

Enclosures PwrPak7D™



COMPACT DUAL ANTENNA ENCLOSURE DELIVERS SCALABLE POSITIONING PERFORMANCE WITH INTERNAL STORAGE



FUTURE PROOFED SCALABILITY

Capable of tracking all present and upcoming Global Navigation Satellite System (GNSS) constellations and satellite signals, the PwrPak7D is a robust, high precision receiver that is software upgradeable in the field to provide the custom performance required for your application.

DUAL ANTENNA INPUT

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

BASE STATION OR ROVER

Compact and lightweight, the PwrPak7D is well suited for base or rover applications. It has a powerful OEM7® GNSS engine inside and offers built in Wi-Fi, on board NTRIP client and server support and 16 GB of internal storage. It also has enhanced connection options including serial, USB, CAN and Ethernet.

PRECISE THINKING MAKES IT POSSIBLE

Developed for efficient and rapid integration, 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. All of our products are backed by a team of highly skilled design and customer support engineers, ready to answer your integration questions.

FEATURES

- + 555 channel, all-constellation, multi-frequency positioning solution
- + TerraStar® correction services supported over multi-channel L-Band and IP connections
- + Multiple communication interfaces for easy integration and installation
- + Built-in Wi-Fi support
- + ALIGN® heading solution
- + 16 GB of internal storage
- + SPAN® INS functionality

If you require more information about our enclosures, visit www.novatel.com/products/gnss-receivers/enclosures/

PERFORMANCE¹

Channel Configuration

555 Channels

Signal Tracking

Primary RF²

GPS L1 C/A, L1C, L2C, L2P, L5
GLONASS³ L1 C/A, L2 C/A, L2P,
L3, L5

Galileo⁴ E1, E5 AltBOC, E5a, E5b
BeiDou B1I, B1C, B2I, B2a
QZSS L1 C/A, L1C, L2C, L5
NavIC (IRNSS) L5
SBAS L1, L5
L-Band up to 5 channels

Secondary RF²

GPS L1 C/A, L1C, L2C, L2P, L5
GLONASS³ L1 C/A, L2 C/A, L2P,
L3, L5

Galileo⁴ E1, E5 AltBOC, E5a, E5b
BeiDou B1I, B1C, B2I, B2a
QZSS L1 C/A, L1C, L2C, L5
NavIC (IRNSS) L5

Horizontal Position Accuracy (RMS)

Single point L1	1.5 m
Single point L1/L2	1.2 m
SBAS ⁵	60 cm
DGPS	40 cm
TerraStar-L™ ⁶	40 cm
TerraStar-C PRO™ ⁶	2.5 cm
TerraStar-X™ ⁶	2 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

Measurements up to 100 Hz
Position up to 100 Hz

Time to First Fix

Cold start⁷ <39 s
Hot start⁸ <20 s

Signal Reacquisition

L1 <0.5 s (typical)
L2 <1.0 s (typical)

Time Accuracy⁹ 20 ns RMS

Velocity Accuracy

0.03 m/s RMS

Velocity Limit¹⁰ 515 m/s

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) HS
1 USB 2.0 (host) HS
1 Ethernet 10/100 Mbps
1 CAN Bus 1 Mbps

1 Wi-Fi
3 Event inputs
3 Event outputs
1 Pulse Per Second output
1 Quadrature Wheel Sensor
input

PHYSICAL AND ELECTRICAL

Dimensions 147 x 125 x 55 mm

Weight 500 g

Power

Input voltage +9 to +36 VDC
Power consumption¹¹ 3.95 W

2 Antenna LNA Power Outputs

Output voltage 5 VDC ±5%
Maximum current 200 mA

Connectors

2 Antenna SMA
USB device Micro A/B
USB host Micro A/B
Serial, CAN, Event I/O

Ethernet DSUB HD26
Data Logging RJ45
Power Push button
SAL M12, 5 pin, male

Status LEDs

Power
GNSS
INS
Data Logging
USB

ENVIRONMENTAL

Temperature

Operating -40°C to +75°C
Storage -40°C to +85°C

Humidity 95% non-condensing

Ingress Protection Rating IP67

Vibration (operating)

Random MIL-STD-810G(CH1)
Method 514.7
Category 24, 20g RMS
Sinusoidal IEC 60068-2-6

Acceleration (operating)

MIL-STD-810G(CH1),
Method 513.7, Procedure II (16g)

Bump (operating)

IEC 60068-2-27 (25g)

Shock (operating)

MIL-STD-810G(CH1),
Method 516.7, Procedure 1,
40 g 11 ms terminal sawtooth

COMPLIANCE

FCC, ISCED, CE and
Global Type Approvals

FEATURES

- NovAtel® OEM7 positioning engine
- Standard 16 GB internal storage
- Support for logging to external USB storage device
- Built-in Wi-Fi support
- Optional integrated Epson IMU
- Web GUI

FIRMWARE SOLUTIONS

- ALIGN®
- SPAN®
- RTK
- RTK ASSIST™
- TerraStar PPP
- API

INCLUDED ACCESSORIES

- Power cable
- USB cable
- DSUB HD26 to DB9 RS-232 cable

OPTIONAL ACCESSORIES

- Full breakout cable for DSUB HD26 connector
- DSUB HD26 to M12 IMU cable
- RJ45 Ethernet cable
- VEXXIS® GNSS-500 and GNSS-800 series antennas
- Compact GNSS antennas
- GrafNav/GrafNet®
- Inertial Explorer®
- NovAtel Connect

HARDWARE OPTIONS

PwrPak7D no Wi-Fi,
no 16 GB internal storage

For the most recent details of this product:

www.novatel.com/products/gnss-receivers/enclosures/pwrpak7d/

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61-400-883-601

Version 5

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Printed in Canada.

D22918 November 2019



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 sources.

² Model-configurable to track L5/E5a (all / Galileo) through L2 (GPS) or L3/E5b/B2 (GLONASS / Galileo / BeiDou) through L2 (GLONASS). See manual for details.

³ Hardware ready for L3 and L5.

⁴ E1bc support only.

⁵ GPS only.

⁶ Requires a subscription to a TerraStar data service. Subscriptions available from NovAtel.

⁷ Typical value. No almanac or ephemerides and no approximate position or time.

⁸ Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

⁹ Time accuracy does not include biases due to RF or antenna delay.

¹⁰ Export licensing restricts operation to a maximum of 515 metres per second, message output impacted above 500 m/s.

¹¹ Typical value. Consult the OEM7 User Documentation for power supply considerations.