SUNRISE TELECOM®

# SunSet MTT®

## ACM II Chassis

**Data Sheet**


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

The Advanced Cable Maintenance (ACM II) Chassis, part of the SunSet Modular Test Toolkit (MTT) family of test sets, is a rugged, battery-operated test solution for installation and maintenance of physical layer access network services. The new SunSet MTT ACM II is the industry's premier handheld test system designed to qualify copper cables at VDSL2 frequencies, readying service providers for triple play deployments.

The ACM II covers an industry best frequency range from voiceband to 30 MHz – necessary for VDSL2 qualification based on FTTN or MDU architectures. Our patented 'detaptor' feature helps identify short bridge taps, which are especially harmful for VDSL2 transmission. In addition, ACM II offers key voice frequency features that are common to industry methods and procedures. Using the SunSet MTT ACM II enables service providers to complete installations in less time and with greater confidence in the quality of service delivered to customers.

## KEY FEATURES

- Color display
- Easy-to-use interface
- Fast and easy one-button auto test
- Dual trace TDR for in-depth fault location
- RFL to locate resistance faults
- Spectrum analyzer - 30 MHz PSD background noise
- 30 MHz insertion loss
- Voice frequency features
  - Longitudinal balance
  - Circuit noise and power influence
  - Power harmonics analysis
- Detaptor (patented) to determine lengths of bridge taps
- Supports many SSMTT/SSxDSL test modules

## BENEFITS

- Handheld and portable
- Flexible and dynamic
- Copper qualification with extended VDSL2 frequency range
- Standard POTS installation tests
- Convenient and cost-effective
- Integrated cable maintenance features
- Enhanced troubleshooting and repair
- Complete FTTn/x testing in one package

## Advanced Cable Maintenance Features

### *TDR*

Display Options
- Single Trace
- Dual Trace (Split Screen, Overlap, Difference, Recall)

Distance Range: Dependent on cable type and condition

| English | |
|---|---|
| **Cable Gauge** | **Distance Range** |
| 22 AWG | 15 ft. to 24000 ft. |
| 24 AWG | 15 ft. to 18000 ft. |
| 26 AWG | 15 ft. to 12000 ft. |

| Metric | |
|---|---|
| **Cable Gauge** | **Distance Range** |
| 0.6 mm | 3 m to 7200 m |
| 0.5 mm | 3 m to 5400 m |
| 0.4 mm | 3 m to 3600 m |

Display Resolution: 0.6% of selected range
Pulse Widths: 12 nS to 4 µS, autoselect
Output Impedance: 100Ω
Vp: 0.4 to 0.99 in 0.01 increments
Automatic search to first fault

### *RFL*

Fault Range: 10 MΩ
RTS: 4 kΩ
Accuracy of RTF (at 1 MΩ)
- ± 0.1% RTS ± 0.1Ω  0Ω to 100Ω
- ± 0.2% RTS ± 0.1Ω  > 100Ω to 1000Ω
- ± 0.25% RTS ± 0.1Ω  > 1000Ω to 4000Ω

### *DC Voltage*

Range: 300V Max
Accuracy: ± 0.5% ± 10 mV

### *AC Voltage*

Detector: True RMS
Range: 250 VAC Max
Accuracy: ± 1% ± 20 mV for 20 Hz to 1 kHz

### *Resistance*

Range: 1Ω to 100 MΩ
Accuracy
- ± 1% ± 1Ω for 1Ω to 1 MΩ
- ± 2% for > 1 MΩ to 4 MΩ
- ± 5% for > 4 MΩ to 100 MΩ

### *Capacitance*

Range: 1 nF to 2 µF
Accuracy
- ± 2% ± 300 pF for 1 nF to 1 µF
- ± 5% for > 1 µF to 2 µF

### *Current*

Load: 430Ω
Range: 0 mA to 110 mA
Accuracy: ± 2% ± 0.1 mA

### *Insertion Loss*

Range: 0 to 80 dB
Accuracy: ± 2 dB
Frequency response sweep from 13 kHz to 30 MHz
Detaptor: Bridge Tap Detection (Patented)

### *WB Background Power Spectral Density (PSD) Noise*

Frequency Range: 13 kHz to 30 MHz
Resolution Bandwidths: 4.3125 kHz, 34.5 kHz
Level Range: -30 to -140 dBm/Hz

### *VF Background Power Spectral Density (PSD) Noise*

Frequency Range: Up to 6000 Hz
Level Range: 10 dBrn to 90 dBrn

### *Power Harmonics*

Frequency Range: Up to 6000 Hz
Level Range: -50 dBm to 40 dBm

### *VF Metallic Noise*

Range: 0 dBrn to 90 dBrn
Resolution: 1 dBrn
Accuracy
- ± 1.5 dB from 10 dBrn to 90 dBrn
- ± 2 dB from 0 dBrn to 10 dBrn

Filter: C-Message
Impedance: 600Ω

### *Power Influence (Noise-to-Ground)*

Range: 40 dBrn to 130 dBrn
Resolution: 1 dBrn
Accuracy: ± 1.5 dB
Filter: C-Message

### *Longitudinal Balance*

Frequency: 1 kHz
Range: 0 to 70 dB
Accuracy: ± 2 dB

### *Impulse Noise*

Threshold Range: 50 dBrn to 100 dBrn
Dead Time Range: 100 µS to 255 mS
Max Count Range: 1 to 9999
Timer: Settable from 1 to 999 minutes or continuous

### *Signal-to-noise*

Frequency range: 13 kHz to 30 MHz

### *Near End and Far End Crosstalk (NEXT/FEXT)*

Frequency range: 34.5 kHz to 30 MHz

### *Auto Test*

User selectable tests with CSV output
Reports PASS/FAIL/MARGINAL status where applicable

### *Load Coil Detector*

Graphic and count

### *Cable Pair Detect*

Audible connectivity verification

### *Transmitter*

Frequency Range: 10 kHz to 30 MHz
Frequency Resolution: 0.1 kHz
Frequency Accuracy: ± 25 ppm
Levels: 0 to -40 dBm in 1 dB steps
Level Accuracy: ± 1 dB
Output Impedance: 100Ω balanced

### *Receiver*

Measurement Method: FFT
Frequency Range: 13 kHz to 30 MHz
Frequency Resolution: 4.3125 kHz
Level Range
+5 to -80 dBm for 13 kHz to 18 kHz
+10 to -80 dBm for > 18 kHz to 30 MHz
Level Resolution: 0.1 dB
Level Accuracy: ± 1 dB
Input Impedance: 100Ω balanced

## PRODUCT DESCRIPTION

Size (W × L × H): 4.1 × 10.6 × 2.6 in (10.5 × 27 × 6.5 cm)
Weight: 3.5 lb (1.6 kg)
Display: Backlit 240 x 320 dot STN indoor/outdoor Color screen; CFL Backlight
Connectors: Five 2 mm banana test leads
LEDs: 20 bi-color
Serial Port: 8-DIN, RS-232C (V.24) DTE
DC Power Jack
Battery: Rechargeable, field replaceable NiMH pack
Charger: Universal 100-240 VAC adapter with IEC connector
Operating Temperature: 23˚ to 113˚F (-5˚ to 45˚C)
Storage Temperature: -4˚ to 158˚F (-20˚ to 70˚C)
Humidity: 5% to 85% noncondensing

## ORDERING INFORMATION

SSMTT-ACM2
SunSet MTT ACM II
Includes a high resolution color display, mini-banana interface, and the following standard features: Dual and single trace TDR, DMM, Load Coil Detector, Metallic Noise, Power Influence, Longitudinal Balance, Cable Pair Detect, and Impulse Noise. Also includes standard 2.2 MHz measurement range for the following features: Insertion Loss, PSD Background Noise, Signal to Noise, and Frequency Generator. Standard Accessories include test cables, SunSet Jacket, and Certificate of Calibration.

SWMTT-ACM2-VDSL
Extended VDSL Range Features for SunSet MTT ACM II
Includes extended VDSL measurement range for the following features: Insertion Loss, PSD Background Noise, Signal to Noise, and Frequency Generator. Also adds NEXT and FEXT features.

SWMTT-ACM2-RFL
RFL Features for SunSet MTT ACM II
Includes Resistance Fault Locate features for the SunSet MTT ACM II

### Replacement Accessories

| | |
|---|---|
| SA274 | Cable, 2 mm Test Leads (Black/Red) with bed-of-nails alligator clips, 6' |
| SA275 | Cable, 2 mm Test Lead (Green) with bed-of-nails alligator clips, 6' |
| SA276 | Cable, 2 mm Test Leads (Yellow/Blue) with bed-of-nails alligator clips, 6' |
| SA277 | Cable, 2 mm Test Leads Kit (set of five cables) |
| SA278 | Cable, RFL Strap |
| SA601 | Jacket, SunSet MTT Family |