

# P3E

## GNSS Infrastructure

- High performance, low cost receiver
- 220 channels multi-constellation receiver
- Ethernet, serial and USB support
- Convenient HTTP interface and configuration
- Ultra-rugged case with multiple mounting options



P3E GNSS sensor provides a cost-effective answer to demanding applications where high performances and reliabilities are required, including geodetic reference stations, academic centimeter accuracy GNSS sensors for marine surveying, dredging, and GPS/GNSS machine guidance.

P3E offers outstanding performance with proven and innovative GNSS functionalities. P3E supports the tracking of GPS/GLONASS/BDS/Galileo/SBAS. The low noise GNSS carrier phase measurement and low-level elevation tracking technology make P3E a powerful reference station solution.

P3E has 220 channels and supports several Internet protocols, such as NTRIP, TCP and UDP. It also supports numerous data output in differential formats, like SCMRX, RTCM3.x and so on. Numerous data formats and output messages can be easily configured to fit into existing GNSS equipment pool.



# ■ Technical Specifications

## GNSS Characteristics

- 220 channels with all in view simultaneously tracked satellite signals
  - GPS: L1 C/A, L2E, L2C, L5
  - GLONASS: L1 C/A, L1 P, L2 C/A, L2 P, L3
  - BDS: B1, B2
  - SBAS: WAAS, EGNOS, MSAS
  - Galileo: L1 BOC, E5A, E5B, E5 AltBOC
  - QZSS: L1 C/A, L1 SAIF, L2C, L5
- Advanced multipath mitigation technology
- Low noise carrier phase measurement with <1 mm precision in a 1 Hz bandwidth

## GNSS Accuracies <sup>(1)</sup>

- Real Time Kinematics (RTK):
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
  - Initialization Time: Typically < 10 s
  - Initialization Reliability: Typically > 99.9%
- Post-processing Static:
  - Horizontal: 3 mm + 0.5 ppm RMS
  - Vertical: 5 mm + 0.5 ppm RMS
  - Baseline Length: ≤ 300 km

## Physical

- Size (L x W x H): 175.5 mm x 156 mm x 63.8 mm  
(6.9 in x 6.1 in x 2.5 in)
- Weight ≤ 2 kg (70.5 oz)
- Environment:
  - Operating: -25°C to +65 °C (-13°F to +149°F)
  - Storage: -40°C to +80°C (-40°F to +176°F)
- Humidity: 100% condensation
- Dust and Water Proof: IP65
- Shock and Vibration: 1 m (3.3 ft) fall onto concrete, IEC68-2-27
- PC control utility via serial

## Communications

- Serial: 1 x 10-pin LEMO port (external power, USB data download, USB update, RS-232)
- 1x LAN port:
  - 1 port with 1 RJ45 connector
  - HTTP, HTTPS, TCP/IP, UDP, NTRIP Caster, NTRIP Server, NTRIP Client
  - Proxy server
  - Routing table
  - NTP Server, NTP Client
  - UPnP and Zeroconf
  - Email alerts and position monitoring
- Protocols:
  - Correction Formats; RTCM2.x, RTCM3.x, CMR+, CMR, SCMRX
  - Position/Status I/O: NMEA 0183 v2.30 and v4.0, GSOF
  - Proxy server
  - Observables: RT17, RT27, RTCM 3.x
  - Up to 50 Hz output standard
- Internal Data Logging Storage Capacity: 4 GB

## Electrical

- Power Consumption: 4.2 W (depending on user settings)
- External Power: 9 V DC to 36 V DC
- Web User Interface
  - Secure
  - Allows remote configuration, data retrieval and firmware updates
  - Setup of multiple streaming/monitoring ports

## Antenna Option

- A220GR GNSS Geodetic Antenna
- C220GR GNSS Choke Ring Antenna

(1) Accuracy and reliability specifications may be affected by multipath, satellite geometry and atmospheric conditions. Performances assume the minimum of 5 satellites, follow up of recommended general GPS practices.

Specifications are subject to change without notice.

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