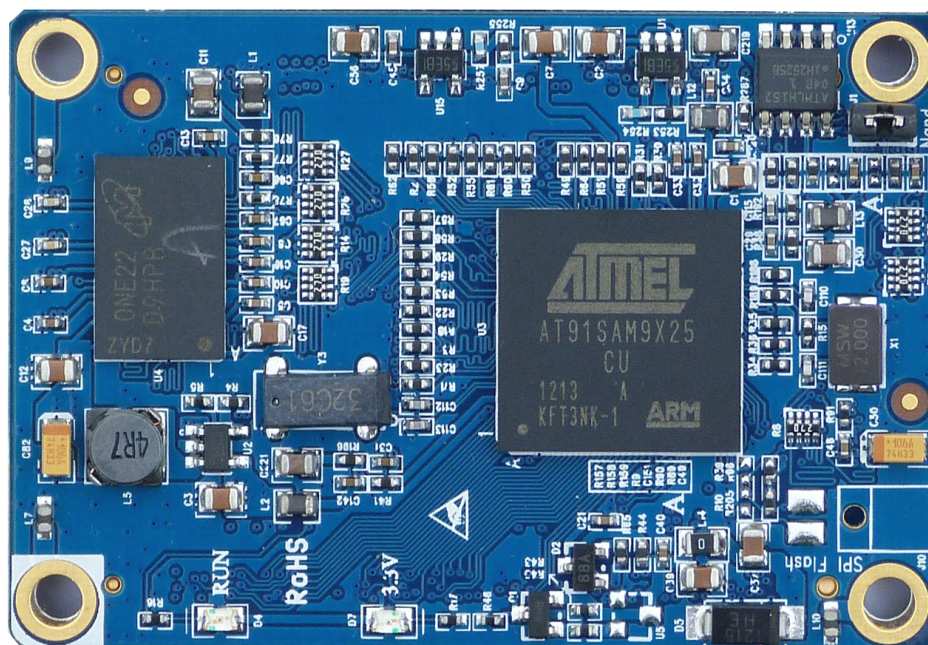




CM-SAM9X25 Overview



- **CPU:** Atmel AT91SAM9X25 ARM926EJ-S Core Microprocessor
- **RAM:** 128MB DDR2 RAM
- **Flash:** 256MB Nand FLash
- **Dimensions:** 57*39mm, 8 layer
- **Working Temperature:** -40 to +85 Celsius
- **Connector:** Two 100 Pin B-T-B connector(Type: **AMP 5-5179009-4**)



Overview

CoreWind CM-SAM9X25 processor card is a compact ARM embedded controller based on 400MHz Atmel AT91SAM9X25 ARM 926EJ-S microcontroller which is designed to provide a high performance processor solution with a high flexibility for general and multimedia oriented applications.

The CM-SAM9X25 processor card has external 128MB DDR2 SDRAM, 256MB Nand Flash and 4Kbit EEPROM on board and many peripherals like UART, Ethernet, USB, SDIO, JTAG, CAN, Soft Modem, SPI and all IOs are brought out by two B-To-B 100Pins connector female headers which is convenient and flexible for customer' s secondary development work.

CoreWind also designed one expansion boards to bring out connectors for implementing and extending the functions of CM-SAM9X25. The boards are called NET-SAM9X25 single board computers. CoreWind offers Linux 2.6.39 for the boards. They are high-performance single board computer for industrial needs.



CM-SAM9X25 Features

- Dimensions: 57*39mm, 8 layer
- Working Temperature: -40 to +85 Celsius
- Atmel AT91SAM9X25 ARM926EJ-S Core Microprocessor
 - 32 KBytes Data Cache, 32 KBytes Instruction Cache, MMU
 - One 32-kbyte internal SRAM and One 64-kbyte internal ROM
 - Work at up to 400MHz
- External Memory
 - 128MByte DDR2 RAM
 - 256MByte NAND Flash
 - 4Kbit EEPROM
- Two system working status LED
- Two 100Pin B-To-B connector extend more interface from CPU
 - UART, Two Ethernet, USB Host/Device, CAN
 - SPI, TWI, SDIO, PWM, JTAG and all IOs
- Supports for Linux 2.6.39 operating systems
- **Adapter mother board:** NET-SAM9X25 Single board computer

CM-SAM9X25 processor card is connected to carrierboard via two 0.8mm pitch B-T-B female headers. Detailed pin explanation for the expansion connectors are as following:

The follow shown is the connector Pin description:

Table 6-1 Connector CON1

CON1	Pin define	Function	CON1	Pin define	Function
1	GND		51	GND	
2	GND		52	GND	
3	-		53	-	
4	-		54	-	
5	-		55	-	
6	-		56	-	
7	-		57	-	
8	-		58	-	
9	-		59	-	
10	-		60	-	
11	PD14	I/O	61	PD15	I/O
12	PD16	I/O	62	PD17	I/O
13	PD18	I/O	63	PD19	I/O
14	PD20	I/O	64	PD21	I/O
15	GND		65	GND	
16	-		66	-	
17	-		67	-	
18	-		68	-	



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19	-		69	-	
20	-		70	-	
21	HHSDPC	USB HOST C FS D-	71	-	
22	HHSDMC	USB HOST C FS D+	72	-	
23	-		73	GND	
24	-		74	GND	
25	DIBN	Soft Modem Signal	75	-	
26	DIBP	Soft Modem Signal	76	-	
27	-		77	GND	
28	-		78	GND	
29	HHSDMB	USB HOST B HS D-	79	-	
30	HHSDPB	USB HOST B HS D+	80	-	
31	GND		81	GND	
32	HHSDMA	USB HOST A HS D-	82	-	
33	HHSDPA	USB HOST A HS D+	83	-	
34	-		84	GND	
35	JTAGSEL	JTAG	85	WKUP	Wake-Up Input
36	SHDN	Shut-Down Control	86	NTRST	JTAG
37	TMS	JTAG	87	TDI	JTAG
38	RTCK	JTAG	88	TCK	JTAG
39	TDO	JTAG	89	NRST	CPU Reset
40	ADVREF	ADC Reference	90	-	
41	-		91	-	
42	-		92	PA21	SPI1_MISO
43	PA22	SPI1_MOSI	93	PA23	SPI1_SPCK
44	GND		94	GND	
45	PA24	SSC TK	95	PA25	SSC TF
46	PA26	SSC TD	96	PA27	SSC RD
47	PA28	SSC RK	97	PA29	SSC RF
48	PA30	SPI1_NPCS3/TWD0	98	PA31	SPI1_NPCS2/TWCK0
49	GND		99	GND	
50	VDD33_IN	Power In 3.3V	100	VDD33_IN	Power In 3.3V

Table 6-2 Connector CON2

CON2	Pin define	Function	CON2	Pin define	Function
1	GND		51	GND	
2	GND		52	GND	
3	PB0	E0_RX0/USART RTS2	53	PB1	E0_RX1/USART CTS2
4	PB2	E0_RXER/USART SCK2	54	PB3	E0_RXDV/SPI0_NPCS3
5	PB4	E0_TXCK/TWD2	55	PB5	E0_MDIO/TWD2
6	PB6	E0_MDC/AD7	56	PB7	E0_TXEN/AD8
7	PB8	E0_TXER/AD9	57	PB9	E0_TX0/AD10/PCK1



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8	PB10	E0_TX1/AD11/PCK0	58	PB11	AD0/PWM0
9	PB12	AD1/PWM1	59	PB13	AD2/PWM2
10	GND		60	GND	
11	PB14	AD3/PWM3	61	PB15	AD4
12	PB16	AD5	62	PB17	AD6
13	PB18	IRQ/CPU board LED	63	-	
14	-		64	-	
15	-		65	-	
16	PC0	TWI1 TWD	66	PC1	TWI1 TWCK
17	PC2	Time/Control3	67	PC3	Time/Control3
18	PC4	Time/Control3	68	PC5	Time/Control4
19	PC6	Time/Control4	69	PC7	Time/Control4
20	PC8	UART UTXD0	70	PC9	UART URXD0
21	PC10	PWM0	71	PC11	PWM1
22	PC12	Time/Control5	72	PC13	Time/Control5
23	PC14	Time/Control5	73	PC15	PCK0
24	PC16	E1_RXER/UART UTXD1	74	PC17	UART1 URXD1
25	PC18	E1_TX0/PWM0	75	PC19	E1_TX1/PWM1
26	PC20	E1_RX0/PWM2	76	PC21	E1_RX1/PWM3
27	PC22	USART TXD3	77	PC23	USART RXD3
28	GND		78	GND	
29	PC24	USART RTS3	79	PC25	USART CTS3
30	PC26	USART SCK3	80	PC27	E1_TXEN/USART RTS1
31	PC28	E1_CRSDV/USART CTS1	81	PC29	E1_TXCK/USART SCK1
32	PC30	E1_MDC/MDC	82	PC31	E1_MDIO/PCK1
33	-		83	-	
34	-		84	-	
35	-		85	-	
36	-		86	-	
37	GND		87	GND	
38	PA0	USART TXD0 /SPI1_NPCS1	88	PA1	USART RXD0 /SPI0_NPCS2
39	PA2	USART RTS0	89	PA3	UART CTS0
40	PA4	USART SCK0	90	PA5	USART TXD1/CANTX1
41	PA6	USART RXD1/CANRX1	91	PA7	USART TXD2 /SPI0_NPCS1
42	PA8	USART RXD2 /SPI1_NPCS0	92	PA9	DRXD/CANRX0
43	PA10	DTXD/CANTX0	93	PA11	SPI0_MISO
44	PA12	SPI0_MOSI	94	PA13	SPI0_SPCK
45	GND		95	GND	
46	PA14	SPI0_NPCS0	96	PA15	MCIO_DA0
47	PA16	MCIO_CDA	97	PA17	MCIO_CK



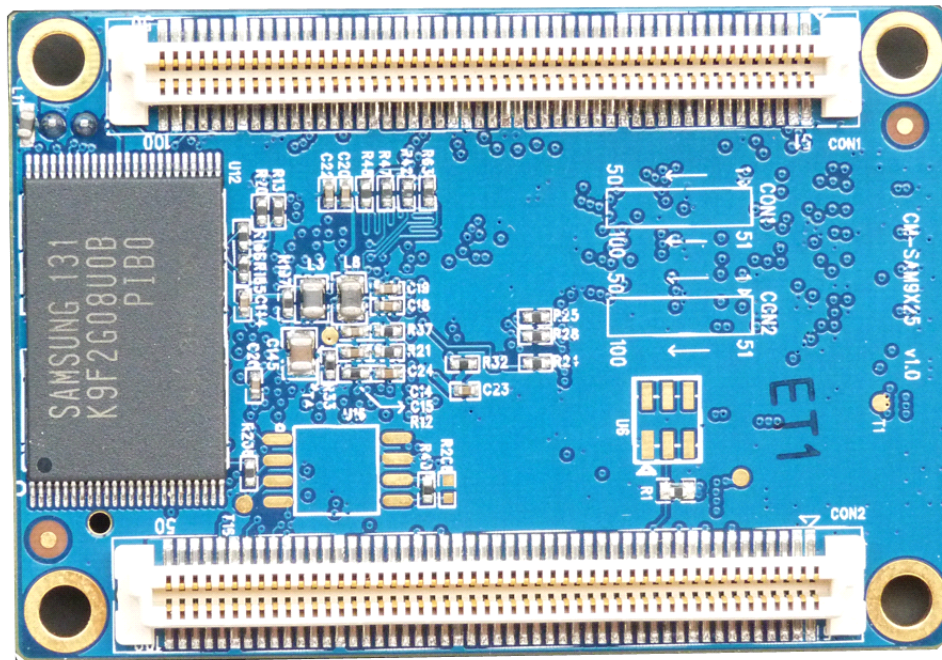
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48	PA18	MCI0_DA1	98	PA19	MCI0_DA2
49	PA20	MCI0_DA3	99	VSBAT	RTC battle
50	VDD33_IN		100	VDD33_IN	



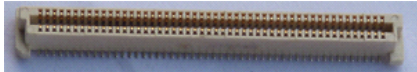
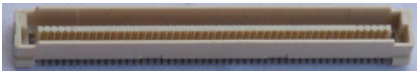
The CM-SAM9X25 connector



The CM-SAM9X25 cpu board use the female connector(name: **AMP 5-5179009-4 SOCKET VERTICAL**).

So for the Expansion board, it need to use the male connector(**name: AMP 5179030-4 HEADER VERTICAL**).

More details about the connector

Item	Connector for CPU board	Connector for Expansion board
On Board	CM-SAM9X25	SBC-SAM9X25
Connector Type	AMP 5-5179009-4 SOCKET VERTICAL 0.8MM 5MM 100WAY	AMP 5179030-4 HEADER VERTICAL 0.8MM 5MM 100WAY
Description	Pitch Spacing:0.8mm Height: 5mm Pin No.: 100Pin	Pitch Spacing:0.8mm Height: 5mm Pin No.: 100Pin
Picture		
Datasheet	Download Positon-> CD:/Datasheet/	Download Position-> CD:/Datasheet/

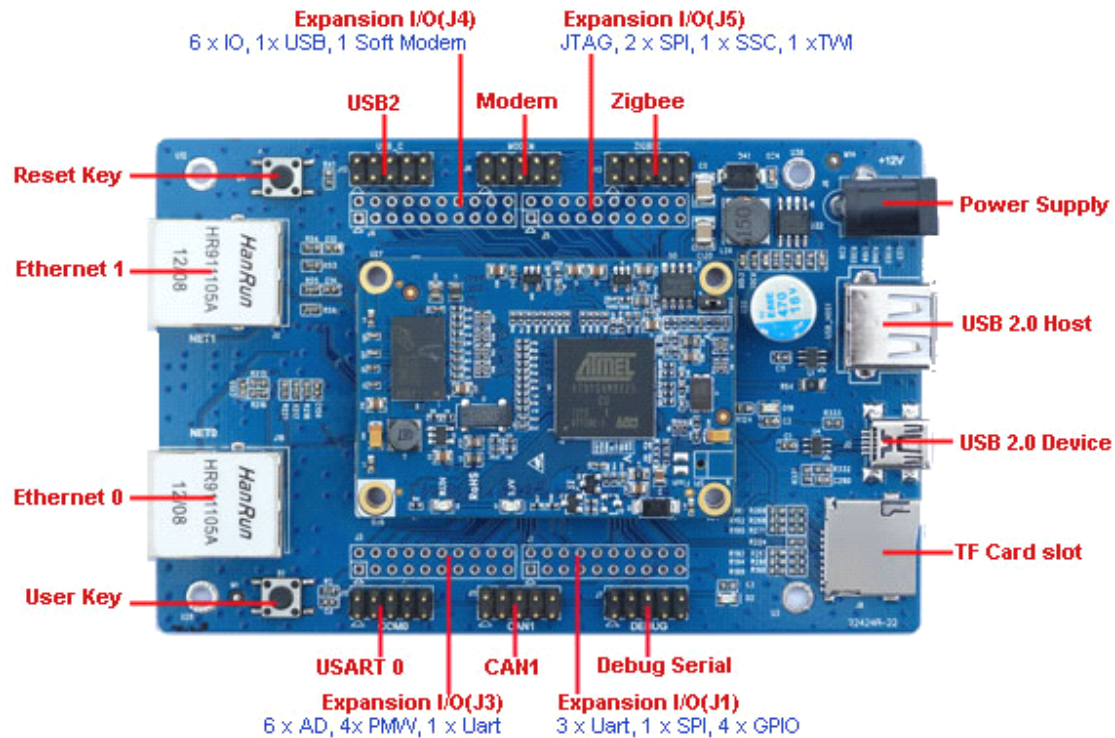


Design Expansion board for CM-SAM9X25

We also designed one expansion boards to bring out connectors for implementing and extending the functions of CM-SAM9X25. The boards are called **NET-SAM9X25** single board computers. CoreWind offers Linux 2.6.39 for the boards. They are high-performance single board computer for industrial needs.

Step 1. Evaluate the function with NET-SAM9X25

You can get the the expansion board(NET-SAM9X25) that we provide, and test the function you needs, for NET-SAM9X25, we have extend more function, the interface is as follow:



Interface on SBC-SAM9X25	Expansion Function(option function)
2 x Serial port	RS232/RS485/RS422 port
2x Ethernet interface	100Mb/s NET interface
1 x USB Host	USB Disk, USB Mouse, USB keyboard, USB WiFi
1 x USB Device	Support Update system image with samba
1 x TF card	Support TF card
1 x CAN bus	CAN interface
1 x Zigbee interface	Support Zigbee Module
1 x Modem Interface	Support Modem Module
Expansion I/O(J1)	3 x Uart, 1 x SPI, 4 x GPIO
Expansion I/O(J3)	6 x AD, 4 x PWM, 1 x Uart
Expansion I/O(J4)	6 x IO, 1 x USB Host, 1 Soft Modem
Expansion I/O(J5)	2 x SPI, 1 x SSC, 1 x TWI, JTAG

Notice: some interface were extended by option module, if you want use these function, you should buy the option module, more details, you can see the NET-SAM9X25 product,

Step 2. Design your expansion board



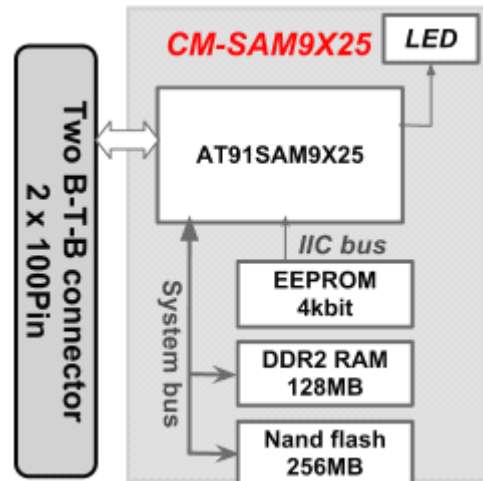
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After you evaluate the CM-SAM9X25 board, then you can get the PCB package library from the CD, and then you can design you PCB file with it.

Of course, you can tell us your needs, and we can design the expansion board for you.

CM-SAM9X25 Block Diagram

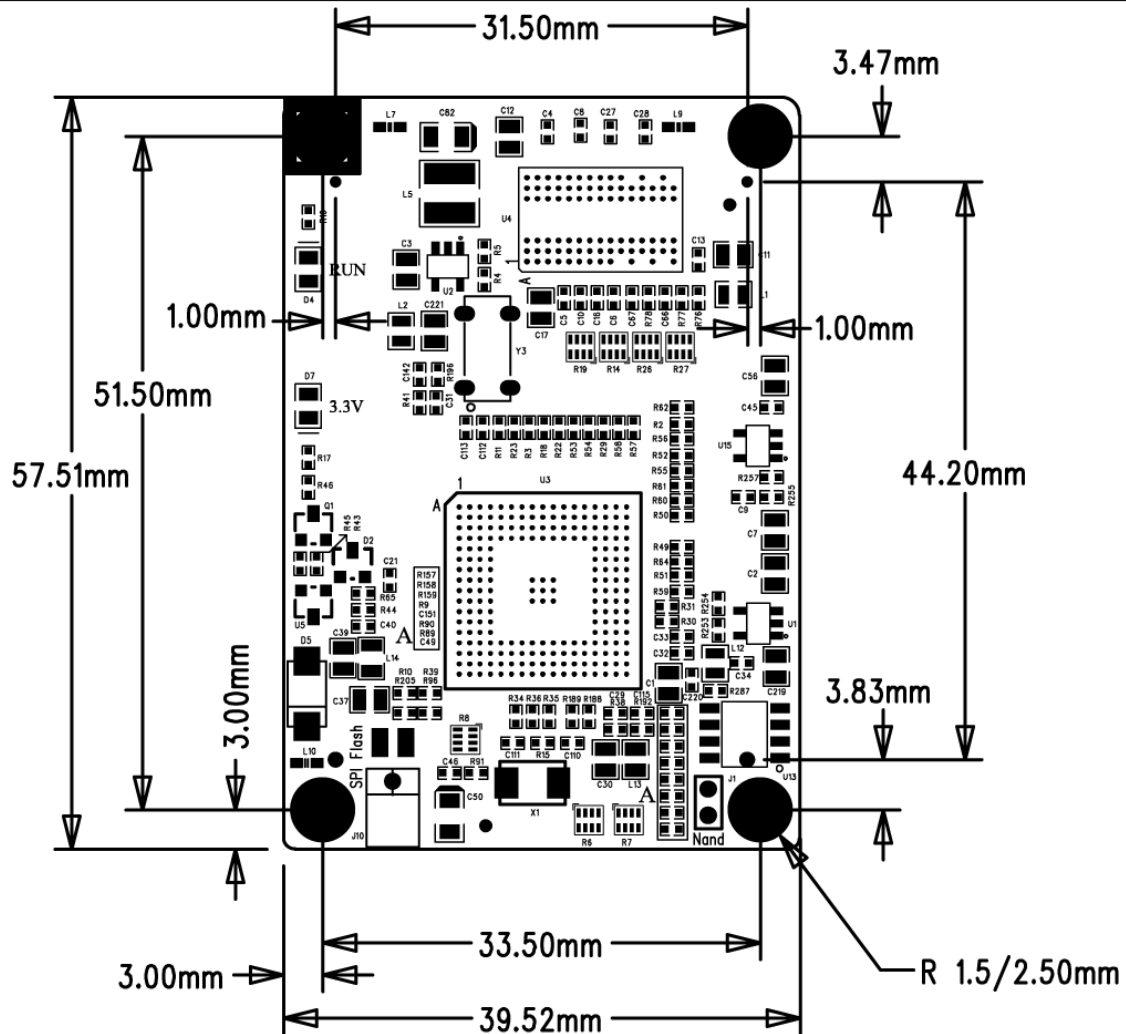




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CM-SAM9X25 Dimensions





CM-SAM9X25 Overview

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Order Information

Order No.	CM-X25
Item	CM-SAM9X25 CPU board
Contents	One CM-SAM9X25 CPU board One CD
Data in CD	Documents (user manual, Datasheet, Schematic, package library) Linux 2.6.39 BSP, Image File Cross compile tool chain
Price	Please contact us (market@armdevs.com)



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