

Fastrax UC430

OEM GPS Receiver Module

- Extremely tiny form factor
- Embedded GPS antenna
- Option for external GPS antenna
- Low Power & Power saving modes
- Fast TTFF and excellent sensitivity
- Self-Assisted by CGEE

OEM GPS Receiver for many Applications

Miniature size with embedded GPS antenna and optional external GPS antenna connectivity allows the UC430 to suit wide range of applications ranging from handheld computers to asset tracking devices.

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 UC430 autonomously activates periodically to maintain awareness of its location at all times and consumes only 125uA average current. As a result, updated location information is available almost immediately when activated, without compromising battery life or TTFF.

Self-Assisted by Extended Ephemeris

The Fastrax UC430 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 10 sec (typ.) over 3 days.

UC430 Key Features:

- Extremely tiny form factor 9.6 x 14.0 x 1.95 mm
- Low power consumption: 68 mW @ 1.8 V
- Low power modes including SiRFAware
 - Only 125uA in average consumption
- Ultra High Sensitivity with SiRFStar IV:
 - -147dBm (Cold Start Acquisition)
 - -163 dBm (Tracking)
- Host port configurable either UART, SPI (slave) or I²C
- NMEA protocol, switchable to OSP binary
- Self-Assisted by Client Generated EE
- Jammer Detection and Removal
- SBAS/WAAS support
- AGPS Support
- Dedicated I²C port for optional external sensors
 - EEPROM 64 or 128kB for CGEE or patch storage
 - Accelerometer Kionix KXTF9
 - Magnetometer Aichi AMI304
- 1PPS output

Cutting component costs

The chip antenna of UC430 performs well against larger patch antennas and circular radiation pattern increases flexibility for device installation. When external antenna is required, UC430 works efficiently as a back-up antenna if the external antenna is damaged or removed. With small design, limited amount of required external components and SMT design both space and manufacturing cost are reduced to a minimum.

Quick Start with Easy-To-Deploy Solution

In addition to serial connection, one control signal and power supply is required to make UC430 operational. Optional connectivity includes host port SPI (slave) or I²C and DR_I²C bus for external EEPROM (CGEE storage) and MEMS sensors to aid navigation in static/moving detection.

Miniature hardware design

With a size of only 9.6 x 14.0 x 1.95mm the UC430 is extremely well suited for applications with space restrictions. The small size including embedded antenna combined with the robustness of SiRFstarIV receiver as well as Fastrax design expertise makes UC430 an unbeatable choice for any GPS application.

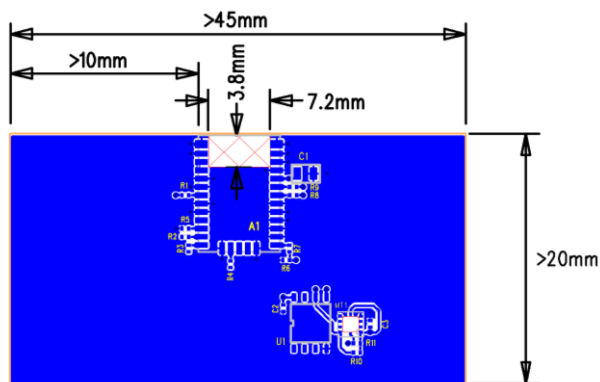
UC430 GPS Receiver Module			
Specifications			
General:	L1 frequency, C/A code (SPS) 48 channels	Antenna efficiency:	60% typ. (note 3)
Update rate:	1 fix/s (up to 5 Hz)	I/O ports:	31 contact LGA
Accuracy (unaided):	Position: 2.5 m (CEP50) Velocity: 0.01 m/s (50%) Time: 1 us (typ.)		One host port: either UART, SPI or I2C ON_OFF control input 1PPS output Antenna output, RF-input
TTFF:	Cold Start (out of the box): 35 s typ. Warm Start: 35 s typ. Hot start: 1 s typ.		Dedicated I2C port for external sensors
Sensitivity: (note 1)	Acquisition (cold): -147 dBm Re-Acquisition: -162 dBm Tracking: -163 dBm	Protocol:	NMEA 0183 3.01 (default) or OSP binary
Power Drain (1.8V):	Navigating 1 fix/s: 68 mW typ. Hibernate state: 36 uW typ.	Baud rate:	4800 baud (configurable)
Operating voltage:	Single Supply VDD: +1.71... +1.89 V	Chip set:	SiRF/CSR GSD4e
I/O voltage levels:	CMOS 1.8V (note 2) same as VDD	Dimensions:	9.6 x 9.6 x 1.85 mm
		Weight:	0.5 g
		Operating temperature:	-40C..+85°C
		Storage temperature:	-40C..+85°C
		FW Options:	Signature feature set

Notes:

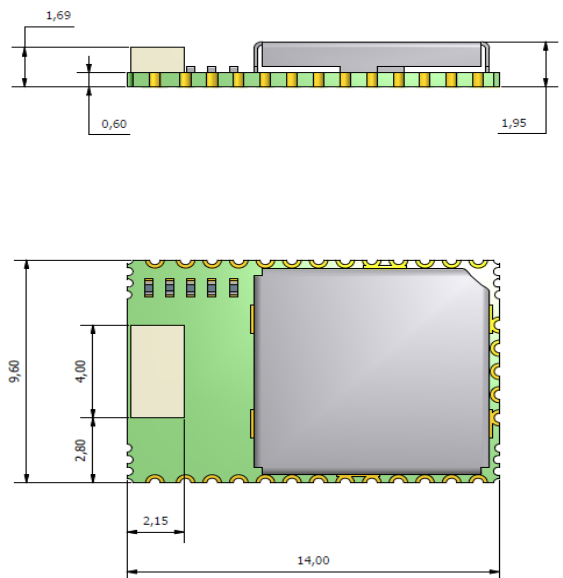
- (1) Measured with AC430 Application Board having external LNA or active antenna $NF \leq 1$ dB, $G \geq 15$ dB.
- (2) Inputs are 3.3 V tolerable.
- (3) Measured on 80x40 mm ground plane; Antenna efficiency depends on ground plane size.

Placement on motherboard:

Note: Ground plane required



Dimensions:



Pin out, bottom side:

