



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		Ω
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		Ω
Gain ⁽¹⁾	Ant – J1, Normal Configuration				dB
	Variable Gain Option	-3		+23	dB
Input SWR	J1 - 50 Ω			1.8:1	-
Output SWR	Ant - 50 Ω			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		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/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)