

# C321+ GNSS Smart Antenna

## OEM Hardware for Machine Control Systems

key features

- Base station with internal UHF radio
- UHF rover
- Network rover
- Multi-GNSS including GPS, GLONASS, BeiDou, QZSS, Galileo, SBAS, and L-band
- Athena™ RTK engine and Atlas® L-band global corrections
- 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 control checking and construction staking activities.

### Manage Your Site

Hemisphere's C321+ multi-GNSS, multi-frequency receiver paired with a Windows based handheld device and Hemisphere's SiteMetrix™ field software platform is the ultimate tool to manage all of your jobsite activities.

- Grade management
- Graphical stakeout
- In-the-field volume calculations
- CAD layer management
- Enhanced graphics for data collection
- Built-in cellular communication support
- Import/export files for machine control
- Easy-to-use
- Create localization
- Real-time cut and fill information

Use the C321+ as a precise base station sending RTK corrections to your existing fleet of machine control systems and rovers via the internal UHF radio or an external radio of your choice. The C321+ receiver can also be tuned into a network rover receiving corrections from your jobsite base station or via the internet. Market-leading technology delivered at competitive prices make Hemisphere's C321+ the ideal receiver for your high-performance satellite positioning needs.

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precision@hgns.com  
www.hgns.com

# C321+ GNSS Smart Antenna

## GNSS Receiver

Receiver Type:	Multi-Frequency GNSS
Positioning Modes:	RTK, L-band, DGNSS, SBAS, Autonomous
Channels:	394
RTK Formats:	RTCM3, ROX, CMR, CMR+ <sup>4</sup>
L-Band Formats:	Atlas H100, Atlas H30, Atlas H10
Update Rate/Recording Interval:	Selectable from 1, 2, 4, 5, 10 Hz (20 Hz available)

## Performance (RMS)

	Horizontal	Vertical
RTK: <sup>1,2</sup>	8 mm + 1 ppm	15 mm + 1 ppm
Static Performance (long occupation):	3 mm + 0.1 ppm	3.5 mm + 0.4 ppm
Static Performance (rapid occupation):	3 mm + 0.5 ppm	5 mm + 0.5 ppm
L-Band Performance: <sup>1,3</sup>	0.08 m	0.16 m
SBAS (WAAS): <sup>1</sup>	0.3 m	0.6 m
Autonomous, no SA: <sup>1</sup>	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

## Communication

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 TNC antenna connector for internal radio 1 TNC antenna connector for modem module
WebUI:	To upgrade the software, manage the status and settings, data download, via smart phone, tablet or other electronic 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
Emitting 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):	<b>4G</b> - Penta Band LTE - 800/900/1800/2100/2600 MHz - FDD-Band (20, 8, 3, 7, 1) <b>3G</b> - Tri Band UMTS (WCDMA) - 900/1800/2100 MHz - FDD-Band (8, 3, 1) <b>2G</b> - Dual Band GSM/GPRS/EDGE - 900/1800 MHz
PLS8-X (North America):	<b>4G</b> - Penta Band LTE - 700/700/850/AWS (1700/2100)/1900 MHz - FDD-Band (13, 17, 5, 4, 2) <b>3G</b> - Tri Band UMTS (WCDMA) - 850/AWS (1700/2100)/1900 MHz - FDD-Band (5, 4, 2) <b>2G</b> - 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) 12 hour operation from two batteries with UHF radio in Rx mode
Battery life:	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, supports up to 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 with no damage; designed to survive a 1 m free drop on hardwood floor with no damage
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

## Authorized Distributor:



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

Toll-Free: +1 (855) 203-1770  
Phone: +1 (480) 348-6380  
Fax: +1 (480) 270-5070  
precision@hgns.com  
www.hgns.com