Sunrise Telecom Broadband

Product Showcase

Technology Leadership in Broadband Test and Measurement

Sunrise Telecom Broadband’s core strengths in RF testing have established a successful track record for providing leading edge solutions that incorporate innovative, easy-to-use test methods that improve network service quality.

Sunrise’s field-proven test and measurement systems include installation and maintenance instruments, portable headend analyzers, and network test systems and software.

We back up our equipment and software with a portfolio of training, support, and maintenance services to help operators get the biggest return from their test and measurement investment.

At Sunrise Telecom Broadband, we are committed to simplifying the cable broadband system engineer’s and field technician’s day.
CM100 IP, CM250 IP, CM500 IP
Install Profiler Series

Reduce secondary truck rolls and increase productivity by ensuring quality high-speed data, digital video and analog service installation with the Install Profiler. The meter’s comprehensive automated testing with programmable Pass/Fail parameters ensures safe operating margins are achieved before the install technician leaves the customer’s premises.

The Install Profiler series provides a cost effective, “phased-in” growth strategy to accommodate evolving test and measurement needs.

The optional realVIEW capability allows remote users to view ingress on any return test point without assistance from headend technicians, saving resources and speeding-up problem diagnosis*. A Web Browser option is also available.

LP100 Leakage Profiler

Locate and measure signal leakage as well as perform FCC-required leakage measurements with the LP100 Leakage Profiler—the industry’s first wireless leakage detection and measurement solution.

The convenient wireless communication link increases user safety by eliminating cumbersome connectors and tangled wires. Used in conjunction with a CM series meter, this easy-to-use device provides comprehensive leakage detection and analysis.

CM1000 DOCSIS and Digital Network Analyzer

For better network performance, higher customer satisfaction and fewer service calls, use a CM1000 for testing the DOCSIS network from headend to home. Equipped with an integrated cable modem, the CM1000 fully tests a network in both the downstream and upstream, displaying continuous updates of measurements instead of static screen shots. It is the right tool to ensure DOCSIS, analog, and digital network performance.

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### Downstream Analysis
- 64/256 QAM measurements
- Constellation display
- Automatic Impairment Diagnosis
- Modulation Error Ratio (MER)
- Pre and Post FEC Bit Error Rate (BER)
- Digital signal level meter
- Analog signal level meter

### Upstream Analysis
- Upstream block error rate (BkER)
- Transmit power and attenuation
- 10/100Base-T port for PC connection
- Cable modem connection screen
- Lost Packet Count
- RSA (return step attenuator) calculation

* realVIEW requires the realWORX system installed at the headend to monitor ingress levels.
Network Maintenance Instruments

3010/2010 Signal/Sweep Measurement System

To find solutions for return path activation, network maintenance or ingress management, look to the 3010/2010 series. All models offer 1 GHz spectrum display, digital and analog channel scan, as well as SLM and distortion measurement capabilities.

Quickly activate and maintain bi-directional cable networks with the 3010 models. They are equipped with the fastest and most precise sweep system on the market—featuring the Calan DigiSweep forward and reverse sweep technology.

The rackmount 3010H headend analyzer manages both the forward and reverse sweep activities and also transmits the return spectrum to all field units for ingress monitoring. Add AT1600 series broadband switches to the headend and the technicians in the field will have instant access to any one of 128 return path nodes for ingress troubleshooting or return sweeping—all without intervention from headend staff.

N1776A Network Profiler

The portable N1776A Network Profiler is the essential diagnostic toolkit for today’s CATV networks. With a user-friendly WinCE interface, the N1776A harnesses the power of a true spectrum analyzer and makes it available to technicians in the field. The N1776 offers the most comprehensive suite of measurements ever assembled into one rugged field appliance. Thanks to the open WinCE environment, the analyzer can run third-party productivity software.

**Measurement Capabilities**
- 4 MHz to 1.1 GHz spectrum analyzer
- Automated analog and digital measurements including proof-of-performance tests with non-interfering distortion
- Forward and return DigiSweep (3010H compatible)
- Return spectrum display
- Individual node selection for ingress measurements
- 64/256 QAM performance measurements with constellation

**Features**
- 8.4” color VGA display with touch screen
- Windows Explorer web browser
- 3rd party application support including workforce management programs
- Flexible I/O including:
  - Field replaceable Lithium Ion smart battery with > 4-hour continuous run time
  - 13.5 lb, rugged, water resistant package
AT2500R Series CATV/QAM/Video Spectrum Analyzers

Expand your measurement capabilities for future technology or for today’s specific CATV requirements with the 1.5 GHz high performance AT2500R series spectrum analyzer. This portable, battery-powered analyzer provides the flexibility you need in the field or at the headend to maintain your network’s optimal performance. Modular options let you customize the AT2500R to your specific network needs.

The AT2500RQ model provides the additional measurement power required for the latest multi-standard 64/256 QAM digital technologies, simplifying the worldwide transition from analog to digital testing.

The optional WinCom II, WinRemote and WinQAM PC applications improve productivity, offer remote operation capability and simplify FCC testing.

New Innovative Features
The AT2500R series now includes internal high/low pass filters for improved dynamic range in a fully loaded cable system environment and optional baseband video measurements with waveform monitor and vectorscope.

The CATV Measurements Package provides full proof-of-performance tests on user configurable channel plans. These tests include carrier levels and frequency measurements, in-service distortion measurements (CCN, CSO, CTB and hum), in-channel frequency response, and depth of modulation. In-service testing ensures the continuity of service that your customers expect.

AT2500RQ Digital Measurement Package
- Multi-standard 64/256 QAM constellation display
- Logging of MER, BER, and system availability statistics for up to 60+ minutes.
- QAM Signal Impairment Analysis (QIA) helps to quickly identify an impairment
- Adaptive EQ display with frequency response and group delay

AT2500Rv Video Demodulation Option (NTSC only)
- Automated video measurements:
- Vectorscope for display of differential gain and phase
- Waveform monitor for time domain viewing of specific video lines

Additional Features
- Ethernet connection for remote access and downloads to PC
- Time Domain Measurement of upstream burst signals
- NTSC and VGA video outputs
- ASI, MPEG transport stream output available
- WinCom II Data Management software included
- Multi-standard 64/256 QAM demodulation with auto polarity
- Modulation error ratio (MER)—up to 40dB
- Pre and post bit error rate (BER) testing, real time and average over time
- High resolution constellation display with zoom
- Data logging for 1 to 60+ minutes with MER and average/real time BER information (up to 7 days with the WinQAM software)
- QAM Signal Impairment Analysis (QIA) helps to quickly identify an impairment

WinCom II, WinRemote, & WinQAM
Windows-based Productivity and Remote Control Software

WinCom II
This data analysis and management software provides powerful capabilities for analysis and record keeping of stored measurement data. WinCom II allows the user to transfer files to and from an AT2500R or AT2500HM spectrum analyzer, to view stored measurement traces, to print reports, and to create a PC based WinCom II database for archival purposes.

WinCom II allows fast FCC report creation using Familyware POP or a Sunrise Telecom Broadband generic report.

WinRemote
This software package provides powerful spectrum analyzer remote control capabilities. Using a modem, direct RS232 connection or an Ethernet connection, the WinRemote software can take control of an AT2500R or AT2500HM providing real time spectrum analysis on any PC. With WinRemote, users can connect to a remote site and make measurements from their desktop or from any location with network access.

WinQAM
WinQAM allows users to connect to a remote site and make QAM measurements from anywhere. Using a modem, direct RS232 connection, or Ethernet connection, the WinQAM software can control an AT2500RQ or AT2500HMQ, providing real time QAM analysis on any PC.
Operators can now confidently roll out RF-sensitive new services like high speed Internet, digital channels, and VOD by using the realWORX automated performance verification system. This unique system monitors both upstream and downstream signal quality from cable headends or hub sites.

realWORX compares RF performance against user-set limits and reports an alarm when signal impairments are detected—before they turn into customer complaints. The realWORX server can control multiple AT2500HM/Q analyzers, which connect to the CATV network through AT1600 series switches.

**Benefits**
- Integrated ingress, analog, and QAM verification platform saves costs on hardware, training, and support
- Fast (2-3 ms scans over 5-45 MHz range), high-sensitivity (-65dBmV) measurements detect problems other equipment can not see
- Notifications by email, pager, or cell-phone ensure prompt response to alarms
- Reports to the NOC via SNMP trap interface to ensure 24-hour service quality
- Open and future-proof architecture protects operators' investment

**View Verification Data Remotely**
The realWORX Client module allows multiple remote users to view and print alarm histories, while the main realWORX server continues monitoring. With the realVIEW option, a user can view ingress traces at his desk or even at home using a PC, or in the field using the Sunrise CM1000/CM500 test meters.

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**AT2500HM Series** Rackmount CATV/QAM Spectrum Analyzers

The AT2500HM series rackmounted spectrum analyzer is a versatile, 1.5 GHz high performance analyzer dedicated to CATV headend requirements. AT2500HM series analyzers form the core of the realWORX performance verification system, and also have applications as remotely controlled headend analyzers. Based on the same platform as the AT2500R series of portable headend analyzers, the AT2500HM series shares almost all that unit’s measurement capabilities. The AT2500HM functions as a dedicated CATV analyzer, while the AT2500HMQ adds QAM measurements and statistics to its capabilities.

**AT1600 Broadband Multiplexers**

The AT1600 series offers a high performance, cost effective solution for broadband RF switching in headend environments. The AT1600 family forms the front-end of the realWORX performance verification system, linking the AT2500HM/Q spectrum analyzers to the CATV network.

With a 100 ms switching rate (switch to switch), the AT1600 series is the fastest switch family in the industry. Unity gain provides consistent output levels, simplifying test measurements. Its convenient 1 RU rackmount package saves valuable space.

The AT1602M connects two independent analyzers to the CATV network. Units can be daisy-chained to allow RF input configurations of up to 256 x 2. Control options include RS-232 and RS-485 interfaces, as well as front panel buttons for manual operation. The AT1601M has the same features but in single output configuration.
Services

Sunrise Telecom Broadband supports its leading edge test and measurement solutions with dedicated services to improve operators’ productivity, and to safeguard their investment in Sunrise test systems. Our portfolio of support services includes:

- Technical Product Support to help customers resolve any issues and questions encountered during operation.
- Installation services to configure test systems and bring them into operation.
- Training for customer personnel to help them make efficient use of Sunrise Telecom Broadband test systems and equipment.
- Repair and calibration service to maintain current and legacy equipment in top working order. We can provide our clients with standard traceable certifications of their test instruments. Service centers in North America, Europe and Asia mean quick turn-around of equipment for the customer.
- Upgrade service to install new hardware and software features to bring your equipment’s capabilities up to the latest Sunrise standard.
- Extended maintenance and calibration contract service to ensure reliable, cost efficient, long-term support of your equipment.

Let us show you how to simplify your test and measurement day. Contact us at 1-800-297-9726 (Int’l calls: 1-514-725-6652), or visit our website at www.sunrisetelecom.com.

Sunrise Telecom Broadband

Sunrise Telecom Broadband is a leader in digital broadband and DOCSIS test instruments for the cable industry. As part of the Sunrise Telecom family, we leverage the strength of one of the world’s largest communications test and measurement companies. Our goal is to enable service providers to rapidly deploy television, high-speed Internet, and digital video applications.