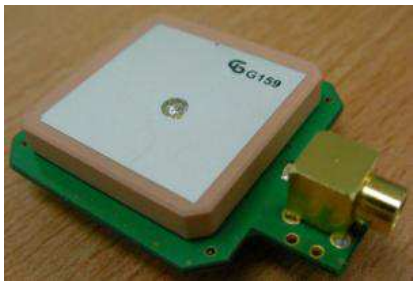
RoHS Compliant



GM-330, SiRFstarIII

Easy to Use GPS Smart Antenna Module with RF Connector

Overview

GM-330 is an easy to use, ultra-high performance, low power GPS smart antenna module with patch antenna and MCX RF connector. The built-in rechargeable backup battery allows for faster position fixing. The built-in SiRFstarIII chip and our experienced design provide fast acquisitions and excellent tracking performance.

Applications

- Camera detector
- Automatic vehicle location

Features

- Easy to use with **built-in patch antenna, backup battery, RF, and 12-pin digital connectors**.
- **MCX, SMA, I-PEX RF** connectors available
- Antenna **open/short detection** and **short-circuit protection** (optional)
- Default **TTL** with **RS-232** option
- GPIO-controlled **power saving control pin**
- 25x25x4 (mm) patch antenna exhibits best GPS signal reception
- Excellent EMI protection and minimum RF efforts
- Based on SiRF's GSC3f low power single chip
- High performance: -159dBm tracking sensitivity
- Low power: **26/31mA** at continuous tracking
- SBAS (WAAS, EGNOS, MSAS) support
- Industrial operating temperature range: -40 ~ 85℃

Technical Specifications

Receiver Performance Data

Receiver Type	20-channel, L1 frequency, C/A code
Horizontal Position Accuracy	< 2.5m (Autonomous) < 2.0m (WAAS) (50% 24hr static, -130dBm)
Velocity Accuracy	<0.01 m/s (speed) <0.01° (heading) (50%@30m/s)
Time To First Fix Hot start Warm start Cold start	Autonomous <1sec <35sec <42sec (50% -130dBm)
Sensitivity (Autonomous)	-142dBm (acquisition) -159dBm (tracking) (-142dBm 28dB-Hz with 4dB noise figure)
Max. Update Rate	1Hz
Max. Altitude	<18,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA v3.00, SiRF Binary 4800~115200 bps N,8,1; GGA, GSA, GSV, RMC, VTG
SBAS Support	WAAS, EGNOS
Dynamics	<4g

Electrical Data

Power Supply	3.3 ~ 5.5 V (3.0V still workable

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	with backup battery not being fully charged.)
Power Consumption (w/o active antenna)	26mA/average tracking (TTL) 31mA/average tracking (RS-232)
TTL I/O	V_{IH}: 2~3.15V, V_{IL}: 0~0.85V V_{OH}: >2.1V, V_{OL}< 0.72V
Protocols	NMEA, SiRF Binary

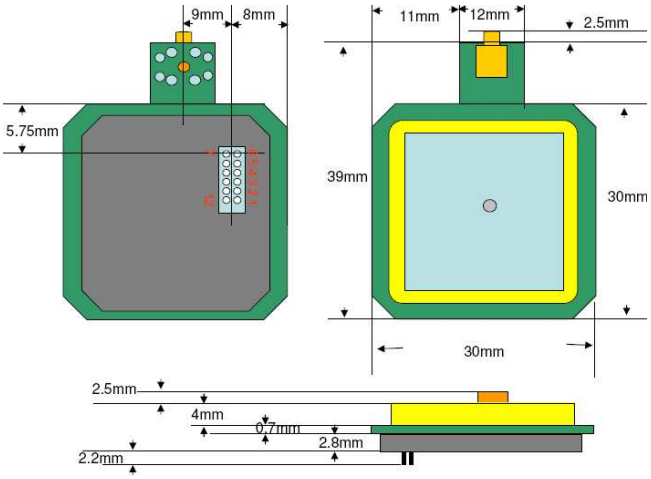
RF Interface

Built-in patch antenna	25x25x4 mm^3
External RF connector	MCX (default) SMA, I-PEX (optional)

Environmental Data

Operating temperature	-40 ~ 85℃ except backup battery: -20~60℃
Storage temperature	-40 ~ 85℃ except backup battery: -40~60℃

Mechanical Data (GM-330)



12-pin Header Interface, pitch 1.27mm

Pin	Name	Function	I/O
1,12	**NC[0] /or**	**Normal: 0, Power off: 1 (option 2) / or**	**Input[2] /**
	RS232-TX[1] / or PWR_SAV[2]	**RS232 level serial data output from GPS (option 1)/ or NC (default setting)**	**or Output[1]**
2,11	**VCC**	**Power supply (DC 3.3~5.5V)**	**Input**
3,10	**TTL-TX**	**TTL level serial data output (from GPS)**	**Output**
4,9	**TTL-RX**	**TTL level serial data input (into GPS)**	**Input**
5,8	**GND**	**Ground**	**Input**
6	**Reset[0]/ or RS232-RX[1] /or NC[2]**	**Active low (250ms) reset signal. Keep float if it is not used. (default setting) / or RS232 level serial data input into GPS (option 1)/ or NC (option 2).**	**Input**
7	**Reserved**	**Reserved for testing. If this pin is used as a reset pin, connect it with pin 6.**	**Input**

Note. 0/1/2 : default/option 1/option 2 setting

On-board LED option

The GPS fix status could be indicated by an optional on-board LED. Default is without this LED.

LED always ON: not fixed; LED blinks: position fixed

Ordering Information

GM-330X

A	9600bps, N-8-1, GGA, GSA, RMC, VTG@1Hz, GSV@1/5Hz Interface: null, 12-pin, default setting w/o power control, w/o antenna open/short
M	9600bps, N-8-1, GGA, GSA, RMC, VTG@1Hz, GSV@1/5Hz Interface: MCX, 12-pin, default setting w/ power control, w/o antenna open/short
Q	19200bps, N-8-1, RMC @1Hz Interface: SMA, 12-pin, default setting w/ power control, w/ antenna open/short

- Other configurations could be customized based on MOQ.

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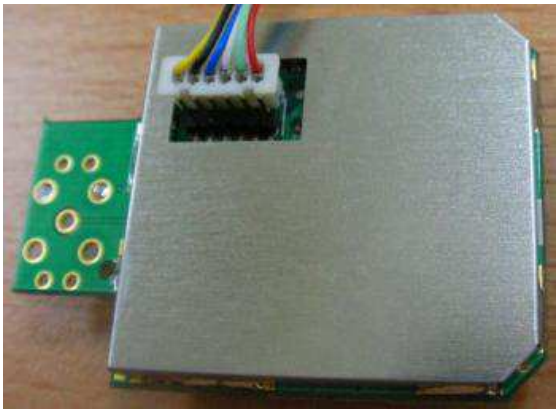
Application of GPS Mouse with External RF Connector

GM-330 could be connected as a GPS-mouse with the optional RF connector. Connect pin 1~6 to a 6-pin pitch 1.25mm wire to board connector for power and data communication as shown below.



GM-330D example

*This document is subject to change without notice.