

### Analog Peripherals

#### 10-Bit Analog to Digital Converter

- Up to 500 ksp/s
- 21 external inputs
- $V_{REF}$  from external pin,  $V_{DD}$ , or internal regulator
- Built-in temperature sensor
- External conversion start input option

#### Comparator

- Programmable hysteresis and response time
- Configurable as interrupt or reset source
- Low current (< 0.5  $\mu$ A)

### Memory

- 1280 bytes internal data RAM
- 8kB byte-programmable EPROM code memory

### On-Chip Debug

- C8051F310 can be used as in-system code development platform; complete development kit available
- On-chip debug circuitry facilitates full speed, non-intrusive in-system debug

### Supply Voltage 1.8 to 3.6 V

- On-chip LDO regulator for core supply
- On-chip voltage supply monitor

**Temperature Range: -40 to +85 °C**

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

- Pipe-lined instruction architecture; executes 70% of instructions in 1 or 2 system clocks
- 25 MIPS peak throughput with 25 MHz clock
- Expanded interrupt handler

### Digital Peripherals

- 29 port I/O; All 5 V tolerant with high sink current
- Hardware enhanced UART, SPI™, and SMBus™ serial ports
- Four general purpose 16-bit counter/timers
- 16-Bit programmable counter array (PCA) with five capture/compare modules
  - PWM
  - Rising / falling edge capture
  - Frequency output
  - Software timer

### Clock Sources

- Internal oscillator: 24.5 MHz with  $\pm 2\%$  accuracy supports UART operation
- External oscillator: CMOS clock or external capacitor
- Can switch between clock sources on-the-fly; useful in power saving modes

### Package

- 32-pin LQFP

**Development Kit: C8051T610DK**

