

GM-5707, SMT Mountable, Ultra-High Performance, GPS Module with Patch Antenna

Overview

GM-5707 is an easy to use, ultra-high performance, low power GPS receiver module with patch antenna for AVL /marine applications. The SMT mountable design allows mass production with automatic assembly.

GM-5707 supports multiple satellite positioning systems – GPS, QZSS and SBAS. Our experienced design fully exhibits the excellent performance of MT3337 chip. It works in GPS signal difficult environment, provides fast acquisitions and excellent tracking performance.

With GM-5707, the RF tuning efforts and also development time is reduced to the minimum.

In addition to the chip built-in power saving, an optional hardware controlled power switch was built-in GM-5707. It allows power cycling by the PWR_CTRL pin.

Applications

- Marine GPS plotters
- Vehicle navigation devices
- Automatic vehicle location
- Timing (GPS clock, FEMTO cell, traffic lights etc)
- DGPS (RTCM SC-104)*

Features

- High performance: -165dBm tracking sensitivity
- Low power: 24mA at continuous tracking
- SMT Mountable with built-in antenna
- GPS/QZSS/SBAS support

RoHS
Compliant



- Supported SBAS: WAAS/EGNOS/MSAS/GAGAN
- 12 multi-tone active interference cancellers
- Indoor/outdoor multi-path detection & compensation
- Up to 5Hz update rate*
- High accuracy 1PPS timing (10ns jitter)
- Easy to use: built-in patch antenna
- Optional support of I-PEX RF connector if patch antenna is not needed.
- RTCM support*
- V_BAT pin support for faster position fix
- PWR_CTRL pin to switch GPS module on and off dynamically for easy power saving control.
- Green LED for position fix indication
- Fully EMI shielded
- Industrial operating temperature range: -40 ~ 85°C

Notes

* Some features need commands programmed by customers

Technical Specifications

Receiver Performance Data

Receiver Type	GPS Chipset: MT3337 Frequency: L1, 1575.42MHz C/A code: 1.023 MHz chip rate Channels: Tracking: 22 /acquisition: 66
Horizontal Position Accuracy	< 3.0m (Autonomous) < 2.5m (SBAS) (50% 24hr static, -130dBm) (50%

	24hr static, -130dBm)
Velocity Accuracy	<0.1 m/s (w/o SBAS) <0.05 m/s (w/ SBAS) (50%@30m/s)
Timing Accuracy	±10ns RMS (1PPS output)
Time To First Fix	Autonomous
Hot start	<1sec
Warm start	<35sec
Cold start	<35sec (50% -130dBm)
Sensitivity	-148dBm (acquisition)
(Autonomous)	-165dBm (tracking)
Update Rate	Up to 5Hz, default 1Hz
Max. Altitude	<18,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA 0183 V3.01, MTK NMEA 4800/9600/38400/115200bps N,8,1; GGA, GSV, GSA, RMC
SBAS Support	WAAS, EGNOS, MSAS, GAGAN
Dynamics	<4g

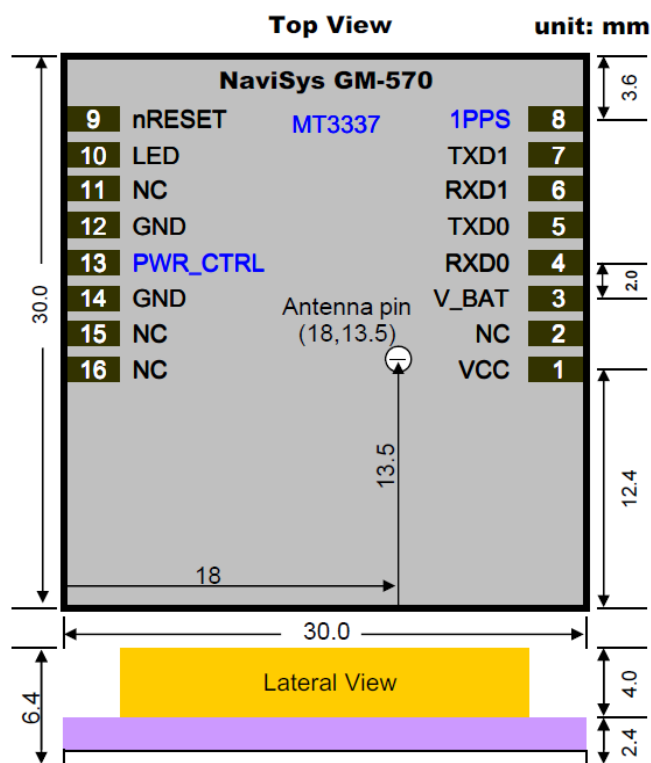
Electrical Data

Power Supply	3.3 ~ 5.5 VDC
Power Consumption	24mA/average tracking
Backup Power	2.1 ~ 4.2 VDC
Digital I/O	V _{IH} : 2~3.6V, V _{IL} : 0~0.8V V _{OH} : 2.4~3.1V, V _{OL} ≤0.4V
Protocols	NMEA, MTK NMEA

Environmental Data

Operating temperature	-40 ~ 85°C
Storage temperature	-40 ~ 125°C
Vibration	5Hz to 500Hz, 5g
Shock	Half sine 30g/11ms

Mechanical Data



16-pin Interface

Pin	Name	Function	I/O
1	VCC	3.3~5.5VDC Power supply	Input
2	NC	No connection	-
3	V_BAT	2.1~4.2VDC backup battery supply	Input
4	RXD0	Port 0 serial data input (GPS in)	Input
5	TXD0	Port 0 serial data output (GPS out)	Output
6	RXD1	Port 1 serial data input (GPS in)	Input
7	TXD1	Port 1 serial data output (GPS out)	Output
8	1PPS	1 Pulse Per Second signal	Output
9	nRESET	Active low, at least 250ms	Input
10	LED	LED display for position fix	Output
11	NC	No connection	-
12	GND	Ground	Input
13	PWR_CTRL	"L": turn off VCC; "H" or floating: normal	Input
14	GND	Ground	Input
15	NC	No connection	-
16	NC	No connection	-

Ordering Information

GM-5707X

X=	standard - patch: 25x25x4, 4800bps, N-8-1,
A	GGA, GSV, GSA, RMC @1Hz

Evaluation Board:

Navisys Technology Corp.

Tel : +886-3-5632598

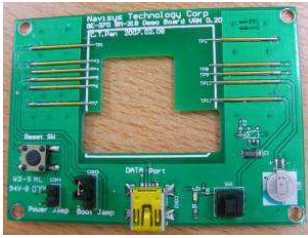
Sales contact: sales@navisys.com.tw

Address: 2F, No.56, Park Ave. II, Science-Based Industrial Park, Hsinchu 300, Taiwan (R.O.C.)

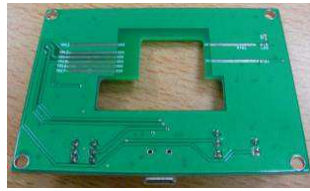
<http://www.navisys.com.tw/>

Fax: +886-3-5632597

Technical support: service@navisys.com.tw



(a) Top



(b) Bottom



(c) GM-5707 Mounted



(b) mini-USB Connected

*This document is subject to change without notice.