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MBC-SAM9G25 Core Board

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PACKING: MBC-SAM9G25   MBC-SAM9G25-P

Item: ATMEL MBC-SAM9G25 Core Board
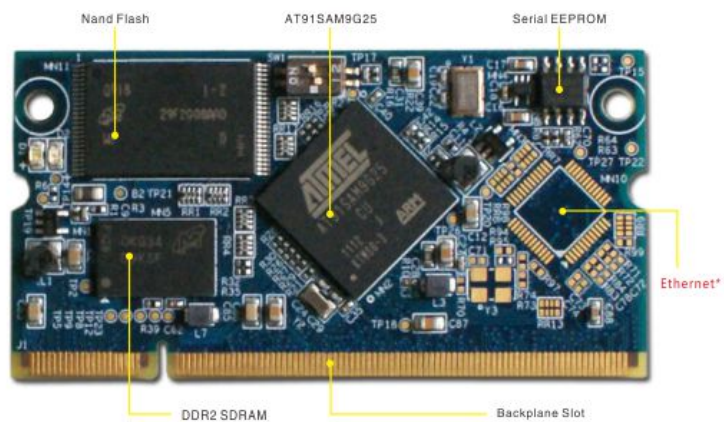
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Overview

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The ATMEL MBC-SAM9G25 ARM9 Board is an ARM embedded board produced by Embest, integrate the ATMEL ARM926EJ-S-based processor AT91SAM9G25, operating at 400MHz frequency, and can support WinCE and Linux. The board has 128MB DDR2 SDRAM, 256MB NandFlash, 4MB DataFlash, 64KB Serial EEPROM，128B one-wire EEPROM.

Top View

*Ethernet module is limited to the core board-P Series

Serial Data Flash

1-wire EEPROM

Bottom View

Hardware Features

ARM926EJ-S™ ARM® Thumb® Processor running up 400 MHz @ 1.0V +/- 10%

16 Kbyte Data Cache, 16 Kbyte Instruction Cache, Memory Management Unit

One 64 KByte internal ROM embedding bootstrap routine: Boot on NandFlash, SDCard, Dataflash or serial dataflash

Programmable order

One 32 KByte internal SRAM, single-cycle access at system speed

External 128MB DDR2 SDRAM, 256MB NandFlash, 4MB DataFlash, 64KB Serial EEPROM，128B one-wire EEPROM
10/100Mbps Ethernet MAC controller(only for MBC-SAM9G25-P）

Software Features(updating)

Test routines and resources based on MDK

Project	Description
audio	Audio test
nandflash	Get familiar with the Nandflash operation
fatfs	Get familiar with the basic operation of file system
filesystem	Base on FAT file system and Embedded file system lib implementation
datafalsh	Use SPI interface to access dataflash code efficiency.
twi-eeprom	Applying the twi host to access the eeprom chip
rtt	The application of the real-time/timer
rtc	The application of the real-time clock
twi	The application of twi with the Master and slave
emac	the application of the Ethernet
emac_uip_helloworld	The implementation of web-server and the telnet the device
emac_uip_telnetd	The application of remote access
emac_uip_webserver	The application of the web server
sdmmc	The application of sdcard interface
sdcard	The application of sdcard
fatfs_sdcard	The application of file system and the sdcard
usb_device_core	The application of USB UDPinterface
usb_device_hid_transfer	The application of USB Human Interface Device class
usb_device_cdc_serial	The application of USB Communication Device class
usb_device_hid_keyboard	Base on the USB HIDdriver, the button test
buzzer	The application of the buzzer

	tsensor	The application of the temperature sensor	
	lcd	The application of the lcd	
	touchscreen	The application of the touchscreen	
	Button	Use the interruption to test the button	

Linux-based operating system kernel driver source list

Type	Function	Description	Source code
Bootloader	AT91Bootstrap	Boot Uboot	√
	Uboot	Version:UBoot1.3.4 Functions: 1.Support NandFlash erase, read and write 2.Support image download through NET 3.Support environment variables set and save 4.Support the memory content display, contrast, changes 5.Support bootm and bootargs set	√
Kernel and Drivers	Kernel	Version: Linux-2.6.30	
	System Clock	System frequency: 400MHz	
	Display driver	Support a variety of different size LCD screen, resolution, adjustable	√
	Touchscreen	Touchscreen driver	√
	DM9000	DM9000 driver	√
	HSMMC	SD/MMC/SDIO driver	√
	IIC	I2C driver	√
	SPI	SPI driver	√
	NANDFLASH	Support 512 Byts small Page, 2K bytes large Page	√
	SERIAL	Serial driver	√
	WAVEDEV	Audio driver, support AC97 and IIS, default driver is IIS (WM8731）	√
	USB Host	Support USB keyboard, mouse and U disk	√
	DMA	DMA driver	√
	USB Gadget	USB Gadget driverFucntion: Support a 32MB NandFlash as U disk to use	√
File System	Jffs2 file system	Support jffs2 file system	
Cross Compiler	arm-none-linux-gnueabi	Cross tool chain	√
Download tools in PC	HyperTerminal	Serial debug terminal, USB download the image tool	
	SAM-BA1.13+USB	SAM-BA downloads Bootloader and kernel to NandFlash on the board through the USB line	

WinCE-based operating system kernel BSP source list

Type	Function	Description	Source code
Bootloader	FirstBoot	Boot Eboot, provide source and the last image FIRSTBOOT.nb0	
	Eboot	Provide source and the last image Eboot.nb0 Eboot Function: 1.NET download: Can set Mac address, static IP, dynamic DHCP IP, and download WinCE kernel 2.FormatNandFlash 3.Set startup delay time 4.Set the kernel address in the NandFlash, the address in the RAM, and the size of the kernel	
	Kernel	Version: WinCE6.0	
	System Clock	System frequency: 400MHz	
	Display	LCD driver, Support the 480 * 272 display	√
	EEPROM	EEPROM dirver	√

Kernel and Drives	EMACB	NET driver	√
	I2C	I2C bus driver	√
	NandFlash	NandFlash driver	√
	SDHC	Micro SD Card driver	√
	Serial	Serial driver	√
	Touchscreen	Touchscreen driver	√
	USB Host	USB Host driver, support EHCI and OHCI	√
	WAVEDEV	Audio, support WM8731	√
	DMA	DMA driver	√
	USB Device	USB Device driverFunction: Synchronization with PC	√
Synchronization Software in PC	Microsoft Activesync	Use to transmit data between PC and board with USB line	
Download tools in PC	HyperTerminal	Serial debug terminal, USB download the image tool	
	SAM-BA1.13+USB	SAM-BA downloads Bootloader and kernel to NandFlash on the board through the USB line	

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