New GNSS Receive Front-End Modules Feature Industry's Best Noise Figure in World's Smallest Package

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Infineon Technologies introduced a new series of Receive Front-End Modules for implementation of Global Navigation Satellite System (GNSS) functionality in smart phones and other handheld devices. The new BGM104xN7 products feature the best noise figure in the industry, which is a critical parameter for the performance of a GNSS receiver.

The new modules are a pin-to-pin compatible upgrade with the previous generation BGM103xN7, and thus remain as the world’s smallest Receive Front-End Modules for this application, with a package size of just 2.3 x 1.7 x 0.73 mm3. They support simultaneous reception of both GPS (Global Positioning System) and GLONASS (Globalnaya Navigatsionnaya Sputnikovaya Sistema) signals. The devices are optimized for different end platforms and offer industry’s leading noise figure, low-power operation, and exceptional protection against electrostatic discharge (ESD).

For the reception of weak GNSS signals, a low noise figure results in a shorter Time-To-First-Fix (TTFF), which is the time required for a GNSS receiver to acquire satellite signals and navigation data and to calculate a position. The new BGM104xN7 series offers 0.15dB better noise figure than the BGM103xN7 series. Therewith, Infineon’s solution outperforms all other solutions on the market about 0.5dB. The improved performance is achieved in a package that is almost 22% smaller than the second smallest available device.

Infineon’s BGM104xN7 modules combine the pre-filter and low noise amplifier (LNA) stages of the GNSS signal chain front-end to achieve a balance of performance improvements and space savings while reducing design time. The low noise figure enhances user’s navigation experience while using smart phones or any other portable device. In addition, the device family meets key design goals: this includes high linearity to avoid interference of more powerful cellular signals, single-module coverage of the frequency range from 1,575 to 1,605 MHz, and optimized gain for state-of-the-art sensitivity.

“Mobile device designers are challenged to deliver rock-solid sensitivity performance for location-based services, even as GNSS evolves to a series of systems operated by different entities and handheld devices incorporate more high-powered RF technologies such as Wi-Fi and LTE”, says Michael Mauer, Senior Marketing Director of RF and Protection Devices at Infineon Technologies.

Researchers at iSuppli estimate 2012 sales of 450 million smart phones, which nearly all support GNSS applications. With the new BGM104xN7 series, Infineon helps designers meet requirements for personal navigation and location based

applications not only for smart phones, but such portable devices as tablets, personal navigation devices (PNDs) and digital cameras.

The new BGM104xN7 series contains two modules, targeted for specific platform applications:
- BGM1043N7: Standard solution meeting high-performance GPS/GLONASS specifications, with 14.8dB gain and 1.5dB noise figure.
- BGM1044N7: A high-gain (17.0 dB) version (1.55dB noise figure) for systems with high losses in the receive chain, such as personal navigation devices and digital still cameras, where the potential for jamming due to high power cellular signals is less critical.

Further technical information on the all Infineon GNSS Receive Front-End Modules is available at www.infineon.com/nav.frontend [1]

March 29, 2012

Source URL (retrieved on *03/09/2014 - 1:12pm*):
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