

ULTRA51 Preliminary Specification

Features

- RISC Core, up to 12 times faster than the original 805x.
- Fast interrupt response times.
- 13 interrupt sources, 5 external interrupt inputs.
- 2 Data Pointers for faster memory copies and indexing.
- 2 Serial interfaces – SPI, UART
- 2 channel 8-bit A/D converter
- 20 bi-directional I/O ports
- Real-time Clock.
- Watch dog timer.
- Three 8-bit programmable timer/event counters
- Built-in voltage detector for power on reset.
- Low Battery detection circuit.
- 32/64/128 Kilobytes Mask Program ROM
- 2 Kbytes Program RAM
- 32/128/256 Kbytes Data RAM with efficient pointer addressing
- 256 Kbytes Data ROM with efficient pointer addressing
- Operating supply voltage range 0.9 V ~ 2.5 V for ultra low current, low noise performance
- Built-in clock generator with programmable multiplier ratios
- Built-in 76.8KHz crystal oscillator
- OTPROM available
- 48-pin TQFP package

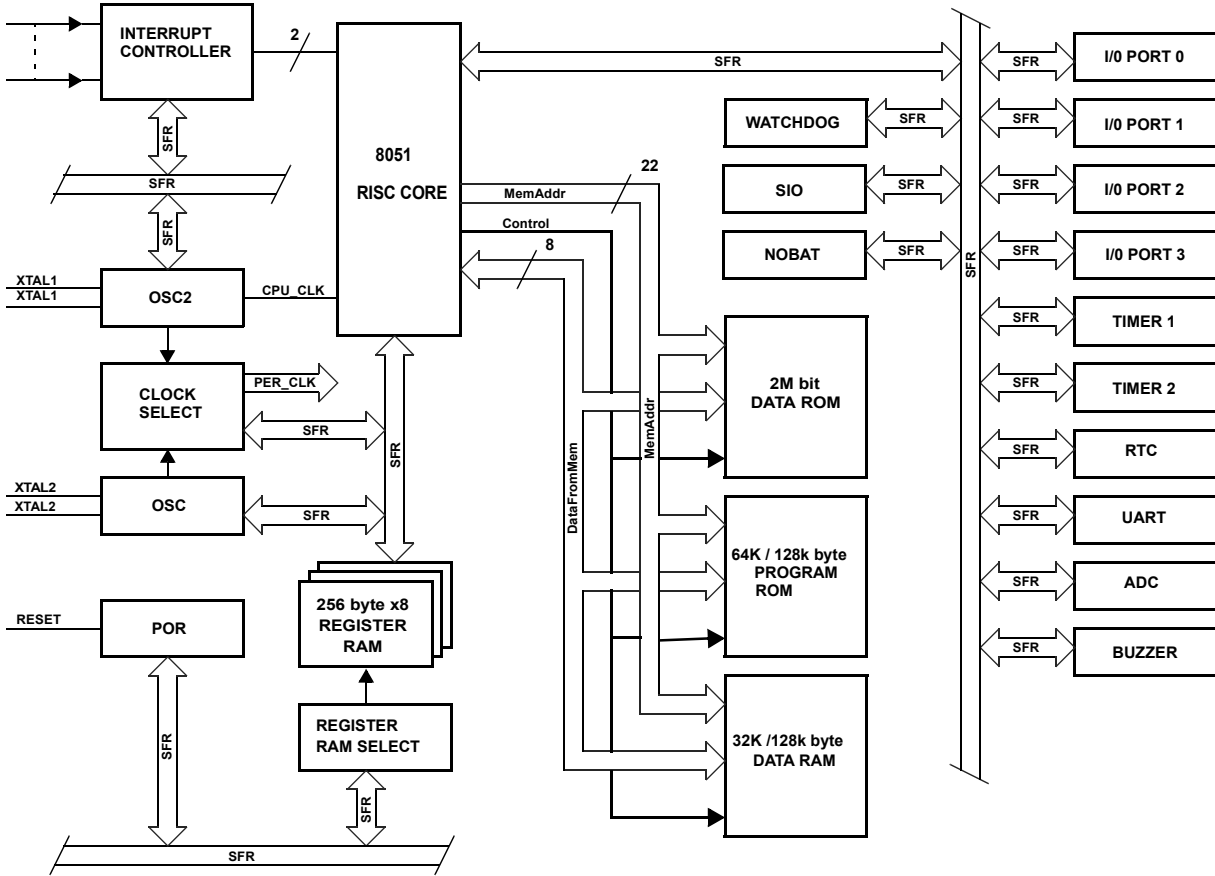
Introduction

The ULTRA51™ IC is a general purpose RISC 805x based microcontroller. It has full-featured program code, a large DATA ROM, and a large RAM storage. It also has an on-chip melody generator, UART, enhanced SIO, ADC, POR and RTC. The CPU uses an efficient RISC (Reduced Instruction Set Computer) 805x compatible core. On average, the execution cycle time is 8 times the performance of a standard 805x for the same processor crystal frequency. Each individual instruction executes up to 12 times faster than the original 805x. The core can potentially access 4Mbytes of program and data memory.

The low current consumption and low operating voltage of ULTRA51™ make it ideally suited for paging markets. Many design considerations have been incorporated into ULTRA51™ to minimize EMC interference to sensitive RF building blocks (assuming normal PCB routing guidelines for low EMC emissions are adhered to).

To achieve low operating currents, ULTRA51™ is fabricated using an advanced 0.9V semiconductor process.

Block Diagram



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