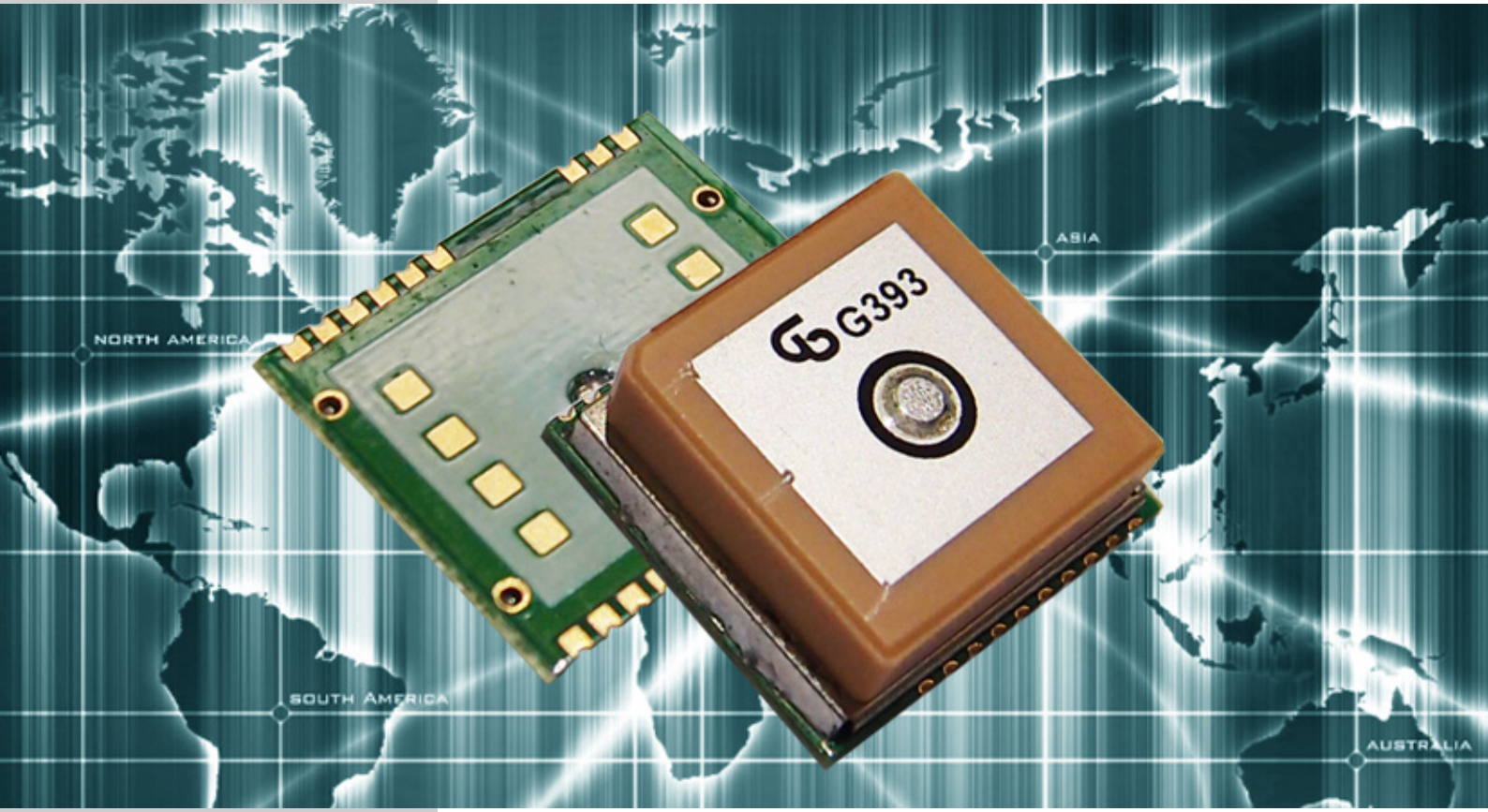
Datasheet

maestro
GPS receiver



A2135-H
A2235-H

Positioning Product

Fleet management
Asset Tracking
Vehicle Tracking
Personal Tracking
Portable Device

Integrated Antenna
Low Power Consumption
MEMS support

Performance SiRFstarIV Integrated Solution

The GPS Antenna Module Sub-System

The A2135-H (flash) and A2235-H (ROM) are Maestro Wireless Solutions answers to the most critical challenges in the GPS market: simplified integration, leading performance, and efficient time to market. The combination of the enhanced fully functional SiRFStar IV GPS engine and a custom-designed high directional patch antenna on board help to ease engineers integration effort of leading GPS technology into devices. The A2135-H and A2235-H fully address the demand for extreme low power operation and ultra-fast Time-To-First-Fix. Their high level of sensitivity allows for use in the most demanding environmental conditions.

Features	Benefits
SMT based integrated GPS antenna module	Lowest assembly cost
17.8 x 16.5 mm^2	Small footprint
29 mA average tracking (full power mode)	Ultra Low power consumption
-163 dBm tracking	Bench marking sensitivity
up to 8 strongest interferes signals detected and mitigated	In-band jamming signal removal

Positioning Receiver Portfolio

With the mission to support our customers in implementing GNSS functionality into their systems, Maestro Wireless Solutions is offering a distinct product portfolio to address a wide area of applications. These range from traditional telematics solutions to latest highly integrated consumer devices, all of them having their special requirements towards a GNSS module. Based on SiRFstarIII and now also SiRFstarIV chip sets, Maestro Wireless Solutions GNSS module solutions address different specific needs and combine high performance, low power consumption, and simplified integration effort. Our modules comply with the RoHS standard and are 100% electrically and functionally tested prior to packaging, thereby assuring the guarantee of the highest quality products.

Ordering information:
A2135-H410
MOQ: 1 reel / 500 pcs (TBC)

EVA2135-H Evaluation Board
1 pc

A2235-H
MOQ: 1 reel / 500 pcs (TBC)

EVA2235-H Evaluation Board
1 pc

Technical Details A2135-H / A2235-H

PERFORMANCE

Channels	48 parallel tracking
Correlators	400,000 plus
Frequency	L1 - 1,575 MHz
Sensitivity	
Tracking Navigation Acquisition (cold start)	- 163 dBm - 160 dBm - 148 dBm
Position Accuracy (horizontal)	< 2.5 m CEP (autonomous) < 2.0 m CEP SBAS
Time To First Fix	
Hot Start[1]	< 1 s
Warm Start[2]	< 32 s
Cold Start[3]	< 35 s
Navigation	
Update Rate	1 Hz / 5 Hz Supported

COMMUNICATION

UART - NMEA (Default)	
NMEA message Switchable	GGA, RMC, GSA, GSV, VTG, GLL, ZDA
Baud rate Switchable	4,800 (default) 1,200 to 115.2k
Ports	Tx (NMEA output) Rx (NMEA input)
UART - SiRF Specific SSB/OSP	
SiRFbinary protocol	Protocol for SiRFstar product family up to SSIII
One Socket Protocol	Protocol extension for SiRFstarIV
Baud rate Switchable	57.6k (default) 1,200 to 115.2k
Ports	Tx (Binary output) Rx (Binary input)
SPI - NMEA/SiRF Specific	
Clock	Up to 6.8 MHz
Ports	DO (NMEA / Binary output) DI (NMEA / Binary input) SPI CLK (clock - input) SPI CS (chip select - input)

HIGHLIGHTS

SiRFnav™	High availability and coverage; improved TTFF in weak signal environments
SiRFaware™	Keeps module in a state of readiness for rapid navigation (hot start)
Jammer remover technology	Detects and removes up to 8 in-band jammers with minimal loss of sensitivity
A-GPS	Embedded Extended Ephemeris (SiRFInstantFix1) and Ephemeris Push support
MEMS I2C interface	Prepared to use additional sensor information for improved navigation
Flash-based design **(A2135-H only)**	Prepared to store configuration and calibration data and to allow firmware updates
Internal antenna	Best matched build-in antenna for easy integration

ENVIRONMENT

Temperature	
Operating	-40°C to +85°C
Storage	-40°C to +85°C
Humidity	Non condensing

POWER

Input voltage	3.0 to 3.6 VDC Nominal 3.3 VDC	
Average current draw	**2135-H**	**2235-H**
Full power mode (searching)	36 mA	56 mA
Full power mode (tracking)	24 mA	31 mA
PTF mode	0.7 mA	46.4 µA
MPM / SiRFaware	100 µA	45 µA
Hibernate	27 µA	27 µA
Antenna supply via Vant		
Voltage range	up to 5.0V	
Max. allowed current[4]	50 mA	

MECHANICAL

Dimensions	
L x W x H	17.8 x 16.5 x 7.1 mm[3]
L x W x H	0.7" x 0.65" x 0.28"
Weight	4.0 g / 0.14 oz.

1) The receiver has estimates of time/date/position and valid almanac and ephemeris data.
2) The receiver has estimates of time/date/position and almanac
3) The receiver has no estimate of time/date/position, and no recent almanac
4) An external current limiter is suggested to avoid damage in fault conditions

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maestro GPS receiver