MULTI-GNSS RTK, HIGH-ACCURACY RECEIVER

atlas®

The new **R632** GNSS receiver is a full-solution product in an incredibly compact and powerful package, offering the ability to easily upgrade to an astounding 0.01° accurate heading.

Built on the foundation of Hemisphere's new Lyra, Cygnus and Aquila core technologies, the **R632** offers amazing new interference rejection and multipath mitigation. The result is an exceptional combination of performance, communications, and connectivity.

The **R632's** standard configuration offers multiple methods of connectivity and an impressive array of wireless communications.

Through Hemisphere's Atlas correction network, the **R632** offers worldwide stand-alone positioning to 4 cm.

The **R632** is an incredible solution for almost any application requiring professional-level position and heading performance.

Key Features

- Multi-frequency GPS, GLONASS, BeiDou (including Phase 3), Galileo, IRNSS, QZSS, and Atlas L-band
- Long-range RTK baselines up to 50 km with fast acquisition times
- Worldwide Atlas L-band corrections to 4 cm
- UHF (400MHz& 900MHz), cellular (GSM, 3G & 4G, Bluetooth, and Wi-Fi wireless communication
- Athena GNSS engine providing best-in-class RTK performance
- Status LEDs and powerful WebUI, making the R632 easy to monitor and configure
- Ethernet, CAN, Serial, and USB, providing exceptional connectivity
- Free firmware updates for the life of the product

GNSS Receiver Specifications

Receiver Type: Multi-Frequency GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS, and Atlas L-band

Signals Received: GPS L1CA/L1P/L1C/L2P/L2C/L5
GLONASS G1/G2/G3, P1/P2
BeiDou B1i/B2i/B3i/B10C/B2A/B2B/ACEBOC
GALILEO E1BC/E5a/E5b/E6BC/ALTBOC
QZSS L1CA/L2C/L5/L1C/LEX
IRNSS L5
Atlas L-band

GPS Sensitivity: -142 dBm

SBAS Tracking: 3-channel, parallel tracking

Update Rate: 10 Hz standard, 20 Hz optional (with activation)

Timing (1PPS)

Accuracy: 20 ns

Cold Start: 60 s typical (no almanac or RTC)

Warm Start: 30 s typical (almanac and RTC)

Hot Start: 10 s typical (almanac, RTC and position)

Antenna Input Impedance: 50 Ω

Maximum Speed: 1,850 mph (999 kts)

Maximum Altitude: 18,000 m (59,055 ft)

Accuracy

Heading (RMS): 0.2° @ 0.5 m antenna separation
0.1° @ 1.0 m antenna separation
0.05° @ 2.0 m antenna separation

Positioning (RMS):	Horizontal	Vertical
Single Point:	1.2 m	2.4 m
SBAS: [1]	0.3 m	0.6 m
Atlas H10: [1]	0.04 m	0.08 m
Atlas H30: [1,3]	0.15 m	0.3 m
Atlas Basic: [1,3]	0.5 m	1.0 m
RTK: [1,2]	8 mm + 1 ppm	15 mm + 1 ppm

L-Band Receiver Specifications

Receiver Type: Single Channel

Frequency Range: 1525 to 1560 MHz

Sensitivity: -130 dBm

Channel Spacing: 5.0 kHz

Satellite Selection: Manual and Automatic

Reacquisition Time: 15 seconds (typical)

Communications

Bluetooth: Bluetooth 2.1+EDR / 4.0 LE

Wi-Fi: 802.11 b/g

Network: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28
LTE TDD: B38/B39/B40/B41
UMTS: B1/B2/B4/B5/B6/B8/B19
GSM: B2/B3/B5/B8

Radio: Frequency range: 410MHz ~ 470MHz and 902.4MHz ~ 928MHz
Channel Spacing: 12.5 KHz / 25 KHz
Protocol: TrimTalk 450S, PCC EOT, TrimMark III(19200)

RTK Formats: RTCM2.1, RTCM2.3, RTCM3.0, RTCM3.1, RTCM3.2 including MSM

Correction I/O

Protocol: Hemisphere GNSS proprietary ROX format, RTCM v2.3, RTCM v3.2, CMR, CMR+

Data I/O Protocol: NMEA 0183, NMEA2000, Hemisphere GNSS binary

Timing Output: 1PPS (CMOS, rising edge sync)

Event Marker Output: Open drain, falling edge sync, 10 kΩ, 10 pF load

Physical

Weight: 550 g

Dimensions: 105 x 150 x 34 mm

Power Connector: 2-pin metal ODU

Antenna Connector: TNC female, straight (2x)

Data Connector: D-SUB 26 (2x RS485, 1x RS232, 1x USB2, 1x 1PPS, 1x Event, 1x CAN, 1x 100m Ethernet)

LTE Connector: SMA

UHF Connector: SMA

Other: Micro SIM card slot and Micro SD card slot

Storage Type: 8 GB internal, Micro SD card up to 32 GB

Environmental

Operating Temperature: -30°C ~ +65°C

Storage Temperature: -40°C ~ +80°C

Protection: IP6x, IPx6, IPx7

Shock Resistance: EP455 Section 5.41.1 Operational

Humidity: 95% non-condensing

Vibration: EP455 Section 5.15.1 Random

EMC: CE (IEC 60945 Emissions and Immunity) FCC Part 15, Subpart B, CISPR22

Inflammability: UL recognized, 94HB Flame Class Rating (3) 1.49 mm

Chemical Resistance: Cleaning agents, soapy water, industrial alcohol, water vapor, solar radiation (UV)

Electrical

Input Voltage: 8 to 36 V DC

Power Consumption: 7.65 W nominal (all signals + L-band)

Reverse Polarity Protection: Yes

Antenna Voltage Output: 5 V DC maximum

Antenna Short Circuit Protection: Yes

Input Range: 10 to 40 dB

User Interface

LEDs: Power, Satellite, Bluetooth, Cellular, Wi-Fi, UHF, Heading [3]

WebUI: Supports software updates, receiver status and settings and data downloads via smartphones, tablets or other Wi-Fi capable devices.

---

1. Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
2. Depends also on baseline length
3. Requires an activation or subscription from Hemisphere GNSS

Hemisphere GNSS
8515 E. Anderson Drive
Scottsdale, AZ 85255, USA

Phone: +1 (480) 348-6380
Toll-Free: +1 (855) 203-1770
Fax: +1 (480) 270-5070

precision@hgnss.com
www.hgnss.com