

Specifications

Trimble BX992 GNSS-INS Heading Receiver



Receiver Name	BX992 GNSS-INS Heading Receiver
Configuration Option	Modular
Base and Rover interchangeability	Rover only
Rover position update rate	20 Hz standard
Rover maximum range from base radio	Unrestricted
Rover operation within a VRS™ network	Yes
Heading and Moving Base operation	Yes
Factory options	See Receiver Upgrades below
Heave and Attitude	Yes
General	
Keyboard and display	4 LEDs - Power, Corrections, SV Tracking, Future Feature
Dimensions (L × W × D)	185mmL x 93mmW x 43mmH (7.28inL x 3.66inW x 1.7inH)
Weight	.75 kg (1.65 lb)
Antenna Options	
GA510 (Discontinued)	L1/L2/L2C GPS, QZSS, BeiDou, SBAS, RTX, and OmniSTAR
GA530 (Discontinued), Rugged GA530	L1/L2/L2C GPS, QZSS, BeiDou, SBAS, RTX, and OmniSTAR, Beacon
GA810	L1/L2/L2C GPS, QZSS, Glonass, Galileo, BeiDou, RTX, OmniSTAR, SBAS
GA830	Triple Frequency GNSS (GPS, QZSS, Glonass, Galileo, BeiDou), MSS (RTX, OmniSTAR), L1 SBAS
L1/Beacon, DSM 232 (Discontinued)	Not supported
Zephyr™ Model 3	Triple Frequency GNSS (GPS, QZSS, Glonass, Galileo, BeiDou), MSS(RTX, OmniSTAR), L1 SBAS
Zephyr Base Station Model 3	Triple Frequency GNSS (GPS, QZSS, Glonass, Galileo, BeiDou), MSS(RTX, OmniSTAR), L1 SBAS
Zephyr Model 3 Rugged	Triple Frequency GNSS (GPS, QZSS, Glonass, Galileo, BeiDou), MSS(RTX, OmniSTAR), L1 SBAS
Zephyr, Zephyr Geodetic, Z-Plus, Micro-Centered™ (Discontinued)	
Temperature	
Operating ¹	-40 °C to +70 °C (-40° F to +158° F)
Storage	-55 °C to +85 °C (-67 °F to + 185° F)
Humidity	5% to 95% RH non-condensing
Water Ingress Protection	IP67 for submersion to depth of 1 m (3.3 ft), dustproof
Shock and Vibration	

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Pole drop	
Shock – Non-operating	MIL810D, To 75 g, 6 ms
Shock – Operating	MIL810D, To 40 g, 10 ms, saw-tooth
Vibration	MIL810F, tailored Random 6.2 g RMS operating Random 8 g RMS survival
Measurements	
	Advanced Trimble Maxwell™ 7 Custom GPS Chips
	High-precision multiple correlator for GNSS pseudorange measurements
	Unfiltered, unsmoothed pseudo-range measurements data for low noise, low multipath error, low-time domain correlation, and high-dynamic response
	Very low noise carrier phase measurements with <1 mm precision in 1 Hz bandwidth
	Trimble EVEREST™ multipath signal rejection
	MSS Band: CenterPoint RTX and MarineStar by subscription
	Heave: 5cm / 5% up to 9 second period and +/-1m (2m Amplitude)
	Pitch and Roll (INS) +/-0.10°
	Dead Reckoning up to 10 seconds 0.30 (H) 0.30 (V)
	2 x 336 channel GNSS
	GPS L1 C/A, L2C, L2E, L5 (Trimble method for tracking unencrypted L2P)
	GLONASS L1/L2C/A, L2P Full Cycle Carrier
	Upgradeable to BeiDou: B1, B2, B3, B1C, Tracks 3rd generation BeiDou
	Upgradeable to Galileo: L1 CBOC, E5A, E5B & E5AltBOC[8]
	4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS/GAGAN)
	QZSS: L1 C/A, L1C, L1 SAIF, L2C, L5
SBAS (WAAS/EGNOS/MSAS) Positioning³	
Accuracy	Horizontal ± 0.50m (1.6 ft), Vertical ± 0.85m (2.8 ft)
Code Differential GPS Positioning²	
Horizontal accuracy	0.25 m + 1 ppm RMS (0.8 ft + 1 ppm RMS)
Vertical accuracy	0.50 m + 1 ppm RMS (1.6 ft + 1 ppm RMS)
OmniSTAR Positioning	
VBS service accuracy	Horizontal <1 m (3.3 ft)
XP service accuracy	Horizontal 0.2 m (0.66 ft), Vertical 0.3 m (1.0 ft)
HP service accuracy	Horizontal 0.1 m (0.33 ft), Vertical 0.15 m (0.5 ft)
CenterPoint RTX Positioning	
Accuracy ¹²	Horizontal 2cm (0.06 ft) RMS, Vertical 5cm (0.16 ft) RMS
Convergence time for specified precisions ¹²	5 minutes in select regions, and within 30 minutes worldwide
xFill Positioning	
xFill accuracy	N/A
Location RTK Positioning	
Horizontal accuracy	Location RTK (10/10) or (10/2) 10 cm + 1 ppm RMS (0.32 ft + 1 ppm)
Vertical accuracy	Location RTK (10/10) 10 cm + 1 ppm RMS (0.32 ft + 1 ppm) Location RTK (10/2) 2 cm + 1 ppm RMS (0.065 ft + 1 ppm)

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Real-Time Kinematic (RTK up to 30 km) Positioning²

Horizontal accuracy	8 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS)
Vertical accuracy	15 mm + 1 ppm RMS (0.05 ft + 1 ppm RMS)

Trimble VRS³

Horizontal accuracy	8 mm + 0.5 ppm RMS (0.026 ft + 0.5 ppm)
Vertical accuracy	15 mm + 0.5 ppm RMS (0.05 ft + 0.5 ppm)

Precise Heading

Heading accuracy	
2 m antenna separation	0.09° RMS
10 m antenna separation	0.05° RMS

High Precision Static

Horizontal accuracy	
Vertical accuracy	

Initialization Time

Regular RTK operation with base station	Single/Multi-base typically less than 8 seconds
Initialization reliability ⁴	>99.9%

Power

Internal	None
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Power

External	Power input on the 26-pin D-sub connector 9 VDC to 30 VDC Max 4.1 W
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Power over Ethernet (PoE)	N/A
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Power consumption	4.1 W
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Operation Time on Internal Battery

Rover	N/A
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Base station

450 MHz systems	N/A
220 MHz systems	N/A
900 MHz systems	N/A

Regulatory Approvals

FCC Part 15 Subpart B (Class B Device)

Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

RE Directive: EN 301 489-1/-3, EN 300 487, EN 303 413,
EN 300 440, EN 60950-1

CE mark compliant

RoHS compliant

WEEE compliant

Communications

Lemo (Serial 1)	26-pin D-sub, 3 wire RS232, Labeled Serial 3 on 78235-10 adaptor cable
Modem 1 (Serial 2)	26-pin D-sub, Serial 2, 5 wire RS232, using adaptor cable
Modem 2 (Serial 3)	CAN output on DB9 port - not supported
Serial 4	USB port
1PPS (1 Pulse-per-second)	Supported
Ethernet	Through a multi-port adaptor
WiFi	N/A
Bluetooth wireless technology	N/A
Integrated radios (optional)	N/A
Channel spacing (450 MHz)	
Sensitivity (450 MHz)	
450 MHz output power	
220 MHz output power (China only)	
900 MHz output power	
Frequency approvals (902-928 MHz)	

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External GSM/GPRS, cell phone support	Supported for Internet-based correction streams – directly using the external SNM94x Cell phone or GSM/GPRS via network
Internal MSK Beacon receiver	N/A
Receiver position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning
Correction data input	CMR™, CMR+™, CMRx™, RTCM 2.x, RTCM 3 (require Rover upgrade)
Correction data output	N/A
Data outputs	NMEA, GSOFF, 1PPS Time Tags
Receiver Upgrades	
Precision upgrades	Location RTK (10/2), (10/10) Precision RTK Rover
Signal / Constellation upgrades	GALILEO, GLONASS and BeiDou GNSS[10]
Feature upgrades	Data Logging Option INS Option 50 Hz Output
Notes	<p>2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interference and atmospheric conditions.</p> <p>3 Depends on SBAS system performance.</p> <p>4 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.</p> <p>8 Galileo Commercial Authorization Developed under a Licence of the European Union and the European Space Agency.</p> <p>9 Networked RTK PPM values are referenced to the closest physical base station</p> <p>10 This Trimble Receiver is capable of supporting existing and planned GNSS satellite signals, including GPS, GLONASS, GALILEO, BeiDou and QZSS, and existing and planned augmentations to these GNSS systems.</p> <p>12 Receiver accuracy and convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.</p>

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Specifications subject to change without notice.

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