



Globalsat Technology Corporation

PRODUCT USER MANUAL

GPS ENGINE BOARD

ET-312

Globalsat Technology Corporation

Headquarters (Far East Century Park)

16F., No. 186, Jian-Yi Road, Chung-Ho City, Taipei Hsien 235, Taiwan

Tel: 886-2-8226-3799/ Fax: 886-2-8226-3899

E-mail : service@globalsat.com.tw

Website: www.globalsat.com.tw

Specification:

General

Chipset	SiRF Star III
Frequency	L1, 1575.42 MHz
C/A code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Sensitivity	-159 dBm

Accuracy

Position	10 meters, 2D RMS 5 meters, 2D RMS, WAAS enabled
Velocity	0.1 m/s
Time	1us synchronized to GPS time

Datum

Default	WGS-84
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Acquisition Time

Reacquisition	0.1 sec., average
Hot start	1 sec., average
Warm start	38 sec., average
Cold start	42 sec., average

Dynamic Conditions

Altitude	18,000 meters (60,000 feet) max
Velocity	515 meters /second (1000 knots) max
Acceleration	Less than 4g
Jerk	20m/sec **3

Power

Main power input	3.3V +- 5% DC input
Power consumption	80mA (Continuous mode) 65mA(Trickle power mode)

Interface

Dimension	27.9mm * 20mm * 2.9mm
Baud rate	4,800 to 57,600 bps adjustable
Output message	SiRF binary or NMEA 0183 GGA, GSA, GSV, RMC, VTG, GLL

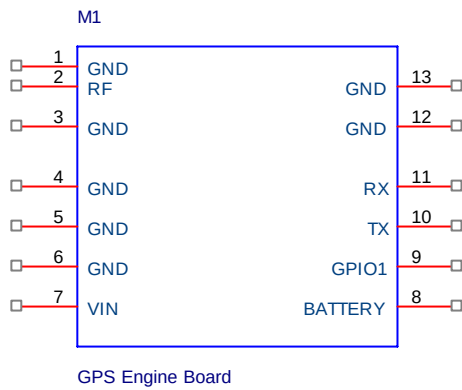
Antenna

Active or passive antenna

Environmental

Operating Temp	-40°C to +85°C
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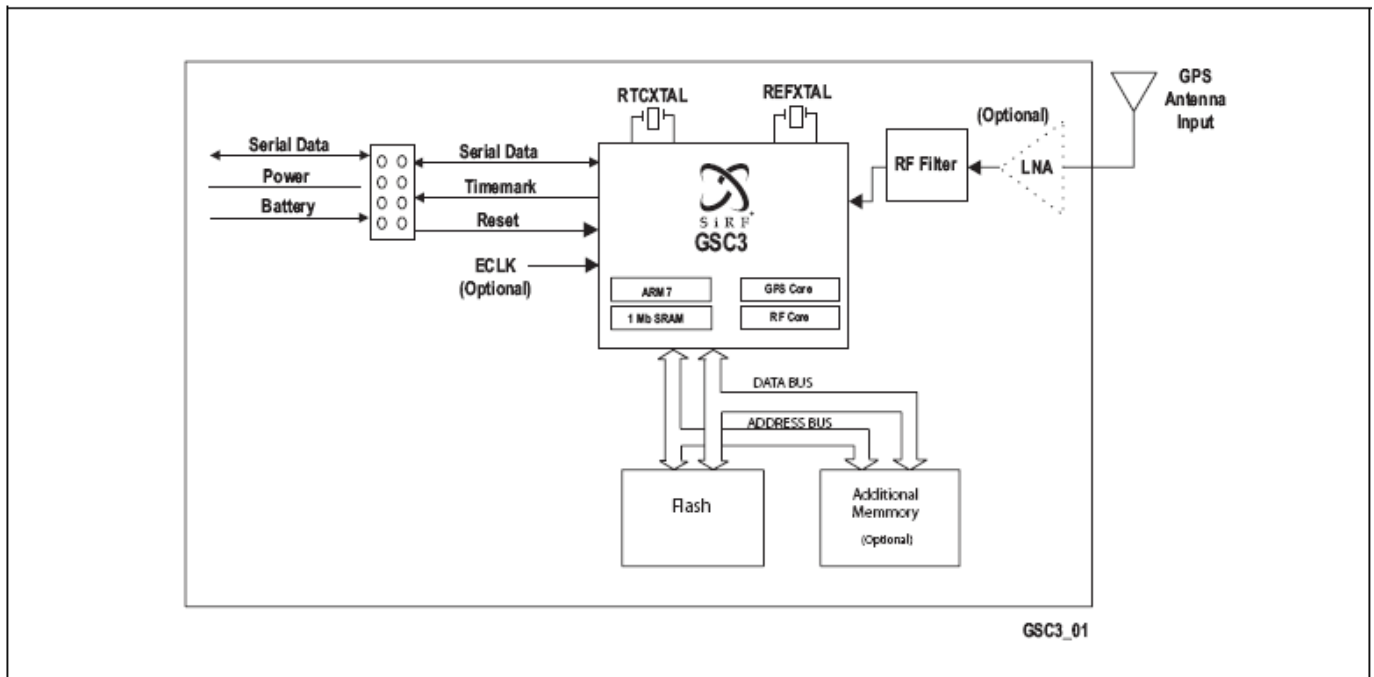
Pin Assignment



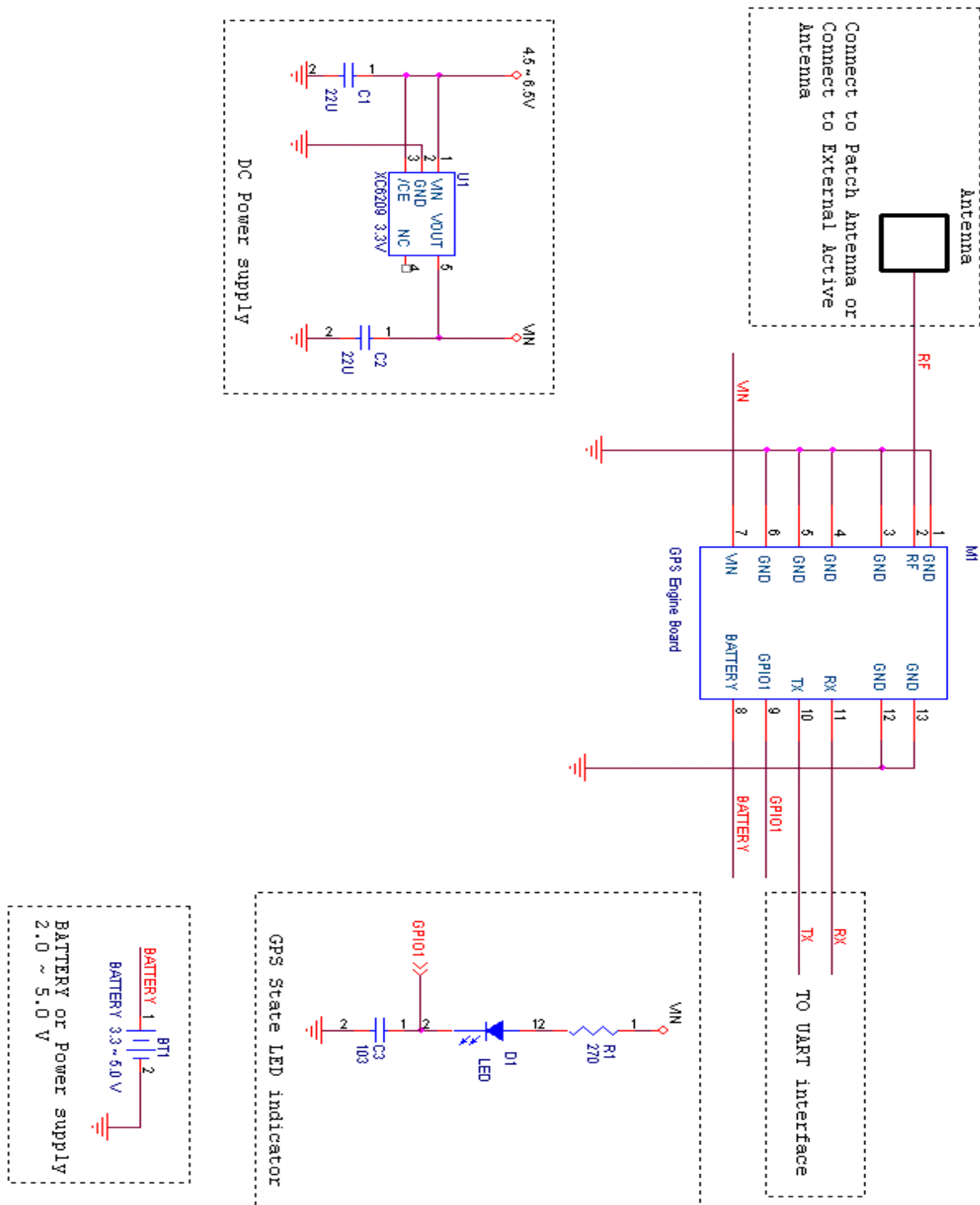
Pin description

Pin NO.	Pin Name	Remark
1.	GND	Ground.
2.	RF	Connect to Patch Antenna or Connect to External Active Antenna. While external antenna is used, the optional power is needed.
3.	GND	Ground.
4.	GND	Ground.
5.	GND	Ground.
6.	GND	Ground.
7.	VIN	This is the main DC supply for a 3.3V +- 5% DC input power module board.
8.	BATTERY	This is the battery backup input that powers the SRAM and RTC when main power is removed. Typical current draw is 15uA. Without an external backup battery, the module/engine board will execute a cold star after every turn on. To achieve the faster start-up offered by a hot or warm start, a battery backup must be connected. The battery voltage should be between 2.0v and 5.0v.
9.	GPIO1	User can use this I/O pin for special function. For example, on/off LED
10.	TX	This is the main transmits channel for outputting navigation and measurement data to user's navigation software or user written software. Output TTL level, 0V ~ 2.85V
11.	RX	This is the main receive channel for receiving software commands to the engine board from SiRFdemo software or from user written software.
12.	GND	Ground.
13.	GND	Ground.

Block Diagram

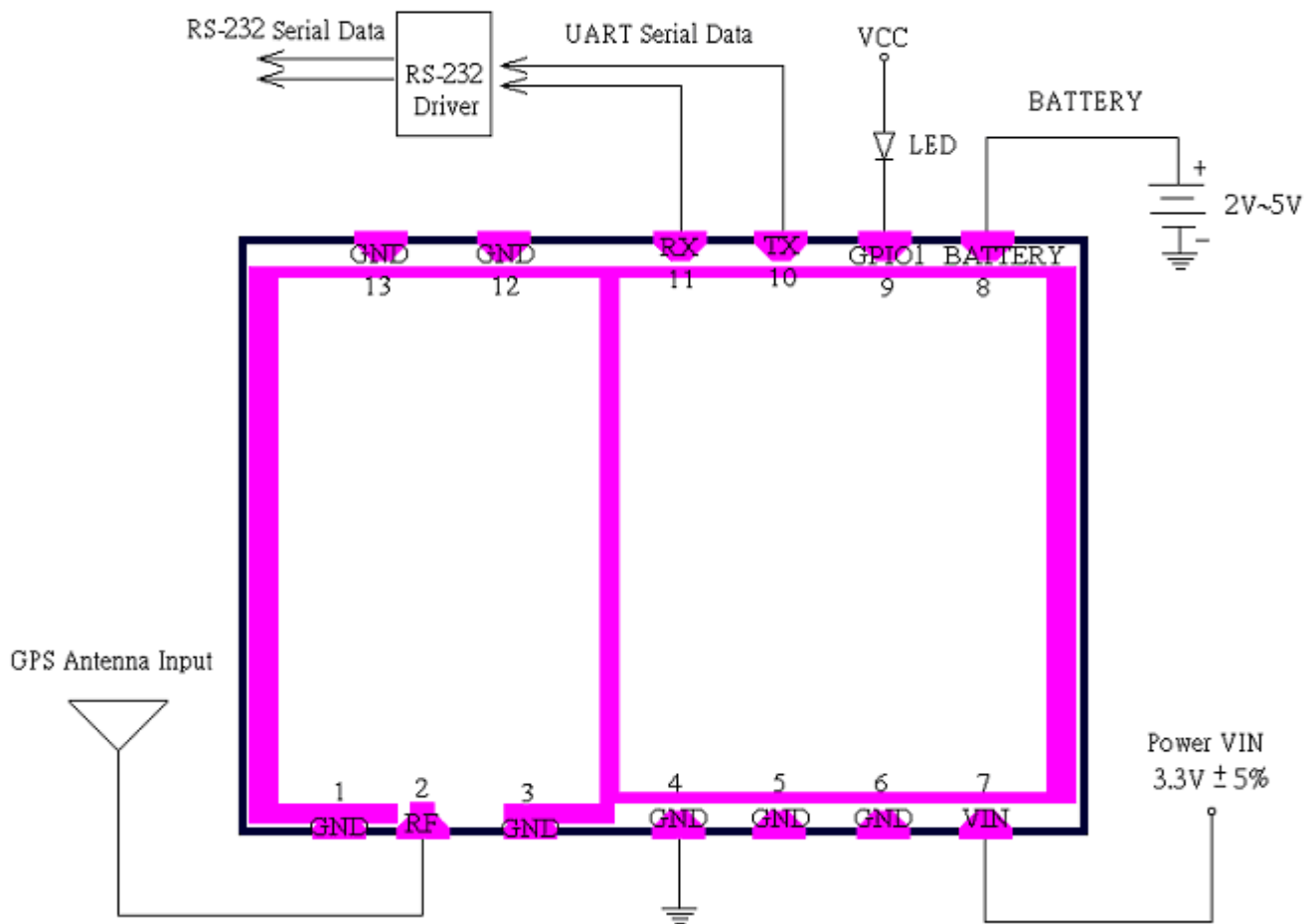


Reference Design

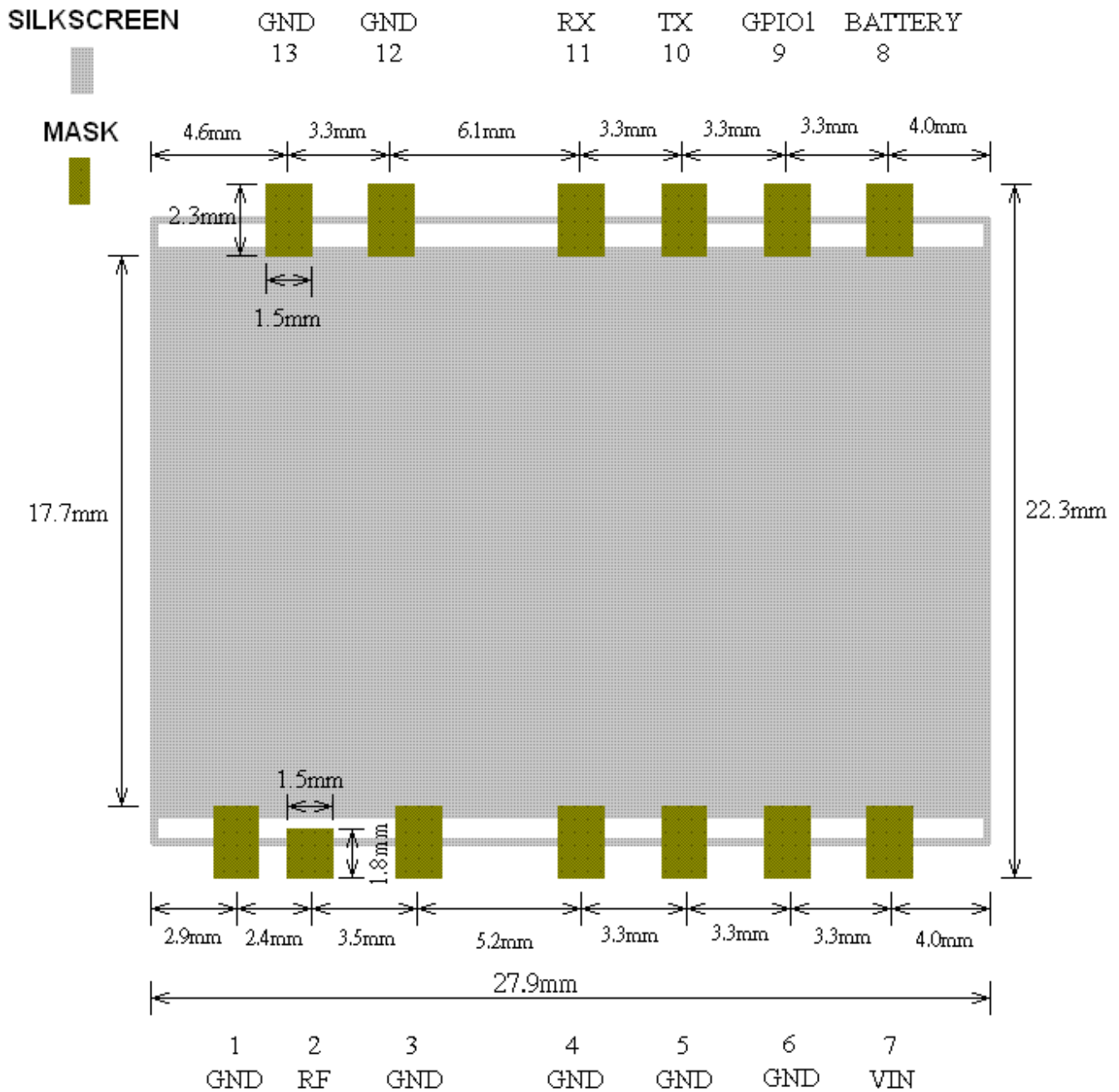


Recommend Drawing

ET-312 Recommend Drawing



Recommend Layout PAD



Placement Drawing

