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P5E

GNSS REFERENCE STATION



NAVIGATION &
INFRASTRUCTURE

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ADVANCED GEODETIC GNSS REFERENCE STATION

The P5E GNSS reference receiver guarantees outstanding performances for all geodetic and scientific applications. Email alarms and automatic reconnection can be set based on real time self-diagnosis and status monitoring. Multiple user rights authorization, web interface restrictions and HTTPs encryption are applied to prevent unauthorized access. The integrated firewall, port and MAC filtering provide additional security layers.

With 32 GB internal storage and up to 1 TB external disk storage, the P5E provides reliable and up to 15 years GNSS data storage in industry standard formats which can be different due to the satellites and sample interval.

MULTI-CONSTELLATION TRACKING

Combine GPS, Glonass, Galileo and BeiDou.
Powered by a 624-channel GNSS core engine, the P5E GNSS reference station provides geodetic-grade accuracy to any surveying project and scientific applications.

L-BAND PPP CORRECTIONS

Compatible with L-Band and RTX™ correction signals.
Connected to 3rd party L-Band corrections services, the P5E GNSS provides accurate, sub-decimeter positioning in virtually all regions where RTK networks, GSM coverage or traditional GNSS base station are not available.

24/7 UNINTERRUPTED OPERATION

Redundant power supply inputs and internal battery backup.
Two external power inputs sources make the P5E GNSS the ultimate choice for GNSS reference station deployment. Its 17,000 mAh internal battery capacity supports up to 20 hours of backup operation in case of power failure.

CONNECTED AND SECURED

Remote control and configurable alarms.
Email alarms and automatic reconnection can be enabled by the self-diagnostic feature that monitors the status of the receiver in real time. Multiple user rights, web interface restrictions and HTTPs encryption are applied to prevent unauthorized access. Built-in firewall, port filtering and MAC filtering provide additional layers of security.

SMART DATA MANAGEMENT

Efficient memory management and versatile data access.
Large storage capacity, cycling GNSS data recording and up to 8 independent logging sessions ensure the most efficient memory management. GNSS data can be accessed via a secured web interface, built-in FTP server, or configured to be pushed to remote FTP sites.

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EXCEPTIONAL RELIABILITY

SPECIFICATIONS

GNSS Characteristics	
Channels	624
GPS	L1C/A, L2C, L2E, L5
GLONASS	L1C/A, L2C/A, L3 CDMA (2)
Galileo	E1, E5A, E5B, E5AltBOC, E6 (2)
BeiDou	B1, B2, B3 (2)
SBAS	WAAS, EGNOS, MSAS, GAGAN, IRNSS and QZSS
L-Band (1)	Trimble RTX ™
GNSS accuracies (3)	
Real time kinematic (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 8 s Initialization reliability: > 99.9%
Post-processing static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Post-processing static (long observation)	Horizontal: 3 mm + 0.1 ppm RMS Vertical: 3.5 mm + 0.4 ppm RMS
Hardware	
Size (L x W x H)	200 mm × 150 mm × 69 mm (7.9 in x 5.9 in x 2.7 in)
Weight	2.24 kg (79 oz) with battery
Environment	Operating: -40°C to +65 °C (-40°F to +149°F) Storage: -45°C to +80°C (-49°F to +176°F)
Humidity	100%
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock	Survive a 1-meter pole drop
Electrical	
Power consumption	5 W (depending on user settings)
Internal battery Capacity	17,000 mAh, 7.2 V
Operating time on internal battery (4)	Up to 20 h (depending receiver configuration)
External power	9 V DC to 36 V DC
Certifications and Calibrations	
FCC Part 15 (class B Device), FCC Part 22, 24, 90; CE Mark; MIL-STD-810G, Method 514.7, IGS	

Communications and Data Storage	
Ports	1 x 7-pin LEMO port (external power, RS-232) 1 x 10-pin LEMO port (external power, RS-232) 1 x MiniUSB port (support DEVICE/HOST/OTG) 1 x LAN port HTTP/ HTTPs, TCP/IP, UDP, FTP, NTRIP Caster, NTRIP Server, NTRIP Client – Simultaneously transmits multiple data stream – Support proxy server and route table 1 x DB9 port 2 x GNSS antenna port (5) 1 x SIM card slot
Protocols	Correction formats: CMR, CMR+, SCMRX, RTCM2.x, RTCM 3.x, RTD Observables: RT17, RT27, BINEX, BINARY, RTCM 3.x, RINEX2.x, RINEX3.x Position/Status I/O: NMEA 0183 V2.30 and V4.0 output Met sensor
Internal data logging and position	Output frequency up to 50 Hz, storage capacity 32 GB
External storage	Up to 1 TB
Bluetooth ®	V4.1
Wi-Fi	802.11 b/g/n, access point mode
Network modem (Internal 4G modem)	LTE (FDD): B1, B2, B3, B4, B5, B7, B8, B20 DC-HSPA+/HSPA+/HSPA/UMTS: B1, B2, B5, B8 EDGE/GPRS/GSM: 850/900/1800/1900 MHz
UHF radio	Standard Internal Rx/Tx: 410 to 470 MHz Transmit power: 0.5 W to 2 W Protocol: CHC, Transparent, TT450 Range: 5 km optimal conditions

*All specifications are subject to change without notice.
(1) Available with further firmware update. (2) Subject to availability of BDS ICD and Galileo commercial service definition. GLONASS L3, BDS B3 and Galileo E6 will be provided through future firmware upgrade. (3) 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. (4) Battery life is subject to operating temperature. (5) GNSSO2 is reserved.

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WWW.CHCNAV.COM | SALES@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