# A325 GNSS Smart Antenna

## Affordable, Portable Solution With Professional Accuracy

Work smarter, not harder. The A325™ Smart Antenna offers 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, and an easy-to-see status indicator for power, GNSS, and Bluetooth. The durable enclosure houses both antenna and receiver. It can be powered through various sources, making the A325 Smart Antenna ideal for a variety of applications. Dual-serial, CAN, and pulse output options make this GNSS receiver compatible with almost any interface.

**Eclipse™ GNSS RTK with SureTrack™**
With A325, RTK performance is scalable. Utilize the centimeter-level accuracy in either L1-only mode, or employ the full performance of fast RTK performance over long distances with L1/L2 GNSS signals. Our exclusive SureTrack technology gives peace of mind knowing your RTK rover is making use of every satellite it is tracking, even satellites not tracked at the base. Benefit from fewer RTK dropouts in congested environments, faster reacquisitions and more robust solutions due to better cycle slip detection. SureTrack also removes concerns with mixing GNSS data from various manufacturers. Even if your base is only L1/L2 GPS, SureTrack with GLONASS at your rover delivers complete GNSS performance where others cannot. Rely on SureTrack technology from Hemisphere GPS.

## Key A325 GNSS Smart Antenna Advantages

- Improved GNSS performance, particularly with RTK and GLONASS applications through the implementation of SureTrack technology
- Long range RTK baselines of up to 50 km
- L-band (OmniSTAR®) capable
- Very fast RTK fix and reacquisition times
- Strong multipath mitigation and interference rejection

- Wide operating voltage range, 7-36 V, high transient protection for any power source
- Supports NMEA 2000 over Controller Area Network (CAN) for ISO bus connections
- OmniSTAR capable receiver for HP or VBS
- Integrated 2D tilt sensor enables offset corrections

# A325 GNSS Smart Antenna

## GPS Sensor Specifications

| | | |
|---|---|---|
| Receiver Type: | GNSS L1 & L2 RTK with carrier phase | |
| Signals Received: | GPS, GLONASS, and GALILEO [4] | |
| GPS Sensitivity: | -142 dBm | |
| SBAS Tracking: | 3-channel, parallel tracking | |
| Update Rate: | 10 Hz standard, 20 Hz optional | |
| Horizontal Accuracy: | | |
| | RMS (67%) | 2DRMS (95%) |
| RTK: [2, 3] | 10 mm + 1 ppm | 20 mm + 2 ppm |
| SBAS (WAAS): [2] | 0.3 m | 0.6 m |
| Autonomous, no SA: [2] | 1.2 m | 2.5 m |
| Pitch / Roll Accuracy: | 1° using tilt sensor | |
| Timing (1PPS) Accuracy: | 20 ns | |
| Cold Start: | < 40 s typical (no almanac or RTC) | |
| Warm Start: | < 20 s typical (almanac and RTC) | |
| Hot Start: | < 5 s typical (almanac, RTC and position) | |
| Maximum Speed: | 1,850 kph (999 kts) | |
| Maximum Altitude: | 18,288 m (60,000 ft) | |

## L-band Sensor Specifications

| | |
|---|---|
| Sensitivity: | -130 dBm |
| Channel Spacing: | 1530 to 1560 MHz |
| Satellite Selection: | 15 seconds |
| Reacquisition Time: | 15 seconds (typical) |
| Rejection: | 15 kHz spacing > 30 dB, 300 kHz spacing > 60 dB |
| Processor: | DSP for demodulation and protocol decoding module provides processing for the differential algorithms |
| Command Support: | Reports L-band (OmniSTAR) region, satellite info, allows input and status of L-band (OmniSTAR) subscription, Bit Error Rate output for reception quality indication and manual frequency tuning |

## Communications

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|---|---|
| Serial Ports: | 2 full-duplex RS232 |
| Baud Rates: | 4800 - 115200 |
| Correction I/O Protocol: | Hemisphere GPS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK), CMR, CMR+[1] |
| Data I/O Protocol: | NMEA 0183, Crescent binary [3], NMEA 2000, Bluetooth 2.0 (Class 2) |
| Timing Output: | 1PPS, 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

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|---|---|
| Input Voltage: | 7-36 VDC with reverse polarity operation |
| Power Consumption: | < 4.6 W nominal GPS (L1/L2), GLONASS (L1/L2), and L-band |
| | < 3.6 W nominal GPS (L1/L2) and GLONASS (L1 L2) |
| Current Consumption: | 334 mA nominal GPS (L1/L2), GLONASS (L1/L2), and L-band |
| | 580 mA nominal GPS (L1/L2) and GLONASS (L1/L2) |
| 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 |
| Shock and Vibration: | Vibration: EP455 Section 5.15.1 Random Mechanical Shock: EP455 Section 5.14.1 Operational |
| EMC: | CE (IEC 60945 Emissions and Immunity) FCC Part 15, Subpart B CISPR 22 |
| Enclosure: | IP67 |

## Mechanical

| | |
|---|---|
| Dimensions: | 104.0 H x 145.0 D mm (4.09 H x 5.71 D in) |
| Weight: |  < 558 g (< 26 oz.) |
| Status Indications (LED): | Power, GNSS lock |
| Serial Port Extension: | Bluetooth communication |
| Power/Data Connector: | 12-pin male (metal) |
| Antenna Mounting: | 1-14 UNS-2A female, 5/8-11 UNC-2B adapter and mag-mount available |

[1] Receive only, does not transmit this format
[2] Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
[3] Depends also on baseline length
[4] Upgrade required

Note: The Eclipse receiver technology is not designed or modified to use the GPS Y-Code