



MBX-3S

World's most popular commercial-grade
DGPS Beacon Receiver



- Supplements GPS systems with free differential corrections, enhancing accuracy
- Dual-channel tracking ensures best signal tracking
- Fast signal acquisition
- Wide input voltage range for a variety of power sources
- Low power consumption extends battery life
- Automatic tuning mode for hands-free operation
- Integrated signal splitter outputs GPS signal from combined GPS / differential antennas
- Front-panel interface for easy configuration and status monitoring

Industry Leader

CSI Wireless is an established industry leader in the development and manufacture of differential radiobeacon receivers. The MBX-3S differential beacon receiver utilizes CSI Wireless' proven technology to receive free DGPS beacon transmissions and demodulate them into industry-standard RTCM SC-104 differential corrections.

World Beacon Network

Navigation authorities around the world have invested in differential radiobeacon networks to supplement GPS positioning improving accuracy and furthering user safety. Each beacon station transmits industry-standard RTCM SC-104 correction data over a medium-frequency signal. Access to each of these high-quality networks is available to the public free of charge as a navigation service.

CSI Wireless' MBX-3S differential beacon receiver is fully compatible with these supplemental networks and surpasses the performance requirements mandated by the governing authorities.

Digital Technology

The MBX-3S employs advanced digital signal processing techniques to deliver consistent signal reception - even in noisy environments. The advanced design is complemented by high-performance dynamic signal processing algorithms to achieve the highest performance possible, even in harsh environments.

Quick Installation

The MBX-3S requires only power, data and antenna connections, and can be fully installed and operational in just minutes. A variety of interface cables are available to suit various installation needs.

Hands-Free Operation

The MBX-3S differential beacon receiver features two modes of operation: automatic-tuning mode and manual-tuning mode. In its default configuration, the MBX-3S automatically tunes to track the strongest beacon station without user intervention; in manual-tuning mode, the receiver tracks a user-specified beacon station. The front-panel menu system permits the user to change between these operating modes simply and quickly.

In automatic tuning mode, the MBX-3S uses two independent channels to cooperatively maintain lock on the strongest DGPS beacon signal available.

Monitoring Software

CSI Wireless freely distributes DGPS Command Centre - a Windows-based utility used to configure and monitor the operation of the MBX-3S receiver. This program is available for free public download from the CSI Wireless website: www.csi-wireless.com.

MBX-3S

Receiver Specifications

Channels:	2 independent channels
Channel Spacing:	500 Hz
Frequency Range:	283.5 to 325.0 Hz
MSK Bit Rates:	50, 100, 200 bps
Cold Start Time:	<1 min
Warm Start Time:	<2 seconds
Demodulation:	Minimum shift keying
Sensitivity:	2.5 μ V/m for 6 dB SNR
Dynamic Range:	100 dB
Frequency Offset:	± 8 Hz (27 ppm)
Adjacent Channel Rejection:	61 dB $f_0 \pm 400$ Hz
Correction Output Protocol:	RTCM SC-104
Input Status Protocol:	NMEA 0183

Communications

Interface:	RS-232C or RS-422
Baud Rates:	2400, 4800, 9600

Environmental Specifications

Operating Temperature:	-30°C to +70°C
Storage Temperature:	-40°C to +80°C
Humidity:	95% non-condensing
EMC:	EN 60945 EN 50081-1 EN 50082-1 FCC: Part 15, sub-part J, class A digital device

Power Specifications

Input Voltage Range:	9 to 40 VDC
Nominal Power:	2.5 W
Nominal Current:	210 mA
Antenna Voltage Output:	10 VDC (5 VDC optional)
Antenna Input Impedance:	50 Ω

Mechanical Specifications

Dimensions:	150 mm L x 125 mm W x 51 mm H (5.9" L x 4.9" W x 2.0" H)
Weight:	0.64 kg (1.4 lb)
Display:	2-line x 16-character LCD
Keypad:	3-key switch membrane
Power Connector:	2-pin circular locking
Data Connector:	DB9-S
Antenna Connector:	BNC-S
Optional GPS Output Port:	TNC-S

Operating Modes

MBX-3 Mode (Default):	RTCM SC-104 correction and NMEA status message output (Default Mode)
MBX-E Mode:	RTCM SC-104 correction and NMEA status message output and GPS NMEA message input for position and satellite status display

NMEA 0183 I/O

- Receiver Automatic and Manual tune command
- Frequency and data rate query
- Receiver performance and operating status queries
- Automatic search almanac queries (proprietary)
- Baud rate selection command
- Receiver tune command
- Force cold start command (proprietary)
- Software upgrade command (proprietary)
- Configuration up-load command (proprietary)

Accessories

Antenna:	Various
Power Cables:	Various
Antenna Cables:	Various
Data Cables:	Various
CSI Beacon Command Center:	MS Windows 95 [®] beacon control software

Pin-out

RS, 232C (DB9 PIN#)

Pin 2	TXD, RTCM SC-104/Status Output
Pin 3	RXD, configuration input
Pin 5	Signal return

RS-422 (DB9 PIN#)

Pin 1	TXD +, RTCM SC-104 / Status Output
Pin 2	TXD -, RTCM SC-104 / Status Output
Pin 4	RXD -, configuration input
Pin 5	Signal return
Pin 7	RXD +, configuration input

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Warranty: Each CSI Wireless product is covered by a limited one-year warranty on parts and labor.

CSI Wireless Dealer



Avery label #05260 (laser print)

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4110 - 9th Street SE • Calgary • AB • Canada • T2G 3C4
Phone (403) 259-3311 • Fax (403) 259-8866