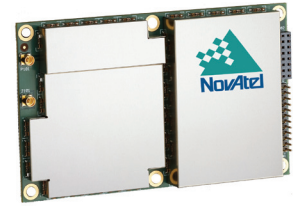


PRECISE POSITIONING FOR SAASM APPLICATIONS



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). When keyed, the OEM625S provides an RTK PPS solution by taking the raw measurements from an L-3 XFACTOR Selective Availability Anti Spoofing Module (SAASM) and applying them to NovAtel's industry leading RTK algorithm. In the Standard Positioning Service (SPS) fallback mode, the OEM625S continues to provide centimetre-level accuracy by utilizing NovAtel's dual-frequency civil GNSS positioning engine.

EASY SYSTEM INTEGRATION IN A COMPACT SIZE

Quality and easy integration are essential to the design and build of the OEM625S receiver. Maintaining NovAtel's standard OEMV-2 form factor ensures drop-in replacement and backward compatibility for our existing customers. NovAtel's comprehensive set of software commands facilitates system integration. SAASM security functions are provided over a dedicated interface, while the SAASM RTK position is provided through NovAtel's software command protocol.

OPTIONAL GPS+GLONASS TRACKING FOR GREATER PERFORMANCE

The SPS fallback mode of the OEM625S is configurable for GPS or GPS+GLONASS. Adding GLONASS tracking increases available position in obstructed sky conditions, such as unmanned ground vehicle applications.

DESIGNED FOR FLEXIBILITY

Modular firmware provides the flexibility to configure the OEM625S to unique application needs. Scalable sub-metre to centimetre-level positioning enables diverse applications such as single point positioning, differential and RTK base stations, and differential and RTK rovers. For precise timing applications the OEM625S can be locked to an external 10 MHz frequency standard.

BENEFITS

- + Small form factor combination of robust SAASM GPS positioning with industry leading precision from NovAtel
- + Designed for rapid integration
- + Security approved for operational use by U.S. and Allied Forces

FEATURES

- + 20 Hz SAASM RTK when keyed
- + 20 Hz civil RTK fallback mode
- + ALIGN® relative position and heading
- + SPAN® INS functionality
- + PPS and SPS raw data output

For more information about NovAtel's OEM625S receiver contact defense@novatel.com

OEM625S™

PERFORMANCE¹

Channel Configuration

120 SPS Channels²

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

SBAS³ 0.6 m

DGPS 0.4 m

NovAtel CORRECT™

» 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 code ⁴	8 cm	8 cm
L2 carrier phase ⁴	1.0 mm	1.0 mm
L2 Y code	–	–
L2C code ⁵	8 cm	8 cm
L2C carrier phase ⁵	1.0 mm	1.0 mm

Maximum Data Rate⁶

Measurements up to 20 Hz

Position up to 20 Hz

Time to First Fix

Cold start⁷ <50 s

Hot start⁸ <35 s

Signal Reacquisition

L1 <0.5 s (typical)

L2 <1.0 s (typical)

Time Accuracy⁹ 20 ns RMS

Velocity Accuracy 0.03 m/s RMS

PHYSICAL AND ELECTRICAL

Dimensions 60 × 100 × 15.1 mm

Weight 56 g

Power

Input voltage +3.3 VDC ±5%

Power Consumption

GPS Civil 1.0 W

GPS Civil+GLONASS 1.2 W

GPS Civil+GLONASS+SAASM 2.2 W

Antenna LNA Power Output

Output voltage 5 VDC ±5%

Maximum current 100 mA

Connectors

Main 24-pin dual row male header

Aux 16-pin dual row female header

Antenna input MMCX female

External oscillator input MMCX female

COMMUNICATION PORTS

1 RS-232 up to 921,600 bps

2 LVTTL up to 921,600 bps

1 USB port 12 Mbps

1 RS-232 dedicated to SAASM

1 DS-101 for key loading

ENVIRONMENTAL

Temperature

Operating -40°C to +85°C

Storage -40°C to +85°C

Humidity 95% non-condensing

Vibration

Random MIL-STD 810G

(Cat 24, 7.7 g RMS)

Sinusoidal IEC 60068-2-6

Bump ISO 9022-31-06 (25 g)

Shock MIL-STD-810G (40 g)

Survival (1000 g)

FEATURES

- 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
- Outputs to drive external LEDs
- External 10 MHz oscillator input
- Event input
- 1 Pulse Per Second (PPS) output

FIRMWARE OPTIONS

- GLONASS
- RT-2®
- ALIGN relative positioning with heading
- SPAN GNSS+INS integration

ACCESSORIES

- GPS-700 series antennas
- ANT series antennas
- GAJT anti-jam antennas
- RF cables—5, 10 and 30 m lengths

For more information about NovAtel's OEM625S 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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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. GPS only (civil).

4. L2 P for GLONASS.

5. L2 C/A for GLONASS.

6. 20 Hz while tracking up to 20 satellites.

7. Typical value. No almanac or ephemerides and no approximate position or time.

8. Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

9. Time accuracy does not include biases due to RF or antenna delay.

