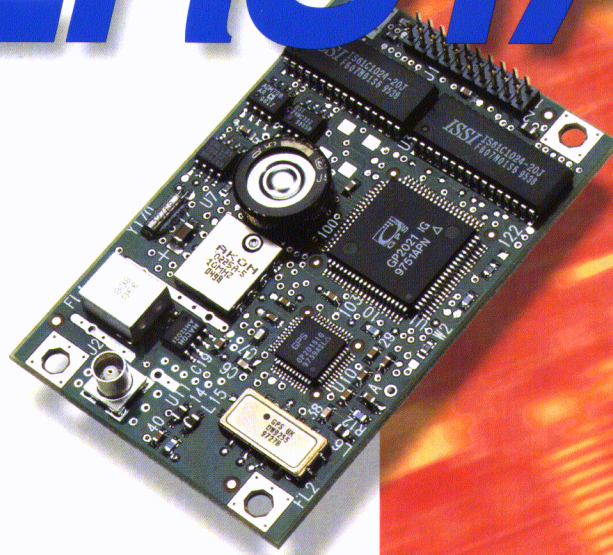


# SUPERSTAR

Marconi's  
newest miniature  
GPS Receiver:  
only 5 square  
inches



(Actual size)

Canadian Marconi Company introduces the **SUPERSTAR**: another breakthrough in low-cost and small-size superior quality GPS receivers for embedded applications.

The **SUPERSTAR** was designed for applications requiring a low-cost high-reliability positioning performance. The **SUPERSTAR** provides high reliability, outstanding performance under severe conditions (foliage, urban canyon), ease of integration as an embedded receiver and

future growth capability to WAAS via software upgrade.

The **SUPERSTAR** is like the highly popular **ALLSTAR** high-end OEM Receiver and has kept the same, robust signal tracking and unsurpassed tracking capability under FOLIAGE.

The **SUPERSTAR** is the only low cost GPS OEM Receiver on the market offering sub-meter DGPS capability. Designed to operate with either an active or a passive GPS antenna, for the lowest system cost.

12-channel  
**SUPERSTAR**  
GPS Receiver  
OEM Module



CANADIAN MARCONI COMPANY  
COMPONENTS-GPS OEM



# SUPERSTAR 12-Channel GPS Receiver OEM Module

## Specifications

### GENERAL

12-PARALLEL TRACKING CHANNELS, "ALL-IN-VIEW" RECEIVER MODULE

L1 Frequency	1,575.42 MHz
Coarse Acquisition	C/A code (1.023 MHz chip rate), code & carrier phase tracking
Sensitivity	-124 to -130 dBm (antenna input level)
DGPS Software	Standard

### PERFORMANCE

Velocity	1852 km/h (514 m/sec) (limited by US and Canadian exportation laws)
Acceleration	4 Gs (39.2 m/sec <sup>2</sup> ) Jerk: 2 m/sec <sup>3</sup>
Position Accuracy	<1 m circular error probability (CEP), DGPS <16 m circular error probability (CEP), Stand-Alone mode without S/A imposed <40 m circular error probability (CEP), Stand-Alone mode with S/A imposed
Altitude	60,000 ft (18 km)
Time to First Fix	Hot start: 15 sec typical, with current almanac, position, time & ephemeris Warm start: 45 sec typical, with current almanac, position, & time Cold start: 2 min typical, no almanac, no position, & no time
Re-acquisition Time	<1 sec typical to re-acquire (5-sec. obscuration) <3 sec typical to re-acquire (60-min. obscuration)

### INTERFACES

Prime Power	5.0 (+ 0.5/- 0.25) VDC INPUT (50-mV p-p ripple maximum) 1.2 W at 5.0 VDC typical, with passive antenna
"Time-Keeping" Power	2.5 to 4.5 VDC external input, <1 $\mu$ A (5V), <0.3 $\mu$ A (3V) Supercap on-board, to maintain SRAM & Time for Warm start
Serial Communications	2 x RS-232 (TTL level) asynchronous data ports; TX1-RX1, TX2-RX2 9,600 baud standard (user-selectable from 300 to 19,200 baud) 3rd and 4th input/output ports (on special version)
Input Messages	
Rx 1: NMEA/CMC Binary	Set altitude, position, date & time selectable output messages & rates
Rx 2: RTCM SC-104	Message types 1, 2, 9
Output Messages	
Tx 1: NMEA or CMC Binary	GGA, GSA, GSV, RMC, VTG, ZDA, GLL plus proprietary messages All data available on NMEA messages plus channel assignments, ephemeris, self-test result (BIT), others
Tx 2:	Spare
Time Mark Output	1 pulse/sec, aligned with GPS time ( $\pm$ 200 ns, typ. in absolute mode) ( $\pm$ 50 ns typical, in relative mode), with SA imposed
Discrete	3 general purpose input/output lines

### PHYSICAL

Dimensions	1.8" W x 2.8" L x 0.51" H; (46 x 71 x 13 mm)
Weight	0.05 lb (22 g)
Operating Temperature	-30 to +75°C (standard)
Storage Temperature	-55 to +90°C
Humidity	5% to 95% relative humidity, non-condensing to +60°C



## CANADIAN MARCONI COMPANY COMPONENTS-GPS OEM

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