

MVGLA20RPDC



Mini Variable Gain Line Amplifier 20dB Gain Technical Product Data

Features

- Small Form Factor
 - 2.5" x 0.75" x 1.49" (not including connectors)
- Low Noise Figure
 - 1.2 dB NF Typical at GPS L1 With 25dB Gain Setting.
- Wide Accepted Frequency Range
 - Accepts signals from the entire L-Band, covering all major GNSS constellations.
- Customizable Output Gain
 - Customizable from 1 dB to 25 dB.
- High 1 dB compression point and 3rd order intercept point.



Description

This **Mini Variable Gain Line Amplifier 20dB Regulated Pass DC (MVGLA20RPDC)** is an active one input, one output amplifier optimized for GPS applications. This equipment accepts signals covering all major GNSS constellations with excellent gain flatness and a low L1 noise figure. In the standard configuration, the J1 port accepts DC voltage from a connected GPS receiver. This voltage is regulated and used to power the internal amplifiers while unregulated voltage is passed through the antenna port to power a connected active antenna or other upstream devices.

Use Cases

- As an in-line amplifier to negate the insertion loss of a long cable run.
- To add amplification to a signal provided by a passive antenna.
- As an amplifier in a re-radiating system.
- In combination with one of our splitter devices to create a GPS distribution network.
- When an amplifier is needed but the VGLA20RPDC has too large of a form factor.

MVGLA20RPDC

Electrical Specifications, TA=25°C

General Specification

Parameter	Notes	Min	Typ	Max	Unit
Frequency Range	Covers all major GNSS constellations.	1.1		1.7	GHz
Characteristic Impedance	Input and output ports matched to 50Ω.		50		Ω
Reverse Isolation	Attenuation applied signals traveling backwards through the amplifier: S12.	-56		-60	dB
Req. DC Input V.	Operating Voltage Range.	3.3		15	VDC
Current Draw	Typical current consumption.		12		mA

GPS L1 & L2 RF Specification ⁽¹⁾

Parameter	Notes	Min	Typ	Max	Unit
Min Gain	The relative increase in signal power provided by the amplifier.	-1	0	1	dB
Max Gain	The relative increase in signal power provided by the amplifier.	24	25	26	dB
Input SWR	Input Standing Wave Ratio: S11 at L1 and L2		1.6:1	2.0:1	-
Output SWR	Output Standing Wave Ratio: S22 at L1 and L2		1.5:1	2.0:1	-
Noise Figure	The increase in noise power relative to an ideal amplifier. Minimum NF is achieved at max amplification. Max NF occurs at minimum gain.	L1:2 L2:3.6		L1:4.65 L2:5.65	dB
Band Gain Flatness	The difference in loss or gain between the L1 and L2 frequencies.		0.5	1.0	dB
Tolerance	The difference between gain setting and actual gain value.		1.0	2.0	dB
Input P1dB	The 1dB compression point at L1.		L1:-25 L2:-26		dBm
3 rd Order Intercept	Third-order intercept point at L1.		-15.5		dBm

(1): Performance is slightly reduced around GPS L5. If working on sensitive L5 applications, please request performance data.

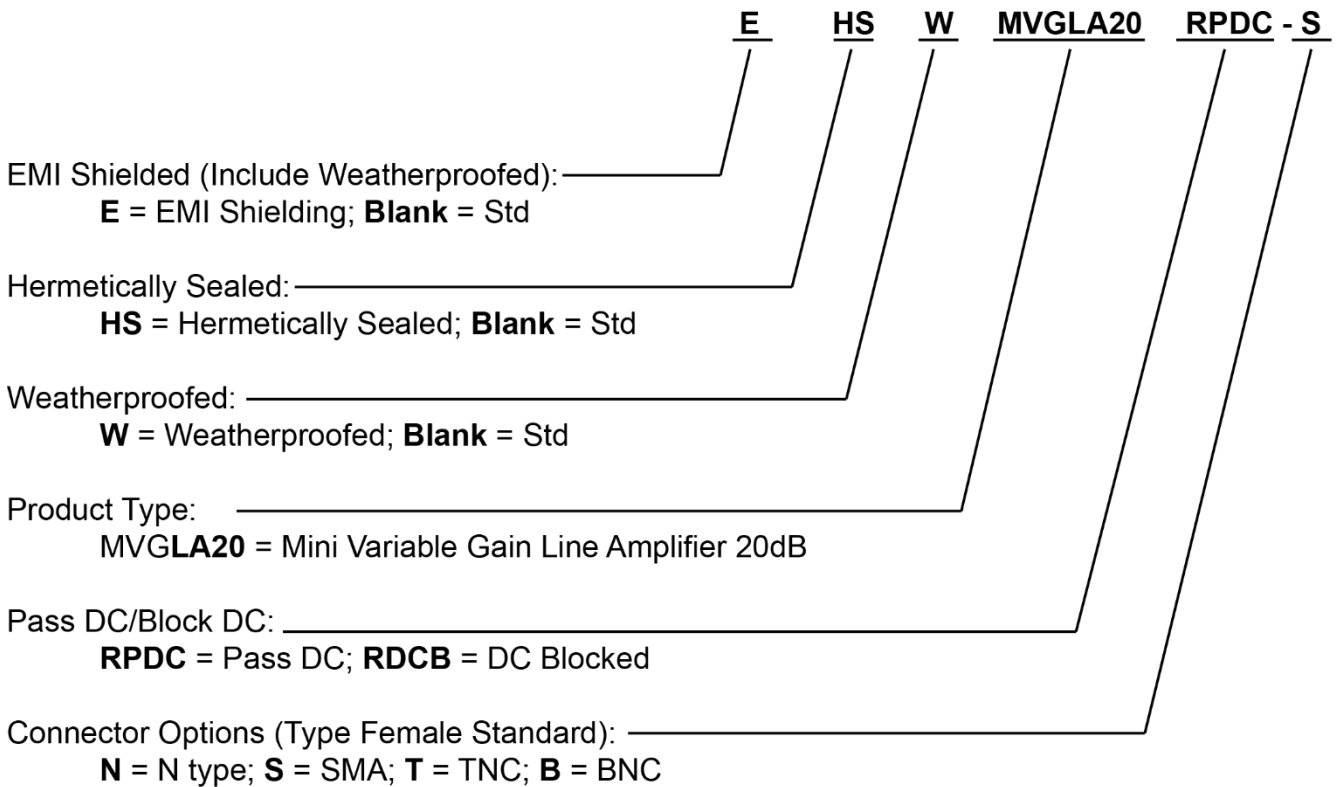
Standard DC Configuration without External Power Option

All Ports Pass DC

Connector Options	Connector Style	Charge
	Type N-female	No Charge
	Type SMA-female	No Charge
	Type TNC-female	No Charge
	Type BNC-female	No Charge
	Other	Contact GPS Networking

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Part Number Configuration



Contact GPS Networking Technical Support at 1-800-463-3063 or salestech@gpsnetworking.com for any questions regarding non-standard configurations and corresponding part numbers.

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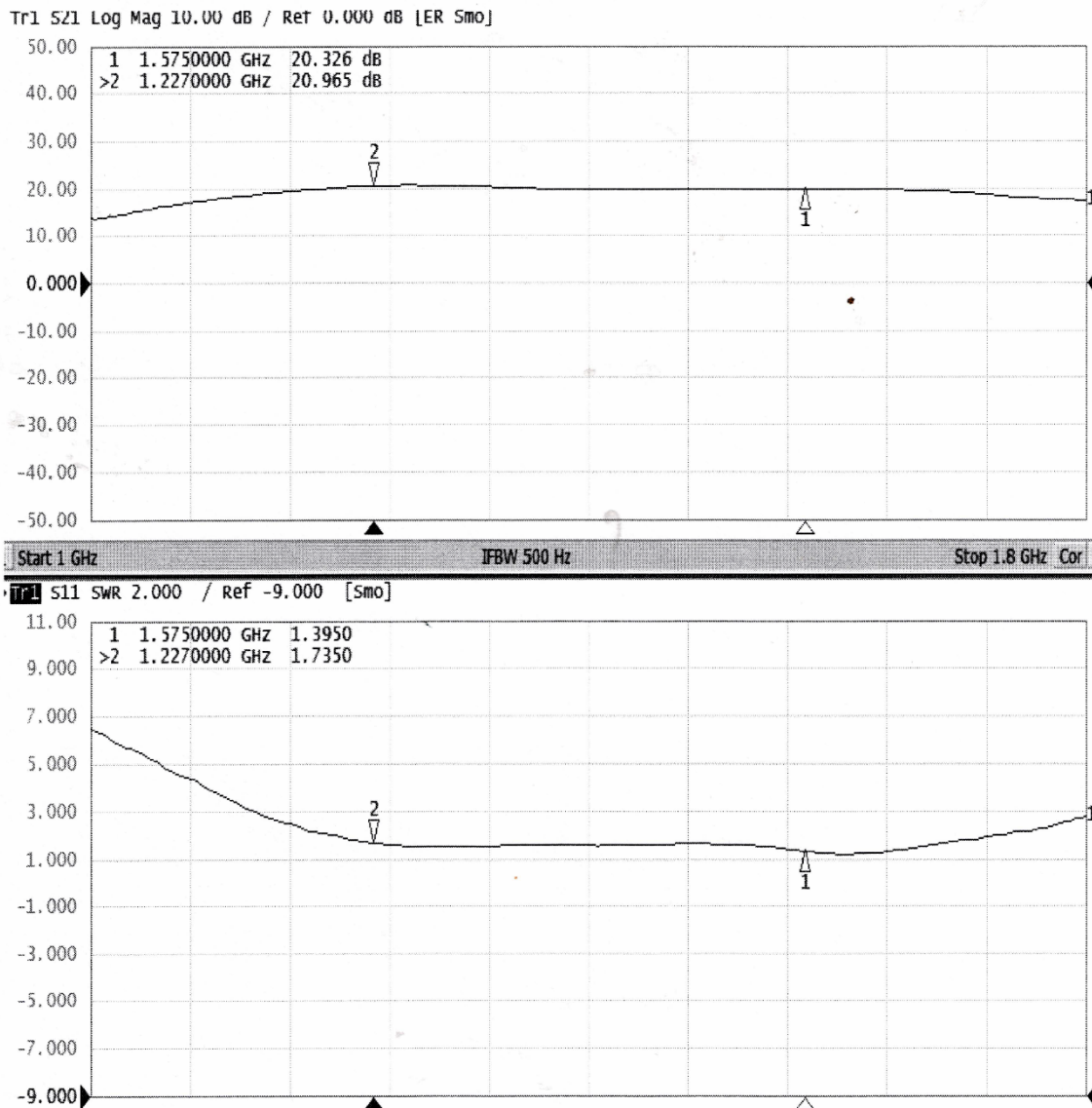
Performance

MVGLA20RPDC (Standard Gain)

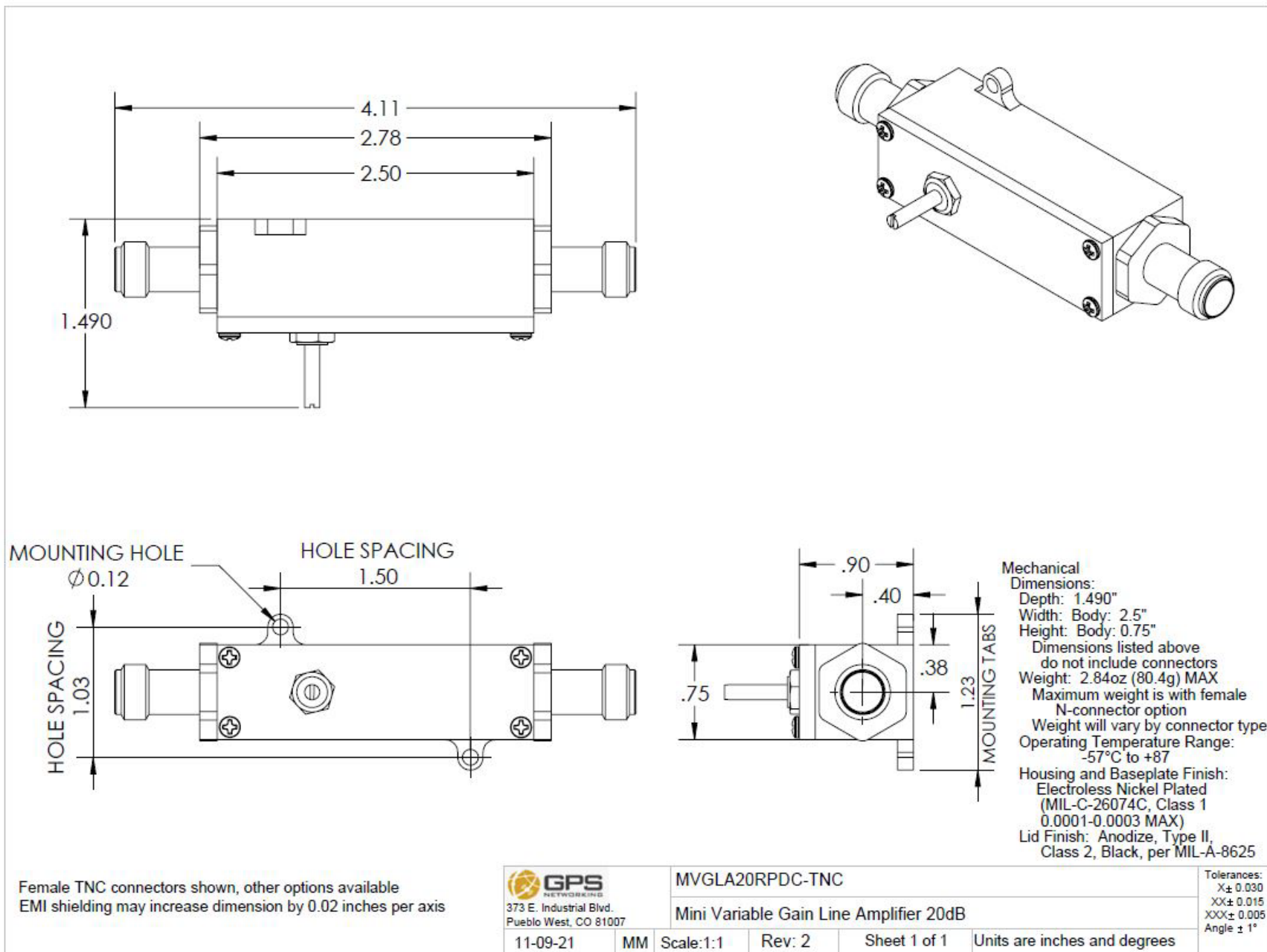
Each MVGLA20RPDC ships with a test sheet that verifies critical performance characteristics, such as gain, input VSWR, and amplitude balance; a typical VNA test sheet is shown below. Noise figure test data is available upon request.



Test Data



Mechanical



Contact us at salestech@gpsnetworking.com for 3D models or CAD drawings.