iTraxO2



[actual size]

- Ultra Low Power Consumption
- Tiny Form Factor
- Market Leading Performance

iTRAXO2 Key Features:

- Tiny PCB form factor 26mm x 26mm x 4.7mm (including RF shield and system connector).
- Ultra-low power consumption 130mW @ 2.7V in continuous operation
- Very Fast TTFF
- Sensitivity –150dBm (Tracking)
- iTALK and NMEA0183 protocols
- Versatile interface ports
- Accurate 1PPS timing output
- iTRAX02/8 8MBit Flash Memory
 iSUITE SDK Software Development Kit
- iTRAX02/4 4MBit Flash Memory
 - NMEA Engine



GPS Receiver Module

Fastrax's iTrax02 GPS receiver modules enable the implementation of full-fledged positioning features into any appliance faster and with less effort than ever before. Offering industry-leading benefits in performance, size, power consumption and versatility, the iTrax02 receivers are ideally suited for both industrial tracking systems and battery-operated consumer products like mobile phones, asset tracking devices, handheld computers and sports accessories.

Market Leading System Performance

Ultra-low, user configurable power management makes iTrax02 the lowest power consuming, complete 12-channel GPS receivers on the market. Nevertheless, there are no compromises in performance. The iTrax02 receivers have a navigation sensitivity as low as -150 dBm making them applicable even for extremely demanding applications and environments.

Cutting component costs

Space and costs are reduced due to the cutting-edge technology architecture in the iTrax02 receivers. All navigational data is stored in Flash memory with simple commands and thus no back-up battery is required. This benefit can easily be converted to smaller component costs and smaller design – crucial parameters for many projects.

iTRAX02/8 - Versatile Programmability

The iTrax02/8 features 8MBit Flash memory allowing versatile programmability with the iSuiteSDK (Software Development Kit). Application costs are reduced significantly when no external processor is needed and the iTrax02 is used as a microprocessor. With fewer components, cost and application size are reduced.

iTRAX02/4 - cost efficient performance

In applications where the industry standard NMEA0183 protocol is sufficient and programmability is unnecessary, the iTrax02/4 with 4MBit Flash memory, is a cost efficient and high performance alternative.

Quick Start with Easy-To-Deploy Solution

The addition of an antenna and power supply is all that is needed to make the iTRAX02 operational. The Fastrax support team can provide antenna design application notes to aid in further refinement of the antenna design for specific applications.



iTrax02

GPS Receiver Module



Specifications

General:	L1 frequency, C/A code (SPS)		
	12 independent tracking channels		
	Separate search & acquisition engine Based on two-chip GPS solution - RF chip, uN8021		
	- Base band chip, uN8031		
Update rate:	1 fix/s or user configurable		
Accuracy:	Position:	3m (CEP), 6m 2DRMS	
	Velocity:	0.2 m/s (50%)	
	Time:	20ns RMS (static mode)	
Reacquisition:	100ms typical (signal reacquisition)		
TTFF:	Cold Start:	50 s typical	
	Warm Start:	35 s	
	Hot Start:	8 s	
	Quick Start:	3 s	
Dynamics:	Acceleration:	4 G	
	Jerk:	4 m/s³	
Sensitivity:	-150dBm (tracking)		
Operating Voltage:	2.7V3.3V (linearly regulated)		
Operating Temp:	-40C+85C		
Antenna Supply:	Same as board supply or		
	Separate external supply (e.g. 3.3V)		

Antenna:	Evternal passive o	ur active	
Power Drain:	External, passive or active		
Power Drain:	130mW @ 2.7V (in continuous mode)		
	(Active antenna power not included)		
I/O Ports:	Dual Asynchronous data ports		
	16-bit GPIO		
	SPI-Interface		
	Dual Pulse Measurement inputs		
	1PPS Output		
Protocol:	NMEA-0183 V3.0		
	Proprietary iTALK binary protocol		
Processor:	Proprietary, 32MIPS integrated 16-bit DSP-core		
	RISC-like programming under Pre-emptive		
	Real Time Operating System Control (VSDSP RTOS)		
Flash Memory:	iTRAX02/8:	8MBits Flash	
	iTRAX02/4:	4MBits Flash	
Dimensions:	26 mm x 26 mm x 4.7 mm		
	(Including RF shield and connector)		
Weight:	4 g		
System Connector:	: AMP 4-353515-0 (RF and I/O)		
	2 x 20 pin, 0.5 mm pitch		
Mating Connector:	AMP 4-353512-0		

Other Fastrax GPS products



Fastrax other GPS products include modules like *uTracker02* and *uPatch02*. Both products include a iTrax02 GPS receiver and on-board regulators. The uTracker02 has furthermore a *MCX antenna* connector for easy integration while the uPatch02 has RS232 drivers and a already integrated and optimized *Patch antenna*. For easier evaluation Fastrax offers an *iTrax02 Evaluation kit* that includes a universal power supply, two serial cables, an active antenna, a user's manual and a CD with documentation and the *GPS WorkBench*.

iTrax Evaluation Kit



For programming the iTrax02/8 Fastrax offers a *iSuiteSDK* (software development kit). In addition to the software the iSuiteSDK includes two days of hands on training and e-mail

support during development. For application that use an external host processor Fastrax offers a free *iSuiteHDK* (host development kit) to registered users at www.fastrax.fi. The iSuiteHDK includes documentation and source code to Fastrax binary protocol, iTalk.

