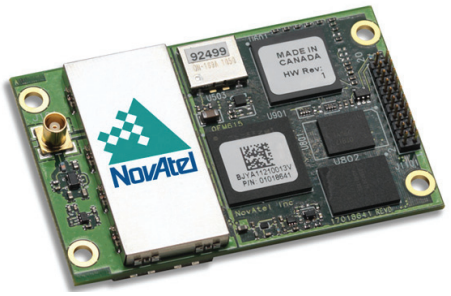
OEM615™



Compact, Dual Frequency GNSS Receiver Delivers Robust RTK Functionality

Benefits

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 and L2C signal tracking

GL1DE® smoothing algorithm

RT-2™, ALIGN® and RAIM firmware options

SPAN INS functionality

High Precision GNSS, Compact Size

The dual-frequency, GPS + GLONASS OEM615 offers future ready, precise positioning for space constrained applications. The backward compatibility of the OEM615 with NovAtel's popular OEMV-1 form factor provides the most efficient way to bring powerful GPS + GLONASS capable products to market quickly. As with all NovAtel OEM6™ series receivers, the OEM615 is ready for existing and planned GPS, GLONASS, Galileo and Compass signals.

GPS + GLONASS Tracking for Greater Performance

The OEM615 is configurable with GPS or GPS + GLONASS GNSS capabilities. Adding GLONASS tracking increases available positions in obstructed sky conditions, increasing field productivity. The OEM615 also supports L2C that provides stronger signal tracking and better cross correlation protection for superior solution availability in low signal strength applications.

Designed for Flexibility

The modular nature of 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 AdVance® RTK for centimetre level real-time positioning, ALIGN for precise heading and relative positioning, GL1DE for decimetre level pass-to-pass accuracy and RAIM for increased GNSS pseudorange integrity.

Customization with an API

The 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.

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

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or 403-295-4900
China 0086-21-54452990-8011
Europe 44-1993-848-736
SE Asia and Australia 61-400-883-601

OEM615™

Performance[1]

Channel Configuration
120 Channels[2]
Signal Tracking
- GPS: L1, L2, L2C
- GLONASS: L1, L2
- Galileo: E1
- GIOVE-A/GIOVE-B (test)
- Compass[3]
- SBAS
- QZSS

Horizontal Position Accuracy (RMS)

Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS[4]	0.6 m
DGPS	0.4 m
RT-2™	1 cm+1 ppm
Initialization time	< 10 s
Initialization reliability	> 99.9%

Measurement Precision (RMS)

Fully independent code and carrier measurements:

	GPS	GLO
L1 C/A Code	4 cm	8 cm
L1 Carrier Phase	0.5 mm	1 mm
L2 P(Y) Code[5]	8 cm	8 cm
L2 Carrier Phase[5]	1 mm	1 mm
L2C Code[6]	8 cm	8 cm
L2C Carrier Phase[6]	0.5 mm	0.5 mm

Data Rate[7]

Measurements	up to 50 Hz
Position	up to 50 Hz

Time to First Fix

Cold Start[8]	< 50 s
Hot Start[9]	< 35 s

Signal Reacquisition

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

Time Accuracy[10]	20 ns RMS
Velocity Accuracy	0.03 m/s RMS
Velocity Limit[11]	515 m/s

Physical and Electrical

Dimensions	46 x 71 x 11 mm
Weight	24 g

Power

Input Voltage	+3.3 VDC [±5%]
Power Consumption[12]	<1.0 W, GPS L1/L2 1.1 W, GPS/GLONASS L1/L2 1.2 W , all on

Antenna LNA Power Output

Output Voltage	5.0 VDC
Maximum Current	100 mA

Connectors

Main	20-pin dual row male header
Antenna Input	MCX female

Communication Ports

3 LV-TTL	up to 921,600 bps
2 CAN Bus[13]	1 Mbps
1 USB	12 Mbps

Environmental

Temperature

Operating	-40°C to +85°C
Storage	-55°C to +95°C
Humidity	95% non-condensing

Vibration

Random Vibe	MIL-STD 810G (7.7 g RMS)
Sine Vibe	IEC60068-2-6 (5g)
Bump	ISO9022-31-06
Shock	MIL-STD-810G (40 g)

Features

- Field upgradeable software
- Multipath 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
- GL1DE smoothing algorithm

NovAtel Connect

NovAtel Connect is an intuitive configuration and visualization tool suite allowing comprehensive control of the OEM615 product.

- Easy to use wizards guide you through positioning mode configuration and raw data collection
- Detailed graphical windows display comprehensive status information
- Plan view and playback files allow you to monitor the positioning and configuration history
- Remotely control and monitor the OEM615 over the internet
- Available on Windows XP, Windows 7 and Linux platforms

Optional Accessories

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

Firmware Options

- RT-2
- ALIGN
- RAIM
- SPAN

Version 2 - Specifications subject to change without notice

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OEM615 July 2012
For the most recent details of this product:
novatel.com/assets/Documents/Papers/OEM615.pdf

[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] The Compass signal is not finalized and changes in the signal structure may still occur. Designed for Compass Phase 3 B1 compatibility.
[4] GPS only.
[5] L2 P for GLONASS.
[6] L2 C/A for GLONASS.
[7] 50 Hz while tracking up to 20 satellites.
[8] Typical value. No almanac or ephemerides and no approximate position or time.
[9] Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
[10] Time accuracy does not include biases due to RF or antenna delay.
[11] Export licensing restricts operation to a maximum of 515 metres per second.
[12] Typical power consumption values.
[13] User application software required.