Specifications

Trimble MPS566
Modular GNSS Heading Receiver

Receiver Name	**MPS566 GNSS Heading Receiver**
Configuration Option	
Type	Modular
Base and rover interchangeability	No, rover only
Rover position update rate	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20Hz, 50Hz
Rover maximum range from base	Unrestricted
Heading and Moving Base operation	Yes
Rover operation within a VRS™ network	Yes
Factory options	GPS, GLN, Triple Frequency, WiFi (AP, Client), LTE, Logging, Dual MSS (RTX, Marinestar)
Internal Memory	9.25 GB logging
General	
Keyboard and display	Display 32 characters by 4 rows
	On/Off key for one-button startup
	Escape and Enter keys for menu navigation
	4 arrow keys (up, down, left, right) for option scrolls and data entry
Dimensions (L × W × D)	269 mm (10.6 in) L x 141 mm (5.5 in) W x 61 mm (2.4 in) H
Weight	1.85 kg (4.08 lb)
GNSS Antenna (Recommended)	
Zephyr™ 3 Series [Rover, Rugged]	Triple-frequency GNSS (GPS, GLONASS, Galileo, BeiDou, QZSS, NavIC) MSS, SBAS
GA830	Triple-frequency GNSS (GLONASS, Galileo, BeiDou, QZSS, NavIC), MSS, SBAS, MSK
Temperature	
Operating	-40 °C to +65 °C (-40 °F to +149 °F)
Storage	-40 °C to +80 °C (-40 °F to +176 °F)
Humidity	93% humidity at 40 °C for a duration of 3 hours (IEC-60945 Method 8.3)
Water Ingress Protection	IP67 for submersion to depth of 1 m (3.3 ft), dustproof
Shock and Vibration	
Pole Drop	Designed to survive a 1.1 m (3.6 ft) pole drop onto a hard surface
Shock – Non-operating	To 75 g, 6 ms
Shock – Operating	To 40 g, 10 ms, saw-tooth
Vibration	IEC 60945 Method 8.7 Random 6.2 g RMS operating 9.8g RMS 24-2000 Hz for 1 hrs each axis survival

Measurements	
	Advanced Trimble Maxwell™ 7 Custom GNSS Chip
	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 a 1 Hz bandwidth
	Trimble EVEREST™ multipath signal rejection
	Spectrum Analyser to troubleshoot GNSS jamming
	Dual MSS Band: Trimble CenterPoint® RTX, OmniSTAR® and Fugro MarineStar correction services by subscription
	Trimble xFill® technology for short gaps in RTK correction messages
	Advanced Trimble dual Maxwell 7 GNSS chipset provide 672 channels for simultaneous satellite tracking and anti-spoofing capabilities
	GPS: L1 C/A, L1C, L2C, L5, L2E (Trimble method for tracking unencrypted L2P)
	GLONASS: L1-C/A, L2-C/A, L1P, L2P, L3 Full Cycle Carrier
	NavIC (IRNSS): L5-C/A
	Galileo: E1, E5-A, E5-B, E5-AltBOC, E6[8]
	Upgradeable to BeiDou: B1, B2, B3, B1C. B2A, B2B [Tracks 3rd generation BeiDou signals]
	4-channel SBAS L1 C/A, L5 (WAAS/EGNOS/MSAS/GAGAN)
	QZSS: L1 C/A, L1C, L1 SAIF, L2C, L5, L6
	Dual channel MSK
SBAS (WAAS/EGNOS/MSAS) Positioning[3]	
Horizontal accuracy	± 0.50m (1.6ft)
Vertical accuracy	± 0.85m (2.8 ft)
Code Differential GPS Positioning[2]	
Correction type	DGPS RTCM 2.x
Correction source	DGPS Base via radio, Internet or MSK
Horizontal accuracy	±(0.25m + 1 ppm) RMS ±(0.8 ft + 1 ppm) ±(250+1xDx10^{-6}) mm [D = distance from base in Km]
Vertical accuracy	±(0.50m + 1 ppm) RMS ±(1.6 ft + 1 ppm) ±(500+1xDx10^{-6}) mm [D = distance from base in Km]
OmniSTAR/MarineSTAR 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)
Marinestar G2+ service accuracy	Horizontal 0.02 m (0.06 ft), Vertical 0.06 m (0.20 ft), 95%
CenterPoint RTX Positioning[12]	
Horizontal accuracy	0.02 m (0.06 ft) RMS
Vertical accuracy	0.05 m (0.16 ft) RMS
Convergence time for specified precisions	5 minutes in select regions, and within 15 minutes worldwide
xFill Positioning	
Horizontal accuracy	RTK + 10mm(0.03 ft)/min RMS
Vertical accuracy	RTK + 20mm(0.06 ft)/min RMS
RTK Positioning[2], Single Baseline<30 km, Network RTK	
Horizontal accuracy	8 mm + 1 ppm RMS (0.026 ft + 1 ppm RMS) ±(8+1xDx10^{-6}) mm [D = distance from base in Km]
Vertical accuracy	15 mm + 1 ppm RMS (0.05 ft +1 ppm RMS) ±(15+1xDx10^{-6}) mm [D = distance from base in Km]
Fast Static	
Horizontal accuracy	3 mm + 0.5 ppm RMS ±(3+0.5xDx10^{-6}) mm [D = distance from base in Km]
Vertical accuracy	5 mm + 0.5 ppm RMS ±(5+0.5xDx10^{-6}) mm [D = distance from base in Km]
High-Precision Static	
Horizontal accuracy	3 mm + 0.1 ppm RMS (0.01 ft +0.1 ppm) ±(3+0.1xDx10^{-6}) mm [D = distance from base in Km]

Vertical accuracy	3.5 mm + 0.4 ppm RMS (0.011 ft +0.4 ppm) ±(3.5+0.4xDx10⁻⁶) mm [D = distance from base in Km]
Precise Heading[2]	
Heading accuracy	
2 m antenna separation	0.09° RMS
10 m antenna separation	0.05° RMS
Velocity	
Doppler	H 0.008 m/s RMS, V 0.025 m/s RMS
Power	
Internal	N/A
External	Power input on 7-pin 0-shell Lemo connector is optimized for lead acid batteries with a cut-off threshold of 11.5 V, Maximum 28 VDC
	Power input on the 26-pin D-sub connector is optimized for Trimble lithium-ion battery input with a cut-off threshold of 10.5 V
	Power source supply (Internal/External) is hot-swap capable in the event of power source removal or cut off
	DC external power input with over-voltage protection
	Receiver automatically turns on when connected to external power
Power over Ethernet (PoE)	N/A
Power consumption	7.7 W in rover mode, dual GNSS active
	8.0 W in rover mode with internal receive radio, dual GNSS active
Regulatory/Type Approvals	
	FCC: Part 15 Subpart B (Class B Device),
	Subpart C Section 15.247,
	Part 90,
	Part 22/24/27,
	Part 2, KDB 447498 D01, IEEE C95.3,
	UL IEC 62368-1, UL 2054, IEC 62311, EN 38.3,
	PTCRB,
	BT SIG,
	Canada: ICES-003. Cet appareil numérique de la classe B
	est conforme à la norme NMB-003 du Canada.
	RSS-GEN, RS-102, RSS-247, RSS-130/132/133/139/199.
	Cet appareil est conforme à la norme CNR-GEN, CNR-102, CNR-247, CNR-130/132/133/139 et
	CNR-199 du Canada.
	EU: Radio Directive (RED 2014/53/EU),
	EN 300 113, EN 300 328, EN 301 908,
	EN 303 413, EN 300 487,
	EN IEC 62368-1,
	Marine Equipment: IEC 60945:2002 Section 8, Protected
	RoHS Directive 2011/65/EU,
	WEEE Directive 2012/19/EU.
	UKCA: S.I. 2017 No. 1206, S.I. 2016 No. 1091, S.I. 2016 No. 1101.
	ACMA: AS/NZS 4268, AS/NZS CISPR 32.
	China SRRC.
	India WPC.
	Japan MIC.
	South Africa ICASA.
	Brazil ANATEL.
	Mexico IFT.
	Argentina RAMATEL.
	United Arab Emirates TDRA.
	More certification is available upon request.

Communications	
Serial 1 (COM1)	7-pin 0S Lemo, Serial 1, 3-wire RS-232
Serial 2 (COM2)	26-pin D-sub, Serial 2, 5-wire RS232, using adaptor cable
Serial 3 (COM3)/CAN	26-pin D-sub, Serial 3, 3-wire RS232, using adaptor cable (Selectable) 2 wire CAN Output [NMEA 2000] (Selectable)
1PPS (1 Pulse-per-second)	Supported on both Lemo and 26-pin D-sub
Event In	Supported on Lemo
USB	USB v2 (Supports USB-PD)
Ethernet	Through a multi-port adaptor (PN 57168)
Wi-Fi	Fully-integrated, fully-sealed 2.4 GHz Wi-Fi module Simultaneous Access Point (AP) and Client modes
Bluetooth® wireless technology	Fully-integrated, fully-sealed 2.4 GHz Bluetooth module[5]
Cellular	Fully-integrated, fully-sealed LTE compliant module Bands 1:2:3:4:5:7:8:12:18:19:20:28 [Verizon not supported]
Network Protocols	
HTTP (web browser GUI)	HTTP, HTTPS
NTP Server	Yes
TCP/IP or UDP	Yes
NTRIP	NTRIP v1 and v2, Client, Server and Caster modes
mDNS/uPnP Service discovery	Yes
Dynamic DNS	Yes
eMail alerts	Supports SSL/TLS secure Email Servers
Integrated UHF radio (Rx Only)	
450 MHz	Fully-integrated, internal 403-473 MHz Rx Only, 12.5 kHz or 25 kHz spacing configurable by Trimble Dealer
Sensitivity	-114 dBm (12 dB SINAD)
900 MHz	Fully-integrated, internal 900 MHz; Rx Only
Frequency approvals (902-928 MHz)	USA/Canada
Cellular support	
Internet-based correction streams: (Trimble IBSS, Trimble VRS Now, NTRIP)	Internal LTE modem Connected smartphone Connected Trimble Controller [SiteWorks]
Carriers	Bands 1:2:3:4:5:7:8:12:18:19:20:28 [Verizon not supported]
Remote Access	Using DynDNS and appropriate service
Internal MSK Beacon receiver	
Channels	2
Frequency range	283.5–325.0 kHz
Channel spacing	500 Hz
MSK bit rate	50, 100, and 200 bps
Demodulation	Minimum shift key (MSK)
Antenna	Trimble GA830
Internal MSS Demodulator (L-Band)	
Channels	2
Frequency range	1525-1559 MHz
Correction Services	Trimble CenterPoint® RTX, OmniSTAR® and Fugro MarineStar
Input/Output	
Correction inputs	CMR+, CMRx, RTCM 2.x, RTCM 3, RTCM 3.3(MSM) MSS [Marinestar, Trimble RTX]
Data outputs	NMEA 0183, NMEA 2000, GSOF, 1PPS Time Tags
Data inputs	Event
Maximum data rate	100Hz (depending on data type)
Features and Upgrades	
Standard features	GPS, GLONASS, Triple Frequency, Wi-Fi (AP, Client), LTE, Logging
Raw data logging (*.T02, *.T04)	9.25 GB Internal
Precision upgrades	Premium Precise Heading Rover Precise Heading Rover 10/02 Heading Rover 10/10 Heading Rover

Signal / Constellation upgrades	Galileo BeiDou
Feature upgrades	Inertial (INS) Heading, Pitch and Roll Attitude, 1° Pitch and Roll Programmatic Interface Binary Ouputs

Notes

1 Operating up to +65 °C ambient when the device is powered by external DC supply
Operating up to +48 °C ambient when the device is powered by a USB-PD battery or charger.

2 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, interference and atmospheric conditions. Always follow recommended survey practices.

3 Depends on SBAS system performance.

4 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

5 Bluetooth type approvals are country specific. For more information, contact your local Trimble office or representative.

6 Networked RTK PPM values are referenced to the closest physical base station

7 Receiver accuracy and convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.

8 Galileo Commercial Authorization
Developed under a Licence of the European Union and the European Space Agency.

Specifications subject to change without notice.

Trimble Civil Engineering and Construction Division

10368 Westmoor Drive

Westminster, Colorado 80021

USA

800-361-1249 (Toll Free)

+1-937-245-5154 Phone

+1-937-233-9441 Fax

www.trimble.com

Trimble Authorized Distribution Partner