Ultra Low Power 8-bit FLASH Microcontroller

The World's Lowest Power 8-bit Flash Microcontroller

Description

The EM6812 is designed to be battery operated for extended lifetime applications. Brownout and powercheck functions ensure reliable operation at or near undervoltage conditions, offering greater reliability in complex operation modes. Each of the 16 I/Os is freely programmable and the microcontroller has a dual quartz and trimmable RC oscillator up to 10MHz. It has an 8-bit RISC architecture specially designed for very low power consumption. With 2 clocks per instruction, EM6812 executes up to 2.5 MIPS and achieves an astonishing 2200 MIPS/Watt.

Key Features

- **True low current:** 120 µA active mode, @1MHz
  6 µA standby mode, RC on
  0.8 µA standby mode, RC off
- **Up to 2.5 MIPS**
- **On-chip brownout detection**
- **Powercheck functions at start-up**
- **8-level Supply Voltage Level Detection (SVLD)**
- **Fast wake-up from standby mode**

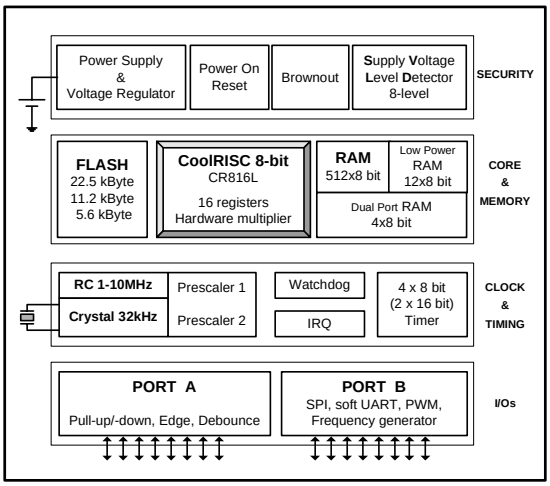
& BENEFITS

- ✓ *Saves battery life*
- ✓ *Increased flexibility and security*
- ✓ *Prevents malfunction in harsh environment*
- ✓ *Cost effective*

And more…

- 16 fully configurable I/Os (pull-up, pull-down, N-channel open drain)
- 6 high currents outputs, up to 20 mA
- Wide supply voltage range 2 V – 5.5 V
- Flash read monitor
- Dual mode quartz and RC oscillators:
  - *1 MHz – 10 MHz RC*
  - *32768 Hz crystal or external clock source*
- 8-bit CoolRISC architecture, 16 registers, 2 clock per instruction
- Power-On-Reset and watchdog
- Various Flash memory size:
  - *2k x 22 bit (5.6k Byte)*
  - *4k x 22 bit (11.2k Byte)*
  - *8k x 22 bit (22.5k Byte)*
- Fully static 512B or 256B RAM, Low power 12B RAM, Dual port 4B RAM
- Internal and external interrupts
- Frequency generator
- PWM functions
- 8/16-bit timer
- Prescaler: 10-bit RC divider, 15-bit crystal divider
- SPI interface, UART programmable by software
- Small 24-pin TSSOP and SO packages

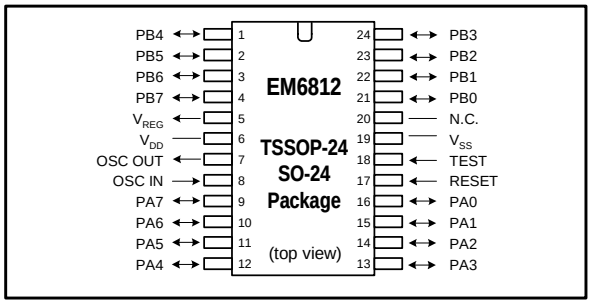
Block Diagram



Tools & Services

- Easy to use emulator with full debug functions, full peripheral integration, C-compiler
- Windows-based software programs
- Programmer from different vendors
- Dedicated team of engineers for outstanding support

Pinout Configuration



Typical Applications

- Metering
- Heat Cost Allocation
- Smoke detector
- Security
- Body care
- Sports
- Computer peripherals, Bluetooth chipset
- Automotive

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Phone: +41.32.755-5111, Fax: +41.32.755-5403
www.emmicroelectronic.com
info@emmicroelectronic.com