

Fastrax UP501

GPS Antenna Module

- **Fastrax UP500 compatible form factor**
- **Embedded GPS antenna**
- **Low power consumption**
- **Ultra High Sensitivity with MTK MT3329**

GPS receiver for many Applications

Fastrax UP501 GPS receiver module with embedded GPS antenna enables ultra high performance navigation in the most stringent applications and solid fix even in harsh GPS visibility environments.

The Fastrax UP501 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 UP501 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 and internal jammer detection compensates the possible negative effect of host system EMI, enabling post-installations in multiple applications.

Fastrax UP501 Key Features:

- Low power consumption: 75mW @ 3.0V
- Ultra High Sensitivity:
 - 148dBm (Cold Start Acquisition)
 - 165 dBm (Navigation)
- Jammer detection and reduction
- 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
- Up to 10Hz fix rate
- WAAS/EGNOS support
- Optional internal backup battery
- MediaTek MT3329, 66-channel receiver

Cutting component costs

Space and costs are reduced due to the cutting-edge technology in the Fastrax UP501 receiver. On board high efficiency switch mode regulator and extensive supply range allow direct power supply from Li-Ion or Li-Polymer batteries.

Performance upgrade for UP500

The UP501 is a pin-to-pin electrically and mechanically compatible performance enhanced upgrade for existing UP500 users. The UP501 has built-in PCB-mounting flanges and standard 2.54mm IO-pin pitch for easy integration on various host systems.

For new antenna module customers Fastrax UP501 provides market leading GPS performance in field proven form factor.

Available Fastrax UP501 standard module versions are listed in the table below:

UP501 version	On-board backup battery	Dual SAW filter
UP501	No	No
UP501B	Yes	No
UP501D	No	Yes

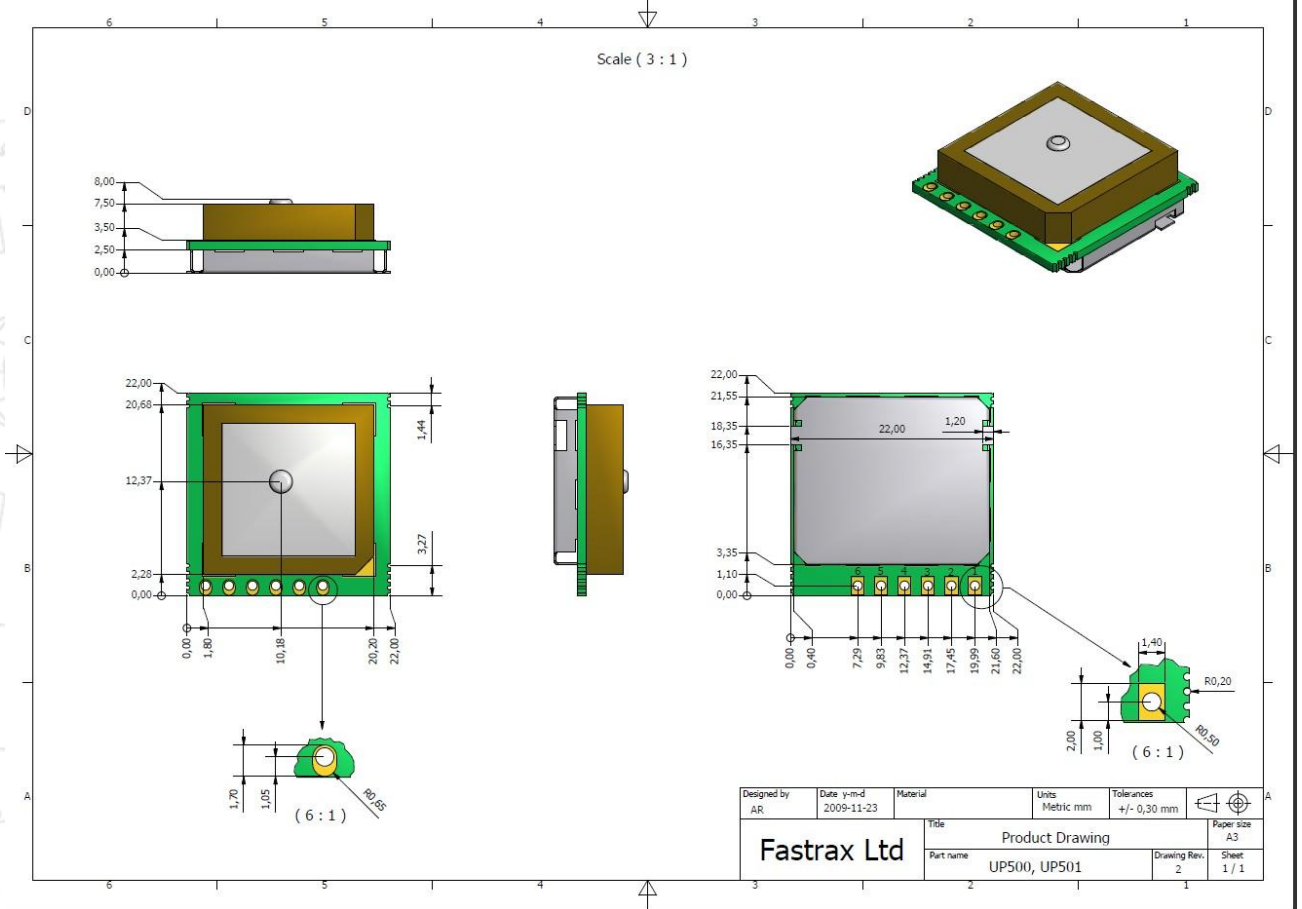




UP501 GPS Antenna Module			
Specifications			
General:	L1 frequency, C/A code (SPS)		IF Connector: 2.54mm pitch, 1x6pin grid
	22 tracking + 66 search channels		I/O ports:
Update rate:	1 fix/s (user configurable, up to 10 fix/s)		Pin1: Serial port RX
Accuracy:	Position:	1.8m (CEP95)	Pin2: Serial port TX
	Velocity:	0.1m/s	Pin3: Ground
	Time:	+/-50ns (RMS)	Pin4: Main supply
TTFF:	Cold Start (out of the box):	34s typ.	Pin5: Backup supply
	Warm Start	34s typ.	Pin6: 1PPS output
	Hot start:	1s typ.	Protocol: NMEA 0183, 9600 baud
Sensitivity:	Acquisition (cold):	-148dBm (1)	Chip set: MediaTek MT3329
	Re-acquisition:	-158dBm (1)	Dimensions: 22mm x 22mm x 8mm
	Navigation:	-165dBm (1)	Weight: 9 g
Power Drain (3.0V):	Navigating 1 fix/s:	75mW typ.	Operating temperature: -40C..+85C
	Backup state:	< 15uW typ.	Storage temperature: -40C..+85C
Operating voltage:	Main Supply:	+3.0V..4.2V (2)	Standard Options: Dual SAW filter front end
	Backup Supply:	+2.0V..4.2V (2)	Internal Backup battery

- Notes: (1) Measured by conductive measurement setup.
 (2) Extended VDD range up to +5.5V (UP500 equivalent max.) can be made available upon request. Please contact Fastrax sales for details.

Dimension drawing:



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