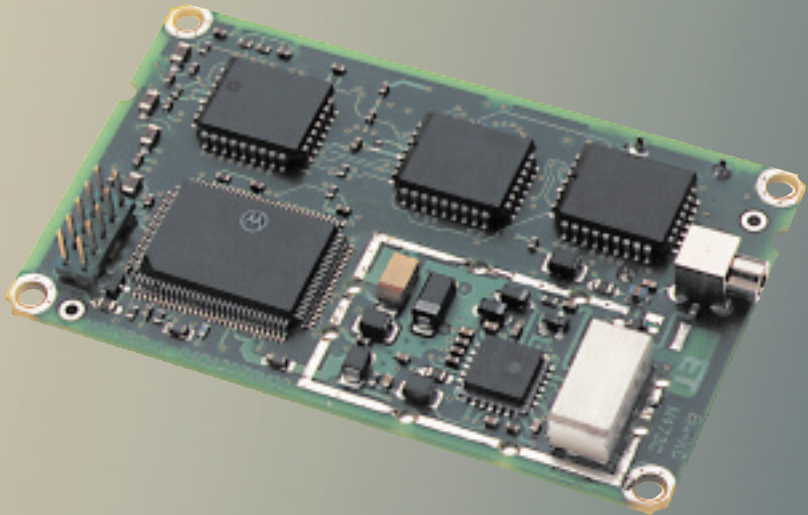




VP Oncore™ GPS Receiver



Actual size

There's only one name for quality and performance in GPS technology: Oncore. The Oncore family is a full line of GPS receivers developed and built by Motorola for the OEM and Systems Integrator marketplace.

The VP Oncore is Motorola's original credit card-sized 8-channel GPS receiver. It measures just 2" x 3 1/4" x 1/2", has very low power requirements, and is well suited for embedded applications.

The VP Oncore has the capability of acting as a DGPS reference station. Using GT Plus Oncore receivers as mobile units in conjunction with the VP Oncore base station is a cost effective solution for differential applications. The VP Oncore also has the ability to output raw satellite measurement data for use in real-time kinematic and differential post-processing applications.

The Oncore family of GPS receivers incorporate Motorola GPS custom ICs (integrated circuits), Motorola MPUs (microprocessor units), and Motorola GPS receiver software. Add QS 9000 certification, reliability, responsive support and the long-term commitment you've come to expect from Motorola, and you understand why Oncore is the quality choice.



VP Oncore™ GPS Receiver

General Characteristics

Receiver Architecture	• 8 channel • L1 1575.42 MHz • C/A code (1.023 MHz chip rate) • Code plus carrier tracking (carrier aided tracking)
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Performance Characteristics

Tracking Capability	• 8 simultaneous satellite vehicles
Dynamics	• Velocity: 1000 knots (515 m/s); > 1000 knots at altitudes < 60,000 ft. • Acceleration: 4 g • Jerk: 5 m/s • Vibration: 7.7G per Military Standard 810E
Acquisition Time (Time To First Fix, TTFF)	• 20 s typical TTFF (with current almanac, position, time and ephemeris) • 45 s typical TTFF (with current almanac, position and time) • 2.5 s typical reacquire
Positioning Accuracy	• Less than 25 m, SEP (without SA) [DoD may invoke Selective Availability (SA), potentially degrading accuracy to 100 m (2dRMS)] • DGPS accuracy 1-5 m typical
Timing Accuracy (1 Pulse Per Second, 1 PPS)	• 130 ns observed (1s) with SA on • In position hold mode, < 50 ns observed (1s) with SA on
Antenna	• Active micro strip patch antenna module • Powered by receiver module (25mA @ 5 Vdc)
Datums	• 49 std. datums, 2 user defined, default WGS-84

Serial Communication

Output Messages	• Latitude, longitude, height, velocity, heading, time, satellite tracking status (Motorola binary protocol) • NMEA-0183 Version 2.00 (selected formats) available • Software selectable output rate (continuous or poll) • Broad list of command/control messages • TTL interface
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Electrical Characteristics

Power Requirements	• 5 ± 0.25 Vdc; 50 mVp-p ripple (max)
"Keep-Alive" BATT Power	• External 2.5 V to 5.25 V; 15mA (typ.) 60mA (max)
Power Consumption	• 1.1 W @ 5 V

Physical Characteristics

Dimensions	• 2.00 x 3.25 x 0.64 in. [50.8 x 82.6 x 16.3 mm]
Weight	• 1.8 oz. (51 g)
Connectors	• Data/power: 10 pin (2x5) unshrouded header on 0.100" centers • RF: right angle OSX (subminiature snap-on)
Antenna to Receiver Interconnection	• Single coaxial cable

Environmental Characteristics

Operating Temperature	• -30°C to +85°C
Humidity	• 95% noncondensing +30°C to +60°C
Altitude	• 60,000 ft. (18 km) (max) • > 60,000 ft. (18 km) for velocities < 1000 knots

Miscellaneous

Optional features	• 1 PPS timing output with Time RAIM • Raw measurement data • On board rechargeable lithium battery
DGPS	• Differential GPS is a standard software feature • RTCM-104 format (remote input) • Motorola custom format (master output and remote input)

For more information contact
your local distributor:



MOTOROLA

4000 Commercial Avenue
Northbrook, IL 60062 USA

Call: 888.298.5217 In Europe call: +44.1628.763.260 In Asia call: +852.2966.4136
847.714.7325 fax +44.1628.637.059 fax +852.2966.4141 fax

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