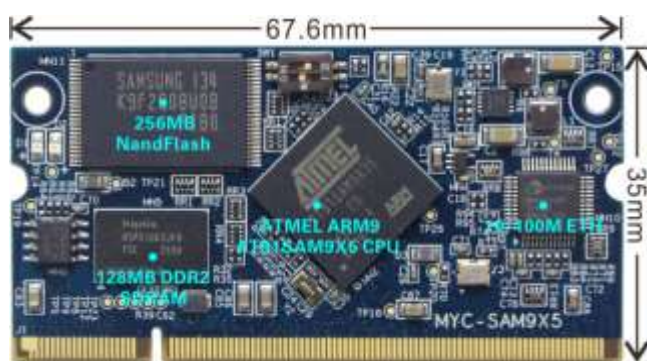


MYC-SAM9X5 CPU Module

- 400MHz Atmel AT91SAM9X5 Series ARM926EJ-S Processors
- 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM
- On-board Ethernet PHY
- DDR2 SO-DIMM 200-pin Expansion Connector
- Fully Compatible with Atmel's SAM9X5-EK Official Board
- 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 67.6mm by 35mm, MYIR's MYC-SAM9X5 series CPU Modules are highly-integrated low-cost controller boards for industrial and embedded applications. The modules are based on Atmel's 400MHz AT91SAM9x5 series processors: SAM9G15, SAM9G25, SAM9G35, SAM9X25 and SAM9X35. The modules include 128MB DDR2 SDRAM, 256MB Nand Flash, 4MB Data Flash, 64KB EEPROM and Ethernet PHY. They have one 200-pin DDR2 SO-DIMM connector with gold-plated to provide an interface to bring out all the I/O signals from 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. They are compatible with Atmel's official SAM9X5-EK and can work on SAM9X5-EK's base board directly. We can make a comparison for some main functions of the five modules from below table:

Item	MYC-SAM9G15	MYC-SAM9G25	MYC-SAM9X25	MYC-SAM9G35	MYC-SAM9X35
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

we can see if you need Ethernet, except MYC-SAM9G15, other four models all can support; if you need two CANs, two Ethernet but no need LCD, the MYC-SAM9X25 is a good choice; if you want to expose most features of this industrial module, the MYC-SAM9X35 has the most complete functions.

The MYC-SAM9X5 CPU modules are capable of running Linux 2.6.39 and android 2.3.5 operating systems. MYIR provides complete software packages as well as document to support customers' development. MYIR also

offers plenty of ARM-MDK sample codes to enable your debugging capabilities.

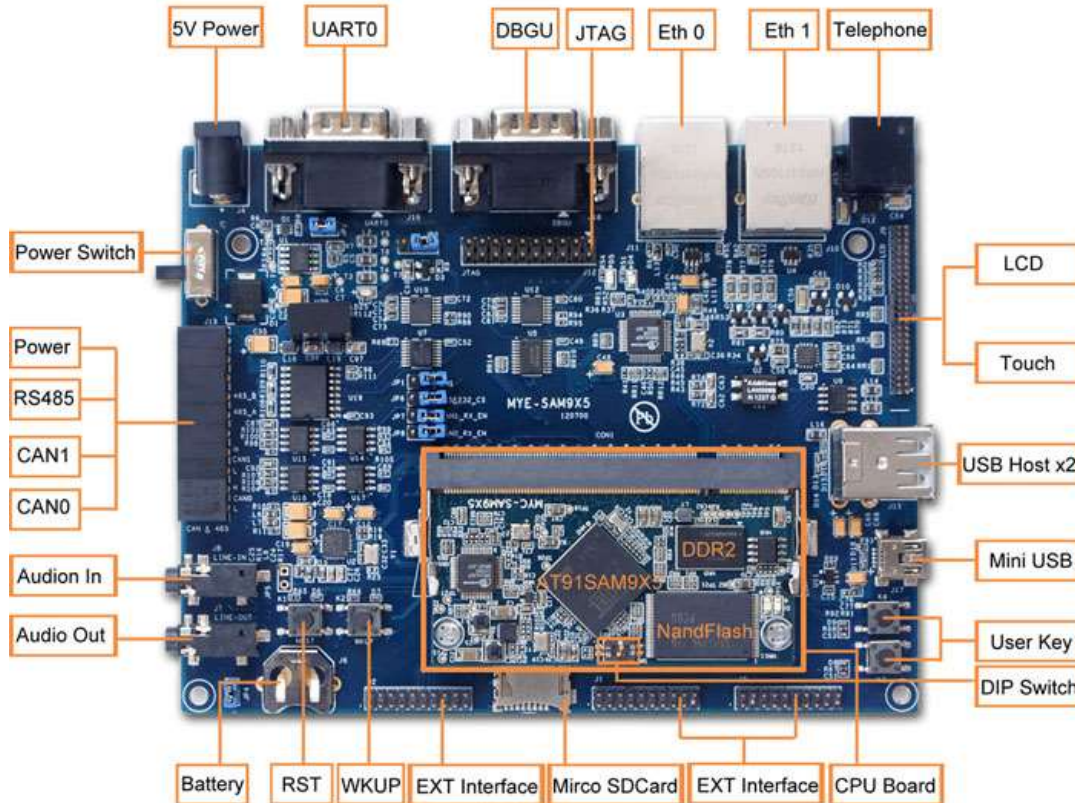
MYiR has designed a commonly-used base board for the MYC-SAM9X5 series CPU Modules which has extended most peripheral functions of the CPU by headers and connectors. The development board is called [MYD-SAM9X5](#) which is an ideal platform for user evaluation and prototype. User can also create their own applications on this board and use it directly for their final products.

Hardware Specifications

Item	MYC-SAM9G15	MYC-SAM9G25	MYC-SAM9G35	MYC-SAM9X25	MYC-SAM9X35
	AT91SAM9G15	AT91SAM9G25	AT91SAM9G35	AT91SAM9X25	AT91SAM9X35
Processor	<ul style="list-style-type: none"> - 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 - 217 balls BGA - Low power, Vcore 1.0V 				
Dimensions	67.6 x 35mm				
PCB Layer	8-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	1.8V DDR2 SO-DIMM 200-pin connector brings 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 105 GPIOs can be used				

Signals Routed to SO-DIMM 200-pin Connector

MYIR has designed a base board for the MYC-SAM9X5 CPU Modules. The CPU Module is equipped with one SO-DIMM 200-pin connector which provides an interface to bring out all the I/O signals to or from the CPU Module and extended through the base board. Please refer to below table to know signals routed to the pins:



MYD-SAM9X5 Development Board (using MYC-SAM9X5 as controller board)

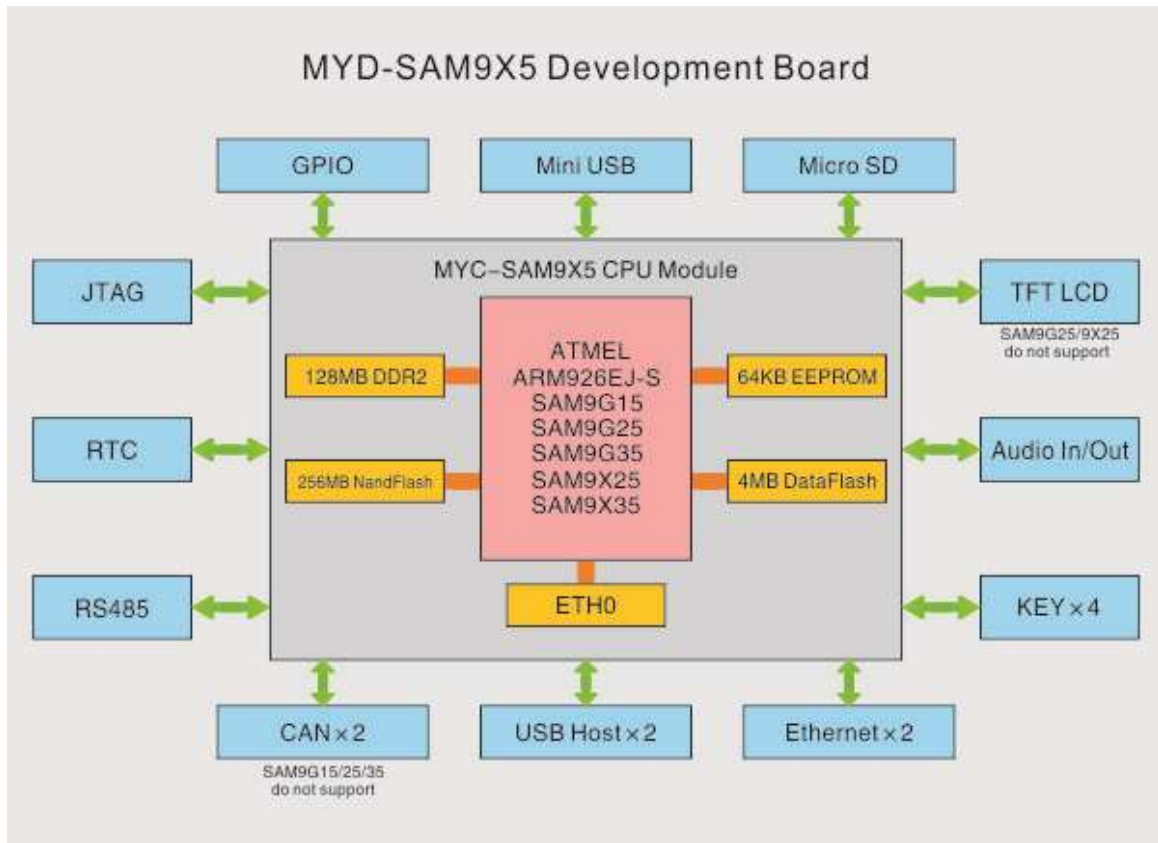


Function	IO Pin	Pin No.	Pin No.	IO Pin	Function
3V3 Power	+3V3	1	2	+3V3	3V3 Power
3V3 Power	+3V3	3	4	+3V3	3V3 Power
Power GND	GND	5	6	VBAT	RTC Battery
USB C_DP	USB C_DP	7	8	JTAGSEL	JTAGSEL
USB C_DM	USB C_DM	9	10	WKUP	WAKE UP
Power GND	GND	11	12	SHDN	SHDN
USB B_DM	USB B_DM	13	14	BMS	BMS
USB B_DP	USB B_DP	15	16	NRST	NRST

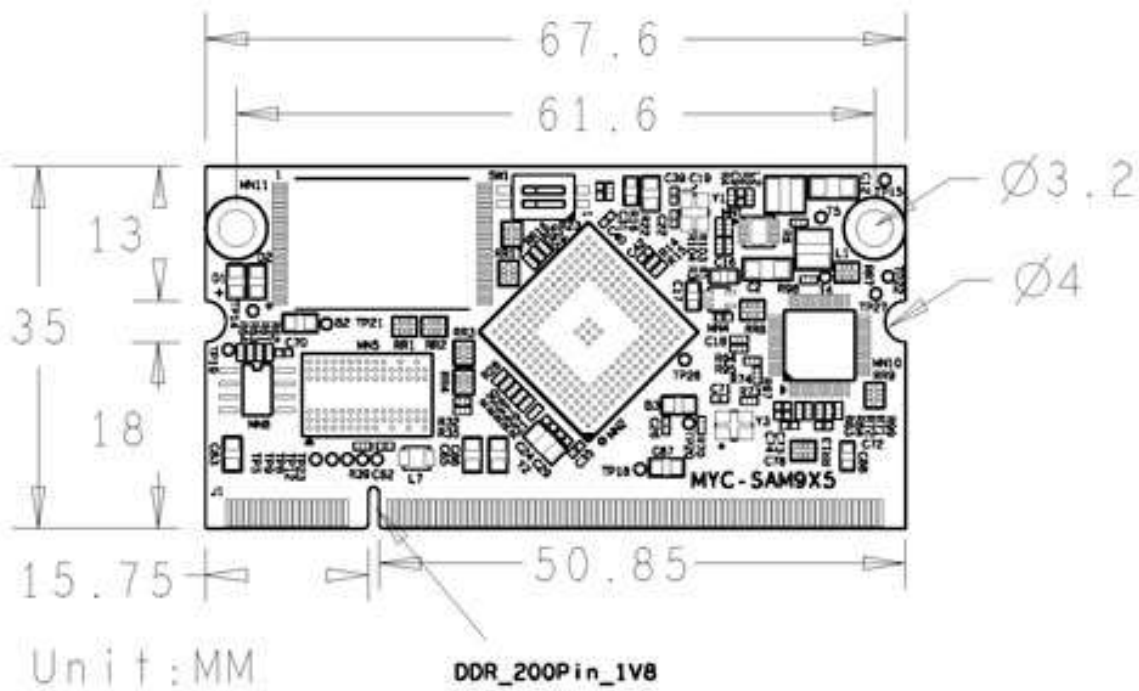
Power GND	GND	17	18	NTRST	NTRST
DIBP	DIBP	19	20	TDI	TDI
DIBN	DIBN	21	22	TCK	TCK
Power GND	GND	23	24	TMS	TMS
USB A_DM	USB A_DM	25	26	TDO	TDO
USB A_DP	USB A_DP	27	28	RTCK	RTCK
Power GND	GND	29	30	PWR_EN	PWR_EN
Blank	RFU1	31	32	RFU2	Blank
Blank	RFU3	33	34	RFU4	Blank
Blank	RFU5	35	36	RFU6	Blank
Blank	RFU7	37	38	RFU8	Blank
Blank	RFU9	39	40	RFU10	Blank
Power GND	GND	41	42	GND	Power GND
Blank	RFU11	43	44	RFU12	Blank
Blank	RFU13	45	46	RFU14	Blank
Blank	RFU15	47	48	RFU16	Blank
Blank	RFU17	49	50	RFU18	Blank
Power GND	GND	51	52	GND	Power GND
Blank	RFU19	53	54	RFU20	Blank
Blank	RFU21	55	56	RFU22	Blank
Blank	RFU23	57	58	RFU24	Blank
Blank	RFU25	59	60	RFU26	Blank
3V3 Power	VDDNF	61	62	VDDNF	3V3 Power
NAND	PD0	63	64	PD1	NAND
NAND	PD2	65	66	PD3	NAND
NAND	PD4	67	68	PD5	NAND
NAND	PD6	69	70	PD7	NAND
NAND	PD8	71	72	PD9	NAND
Blank	NC	73	74	GND	Power GND
NAND	PD10	75	76	PD11	NAND
NAND	PD12	77	78	PD13	NAND
GPIO	PD14	79	80	PD15	MCI0_CD
GPIO	PD16	81	82	PD17	GPIO
GPIO	PD18	83	84	PD19	GPIO
GPIO	PD20	85	86	PD21	GPIO
3V3 Power	VDDIOP0	87	88	VDDIOP0	3V3 Power
TXD0	PA0	89	90	PA1	RXD0
RTS0	PA2	91	92	PA3	CTS0
GPIO	PA4	93	94	GND	Power GND
SPIO_MISO	PA11	95	96	PA12	SPIO_MOSI
SPIO_SPCK	PA13	97	98	PA14	SPIO_NPCS0
Power GND	GND	99	100	PA7	TXD2
RXD2	PA8	101	102	PA21	SPI1_MISO
SPI1_MOSI	PA22	103	104	PA23	SPI1_SPCK
TWCK0	PA31	105	106	PA30	TWD0
Power GND	GND	107	108	PA15	MCI0_DA0

MCIO_CDA	PA16	109	110	PA17	MCIO_CK
MCIO_DA1	PA18	111	112	PA19	MCIO_DA2
MCIO_DA3	PA20	113	114	GND	Power GND
CANTX1	PA5	115	116	PA6	CANRX1
DTXD	PA10	117	118	PA9	DRXD
Power GND	GND	119	120	PA24	TK
TF	PA25	121	122	PA26	TD
RD	PA27	123	124	PA28	RK
RF	PA29	125	126	GND	Power GND
3V3 Power	VDDIOP1	127	128	VDDIOP1	3V3 Power
LCDDAT0	PC0	129	130	PC1	LCDDAT1
LCDDAT2	PC2	131	132	PC3	LCDDAT3
LCDDAT4	PC4	133	134	PC5	LCDDAT5
Power GND	GND	135	136	PC6	LCDDAT6
LCDDAT7	PC7	137	138	PC8	LCDDAT8
LCDDAT9	PC9	139	140	PC10	LCDDAT10
LCDDAT11	PC11	141	142	GND	Power GND
LCDDAT12	PC12	143	144	PC13	LCDDAT13
LCDDAT14	PC14	145	146	PC15	LCDDAT15
Power GND	GND	147	148	PC16	LCDDAT16
LCDDAT17	PC17	149	150	PC18	LCDDAT18
LCDDAT19	PC19	151	152	PC20	LCDDAT20
LCDDAT21	PC21	153	154	GND	Power GND
LCDDAT22	PC22	155	156	PC23	LCDDAT23
LCDDISP	PC24	157	158	PC25	GPIO
LCDPWM	PC26	159	160	PC27	LCDVSYNC
Power GND	GND	161	162	PC28	LCDHSYNC
LCDDEN	PC29	163	164	PC30	LCDPCK
GPIO	PC31	165	166	SELCONFIG	configuration signal
3V3 Power	VDDANA	167	168	VDDANA	3V3 Power
For Ethernet	PB0	169	170	PB1	For Ethernet
For Ethernet	PB2	171	172	PB3	For Ethernet
For Ethernet	PB4	173	174	PB5	For Ethernet
For Ethernet	PB6	175	176	PB7	For Ethernet
For Ethernet	PB8	177	178	GND	Power GND
For Ethernet	PB9	179	180	PB10	For Ethernet
AD0	PB11	181	182	PB12	AD1
AD2	PB13	183	184	PB14	AD3
GPIO	PB15	185	186	PB16	GPIO
GPIO	PB17	187	188	GND	Power GND
INT	PB18	189	190	ADVREF	ADC voltage reference
Power GND	GND	191	192	ETH0_LED0	ETH0_LED0
ETH0_TX+	ETH0_TX+	193	194	ETH0_LED1	ETH0_LED1
ETH0_TX+	ETH0_TX-	195	196	ETH0_LED2	ETH0_LED2
ETH0_RX+	ETH0_RX+	197	198	ETH0_AVDDT	ETH0_AVDDT
ETH0_RX+	ETH0_RX-	199	200	ETH0_GND	ETH0_GND

Function Block Diagram of MYD-SAM9X5



Dimension Chart of MYC-SAM9X5



Software Features

MYIR has provided software packages on Linux and Android operating systems for the MYC-SAM9X5 series 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:

Software Features			
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, USART, 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

Order Information

Product Item	Part No.	Packing List
MYC-SAM9G15 CPU Module	MYC-SAM9G15	<ul style="list-style-type: none"> ➤ One MYC-SAM9X5 CPU Module ➤ One Product DVD (including user manual, datasheet, schematic in PDF format and software packages) Add-on Options <ul style="list-style-type: none"> ➤ MYD-SAM9X5 Development Board ➤ MY-LCD43TP 4.3-inch LCD Module ➤ MY-LCD70TP 7-inch LCD Module ➤ MY-SODIMM200 Socket
MYC-SAM9G25 CPU Module	MYC-SAM9G25	
MYC-SAM9G35 CPU Module	MYC-SAM9G35	
MYC-SAM9X25 CPU Module	MYC-SAM9X25	
MYC-SAM9X35 CPU Module	MYC-SAM9X35	
MYD-SAM9G15 Development Board	MYD-SAM9G15	
MYD-SAM9G25 Development Board	MYD-SAM9G25	
MYD-SAM9G35 Development Board	MYD-SAM9G35	
MYD-SAM9X25 Development Board	MYD-SAM9X25	
MYD-SAM9X35 Development Board	MYD-SAM9X35	
MY-LCD43TP 4.3-inch LCD Module	MY-LCD43TP	
MY-LCD70TP 7-inch LCD Module	MY-LCD70TP	
MY-SODIMM200 Socket	MY-SODIMM200	
<i>Remark:</i> <ol style="list-style-type: none"> 1. Discount is available for mass orders. Please contact MYIR for inquiries. 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. 		

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

<http://www.myirtech.com/list.asp?id=458>


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>