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AirCheck™G3 Pro Wi-Fi 6 Wireless Analyzer

Overview

The AirCheck G3 Wireless Analyzer's intuitive user interface provides actionable intelligence, speeding and simplifying wireless deployment, troubleshooting and validation. AirCheck G3 is the most cost-effective hardware-enabled site survey solution for Wi-Fi 6/6E networks. It provides network professionals of any skill level with complete and accurate information to survey and validate Wi-Fi deployments and changes, resolve connectivity and performance problems quickly, speed up closure of trouble tickets, and ensure your Wi-Fi network meets end users' needs.

With powerful tools suited for wireless engineers, but ease of use for technicians and remote "smart hands" AirCheck G3 Pro makes your entire team more productive.

- Test, verify, and troubleshoot technology upgrades, Wi-Fi 6/6E networks with advanced testing apps and purpose-built hardware
- Validate Wi-Fi 6/6E network performance for critical services and key end devices
- Quickly find the physical location of Wi-Fi access points and clients on the 2.4GHz, 5GHz, and 6GHz bands
- Supports 2.4GHz and 5GHz spectrum analysis with the optional NXT-1000 Portable Spectrum Analyzer adapter
- Faster and easier Wi-Fi and Bluetooth/BLE site surveys with AirMapper™ Site Survey
- 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, manage field test data, and integrate with network management systems via Link-Live™ collaboration, reporting, and analysis platform
- Automatically discover and instantly generate a topology map of your wired and Wi-Fi networks using Link-Live





Now with Wi-Fi 6/6E!

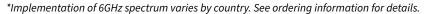


Key Features



The AirCheck G3 has two Wi-Fi network interfaces: a 2x2 radio to scan and test Wi-Fi networks, and a 1x1 radio for remote management and active testing. The test interface supports 802.11a/b/g/n/ac/ax and can analyze Wi-Fi channels, SSIDs, BSSIDs, access points and client devices. The AirCheck G3 provides full 6GHz support.*

The AirCheck G3 has a built-in Bluetooth v5/BLE radio for peripheral connectivity and conducting BT/BLE site surveys; three USB interfaces provide connectivity for accessories and other devices.







Key Features - continued



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

The AirCheck G3 provides AutoTest profiles with best practice pass/fail thresholds for quick assessment of Wi-Fi network configurations and services.

Multiple profiles can be created for complex Wi-Fi networks with multiple SSIDs, each with its own set of services tests. Profiles can then be organized into named profile groups that allow one button validations across multiple SSIDs, bands and authentications. Since the pre-defined profiles can be executed individually, the profiles group serves as a resource for technicians to verify each specific SSID during troubleshooting. With profile groups, engineers can effectively transfer their network configuration and test knowledge to technicians, saving training time and effort.

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 critical network services.

*NOTE: Wi-Fi AutoTest supports connecting to Captive Portals where a sign-in is required for access.

- 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. The Wi-Fi Link Test graphs save and display data for up to 4 hours, 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 graphs the current 802.11 and non-802.11 utilization as a percentage of channel capacity.
- AP Test shows the AP name and SSID of the network it supports, its IP and MAC addresses, security, primary and secondary channels802.11 types supported, and number of connected clients.
- **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.
- **Services Tests** validate access and performance of any number of services ranging from simple connectivity ping/TCP connect, to pulling web pages and FTP files with a complete breakdown of where the time is spent (DNS, SYN/ACK, Data start and data transfer time). Prove the the problem is not the Wi-Fi and lies in the services.
- **Troubleshooting Tools** packet capture, Browser, Telnet, SSH and other tools can be used to further troubleshoot network problems.



(🖘) Air Quality Test

The Air Quality Test performs a 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 2.4GHz, 5GHz, and 6GHz (to detect 40, 80 and 160 MHz-wide overlapping BSSIDs).



Periodic AutoTest

In this mode, AutoTest can run multiple test profiles at specified intervals (from 1 to 60 minutes, for durations from 10 minutes to 24 hours) and sends the results to Link-Live to analyze the results over time. This is an effective way to "monitor" connectivity of your Wi-Fi network for an extended period and 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 or exported to Excel. Email notifications can warn you when thresholds are exceeded.



Wi-Fi SSID connectivity and coverage



Customize profiles for standardized testing



Wi-Fi Air Ouality - detects oversubscribed channels



AirMapper Site Survey App on the AirCheck G3



Automated problem detection and detailed description

⑨ AirMapper™ Site Survey – Now supporting Wi-Fi 6/6E

With the AirMapper app, AirCheck G3 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 collaboration, reporting, and analysis platform. 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 remote analyzers.

- Faster and easier Wi-Fi and Bluetooth/BLE site surveys with a rugged handheld tester.
- Perform enterprise-grade surveys without the need of a dongle or tethered device for accurate and complete data collection
- Automatically identify common Wi-Fi network problems using InSites™ intelligence analysis in Link-Live
- Collaborate easily visualize, generate reports, and share survey data through Link-Live
- Simultaneous passive and active Wi-Fi surveys to gather critical site metrics and validate client experience and roaming with one survey
- Export Wi-Fi survey data to AirMagnet® Survey PRO for more advanced analysis, planning and reporting

Automated Problem Detection

AirCheck G3 automatically diagnoses various conditions on wireless networks and identifies specific problems 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.

Wi-Fi Problems automatically detected by AirCheck G3:

- Using Shared Key Authentication
- High Utilization on Channel*
- High Retries on Channel*
- High Utilization on BSSID *
- BSSID overloaded with Clients*
- · High retries on device*
- BSSID channel changes*
- BSSID Country Conflict
- RF Regulatory Violation
- AP association capacity full

Network Problems automatically detected by AirCheck G3:

- Bad Subnet Mask detected
- Duplicate IP addresses detected or issued
- Multiple DHCP offers received
- Maximum Client on an AP
- High Interface utilization, errors or discards (SNMP) *
- High CPU, memory or disk utilization (SNMP) *
- Recent device reboot (SNMP)
- Spanning Tree topology change
- SNMPv2 detected on SNMPv3 network

^{*}Problems detected with user definable threshold.

্নিশু Native Wi-Fi 6 and 6GHz Support

With the introduction of Wi-Fi 6/6E, how WLAN validation and troubleshooting is done has 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 – necessitating new technology to test and validate these networks.

- Validate actual Wi-Fi 6/6E network performance and utilization using a native 802.11ax radio
- Gain visibility into all Wi-Fi devices working on the 2.4GHz, 5GHz, and 6GHz bands*
- Enables packet captures of Wi-Fi 6 control, management, and data frames in all 3 bands
- Diagnose new Wi-Fi 6E mechanisms of Reduced Neighbor Reports, Preferred Scanning Channels, and multi-BSSID
- Authenticate using the latest security standard of WPA3 and Enhanced Open



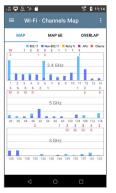
Wi-Fi Bands

*NOTE: Wi-Fi 6/6E regulatory compliance implementation of the 6GHz spectrum varies by country. AirCheck G3 models are available in three versions; see Models and Accessories for additional information.

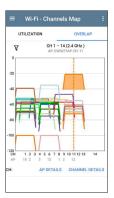
Channel Utilization and Overlap

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 on a selected channel, as well as the access points and clients using this channel.

The channel overlap graph provides visibility into the overall site channel plan how many access points are working on the same channel or overlapping channels, making it easier to identify the root cause of co-channel and adjacent channel interference problems. For wider channels, a graphical indicator marks the primary channel.







Channel Overlap

(📠) Spectrum Analysis and Interference

Trying to pinpoint the source of interference on a Wi-Fi network is hit or miss with the wrong tools. Through the use of the optional NXT-1000 Mobile Spectrum Analyzer, AirCheck G3 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 live RF view including current, average and max readings
- Frequency Spectrum Displays heat mapped signal density to identify recurring energy
- **Spectrogram** Shows energy over time to identify the periodic nature of the RF environment



Spectrum App on the AirCheck G3

Roaming Analysis

In the Wi-Fi link test graphs (SNR, Utilization, Retries, PHY Tx Rate, PING) anytime the AirCheck G3 roams and connects to a new AP, a green vertical line will be shown in the graph.

Seeing the correlation between various factors and roam events can help diagnose roaming issues. 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



iPerf throughput test with TCP or UDP frames



HTTP test against a webserver with end-userresponse-time analysis



Wi-Fi performance Tests for Critical Links & Key **Devices**

The AirCheck G3 uses iPerf v3 to run performance tests against the NetAlly Test Accessory or any iPerfv3 server. Performance can be measured using TCP or UDP throughput in the upstream or downstream direction.

For key servers/services residing on-prem or in the cloud, 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.



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

(45) Auditing & Documenting Network Security & Health

The AirCheck G3 automatically discovers your network through its set of Wi-Fi interfaces immediately upon power-up.

Devices are classified and correlated to provide complete visibility of their name and device type, network addresses, VLAN, SSID, and where available, traffic statistics. Engineers can add user names and authorization status for devices discovered. Discovery results can be directly uploaded to Link-Live for detailed analysis of devices discovered with filter and sort tools, topology mapping, or export to CSV/PDF files as documentation.

The AirCheck G3 breaks the layer 2 visibility ceiling and 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.

AirCheck G3 discovery can be enriched with SNMP. It shows details such as device configuration, interface configuration and traffic details, 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.

AirCheck G3'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 both on the unit or in Link-Live - so you have clear knowledge of who and what is on your network, and whether they should be there or not.



(**■**) 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 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 snapshot will provide a baseline of your network, and the second discovery snapshot the current state of your network. Link-Live will compare the two snapshots and highlight new and missing devices.



Network Topology Mapping - Integrated Wired & **Wi-Fi Network Diagrams**

No more struggling to keep manually drawn maps up to date! AirCheck G3 automatically discovers both your wired and Wi-Fi networks for instant mapping in NetAlly's Link-Live. 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 clients, and switch/ router interconnections.

Users can interact with the network topology in a flexible map-based user interface to quickly identify configuration and connection issues thus speeding troubleshooting and automatically creating network documentation.

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; doubleclicking on any map element brings up its detailed discovery information, including status, problems, interface information, and more.

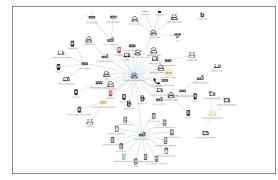


(🏂) The Importance of Visualizing Your Network

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 predeployment network assessments and new technology rollouts, but it can take too much time to complete. Link-Live supports topology exports using PNG, SVG or Viso formats saving hours of manual effort and allowing further customization.

Ideal for enterprises or service organizations, AirCheck G3's mapping function saves hours of manual labor, allowing documentation to keep up as the network changes, or provide instant maps for client projects.



Discovery Difference analysis shown in Topology view



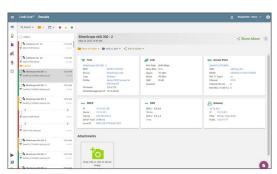
Link-Live makes it easy to collaborate and share maps to anyone who needs access, with no added licensing costs. One click exports your map to Microsoft Visio® where you can easily add notations and modify your map.



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

Simple controls in Link-Live allow for instant customization of the map's appearance and displayed data







Simplify report generation across media types for network deployment documentation



Cloud Remote Control in Link-Live™

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 (available as a complimentary cloud service or private cloud/on-premise version) 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, 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

Simple "access-anywhere" Remote Control Enables Collaboration

The AirCheck G3 has a dedicated Wi-Fi management port that enables a remote engineer to control the AirCheck G3 "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 – 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 Link-Live.



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



Wi-Fi Packet Captures on the 2.4/5/6GHz bands



Examples of apps available to download to AirCheck G3

Multiple Advanced Troubleshooting Tools In One

Path Analysis: shows the switch/router path connecting the AirCheck G3 to an IP device across wired and Wi-Fi networks, and even beyond the local network, e.g., from the AirCheck G3's Wi-Fi port to a server in the cloud or data center The AirCheck G3 offers built-in tools to conduct further analysis of the devices along the path: view connection details along the path, interface traffic statistics, launch Telnet or browser, conduct port scan, ping and more.

Packet Capture: from the Wi-Fi test interface. You can capture up to Wi-Fi 6 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 Link-Live for easy sharing.

Device Location: allows you to track down the physical location of both access points and clients. Making it easier to find rogue or hidden Wi-Fi devices on the 2.4GHz, 5GHz, and 6GHz bands.

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

Models & Accessories

IMPORTANT NOTES: Wi-Fi 6/6E regulatory compliance implementation of the 6GHz spectrum varies by country.

AirCheck G3 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 "AIRCHECK-G3-PRO" with the following for the other model types:

AIRCHECK-G3E-PRO Partial Tri-Band

AIRCHECK-G3C-PRO Dual Band Only (2.4/5GHz)

Inclusion of AllyCare Support

All new AIRCHECK-G3-PRO 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
AIRCHECK-G3-PRO	Includes: AIRCHECK-G3-PRO mainframe with 1 year of AllyCare support (AIRCHECK-G3-PRO-1YS), shoulder sling bag, AC charger, <i>Quick Start Guide</i> .
AIRCHECK-G3-PRO-KT	Includes: AIRCHECK-G3-PRO mainframe with 1 year of AllyCare support (AIRCHECK-G3-PRO-1YS), shoulder sling bag, AC charger, <i>Quick Start Guide</i> , external directional antenna, holster, and NXT-1000 spectrum analyzer.
AIRCHECK-G3-PRO-TKT	Includes: AIRCHECK-G3-PRO mainframe with 1 year of AllyCare support (AIRCHECK-G3-PRO-1YS), shoulder sling bag, AC charger, <i>Quick Start Guide</i> , external directional antenna, holster, NXT-1000 spectrum analyzer, and Test Accessory.
EXT-ANT-TRIBAND	2.4/5/6GHz directional antenna for use with AirCheck G3 and EtherScope nXG
NXT-1000	NXT-1000 Portable Spectrum Analyzer

Models & Accessories - continued

Model Number/Name	Description
G3-PWRADAPTER	AC charger replacement/spare for AIRCHECK-G3-PRO mainframe with country power cords
G3-REPL-BA	LITHIUM-ION replacement battery for use with the AirCheck G3
HOLSTER-G3	Field use carrying holster makes troubleshooting on the go easier. Openings allow access to all applicable buttons and interfaces.
	ear of support is included. Use these support model numbers for extending support at time of asse or for support renewal.

Specifications

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General	
Dimensions	4.98 in x 7.68 in x 1.65 in (102 mm x 196 mm x 42 mm)
Weight	1.05 lbs. (0.48 kg)
Battery	Rechargeable lithium-ion battery pack (3.63 V, 9.75 A, 35.39 Wh)
Battery Life	Typical operating life is 10 hours (Battery life from full charge varies depending on the feature being used); Typical charge time is 3-4 hours
Display	5.0-inch color LCD with capacitive touchscreen (720 x 1280 pixels)
Host Interface	2 USB Type-A Ports USB Type-C Power and On-the-Go Port RP-SMA External Antenna Port
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 15V (3A)
Wireless	
AirCheck G3 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 AirCheck G3 tester	Frequencies of channels received and transmitted: 2.4 GHz band: 2.412 to 2.484 GHz (channel 1 to channel 14)* 5 GHz band: 5.170 to 5.320 GHz, 5.500 to 5.700 GHz, 5.745 to 5.825 GHz (channel 36 to channel 165)* 6 GHz band: 5.925 to 7.125 GHz (channel 1 to channel 233)* (*) Where allowed by country regulations.
supports.	NOTE: The tester transmits only on the frequencies allowed in the country where it is operating.
Antennas	
Internal Wi-Fi Antennas	Minimum gain 2.0 dBi peak in the 2.4 GHz band, 1.5 dBi peak in the 5 GHz band, and 2.7 dBi peak in the 6 GHz band.
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, 8.9 dBi peak in the 5 GHz band, and 8.6 dBi peak in the 6 GHz band.

Specifications - 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 95°F (35°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	
ЕМС	IEC 61326-1: Basic Electromagnetic Environment CISPR 11: Group 1, Class A	
Certifications and Compliance		
C€	Conforms to relevant European Union directives	
<u> </u>	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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Premium Customer Services ·



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.