

MSP2200

MSP with IDE & PCI for Network & Media Storage

Advance
Product Brief

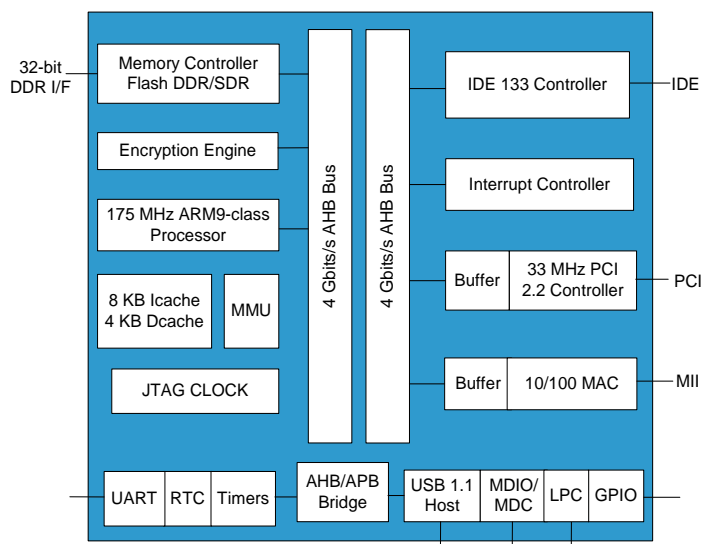
PRODUCT OVERVIEW

The MSP2200 is a highly integrated, feature rich System-on-a-Chip device designed for digital home appliances requiring storage such as network attached storage (NAS) and media servers. Its low cost and small footprint make it an ideal solution for the home, small office/home office (SOHO), as well as for small and medium business network storage.

The MSP2200 has a low cost, 32-bit ARM9-class RISC processor running up to 175 MHz, delivering over 200+ MIPS processing power. Combined with PMC-Sierra's advanced network storage software, the MSP2200-based solution provides:

- a comprehensive solution that includes processors, application software, and product reference designs, allowing OEM and ODMs to rapidly deliver simple and affordable network storage products.
- a superior level of optimization and small footprint that integrates an Ultra IDE controller, a standard 10/100 Ethernet MAC, support for low cost DDR SDRAM, hardware acceleration for TCP/IP offload, encryption and memory management, as well as a USB port and Real Time Clock (RTC).
- security and encryption features to protect sensitive data.
- plug-and-play software capability for simple installation and use.
- a PCI bus for flexible system configurations, including wireless access, media CODECS, USB 2.0 ports, etc.

MSP2200 BLOCK DIAGRAM



PRODUCT HIGHLIGHTS

STORAGE INTERFACE

- IDE interface supports up to two Ultra ATA 133 hard drives (Master/Slave)

LAN INTERFACE

- Standard IEEE 802.3 10/100 Ethernet MAC

SECURITY & PERFORMANCE ACCELERATION FEATURES

- True 32-bit random number generator
- 128-bit security acceleration engine for:
 - DES-ECB, 3DES-ECB
 - AES-ECB with 128, 192, and 256-bit keys
 - ESP-CBC
 - ESP-DES-CBC, AES-CBC with explicit IV
 - SHA1, MD5, HMAC-SHA1, HMAC-MD5
- TCP/IP acceleration engine

MEMORY CONTROLLER

- Interface to 16 MB serial/parallel Flash
- Interface to 128 MB of DDR/SDR SDRAM
- Integrated memory management unit (MMU)

SYSTEM PROCESSOR

- High performance ARM9-class RISC processor at 170 MHz
- 8 KB Instruction cache, 4 KB Data cache

HIGH PERFORMANCE SYSTEM BUSES

- PCI interface (32-bit, 33 MHz) – PCI v2.2 compatible
- Dual ultra fast internal core buses with aggregate peak performance of greater than 8 Gbps (4 Gbps each) for wire-speed operation

SYSTEM CONTROL AND PERIPHERALS

- USB 1.1 host port
- System power management
- Real Time Clock (RTC), Timer, watchdog timer
- 32 GPIOs & interrupt inputs
- 16550-compatible UART
- LPC interface

PACKAGE/PROCESS

- 256-pin PBGA with a 14 x 14 mm small footprint
- Low cost, low power 0.18 µm standard CMOS process

SOFTWARE

- Linux 2.4.18 board support package
- NAS application software including:
 - Standards-based network file sharing for Windows, UNIX/Linux SMB, and MAC OSX (via CIFS/Samba)
 - Web-based user interface for system configuration and management
 - Networking configuration and management including DHCP client and UPnP for simple system installation
 - Storage management including S.M.A.R.T. reporting
 - File system encryption to protect sensitive data
 - Remote file access via FTP; Remote firmware upgrade

DEVELOPMENT TOOLS

- Support for Linux
- Evaluation boards; Third-party tool chains

THIRD-PARTY SUPPORT

- Media server software: Mediabolic
- JTAG debuggers
 - Faraday ICE
 - AXD or RealView – ARMICE

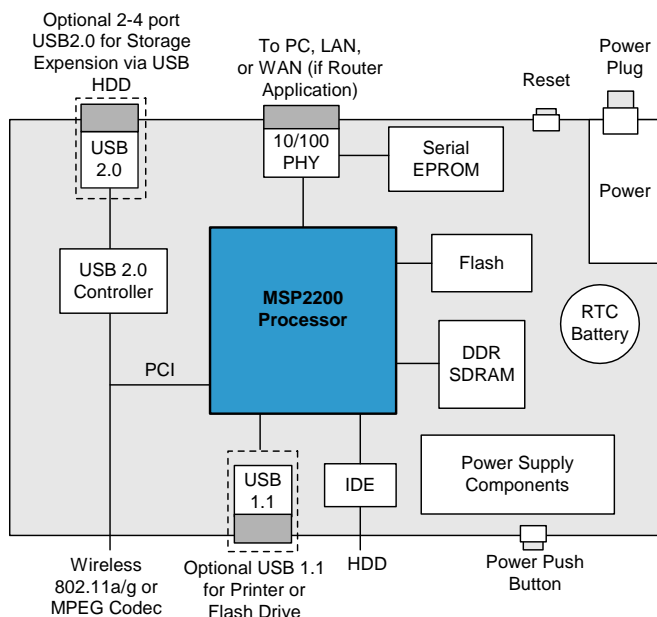
MSP STORAGE PROCESSOR FAMILY

- MSP2202 – MSP with Dual IDE for Network & Media Storage
- MSP2204 – MSP with IDE for Network and Media Storage
- MSP2206 – MSP with MMU & PCI for Wireless Router & Access Points

BENEFITS

- Industry's lowest cost and highest integration solution on a single chip for secure home and SOHO network storage systems.
- Support for secure media storage as well as third-party solutions for standards-compliant media server software.
- Integrated USB port for convenient connection to a printer, scanner, USB Flash drive, or external USB hard-disk drive for additional storage capacity.
- A proprietary TCP/IP hardware acceleration engine, which improves overall network throughput by approximately 25%.

MSP2200 SOLUTION BOARD DIAGRAM



APPLICATIONS

- Consumer NAS
- Small Office and Home Office (SOHO) NAS
- Network Entertainment Systems
 - Media server
 - Personal Video Recorder (PVR); Digital Media Adapters (with PVR)
 - IP-TV/Digital Video Storage Server
- Portable Wireless NAS Appliance
- Wireless Storage Router

FURTHER RESOURCES

NETWORK STORAGE & ENTERTAINMENT SOLUTIONS

www.pmc-sierra.com/nas

NETWORK STORAGE CHIP SOLUTIONS

www.pmc-sierra.com/nas

TECHNICAL DOCUMENTATION

www.pmc-sierra.com/documentation/

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