



ProPak-V3

Features

Three high-speed serial ports and USB 1.1 capability

PAC and Vision Correlator technologies

Integrated OmniSTAR and CDGPS

GPS modernized signals and GLONASS Measurements

Supports peripheral devices, including an Inertial Measurement Unit (IMU)

Benefits

Ensures flexible installation and quick configuration

Offers superior multipath detection to eliminate close-in interference and to flag poor signal quality

Sub-meter accuracy without the need for additional hardware

Improved positioning in challenging or limited visibility environments

Combined GPS and inertial navigation, including attitude data and continuous positioning

NovAtel's ProPak-V3 is a durable, high-performance receiver with advanced capabilities, including 72 available channels, GLONASS measurements, USB communication and IMU support.

Flexibility and Ease of Integration

The ProPak-V3 provides the same easy-to-use interface as the ProPak-G2*plus*, while adding the ability to receive measurements from GLONASS constellations in addition to GPS positioning. The ProPak-V3 also features integrated L-band corrections from geosynchronous satellites such as OmniSTAR and CDGPS. Additionally, with firmware upgrades, your investment will continue to work into the future, tracking L5 signals as soon as they are available.

Protects against harsh conditions

The ProPak-V3 features a durable metal enclosure to ensure that your receiver delivers accurate positions even in harsh environments and EMI conditions. Combined with one of NovAtel's rugged GPS-700 series antennas, the ProPak-V3 provides superior tracking performance, positioning accuracy and reliability.

Advanced multipath mitigation

The OEMV family of GNSS receivers is available with PAC, NovAtel's current industry-leading multipath mitigation technology and the new Vision Correlator. The initial OEMV release will include PAC as the default technique with enhanced Vision functionality added in future firmware updates. Vision uses innovative technology to model the signal's unique signature to detect multipath reflections. With full Vision functionality, the OEMV receivers will offer superior multipath elimination close to the antenna and in high multipath environments.

Support for systems integrators

The ProPak-V3 can power external peripherals such as a UHF radio or an IMU. A single cable from the receiver to an Inertial Measurement Unit (IMU), creates an enhanced system that delivers 100 Hz position and attitude measurements and robust performance. Supported by NovAtel's SPAN technology, it is unaffected by short outages or reduced satellite coverage. In addition, the ProPak-V3 supports an Application Programming Interface (API).



Precise thinking

ProPak-V3

Performance¹

Position Accuracy (RMS)

Single Point L1	1.8 m
Single Point L1/L2	1.5 m
WAAS L1 only	1.2 m
WAAS L1/L2	0.9 m
CDGPS	1.0 m
DGPS	0.45 m
OmniSTAR	
VBS	0.7 m
XP	0.15 m
HP	0.1 m
RT-20 ²	0.2 m
RT-2	1 cm + 1ppm

Measurement Precision

L1 C/A Code	6 cm RMS
L1 Carrier Phase	0.75 mm RMS (differential channel)
L2 P(Y) Code	25 cm RMS
L2 Carrier Phase	2 mm RMS (differential channel)

Data Rate³

Measurements	20 Hz
Position	20 Hz
OmniSTAR HP	20 Hz

Time to First Fix

Cold Start ⁴	50 s
Warm Start ⁵	40 s
Hot Start ⁶	30 s

Signal Reacquisition

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

Time Accuracy⁷ 20 ns RMS

Velocity Accuracy 0.03 m/s RMS

Dynamics

Velocity ⁸	515 m/s
Vibration	4 G (sustained tracking)
Altitude ⁸	18,288 m

Physical & Electrical

Size 185 x 160 x 71 mm

Weight 1.0 kg

Power

Input Voltage ⁹	+9 to +18 VDC
Power Consumption	2.5 W (typical) ¹⁰

Antenna LNA Power Output

Output Voltage	+5 VDC
Maximum Current	100 mA

Communication Ports

- 1 RS-232 or RS-422 serial port capable of 921,600 bps
- 1 RS-232 or RS-422 serial port capable of 230,400 bps
- 1 RS-232 serial port capable of 230,400 bps
- 1 USB 1.1 port capable of 5 Mbps

Input/Output Connectors

Power	4-pin LEMO
Antenna Input	TNC female
External Oscillator	BNC female
COM1	DB-9 male
COM2	DB-9 male
AUX (COM3)	DB-9 male
I/O	DB-9 female

Environmental

Temperature	
Operating	-40°C to +75°C
Storage	-45°C to +95°C
Humidity	95% non-condensing
Waterproof	IEC 60529 IPX7
Vibration (operating)	
Random	MIL-STD-202G 214A
Sinusoidal	SAE J1211 4.7
Shock (non-operating)	IEC 68-2-27 Ea

Regulatory

Emissions	
FCC Part 15	Class B
EN 55022	Class B
Immunity	EN61000-6-2
Safety	EN60950

- 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 Expected accuracy after static convergence.
- 3 Slower data rates are expected for API customers. The maximum data rate is dependent on the size of the application.

Included Accessories

- Automotive 12 VDC power adapter with 3A slow-blow fuse
- Mounting bracket
- Straight serial cable
- Null-modem serial cable
- I/O port interface cable
- USB cable

Optional Accessories



L1, L1/L2 or L1/L2/L-band GPS-700 series antennas



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 GPS or GLONASS, L1/L2 GPS or GLONASS, and carrier-phase positioning with RT-20 or RT-2 options.
- Auxiliary strobe signals, including a configurable PPS output and two mark inputs
- Field-upgradeable firmware
- Supports RTCM SC-104 version 3.0, CMR version 3.0, CMR+, NMEA 0183 version 3.01, and RTCA DO-217 message types
- Application Programming Interface (API)

- 4 Typical value. No almanac or ephemerides and no approximate position or time.
- 5 Typical value. Almanac saved and approximate position and time entered. No recent ephemerides.
- 6 Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
- 7 Time accuracy does not include biases due to RF or antenna delay.
- 8 Export licensing restricts operation to a maximum of 18,288 meters and 514 meters per second.
- 9 While operating without an external IMU, the ProPak-V3 can accept an input voltage between +6 and +18 VDC.
- 10 When running a GPS only model.



Precise thinking



Version 1D - Specifications subject to change without notice. © 2006 NovAtel Inc. All rights reserved. Printed in Canada. D09558