

# SBX-3B

World's most popular DGPS Beacon Module



## SBX-3B

- Dual-channel design for strongest signal tracking
- Dual serial ports accommodate separate RTCM and NMEA communications
- Patented ceramic filter blocks out-of-band signals, optimizing reception
- Low power consumption extends battery life
- Wide range of operating voltages satisfies diverse integration requirements
- Power and lock LED's permit visual verification of receiver status
- Reverse-compatibility ensures operation in existing SBX-2 and SBX-3 integrations
- New boot loader improves firmware upgrade reliability.



**ESRI**  
Technology  
AUTHORIZED  
BUSINESS PARTNER

  
**csi wireless**<sup>™</sup>  
[www.csi-wireless.com](http://www.csi-wireless.com)

# SBX-3B World's most popular DGPS Beacon Module

## Operating specifications

<b>Channels:</b>	2-channel parallel tracking
<b>Frequency Range:</b>	283.5 to 325.0 kHz
<b>Channel Spacing:</b>	500 Hz
<b>MSK Bit Rates:</b>	50, 100, and 200 bps
<b>Operating Modes:</b>	Manual and automatic
<b>Cold Start Time:</b>	< 1 minute typical
<b>Reacquisition Time:</b>	< 2 seconds typical
<b>Demodulation:</b>	Minimum shift keying (MSK)
<b>Sensitivity:</b>	2.5 $\mu$ V/m for 6 dB SNR @ 200 bps
<b>Out of Band Rejection:</b>	60 dB < 204 kHz and > 404 kHz
<b>Spurious Response:</b>	< -55 dB (0.1 MHz to 1.6 MHz)
<b>Ripple (in-band):</b>	3 dB
<b>Dynamic Range:</b>	100 dB
<b>Frequency Offset:</b>	$\pm$ 8 Hz (~ 27 ppm)
<b>Adjacent Channel Rejection:</b>	61 dB $\pm$ 1 dB @ $f_o \pm$ 400 Hz
<b>Antenna Input Impedance:</b>	50 $\Omega$

## Communications

<b>Serial Ports:</b>	2 full-duplex
<b>Interface Level:</b>	HCMOS, tracks input voltage
<b>Baud Rates:</b>	1200, 2400, 4800, and 9600
<b>Correction Input / Output Protocol:</b>	RTCM SC-104
<b>Data Input / Output Protocol:</b>	NMEA 0183

## Environmental

<b>Operating Temperature:</b>	-30°C to +70°C
<b>Storage Temperature:</b>	-40°C to +80°C
<b>Humidity:</b>	95% non-condensing
<b>EMC:</b>	EN50081-4-2 ESD

## Power

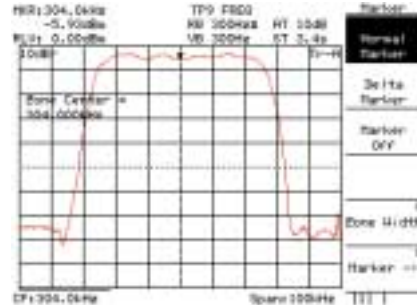
<b>Input Voltage Range:</b>	4.0 to 10.0 VDC
<b>Power Consumption:</b>	< 0.25 W @ 5.0 VDC (no antenna)
<b>Current Consumption:</b>	< 50 mA @ 5.0 VDC (no antenna)
<b>Antenna Voltage Output:</b>	5 VDC or 12 VDC applied externally

## Mechanical

<b>Dimensions :</b>	76.2mm L x 50.8mm W x 13.8mm H (3.0" L x 2.0" W x 0.54" H)
<b>Weight:</b>	30 g (1.1 oz)
<b>Connector J1:</b>	1 x 4 pin header, 0.1" spacing
<b>Connector J2:</b>	2 x 12 pin header, 0.1" spacing

## Patented front-end filter response

The front-end filter in the SBX-3B passes beacon frequencies at a consistent strength while blocking out-of-band signals. The result? Low-noise, high-performance beacon reception. The following figure illustrates the frequency response of this filter.



## Proprietary NMEA 0183 commands

- Select between manual and automatic tuning modes
- Query receiver performance and operating status
- Specify communications baud rate up to 9600 bps
- Reset receiver from operation to simulate a cold start
- Tabulate and output results of frequency scan

## Pin-out

### J1 connector

<b>Pin(s)</b>	1,3
	2
	4

### Signal

Analog ground  
Antenna input  
Antenna power output

### J2 connector

<b>Pin(s)</b>	1,2
	3,4
	14
	15
	16
	17
	18
	19
	20
	21,22
	23,24

### Signal

Antenna power input  
Power supply input  
TXD0, output  
TXD1, output  
Lock indicator (0.5 mA max, active high)  
RXD0, input  
RXD1, input  
Internal reset output (active low)  
External reset input (active low)  
Analog ground  
Digital ground

© Copyright: September 2001, CSI Wireless Inc. All rights reserved. Specifications subject to change without notice.

CSI Wireless and the CSI Wireless logo are trademarks of CSI Wireless Inc. Made in Canada.

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)

Printed in Canada.



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