

A2100-A/B

Positioning Product

GPS Receiver Modules  
Telematics Platforms



# SiRFstarIV GPS Module: The Answer to All Challenges

The A2100 GPS modules enable fastest acquisition and tracking with the latest SiRFstarIV technology. With module versions supporting either 3.3V or 1.8V there is an appropriate solution for all telematics and power-sensitive mobile consumer application devices. In any case the module fully answers the demand for lowest power consumption with – amongst other features – SiRFaware™ technology. The removal of jammers does not only facilitate designs of new products, but guarantees operation even in hostile environments. Highest sensitivity, during acquisition or while tracking, allows for use in many different environments and under toughest conditions.

**Features**

Complete GPS module  
Direct passive antenna support  
Jamming detection and removal

Flash-based design

Best acquisition sensitivity  
Lowest tracking power consumption  
SiRFaware™ for constant Hot Start

**Benefits**

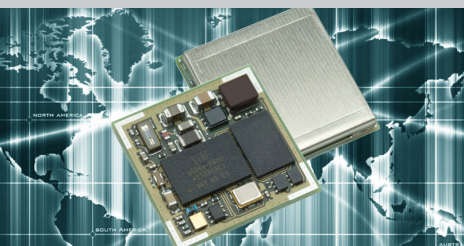
Easy integration  
Fastest design-in  
Minimal BOM

Configuration / Firmware update

Ideally suited for all  
small battery powered  
GPS applications

# GPS Solutions for Many Applications

With the mission to support our customers in implementing GPS 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 GPS module. Based on SiRFstarIII and now also SiRFstarIV chip sets, Maestro Wireless Solutions GPS 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:  
A2100-A/Bxxx  
EVA2100-A/B Evaluation Board

## Technical Details A2100-A/B

### PERFORMANCE

<b>Channels</b>	48
<b>Correlators</b>	~ 400,000
<b>Frequency</b>	LI - 1,575 MHz
<b>Sensitivity<sup>1</sup></b>	
Tracking	- 163 dBm
Navigation	- 160 dBm
Acquisition (cold start)	- 148 dBm
<b>Position Accuracy<sup>2)</sup> (horizontal)</b>	< 2.5 m CEP (autonomous) < 2.0 m CEP SBAS
<b>Time To First Fix</b>	
Hot Start <sup>2)</sup>	< 1 s
Warm Start <sup>2)</sup>	< 32 s
Cold Start <sup>2)</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 (for A/B)</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)
<b>I2C - NMEA/SiRF Specific (for B only)</b>	
Clock	Up to 400 kbps
Ports	I2C DIO (NMEA / Binary input / output) I2C CLK (clock - 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</b>	Prepared to store configuration and calibration data and to allow firmware updates

### POWER

<b>Supply voltage</b>	3.0 to 3.6 VDC [A2100-A] 1.7 to 1.9 VDC [A2100-B]
<b>Power consumption</b>	(typical)
Fully tracking	47 mW
Trickle Power Mode (1Hz)	8 mW
SiRFaware™ Mode	500 µW
Hibernate Mode	30 µW
<b>Antenna supply via Vant</b>	
Voltage range	up to 5.0V
Max. allowed current <sup>3)</sup>	50 mA

### MECHANICAL

<b>Dimensions</b>	
L x W x H	15.2 x 15.2 x 2.4 mm <sup>3</sup>
L x W x H	0.6" x 0.6" x 0.1"
<b>Weight</b>	1.2 g / 0.04 oz.

### ENVIRONMENT

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

1) With best matched antenna  
2) All SVs with -130dBm

3) External current limiter suggested

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