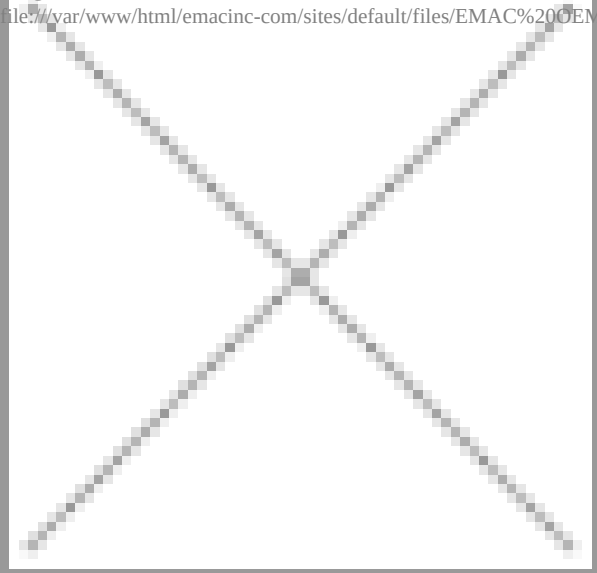


SoM-9M10M ARM System on Module



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Small, 200-pin SODIMM form factor (2.66" x 2.375")

Atmel ARM9 Jazelle AT91SAM9G45 or AT91SAM9M10 400Mhz Processor

10/100BaseT Ethernet with on-board PHY

5 Serial ports, 4 with handshake

1 USB 2.0 (High Speed) Host port

1 USB 2.0 (High Speed) Host/Device (USB OTG) port

Up to 128 MB of DDR2 RAM

Up to 128 MB of SDRAM

Up to 1 GB of NAND Flash

Up to 8 MB of Serial Data Flash

Battery backed Real Time Clock

On-Module Micro SD Card Socket

SD/MMC Flash Card Interface

2 I2C and 2 SPI ports

2 I2S Audio ports

Image Sensor Interface (ISI), ITU-R BT 601/656

Timer/Counters and Pulse Width Modulation (PWM) ports

8 Channel, 10-bit Analog-to-Digital converter with 4-wire Touchscreen Interface

Graphic LCD Interface with 2D acceleration up to 1280 x 860 Resolution

Multi-format Video Decoder (SoM-9M10 only)

True Random Number Generator

Typical power requirement less than 1 Watt

JTAG for debug, including real-time trace

FREE Eclipse IDE with GCC & GDB development tools

Linux

Green Hills Integrity BSP in development

Designed and manufactured in the USA the SoM-9M10 is a System-on-Module (SoM) based on either the Atmel ARM9 AT91SAM9G45 or AT91SAM9M10 processor. This Fanless ARM9, 400 MHz SoM has an Ethernet PHY included along with 4 serial ports. It utilizes up to 256MB of external DDR2 / SDRAM, 1GB of NAND Flash and includes an MMU which allows it to run Linux Operating System. A SoM is a small embedded module that contains the core of a microprocessor system.

Using the same small 200 pin SODIMM form-factor utilized by other EMAC SoM modules, the SoM-9M10 is the ideal processor engine for your next design. All of the ARM processor core is included on this tiny board including: Flash, Memory, Serial Ports, Ethernet, I2S Audio, PWMs, Timer/Counters, A/D, digital I/O lines, video, Clock/Calendar, and more.

The SoM-9M10 is designed to plug into a carrier board that contains all the connectors and any custom I/O required for the application. This

approach allows the customer or EMAC, to design a Custom Carrier Board that meets the customer's I/O, dimensional, and connector

requirements without having to worry about the processor, memory, and standard I/O functionality. With this System on Module approach, a semi-custom hardware platform can be developed in as little as a month.

In addition to the option of the developing a Carrier board, one can be purchased off-the-shelf from EMAC. EMAC provides off-the-shelf Carrier boards that feature A/D, D/A, MMC/SD card, keypad, LCD, Touchscreen, and Audio interfaces. The recommended off-the-shelf

Carrier Board for the SoM-9M10 is the **SoM-200ES** which allows the user to immediately start coding their application using the powerful

Linux Operating System and Tools.

The System on Module approach provides the flexibility of a fully customized product at a greatly reduced cost.

Specifications

SOM Type:

Microcontroller SODIMM Modules

Processor

Embedded Atmel AT91SAM9M10

Clock Speed:

400 MHz

Real Time Clock:

Processor Misc.:

System Reset: Supervisor with external Reset Button provision

Memory

Primary Flash:

1GB NAND Flash

Secondary Flash:

16 MB of Serial Data Flash

Primary I/O

32x GPIO's with 16 ma. drive when used as an output

Video Out:

LCD Video Interface with up 1280 x 860 resolution with 2D acceleration & Video CODECs

SPI:

2x High-Speed SPI ports with Chip Selects

Audio:

2x I2S Synchronous Serial Controllers with analog interface support

Ethernet:

1x 10/100 BaseT Ethernet

USB:

1x USB 2.0 High Speed Host

1x USB 2.0 High Speed Host/Device (USB OTG)

Serial Ports:

5x Serial Ports (4x with RTS/CTS handshake

1x RS485)	
I2C:	
2x multi-mode I2C port	
Watchdog:	
Secondary I/O	
Timers/ Counters/ PWM:	
2x 3 channel	
16-bit timers/counters with capture	
compare	
and PWM	
20-bit interval timer plus 12-bit interval counter	
LPT Port:	
Keypad:	
PS/2:	
Touch:	
10-Bit 4-wire analog resistive Touchscreen	
Analog on	
A/D.	
D/A:	
Analog Misc.:	
Analog I/O: 8 channel, 10-bit Analog-to-Digital converter (ADC), with 4 channels utilized for 4-wire touchscreen interface	
Power: Power Management Controller allows selectively shutting down on processor I/O functionality and running from a slow clock	
Dimensions	
Dimensions:	
2.66 × 2.375 in	
Form Factor:	
200-pin SODIMM	
Power Requirements	
Voltage:	
3.3 V	
Idle Current:	
270 mA	
Constant Busy Loop Current:	
290 mA	
Typical Current:	
270 mA	
Typical Voltage:	
3.3 V	
Max Boot Current:	
300 mA	
Power Misc.:	
Constant busy loop with Ethernet PHY disabled: 235 mA	
APM sleep mode using slow clock with Ethernet PHY disabled: 70 mA.	
APM sleep mode using slow clock with Ethernet PHY enabled: 105 mA	
Environmental	
Low Operating Temperature:	

40 C

High Operating Temperature:

85 C

Upper Operating Humidity:

90%

Pricing
SoM-9M10M-130

w/ AT91SAM9M10 CPU, 1 GB FLASH 256 MB RAM

\$250.00

Stock

Base Product:

SoM-9M10M

Non-Stock NCNR:

0

Carrier Boards:

SoM-200GS-000

Standard 200-pin Carrier with SD Card, Audio, CAN, PLD & 4.3" LCD

\$245.00

Base Product:

SoM-200GS

SoM-200GS-001

Deluxe 200-pin Carrier with WiFi, Audio, CAN, PLD & 4.3" LCD, without SD Card Socket

\$295.00

Base Product:

SoM-200GS

SoM-200GS-007

Bare Bones 200-pin Carrier w/SD Card & CAN, without Audio, PLD & LCD

\$145.00

Base Product:

SoM-200GS

SoM-212ES-000

Standard Carrier Board with Touch Screen

\$175.00

Base Product:

SoM-212ES

SoM-212ES-003

Deluxe Carrier Board with Touch Screen, POE, and Stereo Audio

\$225.00

Base Product:

SoM-212ES

SoM-212ES-007

Bare Bones Carrier Board

\$110.00

Base Product:

SoM-212ES

SoM-250GS-000

Standard Carrier Board with CAN, Audio, 7" LCD & Touch Screen, WiFi

\$399.00

Base Product:

SoM-250GS

SoM-250GS-001

Deluxe Carrier Board with CAN, Audio, 10" LCD & Touch Screen, WiFi

\$399.00

Base Product:

SoM-250GS

SoM-250GS-007

Bare-Bones Carrier Board with CAN, Audio, WiFi, without LCD

\$250.00

Base Product:

SoM-250GS

Source URL: <https://www.emacinc.com/content/som-9m10m-arm-system-module>