

# 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 FTTH or MDU architectures. Our patented 'detaport' 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
- Detaport (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 FTTH/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  $\mu$ S, autoselect

Output Impedance: 100 $\Omega$

Vp: 0.4 to 0.99 in 0.01 increments

Automatic search to first fault

### RFL

Fault Range: 10 M $\Omega$

RTS: 4 k $\Omega$

Accuracy of RTF (at 1 M $\Omega$ )

$\pm 0.1\%$  RTS  $\pm 0.1\Omega$  0 $\Omega$  to 100 $\Omega$

$\pm 0.2\%$  RTS  $\pm 0.1\Omega$  > 100 $\Omega$  to 1000 $\Omega$

$\pm 0.25\%$  RTS  $\pm 0.1\Omega$  > 1000 $\Omega$  to 4000 $\Omega$

### DC Voltage

Range: 300V Max

Accuracy:  $\pm 0.5\%$   $\pm 10$  mV

### AC Voltage

Detector: True RMS

Range: 250 VAC Max

Accuracy:  $\pm 1\%$   $\pm 20$  mV for 20 Hz to 1 kHz

### Resistance

Range: 1 $\Omega$  to 100 M $\Omega$

Accuracy

$\pm 1\%$   $\pm 1\Omega$  for 1 $\Omega$  to 1 M $\Omega$

$\pm 2\%$  for > 1 M $\Omega$  to 4 M $\Omega$

$\pm 5\%$  for > 4 M $\Omega$  to 100 M $\Omega$

### Capacitance

Range: 1 nF to 2  $\mu$ F

Accuracy

$\pm 2\%$   $\pm 300$  pF for 1 nF to 1  $\mu$ F

$\pm 5\%$  for > 1  $\mu$ F to 2  $\mu$ F

### Current

Load: 430 $\Omega$

Range: 0 mA to 110 mA

Accuracy:  $\pm 2\%$   $\pm 0.1$  mA

### Insertion Loss

Range: 0 to 80 dB

Accuracy:  $\pm 2$  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

$\pm 1.5$  dB from 10 dBrn to 90 dBrn

$\pm 2$  dB from 0 dBrn to 10 dBrn

Filter: C-Message

Impedance: 600 $\Omega$

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

Range: 40 dBrn to 130 dBrn

Resolution: 1 dBrn

Accuracy:  $\pm 1.5$  dB

Filter: C-Message

### Longitudinal Balance

Frequency: 1 kHz

Range: 0 to 70 dB

Accuracy:  $\pm 2$  dB

### Impulse Noise

Threshold Range: 50 dBrn to 100 dBrn

Dead Time Range: 100  $\mu$ S 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:  $\pm 25$  ppm  
Levels: 0 to -40 dBm in 1 dB steps  
Level Accuracy:  $\pm 1$  dB  
Output Impedance: 100 $\Omega$  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:  $\pm 1$  dB  
Input Impedance: 100 $\Omega$  balanced

## PRODUCT DESCRIPTION

Size (W x L x H): 4.1 x 10.6 x 2.6 in (10.5 x 27 x 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

For more information or a directory of sales offices: [info@sunrisetelecom.com](mailto:info@sunrisetelecom.com) | [www.sunrisetelecom.com](http://www.sunrisetelecom.com)