

RoHS
Compliant



GM-318, SiRFstarIII, 18.4x21.4

Easy to Use Ultra-High Performance

GPS Smart Antenna Module

Overview

GM-318 is built-in with **patch antenna**, **backup battery** and **power control pin**. The integrated design allows **easily connect and use**. The built-in SiRFstarIII chip and our experienced design provide fast acquisitions and excellent tracking performance. This integrated ultra-high performance, low power GPS smart antenna module makes it an ideal solution for **handheld** applications.

Applications

- Handheld navigation devices
- Child/elderly/personal tracker and security system
- GPS clock and digital camera
- Automatic vehicle location

Features

- Ultra-small (18.4x21.4 mm) and easy to use with built-in patch antenna, backup battery, and 5 soldering pins
- Excellent EMI protection and minimum RF efforts
- Based on SiRF's GSC3f low power single chip
- High performance: -159dBm tracking sensitivity
- Low power: 26mA at continuous tracking
- SBAS (WAAS and EGNOS) support
- Industrial operating temperature range: -40 ~ 85°C

Technical Specifications

Receiver Performance Data

Receiver Type	20-channel,
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	L1 frequency, C/A code
Horizontal Position Accuracy	< 2.5m (Autonomous) < 2.0m (WAAS) (50% 24hr static, -130dBm)
Velocity Accuracy	<0.1 m/s (speed) <0.01° (heading) (50% @30m/s)
Time To First Fix	Autonomous
Hot start	<1sec
Warm start	<35sec
Cold start	<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 4800bps N,8,1; GGA, GSA, GSV, RMC, VTG
SBAS Support	WAAS, EGNOS
Dynamics	<4g

Electrical Data

Power Supply	3.3 ~ 3.5 V
Power Consumption	26mA/average tracking
TTL I/O	V _{IH} : 2~3.15V, V _{IL} : 0~0.85V V _{OH} : >2.1V, V _{OL} : < 0.72V

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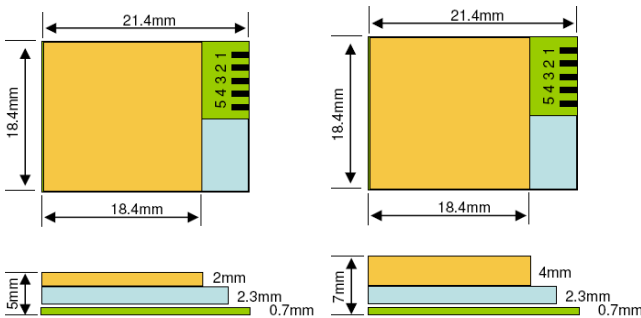
Technical support: support@navisys.com.tw

Protocols	NMEA, SiRF Binary
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Environmental Data

Operating temperature	-40 ~ 85°C except battery: -20~60°C
Storage temperature	-40 ~ 85°C except battery: -40~60°C
Vibration	5Hz to 500Hz, 5g
Shock	Half sine 30g/11ms

Mechanical Data (GM-318A/GM-318B)



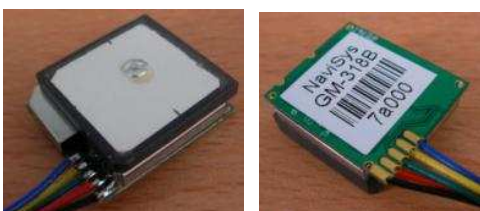
GM-318A: 18.4x21.4x5	GM-318B: 18.4x21.4x7
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5-pin Interface

Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply	Input
3	TXD-TTL	TTL level serial data output	Output
4	RXD-TTL	TTL level serial data input	Input
5	PWR_CTRL	"L": normal run "H" or floating: turn off VCC	Input

Example I/O Connections

Both top and bottom sides support soldering points.



PND Application

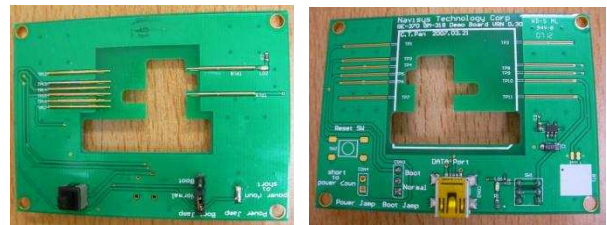
1. Place the GM-318 body on top side of PND for better signal reception and
2. Connect it to main board via connector.

Ordering Information

GM-318X

A	Patch: 18.4x18.4x2 mm, 4800bps, N-8-1, GGA, GSA, RMC, VTG@1Hz, GSV@1/5Hz
B	Patch: 18.4x18.4x4 mm, 4800bps, N-8-1, GGA, GSA, RMC, VTG@1Hz, GSV@1/5Hz

Evaluation Board:



(a) Top

(b) Bottom



(c) GM-318 Mounted



(b) mini-USB Connected

*This document is subject to change without notice.