

## Datasheet: OneTouch™ AT G2 Network Assistant

Network technicians spend 25% of their time troubleshooting – taking time away from other critical tasks. Most network problems require more than 1 hour to solve, and 40% require escalation. Intermittent problems can take twice as long to resolve. Adding to troubleshooting inefficiency is the 5 hours per week spent traveling to and from problem sites and the lack of standardized troubleshooting processes for more than 70% of IT organizations<sup>1</sup>.

By improving each step of the troubleshooting process, the OneTouch AT Network Assistant helps novice and expert network technicians solve more problems faster, escalate issues more efficiently and validate performance easily – saving up to a week of time each month.

<sup>1</sup>Implementing Best Practices Troubleshooting for IT (Fluke Networks study, 2013).



**An automated all-in-one portable tester for understanding end-user Ethernet and Wi-Fi network performance on-site in real-time and through the cloud over time.**

- **All-in-one:** a handheld tester combining infrastructure, network service and end-to-end path performance measurement in one tool
- **Versatile:** dual 10/100/1G copper/fiber Ethernet test ports and an 802.11a/b/g/n/ac Wi-Fi radio for use in multiple environments
- **Fast:** all tests within an AutoTest profile are run and graded automatically with the touch of a button, enabling identification of the most common problems in about a minute
- **Accurate:** site-specific AutoTest profiles emulate how client devices experience the network, including local, intranet and cloud-hosted services
- **Consistent:** everyone on the team uses the same preconfigured profiles to encourage standardization and best practices
- **Network aware:** wired and Wi-Fi discovery and analysis provides visibility into connected devices, key device properties and problems
- **Authoritative:** measure end-to-end path performance prior to the deployment of new services or network infrastructure to assess network readiness and post deployment to prove SLA compliance
- **VoIP capable:** troubleshoot desktop VoIP problems in real-time with inline call monitoring, logging and scoring
- **Capture friendly:** wired and Wi-Fi packet capture streamlines collaboration and escalation of the most complex issue. Capture wireline traffic using a tap, a mirror port or avoid complexity by using the OneTouch inline capture tool. Use the powerful AP, channel or client capture filters to capture the right packets for Wi-Fi troubleshooting
- **Cloud enabled:** AutoTest results are sent to the OneTouch AT Cloud Service to establish a path performance baseline, to perform more rigorous network acceptance testing and to troubleshoot intermittent problems – when and where it is convenient

## OneTouch AT G2 features

### Combined copper, fiber and Wi-Fi troubleshooting

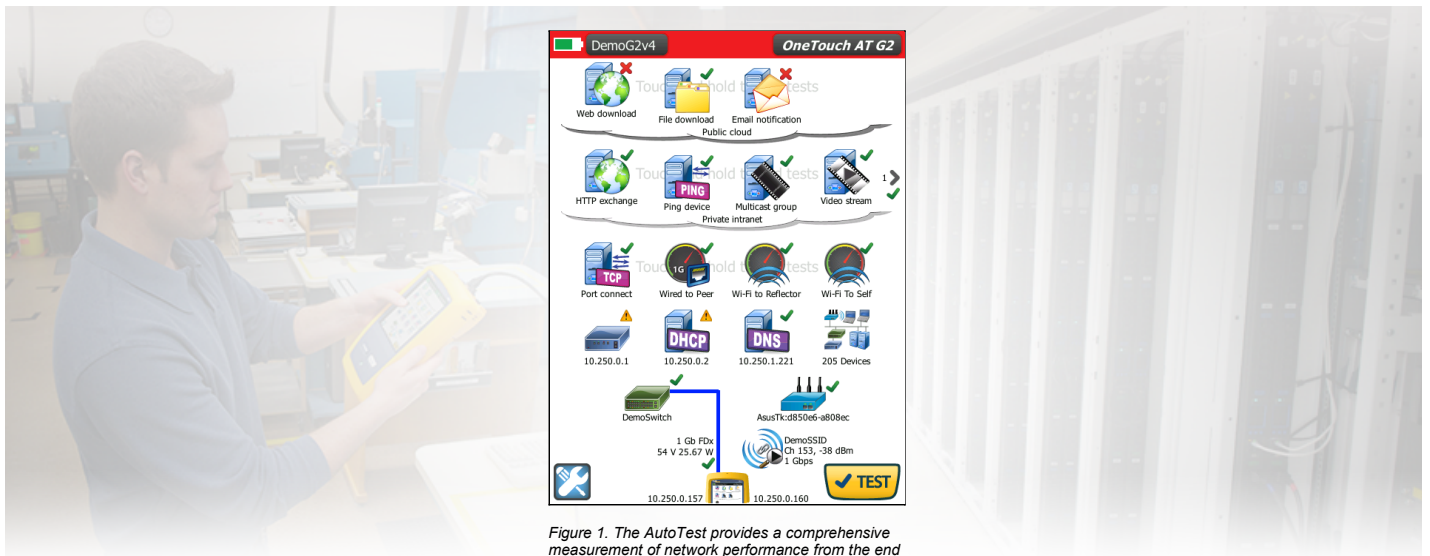
Be ready for a broad range of troubleshooting scenarios with the handheld OneTouch AT G2 Network Assistant. The tester incorporates dual copper and fiber optic test ports to facilitate troubleshooting of 10/100/1000 Mbps twisted pair and 100/1000 Mbps fiber Ethernet networks. The dual ports simplify inline packet capture and VoIP monitoring by eliminating the need for mirror ports or Taps. For troubleshooting Wi-Fi networks the OneTouch AT G2 tester incorporates an 802.11ac dual-band Wi-Fi radio with a 3x3 antenna. When connected to both wired and Wi-Fi networks the tester displays test results side-by-side on a single page to aid in problem domain isolation.

### Standardized network troubleshooting and performance validation

Use the intuitive touch interface and the Setup Wizard to create test profiles, where a profile is a set of tests, tailored to specific networks, services, and applications. Build profiles to accommodate different types of users, devices, locations or technologies. Profiles can be very simple with just a few tests or advanced with dozens of tests. Once created, profiles can be saved for quick and easy reuse. Create a library of standardized profiles to elevate the troubleshooting know-how of the entire network support staff. Share profiles with other OneTouch AT users. Use the profiles to establish best practices for consistent, faster, more productive troubleshooting and network acceptance testing.

### Automated testing and pass/fail analysis

Test everything defined in a profile automatically with the one button AutoTest. The AutoTest progresses from the physical layer of the network through the wired and wireless infrastructure, to network services and user-defined applications. Clear pass/fail and warning indicators highlight potential problems. A top-level pass/fail indicator provides the overall AutoTest status at a glance.



*Figure 1. The AutoTest provides a comprehensive measurement of network performance from the end user point-of-view, from cable to services and applications*

### A client view of performance

Most network trouble tickets start where a client device is connected to the network—where the device could be a PC, tablet, smart phone, IP phone, printer, POS terminal, industrial equipment controller, a medical imager etc. Troubleshoot common issues—or prove that the network is not the cause—by emulating the client device and measuring network performance.

## Comprehensive testing from the patch cable to the cloud

The cause of a network problem can be elusive. Identify the root cause of a problem by measuring and analyzing the performance of the critical network elements: the network cabling, the delivery of Power over Ethernet (PoE), the connection to the nearest switch, the connection to the nearest access point, and the performance of key network services and server-based applications.

### Cloud-based trending

The Trending feature automatically and repeatedly uploads AutoTest results to the cloud for additional analysis. Control the number of AutoTest results uploaded by setting the trending duration and interval. Trending runs automatically once launched, untethering the user from the tester. The user does not need to be present to gather test results; simply launch Trending and leave. Trend results for up to 1 week, or until manually stopped. Long duration testing is invaluable when trying to troubleshoot sporadic, intermittent problems that frequently occur when network support staff is away.

### Cloud analytics

Open a OneTouch AT Cloud Service account to view and analyze AutoTest results uploaded via the Trending feature. Correlate network events by viewing multiple test results simultaneously in side-by-side charts. All the test results uploaded during a single Trending session are available for analysis. The number of tests is defined by the complexity of the AutoTest profile and the number of results is defined by the Trending duration and interval. Select one or more of the tests within the trending session to analyze the results. The Cloud Service plots sequential results on a single color-coded chart to simplify analysis over time. Charting makes it easy to see performance irregularities. Zoom permits an even more detailed analysis of the sub-processes that comprise each individual test.

Access the Cloud Service over the web at anytime from anywhere using a web-connected smart device with a web browser. View and analyze results when and where it is convenient using a PC or smart device.

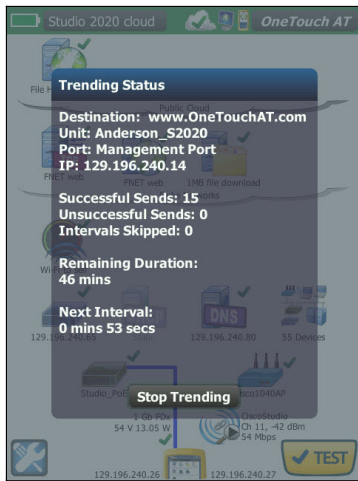


Figure 2. Trending automatically runs the AutoTest repeatedly and uploads results to the cloud



Figure 3. Cloud Service enables analysis of results over time to troubleshoot intermittent problems

## Remote control and file access

Use the built-in RJ-45 management port or optional USB Wi-Fi adapter to remotely control the OneTouch AT and access saved files. Any action that can be performed directly on the OneTouch AT using the touch screen can be performed remotely using a PC, laptop, tablet or smart phone. Manage the OneTouch AT remotely when and where convenient using a device at hand. Minimize the time, expense and inconvenience of traveling to the client location where the problem was reported. Webcam support enables live, remote viewing of the physical environment near the tester.

Remotely control the OneTouch AT and access saved files from the Cloud Service. Increase productivity by remotely managing the tester and viewing trended AutoTest results all from a single location. Remote management via the Cloud Service also allows traversal of NAT devices, which is very advantageous when troubleshooting from outside the office.

## Problem avoidance and performance optimization

Cloud trending and analytics let you use the OneTouch AT for proactive problem avoidance and performance optimization. Set a long trending duration - up to one week - and use Cloud Service analytics to identify potential vulnerabilities and performance bottlenecks. In this use model the OneTouch AT tester serves as a 24/7 portable network probe and the Cloud Service as the analytics engine. Identify and correct potential network, service or application vulnerabilities before they become problems that adversely impact users. Identify performance bottlenecks and appropriately reconfigure the network to optimize end user response time.

The OneTouch AT excels at both "firefighting" - reactive troubleshooting of persistent and intermittent problems - and daily network management - proactively avoiding problems and optimizing performance.

## Copper and fiber optic cable testing

Troubleshoot cable performance quickly by measuring twisted pair cable wiremap and length. Use cable identifiers and IntelliTone™ toning to locate and identify cables. Measure the optical power received through fiber optic links. Verify the cleanliness of fiber optic connections by viewing connector end faces with the optional FiberInspector™ USB video probe.

## PoE testing

Verify the successful delivery of PoE with the TruePower™ load test. Emulate an 802.3at (PoE+) class 1-4 powered device and measure power up to 25.5 watts. See the requested and received PoE class, the pairs used, the PSE type, measured PoE voltage unloaded and under load, and PoE power under load.

## Wired and Wi-Fi client connectivity testing

Understand how a client device connects to the wired infrastructure by testing link negotiation, identifying the nearest switch, and monitoring key switch port statistics. Test 10/100/1000BASE-T twisted pair and 100BASE-FX/1000BASE-X fiber optic Ethernet networks. Understand how a client device connects to the Wi-Fi infrastructure by testing the link between the client and the nearest access point, identifying the AP name, channel and security type, observing the authentication and association process, and monitoring key AP and network statistics, including roaming details by AP. Test IEEE 802.11a, .11b, .11g, .11n and .11ac Wi-Fi networks.

CABLE LINK PoE	
Advertised Speed	10 100 1000 Mbps
Actual Speed	1 Gbps
Advertised Duplex	Half Full
Actual Duplex	Full
Rx Pair	MDIX
Level	Normal
Polarity	Normal

Figure 4. Test twisted pair and fiber optic links at rates up to 1Gbps

RESULTS LOG	
Channel	153 80 MHz Bonded
Security	WPA2-P Auto
IP Address	10.250.0.160 DHCP
Connected For	169 s
	Current Min Max Average
Signal (dBm)	-38 -40 -35 -36
Noise (dBm)	-99 -99 -97 -98
Tx Rate (Mbps)	1170 1053 1300 1170
% Max Tx Rate (1300 Mbps)	90 81 100 90
Retries (% pkts)	0 0 36 0

Figure 5. Test a Wi-Fi connection at 802.11ac rates

## Network services testing

Test DHCP server responsiveness. Identify the wired and Wi-Fi DHCP servers and view the offer and acceptance timing and the lease information. Test DNS server responsiveness. Identify the wired and Wi-Fi DNS servers and view the DNS lookup time. Also, determine if a second DHCP address is being offered. If unexpected or is a potential rogue server, use the path analysis tool - a layer 2 and layer 3 trace route - to track down the device to mitigate a problem situation.

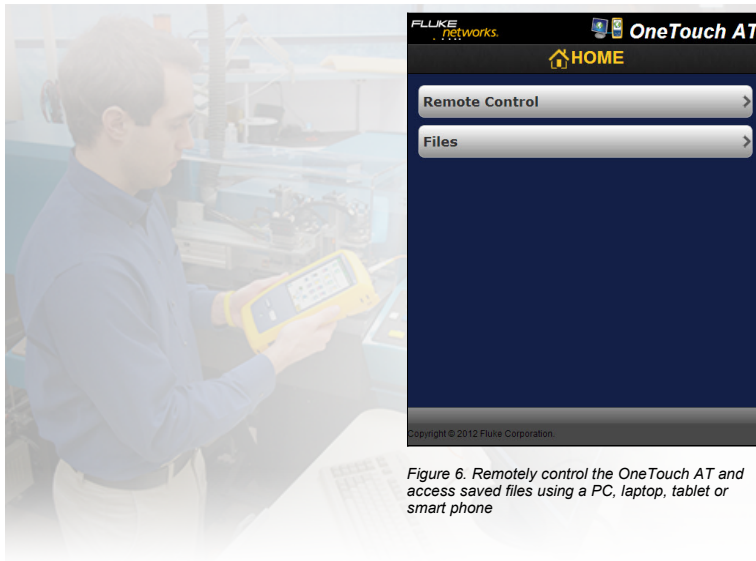


Figure 6. Remotely control the OneTouch AT and access saved files using a PC, laptop, tablet or smart phone

	RESULTS	
	Wired	Wi-Fi
IPv4		
Server IP	10.250.0.2	10.250.0.2
Server Name	cos_dev_sw1.fnet.eng	cos_dev_sw1.fnet.eng
Offer	10.250.1.137	10.250.1.143
Offer Time	44 ms	65 ms
Accept	10.250.1.137	10.250.1.143
Total Time	48 ms	68 ms
Subnet	255.255.254.0	255.255.254.0
Subnet ID	10.250.0.0 / 23	10.250.0.0 / 23
Lease Time	24 h	24 h
Expires	05/22/2013 9:07:25 am	05/22/2013 9:07:28 am

Figure 7. Detailed breakdown of network service performance

## Network application testing

Determine if a server-based application is the root cause of a reported problem by measuring availability and response metrics. Add to the AutoTest profile the performance test appropriate for the application: ping (ICMP), connect (TCP), web (HTTP), file (FTP), multicast (IGMP), video (RTSP) or email (SMTP). Each test is graphically represented on the OneTouch AT home page as an icon. After running the AutoTest, touch a test icon on the home page to get a detailed breakdown of application performance including DNS lookup time, server response time and data rate. The test results are presented side-by-side for easy wired/Wi-Fi and IPv4/IPv6 performance comparisons. A few examples: ping your WLAN controller, connect to port 2000 on your VoIP call manager, download a page of an application with a web interface, upload or download a file from a server, subscribe to a multicast group, access video content from an on-demand streaming video server or email a text message to your mobile phone.

## Local, intranet and internet performance

Understand the performance of network services and server-based applications wherever they are hosted: locally in the datacenter, on a corporate intranet server or on a server reached via the public internet. Create location centric AutoTest profiles by grouping together co-located services and applications. Measure service levels to the different groups to quickly spot problems.

## End-to-end path performance measurement

Ensure that newly installed or upgraded wired and Wi-Fi networks meet SLA objectives and are ready for new high-bandwidth applications by measuring end-to-end path performance. Measure throughput, frame loss, latency and jitter between a local OneTouch AT and a remote OneTouch AT peer or a remote LinkRunner reflector. A remote peer provides upstream and downstream results while a remote reflector yields round trip results. Measure performance at rates up to 1 Gbps on copper and fiber networks and 600 Mbps on Wi-Fi networks. A special use model exists that enables testing from the OneTouch AT wired interface to the Wi-Fi interface on the same instrument for testing without a remote.

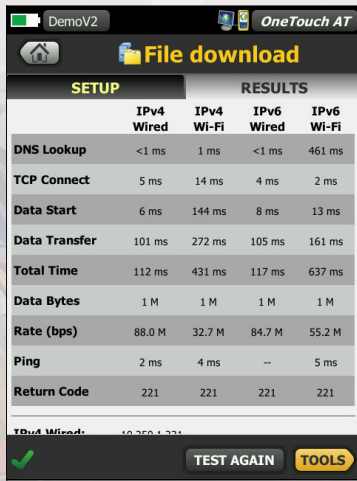


Figure 8. Detailed breakdown of network-hosted application performance

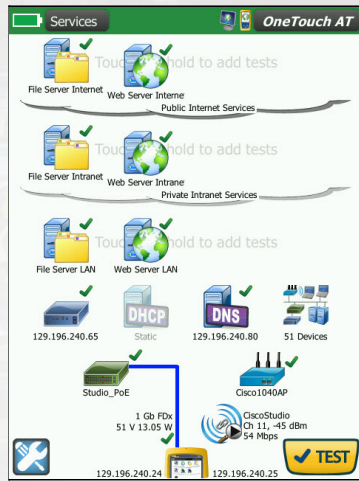


Figure 9. Group tests by hosting location – local, intranet, internet

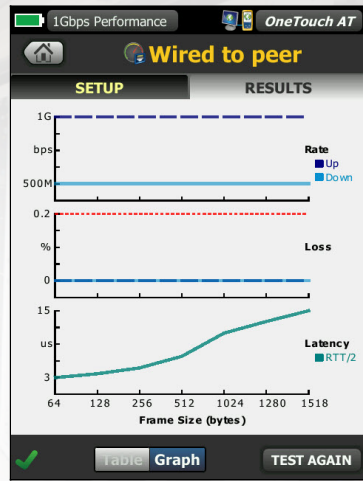


Figure 10. End-to-end path performance measurement validates link readiness and SLA compliance

## Wired network discovery and analysis

Automatically discover copper and fiber-connected devices and key device properties. Select from among fourteen different sorts to obtain different views into the wired network. For example, sort by IPv4 or IPv6 address to identify used and available addresses. Or sort by switch name/slot/port to understand where on the network devices are connected. Sort by discovered problems to quickly identify potential issues. Additional discovery-assisted analysis tools aid with troubleshooting and profile creation. For example, the Multiport Statistics tool provides visibility into switch, router and AP port statistics including speed, duplex, slot, port, VLANs, host count, utilization, discards and errors. The Devices on Port tool provides visibility into the devices connected to an individual switch port. The Path Analysis tool provides a layer 2 and 3 trace route from the OneTouch AT to a target device including time to each hop and SNMP switch and router port statistics.

## Wi-Fi discovery and analysis

Automatically discover Wi-Fi devices and key device properties. Select from among twenty context-relative sorts to obtain different views into the wireless network. For example, sort by signal strength to troubleshoot Wi-Fi coverage issues. Sort by MAC manufacturer to discover Wi-Fi devices by type and to understand how they are connected relative to SSID, AP and channel. Sort by channel to identify channel spacing and usage problems. Sort by authorization status to find potential security violations. Additional discovery-assisted analysis tools aid with troubleshooting and security enforcement. If a Wi-Fi device is also discovered via Wired Analysis, the Cross Link feature enables one-button toggling between wired and Wi-Fi analysis views.



Figure 11. Analyze copper and fiber networks with automated device discovery, comprehensive sorts and deep-dive analysis tools.

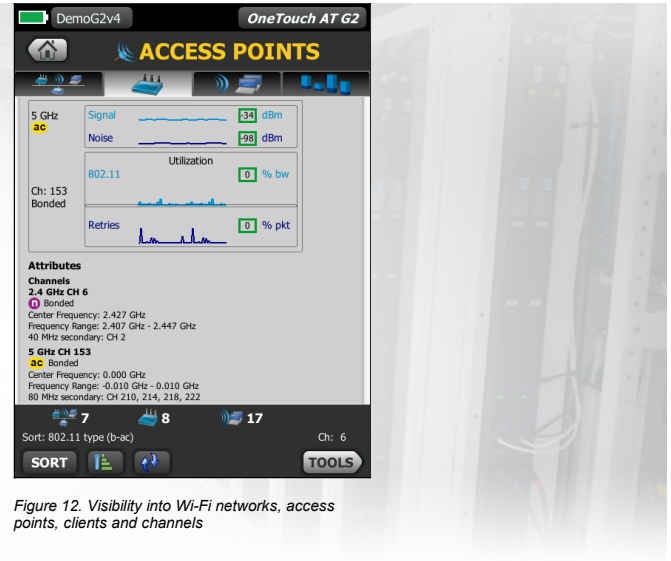


Figure 12. Visibility into Wi-Fi networks, access points, clients and channels

## Inline VoIP analysis

Connect the OneTouch AT inline between an IP phone and the network for real-time troubleshooting and analysis. The VoIP analysis test reveals issues related to PoE, DHCP, TFTP, SIP, and SCCP. The test provides visibility into unencrypted SIP and SCCP traffic to debug VoIP phone problems and quantify the quality of a VoIP call. Simultaneous capture of the VoIP conversation is optional.

## Packet capture

Capture wired, Wi-Fi, VoIP and AutoTest traffic when a packet-level view is required to solve a complex network or application issue. Filter the traffic to capture what is most important. Export the capture file to a PC for decoding and analysis using protocol analysis software. Capture wired traffic on a single port, on two ports aggregated, or inline between a client device and the network. Inline capture avoids the complexity, time and cost associated with standalone taps or configuring switch mirror ports. Capture Wi-Fi traffic by channel and mode (20 MHz or 40 MHz+).

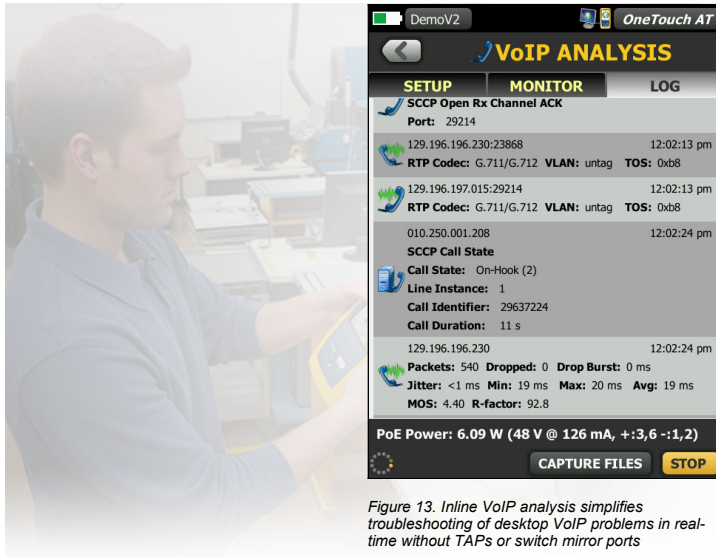


Figure 13. Inline VoIP analysis simplifies troubleshooting of desktop VoIP problems in real-time without TAPs or switch mirror ports

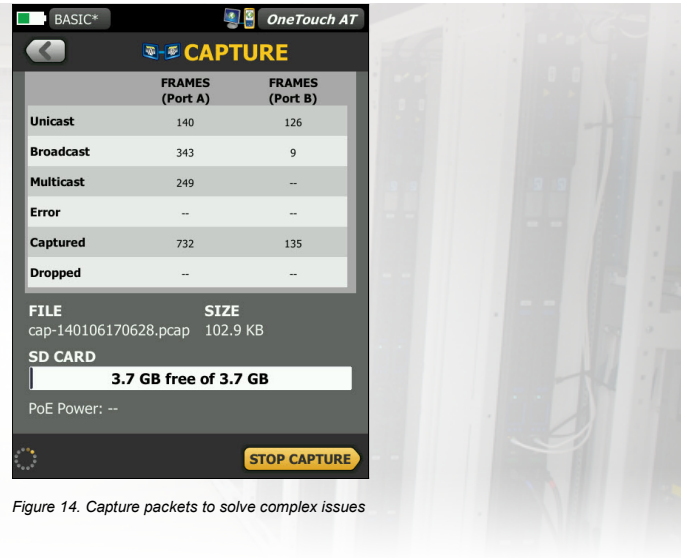


Figure 14. Capture packets to solve complex issues

## Streamline collaboration

Collaborate with peers, consultants, integrators and vendors more effectively by sharing packet captures, screen shots and AutoTest reports. Remotely control and view the user interface and remotely access files using a PC, tablet or smart phone. Attach a web cam to the OneTouch AT to share a view of the test environment.

## Troubleshoot IPv6 networks

Easily compare and contrast IPv4 and IPv6 wired and wireless network performance by viewing test results side-by-side.



## Save test results

Save the test results to share with colleagues or outside parties. A report serves as trouble ticket documentation, as a record of historical performance for benchmarking or as a certification report after new infrastructure deployment and turn up. Define which test results to include in the report (AutoTest, Wired Analysis, Wi-Fi Analysis, Tools Settings, VoIP Analysis) and the report format (PDF, XML). Open the results in a spreadsheet for flexibility in results analysis.

## Setup wizard

Simplify AutoTest profile creation while learning about the tester's capabilities by running the Setup Wizard. The wizard simplifies profile creation with step-by-step guided instructions, yes/no prompts, on-screen help and graphical progress indicators. Experienced users can bypass the wizard if desired.

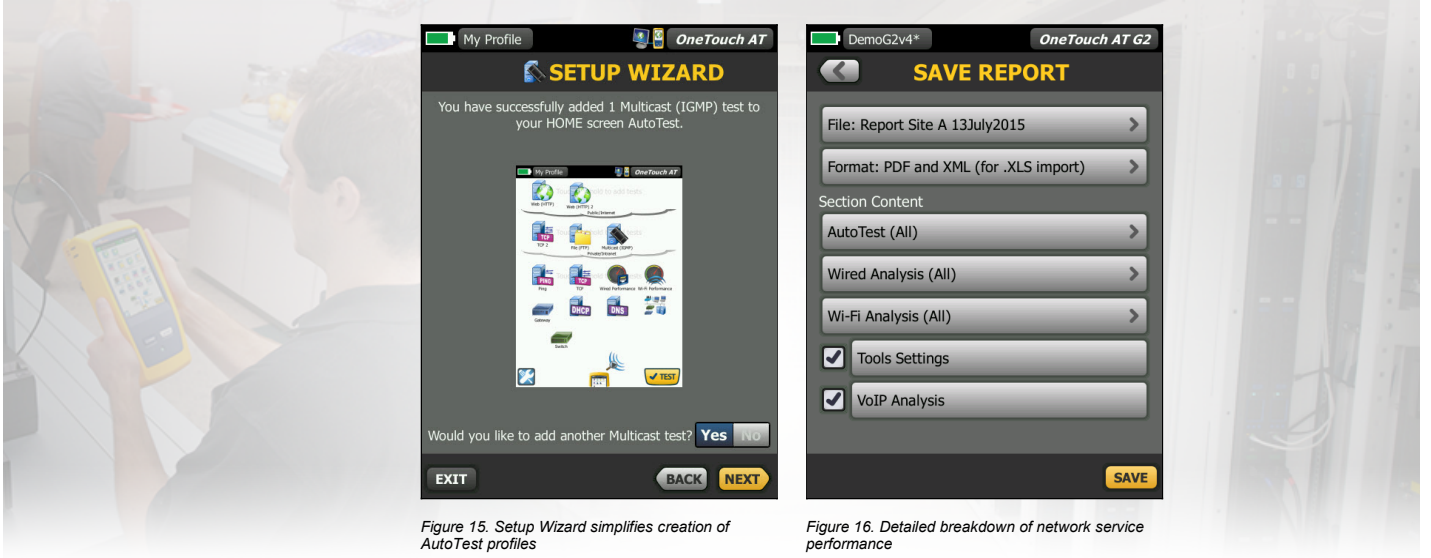


Figure 15. Setup Wizard simplifies creation of AutoTest profiles

Figure 16. Detailed breakdown of network service performance

## Purpose-built for field testing

The OneTouch AT is engineered specifically for network support professionals on the go. Useful test and management tools include a web browser, Telnet/SSH client, cable toner, webcam support and optional fiber optic connector inspection camera. The durable platform provides years of reliable operation in tough environments.

## Gold Support

Protect your investment with Gold Support. Gold Support benefits include Gold Cloud Service, software upgrades and MIB updates, unlimited priority repair service with loaner units, annual factory performance verification, free accessory replacement and 24x7 technical support with priority members-only access numbers.





## Technical Specifications

General	
<b>Dimensions (with module and battery installed)</b>	10.3 in x 5.3 in x 2.9 in (26.2 cm x 13.5 cm x 7.3 cm)
<b>Weight (with module and battery installed)</b>	3.5 lb (1.6 kg)
<b>Display</b>	5.7 in (14.5 cm) LCD with projected capacitance touch screen, 480 x 640 pixels
<b>AC adapter</b>	Input: 100-240 Vac, 50-60 Hz, 1.0 A
	Output: +15 Vdc, 2.0 A
<b>Battery type</b>	Lithium ion battery pack, 7.2 V
<b>Battery life</b>	Approximately 3-4 hours depending on type of usage, 4 hours to charge from 10% capacity to 90% capacity with the unit powered off
<b>Memory</b>	Internal: 2 GB shared between system and user files
	SD card: 4/8 GB, brand and model selected for optimal performance
	USB 2.0 type A port: for use with USB mass storage devices
<b>Network analysis ports</b>	Two RJ-45 10/100/1000BASE-T Ethernet
	Two SFP 100BASE-FX/1000BASE-X Ethernet
<b>Management port</b>	One RJ-45 10/100BASE-T Ethernet
	One USB 802.11 (requires optional adapter)
<b>Wi-Fi adapter data rate</b>	802.11a: 6/9/12/24/36/48/54 Mbps
	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/24/36/48/54 Mbps
	802.11n (20 MHz): MCS0-23, up to 216 Mbps
	802.11n (40 MHz): MCS0-23, up to 450 Mbps
	802.11ac (80 MHz): MCS0NSS1-MCS9NSS3, up to 1.3 Gbps
<b>Wi-Fi adapter operating frequency</b>	2.412 ~ 2.484 GHz (Industrial Scientific Medical Band)
	5.170 ~ 5.825 GHz
<b>Wi-Fi security</b>	64/128-Bit WEP Key, WPA/WPA2 personal, WPA/WPA2 enterprise, 802.1X

### Environmental and Regulatory

Operating temperature	32°F to 122°F (0°C to 50°C)
Battery charging temperature	32°F to 104°F (0°C to 40°C)
Storage temperature	-40°F to 160°F (-40°C to 71°C)
	-4°F to 122°F (-20°C to 50°C) for periods longer than 1 week
Operating relative humidity (% RH without condensation)	5% to 45% at 32°F to 122°F (0°C to 50°C)
	5% to 75% at 32°F to 104°F (0°C to 40°C)
	5% to 95% at 32°F to 86°F (0°C to 30°C)
Shock and vibration	Meets the requirements of MIL-PRF-28800F for Class 3 Equipment
Safety	CAN/CSA-C22.2 No. 61010-1-04, IEC 61010-1:2001
Operating altitude	13,123 ft (4,000 m), 10,500 ft (3,200 m) with AC adapter
Storage altitude	39,370 ft (12,000 m)
Pollution degree	2
EMC	EN 61326-1:2006

### Certifications and Compliance

	Conformite Europeene. Conforms to the requirements of the European Union and the European Free Trade Association (EFTA).
	Listed by the Canadian Standards Association.
	Conforms to relevant Australian standards.
	Conforms to relevant South Korean EMC Standards

For a complete list of OneTouch AT Wi-Fi certified countries, please visit the [OneTouch AT product page](#)

For ordering information please see the [OneTouch AT Configuration Guide](#)