

GM-301, SiRFstarIII

RoHS
Compliant

Ultra-High Performance

GPS Smart Antenna Module

Overview

GM-301 is an easy to use, ultra-high performance, low power GPS smart antenna module with patch antenna for AVL/handheld applications. The built-in SiRFstarIII chip and our experienced design provide fast acquisitions and excellent tracking performance.

Applications

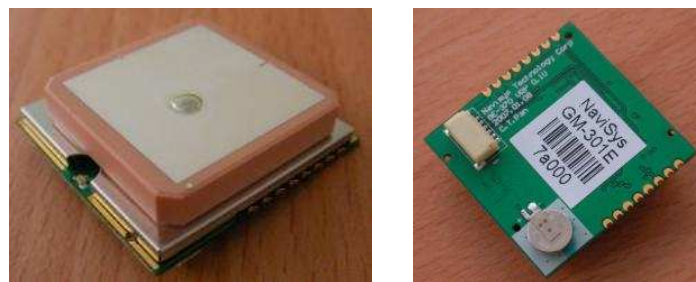
- Automatic vehicle location
- Personal navigation devices
- Fleet management
- GPS clock and digital camera
- Child/elderly/personal locator and security system

Features

- Based on SiRF's GSC3f low power single chip
- High performance: -159dBm tracking sensitivity
- Low power: 31mA at continuous tracking
- Push to fix reduces power by as much as 98%.
- SBAS (WAAS and EGNOS) support
- Easy to use: built-in patch antenna & 6-pin wire to board connector w/ pitch of 1.0mm
- Backup battery support for faster position fix
- Blue LED for position fix indication
- Fully EMI shielded
- Industrial operating temperature range: -40 ~ 85°C

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	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 ~ 5.5 V
Power Consumption	31mA/average tracking

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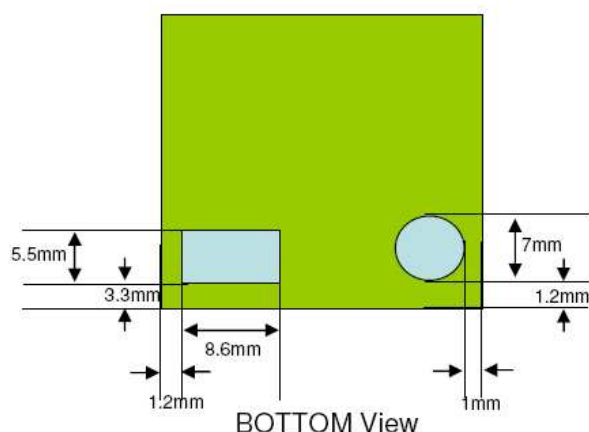
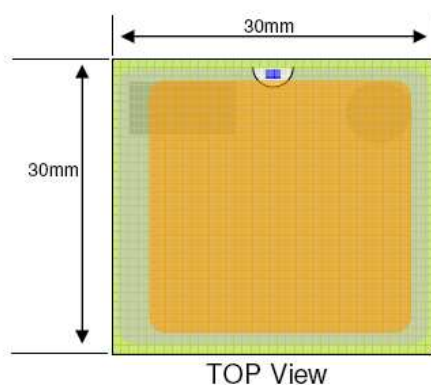
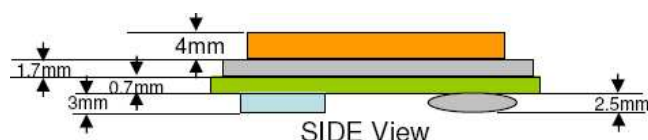
Technical support: support@navisys.com.tw

Backup Battery	Nominal voltage: 3.0 V
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

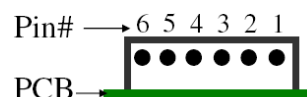
Environmental Data

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



6-pin Interface, pitch 1.0mm



Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply	Input
3	TXD-TTL	TTL level serial data output	Output
4	RX-RS232	RS232 level serial data input	Input
5	TX-RS232	RS232 level serial data output	Output
6	RXD-TTL	TTL level serial data input	Input

Ordering Information

GM-301X

X=E	standard - patch: 25x25x4, 4800bps, N-8-1, GGA, GSA, RMC, VTG@1Hz, GSV@1/5Hz
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*This document is subject to change without notice.