Hemisphere®

A222
GNSS Smart Antenna

SCALABLE ALL-IN-ONE GNSS RECEIVER SOLUTION

atlas®

The A222 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, 60 cm 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 A222 smart antenna ideal for a variety of applications. Dual-Serial, CAN, and pulse output options make this DGNSS receiver compatible with almost any interface.

A222 is supported by Hemisphere's easy-to-use Atlas Portal (www.atlasgnss.com), which empowers you to update firmware and enable functionality, including Atlas subscriptions for accuracies from meter to sub-decimeter levels.

Key Features

- Atlas® L-band corrections
- Exclusive Atlas Basic option available when other differential signals are not practical
- 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

GNSS Receiver Specifications

Receiver Type:	Scalable dual-frequency, multi-GNSS RTK
Signals Received:	GPS L1CA/L1P/L1C/L2P/L2C GLONASS G1/G2/P1/P2 BeiDou B1 Galileo E1BC Atlas
Channels:	332
GPS Sensitivity:	-142 dBm
SBAS Tracking:	3-channel, parallel tracking
Update Rate:	10 Hz standard, 20 Hz optional (with subscription)
Timing (1 PPS) Accuracy:	20 ns
Cold Start:	< 60 s typical (no almanac, ephemeris, position, or RTC)
Warm Start:	< 30 s typical (almanac and RTC)
Hot Start:	< 10 s typical (almanac, ephemeris, position, and RTC)
Maximum Speed:	1,850 mph (999 kts)
Maximum Altitude:	18,288 m (60,000 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: [1,3]	0.08 m	0.16 m
RTK: [1,2]	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:	2 full-duplex RS-232, CAN [4]
Baud Rates:	4800 - 115200
Correction I/O Protocol:	Hemisphere GNSS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK)
Data I/O Protocol:	NMEA 0183, NMEA 2000, Hemisphere GNSS binary
Timing Output:	1 PPS, CMOS, active low, falling edge sync, 10 kΩ, 10 pF load
Event Marker Input:	CMOS, active low, falling edge sync, 10 kΩ, 10 pF load

Power

Input Voltage:	7-32 VDC with reverse polarity operation
Power Consumption:	4.1 W nominal (L1/L2 GPS/GLONASS; L-band)
Current Consumption:	0.35 A nominal (L1/L2 GPS/GLONASS; L-band)
Power Isolation:	No
Reverse Polarity Protection:	Yes
Antenna Voltage:	Internal Antenna

Environmental

Operating Temperature:	-40°C to +70°C (-40°F to +158°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Mechanical Shock:	EP455 Section 5.41.1 Operational
Vibration:	EP455 Section 5.15.1 Random
EMC:	CE (ISO 14982 Emissions and Immunity), FCC Part 15, Subpart B, CISPR 22
Enclosure:	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)
Status Indications (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

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 Requires software upgrade

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