



# Vector™ V104 GPS Smart Antenna

## Compact GPS Positioning and Heading Smart Antenna

### key features

- Provides position, heading, pitch, roll, and heave
- Excellent in-band and out-of-band interference rejection
- 2° (RMS) heading accuracy in an amazingly small form factor
- Integrated gyro and tilt sensors deliver fast start-up times and provide heading updates during temporary loss of GPS and satellites
- Differential position accuracy of 1m, 95% of the time
- Accurate heading for up to 3 minutes during GNSS outages
- COAST technology maintains differentially corrected positioning for 40 minutes or more after loss of differential signal
- Offered as a Serial or NMEA 2000 version



Vector V104 GPS Smart Antenna offers superior navigation including accurate positioning and heading performance. V104 uses SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS position allowing Hemisphere GNSS to provide a low cost and highly effective positioning and heading based smart antenna.

The rugged and low-profile enclosure combines Hemisphere GNSS' Crescent® Vector technology and two multi-path resistant antennas for accuracy, portability and simple installation. The smart antenna, measuring less than a half meter in length, mounts easily to a flat surface or pole. The stability and maintenance-free design of V104 provides traditional GPS position and heading at a low cost, replacing the combination of low-accuracy GPS and fluxgate compass.



precision@hgnss.com  
www.hgnss.com

# Vector V104 GPS Smart Antenna

## GPS Receiver Specifications

Receiver Type:	Vector GPS L1 Compass
Signals Received:	GPS
Channels:	24
GPS Sensitivity:	-142 dBm
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	10 Hz standard (position and heading)
Rate of Turn:	90°/s maximum
Compass Safe Distance:	30 cm (11.8 in)
Cold Start:	< 60 s (no almanac or RTC)
Warm Start:	< 20 s typical (almanac and RTC)
Hot Start:	< 5 s typical (almanac, RTC and position)
Heading Fix:	< 20 s typical (valid position)
Maximum Speed:	1,850 kph (999 kts)
Maximum Altitude:	18,288 m (60,000 ft)

## Positioning and Heading Accuracy

Position:	
Single Point <sup>1</sup> :	3 m (95%)
SBAS <sup>2</sup> :	1 m (95%)
Heading:	2° (RMS)
Pitch/Roll:	2° (RMS)
Heave:	30 cm <sup>3</sup>

## Communications

Ports:	2 full-duplex RS232 <sup>4</sup> or 1 NMEA 2000 <sup>5</sup>
Baud Rates:	4800, 9600, 19200, 38400, 57600, 115200
Correction:	
I/O Protocol:	RTCM SC-104
Data I/O Protocol:	NMEA 0183 <sup>5</sup> , NMEA 2000 <sup>5</sup> , Hemisphere Crescent binary <sup>6</sup>

## Power

Input Voltage:	8-36 VDC
Power Consumption:	~ 2.0 W nominal
Current Consumption:	0.16 A @ 12 VDC
Power Isolation:	Isolated to enclosure
Reverse Polarity Protection:	Yes

## Environmental

Operating Temperature:	-30°C to + 70°C (-22°F to + 158°F)
Storage Temperature:	-40°C to + 85°C (-40°F to + 185°F)
Humidity:	100% non-condensing
Shock and Vibration:	IEC 60945
EMC:	CE (IEC 60945 Emissions and Immunity), FCC Part 15 Subpart B, CISPR22
IP Rating:	IP69
Enclosure:	UV resistant, white plastic, Gelyo CR7520 (ASA)

## Mechanical

Dimensions	
Not including mount:	25.9 L x 12.9 W x 4.5 H (cm) 10.2 L x 5.1 W x 1.8 H (in)
Including mount:	25.9 L x 12.9 W x 12.8 H (cm) 10.2 L x 5.1 W x 5.0 H (in)
Weight	
Not including mount:	0.42 kg (0.9 lb)
Including mount:	0.51 kg (1.1 lb)
Power/Data Connector:	8-pin Male for Serial or 5 Pin Male NMEA 2000 Micro connector

## Aiding Devices

Gyro:	Provides smooth heading, fast heading reacquisition and reliable 2° per minute heading for periods up to 3 minutes when loss of GPS has occurred
Tilt Sensors:	Provide pitch and roll data, assist in fast start-up and reacquisition of heading solution

<sup>1</sup> Depends on multipath environment, number of satellites in view, satellite geometry, no SA, and ionospheric activity

<sup>2</sup> Depends on multipath environment, number of satellites in view, SBAS coverage and satellite geometry

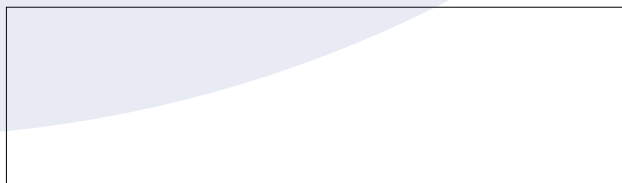
<sup>3</sup> Based on a 40-second time constant

<sup>4</sup> Serial model only

<sup>5</sup> NMEA 2000 model only

<sup>6</sup> Hemisphere GNSS proprietary

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