PwrPak7-E2

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

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.

PwrPak7-E2 advantages
The PwrPak7-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 PwrPak7-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 PwrPak7-E2 is a robust, high-precision receiver that is software upgradeable in the field to provide the custom performance required for your application demands.

Precise thinking makes it possible
Our GNSS products are developed for efficient and rapid integration and 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. Our products are backed by a team of highly-skilled design and customer support engineers ready to answer your integration questions.

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

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
- 16 GB of internal storage
- Built-in Wi-Fi support
### Performance

**Signal tracking**
- GLONASS: L1/C/A, L2/C/A, L5
- QZSS: L1/C/A, L1S, L1S, L2C, L2L, L5
- Galileo: E1, E5 AltBOC, E5a, E5b
- BeiDou: B1, B1c, B2I, B2b, B3
- NavIC (IRNSS): L5
- SBAS: L1, L5

**Horizontal position accuracy**
- Single point: 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
- TerraStar-X: 2 cm

**IMU performance**
- Gyroscope performance: ±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**
- RS-232/RS-422: up to 460,800 bps
- Ethernet: RJ45
- Serial, CAN, Event I/O: HD26
- USB: Micro A/B

**Power**
- Input voltage: +9 to +36 VDC
- Power consumption: 3.4 W

**Physical and electrical**
- Dimensions: 147 x 125 x 55 mm
- Weight: 560 g
- Power consumption: 3.4 W

**IMU LNA power output**
- Output voltage: 5 VDC ±5%
- Maximum current: 200 mA

**Connectors**
- Antenna: TNC
- USB device: Micro A/B
- Power: SAL M12, 5 pin, male

**Environmental**
- Temperature: -40°C to +75°C
- Humidity: 95% non-condensing
- Ingress protection rating: IP67

**Vibration (operating)**
- Random: MIL-STD 810H, Method 514.8
- Aircraft: CAT 13 – 4.5 g RMS

**Acceleration (operating)**
- MIL-STD-810H, Method 513.8

**Positioning and GNSS outages**

<table>
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<tr>
<th>Outage Duration</th>
<th>Positioning Mode</th>
<th>Positioning (m) RMS</th>
<th>Velocity (m/s) RMS</th>
<th>Attitude (Degrees) RMS</th>
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<td>Vertical</td>
<td>Horizontal</td>
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1. Typical values. Performance specifications subject to GNSS system characteristics, Signal-in-Space (SiS) operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference.
2. Hot start.
3. E1bc and E6bc support only.

### Contact Hexagon | NovAtel

sales.novap@hexagon.com | 1-800-NOVATEL (U.S. and Canada) or 403-295-4900 | China: 0086-21-68882300 | Europe: 44-1993-848-736 | SE Asia and Australia: 61-400-883-601.

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

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