

## Industry Leading Civil RTK and SAASM on a Single Receiver Card

### Benefits

Small form factor combination of robust SAASM GPS positioning with industry leading precision from NovAtel

Designed for rapid integration

### Features

Proven NovAtel RTK with civil signals

SAASM position output through NovAtel interface protocol

### Defense and Civil - Combining the best of both worlds

System integrators have come to rely on the centimeter level positioning accuracy available in Real Time Kinematic (RTK) commercial GPS receivers. Authorized defense customers also need access to the Precise Positioning Service (PPS) for single point positioning. The OEM625S combines a commercial dual-frequency NovAtel receiver with an L-3 XFACTOR Selective Availability Anti Spoofing Module (SAASM) in a single card solution, reducing overall size and power requirements for end customer applications.

### Easy System Integration in a Compact Size

Like all NovAtel products, the OEM625S is designed and built with a focus on product quality and ease of integration. It maintains our industry-setting V2 form factor ensuring a successful drop-in replacement and backward compatibility for existing customers. NovAtel's well-established, comprehensive set of software commands facilitates system integration. The SAASM position is provided via a dedicated communication port, as well as through NovAtel's software command protocol, allowing for maximum flexibility.

### Optional GPS+GLONASS Tracking for Greater Performance

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

For more information about OEM625S  
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**Civil only Performance**

**Channel Configuration**

120 Channels<sup>2</sup>  
 Signal Tracking  
 GPS: L1, L2, L2C  
 GLONASS: L1, L2  
 SBAS

**Horizontal Position Accuracy (RMS)**

Single point L1	1.5 m
Single point L1/L2	1.2 m
SBAS <sup>5</sup>	0.6 m
DGPS	0.4 m
RT-20 <sup>®6</sup>	0.2 m
RT-2 <sup>™</sup>	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 <sup>6</sup>	8 cm	8 cm
L2 carrier phase <sup>6</sup>	1.0 mm	1.0 mm
L2C code <sup>7</sup>	8 cm	8 cm
L2C carrier phase <sup>7</sup>	0.5 mm	0.5 mm

**Maximum Data Rate<sup>8</sup>**

Measurements	up to 50 Hz
Position	up to 50 Hz

**Time to First Fix**

Cold start <sup>9</sup>	<50 s
Hot start <sup>10</sup>	<35 s

**Signal Reacquisition**

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

**Time Accuracy<sup>11</sup>** 20 ns RMS

**Velocity Accuracy** 0.03 m/s RMS

**Physical and Electrical**

**Dimensions** 60 x 100 x 9.1 mm

**Weight** 56 g

**Power**

Input voltage +3.3 VDC [+5%/-5%]  
 Power consumption  
 GPS Civil 1.0 W  
 GPS Civil + GLONASS 1.1 W  
 GPS Civil + GLONASS +SAASM 2.7 W

**Antenna LNA Power Output**

Output Voltage 5 VDC [+5%/-5%]  
 Maximum current 100 mA

**Connectors**

Main 24-pin dual row male header  
 Aux 16-pin dual row male header  
 Antenna input MMCX female  
 External oscillator input MMCX female

**Communication Ports**

1 RS-232 300 to 921,600 bps  
 1 LVTTTL 300 to 921,600 bps  
 1 USB port 12 Mbps  
 1 RS-232 dedicated to SAASM  
 DS-101 for key loading

**Environmental**

**Temperature**

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

**Features**

- Field-upgradeable software
- 50 Hz measurement and 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
- Outputs to drive external LEDs
- External oscillator input

**Firmware Options**

- RT-2
- RT-20
- ALIGN<sup>®</sup>
- GL1DE<sup>®</sup>
- RAIM

**Additional Accessories**

- GPS-700 series antennas
- ANT series antennas
- RF cables-5, 10 and 30 m lengths

**PRELIMINARY**  
 ALL SPECIFICATIONS SUBJECT TO CHANGE



Preliminary OB - Specifications subject to change without notice.  
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<sup>1</sup> 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.  
<sup>2</sup> Tracks up to 60 L1/L2 satellites.  
<sup>3</sup> The Compass signal is not finalized and changes in the signal structure may still occur. Designed for Compass Phase 3 compatibility.  
<sup>4</sup> GPS only.  
<sup>5</sup> Expected accuracy after static convergence.  
<sup>6</sup> L2 P for GLONASS.  
<sup>7</sup> L2 C/A for GLONASS.  
<sup>8</sup> 50 Hz while tracking up to 20 satellites.  
<sup>9</sup> Typical value. No almanac or ephemerides and no approximate position or time.  
<sup>10</sup> Typical value. Almanac and recent ephemerides saved and approximate position and time entered.  
<sup>11</sup> Time accuracy does not include biases due to RF or antenna delay.

