附　录

附录 1　FAQ

1．AT91RM9200 Boot Rom problem using 8-bit parallel memories on NCS0

Question: Problem when trying to use the internal Boot Rom to access to an 8-bit parallel memories

Answer: There is an error in the internal Boot Rom program, the wait state number on CS0 is set to 0 during the Boot Rom initialisation. This gives an access time of 20ns at 48MHz Master Clock frequency. So the AT91RM9200 will not be able to access memories with standard access time such as 70 or 90ns. To conclude, the AT91RM9200 cannot boot from an 8-bit parallel memories. However, the AT91RM9200 internal Boot Rom can be used to boot from a SPI DataFlash or a Two-wire EEPROM.
Applies To: AT91RM9200
Post Date: 09/15/03

2．AT91RM9200DK Internal Boot ROM Program

Question: How to boot from the internal ROM Boot Program on the AT91RM9200DK Development Kit?

Answer: The Boot Mode Select (BMS) pin state during reset allows you to select the boot memory. By default, the BMS pin state on the AT91RM9200DK is set to low level and the AT91RM9200DK boot out from the external Flash memory which embeds the U-Boot boot program.
If the user want to boot out from the internal ROM Boot Program, the BMS pin state can be set to high level by removing the resistor named R159 from the PCB. This resistor can be found on the back side of the PCB just behind the 20-pin JTAG connector.
Applies To: AT91RM9200DK
Post Date: 11/26/03

3．Core and IO voltage power-up sequence and constraint

Question: Core and IO voltage power-up sequence and constraint?

Answer: There is no specific sequence to power up an AT91 microcontroller. Either the core voltage or I/O voltage can be powered first without any risk of destruction.
However, Output values and power consumption are not guaranteed during power up sequence. We advise to perform a product specific reset after stabilization of supplies to have a known state.
Although only one voltage rail can be supplied without any risk of destruction, correct

functionality of the device cannot be guaranteed.
Applies To: All AT91 products
Post Date: 10/30/03

4．Different definitions of the Boot Mode Select pin from the AT91RM9200's Full Datasheet (ref. 1768A-ATARM-22-APR-03).

Question: There is two different definition of the Boot Mode Select pin (BMS) from the AT91RM9200's Full Datasheet (ref. 1768A-ATARM-22-APR-03) from page 87 and page 127. Which one is correct?

Answer: Actually, there is two definitions of the BMS pin from two different pages. In Page 87, section line, within parenthesis, you must read "BMS high during the reset". This will be corrected in the next version of the datasheet.
Applies To: AT91RM9200's Full Datasheet (ref. 1768A-ATARM-22-APR-03)
Post Date: 06/12/03

5．Wrong bootcmd command on AT91 CD-ROM May 2003

Question: When I try to load ramdisk and zImage files by tftp, it fails why?

Answer: The bootcmd is used when using AT91RM9200-DK running under Linux. You need first to set the destination_address and after the file_name. On the cd-rom May 2003 the order is inverse. The correct bootcmd command is: > setenv bootcmd tftp 0x20008000 zImage \; tftp 0x21000000 ramdisk \; go 0x20008000 Do not forget to save your parameters. > saveenv. Reset the AT91RM9200-DK.
Applies To: AT91RM9200-DK
Post Date: 11/17/03

6．Flash/ROM Startup Sequence Debugging

Question: I want to debug my application stored in Flash/ROM memory from the reset to the REMAP command. How can I do?

Answer: By using the Watchdog Timer. Actually, the Watchdog can be programmed to generate an internal Reset. This fully resets the AT91 device without resetting the external hardware. This can be done by programming the watchdog by entering the following commands through the Command Line Interface (CLI) or by loading a script file from your Debugger:
Script file example for ARM ADS 1.2 with the AT91x40 Series:

```
Com Enable the vector catch for reset only
spp vector_catch 0x1
Com Set a breakpoint at address 0
br 0x0
Com This script follows the WD Enabling Sequence from the x40 Datasheet
```

Com Disable the Watchdog by clearing the bit WDEN:
Com This step is unnecessary if the WD is already disabled (reset state).
setmem 0xFFFF8000 0x2340 32
Com Initialize the WD Clock Mode Register:
Com (HPCV = 15 and WDCLKS = MCK/1024)
setmem 0xFFFF8004 0x0000373F 32
Com Restart the timer
setmem 0xFFFF8008 0x0000C071 32
Com Enable the watchdog: (Internal Reset enabled)
Com setmem 0xFFFF8000 0x00002341 32
Com Enable Internal Reset generation
setmem 0xFFFF8000 0x00002343 32
go

After the timeout period of the Watchdog, the debugger will stop at address 0 due to the "br 0x0" command.
If the reset has been performed correctly, the EBI_CSR0 must contain the reset value as described in the datasheet. From now, you can run step by step until the remap command. Note that the remap command cannot be stepping-in due to the pipeline. You can set a breakpoint after the remap command.
Applies To: All AT91 Products.
Post Date: 12/02/02

7．HOLD and HOLDA pin names showed on the AT91RM9200-DK Electrical Schematics

Question: The IO pins PC14 and PC15 are called HOLD/PC14 and HOLDA/PC15 on the AT91RM9200-DK Electrical schematics but I looked up any information on the datasheet and there is nothing about the HOLD and HOLDA features?

Answer: On AT91RM9200-DK User Guide, you can find the AT91RM9200-DK Electrical Schematics. The pins M17 and L13 are called, respectively, HOLD/PC14 and HOLDA/PC15 but these pins are only IO and the HOLD and HOLDA functions do not exist. The pin description on the datasheet is correct. These pin must be called PC14 and PC15 only.
Applies To:AT91RM9200
Post Date: 09/02/03

8．How to add SDRAM memory on an AT91RM9200 Development Kit?

Question: How to add SDRAM memory on an AT91RM9200 Development Kit?
Answer: At the factory, the AT91RM9200-DK is fitted with 2 SDRAM devices organized as 2M x 16-bit x 4 banks (device reference: Micron MT48LC8M16A2TG-8E), for a total amount of 32Mbytes of memory. In order to upgrade this amount of memory, a compatible footprint has been designed on the board to fit larger memory devices. To do so, the user has to replace the SDRAM fitted by default with 2 devices organized as 4M x 16-bit x 4 banks (device reference: Micron MT48LC16M16A2TG-7E), for a total amount of 64Mbytes of memory.

Applies To:AT91RM9200 Development Kit
Post Date: 10/02/03

9．U-Boot Binary Files

Question: I have erased the flash content on the AT91RM9200DK where can I find the U-Boot binary files?

Answer: U-Boot is made up of three parts, a primary bootstrap, a de-compression executable and a gzip-compressed binary executable. The primary bootstrap is concatenated to the de-compression executable into one single file called the boot image and named boot.bin. The gzip-compressed binary executable is called the U-Boot image and named u-boot.gz. These two files are available in the AT91CDROM under the following directory path: CDROM\Pages\Software\Software_ARM9\Tools\U-Boot
Applies To: AT91RM9200DK
Post Date: 10/30/03

10．USART RS485 Mode, Faulty Description of RTS Pin Behavior in AT91RM9200 Datasheet, 1768B

Question: USART RS485 Mode, Faulty Description of RTS Pin Behavior in AT91RM9200 Datasheet, 1768B

Answer: USART RS485 Mode, Faulty Description of RTS Pin Behavior in AT91RM9200 Datasheet, Atmel Literature Number 1768B On page 419 of the datasheet, In the RS485 Mode section: 1. "The RTS pin is driven low when the trasnmitter is operating." Should read: The RTS pin is driven high when the transmitter is operating. 2. "Significantly, the RTS pin remains low when timeguard is programmed..." Should read: "Significantly, the RTS pin remains high when timeguard is programmed..." 3. Figure 196 and Figure 197 give incorrect descriptions of RTS behavior.
Applies To:
Post Date: 08/29/03

11．Wrong bootcmd command on AT91 CD-ROM May 2003

Question: When I try to load ramdisk and zImage files by tftp, it fails why?

Answer: The bootcmd is used when using AT91RM9200-DK running under Linux. You need first to set the destination_address and after the file_name. On the cd-rom May 2003 the order is inverse. The correct bootcmd command is: > setenv bootcmd tftp 0x20008000 zImage \; tftp 0x21000000 ramdisk \; go 0x20008000 Do not forget to save your parameters. > saveenv. Reset the AT91RM9200-DK.
Applies To: AT91RM9200-DK
Post Date: 11/17/03

附录 2　JTAG 接口电路