SUNRISE TELECOM®

SunSet MTT®

Basic Color Chassis

Data Sheet

The SunSet MTT Basic Color Chassis features a family of plug-in modules, providing a wide variety of testing capabilities for the Access Network

The Modular Test Toolkit (MTT) product family features the SunSet MTT as the industry's premium handheld platform for access network service installation, verification, and troubleshooting applications. Equipped with a high resolution color display, the ruggedized SunSet MTT Basic Color Chassis is ideal for Metro, FTTx, and Transport field service applications.

FEATURES

- Color display
- Easy-to-use-interface
- Supports many SSMTT/SSxDSL test modules

BENEFITS

- Handheld and portable
- Convenient and cost-effective
- Ideal for field Metro, FTTx, and Transport MTT modules

APPLICATIONS

With a variety of plug-in test modules, the SunSet MTT supports multiple access network applications.*

SPECIFICATIONS

Connectors

Serial Port: 8-DIN, RS-232C (V.24) DTE
DC Power Jack

General

Size: 4.5" (W) x 3.3" (H) x 11" (L) [11.4 cm x 8.3 cm x 28 cm]
Weight: 3.3 lb [1.5 kg]
Display: Backlit 240 x 320 dot STN indoor/outdoor Color Screen
LEDs: 13 bi-color
Battery: Rechargeable, field replaceable NiMH pack
Charger: Universal 100-240 VAC adapter with IEC connector
Operating Temperature: 32°F to 122°F [0°C to 50°C]
Storage Temperature: -4°F to 158°F [-20°C to 70°C]
Humidity: 5% to 85% noncondensing

ORDERING INFORMATION

SSMTT-C	SunSet MTT Basic Color Chassis. Supports Plug-in Modules with a high resolution color display. CLEI: TET1VZ0EAA CPR: 099604

** See module data sheets for more information*

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GigE Module

MTT-50

Data Sheet

Dual port 10/100/1000BASE-T and 1000BASE-X

The MTT-50 GigE Module is the perfect choice for service providers who are currently using Sunrise Telecom's Modular Test Toolkit (MTT) in the field. The MTT-50 ensures rapid and efficient installation and maintenance of business Ethernet and IP services and significantly reduces repair time while maintaining the quality of service that customers demand. A complete set of testing capabilities makes the MTT-50 ideal for the field technician who needs to verify end to end transport of Ethernet/IP traffic, perform BER tests, determine throughput, link utilization and IP connectivity. An intuitive user interface enables technicians with limited Ethernet or IP experience to verify performance parameters. The modular design and the wide range of test functionalities provides all of the tools needed for verifying Service Level Agreements while lowering the operating costs associated with the need for multiple test sets.

KEY FEATURES

- Full 10/100/1000 Mbps and Gigabit Ethernet line rate traffic generation
- Performs throughput, latency, frame loss, and back-to-back tests per RFC 2544 using Loopback or point-to-point without Loopback
- BER testing at Layer 1, Layer 2, and Layer 3 (IP) for Gigabit Ethernet and IP services
- IP verification with Ping, Trace Route, ARP Scan and IP Throughput across a routed network
- Generate up to 8 traffic flows with different MAC address, VLAN tag, and IP address configurations
- Class of Service (CoS) via VLAN P-bit and IP Type of Service (ToS/DSCP) traffic prioritization settings
- Dual Port capability for network element prequalification testing
- Control/Respond Loopback feature to loop-up/down a far end MTT, STT or SunLite Ethernet modules
- Test Profiles for fast and efficient test set configuration and operation

BENEFITS

- The flexible modular design leverages the existing MTT platform and eliminates the need for multiple instruments
- The MTT chassis are rugged, light weight and field tested, with over 47,000 units in the field
- The MTT chassis' long battery life can be extended with the new 2 x battery
- Remote, real time troubleshooting and analysis
- Completely interoperable with MTT, STT and SunLite Ethernet modules

APPLICATIONS

- Enables service providers and operators to turn-up and troubleshoot Ethernet and IP services
- Allows service providers to verify SLAs between themselves and their customers
- Automated SLA verification with RFC 2544 testing
- Layer 2 CoS settings for verifying Metro Ethernet services
- Test profile storing and loading for fast deployment of Ethernet services

SPECIFICATIONS

Connectivity

Ethernet (10BASE-T), Fast Ethernet (100BASE-T) and Gigabit Ethernet 1000BASE-T (per IEEE 802.3, 2000 Edition)
Gigabit Ethernet 1000BASE-X (per IEEE 802.3, 2000 Edition)
Connector type:
- Dual Duplex LC for 1000BASE-X
- Dual RJ-45 UTP (10/100/1000BASE-T)

Optical transceiver type: SFP field interchangeable
SA580-850 (1000BASE-SX)
- Transmitter
  - Wavelength: 850 nm multi-mode
  - Power: -9.5 dBm to -4 dBm
- Receiver
  - Wavelength: 770 nm to 860 nm
  - Signal: -21 dBm to 0 dBm max
- Optical Power Measurement (OPM) function available

SA580-1310 (1000BASE-LX)
- Transmitter
  - Wavelength: 1310 nm single-mode
  - Power: -9.5 dBm to -4 dBm
- Receiver
  - Wavelength: 1270 nm to 1600 nm
  - Signal: -25.5 dBm to -3 dBm max
- Optical Power Measurement (OPM) function available

SA580-1550 (1000BASE-ZX)
- Transmitter
  - Wavelength: 1550 nm single-mode
  - Power: +3 dBm to -2 dBm
- Receiver
  - Wavelength: 1270 nm to 1570 nm
  - Signal: -24 dBm to -3 dBm max
- Optical Power Measurement (OPM) function not available

Operation Mode

Dual port-to-point mode
Monitor mode
Management and point-to-point mode
Auto-negotiation enabled or disabled
Auto-negotiation parameters: pause flow control, asymmetric pause

BER/Throughput Testing

End-to-end testing with two test sets
Single-ended testing with loop on the other end
Singe test set bench testing
Dual port operation of tests mentioned above

Traffic Generation

Layer 1, Layer 2, or Layer 3 traffic
Configurable source and destination MAC address
Configurable 802.1q VLAN tag and 802.1p priority
Configurable MPLS tags
Configurable source and destination IP address (IPv4)
Configurable IP header fields (ToS, TTL, Protocol, and Fragment Offset) for QoS verification testing
Up to 8 independent traffic flows (MAC address, IP address, VLAN tag)
Test patterns: All 1s, All 0s, ITU-T PRBS (2e31, compatible 2e23, compatible 2e31, normal or invert, or user defined (2 bytes)
Frame length 48 to 1518 bytes or Jumbo frame (up to 11000 bytes)
Frame rate 0% to 100% bandwidth utilization with steps of 0.1%
Traffic shaping: Constant, Ramp, or Burst
Error/Alarm injection: Bit, CRC, IP Checksum error and rate injection
Test duration

Measurements

Performance statistics: Transmitted and received bandwidth utilization (Min, Max, Average), frame rate (Min, Max, Average), transmitted and received line rate and data rate (kbps)
Frame statistics: Total number of transmitted & received frames, total number of received VLAN tagged, MPLS, TCP/UDP, frames, number of lost, out of sequence frames, oversized, multicast, flow control, broadcast and unicast frames, inter-frame delay measurement (Min, Max, Avg, Variation), frame size distribution
Link statistics: Bit, CRC, IP checksum distribution count and rate, loss of signal, loss of synchronization, and out of service seconds counters
Events recorder with timestamp

Loopback Mode

Automatically loops all incoming frames with or without swapping the source and destination MAC address fields and IP address source and destination fields
Manual or controller/responder mode

IP Features

PING Test

Step by step results showing connectivity to the router
Summary and detailed result screens
Statistics on PING messages
- Number of sent/received/missing/unreached messages
- Current/average/max/min round trip delay

Following parameters can be configured:
- IP mode (Static/DHCP mode)
- VLAN settings
- Local IP address
- Destination IP address
- Gateway address
- Number and rate of PING messages
- Frame length

Trace Route

Trace the IP route over the IP network up to 30 hops
Gateway, Router IP address traceability

ARP scan

Discover the MAC address of devices on the network by sending ARP requests to a range of IP addresses

VLAN scan

Discover the VLAN IDs that are configured on an interface

Cable test

Measure the length of copper Ethernet cable pair (meters or feet)

Optical power measurement

Report Tx/Rx Power, wavelength of the optical ports

RFC 2544

Throughput, latency, frame loss rate, and back-to-back frames tests conform to RFC 2544 standard using Loopback or point-to-point without Loopback
User configurable frame sizes (64 - 11000 bytes)
Configurable PASS/FAIL threshold
Tests can be run individually or in sequence
Available for Layer 2, and Layer 3 testing, including Ethernet routed circuits
Configurable IP header fields (ToS, TTL, Protocol, and Frame Offset) for QoS verification testing

Monitoring and Analysis

In-service monitoring with or without splitter
Measurements
- Signal and Frame Synchronization
- Bandwidth Utilization
- Rx Frames Count
- CRC Error

Events recorder with timestamp

Other Features

Multiple User Profiles

Up to 10 different test configuration profiles may be saved
Test profiles saved and loaded with the press of a button
Profiles can be shared across multiple chassis for fast and efficient test set configuration and operation

Results and Reports

Test results are saved in .CSV format for easy retrieval, sharing, and analysis of data. PDF reports are created on PC by importing CSV files.

PRODUCT DESCRIPTION

Module Size:
5.0 W × 3.5 L × 0.9 H in (12.6 × 9 × 2.2 cm)

Operating Temperature:
32˚ to 113˚F (0˚ to 45˚C)

Storage Temperature:
-4˚ to 158˚F (-20˚ to 70˚C)

Humidity:
5% to 85% noncondensing

ORDERING INFORMATION

SSMTT-50	GigE Module Basic Package includes dual 10/100Base-T ports, Single Streams Layer 1/Layer 2 Ethernet Testing and 1-Year Standard Warranty in Hardware and Software. RJ-45 Interface Upgradable to10/100/1000 Base-T; Optical Interface Upgradable to 1000Base-X; SFP Modules Sold Separately.

Software Options

SWMTT50-1000T	Dual Port 1000Base-T (enable 1000Base-T on RJ-45 interfaces)
SWMTT50-1000X	Dual Port 1000Base-X (enable 1000Base-X on optical interfaces)
SWMTT50-L3	Layer 3, MPLS and Advanced IP Features
SWMTT50-MULTI	Multiple Streams

Accessories

SA148	SFP Optics Container
SA265	Cable, 100Ω, CAT5e, RJ45 (M) to RJ45 (M), Cross-over, 6 ft.
SA266	Cable, 100Ω, CAT5e, RJ45 (M) to RJ45(M), 6 ft.
SA508	Optical Patch Cord, SMF, LCUPC to SCUPC, 6 ft.
SA558	Optical Patch Cord, LCUPC to LCUPC, Duplex, SMF, 6 ft.
SA561	Optical Patch Cord, LC-SC duplex, MMF, 62.5/125 um, 6 ft.
SA562	Optical Patch Cord, SMF, LC-SC duplex, 6 ft.
SA580-850	850 nm LC SFP Field Interchangeable Optical Transceiver
SA580-1310	1310 nm LC SFP Field Interchangeable Optical Transceiver
SA580-1550	1550 nm LC SFP Field Interchangeable Optical Transceiver

Note: The MTT GigE Module is supported on most MTT platform host chassis including the MTT-ACM series and MTT-C. It is not supported on XDLS Full, MTT-EX and MTT-B chassis.

For more information or a directory of sales offices: **info@sunrisetelecom.com** | **www.sunrisetelecom.com**
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