MBX-4 Beacon Receiver

Reliable Auto-Tracking Differential Beacon Receiver

Provide a reliable source of free differential corrections with the MBX-4™ Differential Beacon Receiver that augments a separate GPS receiver with free accuracy-improving correction data from networks of beacon stations located throughout the world. With automatic dual-channel tracking, the MBX-4 ensures the best beacon station is always being decoded. Beacon stations are automatically tracked based on signal strength or station distance and can also be manually selected.

Hemisphere GPS' MBX-4 has been optimized for high performance reception and proves reliable even in noisy environments. It outputs the industry standard RTCM SC-104 format accepted by differential-ready GPS receivers and can be configured and monitored with NMEA 0183 protocol. Hemisphere GPS' MBX-4 receiver kit includes an integrated GPS and beacon antenna.

Key MBX-4 Advantages

- Supplements GPS systems with free beacon differential corrections, receiver quality)
- Dual-channel design allows strongest signal or closest station selection
- Integrated signal splitter outputs GPS signal from combined GPS / differential antenna
- Simple to monitor and configure through menu system and display
- Patented ceramic filter blocks out-of-band signals, optimizing reception
- Meets IEC 61108-4 operational and performance compliance

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Receiver Specifications

Channels:	2-channel, parallel tracking
Channel Spacing:	500 Hz
Frequency Range:	283.5 to 325.0 kHz
MSK Bit Rates:	50, 100, 200 bps
Operating Modes:	Manual, Automatic and Database
Cold Start Time:	<1 min
Warm Start Time:	<2 seconds
Demodulation:	Minimum Shift Keying (MSK)
Sensitivity:	2.5 µV/m for 6 dB SNR
Dynamic Range:	100 dB
Frequency Offset:	±8 Hz (27 ppm)
Adjacent Channel Rejection:	61 dB @ ± 400 Hz
Correction Output Protocol:	RTCM SC-104
Input Status Protocol:	NMEA 0183
Operation and Performance Certification:	IEC 61108-4

Communications

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

Environmental Specifications

Operating Temperature:	-30°C to +70°C (-22°F to 158°F)
Storage Temperature:	-40°C to +80°C (-40°F to 176°F)
Humidity:	95% non-condensing
EMC:	CISPR22 EN 61000-6-1 CE

Power Specifications

Input Voltage Range:	9 to 40 VDC
Nominal Power:	2.5 W
Nominal Current:	210 mA @ 12 VDC
Antenna Voltage Output:	10 VDC (5 VDC optional)
Antenna Input Impedance:	50

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 inches)
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

NMEA 0183 I/O

- Receiver Automatic, Database 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)

Back Panel Configuration

Authorized Distributor:

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