



## 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

SMT based integrated GPS antenna module  
17.8 x 16.5 mm<sup>2</sup>  
29 mA average tracking (full power mode)  
-163 dBm tracking  
up to 8 strongest interferes signals detected and mitigated

### Benefits

- Lowest assembly cost
- Small footprint
- Ultra Low power consumption
- Bench marking sensitivity
- 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

EVA2135-H Evaluation Board  
1 board + 2 samples

A2235-H  
MOQ: 1 reel / 500 pcs

EVA2235-H Evaluation Board  
1 board + 2 samples

## Technical Details A2135-H / A2235-H

### PERFORMANCE

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

### COMMUNICATION

<b>UART - NMEA (Default)</b>	
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)
<b>UART - SiRF Specific SSB/OSP</b>	
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)
<b>SPI - NMEA/SiRF Specific</b>	
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

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

### ENVIRONMENT

<b>Temperature</b>	
Operating	-40°C to +85°C
Storage	-40°C to +85°C
<b>Humidity</b>	
	Non condensing

### POWER

<b>Input voltage</b>	3.0 to 3.6 VDC Nominal 3.3 VDC	
<b>Average current draw</b>	<b>A2135-H</b>	<b>A2235-H</b>
Full power mode (searching)	36 mA	36 mA
Full power mode (tracking)	24 mA	22 mA
PTF mode	0.7 mA	0.9 mA
TricklePower™ Mode	8.7 mA	7.2 mA
Hibernate	27 µA	27 µA
<b>Antenna supply via Vant</b>		
Voltage range	up to 5.0V	
Max. allowed current <sup>4)</sup>	50 mA	

### MECHANICAL

<b>Dimensions</b>	
L x W x H	17.8 x 16.5 x 7.1 mm
L x W x H	0.7" x 0.65" x 0.28"
<b>Weight</b>	4.0 g / 0.14 oz.

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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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