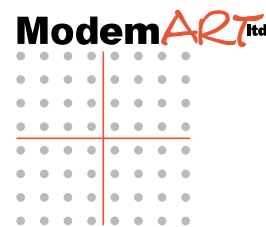




Enabling 3G Terminals



MA1050 W-CDMA Programmable Baseband Processor

3G upgrade for existing GSM/GPRS/EDGE baseband processors

Benefits

- Supports a true, type 2 multi-mode UMTS/GSM/GPRS/EDGE solution
- Add-on to GSM/GPRS/EDGE baseband processors enabling re-use of GSM/GPRS/EDGE legacy
- Feature rich: 3GPP Release 4, 384 kbps class
- Software upgradeable for future 3GPP standard releases
- Low power consumption, suitable for commercial 3G W-CDMA handsets
- Direct interface to RF Chipset

Key Features

- Complete 3GPP compliant L1 firmware and software
- Hardware Abstraction Layer for rapid protocol stack integration
- Low power consumption (allows handset standby time of more than 250 hours)
- Flexible radio interface compatible with off-the-shelf RF solutions in the market
- UMTS Encryption block
- USIM card interface
- Internal PLL supporting a wide range of input clocks (13, 26, 15.36, 30.72, 19.2 MHz)
- 32 KHz internal oscillator for power down modes

MA1050 Overview

The Modem-Art MA1050 chip is a highly integrated 3G W-CDMA baseband processor for either single mode UMTS or true multi-mode UMTS + GSM/GPRS/EDGE terminals. The MA1050 offers the most advanced functionality of the 3GPP standard, supporting all 3GPP Release 99 and Release 4 features. MA1050 based terminals take full advantage of advanced 3G features, such as real time video, high-speed data transfer and Internet browsing, without compromising on power consumption, cost and size.

The MA1050 is used as a W-CDMA physical layer co-processor connected to existing GSM/GPRS/EDGE baseband processors. The MA1050 enables a fast and low risk upgrade of existing type-approved and field-tested GSM/GPRS/EDGE terminal designs to multi-mode UMTS + GSM/GPRS/EDGE. This "add-on" approach offers the shortest time to market by maximizing re-use of existing GSM/GPRS/EDGE certified technology and terminal designs, while minimizing the new W-CDMA development, testing efforts, risks and costs.

Modem-Art provides the MA1050 with a full range of development and support tools, including multi-mode UMTS/GSM/GPRS/EDGE development board and software development suit, thus facilitating a rapid development of 3G mobile terminals. The MA1050 is supported by a multi-mode protocol stack and reference design.

PME Technology

The MA1050 is built around the PME (Programmable Modem Engine), Modem-Art's core technology. The PME is a powerful physical layer processor optimized for W-CDMA modem implementation. The PME's multiprocessing architecture enables a rapid realization of the 3GPP standard releases by software upgrades, displacing the need for hardware modifications. The PME reduces time to market and improves reliability. The result is a baseband processor with rich system functionality, a high level of flexibility and a low-power consumption that facilitates a smooth transition to commercial 3G terminals.

Target Applications

- Single mode UMTS handsets
- Multi-mode UMTS/GSM/GPRS/EDGE handsets
- Single and multi-mode data modules



Development and Support Tools

- MA1050 multi-mode UMTS/GSM/GPRS/EDGE evaluation board
- MA1050 software development and testing tools
- Protocol stack software development kit
- Multi-mode form factor board
- Multi-mode reference design

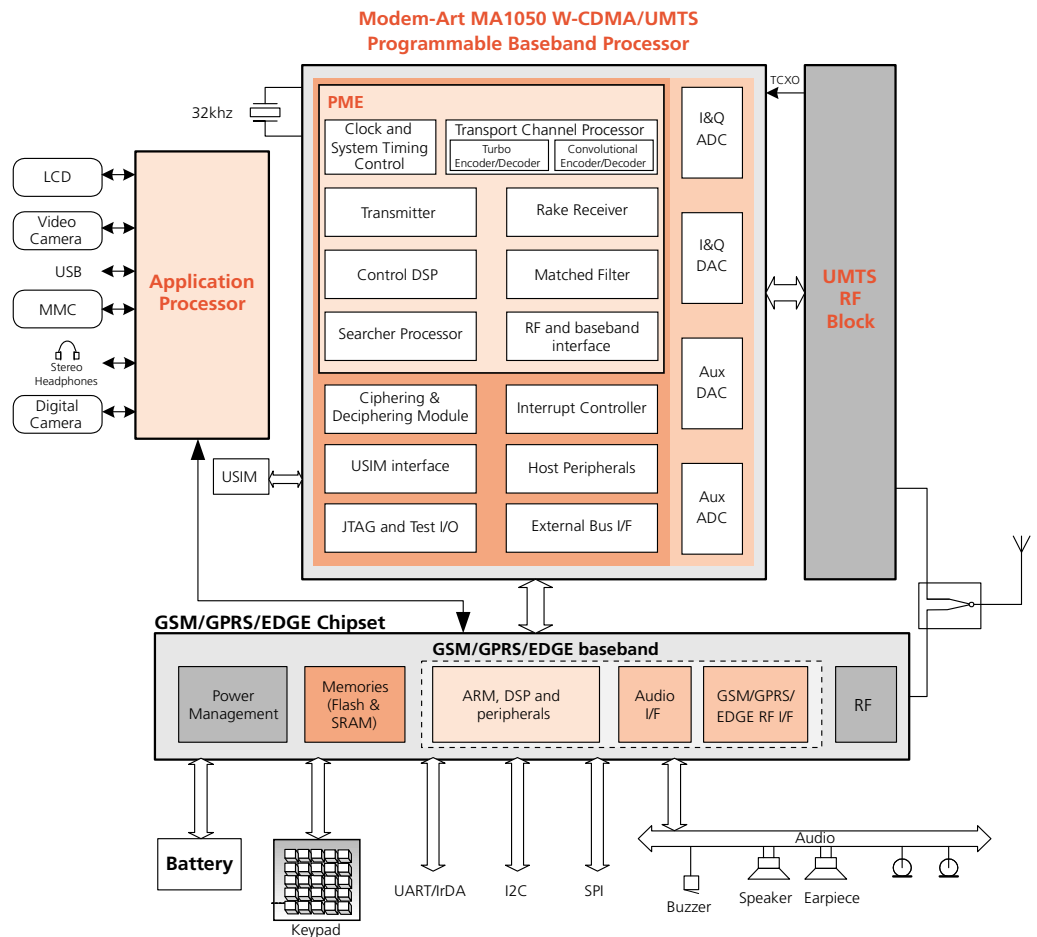
Package

- 196 FPBGA, 0.8mm pitch, 12x12mm footprint

Availability

- MA1050 samples, evaluation boards, software and testing and development tools are available now

Application Example: MA1050 based Multi-Mode Smart Phone

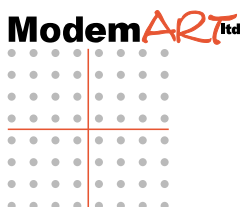


The MA1050 consolidates all W-CDMA physical layer baseband functionality into a single chip. The MA1050 is memory mapped to an existing GSM/GPRS/EDGE baseband processor. The ARM in the GSM/GPRS/EDGE baseband processor runs the multi-mode UMTS/GSM/GPRS/EDGE protocol stack, implementing the call processing and system control functions. The MA1050 interfaces and architecture are optimized to minimize the ARM overhead of the physical layer management tasks. The ARM resources are dedicated to protocol stack and MMI functions. The MA1050 includes the Analog Front End (AFE) enabling a direct interface and control of the UMTS RF circuitry.

3GPP Functionality

- Standard compliance: 3GPP (W-CDMA) Release 1999 and Release 4
- 384Kbps on both downlink and uplink channels
- Multi-call through programmable multiplexing of transport channels
- Compressed mode functionality for multi-mode terminals
- All 3GPP diversity modes: STTD, closed loop and SSTD
- Spreading Factor 4 on both downlink and uplink
- Blind transport format detection
- Simultaneous reception of 4 downlink CCTrCH
- DSCH: Downlink Shared Channel for improved system capacity and efficiency

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