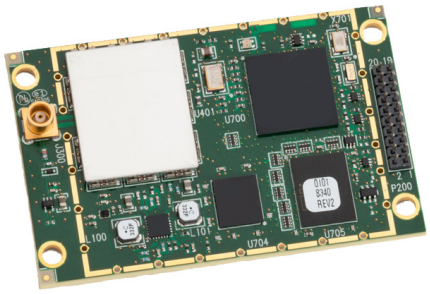
OEMStar™



Low Cost, L1 GPS+GLONASS Receiver Enhances Satellite Availability and Positioning

Benefits

Increased satellite availability with GLONASS tracking

Easy to integrate

Form-factor consistent with NovAtel OEMV-1 receivers[1]

NovAtel OEMV®-style command interface

Features

Small form factor

Very low power consumption

GL1DE® firmware option

API firmware option

Receiver Autonomous Integrity Monitoring (RAIM) firmware option

Designed for Integration

The OEMStar receiver has the same form factor as NovAtel's OEMV-1 series receivers and uses the OEMV-style command interface. This allows you to easily integrate the OEMStar into existing OEMV-1 series systems[1]. The OEMStar uses Space Based Augmentation System (SBAS) corrections from services such as the Wide Area Augmentation System (WAAS) and European Geostationary Navigation Overlay Service (EGNOS).

Multi-Constellation Performance

The OEMStar features up to 14 channels of L1 GPS only, GLONASS only or combined GPS and GLONASS code and carrier phase tracking for increased positioning availability. The position, velocity and time information is available at up to 10 Hz, with a 1 PPS accuracy of 20 ns for GPS and 40 ns for GLONASS. The multi-constellation timing feature lets a user select a primary and secondary constellation for the timing source.

Code and Carrier Phase

The OEMStar features up to 14 channels of combined L1 GPS and GLONASS code and carrier phase tracking for increased positioning accuracy and availability. The position, velocity and time information is available at up to 10 Hz, with a 1 PPS accuracy of 20 ns or GPS and 40 ns for GLONASS.

Small Form Factor with Low Power Consumption

The OEMStar measures only 46 by 71 mm, accepts an input voltage between 3.1 and 5.25 VDC and consumes less than 500 mW. This makes the OEMStar an attractive choice for use in handheld and battery powered applications.

Customizing with API

Application Programming Interface (API) functionality is available on the OEMStar. Using a recommended compiler with the API library, an application can be developed in a standard C/C++ environment to run directly from the receiver platform; eliminating system hardware, reducing development time and resulting in faster time to market.

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

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OEMStar

Performance[1]

Channel Configuration
14 GPS L1
12 GPS L1 + 2 SBAS
10 GPS L1 + 4 GLO L1
8 GPS L1 + 6 GLO L1
8 GPS L1 + 4 GLO L1 + 2 SBAS
10 GPS L1 + 2 GLO L1 + 2 SBAS
7 GPS L1 + 7 GLO L1
14 GLO L1

Horizontal Position Accuracy (RMS)

Single point L1	1.5 m
SBAS[2]	0.7 m
DGPS	0.5 m

Measurement Precision (RMS)

	GPS	GLO
L1 C/A code	5 cm	35 cm
L1 Carrier phase	0.6 mm	1.5 mm

Data Rate

Measurements	up to 10 Hz
Position	up to 10 Hz

Time to First Fix

Cold start[3]	65 s
Hot start[4]	35 s

Signal Reacquisition

L1	< 1.0 s (typical)

Time Accuracy

GPS[2,5]	20 ns RMS
GLONASS[5,6]	40 ns RMS

Velocity Accuracy < 0.05 m/s RMS

Velocity[7] < 515 m/s

Physical and Electrical[8]

Dimensions 46 x 71 x 13 mm

Weight 18 g

Power

Input voltage	+3.1 to +5.25 VDC
Power consumption[9]	0.360 W

Antenna LNA Power Output

Output voltage	5 V nominal
Maximum current	100 mA

Connectors

Main	20-pin dual row male header
Antenna input	MCX female

Communication Ports

2 LV-TTL	300 to 230,400 bps
1 USB 2.0	

Environmental

Temperature

Operating	-40°C to +85°C
Storage	-45°C to +90°C

Humidity 95% non-condensing

Vibration

Random vibe	MIL-STD 810G
Sine vibe	IEC 60068-2-6 (5 g)
Shock	MIL-STD 810G

Features

- Auxiliary strobe signals, including a configurable PPS output for time synchronization and a mark input
- Outputs to drive external LEDs
- Common, field-upgradeable software

Optional Accessories

- GPS-700 series antennas
- ANT series antennas
- RF cables–5, 10 and 30 m lengths
- Right angle RF connector
- Available in the FlexPak-G2™ enclosure

Firmware Options

- GL1DE
- API
- RAIM

Version 3 -Specifications subject to change without notice.

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For the most recent details of this product:
novatel.com/Documents/Papers/OEMStar.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] GPS only. Clock aligned to GPS system time.
[3] Typical value. No almanac or ephemerides and no approximate position or time.
[4] Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
[5] Time accuracy does not include biases due to RF or antenna delay.
[6] GLONASS only. Clock aligned to GLONASS system time.
[7] Export licensing restricts operation to a maximum of 515 metres per second.
[8] Physical size, mounting holes and connector location is identical to OEMV-1/1G receivers. Some of the 20-pin connector signal assignments have been modified.
[9] Typical values for 14 channel GPS only operation. Power consumption will vary depending upon features selected.

RoHS COMPLIANT
ISO 9001:2000 FM 92323