

# GLI-ECHO II (Air)

## Smart GPS Retransmission



### Description

The GLI-ECHO II is a military grade, primary system LRU for GPS Retransmission. It will provide wireless or wired signal to all GPS enabled sub-systems on a ground vehicle platform. Designed for long term reliability, it is small, lightweight and built for limiting SWaP.

It is based on state of the art technology developed for permanent GPS retransmission in the Boeing C-17. GLI-ECHO II supports options not available in any other repeater and outperforms retransmission systems costing several thousand dollars more.

### Features

- Aviation Applications
- GPS Bands: GPS L1, L2 (includes M-code)
- Precisely controlled and user adjustable output signal strength
- Automatic oscillation detection
- BIT and fault isolation
- Ability to directly connect to three GPS receivers
- NVG compatible
- Available in Single & Quad Output Configurations
- Power Always On or Power On/Off Configurations

### Options

The GLI-ECHO II is available as part of a roll on/roll off or permanent installation kit. The kits are available with multiple options and supporting equipment to meet specific needs. Please contact GPS Source via phone, fax, email, or visit the website for further information on product options and specifications.

### Basic Functions

#### AMPLIFIES & CONDITIONS THE SIGNAL

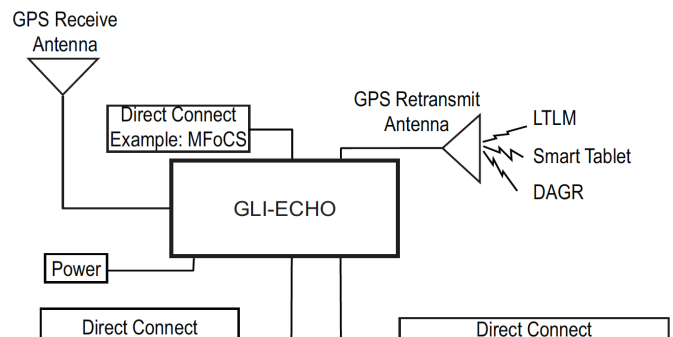
The GLI-ECHO II signal controller receives the GPS signals from a receive antenna and amplifies them to a level that is sufficient for retransmission of the signals throughout any small to large indoor space. The signals are retransmitted by a passive antenna installed within the enclosure.

#### SIGNAL SPLITTER

The GLI-ECHO II splits the signal equally between four ports. Any of the four output ports can be connected to a passive GPS antenna, transmitting the signal within the enclosure. More than one retransmission antenna may be necessary if retransmitting into a large ground vehicle.

#### DIRECT CONNECT OPTION

The GLI-ECHO II can be ordered with the "Direct Connect" option. This configuration allows the GLI-ECHO II to operate as a combined GPS retransmission controller and GPS signal divider to other GPS embedded systems. Any device requiring a direct connection to an external GPS antenna can utilize a signal being transmitted from the GII-ECHO II. Up to three output ports are available for direct connect to the signal. The fourth output port is set aside for wireless retransmission via passive GPS antenna.



#### BUILT IN TEST (BIT)

The GLI ECHO II performs a continuous built in test function. This monitors the status of coaxial cables to and from the device, the presence of GPS receivers on ports configured for direct connect, as well as the GPS signal levels and signal quality within the device itself. Real-time status indicators are provided on the user input panel.

#### REAL-TIME STATUS INDICATION

The GLI-ECHO II provides a status signal (XMIT OR FAULT) to the user input panel. It also has a diagnostic port that can be monitored by way of a RS232 or RS422 port in order to control and monitor the status of the system.

### Amplifier Specifications

Operating Temperature -54°C to 71°C

Parameter	Conditions	Min	Type	Max	Units
Operating Frequencies	L1	1560.42	157.42	1590.42	MHz
	L2	1212.60	1227.60	1242.60	
Input / Output Impedance	Ant: Output= 50 Ω		50		Ω
Operating Gain		6	33	49	dBm
Direct Connect Output Power			-150		dBm
Output SWR	Output= 50 Ω			2.1	--
Noise Figure				3	dB
RF Power	Output= 50 Ω	-85		-65	dBm

### Electrical Specifications

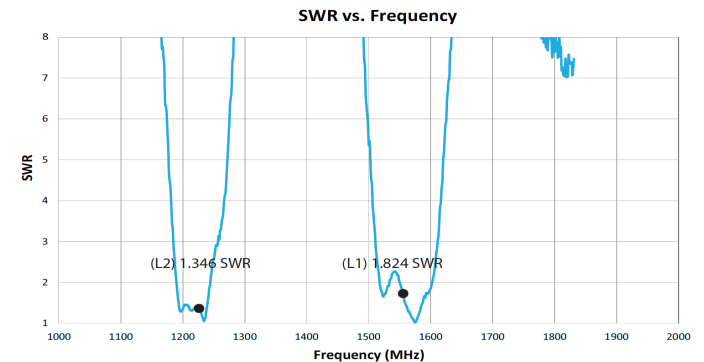
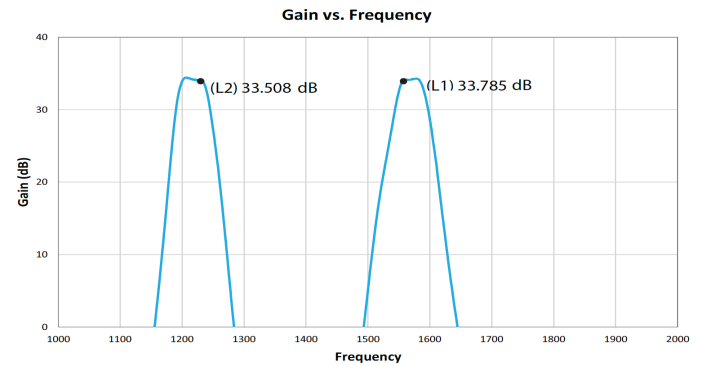
Parameter	Conditions	Min	Type	Max	Units
DC In	Powered Mil Connector	12		33	VDC
AC In	110 Wall Mount Transfer		110		VAC
Antenna In		12		28	V
Antenna Out			6.8		V
Antenna Current Thru J1	Load Current Range		20-70		mA
Operating Current	Excludes Antenna Current as 12V		610		mA
	Excludes Antenna Current as 28V		400		mA

### Environmental and EMI/EMC Requirements

The GLI-ECHO II has been designed to meet the following

Environment	MIL-STD-Requirements
Mechanical Vibration	810G Mtd 514.6, Proc. I
Functional Shock	810G Mtd 516.6, Proc. I & V
Explosive Atmosphere	810G Mtd 511.5, Proc. I
Crash Hazard	810G Mtd 516.6
High Temperature	810G Mtd 501.5, Proc. II
Low Temperature	810G Mtd 502.5, Proc. II
Temperature Shock	810G Mtd 503.5, Proc. I-C
Altitude	810G Mtd 500.5, Proc. III
Humidity	810G Mtd 507.5, Proc. II
Salt Fog	810G Mtd 509.5
Fungus	810G Mtd 508.6
Sand and Dust	810G Mtd 510.5, Proc. I & II
NVG Compatible	1572F Sec. 5.2.1.2.1.2
Display	1472 Sec. 5.2.6.7
Conducted Emissions	461F CE101, CE102
Radiated Emissions	461F RE102

### Performance Data



### Product Options

Type	Options
RF Connector	TNC (Default) Male and Female
	N Male and Female
	TNC (Female/Male)
Mil Power Connector	MIL-STD-1275

# GLI-ECHO II (Air)

## Product Code Decoder

**ECIIG - Q - PRWA - J2 - 422 - SF**

### ECIIG

GLI-Echo II

### Outputs

Blank = Single  
Q = Quad (4 outputs)

### Ground Power

PWRA = Ground Power Always On  
PWRO = Ground Power On/Off

### Outputs

Blank = No Direct Connect  
J2 = Direct Connect Port 2 (20dB)  
J2XX = Direct Connect Port 2 (XX Custom attenuation 0 to +19dB)  
J3 = Direct Connect Port 3 (20dB)  
J3XX = Direct Connect Port 3 (20dB) (XX Custom attenuation 0 to +19dB)  
J4 = Direct Connect Port 4 (20dB)  
J4XX = Direct Connect Port 4 (20dB) (XX Custom attenuation 0 to +19dB)  
J5 = Direct Connect Port 5 (20dB)  
J5XX = Direct Connect Port 5 (20dB) (XX Custom attenuation 0 to +19dB)

### Connector Option

TF = TNC (Male/Female)  
SF = SMA (Male/Female)  
NF = N (Male/Female)

### Data Connector

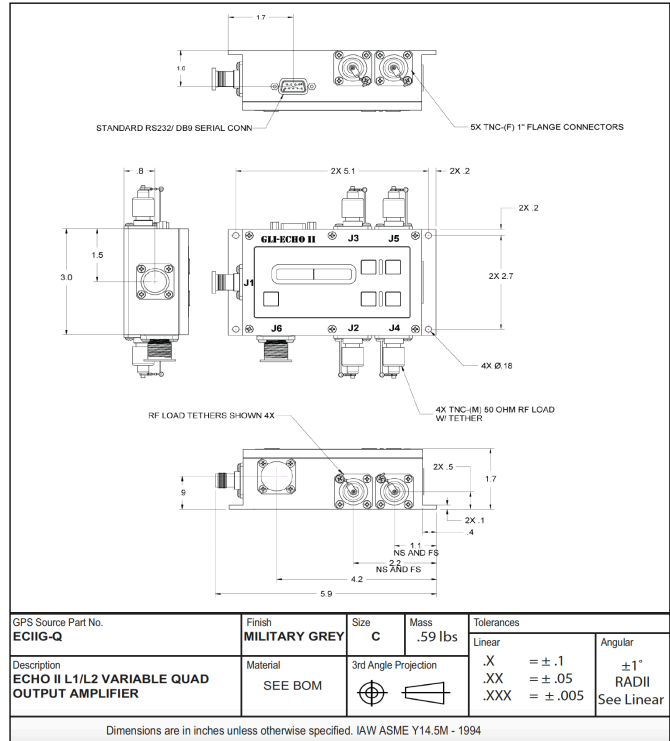
Blank = RS232  
422 = RS422 Connector

*Ex. J2-J3-J4 calls out Direct Connect for ports 2, 3, 4 J210-J310-J415 calls out Direct Connect for ports 2, 3, 4 and custom attenuation for each port*

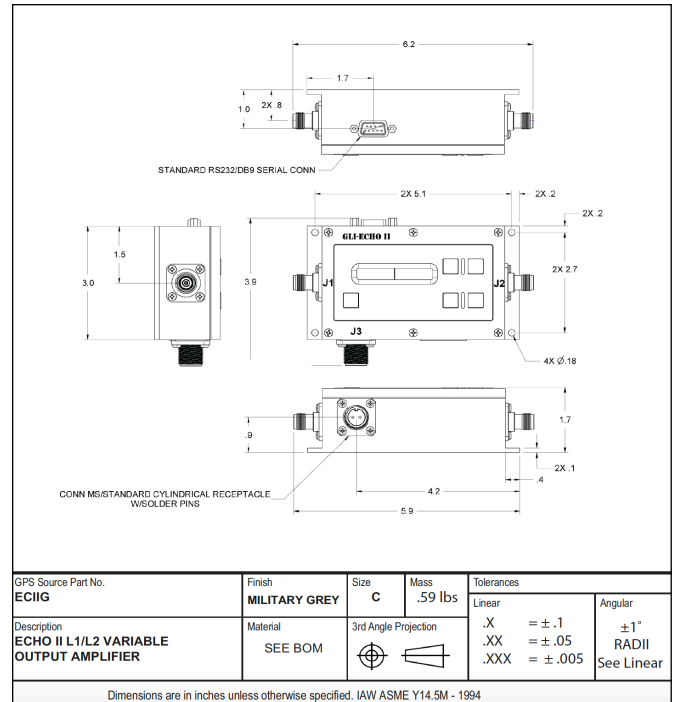
*Note: To have product/part codes customized to meet exact needs, contact GPS Source at sales@gpssource.com or visit the website at www.gpssource.com.*

## Mechanical Drawings

GLI-ECHO II Air (1x4)



GLI-ECHO II Air (1x1)



## GENERAL DYNAMICS

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