

1 Introduction



The model G-Box L4S1 is a high sensitivity GPS receiver with both USB and RS232 interface. It accepts input power either from the USB interface or from the DC in Jack. The board dimension is 80mm X 50mm.

2 Features

- Antenna short/open circuit supervisory through GPTXT command
- Antenna short circuit shut down
- Build-in rechargeable backup battery for GPS real time clock and satellite data
- Input supply reverse polarity protection from DC IN
- TVS protected power supply input
- Operating temperature range -40degC to +85degC
- Tracking sensitivity of -158dBm.
- Fast time to first fix of < 40sec for cold start
- Supports USB and RS232 interfaces

3 Power Supply Absolute Max. Rating

Parameters	Pin Name	Absolute Max. Rating	Recommended Operating
USB Supply	Vbus	+6Vdc	+5Vdc
DC IN	DC+	+7.5Vdc	+5Vdc

Note: Stress beyond these ratings may damage the module.

4 Interface Connection

4.1 GPS Antenna Input

CON1A: GPS Antenna Input

Connector Type: SMA R/A Female

Antenna Supply:

- Voltage: 3.3Vdc
- Current: 50mA, max

Antenna Supervisory: Short-Circuit / Open Circuit detection

4.2 Alternative Supply - DC IN

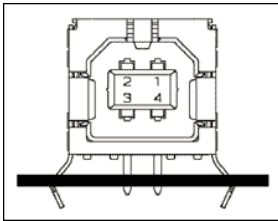
CON1: Alternative DC Supply Input
 Connector Type: DC Jack 2.5 mm centre pin
 Pin Assignment:



Note: Recommended Operating Supply +5Vdc, 100mA

4.3 USB Interface

CON3: USB Interface to PC
 Connector Type: USB Type B, PCB, Right Angle
 Pin Assignment:



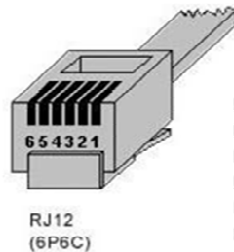
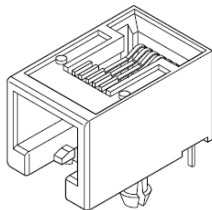
Pin 1 Vbus
 Pin 2 Data D -
 Pin 3 Data D +
 Pin 4 GND

Note:

1. If this USB interface is used, supply for the board will be drawn from Vbus. **Do not connect DC IN.**

4.4 RS232 Interface

CON2: RS232 Interface
 Connector Type: Molex Modular connector, RJ12, R/A, 6P6C
 Pin Assignment:



Pin 1 TXD2 – RS232
 Pin 2 RXD2 – RS232
 Pin 3 GND
 Pin 4 DCIN
 Pin 5 TXD1 – RS232
 Pin 6 RXD1 – RS232

Note apply only to Version 1/1:

1. DC In is made available on the connector CON2.
2. The RS232 cable supplied with G-Box-L4S1 is connected to TXD1 & RXD1 on the 9 pin D-sub connector, Pin 1,2 & 4 are NC.

5 Back-up Battery

The back-up battery used on the G-Box-L4S1 to back-up the Real Time Clock (RTC) and the satellite data is a CR2032 lithium coin cell. Replace this battery when the voltage falls below 1.5V. Typical capacity of the CR2032 is 200mAh. A new battery will typically last 3.5 years if operated in a 25 degC environment.

6 GPS Reset

Switch SW1A is used for H/W reset of the GPS board.

7 LED indicator

The LED1 on the G-Box L4S1 is for indicating power supply and GPS status.

Power Indicator – LED turn ON when supply is applied
GPS Status – Blinks when there is GPS fix

8 GPS Programming Reference

Refer to the ANTARIS_Protocol_Specification from u-blox for the programming of the GPS module.
The default baud rate and protocol for the serial port are as follow;

- USB 9.6kbps, 8N1, NMEA 0183 data
- RS232 9.6kbps, 8N1, NMEA 0183 data

9 Optional Casing

This model is available with optional anodized aluminum casing.



10 PCB Information

