C321+ GNSS Smart Antenna

GNSS Smart Antenna for Construction

key features

- **RTK Base station with internal UHF radio**
- **UHF RTK rover**
- **Network RTK rover**
- **Multi-GNSS including GPS, GLONASS, BeiDou, QZSS, Galileo, SBAS, and L-band**
- **Athena™ RTK engine and Atlas® GNSS Global Correction Service**
- **Dual hot-swappable lithium batteries provides 12 hours of battery life**
- **aRTK™ capabilities - Satellite-based RTK augmentation**

atlas

A rugged base station for your machine control jobsite or a rover to assist with grade checking and construction staking activities.

C321+ provides users a precise base station solution for sending RTK corrections to your existing fleet of machine control systems including RTK rovers via the internal UHF radio or an external radio of your choice. The C321+ receiver can also be used as a UHF or network RTK rover receiving corrections via the internet. Market-leading GNSS technology delivered at an exceptional value make the Hemisphere C321+ the ideal receiver for your high-performance satellite positioning needs.

Hemisphere®

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GNSS Receiver Specifications

Receiver Type:	GNSS Position RTK Receiver
Positioning Modes:	RTK, Atlas, DGNSS, SBAS
Channels:	572
RTK Formats:	RTCM3, ROX, CMR, CMR+[4]
L-Band Formats:	Atlas Basic, Atlas H30, Atlas H10
Update Rate/ Recording Interval:	1, 2, 4, 5, 10 Hz, and 20 Hz[3]

Positioning Accuracy

	RMS (67%)	2DRMS (95%)
Horizontal Accuracy:		
RTK: [1,2]	8 mm + 1 ppm	15 mm + 1 ppm
Static Performance (long occupation):	3 mm + 0.1 ppm	3.5 mm + 0.4ppm
Static Performance (rapid occupation):	3 mm + 0.5 ppm	5 mm + 0.5 ppm
L-Band Performance: [1,3]	0.08 m	0.16 m
SBAS (WAAS): [1]	0.3 m	0.6 m
Autonomous, no SA: [1]	1.2 m	2.4 m

Satellite Tracking

GPS:	L1CA, L1P, L2P, L2C, L5
GLONASS:	G1, G2, P1, P2
BeiDou:	B1, B2
QZSS:	L1C, L1CA, L2C, L5
Galileo:	E1BC, E5a, E5b
SBAS:	MSAS, WAAS, EGNOS, GAGAN

Communications

Connectors I/O:	5-pin Lemo connector for external power supply and external radio devices 7-pin Lemo connector for USB OTG connection and a serial port interface 1 SMA antenna connector for UHF radio 1 SMA antenna connector for UMTS Radio
WebUI:	Supports software & firmware updates, management of receiver configuration and data transfers with any Wi-Fi equipped device.
TTS:	Smart voice broadcast system "Speaking" receiver
Reference Outputs:	RTCM2.1, RTCM2.3, RTCM3.0, RTCM3.1, RTCM3.2 including MSM

Radio

Frequency Range:	410 - 470 MHz
Channel Spacing:	12.5KHz / 25 KHz
Transmitting Power:	0.5 /1 W

Wireless Module

Wi-Fi:	Integrated module with internal Wi-Fi antenna
Bluetooth:	Bluetooth 2.1 + EDR Integrated Bluetooth (BT) communication module with internal BT antenna

Cellular

PLS8-E (International):	**4G-** Penta Band LTE - 800/900/1800/2100/2600 MHz - FDD-Band (20, 8, 3, 7, 1) **3G-** Tri Band UMTS (WCDMA) - 900/1800/2100 MHz - FDD-Band (8, 3, 1) **2G-** Dual Band GSM/GPRS/EDGE - 900/1800 MHz
PLS8-X (North America):	**4G-** Penta Band LTE - 700/700/850/AWS (1700/2100)/1900 MHz - FDD-Band (13, 17, 5, 4, 2) **3G** - Tri Band UMTS (WCDMA) - 850/AWS (1700/2100)/1900 MHz - FDD-Band (5, 4, 2) **2G** - Quad Band GSM/GPRS/EDGE - 850/900/1800/1900 MHz

Power

Battery:	Hot-swappable 11.1 V - 37.74 Wh intelligent lithium (2 per kit)
Battery life:	12 hour operation from two batteries with UHF radio in Rx mode
Voltage:	9 to 22V DC external power input with over- voltage protection (5-pin Lemo)
Charge Time:	Typically 7 hours

Memory

SIM Card:	User accessible SIM card slot
Memory:	Internal 4 GB, accessible through USB and Wi-Fi
SD Card:	External Micro SD card slot 64 GB

Environmental

Operating Temperature:	-30°C to 60°C (-22°F to 140°F)
Storage Temperature:	-40°C to 80°C (-40°F to 176°F)
Waterproof/ Dustproof:	IP67. Protected from temporary immersion to a depth of 1 meter
Shock Resistance:	MIL-STD-810G, method 516.6 Designed to survive a 2 m pole drop on concrete floor Designed to survive a 1 m free drop on hardwood floor
Vibration:	MIL-STD-810G, method 514.6E-I
Humidity:	Up to 100%
Inflammability:	UL recognized, 94HB Flame Class Rating (3) 1.49mm
Chemical Resistance:	Cleaning agents, soapy water, industrial alcohol, water vapor, solar radiation (UV)

Mechanical

Size:	14.1 D x 14.0 H (cm) 5.5 D x 5.5 H (in)
Weight:	<1.38 kgs (<3.05 lbs)
Mounting:	5/8"x11, 55° thread angle, stainless steel insert
Phase Center Offset:	GPS L1 and L2 offset below 2.5mm

1 Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
2 Depends also on baseline length
3 Requires a subscription from Hemisphere GNSS
4 CMR and CMR+ do not cover proprietary messages outside of the typical standard

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