Mobile eXtreme Convergence Platforms

MXC275-30

Overview

Based on the revolutionary Mobile eXtreme Convergence (MXC) architecture, MXC275-30 provides a comprehensive platform solution for EDGE-based phones that speeds time to market by simplifying development for manufacturers. By reducing component count and cost, the MXC275-30 platform enables consumers to have handsets that are slim, sleek and stylish. Integrated world-class power amplifier and power management technology helps reduce dropped calls and extend battery life. Advanced packaging techniques put the MXC architecture in a package the size of a postage stamp, literally providing more room to innovate.

MXC: First Single-Core Modem

The single-core processor at the heart of the MXC275-30 platform combines a StarCore™ SC140e DSP operating at up to 208 MHz and an ARM1136™ applications processor core operating at up to 532 MHz. The single-core modem performs the signaling protocol layers (L1, L2 and L3) for 2.5G and 2.75G standards including GSM, GPRS and EDGE Class 12.

Applications processing technology is integrated into the chip with a shared memory system and shared peripherals. This eliminates the need for an additional external applications processor and helps to reduce cost. The modem and applications domains run on the same piece of silicon, which means more efficient interprocessor communication, higher performance, exceptional power management and reduced complexity.

Create Applications Faster

While the modem and applications share hardware, they are separated by software. This clean separation dramatically reduces complexity and simplifies software development. Designers can create new applications as quickly as they need to, without touching the modem core—speeding time to market by as much as six months. This separation gives manufacturers complete scalability and flexibility across their portfolios—making it possible to increase functions, decrease development time and free up critical engineering resources. MXC architecture helps reduce part count, size and system costs, while enhancing multimedia and communications processing performance.

Benefits

Low power
- Communications functions on a single core
- Dedicated hardware accelerators
- Internal memories and caches

Cost effective
- Shared external memory approach
- Single core modem architecture
- High integration with fewer discrete parts

High performance
- Dedicated accelerators
- L1, L2 caches
- High speed: 208 MHz DSP, 532 MHz microcontroller unit (MCU)

Speeds development time and simplifies effort
- Strict separation of modem and apps provides simpler software development and integration
- Modem software runs entirely on the DSP
- Run open operating systems such as Linux® OS and Symbian OS™ on the MCU
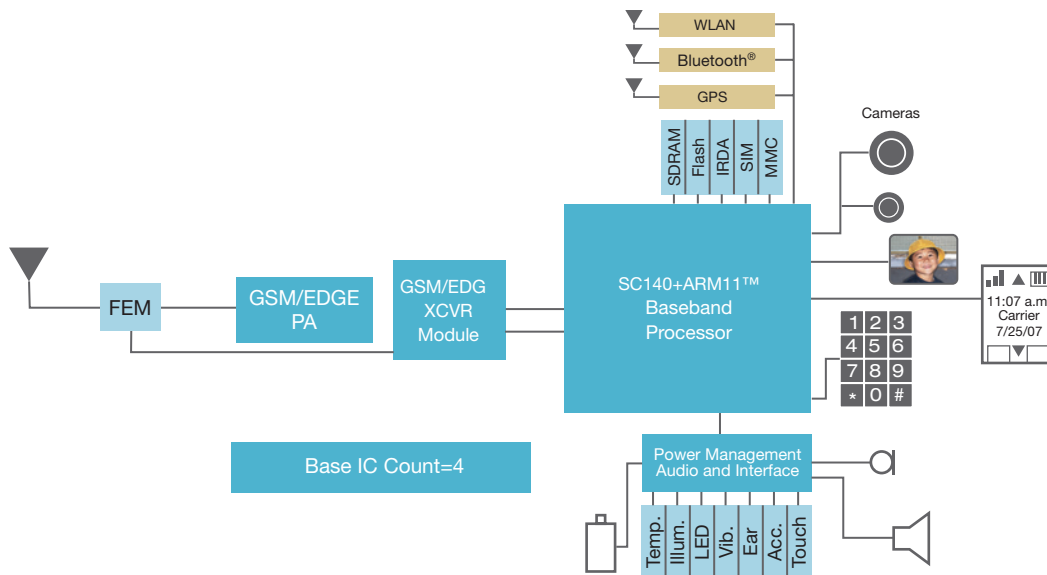
MXC275-30 Platform Features

- StarCore SC140e DSP up to 208 MHz
- ARM11 applications processor up to 532 MHz
- Quad-band GSM 850/900/1800/1900 MHz
- GERAN data rates (max)—DL 236 Kbps, UL 118 Kbps
- GPRS/EGPRS (EDGE) slot up to Class 12 (4d/4u)
- Supports dynamic synchronous transfer mode (DTM) Class 5-11
- Octal speech
- DigRF interface support
- AMR-NB, HR, FR and EFR vocoders
- Hardware encryption of A5/1, A5/2, A5/3 and A5/4

- Optimized for open operating systems such as Linux and Symbian without adding any processor or accelerator
- Hardware acceleration for GPRS ciphering algorithm GEA/1, GEA/2, GEA/3 and GEA/4
- Single antenna interference cancellation (SAIC) for GMSK
- Secure boot
- Run-time integrity checker (RTIC)
- Integrated imaging processing unit (IPU) video accelerator
- Wireless connectivity features
  - A-GPS (network assisted) interface support
  - Bluetooth® interface support
  - WLAN 802.11a/b/g interface support

Key Multimedia Features

- Video playback
  - MPEG-4 Decode, CIF 30 fps, 384 Kbps
  - H.264 Decode, CIF 30 fps, 384 Kbps
  - WMV9 Decode, QCIF 30 fps, 384 Kbps
- Video capture
  - MPEG-4 Encode, CIF 30 fps, 384 Kbps
  - H. 264 Encode, QCIF 15 fps, 128 Kbps
- Video conferencing
  - MPEG-4, CIF 30 fps
  - H.263 and MPEG-4, CIF 30 fps decode, QCIF 15 fps encode
- Audio codecs
  - AMR-NB, AMR-WB, AAC, AAC+, MP3 and MIDI
- Other capabilities
  - Push to talk
  - See what I see

Learn More: For more information on our Mobile eXtreme Convergence vision, the MXC architecture and our wireless portfolio, including a list of specific MXC architecture features, visit **www.freescale.com/mxc**.

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