

Marvell 88MC200

SoC Solution for Home Automation and More

PRODUCT OVERVIEW

The Marvell® 88MC200 microcontroller is a highly integrated system-on-chip (SoC) and integral component of Marvell’s Smart Energy Platform. It is designed to provide a highly cost-effective, flexible and easy-to-use hardware/software solution to enable smart connectivity for a variety of devices and appliances, ranging from refrigerators to thermostats. Using advanced 55-nanometer process technology and industry-leading integration, the Marvell 88MC200 has a CPU clock up to 200Mhz, 512KB memory and rich set of I/O interfaces to offer high performance, lower power consumption and significantly reduced total bill of materials for a host of smart devices.

The Marvell 88MC200 further enables innovative, energy-efficient applications, including mobile applications and Cloud-based services for the mass market. At a maximum MCU speed of 200 MHz, it offers the fastest MCU to date, based on a 32-bit ARM Cortex-M3 core. The SOC also has eight Megabits (Mb) of on-chip serial flash memory, 512KB SRAM, two second-order sigma-delta ADCs with up to 16 bits resolution and one 10-bit DAC with two channels. In addition, the Marvell 88MC200 provides an extensive set of peripheral interfaces, including up to 63 GPIOs, four UARTs, three I2Cs, two SSP/SPI/I2S and USB.

BLOCK DIAGRAM

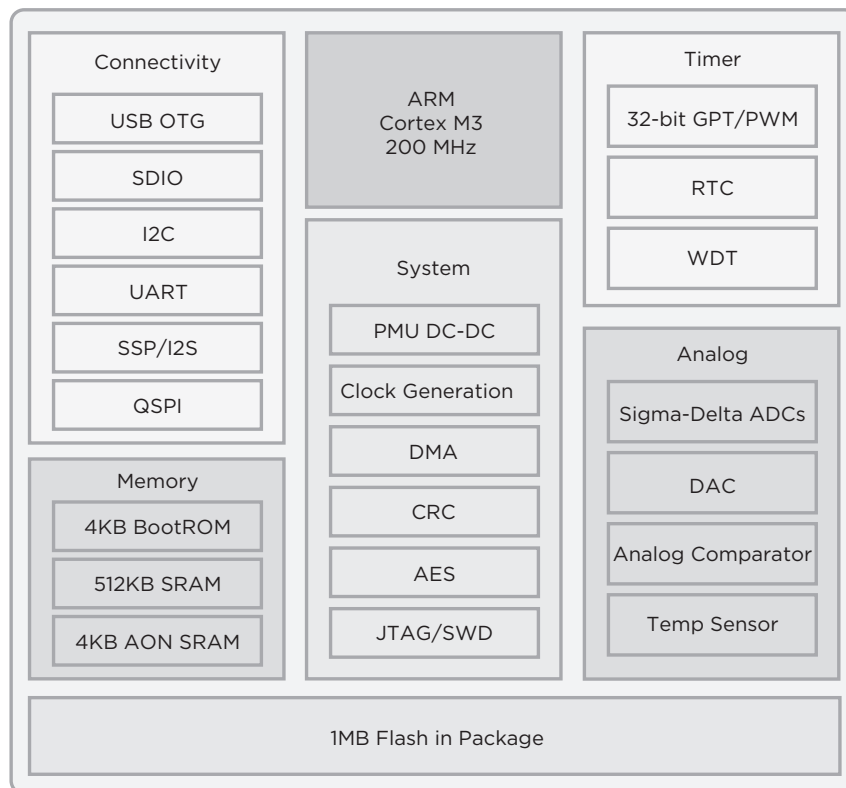


Fig 1. Marvell 88MC200

KEY FEATURES

FEATURES	BENEFITS
Processor	<ul style="list-style-type: none"> •32-bit ARM Cortex-M3 core, running up to 200MHz
Memory	<ul style="list-style-type: none"> •8 Mbit serial flash memory •4KB Boot ROM •512 KB configurable code/data RAM, including 192KB retentive SRAM •4KB retention SRAM in AON domain
System peripherals	<ul style="list-style-type: none"> •On-chip DC-DC converter supports 1.8-3.6 volt battery input, which can be up to 50 percent more energy efficient compared to LDO-based power supply solutions •Five power modes supported by intelligent power management to minimize standby power and wake up time •Flexible clock gating for all the peripheral modules •DMA engine with eight configurable channels •Hardware 16/32-bit CRC and 128/192/256-bit AES engine
Analog Peripherals	<ul style="list-style-type: none"> •I2S/PCM, 2 x I2C, 2 x UART interfaces, 2 x SSP/SSI and up to 32 GPIOs
Timers	<ul style="list-style-type: none"> •Four general purpose 32-bit timers, each supporting 6 PWM channels •RTC and WDT
Packages	<ul style="list-style-type: none"> •Supports 68/88-pin QFN package
Temperature	<ul style="list-style-type: none"> •Supports two temperature options: 0-85°C and -40-85° C

THIRD PARTY DEVELOPMENT TOOLS

IDEs

- IAR Embedded Workbench for ARM (EWARM)
- ARM Keil MDK

JTAG debuggers

- Debuggers supporting Cortex-M3 such as J-link, U-link2

TARGET APPLICATIONS

The Marvell 88MC200 features advanced flexibility for a multitude of applications:

- Smart appliances
- Lighting control
- Smart metering
- Home/building automation
- Remote control
- Healthcare



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