Fastrax enhances the world’s smallest GPS antenna module

The new Fastrax UC530 GPS module with integrated chip antenna combines market-leading performance and sensitivity with extremely low power consumption

Fastrax today introduced the Fastrax UC530 - a new edition of the world’s smallest OEM GPS receiver with an integrated chip antenna. The module features the same ultra small form factor as the widely popular Fastrax UC430, while providing new benefits to designers, developers and manufacturers of handheld digital devices.

The Fastrax UC530 features the highest sensitivity on the market (-165 dBm in tracking) and extremely low power consumption, typically only 45 mW average power. The antenna module is easily embeddable in space-restricted environments thanks to its tiny footprint of 9.6 x 14.0 x 1.95 mm and extended input voltage range of +3.0V...+4.3V. The ability to directly connect the module to a lithium battery allows hardware designers to omit cost-adding regulators. Full SMT design reduces the need for external components and minimizes manufacturing costs.

The integrated chip antenna of the Fastrax UC530 exhibits significantly better radiation efficiency than small patch antennas and performs well against larger and heavier patch antennas. Its circular radiation pattern brings flexibility to hardware design. The optional connectivity to an external GPS antenna extends the applicability of the module to a wider range of devices from handheld computers to asset tracking systems. When the optional external antenna is used, the embedded antenna works as a low-cost back up.

The new power-saving AlwaysLocate mode prolongs battery life while maintaining location information, similarly to the newly introduced Fastrax IT530 GPS receiver module. Depending on the environment and motion, the module adjusts its navigation activity to balance positioning accuracy, fix rate and power consumption. In addition, the Embedded Assist System (EASY) reduces warm-start TTFF by up to 90% with autonomously calculated ephemeris data for next three days. The additional server-assisted EPO™ file transfer extends the external A-GPS service to up to 14 days when desired.

“Location-aware features and applications are increasingly becoming mainstream in all sorts of digital devices, which is equally exciting for users as it is challenging for hardware providers,” said Fredrik Borgström, VP of GNSS Receivers at Fastrax. “Hardware designers, developers and manufacturers are faced with the difficult task of providing accurate and reliable positioning in all kinds of small size devices, while time-to-market and price pressure call for minimal extra engineering effort and the lowest possible cost. The new Fastrax UC530 is built with these needs in mind: a complete low-power, high-sensitivity and high performance GPS receiver

with an integrated antenna. Packaged in a tiny casing, the module is easy to integrate in a wide variety of devices at low cost."

The embedded jammer remover in the Fastrax UC530 helps solve issues with distorting signals due to electromagnetic interference (EMI). Active Interference Cancellation (AIC) tracks and removes up to 12 CW (Carrier Wave) type EMI sources up to -80 dBm. Also embedded is the LOCUS logger function, which stores location information in the internal memory of the Fastrax UC530. With a typical log interval of 15 seconds, log capacity is 16 hours.

Engineering samples of the Fastrax UC530 are available in the end of June 2012, and mass production is estimated to start in the end of August 2012. Documentation is available now at www.fastraxgps.com [1].

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[1] http://www.fastraxgps.com