VIAVI

T-BERD®/ MTS-4000 Multiple Services Test Platform

Enterprise Solutions

The Modular Handheld Test Platform for Enterprises

Today's IT networks are more complex than ever with voice over IP, IP security cameras, presence, and remote applications running over high-speed copper, fiber, and wireless infrastructure. Complexity that was once confined to the data center now finds its way closer and closer to the user resulting in front-line IT technicians having to resolve a far greater range of faults than ever before. With even minor network faults potentially rendering employees unproductive, maintaining a working network is a mission-critical task.

Trusted worldwide by service providers, network equipment manufacturers, commercial providers, and government agencies, Viavi offers a complete range of communications test and measurement instruments, systems, and software, together with the expertise to help businesses confidently improve the quality and efficiency of network operations while reducing costs and increasing customer satisfaction. Viavi customers are confident that they see more and know more about their systems, their business, their customers and their options. No test and measurement partner understands customers and shares the risk (of new markets and innovation) like Viavi Solutions.

The Viavi T-BERD®/MTS-4000 Multiple Services Test Platform and Enterprise Services Application Module (ESAM) address these challenges of modern networks with a modern approach. The ESAM provides physical media tests through its workflow-based intuitive user interface, including speed-certification of electrical Ethernet cabling, network connectivity tests, network discovery, wirespeed deep-packet statistics, and wirespeed protocol capture and expert analysis. In addition, the ESAM is part of the modular Viavi T-BERD/MTS-4000 platform allowing additional options that include VoIP emulation, WiFi testing, optical power meters (OPMs), visual fault locators (VFLs), digital fiber inspection probes, and optical time domain reflectometers (OTDRs).

The lightweight T-BERD/MTS-4000 features a wide 7-inch color touch screen display that lets technicians easily navigate through the workflow-based user interface to view test results and capture files. Additional applications, such as a PDF viewer, web browser, and Wireshark, increase the usefulness of the platform.

Key Features

T-BERD/MTS-4000: A cost-effective, modular handheld platform with options and modules including:

- large 7-inch touch screen display
- integrated web browser
- VoIP phone emulation
- WiFi test capability
- optical power meter
- visual fault locator

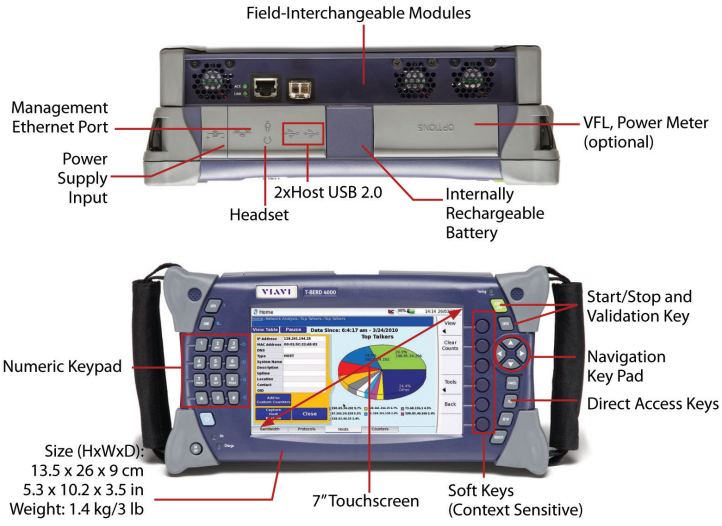
ESAM:

- provides Layer 1–7 protocol capture and expert analysis
- offers wirespeed deep packet statistics and analysis
- tests network connectivity
- performs network discovery
- conducts a full range of physical media tests
- offers a workflow-based user interface

Key Applications:

Performs all-in-one enterprise testing to verify copper cables will support GigE, to test network connectivity (from Ethernet interface discovery to Layer 4 Port connectivity), to discover network devices both on and off the subnet, to collect statistics and ana- lyze network utilization/traffic pat- terns, and to perform wirespeed cap- ture on GigE links

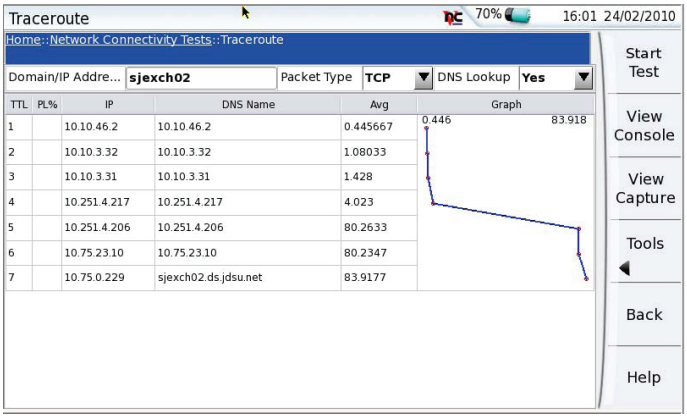
- Speed certifies electrical Ethernet up to 1000Base-T
- Isolates and resolves Ethernet or IP problems in the field using unique, in-depth Viavi J-Mentor capture and decode capabilities



Solutions that Improve Your Network Availability

Physical Media Tests

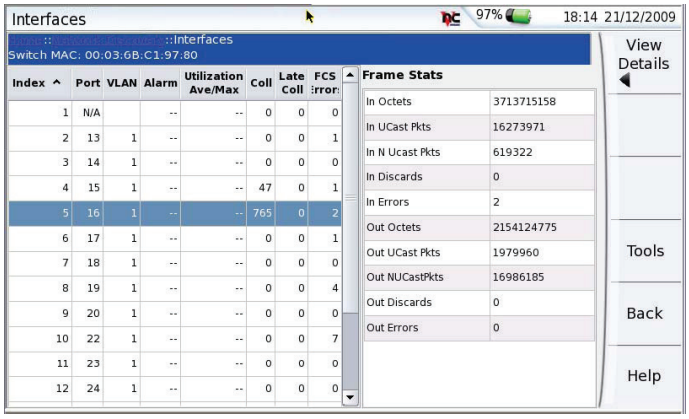
Technicians can use the included Plan-Um® software to create cabling layout diagrams and cable test schedules. After loading the job onto the ESAM, technicians can run auto-tests for wiremap, length, signal-to-noise ratio (SNR), skew, and bit error rate tests (BERTs). Passing these tests ensures that the cable can support 1000Base-T. All of the auto tests can also be performed manually as can tone generation and ID-only mapping.



Trace Route screen

Network Connectivity Tests

After testing and confirming that the physical media can support Ethernet, technicians can test for connectivity to active Ethernet devices on a single drop. If Power over Ethernet (PoE) is supplied, the pins, voltage, and current can be checked to ensure they match the requirements of the powered device. Port discovery confirms that the Ethernet interface is advertising the correct speed and duplex options, avoiding optional duplex-mismatch issues. The next connectivity test attempts to obtain an IP address using Dynamic Host Configuration Protocol (DHCP) (static configuration is also possible). It flags duplicate IP addresses to the user's attention. Once an IP configuration is obtained, the ESAM can perform Ping, TraceRoute, and DNS connectivity tests to ensure connectivity to various network devices. It can also test firewalls using Transmission Control Protocol/ User Datagram Protocol (TCP/UDP) connectivity tests to verify that particular TCP/UDP ports are open or blocked. If Cisco Discovery Protocol (CDP) and/or Link Layer Discovery Protocol (LLDP) are used in the network, the analyzer can read these messages and report them to users. If issues are observed during many of the connectivity tests, technicians can choose to view a capture of all frames sent and received for that specific test allowing in-depth root-cause analysis.

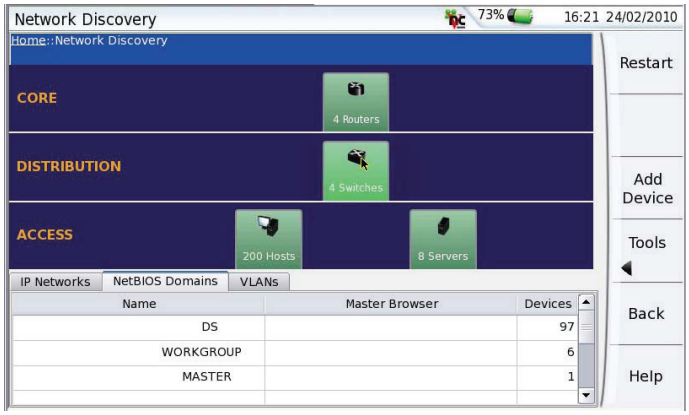


Graphic view of discovered devices

Network Discovery

Once technicians confirm basic connectivity to the network, they may need to discover what devices are on the network. Using active and passive discovery methods from an individual Ethernet drop, technicians can discover a wide range of devices both within the users subnetwork and beyond. Presented with a graphical view of the discovered devices, technicians can drill into details about specific network elements. Configuring SNMP password strings allows technicians to query network devices and view the various details, which will highlight any obvious problems in the network.

Once users drill into details about a specific element they can view details such as MAC/IP addresses. Enabling SNMP on the network lets users view additional information such as interface utilization, packet rates, and errors.



SNMP Details view

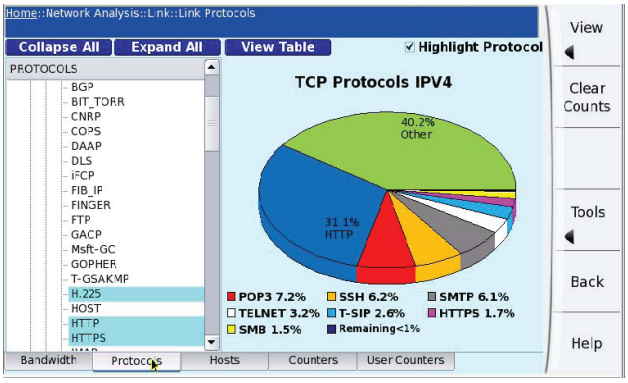
Solutions that Improve Your Network Availability

Network Statistics

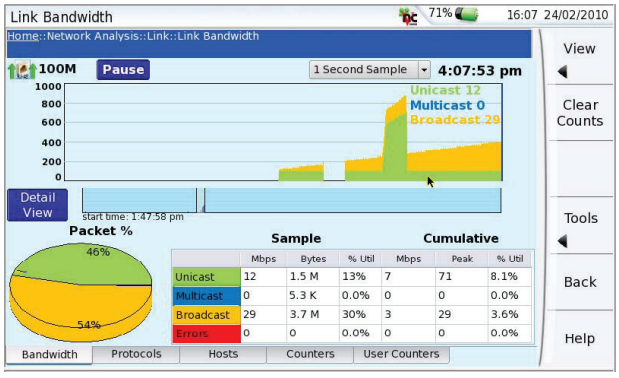
Connecting the analyzer to an Ethernet aggregating test access port (TAP) or switch mirror port enables it to gather statistics at full line speed. Users can view utilization statistics by link, virtual local area network (VLAN), and Subnetwork. They can view link utilization which is broken down by unicast, broadcast, multicast, and errored frames. Users can view protocol distribution on the link allowing them to identify what protocols are consuming link capacity. The unit identifies top-talkers on the link to users. Pre-defined and user-defined wirespeed packet/byte counters allow users to view statistics by specific protocols and events.

Packet Capture and Expert Analysis

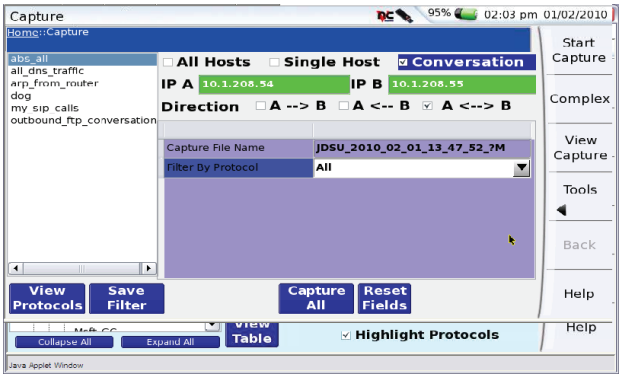
Hardware-based packet capture ensures that all frames are captured – even at sustained full gigabit line rate. The 1 Gigabyte capture buffer allows for a large amount of data to be captured. Captured traffic is stored in packet capture (PCAP) format and can be analyzed with Wireshark – both on and off the tester. Pre-capture filters and triggers can be applied to ensure that the correct frames are captured at the correct time. Expert analysis via J-Mentor reduces the need to be an expert in analyzing captured data.



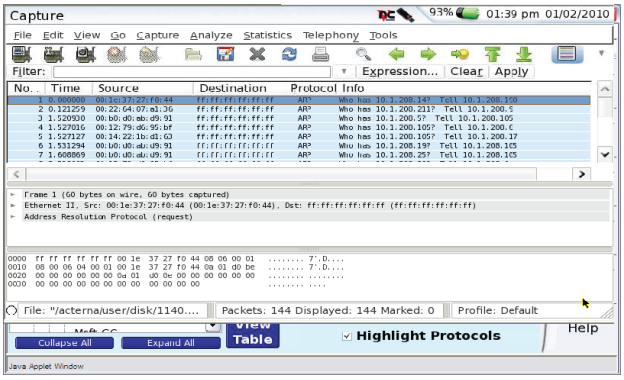
Utilization statistic view



Protocol Distribution screen



Capture and filter all frames with the ESAM



Captured traffic filters

Platform Options

Complete Enterprise Test Solution

When troubleshooting Enterprise IT networks, technicians must perform a variety of tasks. In addition to the wide-ranging standard ESAM functionality, the T-BERD/MTS-4000 meets advanced test needs for optical and VoIP network testing.

The T-BERD/MTS-4000 base unit has optional built-in basic fiber optic test options for quick and easy verification of fiber links, including an optical power meter, visual fault locator, and connector inspection via USB port.

The T-BERD/MTS-4000 base unit has optional VoIP test capabilities. By emulating a VoIP phone, the T-BERD/MTS-4000 can assess VoIP packet quality and voice quality rating using MOS and R-Factor. It supports VoIP signaling protocols from H.323 (fast or slow), SIP, MGCP, Skinny Cisco Client Protocol (SCCP), and Nortel Unistim.

End Devices
Clients/Servers
VoIP Phones
Other IP Hosts

- Top Talkers
- Protocol Distribution
- DNS Lookups
- Network Statistics
- Packet Capture and Analysis
- VoIP Emulation

Network
Ethernet Switches
IP Routers
Firewalls

- Ethernet Port Settings
- Power over Ethernet (PoE)
- Cisco/Link Layer Discovery
- DHCP (IP Addressing)
- Ping/Trace Route
- TCP/UDP Port Connectivity

Physical Media
Shielded Twisted Pair (STP)
Unshielded Twisted Pair (UTP)
Multi Mode Fiber (62.5/125 or 550/125)
Single Mode Fiber (9/125)

- Length, Wiremap
- Speed Certification
- Pristine End Face
- Insertion Loss
- OTDR

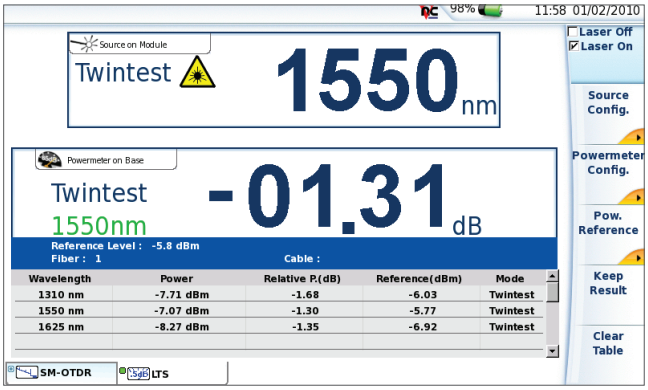
Scalable, modular platform for Enterprise testing services

Power Level Measurement, VFL, and Fiber Inspection Probe

Complete Fiber Optics Test Solution

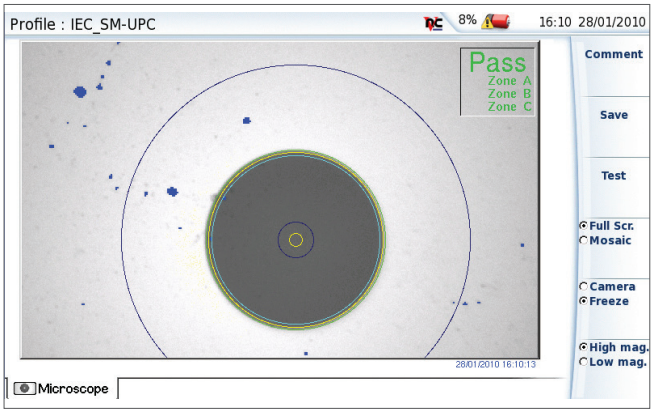
During fiber network installation and maintenance, technicians must verify continuity and characterize the performance of the fiber link. The T-BERD/MTS-4000 offers optional mainframe-based functions that enable quick and easy verification of fiber links:

- Power level measurement: The broadband power meter lets technicians easily verify the presence of a signal. This meter covers 850 to 1550 nm over a range of +10 to −60 dBm.
- Visual fault location: The VFL enables easy and visual break localization and network connectivity check.
- Optical connector inspection via USB interface: The optional Inspect Before You Connect fiber inspection probe enables quick and easy control of connector end faces. Now available with automated pass/fail indication to enable consistent pre-defined end face analysis and evaluation.



Power level measurements

Visual Fault Location

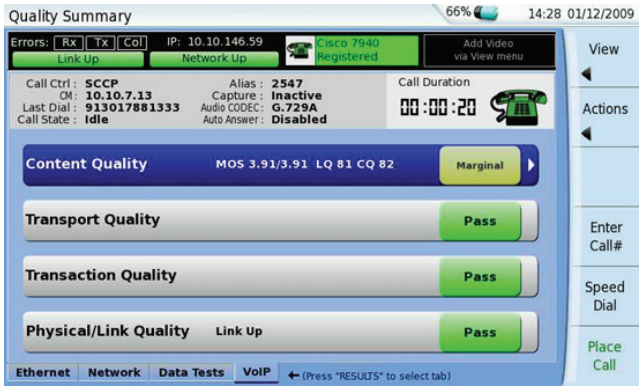


Connector inspection screen

VoIP Emulation and Unprecedented Connectivity

VoIP Testing

Technicians can use the T-BERD/MTS-4000 to turn up and troubleshoot voice service (voice over IP [VoIP]) connectivity, feature availability, and voice quality. They can also conduct IP ping, packet statistic, and trace route analysis to identify, diagnose, and sectionalize VoIP network and equipment problems.



VoIP test interface

More than a Test Unit

The T-BERD/MTS-4000 platform comes with unprecedented connectivity features such as Ethernet, WiFi, Bluetooth, and integrated Web browser.

Combining these features with an ergonomic, intuitive user interface enables the T-BERD/MTS-4000 to offer user-friendly functions such as Internet/intranet access, wireless data transfer, and remote operations.

1 Remote Access

Control the T-BERD/MTS-4000 via Internet/intranet and WiFi

- Operate the unit from a computer
- Obtain remote assistance from any expert user

2 Data Transfer via WiFi/Bluetooth, Ethernet, or USB

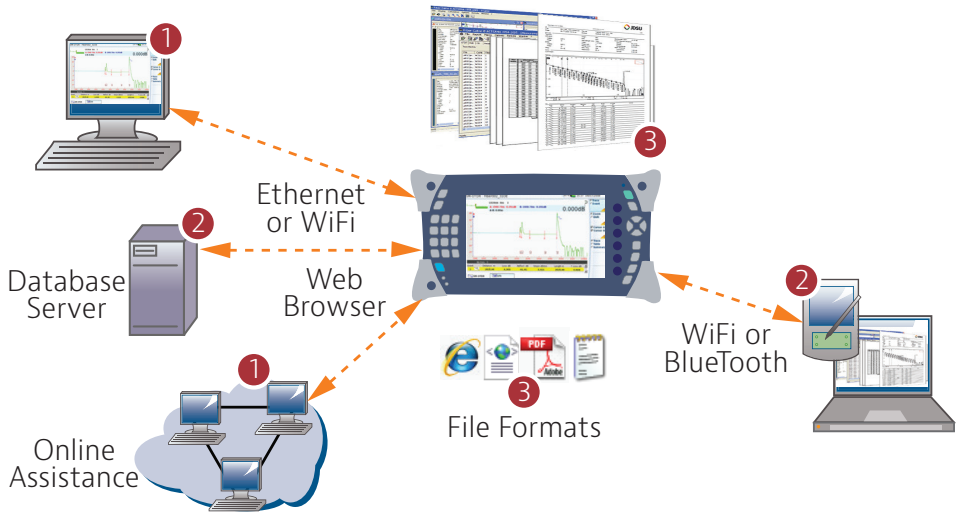
Transfer data easily using a computer or personal digital assistant (PDA)

- Download capture files through the embedded FTP server
- Send measurement results via e-mail

3 User-friendly Functions

Integrated Web browser and HTML/XML/TXT/PDF reader

- Save results with test record information in HTML, XML, TXT or PDF
- Download files from the web and consult documents, such as the T-BERD/ MTS-4000 User's Manual or Quick Guide



Contact Viavi today for more information about how to equip your technicians with the T-BERD/MTS-4000 Enterprise platform—the ideal solution for complete testing of enterprise services.

For more information visit our website at
www.viavisolutions.com/enterprise.

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