



## Compact, Dual Frequency GNSS Receiver Delivers Robust RTK Functionality

### Benefits

Proven OEMV® technology

Lowest power consumption in the market for a dual frequency receiver

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

Easy to integrate

### Features

L1, L2 and L2C signal tracking

Increased satellite availability with GLONASS tracking

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

### Designed for Efficiency

The OEMV-2 sports low power consumption and a small form factor for ease and efficiency in integration. The modular nature of OEMV-2 firmware allows the user the flexibility to configure the receiver from a basic GPS L1-only to a dual frequency receiver with RTK functionality.

### Greater Performance with GNSS Functionality

The OEMV-2 is configurable with GPS or GPS+GLONASS real-time capabilities. The GPS+GLONASS option increases available positions in obstructed sky conditions and allows users to work more often.

### Enhanced, Flexible Firmware Features

With L2C tracking capabilities, the OEMV-2 is ideal for low signal strength applications, providing stronger signal tracking and better cross correlation protection. The OEMV-2 provides decimetre-level pass-to-pass accuracy with NovAtel's GL1DE® technology. NovAtel's optional AdVance® RTK technology is available for centimetre-level real-time position accuracy. ALIGN® technology is available for heading and position outputs.

### Customization With The API

The Application Programming Interface (API) functionality is available on the OEMV-2. 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](http://novatel.com/products/receivers.htm)



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## Performance<sup>1</sup>

### Channel Configuration

14 GPS L1, 14 GPS L2  
12 GLONASS L1, 12 GLONASS L2  
2 SBAS

### Horizontal Position Accuracy (RMS)

Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS <sup>2</sup>	0.6 m
DGPS	0.4 m
RT-20 <sup>3</sup>	0.2 m
RT-2	1 cm+1 ppm

### Measurement Precision (RMS)

	GPS	GL0
L1 C/A Code	4 cm	15 cm
L1 Carrier Phase	0.5 mm	1.5 mm
L2 P(Y) Code	8 cm	8 cm
L2 Carrier Phase	1 mm	1.5 mm

### Data Rate

Measurements	20 Hz
Position	20 Hz

### Time to First Fix

Cold Start <sup>4</sup>	60 s
Hot Start <sup>5</sup>	35 s

### Signal Reacquisition

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

**Time Accuracy<sup>6</sup> 20 ns RMS**

**Velocity Accuracy 0.03 m/s RMS**

**Velocity<sup>7</sup> 515 m/s**

## Physical and Electrical

**Dimensions 60 x 100 x 13 mm**

**Weight 56 g**

### Power

Input Voltage +3.3 to +5.0 +/-3% VDC  
Power Consumption 1.2 W (GPS only)  
1.6 W (GPS & GLONASS)

### Antenna LNA Power Output

Output Voltage +5.1 VDC  
Maximum Current 100 mA

### Communication Ports

- 1 RS-232 capable of 300 to 921,600 bps
- 2 LV-TTL serial port capable of 300 to 230,400 bps
- 1 CAN Bus<sup>8</sup> serial port capable of 1 Mbps
- 1 USB port capable of 5 Mbps

### Input/Output Connectors

Main 24-pin dual row male header  
Antenna Input MMCX female  
External Oscillator Input MMCX female

### Environmental

Temperature  
Operating -40°C to +85°C  
Storage -45°C to +95°C  
Humidity 95% non-condensing

Random Vibe MIL-STD 810F (7.7 g RMS)  
Sine Vibe SAEJ1211 (4 g)  
Bump/Shock IEC 68-2-27 (30 g)

## Options and Accessories

- GPS-700 series antennas
- ANT series antennas
- RF Cables—5, 10 and 30 m lengths
- 50 Hz output rate<sup>9</sup>
- Right angle RF connector

## Additional Firmware Features

- RT-20
- RT-2
- ALIGN
- GL1DE
- Pseudo Range/Delta-Phase (PDP) Positioning

## Additional Features

- Common, field-upgradeable software for all OEMV family receivers
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs
- Outputs to drive external LEDs
- External oscillator input



Version 4a -Specifications subject to change without notice  
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OEMV-2 May 2010  
For the most recent details of this product:  
[novatel.com/Documents/Papers/OEMV-2.pdf](http://novatel.com/Documents/Papers/OEMV-2.pdf)

<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> GPS only.  
<sup>3</sup> Expected accuracy after static convergence.  
<sup>4</sup> Typical value. No almanac or ephemerides and no approximate position or time.  
<sup>5</sup> Typical value. Almanac and recent ephemerides saved and approximate position and time entered.  
<sup>6</sup> Time accuracy does not include biases due to RF or antenna delay.  
<sup>7</sup> Export licensing restricts operation to a maximum of 515 metres per second.  
<sup>8</sup> External CAN transceiver and user application software required. Replaces one LV-TTL serial port.  
<sup>9</sup> GLONASS is not supported at 50Hz.

