OEMV-1

Compact, Single Frequency GPS Receiver Delivers L-band Positioning On Board

Benefits

Proven OEMV® Technology

Lower cost receiver card

Easy to integrate

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

Features

Small form factor

Low power consumption

Integrated L-band supports OmniSTAR VBS and CDGPS correction services

RT-20 and GL1DE firmware options

High Performance

The OEMV-1 delivers L1 GPS precision measurements and positions, and features NovAtel's exclusive GL1DE™ technology. GL1DE provides decimetre-level pass-to-pass accuracy, making it ideal for agricultural applications. With NovAtel's optional RT-20™ technology, the OEMV-1 delivers 20 centimetre real-time positioning accuracy.

Integrated L-band

With integrated L-band capability, the OEMV-1 eliminates the need for additional hardware, reducing the size, cost and complexity of the end-user system. Users can access OmniSTAR VBS or CDGPS correction services for sub-metre real-time positioning accuracy.

Easy System Integration

The OEMV-1 provides 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-1 is one of the most competitive precision L1 GPS receivers in the market today.

Customization With The API

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

Performance[1]

Channel Configuration
14 GPS L1
1 L-band
2 SBAS

Horizontal Position Accuracy (RMS)

Single Point L1	1.5 m
SBAS[2]	0.6 m
CDGPS[2]	0.6 m
DGPS	0.4 m
OmniSTAR VBS[2]	0.6 m
RT-20[3]	0.2 m

Measurement Precision (RMS)

L1 C/A Code	4 cm
L1 Carrier Phase	0.5 mm

Data Rate

Measurements	20 Hz
Position	20 Hz

Time to First Fix

Cold Start[4]	60 s
Hot Start[5]	35 s

Signal Reacquisition

L1	0.5 s (typical)

Time Accuracy[6] **20 ns RMS**

Velocity Accuracy **0.03 m/s RMS**

Velocity[7] **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 (typical)

Antenna LNA Power Output

Output Voltage	5 V 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[8] 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

Additional Firmware Features

- RT-20
- GL1DE
- OmniSTAR VBS

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 4 -Specifications subject to change without notice

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