Receivers

OEMV-2™

Compact, Dual Frequency GNSS Receiver Delivers Robust RTK Functionality

Benefits
proved 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/gnss-receivers/oem-receiver-boards
### Performance

#### Channel Configuration
- 72 Channels
- 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\(^2\): 0.6 m
- DGPS: 0.4 m
- RT-2\(^3\): 0.2 m
- RT-2: 1 cm +1 ppm

#### Measurement Precision (RMS)
- L1 C/A Code: 4 cm
- L1 Carrier Phase: 0.5 mm
- L2 P(Y) Code: 8 cm
- L2 Carrier Phase: 1 mm

#### Data Rate\(^4\)
- Measurements: up to 50 Hz
- Position: up to 50 Hz

#### Time to First Fix
- Cold Start\(^5\): 60 s
- Hot Start\(^6\): 35 s

#### Signal Reacquisition
- L1: 0.5 s (typical)
- L2: 1.0 s (typical)

#### Time Accuracy\(^7\)
- 20 ns RMS

#### Velocity Accuracy
- 0.03 m/s RMS

#### Velocity\(^8\)
- 515 m/s

### Physical and Electrical

#### Dimensions
- 60 x 100 x 13 mm

#### Weight
- 56 g

#### Power
- Input Voltage: +3.3 VDC [+5%/-3%]
- Power Consumption\(^2\): 1.2 W

#### Antenna LNA Power Output
- Output Voltage: 5.1 VDC
- Maximum Current: 100 mA

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

#### Communication Ports
- 1 RS-232: 300 to 921,600 bps
- 2 LV-TTL: 300 to 230,400 bps
- 1 CAN Bus\(^9\): 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)
- 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
- GPS-700 series antennas
- ANT series antennas
- RF Cables–5, 10 and 30 m lengths
- Right angle RF connector

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

---

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 GLONASS is not supported at 50Hz.
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 514 metres per second.
9 External CAN transceiver and user application software required. Replaces one LV-TTL serial port.