# VGLA20RPDC

## *Variable Gain Line Amplifier*


### Features

- **Variable Gain Amplifier**
  0 ≤ Gain ≤ 20dB

- **Extremely Flat Group Delay**
  Less than 1ns Variation

- **Excellent SWR Throughout Dynamic Range**
  SWR ≤ 1.8:1 Max, SWR ≤ 1.5:1 Typical

### Description

The VGLA20RPDC GPS Variable Gain Line Amplifier is a one input, one output device featuring a variable gain block with 20dB of dynamic range. The frequency response covers the GPS L1/L2/L5, Galileo and GLONASS bands with excellent flatness throughout most of the attenuation range. In the normal configuration, the RF output (J1) passes DC from the connected GPS receiver through the amplifier to the antenna, allowing the GPS receiver to power both the antenna and the amplifier.

### Electrical Specifications, $T_A = 25^0C$

| Parameter | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Freq. Range | Ant – J1 | 1.1 | | 1.7 | GHz |
| In/Out Impedance | Ant, J1 | | 50 | | Ω |
| Gain, Max Setting | Ant – J1, Control Fully Clockwise | 19 | 20 | 21 | dB |
| Gain, Min Setting | Ant – J1, Control Fully Counterclockwise | -1.0 | 0 | 1.0 | dB |
| Input SWR | J1 - 50Ω, across full gain range | | | 1.8:1 | - |
| Output SWR | Ant - 50Ω, across full gain range | | | 2.0:1 | - |
| Gain Flatness | \| L1 - L2 \|, Ant – J1, from 0dB gain to 20+ dB gain | | | 1.5 | dB |
| Noise Figure | Ant – J1 | | 1.7 | | dB |
| Reverse Isolation | J1 – Ant, Max Gain setting | 40 | | | dB |
| Group Delay Flatness | $\tau_{d,max} - \tau_{d,min}$ : Ant – J1 | | | 1 | ns |
| Req. DC Input V. | Non-Network Configuration, DC Input on J1 | 3.8 | | 15 | Vdc |
| Current (1) | Amplifier Current Draw, All products - 50Ω | | | 15 | mA |

(1). Current draw on J1 port in the non-networked configuration.

## Available Options

| **Network Power Supply** | | |
|---|---|---|
| Source Voltage Options | VOLTAGE INPUT | STYLE |
| | 110VAC | Transformer (Wall Mount) |
| | 220 VAC | Transformer (Wall Mount) |
| | 240 VAC (United Kingdom) | Transformer (Wall Mount) |
| | Customer Supplied DC 9-32 VDC | Military Style Connector |
| Output Voltage Options (1) | DC VOLTAGE OUT | MAX CURRENT OUT FOR CORRESPONDING Vout(2) |
| | 5 V | 110mA |
| | 7.5V | 130mA |
| | 9V | 140mA |
| | 12V | 170mA |
| | 15V | 210mA |
| | Custom | TDB |
| **Pass/Block DC Options** | | |
| Pass DC(1) | All Ports Pass DC | |
| DC Blocked (1) | Ant is DC blocked, Pass DC J1 | |
| **RF Connector Options** | | |
| Connector Options | CONNECTOR STYLE | CHARGE |
| | Type N | NC |
| | Type SMA | NC |
| | Type TNC | NC |
| | Type BNC | NC |

(1). With Network Option, any RF port (input or output) can be DC blocked or can pass the network DC voltage.

## Part Number

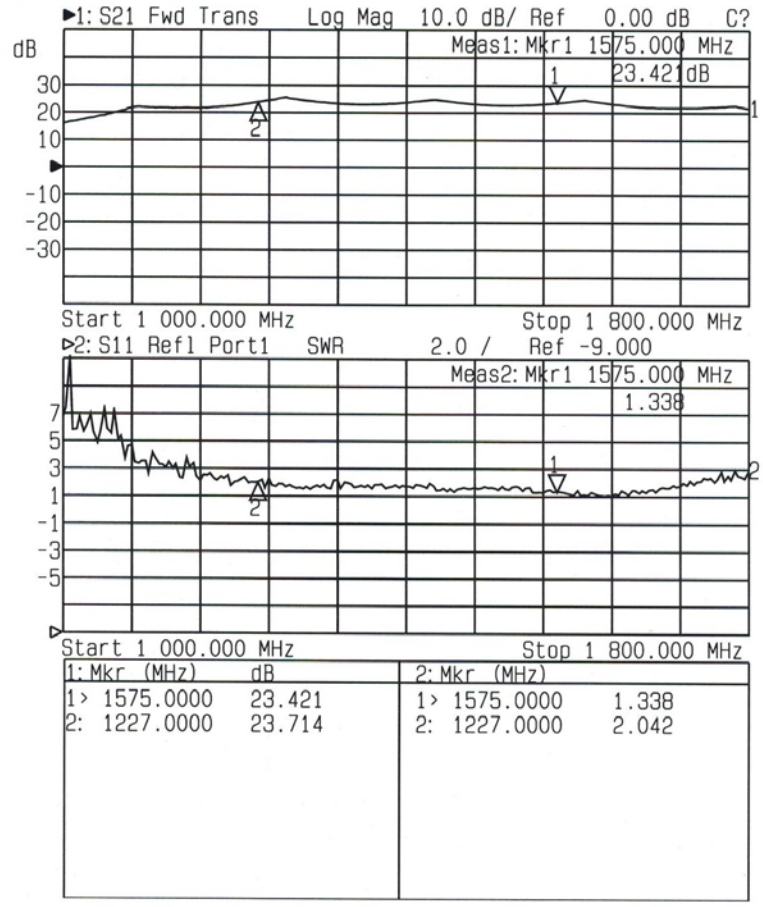
**N VGLA20 RPDC - S / 5 / 110**

Network Option:
**N =**Network Option; **Blank**: No Network
DC Options:
**DCB =** Ant. DC Blocked; **RPDC =** Pass DC
Connector Options:
**N** = N type; **S =** SMA; **T =** TNC; **B =** BNC
DC Output Voltage:
**3.3, 5, 7.5**, **9**, **12**, **15**, **CXX** (Custom: "**XX"** denotes the desired V)
Source Voltage:
**110** -Transformer, **220** – Transformer, **240** – Transformer, **MC** – Military Conn. (User supplies DC Voltage)

**Performance:**

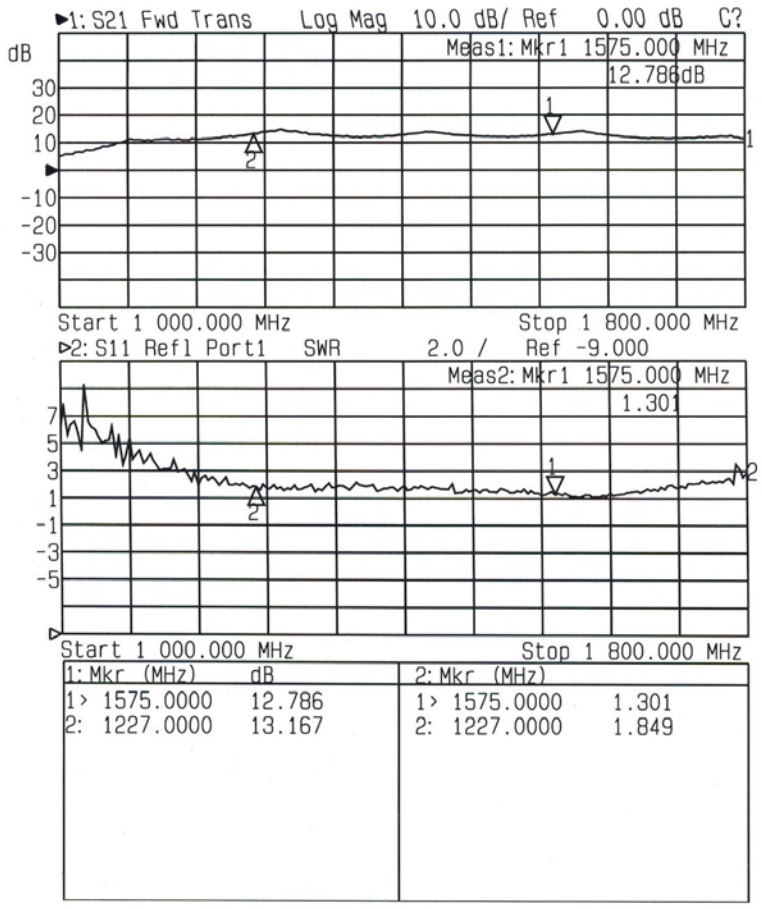
**Max Gain Setting** (Control Full CW)

Input SWR (Ant. Port) and Frequency Response (Typical, Type N Connector)



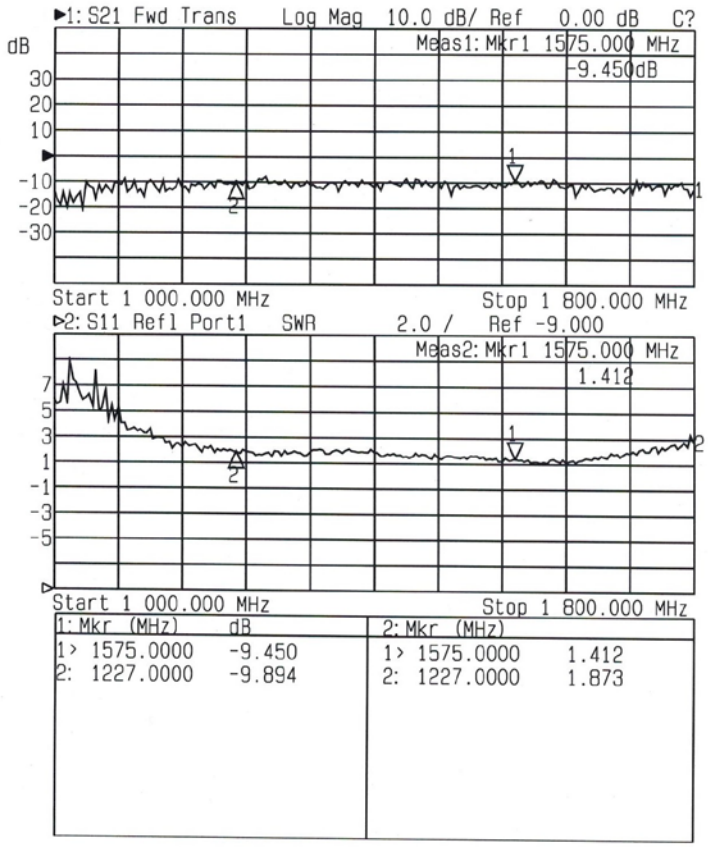
**Mid Gain Setting** (Control 2/3 CCW)

Input SWR (Ant. Port) and Frequency Response (Typical, Type N Connector)



**Min Gain Setting** (Control Full CCW)

Input SWR (Ant. Port) and Frequency Response (Typical, Type N Connector)



## Mechanical

Dimensions: Height: 1.3”

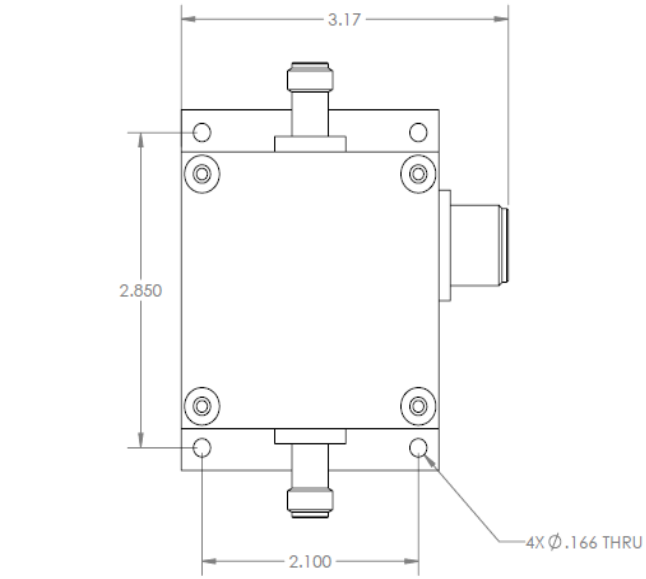
Length (not including connectors) Body: 2.5”
Base Plate: 3.25”

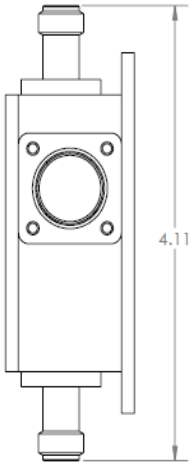
Width: 2.5”

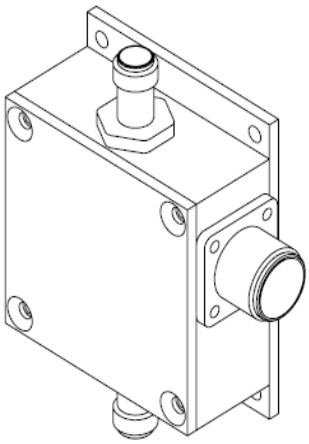
Weight: 9.8 oz. (272 grams)

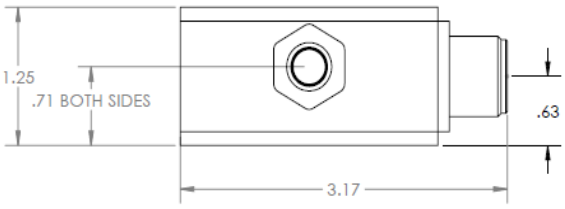
Operating Temp. Range: -40º to + 75ºC

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | REV. | DESCRIPTION | REV. BY | DATE |
| - | A | INITIAL RELEASE | - | --- |






| | | | |
|---|---|---|---|
| GPS NETWORKING | ASSY, 1X1 STANDARD | | Do Not Scale Dwg<br>Remove All Burrs And Sharp Edges to .020 Rad Max |
| 373 E Industrial Blvd Pueblo West CO 81007 | Drawn By: BPC<br>Date: 09/04/15<br>Design Eng:<br>Checked By:<br>Date:<br>Proj Eng:<br>Scale:<br>Quantity / Next Assy:<br>Finish Treatment: See Note<br>Third Angle Projection<br>Material:<br>Next Assy:<br>Dwg Number: ASSY, 1X1 STANDARD<br>SIZE: B<br>Rev: A<br>SHEET: 1 OF 1 | | Tolerances:<br>X = ±.030<br>.XX = ±.015<br>.XXX = ±.005<br>Angle ±1°<br>Surface Finish Unless Noted<br>Inch Dimensions Unless Noted |