



iSuite MP SDK

Software Development Kit for Embedded GPS Applications

iSuite MP SDK is a complete software development environment for application specific customization and programming of Fastrax GPS Receivers.

The main advantages are fast time to market, miniature size and lowest possible cost of ownership as no additional microcontroller is needed in the end applications. Suitable target segments are asset tracking, person tracking and recreation applications where miniature size, lowest possible power consumption and excellent sensitivity are key requirements.

Typical iSuite MP SDK Applications

iSuite MP SDK is used in a variety of different applications. The applications are often high volumes consumer application like speed camera devices, Bluetooth positioning devices, sports devices or anti-theft asset tracking devices. In such applications the internal microcontroller has been used to manage GSM/GPRS modems, Bluetooth modules, LED's, displays, buttons, microphones, POI storage etc. The iSuite MP SDK has also been used for more technical requirements such as geo-fencing, integrating proprietary communication protocols, accessing carrier phase data or 100Hz post processed position updates.

Develop your own application

iSuite MP SDK is used to develop customer specific applications that are executed on the Fastrax IT OEM GPS receivers. The customer application software can process both raw and calculated position data generated by the iSuite MP SDK GPS Navigation software. The application software can also communicate with other devices with standard and customer specific communication protocols. The Fastrax IT receivers can also be used to do other programmed tasks triggered either internally or externally. These applications can utilize the on chip memory, flash memory file system for data and software code storage in addition to access the various I/O lines on the Fastrax IT OEM GPS receiver. The receivers provide enough memory and bandwidth for even complex user tasks.

iSuite MP SDK is now more powerful than ever

iSuite MP SDK is the only true embedded, real time GPS Software Development Environment and it is furthermore available for multiple GPS chipset platforms! Spare CPU processing capacity and extensive I/O's of Fastrax IT03, Fastrax IT03-S, Fastrax IT03-02, Fastrax IT130 and Fastrax UP130 OEM GPS receivers can be used for custom purposes.

	IT03/16	IT03-S	IT03-02	IT130	UP130
Free Program code and constant data memory Flash ¹⁾	1082 kBytes	57.8 kBytes	1082 kBytes	553.5 kBytes	
CPU Available for user applications • Code executed from RAM ²⁾ • Code executed from Flash ²⁾	41% of total CPU cycles free 4.8 Dhrystone MIPS 0.8 Dhrystone MIPS			68% of total CPU cycles free 17 Dhrystone MIPS 4.0 Dhrystone MIPS	
Free RAM memory	48 kBytes			20.7 kBytes	

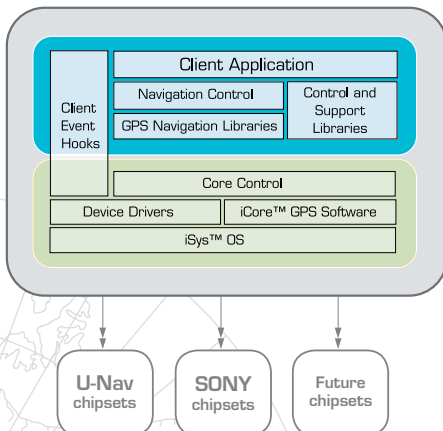
Note 1): These are minimum values. Available program code space can be increased by leaving out unused system features while compiling user application. Note 2): 100% of the CPU can be allocated to user application by temporarily suspending the GPS functionality.
NOTE: System resources are based on currently available iSuite firmware version. Available resources are subject to change without prior notice.

iSys Real Time Operating System

iSys offers true multitasking and a 100% control of the application while iTalk protocol offers effective synchronized message queues. Programming challenges of multitasking and data sharing environment are already solved by the operating system and by using the extensive system programming facilities you can concentrate to what is important for you without the need to reinvent the wheel.

Toolkits for controlling your device

Optional iSuite MP SDK Toolkits can be used to enhance the capabilities further. Control of wireless modems, simple keyboards, LCD displays and other similar devices is easy to implement with specialized Toolkits which provide functional reference implementations with complete source code. iSuite MP SDK Toolkits are well suited for demanding application development such as interfacing with external sensors and peripheral devices. This allows Fastrax IT OEM GPS receivers to be used in independent solutions like wireless asset tracking devices and applications based on geo-fencing databases.



Hardware Platforms for application development with iSuite MP SDK

The Fastrax Evaluation Kit or the Fastrax Mini Evaluation kit together with either appropriate IT Application Board, or with the IT130 Development Board are used as hardware development platforms for iSuite MP SDK software development. The hardware enables easier debugging and testing of receiver software and access to all interface signals of programmable modules.

Fastrax hardware development platforms together with iSuite MP SDK enable seamless platform to platform transition of the application code and thus your valuable investment in software development is protected.

IT130 Development Board



IT Application Board





iSuite MP SDK Includes:

- iSuite MP SDK Software development environment
- New iSuite Builder IDE
- iSys™ Portable Real Time Operating System
- GPS core software, navigation libraries with control and support API's
- System libraries and device drivers with source code
- Protocol libraries with source code including iTalk 3 and NMEA.
- Full on-line documentation
- Support for Windows based development, debugging and testing using Microsoft® Visual Studio® .NET 2003
- 2 days of intensive training is optionally available.

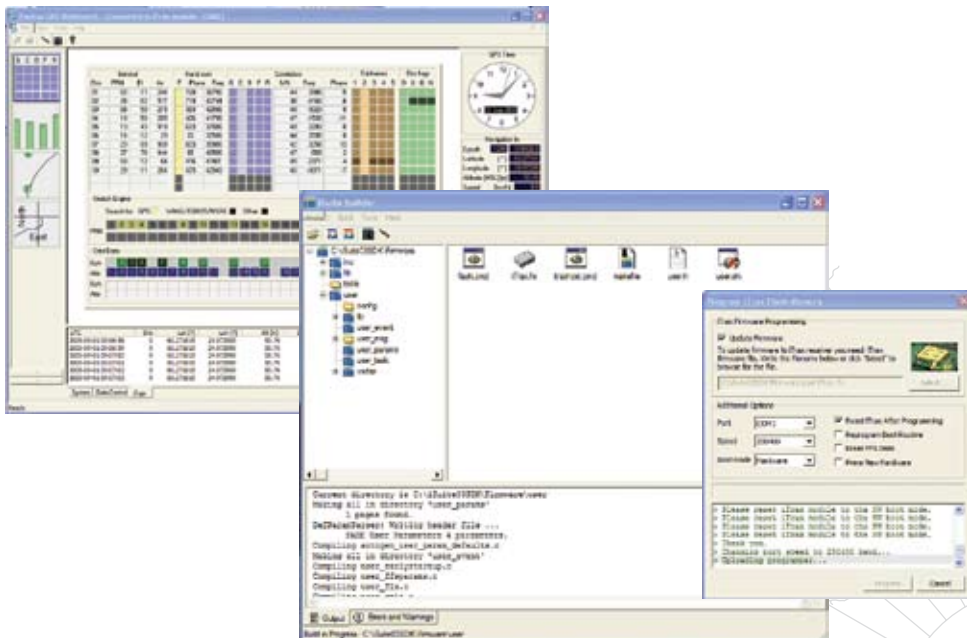
► For more information, please visit iSuite SDK Developers site <http://isuite.fastrax.fi>

iSys Operating System

- iSys Operating system offers true multitasking with real time response to user tasks
- iSys supports task prioritization, inter-task messaging and synchroization
- iSys libraries for Windows XP operating System provides development and testing using Microsoft Visual Studio .Net 2003

iSuite MP SDK Software

- iSuite MP SDK customizable communications libraries for iTalk 3 and NMEA protocols
- A-GPS support
- DGPS support
- Advanced search and tracking software
- Advanced multipath mitigation
- Advanced cross correlation mitigation
- Configurable power management
- Flash File System
- Autonomous Logging system
- WAAS/EGNOS/MSAS support



iSuite Builder IDE

- Automatic creation and management of user projects
- Automated firmware build process
- Flash memory programming
- Configurable and extensible parameter system

GPS Navigation Library

- Extensively configurable
- Kalman navigation engine
- Standard interfaces for external A-GPS, DGPS and INS data

Control and Support Libraries

- Navigation and GPS core control for specialized customer applications
- Provides complete control over GPS functionality

GPS Workbench PC Software

- Easy and quick evaluation of programmable Fastrax IT OEM GPS receivers
- Complete data archiving and playback capability including raw GPS measurements
- Flash programming and debugging tools
- Data handling and navigation hosting for PC based development, debugging and testing

Documentation and Training

- 2 days optional training and hands-on programming sessions are available
- Full On-line documentation with search facilities make using the SDK easy

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Tester with optional flasher tool