

IN THE SPOTLIGHT:

THE NEW GE865: SMALLER FORM FACTOR, BETTER PERFORMANCE.

by Marco Contento

>> With the GE865, Telit's engineers have designed a GSM/GPRS module that characterizes Telit's mission to reduce size while improving performance. The GE865 extends Telit's range of BGA products, incorporating a single-chip solution built on 0.13 µm CMOS technology into a 22 x 22 x 3 mm block.

The GE865 is a quad-band GSM/GPRS module that is Release 99 compliant and fully backward compatible with the entire Telit GSM product family in terms of AT Command interface and Python™ scripts. The GE865 enables customers to easily migrate from any Telit module to take advantage of the compact size of GE865, making it an ideal fit for high volume m2m projects, or where the module's size is a key component for the m2m application.

The GE865 offers all relevant data services over the GSM/GPRS network, integrated TCP/IP stack supporting UDP, FTP and SMTP via AT Commands, 10 GPIO, 1 DAC and 2 DAC converters, audio lines, and extended temperature range.

The GE865 also supports the Premium FOTA Management that allows, thanks to the embedded Red Bend vCurrent® Mobile client software, remote updates to the module's firmware over-the-air in a quick and reliable way increasing the reliability of the entire m2m application.

The over-the-air upgrade capability for m2m devices is a necessary requirement for all customers who design products for a long lifecycle. The lifecycle of m2m applications is usually in the range of 5-10 years. Therefore, the download

of a new firmware supporting a new feature as well as a GSM network upgrade, represents a key feature for these applications. This also avoids upgrading the device in the field allowing quicker and more cost effective maintenance of the application.

The GE865 also benefits from remote AT, which is a feature that allows the customer to run the module's AT commands remotely over SMS or a TCP socket. The AT Command execution can be requested by sending a simple SMS from any phone, the output of the command will be sent back via SMS to the requester, or the AT Command execution can be requested via TCP. The AT interface of the module will be redirected to the TCP socket.

Personal location devices are a typical market segment where the compact GE865 is ideally suited. An example of this market is well represented by EmFinders. The EmFinders's solution is based on a small form factor device such as a watch or a necklace that helps to locate lost individuals. The EmFinders system is designed to assist individuals who might wander, become disoriented, or lost such as individuals with Alzheimer's disease or Autism. Caregivers can remotely activate a discrete wireless device worn by their loved ones and emergency activation of the EmFinder's device enables 911 emergency dispatchers to instantly see the location of the missing person and send local law enforcement to the general location for assistance.

Another example is represented by Laipac Technologies. Among other tracking systems, Laipac Technologies has designed a personal location device, which has a bracelet form factor. This device is a portable A-GPS tracking device, with a quad-band phone that can be used as an emergency cellular phone. In this case, the module's size is a key factor in the application. <<



*original size

>> Telit's products have always been designed for inclusion in rugged environments where heat and vibration are of the utmost concern. Our innovative BGA design was the first in the industry to address the need to eliminate as many sources of potential failure as possible. By reducing the mass and removing the board-to-board and RF connectors, the MTBF of the final application can be significantly increased.

When Telit decided to enter the automotive market, further steps were taken to build on the previous successes. A careful analysis of current designs indicated some room for improvement to achieve even higher reliability levels. By redesigning with automotive grade components where available, the upper temperature limit has been increased to meet the required +85 °C. This primarily involved incorporating a more robust power amplifier that provides additional headroom to achieve the maximum power output at



THE TELIT AUTOMOTIVE PROPOSAL

by Brian Tucker

extreme temperatures without compromising the life of the product. Unlike others in the market, our products are designed and tested to meet the standards even outside the industry defined temperature ranges. For example, the GSM standards only address the commercial temperature ranges. Beyond 50 °C the standards only seek to ensure that a device will not do harm to the network. While all of our products meet this requirement, Telit felt that exceeding the requirements was what the automotive customer demanded.

The GE864-QUAD Automotive is not only designed to meet the needs of the automotive customer, it is manufactured in accordance with TS16949. By adhering to the quality standards of the automotive industry, Telit ensures our Tier 1 customers that they in turn can meet the expectations of the OEM's. Telit continuously seeks to improve the quality and reliability of our entire product range and with a focus on automotive, the lessons learned help influence future product design. <<

