



iTrax03

OEM GPS Receiver Module

- Market leading Programmability
- Ultra Low Power Consumption
- Very High Sensitivity



Fastrax iTrax03 OEM GPS receiver modules enable the implementation of fullfledged positioning features into appliances faster and with less effort than ever before.

Offering industry-leading benefits in performance, size, power consumption, programmability and total cost of product, the iTrax03 receivers are ideally suited for both industrial tracking and navigation systems and batteryoperated consumer products like sports accessories, handheld computers, tracking devices, vehicle navigation devices and mobile phones.

Market Leading System Performance

Ultra-low, user configurable power management makes iTrax03 one of the lowest power consuming, complete 12-channel OEM GPS receivers on the market. Nevertheless, there are no compromises in performance. The iTrax03 receivers have a navigation sensitivity as low as -156 dBm making them applicable even for extremely demanding applications and environments. The iTrax03 includes a full-fledged MMC-card interface which enables integrated PDA applications i.e. maps for navigation. A-GPS can be used to further improve TTFF and acquisition sensitivity.

Cutting component costs

Space and costs are reduced due to the cutting-edge technology architecture in the iTrax03 receivers. The surface mount SMD design eliminates need for expensive and labour intensive system and RF connectors. Very few additional components are

required. Utilizing iTrax03 programmability the cost of a host CPU can be saved. The dedicated hardware search engine ensures fast TTFF thus no backup battery is required. These benefits can easily be converted to smaller component costs and smaller design – crucial parameters for many projects.

iTrax03/16 – Versatile Programmability

The iTrax03/16 features 16 MBit Flash memory which allows versatile programmability with iSuite™ 3 SDK. It also allows permanent operation parameter changes via NMEA or iTalk™ and data logging as a standard feature. Application costs are reduced significantly when no external processor is required and the iTrax03 is used as a host controller. With fewer components, cost and application size are reduced.

iTrax03/8 – cost efficient performance

In applications where the industry standard NMEA0183 protocol is sufficient or where only a limited amount of flash memory is required for application code/data storage, the iTrax03/8 with 8MBit 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 required to make the iTrax03 operational. The Fastrax Engineering Services team can provide antenna design application notes to aid in further refinement of the antenna design for specific applications.



Specifications

General:	L1 frequency, C/A code (SPS) 12 independent tracking channels. Separate search & acquisition engine.
Update rate:	1 fix/s (user configurable up to 3Hz)
Accuracy:	Position: 1.0 m (CEP50) 1.2 m (CEP95) Velocity: 0.1 m/s Time: 20 ns RMS
Reacquisition:	100ms typical (signal reacquisition)
TTF:	Out of the box start: 40 s typical Cold Start: 36 s Hot Start: 4 s
Sensitivity:	Acquisition (cold): -141 dBm Acquisition (hot, warm): -149 dBm Tracking: -156 dBm Navigation: -155 dBm
Operating voltage:	Main Supply: 2.7V...3.3V RF Supply: 2.7V...3.3V
Operating Temp:	-40C...+85C
Storage Temp:	-40C...+85C
Antenna:	External, passive or active
Antenna input:	LGA pad, 50ohm
Antenna bias:	Same as RF supply
Power Drain:	95mW @ 2.7V (Continuous Mode) 15mW @ 2.7V (Idle Mode) 20µW @ 2.7V (Sleep Mode) (Active antenna power not included)
I/O Ports:	Two asynchronous serial ports 22-pin GPIO (Shared Functionality) 2 x SPI-Interface Dual Pulse Measurement inputs 1PPS output 2 x Pulse Measurement Timers 2 x Capture Timers 2 x Clock inputs MMC (Master) connection
Protocol:	NMEA-0183 iTalk 3 Binary Protocol
Chipset:	uN8021 RF uN8130 Baseband
Flash Memory:	iTrax03/16: 16Mbits Flash iTrax03/8: 8Mbits Flash
Dimensions:	22 mm x 23 mm x 2.9 mm (Including RF shield)
Weight:	3 g

iTrax03

iTrax03 Key Features:

- Tiny PCB form factor – 22mm x 23mm x 2.9mm
- Ultra-low power consumption – 95mW @ 2.7V
- Very high sensitivity –156 dBm (tracking)
- A-GPS support
- NMEA0183 and iTalk 3 protocols
- Kalman Navigation
- Supports remote firmware updates
- Extensive support for external sensors
- Versatile interface ports
- iTrax03/16 – 16MBit Flash Memory
- iTrax03/8 – 8MBit Flash Memory
- Supported by iSuite™ 3 Software Development Kit
- Datalogger, up to 140.000 datapoints (16 MBit version)
- Accurate 1PPS timing output
- WAAS/EGNOS/MSAS support
- INS support (2H2006)
- Automatic interval mode

Connection to: 37 SMD connection pads

Software Features: iSuite™ 3 Firmware

- Kalman Navigation
- Reprogramming on the fly
- Advanced Multipath Mitigation
- Advanced Cross Correlation Mitigation
- Data-logger
- A-GPS Support
- WAAS / EGNOS Support
- Automatic interval mode

Application board:

