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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	Active
Core Processor	PowerPC G2
Number of Cores/Bus Width	1 Core, 32-Bit
Speed	200MHz
Co-Processors/DSP	Communications; RISC CPM
RAM Controllers	DRAM, SDRAM
Graphics Acceleration	No
Display & Interface Controllers	-
Ethernet	10/100Mbps (3)
SATA	-
USB	-
Voltage - I/O	3.3V
Operating Temperature	-40°C ~ 105°C (TA)
Security Features	-
Package / Case	480-LBGA Exposed Pad
Supplier Device Package	480-TBGA (37.5x37.5)
Purchase URL	https://www.e-xfl.com/pro/item?MUrl=&PartUrl=xpc8260cvvifbc

— Embedded 32-bit communications processor (CP) uses a RISC architecture for flexible support for communications protocols
— Interfaces to G2 core through on-chip 24-Kbyte dual-port RAM and DMA controller
— Serial DMA channels for receive and transmit on all serial channels
— Parallel I/O registers with open-drain and interrupt capability
— Virtual DMA functionality executing memory-to-memory and memory-to-I/O transfers
— Three fast communications controllers (two on the MPC8255) supporting the following protocols:
  – 10/100-Mbit Ethernet/IEEE Std 802.3™ CDMA/CS interface through media independent interface (MII)
  – ATM—Full-duplex SAR protocols at 155 Mbps, through UTOPIA interface, AAL5, AAL1, AAL0 protocols, TM 4.0 CBR, VBR, UBR, ABR traffic types, up to 16 K external connections
  – Transparent
  – HDLC—Up to T3 rates (clear channel)
— Two multichannel controllers (MCCs) (only MCC2 on the MPC8255)
  – Each MCC handles 128 serial, full-duplex, 64-Kbps data channels. Each MCC can be split into four subgroups of 32 channels each.
  – Almost any combination of subgroups can be multiplexed to single or multiple TDM interfaces up to four TDM interfaces per MCC
— Four serial communications controllers (SCCs) identical to those on the MPC860, supporting the digital portions of the following protocols:
  – Ethernet/IEEE 802.3 CDMA/CS
  – HDLC/SDLC and HDLC bus
  – Universal asynchronous receiver transmitter (UART)
  – Synchronous UART
  – Binary synchronous (BISYNC) communications
  – Transparent
— Two serial management controllers (SMCs), identical to those of the MPC860
  – Provide management for BRI devices as general circuit interface (GCI) controllers in time-division-multiplexed (TDM) channels
  – Transparent
  – UART (low-speed operation)
— One serial peripheral interface identical to the MPC860 SPI
— One inter-integrated circuit (I^2C) controller (identical to the MPC860 I^2C controller)
  – Microwire compatible
  – Multiple-master, single-master, and slave modes