

Handout On
Bring Up ARM11 Development Board with SD Card
HL
S12

I. Introduction

This handout is written for ARM11 development board as in Figure 1. In this note, I will cover using SD card to boot the board and to port the OS. There are 2 steps in the process to bring up the board as given in Table 1.



Figure 1. ARM11 development board.

Table 1. Four steps to bring up ARM9 development board

Steps	Description	Note
Step 1. Prepare BIOS on the SD card	Use the manufacture's program to format SD card and to load the manufacturer's boot loader, superboot.bin, to the host platform.	
Step 2. Copy images to the SD card	Copy the already built Linux kernel and file systems to the SD card.	

II. Prepare SD Card

2.1 Background on ARM11 BIOS

There are 2 different BIOS for ARM11 development board as described in Table 3.

Table 3. BIOS for ARM11 board.

Name of the BIOS	Note
U-boot.bin	Open source, but can not be written to SDHC card exceeding 2GB.
Superboot.bin	The manufacturer's bootloader for the board.

2.2 Prepare BIOS for ARM11

We will discuss Windows 7 or XP for BIOS prep on SD card. Note you will have to have at least 4G card. From distribution CD, from \tools folder find "SD-Flasher.exe", then right click on

the mouse to open it as an “administrator”, the pop-up window will appear as in Figure 2, then click on “...” button to find the superbios from the \tools folder, and select it. Then insert the SD card, click “scan” on the right panel, you will see the card. Note this card under available is “No”. Then click on the “re-layout” button on the bottom of the pop-up window. Click on “yes” when prompt.

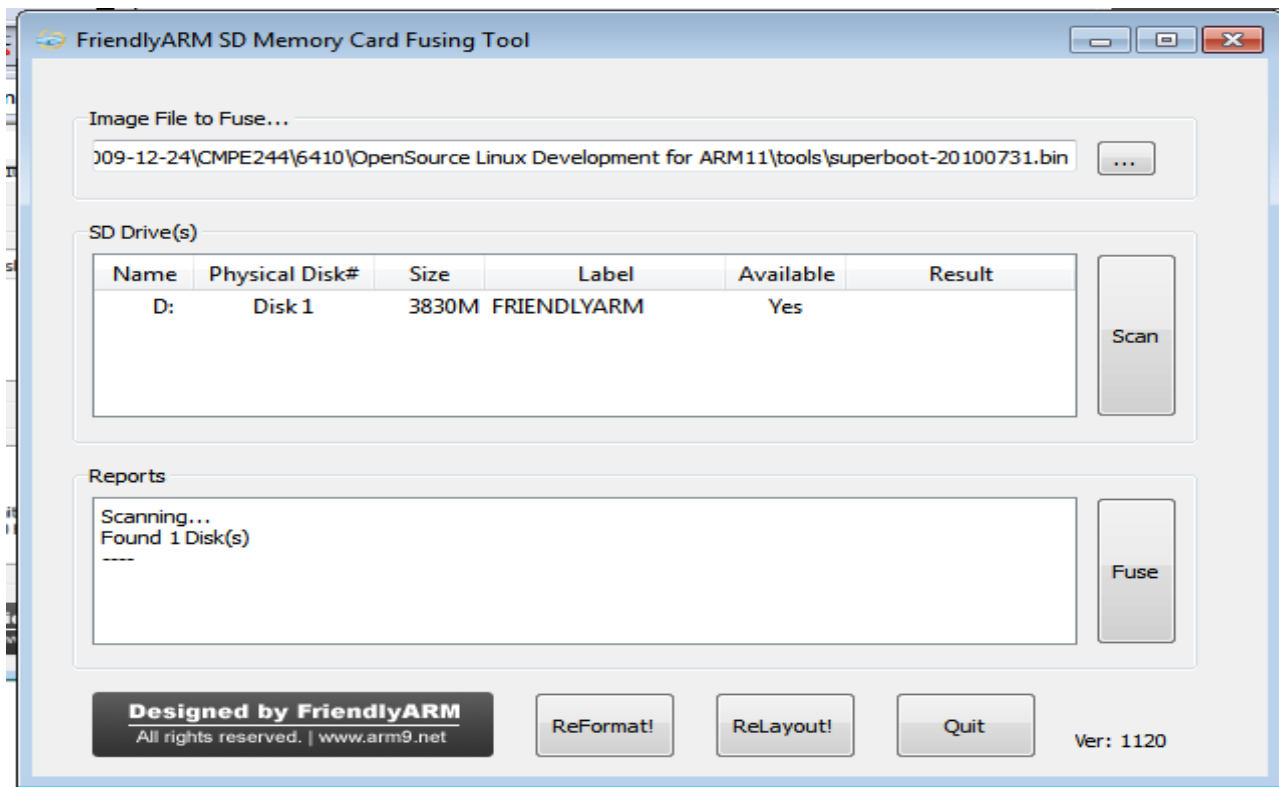


Figure 2. Using “SD-Flasher.exe” to prepare BIOS SD card.

Now, it is ready to write the BIOS to the SD card by clicking on Fuse on the right panel, once it is done, it will show in the “Report” window as in Figure 3.

Now start hyperterminal by setting hyper-terminal connection between the host computer and the ARM 11 board by using the RS232 cable provided from the development kit, (the RS232 serial cable should be straight through cable with direct connection) and connect the host PC and the ARM11 board. Note: Use COM0 port (the one next to the wall mount power connector), the settings for the hyper-terminal is given as follows:

1. bit rate 115200;
2. 8N1;
3. No flow control.

Once this setting is done, place the SW2 switch (the switch on the edge of the board next to the bank of push button switches) towards the outer edge of the board, then power on the ARM11 development kit, you can see the hyper-terminal console now displays the boot message as in Figure 4.

To see if the BIOS works, insert it to the ARM11 board, and set the S2 switch to SDBOOT, then turn the power on, when you see the LED1 flashing, that means superbios is working correctly. Now use the hyper-terminal connection, you can see the superbios message as in Figure 4. Note you can also restore SD card for your computer use by using SD-Flasher re-format function.

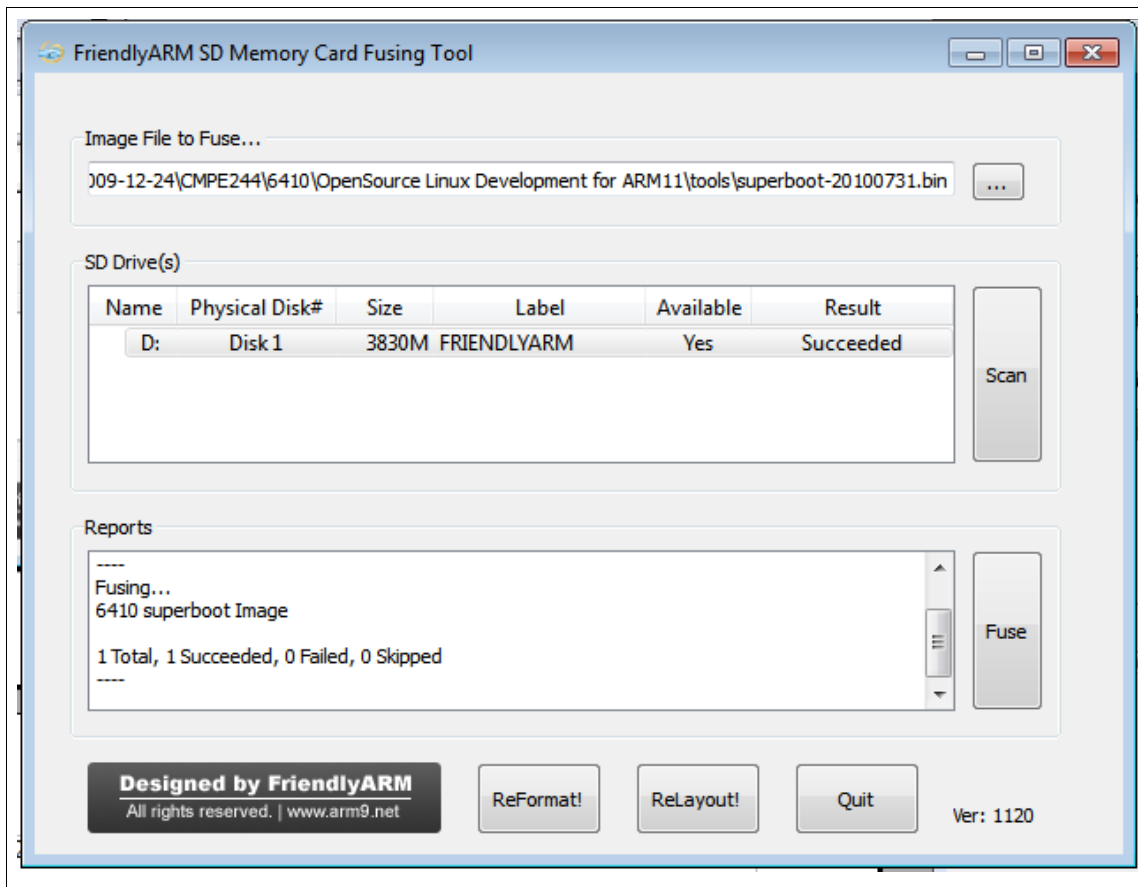


Figure 3. The BIOS “superboot” was written to SD card successfully.

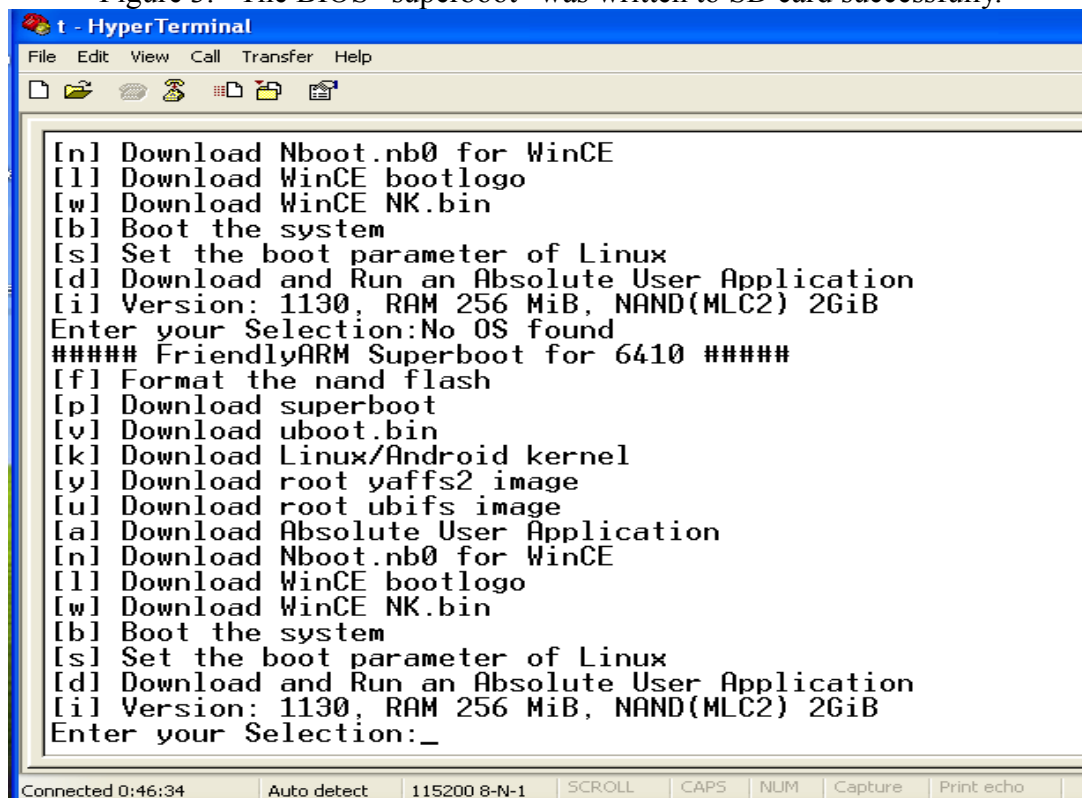


Figure 4. The hyper-terminal console displays the superboot message.
(END)