PRECISE THINKING
MAKES IT POSSIBLE

NovAtel is an original equipment manufacturer (OEM) that designs, manufactures and sells high-precision Global Navigation Satellite System (GNSS) technology.

Our receivers, antennas, components and subsystems are at the heart of many of the world's most exciting precise positioning applications.

The markets we serve are wide and varied, including aviation, survey, geomatics, machine control, mining, agriculture, marine and defense. Whatever your application, NovAtel technology will give you the advantage.

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RECEIVERS

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RECEIVERS

NovAtel's OEMV® family of Global Navigation Satellite System (GNSS) receivers sets the standard in performance, features and ease of integration.

Our precise thinking has culminated in industry-leading innovations, including a next-generation Application Specific Integrated Circuit (ASIC) offered on a variety of receiver form factors. User-configurable and upgradeable firmware, Application Programming Interface (API) and a common user interface are standard on all NovAtel OEMV products.

This high-precision receiver line delivers GPS+GLONASS positioning performance, GPS modernization (L2C and L5), patented Pulse Aperture Correlation (PAC) multipath mitigation and integrated L-band. Our AdVance™ RTK centimetre-level positioning, ALIGN™ heading technology and GL1DE™ relative positioning algorithm are all leading-edge features of the OEMV family. Our entire OEMV line is designed to meet the European Union's Restriction of Hazardous Substances (RoHS) Directive.

Product Specifications

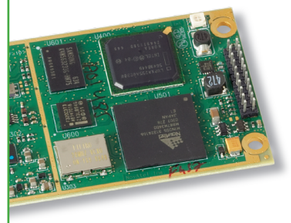
Horizontal Position Accuracy (RMS)	
Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS	0.6 m
DGPS	0.4 m
RT-20™	0.2 m
RT-2 L1TE	1.5 cm+ 1 ppm [1]
RT-2™	1 cm+ 1 ppm [2]

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 mm	1.5 mm

Maximum Data Rate	20 Hz
Time to First Fix	
Cold Start	60 s
Hot Start	35 s
Signal Reacquisition	
L1	0.5 s (typical)
L2	1.0 s (typical)
Time Accuracy	20 ns
Velocity Accuracy	0.03 m/s
Velocity	515 m/s

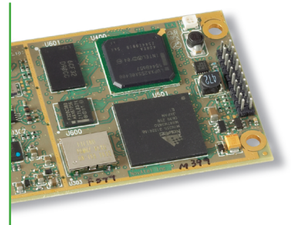
1 Only available on OEMV-1G
2 Only available on OEM-2 and OEMV-3

OEMV-1



The OEMV-1 delivers L1 GPS precision measurements and positions in a small size and with low power consumption. With integrated L-band capability, the OEMV-1 eliminates the need for additional hardware, reducing the size, cost and complexity of the end-user system. Users can access OmniSTAR VBS or Canada-wide Differential GPS (CDGPS) correction services for sub-metre real-time positioning accuracy. NovAtel's GL1DE relative positioning algorithm is optional, as is RT-20 firmware, which provides decimetre-level real-time positioning accuracy.

OEMV-1G

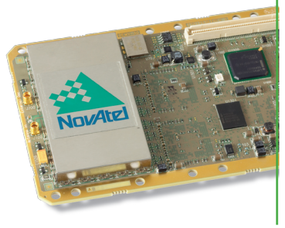


The OEMV-1G offers L1 GPS+ GLONASS positions and measurements in combination with GPS data to provide more satellites for positioning in challenging environments. With NovAtel's optional RT-2 L1TE technology, users can expect centimetre-level real-time position accuracy for baseline lengths of up to three kilometres. The compact OEMV-1G also features NovAtel's ALIGN option, which allows users to output heading and bearing information.

OEMV-2

The OEMV-2 is the lowest-power-consuming dual-frequency receiver in today's market. Small in size, its firmware provides the flexibility to configure the receiver from a basic GPS L1-only receiver to a dual-frequency receiver with centimetre-level RTK functionality. Configurable with GPS or GPS+GLONASS real-time capabilities, and with L2C tracking, the OEMV-2 is ideal for low-signal-strength applications, providing stronger signal tracking and better cross-correlation protection.

OEMV-3



The OEMV-3 is a high-performance receiver designed to track GPS L1, L2, L2C and the new L5 signal, as well as GLONASS L1 and L2. Delivering integrated L-band for OmniSTAR VBS, HP, XP, G2 and CDGPS correction services, and multi-frequency tracking loadable through firmware upgrading, this receiver eliminates the need for future hardware changes. Additional features include centimetre-level RTK functionality, higher input voltage range and a high-vibe TCXO design for better shock and acceleration performance.

	OEMV-1	OEMV-1G	OEMV-2	OEMV-3
Dimensions	46 mm x 71 mm x 13 mm	46 mm x 71 mm x 13 mm	60 mm x 100 mm x 13 mm	85 mm x 125 mm x 13 mm
Weight	21.5 g	21.5 g	56 g	75 g
Signals Tracked	GPS L1 C/A SBAS L-band	GPS L1 C/A GLONASS SBAS	GPS L1 C/A, L2P (Y), L2C GLONASS L1, L2 SBAS	GPS L1 C/A, L2P (Y), L2C, L5 GLONASS L1, L2 SBAS
Channel Configuration	14 GPS L1 1 L-band 2 SBAS	14 GPS L1 12 GLO L1 2 SBAS	14 L1, 14 L2 GPS 12 L1, 12 L2 GLONASS 2 SBAS	14 GPS L1, 14 GPS L2, 6 GPS L5 12 GLO L1, 12 GLO L2 2 SBAS 1 L-band
Power Consumption	1.0 W	1.0 W (GPS only) 1.2 W (GPS+GLONASS)	1.2 W (GPS only) 1.6 W (GPS+GLONASS)	2.1 W (GPS only) 2.8 W (GPS+GLONASS)
Communication Ports	3 LV-TTL, 2 CAN bus, 1 USB	3 LV-TTL, 2 CAN bus, 1 USB	2 LV-TTL, 1 RS-232 or RS-422, 2 CAN bus, 1 USB	1 LV-TTL, 1 RS-232, 1 RS-232 or RS-422, 2 CAN bus, 1 USB
Signal Reacquisition	L1 0.5 s	L1 0.5 s	L1 0.5 s L2 1.0 s	L1 0.5 s L2 1.0 s
Enclosure Options	FlexPak-G2 enclosure	FlexPak-G2 enclosure	FlexPak-G2 enclosure	ProPak-V3 enclosure DL-V3 enclosure
Firmware Options	RT-20 GL1DE OmniSTAR VBS CDGPS	RT-20 RT-2 L1TE GL1DE ALIGN	RT-20 RT-2 GL1DE Pseudo Range/Delta Phase (PDP) Positioning ALIGN	RT-20 RT-2 GL1DE Pseudo Range/Delta Phase (PDP) Positoning ALIGN OmniSTAR VBS, HP, XP, and G2 CDGPS