

# 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

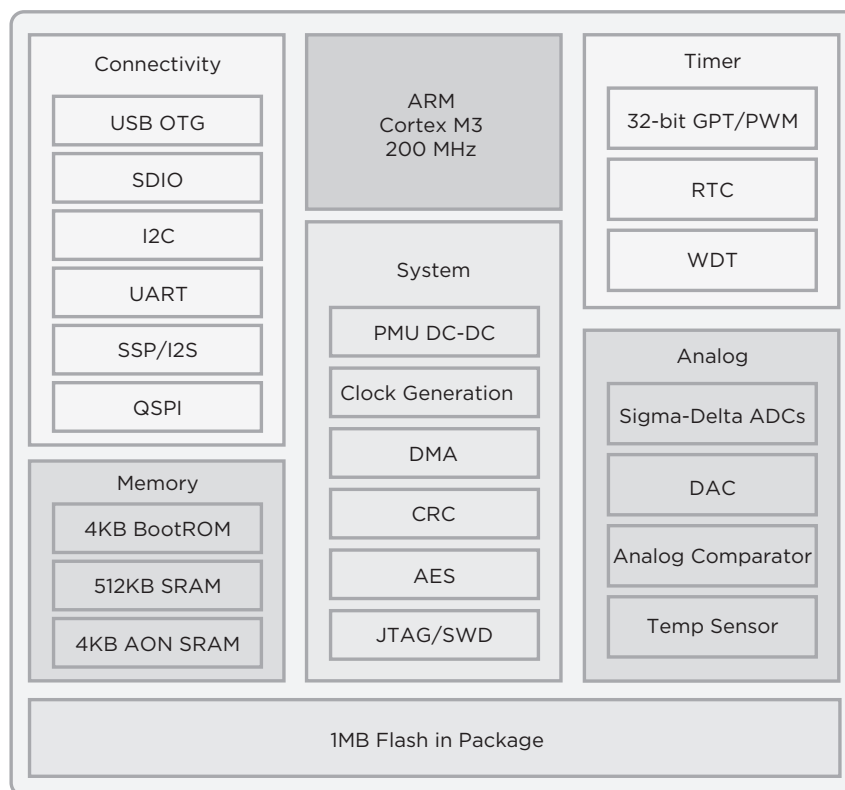


Fig 1. Marvell 88MC200

## KEY FEATURES

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

## 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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