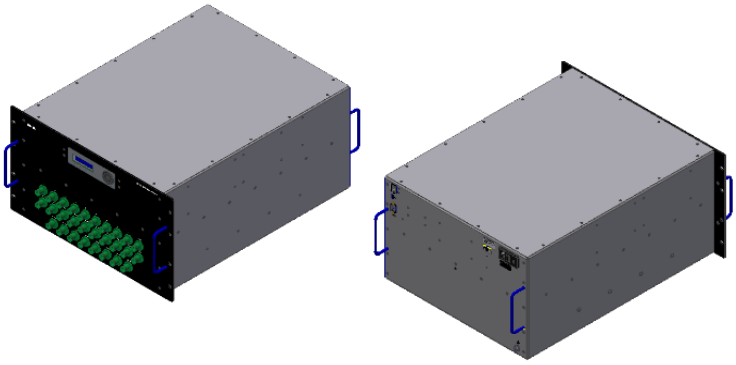
Electro-mechanical Switch Matrices
Model 10203

20 x 8 Full-Blocking Switch Matrix with Ethernet, USB 2.0, RS-232, and Local Control



Features:

- Operational from DC to 18 GHz
- Low insertion loss (1.5 dB typical up to 6 GHz)
- Excellent VSWR (<1.35:1 typical up to 6 GHz)
- High CW power handling ability (+47 dBm)
- Very high channel to channel and on/off isolation
- 20 Input and 8 Output Ports (fully bi-directional)

Applications:

- Ideal for Automated Test Equipment (ATE) platforms
- 2G/3G/4G LTE/5G signal routing
- MIMO, Wi-MAX, Wi-Fi test scenarios
- Engineering or production test lab environments

Description:

API Weinschel's Model 10203 operates over the DC to 18 GHz frequency range, with optimized performance from DC to 6 GHz to specifically support telecom and wireless test applications. The full-blocking configuration allows for any input to be routed to any individual output (or vice versa), while isolating (blocking) the other paths from the connection.

Electro-mechanical switches are utilized in the design, resulting in extremely low insertion loss, VSWR, and high on/off and channel to channel isolation. The unit will also handle up to +47 dBm CW for steady state operation, with hot switching allowed at up to +30 dBm CW power levels.

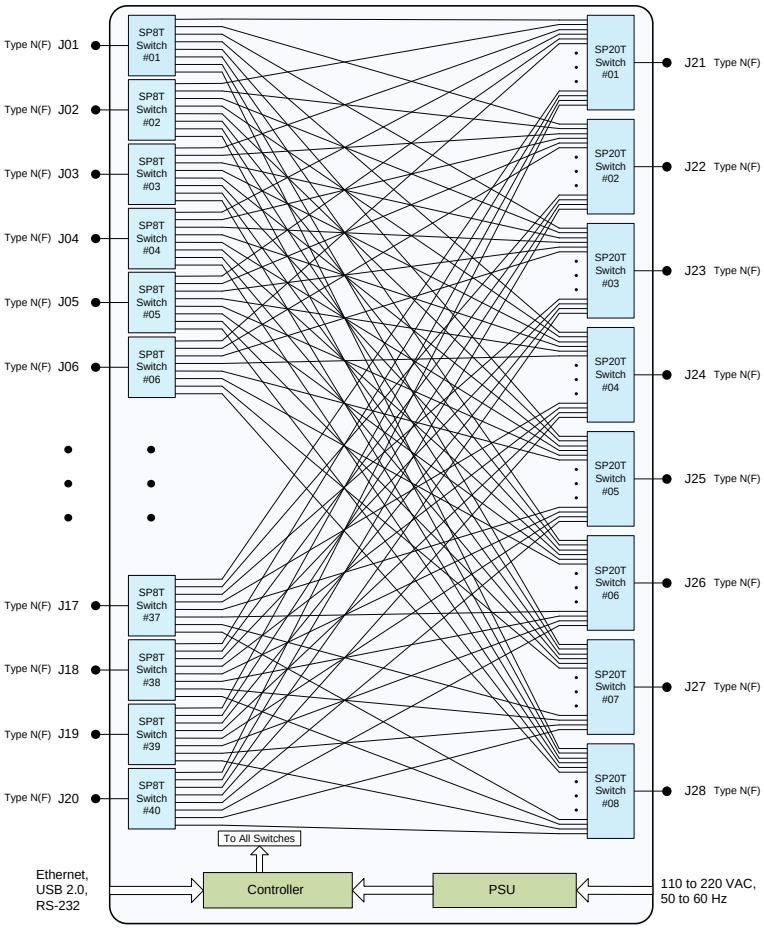
Control & Command:

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.



20 x 8 Switch Matrix, Full Blocking

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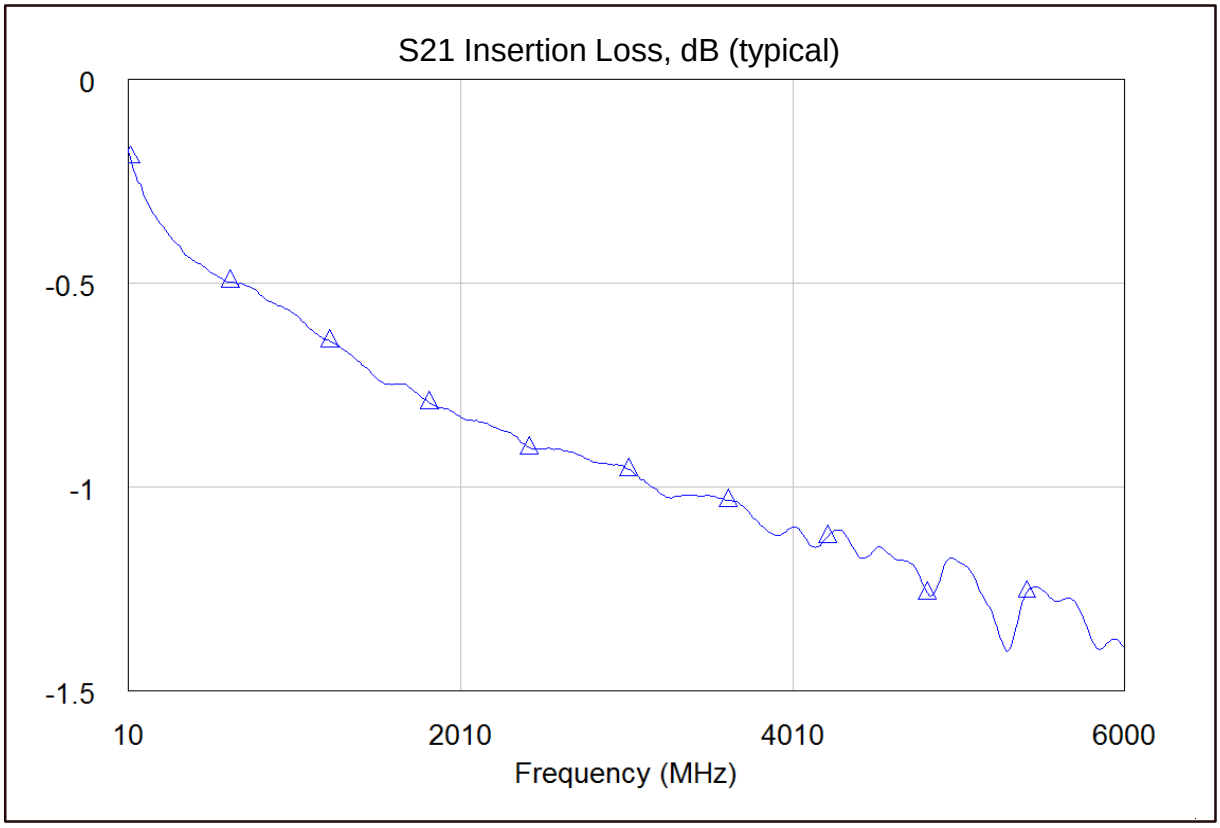
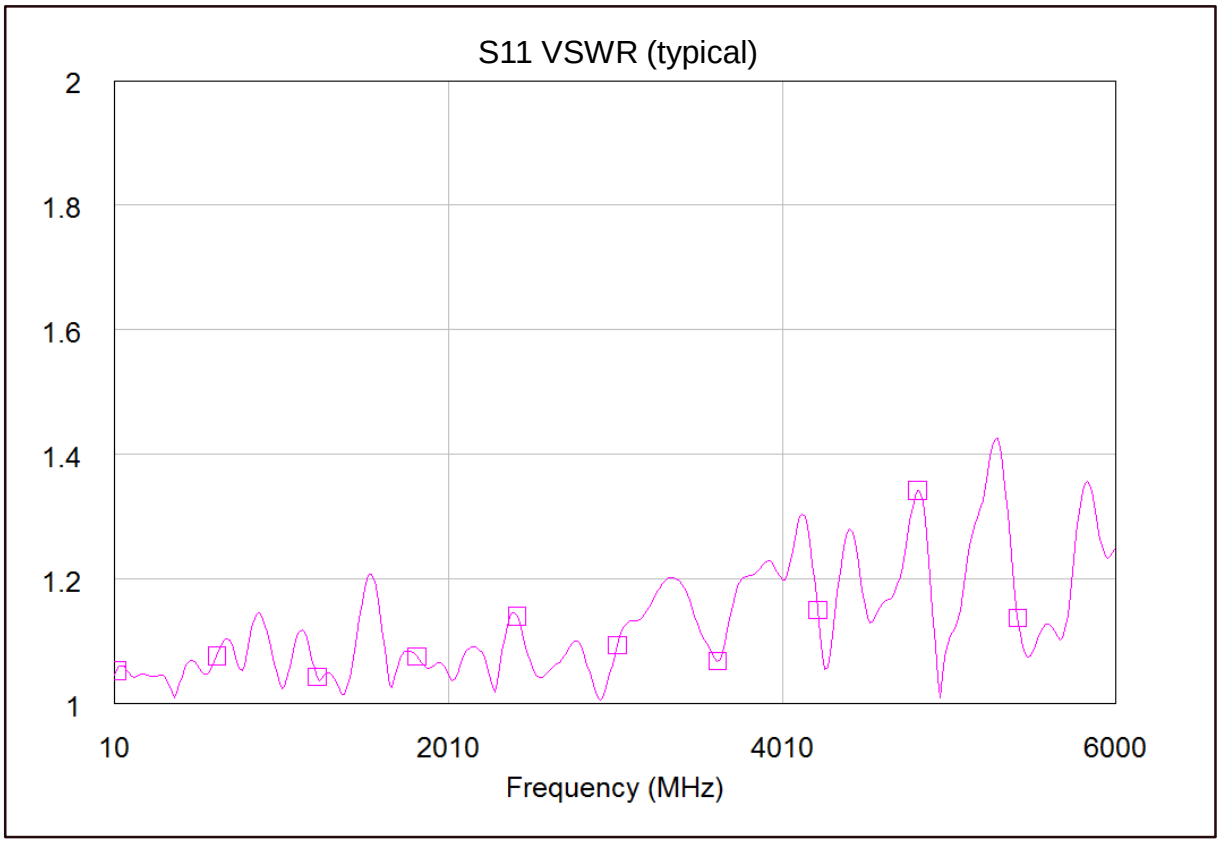
Electrical & Environmental Specifications

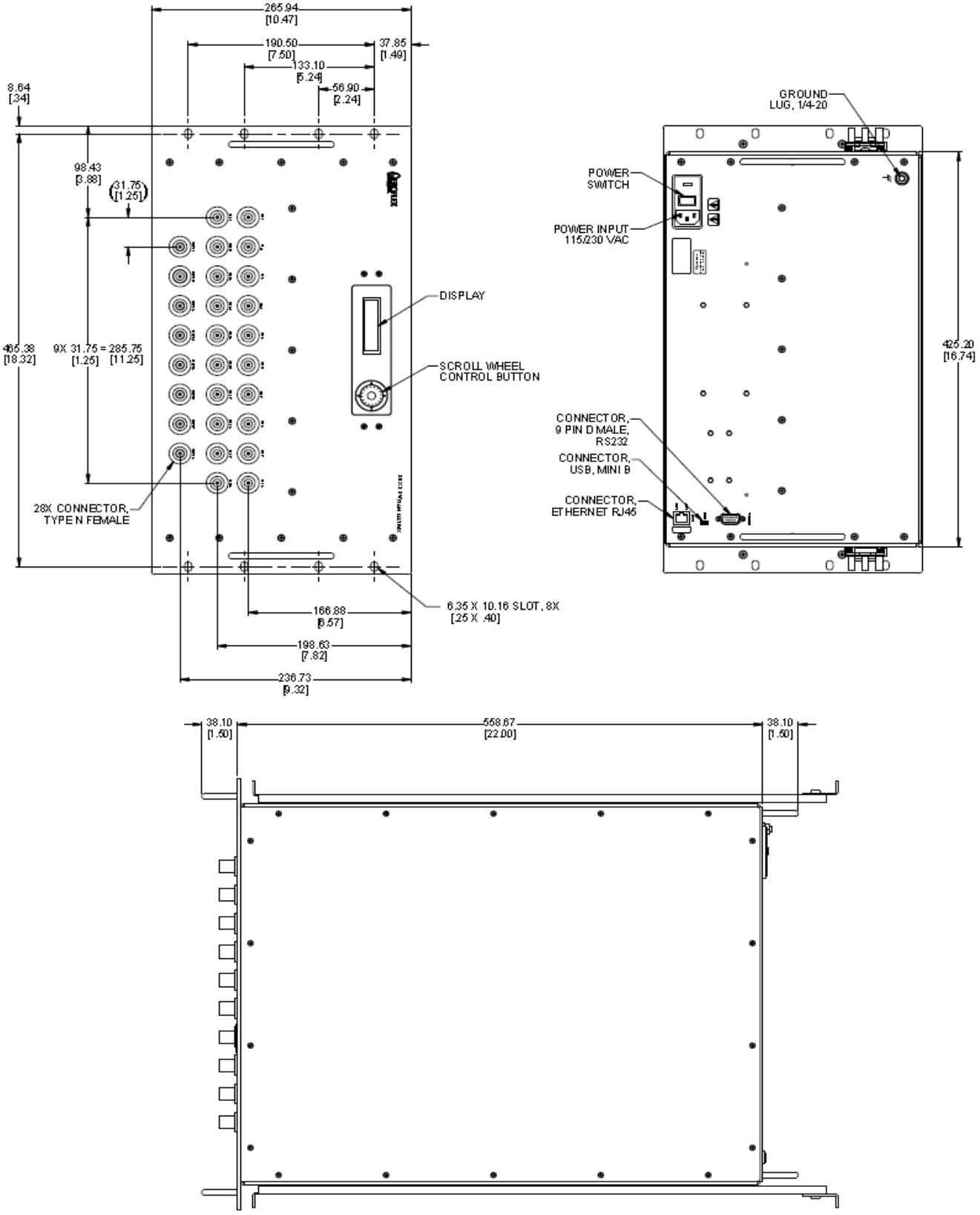
Parameter	Condition	Minimum	Typical	Maximum	Units
Frequency Range	-	DC	-	18	GHz
Insertion Loss	DC – 3 GHz	-	1.0	1.5	dB
	3 – 6 GHz	-	1.5	2.1	
	6 – 12 GHz	-	2.5	-	
	12 – 18 GHz	-	3.3	-	
VSWR (All Ports)	DC – 6 GHz	-	1.3:1	1.5:1	ratio
	6 – 18 GHz	-	1.5:1	-	
Nominal Impedance	DC – 18 GHz	-	50	-	ohm
RF Input Power, CW (see Note 2)	DC – 18 GHz	-	-	+47	dBm
Isolation (on/off)	DC – 18 GHz	65	85	-	dB
Switching Speed (see Note 3)	DC– 18 GHz	-	10	15	msec.
Switch Lifetime	+20 dBm	1 million	2 million	-	cycles
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	-	100	-	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. The values in the table apply at room temperature unless otherwise specified.
2. Steady state conditions only. Hot switching limited to +30 dBm CW.
3. Switches only, does not include command processing time of 10 msec. nominal. Switches have a “break before make”, normally open functionality.





Mechanical Outline



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