COMPACT, DUAL-FREQUENCY
GNSS RECEIVER DELIVERS ROBUST
RTK FUNCTIONALITY

HIGH PRECISION GNSS, COMPACT SIZE
The dual-frequency OEM615 offers future ready, precise positioning for space
constrained applications. Backward compatible with NovAtel’s popular OEMV-1
form factor, the OEM615 provides the most efficient way to bring powerful Global
Navigation Satellite System (GNSS) capable products to market quickly.

DESIGNED WITH PERFORMANCE AND THE FUTURE IN MIND
The OEM615 tracks all current GNSS constellations including GPS, GLONASS, Galileo,
BeiDou and QZSS. It features configurable channels to optimize satellite availability
in any condition, no matter how challenging. The OEM615 is software upgradable
to track future signals as they become available. Maximizing satellite availability
and optimizing GNSS signal usage now, and in the future, ensures consistent, high
performance GNSS positioning.

DESIGNED FOR FLEXIBILITY
The modular nature of NovAtel’s OEM6® firmware gives users the flexibility to
configure the OEM615 for their unique application needs. The OEM615 is scalable
to offer sub-metre to centimetre-level positioning, and is field upgradable to all
OEM6 family software options. Options include NovAtel CORRECT™ with RTK for
centimetre-level real-time positioning, ALIGN® for precise heading and relative
positioning, GLIDE™ for decimetre-level pass-to-pass accuracy, SPAN for continuous
3D position, velocity and attitude and RAIM for increased GNSS pseudorange
integrity.

CUSTOMIZATION WITH AN API
Application Programming Interface (API) functionality is available on the OEM615.
Using a recommended compiler with the API library, an application can be developed
in a standard C/C++ environment to run directly on the receiver platform, eliminating
system hardware, reducing development time and resulting in a faster time to market.

PROVEN NOVATEL TECHNOLOGY
EASY TO INTEGRATE
LOW POWER CONSUMPTION
API REDUCES HARDWARE REQUIREMENTS
AND SYSTEM COMPLEXITY

FEATURES
- Increased satellite availability with
  GLONASS tracking
- L1, L2, L2C, B1 and E1 signal
  tracking
- GLIDE smoothing algorithm
- RT-2®, ALIGN and RAIM firmware
  options
- SPAN® INS functionality

If you require more information about our receivers, visit www.novatel.com/products/
gnss-receivers/oem-receiver-boards/
## PERFORMANCE

<table>
<thead>
<tr>
<th>Channel Configuration</th>
<th>120 Channels[^2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Tracking</td>
<td>GPS L1, L2, L2C</td>
</tr>
<tr>
<td></td>
<td>GLONASS L1, L2</td>
</tr>
<tr>
<td></td>
<td>BeiDou B1</td>
</tr>
<tr>
<td></td>
<td>Galileo E1</td>
</tr>
<tr>
<td></td>
<td>SBAS</td>
</tr>
<tr>
<td></td>
<td>QZSS</td>
</tr>
</tbody>
</table>

### Horizontal Position Accuracy (RMS)

- Single Point L1: 1.5 m
- Single Point L1/L2: 1.2 m
- SBAS[^3]: 0.6 m
- DGPS: 0.4 m
- NovAtel CORRECT RT-2: 1 cm + 1 ppm
- Initialization time: < 10 s
- Initialization reliability: > 99.9%

### Measurement Precision (RMS)

- Fully independent code and carrier measurements:
  - GPS: L1 C/A code 4 cm, L1 carrier phase 0.5 mm, L2 P(Y) code 8 cm, L2 carrier phase 1 mm, L2C code 8 cm, L2C carrier phase 1 mm
  - GLO: L1 C/A code 8 cm, L1 carrier phase 1 mm

### Maximum Data Rate[^6]

- Measurements: 50 Hz
- Position: 50 Hz
- Time to First Fix:
  - Cold start[^7]: < 50 s
  - Hot start[^8]: < 35 s

### Signal Reacquisition

- L1: < 0.5 s (typical)
- L2: < 1.0 s (typical)

### Time Accuracy[^9]

- 20 ns RMS

### Velocity Accuracy

- 0.03 m/s RMS

### Velocity Limit[^10]

- 515 m/s

## PHYSICAL AND ELECTRICAL

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>46 x 71 x 11 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>&lt; 24 g</td>
</tr>
<tr>
<td>Power</td>
<td>Input voltage +3.3 VDC ±5%</td>
</tr>
<tr>
<td>Power Consumption[^1]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPS L1/L2 &lt; 1.0 W</td>
</tr>
<tr>
<td></td>
<td>GPS/GLONASS L1/L2 &lt; 1.1 W all on</td>
</tr>
<tr>
<td></td>
<td>L2C code &lt; 1.2 W</td>
</tr>
<tr>
<td>Antenna LNA Power</td>
<td>Voltage 6 VDC-12 VDC, Output voltage 5.0 VDC, Max output current 100 mA</td>
</tr>
<tr>
<td>Antenna Input</td>
<td>MCX female</td>
</tr>
</tbody>
</table>

## FEATURES

- Field upgradeable software
- Multi-path mitigating technology
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, CMR, CMR+ and RTCA
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Auxiliary strobe signals, including a configurable output for time synchronization and mark inputs
- Outputs to drive external LEDs
- GLIDE smoothing algorithm

## COMMUNICATION PORTS

- 3 LV TTL up to 921,600 bps
- 2 CAN Bus[^12]
- 1 USB 1 Mbps
- 12 Mbps Pulse Per Second (PPS) output

## ENVIRONMENTAL

### Temperature

- Operating: -40°C to +85°C
- Storage: -55°C to +95°C

### Humidity

- 95% non-condensing

### Vibration

- Random: MIL-STD 810G (Cat 24, 7.7 g RMS)
- Sinusoidal: IEC 60068-2-6
- Bump: ISO 9022-31-06 (25 g)

### Shock

- MIL-STD-810G (40 g)
- Survival (75 g)

## FIELD OPTIONS

- ALIGN
- GLIDE
- RAIM
- RT-2
- SPAN

## OPTIONAL ACCESSORIES

- GPS-700 series antennas
- ANT series antennas
- RF Cables—5 and 10 m lengths
- OEM6 Development Kit

## HIGH VIBRATION HARDWARE

The OEM615 is available as a High Vibration TCXO hardware variant, the OEM615V. This is compliant with MIL-STD 810G (Category 24, 20 g RMS).

For the most recent details of this product: [www.novatel.com/products/gnss-receivers/oem-receiver-boards/oem6-receivers/oem615/](http://www.novatel.com/products/gnss-receivers/oem-receiver-boards/oem6-receivers/oem615/)

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1-800—NOVATEL (U.S. and Canada) or 403–295–4900  
China 0086–21–68882300  
Europe 44–1993–848–736  
SE Asia and Australia 61–400–883–601

[^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]: Tracks up to 60 L1/L2 satellites.

[^3]: GPS only.

[^4]: L2 P for GLONASS.

[^5]: L2 C/A for GLONASS.

[^6]: Typical power consumption values.

[^7]: Export licensing restricts operation to a maximum of 515 metres per second.

[^8]: Time accuracy does not include biases due to RF or antenna delay.

[^9]: Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

[^10]: Typical value. No almanac or ephemerides and no approximate position or time.

[^11]: Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

[^12]: User application software required.