

MYD-AM335X-J Development Board

- *MCC-AM335X-J CPU Module as Controller Board*
- *DDR2 SO-DIMM 200-pin Connector for Board-to-Board Connections*
- *Up to 1GHz TI AM335x Series ARM Cortex-A8 Processors*
- *256MB DDR3 SDRAM (128MB/512MB Compatible)*
- *256MB Nand Flash (128MB/512MB Compatible)*
- *Up to 6 x Serial ports, , 1 x CAN, 2 x RS485, 2 x Gigabit Ethernet, USB, TF, Audio, LCD*
- *Optional LCD, WiFi, Camera, GPS and GPRS Modules*
- *Ready-to-Run Linux Evaluation Kit*

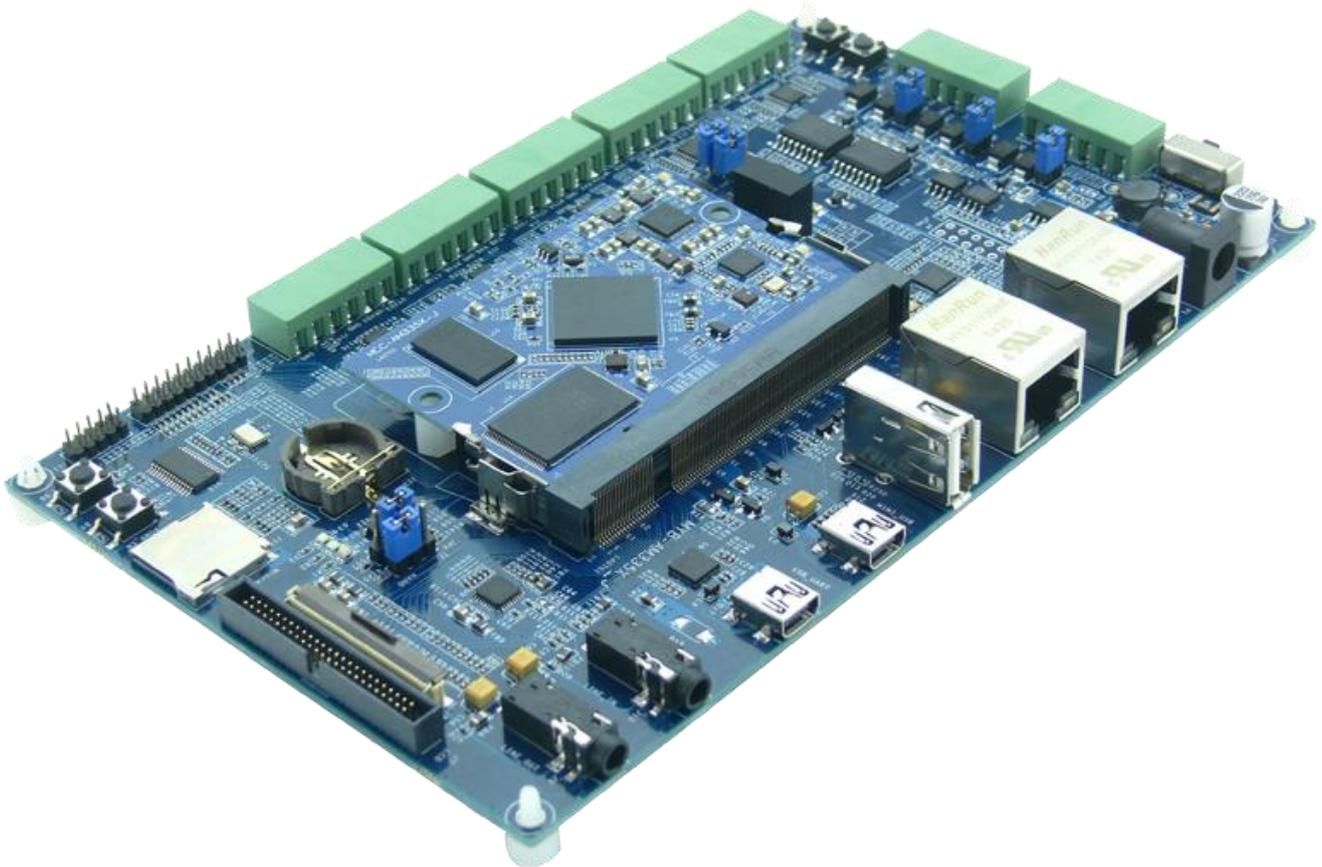


Figure 1-1 MYD-AM335X-J Development Board

Description

The MYD-AM335X-J development board is a complete evaluation platform for TI **AM335x** (AM3352, AM3354, AM3356, AM3357, AM3358 and AM3359) ARM Cortex-A8 Sitara Microprocessors (MPUs). It is designed based on the MCC-AM335X-J CPU module which integrates the core components on board including the AM335x processor, 256MB DDR3, 256MB Nand Flash, Gigabit Ethernet PHY, PMIC, etc.

The MCC-AM335X-J CPU Module is mounted onto the MYD-AM335X-J base board through an SO-DIMM 200-pin gold finger interface. In addition to those main functions provided by the MCC-AM335X-J CPU module, the MYD-AM335X-J base board has extended more functions through headers and connectors, which makes the board versatile for various industrial applications. It features up to six serial ports, two Ethernet ports, USB Host, OTG, CAN, RS485, TF card slot, Audio, LCD and more other peripherals on board. It can support -40 to +85 Celsius extended temperature operation and ready to run Linux operating system.

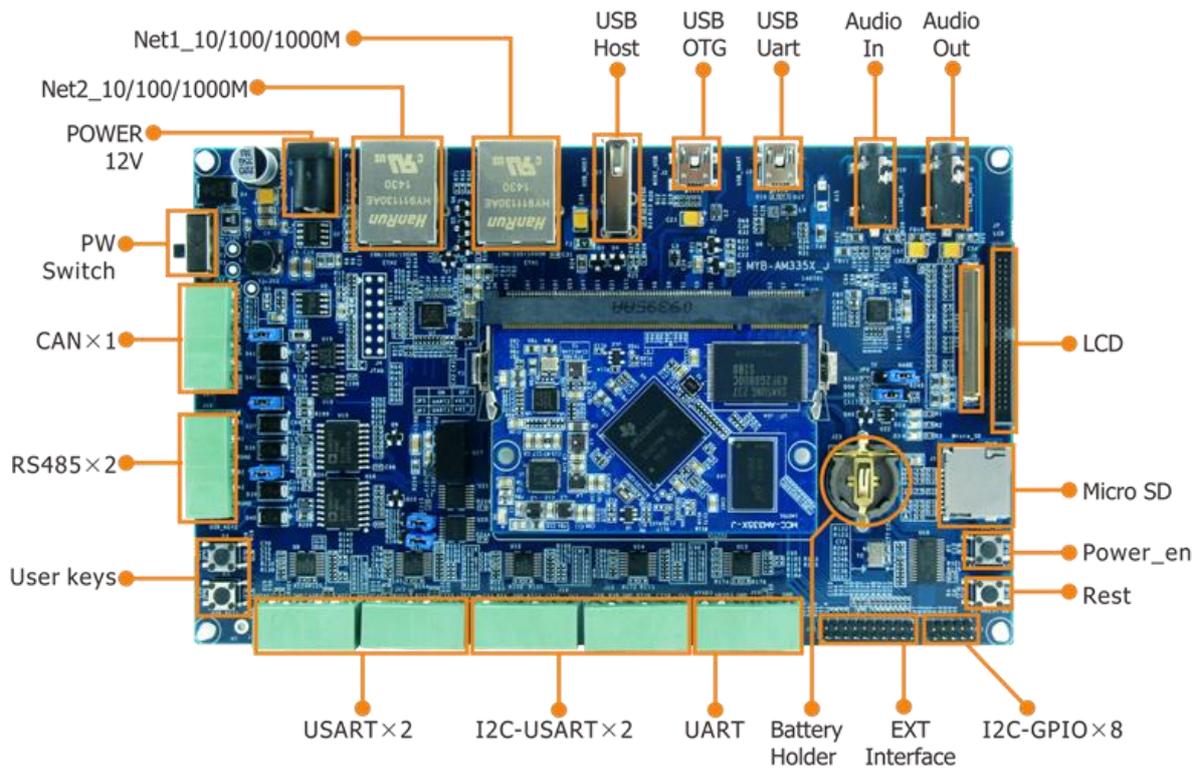


Figure 1-2 MYD-AM335X-J Development Board

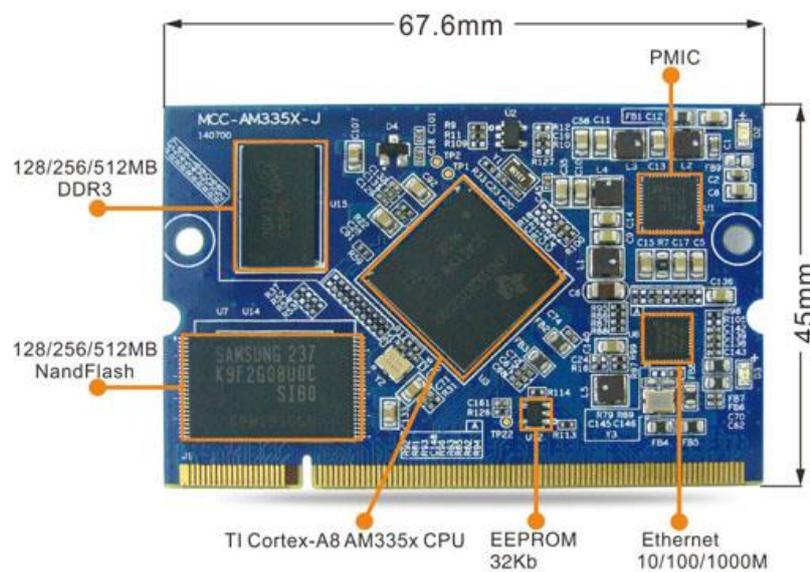
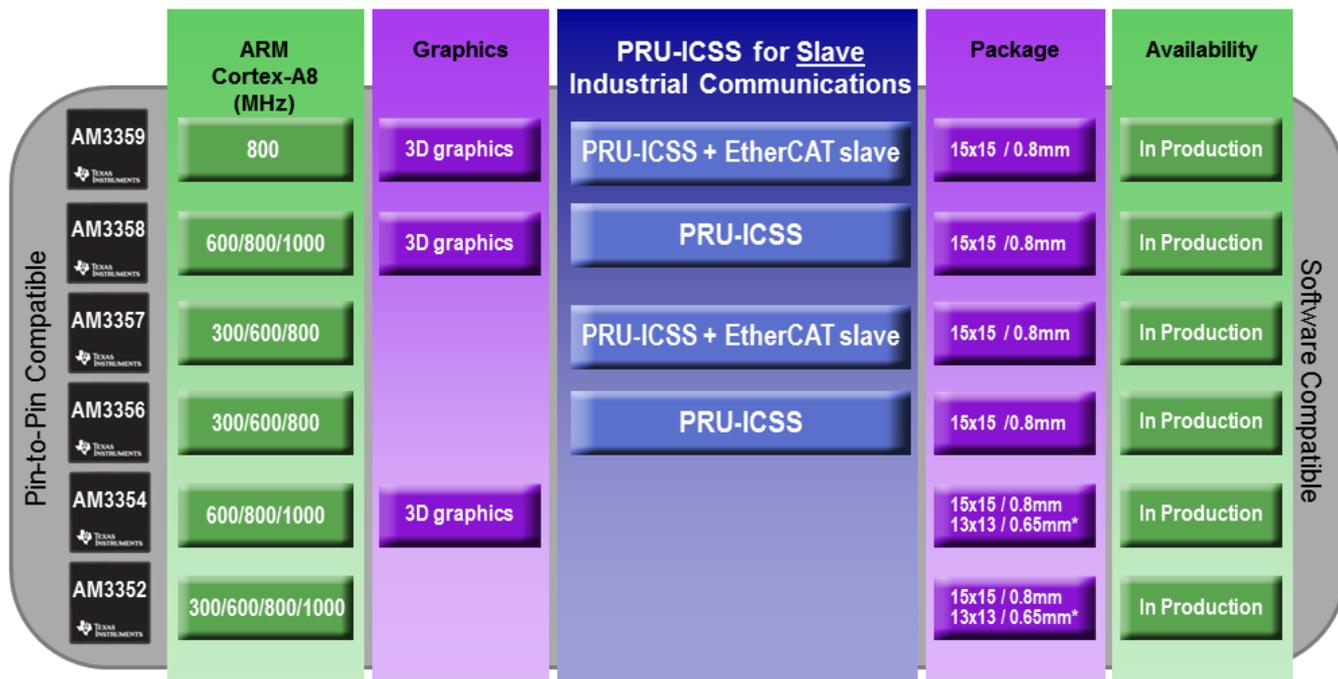


Figure 1-3 MCC-AM335X-J CPU Module

User can integrate a different MCC-AM335X-J module on the same base board, thus making six variants of evaluation boards. The differences are depending on the AM335x processor features with various options including speed grades, packages, graphics and peripherals. The image below gives a brief overview of options.



✓ PRU-ICSS is used for slave industrial communication protocols such as Profibus, Profinet, Powerlink & Ethernet/IP

Package	15x15mm (ZCZ)
ARM speed	Up to 1000 MHz
USB 2.0 OTG + PHY	x2
EMAC	2-port switch

Figure 1-4 AM335x Devices Features

The MYD-AM335X-J board comes with Linux 4.1.18 software packages, detailed documents, necessary cable accessories as well as optional 4.3- or 7-inch LCD (with touch screen) to enable your rapid development when getting the goods out-of-the-box.



Figure 1-5 MYD-AM335X-J Development Board with 7-inch LCD Module

Hardware Specification

The [TIAM335x](#) 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					

Table 1-1 AM335x Devices Key Features

The MYD-AM335X-J development board is characterized as follows:

Mechanical Parameters

- Dimensions: 106mm x 177mm (base board), 67.6mm x 45mm (CPU Module)
- PCB Layers: 4-layer design (base board), 8-layer design (CPU Module)
- Power supply: 12V (base board), 5V, 1.8V (CPU Module)
- Working temperature: 0~70 Celsius (commercial grade) or -40~85 Celsius (industrial grade)

The MYD-AM335X-J Controller Board (MCC-AM335X-J CPU Module)**Processor**

- TI AM3352, AM3354, AM3356, AM3357, AM3358, AM3359 (15x15 mm, 0.8-mm ball pitch, ZCZ package)
 - Up to 1GHz ARM Cortex-A8 32-bit RISC MPU
 - 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)
- DDR2 SO-DIMM 200-pin gold finger connector (the extended signals please refer to the pinouts diagram):
 - 2 x Gigabit Ethernet
 - 2 x USB OTG
 - Up to 6 x Serial ports
 - Up to 2 x I2C
 - Up to 2 x SPI
 - Up to 2 x CAN
 - 8 x ADC
 - 2 x PWM
 - 3 x SDIO (One SDIO has multiplexed with Nand Flash signals)

The MYD-AM335X-J Base Board

- Serial ports: Up to 6 x Serial ports
 - 1 x 3-wire RS232
 - 4 x 5-wire RS232

- 1 x USB Debug serial port
- 2 x RS485 (multiplexed with UART2 and UART3, with isolation)
- USB
 - 1 x USB2.0 Host port
 - 1 x Mini 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)
- 1x 2.54mm 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 User LEDs (Green)
- Battery backed RTC
- 1 x 2.0mm pitch 20-pin and 1 x 2.0mm pitch 10-pin expansion connectors
 - 3 x ADC
 - 1 x SDIO
 - 1 x UART
 - 1 x I2C
 - 8 x GPIO

Function Block Diagram

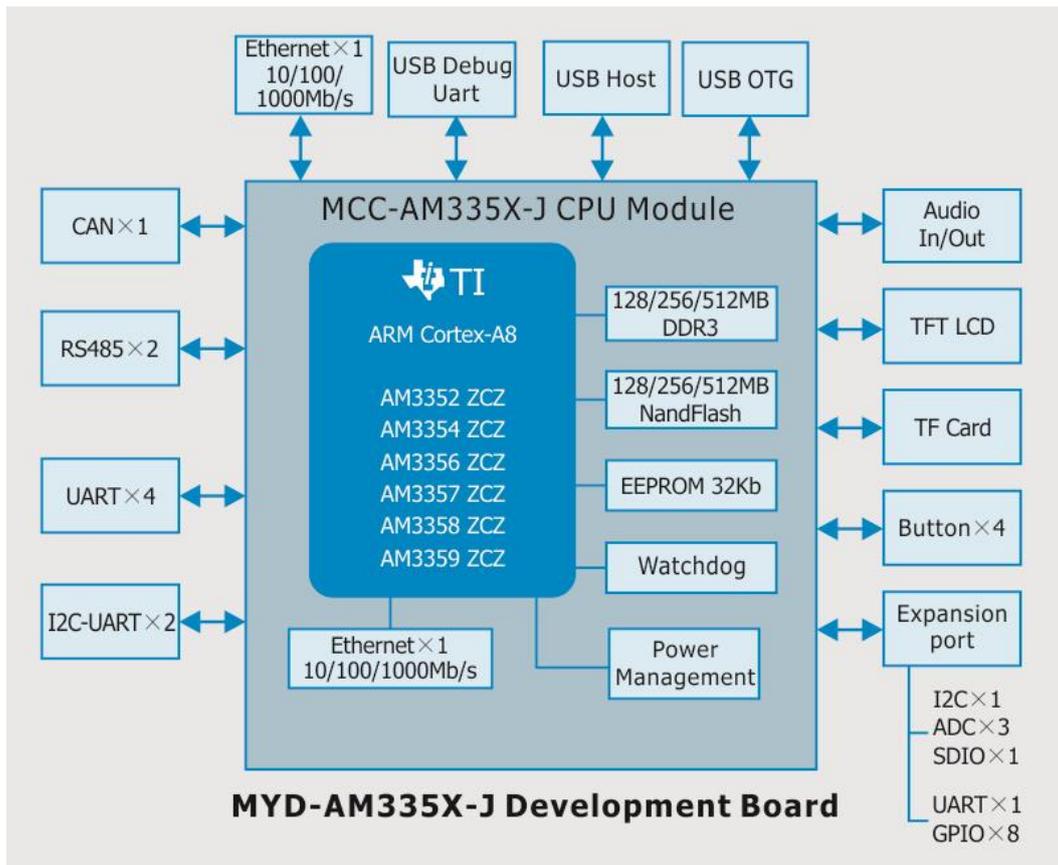


Figure 1-6 Function Block Diagram of MYD-AM335X-J

Dimension Chart of MYD-AM335X-J

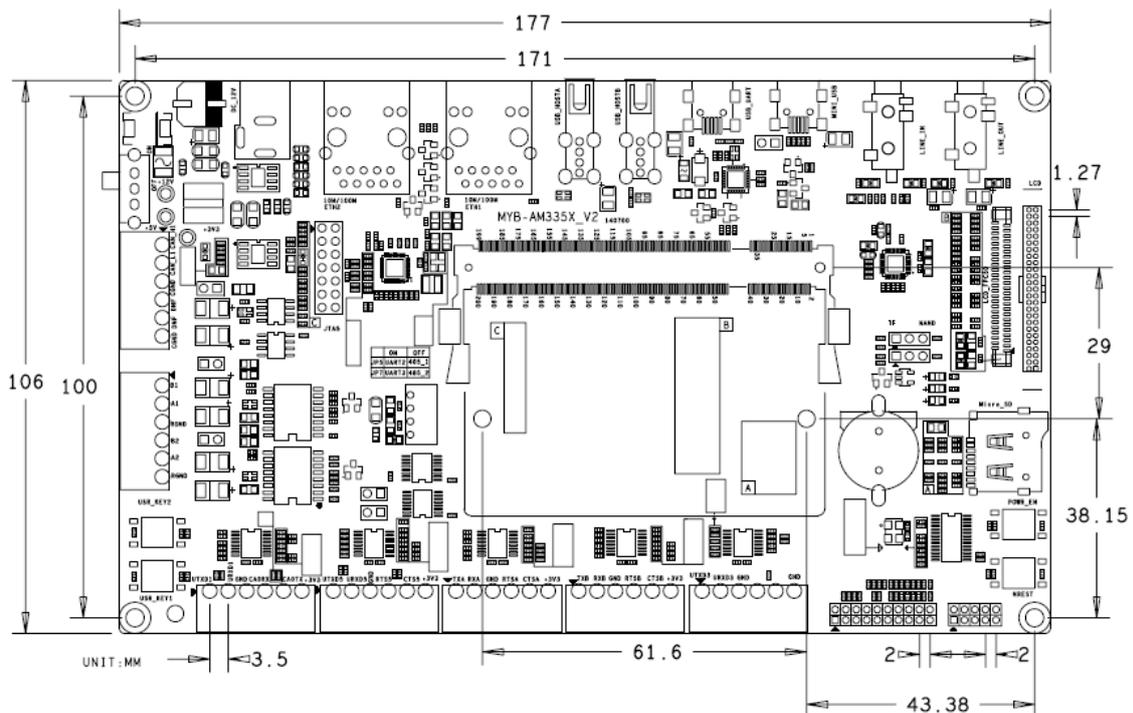


Figure 1-7 Dimension Chart of MYD-AM335X-J

Software Features

MYIR's AM335x Starter Kit MYD-AM335X-J 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:

Category	Name	Description	source
Bootloader	U-boot	Responsible for system initialization and boot kernel, including TCPIP	YES
Kernel	Linux 4.1.18	Designed for MYD-AM335X-J hardware	YES
Drivers	USB Host	USB Host driver, support OHCI and EHCI	YES
	USB Device	USB Device driver	YES
	Ethernet	Ethernet driver	YES
	MMC/SD	MMC/SD driver	YES
	NAND Flash	NAND Flash/SmartMedia driver	YES
	I2C	I2C driver	YES
	SPI	SPI driver	YES
	Audio	SGTL5000 driver	YES
	LCD Controller	LCD driver, for 4.3 inch, 7 inch	YES
	RTC	RTC clock driver	YES
	TouchScreen	4-wire resistive touch screen driver I2C capacitive touch screen driver	YES
	PWM	PWM (Pulse Width Modulation) driver	YES
	UART	Serial driver	YES
	CAN	CAN driver	YES
	PMU	Power Management Unit river	YES
	LED	GPIO/PWM LED Driver	YES
	GPIO	LED driver and GPIO input and output	YES
	I2c to UART/IO	I2c to UART/IO Driver	YES
Filesystem	rootfs	Base on buildroot	Bin
	rootfs-qt	Filesystem with QT5	Bin
Demo	Examples	Audio, CAN, EEPROM, framebuffer, gpio, keypad, led, mtd, network, rtc, RS232, RS485	YES

Order Information

Product Item	Part No.	Packing List
MYD-AM3352-J Development Board	MYD-J3352-256N256D-80-I	<ul style="list-style-type: none"> ➤ One MYD-AM335X-J Board ➤ One Net cable ➤ One USB cable ➤ One 12V/1.5A Power adapter ➤ One Product DVD
MYD-AM3358-J Development Board	MYD-J3358-256N256D-100-I	
MCC-AM3352-J CPU Module	MYC-J3352-256N256D-80-I	
MCC-AM3358-J CPU Module	MYC-J3358-256N256D-100-I	
MY-LCD43TP 4.3-inch LCD Module	MY-TFT043RV2	Add-on Options <ul style="list-style-type: none"> ➤ MCC-AM335X-J CPU Module ➤ MY-LCD43TP 4.3-inch LCD Module ➤ MY-LCD70TP 7-inch LCD Module ➤ MY-LCD70TP-C 7-inch LCD Module
MY-LCD70TP 7-inch LCD Module	MY-TFT070RV2	
MY-LCD70TP-C 7-inch LCD Module	MY-TFT070CV2	
<i>Remark:</i> <ol style="list-style-type: none"> 1. One MYD-AM335X-J Development Board includes one CPU module MCC-AM335X-J mounted on the base board. If you need more CPU module, you can order extra ones. 2. We deliver the board of industrial grade version with 800MHz AM3352 or 1GHz AM3358 processor, 256MB DDR3 and 256MB Nand Flash by default; if you need other CPU model or RAM/Flash configurations, please contact MYIR for availabilities. 3. For Price information, please contact MYIR. 4. We accept custom design based on the MYD-AM335X-J, whether reducing, adding or modifying the existing hardware according to customer's requirement. 		


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