

# EtherScope™

## Network Assistant

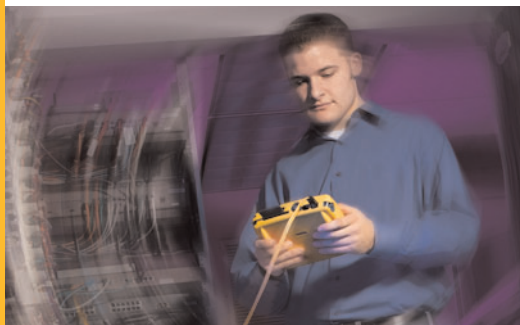
### With EtherScope, you can:

- **Solve gigabit Ethernet network problems fast** – full-duplex 10/100/1000 copper interface for testing up to Gigabit speeds.
- **Wireless network visibility** – add the 802.11 a/b/g wireless network analysis option to troubleshoot today's mixed wired and wireless networks. A full suite of tests including detailed information about RF signal strength, access point and client configurations, and network utilization.
- **Discover switches fast** – Locate available interfaces, active ports, MAC, IP, SNMP name, and link speed.
- **Capture detailed network information** – Locate, view, and store 1,000 network devices in the on-board database. Drill down on any device to see its configuration, addressing, and status.
- **View data instantly** – Pinpoint duplicate IP addresses, network misconfigurations, frame errors, collisions, high-utilization segments, and cable problems.
- **Identify vital network stats** – View Ethernet utilization, collisions and errors. Use the data to fine tune your network.
- **Performance testing** - the Internetwork Throughput Option (ITO) enables IP performance testing for deployment and maintenance of enterprise networks. With this feature, you can verify the available bandwidth between two points in a network or simulate the impact of additional network users or applications.
- **Portable analysis** – easy to use and carry, featuring a small, lightweight ruggedized platform, a bright color touch-screen, intuitive user interface and context sensitive help.

You're working on one of your two-dozen top priority projects when you get the call. Someone's complaining about the network. It could be one of your access switches. It could be the router or WAN link. It could be a server problem, a rogue wireless access point, or a configuration issue. **It could be anything!**

But **you** are the one that has to investigate, isolate, and solve the problem... or at least prove it's not the network.

No problem. Thanks to your assistant, you quickly see into the network and fix the problem fast so you can get on with your life.





## Powerful vision into your network

Whether a wired or a wireless LAN, the EtherScope Network Assistant delivers the information you need to quickly analyze, isolate and troubleshoot network problems. EtherScope excels at troubleshooting access network issues, with advanced diagnostics that simplify troubleshooting in switched environments. When problems require a visit to the user's work area, the switch closet or the equipment room, EtherScope is the one portable tool you should bring with you. It is engineered to be small, lightweight and durable for field use. And it is packed with the features you need so you can leave your laptop PC back at your desk.

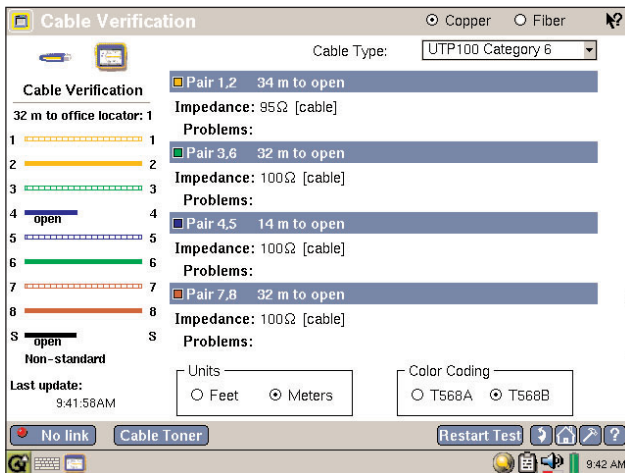
## Verify cabling infrastructure quality

High performance cabling is the backbone of a high-speed network. Do not let simple cabling problems bring your network down. Several built-in tools, like TDR fault location, wiremap and digital toning, help you troubleshoot common cabling issues.

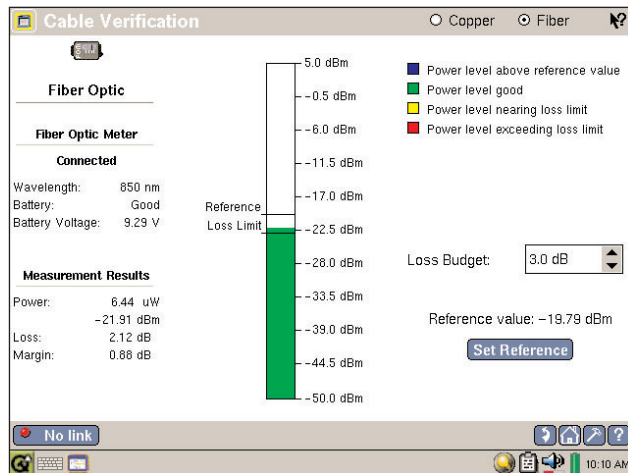
If your network includes gigabit links, you likely have multimode or singlemode fiber optic cabling. Verify the quality of these links by measuring the power from fiber optic NICS and the loss of optical fiber cables.

## Infrastructure cabling

- UTP/STP wiremap
- Fault location
- Toning
- Jack identification
- Fiber optic power/loss



Cable verification



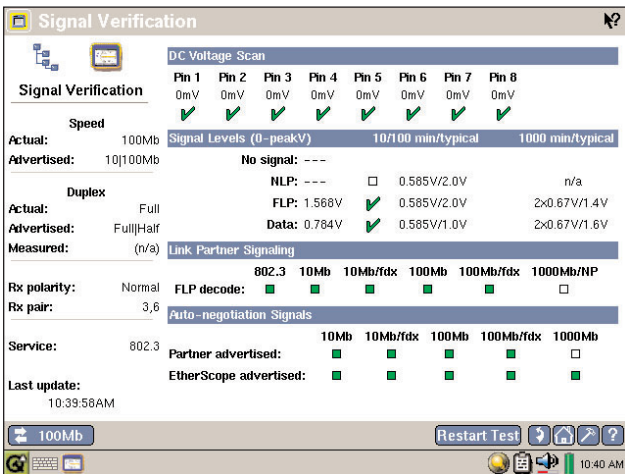
Fiber optic power measurement



## Validate connectivity and configuration

A speed or duplex mismatch is a common cause of collisions and errors. Easily observe the link negotiation signaling of PC NICs and network devices. Detect the presence of Power over Ethernet (PoE).

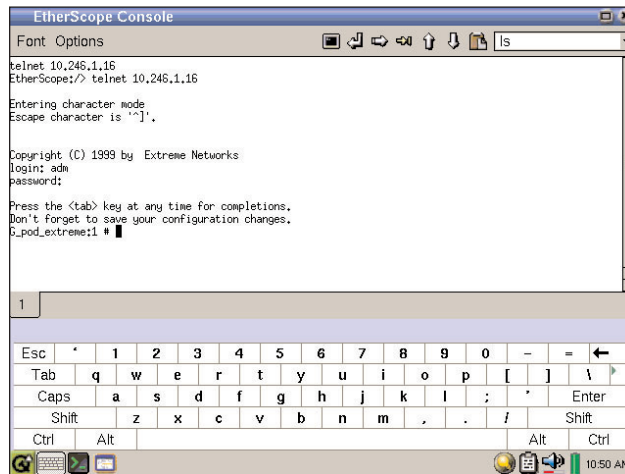
Use either the telnet or terminal emulator to log into network devices. Review or edit configurations with EtherScope and leave your laptop PC on your desk.



Signaling

## Connectivity & configuration

- Signaling
- PoE detection
- Telnet
- Terminal emulation



Telnet

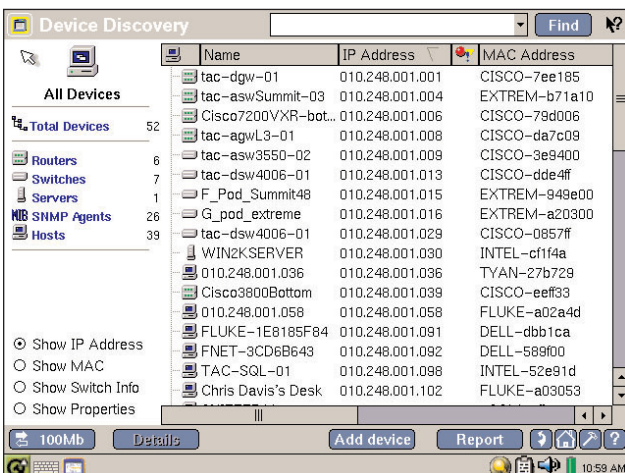
## Discover what and where

Discover up to 1000 devices automatically as soon as you connect to the network. Extract switch port/slot and VLAN information showing you where users are connected. Save time troubleshooting connection and congestion issues.

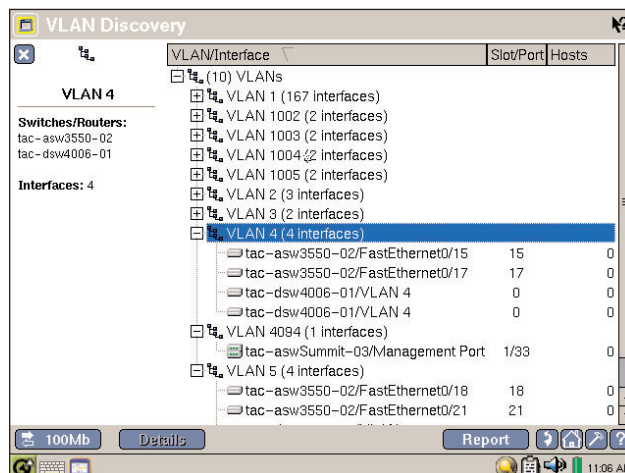
Managing VLANs has never been easier. See the switch interfaces that comprise each VLAN. In addition, “nearest switch discovery” speeds troubleshooting by identifying the slot and port to which you are connected while “network discovery” organizes devices by IP subnet and domain.

## Discovery

- Devices and details
- Networks
- VLANs
- Switch interfaces and port stats
- Switch trace route



Device discovery



VLAN discovery

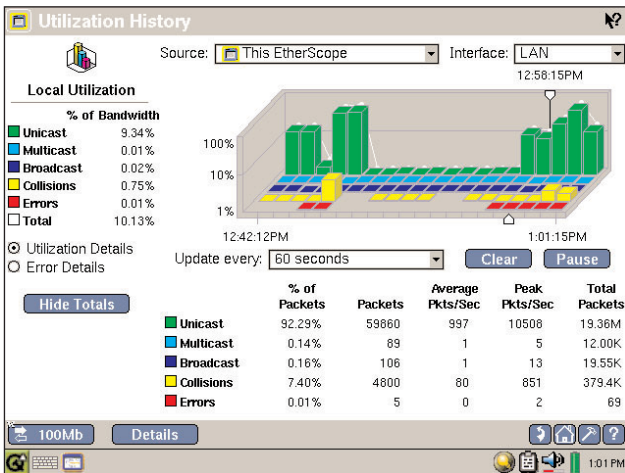




## Monitor network health

Identify capacity trends and needs. Switch port statistics and trending show steady and bursty traffic, allowing you and your staff to pinpoint problems quickly.

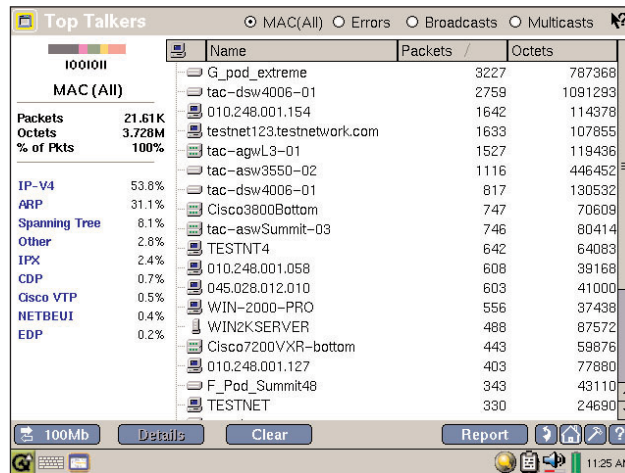
See who the top bandwidth users are at a glance. Select specific frame types such as errors, broadcasts or multicasts. Then see the traffic displayed by protocol, such as IPV4, ARP, spanning tree, IPX and others. Drill-in on suspicious activity, identify the source, and quickly solve the problem.



Utilization history

## Health

- Switch port scanning
- Utilization history
- Protocol statistics
- Top talkers
- Key devices
- Problem log



Top talkers

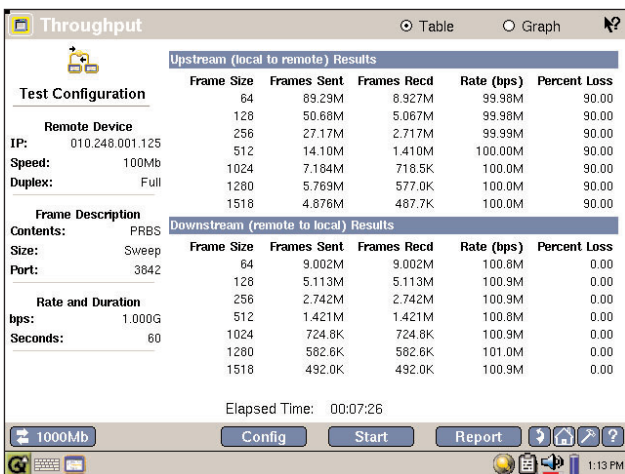
## Measure network performance

Test performance across your enterprise network. The Internetwork Throughput Option (ITO) enables IP performance testing for deployment and maintenance of enterprise networks. With this feature, you can verify the available bandwidth between two points in a network. Test at rates from 1 Kbps to 1000 Mbps.

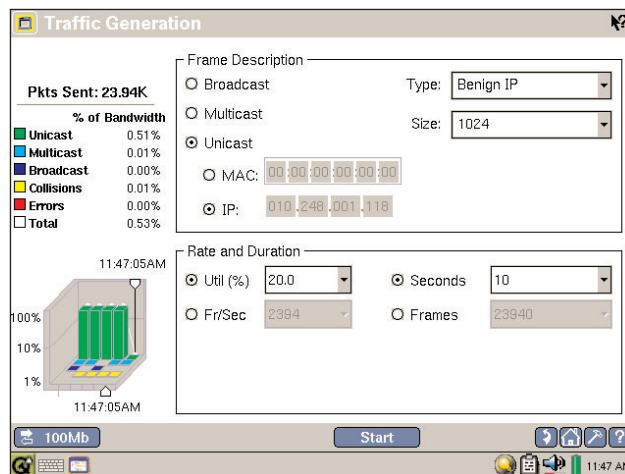
Understand how your network reacts to various stress levels. Simulate the impact of additional network users or applications by generating traffic.

## Performance

- Internetwork throughput
- Traffic generation



ITO



Traffic generation



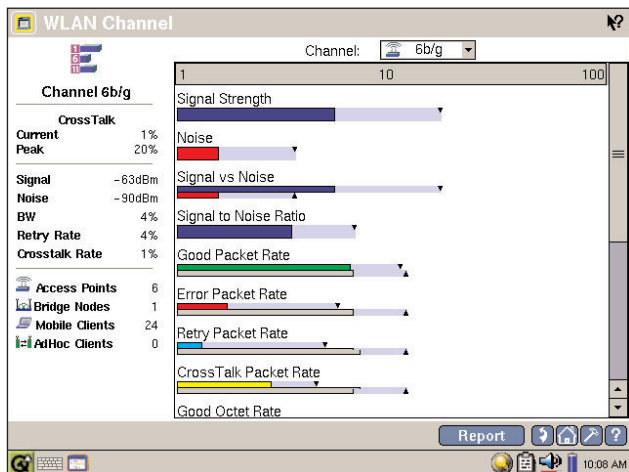
## 802.11a/b/g wireless analysis

Ensure that your network is secure by performing periodic wireless network audits. With the wireless option enabled, scan both 2.4 and 5GHz frequencies, providing the visibility you need to identify, locate and disable rogue access points and unauthorized ad-hoc networks. EtherScope lists the security settings of all discovered wireless devices and alerts you to potential security problems.

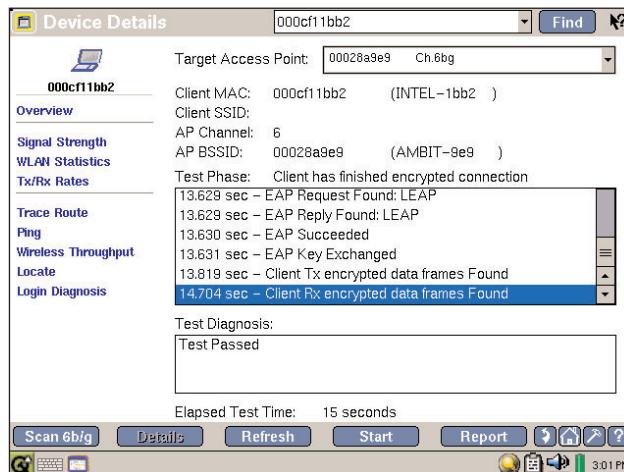
Quickly test and verify wireless encryption and authorization configurations. Supervise wireless client EAP authentication processes and identify where and when the process breaks down. The wireless environment is dynamic. Simplify network expansion and optimization using the site survey capabilities of wireless EtherScope. Record a snapshot of the RF environment at several places within a facility and compare real-time signal strength measurements to historical data to identify changes in the RF environment.

## Wireless 802.11a/b/g

- Channel analysis
- Device discovery
- Network discovery
- Site survey
- Security scan
- Key devices



Channel scan



Site survey

**Network reports**

Document your network with XML-coded reports. Record network attributes, baseline performance, device inventory, a problem log, and switch-port statistics – all in web-viewable files.

**Diagnose problems from anywhere via the Web**

EtherScope fully supports secure remote access and control. So no matter where the problem is, all you need is an active web browser to diagnose remote locations – just ship an EtherScope to that location and instruct a person on the other end to simply plug it in to the local network.

**Future enhancements**

EtherScope is designed for the future, with a robust processor, plenty of memory, a forward-looking Linux® operating system and a software update procedure that is a snap. As your network and your troubleshooting needs evolve, EtherScope grows with you. Your investment in EtherScope will serve you for years to come.

**FLUKE networks EtherScope™ Network Assistant**  
Device Discovery - All Devices  
Sep 3 09:09:36 2004

Name	MAC Address	IP Address	Properties	Switch	Slot/Port	VLAN
010.000.004.001	PRIMARY-06c588	010.000.004.001	---	---	---	---
tacvision2	LITEON-1c7b1a	010.248.001.110	---	Catalyst 2800	9	---
010.248.001.233	Linksys-580c95	010.248.001.233	---	TAC_C-pod	2	100
WIN2KSERVER	INTEL-cf1f4a	010.248.001.030	DHCP,DNS	TAC_C-pod	2	100
010.248.001.116	INTEL-cf17e1	010.248.001.116	---	Cisco1900_JT	1	---
TESTNET	INTEL-cf13dd	010.248.001.106	---	TAC_C-pod	2	100
WIN-2000-PRO	INTEL-bcc7a4	010.248.001.103	---	TAC_C-pod	2	100
CONCORD	INTEL-9f00ce	010.248.001.134	---	---	---	---
TAC-QGF330DGIE2	INTEL-751f5a	010.248.001.111	---	Catalyst 2800	10	---
SIMULATION_SERV	INTEL-7505ab	010.248.001.089	MB	TAC_C-pod	9	100
W2K3SERVER	INTEL-52e91d	010.248.001.098	---	TAC_C-pod	2	100
NPIC63722	HP-c63722	010.248.001.099	---	TAC_C-pod	2	100
Catalyst 2800	GrdJun-e82c53	010.248.001.195	---	TAC_C-pod	9	100
010.248.001.100	FLUKE-c00074	010.248.001.100	---	---	---	---

Network reports

**EtherScope™ Pro LAN Vision Suite**

The EtherScope Pro LAN Vision Suite gives you the fast troubleshooting power and portability of the EtherScope Network Assistant. Teamed with OptiView™ Console and OptiView™ Protocol Expert, this suite provides portable network troubleshooting plus monitoring and protocol analysis capabilities.

OptiView Console network monitoring software quickly discovers and continuously monitors network devices while documenting their connectivity. With one look at the clearly organized data, you can quickly identify where the problem is and access the detailed information you need to resolve it quickly.

OptiView Protocol Expert software provides protocol analysis directly through the network interface card in the PC on which it is running. Its expert analysis feature pinpoints problems quickly and suggests corrective action. Extensive seven-layer decodes make it easy to identify and solve the toughest problems on switched segments.



EtherScope Pro LAN Vision Suite



## EtherScope Network Assistant Specifications

General specifications	
Weight, with battery	0.86 kg (1.9 lb)
Dimensions	19.1 x 15.2 x 4.4 cm (7.5 x 6.0 x 1.75 in)
Display	LCD touch screen, 640 x 480 pixels, TFT (active) color panel, touch pad
LED indicators	6 (including power LED)
Power	
Battery	Lithium Ion 7.2V DC (nominal), 4.2Ah, removable/rechargeable
Battery life	4 hr typical, 10 hr in standby mode
External AC adapter/battery charger	AC input: 90 to 264 V ac, 48 to 62 Hz; 1.5 A DC output: 15 V dc, 1.2 A (isolated output)
Ports	
Communication and accessory ports	1 USB, 1 PCMCIA/Cardbus (PC Card type II), 1 Compact Flash (Card Type I/II), 1 DB-9 serial, headphone jack, microphone jack, Kensington lock receptacle
Network analysis ports	Wired/Pro models: RJ-45 10/100/1000 BASE-T Ethernet, RJ-45 wiremap. Wireless/Pro models: PCMCIA/Cardbus 802.11a/b/g
Environmental and safety	
Operating temperature	0° to +40°C (32° to 104°F) with up to 95% relative humidity
Storage temperature	-20° to +60°C (-4° to 140°F)
Shock and vibration	Meets requirements of MIL-PRF-28800F for Class 3 equipment
Safety	CSA Canada & United States, CE, FCC Part 15 Class A, C-TICK N10140; UL and CSA approvals for universal AC adapter.
EMC	Complies with EN61326, Class A, Criteria C
Copper media (Wired/Pro models)	
Cable types	Unshielded twisted pair LAN cables (100 and 120 Ohm UTP), Foil-screened twisted pair LAN cables (100 and 120 Ohm ScTP)
Cable length	1 to 305 m (3 to 1000 ft), accuracy dependent upon the cable type selected
Length resolution	± [5% of reading + 1 m (3 ft)], with open, shorted, with wire map adapter, or terminated with reflection ≥ 20%
Receive level	100 to 5000 mVp-p
Datalink signal	500 to 4000 mVp-p
Measuring terminated cables	
The Cable Verification feature tests the individual twisted-pairs of a cable that are terminated into most equipment vendor's Ethernet ports such as on a hub, switch or NIC. All cable tests other than WireView wire map and office locator ID are operational in the presence of datalink signal.	
Wiremapper/office locator compatibility	
Detects combinations of shorts, opens, and connector miswires. Compatible with Fluke Networks WireView wire map adapter/office locator.	
Fault tolerance	
The RJ-45 Ethernet connection on the analyzer is designed to withstand a maximum of 100 volts. The RJ-45 connection is not for connection of public telephone systems and should only be connected to the public phone network through regulatory agency compliant modem devices.	

Fiber optic power meter (Wired/Pro models)	
Optical power meter compatibility	
The analyzer supports the Fluke Networks DSP-FOM optical power meter. Connection to the DSP-FOM is through the RF-45 Ethernet connection.	
Throughput Test (option on Wired/Pro models)	
Compatible remote device	OptiView v4 Integrated Network Analyzer, EtherScope Network Assistant v2, OneTouch Series II
Frame content	All 0's, all 1's, alternation 1's and 0's, Pseudo Random Bit Sequence (PRBS)
Frame size	64, 128, 256, 512, 1024, 1280, 1518, sweep of all sizes
Rate (bps)	672 to 1000 M (max. rate using EtherScope)
Duration (s)	1 to 86,400 (24hr)
Results	Frames sent, received, rate and percent loss for both upstream and downstream directions
Results format	Tabular, graphical, xml-based report
Traffic generator (included with Internetwork Throughput Option)	
Traffic type	Broadcast, multicast or unicast
Frame type	Benign Ethernet, Benign LLC, NetBEUI, Benign IP, IP/ICMP Echo, IP/UDP Echo, IP/UDP Discard, IP/UDP Chargen, IP/UDP NFS, IP/UDP NetBIOS
Frame size	64, 128, 256, 512, 1024, 1280, 1518
Rate	Utilization (%): >0 - 100 Frames/second: 1 - 1488095
Duration	Seconds: 1 - continuous Frames: 1 - continuous
Wireless LAN Adapter Card (Wireless/Pro models)	
Specification compliance	IEEE 802.11a, 11b, 11g
Certifications	FCC part 15, Telec, CTICK, ETSI, EN301893, EN60950
Interoperability	WECA Compliant
Security	64-bit WEP, 128-bit WEP, 152-bit WEP, AES-CCM, TKIP, CKIP/CMIC, 802.1X, WPA, WPA2, 802.11i
Interface	32-bit Cardbus
Outdoor operating range	Up to 515 m (1690 ft)
Indoor operating range	Up to 85 m (279 ft)
Data rate	802.11a: up to 54 Mbps 802.11b: up to 11 Mbps 802.11g: up to 54 Mbps
Output power	18 dBm peak power
Infrastructure mode	BSS
Operating temperature	0° to +40°C (32° to 104°F) with up to 95% relative humidity
Storage temperature	-20° to +60°C (-4° to 140°F)





## Ordering Information

Model	Description	10/100/1000 wired	802.11a/b/g wireless	ITO	PE	OVC—500	Contents
ES-LAN	EtherScope Wired LAN analyzer	•					Mainframe, rechargeable Li-Ion battery pack (installed), protective holster, carrying strap, AC adapter/battery charger, remote wire map (WireView #1), 64MB CompactFlash® card, patch cable, CD containing user manuals and other useful files, carrying case
ES-EXT-KIT	EtherScope Wired LAN extended kit	•					ES-LAN plus replacement battery, external battery charger, USB mini keyboard, and WireView outlet IDs #2 - #6.
ES-WLAN	EtherScope Wireless LAN analyzer		•				ES-LAN plus Cardbus WLAN adapter (note: only wireless analysis enabled)
ES-PRO	EtherScope Wired and Wireless LAN Analyzer	•	•				ES-LAN plus Cardbus WLAN adapter
ES-PRO-I	EtherScope Wired, wireless, ITO	•	•	•			ES-PRO plus 10/100/1000 wired Internetwork Throughput Option
ES-PRO-PE	EtherScope Pro LAN vision suite/PE	•	•		•		ES-PRO plus Protocol Expert software package
ES-PRO-OVC	EtherScope Pro LAN vision suite/OVC	•	•			•	ES-PRO plus OptiView Console 500 node software package
ES-PRO-OVC/PE	EtherScope Pro LAN vision suite	•	•		•	•	EtherScope Pro LAN Vision Suite, includes ES-PRO, Protocol Expert and OptiView Console 500 node software packages

## Options & Accessories

Model	Option
ES-WLAN-OPT	802.11a/b/g wireless upgrade option for all wired-only models
ES-LAN-OPT	10/100/1000 wired upgrade option for all wireless-only models
ES-ITO-OPT	Internetwork throughput option for all wired-enabled models
GLD-ES	Gold Support - Annual membership
GLD-ES-REN	Gold Support - Renewal membership
Model	Accessory
ES-ACC-KIT	Kit containing an EtherScope battery, external battery charger, AC charger and line cord, USB mini keyboard, WireView identifiers #2 - #6, and a larger carrying case
DSP-FTK	Fiber optic test kit, 850nm and 1300nm LED source and 850/1300/1550 nm meter
ES-BATTERY	Replacement battery
ES-BATT-CHG	External battery charger
WIREVIEW 2-6	Remote identifiers 2 - 6
OPVS2-KB	Mini USB keyboard
ES-WCARD	Replacement WLAN card (hardware only)
DTX-ACUN	AC charger, universal
OPV-POE	Power Over Ethernet adapter
MT-8200-53A	IntelliTone 100 Probe
944806	Null modem cable (DB9)

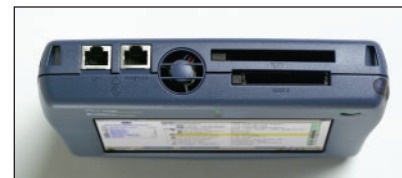
## Network SuperVision Gold Support

Sign up for our Network SuperVision Gold Support plan and you'll enjoy privileges to protect and add value to your equipment. These include unlimited 24x7 technical assistance and an exchange unit at no cost in the event something happens to your unit. Support also includes web based training, unlimited access to the knowledgebase, product discounts and "members only" promotions.

See [www.flukenetworks.com/goldsupport](http://www.flukenetworks.com/goldsupport) for details.



**Side Interfaces** – RS-232C serial port, USB port, microphone and headphone jacks, Kensington lock (opposite side).



**Top Interfaces** – 10/100/Gigabit port, wire map port, CompactFlash® and PCMCIA slots.

### NETWORK SUPERVISION

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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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