MB86L13A LTE-Optimized Transceiver
Ideal for 4G LTE Mobile Handsets

Description

The Fujitsu MB86L13A transceiver is intended for LTE-only applications. Like its predecessor, the MB86L12A, the new transceiver has no external LNAs or inter-stage SAW filters in the TX and RX paths of LTE lineups. A high-level programming model controls the radio using an open standard digital interface (4G DigRF/MIPI), which is compatible with a wide range of industry basebands.

Building on the revolutionary short-cycle RF programming method used in Fujitsu’s MB86L01A, the MB86L13A speeds RF subsystem implementations with simplified layer-one programming and embedded intelligence. With this revolutionary approach, an engineer enters a single command stating the desired channel and power level. This command sets the parameters and times the events so that system compliance is virtually assured.

Eight outputs directly drive the power amplifier and eliminate the need for TX inter-stage SAW filters. The new RF front-end eliminates the need for LNAs and RX inter-stage SAW filters. Nine primary and five secondary inputs support LTE. The receiver also incorporates anti-aliasing filters, digital channel filters, digital gain control and high-dynamic-range ADCs.

The transceiver offers SPI or MIPI RFFE and/or GPOs to control PAs, switching regulators and the antenna switch. A microcontroller unit in the transceiver enables simplified timing and control.

The new, compact module enables cell-phone manufacturers to reduce component count, board space and bill of materials.

The MB86L13A supports LTE FDD bands 1–21 and TDD bands 33–41.

Applications

- Mobile phones
- Mobile Internet devices
- Data cards
- Embedded modules
Key Features

- Transceiver optimized for LTE which eliminates external LNAs, as well as both TX and RX inter-stage SAW filters from 4G paths
- FDD Bands 1-21, 23-25
- TDD Bands 33-41
- Support for:
  - LTE category 4 data rate
- 14 differential RF inputs for the receiver
  - 9 differential RF inputs on the primary receiver
  - 5 differential RF inputs on the diversity receiver
- 8 RF outputs on transmitter
- Optimized design minimizes factory calibration time
- Multiband and Multimode PA support
- DigRF/MIPI 4G (Version 1.0) interface to the baseband
- RX and TX auto calibration routines
- Auxiliary SPI or MIPI RFFE to control PAs, DC–DC converters, switching regulators and antenna switch
- Optional GPO ports available for non-SPI components
- Simplified timing and control via an RF API
- 6.5mm × 9.0mm LGA package

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