

DESCRIPTION

FC7870 of FCI's zipRF™ family is a multi-band and multi-mode RF-to-baseband direct-conversion transceiver IC which covers most of the 2G, 3G, and 4G applications including GSM, GPRS, EDGE, WCDMA, HSPA, HSPA+, TD-SCDMA, FDD and TDD LTE. FC7870 covers almost all the frequency allocation bands from 1 to 41 with receiver diversity.

It is a highly integrated chip working with dual supply voltage such as 1.2V and 1.8V. Due to the linear, wide dynamic range transmit chain with low RX-band phase noise characteristics and low noise figure and highly linear receive chain, the RX and TX RF SAW filters are no longer required in most of the applications. The 4-wired serial-to-parallel interface (SPI) enables FC7870 to operate in various modes.

FC7870 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. FC7870 also contains complete transmitter path such as baseband amplifier, TX channel filter, up-converter, RF programmable drive amplifier (DA), Tx VCO, Tx PLL, RMS detector, envelop detector, and LO distribution block. The RMS power detector is included to indicate the received TX output power level whereas the envelop detector is used for internal TX DC and I/Q calibration. FC7870 is available in 4.87mm x 4.87mm 121-pin WLCSP (wafer level chip scale package).

FC7870 fully support all the various FDD/TDD duplexing method. For TDD operation, the TX_ON hardware pin exists. Also SPI controlled TDD operation is supported. During TDD operation, RX VCO/PLL can be configured to operate as a common LO supporting both of the TX and RX operation.

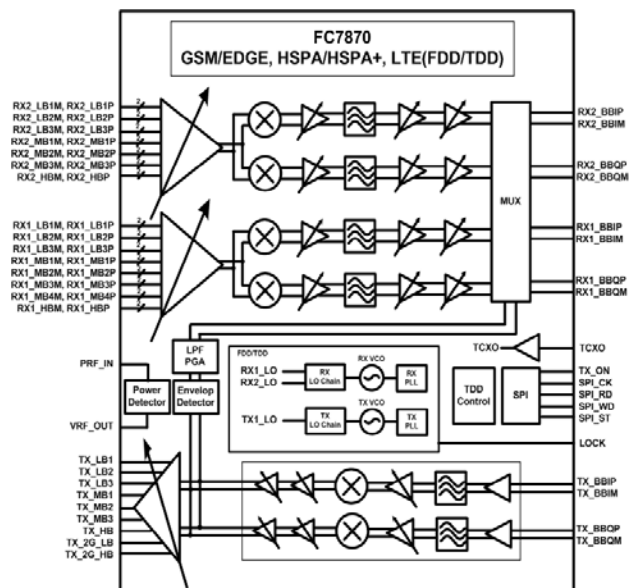
APPLICATIONS

- 2G/3G/4G multi-band mobile phone
- Multi-band LTE & HSPA+ mobile phone

FEATURES

- Complete MIMO (2Rx,1Tx) transceiver with receiver diversity covering multi-band (Band1-41) supporting multiple standards such as GSM/GPRS/EDGE, TD-SCDMA, WCDMA, HSPA+, and TDD/ FDD LTE applications
- Low noise and highly linear wide-band LNAs with 8 and 7 LNAs in the primary and secondary receive signal path.
- Low Rx-band phase noise and highly linear wide-band TX output from 9 drive amplifiers.
- Fully integrated low phase noise Rx and Tx VCO and Fractional-N PLL with fine frequency resolution with self-calibrated VCO frequency.
- Modem assisted TX LO leakage, TX I/Q, and RX DC offset calibration
- Self-calibrated RX/TX channel filter frequency
- Greater than 85-dB transmitter output power control and greater than 95-dB receiver gain control
- Modem assisted Ramping for 2G GSM/EDGE
- 4.87mm x 4.87mm 121-pin WLCSP package

BLOCK DIAGRAM



FCI Inc.
11th Floor, Kins Tower, 25-1
Jeongja-Dong, Bundang-Gu,
Sungnam City, Gyunggi-do,
463-811, KOREA

Website: <http://www.fci.co.kr>
E-mail: fc_i_7830@fci.co.kr
Phone: 82-31-711-6444
Fax: 82-31-711-0313