

### A631 GNSS Smart Antenna





The **A631** GNSS Smart Antenna is an affordable, portable solution with professional-level accuracy for agricultural, marine, GIS, mapping, and other applications.

Focus on the job-at-hand with fast start-up and reacquisition times, scalable accuracy, and an easy-to-see LED status indicator for power, GNSS, and DGNSS. The durable enclosure houses both antenna and receiver. It can be powered through various sources, making the **A631** smart antenna ideal for a variety of applications. Dual-Serial, CAN, and pulse output options make this DGNSS receiver compatible with almost any interface. With optional Bluetooth and WiFi support, the **A631** Smart Antenna is ready to be connected with mobile devices.

## atlas

**A631** supports the use of Hemisphere's Atlas® Global Correction Service. This, paired with the easy-to-use Atlas Portal (www.atlasgnss.com), empowers users to update firmware and enable functionality, including Atlas® activations and subscriptions for accuracies from meter to subdecimeter levels.

#### **Key Features**

- Multi-Frequency GPS, GLONASS, BeiDou, Galileo, and QZSS
- Powered by Hemisphere Lyra<sup>™</sup> II ASIC & Cygnus<sup>™</sup> Interference Mitigation technology
- Atlas<sup>®</sup> L-band corrections
- Athena™ RTK engine
- Scalable accuracy within a single product for different use cases
- Durable enclosure is proven to withstand the most aggressive environments
- Compact, low-profile design with fixed or magnetic mounting options are ideal for portable and dynamic applications
- Optional Bluetooth and WiFi interface
- Optional 16 GB Internal Storage

#### **GNSS Receiver Specifications**

Receiver Type:	Multi-Frequency GPS, GLONASS, BeiDou,
	Galileo, QZSS, and Atlas
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/IRNS L5
	Atlas
Channels:	800+
GPS Sensitivity:	-142 dBm
SBAS Tracking:	
Update Rate:	10 Hz standard, 20 Hz optional
	(with activation)
Timing (1 PPS)	
Accuracy:	20 ns
Cold Start:	60 s typical (no almanac RTC)
Warm Start:	30 s typical (almanac and RTC)
Hot Start:	10 s typical (almanac, RTC, and position)
	1,850 kph (999 kts)
Maximum	
Altitude:	18,000 m (59,055 ft)

Accuracy		
Positioning:	RMS (67%)	2DRMS (95%)
Autonomous,		
no SA: 1	1.2 m	2.5 m
SBAS: 1	0.3 m	0.6 m
Atlas H10: 1,3	0.04 m	0.08 m
Atlas H30: 1,3	0.15 m	0.3 m
Atlas Basic: 1,3	0.50 m	1.0 m
<b>RTK:</b> <sup>1, 2</sup>	8 mm + 1 ppm	15 mm + 2 ppm

#### **L-Band Receiver Specifications**

Receiver Type:	Single Channel	
Channels:	1530 to 1560 MHz	
Sensitivity:	-130 dBm	
Channel Spacing: 5 kHz		
Satellite Selection: Manual or Automatic		
Reacquisition		
Time:	15 sec (typical)	

#### Communications

Ports: Baud Rates: Correction I/O	2 full-duplex RS-232, CAN 4800 - 460,800
Protocol:	Hemisphere GNSS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK)
Data I/O Protocol Timing Output:	NMEA 0183, NMEA 2000, Hemisphere GNSS binary, Bluetooth 2.0 (Class 2), Wi-Fi 1 PPS, CMOS, active low, falling edge
	sync, 10 kΩ, 10 pF load

#### **Event Marker**

Input:

CMOS, active low, falling edge sync, 10 k $\Omega$ , 10 pF load

#### Data & Storage

Storage Type: 16 GB (internal)

Power Input Voltage: Power	7-32 VDC
Consumption:	2.0 W nominal (L1/L2 GPS/GLONASS; L-band)
Current	
Consumption:	0.17 A nominal (L1/L2 GPS/GLONASS; L-band)
Power Isolation: Reverse Polarity	No
Protection: Antenna Voltage:	Yes Internal Antenna

#### Environmental

Operating Temperature: Storage	-40°C to +70°C (-40°F to +158°F)
Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Mechanical	
Shock:	MIL-STD-810H, Method 516.8 Procedure I, Operational, 50G half sine 11ms
Vibration:	MIL-STD-810H, Method 514.8, Procedure I, General vibration Category 24 E1
EMC: Enclosure:	CE, FCC Part 15, Subpart B, CISPR 32 IP67

#### Mechanical

Dimensions:	15.8 L x 15.8 W x 7.9 H (cm)
	6.2 L x 6.2 W x 3.2 H (in)
Weight:	< 1.05 kg (< 2.53 lbs)
<b>Status Indications</b>	
(LED):	Power, GNSS Lock
Power/Data	
Connector:	12-pin male (metal)
Antenna	
Mounting:	1-14 UNS-2A female adapter, 5/8-11 UNC
	2B adapter, flat mount available

 Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
Depends also on baseline length

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Hemisphere GNSS Proprietary

# DHemisphere®

#### **Hemisphere GNSS**

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