



MOBILE WiMAX

802.16e-2005 Dual band USB reference kit



Description

Fujitsu has developed a one-chip, highly integrated, MAC and PHY, mixed signal, baseband processor for mobile WiMAX™ applications.

This MB86K21 baseband SoC combined with the Infineon PMB2008 state-of-the-art single chip RF transceiver are the core elements of the Mobile WiMAX USB dongle reference kit.

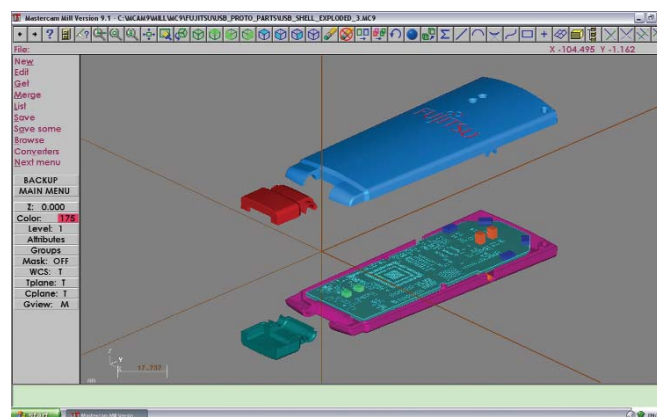
This reference kit is the right starting point for development of a Mobile WiMAX product with USB interface.

In addition it can be used for evaluation and first tests.

Features

- Baseband SoC implements all features required for Wave 2 Mobile WiMAX certification
- Low power, dual band, high performance RF
 - 2.3-2.7GHz and 3.3-3.9GHz
 - Direct conversion (Zero-IF)
 - 2 x Rx and 1 x Tx to support Rx diversity
- OFDMA PHY with TDD
- 512/1024 points FFT to support 5MHz and 10MHz channel bandwidth

- 64QAM (DL), 16QAM and QPSK modulation
- Support of space time coding with 2-antenna matrix A/B (vertical encoding)
- H-ARQ chase combining with CTC
- AES encryption/decryption for 802.16 MAC security sub-layer
- Dual RISC processors for implementing upper & lower MAC
- USB2.0 interface



FACTSHEET
USB DONGLE REFERENCE KIT

Fujitsu has been actively involved in WiMAX and IEEE 802.16 activities since 2003, and has provided WiMAX solutions since the launch of its Fixed WiMAX System-on-Chip (SoC) based on the IEEE 802.16d-2004 standard.

The Fujitsu Mobile WiMAX reference kit uses Fujitsu's capability to integrate complex electronic devices, its extensive experience in mobile phone design and development, and its system knowledge and expertise for end-to-end WiMAX solutions.

Reference design

USB Dongle reference design kit is designed for OEMs, ODMs, and system manufacturers to provide WiMAX Mobile stations with USB interface.

Along with the reference design hardware, Fujitsu delivers detailed design documents.

The Fujitsu reference kit software package includes USB drivers for Windows® operating system. On top of the hardware interface driver, Fujitsu provides an API software layer for customers to develop custom application and graphic user interfaces.

Fujitsu offers the MAC software in binary code based on the mobile WiMAX standard and provides drivers, APIs, sample user application software and maintenance application software to help customers use the MB86K21 Mobile WiMAX SoC.

Fujitsu's maintenance software can measure air-traffic performance, noise level, error rates, transmitting and receiving powers, MAC management messages, connection IDs, as well as providing settings/readings for many useful parameters.

More reference kits

The PC Card reference design kit (RDK) with CardBus interface allows a fast product development of Mobile WiMAX PC card products.

The System Development Kit enables customers to evaluate WiMAX using the MB86K21. With the SDK, the software

development to integrate WiMAX into customer products and systems can be started in parallel with the hardware design.

The RDK and the SDK comes with a similar set of software and tools as mentioned for the USB dongle reference kit.



System development kit (SDK).

Certification and compliance

Fujitsu has designed the WiMAX SoC to comply with the IEEE 802.16e-2005 standard.

Availability

Engineering samples of the USB Dongle reference design kit will be available end Q3 2008. Samples of the MB86K21, the RDK and SDK are available now. Systems using the Fujitsu Mobile WiMAX SoC will be submitted to the WiMAX Forum for certification. Fujitsu plans multiple SoC releases to match customers' product targets. The initial release - MB86K21 - is the first broadband SoC to deliver MIMO Wave 2 certification compliance. The second releases in 2008 and subsequent releases will support better performance, more features and can be tailored to different applications.

Companion products such as WiMAX RF modules are available.

<http://www.fujitsu.com/emea/services/microelectronics/networking>
<http://www.fujitsu.com/emea/services/microelectronics/wimax>

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