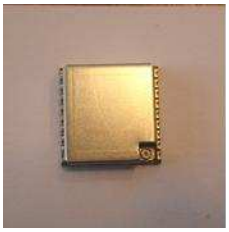
InvenTek System GPS Modules

ISM300F2-CX – Low Power – Low Cost – Low Profile GPS Module



The Inventek ISM300F2-CX is a 20-channel Global Positioning System (GPS) receiver module offered in an extremely compact Surface Mount Device (SMD) module form factor The module provides high sensitivity, high gain, and low power. It is designed for a broad spectrum of OEM applications and is based on the fast and deep GPS signal search capabilities of the SiRFStarIII™ architecture.

This module is designed for quick and easy integration for GPS related applications such as:

- Hand-held Devices for Personal Positioning and Navigation
- PDA, Pocket PC and other computing devices
- Fleet Management / Asset Tracking
- AVL and Location-Based Services

Module Highlights

- Based on the high performance features of the SiRFstarIII™ GSC3f/LPx chipset
- 1.9 mm thinner than our ISM300F1 series
- Integrated connector for direct antenna attachment
- SMT pads allow for fully automatic assembly processes equipment and reflow soldering
- RoHS compliant (lead-free)
- EMI/EMC Metal Shield
  - Optimal RF performance in noisy environments
  - Provides lower RF emissions/signature for FCC compliance
- Message Protocol: NMEA-0183/SiRF Binary
- SBAS (WAAS and EGNOS) Enabled

Advantages

- Ideal for compact size devices
- The elimination of RF and board to board digital connectors provides significant cost savings
- Flexible and cost effective hardware designed for multiple application requirements
- Secure SMD PCB mounting method
- Compact module size for easy integration: 18 x 18 x 3.1 mm (including shield height)

ACQUISITION / TTFF	Max
Hot Start TTFF	< 1s
Cold Start TTFF Autonomous	< 40 s
Reacquisition 1min ON/1min OFF	< 1.5 s

(Open sky measurements)

- Ultra-low Power (29ma acquisition, 25ma tracking, 10µa hibernate)
- Multi-path Mitigation Hardware
- TTL level serial port for GPS communications interface

Timing 1PPS output

- The 1PPS output width of the ISM300F2-CX Module is ~1µs

Sensitivity

Parameter	Description
Tracking Sensitivity	-159 dBm
Acquisition Sensitivity*	-142 dBm

*Autonomous

Rev 1.1 May 2008

239 Littleton Road, Westford Ma 01886 Tel 978-392-2202 www.inventeksys.com

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Software Features

The Inventek's ISM300F2-CX GPS module includes GSW3, the SiRF standard software for SiRFstarIII™ receivers. The default configuration is as follows:

Item	Description
Core of firmware	SiRF GSW3
Baud rate	9600, 19200 (default 4800)
Code type	NMEA -0183 ASCII
Datum	WGS -84
Protocol	Message GGA, GSA, GSV, GLL, RMC, VTG
Output frequency	1 Hz

Battery backup SRAM/RTC backup

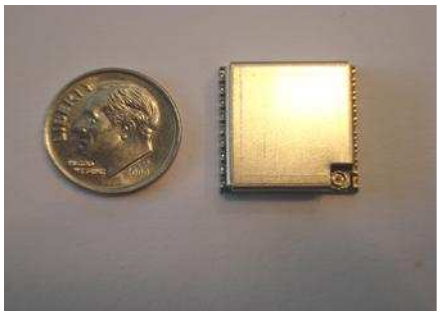
During 'Powered down' condition, the SRAM and RTC (Real Time Clock) may be kept operational by supplying power from VBATT. The ISM300F2-CX module can accept slow VBATT supply rise time (unlike the SiRFstarII™ based receivers) due to an on-board voltage detector.

Hardware Interface Power supply

Parameter	ITS-GPS3F-02 Module
Input voltage	3.3 ~ 5.0 VDC
Current (avg) at full power (3.3V)	40 mA with Antenna
Battery backup voltage	3.3V

GPS Ordering P/N information

ISM300F2-CX



Environmental

Item	Description
Operating temperature rang	-40 deg. C to +85 deg. C
Storage temperature range	-55 deg. C to +100 deg. C
Humidity	95% max non-condensing
Altitude	18,000 m (60,000 ft) max.
Velocity/Speed	515 m/Sec (1000 knots) max.
Jerk	20 m/Sec^3 (max)
Acceleration	4 G (max)

** Measusrements are open sky*

Position / Velocity

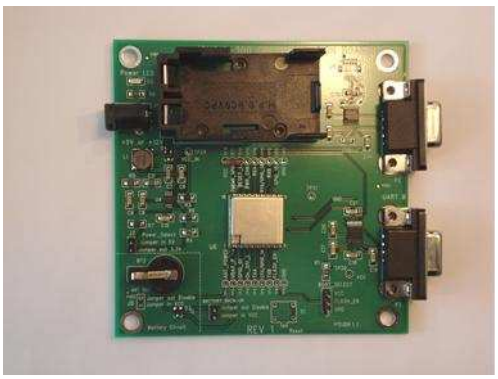
Full Power Stationary	Measured	Max
Horizontal Position (Avg.)	2.2m	10 m
Vertical Position Accuracy (Avg.)	0.0m	15.0M
Horizontal Velocity Accuracy (Max Dev.)	0.25m/s	2.0 m/s

(Open sky measurements)

Evaluation Kits:

Available as UART or USB versions. Ordering information below:

P/N : ISM300F2-EK001



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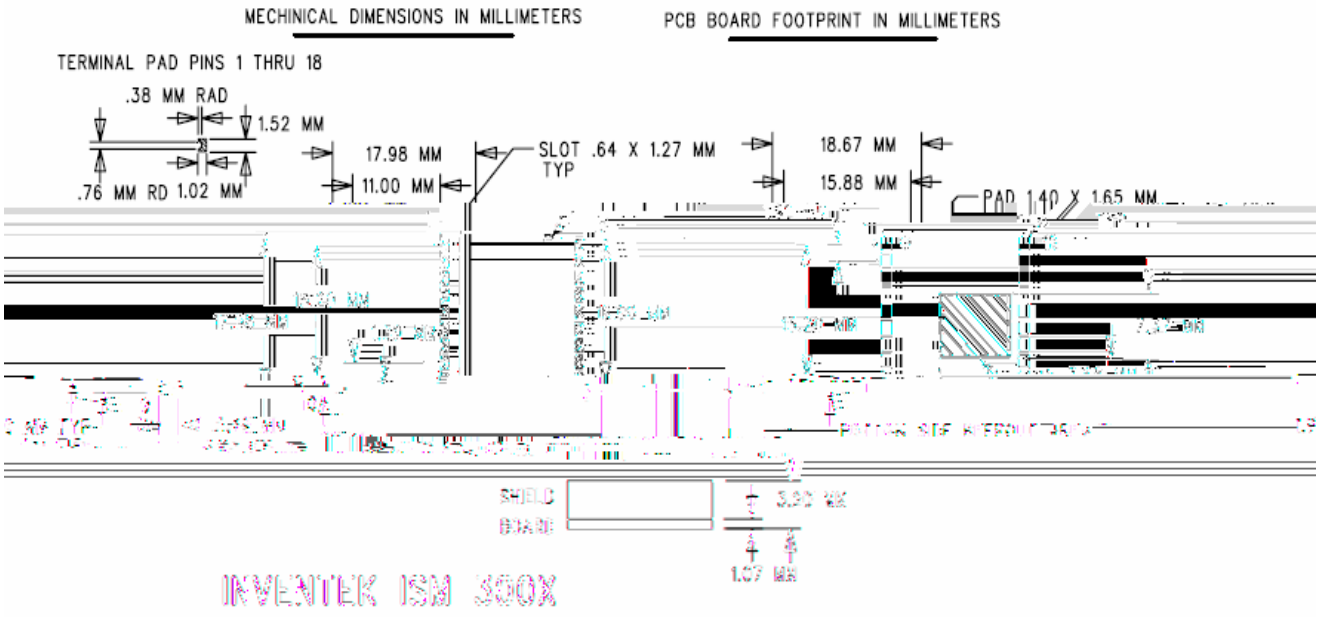
Mechanical Specifications:

Items	Description
Length	18.0 ± 0.1 mm
Width	18.0 ± 0.1 mm
Height	3.1 ± 0.05 mm



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