

# LinkRunner™ AT

## Network Auto-Tester

Network technicians and desktop support professionals are under ever-increasing pressure to deploy new infrastructure and ensure user satisfaction.

To address these challenges, LinkRunner AT Network Auto-Tester provides the fastest way to solve network connectivity problems. Powering up in under three seconds, its one-button AutoTest performs your required set of connectivity tests in seconds, enabling you to quickly and accurately identify and solve network problems.

### Key features include:

- Verification of Ethernet on copper or fiber up to 1 GB/s
- TruePower™ over Ethernet (PoE) testing up to 802.3at (25.5W)
- Cable testing and fault identification
- IPv4/IPv6 ready
- Powers up in 3 seconds
- Stores up to 50 reports

### Overview

LinkRunner AT provides the answers you need to quickly troubleshoot connectivity problems:

- Where does this cable or jack go?
- How is this switch port provisioned?
- Can I negotiate a Gigabit link?
- Are there 802.1x security conflicts?
- Are the DHCP and DNS servers working?
- Can I get enough power from this port?
- Can I connect to servers and the Internet with IPv4 and IPv6?
- Can I connect over copper or fiber links?
- Is this patch cable good?

In seconds, the LinkRunner AutoTest provides these answers and more on a brightly colored display that's easy to read under desks or outdoors. You can document your test results with two quick keystrokes to prove the job's done right. With a six hour battery life and rugged design, LinkRunner can work wherever and whenever you need it.

### LinkRunner AT Features

**Instant-on operation**—ready to run your first test in less than three seconds.

**Get answers fast**—user-defined AutoTest performs your required set of connectivity tests in seconds, enabling you to accurately and quickly identify and solve network problems.

**Verify connection at 10/100/1 G over copper or 100/1 G over fiber**—connect using copper or fiber, turn it on to see link status, connection type, signal strength and traffic.

**Nearest switch and VLAN information**—uses IEEE Link Layer Discovery Protocol (LLDP) plus the Cisco® and Extreme Discovery Protocols (CDP and EDP) to display the VLAN and nearest switch model, slot and port.



**TruePower™ PoE testing**—quickly validate PoE performance by drawing actual power up to the 802.3at standard 25.5W. Load the circuit to stress switches, cabling and patch panels, all while measuring the voltage and pairs being used. The ability to validate the TruePower delivery before installing cameras, AP's and phones ensures smooth deployment.

**802.1x authentication**—verify access to secure networks using 802.1x and MAC Access Control Lists (ACL). The included LinkRunner Manager software configures 802.1x EAP type, downloads certificates and enters passwords.

**Cable verification and toning**—check patch cables using the built-in wiremap port including pin-to-pin connection, or installed wiring for length, shorts, opens or split pairs. The optional office locator kit allows identification of up to six unique ports for documenting cable plants.

**IPv4/IPv6 ready**—supports both IPv4 and IPv6.



**Fastest way to solve network connectivity problems**

**Key device and application availability**—instead of a ping, which is often blocked or disabled, LinkRunner performs a TCP port open test to verify application connectivity using IPv4 and IPv6. Router, DNS and DHCP servers are reported.

**Document results**—store up to 50 complete test results and download to your PC with the push of a button.

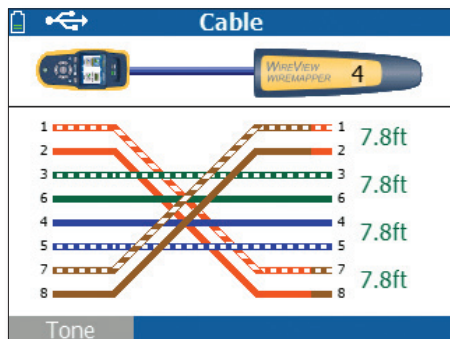
**Designed for field use**—six-hour battery life, one-handed operation and a rugged design.

**Easy upgrades**—the mini-USB port allows software upgrades in the field in minutes.

## LinkRunner AT Functions

### Graphical Cable Wiremap and Cable Details

Finds opens, shorts, mis-wires and split pairs on non-terminated cable with a WireView Cable Identifier and built-in wiremap port.



A mis-wired cable with pairs 1,2 and 7,8 swapped using cable identifier #4

### Cable Tests

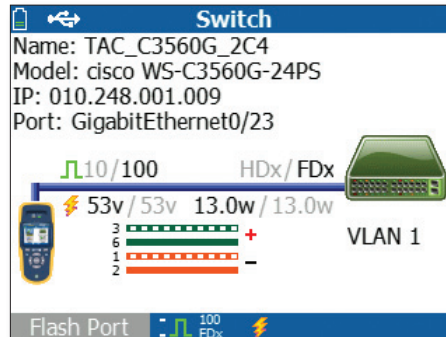
Locate cable runs with toning, port advertisement, link blinking and wiremapping with up to six cable identifiers. Toning supports both analog and digital IntelliTone™ modes.

### Switch Information

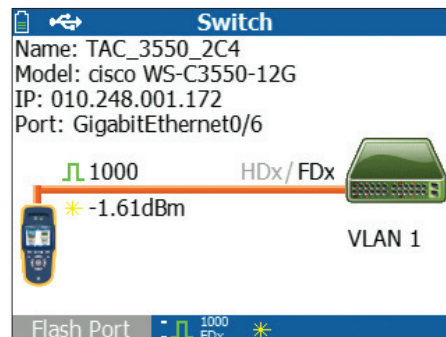
LinkRunner AT displays critical nearest switch information including:

- Switch name and model

- IP address
- Port, slot and VLAN
- Duplex and speed (actual and advertised)
- Signal strength
- Connection MDI or MDI/X
- PoE voltage and power (actual and test limits)
- Graphical representation of power on pairs



100 Mbps link on copper with PoE on port 23



1 Gig link on fiber

### TruePower™ PoE Loading

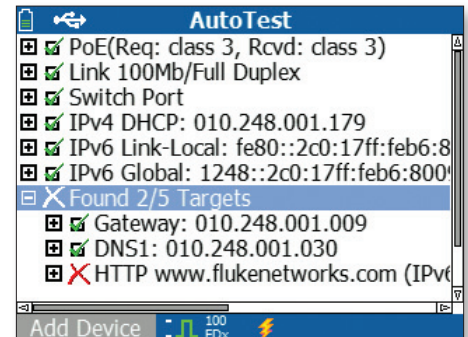
Verify you are receiving the required current and voltage up to 25.5W to power your PoE enabled devices. The LinkRunner TruePower PoE loading draws actual power to verify that your PoE enabled devices will have the required power to function.

### AutoTest

Verify enterprise connectivity in seconds with AutoTest. Standardize your set of critical network tests in profiles to run every time. Tests include:

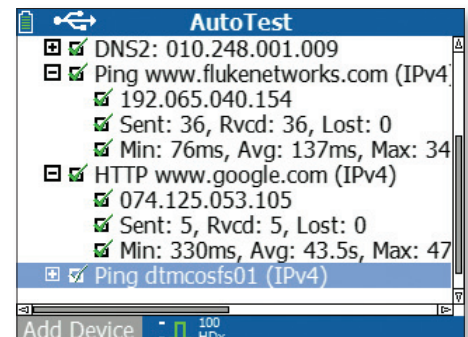
- PoE (copper only) class
- Link speed and duplex (actual and advertised)
- RX pair and polarity
- 802.1x authentication

- Switch name, port, VLAN, model and IP
- DHCP auto-negotiation with subnet and DHCP server addresses
- IPv4 and IPv6 availability
- Ping and TCP port connectivity with lost and min, max and average speed



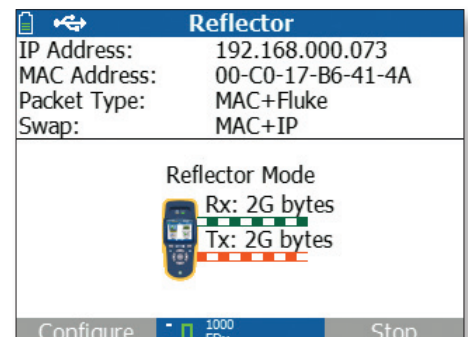
### Ping and TCP Port Connectivity

Verify connectivity to key devices with ping and TCP connectivity testing. Devices automatically include a router, DNS server and DHCP server. Configure 10 additional devices to meet your requirements by URL or IPv4/IPv6 address and optional application port number.



### Reflector

The LinkRunner packet reflector mode allows it to be used as a remote device during throughput tests to validate LAN and WAN throughput capabilities.



## LinkRunner Manager Software

Included with LinkRunner, the LinkRunner Manager software gives you the ability to manage LinkRunner profiles and manage recorded sessions.

### Profiles

The Profiles feature allows you to standardize your critical tests into one or more profiles making it easy for staff to produce consistent test results. For example, use one profile to verify connectivity to key devices or applications and another to verify connectivity to other locations. You can also name and transfer up to 10 profiles between LinkRunner and your PC.

The Profiles feature also allows you to configure, manage and control the use of your LinkRunner—or an entire fleet of them—with the following settings:

- Enable IPv6 addressing
- IP configuration including DHCP or static addresses
- VLAN and connection configuration including 802.1x security, speed/duplex settings and VLAN ID and priority
- AutoTest configuration for 10 devices
- PoE configuration and loading
- Reflector mode configuration

### Record Test Results

Document what LinkRunner is seeing to share or archive. Creating reports allows you to

quickly close trouble tickets or provide documentation for problem escalation. Press one key to record all the collected details for:

- AutoTest results
- Switch results
- Cable results

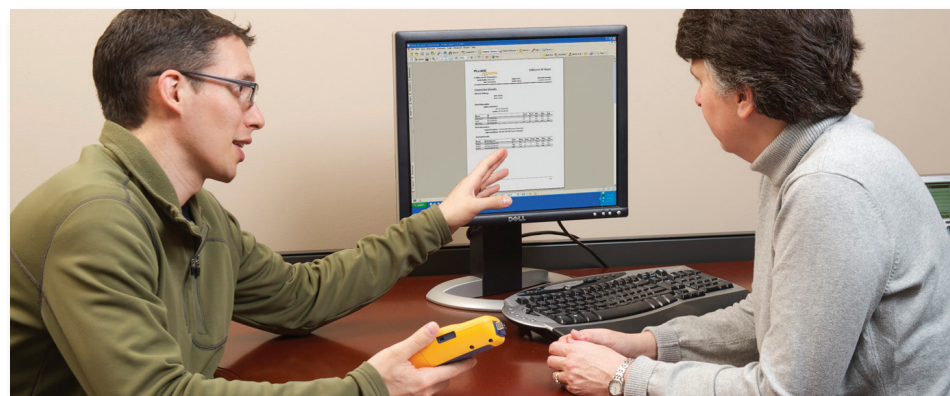
Transfer sessions to a PC and easily view or store them using LinkRunner Manager.

## Multiple language support

LinkRunner AT fully supports multiple languages including English, French, German, Spanish, Portuguese, Russian, Japanese and Simplified Chinese. Multi-language support includes LinkRunner AT user interface, getting started guide, user manual and supporting LinkRunner Manager software, help files and user reports.

## Gold Support

Sign up for the Gold Support plan and enjoy unrivaled privileges that support and protect your investment. These include unlimited tech assistance seven days a week, 24 hours a day via phone or our website support center; free software upgrades; unlimited web-based training; discounted pricing on instructor-led and custom onsite training; access to our extensive Knowledgebase library that includes operation and application-related technical articles; and Gold “members only” special pricing and promotions. Some benefits are not available in all countries. See [www.flukenetworks.com/goldsupport](http://www.flukenetworks.com/goldsupport) for more information.



## Family Comparison

|                                            | LinkRunner AT 1000                | LinkRunner AT 2000                |
|--------------------------------------------|-----------------------------------|-----------------------------------|
| AutoTest                                   | ✓                                 | ✓                                 |
| 10/100/1G Copper                           | ✓                                 | ✓                                 |
| Color Display                              | ✓                                 | ✓                                 |
| Key Devices & TCP Connectivity             | ✓                                 | ✓                                 |
| Verify 802.1x Settings                     | ✓                                 | ✓                                 |
| Identify Switch Ports and VLANs            | ✓                                 | ✓                                 |
| PoE Voltages                               | ✓                                 | ✓                                 |
| IPv4 Support                               | ✓                                 | ✓                                 |
| Graphical, Color Wiremap and Cable Details | ✓                                 | ✓                                 |
| WireView Cable Identifier #1               | Optional                          | ✓                                 |
| 6-hour Battery Life (Lithium Ion Battery)  | Included until September 30, 2012 | Included until September 30, 2012 |
| Reports                                    | 10                                | 50                                |
| 100/1G Fiber                               |                                   | ✓                                 |
| IPv6 Support                               |                                   | ✓                                 |
| True PoE Loading                           |                                   | ✓                                 |
| Reflector Option                           |                                   | ✓                                 |

## Technical Specifications

| Environmental                                                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature and Relative Humidity</b>             | 32°F to 113°F (0°C to +45°C)<br><i>Note: The battery will not charge if the internal temperature of the tester is above 113°F (45°C)</i>                                                                                                                                                                                                                                                          |
| <b>Operating Relative Humidity (% RH without condensation)</b> | 90% (50°F to 95°F; 10°C to 35°C)<br>75% (95°F to 113°F; 35°C to 45°C)                                                                                                                                                                                                                                                                                                                             |
| <b>Storage Temperature</b>                                     | -4°F to 140°F (-20°C to +60°C)                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Shock and Vibration</b>                                     | Random, 2 g, 5 Hz-500 Hz (Class 2) 1 m drop                                                                                                                                                                                                                                                                                                                                                       |
| <b>Safety</b>                                                  | EN 61010-1 2nd edition                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Safety (LR-AT 2000 only)</b>                                | EN/IEC 60825-1:2007,<br>EN/IEC 60825-2:2004+ A1:2007 (LRAT- 2000 only)                                                                                                                                                                                                                                                                                                                            |
| <b>Altitude</b>                                                | 4,000 m; Storage: 12,000 m                                                                                                                                                                                                                                                                                                                                                                        |
| <b>EMC</b>                                                     | FCC Part 15 Class A, EN 61326-1                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Certifications and Compliance</b>                           |  Conforms to relevant European Union directives<br> Conforms to relevant Australian standards<br> Listed by the Canadian Standards Association |
| General                                                        |                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Media Access; Copper</b>                                    | RJ-45: 10BASE-T, 100BASE-TX, 1000BASE-T and PoE (IEEE 802.3af and 802.3at); 100BASE FX and 1000                                                                                                                                                                                                                                                                                                   |
| <b>Media Access; Fiber</b>                                     | SFP Adapter Port supports 100BASE-FX and 1000BASE-LX/SX/ZX (LRAT-2000 Only)                                                                                                                                                                                                                                                                                                                       |
| <b>Cable Tests</b>                                             | Pair lengths, opens, shorts, splits, crossed, straight through and cable ID                                                                                                                                                                                                                                                                                                                       |
| <b>Tone Generator</b>                                          | IntelliTone digital tone: [500 KHz]; analog tones: [400 Hz, 1 KHz]                                                                                                                                                                                                                                                                                                                                |
| <b>Dimensions</b>                                              | 3.5 in x 7.8 in x 1.9 in (8.9 cm x 19.8 cm x 4.8 cm)                                                                                                                                                                                                                                                                                                                                              |
| <b>Weight</b>                                                  | 18 oz (0.5 kg)                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Battery</b>                                                 | Removable, rechargeable lithium-ion battery pack (18.5 Watt-hrs) (included with introductory special)                                                                                                                                                                                                                                                                                             |
| <b>Battery Life</b>                                            | Typical operating life is 6 hours; Typical charge time is 3 hours                                                                                                                                                                                                                                                                                                                                 |
| <b>External AC Adapter/Charger</b>                             | AC input 90 to 264 Vac 48 to 62 Hz input power<br>DC output 15 Vdc at 1.2 amps                                                                                                                                                                                                                                                                                                                    |
| <b>Display</b>                                                 | 2.8 in color LCD (320 x 240 pixels)                                                                                                                                                                                                                                                                                                                                                               |
| <b>Keypad</b>                                                  | 12-key elastomeric                                                                                                                                                                                                                                                                                                                                                                                |
| <b>LEDs</b>                                                    | 2 LEDs (Link and Receive/Transmit indicators)                                                                                                                                                                                                                                                                                                                                                     |
| <b>Host Interface</b>                                          | USB 5-pin mini-B                                                                                                                                                                                                                                                                                                                                                                                  |

| LinkRunner Manager Software        |                                                                                                           |
|------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Supported Operating Systems</b> | Windows® Vista, Windows® XP, Windows® 7                                                                   |
| <b>Processor</b>                   | 400 MHz Pentium processor or equivalent (minimum);<br>1 GHz Pentium processor or equivalent (recommended) |
| <b>RAM</b>                         | 96 MB (minimum); 256 MB (recommended)                                                                     |
| <b>Hard Disk</b>                   | Up to 500 MB of available space may be required                                                           |
| <b>Display</b>                     | 1024 x 768 high color, 32-bit (recommended)                                                               |

## Ordering Guide

| Item Name             | Description                                                                                                                                                                                                                                                                                                      |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LRAT-2000</b>      | Includes LinkRunner AT 2000 with Li-ion battery (until September 30, 2012), Wireview Cable ID #1, LinkRunner Manager software CD, USB cable, RJ45 coupler, Getting Started Guide and soft case.                                                                                                                  |
| <b>ACK-LRAT2000</b>   | Includes AirCheck™ tester, LinkRunner AT 2000 tester, AirCheck external directional antenna, spare Li-ion battery for either AirCheck or LinkRunner and deluxe carrying case.                                                                                                                                    |
| <b>LRAT-2000-FTK</b>  | Includes LinkRunner AT 2000, SimpliFiber® Pro optical power meter, 850/1300 multimode source, VisiFault™ VFL, FT120 FiberViewer™, FindFiber™ Remote ID source, carrying case and SC, ST, and LC power meter adapters.                                                                                            |
| <b>LRAT-2000-KIT</b>  | Includes LinkRunner AT 2000, IntelliTone™ Pro 200 Probe, WireView Cable IDs #1-6, LinkRunner Manager software CD, test accessory soft pouch, USB cable, LinkRunner AT Getting Started Guide, IntelliTone Pro Getting Started Guide, one 9 V alkaline battery—packaged in a deluxe Fluke Networks' carrying case. |
| <b>LRAT-2000-5PK</b>  | Includes 5 LRAT-2000s and 5 LinkRunner AT Mobility Kits. Each Mobility Kit includes an auto charger and a holster.<br><i>Note: Available only in the US, Canada and Europe.</i>                                                                                                                                  |
| <b>LRAT-2000-10PK</b> | Includes 11 LRAT-2000s and 11 LinkRunner AT Mobility Kits. Each Mobility Kit includes an auto charger and a holster.<br><i>Note: Available only in the US, Canada and Europe.</i>                                                                                                                                |
| <b>CIQ-GSV2</b>       | Includes CableIQ™ Qualification Tester, LinkRunner AT 1000, IntelliTone Pro 200 Probe, CableIQ Remote Identifiers #1-7, WireView Cable ID #1, CableIQ Reporter software CD, RJ45-RJ45 shielded patch cords (2) and USB cable, coax.                                                                              |
| <b>LRAT-1000</b>      | Includes LinkRunner AT 1000 tester with Li-ion battery (until September 30, 2012) LinkRunner Manager software CD, USB cable, Getting Started Guide and soft case.                                                                                                                                                |
| <b>GLD-LRAT</b>       | LinkRunner Gold Support Services, 1 yr.                                                                                                                                                                                                                                                                          |

For a complete listing of LinkRunner AT models and accessories, visit [www.flukenetworks.com/LinkRunnerAT](http://www.flukenetworks.com/LinkRunnerAT)

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**Fluke Networks** operates in more than 50 countries worldwide. To find your local office contact details, go to [www.flukenetworks.com/contact](http://www.flukenetworks.com/contact).

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