



# VGL1/L2HNRRKIT

## Technical Product Data

### Features

- **Roof Amplified Antenna**  
Gain  $\geq$  35dB
- **Re-Radiating Amplifier with Power Supply**  
Excellent Gain Flatness
- **Optional Mounting Kit Hardware**  
Roof Antenna Mount & Re-Radiating Amp Mount
- **Variable Gain**  
Re-Radiating Amp Gain Varies from  $-3$  to  $+23$  dB

### Description

The GPS Variable Gain L1/L2 Hanger Re-Radiating Kit (VGL1/L2HNRRKIT) is a complete re-radiating system that allows re-radiation of the GPS L1 and L2 signals indoors. The VGL1/L2HNRRKIT consists of an active roof antenna, 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.

### Roof Antenna

### Electrical Specifications, $T_A = 25^{\circ}\text{C}$

Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1		1.575		GHz
	L2		1.227		GHz
Bandwidth			20		MHz
Out Imped.			50		$\Omega$
Pre-Amp Gain			35	40	dB
Noise Figure			2.75		dB
Output SWR				2.0:1	-
Filtering	1626 MHz	-20			dB
	1500 MHz	-10			dB
Req. DC Input V.		4.5		5.5	Vdc
Current			22		mA

## Re-Radiating Amplifier

Electrical Specifications,  $T_A = 25^{\circ}\text{C}$

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – J1	1.0		2.0	GHz
In/Out Imped.	Ant, J1		50		$\Omega$
Gain <sup>(1)</sup>	Ant – J1, Normal Configuration				dB
	Variable Gain Option	-3		+23	dB
Input SWR	J1 - 50 $\Omega$			1.8:1	-
Output SWR	Ant - 50 $\Omega$			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,  $T_A = 25^{\circ}\text{C}$

Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1		1.575		GHz
	L2		1.227		GHz
Bandwidth				20	MHz
Impedance			50		$\Omega$
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

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

Part Number

**VG L1/L2HNRRKIT - 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)