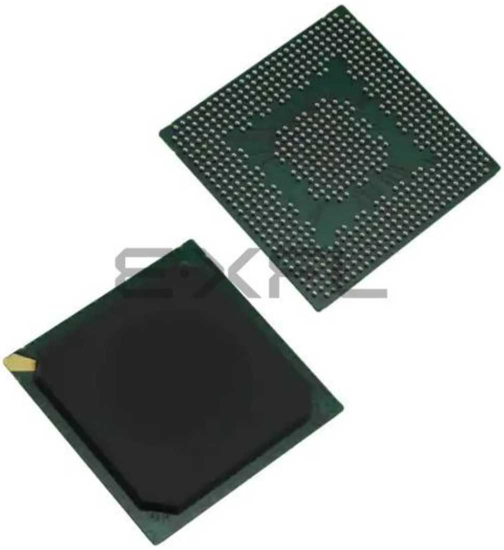

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Understanding Embedded - Microprocessors

Embedded microprocessors are specialized computing chips designed to perform specific tasks within an embedded system. Unlike general-purpose microprocessors found in personal computers, embedded microprocessors are tailored for dedicated functions within larger systems, offering optimized performance, efficiency, and reliability. These microprocessors are integral to the operation of countless electronic devices, providing the computational power necessary for controlling processes, handling data, and managing communications.

Applications of Embedded - Microprocessors

Embedded microprocessors are utilized across a broad spectrum of applications, making them indispensable in

Details	
Product Status	Obsolete
Core Processor	PowerPC e300
Number of Cores/Bus Width	1 Core, 32-Bit
Speed	400MHz
Co-Processors/DSP	Security; SEC
RAM Controllers	DDR, DDR2
Graphics Acceleration	No
Display & Interface Controllers	-
Ethernet	10/100/1000Mbps (3)
SATA	-
USB	USB 2.0 + PHY (2)
Voltage - I/O	1.8V, 2.5V, 3.3V
Operating Temperature	-40°C ~ 105°C (TA)
Security Features	Cryptography, Random Number Generator
Package / Case	620-BBGA Exposed Pad
Supplier Device Package	620-HBGA (29x29)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/mpc8343ecvragd

- — Up to four physical banks (chip selects), each bank up to 1 Gbyte independently addressable
- — DRAM chip configurations from 64 Mbits to 1 Gbit with ×8/×16 data ports
- — Full error checking and correction (ECC) support
- — Support for up to 16 simultaneous open pages (up to 32 pages for DDR2)
- — Contiguous or discontiguous memory mapping
- — Read-modify-write support
- — Sleep-mode support for SDRAM self refresh
- — Auto refresh
- — On-the-fly power management using CKE
- — Registered DIMM support
- — 2.5-V SSTL2 compatible I/O for DDR1, 1.8-V SSTL2 compatible I/O for DDR2

- Dual three-speed (10/100/1000) Ethernet controllers (TSECs)
  - — Dual controllers designed to comply with IEEE 802.3™, 802.3u™, 820.3x™, 802.3z™, 802.3ac™ standards
  - — Ethernet physical interfaces:
    - – 1000 Mbps IEEE Std. 802.3 RGMII, IEEE Std. 802.3z RTBI, full-duplex
    - – 10/100 Mbps IEEE Std. 802.3 MII full- and half-duplex
  - — Buffer descriptors are backward-compatible with MPC8260 and MPC860T 10/100 programming models
  - — 9.6-Kbyte jumbo frame support
  - — RMON statistics support
  - — Internal 2-Kbyte transmit and 2-Kbyte receive FIFOs per TSEC module
  - — MII management interface for control and status
  - — Programmable CRC generation and checking
- PCI interface
  - — Designed to comply with *PCI Specification Revision 2.3*
  - — Data bus width:
    - – 32-bit data PCI interface operating at up to 66 MHz
  - — PCI 3.3-V compatible
  - — PCI host bridge capabilities
  - — PCI agent mode on PCI interface
  - — PCI-to-memory and memory-to-PCI streaming
  - — Memory prefetching of PCI read accesses and support for delayed read transactions
  - — Posting of processor-to-PCI and PCI-to-memory writes
  - — On-chip arbitration supporting five masters on PCI
  - — Accesses to all PCI address spaces
  - — Parity supported
  - — Selectable hardware-enforced coherency