PwrPak7D-E2

OEM7 dual-antenna enclosure with SPAN GNSS+INS technology from Hexagon | NovAtel provides improved performance and higher data rates

**Dual-antenna input**
Multi-frequency, dual-antenna input allows the PwrPak7D-E2 to harness the power of RTK and ALIGN functionality. This makes the PwrPak7D-E2 ideal for ground, marine or aircraft-based systems, providing industry-leading GNSS multi-constellation heading and position data in static and dynamic environments.

**World-leading GNSS+INS technology**
SPAN GNSS+INS technology brings together two different but complementary technologies: Global Navigation Satellite System (GNSS) positioning and Inertial Navigation System (INS). The absolute accuracy of GNSS positioning with the stability of inertial measurement unit (IMU) gyro and accelerometer measurements generate a 3D navigation solution that is stable and continuously available. Deeply coupling the GNSS and inertial measurements through SPAN technology enables better bridging through GNSS interruptions and rapid reacquisition of signals.

**PwrPak7D-E2 advantages**
The PwrPak7D-E2 contains an Epson G370N MEMS IMU to deliver world-class SPAN technology in an integrated, single-box solution. Built on top of the reputable PwrPak7 family with a higher performance Epson IMU, the PwrPak7D-E2 provides seamless positioning, quick alignment and leading performance. This product is commercially exportable and provides an excellent midrange price/performance/size GNSS+INS solution.

**Future-proofed scalability**
Capable of tracking all present and upcoming GNSS constellations and satellite signals, the PwrPak7D-E2 is a robust, high-precision receiver that is software upgradeable in the field to provide the custom performance required for your application demands. The PwrPak7D-E2 has a powerful OEM7 GNSS engine, integrated MEMS IMU, built-in Wi-Fi, onboard NTRIP client and server support and 16 GB of internal storage.

**Precise thinking makes it possible**
Our GNSS products have set the standard in quality and performance for over 20 years. State-of-the-art lean manufacturing facilities in our North American headquarters produce the industry’s most extensive line of OEM receivers, antennas and subsystems.

**Benefits**
- Small, low-power, all-in-one GNSS+INS enclosure
- Easy integration into space and weight constrained applications
- Commercially exportable system
- Rugged design ideal for challenging environments
- Enhanced connection options including serial, USB, CAN and Ethernet
- Future-proof for upcoming GNSS signal support

**Features**
- Low-noise commercial grade gyros and accelerometers
- Dedicated wheel sensor input
- TerraStar Correction Services supported over multi-channel L-Band and IP connections
- Spoofing detection, interference detection and mitigation provided by GNSS Resilience and Integrity Technology (GRIT)
- SPAN GNSS+INS capability with configurable application profiles
- Dual-antenna ALIGN heading
- 16 GB of internal storage
- Built-in Wi-Fi support
**Performance**

**Signal tracking**
- GPS L1/C/A, L1C, L2C, L2P, L5
- Galileo E1, E5a, E5b, E5c
- QZSS L1/C, L1C, L1S, L2C, L5
- NavIC (IRNSS) L5
- SBAS L1, L5
- L-Band up to 5 channels

**Horizontal position accuracy (RMS)**
- Single point L1: 1.5 m
- Single point L1/L2: 1.2 m
- SBAS: 60 cm
- DGPS: 40 cm
- TerraStar-L: 40 cm
- TerraStar-C PRO: 2.5 cm
- RTK: 1 cm + 1 ppm
- Initialization time: < 10 s
- Initialization reliability: > 99.9%

**ALIGN heading accuracy**
- Baseline Accuracy (RMS)
  - 2 m: 0.08 deg
  - 4 m: 0.05 deg

**Maximum data rate**
- GNSS measurements: up to 20 Hz
- GNSS position: up to 200 Hz
- INS solution: up to 200 Hz
- IMU raw data rate: 200 Hz

**Time to first fix**
- Cold start: < 39 s (typ)
- Hot start: < 20 s (typ)

**Time accuracy**
- 20 ns RMS

**Velocity limit**
- 515 m/s

**IMU performance**
- Gyroscope performance
  - Input range: ±450 deg/s
  - Rate bias stability: 0.8 deg/hr
  - Angular random walk: 0.06 deg/√hr

- Accelerometer performance
  - Input range: ±10 g
  - Bias stability: 0.01 mg
  - Velocity random walk: 0.025 m/s/√hr

**Communication ports**
- 1 RS-232: up to 460,800 bps
- 2 RS-232/RS-422 selectable: up to 460,800 bps
- 1 USB 2.0 (device)
- 1 USB 2.0 (host)
- 1 Ethernet: 10/100 Mbps
- 1 CAN Bus: 1 Mbps
- 1 Wi-Fi
- 3 Event inputs
- 3 Event outputs
- 1 Pulse Per Second (PPS) output
- 1 Quadrature wheel sensor input

**Physical and Electrical**
- Weight: 560 g
- Dimensions: 147 x 125 x 55 mm

**Power**
- Input voltage: +9 to +36 VDC
- Power consumption: 4.15 W
- Output voltage: 5 VDC ±5%

**Accuracy (RMS)**
- Horizontal position accuracy:
  - Single point L1: 4 m
  - Single point L1/L2: 2 m
- Velocity accuracy (m/s):
  - Single point L1: 60 cm
- Acceleration (operating):
  - MIL-STD-810H, Method 514.8
  - Compass GNE-500
  - VEXXIS GNSS-800 series antennas
  - Compact GNSS antennas

**Contact Hexagon | NovAtel**

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For the most recent details of this product: novatel.com

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