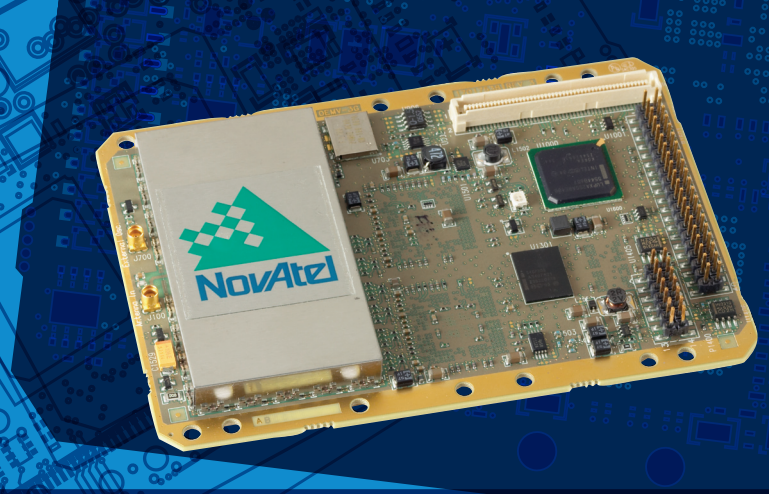
OEMV®-3



Features

L1 and L2 GPS+GLONASS

GPS modernized signals

Integrated OmniSTAR and CDGPS

AdVance™ RTK

Application Programming Interface (API) option

Benefits

Improved position availability in challenging or limited visibility environments

Ensures future compatibility as more signals become available

Access to OmniSTAR and CDGPS without additional hardware

Robust and reliable RTK performance

Reduces system hardware by using the receiver's processor and memory to run a user application

NovAtel®'s OEMV-3 GNSS engine is a 72-channel, triple frequency board that includes L2C, L1 and L2 GLONASS and hardware support for the future L5 GPS frequency. It is a drop-in replacement for the OEM4-G2 with compatible commands and logs.

Superior Performance

The OEMV-3 receiver provides 1 centimetre real-time accuracy with NovAtel's AdVance™ RTK and decimetre pass-to-pass accuracy with GL1DE™. In addition to providing flexible performance for a variety of positioning applications, the OEMV-3 card is compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive, eliminating the need for future hardware changes.

GLONASS

The OEMV Family of GNSS receivers offer GPS+GLONASS positions and measurements in real-time. The GLONASS measurements are used in combination with GPS to provide more satellites for positioning in challenging environments. The OEMV-1G, OEMV-2 and OEMV-3 receivers and their enclosures are all configurable as either GPS only or GPS+GLONASS. The addition of GLONASS satellites to the positioning solution enables users to work more often and increases availability of a position in obstructed sky conditions.

GPS Modernization

Capable of tracking the new L2 civil signal, the OEMV-3 provides stronger signal tracking and better cross correlation protection to reject interfering signals. Not only is the L2C signal better for low signal strength applications, but having access to multiple signals allows the user to select the one that is best suited to their needs. Additionally, using the same hardware, the OEMV-3 will be capable of tracking the L5 GPS signal as soon as it becomes available.

Integrated L-band

L-band functionality is integrated in the OEMV, eliminating the need for additional hardware. Users can access OmniSTAR HP, XP and VBS or CDGPS, thus minimizing additional size, cost and complexity in the end user system. The OEMV-3 is the only multi-frequency GNSS receiver available with onboard L-band support.

NovAtel

Precise thinking

OEMV™-3

Performance[1]

Channel Configuration
14 L1, 14 L2, 6 L5 GPS
12 L1, 12 L2 GLONASS
2 SBAS
1 L-band

Horizontal Position Accuracy (RMS)

Single Point L1	1.8 m
Single Point L1/L2	1.5 m
SBAS[2]	0.6 m
CDGPS[2]	0.6 m
DGPS	0.45 m
OmniSTAR[2]	
VBS	0.7 m
XP	0.15 m
HP	0.1 m
RT-20™ [3]	0.2 m
RT-2®	1 cm+1 ppm

Measurement Precision

L1 C/A Code	4 cm RMS
L1 Carrier Phase	0.50 mm RMS (differential channel)
L2 P(Y) Code	8 cm RMS
L2 Carrier Phase	1 mm RMS (differential channel)

Data Rate[4]

Measurements	50 Hz
Position	50 Hz
OmniSTAR HP/XP	20 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

Dynamics

Velocity[8]	515 m/s

Physical & Electrical

Size	85 x 125 x 13 mm
Weight	75 g

Power

Input Voltage	+ 4.5 to 18 VDC
Power Consumption	2.1 W (GPS only)
	2.6 W (GPS & GLONASS)

Antenna LNA Power Output

Output Voltage	5 V nominal
Maximum Current	100 mA

Communication Ports

- 1 RS-232 or RS-422 capable of 300 to 921,600 bps
- 1 RS-232 or LV-TTL capable of 300 to 921,600 bps
- 1 LVTTL capable of 300 to 230,400 bps
- 2 CANBus[9] serial ports capable of 1 Mbps
- 1 USB port capable of 5 Mbps

Input/Output Connectors

Main	40-pin dual row male header
Antenna Input	MMCX female
External Oscillator Input	MMCX female
CAN	14-pin dual row male header

Environmental

Temperature	
Operating	-40°C to +85°C
Storage	-45°C to +95°C
Humidity	95% non-condensing

Regulatory

Random Vibe	MIL-STD 810F (7.7g)
Sine Vibe	SAEJ1211 (4g)
Bump/Shock	IEC 68-2-27 (30g)

Enclosure Options

- ProPak®-V3
- DL-V3

Optional Accessories

- GPS-700 series antennas
- ANT-500 series antennas
- RF Cables - 5, 10 and 30 m lengths

Additional Features

- Common, field-upgradeable software for all OEMV family receivers with OEM4 compatible commands and logs
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs
- Outputs to drive external LEDs
- External oscillator input

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 Slower data rates are expected for API customers. The maximum data rate is dependent on the size of the application.
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 User application software required.

Precise thinking

1-800-NOVATEL (U.S. & Canada) or 403-295-4900
Europe +44 (0) 1993 852-436
SE Asia & Australia +61 (0) 400 833-601
sales@novatel.com
novatel.com

RoHS COMPLIANT

ISO 9001:2000 FM 92323