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FLUKE®

The 68X Enterprise LANMeter® Series:

Powerful Troubleshooting and Personal Network Management

Technical Data

The first and only portable troubleshooting tools specifically designed to help network managers see across routers to view events on managed networks

The Fluke LANMeter series of handheld testers now makes testing and troubleshooting complicated networks faster and easier than ever before.

Modern Tools for Modern Networks
Today's diverse super-segmented WANs are loaded with managed hubs, switches, and routers, all scattered over remote sites, making it almost impossible to "see" where problems are originating. Unlike protocol analyzers the Enterprise LANMeter gives managers of these modern networks the fast answers they need.

WAN & LAN Testing for Ethernet and Token Ring
The 68X Enterprise LANMeter models support token ring and 10/100 Ethernet direct connections, and permit SNMP access to the furthest reaches of your WAN from wherever you are.

Ease of Use
From the moment you pick it up, you will find the LANMeter's front panel simple, straightforward and fast to use. Five dynamically labeled soft function keys put you in control of the intuitive menu system, and status LED indicators reflect the most common local segment problems. It also contains an extensive context sensitive help file system.



New Device Verification
Minimize installation problems by using the LANMeter to verify correct operation of network interface cards, cabling and hubs or MAUs before they have a chance to impact network operation. Verify connectivity and access to key network resources through LAN and WAN connections with protocol-specific ping tests.

Quick Problem Isolation
The unique functionality of the LANMeter series allows you to quickly isolate the most common problems that occur on an Ethernet or Token Ring network. The Fluke LANMeter is the only single instrument in a handheld package capable of pinpointing network, component and cable problems.

Distributed Testing
The Enterprise LANMeter provides more flexibility in solving network problems by combining portability with remote access and control. With the WebRemote Control Option for Enterprise LANMeter, you can take full control of a 68x Enterprise LANMeter via a Netscape or Microsoft web browser anywhere on the network. No more running back and forth to the physical location of an intermittent problem hoping to be there when the problem occurs again. Just place the LANMeter near the source of the problem, point your web browser to the IP address of the LANMeter and monitor the situation from your office.

SNMP
The Enterprise LANMeter is the first portable tool to include SNMP-based troubleshooting capabilities, in an easy-to-use format to reach beyond the attached LAN segment. The unique capability to query via SNMP (including MIB I, II and RMON queries) allows access to information that already exists in managed devices throughout the entire network.

Support You Can Count On
The LANMeter analyzer's Flash ROM Technology protects your investment by allowing quick and easy software updates from your PC. If anything should go wrong, you can count on Fluke's worldwide service and support to get you up and running fast.

Network Monitor—Instant

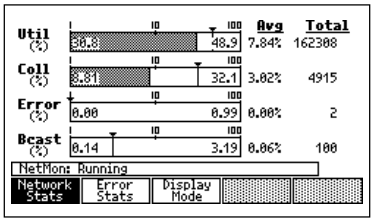
Seeing what really happens on the network

When troubleshooting or testing a network, you cannot afford to miss any error events. Unlike most software only test tools today, the LANMeter is designed with special hardware to detect physical layer problems that could cause network problems. By offering the information quickly and accurately, the LANMeter can speed up network health assessment and troubleshooting.

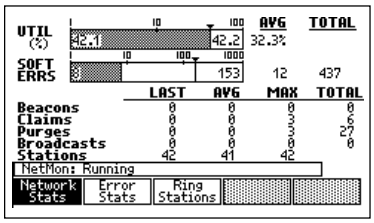
Ethernet and Token Ring

Versatile configuration
The 68X Enterprise LANMeter supports 10 or 100 Mbps Ethernet with Auto-speed detection. It has a built-in BNC connector for 10BASE-2 Ethernet. For Token Ring, the Ring Speed may be configured to 4 Mbps, 16 Mbps or Auto-speed detect. Even the LANMeter MAC address can be changed without rebooting the equipment to allow it to emulate a station and quickly test a switch with MAC-based VLAN configuration.

Quick Network Health Check
Monitor the general health of a network by calculating statistics for key network parameters. The Ethernet results screen shows utilization, collisions, errors, and broadcasts as average, maximum, and total values, in numeric and bar graph formats.



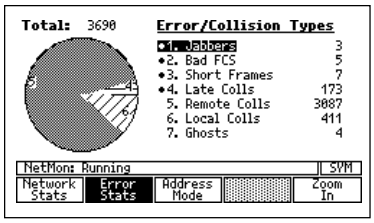
The Token Ring results screen shows utilization and soft errors in numeric and bar graph formats, and other key frames as average, maximum, and total numerical values.



This test may be configured to store log files of results captured at various time intervals from 24 minutes to 7 days. Log files are exported as comma-separated variable (CSV) files for detail analysis and report generation.

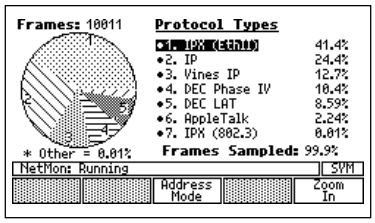
Error Detection
Monitors the types and sources of errors. Displays results in numerical format and in a pie chart which shows error distributions by error type.

For Error Types that are preceded by the (icon, highlight the specific Error Type and press the "Zoom In" softkey to obtain a list of stations sourcing those errors. (Ethernet errors shown)



Detects Protocol Types
Displays a percentage-ranked listing of the top protocols measured by frame count on the local segment. The LANMeter analyzer automatically identifies encapsulation types for IPX.

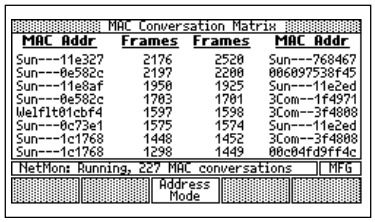
Highlight a protocol and press the "Zoom In" softkey for a list of the top stations transmitting that protocol. The list of all protocols and stations recorded for each protocol may be printed or viewed.



Top MAC Stations
Monitors the busiest transmitting nodes on the local network. The LANMeter analyzer can be configured to filter on a single address and show the top senders to a particular station. The data is displayed in the form of a pie chart, together with a list of the top frame senders.

The test also distinguishes between broadcast, multicast, and non-broadcast frames for Ethernet. For Token Ring, the test distinguishes between all routes, single routes, no route control, and non-broadcast frames.

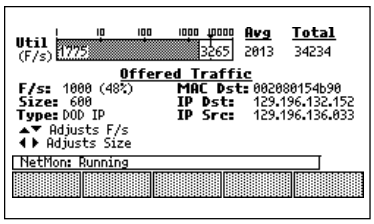
MAC Converstation Matrix
Monitors the busiest MAC conversations on the local segment and displays test results by Source/Destination address pairs. Test results include frame count transmitted by each address in the pair combination. Use this test to find segments that would benefit from LAN switching as well as showing where further segmentation would be helpful.



view of network health

Traffic Generation
Traffic generation is used to stress test network components. Adding traffic reveals media and other physical layer problems on networks. The traffic generator may be run concurrently on Ethernet networks with Network Statistics, Error Statistics, and Collision Analysis, and on Token Ring networks with Network Statistics, Error Statistics, and Ring Stations.

User selectable parameters include frames-per-second of added traffic and frame size. To assist in testing bridges and routers the LANMeter analyzer automatically builds IP and IPX headers, all you need to supply is the source and destination address.



While the test is running, users may increase or decrease the current frame rate and size on-the-fly with the cursor keys. This is particularly useful when trying to locate sources of throughput problems and failure conditions.
For Token Ring networks, select among three different worst-case data patterns. These patterns are known to test for correlated phase jitter sensitivity resulting from cabling, adapter card, and interoperability problems.

Special Tests for Token Ring

Token Rotation (detects if ring length is too long)
Calculates the time for the token to travel completely around the ring. This test shows the last, average, and maximum values for token rotation time and the number of active stations. The LANMeter analyzer also reports when token rotation is outside of the normal range.

Ring Stations List
Monitors the network and compiles an ordered list of stations inserted into the ring. The list is in the correct physical order around the ring, starting with the Active Monitor.

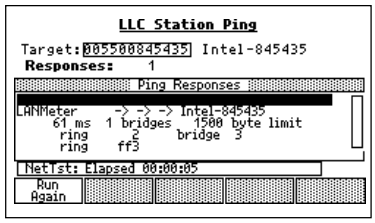
Stations may be displayed in the following address formats, depending on which are known; symbolic name, manufacturer prefix, or hexadecimal MAC address.

Use the Active Monitor History screen to view a time-stamped log of which stations have been the Active Monitor. This helps you isolate hard-to-find problems related to the Active Monitor station.

Show Beaconing Status
Push one button and in seconds the LANMeter analyzer will insert into a beaconing ring and automatically identify the fault domain. No more wading through screens of decodes to extract the buried fault domain information. A beacon alert pop-up window is displayed when the LANMeter analyzer detects beacon frames on the network.



Station Ping
Verifies connectivity to a particular station. The target station address may be chosen from the station list or entered in hexadecimal. If source routed bridges are used, the route to the target station and the maximum frame size allowed through that path will be displayed.



Phase Jitter
Tests the amount of uncorrelated phase jitter, a measure of noise, on an operational ring.

While functioning as Active Monitor, the LANMeter analyzer displays an averaged jitter measurement made while frames of all 1s or all 0s are being transmitted. The LANMeter analyzer will give inconclusive results when "jitter-busting" or other retiming circuits are present on the ring. A LOW result indicates that there is relatively little cumulative uncorrelated jitter on the ring.

Adapter Status
Reports what functional role the target station is performing, as well as its NAUN and response time. Use this test to discover the location of source-routed bridges on your network.

Remove Station
While troubleshooting, it's easy to remove a suspect station from the ring by sending a Request Station Removal frame to the specified station.

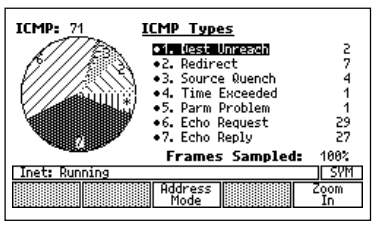
Superior capabilities for TCP/IP

Fluke has substantially enhanced support for today's growing TCP/IP networks. TCP/IP has rapidly become the most important network protocol for many enterprise-wide networks. The Enterprise LANMeter provides features designed to show key IP network configuration information that is necessary to troubleshoot connectivity and configuration problems in IP networks. In addition, Enterprise LANMeter can use SNMP commands to retrieve configuration and status information, such as route table and bridge forward table, to further facilitate quick diagnostic of network problems in switched or routed environment.

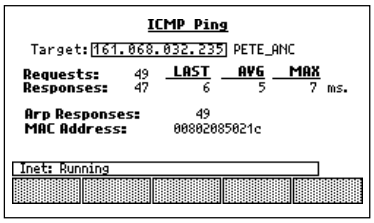
TCP/IP

This suite of tests diagnoses problems on TCP/IP networks by verifying connectivity, and monitoring traffic levels and ICMP activity.

Monitor ICMP Frames
Identifies congested devices, and mis-configured routers and hosts by monitoring key ICMP packets. Monitors and displays the number of key IP events detected. Frame types monitored include: Destination Unreachable, Redirect, Source Quench, Time Exceeded, and Parameter Problem. The stations sending the most traffic in each category may be identified by "Zooming" on the desired category.

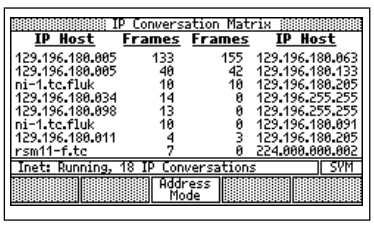


ICMP Ping
Verifies connectivity to a particular IP station. The target station address may be chosen from the station list or entered in dotted decimal notation. The resulting IP address, MAC address, number of responses and response time is displayed.



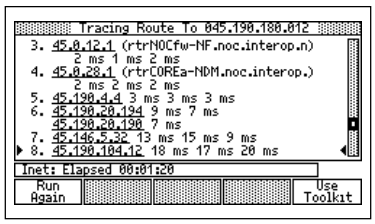
Top IP Stations
Monitors the busiest transmitting IP nodes on the local segment. The LANMeter analyzer can be configured to filter on a single address and show the top senders to a particular station. The data is displayed in the form of a pie chart, together with a list of the top frame senders. Station addresses may be displayed as either symbolic name or IP addresses by a single keystroke. A list of all stations recorded as transmitting during the test period may be printed or viewed.

IP Conversation Matrix
Monitors the busiest IP conversations on the local segment and displays test results by Source/Destination address pairs. Test results include frame count transmitted by each address in the pair combination. Use this test to determine the best placement of new switches by finding the busiest stations and which resources they are accessing.

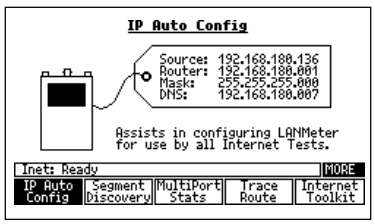


Trace Route
Reports each router encountered while sending an IP packet to a specified destination host. If a Domain Name System (DNS) server is configured, LANMeter will look up the name of each device encountered. Configurable parameters include source and destination IP address, default router/gateway address, DNS server address, and maximum TTL value.

Depending on the configuration of the network being tested, Trace Route will show when multiple routes are being used, the route a packet is taking and whether it reached the destination, and the last router that forwarded the packet in situations where it does not arrive at the destination.

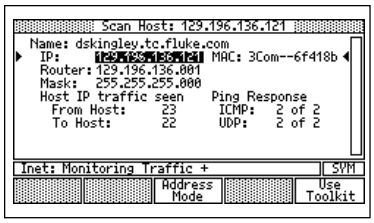


IP Auto Configuration
Automates IP configuration of the Enterprise LANMeter analyzer. Searches for a usable IP source address, the correct subnet mask, a default IP router and any available DNS server.

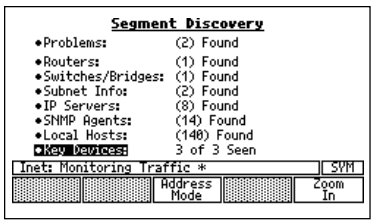


The Auto Configure feature can make use of Dynamic Host Configuration Protocol (DHCP) or BOOTP servers. The function can also be used to verify the connection to the DHCP or BOOTP server.

Monitor IP Host
Verifies a host's IP configuration by reporting the MAC address, the subnet mask, and the IP address of a usable default router. If a DNS server is configured, the host name is also reported. The test also monitors the IP traffic to and from the host, and also verifies connectivity by pinging the device.

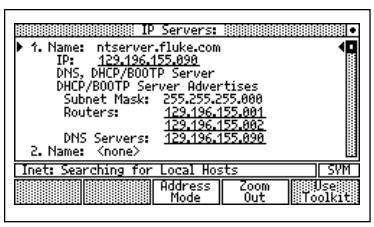


Discover IP Resources
Analyzes the attached IP network, cataloging critical IP network configuration and resources: IP Routers, subnet information, DNS, DHCP and BOOTP servers, SNMP Agents and Local Hosts. For key devices that must be present on the segment, the LANMeter can be configured to ping these devices every two minutes and report problems.

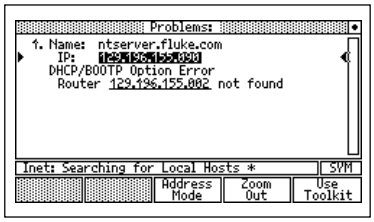


It also automatically identifies problems such as incorrect subnet masks, duplicate IP addresses and advertised services not available.

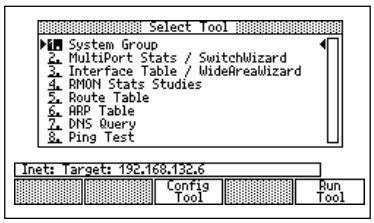
For example, the LANMeter would discover that a DHCP server offers the service of a default router.



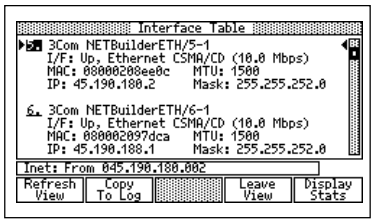
The LANMeter will check for the availability of the router, and report if the router is not responding.



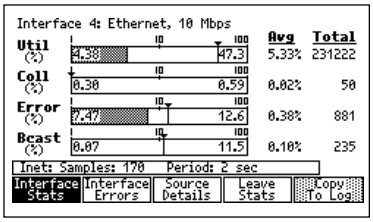
Working with SNMP Devices
The Enterprise LANMeter contains suite of tests that will provide an in-depth analysis of a particular device that supports SNMP. These tests using MIB and RMON queries are unique in a handheld product and expand the troubleshooting capability of the LANMeter analyzer beyond the attached local segment. All you need to know to get started is the IP address and the community string of the device.



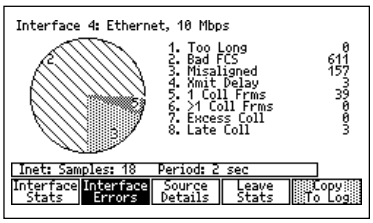
Use **Interface Table** to obtain a list of interfaces on a host, and Display Statistics for more detail about a selected interface. The LANMeter supports most LAN and WAN interface MIBs, such as 10/100 Mbps Ethernet, Token Ring, and FDDI. (For information retrieved WAN interfaces, see the WideAreaWizard Option section on page 11)



Use **Interface Stats** to obtain utilization information of each interface by interrogating the interface's standard SNMP MIB.

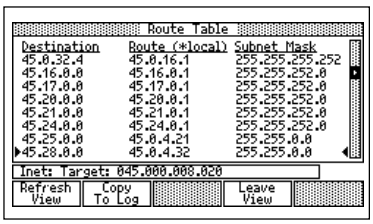


And identify problems using the **Interface Errors**.



For devices supporting RMON, the LANMeter could retrieve utilization and error information from the RMON MIB using the **RMON stats studies**.

To verify the integrity of the routing mechanism, routing tables could be retrieved from routers using the **Route Table** query.

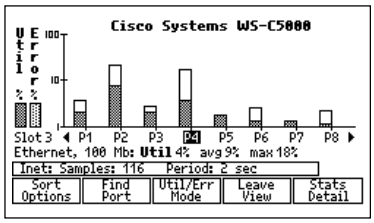


Learn the latest MAC to IP address associations by querying routers and other hosts for their **ARP table**. Check **DNS Server** information by querying the server for either an IP address or for a name.

Optional advanced features

SwitchWizard Option

This option shows what is occurring at each port of a multi-interface device. This test displays utilization and error percentages for up to eight ports simultaneously, while monitoring the other ports in the background. The user may sort the data by port number, average utilization or average error rates.

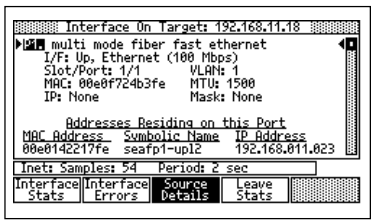


The SwitchWizard Option will display information for any type of SNMP monitored port: Ethernet, Token Ring, Serial Links, FDDI, even very high speed switch backplanes.

SwitchWizard will provide detailed **Interface Statistics** on the selected port, including utilization, error rates, and broadcast levels. You can obtain greater detail on the specific types of errors by pressing the **Interface Errors** softkey.

Switch Port Configuration

The Source Details screen will display the list of MAC addresses from the port's bridge forwarding table, together with their associated IP address and DNS names if available from the Segment Discovery test. For Cisco 5000 Series Catalyst switches, the VLAN number assigned for the interface will also be soon.



Find Port

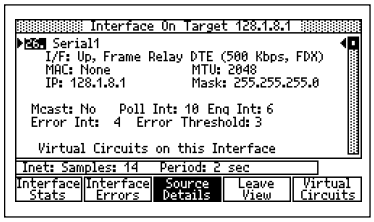
Enter a specific MAC or IP address and the SwitchWizard will automatically highlight the port where that address is located.

WideAreaWizard Option

This option allows access to information from WAN interfaces selected from the Internet Toolkit, Interface Table test.

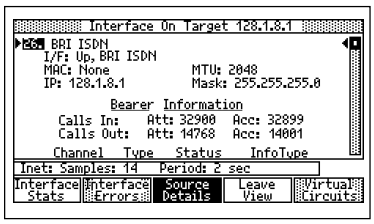
Frame Relay

For frame relay links utilization and error rate, and types of errors (including FECN and BECN) present on the DTE interface is shown. Selecting any individual DLCI would allow the user access to detailed information about that connection.



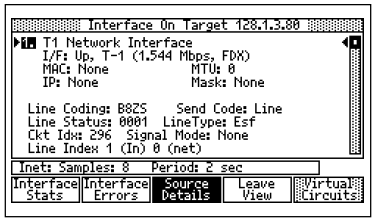
ISDN

In addition to providing a bar graph display of utilization and error rate for BRI or PRI interfaces, the test also provides bearer information such as: Inbound and outbound calls attempted and accepted, Channel number, Type and status, and Information type.



T1/E1

For T1/E1 interfaces, the information presented on the Enterprise LANMeter display will include: Line coding and type of Zero Code Suppression in use, Send code, Line status, Line type, Signal mode, Line index (In and Out), Interface error types.



WebRemote Control Option



The WebRemote Control option expands the standard web server function of the Enterprise LANMeter to allow full remote control of all test functions through a web browser. Users can access the power of the Enterprise LANMeter regardless of where they are. The access is password protected to prevent unauthorized access to the Enterprise LANMeter. Imagine that you can dispatch the Enterprise LANMeter to a remote site and remotely control it to troubleshoot the network without leaving your office. In addition, datalog sessions can be initiated remotely to create a network baseline report for network segments. Features available through virtually any web browser include:

- Navigate the LANMeter menus and screens
- View the current Enterprise LANMeter display
- Retrieve test results
- Retrieve screen captures
- Retrieve station lists
- Retrieve data logs

FLUKE®

Documenting your work is as easy as 1-2-3

Knowing what's happening on your network segment has never been easier. Test results from the Enterprise LANMeter can be imported through the network into a PC running Network Inspector LANMeter Edition software. This optional Windows-based software can generate reports directly from the data, or results can be imported into a spreadsheet for further analysis. In addition, Network Inspector LANMeter Edition is a powerful, standalone real-time network monitoring and reporting software package. It discovers devices that are on the segment and keeps track of their addresses.

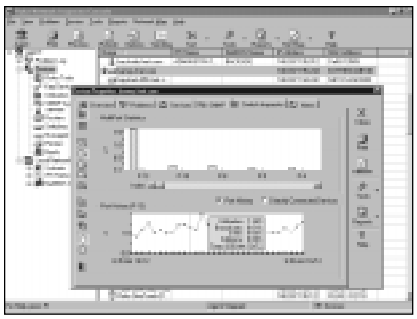
LANMeter test results
Virtually all screens can be captured to a file. Nearly all tests permit complete results to be saved as ASCII formatted files. Some key test reports that can be stored include:

- TOP MAC, IP Conversation Matrix
- IP Device Inventory in a segment
- 2 hours to 7 day data log of network utilization and errors
- Protocol distribution reports with MAC addresses of senders

Each file saved is identified by the test name, type of file, and is time and date stamped. Saved graphic and ASCII files can be previewed on the display. All files can be exported via e-mail, through the RS-232 port to a PC, or can be printed directly to a serial printer (except log files which cannot be printed directly). The LANMeter analyzer supports HP LaserJet, ThinkJet, and EPSON printers for direct printing via the RS-232 port.

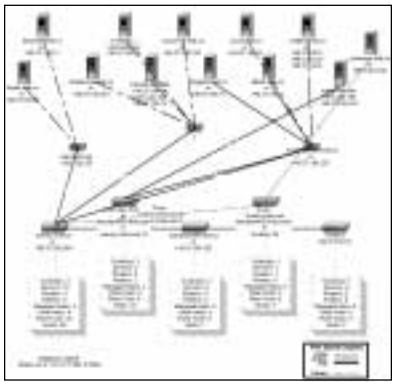
Network Inspector LANMeter Edition
Fluke Network Inspector LANMeter Edition runs on Windows-compatible PCs and is designed for both Ethernet and Token Ring LANs. Unlike most network management systems, it starts to actively monitor and diagnose problems in TCP/IP, IPX, and NetBIOS environments about 10 minutes after installation. It automatically discovers servers, clients, switches, routers, and printers on the segment and identifies many problems associated with these devices. With the press of a button, you can also generate web-based reports on IP, IPX, or NetBIOS inventory of all devices and the services they provide. The Network Inspector LANMeter Edition comes standard with the LANMeter WebRemote Control Option and is fully integrated with Enterprise LANMeter. You can control the Enterprise LANMeter remotely to conduct network tests, and generate reports from the test results. Fluke Network Inspector LANMeter Edition:

- Discovers all network devices in less than ten minutes
- Shows network device interface configurations including speed, type, MTU, slot and port
- Trends utilization, errors, broadcasts, and collisions hourly and daily on all managed device ports



Network Inspector Monitor Console

- Generates web-based reports on network devices inventory, most heavily used switch and router ports, and network topology diagram.



Network Topology Plot

- Detects and controls LANMeter to conduct Network Test and generates LANMeter test reports
- Logs errors and changes on network devices continuously and recommends solutions to problems on the network segment.

Quick diagnostics for your important

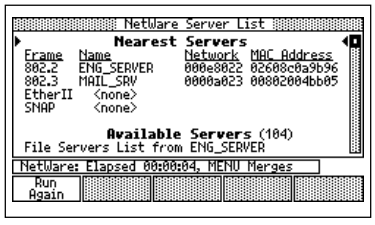
Protocol Support
The LANMeter analyzer has in-depth support for the most popular protocols running on your mission critical Ethernet or Token Ring based networks. Unlike most protocol analysis tools, the LANMeter has pre-configured tests that quickly indicate the problem area to aid speedy troubleshooting.

- Novell NetWare
- NetBIOS-based networks: Windows NT, Windows 95, Windows for Workgroups, IBM LAN Server and OS/2
- Banyan VINES

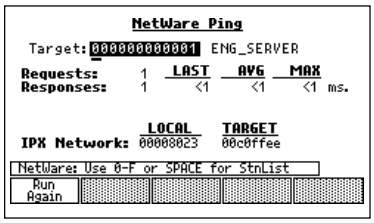
Novell NetWare

The LANMeter has a suite of tests that diagnose problems on Novell networks by verifying client and server connectivity across IPX routers, monitoring NetWare statistics and routing, and keeps track of top traffic contributors.

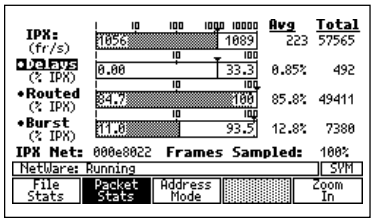
Find Server Accessible
Displays a list of servers available from a specific network location. It is similar to the display servers function provided on Novell Servers. The resulting display shows the symbolic name, IPX network address, and response time. Use IPX encapsulation choices to help resolve configuration problems.



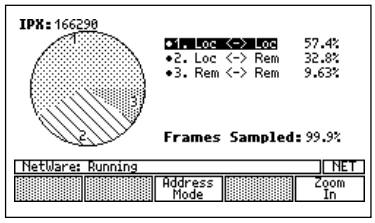
NetWare Ping
Verifies connectivity of a Novell Client or Server. The target station address may be chosen from the station list or entered in hexadecimal. The resulting IPX address, MAC address, number of responses and response time is displayed.



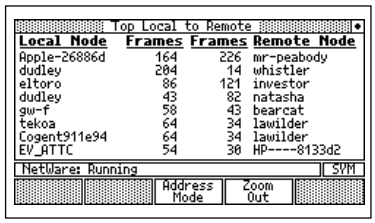
NetWare Traffic Analysis
Provides statistics that may be used to evaluate the overall health of the IPX traffic on the local segment by monitoring file requests and other key NetWare frames and statistics. The stations sending the most traffic in each category may be identified by "Zooming" on the desired category. A filtering condition can be applied to focus traffic analysis to or from a particular IPX station.



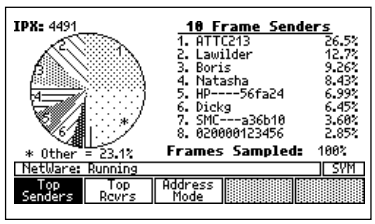
Routing Analysis
Only LANMeter helps you load-balance your IPX routed traffic. The display distinguishes between local-to-local, local-to-remote, and remote-to-remote traffic. Calculations are based on frame count.



The stations sending the most traffic in each category may be identified by "Zooming" on the desired category.



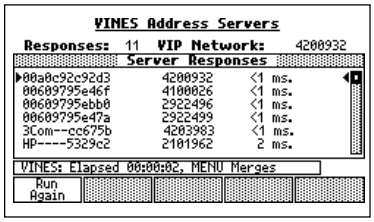
Top NetWare Stations
Monitors the busiest transmitting IPX nodes on the local segment. The LANMeter analyzer can be configured to monitor the top senders to a particular station. The data is displayed in the form of a pie chart, together with a list of the top frame senders. Station addresses may be displayed alternately as either symbolic name, MAC address or IPX network number by a single keystroke.



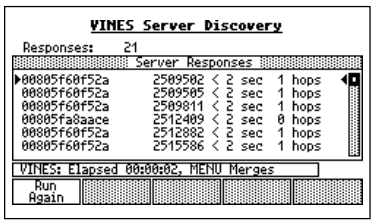
Banyan VINES

This selection of tests provides information to help troubleshoot, load balance, and tune Banyan VINES networks.

Address Servers Connection
Displays a list of all VINES routing servers and routers on the segment that assign the dynamic Banyan addresses to VINES clients entering the network.



Server Accessibility Test
Displays all of the VINES servers on your network. The Server Discovery process may be controlled by adjusting a Hop Count, which allows you to look for servers on the same LAN as the LANMeter, analyzer or up to some number of router hops away.



Top VINES Stations
Monitors the busiest transmitting VINES nodes on the local segment. The LANMeter analyzer can be configured to filter on a single address and show the top senders to a particular station. The data is displayed in tabular form with VINES IP address shown together with the corresponding MAC address.

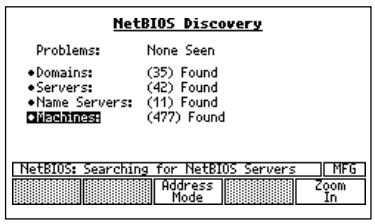
A list of all stations recorded as transmitting during the test period may be printed or viewed.

Powerful analysis for NetBIOS

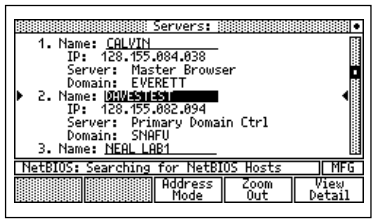
NetBIOS is growing as more networks utilize Windows NT, Windows 95 and IBM LAN Server. The Enterprise LANMeter analyzer provides unique troubleshooting capabilities that allows you to discover problems such as misconfigured NetBIOS end-nodes, duplicate NetBIOS names and the causes of high NetBIOS traffic.

IP Auto Configuration
For NetBIOS over TCP/IP, automates IP configuration of the Enterprise LANMeter analyzer.

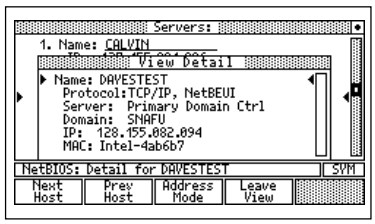
NetBIOS Discovery
Analyses the attached NetBIOS network cataloging critical network attributes. Automatically identifies problems such as duplicate names, registration errors and default router not responding to ARP.



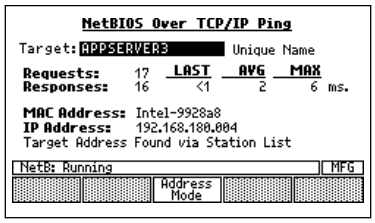
Categories may be highlighted and further information obtained by pressing the "Zoom In" softkey.



Use "View Detail" to access all information about the host.

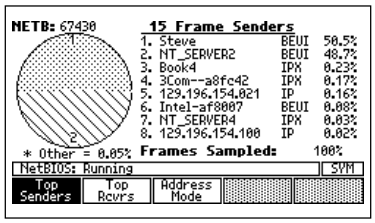


NetBIOS Ping
Test network layer connectivity by pinging a node by name. A NetBEUI ping will be local to the attached segment and is not routable. A NetBIOS ping over IP or IPX can cross IP or IPX routers.



Top NetBIOS
Monitors the busiest transmitting NetBIOS nodes on the local segment. The LANMeter analyzer can be configured to filter on a single address and show the top senders to a particular station. Test results show source address, encapsulation protocol, and percent of NetBIOS traffic.

A list of all stations recorded as transmitting or receiving during the test period may be printed or viewed.

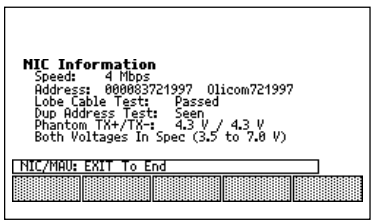


Unique hardware tests

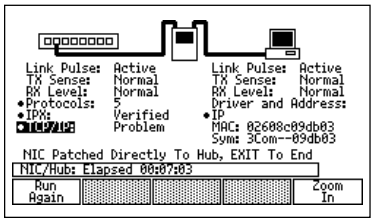
As part of a new breed of LAN troubleshooters, the Enterprise LANMeter combines the most commonly used troubleshooting capabilities from protocol analyzers and cable scanners plus many unique new capabilities. Unlike most network troubleshooting tools that stop after they detected the problem, the Enterprise LANMeter goes one-step further to isolate the cause of the problem in a link, whether it is the NIC, cable or the HUB/MAU. In some of these tests, the LANMeter emulates either the NIC or the HUB/MAU. The Expert-T test is unlike anything else on the market. This will be invaluable when a spare device is not readily available to verify the fault.

NIC/Hub Tests

NIC Autotest
Tests new or suspected faulty NIC cards for correct operation. For Ethernet the test reports the MAC address, protocol, and driver voltage levels, offered auto negotiation capabilities, 10/100, half or full duplex) and the presence and polarity of link pulses. If no signal is detected from the NIC, the test will automatically scan for connector and cable faults. For Token Ring, the test reports the result of the lobe test, checking for connector and cable faults if the lobe test fails, and reports the NIC speed, MAC address and phantom drive levels. This test does not require a live network connection. (Token Ring shown.)



Expert-T Autotest
A unique comprehensive test allows the LANMeter analyzer to be connected in series between a station and the hub or MAU. This test automatically isolates failures to cable, hub or MAU, NIC, or station software with confidence. (Ethernet shown.)



Ethernet

HUB Autotest
Tests new or suspected faulty hub and switch ports for correct operation by testing for the presence and polarity of link pulses, offered auto negotiation capabilities (10/100, half or full duplex) and for hub transmit levels. Protocols detected are identified, and selected local IP hosts and IPX servers are queried to ensure connectivity. Cable tests are performed when a cable fault is suspected.

Token Ring

Lobe Test
Verifies that a lobe cable is capable of supporting 4 Mbps and/or 16 Mbps Traffic.

MAU Autotest
Tests new or suspected faulty MAU port for correct operation by attempting to insert into the ring, reporting ring speed and indicating the presence of network activity. Cable tests are performed when a cable fault is suspected.

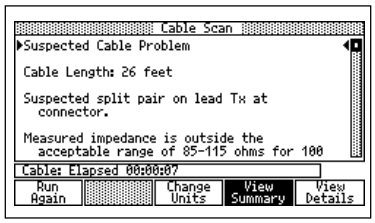
MAU Reset
Attempts to unstick the relay in the attached MAU port and monitors network activity to verify correct relay operation.

Cable Tests

These tests measure cable lengths and detect opens, shorts and other miswires in network cabling.

Cable Scan
Measures the length of the cable, the distance to the largest fault, and the characteristic impedance of the cable. When testing UTP cabling, split pairs, opens, shorts and other discontinuities can be found without a termination device. The wire map adapter can be connected to the far end of the cable to detect wiring problems and smaller impedance dis-continuities such as split pairs at the far end.

For Ethernet networks, this test may be performed on a live coax network. For Token Ring networks, the cable scan test automatically detects the presence of a self-shorting IBM connector and correctly reports the cable length.

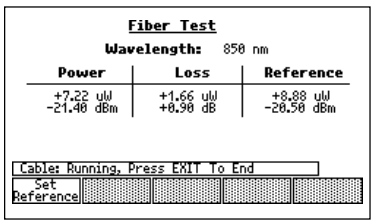


Wire Map
Checks for miswires and for intermediate opens and shorts on twisted pair cable. A pin-by-pin connection list is displayed.

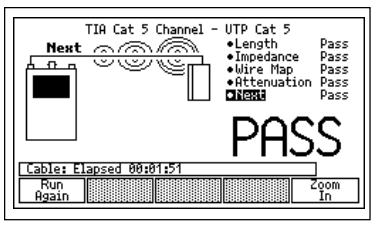
Cable Identifier
Used to map UTP drop and lobe cables to individual offices from the wiring closet. Unique Cable Identifier Remote Units are identified and displayed in the order detected. Up to thirteen identifiers can be connected.

Fiber Cable Test
Measure fiber optic cables for power loss with the DSP-FTK Fiber Test Kit. It is used to detect bad connections, bad splices, broken fibers, and loss of power from bends and fiber type mismatches.

The kit contains a fiber optic meter for receiving signals from 850 nm, 1300 nm, 1310 nm and 1550 nm sources. An LED source for both 850 nm and 1300 nm is included in the kit, and allows for testing of multimode cable, with an optional 1310/1550 nm laser power source for testing singlemode cable.



Cat-5 Cable Test
Tests length, impedance, wire map, attenuation and NEXT up to 100 MHz (depending on configuration.) The specific tests run by Cable Autotest depend on the network specification configured. Cable Autotest may be used for coax, 150 ohm STP, or 100 ohm UTP. Testing 100 ohm twisted pair requires the optional 100 MHz remote adapter. If the optional 100 MHz remote adapter is used to test 100 ohm twisted pair cable, the results comply with TIA/EIA-568-A, TSB-67 requirements for Level I test of Basic Link or Channel configurations. Test results may be viewed directly or stored for printing later. (Auto Test result shown)



DC Continuity
For coax, use DC Continuity to verify the impedance of the termination resistor is within specification.

General Specifications

Dimensions: 29.2 x 17.8 x 6.7 cm (11.9 x 7.0 x 2.65 in)
Weight: 2 kg (4.5 lbs)
Keyboard: 36 key Elastomeric with alphanumeric and dedicated keys.
Display: 240 x 128 pixel bit-mapped LCD. (W x H)
12 x 6.5 cm (4.75 x 2.5 in)
LED Indicators: Nineteen light emitting diodes
Power: Removable/rechargeable NiCad (9 Sub-C Cells) with average three hours operating time. Recharges in three hours.

Note: Continuous use of the display backlight will reduce battery operating time by approximately 33%.

Communication Port: RS-232C Serial Port (DB-9)
Network Ports:
Ethernet:
HUB Connector (RJ-45)
NIC Connector (RJ-45)
BNC (ThinLAN)
Token Ring:
MAU Connector (RJ-45 and DB-9)
NIC Connector (RJ-45 and DB-9)
Operating Temperature:
10 to 30°C
Warranty: One year
(Extended warranty is available)

TDR Specifications

Resolution: 0.3m (1 ft)
Minimum Distance: 0m (0 ft) measures right up to connection point
Maximum Distance:
Dependent on cable type
BNC (ThickLAN) 600m (2000 ft)
BNC (ThinLAN) 300m (1000 ft)
STP 600m (2000 ft)
UTP 300m (1000 ft)

Measurement Accuracy
DC Resistance:
(BNC Connector): 01/2 to 2001/2
Accuracy: ± 10%
Cable Length:
0 to 30m (0 to 100 ft)
± (1% of reading +0.3m) (1 ft)
30 to 300m (100 to 1000 ft)
± (2% of reading)

Support you can count on

Priority Support

Priority Support is a unique two-tiered membership program. Silver Priority Support is FREE to registered owners and Gold Priority Support is available at extra cost. Silver members receive training tools and essential support services — for as long as you own your LANMeter. Gold membership features enhanced support like next-day exchange, performance verification, and a 20% discount on software and hardware enhancements.
Gold Priority Support is offered in the U.S., Canada and Europe. Call to check availability in other countries.

Product training
Getting the Most Out of Your LANMeter is a one-day, instructor-led course that provides hands-on training of all functions of the Enterprise LANMeter for Ethernet networks. Become more effective with your network tool and extend the value of your instrument investment. Classes are scheduled for attendance by individuals or an on-site training option is available in some areas with group training at your site for up to 12 attendees. Call your local Fluke representative for on-site training availability.

Priority Support ordering information
GOLD-LAN-1 LANMeter Series Gold Priority Support
NETTRNG-1 1-day Product Training (Getting the most out of your LANMeter)

FLUKE®

Ordering Information



Every Fluke LANMeter® analyzer comes with a battery pack (installed), instrument case, AC adapter/battery charger, remote wire map unit (includes cable identifier #0), software utility disk and user manual.

Model

680 Enterprise LANMeter,® Token Ring
682 Enterprise LANMeter,® Ethernet
683 Enterprise LANMeter,® 10/100 Ethernet
685 Enterprise LANMeter,® Ethernet/Token Ring
686 Enterprise LANMeter,® 10/100 Ethernet/Token Ring

Options and Software

68X-002 100 MHz Cable Test Option
68X-SW SwitchWizard Option (ordered with new instrument)
68X-SWK[1] SwitchWizard Option (ordered as an upgrade to an existing instrument)
68X-WW WideAreaWizard Option (ordered with new instrument)
68X-WWK[1] WideAreaWizard Option (ordered as an upgrade to an existing instrument)
68X-RW WebRemote Control Option (ordered with new instrument)
68X-RWK WebRemote Control Option (ordered as an upgrade to an existing instrument)
NIS-ILM Network Inspector LANMeter Edition

Note 1: Almost all SNMP queries are made using standards-based MIBs. Security, firewalls and individual vendor's MIB implementations may affect or limit the information available from the LANMeter analyzer.
Note 2: The cable length test accuracy is relative to the calibration of the LANMeter. This calibration is provided by specifications of a representative cable. Variations, not included in this specification, can occur due to changes in the cables relative permittivity (dielectric constant). Changes in the relative permittivity are caused by variations in wire twist rates.
[1] For all 68X Enterprise LANMeter models.
[2] Requires LANMeter firmware 8.x or higher.

Accessories

DSP-FTK[2] Fiber Optic Test Kit (contains DSP-FOM and FOS-850/1300)
DSP-FOM[2] Fiber Optic Meter for 850 nm, 1300 nm, 1310 nm and 1550 nm measurements
FOS-850/1300[2] Fiber Optic Source for 850 nm and 1300 nm measurements
LS-1310/1550[2] Laser Source for 1310 and 1550 nm measurements
C6700 Soft Carrying Case
N6701 Battery Pack
N6703 UTP Accessory Kit
- 66 Punch-Down to RJ-45 Adapter
- 110 Punch-Down to RJ-45 Adapter
- RJ-45 Female Coupler
- RJ-45 Clip Lead Cable
- RJ-45 to RJ-45 Patch Cable, 2m

N6704 Expert-T™ Accessory Kit
- DB-9 Male to Male STP Cable (IBM Type 1)
- IBM Data Connector to DB-9 (M) Cable, 1m
- RJ-45 to RJ-45 Patch Cable, 2m

N6705 Coax Accessory Kit
- BNC Tee
- 50Ω BNC Terminator
- BNC to Type N Adapter
- BNC to Alligator Clip Adapter
- RG-58 Coax Cable, 2m
- BNC to BNC Adapters (M-M, F-F)

N6707 IBM Data Connector to RJ-45 Adapter
N6708 Cable Locator Kit 1: 6 Cable Locator Units (#s 1-6)
N6709 Cable Locator Kit 2: 6 Cable Locator Units (#s 7-12)



Fiber Test Accessories[2]



C6700 Carrying Case



68X-002[1] 100 MHz Cable Test Option

Fluke. *Keeping your world up and running.*

Fluke Corporation
PO Box 9090, Everett, WA USA 98206

Fluke Europe B.V.
PO Box 1186, 5602 BD,
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 356-5116
In Europe/M-East/Africa (31 40) 2 678 200 or
Fax (31 40) 2 678 222
In Canada (800) 36-FLUKE or
Fax (905) 890-6866
From other countries (425) 356-5500 or
Fax (425) 356-5116
E-mail: fluke-info@tc.fluke.com
Web access: http://www.fluke.com/nettools/

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Gold-standard solutions

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We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

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