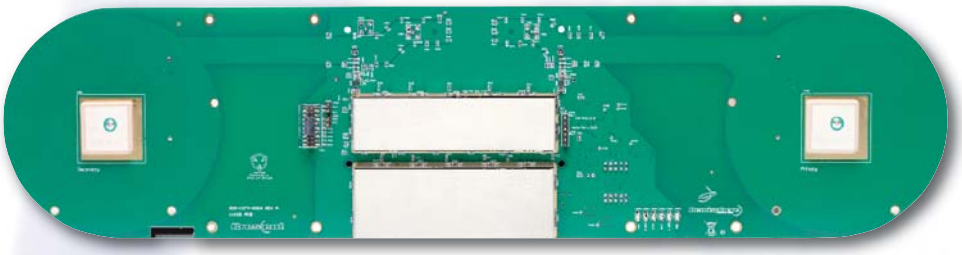
LV100 GPS Compass OEM Board

Superior Heading and Positioning Smart Antenna



LV100

Experience superb navigation or antenna alignment from the accurate heading and position available with the LV100 GPS Compass OEM Board. Based on Hemisphere GPS' patented Crescent Vector™ technology, the LV100 integrates two GPS antennas, a NMEA 2000 communication processor, a single axis gyro, a tilt sensor and a power supply into a single system. The dual antennas allow for ease of integration into your application and provides for precise heading and GPS sub-meter position accuracy even while sitting stationary. The gyro and tilt sensor improve system performance and provide backup heading information if the GPS-based heading is ever lost. The Crescent technology provides more accurate code phase measurement and improved multipath mitigation resulting in excellent accuracy and stability.

Powered by Crescent

The latest Hemisphere GPS products are powered by Crescent Receiver Technology, the future of precision GPS.

Key LV100 OEM Board Advantages

- Affordable solution delivers 2D GPS heading accuracy better than 0.75 degree rms
- Differential positioning accuracy of less than 1m, 95% of the time
- Smart antenna design ensures simple integration into finished product
- Fast heading and positioning output rates up to 20 Hz
- NMEA 2000 compliant
- Integrated gyro and tilt sensor deliver fast start-up times and provide heading updates during temporary loss of GPS
- SBAS compatible (WAAS, EGNOS, etc.) where available and optional external differential input (beacon)
- COAST™ technology maintains accurate solutions for 40 minutes or more after loss of differential signal

LV100 Series GPS Compass

GPS Sensor Specifications

Receiver Type: L1, C/A code, with carrier phase smoothing
Channels: Two 12-channel, parallel tracking
(Two 10-channel when tracking SBAS)
Update Rate: Standard 10 Hz, optional 20 Hz (position and heading)

Horizontal Accuracy:
< 1.0 m 95% confidence (DGPS)*
< 3.5 m 95% confidence (autonomous, no SA)**

Heading Accuracy: < 0.75° rms
Pitch / Roll Accuracy: < 1.5° rms
Rate of Turn: 90° / s max
Start up Time: < 60 s typical
Heading Fix: < 30 s
Satellite Reacquisition: < 1 s

Communications

Serial ports:
2 full duplex RS-232 and 1 half-duplex RS-422

Baud Rates:
4800 to 115200

Correction I/O Protocol:
RTCM SC-104

Data I/O Protocol:
NMEA 0183, Crescent binary

Heading Warning I/O:
Open relay system indicates invalid heading

Environmental

Operating Temperature: -32°C to +74°C (-25.6°F to +165.2°F)
Storage Temperature: -40°C to +85°C (-40°F to +185°F)
Humidity: 95% non-condensing

Power

Input Voltage: 9 to 36 VDC
Power Consumption: < 5 W
Current Consumption: < 360 mA @ 12 VDC
Isolation: Power supply isolated from serial ports

Reverse Polarity Protection: Yes

Mechanical

Dimensions
(not including mounts): 45.8 cm L x 11.3 cm W x 3.7 cm H
(18.0" L x 4.4" W x 1.4" H)
Weight: 350 g (12.3 oz)

Aiding Devices

Gyro: Single axis gyro provides reliable <1° heading for periods up to 3 minutes when loss of GPS lock has occurred

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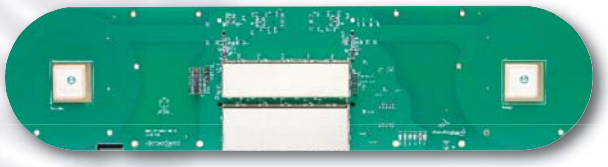

Top View

Bottom View

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