



Fastrax iT900 GPS RF Front End Module

- High Sensitivity
- Ultra low cost
- Small size

RF Front End module for consumer market

Fastrax iT900 OEM GPS RF Front End module is designed for consumer oriented devices where low cost and high performance are crucial requirements.

The iT900 receiver is ideally suited for PND/PMP, laptops, SmartPhones and Camera applications.

Market Leading Performance

The iT900 combined with Fastrax Software GPS exceeds all known conventional GPS receiver architectures in both sensitivity and performance. Fastrax Software GPS solution can deliver – 163dBm navigation and re-acquisition performance with a fraction of the cost compared to standard off-the-shelf receiver modules.

iT900 supports also Galileo frequencies and can be easily upgraded to Galileo with a new Fastrax Software GPS version.

iT900 Key Features:

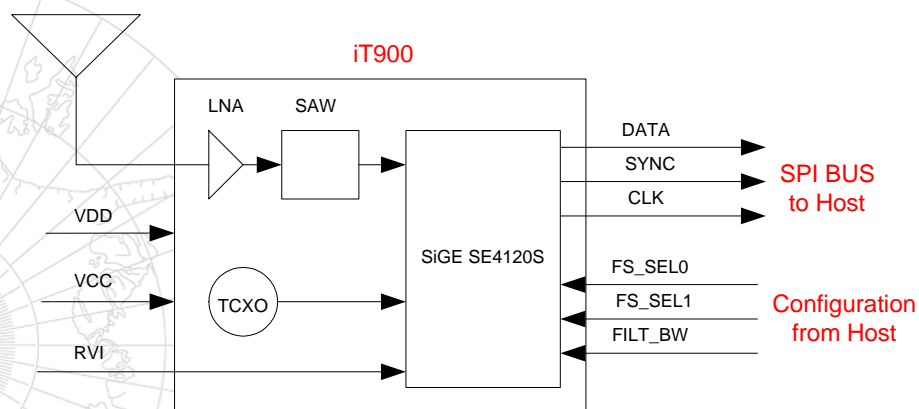
- SiGE SE4120S RF Front end
- LNA, SAW filter and TCXO also included
- Tiny form factor – 8mm x 8mm x 2.2mm
- Low power consumption: 42mW @ 3.0V
- Ultra High Sensitivity –163 dBm (Navigating)
- SPI interface to Host CPU
- Full support for Fastrax Software GPS
- Supports active or passive antenna

Host requirements

The MIPS requirements for the host running Fastrax Software GPS depends on the signal level. 2.5-25MIPS/PRN is required from the host. All Windows and Linux platforms are supported.

Architecture

SiGE's SE4120S RF front, a high performance 16.368MHZ TCXO, an LNA and a SAW filter is included in the iT900. The only external components needed are two power supplies (Digital and RF) + active or passive antenna.

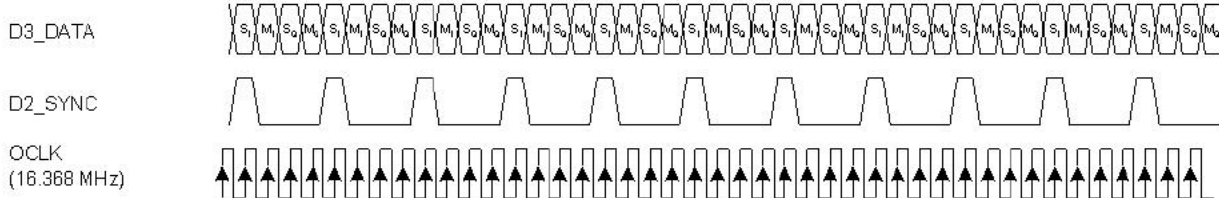




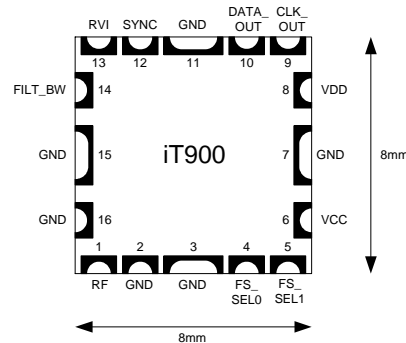
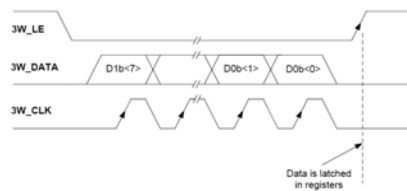
iT900 OEM GPS RF Front-End Module			
Specifications			
General:	L1 frequency, C/A code (SPS)	I/O ports:	SPI Master Output to Host CPU
Update rate:	1 fix/s (user configurable)		RF & Digital I/O supply
Accuracy:	Position:	1.2m (CEP95)	3-wire Host configuration Input port
	Velocity:	0.1m/s	Software/Hardware Mode select input
TTFF:	Cold Start (out of the box):	40s typ.	Protocol:
	Warm Start	30s typ.	SPI Master Output to Host CPU
	Hot start:	2s typ.	3-Wire Host configuration Input
Sensitivity:	Acquisition (cold):	-146dBm	Dimensions:
	Navigation:	-163dBm	8mm x 8mm x 2.2mm (2.3 max)
	Tracking:	-163dBm	Weight:
	Re-acquisition	-163dBm	1g
Power Drain (3.0V):	Navigating 1 fix/s:	42mW typ.	Antenna Input:
Operating voltage:	Digital and I/O Supply:	+1.7V..3.6V	50ohm
	RF Supply:	+2.7V..3.6V	Antenna bias:
Operating temperature:		-40C..+85C	same as VCC Supply
	Storage temperature:		-40C..+85C
			RF chip:
			SiGE SE4120S
			SW Features:
			Fastrax Software GPS on Host CPU
			Linux or Windows OS
			1MByte Flash on host
			1MBit SRAM on host
			2.5-25 MIPS/PRN

SPI-mode supported (4-bit I/Q, 16MBit/s, Complex Zero IF):

4.092 Msps 4-bit I/Q, pulse sync (OUTMODE=11 SERMODE=10 CLK_DIV=11)



3-wire configuration input mode:



Pin-Out:

Pin #	Name	Description	Usage
1	RF	Antenna Input	RF input, antenna bias = VCC
2	GND	Ground	Connect to ground
3	GND	Ground	Connect to ground
4	FS_SEL0/3W_CLK	3-wire (CLK) interface input in software mode	Connect to Host Configuration Port
5	FS_SEL1/3W_DATA	3-wire (DATA) interface input in software mode	Connect to Host Configuration Port
6	VCC	RF supply voltage (2.7V...3.6V)	Connect to Analog supply voltage
7	GND	Ground	Connect to ground
8	VDD	Digital and I/O supply voltage (1.7V...3.6V)	Connect to Host digital supply
9	CLK_OUT	SPI-interface CLK output	Connect to Host SPI port
10	DATA_OUT	SPI-interface DATA output (4-bit I&Q)	Connect to Host SPI port
11	GND	Ground	Connect to ground
12	SYNC	SPI-interface SYNC output	Connect to Host SPI port
13	RVI	Software/Hardware Mode select input	Pull low for software mode
14	FILT_BW/3W_EN	3-wire (ENABLE) interface input in software mode	Connect to Host Configuration Port
15	GND	Ground	Connect to ground
16	GND	Ground	Connect to ground