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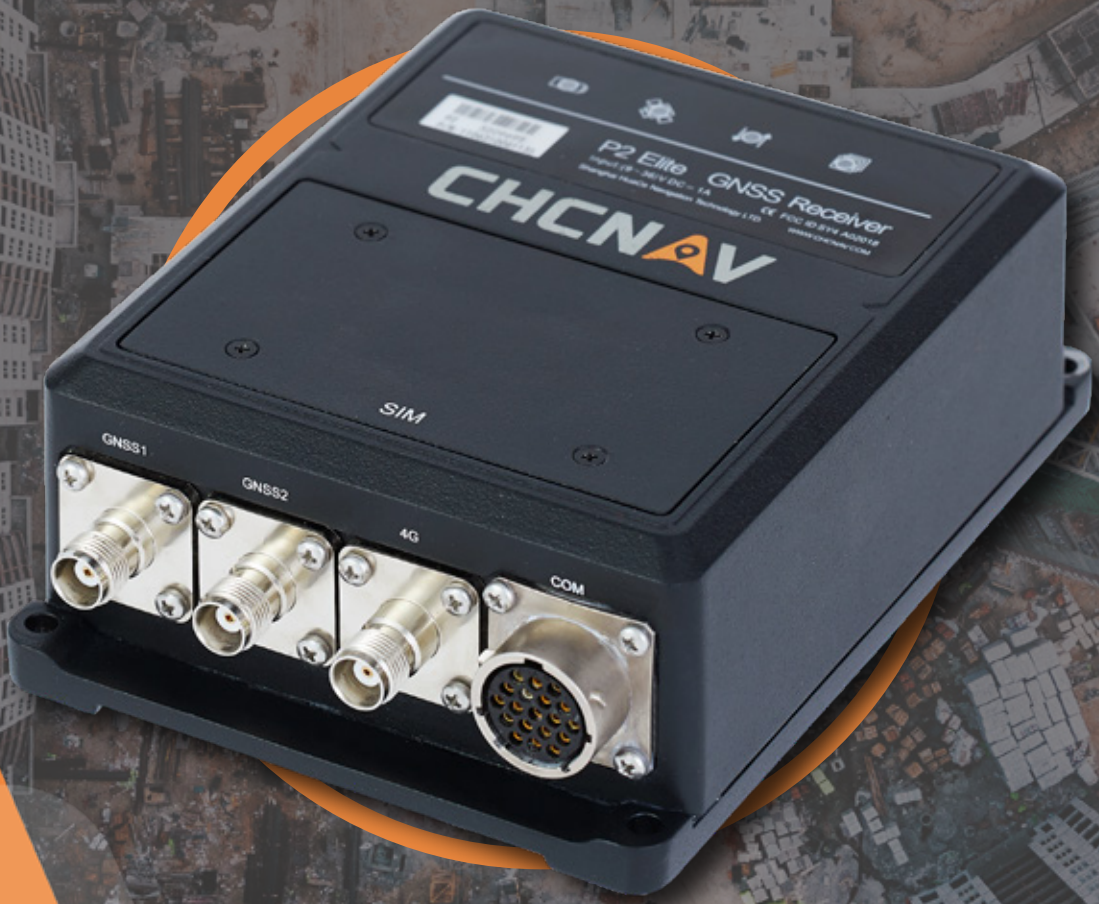
P2 ELITE

GNSS POSITIONING AND HEADING



SURVEYING
& ENGINEERING

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HIGH-PERFORMANCE GNSS POSITIONING AND HEADING SENSOR

The P2 Elite 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 Elite GNSS sensor is built to match the toughest protection standards and ensure uninterrupted performances. It outputs up to 50 Hz precise positioning and heading data (0.15° accuracy with 1 m antenna baseline).

The P2 Elite is a highly integrated, all-in-one GNSS sensor for demanding 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

Advanced and field-proven dual antenna positioning and heading technology supports all current and upcoming GNSS signals. The P2 Elite GNSS sensor also supports Trimble RTX and OmniSTAR corrections services.

EXTENDED AND RUGGED CONNECTIVITY

Rich hardware interfaces make the integration seamless in all applications

With serial ports, optional CAN Bus protocol, RJ45 ethernet connectivity and low latency PPS output, the P2 Elite GNSS Sensor offers unmatched compatibility with industrial and machine applications.

HIGHLY INTEGRATED COMMUNICATION DESIGN

Embedded 4G NTRIP/TCP and UHF modems.

The P2 Elite GNSS sensor provides high connectivity integration to achieve accurate positioning and heading from any RTK corrections sources. Connect to RTK networks NTRIP/TCP corrections via its 4G modem or to UHF GNSS stations corrections available on sites via its internal radio modem.

TRULY MULTI-APPLICATIONS

Marine, industrial automation, robotics, machine control, harbor automation

The P2 Elite is one of the most powerful and versatile GNSS receiver available to precisely match any application requirements.

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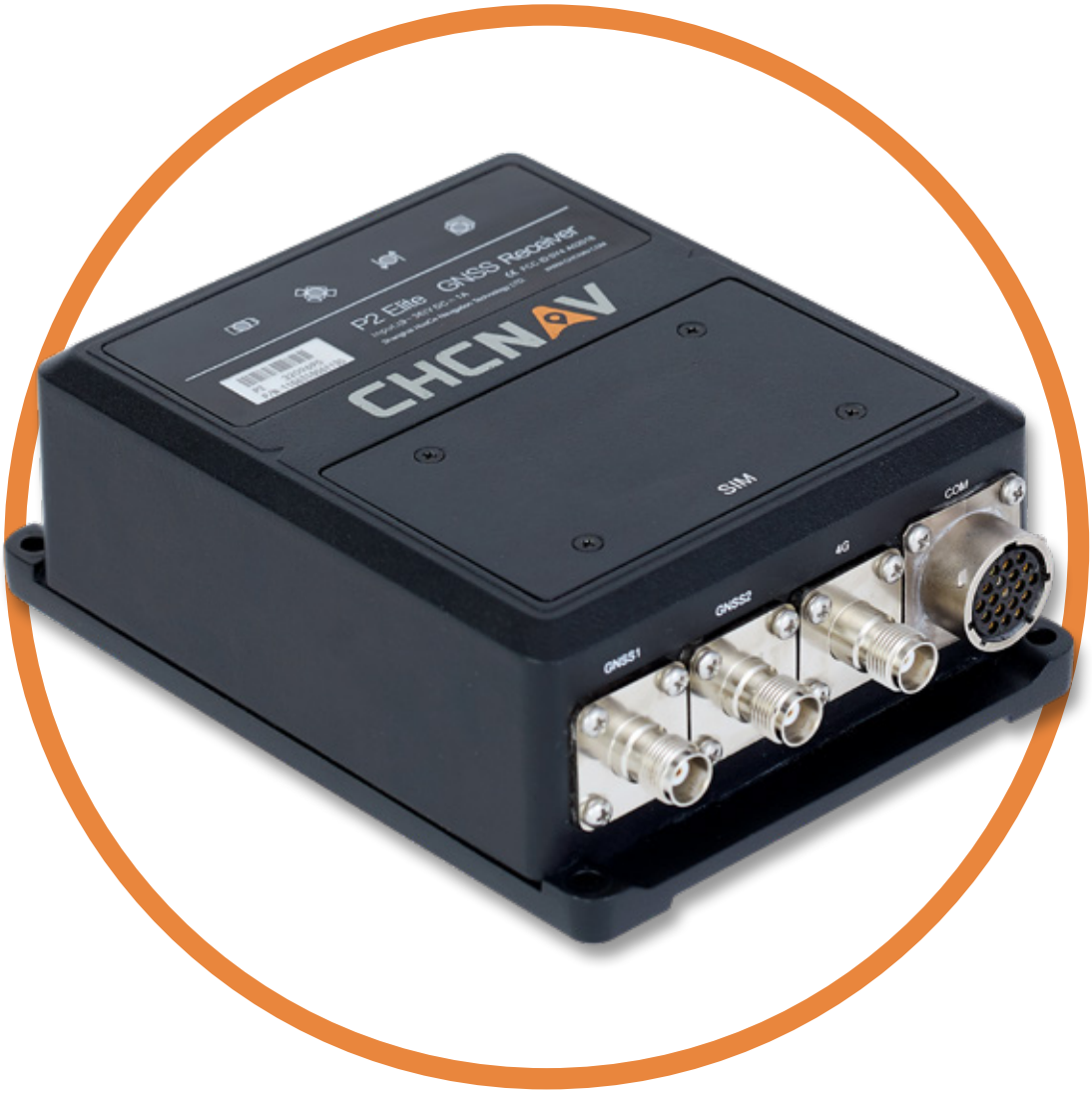
ALL-IN-ONE
GNSS SENSOR



RUGGED GNSS WITH INTEGRATED MODEMS

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
MSS L-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: 0.5 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	0.5 m baseline 0.30°/1.0 m baseline 0.15° 3.0 m baseline 0.05°/ >5 m baseline 0.02°

Hardware

Size (L x W x H)	162 mm x 120 mm x 53 mm (6.4 in x 4.7 in x 2.1 in)
Weight	≤ 1.2 kg (42.3 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 1.2 m drop in hard ground
External power input	6.5 W (depending on user settings)

Communications

1 x Ethernet port	Network Protocols supported > HTTP/HTTPs (WebUI) > NTP Server > NMEA,GSOF,CMR, … over TCP/IP or UDP > NTrip Caster, NTrip Server, NTrip Client
2 x RS232 ports	Up to 460,800 bps
1 x 1PPS	3.3 V TTL level positive slope pulse 8 ms 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 multiple
Wi-Fi	802.11 b/g/n(HT20), access point mode
Bluetooth®	V 4.1
UHF modem	Standard internal Rx/Tx: 410 - 470 MHz Transmit power: 0.5 W to 2 W Protocol: CHC, Transparent, TT450, 3AS Link rate: 9,600 bps to 19,200 bps Range: Typical 3 km to 5 km
Network modem (Internal 4G modem)	4G: E-UTRA FDD LTE Band 1/3/7/8/20 3G: WCDMA 900/2100 2G: GPRS 900/1800, EGPRS 900/1800
Data storage	32 GB high-speed memory

Data Formats

Reference outputs/inputs	CMR, CMR+, sCMRx, RTCM 2.x, RTCM 3.x
Navigation outputs	ASCII: NMEA-0183 Binary: Trimble GSOF
Observation output	RT17, RT27
Maximum position /attitude update rate	20 Hz standard (50 Hz optional)

Certifications

CE; 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.

WWW.CHCNAV.COM | MARKETING@CHCNAV.COM

CHC Navigation Headquarter
Shanghai Huace Navigation Technology Ltd.
599 Gaojing Road, Building D,
Shanghai, 201702, China
+86 21 54260273

CHC Navigation Europe
Infopark Building , Sétány 1, 1117
Budapest, Hungary
+36 20 235 8248 +36 20 5999 369
info@chcnav.eu

CHC Navigation USA LLC
6380 S. Valley View Blvd Suite 246
Las Vegas, NV 89118 USA
+1 480 399 9533

CHC Navigation India
409 Trade Center, Khokhra Circle,
Maninagar East, Ahmedabad,
Gujarat, India
+91 90 99 98 08 02