



Hamid: Data sheet for model purchased by Toro in 2015.

L1/L2GHNRRKIT

Technical Product Data

Features

- **Amplified High Gain Roof Antenna (L1/L2/L5 Galileo/GLONASS and Omnistar)**
Gain $\geq 40\text{dB}$
- **Re-Radiating Amplifier with Power Supply**
Gain $\geq 20\text{dB}$
- **Optional Mounting Kit Hardware**
L1/L2GRAMB Roof Antenna Mount & WRUMT Re-Radiating Amp Mount
- **Variable Gain Option Available**
Re-Radiating Amp Gain Varies from 0 to +20 dB

Description

The GPS L1/L2/L5 Galileo/GLONASS/Omnistar Hanger Networked Re-Radiating Kit (L1/L2GHNRRKIT) is a complete re-radiating system that allows re-radiation of the GPS L1, L2, L5, Galileo, GLONASS and Omnistar signals indoors. The L1/L2GHNRRKIT consists of an active roof antenna, a re-radiating amplifier with a wall mount plug-in transformer that powers the entire system, and a passive re-radiating antenna. The signal from the roof antenna is amplified and radiated indoors. Thus, if a receiver has line of sight with the re-radiating antenna, it can receive all of the GNSS signals indoors up to 100 feet away.

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	20	24.5	33	dB
	Variable Gain Option	0		+20	dB
Input SWR	J1 - 50 Ω			1.8:1	-
Output SWR	Ant - 50 Ω			1.8:1	-
Noise Figure	Ant - J1		2.4	2.7	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

L1/L2/L5 Galileo/GLONASS Active Roof Antenna Specifications

Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1		1.575		GHz
	L2		1.227		GHz
	L5		1.176		GHz
	Galileo L1		1.575		GHz
	Galileo L2		1.278		GHz
	GLONASS L1		1.602		GHz
	GLONASS L2		1.246		GHz
	Omnistar		1.535		GHz
Bandwidth					MHz
Out Imped.			50		Ω
Pre-Amp Gain			40		dB
Noise Figure			2.75		dB
Output SWR				2.0:1	-
Req. DC Input V.		3.3		24	Vdc
Current		20	35	40	mA

Re-Radiating Antenna

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

Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1/L2/L5		1.575/1.227/1.176		GHz
	Galileo		1.575/1.278		GHz
	GLONASS		1.602/1.246		GHz
	Omnistar		1.535		GHz
					GHz
Bandwidth				20	MHz
Impedance			50		Ω
Peak Gain			+3	+3.5	dBic
VSWR				1.5:1	
Polarization			RHCP		
DC Grounding	Lightning Protection		YES		

Mechanical Specifications (Passive L1/L2G 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/L5 Galileo/GLONASS Active/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 $\geq$ 20 dB	
Variable Gain	0dB to +20dB	
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/L2GHNRRKIT - N / 5 / 110

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

Re-Radiator Frequencies
L1/L2/L5 Galileo/GLONASS/Omnistar

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

Output Voltage:
5 = 5 VDC voltage to active antenna

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

