



GT Plus Oncore™ GPS Receiver

GT PLUS 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 GT Plus Oncore is one of the newest members of the successful Oncore family, developed specifically for land vehicle applications. The GT Plus Oncore adds more features at a lower cost, and is available in unlimited quantities. Continuing with the 8-channel design of the Oncore family, the GT Plus Oncore reflects Motorola's high standard for performance in foliage and urban canyon environments. In addition, the GT Plus Oncore's TTFF (time to first fix) and reacquisition times are our fastest ever. Added to this are RTCM correction input, NMEA output, and a user controlled velocity filter.

Measuring 2" x 3 1/4" x 1/2," the GT Plus Oncore is mechanically and electrically backwards compatible with the VP Oncore. To minimize software changes the I/O is a subset of the existing Oncore messages. The GT Plus Oncore also has very low power requirements and is well suited for embedded 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.



GT Plus Oncore™ GPS Receiver

General Characteristics

Performance Characteristics

Serial Communication

Electrical Characteristics

Physical Characteristics

Environmental Characteristics

Miscellaneous

Receiver Architecture	<ul style="list-style-type: none">• 8 parallel channel• L1 1575.42 MHz• C/A code (1.023 MHz chip rate)• Code plus carrier tracking (carrier aided tracking)
Tracking Capability	<ul style="list-style-type: none">• 8 simultaneous satellite vehicles
Dynamics	<ul style="list-style-type: none">• Velocity: 1000 knots (515 m/s); > 1000 knots at altitudes < 60,000 ft.• Acceleration: 4 g• Jerk: 5 m/s³• Vibration: 7.7G per Military Standard 810E
Acquisition Time (Time To First Fix, TTFF) (Tested at -30 to +85°C)	<ul style="list-style-type: none">• < 15 s typical TTFF-hot (with current almanac, position, time and ephemeris)• < 45 s typical TTFF-warm (with current almanac, position and time)• < 90 s typical TTFF-cold• < 1.0 s internal reacquisition (typical)
Positioning Accuracy	<ul style="list-style-type: none">• 100 m 2dRMS with SA as per DoD specification• Less than 25 m SEP without SA• 1-5 m typical in differential mode
Timing Accuracy (1 Pulse Per Second, 1 PPS)	<ul style="list-style-type: none">• < 500 ns (1 sigma) with SA on
Antenna	<ul style="list-style-type: none">• Active micro strip patch antenna module• Powered by receiver module (5-80 mA @ 5 Vdc)
Datum	<ul style="list-style-type: none">• WGS-84• One user definable datum
I/O Messages	<ul style="list-style-type: none">• Latitude, longitude, height, velocity, heading, time• Motorola binary protocol at 9600 baud• NMEA at 4800 baud: GGA, GLL, GSA, GSV, RMC, VTG, ZDA• Software selectable output rate (continuous or poll)• TTL interface (0 to 5 V)• Second COM port for RTCM input
Power Requirements	<ul style="list-style-type: none">• 5 ± 0.25 Vdc; 50 mVp-p ripple (max.)
"Keep-Alive" BATT Power	<ul style="list-style-type: none">• External 2.5 Vdc to 5.25 Vdc; 5 µA (typ.) @ 2.5 Vdc
Power Consumption	<ul style="list-style-type: none">• < 0.9 W @ 5 Vdc with active antenna drawing 20 mA
Dimensions	<ul style="list-style-type: none">• 2.00 x 3.25 x 0.64 in. [50.8 x 82.6 x 16.3 mm]
Weight	<ul style="list-style-type: none">• 1.8 oz. (51 g)
Connectors	<ul style="list-style-type: none">• Data/power: 10 pin (2x5) unshrouded header on 0.100 in. centers• RF: right angle OSX (subminiature snap-on)
Antenna to Receiver Interconnection	<ul style="list-style-type: none">• Single coaxial cable• Antenna sense circuit
Operating Temperature	<ul style="list-style-type: none">• -40°C to +85°C
Humidity	<ul style="list-style-type: none">• 95% noncondensing +30°C to +60°C
Altitude	<ul style="list-style-type: none">• 60,000 ft. (18 km) (max.)• > 60,000 ft. (18 km) for velocities < 1000 knots
Standard Features	<ul style="list-style-type: none">• Motorola DGPS input corrections at 9600 baud on COM port one• RTCM SC-104 input Type 1 and Type 9 messages for DGPS at 2400, 4800, or 9600 baud on COM port two.• NMEA 0183 output• Velocity filtering (user controlled)
Optional Features	<ul style="list-style-type: none">• Lithium battery• Right angle SMB RF connector• On-board LNA for passive antenna support• Low profile shields

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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