



RONAV R1®

Ronav R1®, a quad-band GNSS receiver that uses the GPS, GLONASS, BeiDou, and Galileo constellations to deliver precise and reliable positioning. Having access to several GNSS signals lessens the effects of satellite blockage or masking and improves satellite availability.

OVERVIEW

- Uses GPS, GLONASS and Beidou; Galileo and QZSS ready.
- Long range RTK baseline up to 50km with fast acquisition.
- Compatible with many RTK sources including ROX format, RTCM, CMR, CMR+.
- L-Band corrections providing position accuracy down to 2cm RMS.
- 372 Channels



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GPS Sensor Specifications		
Receiver Type	GNSS multi-frequency RTK with carrier phase	
Signals Received	GPS L1CA, L1P, L1C, L2P, L2C, L5 GLONASS G1, G2, P1, P2 BeiDou B1, B2 (B3 separate variant without L5) GALILEO E1BC, E5a, E5b QZSS L1CA, L2C, L5, L1C.	
Channels	372	
GPS Sensitivity	142 dBm	
SBAS Tracking	3-channel, parallel tracking	
Update Rate	1 Hz standard, 10 or 20 Hz optional	
Accuracy (RMS)	Horizontal	Vertical
RTK	8 mm + 1 ppm	15 mm + 2 ppm
SBAS (WAAS)	0.3m	0.6m
Autonomous, no SA	1.2 m	2.4 m
Timing (1PPS) Accuracy	20 ns	
Cold Start	< 60s Typical (no almanac or RTC)	
Warm Start	< 30 s typical (almanac and RTC)	
Hot Start	< 10 s typical (almanac, RTC and position)	
Maximum Speed	1,850 kph (999 kts)	
Maximum Altitude	18,288 m (60,000 ft.)	
Differential Options	SBAS, Autonomous, External RTCM, RTK, L- band DGPS	

L-Band Sensor Specifications	
Receiver Type	Single Channel
Channels	1525 to 1560 MHz
Sensitivity	-140 dBm
Channel Spacing	5.0 kHz
Satellite Selection	Manual and Automatic
Reacquisition Time	15 seconds (typical)

Power	
Input Voltage	18-36 VDC \pm 5%
Power Consumption	2.4W
Antenna Voltage	5 VDC
Antenna Short Circuit Protection	Yes
Antenna Gain Input Range	10 to 40dB (50 Ω)

Communications	
Serial Port	4 Full Duplex
Baud Rates	4800 – 115200
Correction I/O Protocol	ROX Format, RTCM v2.3, RTCM v3.2, CMR, CMR+
Data I/O Protocol	NMEA 0183, Crescent binary
Timing Output	1PPS, TTL, active high, rising edge sync.

Environmental	
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	95% non-condensing
Shock & Vibration	EP455 Section 5.14.1
Operational Vibration	EP455 Section 5.15.1 Random

Mechanical	
Dimensions	210 L x 190 W x 70 H(mm)
Weight	1000g
Status Indications (LED)	Power, GPS lock, Differential lock
Power Connector	3 pin male metal plug with polarity
Antenna Connectors	TNC, female, straight