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New evaluation kit for miniature GPS receiver module

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A new evaluation kit from Sarantel allows OEM users of the company's DioHelix-F GPS (Global Positioning System) receiver module to characterise it within their system using a simple PC interface. The DioHelix-F module, which combines Sarantel's omni-directional GPS miniature antenna with the Fastrax iTrax02/4 GPS receiver, measures only 66 x 30mm and weighs 30g. The output of the module gives a digital geographical position anywhere on the earth to an accuracy of about +/-10 metres and applications range from leisure products to vehicle navigation and logistics.

DioHelix-F presents an RS232 serial data stream containing NMEA standard navigational information. It can easily be integrated into a variety of applications such as PDAs, notebook PCs, asset and vehicle tracking, in-car navigation and mobile computing platforms to provide fast accurate geographical fixes without significant size or battery life impact - key considerations for these applications.

The small size of the DioHelix-F and its fast operation is due to a combination of Sarantel's PowerHelix(tm) antenna technology and Fastrax's popular iTrax02/4 receiver. The antenna results in particularly good omni-directional performance and high immunity to proximity interference from people, equipment and buildings. The evaluation kit consists of the DioHelix-F module mounted on a PCB which has sockets for power supplies and USB connections for interfacing to a PC as well as a CD of software.

"Today many GPS applications demand low cost, low power consumption along with a 'plug and play' capability," said Barrie Foley, CEO of Sarantel Ltd. "This new module enables us to meet all of these demands."

All GPS processing is carried out Fastrax's low power iTRAX02/4 GPS module which only weighs 4grams. The chip's RF section includes the RF IC, LNA (Low Noise Amplifier), GPS crystal, SAW filter and all necessary passive components. The DioHelix-F mounting arrangements are flexible; with serial data input, output, 3.3V and ground being the only connections needed, and all are made via one 12 way header. The DioHelix-F does not require a ground plane and therefore suits applications where size, weight and security are key requirements.

The DioHelix-F antenna, which operates on the GPS L1-band (1575.42MHz), uses Sarantel's patented PowerHelix(tm) design in which copper tracks, deposited on to a small ceramic cylinder, are individually and automatically laser-trimmed for optimum frequency response. This construction brings several key benefits. The module can be mounted side-by-side in combined applications such as Bluetooth and GPS without loss of performance.

It also has a very broad beamwidth (3dB contour up to 120 degrees typical) making it highly effective at picking up GPS signals regardless of orientation or movement and allowing it to track low-elevation satellites thereby improving overall GPS performance and speed of response.

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