MYiR 米尔电子
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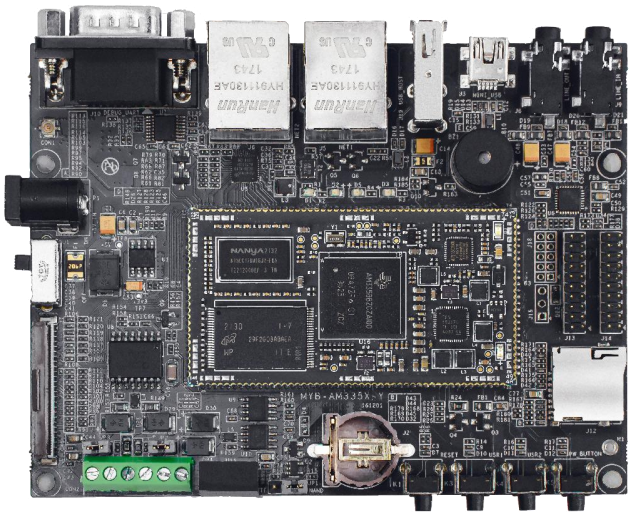
MYD-Y335X-V2 Development Board Overview

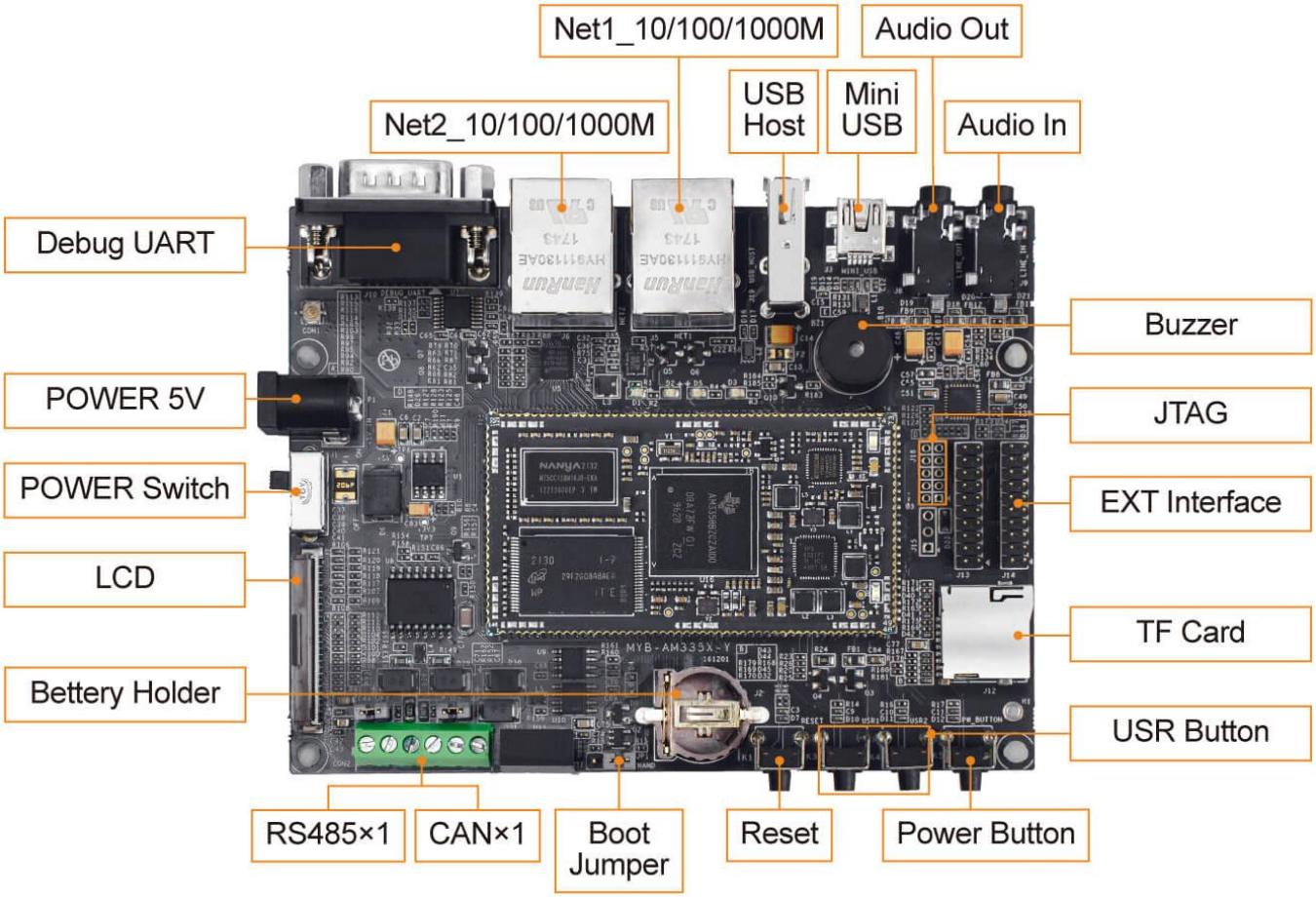


- ✓ *MYC-Y335X-V2 System-On-Module as Controller Board*
- ✓ *Up to 1GHz TI AM335x Series ARM Cortex-A8 Processors*
- ✓ *256MB DDR3 SDRAM (128MB/512MB Compatible)*
- ✓ *256MB Nand Flash (128MB/512MB Compatible)*
- ✓ *Serial ports, 1 x USB2.0 Host, 1 x USB 2.0 OTG, CAN, RS485, TF, Audio, LCD*
- ✓ *2 x Gigabit Ethernet and on-board WiFi Module*
- ✓ *Optional 4.3-inch or 7-inch LCD Module*
- ✓ *Ready-to-Run Linux Development Platform*
- ✓ *Supports -40 to +85 Celsius Extended Temperature Operation*

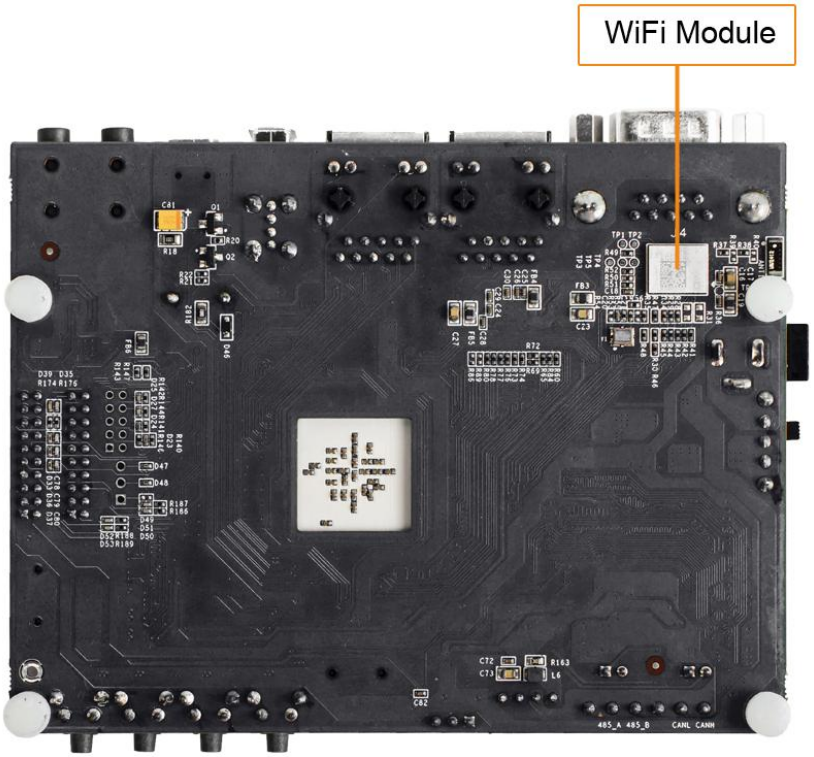
The MYD-Y335X-V2 is another model of development board based on Texas Instruments (TI) Sitara **AM335x** family of ARM Cortex-A8 Microprocessors (MPUs) designed by MYIR. Compared to MYIR's MYD-Y335X-V2 board, it is a reduced function device which is to meet customers' simple requirement and help reduce cost. This board is using the MYC-Y335X-V2 System-On-Module as the core controller board and connected to base board through 1.27mm pitch 146-pin stamp hole interface. The board can work in harsh environment supporting -40 to +85 Celsius extended temperature operation for industrial embedded applications.

The TI AM335x consists of 6 pin-pin compatible devices (AM3352, AM3354, AM3356, AM3357, AM3358 and AM3359) with various options including speed grades, packages, graphics and peripherals. MYIR is using the 15x15 mm, 0.8-mm ball pitch, ZCZ package AM335x ARM CPU on the MYC-Y335X-V2 which is an COM (Computer on Module) and has the core components AM335x processor, 256MB DDR3 SDRAM, 256MB Nand Flash, Gigabit Ethernet PHY chip and Power Management IC on board and can be served as the core of your embedded system.

The MYD-Y335X-V2 base board has extended many features and peripherals with the support of the MYC-Y335X-V2 SOM and some extended controller chips including one Debug port, one USB Host ports, one USB OTG port, dual Gigabit Ethernet ports, WiFi module, one CAN, one RS485, one Micro SD, Audio, Buzzer, LCD, Touch screen, JTAG and some more peripheral signals from two 20-pin extension interfaces.

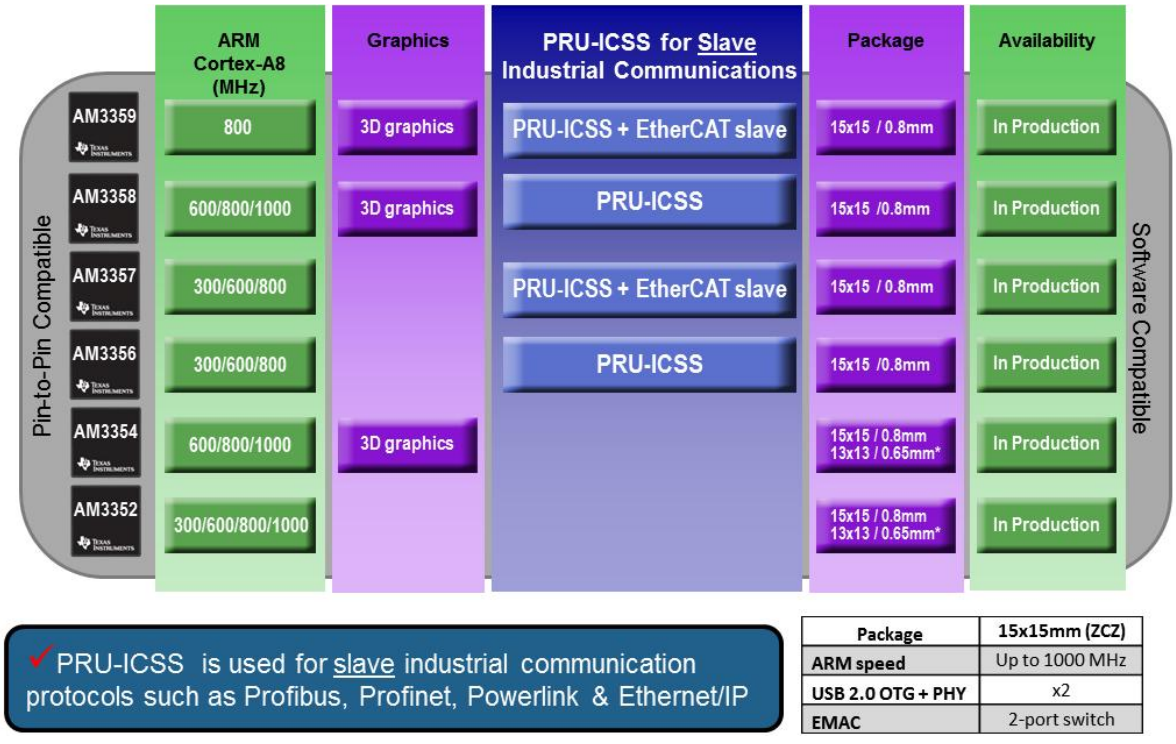


MYD-AM335X-Y Development Board (Top view)



MYD-Y335X-V2 Development Board (Bottom view)

User can integrate a different MYC-Y335X-V2 module on the same base board, thus making six variants of evaluation boards. The differences are depending on the AM335x Cotex-A8 CPU features with various options including speed grades, packages, graphics and peripherals. The image below gives a brief overview of options.



AM335x Devices Features

The MYD-Y335X-V2 board comes with Linux 4.1.18 software packages, detailed documents, necessary cable accessories as well as optional LCD modules (with touch screen) to provide an AM335x starter kit and enable a quickly start of evaluation of AM335x Cortex-A8 MPUs.

Hardware Specification

The TI AM335x microprocessors, based on the ARM Cortex-A8, operating at up to 1GHz, are enhanced with image, graphics processing, peripherals and industrial interface options such as EtherCAT and PROFIBUS. The device supports the following high-level operating systems (HLOSs) that are available free of charge from TI:

• Linux®

• Android™

The AM335x microprocessor contains these subsystems:

• Microprocessor unit (MPU) subsystem based on the ARM Cortex-A8 microprocessor.

• POWERVR SGX™ Graphics Accelerator subsystem for 3D graphics acceleration to support display and gaming effects.

• The Programmable Real-Time Unit and Industrial Communication Subsystem (PRU-ICSS) is separate from the ARM core, allowing independent operation and clocking for greater efficiency and flexibility.

The PRU-ICSS enables additional peripheral interfaces and real-time protocols such as EtherCAT, PROFINET, EtherNet/IP, PROFIBUS, Ethernet Powerlink, Sercos, and others.

AM335x ARM Cortex™-A8 Processors						
Core Feature	**AM3352**	**AM3354**	**AM3356**	**AM3357**	**AM3358**	**AM3359**
Package	15x15mm, 0.8mm (ZCZ)					
CPU Speed (MHz)	300, 600, 800, 1000	600, 800,1000	300, 600,800	300, 600,800	600, 800,1000	800
Core Internal Memory	64KB SRAM shared w/ Data 32KB Cache, Programmable 32KB Cache					
On-chip L2 (KB)	256					
External Memory Interface	DDR2/DDR3/DDR3L/mDDR (LPDDR), 2x16-bit, NAND ECC					
Graphics	-	3D Graphics	-		3D Graphics	
OS Support	Linux, Android, RTOS, Windows Embedded, no-OS					
Other Hardware Acceleration	Crypto Accelerator	Crypto Accelerator	2 PRU-ICSS Crypto Accelerator	2 PRU-ICSS Crypto Accelerator + EtherCAT slave support	2 PRU-ICSS Crypto Accelerator	2 PRU-ICSS Crypto Accelerator + EtherCAT slave support
10/100/1000 EMAC	2 port switch					
USB 2.0 OTG + PHY	2					
Serial Ports	6 UART, 2 SPI, 3 I2C, 2 McASP, 2 CAN, 8 Timers					
System	EDMA, WDT, RTC, 3 eQEP, 3 eCAP, JTAG, ADC (8ch)					
Parallel	3 MMC/SD/SDIO, GPIO					

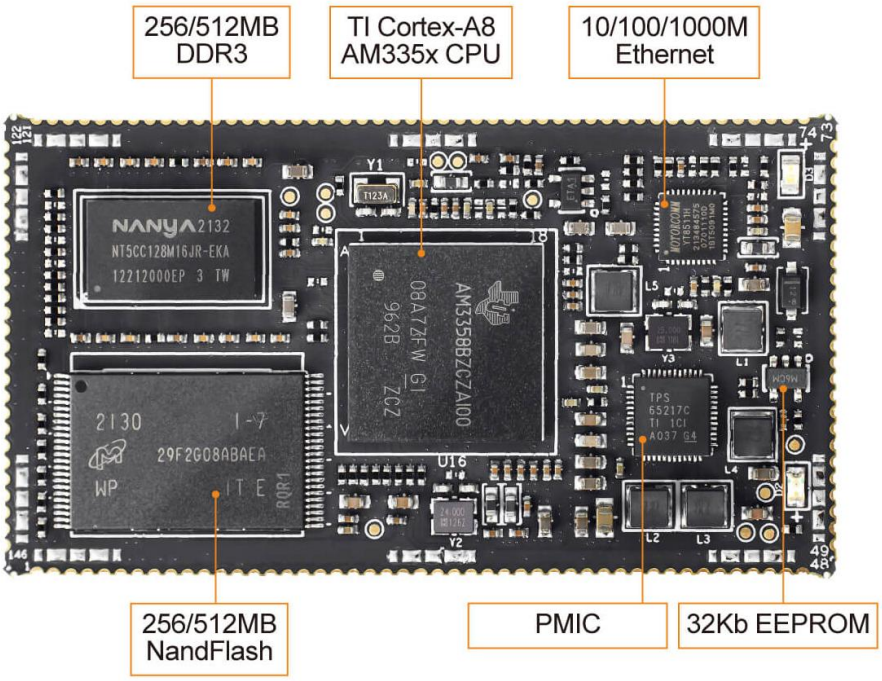
AM335x Devices Key Features

The MYD-Y335X-V2 has an SOM MYC-Y335X-V2 integrated with AM335x processor, DDR3 SDRAM, Nand Flash, Gigabit Ethernet PHY and Power Management IC on it, which exposes many of these features to the user in support of developing specific solutions. The Module can be soldered directly onto the base board through the 1.27mm pitch 146-pin stamp hole expansion interface. This board is characterized as follows:

Mechanical Parameters

- Dimensions: 90mm x 118mm (base board), 65mm x 35mm (CPU Module)
- PCB Layers: 4-layer design (base board), 10-layer design (CPU Module)
- Power supply: +5V/2A (base board), +5V/0.8A (CPU Module)
- Working temperature: 0~70 Celsius (commercial grade) or -40~85 Celsius (industrial grade)

The MYD-Y335X-V2 Controller Board (MYC-Y335X-V2 SOM)



MYC-Y335X-V2 System-On-Module

Processor

- TI AM3352, AM3354, AM3356, AM3357, AM3358, AM3359 (15x15 mm, 0.8-mm ball pitch, ZCZ package)
  - 800-MHz ARM Cortex-A8 32-bit RISC MPU (Up to 1GHz)
  - NEON™ SIMD Coprocessor
  - 32KB/32KB of L1 Instruction/Data Cache with Single-Error Detection (parity)
  - 256KB of L2 Cache with Error Correcting Code (ECC)
  - SGX530 Graphics Engine
  - Programmable Real-Time Unit Subsystem

Memory

- 256MB DDR3 SDRAM (128MB/512MB compatible)
- 256MB Nand Flash (128MB/512MB compatible)
- 32Kb EEPROM

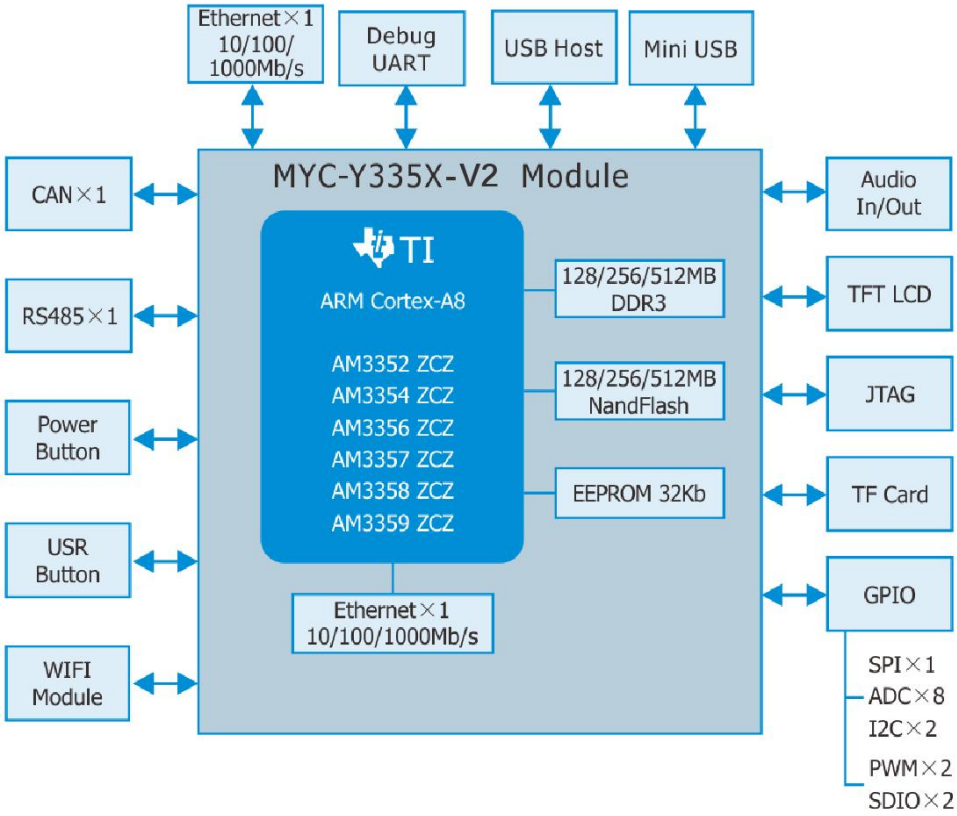
Peripherals and Signals Routed to Pins

- On-board Gigabit Ethernet PHY
- External Watchdog circuit
- Power Management IC (TPS65217C)
- One power indicator (Red LED)
- One user LED (Green)
- 1.27mm pitch 146-pin stamp hole interface can carry out peripherals below:
  - 2 x USB OTG 2.0
  - Up to 6 x Serial ports
  - 2 x Gigabit Ethernet
  - 2 x I2C
  - 1 x SPI
  - 8 x ADC
  - 2 x PWM
  - 2 x SDIO

The MYD-AM335X-Y Base Board

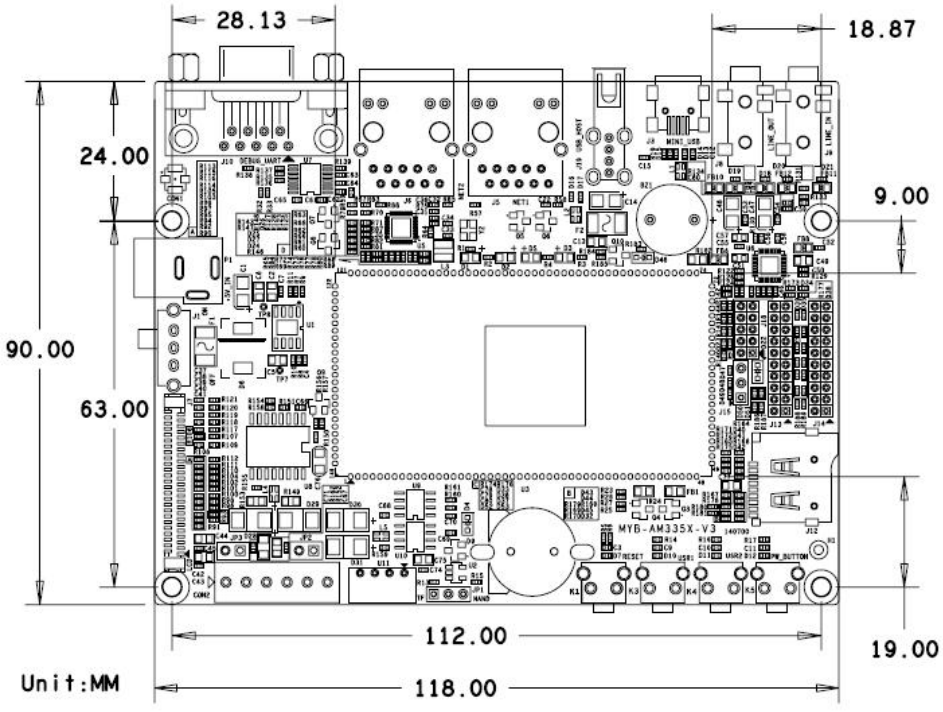
- Serial ports
  - 1 x 3-wire RS232 Debug serial port (DB9)
  - 1 x RS485 (with isolation)
- USB
  - 1 x USB2.0 Host port
  - 1 x USB2.0 OTG port
- 2 x 10/100/1000Mbps Ethernet interfaces
- 1 x CAN interface (with isolation)
- 1 x TF card slot
- 1 x LCD interface (16-bit true color, supports optional 4.3-inch TFT LCD)
- 1 x 4-wire resistive touch screen interface
- 1 x Audio input port (3.5mm jack)
- 1 x Stereo Audio output port (3.5mm jack)
- 1 x Buzzer
- 1x 2.0mm pitch 10-pin JTAG interface
- 4 x Buttons (1 x Reset button, 2 x User buttons, 1 x Power button)
- 1 x Power indicator (Red LED)
- 2 x 2.0mm pitch 20-pin expansion connectors
  - 3 x ADC
  - 1 x DCAN
  - 2 x I2C
  - 1 x UART

Function Block Diagram



Function Block Diagram of MYD-Y335X-V2

Dimension Chart of MYD-Y335X-V2



Dimension Chart of MYD-Y335X-V2

Software Features

MYIR's AM335x Starter Kit MYD-Y335X-V2 is provided with Linux software packages. Many peripheral drivers are in source code to help accelerate customers' designs with a stable and reliable hardware and software platform. The software features are summarized as below:

Item	Features	Description
Bootstrap	SPL	The primary bootstrap (in source code)
	u-boot	The secondary bootstrap (in source code)
Linux kernel	Linux 4.1.18	Linux kernel customized for MYD-Y335X-V2 (in source code)
Drivers	USB Host USB Device USB OTG	USB Host/Device/OTG driver (in source code)
	Ethernet	Gigabit Ethernet driver (in source code)
	MMC/SD/TF	MMC/SD/TF card driver (in source code)
	NandFlash	NandFlash driver (in source code)
	CAN	CAN driver (in source code)
	RS485	RS485 driver (in source code)
	Audio	Audio driver (in source code)
	LCD Controller	LCD driver, support 4.3- and 7-inch TFT LCD (in source code)
	RTC	RTC driver (in source code)
	Touch driver	Resistive Touch driver (in source code) Capacitive Touch driver (in source code)
	Button	Button driver (in source code)
	UART	UART driver (in source code)
	LED	LED driver (in source code)
	GPIO	GPIO driver (in source code)
	WatchDog	Watchdog driver (in source code)
File System	Buildroot	Provide tar package and ubi image file

MYD-Y335X-V2 Software Features

Order Information

Product Item	Part No.
MYD-Y335X-V2 Development Board	MYD-Y3352-V2-256N256D-80-I
	MYD-Y3358-V2-256N256D-100-I
MYC-Y335X-V2 System-On-Module	MYC-Y3352-V2-256N256D-80-I
	MYC-Y3358-V2-256N256D-100-I
MY-TFT043RV2 4.3-inch LCD Module with resistive touch screen	MY-TFT043RV2
MY-TFT070RV2 7-inch LCD Module with resistive touch screen	MY-TFT070RV2
MY-TFT070CV2 7-inch LCD Module with capacitive touch screen	MY-TFT070CV2

Note:

1. One MYD-Y335X-V2 Development Board includes one SOM MYC-Y335X-V2 soldered on the base board. If you need more SOMs, you can order extra ones.
2. For Price information, please contact MYIR.
3. The MYC-Y335X-V2 SOM has commercial grade version can work from 0 to 70 Celsius and industrial grade version can work from -40 to 85 Celsius.
4. We accept custom design based on the MYD-Y335X-V2, whether reducing, adding or modifying the existing hardware according to customer's requirement.

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