

R100 Series DGPS Receiver High Accuracy, Multipurpose Receivers



R100

Complete your work quickly and accurately with the R100™ Series DGPS Receiver. Rely on consistent sub-meter performance with standard SBAS differential and Hemisphere GPS' exclusive COAST™ technology that maintains accuracy during temporary loss of differential signal.

The R100 offers many differential correction options for various environments and worldwide coverage. The simple user interface and extensive software features make the R100 the ideal solution for professional mapping, guidance and navigation applications.



Powered by **Crescent**

Hemisphere GPS products are powered by Crescent Receiver Technology, today's standard in precision GPS.

Key R100 Series Advantages

- Feature-packed sub-60 cm DGPS Positioning
- Differential options including SBAS (WAAS, EGNOS, etc.), Radio Beacon, OmniSTAR®
- Exclusive e-Dif® option where other differential correction signals are not practical
- COAST technology maintains accurate solutions for 40 minutes or more after loss of differential signal
- Fast update rates of up to 20 times per second provide the best guidance and machine control
- Compatible with our exclusive L-Dif™ and RTK technologies, for applications requiring higher accuracy
- Uses a standard USB port for communication with PC
- The status lights and menu system make the R100 Series easy to monitor and configure

R100 Series DGPS Receiver

GPS Sensor Specifications

Receiver Type:	L1, C/A code, with carrier phase smoothing (Patented COAST technology during differential signal outage)
Channels:	12-channel, parallel tracking (10-channel when tracking SBAS)
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	Up to 20 Hz position
Horizontal Accuracy:	<0.02 m 95% confidence (RTK ^{1,2}) <0.28 m 95% confidence (L-Dif ^{1,2}) <0.6 m 95% confidence (DGPS ^{1,3}) <2.5 m 95% confidence (autonomous, no SA ¹)
Cold Start:	60 s (no almanac or RTC)

L-Band Sensor Specifications

Channels:	Single channel
Frequency Range:	1530 to 1560 MHz
Satellite Selection:	Manual or Automatic (based on location)
Startup and Satellite Reacquisition Time:	15 seconds, typical

Beacon Sensor Specifications

Channels:	2-channel, parallel tracking
Frequency Range:	283.5 to 325 kHz
MSK Bit Rates:	50, 100, and 200 bps

Communications

Serial Ports:	2 full duplex
USB Ports:	1 Communications (USB-B)
Interface Level:	RS-232C
Baud Rates:	4800, 9600, 19200, 38400, 57600
Correction Input / Output Protocol:	RTCM SC-104
Data Input / Output Protocol:	NMEA 0183
Raw Data:	Proprietary binary (RINEX utility available)
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Event Marker:	Yes

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

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
Shock and Vibration:	EP 455
EMC:	FCC Part 15, Subpart B, Class B CISPR 22 CE

Power

Input Voltage Range:	8 to 36 VDC
Reverse Polarity Protection:	Yes
Power Consumption:	3 W
Current Consumption:	< 250 mA @ 12 VDC
Antenna Voltage Output:	5.0 VDC
Antenna Short Circuit Protection:	Yes

Mechanical

Enclosure:	Powder-coated aluminum
Dimensions:	160 mm L x 114 mm W x 45 mm H (6.3" L x 4.5" W x 1.8" H)
Weight:	0.54 kg (1.20 lb)
LED Indicators:	Power, GPS lock, DGPS position
Power Connector:	2-pin micro-Conxall
Data Connectors:	DB9-female x2
Antenna Connector:	TNC-female

R100 Series Configuration Options

	R100	R110	R120	R130
GPS	●	●	●	●
SBAS	●	●	●	●
Beacon		●		●
OmniSTAR			●	●

Authorized Distributor:



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