

# iTrax03-02

## OEM GPS Receiver Module

- iTrax02 compatible mechanics
- iTrax03 compatible SDK tools
- Very High Sensitivity
- Ultra Low Power Consumption
- Market Leading Programmability



### OEM GPS receiver replacement for iTrax02

Fastrax iTrax03-02 OEM GPS receiver module enable the implementation of full-fledged positioning features into appliances faster and with less effort than ever before.

iTrax03-02 offers industry-leading technology, which was developed for the iTrax03 family, in iTrax02 mechanical format and connectivity. Thus existing products with iTrax02 OEM GPS receiver can be converted to iTrax03 technology having lower power consumption and better navigation performance with less effort and fast time to the market.

### Market Leading System Performance

As with other iTrax03 OEM GPS receiver modules, the iTrax03-02 is one of the lowest power consuming, complete 12-channel OEM GPS receivers on the market. Compared to iTrax02 the power saving is 30mW. Nevertheless, there are no compromises in performance. The iTrax03-02 receiver has a tracking sensitivity as low as -156 dBm making it applicable even for extremely demanding applications and environments.

### iTrax03-02 – Versatile Programmability

iTrax03-02 supports versatile programmability with iSuite™ 3 SDK, which results to reduced application costs when no external processor is required and when the iTrax03-02 is used as a host controller. With fewer components, cost and application size are reduced.

For iSuite SDK users the iTrax03-02 provides 27 pins GPIO interface and a high speed SPI serial interface. Other supported peripherals include two pulse measurement inputs, two capture timers and a MMC-bus. A-GPS can be used to further improve TTFF and acquisition sensitivity.

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

The addition of an antenna and power supply is all that is required to make the iTrax03-02 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.

### Product line-up

The iTrax03-02 features 16MBit Flash memory, which both allow remote firmware updates, permanent operation parameter changes via NMEA or iTalk 3 and data logging as a standard feature.



## 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>	100 ms typical
<b>TTFF:</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: -156 dBm Navigation: -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>	AMP system connector, 50 ohm
<b>Antenna bias:</b>	External input
<b>Power Drain:</b>	95mW @ 2.7V (Continuous Mode) 15mW @ 2.7V (Idle Mode) 20µW @ 2.7V (Sleep Mode) (Active antenna power not included)
<b>I/O Ports:</b>	Two asynchronous serial ports 1PPS output SPI-bus 27 GPIOs with shared functionality 2 x Pulse Measurement Timers 2 x Capture Timers MMC (Master) connection
<b>Protocol:</b>	NMEA-0183 iTalk 3 Binary Protocol
<b>Chipset:</b>	uN8021 RF uN8130 Baseband
<b>Flash Memory:</b>	iTrax03-02/8: 8MBit iTrax03-02/16: 16MBit
<b>Dimensions:</b>	25.9 mm x 25.9 mm x 4.6 mm
<b>Weight:</b>	4 g
<b>System Connector:</b>	AMP 4-353515-0 (RF and I/O) 2 x 20 pin, 0.5 mm pitch

## iTrax03-02

### iTrax03-02 Key Features:

- iTrax02 compatible mechanics and connectivity
- Small form factor – 25.9mm x 25.9mm x 4.6mm
- Low power consumption: 95mW @ 2.7V
- Very high sensitivity –156 dBm (Tracking)
- iTalk 3 and NMEA0183 protocols
- Kalman Navigation
- Supports remote firmware updates
- Data-logger
- A-GPS support
- Versatile interface ports
- Accurate 1PPS timing output
- WAAS/EGNOS/MSAS support
- Supported by iSuite™ 3 Software Development Kit

**Mating Connector:** MP 4-353512-0

**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
- INS support (2Q2006)
- Automatic interval mode

**Application board:**

