# VGL1/L2PNRRKIT

Technical Product Data

## Features

- **Re-Radiating Amplifier with Power Supply**
  Excellent Gain Flatness

- **Optional Mounting Kit Hardware**
  Re-Radiating Amp Mount

- **Variable Gain**
  Re-Radiating Amp Gain Varies from –3 to +23 dB

## Description

The Variable Gain L1/L2 GPS Portable Re-Radiating Kit (VGL1/L2PNRRKIT) is a re-radiating system that allows re-radiation of the GPS L1 & L2 signals indoors. The VGL1/L2PNRRKIT consists of a re-radiating amplifier with variable gain, a wall mount plug-in transformer that powers the entire system and a passive L1/L2 re-radiating antenna. The GPS L1 & L2 signal from the roof antenna is amplified, adjusted as necessary with the pot range control and radiated indoors. Thus, if a receiver has line of sight with the re-radiating antenna, it can receive the GPS signal indoors up to 100 feet away.

## Re-Radiating Amplifier

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

| Parameter | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Freq. Range | Ant – J1 | 1.0 | | 2.0 | GHz |
| In/Out Imped. | Ant, J1 | | 50 | | Ω |
| Gain (1) | Ant – J1, Normal Configuration | | | | dB |
| | Variable Gain Option | -3 | | +23 | dB |
| Input SWR | J1 - 50Ω | | | 1.8:1 | - |
| Output SWR | Ant - 50Ω | | | 1.8:1 | - |
| Noise Figure | Ant – J1 | | 3.3 | 3.5 | dB |
| Gain Flatness | \| L1 – L2 \| ; Ant – J1 | | 0.5 | 1 | dB |
| Reverse Isolation | J1 – Ant | 35 | | | dB |
| Group delay Flatness | $\tau_{d,max} - \tau_{d,min}$ : Ant – J1 | | | 1 | ns |

(1) For performance plots, see LA20RPDC Data Sheet

Re-Radiating Antenna

Electrical Specifications, $T_A = 25^0C$

| Parameter | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Frequency | L1<br>L2 | | 1.575<br>1.227 | | GHz<br>GHz |
| Bandwidth | | | | 20 | MHz |
| Impedance | | | 50 | | Ω |
| Peak Gain | | | +3 | +3.5 | dBic |
| VSWR | | | | 1.5:1 | - |
| Polarization | | | RHCP | | |
| DC Grounding | Yes (Lightning Protection) | | | | - |

## Mechanical Specifications (Passive L1/L2 Antenna)

Size: Diameter 2.60 in. (66.04 mm) Height: .64 in (16.18mm)

Weight: 4.06 oz. (115 Kg)

Finish: Skydrol Resistant Polyurethane Enamel, Base Iridite per MIL-C-5441

Color: Gloss White #17925 per FED STD-595B

Material: 6061-T6 ALUMINUM ALLOY BASE, THERMOSET PLASTIC RADOME, UV, ABRASION & SKYDROL RESISTANCE

Connector: N-TYPE FEMALE

## Environmental Specifications (L1/L2 Active and Passive Antennas)

Temperature: -67F to +185F (-55C to +85C)

Altitude: 70,000 Feet

Vibration: > 30G's

Leakage: Hermetically Sealed

## Federal and Military Specifications

Design to: FAA TSO-C144, DO-160D, MIL-C-5541, MIL-E-5400, MIL-I-45208A & MIL-STD-810 and SAE J1455

## Available Options

| **Re-Radiating Amp System Power Supply Options** | | |
|---|---|---|
| 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 |
| **Re-Radiating Amp Gain Control Options** | | |
| Normal Gain | Gain ≥ 20 dB | |
| Variable Gain | -3dB to +23dB | |
| **Re-Radiating Amp RF Connector Options** | | |
| Connector Options | CONNECTOR STYLE | CHARGE |
| | Type N | NC |
| | Type SMA | NC |
| | Type TNC | NC |
| | Type BNC | NC |

## Part Number

**VG L1/L2PNRRKIT - S / 110**

Gain Option:
**VG =**Variable; **Blank =** Normal

Connector Options:
**N =** N type; **S =** SMA; **T =** TNC; **B =** BNC

Source Voltage:
**110** -Transformer, **220** – Transformer, **240** – U.K. Transformer **MC** – Military Conn. (User supplies DC Voltage)