netAlly

DATA SHEET

# EtherScope® nXG

## Portable Network Expert

## Overview

The EtherScope® nXG Portable Network Expert is a multi-technology, all-in-one handheld network analyzer 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, analyze, and manage field test data, and integrate with network management systems via the complimentary Link-Live™ Cloud Service
- Automatically discover and instantly map your wired and Wi-Fi networks; integrated views of network topology can be easily customized and exported to Visio.


*Now with Network Mapping Capabilities!*

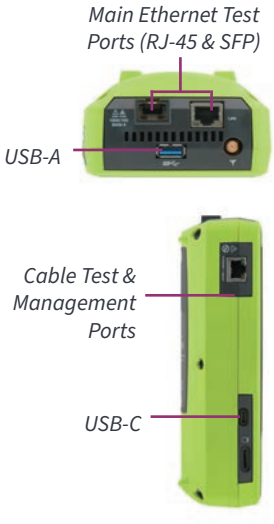
## Key Features

### All-in-one to address multiple technologies

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 SNR, 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.




*Android is a trademark of Google LLC*

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

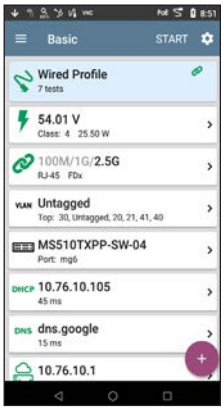
The EtherScope nXG has out-of-the-box AutoTest profiles with best practice pass/fail thresholds for quick assessment of network configurations and services of Wi-Fi and wired networks.

**Ethernet Network:** switch port PoE characteristics, VLAN Tagged traffic detection, 802.1x authentication, link speed advertised vs negotiated, DHCP/DNS/Gateway availability and accessibility.

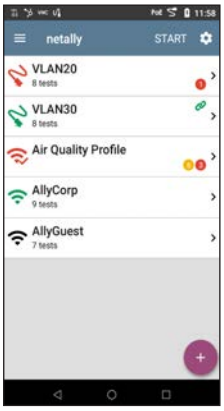
**Air Quality:** assess number of APs, co-channel and adjacent channel interference, and channel utilization

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

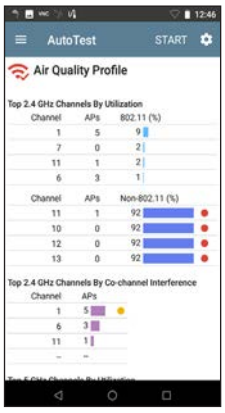
Multiple profiles can be created for complex networks with multiple VLANs supported per switch port, and Wi-Fi networks with multiple SSIDs each with its own set of IP targets. These can then be organized into profile groups that execute each test against each profile in sequence. The result is that 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 with VLAN and 802.1x authentication*




*Add & customize profiles for standardized testing*




*Wi-Fi Air Quality - detects oversubscribed channels*


*Wi-Fi SSID connectivity & coverage*

## 24-Hour Monitoring for Intermittent Issues

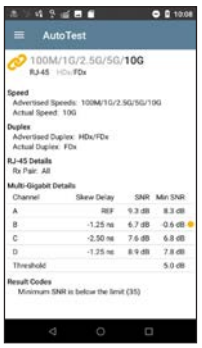
**Periodic AutoTest** – In this mode, AutoTest runs at specified intervals (from 1 minute to 24 hours) and sends the results to Link-Live to view the results over time. This is an effective way to "monitor" aspects of your network for an extended period, or to help diagnose intermittent issues without having to manually execute multiple tests. Results are automatically timestamped and can be prefixed with a user-entered comment for grouping or organization. Test results can be quickly analyzed in Link-Live using the filtering and sorting functions. Email notifications can warn you when errors are found.

A number of additional enhancements in version 1.2 expand the use models for EtherScope nXG, provide more actionable information, and make the network analysis process even more efficient. See the EtherScope nXG v1.2 release notes for additional information.

## Multi-Gig Link Validation

With the expanding deployment of Multi-Gig switching (typically to feed greater bandwidth to Wi-Fi 6 access points), users are finding that their cable plant may not support the desired speed. Cable quality, length, installation workmanship, and noise in the environment all can contribute to "downshifting" to lower-than-expected speeds.

- Cabling SNR Measurement – EtherScope nXG can now verify copper media for Multi-Gig capability (1 / 2.5 / 5 / 10Gig), and provide root cause diagnosis when link speed downshifting occurs.




*Cabling SNR measurement validates Multi-Gig links*

*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*

## Wi-Fi Deployment and Analysis

### AirMapper™ Site Survey

With the AirMapper app, EtherScope nXG users now quickly and easily gather location-based Wi-Fi measurements and create visual heat maps of key performance metrics in the Link-Live Cloud Service, or, for more detailed analysis and presentation, in AirMagnet Survey PRO. Simple to use, the AirMapper app is ideal for quick site surveys of new deployments, change validation, and performance verification.

- Complete faster and easier Wi-Fi site surveys with an entirely mobile platform
- Perform enterprise-grade surveys without the need of a dongle or tethered device with a hardware-based platform for accurate and complete data collection
- Collaborate—easily visualize and share survey data through Link-Live Cloud Service
- Pass survey data to AirMagnet Survey PRO for more advanced analysis, planning and reporting

AirMapper™ Site Survey ECOSYSTEM


*AirMapper Site Survey App*

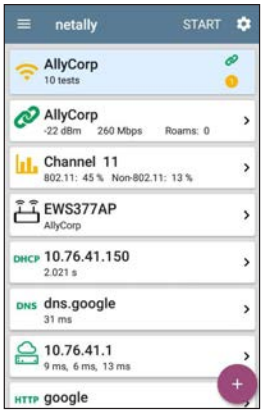
*Visualize survey data in cloud-based Link-Live Service, or in AirMagnet Survey PRO for additional analysis*

AllyCare

**NOTE:** *Enhanced site survey visualizations and filtering are available to customers with AllyCare support on their EtherScope nXG. For information about AllyCare, go to support.netally.com/allycare/*

## Wi-Fi AutoTest - Link Validation

The Wi-Fi AutoTest runs a series of tests by connecting to a selected wireless network (associate to an AP), providing a status indication of Success, Warning, or Fail. This comprehensive test validates not only the Wi-Fi connection, but also each critical supporting network service.(Note: Wi-Fi AutoTest supports connecting to Captive Portals where a sign-in is required for access; see User Guide for instructions.)




*Wi-Fi AutoTest*

**Wi-Fi Link Test –** validates the ability to connect to the selected network. Drilling into the link test provides in-depth information about the SSID, signal strength/SNR, channel utilization, retries, and PHY rate. Of note, Roams indicates the Number of times the unit has disconnected from the previous AP and connected to a different AP with a better signal strength.

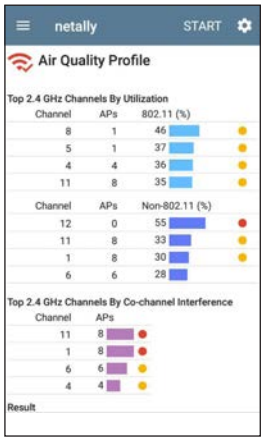
The Wi-Fi Link Test graphs save and display data for up to 24 hours in the past, providing a way to "go back in time" to identify specific problem instances.

**Channel Test –** shows the channel on which the AP is operating and the current 802.11 and non-802.11 utilization in real time, and plots the percentage of channel capacity used by devices and non-802.11 interference.

**AP Test –** shows the AP name and SSID of the network it supports, its IP and MAC addresses, security, channel (if the BSSID is on multiple channels, the bold number indicates the primary), 802.11 types supported, and client associations (number of clients connected to the AP).

**DHCP, DNS, Gateway Results –** these validate the availability and performance of critical network services via the Wi-Fi network. Diagnostics on each test provide details on response times and logs for troubleshooting.

**Path Analysis –** can be run from the above network services tests to identify the connection path to the specified service (or server); this is useful to determine if errors or excessive utilization on the wired network may be affecting the particular service.




*Air Quality results showing excessive utilization and co-channel interference*

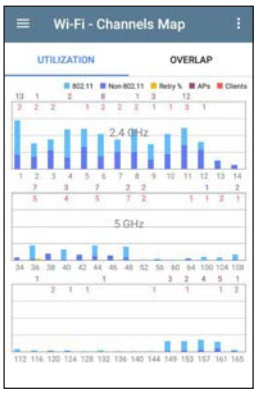
## Air Quality Test

The Air Quality Test performs a single scan of the channels in your wireless network to measure channel utilization and interference.

Each table on the Air Quality results screen shows the top four channels in each band with the highest utilization or co-channel interference, along with the number of APs operating on the channel.

## Channel Utilization and Interference

Quickly determine if channels are over-utilized with Wi-Fi traffic and/or with non-Wi-Fi interference and noise. You can also gain visibility on the level of Wi-Fi traffic and interference over the last 60 seconds on a selected channel, as well as, the access points, clients, and interferers using this channel. Drill into details and detect devices that can cause interference, such as, microwave ovens, wireless game controllers, Bluetooth® devices, Zigbee devices, and wireless video camera.




*Channel Map*

## Automated Problem Detection

EtherScope nXG automatically diagnoses various conditions on both wired and wireless networks and identifies specific problems. Tapping the Problems card shows all discovered issues, which can be sorted by severity or time detected. Drill in to see a detailed description of the problem and recommended course of action to mitigate.

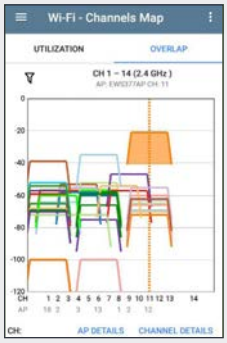
## Roaming Analysis

In the Wi-Fi link test graphs (SNR, Utilization, Retries, PHY Tx Rate) as well as in active test graphs (PING), anytime the EtherScope roams and connects to a new AP, a red vertical line will be shown in the graph.

Seeing the correlation between various factors and the roam can help diagnose roaming successes as well as failures. Paired with the Connect Log, engineers can determine the exact step in the process that may be causing the failure.

*Roam driven by Tx Rate*


*Connect Log shows roam/ association process*




*Channel Overlap*

## 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, QoS, delay and jitter against peers such as EtherScope nXG, LinkRunner 10G, OneTouch™ 10G, OptiView® XGor a Windows-based software reflector agent.

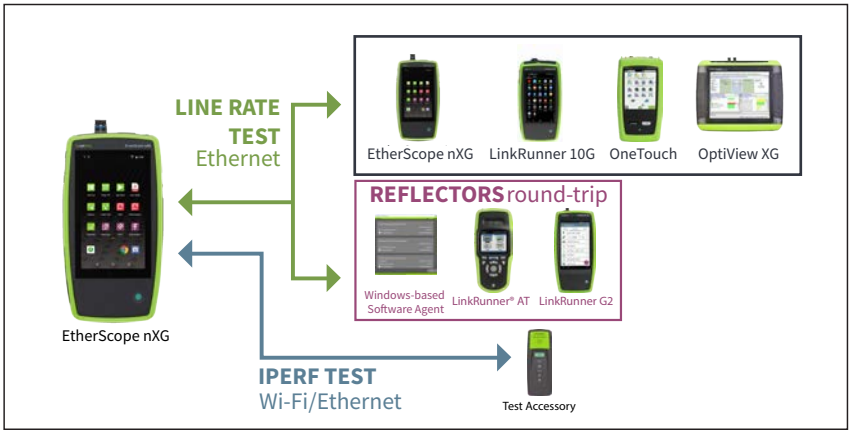
Settings for data streams and thresholds for VoIP or video service can be stored and recalled where needed, saving configuration time.

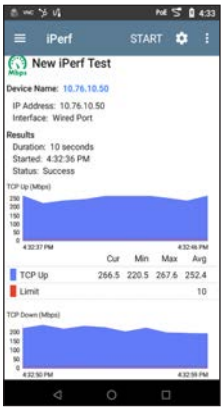
Additionally, the EtherScope nXG can use the popular iPerf v3 network test algorithm to test against the NetAlly Test Accessory. It determines TCP or UDP application throughput through its Wi-Fi or wired interfaces.

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 Relationships -** EtherScope nXG can conduct performance tests through various end-points

**TCP Connect Test -**TCP Connect Test showing response time over time (up to last 24-hours)

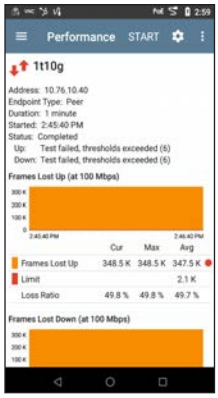



*iPerf throughput test with TCP or UDP frames*


*HTTP test against a webserver with end-user-response-time analysis*


*Performance test with up to 4 streams and 4 end points*




*Frame loss, jitter, and latency charted*


*TCP Connect Test*

## Auditing & documenting network security & 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. Engineers can name and set authorization status for devices discovered. Discovery results can be directly uploaded to the complimentary Link-Live Cloud Service for storage, conduct detailed analysis of devices discovered with filter and sort tools, or export to CSV/ PDF files as documentation.

The EtherScope correlates the discovery result from the wired and Wi-Fi networks and breaks the layer 2 visibility ceiling. EtherScope nXG makes it easy to discover the actual identity of a Wi-Fi device by showing its name and IP address 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 or unauthorized devices, unknown switches granting access to multiple devices, and hidden SSIDs.

EtherScope nXG's "Batch Authorization" workflow allows the user to filter discovery data to a subset of easily identifiable devices, then apply a "label" to the grouping (such as "Authorized" or "Neighbor") to the list of devices. Labeling known/acceptable devices makes it easy to sort/filter and identify unauthorized hosts in subsequent audits - so you have clear knowledge of who and what is on your network, and whether they should be there or not.

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.

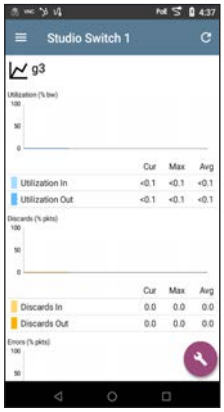

*Wi-Fi Device shown with name & IP address*


*Set known devices as "Authorized" to easily detect unauthorized devices*


*Filters and search options are available to quickly identify devices*


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


*Analyze discovered device details on the unit and on Link-Live*




*Interface traffic statistics - correlated for 24 hours to detect intermittent events*

## Network Topology Mapping – Integrated Wired and Wi-Fi Network Diagrams

No more struggling to keep manually drawn maps up to date! EtherScope nXG automatically discovers both your wired and Wi-Fi networks for instant mapping in NetAlly's Link-Live Cloud Service. These comprehensive, up-to-the-minute-accurate network diagrams show your network as it is NOW, integrating Layer 2 and Layer 3 topology information, including these connections: switch to host, switch to Access Point, AP to Wi-Fi client, switch to switch, switch to router, and router to router hops.

Now, users can now interact with the network in a flexible map-based user interface to quickly visually identify configuration and topology issues, speeding troubleshooting, and automatically create network documentation.

EtherScope nXG's patented discovery engine gathers data from its wired connection (via SNMP and other methods) and from the air (observing Wi-Fi traffic) to generate comprehensive network connectivity maps.

Easy to use filters and map controls allow you to see exactly what you want, and how you want it displayed. Quickly identify network and device configuration errors, and see 'unknown' switches and rogue devices. Element icons are color-coded to identify errors or warnings; double-clicking on any map element brings up its detailed discovery information, including status, problems, interface information, and more.

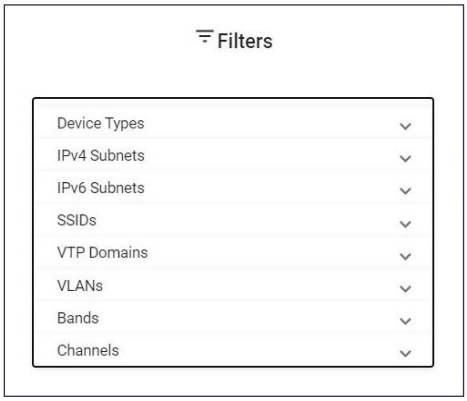
**NOTE:** *Customers with AllyCare get access to in-depth map configuration, controls, and export to Visio. For information about AllyCare, go to support.netally.com/allycare/*

## The importance of visualizing your network

The faster engineers can "see" what is going on in their network, to know who is on the network and where they are connected, and what the path is from "here to there", the faster they can get to root cause when troubleshooting performance issues. This is especially true for maintenance organizations or system integrators who often troubleshoot an "unknown" network. The problem is that traditional methods (CLI or element managers) take too long and present complex data that's often hard to interpret and difficult to correlate.

Documentation is an essential step for any project, such as pre-deployment network assessments and new technology rollouts, but it can take too much time to complete. From the graphical map-based user interface, one click sends the map data through a Visio file generator, creating instant, professional network documentation. Ideal for enterprises or service organizations, EtherScope nXG's mapping function saves hours of manual labor, allowing documentation to keep up as the network changes, or provide instant maps for client projects.


*Link-Live makes it easy to collaborate and share maps to anyone who needs access, with no added licensing costs. One click exports your map to Microsoft Visio® where you can easily add notations and modify your map.*




*Filters allow you to choose the types of devices and network configurations to be shown.*


*Simple controls allow for instant customization of the map's appearance and displayed data*

## Simple “access-anywhere” remote control enables collaboration

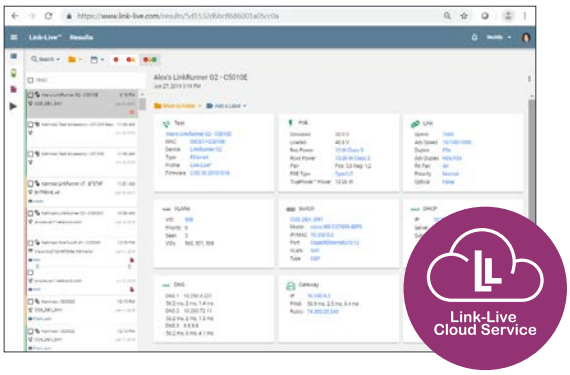
The EtherScope nXG has dedicated Wi-Fi and Ethernet management ports that enable a more experienced/knowledgeable remote engineer to control the EtherScope nXG “out of band” (using VNC) to collaborate with technicians on-site, or to troubleshoot remotely where there is no local staff.

But connecting to distant sites via VNC on different networks is difficult or impossible, particularly behind NAT firewalls. With the AllyCare-enabled web remote control feature, users can instantly connect to remote units through the Link-Live Cloud Service – anywhere in the world – for collaborative and remote troubleshooting.

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.

## Automated test results management

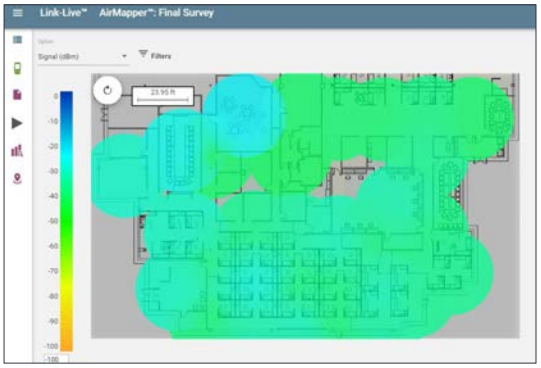
Serving as a centralized test results and instrument management system, the complimentary Link-Live Cloud Service transforms team workflows with the ability to quickly and easily log, document, and report test activity from any NetAlly LinkSprinter, LinkRunner AT, LinkRunner G2, AirCheck G2, OneTouch 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




*Visualize survey data in cloud-based Link-Live Service, or in AirMagnet SurveyPro for additional analysis*

## 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.

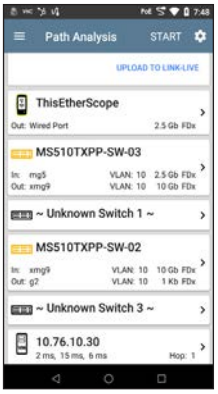
**Packet Capture:** from both the Wi-Fi and Ethernet test interfaces. You can capture up to 10G line-rate to create a PCAP file of up to 1Gigabyte. Packet slicing and filtering are supported, and PAP files can be uploaded to the Link-Live Cloud Service for easy sharing.

**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.

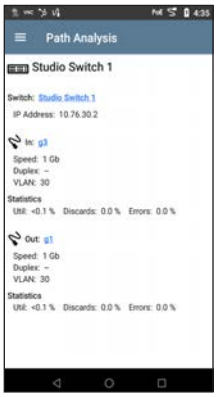
**Android Apps:** Users can download apps from the Link-Live app store to accomplish many tasks in addition to testing.

| | |
|---|---|
| **Configuration** | |
| **Testing** | |
| **Documentation** | |
| **Collaboration** | |

*Examples of Android apps available to download to EtherScope nXG*

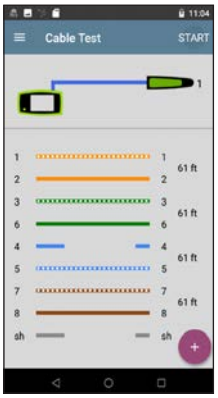



*Path Analysis shows the device & interfaces that UDP/TCP traffic traverses*




*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, including cable shield*

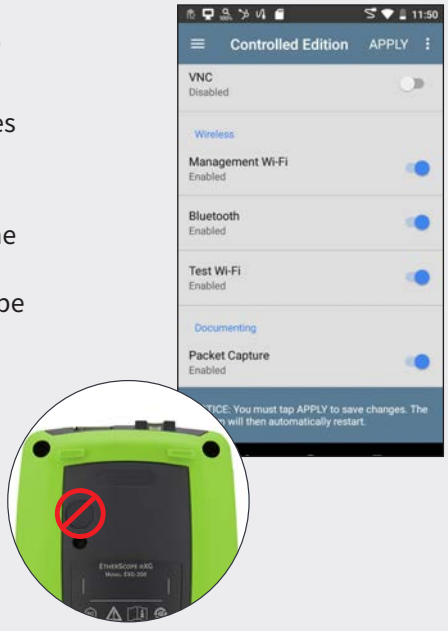
## EtherScope® nXG Controlled Edition

**Allows administrators to temporarily or permanently hardware-disable selective features for restricted environments**

With the Controlled Edition, administrators can disable specific EtherScope capabilities allowing the analyzer to be used in restricted or secure environments. The Controlled Edition is ideal for military and agency use, as well as highly secure enterprises.

Control may be temporarily achieved via a secure administrator password. To make the controlled configuration permanent, the administrator follows a clear workflow that fully disables the selected functions using eFuses in silicon, that once burned, cannot be reversed, ensuring the security of the unit.

- Builds upon the enterprise hardened EtherScope to allow additional hardening by removing capability
- Allows custom granular control of the exact features and capabilities to be permanently disabled
- The camera is physically removed while retaining the opening for flashlight operation
- User accessible deep erasure of all test data upon leaving secured environments



## 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-CE, EXG-200-KIT, EXG-200-LRG2-KIT (covers EXG-200 only) |
| **EXG-200-3YS** | 3 Year AllyCare Support for EXG-200, EXG-CE, EXG-200-KIT, EXG-200-LRG2-KIT (covers EXG-200 only) |
| **EXG-200-KIT** | Includes: (1) EXG-200 mainframe with Li-ION battery, G3-PWRADAPTER, G3-HOLSTER, SF-P+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-2PK** | Includes: (2) EXG-200-KIT |
| **EXG-200-LRG2-KIT** | Includes: (1) EXG-200-KIT and (1) LinkRunner G2 (LRG2) |
| **EXG-LR10G-KIT** | 10G Performance Test Kit<br>Includes: EXG-200-KIT and LR10G-100 (LinkRunner 10G). Purchase EXG-200-1YS and LR10G-100-1YS for 1 year AllyCare Support or EXG-200-3YS and LR10G-100-3YS for 3 years AllyCare Support. |
| **EXG-200-CE** | Controlled Edition for secure environments. Includes: (1) EXG-200-CE mainframe with Li-ION battery, (1) G3-PWRADAPTER, SFP+MR-10G850, Inline RJ-45 coupler, WireView #1, *Quick Start Guide,* and small softcase. |

## 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** | 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<br>USB Type-A Port<br>USB Type-C On-the-Go Port |
| **SD Card Port** | Supports Micro SD card storage - up to 32GB supported |
| **Memory** | Approximately 8 GB available for storing test results and user applications |
| **Charging** | USB Type-C 45-W adapter:<br>AC Input Power 100-240 V, 50-60 Hz; DC Output Power 15 V (3 A)<br>RJ-45: 802.3at and 802.3bt PoE |
| **Media Access** | Copper: 10M/100M/1G/2.5G/5G/10G<br>Fiber SFP Adapters: 1G/10GBASE-X |

## Specifications *(continued)*

| | |
|---|---|
| **Supported IEEE Standards** | Wired: 802.3/ab/ae/an/bz/i/u/z Wi-Fi: 802.11a/b/g/n/ac<br>PoE: 802.3af/at/bt, Class 0-8 and UPOE |
| **Cable Test** | Pair lengths, opens, shorts, splits, crossed, straight through, and WireView ID |
| **Wireless** | |
| **EtherScope nXG has two internal Wi-Fi Radios:** | Wi-Fi Testing – 4x4 Dual-band 802.11ac Wave 2 wireless radio<br>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.)* |
| **Specification compliance** | IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.1ax<br>Note: The tester provides 802.11ax visibility using an 802.11ac radio. |
| **Wi-Fi Connectivity** | 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.11ax<br>Note: The tester connects to 802.11ax networks using an 802.11ac radio. |
| **Operating frequencies NOTE: These are the center frequencies of the channels that the AirCheck G2 tester supports.** | Frequencies of channels received:<br>*NOTE: The tester receives on all of the frequencies in every country.*<br>2.4 GHz band: 2.412 – 2.484 GHz (channel 1 to channel 14)<br>5 GHz band: 5.170 – 5.320 GHz, 5.500 – 5.700 GHz, 5.745 – 5.825 GHz (channels 34, 36, 38, 40, 42, 44, 46, 48, 52, 56, 60, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165)<br>Frequencies of channels transmitted:<br>*NOTE: The tester transmits only on the frequencies allowed in the country where it is operating.*<br>**2.4 GHz band**<br>802.11b: 2.412 – 2.484 GHz (channel 1 to channel 14)<br>802.11g/n 20 MHz BW (HT20): 2.412 – 2.472 GHz (channel 1 to channel 13)<br>802.11n 40 MHz BW (HT40): 2.422 – 2.462 GHz (includes all combinations of legal, bonded pairs of channels)<br>**5 GHz band**<br>802.11a/n 20 MHz BW (HT20): 5.180 – 5.320 GHz, 5.500 – 5.700 GHz, 5.745 – 5.825 GHz (channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165)<br>802.11n 40 MHz BW (HT40/VHT40): 5.190 – 5.310 GHz, 5.510 – 5.670 GHz, 5.755 – 5.795 GHz (includes all combinations of legal, bonded pairs of channels)<br>802.11ac 80 MHz BW (VHT80): 5.210 – 5.290 GHz, 5.530 – 5.690 GHz, 5.775 GHz (includes all combinations of legal, bonded pairs of channel |
| **Antennas** | |
| **Internal Wi-Fi antennas** | Three internal 2.4 GHz, 1.1 dBi peak, 5 GHz, 3.2 dBi peak antennas. |
| **External directional antenna** | Antenna, frequency range 2.4 - 2.5 and 4.9 - 5.9 GHz.<br>Minimum gain 5.0 dBi peak in the 2.4 GHz band, and 7.0 dBi peak in the 5 GHz band. |
| **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 device 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;<br>CISPR 11: Group 1, Class A |

## Specifications *(continued)*

| Certifications and Compliance | |
|---|---|
| CE | Conforms to relevant European Union directives |
| RCM | Conforms to relevant Australian Safety and EMC standards. |
| FC | Complies with 47 CFR Part 15 requirements of the U.S. Federal Communications Commission. |
| SP | Listed by the Canadian Standards Association. |
| **NPT Reflector Software Agent** | |
| **Supported Operating System** | Windows® 8.1, Windows® 10, Windows® 2008-R2, Windows® 2012, Windows® 2012-R2, Windows® 2016, and Windows® 2019 |
| **Minimum Hardware Requirement:** | |
| **Processor** | 1GHz or better CPU |
| **RAM** | 1 GB or more RAM |
| **Harddisk** | 1 GB available space |
| **Network Interface** | Ethernet and/or Wi-Fi |



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## Premium Customer Services

AllyCare PRODUCT SUPPORT

AllyCare is a comprehensive support and maintenance service for NetAlly's Network Tools and AirMagnet® software that offers significant value over standard warranty. Membership of AllyCare can be purchased as either a 1-year membership or the value-added 3-year membership rate.

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