

MVGLA20RPDC



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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.



Contact NavtechGPS for product details. www.NavtechGPS.com
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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⁾

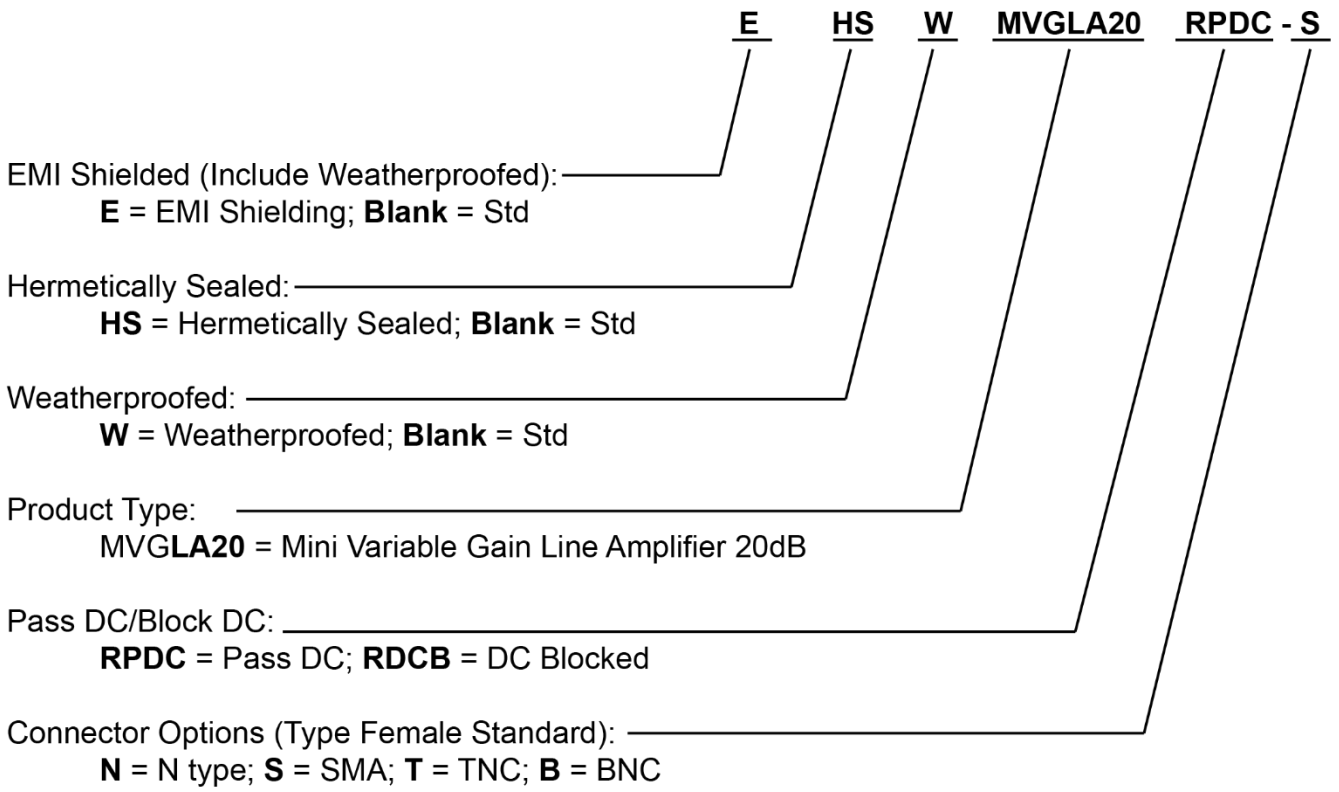
| Parameter | Notes | Min | Typ | Max | Unit |
|---------------------------------|---|----------------|------------------|--------------------|------|
| Min Gain | The relative increase in signal power provided by the amplifier. | -1 | 0 | 1 | dB |
| Max Gain | The relative increase in signal power provided 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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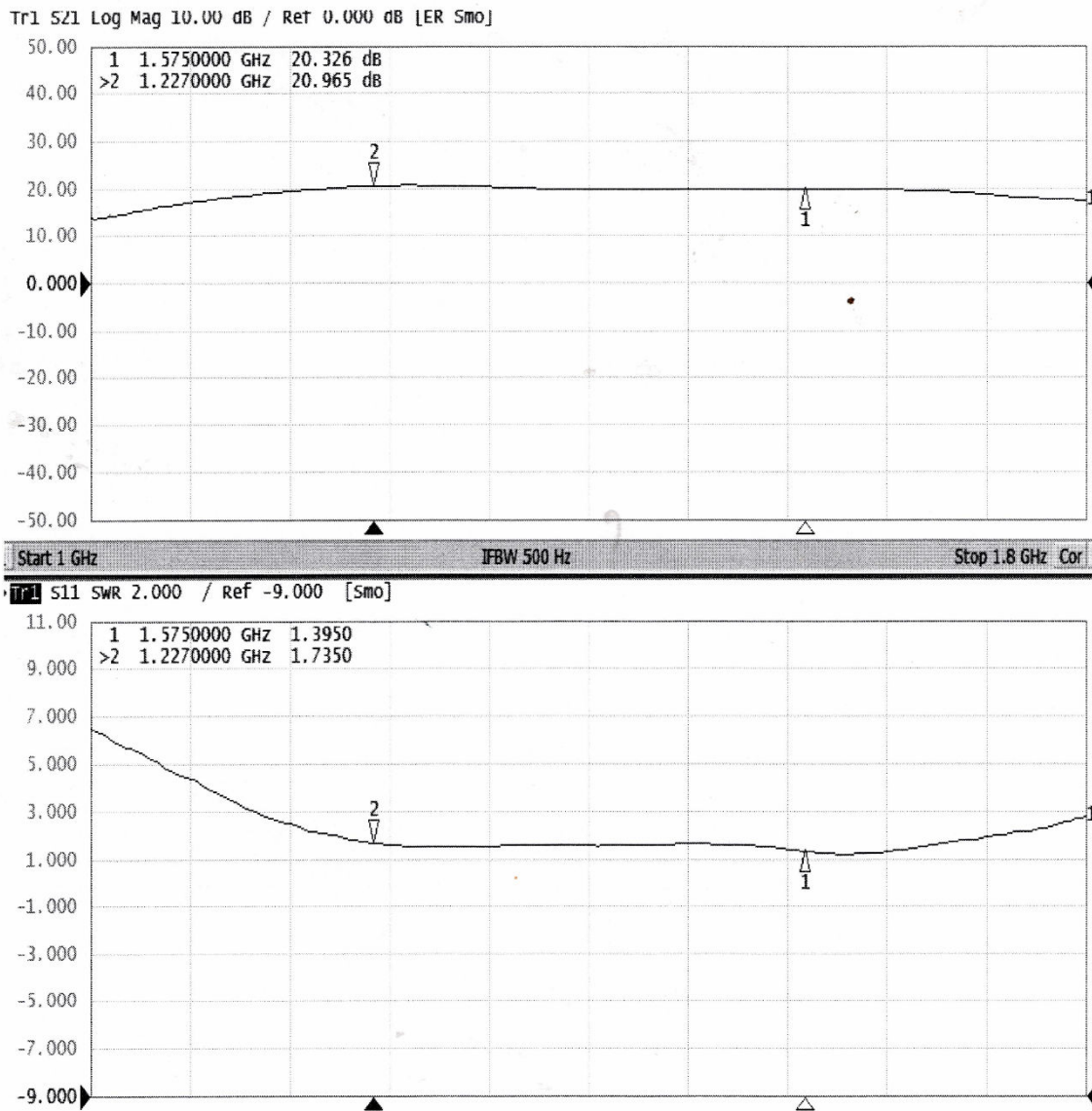
Performance

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

