

# iTrax03-S

## OEM GPS Receiver Module

- iTrax MP Compatible receiver
- Very Small Size
- Very High Sensitivity
- Ultra Low Power Consumption
- Market leading Programmability



### OEM receiver for many Applications

Fastrax iTrax03-S OEM GPS receiver modules enable the implementation of full-fledged 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-S receivers are ideally suited for both industrial tracking and navigation systems and battery operated consumer products like sports accessories, handheld computers, asset tracking devices, vehicle navigation devices and mobile phones.

### Market Leading System Performance

Ultra-low, user configurable power management makes iTrax03-S one of the lowest power consuming, complete 12-channel OEM GPS receivers on the market. Nevertheless, there are no compromises in performance. The iTrax03-S receiver has a tracking sensitivity as low as -156 dBm making it 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 iTrax03-S receivers. The surface mount SMD design eliminates need for expensive and labor intensive system and RF connectors. Very few additional components are required. The build-in data-logger saves an external CPU & memory.

### iTrax03-S Key Features:

- Tiny form factor – 16.2mm x 18.8mm x 2.3mm
- Ultra-low power consumption – 95mW @ 2.7V
- Very High Sensitivity –156 dBm (Tracking)
- iTalk and NMEA0183 protocols
- Kalman Navigation
- Supports remote firmware updates
- Data-logger, up to 14.000 data points (Lat/Lon)
- A-GPS support
- Versatile interface ports
- Accurate 1PPS timing output
- Supported by iSuite™ 3 Software Development Kit
- WAAS/EGNOS/MSAS support

### iTrax03-S –Versatile Programmability

The iTrax03-S features a 8MBit Flash memory, which allows remote firmware updates, permanent operation parameter changes via NMEA or iTalk 3 and data logging as a standard feature. iTrax03-S supports versatile programmability with iSuite 3 SDK, which results to reduced application costs when no external processor is required and when the iTrax03-S is used as a host controller. With fewer components, cost and application size are reduced.

### Quick Start with Easy-To-Deploy Solution

The addition of an antenna and power supply is all that is required to make the iTrax03-S operational. The module supports also dedicated control inputs for external control for the Sleep state. The Fastrax Engineering Services team can provide antenna design application notes to aid in further refinement of the antenna design for specific applications.



## Specifications

<b>General:</b>	L1 frequency, C/A code (SPS) 12 independent tracking channels. Separate search & acquisition engine.
<b>Update rate:</b>	1 fix/s (user configurable up to 3Hz)
<b>Accuracy:</b>	Position: 1.0 m (CEP50) 1.2 m (CEP95) Velocity: 0.1 m/s Time: 20 ns RMS
<b>Reacquisition:</b>	100ms typical (signal reacquisition)
<b>TTF:</b>	Out of the box start: 40 s typical Cold Start: 36 s Hot Start: 4 s
<b>Sensitivity:</b>	Acquisition (cold): -141 dBm Acquisition (hot, warm): -149 dBm Tracking (hot, warm): -156 dBm Navigation (hot, warm): -155 dBm
<b>Operating voltage:</b>	Main Supply: 2.7V...3.3V RF Supply: 2.7V...3.3V
<b>Operating Temp:</b>	-40C...+85C
<b>Storage Temp:</b>	-40C...+85C
<b>Antenna:</b>	External, passive or active
<b>Antenna input:</b>	LGA pad, 50ohm
<b>Antenna bias:</b>	Same as RF supply
<b>Power Drain:</b>	95mW @ 2.7V (Continuous Mode) 15mW @ 2.7V (Idle Mode) 20µW @ 2.7V (Sleep Mode) (Active antenna power not included)

1 - TCAP1/GPIOA11	1PPS - 30
2 - BOOT1/GPIOB22	PM0 - 29
3 - SPI1XCS0/GPIOB10	VDDDIG - 28
4 - SPI1SDO/GPIOB14	MMCCDAT/GPIOA14 - 27
5 - GND	GND - 26
6 - SPI1SDI/GPIOB15	GND - 25
7 - SPI1CLK/GPIOB13	RF - 24
8 - GND	GND - 23
9 - XRESET	ITRAX03-S
10 - BOOT2/GPIOB21	MMCCCLK/GPIOA12 - 21
11 - GND	GND - 20
12 - SPIXCS2/GPIOB12	RXD1 - 19
13 - MMCCMD/GPIOA13	RXD0 - 18
14 - VDDRF	TXD0 - 17
15 - GND	TXD1 - 16

## iTrax03-S

<b>I/O Ports:</b>	30 contact LGA Two asynchronous serial ports 1PPS output SPI-bus Capture Timer input Pulse Measurement input MMC (Master) connection
<b>Protocol:</b>	NMEA-0183 iTalk 3 Binary Protocol
<b>Chipset:</b>	uN8021 RF uN2110 Baseband
<b>Dimensions:</b>	16.2 mm x 18.8 mm x 2.3 mm (2.5 max)
<b>Weight:</b>	1.6 g
<b>Software Features:</b>	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
<b>Application board:</b>	

