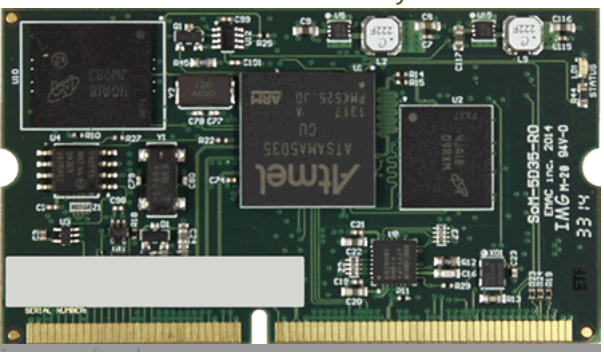
SoM-A5D35 Low Power ARM System on Module



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Small, 144 pin SODIMM form factor (2.66" x 1.5)

Atmel ARM Cortex A5 536Mhz Processor

4GB of eMMC Flash

512 MB or LP DDR2 RAM

5x serial ports with handshake (1x serial port with no handshake)

1x 10/100 BaseT Ethernet port

2x USB 2.0 High Speed Host ports

1x USB 2.0 High Speed Host/Device port

4x A/D Channels with 12-bit A/D Converter

Internal Real time clock/calendar (with external battery backup)

18x GPIO (3.3V) Lines

8x PWM Channels

4x Timer/Counters

3x Programmable Clock outputs

1x I2S Audio Port

2x SPI Port (2 SPI CS)

2x 12C Ports

2x CAN 2.0B Ports

External Reset Button provision and green Status (software controlled) LED

1x SDIO SD Ports

+3.3 volt board input voltage required

Power consumption at 3.3VDc

Typical 175mA

Max Boot 210mA

Constant Busy 180mA

Idle System 160mA

Idle w/o PHY 65mA

APM w/ PHY 60ma

APM w/o PHY 9.5mA

Special Cases

APM w/o PHY&USB 4.2mA

RoHS 2 (2011) compliance

The SoM-A5D35 is a System on Module (SoM) based on the Atmel ARM Cortex A5 ATSAMA5D35 processor. Designed and manufactured in the USA, this wide temperature, fanless ARM 536 MHz SoM has a 10/100 BaseT Ethernet included along with 4 serial ports with handshake. It utilizes up to 4GB of eMMC Flash, up to 16MB of serial data flash, and up to 512MB of LP DDR2 RAM. While also offering APM sleep mode, which allows for low power consumption, while still supporting real-time operating systems (RTOS) such as Xenomai. 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-A5D35 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-A5D35 is designed to plug into a carrier board that contains all the connectors and any custom I/O required for the application.

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-A5D35 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:
Atmel ARM Cortex A5 ATSAMA5D35
Clock Speed:
536 MHz
Real Time Clock:

Memory

Primary Flash:
4 GB of eMMC Flash
Secondary Flash:
16 MB of Serial Data Flash
Memory Misc.:
Optional 512MB of LP DDR2 RAM

Primary I/O

GPIO:
18x GPIO (3.3V) Lines
SDIO:
1x SDIO SD Port
SPI:
2x SPI Ports (2 SPI CS)
Audio:
1x I2S Audio port
Ethernet:
1x 10/100 BaseT Ethernet Ports
USB:
2 x USB 2.0 High Speed Host Port
1 USB 2.0 High Speed Host/Device port
Serial Ports:
5x Serial ports (3 with no handshake

2 serial ports with handshake)
I2C:
2x 12C Ports
Watchdog:

Secondary I/O

CAN:
2x CAN 2.0B Ports
Timers/ Counters/ PWM:
4x Timer/Counters
8x PWM Channels
LPT Port:
Keypad:
PS/2:
Secondary I/O Misc.:
External Reset Button provision and green Status (software controlled) LED

Analog on

A/D:
D/A:

Dimensions

Dimensions:
2.66 × 1.5 in
Form Factor:
144-pin SODIMM

Power Requirements

Voltage:
3.3 V
Sleep Current:
9.5 mA
Idle Current:
160 mA
Typical Current:
175 mA
Max Boot Current:
210 mA
Power Misc.:
Low Operating and Sleep Current

3.3 Vdc

Environmental

Low Operating Temperature:
-40 C
High Operating Temperature:
85 C

Pricing

SoM-A5D35-140
A5D35 536Mhz, 4GB eMMC, 16MB Serial Data Flash, 512MB RAM, (-40 to +85)
$150.00
Order:
0

Parent Product:
SoM-A5D35
Base Product:
SoM-A5D35
Non-Stock NCNR:
0
Carrier Boards:
SoM-150ES-000
Standard Carrier Board
$150.00
Base Product:
SoM-150ES
SoM-150ES-007
Bare-Bones Carrier Board
$100.00
Base Product:
SoM-150ES
SoM-150ES-031
Deluxe Carrier Board with A/D, D/A, Audio
$220.00
Base Product:
SoM-150ES
