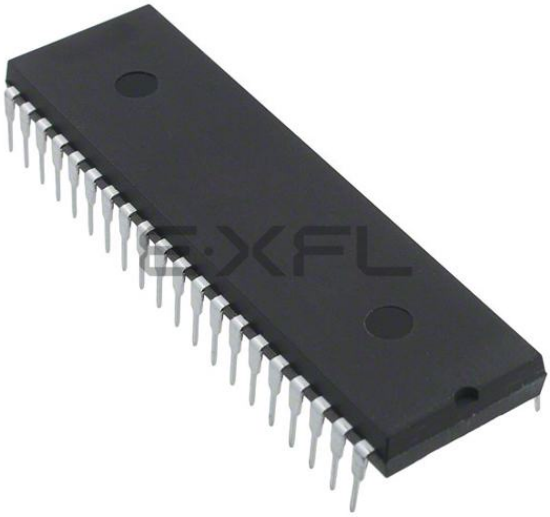

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What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Obsolete
Core Processor	80C51
Core Size	8-Bit
Speed	40MHz
Connectivity	UART/USART
Peripherals	POR, PWM, WDT
Number of I/O	32
Program Memory Size	-
Program Memory Type	ROMless
EEPROM Size	-
RAM Size	1K x 8
Voltage - Supply (Vcc/Vdd)	2.7V ~ 5.5V
Data Converters	-
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Through Hole
Package / Case	40-DIP (0.600", 15.24mm)
Supplier Device Package	40-PDIL
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/at80c51rd2-3csim

1. Description

AT80C51RD2 microcontrollers are high performance versions of the 80C51 8-bit microcontrollers.

The microcontrollers retain all features of the Atmel 80C52 with 256 bytes of internal RAM, a 7-source 4-level interrupt controller and three timer/counters.

In addition, the microcontrollers have a Programmable Counter Array, an XRAM of 1024 byte, a

Table 3-1. Pin Description

Mnemonic	Pin Number DIL	Pin Number PLCC44	Pin Number VQFP44 1.4	Type	Name and Function
V_{SS}	20	22	16	I	Ground: 0V reference
V_{CC}	40	44	38	I	Power Supply: This is the power supply voltage for normal, idle and power-down operation
P0.0 - P0.7	39 - 32	43 - 36	37 - 30	I/O	Port 0 : Port 0 is an open-drain, bi-directional I/O port. Port 0 pins that have 1s written to them float and can be used as high impedance inputs. Port 0 must be polarized to V_{CC} or V_{SS} in order to prevent any parasitic current consumption. Port 0 is also the multiplexed low-order address and data bus during access to external program and data memory. In this application, it uses strong internal pull-up when emitting 1s. Port 0 also inputs the code bytes during EPROM programming. External pull-ups are required during program verification during which P0 outputs the code bytes.
P1.0 - P1.7	1 - 8	2 - 9	40 - 44 1 - 3	I/O	Port 1: Port 1 is an 8-bit bi-directional I/O port with internal pull-ups. Port 1 pins that have 1s written to them are pulled high by the internal pull-ups and can be used as inputs. As inputs, Port 1 pins that are externally pulled low will source current because of the internal pull-ups. Port 1 also receives the low-order address byte during memory programming and verification. Alternate functions for T89C51RB2/RC2 Port 1 include:
	1	2	40	I/O	P1.0: Input/Output
				I/O	T2 (P1.0): Timer/Counter 2 external count input/Clockout
	2	3	41	I/O	P1.1: Input/Output
				I	T2EX: Timer/Counter 2 Reload/Capture/Direction Control
	3	4	42	I/O	P1.2: Input/Output
				I	ECI: External Clock for the PCA
	4	5	43	I/O	P1.3: Input/Output
				I/O	CEX0: Capture/Compare External I/O for PCA module 0
	5	6	44	I/O	P1.4: Input/Output
				I/O	CEX1: Capture/Compare External I/O for PCA module 1
	6	7	1	I/O	P1.5: Input/Output
				I/O	CEX2: Capture/Compare External I/O for PCA module 2
	7	8	2	I/O	P1.6: Input/Output
				I/O	CEX3: Capture/Compare External I/O for PCA module 3
	8	9	3	I/O	P1.7: Input/Output:
				I/O	CEX4: Capture/Compare External I/O for PCA module 4
XTAL1	19	21	15	I	Crystal 1: Input to the inverting oscillator amplifier and input to the internal clock generator circuits.
XTAL2	18	20	14	O	Crystal 2: Output from the inverting oscillator amplifier