Enclosures FlexPak6™

COMPACT ENCLOSURE FEATURING THE NEXT GENERATION, HIGH PERFORMANCE GNSS RECEIVER

FUTURE PROOFED SCALABILITY

The FlexPak6 is software upgradable in the field to provide the custom performance required for your application demands. Capable of tracking all present and upcoming Global Navigation Satellite System (GNSS) constellations and satellite signals including GPS L1/L2/L2C/L5, GLONASS L1/L2/L2C, Galileo E1/E5a/E5b/AltBOC and BeiDou B1/B2 signals, the FlexPak6 ensures high performance GNSS positioning now and in the future.

BASE STATION OR ROVER

Compact and lightweight, the FlexPak6 is well suited for rover applications. With its powerful GNSS engine, onboard NTRIP v1.0 and v2.0 client and server support and enhanced connection options including serial, USB, CAN and Ethernet, the FlexPak6 is also ideal for base station operation.

FLEXIBLE CONFIGURATION OPTIONS FOR YOUR APPLICATION

Proven and innovative NovAtel technology combine to achieve the best in GNSS positioning. NovAtel's industry leading Pulse Aperture Correlator (PAC) multipath mitigation technology is standard and ensures the highest quality measurements and positioning. Innovative new technology provides excellent resistance to interference for consistent, accurate and reliable positioning. Configurable options ensure that your positioning and accuracy needs are met at all times. To learn more about how our firmware options can enhance your positioning, please visit www.novatel.com/products/firmware-options.

BENEFITS

+ Next Generation NovAtel GNSS technology
+ Supports current and future GNSS signals
+ Compact, lightweight and easy to integrate
+ Ideal for low payload UAV and robotics applications

FEATURES

+ Metre to centimetre-level accuracy
+ Auxiliary strobe signals with configurable PPS output
+ Shock resistant
+ Serial, USB, Ethernet and CAN Bus communications
+ NTRIP client and server
+ Wide input voltage range
+ SPAN® INS functionality

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

FlexPak6™

PERFORMANCE[1]

Channel Configuration
120 Channels[2]

Signal Tracking

GPS	L1, L2, L2C, L5
GLONASS	L1, L2, L2C
Galileo	E1, E5a, E5b, AltBOC
BeiDou[3]	B1, B2
SBAS	
QZSS	
L-Band	

Horizontal Position Accuracy (RMS)

Single point L1	1.5 m
Single point L1/L2	1.2 m
SBAS[4]	0.6 m
DGPS	0.4 m
NovAtel CORRECT™	
» TERRASTAR-D[5]	6 cm
» Veripos Apex[2] [6]	6 cm
» RT-2®	1 cm + 1 ppm
Initial time	<10 s
Initial reliability	>99.9%

Measurement Precision (RMS)

Fully independent code and carrier measurements:

	GPS	GLO
L1 C/A code	4 cm	8 cm
L1 carrier phase	0.5 mm	1.0 mm
L2 P(Y) code[7]	8 cm	8 cm
L2 carrier phase[7]	1.0 mm	1.0 mm
L2C code[8]	8 cm	8 cm
L2C carrier phase[8]	1.0 mm	1.0 mm
L5 code	3 cm	–
L5 carrier phase	0.5 mm	–

Maximum Data Rate[9]

Measurements	100 Hz
Position	100 Hz

Time to First Fix

Cold start[10]	<50 s
Hot start[11]	<35 s

Signal Reacquisition

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

Time Accuracy[12] 20 ns RMS

Velocity Accuracy 0.03 m/s RMS

Velocity[13] 515 m/s

PHYSICAL AND ELECTRICAL

Dimensions 147 x 113 x 45 mm

Weight 337 g

Power

Input voltage	+6 to +36 VDC
Power consumption[14]	1.8 W

Antenna LNA Power Output

Output voltage	5 VDC ±5%
Maximum current	100 mA

Connectors

Serial	DB9
USB	Mini-AB
Ethernet, CAN, I/O	DB-HD15

COMMUNICATION PORTS

1 RS-232	921,600 bps
1 RS-232 or RS-422	921,600 bps
1 USB port	12 Mbps
1 CAN port[15]	1 Mbps

1 Ethernet port supporting:
- » 10BaseT/100BaseT networks
- » Direct TCP/IP & UDP connectivity
- » NTRIP (v2.0) client and server

1 I/O Port (PPS, Event1, Event2, VARF, ERROR, Position Valid)

ENVIRONMENTAL

Temperature

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

Humidity 95% non-condensing

Vibration (operating)

Random	MIL-STD-810G (7.7 g)
Sinusoidal	SAE J1211 (4 g)

Acceleration (operating)
MIL-STD 810G, Method 513.6 Procedure II (16 g)

Bump IEC 60068-2-27 (10 g)

Shock MIL-STD-810G (40 g)

Immersion IEC 60529 IPX7

Compliance FCC, CE, Industry Canada

FEATURES

- Field upgradeable software
- 20 Hz measurement position data rate
- PAC multipath mitigating technology
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, CMR, CMR+ and RTCA
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs

NOVATEL CONNECT™

NovAtel Connect is an intuitive configuration and visualization tool suite allowing comprehensive control of the FlexPak6 product.

- Easy to use wizards for positioning mode configuration and raw data collection
- Detailed GUI for comprehensive status information
- Plan view and playback files allow to monitor positioning and configuration history
- Remotely control and monitor the FlexPak6 over the internet
- Windows XP and Windows 7 platforms

INCLUDED ACCESSORIES

- Serial cable (null)
- I/O cable
- USB cable
- Automotive 12 VDC power adapter

OPTIONAL ACCESSORIES

- GPS-700 series antennas
- ANT series antennas
- Ethernet, CAN and I/O breakout cable
- Serial cable (straight)

FIRMWARE OPTIONS

- ALIGN®
- GLIDE™
- RT-2
- SPAN®
- RAIM
- API
- NTRIP v1.0 and v2.0
- 100 Hz output rate[9]

For the most recent details of this product:
www.novatel.com/products/gnss-receivers/enclosures/flexpak6/

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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. Tracks up to 60 L1/L2 satellites.
3. The BeiDou signal is not finalized and changes in the signal structure may still occur. Designed for BeiDou Phase 3 compatibility.
4. GPS only.
5. TERRASTAR-D subscriptions are available from NovAtel.
6. Veripos Apex[2] marine subscriptions are available directly from Veripos. (www.veripos.com)
7. L2 P for GLONASS.
8. L2 C/A for GLONASS.
9. 100 Hz while tracking up to 20 satellites.
10. Typical value. No almanac or ephemerides and no approximate position or time.
11. Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
12. Time accuracy does not include biases due to RF or antenna delay.
13. Export licensing restricts operation to a maximum of 515 metres per second.
14. Power consumption values for GPS L1/L2 at 6 VDC with Ethernet disabled. Power consumption may increase with other configurations.
15. User application software required.