



RECEIVER

L-Band/Beacon



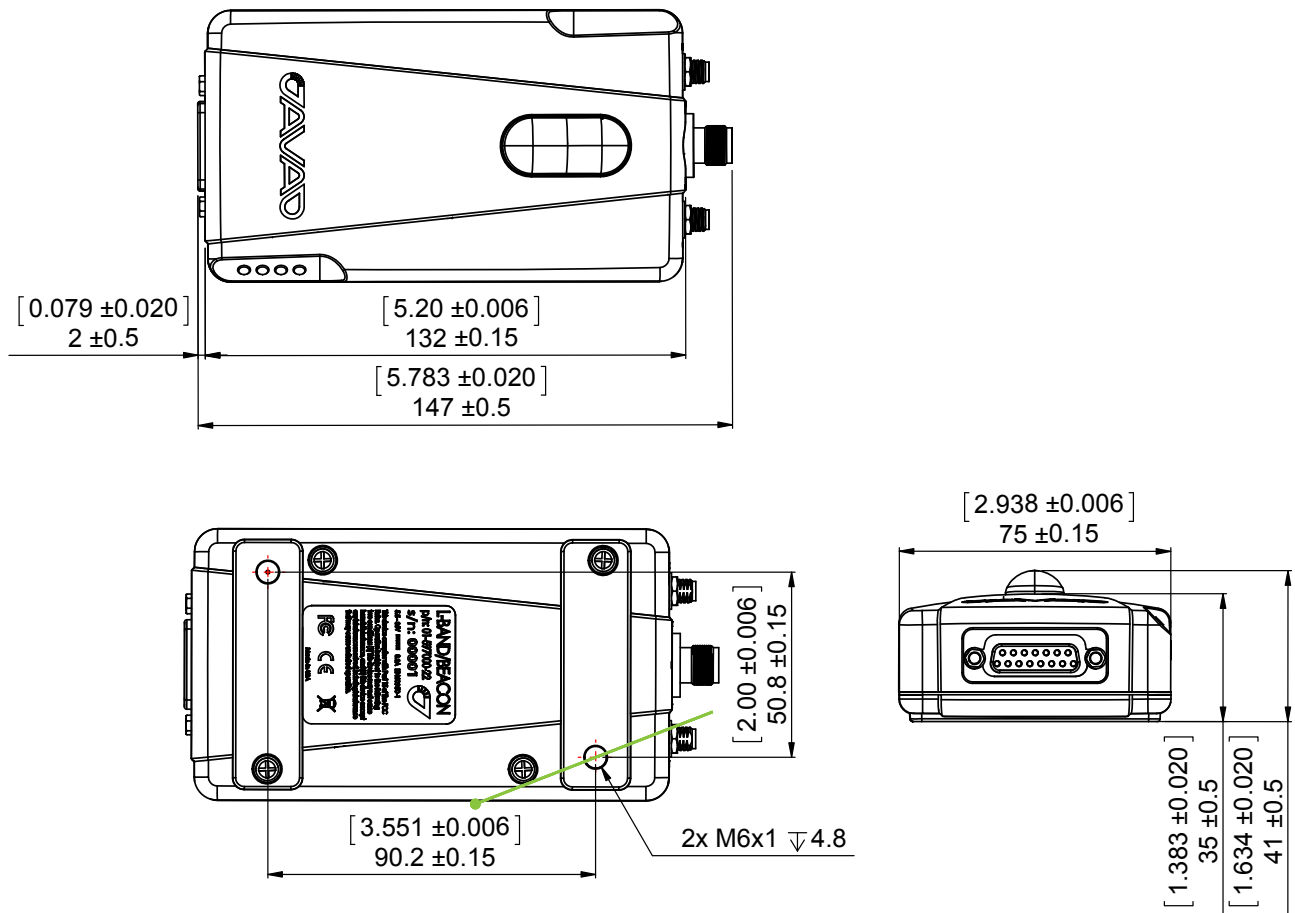
L-Band/Beacon receiver comprises two radio sections: L-Band receiver (1518 MHz to 1559 MHz) and Marine Radiobeacon receiver (283.5 to 325 kHz).

L-Band receiver complies with INMARSAT SDM Technical Specification for narrow band point-to-multipoint receivers as defined in INMARSAT-A Mobile Earth Station Technical Bulletin, SESTB 28A, August 1993. L-Band receiver is designed for multiple applications including particularly geostationary satellite communication networks satellite services.

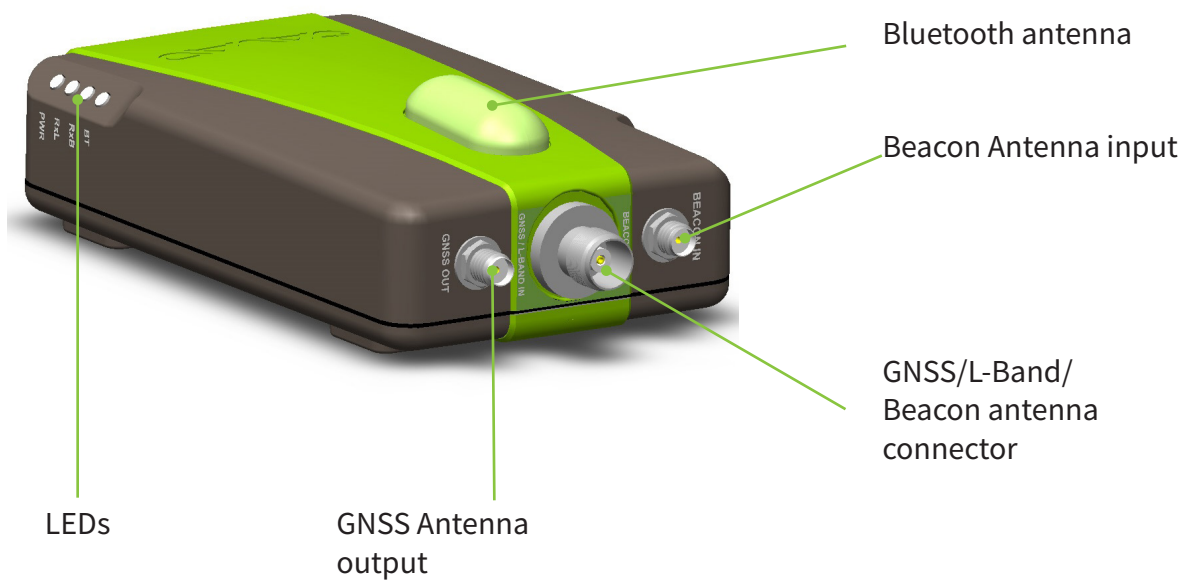
Potential applications are differential GPS correction parameter distribution, financial data distribution, news, weather and sport information distribution, store and forward audio distribution, facsimile and image distribution, control of remote equipment.

Marine Radiobeacon receiver (283.5 to 325 kHz) or Beacon receiver complies with Broadcast Standard for the USCG DGPS Navigation Service COMDTINST M16577.1. Beacon receiver is designed to receive pseudorange corrections transmitting by Radiobeacon stations. Maritime Radiobeacon DGNSS systems according to RTCM SC-104 version 2.3 are usually capable of broadcasting the following RTCM messages: 1, 2, 3, 5, 6, 7, 9, 15 (seldom), and 16. Radiobeacons are widely used throughout the world. DGNSS Radiobeacon transmissions meet stringent integrity and reliability requirements mandated by the International Association of Lighthouse Authorities. The flash memory is re-programmable through an RS-232 interface, USB, and Bluetooth.

L-Band/Beacon Receiver



All dimensions are in mm



L-Band/Beacon Receiver

SPECIFICATIONS

RADIO TECHNICAL

- Frequency Range 1518 - 1559 MHz
- Frequency Offset ± 3.0 kHz (~ 2 ppm)
- Channel Spacing 6.25kHz, 12.5kHz, 25kHz
- User Data Rates 300, 600, 1200, 2400, 4800 bps
- High Power Channels User defined
- Low Power Channels User defined
- Service Identifier User defined
- Scrambler Vector User defined
- Tuning Mode manual/automatical
- Sensitivity -120 dBm for $<10^{-3}$ BER@1200bps
- Dynamic Range 80 dB
- Adjacent Channel Rejection 60 dB
- Start Time <1 min
- Output Data Format Raw Data
- Input/Output
- Serial (RS-232) up to 115200 bps
- Serial port configurable as RS-232 or RS-422, or RS-485
- USB USB 2.0 device port
- Bluetooth Bluetooth V2.0 Class 2 supporting SPP
- Slave and Master Profiles
- Bluetooth Antenna Embedded

BEACON RECEIVER

- Frequency Range 283.5- 325 kHz
- Channel Spacing 500 Hz
- Bit Rates 50, 100, 200 bps (manual or Auto selection)
- Channels 2-channel, parallel operating
- Operation Mode manual/automatic
- Adjacent Channel Rejection 65 dB ± 1 dB @ for ± 400 Hz
- Cold Start Time <1 min
- Warm Start Time <2 seconds
- Modulation Minimum Shift Keying (MSK)
- Sensitivity 1.5 μ V/m for 6 dB SNR (200 bps)
- Dynamic Range 100 dB
- Frequency Offset ± 0.5 Hz (~ 1.5 ppm)
- Correction Output Protocol RTCM SC-104

L-BAND RECEIVER

- Input Impedance 50 Ohms
- Max Overload Input Signal of
- Normal Power Level + 0 dBm
- Satellite Symbol Ratio 609.5, 1219.05, 2438.1, 4878.2, 9752.4 symbol/second
- Assigned Bandwidth 1.25, 2.5, 5.0, 7.5, 15.0 kHz
- Modulation Type filtered BPSK
- Filtering 40% square-root raised cosine
- Channel Coding Rate 1/2 convolutional Constant $K=7$
- Decoding Algorithm Viterbi
- Channel Scrambling V.35 prior to FEC as defined in Inmarsat-M (Scrambler vector related to Service identifier)
- Frame Length 8192 symbols
- Unique Word Length 2 x 32 bits (not encoded or scrambled)
- Spare Byte 8 bits (encoded but not scrambled)
- E_b/N_0 for BER = 10^{-5} 5.5 dB

ENVIRONMENTAL

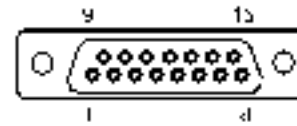
- Operating Temperature -40°C to $+70^{\circ}\text{C}$
- Storage Temperature -40°C to $+85^{\circ}\text{C}$
- Dimensions: 146 mm x75 mm x44 mm
- Weight 488 g
- Power Supply Voltage +9 to +36 VDC nominal
- Power Consumption 1.4 W
- Housing/Color: Aluminum / Two-tone Silver / Gray, IP 66
- GNSS /L-Band/ Beacon Antenna Connector: TNC, 50 Ω ANT_PWR* On/Off
- Beacon Antenna Connector: SMA, 50 Ω ANT-PWR* On/Off
- GNSS Out Connector SMA, 50 Ω

L-Band/Beacon Receiver

DB15 CONNECTOR SPECIFICATION

| Pin | Signal Name | I/O | Description |
|-----|-------------|-----|---|
| 1 | DCD_OUT | O | Data Carrier Detect (RS-232) |
| 2 | DTR_OUT | O | Data Terminal Ready (RS-232) |
| 3 | RX+/CTS_IN | I | Receive Data positive line (RS-422)/ Clear to Send (RS-232) |
| 4 | RX-/RX_IN | I | Receive Data negative line (RS-422)/ Receive Data (RS-232) |
| 5 | PWR_IN | I | +9 to +36 VDC Power Input |
| 6 | USB_PWR | I | Power Input line (USB) |
| 7 | Ground | - | Power Ground |
| 8 | PWR_IN | I | +9 to +36 VDC Power Input |
| 9 | DSR_IN | I | Data Set Ready (RS-232) |
| 10 | TX+/RTS_OUT | O | Transmit Data positive line (RS-422) / Request to Send (RS-232) |
| 11 | TX-/TX_OUT | O | Transmit Data negative line (RS-422) / Transmit Data (RS-232) |
| 12 | Ground | - | Power Ground |
| 13 | USB_D+ | I/O | Positive line (USB) |
| 14 | USB_D- | I/O | Negative line (USB) |
| 15 | Ground | - | Power Ground |

DB15 FEMALE



This connector provides DB15 connectivity for the L-Band-Beacon receiver with DTE. About using and configuration RS-485 and RS-422 please contact support@javad.com



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