

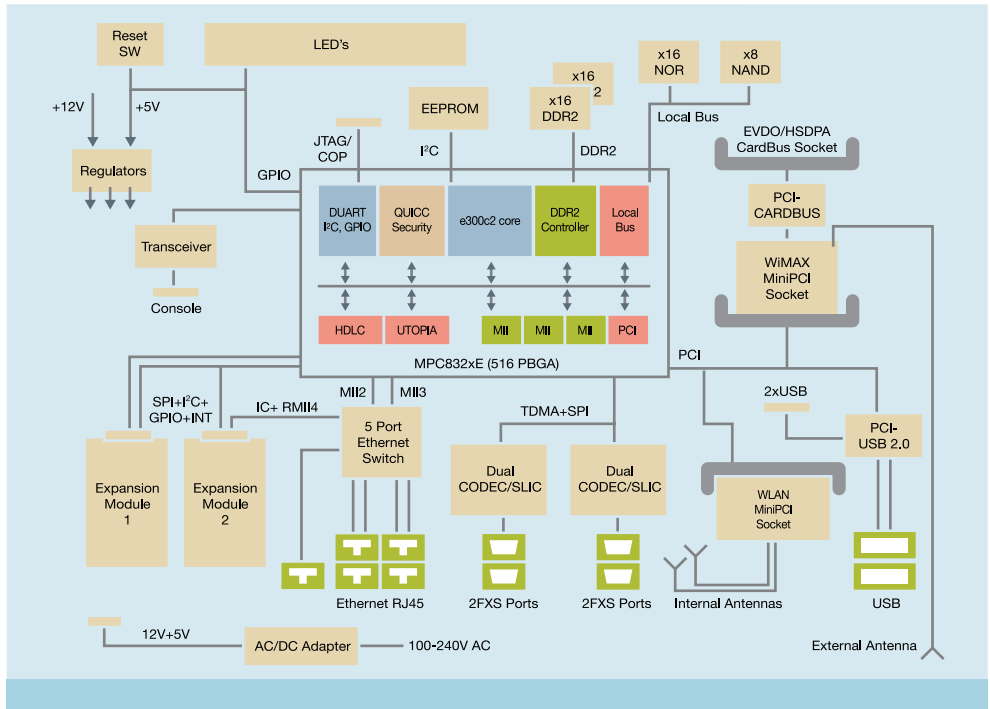
WiMAX-Enabled CPE Production-Ready Reference Platform

Ideal for Wireless Infrastructure, Residential and Small Office/Home Office (SOHO) Applications

The residential gateway market is changing from just offering simple connectivity between a home network and broadband connection to handling complex quality of service (QoS) requirements and applications such as Voice-over-Internet Protocol (VoIP) and security. By partnering with Wavesat and Celestica, the solution is also WiMAX-enabled and production ready. WiMAX-Enabled CPE Production-Ready Reference Platform is a pre-developed platform for customer differentiation in the wireless telecommunications infrastructure, home and SOHO markets.

The WiMAX CPE solution is based on PowerQUICC™ II Pro processors, built on Power Architecture™ technology, with Wavesat's WiMAX chipset, MiniPCI design, CPE MAC software and a WiMAX Gateway/CPE solution from Celestica. The WiMAX CPE is a production-ready reference design optimized for converged wireless business and residential gateway applications. The integrated CPE solution from Freescale, Celestica and Wavesat supports WiMAX Forum 802.16d-2004 certification and is intended for upgradeability to IEEE® 802.16e-2005 standards for basic mobility in accordance with the WiMAX Forum ETG profile. The MPC8321E PowerQUICC II Pro is a cost-effective communications processor that meets the requirements of several SOHO, access, IP and industrial control applications. It provides better CPU performance, additional functionality and faster interfaces while addressing important time-to-market, price, power consumption and board real estate requirements.

BWA CPE Detail



WiMAX-Enabled CPE Production-Ready Reference Platform Features Include:

- 333 MHz Freescale MPC8321E network processor
- 32 MB DDR2 SDRAM
- 10/100 Ethernet WAN interface
- Four 10/100 Ethernet LAN interfaces
- Four FXS analog telephony ports for VoIP
- Two MiniPCI slots for wireless LAN and WiMAX support
- Four USB 2.0 High Speed host ports
- Expandable NAND flash interface

For customers seeking a pre-engineered, pre-developed solution for compressing product development cycles and driving lower costs, this platform offers numerous benefits, including:

- Support for processor and memory-intensive applications, including VoIP, advanced telephony, parental controls and cryptographic operations
- Utilization of commercial off-the-shelf MiniPCI or Cardbus WiMAX, ADSL/VDSL/VDSL2, HSDPA and EVDO adapters for maximum network backhaul interconnectivity without incurring unnecessary development costs
- Compatibility with off-the-shelf MiniPCI LAN options including Wi-Fi® for rapid deployment



Wavesat Evolutive™ WiMAX DM256 Chipset

The DM256 is a cost-effective, low power consumption chipset implementing the IEEE 802.16-2004 OFDM PHY layer protocol. The PHY has two complementary functions to process data for transmission where the output is a baseband I/Q signal or a programmable IF signal (real or complex). The process is reversed for the second function. For data reception, the PHY implements proprietary synchronization and channel equalization methods for OFDM.

- Can be used for base station and CPE
- Upgradeability from WiMAX fixed to 802.16e OFDM mobility
- Supports TDD, HFDD and FDD
- Industry-leading 5-bits/sec/Hertz spectral efficiency
- 208-pin PQFP and BGA
- Programmable bandwidths and IF frequency

CPE MAC Software

- Complete source code is included
- Conforms to IEEE 802.16-2004
- Progressive support of additional features leading to 802.16e-2005
- High level of abstraction for operating system for easy portability
- Based on WiMAX Forum-certified CPE MAC

3.5 GHz MiniPCI Reference Designs

- A development platform to guide and support efforts in designing WiMAX-compliant wireless systems using the DM256 chipset
- Provides a plug-and-play solution for the lower layer air interface and time-critical low-level MAC functionality
- WiMAX-certified designs for CPE
- Adaptive modulation (BPSK, QPSK, 16-QAM and 64-QAM)
- First MiniPCI design on the market
- Meets all six SUI non line-of-sight channel models
- 37.5 Mbps data throughput
- Support WiMAX profile: 3.5 GHz RF card, 3.5 and 7 MHz bandwidth, TDD and HFDD

Wavesat

Wavesat is a leading fabless semiconductor company developing WiMAX chipsets, software and reference designs, enabling OEMs and ODMs to be the first to market with high-performance and cost-effective WiMAX compliant solutions.

www.wavesat.com

Celestica's WiMAX Gateway/CPE solution is a production-ready solution that can be optimized with customers' intellectual property on market position. Targeted at customers in the wireless telecommunications infrastructure and SOHO markets, the CPE solution accelerator provides companies with a creative solution to shrink product design cycles and achieve full product lifecycle solutions at the lowest total cost and fastest time to market.

Key Features and Benefits:

- Highly configurable design for production
- Leading WiMAX chipset in the industry, ensuring compatibility and a true WiMAX Forum-certified offering
- Supports Freescale PowerQUICC II Pro MPC8323, MPC8321 and MPC8313 processors
- MiniPCI-based WiMAX or other backhaul options
- MiniPCI/Cardbus-based LAN options for production
- Wavesat WiMAX optimized
- Support for CPU-intensive cryptographic operations
 - Hardware acceleration for the data encryption standard (DES, 3DES), advanced encryption standard (AES), secure hash (SHA-1) and message digest (MD5) algorithms
- Roadmap to aggressively reduce cost for production and deployment
- DDR2 DRAM interface
 - Two onboard 256 Mb to 1 Gb DDR2 devices for a total of 64 MB to 256 MB
- Five 10/100 Ethernet connections
- Four USB 2.0 High Speed host ports
- Four FXS POTS ports

Celestica

Celestica is a world leader in the delivery of electronic manufacturing services. Celestica operates a global manufacturing network with operations in Asia, Europe and the Americas, providing a broad range of integrated service and solutions to leading original equipment manufacturers (OEMs).
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