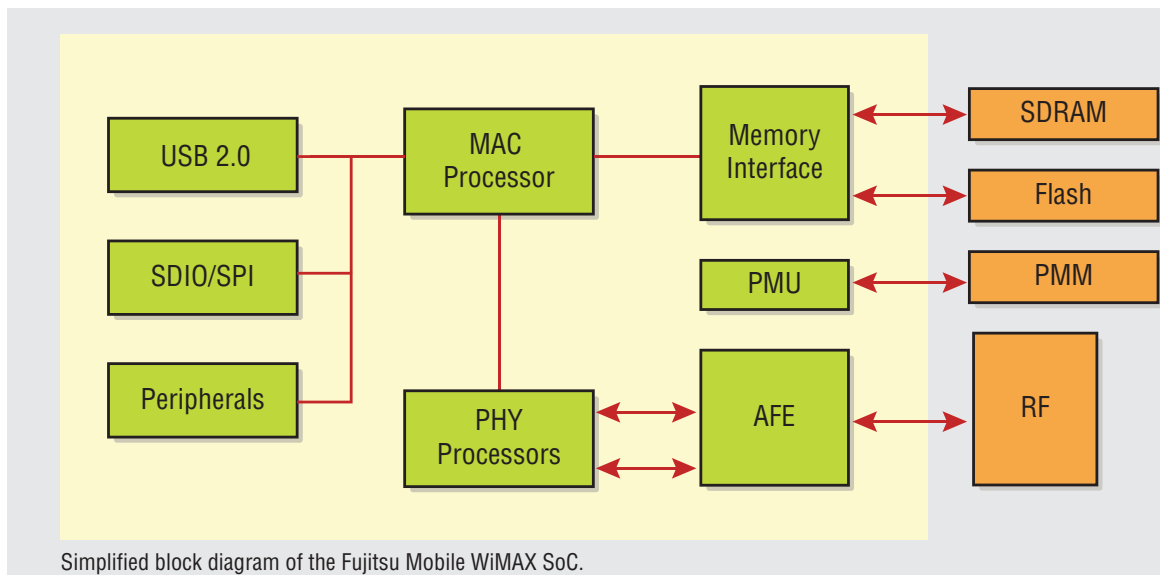


# MB86K23

## The Fujitsu IEEE 802.16e-2005 Mobile WiMAX SoC



### ▶ Description

The Fujitsu MB86K23 WiMAX baseband SoC is compliant with the Wave 2 IEEE 802.16e-2005 standard with optimized PHY and MAC processors for high performance. The MB86K23 is a successor to the first generation mobile WiMAX baseband IC that was certified by the WiMAX Forum.

A total WiMAX solution is available by combining related chips and supporting software:

- MB86K52: Tri-band RF chip supports 2.3GHz, 2.5GHz and 3.5GHz bands.
- MB39C316: Power Management IC

### ▶ Applications

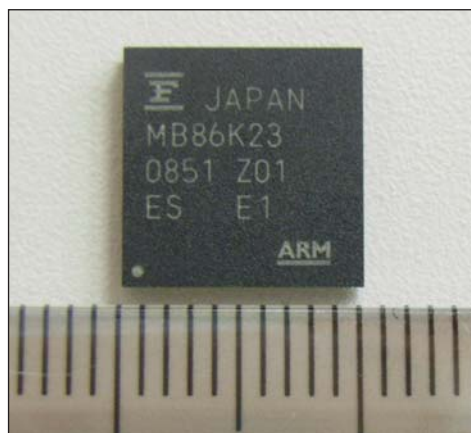
The Fujitsu MB86K23 Mobile WiMAX SoC is optimized for a wide range of full mobile applications:

- Handheld terminals
- Mobile internet devices
- Low-power battery-driven applications
- WiMAX mobile terminals like USB dongles

# MB86K23

## ▶ Features

- Features compliant with IEEE 802.16e-2005 Mobile WiMAX (Mobile station)
  - OFDMA PHY with TDD
  - 512/1024/2048 points FFT
  - Supports channel bandwidths 3.5MHz/7MHz/10MHz/20MHz
  - 64 QAM (DL), 16 QAM, QPSK adaptive modulation
  - Optional space time coding with 2-antenna matrix A/B
  - HARQ chase combining with CTC
- A/D converter and D/A converter for the baseband analog IQ interface
- RF control function
  - Programmable AGC control for supporting broad range of RF LSI and alternative RF front-ends
  - RF control Logic programs the Rx and Tx gain when the radio switches between receive and transmit
- Multi-function peripheral interface
  - I<sup>2</sup>C
  - UART
  - SDIO
  - SPI
  - USB 2.0
  - SPI flash
  - SDR SDRAM
- Internal power control function
  - Built-in power management unit (PMU) supporting idle mode and sleep mode
  - Smart power management unit works with external power management IC to efficiently manage power utilization
  - CoolAdjust Power Gating technique to turn off unused portions of baseband and other external components to substantially reduce overall power consumption
- 65nm low-leak technology
- Package size: 10mm x 10mm



MB86K23 WiMAX Chip: 10mm x 10mm

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