MB86L01A WCDMA/EGPRS Transceiver Module
First commercial multimode transceiver to eliminate 3G TX and RX inter-stage SAW filters and LNAs

Description

The Fujitsu MB86L01A is the industry’s first commercial multimode transceiver to eliminate 3G TX and RX inter-stage Surface Acoustic Wave (SAW) filters and low-noise amplifiers (LNAs). The transceiver features a high-level programming model for controlling the radio using an open standard digital interface (3G DigRF/MIPI), which is compatible with a wide range of industry basebands.

Using a revolutionary RF programming method that reduces development time (the time to first call) by up to 66 percent, the MB86L01A also improves 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.

Six outputs drive the power amplifier directly and eliminate the need for TX inter-stage SAW filters. The receiver provides seven inputs that support WCDMA and GSM/EDGE, and uses the new RF front-end to eliminate the need for LNAs and RX inter-stage SAW filters. The receiver also incorporates anti-aliasing filters, digital channel filters, digital gain control and high-dynamic-range ADCs.

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

The MB86L01A supports GSM bands (GSM850, EGSM900, DCS1800 and PCS1900), WCDMA (bands I-VI and VIII-XI), WCDMA HSDPA category 10 and HSUPA category 6. The transceiver includes a 3G DigRF interface to the baseband IC. The MB86L01A offers either SPI and/or GPOs to control PAs, switching regulators and the antenna switch. A microcontroller unit in the transceiver enables simplified timing and control.

Applications

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

- The first multimode transceiver to eliminate external LNAs, as well as both TX and RX inter-stage SAW filters from 3G paths
- GSM/EDGE/WCDMA
- Quad band GSM/EDGE
- WCDMA Bands I-VI and VIII-XI
- Support for:
  - EGPRS Class 34 operation
  - WCDMA FDD HSDPA category 10
- 7 differential RF inputs for receiver functions
- 6 RF outputs on transmitter
- Six pin DigRF 3G interface to the baseband IC

- Auxiliary SPI to control PAs, switching regulators and antenna switch
- GPO ports for non-SPI components
- No RX or TX inter-stage SAW filters required in WCDMA
- No LNAs required in GSM or WCDMA
- Simplified timing and control via an RF API
- RX and TX IQ auto calibration
- Multi-Mode cartesian modulator for EDGE and WCDMA
- Multi-Mode closed loop power control system
- 7.1 mm × 5.9 mm × 1.0 mm, LGA package

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