FlexPak6™

Compact Enclosure Featuring the Next Generation High Performance GNSS Receiver

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 and dust resistant

Serial, USB, Ethernet and CAN Bus communications

NTRIP client and server

Wide input voltage range

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 GNSS constellations and satellite signals including GPS L1/L2/L2C/L5, GLONASS L1/L2, Galileo E1/E5a/E5b/Alt-BOC and Compass 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 being met at all times. To learn more about how our firmware options can enhance your positioning, please visit www.novatel.com/products/ firmware-options.

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

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FlexPak6

Performance[1]

Channel Configuration
120 Channels[2]
Signal Tracking

GPS	L1, L2, L2C, L5
GLONASS	L1, L2
Galileo	E1, E5[3]
GIOVE-A/GIOVE-B (test)	
Compass[4]	
SBAS	
L-band	

Horizontal Position Accuracy (RMS)

Single point L1	1.5 m
Single point L1/L2	1.2 m
SBAS[5]	0.6 m
DGPS	0.4 m
OmniSTAR	
VBS	0.6 m
XP	0.15 m
HP	0.1 m
RT-20®[6]	0.2 m
RT-2™	1 cm+1 ppm
Initialization time	<10 s
Initialization 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]	0.5 mm	0.5 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%/-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
Random Vibe	MIL-STD-810G (7.7g)

Vibration (operating)

Random	MIL-STD-810G (7.7g)
Sinusoidal	SAE J12117 (4g)

Bump	IEC60068-2-27 (10g)
Shock	MIL-STD-810G (40g)
Immersion	IEC65029 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

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

- RT-2
- RT-20
- OmniSTAR® HP, XP, VBS, G2
- ALIGN®
- GL1DE®
- RAIM
- NTRIP v1.0 and v2.0
- 100 Hz output rate[9]

Version 3 -Specifications subject to change without notice.

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For the most recent details of this product:
novatel.com/assets/Documents/Papers/FlexPak6.pdf

[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] Includes E5a, E5b and Alt-BOC.
[4] The Compass signal is not finalized and changes in the signal structure may still occur. Designed for Compass Phase 3 compatibility.
[5] GPS only.
[6] Expected accuracy after static convergence.
[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 514 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.