



## Multi-Frequency GNSS Receiver Provides Expandable Functionality Without Compromising Performance

### Benefits

Proven OEMV® technology

Integrated L-band supports  
OmniSTAR® correction services

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

### Features

High random vibration  
performance for demanding  
applications

L1, L2, L2C and L5 signal tracking

Increased satellite availability  
with GLONASS tracking

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

### Designed with the Future in Mind

The OEMV-3 is designed to track the GPS L1, L2, L2C, and L5 signals, as well as GLONASS L1 and L2. With integrated L-band onboard and multi-frequency tracking loadable through firmware upgrades, the OEMV-3 receiver eliminates the need for future hardware changes.

### Enhanced, Flexible Firmware Features

The OEMV-3 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.

### Superior Hardware Design

L-band capability is onboard the OEMV-3, eliminating the need for additional hardware. OEMV-3 hardware is designed to be flexible for a wide range of applications. It supports a higher input voltage range, and its high-vibe TCXO design allows for better shock and acceleration performance.

### Customization with an API

Application Programming Interface (API) functionality is available on the OEMV-3. 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](http://novatel.com/products/gnss-receivers/oem-receiver-boards)



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## Performance<sup>1</sup>

### Channel Configuration

72 Channels  
Signal Tracking  
14 GPS L1, 14 GPS L2, 6 GPS L5  
12 GLONASS L1, 12 GLONASS L2  
2 SBAS  
1 L-band

### 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
OmniSTAR <sup>2</sup>	
VBS	0.6 m
XP	0.15 m
HP	0.1 m
RT-20 <sup>3</sup>	0.2 m
RT-2	1 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
L2 P(Y) Code	8 cm	8 cm
L2 Carrier Phase	1.0 mm	1.5 mm

### Data Rate<sup>4</sup>

Measurements	up to 50 Hz
Position	up to 50 Hz

### Time to First Fix

Cold Start <sup>5</sup>	60 s
Hot Start <sup>6</sup>	35 s

### Signal Reacquisition

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

**Time Accuracy<sup>7</sup>** 20 ns RMS

**Velocity Accuracy** 0.03 m/s RMS

**Velocity<sup>8</sup>** 515 m/s

## Physical and Electrical

**Dimensions** 85 x 125 x 13 mm

**Weight** 75 g

### Power

Input Voltage +4.5 to +18.0 VDC  
Power Consumption<sup>2</sup> 2.1 W

### Antenna LNA Power Output

Output Voltage 5 V nominal  
Maximum Current 100 mA

### Connectors

Main 40-pin dual row male header  
Antenna Input MMCX female  
External Oscillator Input MMCX female  
CAN 14-pin dual row male header

## Communication Ports

1 RS-232 or RS-422	300 to 921,600 bps
1 RS-232 or LV-TTL	300 to 921,600 bps
1 LVTTTL	300 to 230,400 bps
2 CAN Bus <sup>9</sup>	1 Mbps
1 USB	5 Mbps

## Environmental

### Temperature

Operating	-40°C to +85°C
Storage	-45°C to +95°C

**Humidity 95% non-condensing**

### Vibration

Random Vibe MIL-STD 810F (7.7 g RMS)<sup>10</sup>  
MIL-STD 810F tailored (19.4 g RMS)<sup>11</sup>  
Sine Vibe SAEJ1211 (4 g)

**Bump/Shock IEC 68-2-27 (30 g)**

## 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

## Optional Accessories

- ProPak-V3
- DL-V3
- GPS-700 series antennas
- ANT series antennas
- RF Cables—5, 10 and 30 m lengths
- 20g random vibrate variant<sup>11</sup>

## Firmware Options

- RT-20
- ALIGN
- GL1DE
- RT-2
- OmniSTAR HP, XP, VBS, G2
- L5 signal tracking
- Pseudo Range/Delta-Phase (PDP) Positioning



Version 5 - Specifications subject to change without notice

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For the most recent details of this product:

[novatel.com/assets/Documents/Papers/OEMV-3.pdf](http://novatel.com/assets/Documents/Papers/OEMV-3.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> OmniSTAR and GLONASS not supported at 50 Hz.

<sup>5</sup> Typical value. No almanac or ephemerides and no approximate position or time.

<sup>6</sup> Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

<sup>7</sup> Time accuracy does not include biases due to RF or antenna delay.

<sup>8</sup> Export licensing restricts operation to a maximum of 514 metres per second.

<sup>9</sup> User application software required.

<sup>10</sup> Minimum integrity test.

<sup>11</sup> Only available with high vibrate hardware variant.

