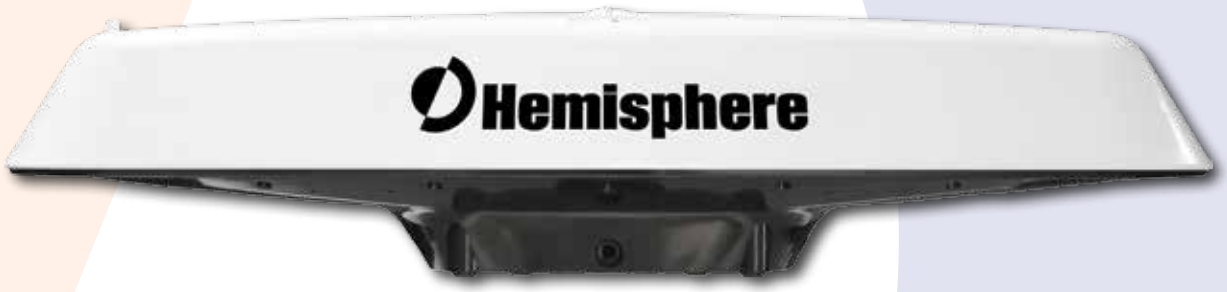
Preliminary

Vector™ V320™ GNSS Compass

All-in-one Professional Heading and Positioning Receiver

key features



- **Simple all-in-one RTK-capable heading solution**
- **Accurate heading with a precise baseline**
- **Dual frequency GPS/GLONASS/BeiDou RTK capable**
- **Maintain heading and position lock when more of the sky is blocked**
- **RTK, L-Band DGNSS, and SBAS capable**
- **COAST technology maintains differentially-corrected positioning for 40 minutes or more after loss of differential signal**
- **Integrated gyro and tilt sensors deliver fast start-up times and provide heading updates during temporary loss of satellites**

Vector™ V320™ is the first all-in-one multi-frequency, multi-constellation GNSS smart antenna, which provides RTK level postion and precise heading. Using Hemipshere's patented Eclipse™ GNSS technology, V320 is a strong addition to our Vector V family. The rugged IP69K design housing is sealed for the harshest environments. It incorporates fixed and pole mounting capability for both marine and land applications. The Vector V320 is series are suitable for both dynamic positioning and professional marine surveys, as well as for machine control and other challenging applications.

The Vector V320 receiver, this all-in-one smart antenna, can be conveniently installed in multiple vessels and enviroments. With a set separation, V320 will consistently provide accurate position and heading accuracy. The Vector V320 uses L-Band and SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS position.

Hemisphere

precision@hgnss.com
www.hgnss.com

Preliminary

Vector V320 GNSS Compass

GNSS Sensor Specifications

Receiver Type:	Vector GNSS L1/L2 RTK Receiver
Signals Received:	GPS, GLONASS, BeiDou
Channels:	540
GPS Sensitivity:	-142 dBm
SBAS Tracking:	3-channel, parallel tracking
Update Rate:	10 Hz standard, 20 Hz available by subscription

Positioning Accuracy:

RMS:	Horizontal	Vertical
Single Point [1]:	1.2 m	2.5 m
SBAS (WAAS) [2]:	0.3 m	0.6 m
L-Band DGNSS [3]:	0.1 m	0.2 m
Code Differential GNSS [1]:	0.3 m	0.6 m
RTK [2, 4]:	10 mm + 1 ppm	20 mm + 2 ppm

Heading Accuracy:	0.17° rms
Pitch/Roll Accuracy (RMS):	1°
Heave Accuracy (RMS):	30 cm (DGPS) [5], 10 cm (RTK) [2,4]
Timing (1PPS) Accuracy:	20 ns
Rate of Turn:	100°/s maximum
Compass Safe Distance:	30 cm (with enclosure)
Cold Start:	60 s (no almanac or RTC)
Warm Start:	20 s typical (almanac and RTC)
Hot Start:	1 s typical (almanac, RTC and position)
Heading Fix:	10 s typical (valid position)
Maximum Speed:	1,850 mph (999 kts)
Maximum Altitude:	18,288 m (60,000 ft)

L-Band Sensor Specifications

Sensitivity:	-130 dBm
Channel Spacing:	7.5 KHz
Satellite Selection:	Manual and Automatic
Reacquisition Time:	15 seconds (typical)
Rejection:	15 kHz spacing > 30 dB, 300 kHz spacing > 60 dB

Communications

Serial Ports:	1 full-duplex RS-232; 1 full-duplex RS-422 and 1 half-duplex RS-422 (Tx only)
Baud Rates:	4800 - 115200
Correction I/O Protocol:	RTCM SC-104, L-Dif™ , RTCM v2 (DGPS), RTCM v3 (RTK), CMR (RTK), CMR+ (RTK) [3]
Data I/O Protocol:	NMEA 0183, NMEA 2000, Crescent binary[5]
Timing Output:	1 PPS (CMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Heading Warning I/O:	Open relay system indicates invalid heading

Power

Input Voltage:	8 to 36 VDC
Power Consumption:	6.10 W nominal (GPS L1/L2) 7.25 W nominal (GPS L1/L2 + GLONASS L1/L2) 8.50 W nominal (GPS L1/L2 + GLONASS L1/L2 + BeiDou B1/B2) 9.50 W nominal (GPS L1/L2 + GLONASS L1/L2 + BeiDou B1/B2 + L-Band)
Power Isolation:	Yes
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:	95% non-condensing
Mechanical Shock:	EP455 Section 5.14.1
Vibration:	EP455 Section 5.15.1 Random
EMC:	CE (IEC 60945 Emissions and Immunity) FCC Part 15, Subpart B CISPR22
Enclosure:	IP69

Mechanical

Dimensions:	66.3 L x 20.9 W x 14.6 H (cm) 26.1 L x 8.3 W x 5.8 H (in)
Weight:	2.1 kg (4.6 lb)
Status Indications (LED):	Power
Power/Data Connector:	18-pin, environmentally sealed

Aiding Devices

Gyro:	Provides heading smoothing with GNSS. Drift rate is 1° per minute in heading for periods up to 3 minute when loss of GNSS has occurred [3]
Tilt Sensors:	Provide pitch and roll data and assist in fast start-up and reacquisition of heading solution

1 Depends on multipath environment, number of satellites in view, satellite geometry, no SA, and ionospheric activity.

2 Depends on multipath environment, number of satellites in view, WAAS coverage and satellite geometry

3 Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for differential services), and ionospheric activity.

4 Based on a 40 second time constant

5 Hemisphere GNSS proprietary

Authorized Distributor:

Rev. 04/15

Hemisphere

Hemisphere GNSS, Inc.
8444 N 90th Street, Suite 120
Scottsdale, AZ, USA 85258

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