

Fastrax UP500

GPS Antenna Module

- Ultra High Sensitivity with MTK MT3318
- Embedded GPS antenna
- Low power consumption

GPS receiver for many Applications

Fastrax UP500 GPS receiver module with embedded GPS antenna enables high performance navigation in the most stringent applications and solid fix even in harsh GPS visibility environments.

The Fastrax UP500 receiver with embedded antenna is ideally suited for navigation systems, asset tracking devices and battery operated consumer products like personal navigation devices, handheld computers, cameras, and sports accessories. Fastrax UP500 is also an ideal receiver for GPS mouse applications, due to its compact design and easy interfacing.

Market Leading Performance

Extremely good acquisition sensitivity enables fast position fix in harsh urban canyons or blocking environments, removing the need for external antenna.

Internal backup battery (optional) will allow very fast TTFF even when the module has been completely powered off by the host system. This will enable custom and extremely efficient power save modes without compromising TTFF performance.

Very high sensitivity compensates the possible negative effect of host system EMI, enabling post-installations in multiple applications.

Fastrax UP500 Key Features:

- MediaTek MT3318, 32-channel receiver
- Low power consumption: 90mW @ 3.0V
- Ultra High Sensitivity:
 - 146dBm (Cold Start Acquisition)
 - 159 dBm (Navigation)
- Tiny form factor – 22mm x 22mm x 8mm
- Embedded patch antenna 18.4 x 18.4 x 4.2 mm
- NMEA protocols (default speed: 9600bps)
- One serial port (default: CMOS level, *option*: RS232)
- 1PPS output
- WAAS/EGNOS support
- Internal back-up battery *option*

Cutting component costs

Space and costs are reduced due to the cutting-edge technology in the Fastrax UP500 receiver. The embedded GPS antenna and optional on-board backup battery allow easy integration to host system.

Quick Start with Easy-To-Deploy Solution

The power supply and serial data is all that is required to make the UP500 operational. The module supports also dedicated control commands for external control for the operating state. The UP500 has built-in PCB-mounting flanges and standard 2.54mm IO-pin pitch, which enable easy and reliable mounting on host PCB.

Fastrax UP500 is a very sensible upgrade path for Fastrax IT100 series antenna modules.

Available Fastrax UP500 module versions are listed in table below:

UP500 version	On-board backup battery	On-board RS232 driver
UP500	No	No
UP500B	Yes	No
UP500R	Yes	Yes



Fastrax

UP500

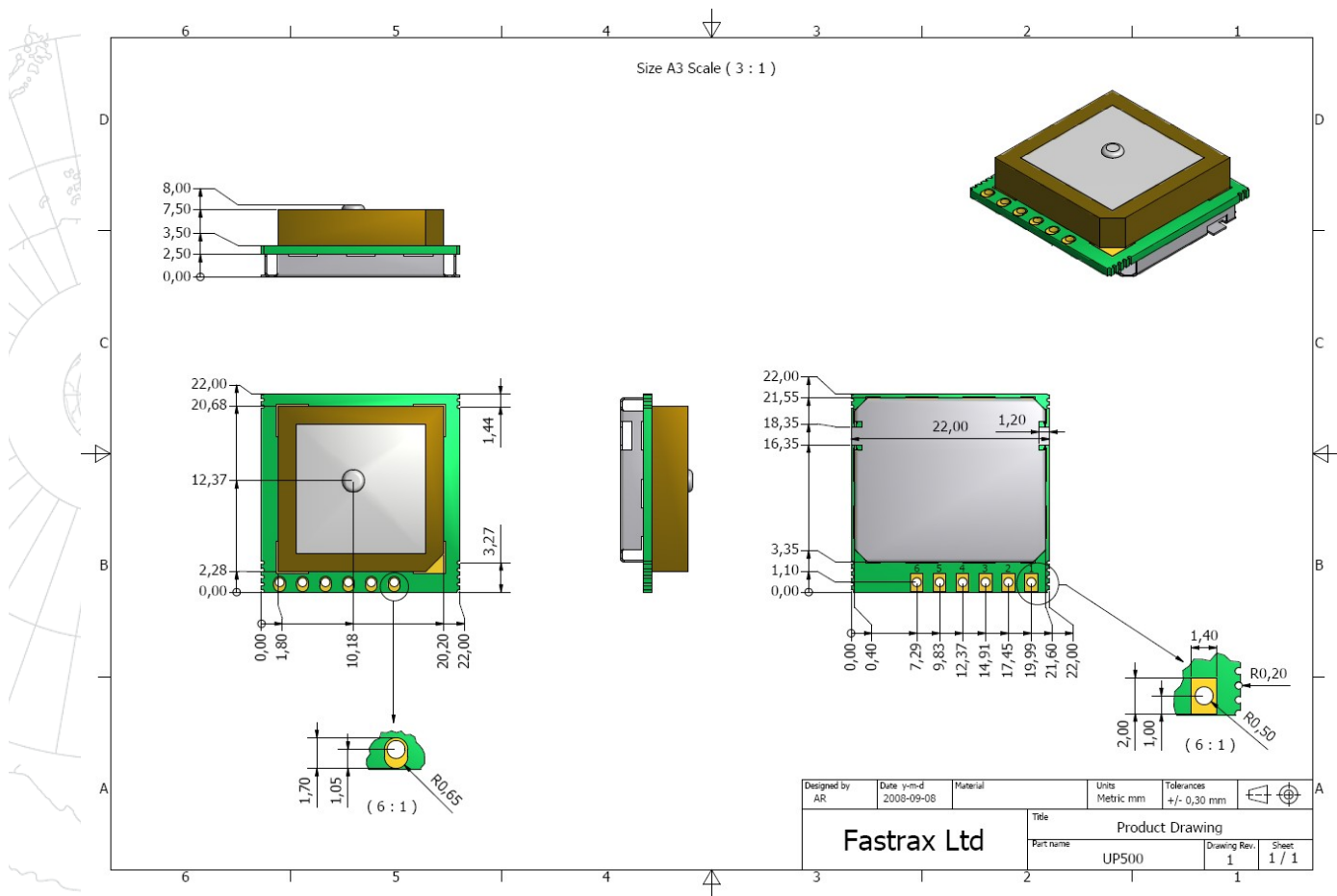
UP500 GPS Antenna Module Specifications

General:	L1 frequency, C/A code (SPS)		IF Connector:	2.54mm pitch, 1x6pin grid
	14 independent tracking channels		I/O ports:	Pin1: Serial port RX
Update rate:	1 fix/s (user configurable, up to 5 fix/s)			Pin2: Serial port TX
Accuracy:	Position:	1.8m (CEP95)		Pin3: Ground
	Velocity:	0.1m/s		Pin4: Main supply
	Time:	+/-1us		Pin5: Backup supply
TTFF:	Cold Start (out of the box):	33s typ.		Pin6: 1PPS output
	Warm Start	33s typ.	Protocol:	NMEA 0183, 9600 baud
	Hot start:	1s typ.	Chip set:	MediaTek MT3318
Sensitivity:	Acquisition (cold):	-146dBm (1)	Dimensions:	22mm x 22mm x 8mm
	Navigation:	-159dBm (1)	Weight:	9 g
	Tracking:	-159dBm (1)	Operating temperature:	-30C..+85C (2)
Power Drain (3.0V):	Navigating 1 fix/s:	90mW typ.	Storage temperature:	-40C..+85C
	Backup state:	< 10uW typ.	HW Options:	RS232 level serial port
Operating voltage:	Main Supply:	+3.0V..5.5V		Internal Backup battery
	Backup Supply:	+2.0V..5.5V		

Notes: (1) Measured by conductive measurement setup.

(2) Operates down to -40degC, all specification parameters are not guaranteed below -30degC.

Dimension drawing:



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