Crescent Vector OEM Board

High Performance GPS Heading and Positioning Module

Provide a professional, dynamic navigation solution at an affordable price with the Crescent® Vector OEM. Use the Crescent Vector OEM module for any application needing accurate heading (0.3 degree rms heading accuracy) or DGPS positioning to better than 60 cm.

Outfitted with Hemisphere GPS' patented Crescent Receiver Technology, the Crescent Vector OEM board computes heading and position using two antennas. This design provides precise heading and GPS sub meter positioning accuracy even while sitting still. And with integrated SBAS support, you can receive precision guidance anywhere those services are available.

Key Crescent Vector OEM Board Advantages

- Extremely affordable solution for heading, attitude and position
- Accuracy of 0.1 - 0.5 degrees (rms) with heading and position updates of up to 20 Hz
- High-precision, differential positioning accuracy of 60 cm, 95% of the time
- COAST™ stability during temporary differential signal outage
- Small form and low-power consumption design is ideal for easy integration
- Compatible with other differential sources including our L-Dif™ and RTK firmware applications

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GPS Sensor Specifications

Receiver Type:	L1, C/A code, with carrier phase smoothing
Channels:	12-channel, parallel tracking (10-channel when tracking SBAS)
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	20 Hz maximum, position and heading
Horizontal Accuracy:	<0.02 m 95% confidence (RTK [1,2,3]) <60 cm 95% confidence (DGPS[1]) <2.5 m 95% confidence (autonomous, no SA[1])
Heading Accuracy:	<0.3° rms @ 0.5 m antenna separation <0.15° rms @ 1.0 m antenna separation <0.10° rms @ 2.0 m antenna separation
Pitch / Roll Accuracy:	<1° rms
Rate of Turn:	90°/s maximum
Start Up Time:	<60 s typical
Heading Fix:	<20 s
Satellite Reacquisition:	<1 s
Maximum Speed:	1607 kph (999 MPH)
Maximum Altitude:	18,288 m (60,000 ft)

Communications

Serial Ports:	3 full duplex 3.3 V CMOS, 1 USB
Baud Rates:	4800 - 57600
Correction I/O Protocol:	RTCM SC-104 (SBAS/Beacon)
Data I/O Protocol:	NMEA 0183, SLX binary
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Event Marker Input:	HCMOS, active low, falling edge sync, 10k Ω

Environmental

Operating Temperature:	-30°C to +70°C (-25°F to +165°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Shock and Vibration:	EP 455

Power

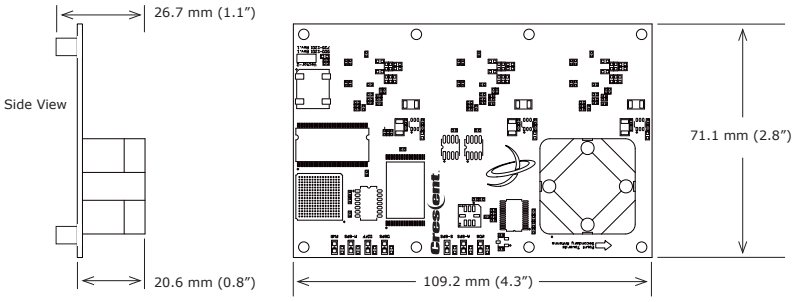
Input Voltage:	3.3 VDC +/- 3%
Power Consumption:	<1 W nominal
Current Consumption:	300 mA nominal
Antenna Voltage Input:	15 VDC maximum
Antenna Short Circuit Protection:	Yes
Antenna Gain Input Range:	10 to 40 dB
Antenna Input Impedance:	50 Ω

Mechanical

Dimensions:	109.2 L x 71.1 W x 26.7 H mm (4.3 L x 2.8 W x 1.1 H in)
Weight:	<55 g (<1.9 oz)
Status Indication (LED):	Power, GPS lock, differential lock, and DGPS position
Power/Data Connector:	34-pin male header, 0.05" pitch
Antenna Connector:	MCX, female, straight

Aiding Devices

Gyro:	Provides smooth heading, fast heading reacquisition and <1° heading for periods up to 3 minutes when loss of GPS lock has occurred
Tilt Sensor:	Assists in fast start up of heading solution



[1] Depends on multipath environment, antenna selection, number of satellites in view, satellite geometry, and ionospheric activity
[2] Up to 5km baseline length
[3] Depends also on baseline length

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