GPS Locator Module

Model: GR-16

WI-RD-D-043 V1.1

UBX-G8030 Single-Chip GPS Receiver Series

Overview:

The main goal of GR-16 is to be used as a part of integrated system, which can be a simple PVT (Position-Velocity-Time) system, for instance, G-mouse, PND (Personal Navigation Device), or complex wireless systems, such as a system with GSM function, a system with Bluetooth function, and a system with GPRS function. The module (GR-16) can be the best candidate for users' systems as the users' systems need the careful consideration on the performance, sensitivity, power consumption, and/or size of the module.

Features:

- Active antenna on board helps the system integrators to do the design-in easily.
- High sensitive GPS Locator and GPS antenna.
- The perfect match is most suitable for any mobile devices, such as PND, Tablet, personal tracker and any portable devices, which need GPS features.
- Intelligent, user configurable power management and a built-in DC/DC converter for significantly lower power consumption.
- Improved jamming immunity

Applications

- Personal positioning and navigation
- Tracking device and Tablet PC, Automotive/Marine navigation
- GPS receiver and GPS mouse, Timing application

San Jose Technology, Inc. | 11F., No.2, Sec. 4, Jhongyang Rd., Tucheng Dist., New Taipei City 236, Taiwan (R.O.C.) | Tel: 886-2-22694456 | Fax: 886-2-22694451 | sanav@sanav.com

Specification:

PHYSICAL CONSTRUCTION			
GPS Board Dimension	L15mm*W15mm*H6.5mm		
GPS Antenna Dimension	L15mm*W15mm*H4.0mm		
Weight	6 gram		
Receiving frequency	GPS:1575.42MHZ; GLONSS:1602 ~ 1615MHZ BeiDou:1561.098MHZ (Option)		
Mounting	SMD		
Construction	Full EMI shielding		
ENVIRONMENTAL CONDITIONS			
Temperature	Operating: -40 ~ +80 ℃		
	Storage: -40 ~ +80 ℃		
COMMUNICATION			
Protocol	NMEA, UBX binary		
Signal level	UART		
INTERFACE CAPABILITY			
Standard Output Sentences	GGA, RMC, GSV, GSA, VTG, GLL Optional: ZDA		
PERFORMANCE			
Built-in Antenna	Highly-reliable ceramic patch		
Sensitivity (Tracking & Navigation)	GPS & GLONASS:-164 dBm		GPS:-163 dBm
Start-up time	hot start	GPS & GLONASS:1 s	GPS:1 s
	cold start	GPS & GLONASS:27 s	GPS 30 s
	Aided start	GPS & GLONASS:4 s	GPS 3 s
Position accuracy	Without aid: 2.5 m		SBAS: 2.0 m
Receiver architecture	72 parallel channels		
Accuracy of time pulse signal	RMS 30ns 99% 60ns		
Velocity	500 m/s		
Altitude	50,000m (Maximum)		
Update Rate	1 Hz(standard) GPS & GLONASS 5 Hz , GPS Only 10 Hz		
Power Supply	3V~5V		
Power Consumption	Acquisition: 66mA, Tracking: 55 mA		
Baud Rate	9600 bps (default) Optional:4800/19200/38400/115200 bps are adjustable		

[1] CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

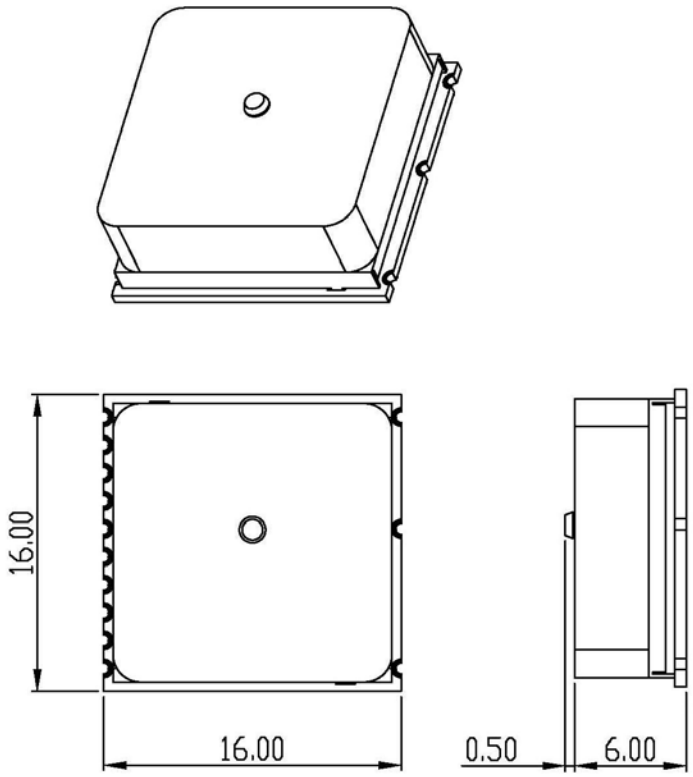
[2] Ready to support GALILEO E1B/C when available

Pin Assignment:

Figure 2.1 shows the pin definitions of GR-16. Table 2.1 describes the corresponding definitions for pins.

Figure 2.1 GR-16 Pin definitions

Pin	Name	Type	Description
1	VCC	P	Main power input (3.0 ~ 5VDC)
2	NC		
3	GND	P	Ground
4	VBAT	P	Backup Battery Input (1.8 ~ 3.6VDC) It must be connected. Power consumption under below 25uA when the power is off and in standby mode.
5	NC		
6	1PPS	O	TIME PULSE output CMOS Output Logic High, VOH 0.8 x VDD(min) VDD(max) CMOS Output Logic Low, VOL GND(min) 0.2 x VDD(max)
7	NC		
8	GND	P	Ground
9	TX	O	CMOS level asynchronous output for UART CMOS Output Logic High, VOH 0.8 x VDD(min) VDD(max) CMOS Output Logic Low, VOL GND(min) 0.2 x VDD(max)
10	RX	I	CMOS level asynchronous input for UART Input Logic High, VIH 0.7 x VDD(min) Input Logic Low, VIL 0.3 x VDD(max)
11	GND	P	Ground
12	GND	P	Ground
13	GND	P	Ground



Unit : mm

Assemble Tolerance : 0.2 mm