

1.0 INTRODUCTION

CHAPTER SUMMARY

Refer to this chapter for the following:

- An introduction to GPS and the Oncore receiver.
- A limited warranty for the Oncore receiver

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About your Oncore Receiver

OVERVIEW

Nearly a decade of Global Positioning System (GPS) experience, combined with world-class expertise in semiconductor products and communications development, has led Motorola to the production of a new generation of GPS receiver modules, more compact and lightweight than ever before.

Specifically designed for embedded applications, the Oncore range of products, when combined with our range of active microstrip patch antenna, affords the engineer new freedom in bringing GPS technology to the most demanding Original Equipment Manufacturer (OEM) applications.

The Oncore M12 Plus is a 12-channel design offering one of the fastest TTFF (time to first fix) in the industry, and split second reacquisition time. The Oncore M12+ timer is one of the most capable timing receivers on the market and offers one of the most precise one pulse per second (1PPS) outputs with TRAIM integrity monitoring.

The GT Plus, UT Plus and the SL are versatile 8-channel receivers. Each channel independently tracks both code and carrier for the superior performance required in today's GPS user environment. The UT Oncore GPS Receiver also includes the precise one pulse per second (1PPS) timing output with TRAIM.

Features**PRODUCT HIGHLIGHTS**

Features that characterize the Motorola Oncore include the following:

12-channel parallel receiver (8-channel design for GT Plus, UT Plus and SL)

Code plus carrier tracking (carrier-aided tracking)

Position filtering

Optional on-board Lithium battery

Antenna current sense circuit

Operates from +5 Vdc regulated power (2.75 to 3.2 Vdc for M12 Oncore)

TTL interface to host equipment

3-dimensional positioning within 25 meters, SEP (without Selective Availability [SA])

Latitude, longitude, height, velocity, heading, time, and satellite status information output either continuously (once per second) or polled

**Automotive and
Telematics Version
M12 Plus Oncore**

Wide range of positioning applications

12-channel design

Right angle power/data connector for vertical mount and optional straight connector for flat mount against host circuit board.

Support capability for inverse differential GPS

RTCM differential GPS support

NMEA 0183 output

Two communication ports

User controlled velocity filter

Antenna sense circuit

M12 Timing Oncore

12-Channel design

Precise 1PPS output (+/- 25 ns accuracy)

Selectable 100PPS output

Time RAIM (Receiver Autonomous Integrity Monitoring) algorithm for checking timing solution integrity

Automatic site survey

**Automotive Version
GT Oncore**

Differential GPS with Motorola binary corrections
RTCM SC-104 differential GPS correction input on second comm port
NMEA 0183 output
Velocity filtering
1PPS output (+/- 500 ns accuracy)
Optional on-board LNA for use with a passive antenna

**Timing Version UT
Encore**

Precise 1PPS output (+/- 50 ns accuracy)
Selectable 100PPS output
Time RAIM (Receiver Autonomous Integrity Monitoring) algorithm for checking timing solution integrity.
Automatic Site Survey
Jamming protection

**Slim Line Automotive
Version SL Oncore**

Smallest Oncore receiver (40 x 80 x 12.2 mm)
Right angle power/data connector for vertical mount and optional straight connector for flat mount against host circuit board.
RTCM differential GPS input
NMEA 0183 output
User controlled velocity filtering
Antenna sense circuit

Applications

Considering that 24-hour, all weather, worldwide coverage is fundamental to GPS positioning and navigation, it is easy to envision a broad range of applications and a large community of GPS users. Applications include the following:

- Automobile Navigation
- Aircraft Navigation
- Land Navigation
- Marine Navigation
- Emergency Calling
- Theft Recovery
- Telematics
- Fleet Tracking
- Routing Systems
- Rail Management
- Asset Management
- Emergency Search and Rescue
- Utility Services
- Precise Time Measurement
- Frequency Stabilization
- Network Synchronization
- Surveying and Mapping
- Exploration

LIMITED WARRANTY MOTOROLA GPS PRODUCTS

What This Warranty Covers And For How Long

MOTOROLA, INC. ("MOTOROLA") warrants its Global Positioning System (GPS) Products ("Product") against defects on material and workmanship under normal use and service for a period of twelve (12) months from Product's in-service date, but in no event longer than eighteen (18) months from initial shipment of the Product.

MOTOROLA, at its option, will at no charge either repair, exchange, or replace this Product during the warranty period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts or Product shall become the property of MOTOROLA. Any repairs not covered by this warranty will be charged at the cost of replaced parts plus the MOTOROLA hourly labor rate current at that time.

This express limited warranty is extended by MOTOROLA to the original end user purchaser only and is not assignable or transferable to any other party. This is the complete warranty for Products manufactured by MOTOROLA. MOTOROLA does not warrant the installation, maintenance or service of the Product.

MOTOROLA cannot be responsible in any way for any ancillary equipment not furnished by MOTOROLA which is attached to or used in connection with MOTOROLA's GPS Products, or for operation of the Product with any ancillary equipment and all such equipment is expressly excluded from this warranty. The Global Positioning System is operated and supported by the U.S. Department of Defense and is made available for civilian use solely at its discretion. The Global Positioning System is subject to degradation of position, velocity, and time accuracies by the Department of Defense. MOTOROLA does not warrant or control Global Positioning System availability or performance.

This warranty applies within the fifty (50) United States and the District of Columbia.

What This Warranty Does Not Cover

(a) Defects or damage resulting from use of the Product in other than its normal and customary manner. (b) Defects or damage from misuse, accident or neglect. (c) Defects or damage from improper testing, operation, maintenance, installation, alteration, modification or adjustment. (d) Defects or damage due to lightning or other electrical discharge. (e) Product disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim. (f) Product which has had the serial number removed or made illegible. (g) Freight costs to the repair depot.

**Limited Warranty
(Continued)****How To Get Warranty Service**

To receive warranty service, contact your Oncore reseller.

General Provisions

This warranty sets forth the full extent of MOTOROLA's responsibility regarding the Product. Repair, replacement, or refund of the purchase price, at MOTOROLA's option, is the exclusive remedy. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE INSTALLATION, USE, OR INABILITY TO USE SUCH PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW