

MYD-SAM9X5-V2 Development Board

- *MYC-SAM9X5-V2 CPU Module as Controller Board*
- *400MHz Atmel AT91SAM9X5 Series ARM926EJ-S Processors*
- *128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM*
- *Serial ports, USB, Ethernet, CAN, RS485, SD, Audio, LCD*
- *Two Ethernet for SAM9X25*
- *One CAN for SAM9X25/X35*
- *4.3 or 7 inch LCD/TSP for SAM9G15/G35/X35*
- *Ready-to-Run Linux 2.6.39 and Android 2.3.5*
- *Complete MDK-ARM Sample Codes*
- *Supports -40 to +85°C Extended Temperature Operation*



Figure 1-1 MYD-SAM9X5-V2 Development Board

The MYD-SAM9X5-V2 Development Board series is another release of an evaluation platform for Atmel SAM9X35, SAM9X25, SAM9G35, SAM9G25 and SAM9G15 ARM9 processors by MYiR after the first series MYD-SAM9X5. The board also uses a CPU module plus base board design. It is a Linux and Android ready-to-run evaluation platform and also provided with complete sample codes bundle for the peripherals using Keil's MDK-ARM to enhance debugging capabilities for non-OS development. 4.3- and 7-inch LCD panels are add-on options for the SAM9G15, SAM9G35 and SAM9X35 evaluation kit. It can work in harsh environment supporting -40 to +85°C extended temperature operation.

The CPU module [MYC-SAM9X5-V2](#) is connected with the base board through two 2.0mm pitch 70-pin connectors. It has 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM and Ethernet PHY on board and

the base board carries out a set of peripheral interfaces including up to six serial ports, three USB ports, Ethernet, LCD, CAN, RS485, Audio, etc.

The MYD-SAM9x5-V2 Development Board series have following models:

MYD-SAM9G15-V2 Development Board (based on Atmel AT91SAM9G15) using *MYC-SAM9G15-V2* as CPU Module

MYD-SAM9G25-V2 Development Board (based on Atmel AT91SAM9G25) using *MYC-SAM9G25-V2* as CPU Module

MYD-SAM9G35-V2 Development Board (based on Atmel AT91SAM9G35) using *MYC-SAM9G35-V2* as CPU Module

MYD-SAM9X25-V2 Development Board (based on Atmel AT91SAM9X25) using *MYC-SAM9X25-V2* as CPU Module

MYD-SAM9X35-V2 Development Board (based on Atmel AT91SAM9X35) using *MYC-SAM9X35-V2* as CPU Module

Item	MYD-SAM9G15-V2	MYD-SAM9G25-V2	MYD-SAM9X25-V2	MYD-SAM9G35-V2	MYD-SAM9X35-V2
Processor	AT91SAM9G15	AT91SAM9G25	AT91SAM9X25	AT91SAM9G35	ATSAM9X35
Ethernet	0	1 X 10/100M	2 X 10/100M	1 X 10/100M	1 X 10/100M
Serial Port	5	6	6	5	5
RS485	1	2	2	1	1
LCD	1	0	0	1	1
CAN	0	0	1	0	1

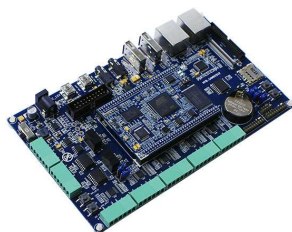
Note: RS485 is multiplexed with Serial port.

Table 1-1 Comparison for Model Selection

The five models are with the same base board and different five CPU modules. But actually the *MYC-SAM9X5-V2* series CPU Modules are sharing the same circuit design with minor configuration settings for five processors: SAM9G15, SAM9G25, SAM9G25, SAM9X25 and SAM9X35.

The MYD-SAM9X5-V2 Development Board comes along with software packages, necessary cable accessories as well as detailed documents to allow customers to start development soon when getting the goods out of box. It is a low-cost full-featured development board can be used for a variety of applications such as industrial controls, medical equipment, automation, portable data terminals, biometric security systems, test and measurement instruments, etc.

The MYD-SAM9X5-V2 Development Kit includes following items:



MYD-SAM9X5-V2 board



Ethernet cable



Serial cable



USB cable



Product DVD



12V Power Adapter



Optional 4.3- or 7-inch LCD/TSP

Figure 1-2 MYD-SAM9X5-V2 Development Kit

Hardware Specification

The Atmel® [SAM9G](#) and [SAM9X](#) embedded MPUs are high-performance, highly integrated processors built the good foundation of the Atmel® ARM926-based embedded MPU line. Running at 400 MHz, they are designed to complement the power of the ARM926 core; these flexible devices deliver a rich combination of peripherals including up to two Ethernet, two CAN, three USB ports and seven UARTS. Additional features include an integrated soft modem, TFT LCD controller and LPDDR/DDR2 memory support. A multilayer bus matrix architecture and multiple DMA channels ensure uninterrupted data transfer with minimum processor intervention. Low voltage, low power consumption and reduced system cost make these devices ideal for cost-sensitive machine-to-machine applications.

The MYD-SAM9X5-V2 series development boards include one CPU module mounted on one base board. It takes full features of the Atmel SAM9G and SAM9X processors and is characterized as in below table 1-2:

Hardware Specifications					
Item	MYD-SAM9G15-V2	MYD-SAM9G25-V2	MYD-SAM9G35-V2	MYD-SAM9X25-V2	MYD-SAM9X35-V2
Processor	AT91SAM9G15	AT91SAM9G25	AT91SAM9G35	AT91SAM9X25	AT91SAM9X35
CPU	MYC-SAM9G15-V2	MYC-SAM9G25-V2	MYC-SAM9G35-V2	MYC-SAM9X25-V2	MYC-SAM9X35-V2
Module	- 400MHz Atmel AT91SAM9G15, 9G25, 9G35, 9X25 and 9X35 ARM926EJ-S Processors - CPU internal 32KB of SRAM and 64KB of ROM - On-board 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM - On-board Ethernet PHY - Two 2.0mm pitch 70-pin connectors				
Dimensions	CPU Module – 72 x 50mm; Base board – 177 x 106mm				
PCB Layer	CPU Module – 6-layer design; Base board – 4-layer design				
Power Supply	12V/1.25A				
Working Temp.	0~70 Celsius or -40~85 Celsius				
Storages	One Micro SD card slot				
Serial ports	5	6	6	5	5
USB	One Mini USB Debug port One High-speed USB 2.0 Host port One Full-speed USB 2.0 Host port One High-speed Mini USB 2.0 OTG port (configured as USB Device by default)				
Ethernet	0	1 (J11)	1 (J11)	2 (J10 & J11)	1 (J11)
CAN	0	0	0	1	1
RS485	1	2	1	2	1
	Note: multiplexed with USART0, USART3				
Audio	Audio input/output port				
	Support	Not support	Support	Not support	Support
LCD/TSP	Supports 24-bit true color TFT LCD, resolution up to 800 x 600 pixels 4-line resistive touch screen 4.3-inch LCD for option (including Touch screen, with resolution 480 x 272 pixels) 7-inch LCD for option (including Touch screen, with resolution 800 x 480 pixels)				
JTAG	20-pin standard JTAG interface				
RTC	Battery backed RTC socket (CR1220 is recommended)				

Buttons	One Reset button, One Wakeup button and Two User buttons
LED	Two Power indicators (Red, one on CPU Module and one on base board) One user LED (Blue, on CPU Module)
Expansion Interface	Three expansion interfaces (J3, J5 and J17) brings out I2C, SPI, GPIO, etc. <i>Note: The resources brought out from the expansion interfaces may be multiplexed with others. Please refer to the product user manual and schematics for details for your development.</i>

Table 1-2 Hardware Specification of MYD-SAM9X5-V2 Development Board



Figure 1-3 MYD-SAM9X5-V2 with 7-inch LCD Module

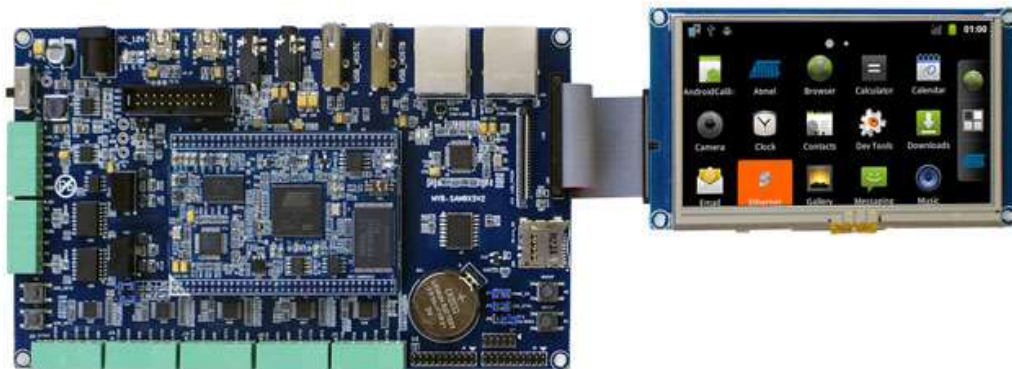


Figure 1-4 MYD-SAM9X5-V2 with 4.3-inch LCD Module

Function Block Diagram

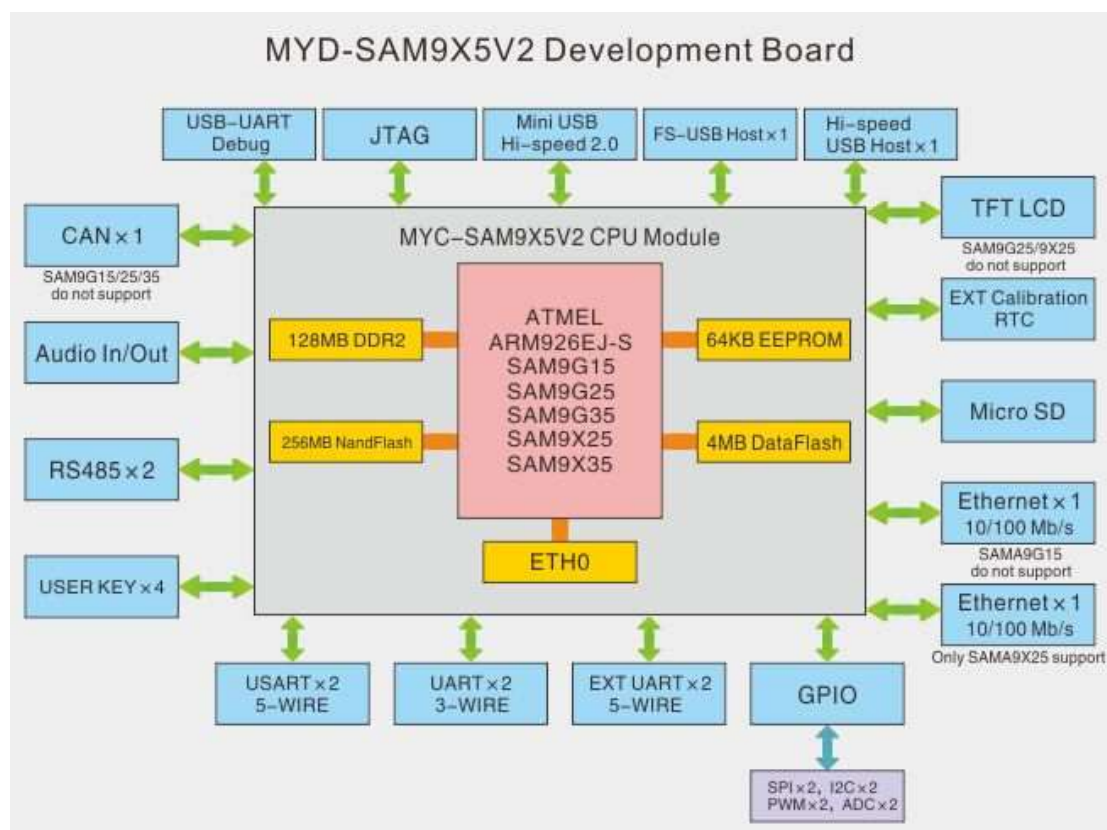


Figure 1-5 Function Block Diagram of MYD-SAM9X5-V2

Dimension Chart of MYD-SAM9X5-V2

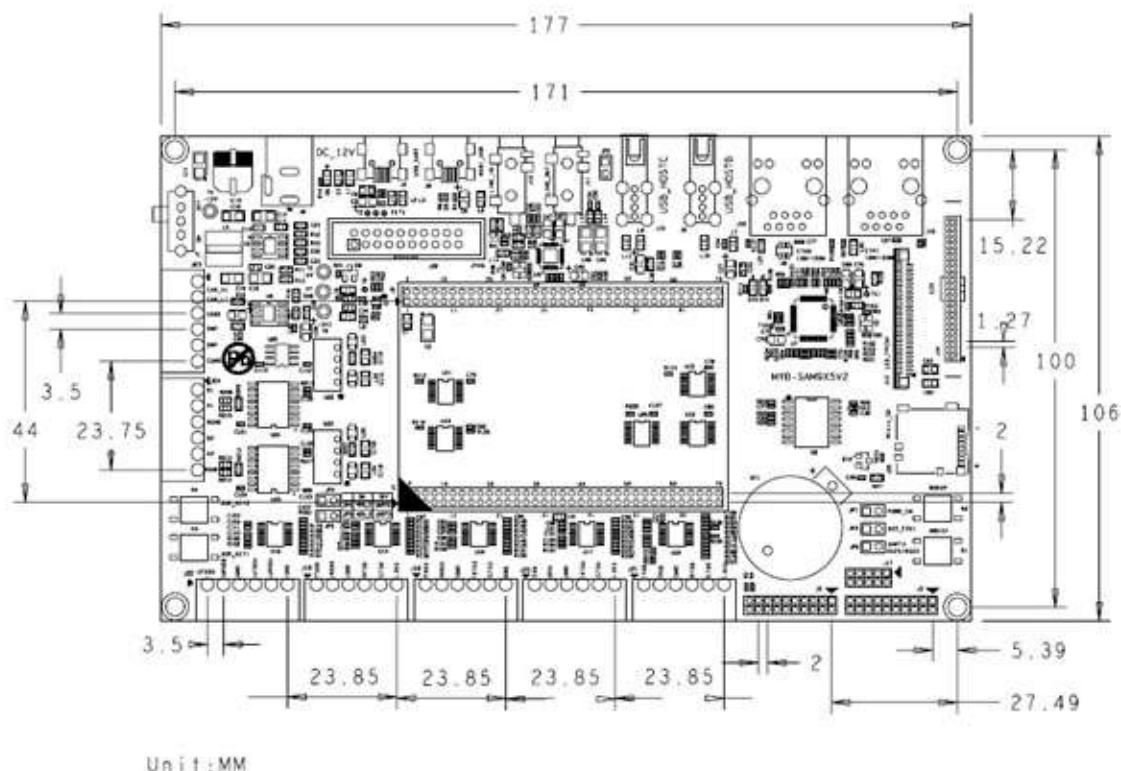


Figure 1-6 Dimension Chart of MYD-SAM9X5-V2

MYD-SAM9X5-V2 Development Board Layout

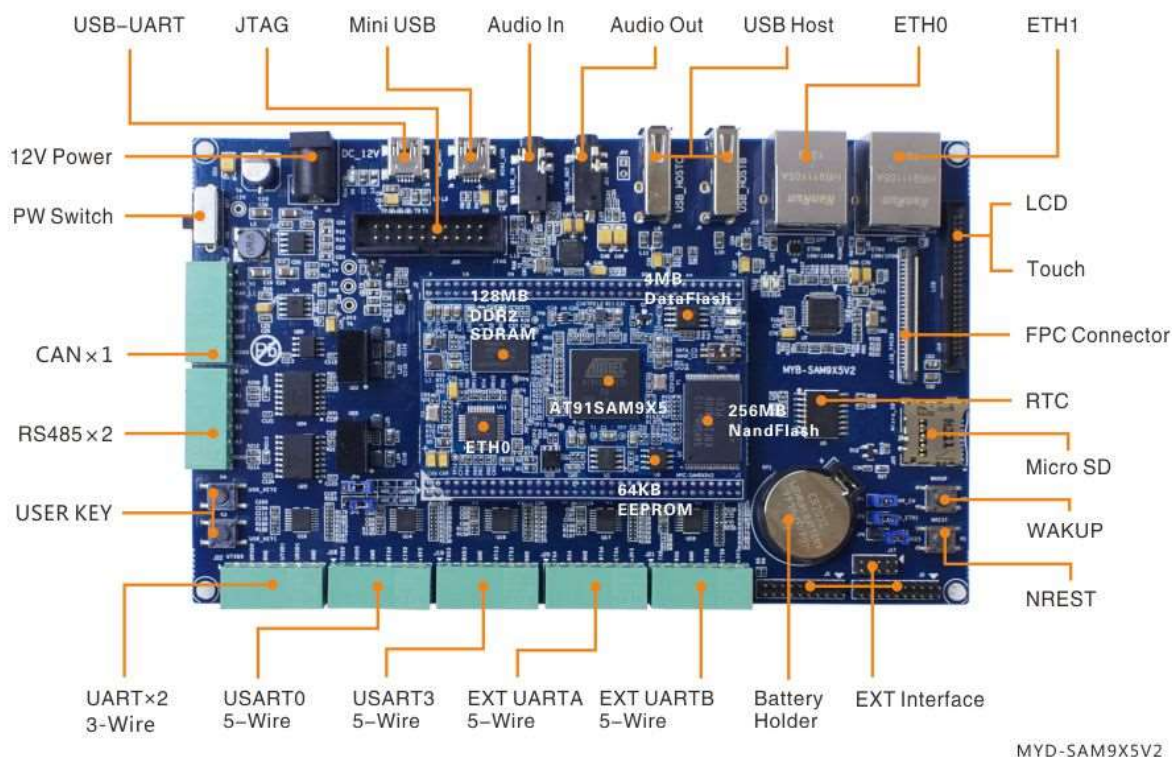


Figure 1-7 MYD-SAM9X5-V2 Development Board Peripherals

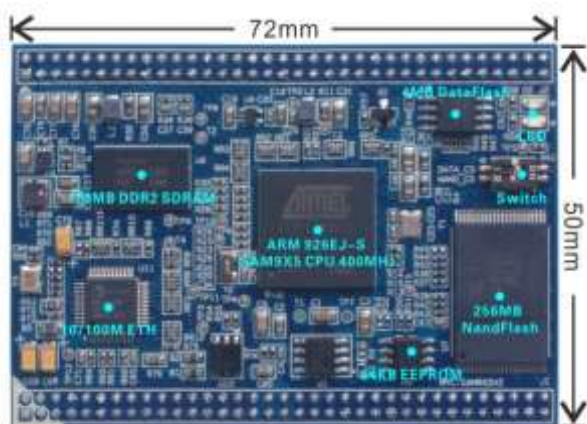


Figure 1-8 MYC-SAM9X5-V2 CPU Module Top-view



Figure 1-9 MYC-SAM9X5-V2 CPU Module Bottom-view

Software Features

The MYD-SAM9X5-V2 is a Linux and Android ready-to-run development board. MYIR offers software packages along with the board. Many peripheral drivers are provided in source code to help customers quickly start their own development and create their own applications. The board is also provided with sample codes bundle for the peripherals using Keil's MDK-ARM. The software features are summarized as below:

OS	Item	Features	Description
Linux	Boot	Boot Strap	First boot program (source code available)
		u-boot	Secondary boot program (source code available)
		Boot Mode	Boot Linux from NAND Flash
		Image update	Support programming kernel image into Nand Flash through USB
		File system update	Support programming file system into Nand Flash through USB
	Kernel	Version	Linux 2.6.39 (source code available)
		File system	Supports ROM/CRAM/EXT2/EXT3/FAT/NFS/ JFFS2/UBIFS
	File system	Format	UBIFS file system
	Drivers	USB Host, USB Device, Ethernet, MMC/SD, CAN, RS485, NandFlash, TWI (I2C), SPI, WM8904 (Audio), LCD Controller, RTC, Touch-Screen, PWM, UART, LED (source code available)	
	Graphical Library	QT	Already ported (source code available)
Android	Kernel	Version	Android 2.3.5
	Drivers	Ethernet, Serial port driver (USART1, DBGU), USB (USB_HOST*2,USB_OTG), SD card driver (Micro SD, MMC/SD), SMD, SPI, TWI, DMA, LCD+touch (LCD and touch screen driver), GPIO driver	
-	MDK Sample Code Bundle	Development tool	MDK-ARM 4.53
		Sample code	getting-started, adc_adc10, adc_touchscreen, can, dma, lcd, periph_protect, pmc_clock_switching, pwm, ssc_dma_audio, twi_eeprom, usart_serial, emac0, emac1, hsmci_multimedia_card, hsmci_sdcard, smc_nandflash, spi_serialflash, usb_audio_looprec, usb_cdc_serial, usb_core, usb_hid_keyboard, usb_hid_mouse, usb_hid_msd, usb_hid_transfer, usb_iad_cdc_cdc, usb_iad_cdc_hid, usb_iad_cdc_msd, usb_massstorage, RS485, External GPIO, External UART, External RTC

Order Information

Product Item	Part No.	Packing List
MYD-SAM9G15-V2 Development Board	MYD-SAM9G15-V2	<div>➤ One MYD-SAM9X5-V2 Development Board</div> <div>➤ One DB9-to-DB9 Serial cable</div> <div>➤ One Net cable</div> <div>➤ One USB cable</div> <div>➤ One 12V/1.25A Power adapter</div> <div>➤ One Product DVD</div> <div>(including user manual, datasheet, schematic in PDF format and software packages)</div>
MYD-SAM9G25-V2 Development Board	MYD-SAM9G25-V2	
MYD-SAM9G35-V2 Development Board	MYD-SAM9G35-V2	
MYD-SAM9X25-V2 Development Board	MYD-SAM9X25-V2	
MYD-SAM9X35-V2 Development Board	MYD-SAM9X35-V2	
MY-LCD43TP 4.3-inch LCD Module	MY-LCD43TP	
MY-LCD70TP 7-inch LCD Module	MY-LCD70TP	
MYC-SAM9G15-V2 CPU Module	MYC-SAM9G15-V2	
MYC-SAM9G25-V2 CPU Module	MYC-SAM9G25-V2	
MYC-SAM9G35-V2 CPU Module	MYC-SAM9G35-V2	
MYC-SAM9X25-V2 CPU Module	MYC-SAM9X25-V2	Add-on Options <div>➤ MY-LCD43TP 4.3-inch LCD Module</div> <div>➤ MY-LCD70TP 7-inch LCD Module</div> <div>➤ MYC-SAM9X5-V2 CPU Module</div>
MYC-SAM9X35-V2 CPU Module	MYC-SAM9X35-V2	
Remark: <div>1. One MYD-SAM9X5-V2 Development Board includes one CPU module MYC-SAM9X5-V2 mounted on the base board. If you need more CPU module, you can order extra ones.</div> <div>2. For Price information, please contact MYIR.</div> <div>3. Our products are delivered of commercial grade (0~70 Celsius) by default. Anyhow the MYD-SAM9X5-V2 board based on Atmel ARM926EJ-S processor can work in harsh environment with working temperature ranging from -40 to 85 Celsius. Please contact us for price and availability of products of industrial grade if you needed.</div> <div>4. We accept custom design based on the MYD-SAM9X5-V2, whether reducing, adding or modifying the existing hardware according to customer’s requirement.</div>		

More details about the [MYD-SAM9X5-V2](http://www.myirtech.com/list.asp?id=444) can be found at:

<http://www.myirtech.com/list.asp?id=444>



MYIR Tech Limited

Room 1306, Wensheng Center, Wenjin Plaza, North Wenjin Road, Luohu District,
Shenzhen, China 518020

E-mail: sales@myirtech.com

Phone: +86-755-22984836

Fax: +86-755-25532724

Website: <http://www.myirtech.com>