

LGBX SERIES

Differential GPS Receivers

FEATURES

- Complete 3-in-1 real-time DGPS receiver and antenna
- Use either differential beacon corrections or L-band OmniSTAR corrections
- State-of-the-art digital architecture
- Backlit 2-line by 16-character liquid crystal display and 3-switch keypad
- GPS, Beacon, and L-Band status information
- Fast GPS and DGPS signal acquisition
- 1 PPS Timing Signal
- External RTCM input
- Global beacon table listing
- Automatic and manual modes
- NMEA 0183 and RTCM Message Protocols



Combination GPS/Beacon/L-band Receivers

3-in-1 Receiver

Whether your application involves data collection or land-based navigation, the LGBX receiver gives you accurate, real-time DGPS positions almost anywhere in the world, without having to establish your own reference station or post process data.

The CSI LGBX receiver combines the performance of proven GPS receiver technology with CSI's digital SBX-2 beacon receiver and an L-band satellite DGPS receiver.

The LGBX is truly CSI's most versatile product to date. With two differential receivers built into the LGBX, you can choose either free 300 kHz beacon signals from the global network of stations, or if this service is not available, you may use the OmniSTAR Worldwide DGPS Service.

3-in-1 Antenna

CSI's CDA-1 antenna combines GPS, L-band satellite, and H-field beacon Loop antenna elements in one compact package. A single antenna cable delivers the combined signal to the LGBX receiver.

OmniSTAR DGPS Service

The built-in L-band receiver provides access to the OmniSTAR Worldwide DGPS Service.

The OmniSTAR service broadcasts wide-area differential GPS correction data in a proprietary format. The L-band receiver uses these messages to compute a set of GPS corrections specific to your location, ensuring a consistent level of accuracy wherever you can receive the OmniSTAR signal.

OmniSTAR subscriptions are competitively priced and easily installed over the air.

Free Beacon DGPS Signals

The 2-channel SBX-2 beacon receiver built into the LGBX, takes advantage of free GPS corrections broadcast by 300 kHz radiobeacons maintained by government agencies around the world. Extensive networks are available in North America, South America, Europe, the Middle East, Asia, and Australia.

DGPS radiobeacon transmissions meet stringent integrity and reliability requirements mandated by the International Association of Lighthouse Authorities.

The LGBX can also be configured to accept RTCM formatted differential corrections from an external source.

Ease of Operation

The LGBX receiver is designed with ease of operation in mind, incorporating a 2-line by 16-character LCD display and an intuitive keypad-driven menu system for configuration and operation of all three internal sensors.

Configuration Software

CSI offers Windows 95® software for receiver configuration and monitoring of receiver status. Data logging capability and a terminal interface are also included.

Warranty

CSI is committed to supporting its products and offers a one-year warranty on parts and labor.

Contact us to discover how the LGBX receiver will complement your application at a price you can afford.



LGBX - Combination GPS/Beacon/L-Band Receivers

GPS Receiver Specifications

Channels: 12-channel, parallel tracking
Horizontal Diff. Accuracy: <1 – 3 m (95% confidence)
Differential Input: RTCM SC-104
Input/Output Messages: NMEA 0183
Messages Update Rate: 1 Hz (LGBX-12)
up to 5 Hz (LGBX-Pro)

- Please contact CSI for full GPS receiver specifications.

L-Band Receiver Specifications

Frequency Range: 1525 to 1559 MHz
Symbol Rates: 609, 1219, 2438, 4876,
Operating Modes: Automatic or Manual
Subscription: OmniSTAR DGPS Service

Beacon Receiver Specifications

Channels: 2 independent channels
Frequency Range: 283.5 to 325.0 kHz
Channel Spacing: 500 Hz
MSK Bit Rates: 50, 100, and 200 bps
Operating Modes: Automatic or Manual
Cold Start Time: < 1 minute
Warm Start Time: < 2 seconds
Demodulation: Minimum shift keying
Sensitivity: 2.5 μ V/m for 10 dB SNR
Dynamic Range: 100 dB
Frequency Offset: \pm 5 Hz
Adjacent Channel Rejection: 60 dB @ $f_0 \pm$ 500 Hz
Subscription: None Required

LGBX Communications

Interface Level: RS-232C
Baud Rates: 2400, 4800, 9600
Correction Output Protocol: RTCM SC-104
Input/Output Protocol: NMEA 0183
Timing: 1 PPS

LGBX Environmental Specifications

Operating Temperature: -20°C to +60°C
Storage Temperature: -40°C to +80°C
Humidity: 95% non-condensing
EMC: EN 50081-1,
EN 50082-1
FCC: Part 15, sub-part J, class A
digital device

LGBX Power Specifications

Input Voltage: 9 – 16 VDC
Nominal Power: 10 W
Antenna Voltage Output: 10 VDC

LGBX Mechanical Specifications

Dimensions: 242 mm L x 125 mm W x 51 mm H
(9.5" L x 4.9" W x 2.0" H)
Weight: 1.1 kg (2.5 lb)
Display: 2-line by 16-character LCD
Keypad: 3-key switch membrane
Power Connector: 2-pin circular locking
Data Connector: DB9-S
Antenna Connector: TNC-S

LGBX Operating Modes

GLX-3 Mode: L-Band as RTCM Source, NMEA 0183 Output
GBX-3 Mode: Beacon as RTCM Source, NMEA 0183 Output
GBX-E Mode: External RTCM Source, NMEA 0183 Output
MBX-3 Mode: Beacon RTCM Output

Pin-Out, RS-232C

DB9 Pin #	Description
2	TXA, LGBX NMEA 0183/RTCM output
3	RXA, LGBX NMEA 0183 input/RTCM input
5	Signal return
9	1 PPS output (TTL logic level)

LGBX Accessories

Antenna: CDA-1
Power Cables: Various
Antenna Cables: Various
Data Cables: Various
CSI GPS Command Center: MS Windows 95® GPS SW
CSI DGPS Command Center: MS Windows 95® Beacon SW

CDA-1 Combination Antenna

Beacon Frequency Range: 283.5 to 325.0 kHz
Beacon LNA Gain: 34 dB
GPS Frequency Range: L1 (1575 MHz)
GPS LNA Gain: 40 dB
L-Band Frequency Range: 1525 to 1559 MHz
L-Band Gain: 40 dB
Dimensions: 128 mm square x 84 mm H
(5.1" square x 3.3" H)
Weight: 0.50 kg (1.1 lb)
Antenna Connector: TNC-S
Enclosure: PVC plastic
Mount: 1-14-UNS-2B (marine std.)
Input Voltage: 4.9 to 13.0 VDC
Input Current: 50 to 60 mA
Operating Temperature: -30°C to +70°C
Storage Temperature: -40°C to +80°C
Relative Humidity: 100% condensing

CSI Authorized Dealer



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