

AT1600M SERIES MULTIPLEXER



*A high performance, cost effective solution
for broadband RF switching*

Combining Sunrise's AT1600 series multiplexer with the industry proven AT2000/2500 series spectrum analyzers is the ideal solution for remote headend testing and return path monitoring. Together they offer unparalleled test and measurement performance and flexibility.

Full spectrum analysis of signals from 1 MHz to 1 GHz allows you to monitor forward path in addition to the reverse path with a single tool. Both analog and digital services can be tested including 16, 64 and 256 QAM signals.

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WE'RE UNCOMPLICATING CABLE**


SUNRISE TELECOM
B R O A D B A N D

...the AT1600 series is the fastest switch family in the industry.

OVERVIEW



The 1600 series multiplexer switch offers a high performance, cost effective solution for broadband RF switching in headend environments. These switches are ideal for test measurement systems, such as the realWORX monitoring system, where multiple CATV signals need to be tested through the same spectrum analyzer. The 1600 series is compatible with the AT2500HM series analyzers as well as with previous Sunrise AT2000HM series spectrum analyzers.

With a 100 micro-seconds 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 inputs x 2 independently controlled RF outputs. 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.

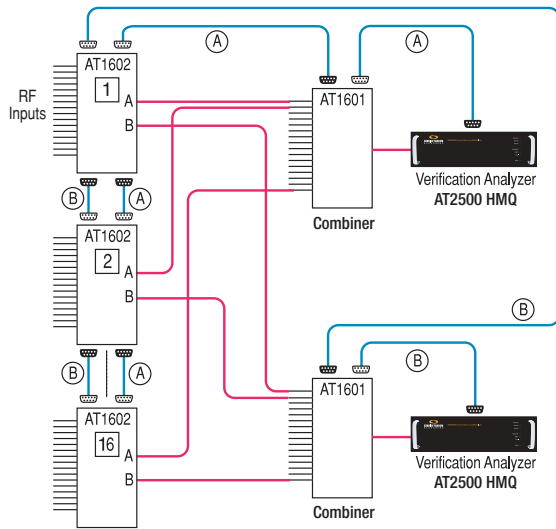
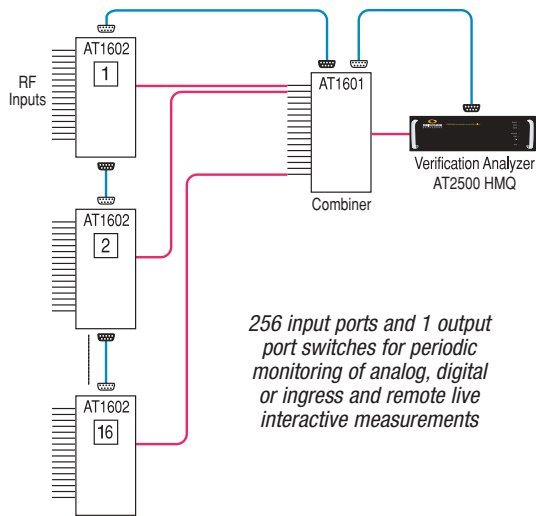
KEY FEATURES AND BENEFITS

- FULL 1 GHz PERFORMANCE RF MATRIX
16 X 1 (AT1601M) OR 16 X 2 (AT1602M)
- FASTEST EXTERNALLY CONTROLLED SWITCH TO SWITCH RATE OF ONLY 100 MICROSECONDS
- UNITY GAIN THROUGH THE SWITCH
- FRONT PANEL ACCESS ALLOWS INDIVIDUAL MANUAL CONTROL OF OUTPUT A OR B
- UNITS CAN BE DAISY CHAINED TO SUPPORT UP TO 256 INPUTS WITH AT1601M OR UP TO 256 X 2 WITH AT1602M
- COMPATIBLE WITH SUNRISE'S AT2000HM/AT2500HM SERIES REMOTE CONTROLLED SPECTRUM ANALYZERS AND 3010H SIGNAL/SWEEP ANALYZERS

...locally control up to 256 switch ports through an analyzer.

APPLICATIONS

TYPICAL CONFIGURATION EXAMPLES



256 input ports and 2 output port switches for periodic monitoring of analog, digital or ingress and remote live interactive measurements where monitoring tasks are shared by two analyzers to increase monitoring time of each monitoring mode

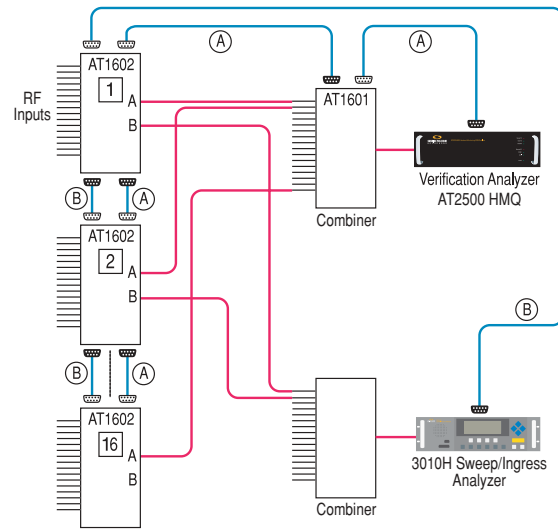
USING AT1601/1602 SWITCHES WITH AT2000/2500 SPECTRUM ANALYZERS

Up to sixteen AT1600 series switches can be co-located with each Sunrise AT2000/2500 series spectrum analyzer, giving the user the ability to locally control up to 256 switch ports through the analyzer. Alternately, utilizing Sunrise Telecom's suite of Windows PC-Based remote software solutions, WinQAM, WinRemote and realWORX, the user can remotely control multiple switches (connected to the analyzer) from any remote location via the LAN, modem or the Internet from a PC.

USING AT1601/AT1602 SWITCHES WITH SUNRISE'S 3010 SIGNAL/SWEEP SYSTEM

The AT1600 series switch can be connected to the 3010 signal/sweep system to perform remote return path ingress and sweep measurements.

The system would be made up of a Sunrise's 3010H sweep system connected to multiple AT1600 switches at the headend and the 3010R or N1776 Network Profiler in the field.



AT1600 series switches used with Sunrise's 3010H Sweep/Ingress system for remote return path ingress and sweep measurements

FIELD-PROVEN SOLUTIONS

For detailed information on the AT1600, the AT2500H series or the Calan 3010H, visit our website at www.sunrisetelecom.com for the name of your local Sunrise representative. Or telephone us at 1-800-297-9726 (Int'l calls: 1-514-725-6652).

Sunrise Telecom Broadband is a leader in digital broadband and DOCSIS test instruments for the broadband industry. As part of the Sunrise Telecom family, we leverage the strength of one of the world's largest communications test and measurement companies. Sunrise Telecom Broadband's field-proven solutions include installation and maintenance instruments; portable head-end analyzers; and network test systems and software. Our goal is to enable service providers to rapidly and efficiently deploy and maximize network performance of digital television, VOD, high-speed Internet and VoIP services.

Based on our core strength in RF testing, we have established a successful track record as a provider of leading edge solutions that incorporate innovative test methods, intuitive user interfaces, and thorough product training.

At Sunrise Telecom Broadband, we uncomplicate the engineer's and field technician's day.

JUST ANOTHER WAY WE'RE UNCOMPLICATING CABLE



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AT1601M AT1602M

RF Inputs	16	16	Common to both channels
RF Outputs	1	2	Independent outputs and controls for each channel
Test Points	1	2	One for each channel, located on front panel
Comm. Ports	2	4	2 Input ports (1 for each channel) and 2 Output ports (1 for each channel)
Comm. Port Type	RS-232 or RS-485		Factory configured option

SPECIFICATIONS

Frequency Range:1 MHz - 1 GHz
Externally Controlled Switching Rate Max. switch port to port
100 usec.(up to 10,000 switches per second)
Maximum RF Input Level:+ 45 dBmV
Insertion Loss:.....0 dB
±1dB 0-860 MHz
±2dB 860-1000 MHz
Isolation:Up to 65 MHz: -75 dB min.
Up to 250 MHz: -70 dB min.
Up to 1 GHz: -65 dB min.
Impedance:75 ohm
Input Return Loss:18 dB typical
Input Power Adapter:115 VAC to 12V 500ma
Operating Temperature:-5°C to +50°C
Size:.....19" w x 1.75" h x 12.5" d
Weight:4 kg (9 lb)
Specifications subject to change without notice.

ORDERING INFORMATION

AT1602M 1 GHz 16x2 Headend Multiplexer
Includes front controls and testpoint, AC power supply and User Manual

AT1601M 1 GHz 16x1 Headend Multiplexer
Includes front controls and testpoint, AC power supply and User Manual

AT2500HM 1.5 GHz Headend Rackmount CATV Spectrum Analyzer
AT2500HMQ 1.5 GHz Headend Rackmount QAM/CATV Spectrum Analyzer

N1776A CaLan Network Profiler
1.1 GHz Portable Spectrum Analyzer w/CATV & QAM measurement

85963A CaLan 3010H Headend Sweep/Ingress Transmitter
Rackmount headend 1 GHz SLM Analyzer

85962A CaLan 3010R Dual Path Sweep/Ingress Analyzer
Field portable 1 GHz SLM Analyzer

RWORX-XMP realWORX Performance Verification Monitoring Software
A99026010 WinCom II - Data Management Software
A99026020 WinRemote - Remote Control Spectrum Analyzer Software
A99026050 WinQam - Remote Control QAM Digital Measurement Software (for AT2500HMQ only)

