

GPS Module Ct-G348



Specifications Sheet V0.1

Part No.: 1-1S01-061RSLO

Features:

- Compact module size for easy integration:
24x20x2.9 mm
- SiRF Star III Low power single chip
- Multiple I/O pins reserved for customizing special user applications
- RoHS compliance

1. Introduction

The Connectec Ct-G348 GPS module is a high sensitivity, low power, Surface Mount Device (SMD). This 20-channel global positioning system (GPS) receiver is designed for a wide range of OEM applications and is based on the GPS signal search capabilities of the SiRFstarIII™ low power single chipset, SiRF's newest chipset technology. The Ct-G348 is also pin-to-pin compatible with the Ct-G348 for easier and faster transition.

The Ct-G348 is designed to allow quick and easy integration into GPS-related applications such as:

- PDA, Pocket PC, and other computing devices
- Car and Marine Navigation.
- Fleet Management /Asset Tracking.
- AVL and Location-Based Services.
- Hand-Held Device for Personal Positioning and Navigation.

1.1. Features

Hardware and Software

- Based on the high performance features of the SiRFStarIII low power single chipset
- Compact module size for easy integration: 24x20x2.9 mm (0.94x0.79x0.11 in).
- Fully automatic assembly: reflow solder assembly ready
- Hardware compatible with SiRF GSW3 v3.2.2 software
- Multiple I/O pins reserved for customizing special user applications
- RoHS compliance

Performance

- Cold/Warm/Hot Start Time: 42/38/1 sec. at open sky and stationary environments.
- Reacquisition Time: 0.1 second
- RF Metal Shield for best performance in noisy environments
- Multi-path Mitigation Hardware.

Interface

- TTL level serial port for GPS communications interface
- Protocol: NMEA-0183/SiRF Binary (default NMEA)
- Baud Rate: 4800, 9600, 19200, 38400 or 57600 bps (default 4800).

Advantages

- Ideal for high volume mass production (Taping reel package)
- Cost saving through elimination of RF and board to board digital connectors
- Flexible and cost effective hardware design for different application needs
- Secure SMD PCB mounting method

2. Specifications

2.1. Technical specifications

Feature	Item	Description
Chipset	GSC3f	SiRF StarIII low power single chipset
General	Frequency	L1, 1575.42 MHz
	C/A code	1.023 MHz chip rate
	Channels	20
Accuracy	Position	10 meters, 2D RMS 5 meters 2D RMS, WAAS corrected <5meters (50%)
	Velocity	0.1 meters/second
	Time	1 microsecond synchronized to GPS time
Datum	Default	WGS-84
	Other	selectable for other Datum
Time to First Fix (TTFF) (Open Sky & Stationary Requirements)	Reacquisition	0.1 sec., average
	Snap start	1 sec., average
	Hot start	1 sec., average typical TTFF
	Warm start	38 sec., average typical TTFF
	Cold start	42 sec., average typical TTFF
Dynamic Conditions	Altitude	18,000 meters (60,000 feet) max.
	Velocity	515 meters/second (1000 knots) max.
	Acceleration	4g, max.
	Jerk	20 meters/second ³ , max.
Power	Main power input	3.3 ~ 5.0 VDC input
	Power consumption	≈165 mW (continuous mode)
	Supply Current	≈49 mA
	Backup Power	1.65 ~ 5.0 VDC input
Serial Port	Electrical interface	Two full duplex serial TTL interface
	Protocol messages	NMEA-0183@4800 bps (Default)
Time-1PPS Pulse	Level	TTL
	Pulse duration	The 1PPS pulse width is 1μs, this 1PPS is NOT suited to steer various oscillators (timing receivers, telecommunications system, etc.)
	Time reference Measurements	At the pulse positive edge. Aligned to GPS second, ±1 microsecond

2.2 Environmental Characteristics

Items	Description
Operating temperature range	-40 deg. C to +85 deg. C
Storage temperature range	-55 deg. C to +100 deg. C

2.3 Physical Characteristics

Items	Description
Length	24 mm \pm 0.1mm (0.94 in)
Width	20 mm \pm 0.1mm (0.79 in)
Height	2.9 mm \pm 0.1mm (0.11 in)
Weight	2.5g

2.4 Interface Specifications

Items	Description
I/O	28 pin SMD micro package

3. Software

The Ct-G348 module includes GSW3.2.2, the SiRF standard GPS software for SiRFstarIII low power single chipset receivers. Features include:

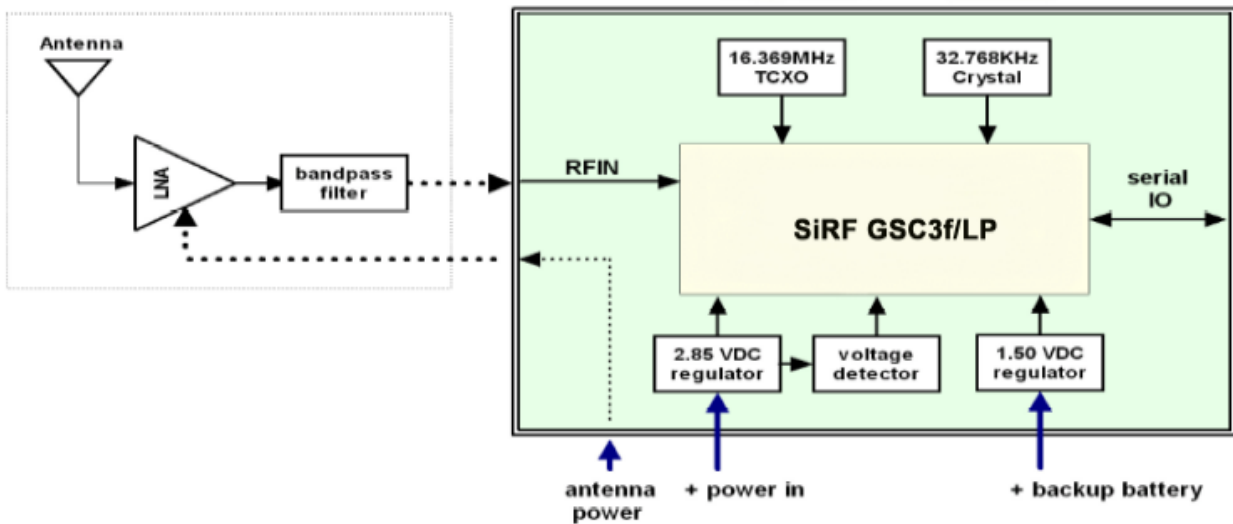
- Excellent sensitivity
- High configurability
- 1 Hz position update rate
- Supports use of satellite-based augmentation systems like the US WAAS or European EGNOS system (**Option**)
- Real-time Operating System (RTOS) friendly
- Capable of outputting either NMEA (default) or SiRF proprietary binary protocols
- Designed to accept custom user tasks executed on the integrated ARM7TDM1 processor (**Option**)
- Runs in full power operation (default) or optional power saving modes
- Default configuration is as follows:

Item	Description
Core of firmware	SiRF GSW3.2.2
Baud rate	4800, 9600, 19200, 38400 or 57600 bps (default 4800)
Code type	NMEA-0183 ASCII
Datum	WGS-84
Protocol message	GGA(1sec), GSA(5sec), GSV(5sec), RMC(1sec), VTG(1sec)
Output frequency	1 Hz

4. Electrical specifications

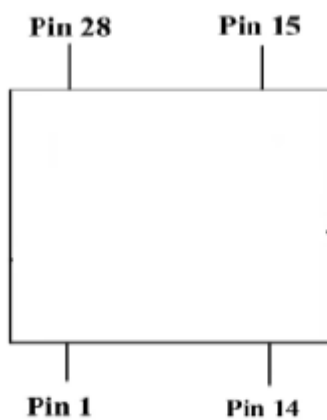
Block Diagram

Ct-G348 Block Diagram



5. Interface specification

5.1. Photos and Pin Positions

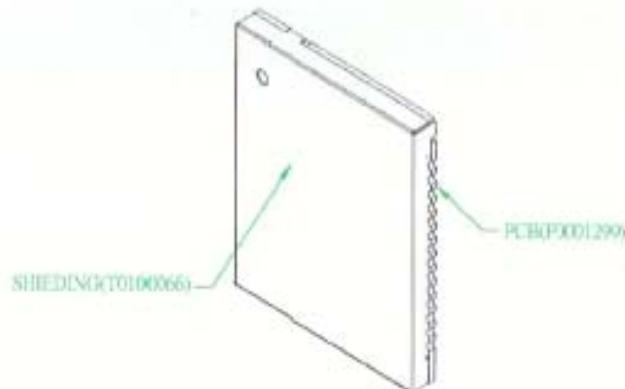
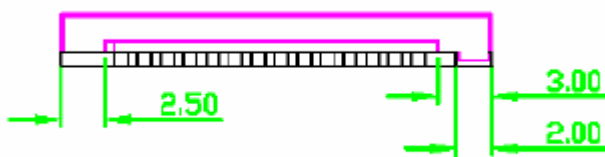
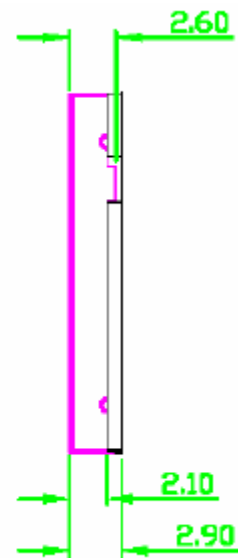
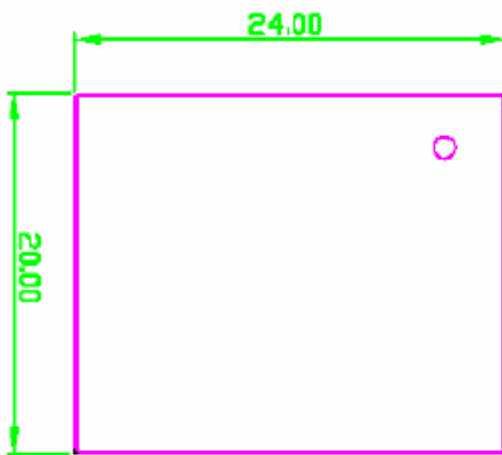


6. Mechanical Dimensions

Outline Drawing

Tolerance:

Length	24.0 ± 0.4 mm
Width	20.0 ± 0.1 mm
Height	2.90 ± 0.1 mm



Recommended Footprint

(Unit : mm)

