RUGGED ENCLOSURE PROVIDES SAASM RTK FOR SIMPLIFIED INTEGRATION AND QUICKER TIME TO MARKET

DEFENSE AND CIVIL—COMBINING THE BEST OF BOTH WORLDS
System integrators have come to rely on the centimetre-level position accuracy available in Real Time Kinematic (RTK) commercial GPS receivers. Authorized defense customers need access to the Precise Positioning Service (PPS). The FlexPak-S contains the OEM625S™ card with commercial dual-frequency NovAtel receiver and an L-3 XFACTOR Selective Availability Anti Spoofing Module (SAASM).

When keyed, the FlexPak-S provides an RTK PPS solution by taking the raw measurements from an L-3 XFACTOR SAASM and applying them to NovAtel’s industry leading RTK algorithm. In the Standard Positioning Service (SPS) fallback mode, the FlexPak-S continues to provide centimetre-level accuracy by utilizing NovAtel’s dual frequency civil GNSS positioning engine.

OPTIONAL GPS+GLONASS TRACKING FOR GREATER PERFORMANCE
The SPS fallback mode of the FlexPak-S is configurable for GPS or GPS+GLONASS. Adding GLONASS tracking increases available position in obstructed sky conditions, making it ideal for unmanned ground vehicle applications.

RELIABLE AND RUGGED IN A COMPACT SIZE
Reliability is safeguarded as a result of the rugged and water resistant IP67 FlexPak-S housing combined with its wide operating temperature range. The FlexPak-S is a compact, lightweight enclosure that fits into most applications where small size is critical.

EASY SYSTEM INTEGRATION AND INSTALLATION
NovAtel has assured faster time to market by reducing integration time with standardized software and hardware connections. FlexPak-S provides numerous interfaces including multiple RS-232/RS-422 serial ports. NovAtel’s comprehensive set of software commands facilitates simple integration. SAASM security functions are provided over a dedicated interface, while the SAASM RTK position is provided through NovAtel’s software command protocol. FlexPak-S uses the same form factor as the popular FlexPak6™ design.

PRECISE THINKING MAKES IT POSSIBLE
NovAtel designs, manufactures and sells high precision OEM Global Navigation Satellite System (GNSS) positioning technology. 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. For unsurpassed quality, product selection and engineering know-how, choose NovAtel.
PERFORMANCE

Channel Configuration
120 SPS Channels
24 PPS Channels

Signal Tracking (SPS)
- GPS L1 (C/A), L2 (semi-codeless), L2C
- GLONASS L1, L2
- SBAS

Signal Tracking (PPS)
- GPS L1 (Y), L2 (Y)

Horizontal Position Accuracy (RMS)
- Single point L1 PPS 1.5 m
- Single point L1/L2 PPS 1.2 m
- NovAtel CORRECT™ SBAS 0.6 m
- DGPS 0.4 m
- RTK 1 cm + 1 ppm

Initialization time <10 s
Initialization reliability >99.9%

Measurement Precision (RMS)
- Fully independent code and carrier measurements:
  - GPS L1 C/A code 4 cm
  - GPS L1 carrier phase 0.5 mm
  - GPS L2 P code 8 cm
  - GPS L2 carrier phase 1.0 mm
  - GPS L2 C/A code 8 cm
  - GPS L2 carrier phase 1.0 mm
- Maximum Data Rate
  - Measurements up to 20 Hz
  - Position up to 20 Hz
- Time to First Fix
  - Cold start 5 s
  - Hot start 35 s
- Signal Reacquisition
  - L1 <0.5 s (typical)
  - L2 <1.0 s (typical)
- Time Accuracy
  - 20 ns RMS
- Velocity Accuracy
  - 0.03 m/s RMS

PHYSICAL AND ELECTRICAL

Dimensions 147 x 113 x 45 mm
Weight <400 g

Power
- Input voltage +9 to 36 VDC

Power Consumption
- GPS Civil 3.8 W
- GPS Civil+GLONASS 4.0 W
- GPS Civil+GLONASS+SAASM 4.9 W

Antenna LNA Power Output
- Output voltage 5 VDC ±5%
- Maximum current 100 mA

Connectors
- Antenna Input TNC
- Power 4-pin LEMO
- COM1 DB9M
- COM2 DB9M
- I/O Event DB9F
- SAASM DB15M

COMMUNICATION PORTS
- 1 RS-232 up to 921,600 bps
- 1 RS-232 or RS-422 up to 921,600 bps
- I/O Port (PPS, Event1, PV, VARF) for key loading

USER INTERFACE/LEDS
- Antenna LED
- COM1 LED
- COM2 LED
- Power LED

ENVIRONMENTAL

Temperature
- Operating -40°C to +65°C
- Storage -50°C to +85°C

Humidity 95% non-condensing

Water Resistant MIL-STD-810G 512.5 (Proc1) (30 Inch Submersion)

Dust MIL-STD-810G 510.5 (Proc1)

Vibration (Operating)
- Random MIL-STD-810G 514.6 (7.7 g)
- Sinusoidal SAE J12117 (4 g)
- Bump IEC 60068-2-27 (25 g)
- Shock MIL-STD-810G 516.6 (40 g)

Compliance FCC

FEATURES

- Field upgradeable software
- Over the air rekeying
- PAC multipath mitigating technology for SPS signals
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, RTCA and NovAtelX
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- External 10 MHz oscillator input (optional)
- 1 Pulse Per Second (PPS) output

FIRMWARE OPTIONS

- GLONASS
- RTK
- ALIGN relative positioning with heading
- SPAN GNSS+INS integration

INCLUDED ACCESSORIES

- 12 VDC power adapter (CLA) with slow blow fuse
- Null modem serial cable

ADDITIONAL ACCESSORIES

- GPS-710 series antennas
- ANT series antennas
- GAJT anti-jam antennas
- Multi I/O cable
- DS-101 key loading cable
- RF cables – 5, 10 and 30 m lengths

For more information about NovAtel’s FlexPak-S receiver contact defense@novatel.com

novatel.com
sales@novatel.com
1-800-NOVATEL (U.S. and Canada)
or 403-295-4900
Europe 44-1993-848-736
SE Asia and Australia 61-400-883-601

Version 3 Specifications subject to change without notice.
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