

OEM4-G2



Features

RT-2® and Pulse Aperture Correlator™ (PAC) technologies

Three high-speed serial ports and USB support

Application Programming Interface (API) option

Benefits

Ensures reliable, centimeter-level positioning in the most demanding applications, including high multipath environments

Provides easy configuration and operation with the flexibility to meet system communication requirements as they evolve

Eliminates system hardware by taking advantage of the receiver's processor and memory, resulting in reduced development costs and faster time to market

NovAtel's OEM4-G2™ is a feature-rich GPS engine offering centimeter-level positioning accuracy and support for on-board custom applications.

Flexible interface

The OEM4-G2 provides multiple options for communication, including a serial port user-configurable for RS-232 or RS-422 operation and supporting speeds up to 921,600 bits per second. For applications requiring even higher throughput, the OEM4-G2 includes a USB port. Two additional serial ports are also provided.

Designed for integration

To meet the demand for smaller and lighter receivers, the OEM4-G2 measures just 125 millimeters by 85 millimeters and weighs only 80 grams. In addition, the OEM4-G2 features a noticeable reduction in power consumption over NovAtel's original OEM4 receiver.

Advanced positioning technology

With 24-channel "all-in-view" parallel tracking and fast reacquisition times, the OEM4-G2 includes NovAtel's patented Pulse Aperture Correlator™ (PAC) technology to virtually eliminate the effects of multipath. The OEM4-G2 features multiple models, which offer L1 or L1/L2 positioning and include optional support for SBAS corrections and RT-2® mode for centimeter-level RTK accuracy.

Customization with the API

The OEM4-G2 can be customized to meet the needs of your application using NovAtel's Application Programming Interface (API) option. With the API library and a standard C/C++ development environment, an application can be developed to run directly from the receiver platform, often eliminating system hardware and reducing development time.



Precise thinking

OEM4-G2

Performance¹

Position Accuracy

Single Point L1	1.8 m CEP
Single Point L1/L2	1.5 m CEP
WAAS L1	1.2 m CEP
WAAS L1/L2	0.8 m CEP
DGPS (L1, C/A)	0.45 m CEP
RT-20 ²	< 20 cm CEP
RT-2	1 cm + 1 ppm

Measurement Precision

L1 C/A Code	6 cm RMS
L2 P(Y) Code	25 cm RMS (AS on)
L1 Carrier Phase	0.75 mm RMS (differential channel)
L2 Carrier Phase	2 mm RMS (differential channel)

Data Rate

Measurements	20 Hz
Position	20 Hz

Time to First Fix

Cold Start ³	50 s
Warm Start ⁴	40 s
Hot Start ⁵	30 s

Signal Reacquisition

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

Time Accuracy⁶ 20 ns RMS

Velocity Accuracy 0.03 m/s RMS

Dynamics

Velocity ⁷	514 m/s
Vibration	4 G (sustained tracking)
Altitude ⁷	18,288 m

Physical & Electrical

Size 85 x 125 x 17 mm

Weight 80 g

Power

Input Voltage	+4.5 to +18 VDC
Power Consumption	2.3 W (typical)

Antenna LNA Power Output

Output Voltage	+5 VDC
Maximum Current	100 mA

Communication Ports

- 1 RS-232 or RS-422 serial port (user-configurable) capable of 300 to 921,600 bps
- 1 RS-232 serial port capable of 300 to 230,400 bps
- 1 TTL serial port capable of 300 to 230,400 bps
- 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

Environmental

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

- 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 Expected accuracy after static convergence.
- 3 Typical value. No almanac or ephemerides and no approximate position or time.
- 4 Typical value. Almanac saved and approximate position and time entered. No recent ephemerides.
- 5 Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
- 6 Time accuracy does not include biases due to RF or antenna delay.
- 7 Export licensing restricts operation to a maximum of 18,288 meters and 514 meters per second.

Enclosure Options



ProPak-G2 rugged enclosure with three serial ports



DL-4 data logger with integrated memory card and LCD



ProPak-LB featuring support for OmniSTAR HP corrections

Additional Features

- Multiple software models, including L1 or L1/L2, and optional support for SBAS corrections (WAAS, EGNOS)
- Software fully compatible with other OEM4 family receivers
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and two mark inputs
- Outputs to drive external LEDs and status lines
- External oscillator input
- Field-upgradeable firmware



Precise thinking



Version 4B - Specifications subject to change without notice. © 2006 NovAtel Inc. All rights reserved. Printed in Canada. D05174