

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**

The latest Hemisphere GPS products are powered by Crescent Receiver Technology, the future of 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 SA¹)

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: -32°C to +74°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

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: