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 hardware 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. A high-vibration variant of the OEMV-1G card is available to customers with a more environmentally rugged application.

**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
### Performance

#### Channel Configuration
- 14 GPS L1
- 12 GLONASS L1
- 2 SBAS

#### Horizontal Position Accuracy (RMS)
- Single Point L1: 1.5 m
- SBAS: 0.6 m
- DGPS: 0.4 m
- RT-2: 0.2 m
- RT-2 L1TE: 2 cm + 1 ppm

#### Measurement Precision (RMS)
- GPS: 4 cm
- GLONASS: 15 cm
- L1 Carrier Phase: 0.5 mm
- L2: 1.5 mm

#### Data Rate
- Measurements: 20 Hz
- Position: 20 Hz

#### Time to First Fix
- Cold Start: 60 s
- Hot Start: 35 s

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

#### Time Accuracy
- 20 ns RMS

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

### Physical and Electrical

#### Dimensions
- 46 x 71 x 13 mm

#### Weight
- 21.5 g

#### Power
- Input Voltage: +3.3 to +5.0 +/-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 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
- Operating Temperature: -40°C to +85°C
- Storage Temperature: -40°C to +85°C
- Humidity: 95% non-condensing

#### Random Vibe
- Standard: RTCA D0-160D (4 g)
- High Vibe: MIL-STD 810 tailored (19.4 g RMS)
- Sine Vibe: SAEJ1211 (4 g)
- Shock: MIL-STD 810F

### Options and Accessories

- GPS-700 series antennas
- ANT 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
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs
- Outputs to drive external LEDs

---

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.
10. Only available with high vibe hardware variant.