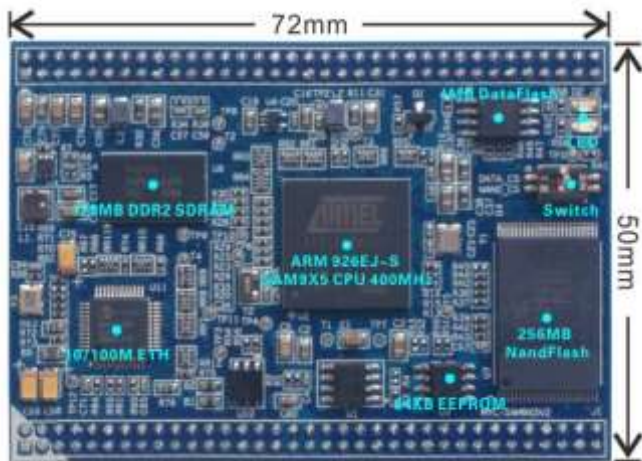


MYC-SAM9X5-V2 CPU Module

- 400MHz Atmel AT91SAM9X5 Series ARM926EJ-S Processors
- 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM
- On-board Ethernet PHY
- Two 2.0mm pitch 70-pin Connectors for Board-to-Board Connections
- Ready-to-Run Linux 2.6.39 and Android 2.3.5 Controller Board
- Complete MDK-ARM Sample Codes
- Supports -40 to +85 Celsius Extended Temperature Operation for Industrial Applications



Top-View



Bottom-View

Measuring only 72mm by 50mm, MYIR's MYC-SAM9X5-V2 series CPU Modules are highly-integrated low-cost controller boards for industrial and embedded applications. They are based on Atmel's 400MHz AT91SAM9x5 series ARM926EJ-S processors: SAM9G15, SAM9G25, SAM9G35, SAM9X25 and SAM9X35. The modules include 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM and Ethernet PHY on board and use two 2.0mm pitch 70-pin connectors to provide an interface to bring out or in I/O signals from or to the CPU Module. It is a Linux and Android ready-to-run module and supports -40 to +85 Celsius Extended Temperature Operation for Industrial Applications.

The five MYC-SAM9X5 CPU Modules are sharing the same circuit design with only minor configuration settings. We can see some main difference from below table:

Item	MYC-SAM9G15-V2	MYC-SAM9G25-V2	MYC-SAM9X25-V2	MYC-SAM9G35-V2	MYC-SAM9X35-V2
Processor	AT91SAM9G15	AT91SAM9G25	AT91SAM9X25	AT91SAM9G35	AT91SAM9X35
Ethernet	0	1 X 10/100M	2 X 10/100M	1 X 10/100M	1 X 10/100M
UART	6	7	7	6	6
LCD	1	0	0	1	1
CAN	0	0	2	0	2

MYIR has designed a commonly-used base board for the MYC-SAM9X5-V2 series CPU Modules which has extended most peripheral functions of the CPU by headers and connectors. It is an ideal platform for user evaluation and prototype. User can also create their own applications on this board and use it directly for their final products.

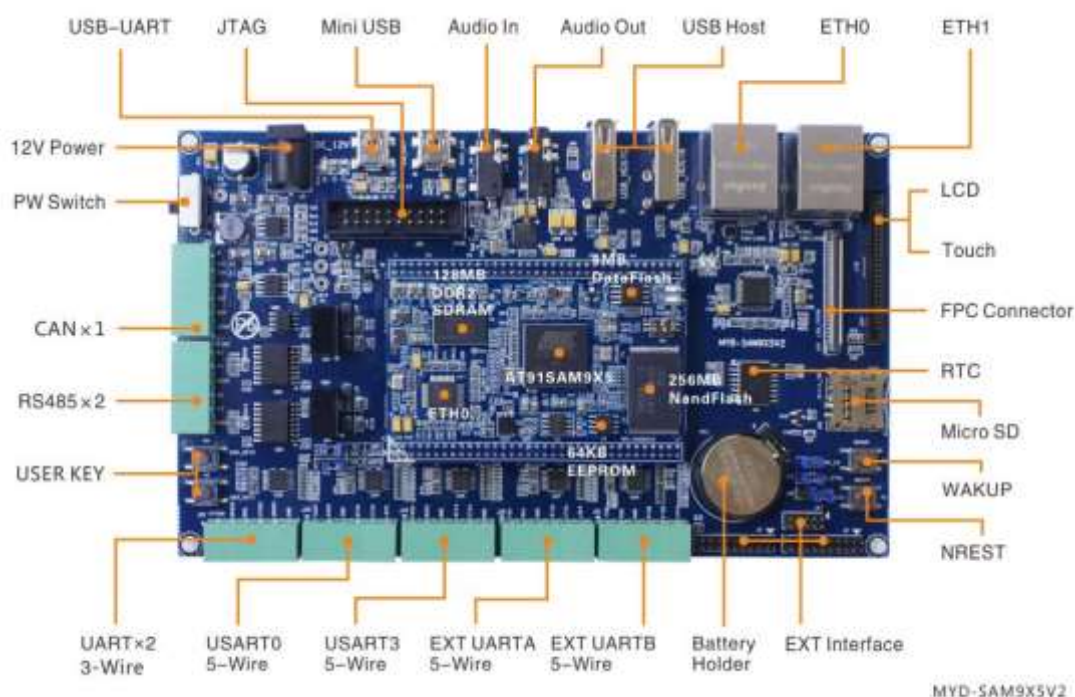
The MYC-SAM9X5-V2 modules come with Linux 2.6.39 and android 2.3.5 software packages, MDK-ARM sample codes bundle as well as document to support customers' development. They are ideal controller board for your next embedded design.

Hardware Specifications

Item	MYC-SAM9G15-V2	MYC-SAM9G25-V2	MYC-SAM9G35-V2	MYC-SAM9X25-V2	MYC-SAM9X35-V2
Processor	AT91SAM9G15	AT91SAM9G25	AT91SAM9G35	AT91SAM9X25	AT91SAM9X35
	- 400 MHz ARM926EJ-S Processor - DSP Instruction Extensions - ARM Jazelle Technology - 16 KB Data Cache, 16 KB Instruction Cache with MMU - 32KB Internal SRAM - External Bus Interface - DMA Controller - DDR2 Interface - IIS audio interface - Embedded ICE - 217 balls BGA - Low power, Vcore 1.0V				
Dimensions	72 x 50mm				
PCB Layer	6-layer design				
Power Supply	3.3V				
Working Temp.	0~70 Celsius or -40~85 Celsius				
External Memory	128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM				
RTC	32.768kHz crystal for RTC clock				
LED	One Power Indicator (Red) One User LED (Blue)				
Expansion Interface	Two 2.0mm pitch 70-pin dip connectors bring out below peripheral signals: <i>Note: The resources brought out from the expansion interfaces may be multiplexed with others.</i>				
Ethernet	0	1	1	2	1
CAN	0	0	0	2	2
LCD	1	0	1	0	1
Serial Ports	6	7	6	7	6
MMC/SD	2				
USB	3				
ADC	12-channel 10-bit ADC				
SPI	2				
TWI	2				
PWM	4 x 16-bit PWM				
GPIOs	Up to 89 GPIOs can be used				

Signals Routed to SO-DIMM 200-pin Connector

MYiR has designed a base board for the MYC-SAM9X5-V2 CPU Modules. The CPU Module is connected with the base board through two 2.0mm pitch 70-pin connectors which provide an interface to bring out all the I/O signals to or from the CPU Module. Please refer to below table to know signals routed to the pins:



MYD-SAM9X5-V2 Development Board (use MYC-SAM9X5-V2 as Controller Board)

Pins on J1 Connector

Function	IO Pins	Pin	Pin	IO Pins	Function
Power GND	ETH0-GND	1	2	ETH0-RX+	ETH0-RX+
AVDDT	AVDDT	3	4	ETH0-RX-	ETH0-RX-
ETH0-LED2	ETH0-LED2	5	6	ETH0-TX+	ETH0-TX+
ETH0-LED1	ETH0-LED1	7	8	ETH0-TX-	ETH0-TX-
ETH0-LED0	ETH0-LED0	9	10	GND	Power GND
Power GND	GND	11	12	PB0	ERX0
ERX1	PB1	13	14	PB2	ERXER
ERXDV	PB3	15	16	PB4	ETXCK
EMDIO	PB5	17	18	PB6	EMDC
ETXEN	PB7	19	20	GND	Power GND
ETX0	PB9	21	22	PB8	Blank
AD0	PB11	23	24	PB10	ETX1
AD2	PB13	25	26	PB12	AD1
Power GND	GND	27	28	PB14	AD3
GPIO	PB15	29	30	PB16	GPIO
AD6	PB17	31	32	PB18	IRQ
ADVERF	ADVERF	33	34	GND	Power GND
LCDDATA0	PC0	35	36	PC1	LCDDATA1
LCDDAT2	PC2	37	38	PC3	LCDDAT3

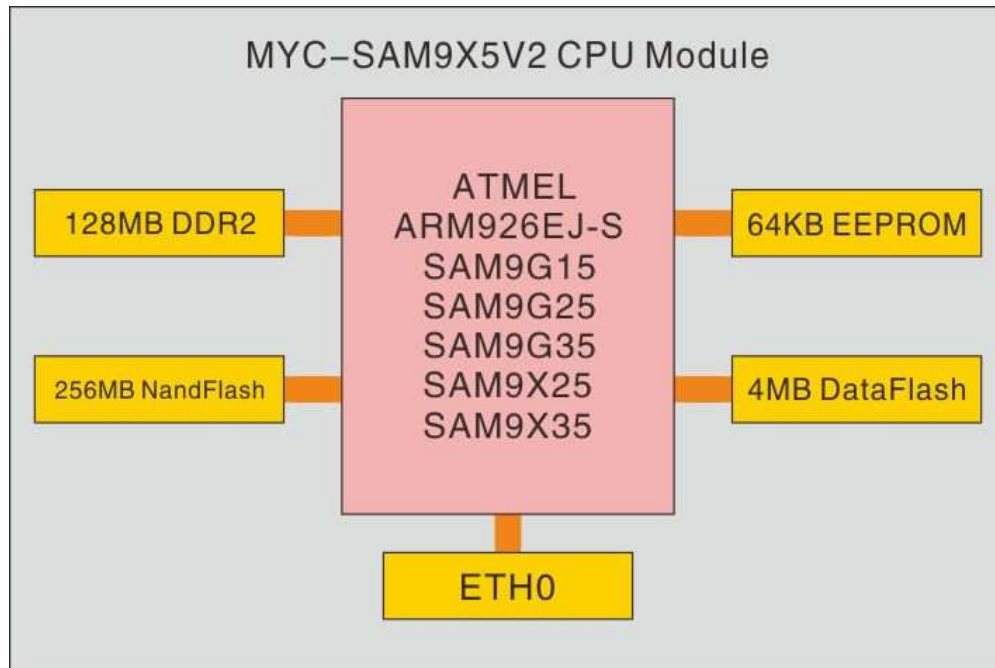
LCDDAT4	PC4	39	40	PC5	LCDDAT5
LCDDAT6	PC6	41	42	PC7	LCDDAT7
Power GND	GND	43	44	PC8	UTXD0
URXD0	PC9	45	46	PC10	LCDDAT10
LCDDAT11	PC11	47	48	PC12	LCDDAT12
LCDDAT13	PC13	49	50	PC14	LCDDAT14
LCDDAT15	PC15	51	52	GND	Power GND
UTXD1	PC16	53	54	PC17	URXD1
LCDDAT18	PC18	55	56	PC19	LCDDAT19
LCDDAT20	PC20	57	58	PC21	LCDDAT21
LCDDAT22	PC22	59	60	PC23	LCDDAT23
Power GND	GND	61	62	PC24	LCDDISP
LCDVSYNC	PC27	63	64	PC25	CTS3
LCDHSYNC	PC28	65	66	PC26	LCDPWM
LCDDEN	PC29	67	68	PC31	FIQ
LCDPCK	PC30	69	70	GND	Power GND

Pins on J2 Connector

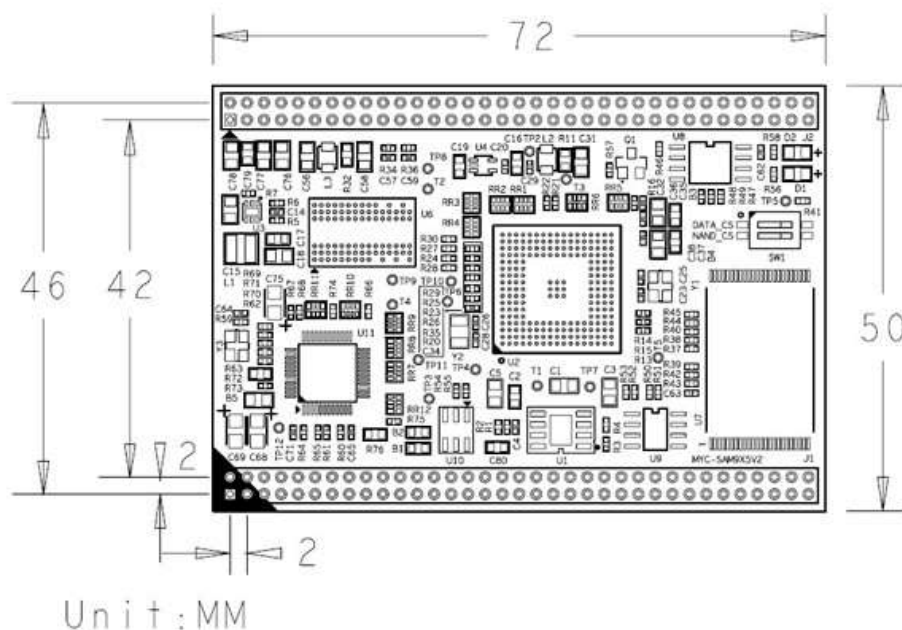
Function	IO Pins	Pin	Pin	IO Pins	Function
3V3 Power	VDDANA	1	2	VDDDBU	3V3 Power
3V3 Power	+3V3	3	4	GND	Power GND
3V3 Power	+3V3	5	6	GND	Power GND
3V3 Power	+3V3	7	8	PD20	GPIO
USB-ENA	PD18	9	10	PD19	GPIO
GPIO	PD17	11	12	SHDN	SHDN
LCD-REST	PD16	13	14	WKUP	WKUP
SD-CD	PD15	15	16	NRST	NRST
Power GND	GND	17	18	NTRST	NRST
USB-C	HHSDPC	19	20	TCK	TCK
USB-C	HHSDMC	21	22	TDO	TDO
Power GND	GND	23	24	TDI	TDI
USB-B	HHSDMB	25	26	TMS	TMS
USB-B	HHSDPB	27	28	RTCK	RTCK
Power GND	GND	29	30	PA10	DTXD
USB-OTG	HHSDMA	31	32	PA9	DRXD
USB-OTG	HHSDPA	33	34	PA15	MCIO_DA0
Power GND	GND	35	36	PA18	MCIO_DA1
Blank	NC	37	38	PA19	MCIO_DA2
Blank	NC	39	40	PA20	MCIO_DA3
Power GND	GND	41	42	PA17	MCIO_CK
RF	PA29	43	44	PA16	MCIO_CDA
RK	PA28	45	46	PA30	TWDO
RD	PA27	47	48	GND	Power GND
TD	PA26	49	50	PA31	TWCK0
TF	PA25	51	52	PA23	SPI1-SOCK

TK	PA24	53	54	PA22	SPI1-MOSI
CANTX1	PA5	55	56	PA21	SPI1-MISO
CANRX1	PA6	57	58	PA8	RXD2
Power GND	GND	59	60	PA7	TXD2
SPI0-SPCK	PA13	61	62	PA14	SPI0-NPCSO
SPI0-MOSI	PA12	63	64	PA4	SCK0
SPI0-MISO	PA11	65	66	PA2	RTS0
CTS0	PA3	67	68	PA0	TXD0
RXD0	PA1	69	70	GND	Power GND

Function Block Diagram of MYC-SAM9X5-V2



Dimension Chart of MYC-SAM9X5-V2



Software Features

MYIR has provided software packages on Linux and Android operating systems for the MYC-SAM9X5-V2 CPU modules. The board is also provided with sample codes bundle for the peripherals using Keil's MDK-ARM to help users evaluate the Atmel AT91SAM9X5 series processors. Please see the features 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
Android	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)
	Kernel	Version	Android 2.3.5
-	MDK Sample Code Bundle	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
		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	
MYC-SAM9G15-V2 CPU Module	MYC-SAM9G15-V2	➤ One MYC-SAM9X5-V2 CPU Module ➤ One Product DVD (including user manual, datasheet, schematic in PDF format and software packages) Add-on Options ➤ MYD-SAM9X5-V2 Development Board ➤ MY-LCD43TP 4.3-inch LCD Module ➤ MY-LCD70TP 7-inch LCD Module	
MYC-SAM9G25-V2 CPU Module	MYC-SAM9G25-V2		
MYC-SAM9G35-V2 CPU Module	MYC-SAM9G35-V2		
MYC-SAM9X25-V2 CPU Module	MYC-SAM9X25-V2		
MYC-SAM9X35-V2 CPU Module	MYC-SAM9X35-V2		
MYD-SAM9G15-V2 Development Board	MYD-SAM9G15-V2		
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		
<i>Remark:</i>			
<i>1. Discount is available for mass orders. Please contact MYIR for inquiries.</i>			
<i>2. All prices above are for boards of commercial grade (0~70 Celsius). If customer needs boards of industrial grade (-40~85 Celsius), please inquiry MYIR for availability and prices.</i>			

More details about the [MYC-SAM9X5-V2](#) can be found at:

<http://www.myirtech.com/list.asp?id=459>


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