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 networks with advanced testing apps and purpose built hardware
- Verify up to 10G Ethernet link performance for critical servers, uplinks and key end devices, and validate Wi-Fi network performance
- Supports full 2.4GHz and 5GHz spectrum analysis with the optional NXT Portable Spectrum Analyzer adapter.
- 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 Link-Live™ Cloud Service
- Automatically discover and instantly generate a topology map of your wired and Wi-Fi networks using Link-Live cloud service; speeds troubleshooting and keeps network documentation up-to-date. Exports to Visio.

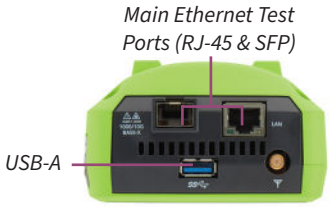
Now with Wi-Fi 6/6E!

*The industry's first handheld analyzer for Wi-Fi 6/6E surveying and troubleshooting, with WPA3 and spectrum analysis**

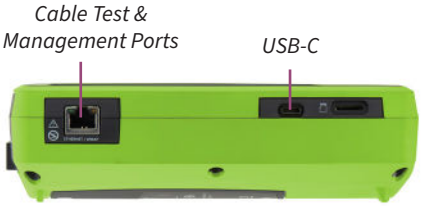
Key Features

All-in-one to address multiple technologies

The EtherScope nXG has two sets of native Wi-Fi network interfaces: a 2x2 adapter to scan and test Wi-Fi networks, and a 1x1 adapter for remote control connection and testing. The test interface supports 802.11a/b/g/n/ac/ax and can show analysis of utilization and status of Wi-Fi channels, SSIDs, BSSIDs, access points and client devices. The EtherScope nXG provides full 6GHz support.*



The EtherScope nXG has two Ethernet ports. The main test RJ-45 port supports Multi-Gig networks from 10/100Mbps to 1/2.5/5/10Gbps 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 10/100Mbps or 1Gbps Ethernet for remote control, and conducts network discovery and tests where needed. It is also the port for cable testing.



The EtherScope nXG has built-in Bluetooth v5/BLE radio for connectivity and conducting BT/BLE site surveys; USB interfaces provide connectivity for accessories and other devices.

**Implementation of 6GHz spectrum varies by country. See ordering information for details. Spectrum analysis requires the optional NXT-1000 Portable Spectrum Analyzer for 2.4/5Ghz.*

Android is a trademark of Google LLC

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

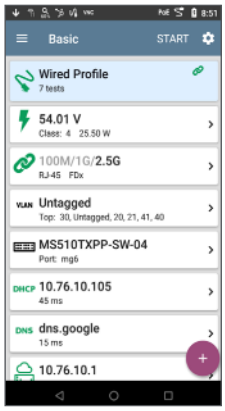
The EtherScope nXG has out-of-the-box AutoTest profiles with best practice pass/fail thresholds for quick assessment of network configurations and services of Wi-Fi and wired networks.

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

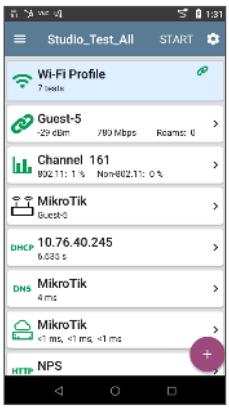
Air Quality: assess number of APs, co-channel and adjacent channel interference, and channel utilization

Wi-Fi Network: supports various authentication and security schemes (including WPA3) to connect to SSIDs/BSSIDs for coverage by signal/noise, and DHCP/DNS/Gateway availability and accessibility.

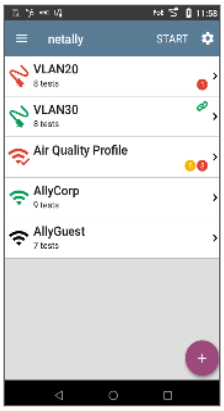
Multiple profiles can be created for complex networks with multiple VLANs supported per switch port, and Wi-Fi networks with multiple SSIDs each with its own set of IP targets. These can then be organized into profile groups that execute each test against each profile in sequence. The result is that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



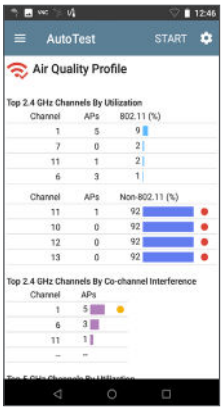
NBASE-T network with VLAN and 802.1x authentication



Add and customize profiles for standardized testing



Wi-Fi SSID connectivity and coverage



Wi-Fi Air Quality - detects oversubscribed channels

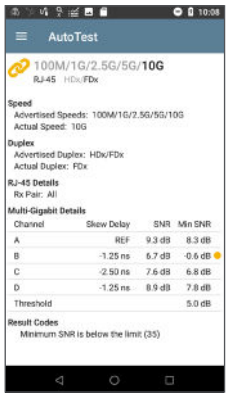
24-Hour Monitoring for Intermittent Issues

Periodic AutoTest – In this mode, AutoTest runs at specified intervals (from 1 to 60 minutes, for durations from 10 minutes 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.

Multi-Gig Link Validation

With the expanding deployment of Multi-Gig switching (typically to feed greater bandwidth to Wi-Fi 6/6E 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 (2.5 / 5 / 10Gbps), and provide root cause diagnosis when link speed downshifting occurs.

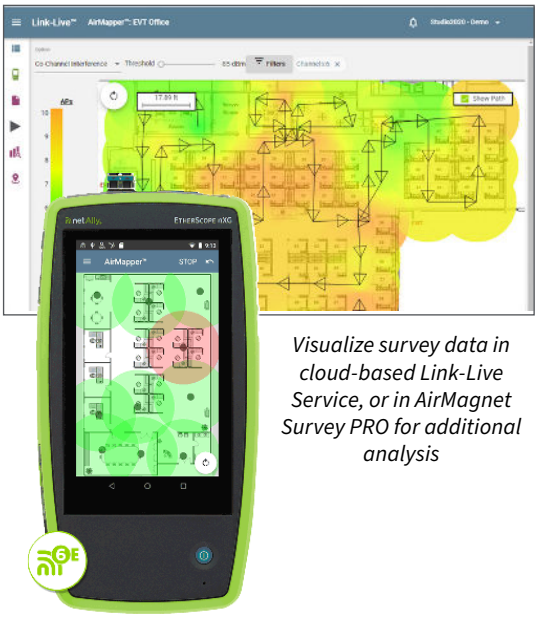


Cabling SNR measurement validates Multi-Gig links

Optical Power Meter

When connected with fiber, the AutoTest Link card has been augmented with the ability to set a reference and display the current power reading relative to that reference. This is useful for saving the power level at the source as a reference, then measuring the fiber power loss at the far end.

Wi-Fi Deployment and Analysis



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

AirMapper Site Survey App

AirMapper™ Site Survey – Now for Wi-Fi 6/6E

With the AirMapper app, EtherScope nXG users can quickly and easily gather location-based Wi-Fi and Bluetooth/BLE measurements and create visual heat maps of key performance metrics in the Link-Live Cloud Service. Simple to use, the AirMapper app is ideal for quick site surveys of new deployments, change validation, and performance verification.

Survey project management capabilities in Link-Live provide a major boost in productivity and collaboration for distributed teams conducting surveys at remote sites. A team lead can create a project in Link-Live, upload and calibrate the floor plan, then automatically push the configured project out to the desired handheld instruments.

- Complete faster and easier Wi-Fi and Bluetooth/BLE 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
- Automatically identify common Wi-Fi network problems using InSites™ intelligence in Link-Live
- Collaborate—easily visualize and share survey data through Link-Live Cloud Service
- Simultaneous passive and active Wi-Fi surveys to gather critical site metrics and validate client experience and roaming with one survey
- Pass Wi-Fi survey data to AirMagnet Survey PRO for more advanced analysis, planning and reporting

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/*

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.

List of Problems Automatically Detected by EtherScope nXG

Wired Network Problems

- Bad Subnet Mask
- Duplicate IP Address
- DHCP Server Not Responding
- EtherScope nXG Received Multiple DHCP Offers
- EtherScope nXG Received Used IP from DHCP
- EtherScope nXG Lost DHCP Lease
- Max Clients on SSID
- High Interface Utilization*
- High Interface Errors*
- High FCS Errors*
- High Packet Discards*
- Detected Half-Duplex Interfaces
- High CPU Utilization*
- High Disk Utilization*
- High Memory Utilization*
- Recent Device Reboot*
- Spanning Tree Topology Change
- SNMPv3 Agent Responded to SNMPv1/v2 Query

Wi-Fi Network Problems

- AP with Encryption Disabled
- Client with Encryption Disabled
- Using Open Authentication
- Using Shared Key Authentication
- High Utilization on Channel*
- High Retries on Channel*
- High Non-802.11 Utilization on Channel*
- Co-Channel Interference Threshold (#AP)*
- Co-Channel Interference AP Signal Level*
- High Utilization on AP*
- AP Overloaded with Clients*
- High Retries on Device*
- BSSID Channel Changes*
- RF Regulatory Violation

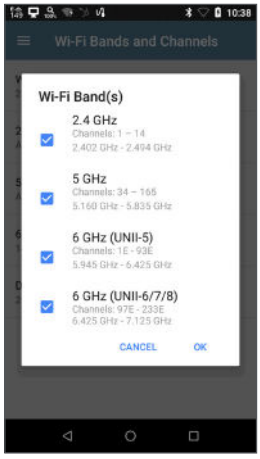
**Problems detected with user definable threshold.*

Native Wi-Fi 6 and 6GHz Support

With the introduction of Wi-Fi 6/6E the way WLAN validation and troubleshooting is done changed. New technologies designed to improve traffic management efficiency and support for the 6GHz band were introduced, allowing for higher throughput and better performance in environments where a high user capacity is required.

Introducing the EXG-300, an improved version of the EtherScope nXG with a native Wi-Fi 6/6E radio. This new version of the EtherScope nXG includes native support for new technologies like OFDMA, OBSS, 1024-QAM and the 6GHz band.

- Validate actual Wi-Fi 6/6E network performance by using a native 802.11ax radio.
- Gain visibility into all Wi-Fi devices working on the 2.4GHz, 5GHz, and 6GHz bands.
- Provides accurate 802.11 utilization and enables packet captures of Wi-Fi 6 control, management, and data frames.
- Faster Wi-Fi device discovery through the use Reduced Neighbor Reports, Preferred Scanning Channels, and the ability of getting information for multiple SSID's from a single beacon frame.
- Enhanced security validation by allowing for the use of WPA3 and Enhanced Open.



Wi-Fi Bands

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 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.

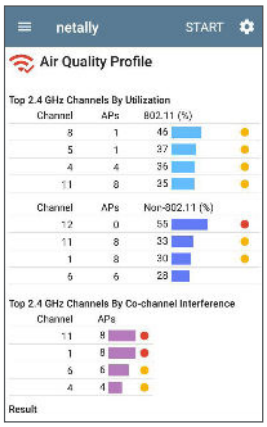
Path Analysis – can be run from the above network services tests to identify the connection path to the specified service (or server); this is useful to determine if errors or excessive utilization on the wired network may be affecting the particular service.

Wi-Fi AutoTest

Air Quality Test

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

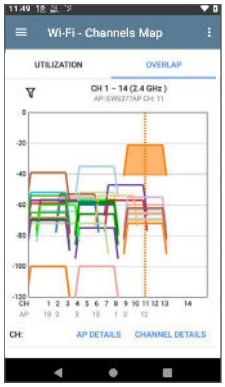
Each table on the Air Quality results screen shows the top four channels in each band with the highest utilization or co-channel interference, along with the number of APs operating on the channel including adjacent channel interference detection in the 5GHz and 6GHz bands (to detect 40, 80 and 160 MHz-wide overlapping BSSIDs).



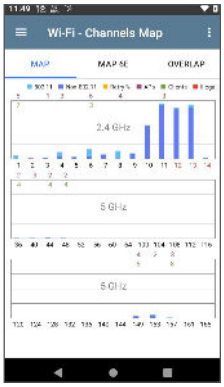
Air Quality results showing excessive utilization and co-channel interference

Channel Utilization

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 and clients using this channel.



Channel Overlap



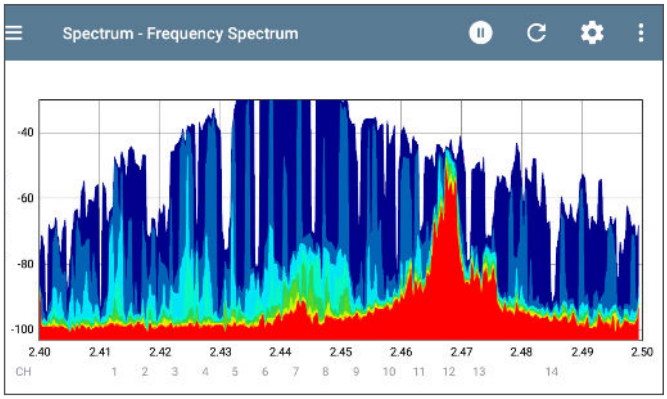
Channel Utilization

Spectrum Analysis and Interference

Trying to pinpoint the source of Wi-Fi interference on a wireless network is hit or miss with the wrong tools. Through the use of the optional NXT-1000 Mobile Spectrum Analyzer, EtherScope nXG offers a view of RF interference in the 2.4 and 5GHz bands and its impact on the wireless network's overall performance. Key graphs and charts include:

- **Real-Time Spectrum –** Provides a real-time view into the RF environment.
- **Frequency Spectrum –** Displays real-time analysis on signals that are common during the current capture session.
- **Spectrogram –** Shows intermittent spikes of RF energy that over time may be causing wireless network problems.

NXT-1000 Mobile Spectrum Analyzer

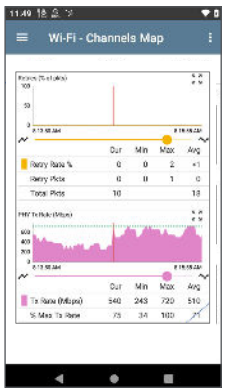


Spectrum App

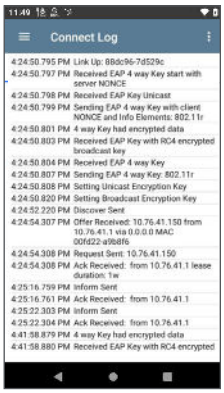
Roaming Analysis

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

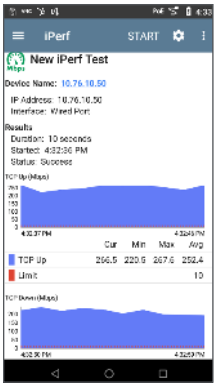
10G copper/fiber wired and Wi-Fi performance tests for critical links and key devices

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 eight 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, or 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.

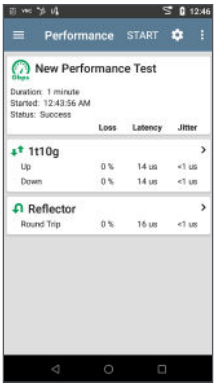
Additionally, the EtherScope nXG can use the popular iPerf v3 network test algorithm to test against the NetAlly Test Accessory. It determines TCP or UDP application throughput through its Wi-Fi or wired interfaces.

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.

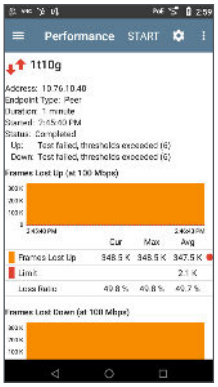


iPerf throughput test with TCP or UDP frames

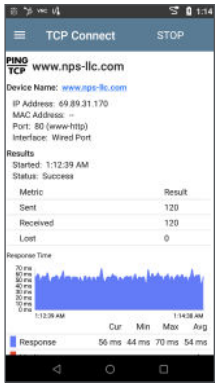
HTTP test against a webserver with end-user-response-time analysis



Performance test with up to 8 streams and 8 end points

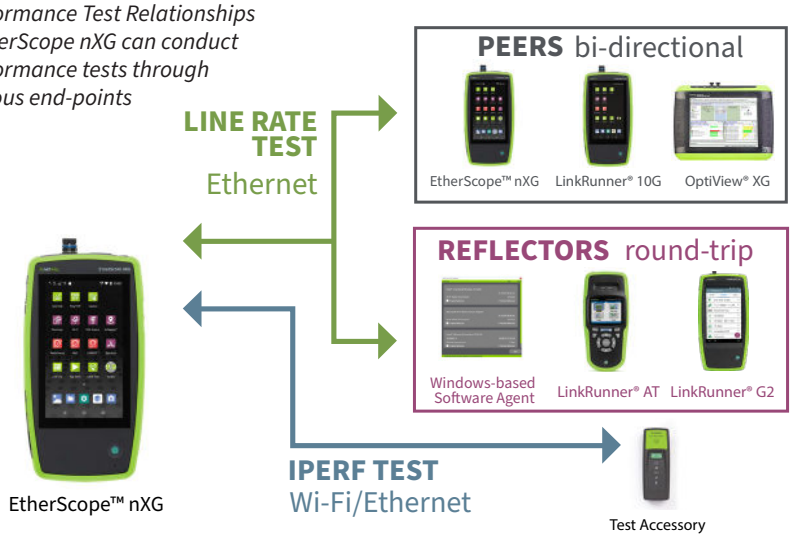


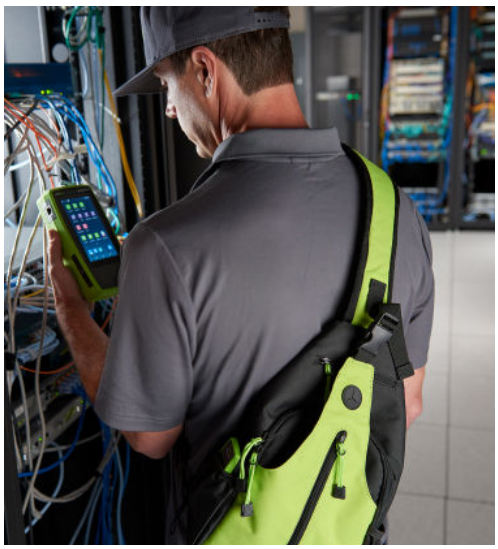
Frame loss, jitter, and latency charted



TCP Connect Test

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





LANBERT™ Media Qualification App

Your copper and fiber cable plant serves as the foundation of your network. But do you know whether it is of sufficient quality to provide the bandwidth required? With the insatiable growth in bandwidth, increasing speeds of Wi-Fi APs (with Multi-Gig 2.5/5Gbps backhauls), 1Gbps to 10Gbps upgrades, and deploying new fiber links, network professionals must have confidence that their network will transport that data error-free at the maximum speed possible. Downtime or intermittent loss and errors is simply not an option.

The quality of components and workmanship of installation is critical, but typical cable certification testers can be very expensive, single-purpose tools – making them cost-prohibitive for many installers and end-users. The new LANBERT media qualification app for NetAlly's multi-function professional instruments provides a simple and fast method of assessing the quality of transmission and available bandwidth.

LANBERT generates and measures the transmission of line rate Ethernet frames over your network cabling infrastructure, qualifying its ability to support 1G/10G on fiber and 100M/1G/2.5G/5G/10G on copper links.

Key Features

- Maximize utilization of your existing cable plant
- Qualify copper cable bandwidth for 2.5 / 5 / 10Gbps
- Validate 1Gbps/10Gbps fiber optic cabling and components
- Identify maximum error-free throughput

Running the LANBERT test using the EtherScope® nXG and/or LinkRunner® 10G as endpoints over a long duration (up to 24 hours) serves as a "soak test" to identify the presence of intermittent issues and noise events that can corrupt network traffic. With easy-to-read trend graphs and the ability to drill down to 1-second granularity, LANBERT helps you identify exactly when errors occur.

Poor quality components and/or installation workmanship can result in links that are susceptible to noise, whether induced from within cable bundles or from outside events such as electrostatic discharges (ESD), crosstalk, or electromagnetic (EMF) pulses caused by motors or other machinery. This can cause not only bit errors and frame loss but may prevent certain technologies (Multi-Gig) from linking at the designated speed causing a downshift to the next lower rate.

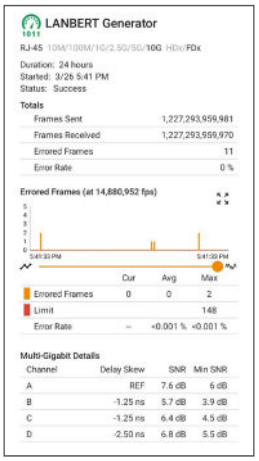
But beware of other testers offering similar capabilities! Standard Layer 2-only Ethernet access link testing will not validate layer-3 enterprise switches and routers. Because it does not test the IP (Internet Protocol) layer, this methodology cannot pass through Layer 3 devices. Thankfully, NetAlly's multifunction tools also feature the Layer 3 line-rate Network Performance Test app, that can transmit and test across your entire network infrastructure end-to-end – not just one access link and switch. It also includes up to 8 streams with individual L2 and L3 QoS and VLAN controls, essential capabilities for truly understanding the capacity and quality of packet transmission

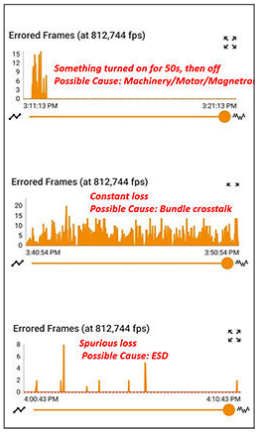
The LANBERT app generates a stream of Ethernet frames onto a copper or fiber link which are redirected back to the EtherScope using one of three methods:

1) Single tester with physical loopback (for fiber, using a jumper between Tx and Rx; for twisted-pair cabling using an RJ-45 loopback connector – limited to 100Mbps)

2) Single tester with active remote loopback (switch port configured in loopback mode, or reflector test instrument (such as LinkRunner G2, for up to 1Gbps)

3) Dual tester, one in Generator mode, the other in Loopback mode, using two EtherScope nXG units, two LinkRunner 10G units, or one of each (up to 10Gbps copper or fiber testing.)





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.

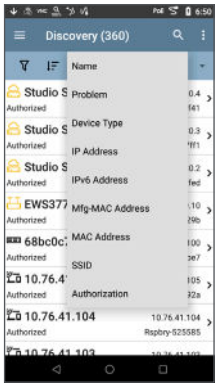
EtherScope nXG's discovery can be enriched by accessing SNMP MIBs of infrastructure devices. It shows details such as device configuration summary, interface configuration and traffic detail, SSIDs supported by WLAN Controllers, and devices directly connected to switches. Community strings entered are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

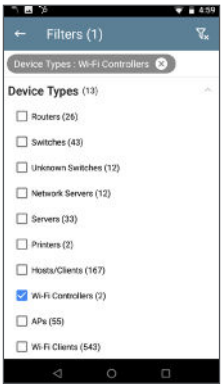
EtherScope nXG's "Batch Authorization" workflow allows the user to filter discovery data to a subset of easily identifiable devices, then apply a "label" to the grouping (such as "Authorized" or "Neighbor") to the list of devices. Labeling known/acceptable devices makes it easy to sort/filter and identify 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.

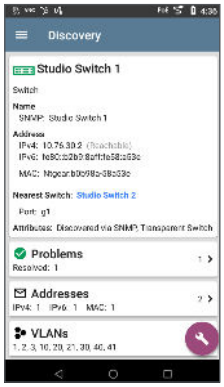
Wi-Fi Device shown with name and IP address



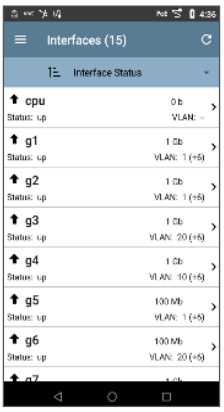
Set known devices as "Authorized" to easily detect unauthorized devices



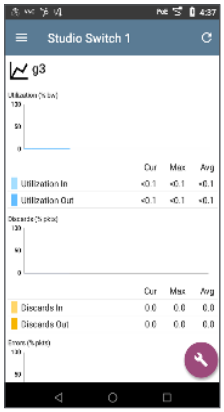
Filters and search options are available to quickly identify devices



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



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



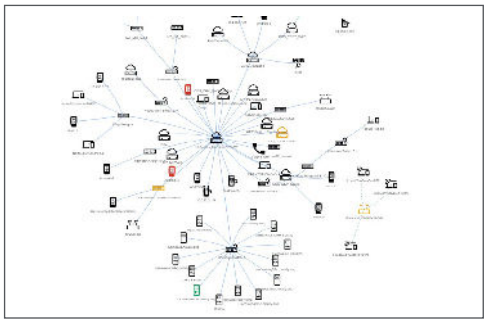
Interface traffic statistics - correlated for 24 hours to detect intermittent events

Discovery Difference Analysis in Link-Live™

Keeping track of network changes while at the same time detecting unauthorized devices connected to your network is essential for speeding troubleshooting and securing your infrastructure, but is very hard to do on a regular basis.

NetAlly's Link-Live Cloud Service makes it fast and easy. The Discovery Difference analysis simplifies the process of documenting network changes or identifying unauthorized devices by comparing two network discovery snapshots and automatically highlighting new or missing devices on your network. This analysis can be viewed as a network topology diagram or data table.

The first discovery test will provide a baseline of the original state of your network, and the second discovery test will provide a snapshot of the current state of your network. Link-Live will compare the two snapshots and then highlight what has changed over time. That includes new devices that were not originally part of your network, and devices that were removed.



Discovery Difference analysis shown in Topology view

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.

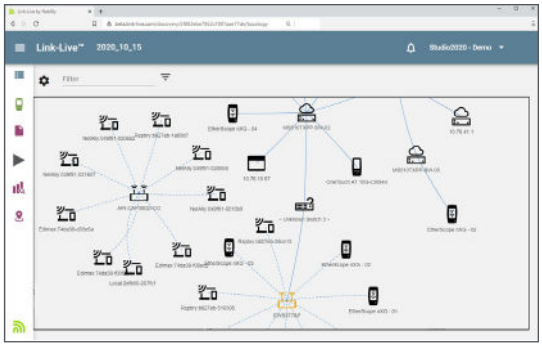
NOTE: *Customers with AllyCare get access to in-depth map configuration, controls, and export to Visio. For information about AllyCare, go to support.netally.com/allycare/*

The importance of visualizing your network

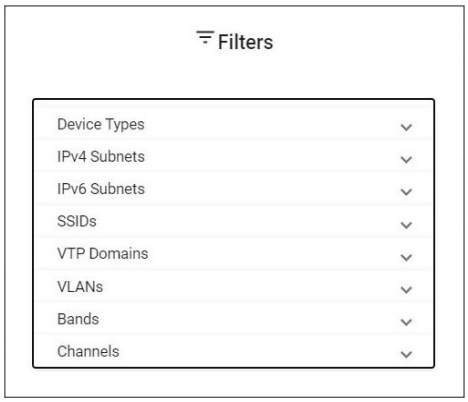
The faster engineers can "see" what is going on in their network, to know who is on the network and where they are connected, and what the path is from "here to there", the faster they can get to root cause when troubleshooting performance issues. This is especially true for maintenance organizations 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, pre-populating the diagram with all discovered devices, links, and corresponding configuration information, saving hours of manual effort, allowing further customization.

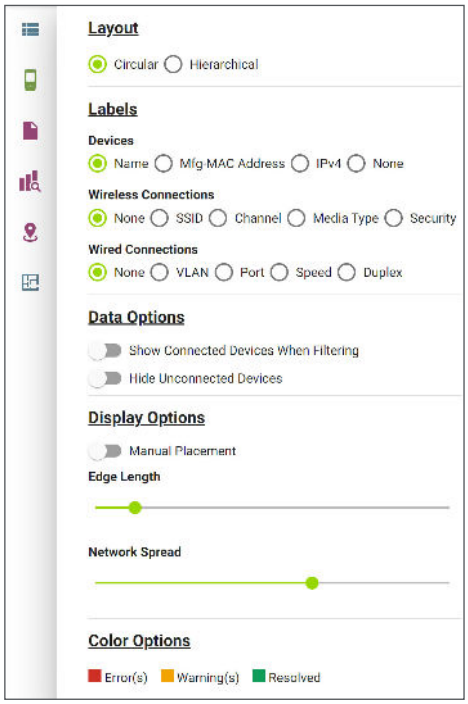
Ideal for enterprises or service organizations, EtherScope nXG's mapping function saves hours of manual labor, allowing documentation to keep up as the network changes, or provide instant maps for client projects.



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

Automated Test Results Management

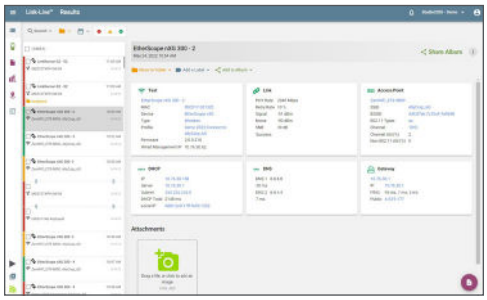
Serving as a centralized test results and device management system, Link-Live transforms team workflows with the ability to quickly and easily log, document, and report test activity from all NetAlly handheld network testers.

Once the instrument 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 instruments 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. This gives you the ability to easily 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
- 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



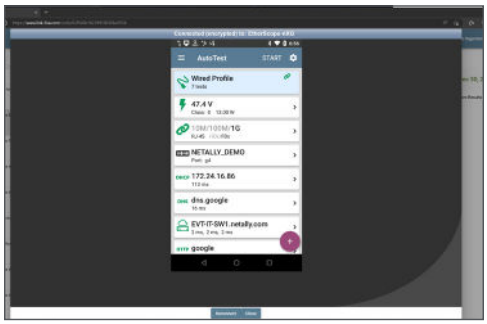
Simplify report generation across media types for network deployment documentation

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.



Remote Cloud Control and Collaboration

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.

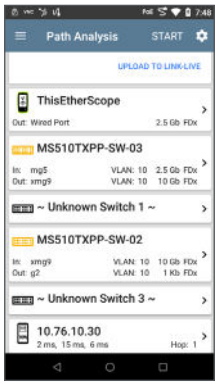
Packet Capture: from both the Wi-Fi and Ethernet test interfaces. You can capture up to 10G line-rate or capture Wi-Fi 6/6E traffic on the 2.4/5/6GHz bands to create a PCAP file of up to 1Gigabyte. Packet slicing and filtering are supported, and PCAP files can be uploaded to the Link-Live Cloud Service 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.

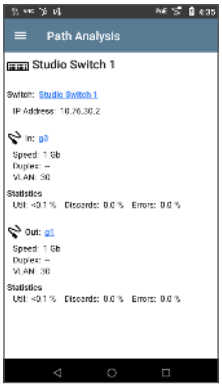
Apps: Users can download apps from the Link-Live app store to accomplish many tasks in addition to testing.

Configuration	
Testing	
Documentation	
Collaboration	

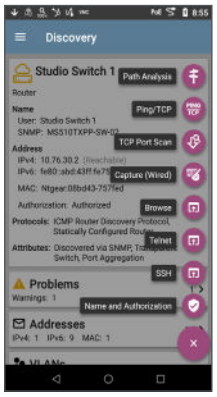
Examples of apps available to download to EtherScope nXG



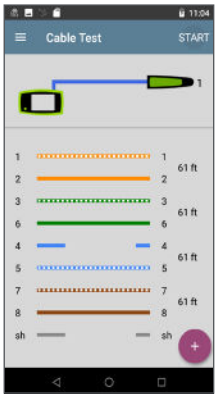
Path Analysis shows the device & interfaces that UDP/TCP traffic traverses



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

Models & Accessories

IMPORTANT NOTES:
WiFi 6/6E Regulatory Compliance Implementation of the 6GHz spectrum varies by country. EtherScope nXG 300 models are available in three versions: Full Tri-Band (capability across the entire 6GHz band), Partial Tri-Band (capability for only certain channels in the 6GHz band as determined by 802.11d regulatory domain information), and Dual Band Only (for countries where operation in the 6GHz band is not allowed.) Be sure to select the model that is certified for use in your specific country. Please contact your NetAlly reseller for more information.

The models shown on the table below are for the "Full Tri-Band" version. Replace "EXG-300" with the following for the other model types:

EXG-300E **Partial Tri-Band**
EXG-300C **Dual Band Only (2.4/5GHz**)

Inclusion of AllyCare Support
All new EXG-300 mainframes are sold with the first year (1 year) of AllyCare support included. Additional year(s) of support may be added. Product registration and activation is required within 30 days of first power-on.

Model Number/Name	Description
EXG-300	**EtherScope nXG Portable Network Expert** Includes: EXG-300 mainframe (FULL TRI-BAND) with one year of AllyCare support (EXG-300-1YS), Li-ION battery, G3-PWRADAPTER, SFP+MR-10G850, Inline RJ-45 coupler, WIREVIEW 1, *Quick Start Guide,* and shoulder bag.
EXG-300-KIT	**EtherScope nXG Portable Network Expert Professional Kit** Includes: EXG-300 mainframe with one year of AllyCare support (EXG-300-1YS), NXT-1000 Spectrum Analyzer, G3-PWRADAPTER, EXG-LR10G-HOLSTER, SFP+MR-10G850, SFP+MR-10G1310, RJ-45 inline coupler, EXT-ANT-TRIBAND, TEST-ACC, WIREVIEW 1-6, *Quick Start Guide*, and medium softcase.
EXG-300-KIT-2PK	Includes: Two EXG-300-KIT. Each unit comes with one year of AllyCare support (EXG-300-1YS). Purchase two EXG-300-1YS for an additional 1-year of AllyCare Support, or two EXG-300-3YS for an additional 3-years of AllyCare Support.
EXG-300-LR10G2-KIT	**EtherScope nXG 10G Performance Test Kit** Includes: Qty 1 EXG-300 mainframe, Qty 1 LR10G-200 mainframe, Qty 2 EXG-LR10G2-HOLSTER, Qty 2 G3-PWRADAPTER, Qty 2 SFP+MR-10G850, Qty 2 SFP+MR-10G1310, Qty 2 RJ-45 inline coupler, Qty 1 EXT-ANT, Qty 1 TEST-ACC, Qty 2 WIREVIEW 1-6, Qty 2 *Quick Start Guide,* Qty 1 small softcase, Qty 1 medium softcase. Purchase EXG-300-1YS and LR10G-200-1YS for 1-year AllyCare Support or EXG-300-3YS and LR10G-200-3YS for 3-years AllyCare Support.
EXT-ANT-TRIBAND	2.4/5/6GHz directional antenna for use with AirCheck G3 and EtherScope nXG
Upgrade Models - Available for Current EXG-200 Owners	
EXG-300-UGD1	SPECIAL PRICING for EXG-200 owners with AllyCare support. Includes: EXG-300 mainframe (FULL TRI-BAND) with 1 year of AllyCare support (EXG-300-1YS), Li-ION battery, G3-PWRADAPTER, SFP+MR-10G850, Inline RJ-45 coupler, WIREVIEW 1, *Quick Start Guide*, and Shoulder Bag. SKU IS RESTRICTED - NETALLY MUST AUTHORIZE QUOTATION.
EXG-300-UGD2	SPECIAL PRICING for EXG-200 owners WITHOUT AllyCare support. Includes: EXG-300 mainframe (FULL TRI-BAND) with 1 year of AllyCare support (EXG-300-1YS), Li-ION battery, G3-PWRADAPTER, SFP+MR-10G850, Inline RJ-45 coupler, WIREVIEW 1, *Quick Start Guide*, and Shoulder Bag. SKU IS RESTRICTED - NETALLY MUST AUTHORIZE QUOTATION
AllyCare Support - One year of support is included. Use these support model numbers for extending support at time of purchase or for support renewal.	
EXG-300-1YS	One year AllyCare support for all EXG-300 models, including full tri-band, "E" (partial tri-band), and "C" (dual band 2.4/5GHz only) SKUS: EXG-300, EXG-300-KIT, EXG-300-KIT-2PK (covers only a single unit), EXG-300-LR10G2-KIT (covers EXG-300 only)
EXG-300-3YS	Three year AllyCare support for all EXG-300 models, including full tri-band, "E" (partial tri-band), and "C" (dual band 2.4/5GHz only) SKUS: EXG-300, EXG-300-KIT, EXG-300-KIT-2PK (covers only a single unit), EXG-300-LR10G2-KIT(covers EXG-300 only)

Specifications EXG-300 Models

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 3-4 hours (Battery life from full charge varies depending on the feature being used); 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 - up to 32GB supported
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)
Media Access	Copper: 10/100Mbps and 1/2.5/5/10Gbps 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/ax 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:	Testing – 2x2 Tri-band 802.11ax wireless radio, IEEE 802.11a/b/g/n/ac/ax compliant Management – 1x1 Dual-band 802.11ac Wave 2 + Bluetooth 5.0 and BLE wireless radio, IEEE 802.11a/b/g/n/ac compliant.
Specification Compliance	IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.11ax
Wi-Fi Connectivity	802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, 802.11ax
Operating frequencies NOTE: These are the center frequencies of the channels that the EtherScope nXG tester supports.	Frequencies of channels received: *NOTE: The tester receives on all of the frequencies in every country.* 2.4 GHz band: 2.412 to 2.484 GHz 5 GHz band: 5.170 to 5.320 GHz, 5.500 to 5.700 GHz, 5.745 to 5.825 GHz 6 GHz band: 5.925 to 7.125 GHz Frequencies of channels transmitted: *NOTE: The tester transmits only on the frequencies allowed in the country where it is operating.*
Antennas	
Internal Wi-Fi antennas	Internal 2.4 GHz, 2.0 dBi peak, 5 GHz, 1.5 dBi peak, 6 GHz, 2.7 dBi peak antennas.
External directional antenna	Antenna, frequency range 2.4 to 2.5 GHz, 4.9 to 5.9 GHz. and 6.0 to 7.1 GHz Minimum gain 6.4 dBi peak in the 2.4 GHz band, and 8.9 dBi peak in the 5 GHz band, and 8.6 dBi peak in the 6 GHz band.

Specifications EXG-300 Models *(continued)*

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; CISPR 11: Group 1, Class A
Certifications and Compliance	
CE	Conforms to relevant European Union directives
	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
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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netally.com/products/etherscopenxg