Fastrax IT430

OEM GPS Receiver Module

- ***Extremely tiny form factor***
- ***Low Power & Power saving modes***
- ***High performance***
- ***Fast TTFF and excellent sensitivity***
- ***Self-Assisted by CGEE***

Achieving Continuous Location Awareness

Convenient use of location aware applications in digital cameras, mobile phones and other battery driven applications previously required keeping the GPS active at all times, leading to increased battery consumption. With its new SiRFstar IV innovative SiRFAware mode, Fastrax IT430 autonomously activates periodically to maintain awareness of its location at all times and consumes only 125 uA average current. As a result, updated location information is available almost immediately when activated, without compromising battery life.

Self-Assisted by Extended Ephemeris

The Fastrax IT430 offers also a solution to reduce warm start TTFF by 70% with embedded assistance based on Client Generated Extended Ephemeris (CGEE), which is derived internally from broadcast ephemeris data and which allows fast Time to Fix over 3 days.

On-board high efficiency regulator

The Fastrax IT430 has internal high-efficiency switching regulator which makes it possible to save current drain when enabled by host via OSP binary command.

IT430 Key Features:

- Extremely tiny form factor 9.6 x 9.6 x 1.85 mm
- Low power consumption: 56/68 mW @ 1.8 V
- Low power modes including SiRFAware
  - Only 125 uA in average consumption
- Ultra High Sensitivity with SiRFStar IV:
  - –147dBm (Cold Start Acquisition)
  - –163 dBm (Tracking)
- Host port configurable either UART, SPI or I^2C
- NMEA protocol, switchable to OSP binary
- Self-Assisted by Client Generated EE
- Jammer Detection and Removal
- SBAS/WAAS support
- AGPS Support
- Dedicated I^2C port for external sensors
- 1PPS output

On-board Jammer mitigation

Wireless and portable consumer electronics products can be packed with a dense collection of fast CPU, memory bus, displays, radio transmitters and other noise sources, often times located very close to the GPS antenna.

Fastrax IT430 overcomes this constraint by detecting, tracking, and removing up to eight CW (Carrier Wave) type EMI sources.

This feature can be used to rapidly identify issues through the design and production validation phases, and potentially as a patch in production until the jamming issues are fixed.

Dedicated I^2C port for external sensors

The Fastrax IT430 has support for external sensors, e.g. MEMS 3-D Accelerometer, which allows stationary detection resulting to reduced position spread when GPS signals are weak indoors.

Fastrax

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IT430 GPS Receiver Module				
Specifications				
General:	L1 frequency, C/A code (SPS)			
	48 channels		I/O ports:	28 contact LGA
Update rate:	1 fix/s (user configurable)			One host port: either UART, SPI or I2C
Accuracy (unaided):	Position:	2.5 m (CEP50)		ON_OFF control input
	Velocity:	0.01 m/s (50%)		1PPS output
	Time:	1 us (typ.)		Antenna bias supply input
TTFF:	Cold Start (out of the box):	35 s typ.		Dedicated I2C port for external sensors
	Warm Start	35 s typ.	Protocol:	NMEA 0183 (default) or OSP binary
	Hot start:	1 s typ.	Baud rate:	4800 baud (configurable)
Sensitivity: *(note 1)*	Acqusition (cold):	-147 dBm	Chip set:	SiRF/CSR GSD4e
	Re-Acquisition:	-162 dBm	Dimensions:	9.6 x 9.6 x 1.85 mm
	Tracking:	-163 dBm	Weight:	0.4 g
Power Drain (1.8V):	Navigating 1 fix/s: *(note 2)*	56/68 mW typ.	Operating temperature:	-40C..+85°C
	Hibernate state:	36 uW typ.	Storage temperature:	-40C..+85°C
Operating voltage:	Single Supply VDD:	+1.71... +1.89 V	FW Options:	Signature feature set
I/O voltage levels:	*CMOS 1.8V (note 3)*	same as VDD		

Notes:

(1) Measured with external LNA or active antenna NF≤1 dB, G≥15 dB

(2) Default power mode is LDO (68 mW); Switcher mode (56 mW) requires binary command to enable

(3) Inputs are 3.3 V tolerable

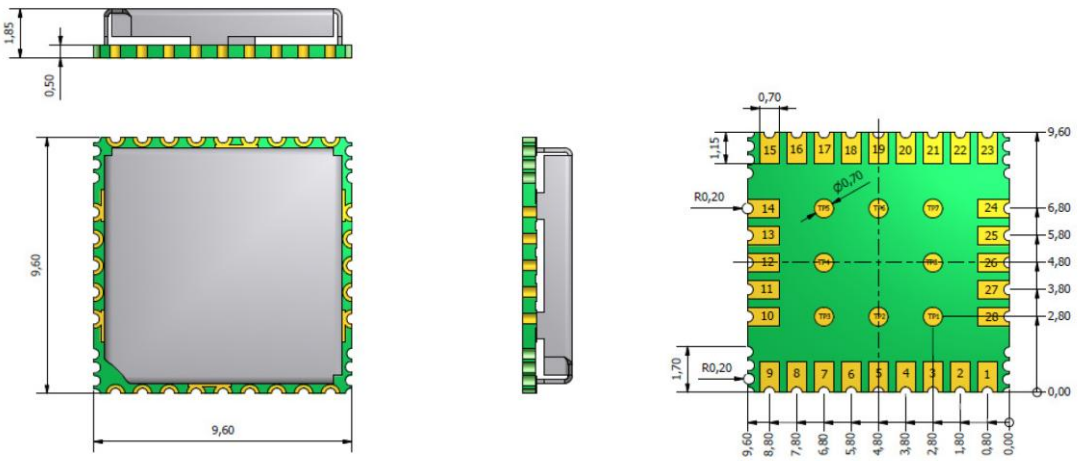
Fastrax IT430 is available with Signature feature set:

IT430-sssr**-SGT** Signature feature set:

- SiRFAware (Micro Power Management) 125 uA low power state
- CW Jammer mitigation
- Embedded Client and Server generated EE support
- TricklePower 10mW (@ 100 ms/ 1 Hz) and Push-to-Fix low power modes
- Support for Almanac based navigation
- AGPS support (Init aiding, set ephemeris, CGEE and SGEE support)
- SBAS/WAAS support (with patch + ROM2.0)
- MEMS sensor support: 3-D Accelerometer & 3-D Compass, Stationary Detection
- HW support for both LDO and Switcher mode

(sssr = FW rev.)

Dimensions and pin out:



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