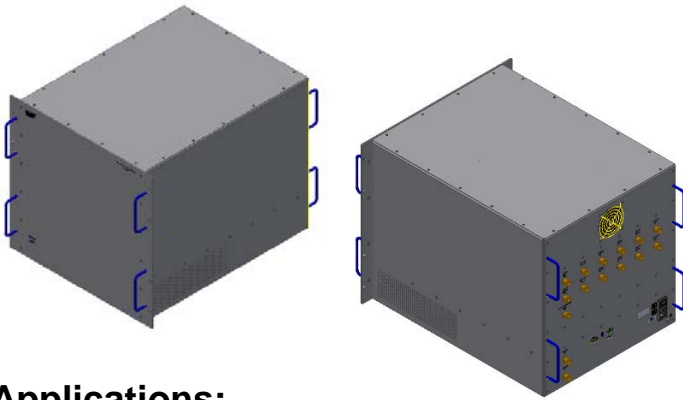


12-User, Full Mesh Transceiver Test System with Ethernet, USB 2.0, and RS-232 Control



Features:

- Full 20 to 3000 MHz Frequency Range
- Broad attenuation range with fine resolution (55.75 dB in 0.25 dB steps)
- Excellent VSWR (<1.4:1 typical)
- +33 dBm CW power handling ability
- Excellent isolation and sneak path mitigation
- 12 bi-directional RF Ports in full mesh configuration

Applications:

- Military Radio and First Responder network testing
- Ideal for Radio to Radio testing and link simulation
- Simulation of static or dynamic test scenarios
- Engineering support or production test lab environments

Description:

API Weinschel's Model 10153 operates over the 20 to 3000 MHz frequency range. It is constructed as a fully meshed network, meaning there is a RF path between each and every RF port. Every path includes its own individually controlled programmable attenuator, allowing each path's signal to be adjusted in amplitude as desired. Some or all of the ports can then be connected to a radio or other device that can transmit or receive signals, with the programmable attenuators allowing for a different attenuation setting for every possible RF path through the matrix. The attenuators can then have their attenuation settings changed over various intervals to simulate signal fading between radios, or a port can be used to introduce an interfering signal at various amplitude levels.

Electro-mechanical attenuators are utilized in the design, resulting in lower insertion loss, better VSWR, and greater attenuation accuracy.

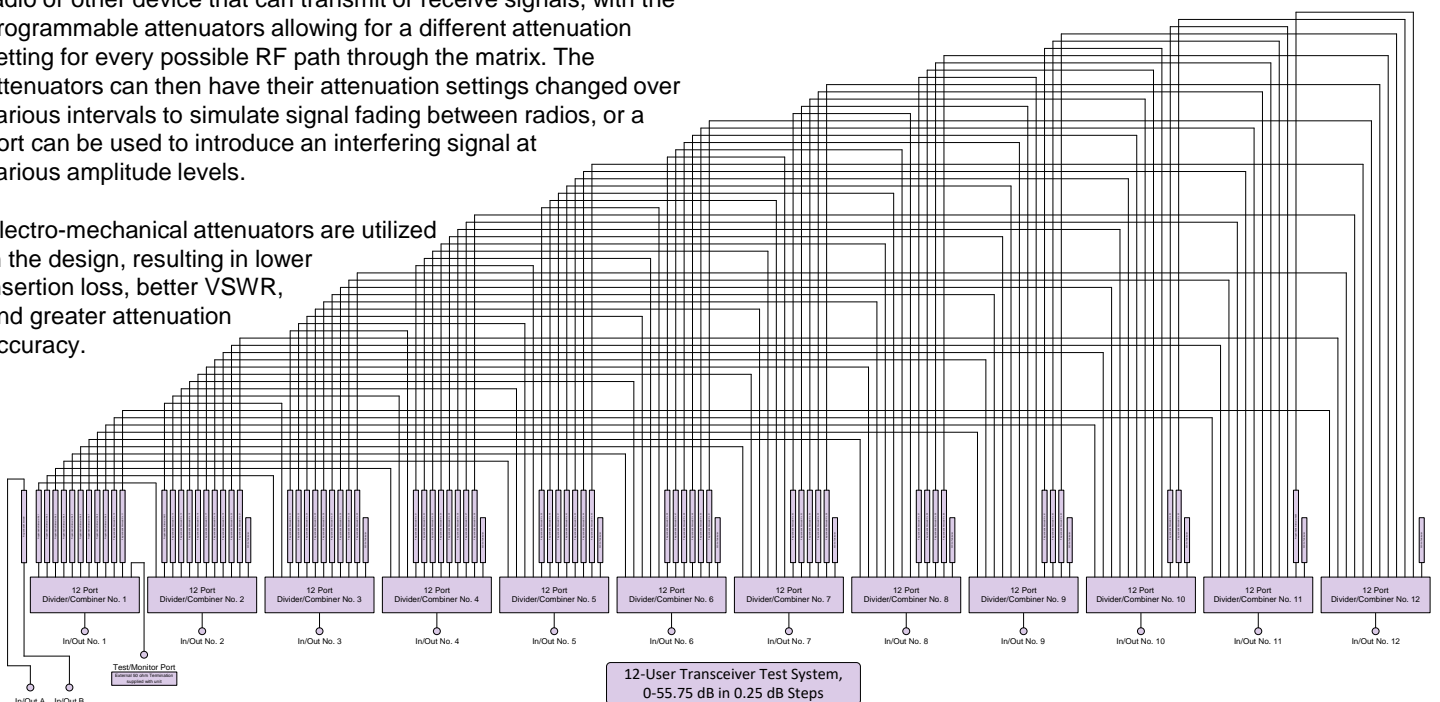
Control & Command:

The system supports control over the following interfaces: Ethernet, RS232, and USB.

The Ethernet port supports control over the following network protocols: IP, UDP, TCP, ICMP, ARP, DHCP, and AUTOIP.

The USB port provides a USB Communications Device Class device (CDC) interface that allows programming via a virtual COM port using the same text-based commands as the serial port.

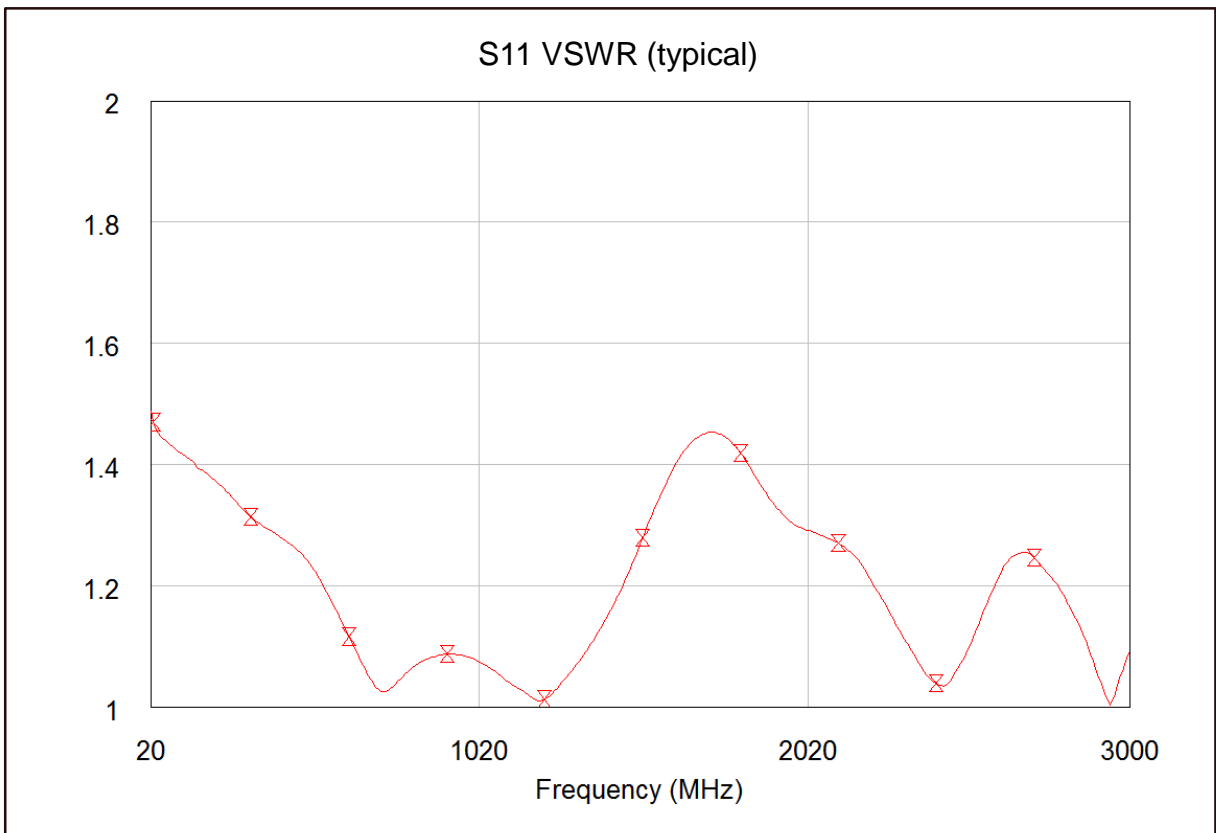
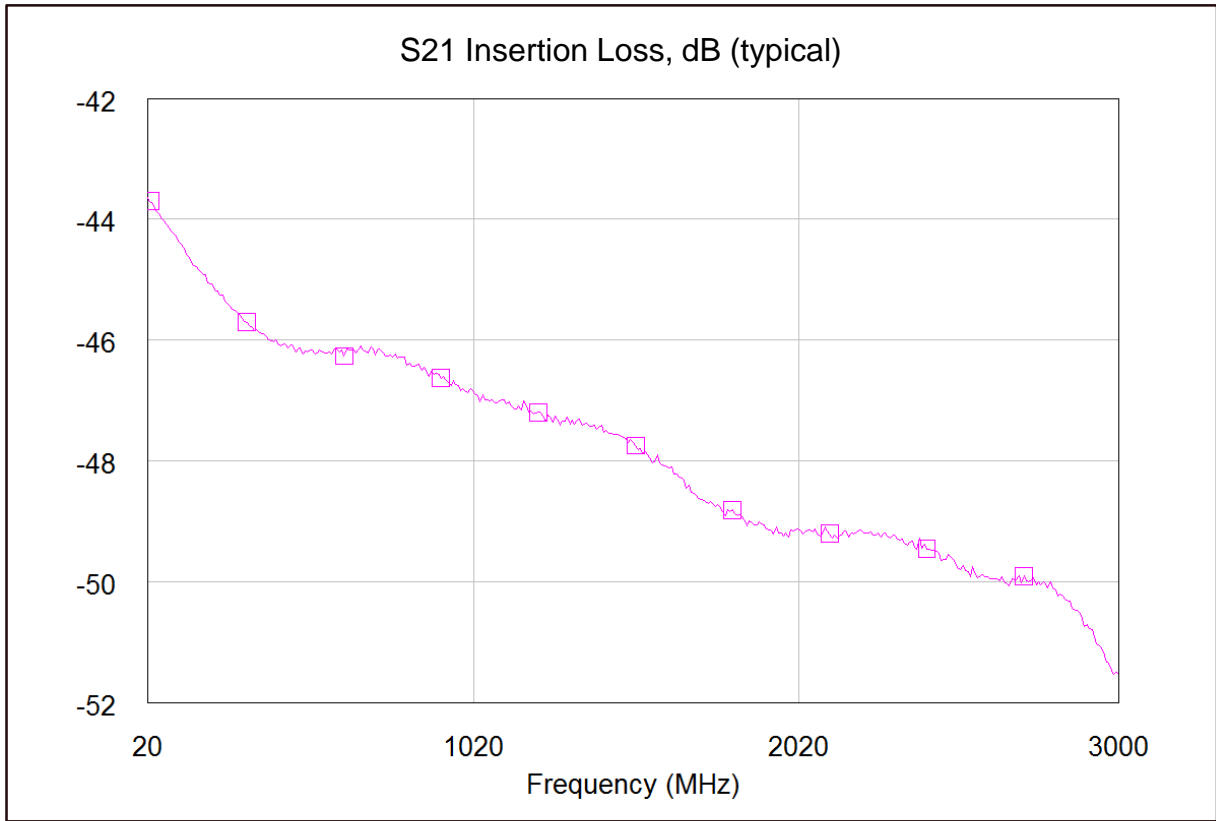
Programming is done via simple ASCII text-based message strings. The command structure/operation includes the 488.2 Common Commands such as *IDN?, *RST, *CLS, and *OPC?, in addition to device specific commands.



Electrical & Environmental Specifications

Parameter	Condition	Minimum	Typical	Maximum	Units
Frequency Range	-	20	-	3000	MHz
Insertion Loss, 0 dB state (see Note 1)	20 – 1000 MHz	42.0	47.0	53.0	dB
	1001 – 2000 MHz	42.0	49.5	53.0	
	2001 – 3000 MHz	42.0	51.5	53.0	
VSWR (All Ports)	20 – 3000 MHz	-	1.4:1	1.6:1	ratio
Nominal Impedance	20 – 3000 MHz	-	50	-	ohm
RF Input Power, CW (see Note 2)	20 – 3000 MHz	-	-	+33	dBm
Attenuation Range (in 0.25 dB step size)	20 – 3000 MHz	0	-	55.75	dB
Attenuation Accuracy	20 – 3000 MHz	-	-	+/- 0.3 or 2.0% (whichever is greater)	dB
Switching Speed (see Note 3)	20 – 3000 MHz	-	4	6	msec.
Power Divider Isolation:	20 – 3000 MHz	18	22	-	dB
RF Connectors	Type N female	-	-	-	-
Ethernet (10/100 Base T) Connector	Standard RJ45	-	-	-	-
USB 2.0 Connector	Mini B	-	-	-	-
RS-232 Bus Connector	9-Pin male D	-	-	-	-
AC Power Requirements	100 to 240 VAC, 47-63 Hz	-	250	550	watts
Operating Temperature Range	-	0	-	+50	°C
Storage Temperature Range	-	-40	-	+70	°C
Relative Humidity	Up to 90%, non-condensing	-	-	-	-
Altitude, Operating	Up to 10,000 feet	-	-	-	-

- NOTES: 1. Separate, single attenuator path Insertion Loss is 4.5 dB max. (20 to 3000 MHz). Test/Monitor Port Insertion Loss is 17.8 dB max.
 2. Hot switching of attenuators is allowed.
 3. Attenuators only, does not include command processing time of 5 msec. nominal.
 4. The values in the table apply at room temperature unless otherwise specified.



Mechanical Outline

