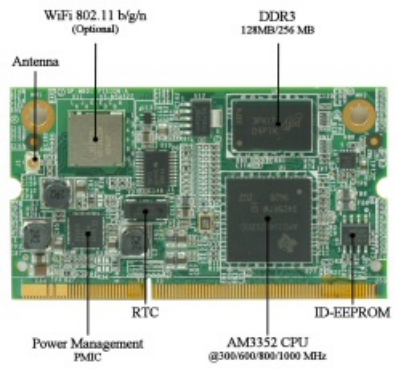
Model Information




## Main Features

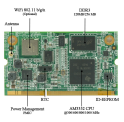
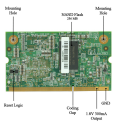
- System-On-Module
- Small SODIMM form factor (68 × 38mm)
- AM335x ARM Cortex-A8 RISC @ 600-1000MHz
- 256MB DDR3, 256MB NAND Flash for boot
- 2 x LAN, 2 x USB 2.0, 3 x UART, 1 x CAN Bus
- 1 x I²C, 40 x GPIO, 8 x ADC
- Configuration EEPROM, RTC
- Optional Wifi IEEE 802.11b/g/n
- 5V@750mA with Wifi
- Debian GNU/Linux Kernel 3.18

Contact Online...

# SOM-AM335x with WLAN

**Quick Link:** | Main Features | More Pictures | Overview | Software Specifications | Core Components | Interfaces (typical / max) | Wireless interface (option) | Power Requirements | Mechanical | Environmental Data | Standards | MTBF (Mean Time Between Failures) | Warranty | Ordering Information | Options | Packaging |

## More Pictures

Click on the thumbnails for the large picture ...

>Back to top

## Overview

The SOM-AM335x is a System-On-Module, in small 204-pin SODIMM form factor. It features a Texas Instruments Sitara AM335x ARM Cortex-A8 32-bit RISC processor running at up to 1000MHz. It is accompanied by DDR3 and NAND Flash memory, plus small Configuration EEPROM and optional WLAN b/g/n. The AM335x processor integrates a NEON SIMD coprocessor, a dedicated AES encryption hardware and random number generator for your numeric and security needs.

### Vast interface options

The module provides a highly configurable set of interfaces like Ethernet, USB 2.0, UARTs, CAN-Bus, I²C, SPI, ADCs and more for various industrial applications.
The SoC has many interface options, multiplexed on the connection pins. This results in a lot of available functions, not all usable in the same configuration. The specifications below name the number of functions in a typical configuration, as well as the maximum number usable in special setups.

### Development and Operating Systems

A variety of Development und OS options allow a fast entry and quick prototyping. Supported are Buildroot, Debian, ELBE and Yocto as Linux based environments, as well as Windows EC.

Project customers can get support in developing their own carrier board for the target application, using proven designs for interfacing.

## Software Specifications

| | |
|---|---|
| **Linux** | Debian:<br>Latest stable release available as ready-to-run SD card image or can be built/customized via vsdebootstrap project (Github)<br>Buildroot:<br>BSP with Kernel and bootloader patches and basic configuration (Github)<br>Yocto:<br>layer-baltos with Kernel and bootloder patches suitable for new projects or integration into already available projects (Github)<br><br>Buildroot and Yocto are suitable for installation to NAND Flash |
| **Windows** | Windows Embedded Compact 7 |

>Back to top

## Core Components

| | |
|---|---|
| **Processor** | • Ti Sitara AM3352 Cortex-A8 ARM RISC CPU @ 600MHz<br>• Option 600 / 800 / 1000 MHz<br>• Option AM335x RISC CPU variants<br>• NEON SIMD Coprocessor |
| **Memory** | • 256MB DDR3 (Option 128MB)<br>• 256MB NAND Flash<br>• 2kbit Configuration EEPROM |
| **Boot** | • NAND Flash Memory<br>• (Micro)SD-card on MMC channel |
| **Time** | • Real Time Clock<br>• Watchdog Timer |
| **Encryption** | • AES hardware encryption<br>• RNG hardware for random |
| **WLAN** | Optional IEEE 802.11b/g/n |
| **Connector** | SODIMM-204<br>• 104 digital signals to/from MPU<br>• 8 analog signals to MPU<br>• Power supply +5V and RTC Battery<br>• Aux power out |

>Back to top

## Interfaces (typical / max)

| | |
|---|---|
| **Gigabit Ethernet** | 1 / 2 x 10/100/1000 RGMII |
| **Fast Ethernet** | 1 / 2 x 10/100 RMII |
| **SDIO / MMC** | 1 / 2 ports |
| **USB** | 2 / 2 x USB 2.0, OTG function possible |
| **Audio** | 0 / 2 McASP (I²S, SPDIF, IEC60958-1 and AES-3) |
| **CAN Bus** | 1 / 2 CAN 2.0A/2.0B High Speed 1Mbit/s |
| **SPI** | 0 / 2 Ports |
| **I²C** | 1 / 3 Ports up to 400kHz |
| **Serial Ports UART** | 3 / 6 ports, 16C750 compatible |
| **Expansion Bus** | 0 / 1, 8 bit address/data multiplexed |
| **Timer** | 0 / 4 timer signals |
| **Display** | 0 / 1 16 bit LCD up to WXGA @ 60Hz |
| **Analog** | 8 / 8, i.e. as Touch Screen Controller (TSC) interface |
| **GPIO** | 40 / 104 signals from MPU |

| | |
|---|---|
| **Others** | eCAP, eHRPWM, eQEP |

>Back to top

## Wireless interface (option)

| | |
|---|---|
| **Standards** | 2.4GHz Radio, supports IEEE Std. 802.11b/g/n |
| **WLAN Modes** | Access Point (AP) or Client (Station) |
| **TX Power** | 802.11b:<br>Typ. 15.5dBm ±1.5 dBm @ 1Mbps (DSSS)<br>Typ. 15.5dBm ±1.5 dBm @ 11Mbps (OFDM)<br>802.11g:<br>Typ. 15.6dBm ±1.5 dBm @ 6Mbps (CCK)<br>Typ. 13.5dBm ±1.5 dBm @ 54Mbps (OFDM)<br>802.11n:<br>Typ. 13.4dBm ±1.5 dBm @ 6.5Mbps (OFDM)<br>Typ. 13.3dBm ±1.5 dBm @ 150 Mbps(OFDM) |
| **RX Sensitivity** | 802.11b:<br>-95.6dBm @ 1Mbps, -88dBm @ 11Mbps<br>802.11g:<br>-91.3dBm @ 6Mbps, -74.2dBm @ 54 Mbps<br>802.11n:<br>-88.8dBm @ 6.5Mbps (20 MHz), -72dBm @ 72.2Mbps (20 MHz) |
| **Transmission Rate** | 802.11b: 11Mbps<br>802.11g: 6 to 54Mbps<br>802.11n: 6.5 to 150Mbps |
| **Transmission Distance** | Up to 100m in open areas |
| **Antenna Connector** | RP (Reverse-Polarity) SMA |

>Back to top

## Power Requirements

| | |
|---|---|
| **Input Voltage** | • 5V DC @ 750mA<br>• 3V Battery for RTC backup |
| **Aux. Power Output** | • 3.3V @ 150mA<br>• 1.8V @ 300mA |

>Back to top

## Mechanical

| | |
|---|---|
| **Dimensions** | 68×38×5 mm³ |

>Back to top

## Environmental Data

| | |
|---|---|
| **Operating Temp** | -10°C - 75°C |
| **Storage Temp** | -20°C - 85°C |
| **Ambient Humidity** | 10-85% non-condensing |

>Back to top

## Standards

| | |
|---|---|
| **Approvals** | • EMC: FCC Class A, CE Class A<br>• Environment: RoHS |

>Back to top

## MTBF (Mean Time Between Failures)

| | |
|---|---|
| **MTBF** | 71.5 Years @ 25°C |
| **Standard** | Telcordia (Bellcore) Standard; RelCalc. 5.0 BELL-7 |

>Back to top

## Warranty

| | |
|---|---|
| **Warranty Period** | 2 years |

>Back to top

## Ordering Information

| | |
|---|---|
| **6834** | SOM-AM335x |
| **6837** | SOM-AM335x with WLAN |

>Back to top

## Options

| | |
|---|---|
| **6836** | Development Kit |

>Back to top

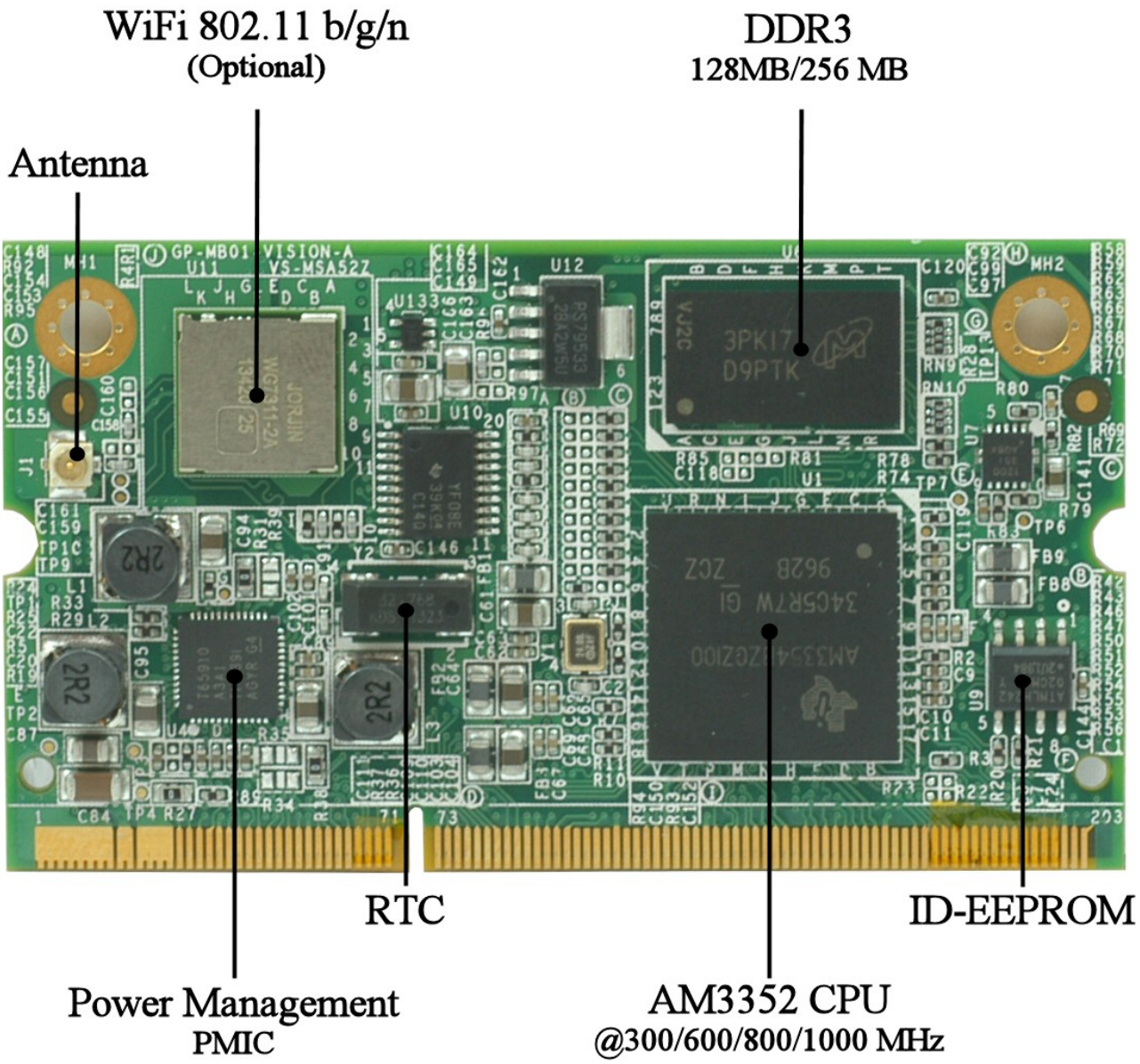
## Packaging

| | |
|---|---|
| **Packing list** | SOM-AM335x System on Module |

>Back to top

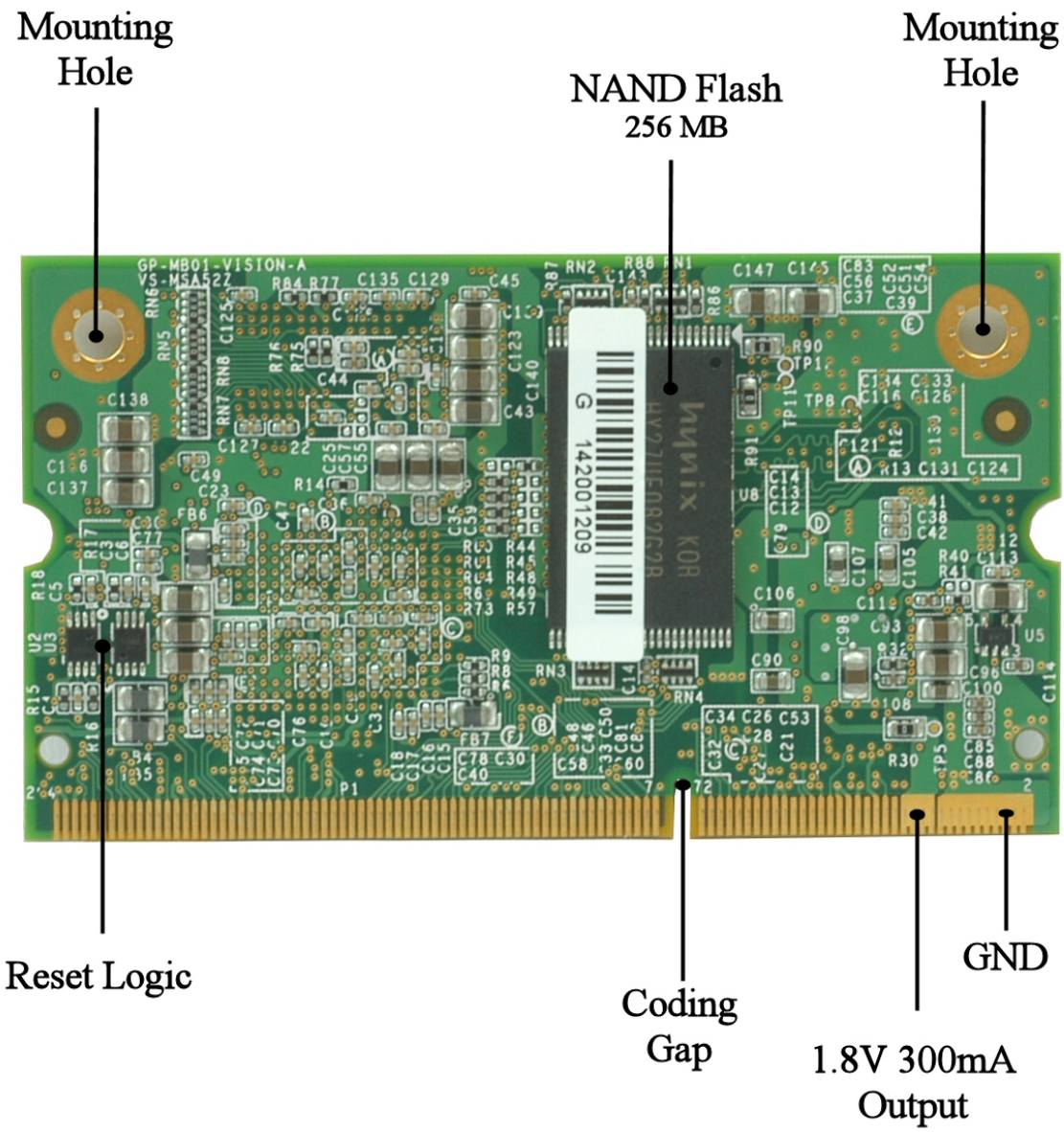
**SOM-AM335x with WLAN**

>Back



## SOM-AM335x back side

>Back




(2017 Jul 27)