FC7860

Future Communications Integrated circuit Inc.

Highly Integrated RFIC for Multi-band & Multi-mode for Quad-Band GSM/GPRS/EDGE and HSPA/HSPA+/LTE

DESCRIPTION

FC7860 is a highly integrated RFIC that covers multi-band and multi-mode HSPA/HSPA+/LTE along with quad-band GSM/GPRS/EDGE. FC7860 is MCP (multi-chip package) which includes LTE/HSPA+/HSPA and GSM/EDGE with 7mm x 7mm small leadless BGA package. The companion baseband modem chip is CMC221 which enables several digital standards such as 2G/2.5G (GSM/GPRS/EDGE), 3G (HSPA), and 3.9G (HSPA+/LTE). FC7860 covers all the required frequency bands that 2G/2.5G/3G/3.9G requires. The HSPA/HSPA+/LTE chip fully supports 2x1 (2RX 1TX) receiver diversity for the increased data traffic.

HSPA/HSPA+/LTE die is a highly integrated chip working with dual supply voltage such as 1.2V and 1.8V. The 4-wired serial-to-parallel interface (SPI) enables operating in various modes. HSPA/HSPA+/LTE die contains complete multi-band receiver diversity path such as LNA, down-conversion mixer, channel selection filter (CSF), baseband programmable gain amplifier (PGA), Rx VCO, Rx PLL, and LO distribution block. FC7850 also contains complete transmitter path such as baseband amplifier, up-converter, RF programmable gain amplifier (PGA), programmable drive amplifier, Tx VCO, Tx PLL, and LO distribution block.

GSM/GPRS/EDGE transceiver is a complete RF front end for GSM/GPRS/EDGE wireless communication. It has an integrated power manager unit which can be directly connected to battery power supply. The receive section interfaces between the RF band-select SAW filter and baseband IC. The GSM/GPRS/EDGE receiver employs a digital low-IF/Zero IF architecture, and support both universal analog baseband interfaces and DigRF 1.12 digital interface. In GSM GMSK modulation mode, the transmit section provides a direct modulation PLL transmitter from the baseband subsystem to the power amplifier (PA). In 8PSK mode, traditional direct modulation architecture to translate BB 8PSK signal to RF. A fast settling fractional-N synthesizer is fully integrated including RF VCO, loop filters, and varactors, and etc.

FEATURES

- HSPA/HSPA+/LTE transceiver chip supports 2RX and 1TX (2x1) MIMO receiver diversity transceiver covering multi-band (Band1~40) from 680MHz to 2700MHz.
- HSPA/HSPA+/LTE transceiver chip capable of FDD-LTE and TDD-LTE.
- HSPA/HSPA+/LTE transceiver chip requires modem assisted TX LO leakage, TX I/Q and RX DC offset calibration along with self-calibrated VCO and RX and TX filter cut-off frequency calibration.
- GSM/GPRS/EDGE transceiver covers GSM 850, E-GSM 900, DCS1800, and PCS1900 with low-IF/Zero IF receiver and direct modulation transmitter architecture.
- GSM/GPRS/EDGE transceiver supports universal analog baseband interface and also DigRF V1.12 digital interface
- GSM/GPRS/EDGE transceiver integrates LDO (3.3 to 4.2V) allowing reception of battery voltage
- 7x7mm small leadless BGA package

APPLICATIONS

- Multi-band GSM/EDGE/LTE/HSPA+ mobile phone
- Multi-band GSM/EDGE/LTE/HSPA+ wireless data modems

REVISION HISTORY

- Tentative version: August, 12, 2011.
- Preliminary version: Feb, 03, 2012.