AT1600E/ AT1700 Series

RF Switch Multiplexer

The AT1600E/AT1700 series multiplexer is a high performance, cost-effective broadband RF switching solution. It is the most complete and fastest switch family in the industry.

Combined with VeEX's industry proven AT2500 series spectrum analyzers, the AT1600E/AT1700 series multiplexer 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 5 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.

The AT1600E/AT1700 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 AT1600E/AT1700 series is compatible with the AT2500HM series analyzers as well as with previous Sunrise Telecom AT2000HM series spectrum analyzers.

With a 100 micro-second switching rate, the AT1600E/AT1700 series is the fastest switch family in the industry. All 16 input ports in the AT1700 series provide consistent output levels with 10 dB gain with very low noise and low distortion gain, allowing high MER measurements at typically low headend testpoint levels. The AT1600E provides ouput level with 0 dB gain, which is ideal for return path monitoring nodes. The AT1600E/AT1700 is in a convenient 1 RU rackmount package, saving valuable space.

The AT1602E/AT1702 dual output model 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. AT1600E and AT1700 control options include an RS-232 and 10/100/1000Base-T Ethernet interfaces, as well as front panel buttons for manual operation.

Key Features

- Full 1 GHz performance RF matrix. 16 × 1 (AT1601E/AT1701) or 16 × 2 (AT1602E/AT1702)
- Fastest externally controlled switch rate of only 100 microseconds
- Gain through AT1600E series switch: 0 dB
- Gain through AT1700 series switch: 10 dB
- Front panel access allows individual manual control of output A or B

Benefits

- Units can be daisy chained to support up to 256 inputs with AT1601E/AT1701 or up to 256 × 2 with AT1602E/AT1702
- Compatible with VeEX's AT2500 series remote controlled spectrum analyzers, Calan 3010H Sweep analyzers, and CX380X Forward and Return Path monitoring system
- Locally control up to 256 switch ports through an analyzer

Applications

Using AT1600E/AT1700 Switches with AT2500 Spectrum Analyzers

Up to sixteen AT1600E/AT1700 series switches can be co-located with each VeEX AT2500 series spectrum analyzer, giving the user the ability to locally control up to 256 switch ports through the analyzer. Alternately, utilizing VeEX's suite of RealWORX web-based remote software solutions, CX380X Forward and Return Path monitoring system, or the AT-Web interface 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.
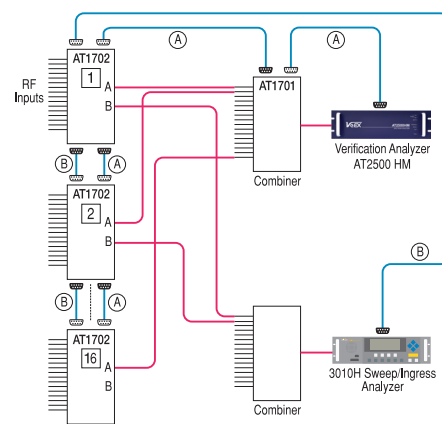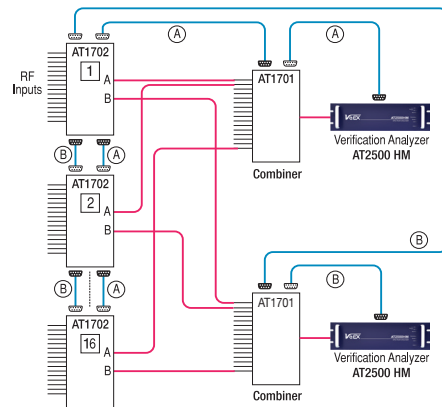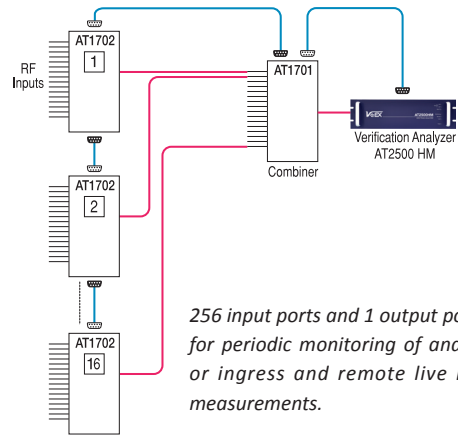
Using AT1600E/AT1700 Switches with VeEX's Calan 3010H Signal/Sweep System

The AT1600E/AT1700 series switch can be connected to the 3010 Signal/Sweep System to perform remote return path ingress and sweep measurements on up to 128 ports. The system consists of VeEX's Calan 3010H Sweep System connected to multiple AT1700M/AT1600E switches at the headend or hub and the CM3800 sweep, spectrum and DOCSIS analyzer in the field.

Specifications

Size (H x W x D)	1.75 x 19 x 9 in; 1 RU (Rack Units) high
Weight	4 lb (1.814 kg)
Frequency Range	5 MHz - 1 GHz
Operating Temperature	5˚C to +40˚C
Storage Temperature	-40˚C to +70˚C
Gain Tolerance	± 1 dB
Switching Rate	100 usec maximum
Max RF Input Level (AT1600E)	+45 dBmV single channel
Max RF Input Level (AT1700)	10 dBmV per channel for 100 channels or +10 dBmV total power
Insertion Loss (AT1600E)	0 dB
Insertion Gain (AT1700)	10 dB
Isolation	50 dB min & -60 dB typical ; 5 MHz - 1 GHz
Impedance	75 ohm
Input Return Loss (AT1600E)	20 dB typical
Input Return Loss (AT1700)	14 dB typical
Power and Current Consumption (AT1600E)	115V/220V, 50/60 Hz; (15VDC/300mA Max)
Power and Current Consumption (AT1700)	115V/220V, 50/60 Hz; (15VDC/1750mA Max)

	AT1601E/ AT1701	AT1602E/ AT1702	
RF Inputs	16	16	Common to both channels
RF Outputs	1	2	Independent out and controls for each channel
Test Points	1	2	One for each channel, located on front panel
Communication Ports	2	4	2 input and output ports (1 for each channel)
Communication Port Type	RS-232/ Ethernet	RS-232/ Ethernet	

256 input ports and 1 output port switches for periodic monitoring of analog, digital or ingress and remote live interactive measurements.

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.

AT1600E/AT1700 series used with VeEX's Calan 3010H Sweep/Ingress system for remote return path ingress and sweep measurements.

Standard Accessories

User Manual, AC Adapter, and Serial cable for PC connection

VeEX
The Verification Experts