**FLUKE** *networks*®

EtherScope™ Series II
Wireless Network Assistant

With Wireless EtherScope, you can:

- **Solve WLAN problems fast** – EtherScope scans 2.4GHz and 5GHz frequencies to provide RF visibility across 802.11a, b, and g networks.

- **Find top-talkers** – Measure network utilization and find out which users are demanding more of the wireless LAN. Find out which wireless access points are overburdened by congregating clients.

- **Discover unauthorized devices** – Discover rogue access points, unauthorized bridges, and ad-hoc networks and quickly locate these devices inside or outside of the building by using signal strength measurements and directional tools.

- **Plan for wireless expansion** – Verify current wireless network coverage using site survey capabilities.

- **Troubleshoot EAP authentication** – Monitor the EAP authentication process of any wireless client to see if, when, and where the process breaks down.

- **View data instantly** – See all wireless infrastructure and client devices, monitor signal quality data, and measure network utilization. Wireless network measurement statistics help you troubleshoot difficult WLAN issues.

- **Easily use** – A bright, color, touch-screen display, intuitive user interface and context-sensitive help makes EtherScope Series II Network Assistant a snap to use.

You receive the call when users are unable to access your wireless LAN, when it's slow, or when it's down. Wasting no time, you grab your proven assistant and rush off to solve the problem.

With a/b/g wireless and 10/100/Gig wired/fiber analysis built-in, EtherScope Series II provides vision into your network on both sides of the access point so you can investigate, isolate and solve problems fast.

Technical Data

Helping first responders solve network problems fast.
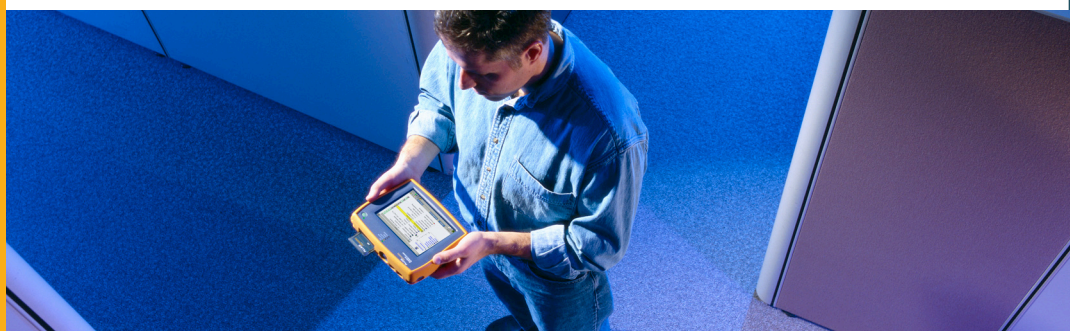
# Troubleshoot RF coverage and performance issues

RF measurements

Is co-channel interference causing a problem? Is signal strength too low to support all users? EtherScope continuously scans 2.4GHz and 5GHz frequencies, providing visibility into wireless LAN coverage and performance. Choose the measurement you wish to view using drop down menus that include signal strength, signal to noise ratio, utilization, and several other useful measurements. Quickly determine if your access points are configured for the appropriate channels and that the RF transmit power is appropriate for your environment.
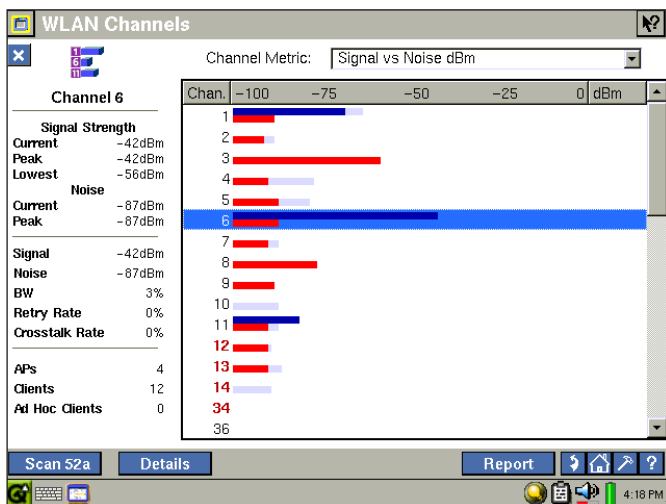
Channel scan

Identify top talkers

See who the top bandwidth users are at a glance. Use Wireless EtherScope to identify the busiest access points and the most demanding wireless clients.
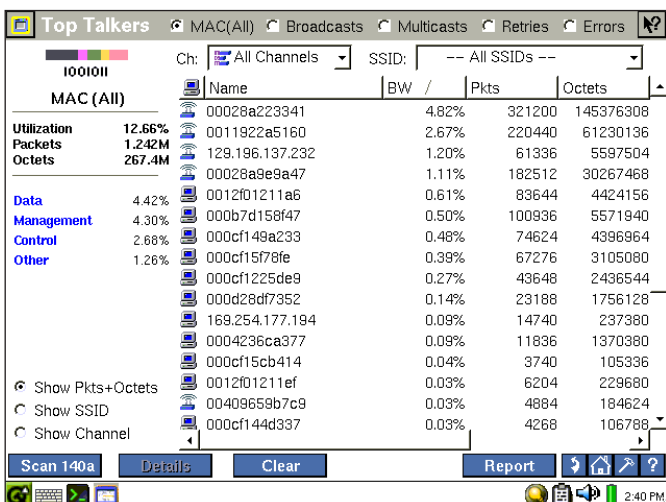
Top talkers

Network Discovery

Who is using the network, and where are they? Are wireless clients congregating in one area of the building, dragging down wireless network performance? Wireless EtherScope quickly identifies all wireless network access points and discovers all associated clients. Visibility into wireless network utilization helps you make better decisions about access point placement and expansion to support actual usage patterns.
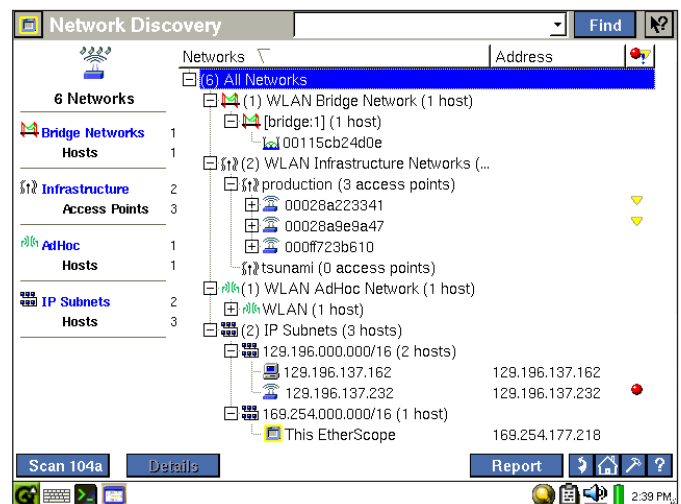
Network discovery

Drill-in to view wireless LAN metrics such as FCS errors, crosstalk, and retries. Identify suspicious activity, then identify the source and solve the problem.
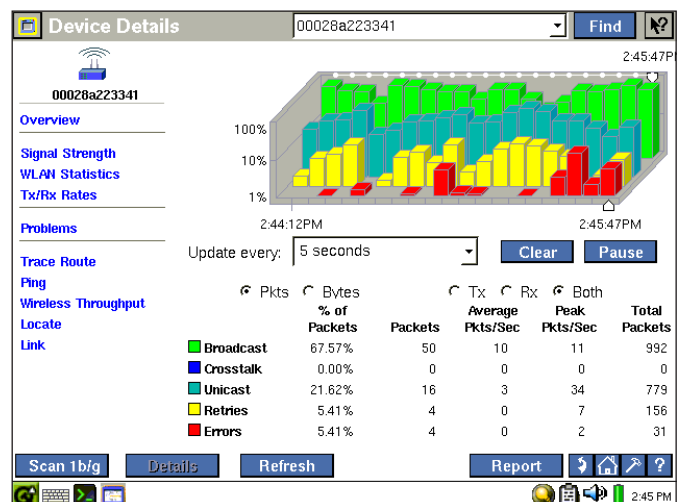
Device details

Wireless security and policy enforcement

Discover unauthorized devices

Wireless security is a top concern, and wireless security policies are difficult to enforce. Use Wireless EtherScope to perform periodic audits of the wireless environment. Wireless EtherScope automatically discovers rogue access points, unauthorized wireless bridges, mobile clients and ad-hoc networks, enabling quick response and resolution.

Discover unauthorized devices

Locate rogue devices

Use the Locate feature to physically track down rogue devices and ad-hoc network. Follow audible and visual indicators that lead you to the location of the offending device!
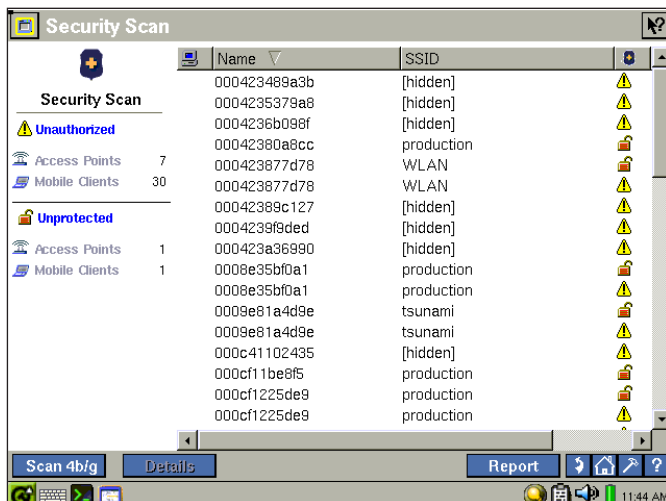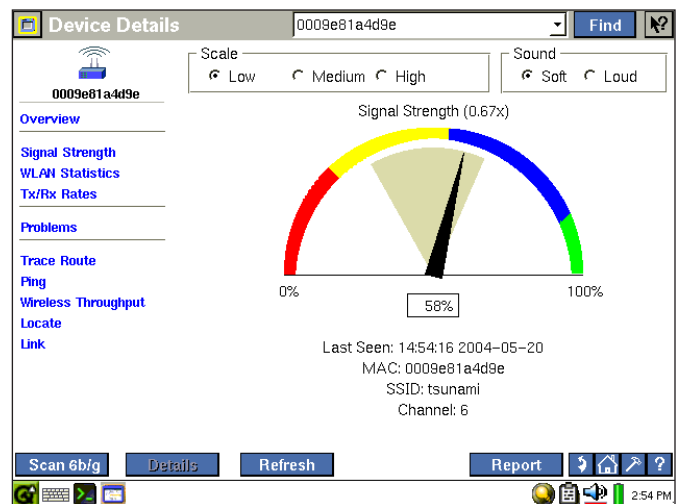
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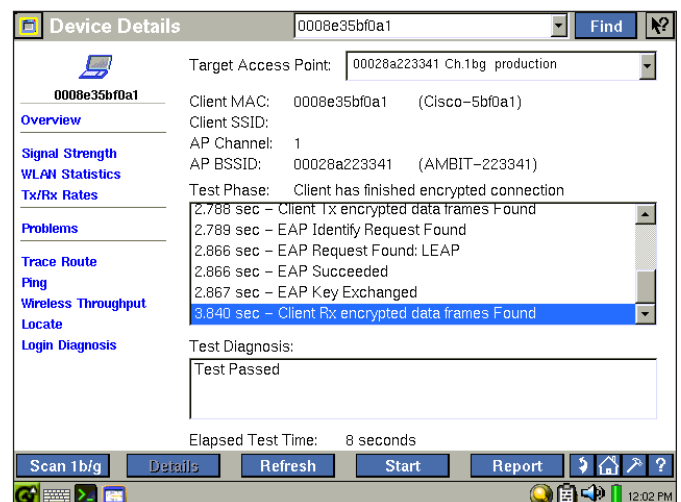
Verify authentication and encryption

Wireless EtherScope discovers whether infrastructure and client devices are employing the appropriate authentification mechanism. EAP (Extensible Authentication Protocol) authentication is tested and monitored using EtherScope's login test tool. Using EtherScope, force a wireless client to disassociate from an access point, and monitor the client and access point EAP exchange as the client re-authenticates on the network. Discover if, where, and when the EAP authentication process breaks down.

Verify authentification and encryption

Planning wireless network expansion

Site survey

Has the RF environment changed since the access points were installed? Is wireless network coverage sufficient to support all users? Does the wireless network provide ubiquitous coverage sufficient to support seamless roaming?

Use Wireless EtherScope to capture baseline RF coverage data immediately after the wireless infrastructure is installed, then compare historical data to periodic survey data over time. Use this information to make minor adjustments to wireless access point transmit power, relocate access points, or add new access points before RF environmental changes impact your user community.
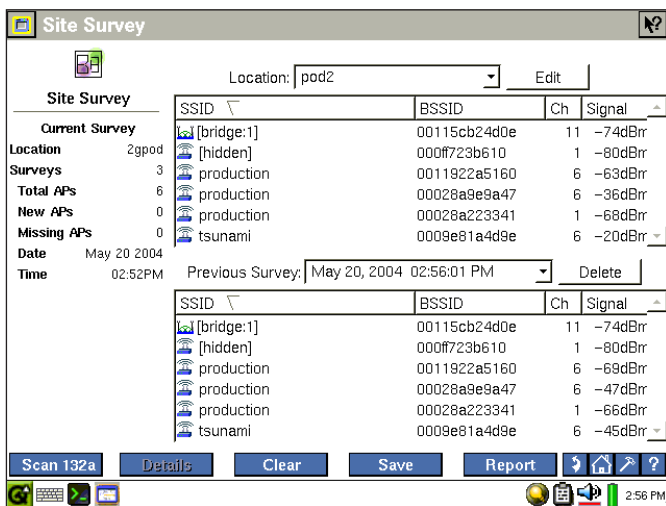
Site survey

Reporting

Network reports

Document your wireless network with EtherScope generated XML reports. Record network metrics, site survey data, and network discovery lists for use in status reports and for historical reference.

Wireless reports

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 unlimited access to the knowledgebase and "members only" promotions.

See **www.flukenetworks.com/goldsupport** for details.

EtherScope™ Series II Pro LAN Vision Suite

The EtherScope Series II Pro LAN Vision Suite gives you the fast troubleshooting power and portability of the EtherScope Series II Pro 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 tough problems on switched segments.

EtherScope Series II Pro LAN Vision Suite

EtherScope Series II 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 SFP cage, 1 Compact Flash (Card Type I/II), 1 DB-9 serial, headphone jack, microphone jack, Kensington lock receptacle
Network analysis ports	RJ-45 10/100/1000 BASE-T Ethernet, (must be enabled)

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 and 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 (LAN/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
Power over Ethernet (PoE)	Solicit for IEEE 802.3af PoE, measure DC voltage (mV) on each pin, remove solicitation

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 (LAN/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.

Internetwork Throughput Option (option for LAN/Pro models)

Compatible remote device	OptiView v4 Integrated Network Analyzer, EtherScope, Series II, OneTouch Series II
Frame content	All 0s, all 1s, alternation 1s and 0s, 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 two EtherScopes)
Duration (s)	1 to 64,800 (18hr)
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
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

Fiber Optic Transceiver (option for LAN/Pro models)

Ethernet rate	1000Mbps
Type	Small Form-factor Pluggable (SFP)
Connector	Duplex LC

Security

Authentication types	LAN: 802.1X, WLAN: 802.1X, 802.11i, WEP, WPA, WPA2
EAP types	TLS, GTC, MD5, MS-CHAP-V2, LEAP, PEAP-GTC, PEAP-MD5, PEAP-MS-CHAP-V2, PEAP-TLS, TTLS-PAP, TTLS-CHAP, TTLS-MS-CHAP, TTLS-MS-CHAP-V2, TTLSEAP-MD5, TTLS-EAP-GTC, TTLS-EAP-MS-CHAP-V2, TTLSEAP-TLS

Ordering Information

Model	10/100/1000 twisted pair	1000 Mbps fiber optic	802.11a/b/g wireless	ITO	PE	OVC—500	InterpretAir	Contents
ES2-LAN	•							**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, RJ-45 coupler, CD containing user manuals and other useful files, carrying case
ES2-LAN-SX	•	•						**LAN analyzer, SX Fiber** ES2-LAN plus SX Fiber Option
ES2-LAN-SX-I	•	•		•				**LAN analyzer, SX Fiber, ITO** ES2-LAN plus SX Fiber Option and Internetwork Throughput Option (ITO)
ES2-WLAN			•					**Wireless LAN analyzer** ES2-LAN plus Cardbus WLAN adapter (note: only wireless analysis enabled)
ES2-PRO	•		•					**LAN and Wireless LAN analyzer** ES2-LAN plus Cardbus WLAN adapter
ES2-PRO-I	•		•	•				**LAN and Wireless LAN analyzer, ITO** ES2-PRO plus Internetwork Throughput Option
ES2-PRO-SXLX-I/S	•	•	•	•				**LAN and Wireless LAN analyzer, SX and LX Fiber, ITO, accessories kit** ES2-PRO plus SX Fiber Option, LX Fiber SFP, Internetwork Throughput Option (ITO), replacement battery, external battery charger, USB mini keyboard, WireView outlet IDs #2 - #6 and large carrying case.
ES2-PRO-PE	•		•		•			**Pro LAN Vision Suite/PE** ES2-PRO plus Protocol Expert software package
ES2-PRO-OVC	•		•			•		**Pro LAN Vision Suite/OVC** ES2-PRO plus OptiView Console 500 node software package
ES2-PRO-OVC/PE	•		•		•	•		**Pro LAN Vision Suite** EtherScope Pro LAN Vision Suite, includes ES2-PRO, Protocol Expert and OptiView Console 500 node software packages
ES2-PRO-INTAIR	•		•				•	**LAN and Wireless LAN analyzer and InterpretAir WLAN Survey Software suite** ES2-PRO plus InterpretAir WLAN Survey Software
ES2-PRO-IA-AA	•		•				•	**LAN and Wireless LAN analyzer, InterpretAir WLAN Survey and AnalyzeAir Wi-Fi Spectrum Analyzer software suites**
ES2-LAN-CIQ100	•							**LAN analyzer and CableIQ 100 kit** ES2-LAN plus CableIQ Qualification Tester

Options & Accessories

Model	Option
ES-WLAN-OPT	802.11a/b/g wireless upgrade option for all LAN-only models
ES-LAN-OPT	10/100/1000 LAN upgrade option for all Wireless LAN-only models
ES2-SX-OPT	SX Gigabit Fiber Option for all LAN-enabled models
ES-ITO-OPT	Internetwork Throughput Option for all LAN-enabled models

Model	Accessory
ES2-SX	SX Gig Fiber SFP Transceiver (850nm VCSEL, replacement item)
ES2-LX	LX Gig Fiber SFP Transceiver (1310nm FP laser, SX Fiber Option required)
ES2-ZX	ZX Gig Fiber SFP Transceiver (1550nm DFB laser, SX Fiber Option required)
ES-ACCY-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-8200-63A	IntelliTone 200 Probe
MT-8200-53A	IntelliTone 100 Probe
944806	Null modem cable (DB9)

Top interfaces - 10/100/Gigabit twisted pair copper port, Gigabit Fiber SFP transceiver, Compact Flash memory card, and 802.11a/b/g WLAN PCMCIA card.

802.11a/b/g cardbus wireless adapter.