OEMV-1G

Compact, Single Frequency GPS+GLONASS Receiver Enhances Satellite Availability and Positioning

Benefits

Proven OEMV® technology

Increased satellite availability with GLONASS tracking

Easy to integrate

Application Programming Interface (API) reduces harware requirements and system complexity

Features

Small form factor

Low power consumption

RT-2 L1TE, RT-20™, ALIGN™, and GL1DE™ firmware options

Multi-Constellation Performance

The OEMV-1G offers GPS+GLONASS positions and measurements in combination with GPS data to provide more satellites for positioning in challenging environments. With NovAtel's optional RT-2® L1TE technology, users can expect centimetre-level real-time position accuracy for baseline lengths of up to three kilometres.

Easy System Integration

The OEMV-1G is designed to deliver precision positioning performance in a compact form factor. At just 46 millimetres by 71 millimetres, and with power consumption of only 1.0W, the OEMV-1G is one of the most competitive precision L1 GPS receivers in the market today. Like NovAtel's OEMV-2 and OEMV-3 GNSS receivers, it is configurable as either a GPS-only or GPS+GLONASS platform.

Customization With The API

The Application Programming Interface (API) functionality is available on the OEMV-1G. 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/receivers.htm

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OEMV-1G

Performance[1]

Channel Configuration
14 GPS L1
12 GLO L1
2 SBAS

Horizontal Position Accuracy (RMS)

Single Point L1	1.5 m
SBAS[2]	0.6 m
DGPS	0.4 m
RT-20[3]	0.2 m
RT-2 L1TE[4]	2 cm+1 ppm

Measurement Precision (RMS)

	GPS	GLO
L1 C/A Code	4 cm	15 cm
L1 Carrier Phase	0.5 mm	1.5 mm

Data Rate

Measurements	20 Hz
Position	20 Hz

Time to First Fix

Cold Start[5]	60 s
Hot Start[6]	35 s

Signal Reacquisition

L1	0.5 s (typical)

Time Accuracy[7]	**20 ns RMS**
Velocity Accuracy	**0.03 m/s RMS**
Velocity[8]	**515 m/s**

Physical and Electrical

Dimensions	**46 x 71 x 13 mm**
Weight	**21.5 g**

Power

Input Voltage	+3.3 +5%/-3% VDC
Power Consumption	1.0 W (GPS only)
	1.2 W (GPS+GLONASS)

Antenna LNA Power Output

Output Voltage	5V nominal
Maximum Current	100 mA

Communication Ports

- 1 LV-TTL serial port capable of 300 to 921,600 bps
- 2 LV-TTL serial port capable of 300 to 230,400 bps
- 2 CAN Bus[9] serial port capable of 1 Mbps
- 1 USB port capable of 5 Mbps

Input/Output Connectors

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

Environmental

Temperature	
Operating	-40°C to +85°C
Storage	-40°C to +85°C
Humidity	95% non-condensing
Random Vibe	RTCA D0-160D (4 g)
Sine Vibe	SAEJ1211 (4 g)
Shock	MIL-STD 810F

Options and Accessories

- GPS-700 series antennas
- ANT-500 series antennas
- RF Cables—5, 10 and 30 m lengths
- Right angle RF connector
- 50 Hz output rate
- 20g random vibe variant

Additional Firmware Features

- RT-20
- ALIGN
- GL1DE
- RT-2 L1TE

Additional Features

- Common, field-upgradeable software for all OEMV family receivers with OEM4 compatible commands and logs
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs
- Outputs to drive external LEDs

Version 1 -Specifications subject to change without notice

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For the most recent details of this product:
novatel.com/Documents/Papers/OEMV-1G.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.
[3] Expected accuracy after static convergence.
[4] Expected accuracy after convergence; maximum baseline of 3 km.
[5] Typical value. No almanac or ephemerides and no approximate position or time.
[6] Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
[7] Time accuracy does not include biases due to RF or antenna delay.
[8] Export licensing restricts operation to a maximum of 515 metres per second.
[9] External CAN transceiver and user application software required.