

# **New High-sensitivity GPS/AGPS Chipset for Telematics and Navigation Applications Built with 0.11-micron CMOS Technology**

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[Fujitsu Microelectronics America, Inc.](#) (FMA) today introduced a new chipset for the high-sensitivity [GPS/AGPS](#) receivers required in communications systems that support telematics and navigation applications for [mobile](#) location, tracking and monitoring. The chipset achieves the industry's highest levels of sensitivity, accuracy and Time-to-First-Fix (TTFF) with low power and a small PCB footprint.

The chipset consists of a baseband chip, the MB87Q2040, which interfaces to a host CPU/MCU via an UART serial interface; and an RF front-end chip, the MB15H156, which supports GPS L-band C/A code. Capable of operating in both "autonomous GPS/standalone" mode and "assisted GPS" mode, the chipset supports leading air interfaces, including UMTS/WCDMA, GSM/GPRS, PDC and CDMA. The chipset is also versatile: a receiver can be initially developed as an autonomous GPS receiver and subsequently upgraded through software to AGPS when assistance becomes available.

Demand for GPS products and services has increased recently and the new chipset has been developed specifically to meet the industry's requirements for low power, small footprint, and reduced materials costs.

The MB87Q2040 baseband chip incorporates highly optimized GPS/AGPS baseband IP that has been licensed from eRide Inc., based in

San Francisco. eRide's patented and proven GPS/AGPS IP is based on the company's extensive experience in the GPS market. Using power-saving techniques with the 0.11µm technology results in a peak baseband power dissipation of only 67mW during low signal strength acquisition, while power dissipation is less than 40mW while continuous tracking is at a 1Hz update rate.

The acquisition/tracking engine on the chip has 44,000 effective correlators, resulting in high indoor sensitivity calibrated to -157.5dBm, with indoor accuracy of

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