P102™ and P103™ OEM Boards

Versatile DGPS Receiver Modules

key features

- **Extremely affordable DGPS solution with update rates of up to 20 Hz**
- **Fast start-up and reacquisition times allow you to get right to work**
- **High-precision, differential positioning accuracy of 60 cm, 95% of the time**
- **Exclusive e-Dif option where other differential signals are not practical**
- **COAST™ technology maintains accurate solutions for 40 minutes or more after loss of differential signal**
- **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**

Create more advanced applications and sophisticated configurations with the P102™ and P103™ OEM boards. Experience higher update rates, noise-reduced raw measurements, additional memory, and higher processor capability.

The 12-channel, L1 DGPS board features SBAS support, along with Hemisphere GNSS' exclusive COAST™ and e-Dif® technologies, making it easy to get an accurate signal, anytime, anywhere. Accuracy and stability are excellent due to Crescent® receiver technology's more accurate code phase measurements, multipath mitigation improvements, and fewer discrete receiver components.

Hemisphere

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P102 and P103 OEM Boards

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
Horizontal Accuracy:	< 0.02 m 95% confidence (RTK [1,2,3])
	< 0.28 m 95% confidence (L-Dif[1,2,3])
	< 0.6 m 95% confidence (DGPS[1])
	< 2.5 m 95% confidence (autonomous, no SA[1])
Cold Start:	60 s (no almanac or RTC)
Warm Start:	30 s (valid almanac and RTC)
Hot Start:	10 s (valid almanac, RTC and <2 hours since last fix)
Reacquisition:	<1 s
Maximum Speed:	1607 klh (999 mph)
Maximum Altitude:	18,2888 m (60,000 ft)

Communications

Serial Ports:	3 full-duplex 3.3 V CMOS, 1 USB
Baud Rates:	4800 - 115200
Correction I/O Protocol:	RTCM SC-104, v2.x (SBAS/Beacon), Proprietary format (L-Dif/RTK)
Data I/O Protocol:	NMEA 0183, SLX binary
Timing Output:	1PPS (CMOS, active low, falling edge sync, 10 kΩ, 10 pF load)

Environmental

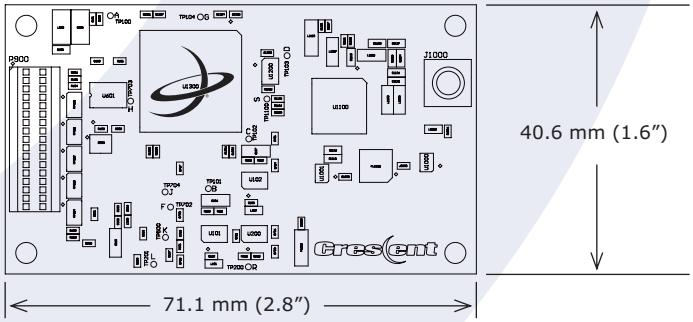
Operating Temperature:	-30°C to +70°C (-25°F to +158°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Shock and Vibration:	EP 455

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:	
P102:	7.2 L x 4.1 W x 1.2 H (cm)
	2.9" L x 1.6" W x 0.5" H (in)
P103:	7.1 L x 4.1 W x 1.2 H (cm)
	2.8" L x 1.6" W x 0.5" H (in)
Weight:	<20 g (<0.75 oz)
Status Indication (LED):	Power, GPS lock, differential lock, and DGPS position
Power/Data Connector:	
P102:	34-pin male header, 0.05" pitch
P103:	20-pin male header, 0.05" pitch
Antenna Connectors:	MCX, female, straight



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

Authorized Distributor:

Rev. 04/14

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