can request a one-on-one live demo at netally.com/etherscopenxg-request-demo/

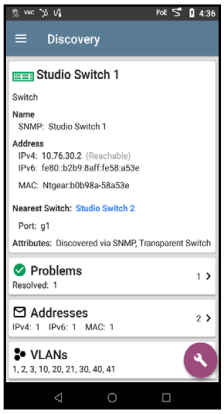
Wi-Fi Device shown with name & IP address



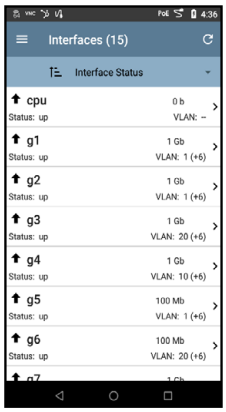
Filters available to narrow down to devices of interest



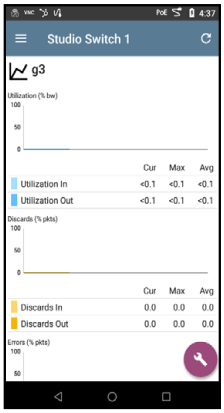
Additional filters available for device types



Device detail showing VLAN, interfaces, uptime, & more with drill-down



Device interfaces sortable by VLAN, connected devices, & utilization



Interface traffic statistic - correlated 24 hr charts to detect intermittent events

List of Problems Automatically Detected by EtherScope nXG

Wired Network Problems	Wi-Fi Network Problems
Bad Subnet Mask	AP with Encryption Disabled
Duplicate IP Address	Client with Encryption Disabled
DHCP Server Not Responding	Using Open Authentication
EtherScope nXG Received Multiple DHCP Offers	Using Shared Key Authentication
EtherScope nXG Received Used IP from DHCP	High Utilization on Channel*
EtherScope nXG Lost DHCP Lease	High Retries on Channel*
Max Clients on SSID	High Non-802.11 Utilization on Channel*
High Interface Utilization*	Co-Channel Interference Threshold (#AP)*
High Interface Errors*	Co-Channel Interference AP Signal Level*
High FCS Errors*	High Utilization on AP*
High Packet Discards*	AP Overloaded with Clients*
Detected Half-Duplex Interfaces	High Retries on Device*
High CPU Utilization*	BSSID Channel Changes*
High Disk Utilization*	RF Regulatory Violation
High Memory Utilization*	
Recent Device Reboot*	
Spanning Tree Topology Change	
SNMPv3 Agent Responded to SNMPv1/v2 Query	

**Problems detected with user-definable threshold*

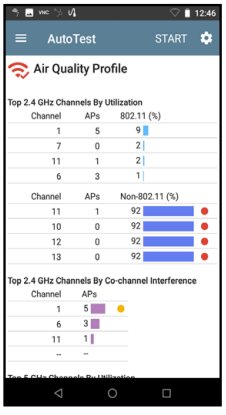
Simplifies tasks and empowers technicians to verify complex networks with next generation AutoTest

The EtherScope nXG has out-of-the-box AutoTest profiles with best practice pass/fail thresholds for quick assessment of network configurations and services of Wi-Fi and wired networks.

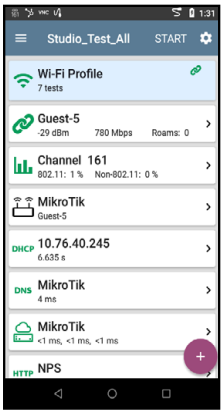
Ethernet Network: switch port PoE characteristics, link speed advertised vs negotiated, DHCP/DNS/Gateway availability and accessibility.

Air Quality: assess number of APs, co-channel and adjacent channel interference, and channel utilization

Wi-Fi Network: supports various authentication and security schemes to connect to SSIDs/BSSIDs for coverage by signal/noise, and DHCP/DNA/Gateway availability and accessibility.



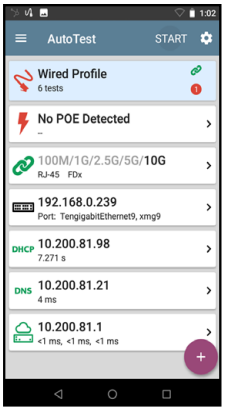
Wi-Fi Air Quality - detects oversubscribed channels



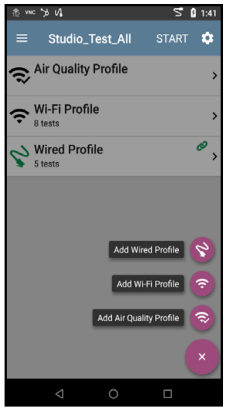
Wi-Fi SSID connectivity & coverage

Simplifies tasks and empowers technicians to verify complex networks with next generation AutoTest (continued)

Multiple profiles can be created for complex networks with multiple VLANs supported per switch port, and Wi-Fi networks with multiple SSIDs each with its own set of IP targets. These can then be organized into profile groups that execute each test against each profile in sequence. The result is that multiple VLANs, and SSIDs can be verified and documented in one go. Since the pre-defined profiles can be executed individually, the profiles group serves as a resource for technicians to verify each specific VLAN or SSID during troubleshooting. With profile groups, engineers can transfer their network configuration and test knowledge to technicians, saving training time and effort.



NBASE-T switch network validation



Add & customize profiles for standardized testing

Multiple advanced troubleshooting tools in one

Path Analysis: shows the switch/router path connecting the EtherScope nXG to an IP device on across wired and Wi-Fi networks, and even beyond the local network, e.g., from the EtherScope nXG's Wi-Fi port to a server in the cloud or data center on the Internet. The EtherScope nXG offers built-in tools to conduct further analysis of the devices along the path: view configuration, interface traffic statistics, launch Telnet or browser, conduct port scan, ping and more.

Packet Capture: from both the Wi-Fi and Ethernet test interfaces. You can capture up to 10G line-rate to create a PCAP file of up to 1Gigabyte. Packet slicing and filtering are supported, and PAP files can be uploaded to the Link-Live Cloud Service for easy sharing.

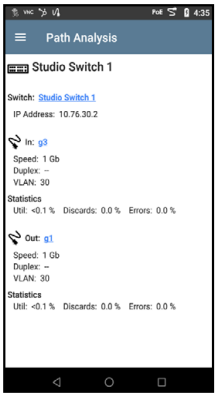
Cable Test: determine length, shorts, and split pairs and locate opens on UTP cable. Verify the wiremap of UTP and ScTP cable with a WireView adapter. It can generate either analog tone or the unique digital tone for the Fluke Networks IntelliTone™ Probe for quick cable tracing.

Android Apps: Users can download apps from the Link-Live app store to accomplish many tasks in addition to testing.

Examples of Android apps available to download to EtherScope nXG

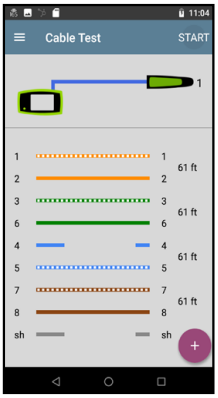
Configuration	
Testing	
Documentation	
Collaboration	

Path Analysis shows the device & interfaces that UDP/TCP traffic traverses



Shows the interfaces of devices present in path analysis

Tools, such as a browser, are available to conduct device level investigation



Cable test with Wiremap detecting distance to fault

Collaborative testing for remote site troubleshooting

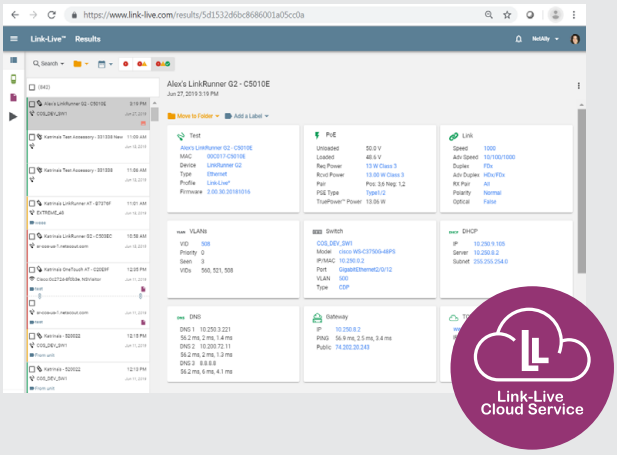
The EtherScope nXG has dedicated Wi-Fi and Ethernet management ports that empower a more experienced/knowledgeable remote engineer to control the EtherScope nXG to collaborate with technicians on-site.

At locations with no Internet service, the Wi-Fi Management Port can connect to a personal Wi-Fi hotspot for remote control, and upload results to the Link-Live Cloud Service.

Apart from providing remote access, the dedicated management ports are used for discovery to access to SNMP MIBs of devices via a management VLAN isolated from client VLANs, and conduct Ping/TCP Connect tests and iPerf tests.

Automated test results management

Serving as a centralized test results and instrument management system, the complimentary Link-Live Cloud Service transforms team workflows with the ability to quickly and easily log, document, and report test activity from any NetAlly LinkSprinter, LinkRunner AT, LinkRunner G2, AirCheck G2, OneTouch AT, and EtherScope nXG network testers. Once the tester is connected to the Link-Live Cloud Service, your test results are automatically uploaded to the dashboard for project management and reporting. You have the option of uploading additional files, screenshots, images, profiles, packet captures, location information, and comments anytime. Also, certain NetAlly testers with AllyCare Support can receive firmware updates "over the network" from Link-Live as they become available.



An API is available to retrieve and integrate data from Link-Live into other management platforms, such as your trouble-ticket application or network management system. It gives you the ability provide proof-of-performance and better manage jobs and staff efficiency.

This unified dashboard of both wired and Wi-Fi network connectivity results enables you to:

- Reduce results management overhead for multiple testers and users
- Enables seamless collaboration between site personnel and remote experts
- Simplify report generation across media types for network deployment documentation
- Attach photos, user comments to each result, adding context for future changes and troubleshooting
- For asset management, ability to associate serial numbers of installed devices, and/or cable/walljack label to specific test results

Ordering Guide

Model Number/Name	Description
EXG-200	Includes: (1) EXG-200 mainframe with Li-ION battery, G3-PWRADAPTER, SFP+MR-10G850, Inline RJ-45 coupler, WireView wire mappers # 1, *Quick Start Guide*, and small carrying case.
EXG-200-1YS	1 Year AllyCare Support for EXG-200
EXG-200-3YS	3 Year AllyCare Support for EXG-200
EXG-200-KIT	Includes: (1) EXG-200 mainframe with Li-ION battery, G3-PWRADAPTER, G3-HOLSTER, SFP+MR-10G850, SFP+MR-10G1310, RJ-45 inline coupler, (1) Test Accessory, WireView wire mappers #1-#6 IntelliTone™ 200 Probe, *Quick Start Guide,* and medium softcase
EXG-200-KIT-1YS	1 Year AllyCare Support for EXG-200-KIT
EXG-200-KIT-3YS	3 Year AllyCare Support for EXG-200-KIT
EXG-200-KIT-2PK	Includes: (2) EXG-200-KIT
EXG-200-LRG2-KIT	Includes: (1) EXG-200-KIT and (1) LinkRunner G2 (LRG2)

Accessories

Model Number/Name	Description
EXT-ANT	External Directional Antenna
G3-PWADAPTER	AC Charger replacement/spare for EXG-200 mainframe with country power cords.
G3-HOLSTER	Holster for G3 EXG-200 mainframe
SFP+MR-10G850	SFP+ Optical Transceiver Module, SX/SR, 1G/10G, 850nm, Multimode
SFP+MR-10G1310	SFP+ Optical Transceiver Module, LX/LR, 1G/10G, 1310nm, Singlemode
WIREVIEW 1	WireView wire mapper #1
WIREVIEW 2-6	WireView wire mappers #2-#6

Specifications

General	
Dimensions	4.05 in x 7.67 in x 2.16 in (10.3 cm x 19.5 cm x 5.5 cm)
Weight	1.677 lbs. (0.76 kg)
Battery	Removable, rechargeable lithium-ion battery pack (7.2 V, 6.4 A, 46 Wh)
Battery Life	Typical operating life is 6 hours; Typical charge time is 3 hours
Display	5.0-inch color LCD with capacitive touchscreen (720 x 1280 pixels)
Host Interface	RJ-45 Cable Test and Management Port USB Type-A Port USB Type-C On-the-Go Port
SD Card Port	Supports Micro SD card storage
Memory	Approximately 8 GB available for storing test results and user applications
Charging	USB Type-C 45-W adapter: AC Input Power 100-240 V, 50-60 Hz; DC Output Power 15 V (3 A) RJ-45: 802.3at and 802.3bt PoE
Media Access	Copper: 10M/100M/1G/2.5G/5G/10G Fiber SFP Adapters: 1G/10GBASE-X
Supported IEEE Standards	Wired: 802.3/ab/ae/an/bz/i/u/z Wi-Fi: 802.11a/b/g/n/ac PoE: 802.3af/at/bt, Class 0-8 and UPOE
Cable Test	Pair lengths, opens, shorts, splits, crossed, straight through, and WireView ID

Specifications (continued)

Wireless	
EtherScope nXG has two internal Wi-Fi Radios:	Wi-Fi Testing – 4x4 Dual-band 802.11ac Wave 2 wireless radio Android System Wi-Fi, Bluetooth, and Management – 1x1 Dual-band 802.11ac Wave 2 + Bluetooth 5.0 and BLE wireless radio *(Both are IEEE 802.11a/b/g/n/ac compliant.)*
Environmental	
Operating Temperature	32°F to 113°F (0°C to +45°C) NOTE: The battery will not charge if the internal temperature of the tester is above 122°F (50°C).
Operating relative humidity (% RH without condensation)	90% (50°F to 95°F; 10°C to 35°C) 75% (95°F to 113°F; 35°C to 45°C)
Storage temperature	-4°F to 140°F (-20°C to +60°C)
Shock and vibration	Meets the requirements of MIL-PRF-28800F for Class 3 Equipment
Safety	IEC 61010-1:2010: Pollution degree 2
Altitude	Operating: 4,000 m; Storage: 12,000 m
EMC	IEC 61326-1: Basic Electromagnetic Environment; CISPR 11: Group 1, Class A
Certifications and Complaince	
CE	Conforms to relevant European Union
	Conforms to relevant Australian Safety and EMC standards.
FC	Complies with 47 CFR Part 15 requirements of the U.S. Federal Communications Commission.
	Listed by the Canadian Standards Association.

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