RECEPTOR GNSS

VECTOR VR1000

Hemisphere

ESPECIFICACIONES TÉCNICAS

GNSS Receiver Specifications

Receiver Type:	GNSS Position & Heading RTK Receiver
Signals Received:	GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS, and Atlas
Channels:	1059
GPS Sensitivity:	-142 dBm
SBAS Tracking:	3-channel, parallel tracking
Update Rate:	10 Hz standard, 20 Hz optional
Timing (1 PPS)	
Accuracy:	20 ns
Rate of Turn:	100°/s maximum
Cold Start:	40 s (no almanac or RTC)
Warm Start:	20 s typical (almanac and RTC)
Hot Start:	5 s typical (almanac, RTC and position)
Heading Fix:	10 s typical (Hot Start)
Antenna Input Impedance:	50 Ω
Maximum Speed:	1,850 kph (999 kts)
Maximum Altitude:	18,000 m (59,055 ft)
Differential Options:	SBAS, Atlas (L-band), RTK

Accuracy

Positioning:	**RMS (67%)**	**2DRMS (95%)**
Autonomous, no SA: [2]	1.2 m	2.5 m
SBAS: [2]	0.25 m	0.5 m
Atlas: [2,3]	0.04 m	0.08 m
RTK: [1]	10 mm + 1 ppm	20 mm + 2 ppm
Heading (RMS):	< 0.2° @ 0.5 m antenna separation < 0.1° @ 1.0 m antenna separation < 0.05° @ 2.0 m antenna separation < 0.02° @ 5.0 m antenna separation < 0.01° @ 10.0 m antenna separation	
Pitch/Roll (RMS):	1°	
Heave (RMS):	30 cm (DGPS) [3], 10 cm (RTK) [3]	

L-Band Receiver Specifications

Receiver Type:	Single Channel
Channels:	1530 to 1560 MHz
Sensitivity:	-130 dBm
Channel Spacing:	5 kHz
Satellite Selection:	Manual or Automatic
Reacquisition Time:	15 sec (typical)

Communications

Ports:	1x full-duplex RS-232/RS-422, 1x full-duplex RS232, 2x CAN, 1x Ethernet
Baud Rates:	4800 - 115200
Radio Interfaces:	Bluetooth 2.0 (Class 2), Wi-Fi 2.4 GHz, UHF (400 MHz)
Correction I/O Protocol:	Hemisphere GNSS proprietary ROX format, RTCM v2.3, RTCM v3.2, CMR[5], CMR+[6]
Data I/O Protocol:	NMEA 0183, Hemisphere GNSS binary
Timing Output:	1 PPS, CMOS, active high, rising edge sync, 10 kΩ, 10 pF load
Event Marker Input:	CMOS, active low, falling edge sync, 10 kΩ, 10 pF load

Power

Input Voltage:	9-36 VDC
Power Consumption:	10.8W Maximum (All signals and L-band)
Current Consumption:	1.2A Maximum
Power Isolation:	No
Reverse Polarity Protection:	Yes

Environmental

Operating Temperature:	-40°C to +70°C (-40°F to +158°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Mechanical Shock:	50G, 11ms half sine pulse (MIL-STD-810G w/ Change 1 Method 516.7 Procedure 1)
Vibration:	7.7Grms (MIL-STD-810G w/Change 1 Method 514.7 Category 24)
EMC:	CE (ISO14982/EN13309/ISO13766/ IEC60945), Radio Equipment Directive 2014/53/EU, E-Mark, RCM
Enclosure:	IP69K

Mechanical	
Dimensions:	
No Plate:	23.2 L x 16.5 W x 7.9 H (cm) 9.1 L x 6.5 W x 3.1 H (in)
With Plate:	23.2 L x 21.4 W x 8.3 H (cm) 9.1 L x 8.4 W x 3.3 H (in)
Status Indications (LED):	Power, Primary Antenna, Secondary Antenna, Heading, Quality, Atlas, Bluetooth, Wi-Fi, CAN1, CAN2, Ethernet, Radio
Power/Data Connector:	23-pin multi-purpose
Aiding Devices	
Gyro:	Provides smooth heading, fast heading reacquisition and reliable < 0.5° per min heading for periods up to 3 min. when loss of GNSS has occurred [4]
Tilt Sensors:	Provide pitch/roll data and assist in fast start-up and reacquisition of heading solution

1. Depends on multipath environment, number of satellites in view, satellite geometry, no SA, and ionospheric activity
2. Depends on multipath environment, number of satellites in view, WAAS coverage and satellite geometry
3. Requires a subscription
4. Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for differential services), and ionospheric activity
5. Hemisphere GNSS proprietary
6. CMR and CMR+ do not cover proprietary messages outside of the typical standard