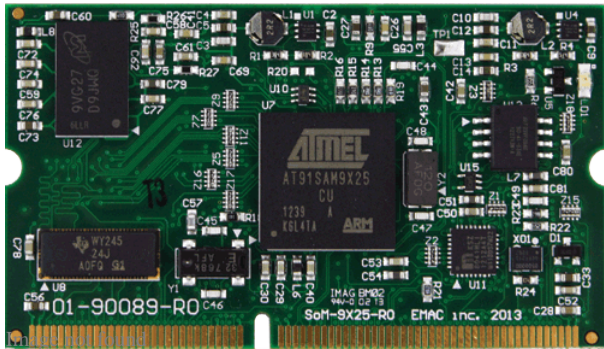


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## SoM-9X25M System on Module



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- Small, 144 pin SODIMM form factor (2.66" x 1.5")
- Atmel AT91SAM9x25 400Mhz Processor
- 1x 10/100BaseT Ethernet with on-board PHY (2nd Ethernet Optional)
- 6x Serial ports, 3 with handshake
- 1x USB 2.0 (High Speed) Host port
- 1x USB 2.0 (Full Speed) Host port
- 1x USB 2.0 (High Speed) OTG
- Up to 128 MB of DDR2 RAM
- Up to 4 GB of eMMC
- Up to 16 MB of Serial Data Flash
- Battery backed Real Time Clock
- SD/MMC SDIO Flash Card Interface
- 2x SPI Ports
- 2x I2C Ports
- 2x CAN 2.0B Ports
- 1x I2S Audio Port
- Timer/Counters and Pulse Width Modulation (PWM) ports
- 4x A/D Channel with 10-bit A/D Converter
- Typical power requirement less than 1 Watt
- JTAG for debug, including real-time trace
- Linux
- FREE Eclipse IDE with GCC & GDB development tools

The SoM-9x25 is a System on Module (SoM) based on the Atmel AT91SAM9x25 processor. Designed and manufactured in the USA, this wide temperature, fanless ARM9 400 MHz SoM has an Ethernet PHY included along with 6 serial ports with auto RS-485. It utilizes up to 4GB of eMMC Flash, up to 16MB of serial data flash, and up to 128MB of DDR2 RAM. A SoM is a small embedded module that contains the core of a microprocessor system.

Using the same small 144 pin SODIMM form-factor utilized by other EMAC SoM modules, the SoM-9x25

is the ideal processor engine for your next design. All of the ARM processor core functionality is included on this tiny board including: Flash, Memory, Serial Ports, Ethernet, I2S Audio, PWMs, Timer/Counters, A/D, digital I/O lines, Clock/Calendar, and more.

The SoM-9x25 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 custom 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, Audio, and Modem interfaces. The recommended off-the-shelf Carrier Board for the SoM-9x25 is the [SoM-150ES](#) 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

**Processor:**

Embedded Atmel ARM9 AT91SAM9X25

**Clock Speed:**

400 MHz

**Real Time Clock:**

#### Memory

**BIOS/ Bootloader:**

Resident Flash Bootloader (Das Uboot)

**Primary Flash:**

4GB of eMMC

**Secondary Flash:**

up to 16MB of Serial Data Flash

**Memory Misc.:**

- **System Reset:** Supervisor with external Reset Button provision.
- (Optional) 16MB of Serial Data Flash

#### Primary I/O

**GPIO:**

32x General Purpose I/Os with 16 ma. drive when used as an output

**SDIO:**

1x SDIO 4-bit Parallel SDHC Interface

**SPI:**

2x High-Speed SPI ports with Chip Selects.

**Audio:**

1x I2S Audio port

**USB:**

1x USB 2.0 High Speed Host

1x USB 2.0 Full Speed

1x USB 2.0 OTG

**Serial Ports:**

6x Serial Ports (1x with full handshake

2x with CTS/RTS handshake)

**I2C:**

I2C ports

**Watchdog:****Secondary I/O****CAN:**

2x CAN 2.0B Ports

**Timers/ Counters/ PWM:**

3x 3 channel 32-bit timers/counters with capture

compare

PWM

**LPT Port:****Keypad:****PS/2:****Analog on****A/D:****D/A:****Analog Misc.:**

**Analog I/O:** 4 channel, 10-bit Analog-to-Digital converter (ADC)

**Dimensions****Dimensions:**

2.66 × 1.5 in

**Form Factor:**

144-pin Headless SODIMM

**Power Requirements****Idle Current:**

210 mA

**Constant Busy Loop Current:**

245 mA

**Typical Current:**

170 mA

**Typical Voltage:**

3.3 V

**Max Boot Current:**

255 mA

**Power Misc.:**

- **Idle system with Ethernet PHY disabled:** 145 mA
- **APM sleep mode with Ethernet PHY disabled:** 20 mA

Environmental

**Low Operating Temperature:**

-40 C

**High Operating Temperature:**

85 C

**Upper Operating Humidity:**

90%

Pricing

**SoM-9x25-120**

W/ CPU, 4GB eMMC Flash, 128MB DDR2 RAM, 8MB Serial Data Flash

\$130.00

Stock

**Base Product:**

SoM-9X25M

**Non-Stock NCNR:**

0

**Carrier Boards:**

**Title: SoM-150ES-000**

Standard Carrier Board

\$150.00

**Base Product:**

SoM-150ES

**Title: SoM-150ES-007**

Bare-Bones Carrier Board

\$100.00

**Base Product:**

SoM-150ES

**Title: SoM-150ES-031**

Deluxe Carrier Board with A/D, D/A, Audio

\$220.00

**Base Product:**

SoM-150ES

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