WERBEL MICROWAVE LLC
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GPS Splitter, 8-way, SMA Female, Active

WM8PD-GPS-ACT-S

Description

Model WM8PD-GPS-ACT-S from Werbel Microwave is a one-input, eight-output GPS splitter. The typical application allows the GPS signal from an active GPS antenna located on the roof to be split evenly among eight GPS receivers. The WM8PD-GPS-ACT-S passes +5VDC to the antenna connected at the RF IN port by way of internal bias tee network.

All outputs are DC blocked with 200Ω DC load to simulate an antenna DC current draw for any receiver connected. All eight channels provide signal gain to help overcome the loss of the splitter and associated cabling.

The product is versatile in that it allows for two power supply options: 120VAC wall adapter (provided) for benchtop use, or +5VDC direct connection by feedthrough for permanent installations into chassis or rack mount systems. Manufactured in the USA.

Photo is representative.

Specifications (R.F.)	Min.	Typ.	Max.	Units
Frequency	950	–	2150	MHz
Impedance	–	50	–	Ohm
Gain	0	3	–	dB
Gain Flatness	–	±0.5	–	dB
Amplitude Unbalance	–	0.3	–	dB
Phase Unbalance	–	5	–	Deg
Isolation (Between Ports 1-8)	18	30	–	dB
Reverse Isolation (Reverse path loss from 1-8 to RF IN)	–	35	–	dB
Return Loss (RF IN Port)	10	20	–	dB
Return Loss (Port 1-8)	14	22	–	dB
Max Input Power without damage (RF IN)	–	–	-5	dBm
Specifications (D.C.)	**Min.**	**Typ.**	**Max.**	**Units**
Supply Voltage (use only one; see following page)				
Direct connection to feed-through or	+4.8	+5.0	+5.2	VDC
120VAC wall adapter (provided) to DC Jack	+9.0	–	+18.0	VDC
Voltage Out to Antenna (RF IN) Port (provided by device).	–	+5.0	–	VDC
Current Out to Antenna (RF IN) Port (do not exceed).	–	–	250	mA
Internal Device Current	–	80	–	mA

Definitions	Specification
DC Blocking	All outputs; +5.2VDC max.
Internal 200-ohm resistor provides current drain for GPS receiver(s) not powering active antenna.	All outputs; 25mA max. at +5VDC.

Specifications (continued)

Mechanical

Connector Interface	SMA-Female
Operating Temperature[2]	-10 to +65 °C
Storage Temperature	-55 to +100 °C
Weight Nominal	485g (1.07 lb.)
Humidity	10-90% non-condensing
Environment	Indoor Use Only
CAGE Code	78YZ0

Materials

RoHS Compliant[3]	Yes
REACH Compliant[3]	Yes
Enclosure	Aluminum
Connectors	Gold Plated
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

1. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
2. Electrical specification at +25 °C only.
3. To the best of our knowledge at the time of publication.

Operating Instructions

ATTENTION

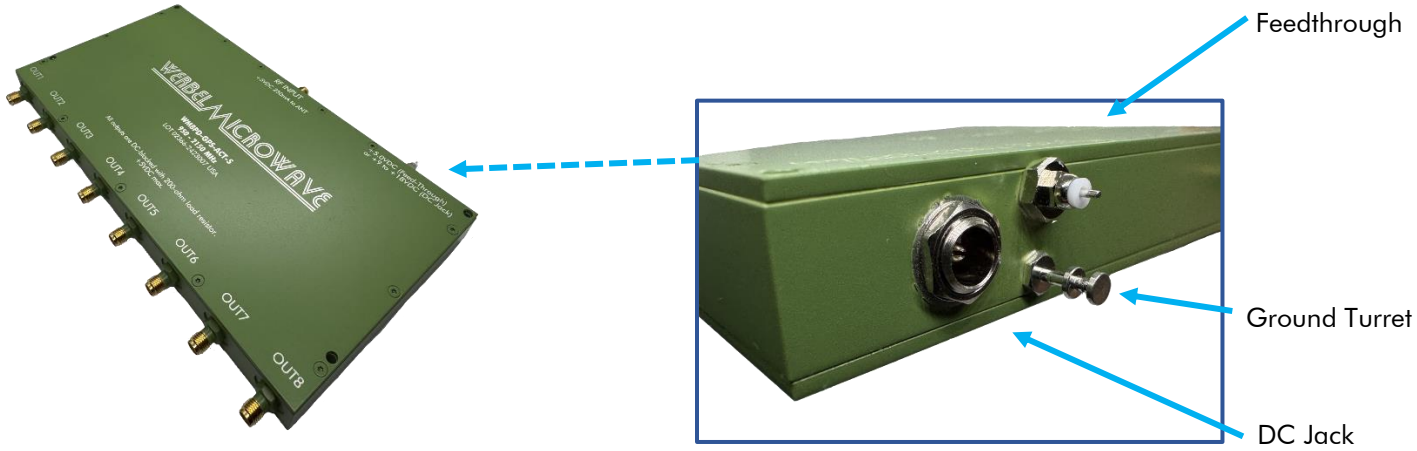
Observe precautions for handling electrostatic sensitive devices.

The product provides two options for supply voltage. Use only one option at a time.

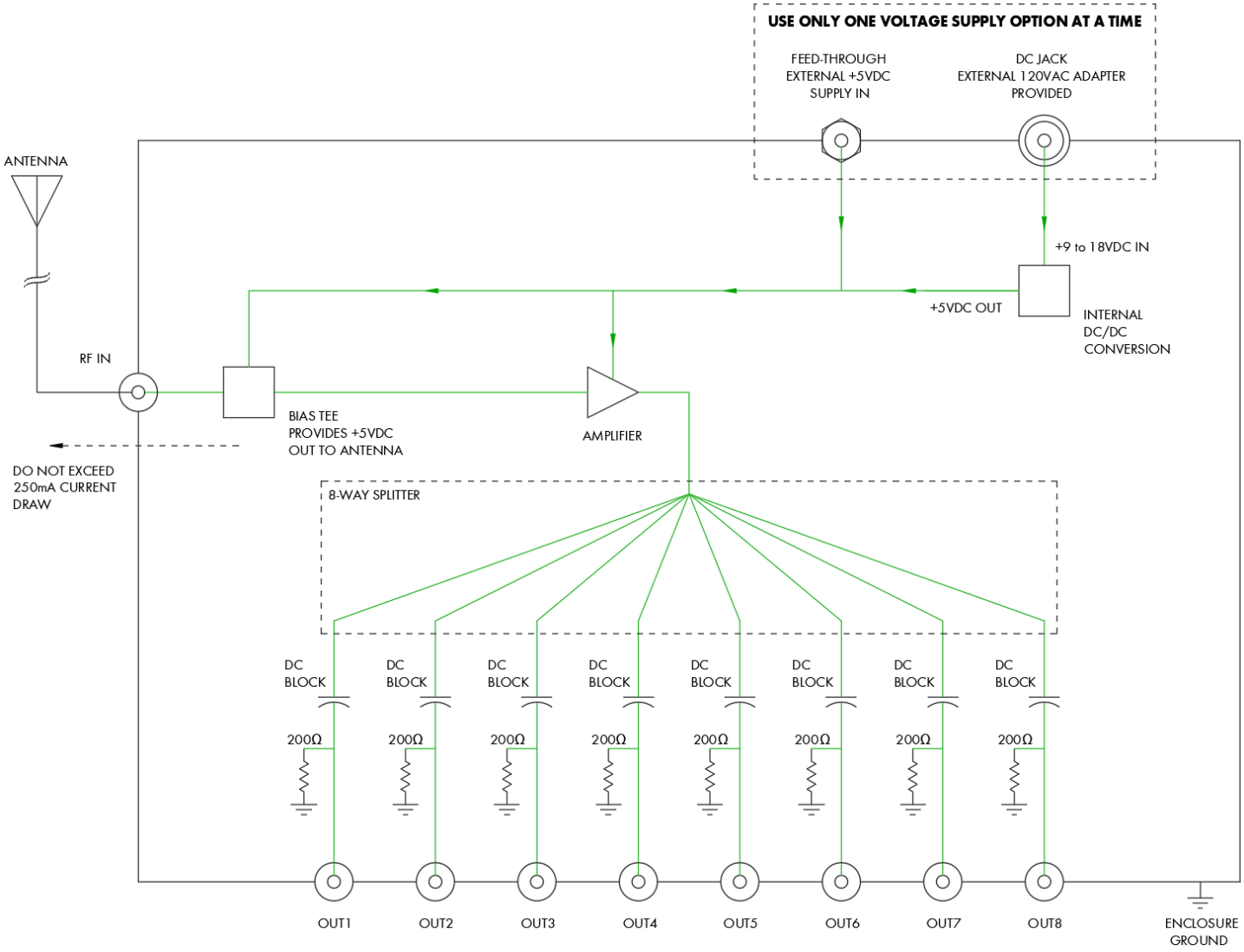
For benchtop use, a 120VAC wall outlet adapter is provided for use with the DC jack.

For permanent installation into a chassis, a feedthrough and ground turret are provided to be supplied with +5VDC and ground connection, respectively.

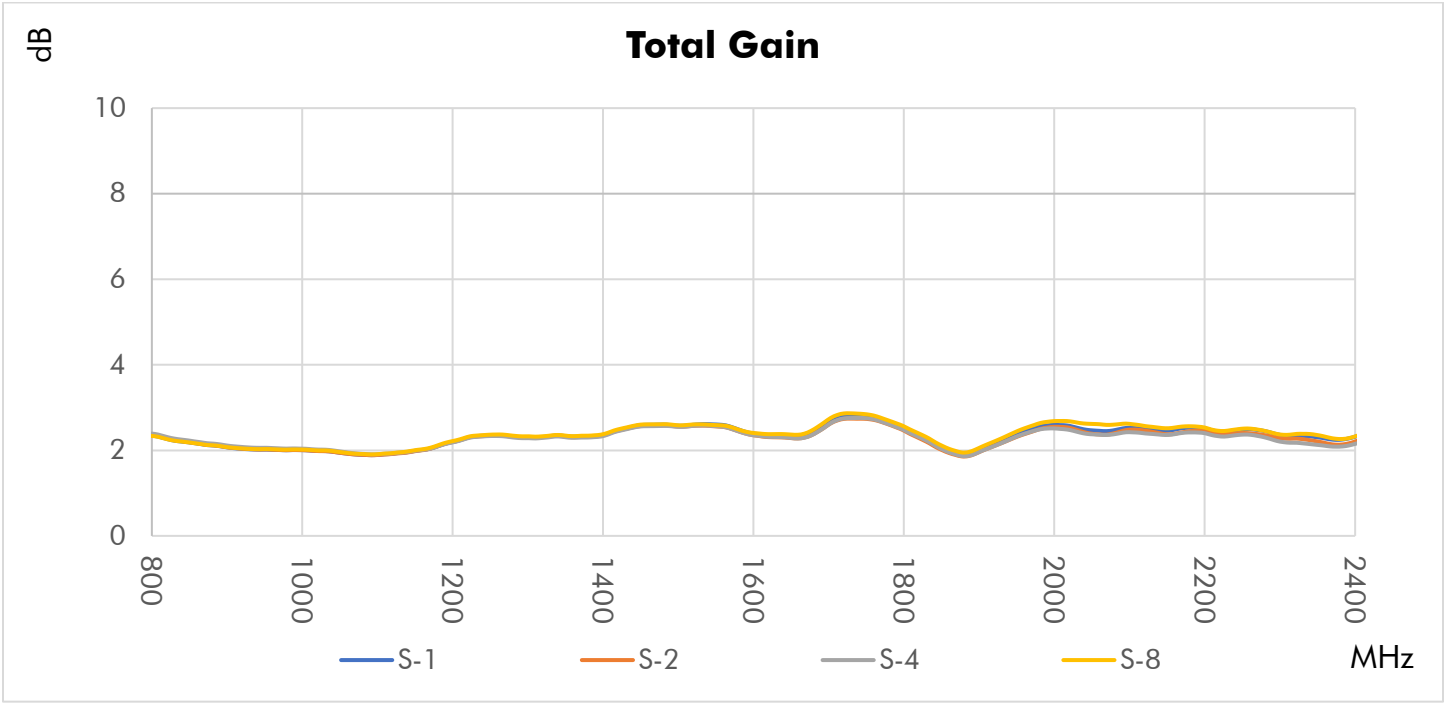
Before connecting the supply voltage, ensure the product enclosure is properly grounded and all RF connections are made. Any unused outputs should be properly terminated with a 50Ω load rated at 1W.

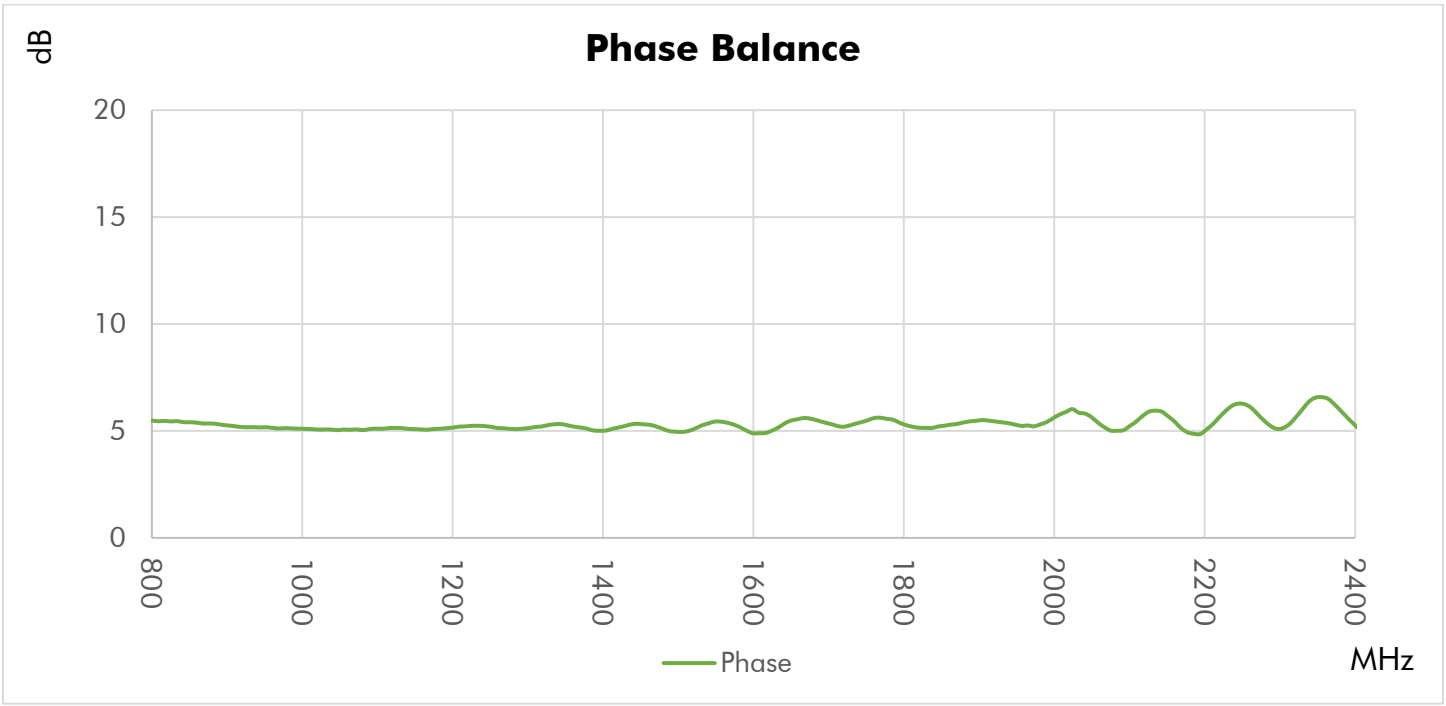


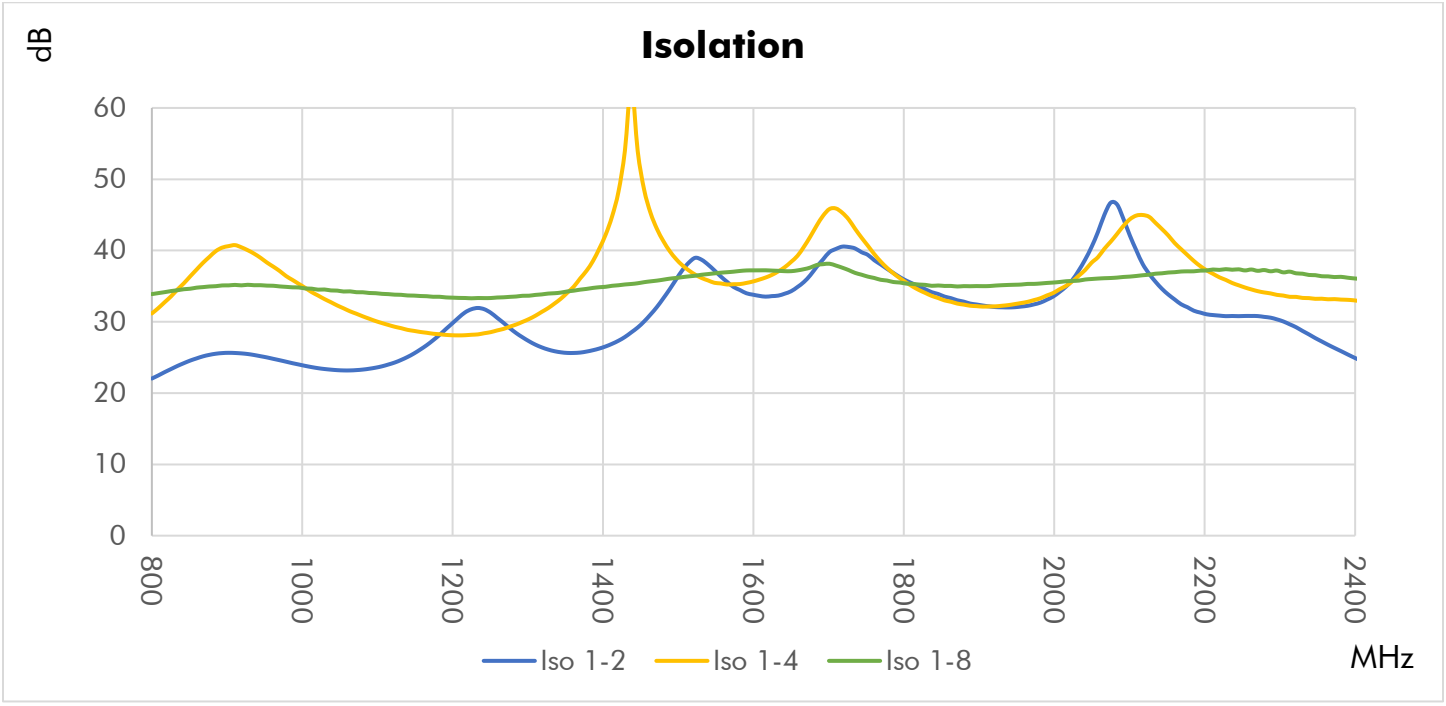
Functional Schematic

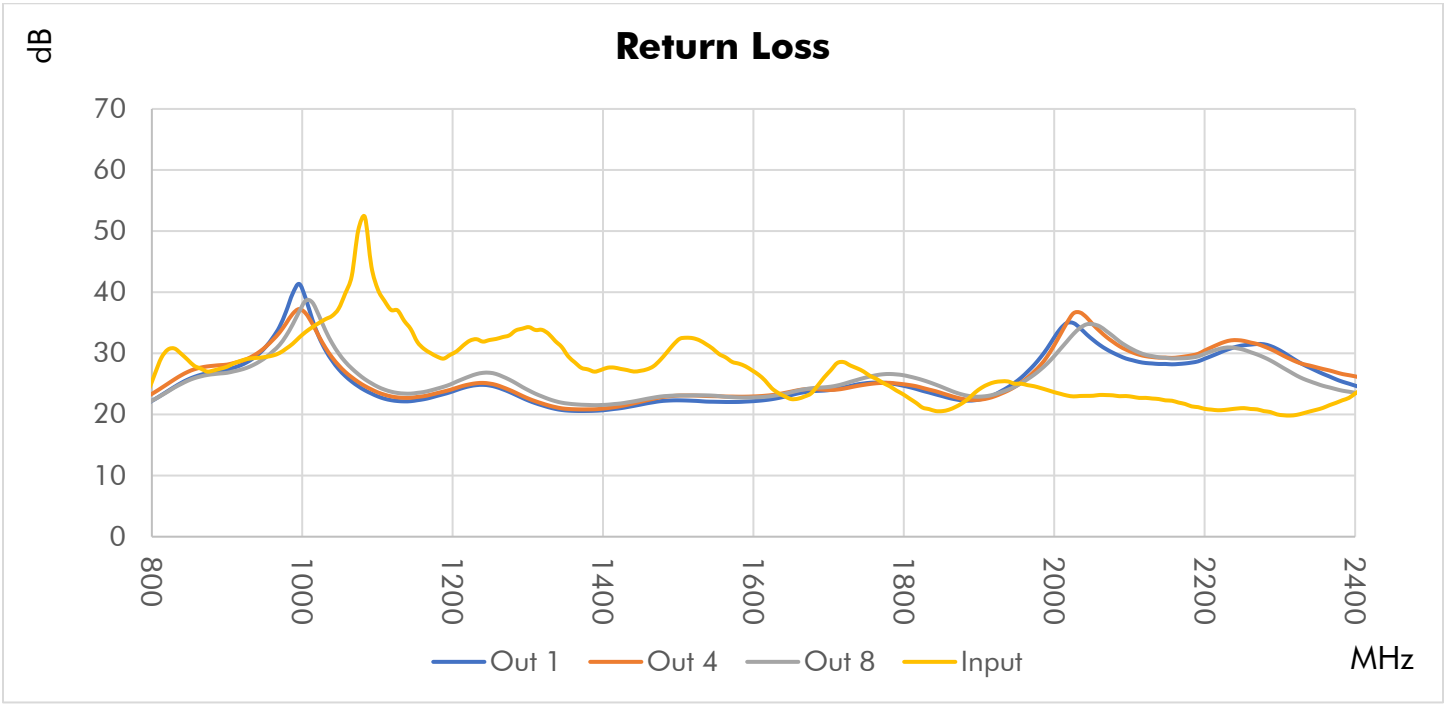


Typical Performance at +25 °C





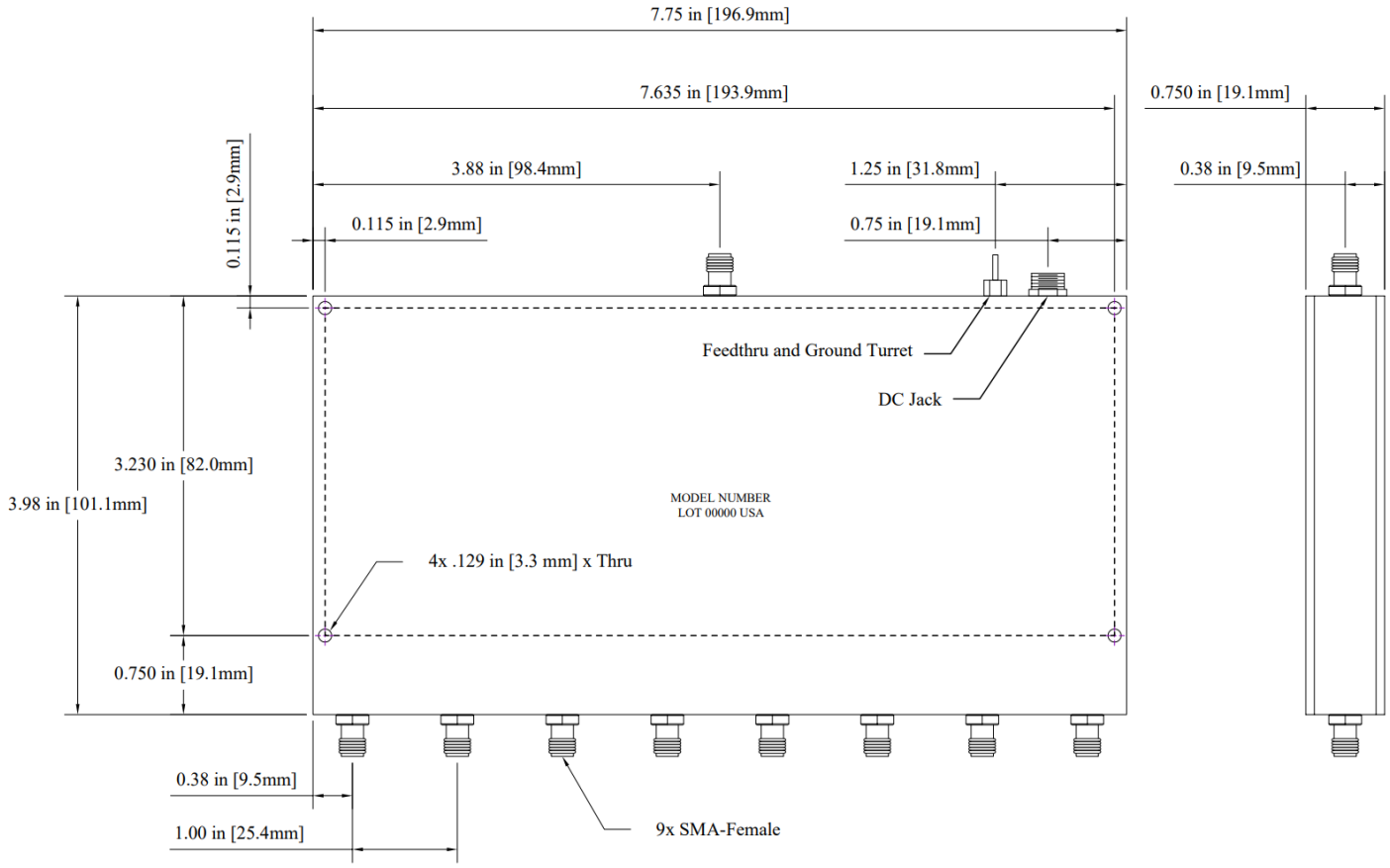

Isolation
dB
60
50
40
30
20
10
0
800
1000
1200
1400
1600
1800
2000
2200
2400
MHz
Iso 1-2
Iso 1-4
Iso 1-8


Return Loss
dB
70
60
50
40
30
20
10
0
800
1000
1200
1400
1600
1800
2000
2200
2400
MHz
Out 1
Out 4
Out 8
Input

Typical Performance Data

Frequency (MHz)	Return Loss (dB)			Total Gain (dB)		Isolation (dB)		
	Port S	Port 1	Port 8	S-1	S-8	1-2	1-4	1-8
600	17.24	24.02	24.99	0.99	0.98	21.18	20.40	26.78
700	19.22	19.58	20.02	0.81	0.80	16.35	23.65	27.44
800	24.58	22.19	22.19	2.34	2.33	25.16	40.44	27.93
900	27.91	27.21	26.68	2.07	2.08	23.88	32.16	29.66
1000	32.73	41.03	37.85	2.01	2.03	21.88	26.57	28.22
1100	46.13	22.98	24.56	1.90	1.92	28.38	26.67	29.69
1200	31.29	23.70	24.99	2.21	2.23	30.71	28.71	29.67
1300	35.31	22.24	23.91	2.32	2.34	24.87	43.27	30.07
1400	26.89	20.59	21.44	2.37	2.39	36.63	32.28	31.03
1500	30.15	22.20	22.95	2.59	2.61	25.81	28.77	32.22
1600	26.16	22.06	22.63	2.40	2.41	30.43	34.94	35.20
1700	26.50	23.82	24.37	2.70	2.76	32.65	35.58	34.73
1800	22.66	24.53	26.20	2.53	2.59	28.16	32.41	33.72
1900	23.90	22.44	22.96	2.03	2.10	49.35	33.69	32.65
2000	23.70	33.17	30.13	2.61	2.73	27.76	32.14	32.68
2100	23.18	29.44	31.54	2.54	2.67	27.86	30.48	33.08
2200	21.15	29.30	30.23	2.54	2.60	44.72	32.54	34.06
2300	20.34	30.15	27.68	2.39	2.45	38.00	39.63	34.39
2400	23.92	25.05	23.81	2.33	2.38	33.08	38.99	35.64
2500	27.25	21.11	21.22	2.45	2.51	26.50	30.69	35.85
2600	21.30	17.78	18.61	2.22	2.31	27.04	29.96	43.09
2700	16.73	18.00	20.13	3.10	3.19	20.27	32.36	39.83
2800	15.47	22.56	24.46	3.57	3.62	18.43	30.91	38.85
2900	15.70	26.35	29.10	2.41	2.47	27.16	29.51	42.72
3000	14.18	22.73	24.14	0.38	0.44	37.83	31.86	35.95

Outline Dimensions



Outline drawing: OL-GPS-08-ACT-S
Dimensions are in inches, [mm] shown for convenience.
Tolerances on 2-pl decimals: ±.03. 3-pl decimals: ± .015.