R131 DGPS Receiver

High Accuracy, Multipurpose Receiver

R131

Powered by Crescent

Complete your work quickly and accurately with the R131™ 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 R131 provides new and convenient physical advantages, including a new design with a rack mountable enclosure, front facing display, 1PPS output via an SMA connector, and a new soft power switch in lieu of the traditional mechanical power switch. The soft switch allows for ease of use when turning the R131 on/off, when the R131 is rack mounted. In addition to the new features, a new metal power connector has been added to provide a durable connection.

The R131 offers many differential correction options such as SBAS, OmniSTAR® , radio-beacon, and e-Dif® for various environments and worldwide coverage. It is also RTK upgradable. The simple user interface and extensive software features make the R131 the ideal solution for professional mapping, guidance and navigation applications.

Key R131 DGPS Receiver 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
- Uses a standard USB port for communication with PC
- 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
- The status lights and menu system make the R131 easy to monitor and configure

R131 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:	10 Hz standard, 20 Hz available
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 RS-232
Baud Rates:	4800 - 115200
USB:	1 USB-B device
Correction I/O Protocol:	Hemisphere GPS RTK, RTCM v2.3 (DGPS)
Data I/O Protocol:	NMEA 0183, Hemisphere GPS 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, 10 kΩ

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, CISPR 22, CE

Power

Input Voltage:	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 aluminium
Dimensions:	18.8 L x 11.4 W x 7.1 H cm (7.4" L x 4.5" W x 2.8" H)
Weight:	0.86 kg (1.9 lb)
LED Indicators:	Power, GPS lock, DGPS position
Power Connector:	2-pin ODU
Data Connectors:	2x DB9-female
Antenna Connector:	TNC-female
1PPS Connector:	SMA

Authorized Distributor:

[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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