ProPak-LB*plus*

NovAtel's ProPak®-LB*plus* GPS receiver combines accuracy and affordability with integrated access to OmniSTAR and CDGPS L-band satellite technology. When paired with the GPS-702L antenna, the need for a separate base station is eliminated.

Features

Accepts OmniSTAR and CDGPS corrections

Pulse Aperture Correlator™ (PAC) tracking technology

Supports peripheral devices, including an inertial measurement unit (IMU)

Benefits

Sub-meter to decimeter-level accuracy without the need of a separate base station

Virtually eliminates the effects of multipath

Ensures minimal integration effort is required to expand your system with attitude data and continuous positioning

Available L-band services

The ProPak-LB*plus* receives either the OmniSTAR or CDGPS L-band signals, which provide various types of correction data for increased accuracy. With a subscription to OmniSTAR's HP, XP or VBS service, the ProPak-LB*plus* provides autonomous sub-meter to decimeter level accuracy worldwide.

The CDGPS service is a free utility with no recurring subscription costs available across Canada and most of the US. The service utilizes superior signal penetration to offer consistent and reliable sub-meter positioning even in challenging conditions.

Exceptional positioning accuracy

To virtually eliminate the effects of multipath, the ProPak-LB*plus* also features patented Pulse Aperture Correlator™ (PAC) technology. Available in multiple models, including L1 and L1/L2, this includes optional support for SBAS corrections, such as those from WAAS, MSAS, and EGNOS systems, and RT-2® mode for centimeter-level RTK performance.

Support for inertial technology

The ProPak-LB*plus* features NovAtel's SPAN™ Technology to provide support for an external inertial measurement unit (IMU). By adding an IMU to the GPS receiver, system operation is enhanced. For dynamic applications, position and attitude output data is available at rates up to 100 Hertz. During short periods of reduced satellite coverage, reliable position output is provided through seamless, uninterrupted service.

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Precise thinking

ProPak-LB*plus*

Performance[1]

Position Accuracy	
Single Point L1	1.8 m CEP
Single Point L1/L2	1.5 m CEP
WAAS L1	1.2 m CEP
WAAS L1/L2	0.8 m CEP
DGPS (L1, C/A)	0.45 m CEP
OmniSTAR VBS[2]	1.0 m CEP
OmniSTAR HP[2]	10 cm CEP
OmniSTAR XP[2]	15 cm CEP
CDGPS[3]	0.7 m CEP
RT-20[4]	< 20 cm CEP
RT-2	1 cm + 1 ppm
Measurement Precision	
L1 C/A Code	6 cm RMS
L2 P(Y) Code	25 cm RMS (AS on)
L1 Carrier Phase	0.75 mm RMS (differential channel)
L2 Carrier Phase	2 mm RMS (differential channel)
Data Rate	
Measurements	20 Hz
Position	20 Hz
Time to First Fix	
Cold Start[5]	50 s
Warm Start[6]	40 s
Hot Start[7]	30 s
Signal Reacquisition	
L1	0.5 s (typical)
L2	1.0 s (typical)
Time Accuracy[8]	**20 ns RMS**
Velocity Accuracy	**0.03 m/s RMS**
Dynamics	
Velocity[9]	514 m/s
Vibration	4 G (sustained tracking)
Altitude[9]	**18,288 m**

Physical & Electrical

Size	**185 x 154 x 71 mm**
Weight	**1.1 kg**
Power	
Input Voltage	+7 to +15 VDC
Power Consumption	3.7 W (typical)
Antenna LNA Power Output	
Output Voltage	+5 VDC
Maximum Current	100 mA

Communication Ports

- 3 RS-232 serial ports capable of 230,400 bps

Input/Output Connectors	
Power	2-pin Switchcraft®[10]
Antenna Input	TNC female
COM1	6-pin Switchcraft®[10]
COM2	7-pin Switchcraft®[10]
COM3	8-pin Switchcraft®[10]
Environmental	
Temperature	
Operating	-40°C to +75°C
Storage	-40°C to +90°C
Humidity	95% non-condensing
Waterproof	IEC 60529 IPX7
Vibration (operating)	
Random	MIL-STD-202F 214A
Sinusoidal	SAE J1211 4.7
Shock (non-operating)	IEC 68-2-29 Eb
Regulatory	**FCC Class B, CE**

1 Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.
2 Requires a subscription to OmniSTAR service.
3 Where available.
4 Expected accuracy after static convergence.
5 Typical value. No almanac or ephemerides and no approximate position or time.
6 Typical value. Almanac saved and approximate position and time entered. No recent ephemerides.
7 Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
8 Time accuracy does not include biases due to RF or antenna delay.
9 Export licensing restricts operation to a maximum of 18,288 meters and 514 meters per second.
10 Switchcraft is a registered trademark of Switchcraft, Inc.

Included Accessories

- Automotive power adapter
- Mounting bracket
- 3 null-modem serial cables

Optional Accessories


GPS-702L antenna


RF cables, available in 5, 15, and 30 meter lengths


AC adapters, including international and North American versions

Additional Features

- Multiple software models, including L1 or L1/L2
- A configurable PPS output and mark input
- Supports RTCM SC-104 version 2.3, CMR version 3.0, CMR+, NMEA 0183 version 3.01, and RTCA DO-217 message types
- Field-upgradeable firmware
- Application Programming Interface (API) option

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