# MN2064A MESHNETWORKS DIGITAL ASIC

GENERAL DESCRIPTION

The MeshNetworks MN2064A baseband processor ASIC with integrated Medium Access Control (MAC) provides a highly integrated solution for today's mobile broadband devices and applications. The MN2064A is the first chip of its kind to combine mobility and peer-to-peer networking in a single chip solution. Built-in Multi-Hopping capabilities create robust, interconnected networks that automatically route around congestion and line-of-sight obstacles, while improving thoughput as subscriber density increases.

Based on MeshNetworks' patented QDMA radio technology, the MN2064A enables wireless OEM manufacturers and application developers to quickly leverage emerging ad hoc networking standards (i.e. MANET). The digital ASIC is at the heart of all MeshNetworks Enabled Architecture (MEA) mobile broadband products.

An embedded RISC processor handles all MAC protocol functions and advanced ad hoc routing algorithms, minimizing the processing load on the host device. Support for an industry standard, 16-bit PC Card interface ensures compatibility with practically all mobile and portable computing devices. Finally, a programmable radio interface allows for seamless connectivity with many standard radio front-ends.
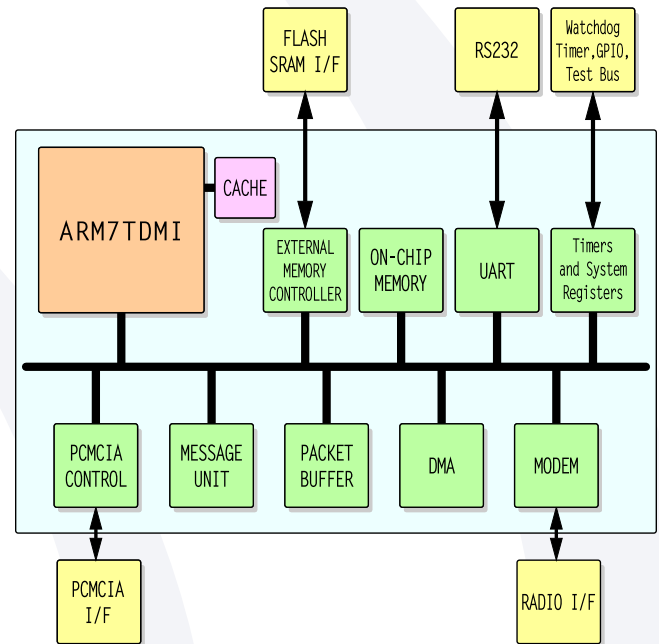
FUNCTIONAL OVERVIEW

The MeshNetworks MN2064A baseband processor is designed for seamless integration with standard RF interfaces to provide a complete wireless broadband solution.

Utilizing an internal ARM7TDMI processor, 8K unified cache, 256KB of on-chip memory and a 64MB/sec burst capable internal bus, the MN2064A provides modem data rates of up to 6 Mbps. It also seamlessly connects to a standard PCMCIA bus.

The hardware accelerated MAC and state-of-the-art modem features are optimized to support mobile mesh networking. General purpose I/O pins, a programmable RF Control Bus, and an internal UART provide design and programming flexibility.

The MN2064A provides high performance in a 288-pin PBGA package suitable for PC card and embedded applications in low-power, battery-powered devices.

mobile broadband network solutions

PRODUCT SPECIFICATIONS

KEY FEATURES & BENEFITS

- **Embedded ARM7 CPU 64 MHz**
  Powerful processing to maintain high bandwidth throughput in a mobile environment

- **Radio Agnostic**
  Supports multiple radio front-ends with a programmable RF Interface

- **256 KB Internal Memory**
  Embedded RAM results in a lower system cost

- **On Chip 8KB Cache**
  Fast memory access for high-speed applications

- **Adaptive Power Control**
  Real-time control of power & data rate maximizes battery life and network performance

- **Supports Multi-Hopping Peer-to-Peer Routing**
  Extends range and helps solve non-line-of-sight issues found in point to multi-point RF systems

- **Supports Network and Ad Hoc Connectivity**
  A single solution for both Wide Area and Local Area ad hoc networks

- **Development Packages**
  Hardware Development Kit: schematics, layout, Gerber files, data sheets, and functional specifications

- **Driver Development Kit**
  Complete turnkey NDIS and Windows Pocket PC 2002 drivers, Windows 2000, Window XP, Pocket PC2002, Linux drivers (optional)

- **MeshAPI Software Development Kit**
  A complete software development toolkit for designing custom applications

- **Manufacturing and Test Software Kit**
  Test procedures and verification environment for direct integration into volume manufacturing program

GENERAL INFORMATION

Data Rate	Up to 6 Mbps
Internal Bus	64 MB/sec burst
Interface	16-bit PC Card
Diagnostics	IEEE 1149.1 JTAG

GEO-LOCATION PERFORMANCE

Positioning Accuracy	+/- 10m in Normal Mode Enhanced Mode Available
Geo-Location Interface	Coordinates supplied to host interface through MeshAPI

ELECTRICAL

I/O Supply Voltage	3.3V +/- 0.3V
CORE Supply Voltage	1.8V +/- 0.15V
Power Consumption	300 mA

PHYSICAL

Dimensions	18mm x 18mm
Mounting Height	1.45 mm (Maximum)
Weight	0.700g
Connectors	288 pin PBGA

ENVIRONMENTAL

Temperature Range	-40 to 70° C Ambient
Storage Temp.	-55 to 125° C

CONTACT INFORMATION

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