smart positioning

uPatch100

OEM GPS Receiver Module

• **Compact design with integrated antenna**

• **High performance, Cost effective design**

• **Suitable for GPS Mouse type of applications**

New family of receivers

uPatch100 is Fastrax' first product in the family of GPS receivers based on SONY GPS chipset.

The uPatch100 integrates a high performance passive patch antenna. It is a versatile OEM GPS receiver for applications that require only an 'NMEA-machine' type of receiver. It is suitable for instance for GPS mouse type of applications where high performance and low cost are key issues.

High performance receiver architecture

The chipset used is SONY CXA3355 RF combined with CXD2956 baseband device with built in ROM based firmware. In addition a one stage LNA, TCXO and RTC are included. Necessary on board regulators are also included for ease of use. Typical Cold Start TTFF is 38s. State-of-the-art signal acquisition and tracking circuitry enables weak signal capability in difficult environments.

Versatile interfaces

The uPatch100 is very easy to use. The 8-pin interface connector carries all necessary signals for making typical 'NMEA machine' type of applications possible.

The user needs only to connect the power supplies (main supply and battery backup supply) to make it functional. Low power mode is simply achieved by removing the main power supply at any time. The receiver will resume normal operation once the main power supply is reconnected.

NMEA0183 output can be customized using SONY ASCII protocol. The uPatch100 can be factory configured for either RS232 level or CMOS level serial interface.

A highly accurate 1PPS timing pulse is also available. A valid fix output can be used for indicating the state of the receiver (acquisition, tracking and navigation modes).
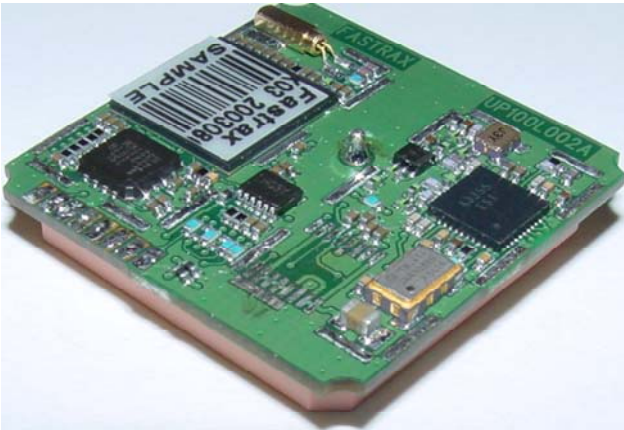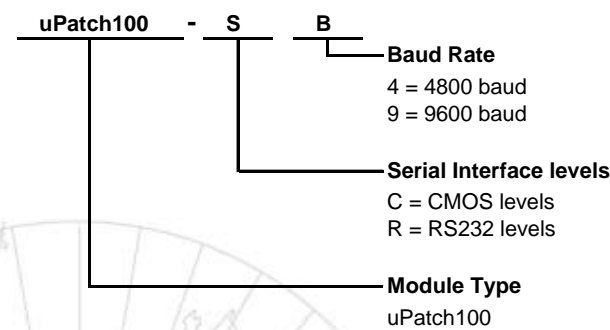
www.fastrax.fi

Fastrax

OEM GPS Receiver Module
Specifications

General:	L1 frequency, C/A code (SPS)	
	12 independent tracking channels	
	Separate search and acquisition engine	
Update rate:	1 fix/s	
Accuracy:	Position:	3m (CEP), 6m 2dRMS
	Velocity:	0.1 m/s
	Time:	50ns RMS
TTFF:	Cold Start:	38s
	Warm Start:	32s
	Hot start:	8s
Sensitivity:	Acqusition (unaided):	-139dBm
	Tracking:	-152dBm
	Navigation:	-150dBm
Power Drain (3.3V):	Acquisition:	76mA
	Navigation:	44mA
	Battery backup	150uA

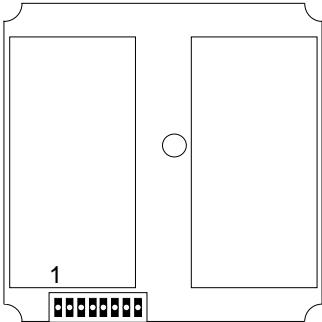| I/O ports:	One asynchronous data port
	8-pin interface connector
	1PPS output
	Valid fix indicator output
	Main power supply
	Battery backup supply
Protocol:	NMEA 0183
	SONY ASCII
Dimensions:	28mm x 28mm x 7mm
Weight:	10g
Operating voltage:	3.3V..5.5V (main supply)
	3.3V..5.5V (battery backup supply)
Operating temperature:	-40C..+85C
Antenna:	Internal passive patch
Chipset:	CXA3355 SONY RF
	CXD2956 SONY Baseband

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Baud Rate
4 = 4800 baud
9 = 9600 baud

Serial Interface levels
C = CMOS levels
R = RS232 levels

Module Type
uPatch100

Valid receiver configurations

uPatch100-R4	RS232 levels @ 4800 baud
uPatch100-R9	RS232 levels @ 9600 baud
uPatch100-C4	CMOS levels @ 4800 baud
uPatch100-C9	CMOS levels @ 9600 baud

Contact Fastrax about pricing and availability

Pin	Signal Name	In/Out	Description
1	VDD	Power	+3.3V…+5.5V Main power supply
2	TXD0	Out	UART Port 0, Transmit Data, RS232 or CMOS level 1)
3	RXD0	In	UART Port 0, Receive Data, RS232 or CMOS level 1)
4	GND	Ground	Power and Signal ground
5	XRESET	In	Not connected, Reserved for future use
6	VBAT	Power	+3.3V…+5.5V Battery Backup Power supply
7	1PPS	Out	1 Pulse Per Second Output, CMOS level 2)
8	GPIO9	Out	Satellite Fix indicator output, CMOS level 2)

uPatch100 Bottom View