

Source URL: <http://emacinc.com/content/som-9g25-industrial-iot-arm-system-module>

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## SoM-9G25 Industrial IoT ARM System on Module



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[www.emacinc.com/sites/default/files/EMAC%20OEM%20LOGO-web-opt\\_2.png](http://www.emacinc.com/sites/default/files/EMAC%20OEM%20LOGO-web-opt_2.png)

- Small, 144 pin SODIMM form factor (2.66" x 1.5")
- Atmel ARM9 AT91SAM9G25 400Mhz Processor
- Up to 128MB of DDR2 RAM
- 8MB Serial Data Flash, Up to 32MB (Optional)
- 256MB NAND Flash
- Up to 512 NAND (Minimum order quantity applies)
- 1x 10/100BaseT Ethernet with on-board PHY
- 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) Device port
- Battery backed Real Time Clock
- SDHC SD/MMC Flash Card Port
- 2x SPI Ports
- 2x I2C ports
  
- 1x I2S Audio Port
- 18x GPIO Lines
- 4x Timer/Counters/PWM
- 5x A/D Channel with 10-bit A/D Converter
- Typical power requirement less than 1 Watt
- JTAG for debug, including real-time trace
- Temperature Range: -40° to +85° C

# SoM-9G25 Options

- Up to 128MB of DDR2 RAM (Stock)
- 512 MB of NAND Flash (Build to Order)
- Temperature Range: 0 to +60C (Custom Order)
- 32 MB of DDR2 RAM (Custom Order)

The SoM-9G25 is a versatile System on Module (SoM) targeting applications that require low power, low cost, and embedded longevity. Designed and Manufactured in the USA the SoM-9G25 is the ideal choice for Industrial IoT solutions. The SoM-9G25 uses an ARM based Atmel ARM9 AT91SAM9X25 processor and comes with UP TO 128MB of onboard DDR2 RAM, 8MB of Serial Data Flash and up to 512MB of NAND flash. With an industrial temperature range of -40 to +85C the SoM-9g25 provides GPIO, Serial Ports, SDIO, Ethernet, A/D, SPI, I2C, PWM, USB Host & Device Ports and I2S Audio Line In/Out Ports.

The SoM-9G25 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. The recommended off-the-shelf Carrier Board for the SoM-9G25 is the SoM-150ES. The SoM approach provides the flexibility of a fully customized product at a greatly reduced cost.

## Specifications

### SOM Type:

Microcontroller SODIMM Modules

#### Processor

**Processor:**

Atmel ARM9 AT91SAM9G25

**Clock Speed:**

400 MHz

**Real Time Clock:**

#### Memory

**Primary Flash:**

8MB of Serial Data Flash

**Secondary Flash:**

256 MB NAND Flash

**Memory Misc.:**

Up to 32MB Serial Data Flash

Up to 512 NAND (NCNR - Minimum order quantity applies)

Please inquire if you solution requires a unique solution such as additional RAM or NAND.

#### Primary I/O

**GPIO:**

18x GPIO

**SDIO:**

1x SDIO

**Disk Interface:**

SD/MMC Flash Card Interface (on Carrier)

**SPI:**

2x SPI Ports

**Audio:**

1x I2S Audio port

**Ethernet:**

1x 10/100BaseT Ethernet with on-board PHY

**USB:**

1x USB 2.0 High Speed Host Port

1x USB 2.0 High Speed Device Port

1x USB 2.0 Full Speed Host Port

**Serial Ports:**

6x Serial ports (3 with handshake)

**I2C:**

2x I2C Ports

**Watchdog:****Secondary I/O****Timers/ Counters/ PWM:**

4x Timer/Counters/PWM

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

5

**A/D Resolution:**

10 bit

**D/A:****Analog Misc.:**

5 Channel, 10-bit Analog-to-Digital converter

**Dimensions****Dimensions:**

2.66 × 1.5 in

**Form Factor:**

144-pin SODIMM

**Power Requirements****Voltage:**

3.3 V

**Typical Current:**

200 mA

**Environmental****Low Operating Temperature:**

-40 C

**High Operating Temperature:**

85 C

**Upper Operating Humidity:**

90%

**Pricing****SoM-9G25M-111**

ARM9 / 64MB RAM / 8MB SERIAL DATA / 256MB NAND FLASH / -40 TO +85C

\$99.00

**Order:**

0

**Parent Product:**

SoM-9G25M

**Base Product:**

SoM-9G25M

**SoM-9G25M-122**

ARM9 / 128MB RAM / 8MB Serial Data Flash / 256MB NAND Flash / -40 TO +85C

\$119.00

Build to Order

**Order:**

0

**Base Product:**

SoM-9G25M

**Non-Stock Minimum Order:**

50

**Non-Stock NCNR:**

1

**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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