

### USB Function Controller

- USB specification 2.0 compliant
- Full speed (12 Mbps) or low speed (1.5 Mbps) operation
- Integrated clock recovery; no external oscillator required for full speed or low speed
- Supports six flexible endpoints
- 256-byte USB buffer memory
- Integrated transceiver; no external resistors required

### On-Chip Debug

- C8051F34A can be used as code development platform; Complete development kit available
- On-chip debug circuitry facilitates full speed, nonintrusive in-system debug
- Provides breakpoints, single stepping, inspect/modify memory and registers

### Memory

- 1280 bytes internal data RAM (256 + 1024)
- 16 kB byte-programmable EPROM code memory
- EPROM can be programmed from firmware running on the device

### Supply Voltage: 1.8 to 5.25 V

- On-chip LDO for internal core supply
- Built-in supply voltage monitor

### Temperature Range: -40 to +85 °C

### High-Speed 8051 $\mu$ C Core

- Pipelined instruction architecture; executes 70% of instructions in 1 or 2 system clocks
- Up to 48 MIPS throughput with 48 MHz clock
- Expanded interrupt handler

### Digital Peripherals

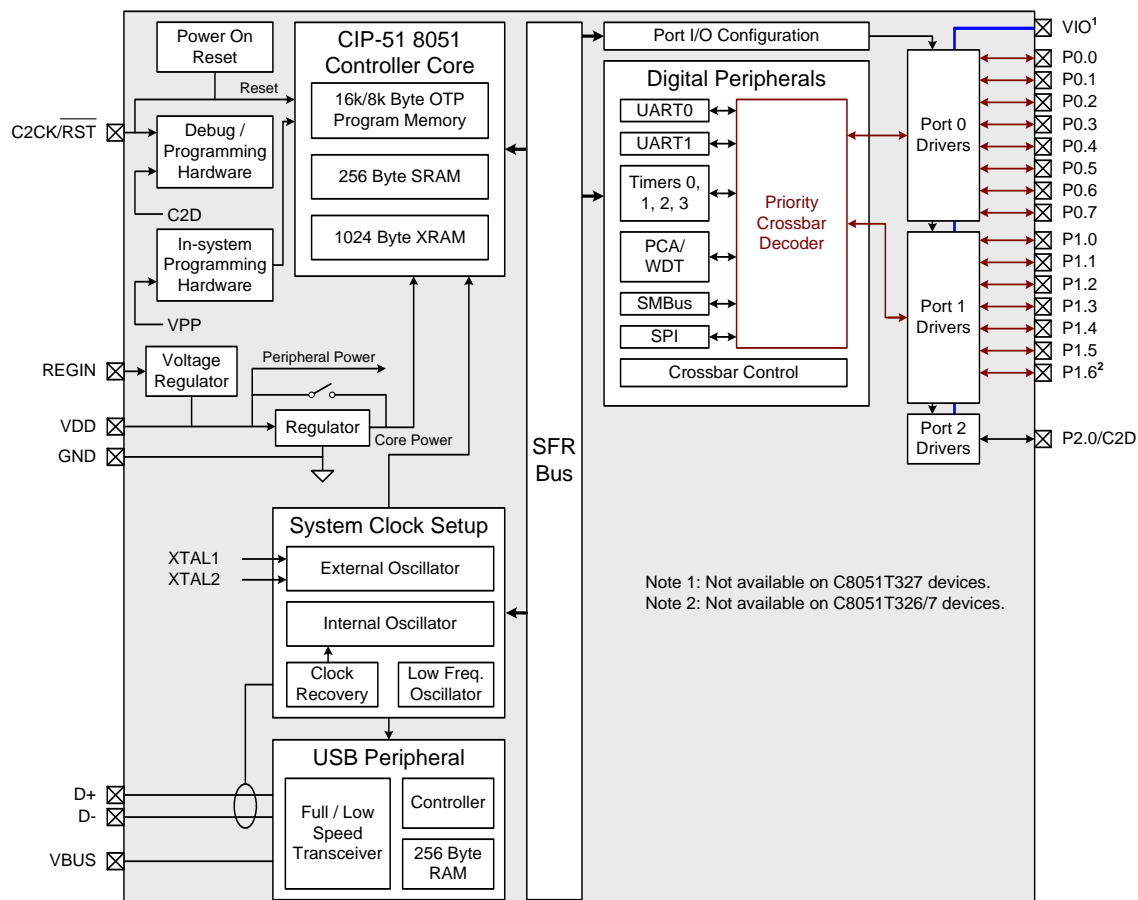
- Up to 16 port I/O with high sink current capability
- Hardware enhanced SPI™, SMBus™, and two enhanced UART serial ports
- Four general purpose 16-bit counter/timers
- 16-bit programmable counter array (PCA) with five capture/compare modules and enhanced PWM functionality

### Clock Sources

- Two internal oscillators:
  - 48 MHz:  $\pm 0.25\%$  accuracy with clock recovery enabled. Supports all USB and UART modes
  - 80/40/20/10 kHz low frequency, low power
- External oscillator: Crystal, RC, C, or CMOS Clock
- Can switch between clock sources on-the-fly; useful in power saving modes

### Package Options

- 4x4 mm QFN24
- 5x5 mm QFN28



### Product Selection Guide

Ordering Part Number	MIPS (Peak)	EPROM Code Memory (Bytes)	RAM (Bytes)	Calibrated Internal 48 MHz Oscillator	Internal 80 kHz Oscillator	USB with 256 Bytes Endpoint RAM	Supply Voltage Regulator	SMBus/I <sup>2</sup> C	Enhanced SPI	UARTs	Timers (16-bit)	Programmable Counter Array	Digital Port I/Os	Separate Port I/O Supply (V <sub>IO</sub> )	Lead-Free (RoHS Compliant)	Package
C8051T622-GM	48	16k <sup>1</sup>	1280	Y	Y	Y	Y	Y	Y	2	4	Y	16	Y	Y	QFN24
C8051T623-GM	48	8k	1280	Y	Y	Y	Y	Y	Y	2	4	Y	16	Y	Y	QFN24
C8051T326-GQ <sup>2</sup>	48	16k <sup>1</sup>	1280	Y	Y	Y	Y	Y	Y	2	4	Y	15	Y	Y	QFN28
C8051T327-GM <sup>3</sup>	48	16k <sup>1</sup>	1280	Y	Y	Y	Y	Y	Y	2	4	Y	15	N	Y	QFN28

**Notes:**

- 512 bytes reserved for factory use.
- Pin compatible with the C8051F326-GM.
- Pin compatible with the C8051F327-GM.

### Selected Electrical Characteristics

Parameter	Conditions	Min	Typ	Max	Units
Supply Voltage	Regulator1 in Normal Mode	1.8	3.0	3.6	V
	Regulator1 in Bypass Mode	1.75	—	1.9	V
SYSCCLK (System Clock)		0	—	48	MHz
Specified Operating Temp Range		-40	—	+85	°C
<b>Voltage Regulator (REG0)</b>					
Input Voltage Range		2.7	—	5.25	V
Output Voltage (V <sub>DD</sub> )	Output Current = 1 to 100 mA	3.3	3.45	3.6	V
Output Current		—	—	100	mA

### C8051T62x Development Kit

