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 upgradable 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
+ Multi-channel L-Band supports TerraStar correction services
+ 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/

PwrPak7D™

PERFORMANCE[1]

Channel Configuration
555 Channels

Signal Tracking

Primary RF[2]

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[3]	L1 C/A, L2 C/A, L2P, L3, L5
Galileo[4]	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 RF[2]

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[3]	L1 C/A, L2 C/A, L2P L3, L5
Galileo[4]	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
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 start[7]	<39 s
Hot start[8]	<20 s

Signal Reacquisition

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

Time Accuracy[9] 20 ns RMS

Velocity Accuracy
0.03 m/s RMS

Velocity Limit[10] 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 consumption[11]	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	DSUB HD26
Ethernet	RJ45
Data Logging	Push button
Power	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

Waterproof IEC 60529 IPX7

Dust IEC 60529 IP6X

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 ISED, FCC, CE, RoHS, WEEE

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 G320N MEMS 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

For the most recent details of this product:
www.novatel.com/products/gnss-receivers/enclosures/pwrpak7D

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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 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.