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P2 Pro

GNSS POSITIONING
AND HEADING



**SURVEYING
& ENGINEERING**

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RUGGED GNSS POSITIONING AND HEADING SENSOR

The P2 Pro GNSS sensor is a dual-antenna high-precision receiver designed to provide reliable and precise heading and positioning solutions to demanding applications.

Integrating the latest GNSS technology in an extremely rugged IP67 and lightweight enclosure, the P2 Pro GNSS sensor is built to match the toughest protection standards to ensure uninterrupted performances. It outputs up to 50 Hz precise positioning and heading data (0.15° accuracy with 1 m antenna baseline).

The CHCNAV P2 Pro GNSS sensor is a highly cost-effective solution for many positioning and navigation applications such as marine, industrial automation, robotics, machine control, harbor automation...

HIGH PERFORMANCE POSITIONING AND HEADING

336-channel GPS, GLONASS, Galileo and BeiDou GNSS engine.

The P2Pro is an advanced and field-proven dual antenna positioning and heading technology GNSS sensor which supports all current and upcoming GNSS signals. The P2 Pro GNSS initializes within seconds for instant centimeter accuracy positioning.

HIGH-RELIABILITY INDUSTRIAL DESIGN

Secure your investment in any marine or construction machine application.

IP67 dust and water resistance certification and integrated industrial-grade power management circuit provide reliable and constant performances in most difficult environment.

EASY INTEGRATION AND CONFIGURATION

Virtually no learning curve for faster integration process.

The P2 Pro GNSS sensor is easy to install and set up. Just connect to the P2 Pro GNSS ethernet port and get immediate access to advanced control panel for its configuration.

EXTENDED AND RUGGED CONNECTIVITY

Rich hardware interfaces make the integration seamless in all applications.

The P2Pro supports serial ports, RJ45 ethernet connectivity and low latency PPS output.

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**INSTANT RTK
POSITIONING
+ HEADING**



**COST EFFECTIVE
GNSS SENSOR**

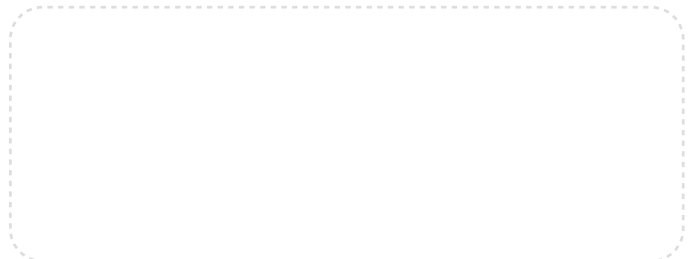
SPECIFICATIONS

GNSS Characteristics ⁽¹⁾	
Position Antenna	
Channels	336
GPS	L1 C/A, L2E, L2C, L5
GLONASS	L1 C/A, L2 C/A, L3 CDMA
Galileo	E1, E5A, E5B, E5AltBOC, E6
BeiDou	B1I, B1C, B2I, B2C, B3I
SBAS	L1 C/A, L5
QZSS	L1 C/A, L1 SAIF, L2C, L5, LEX
IRNSS	L5
MSSL-Band	OmniSTAR [®] , TrimbleRTX [™]
Vector Antenna	
Channels	336
GPS	L1 C/A, L2E, L2C, L5
GLONASS	L1 C/A, L2 C/A, L3 CDMA
Galileo	E1, E5A, E5B, E5AltBOC, E6
BeiDou	B1, B2, B3
L5 IRNSS	L5
QZSS	L1 C/A, L1 SAIF, L2C, L5, LEX
GNSS Accuracies ⁽²⁾	
Real time kinematic(RTK)	Horizontal: 8 mm+ 1 ppm RMS Vertical: 15 mm+ 1 ppm RMS Initialisation time: typically < 8 s Initialisation reliability: > 99.9%
Autonomous	Horizontal: 1.0 m RMS Vertical: 1.5 m RMS
SBAS	Horizontal: 0.50 m RMS Vertical: 0.85 m RMS
Code differential	Horizontal: 0.25 m + 1 ppm RMS Vertical: 0.50 m + 1 ppm RMS
Time to first fix ⁽³⁾	Cold start: < 45 s Warm start: < 30 s Signal re-acquisition: < 2 s
Heading accuracy	0.5m baseline 0.30° / 1 m baseline 0.15° 3.0m baseline 0.05° / >5m baseline 0.02°
Hardware	
Size (L x W x H)	162 mmx 120 mmx 53 mm (6.4 in x 4.7 in x 2.1 in)
Weight	≤ 1.0 kg (35.3 oz)
Environment	Operating: -40 °C to +75 °C (-40 °F to +167 °F) Storage: -55 °C to +85 °C (-67 °F to +185 °F)
Humidity	100%
Ingress protection	IP67 waterproof and dustproof
Shock	Survive a 1.2m drop in hard ground

Communications	
1 x Ethernet port	Network protocols supported > HTTP/HTTPs (WebUI) > NTPServer > NMEA, GSOFF, CMR, etc...over TCP/IP or UDP > NtripCaster, NtripServer, NtripClient
2 x RS232 ports	Up to 460,800 bps
1 x 1PPS	3.3V TTL level positive slope pulse 8ms pulse wide and 20ns latency
Control software	HTML web browser, Internet Explorer, Firefox, Safari, Opera, Google Chrome
Web user interface	Allows remote configuration, data retrieval and firmware updates, setup of multiplexstreaming/monitoring ports
Data Formats	
Reference outputs/inputs	CMR, CMR+, sCMRx, RTCM2.x, RTCM3.x
Navigation outputs	ASCII: NMEA0183 Binary: TrimbleGSOFF
Observation output	RT17, RT27
Maximum position/attitude update rate	20 Hz standard (50Hz optional)
Electrical	
Power consumption	4.2 W (depending on user settings)
External power input	9 V DC to 36 V DC
Certifications	
CE; FCC Part 15 (class B Device), MIL-STD-810G, Method 514.7	



*All specifications are subject to change without notice.
 (1) Subject to availability of BDS ICD and Galileo commercial service definition. B1C will be supported by V5.37 or higher firmware and B2A is optional. GLONASS L3 and Galileo E6 will be provided through future firmware upgrade.
 (2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices. (3) Typical observed values.



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