Embest SBC2440-I Single Board Linux User Manual

V1.0

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CONTENTS

1. Prerequisites	3
1.1 Host Computer Requirements	3
1.2 Hardware setup	3
2. INSTALLING THE TOOLCHAINS AND SOURCE CODE FILE	3
2.1 Installing the toolchains	3
2.2 Installing Linux source code	4
2.3 Set the environment variable	4
3.COMPILE VIVI.	4
4. CONFIGURE AND COMPILE KERNEL	7
5. MAKE YAFFS FILE SYSTEM IMAGE	8
6.LINUX APPLICATION PROGRAM DEVELOPMENT GUIDE	9
7. HOW TO BURN LINUX IMAGE TO NANDFLASH	10
Step 1. Burn vivi to NANDflash using JTAG Cable and SJF2440.exe	10
Step 2 Install USB driver	13
Step 3. Burn Linux kernel and File System via USB	18

1. Prerequisites

1.1 Host Computer Requirements

In order to use this demonstration and further tools, the following minimum personal computer requirements must be met:

- Personal computer running Redhat 9.0 (suggest fully installing Linux)
- One free RS232 serial port (DB9)
- Minimum 500MB of disk space
- A Linux terminal program such as Minicom

1.2 Hardware setup

The SBC2440-I kit includes a basic guide for setting up hardware. It is assumed that the kit is configured as described in this guide. Here are the minimum required connections for using this demo:

- SBC2440-I Single Board
- 12V DC power supply
- RS232 Serial cable
- USB Cable
- JTAG Cable made by Embest
- Hyper terminal
- DNW.exe

2. Installing the toolchains and source code file

This section mainly introduce how to install arm-linux development environment on Redhat 9.0 Including:

Install cross compiler

Install kernel source code

Install tools

The below steps are based on Redhat 9.0. Please make sure your hard disc has at least 1GB surplus space.

2.1 Installing the toolchains

In order to build the Linux kernel, you will need a Linux PC running Red Hat 9.0 with the necessary GNU compiler toolchains installed.

Please login in using the user name root and insert the SBC2440-I CD in your CD-ROM.

Step1: Mount CD #mount /dev/cdrom /mnt/cdrom Step2: get in CD directory #cd /mnt/cdrom/Linux
Step3: install compiler
#tar xvzf arm-linux-gcc-3.4.1.tgz -C /
Decompress to create the directory /usr/local/arm/3.4.1 where the arm-linux-gcc compiler is located.

2.2 Installing Linux source code

Step1: get into the CD directory #cd /mnt/cdrom/Linux Step2: install SBC2440-I kernel source code #tar xvzf SBC2440I.tgz –C / create /opt/Embest /SBC2440-I directory, the structure of the directory is as below: |____ vivi bootloader of SBC2440-I board |____ kernel –2.6.13 Kernel source code 2.6.13 of the SBC2440-I board ___ root_default File System without QT **QT File System with Tounch panel** ___ root_qtopia_tp **QT File System with USB mouse** ___ root_qtopia_mouse ____examples Example source code Jflash Flash programmer tool |____mkyaffs yaffs file system making tool

Following operations all run under the above directory.

2.3 Set the environment variable

To easily use arm-linux-gcc compilersystem, it is recommended to add arm-linux tool chain directory to environment variable PATH.

Open **/etc/profle** file and add the words as showed in belowo red diagram box to set the environment variable. (Note: valid only after restart)

Figure 2-1

3.Compile vivi

Vivi is a bootloader that mizi company designs for ARM processor, as now vivi only supports telecommunicating with host using serial port, so you must use a serial cable to connect target board and host. SBC2440-I uses a standard male/female serial port cable.

Enter vivi source code directory:

cd /opt/Embest/SBC2440I/vivi

Execute "make menuconfig" command to configuration vivi

make menuconfig

Select "Load on Alternate Configuration File" menu in the window pop up, press <Select>



Figure 3-1

Then enter the menu ,input "arch/def-configs/smdk2440", as shown in Figure 3-2.

Smdk 2440 is the configuration file for SBC2440-I, located at the directory vivi/arch/def-configs, the directory includes some configuration files suitable for various boards.



Figure 3-2 Press <OK> Figure 3-1 shows again , select exit



Figure 3-3

Then "Do you wish to save your new vivi configuration " dialog pop up, press <YES> and save the setup,.

Execute "make" command to compile vivi. #make

If the compilation is successful, a vivi binary image file will be created in current directory.

4. Configure and compile kernel

The kernel sources is stored at the directory /opt/Embest/SBC2440-I/kernel-2.6.13.

Like vivi, user should excute command"make menuconfig"to configuration kernel before compile. Enter kernel source code directory:

#cd /opt/Embest/SBC2440I/kernel-2.6.13 #make menuconfig

e E	dit View Termi	nal Co Heln
	Kornol w2 4 18	ma <u>Go n</u> ep
mux	Kerner vz.4.10-	
		Main Menu
Ar ho <e mo</e 	rrow keys naviga otkeys. Pressir sc> <esc> to exi odule capable</esc>	te the menu. <enter> selects submenus>. Highlighted letters are ng <y> includes, <n> excludes, <m> modularizes features. Press it, <? > for Help. Legend: [*] built-in [] excluded <m> module < ></m></m></n></y></enter>
		Character devices>
		M ltimedia devices>
		Dile systems>
		Console drivers>
		Sound>
		M ltimedia Capabilities Port drivers>
		SB support>
		luetooth support>
		ernel hacking>
		Load an Alternate Configuration File
		save Configuration to an Alternate File
L		
		<pre><select> < Exit > < Help ></select></pre>

Figure 4-1

Select highlighted letters "Load an Alternate Configuration File",press <Select> Then enter the menu ,input the kernel configuration file, for example ,input "config_cs8900_s35", as shown in Figure 4-2.

• config_cs8900_n35 Kernel configuration file for NEC 3.5" tft LCD

config_cs8900_s35

Kernel configuration file for Samsung 3.5" tft LCD

- config_cs8900_tft84 Kernel configuration file for Sharp 8.4" tft LCD
- config_dm9000_n35 Kernel configuration file for NEC 3.5" tft LCD
- config_dm9000_s35
- config_ dm9000_tft84

Kernel configuration file for Samsung 3.5" tft LCD

n9000_tft84 Kernel configuration file for Sharp 8.4" tft LCD

These kernel configuration files are located at the directory kernel-2.6.13.

Figure 4-2

Press <OK> ,return main memu.

Select "Save configuration to Alternate File ", press <Exit>

Then "Do you wish to save your new kernel configuration" dialog pop up, press <YES> and save the setup.

make zlmage

If the compilation is successful, a kernel image file will be created in directory arch/arm/boot.

5. Make yaffs File System Image

Files of file system are under the directory /opt/Embest /SBC2440-I and consist of below contents:

root_default	File System without QT
root_qtopia_mouse	QT File System with USB
root_qtopia_tp	QT File System with Tounch panel

Use mkyaffsimge program can make one directory to be a yaffs image file and then download to SBC2440-I single board via USB port.

Steps1: In order to use the program more conveniently, please copy it to the directory /usr/bin. #cd /opt/Embest/SBC2440I/mkyaffs #cp mkyaffsimge /usr/bin

Step2: create image file

#cd /opt/Embest/SBC2440I/
#mkyaffsimage root_qtopia_tp root_qtopia_tp.img
root_qtopia_tp.img will be created under the directory /opt/Embest/SBC2440-I.

6.Linux application program development guide

Provided Linux app is under the directory /opt/Embest/SBC2440l/examples, below is a Hello example: **Example1: Hello**

Step1: compile source code #include <stdio.h>

int main(void) {

```
printf("hello, Embest!\n");
```

}

Step2: compile hello Use below command to compile: #arm-linux-gcc –o hello .c create hello execution file

Step3: download and run

To move the execution file to SBC2440-I board mainly has two ways:

(1) Copy to mobile harddisk like USB disk

Insert USB disk into the USB port of PC and execute below command to copy hello to USB disk.

mount /dev/sda1 /mnt

#cp hello /mnt

#umount /mnt

Please plug out U disc and insert it to USB Host of SBC2440-I board and follow below commands:

#mount /dev/sda1 /mnt; mount U disc#cp /mnt/hello bin; copy hello to bin directory#hello: execute hello

(2) Through network

The main steps for downloading program from net is: First copy hello to ftp share directory and then use ftp download hello to SBC2440-I board, change the execution right and run as below:

On PC:

#cp hello /home/ftp

On SBC2440-		
#cd /bin	; enter into bin directory	
#ftp 192.168.0	i ; login in ftp server	
>get hello	; download hello	
>bye	; exit ftp login	
#chmod a+x	rello ; change the execution right of hell	0

7. How to burn Linux Image to NANDFLASH

Linux image locate in CD_ROM/Image/linux/. Burn linux image to NandFlash includes below steps: **Step 1:** Burn vivi to NANDflash using JTAG Cable and sjf2440.exe **Step 2:** Install USB driver **Step 3:** Burn Linux kernel and File System via USB

Note:

If SBC2440-I preload sbc_vivi, Step1 can be skipped. Please do not destroy vivi at will. If your PC has installed USB driver for SBC2440-I ,Step 2 can be skipped.

Step 1. Burn vivi to NANDflash using JTAG Cable and

SJF2440.exe

INSTALLING GIVEIO.SYS on PC

SJF2440.exe is a JTAG flash programmer of S3C2440 CPU. In Windows NT/2000/XP, any application can't access the I/O such as the parallel port. GIVEIO.SYS is required for enabling SJF2440.exe to access the parallel port without any memory fault. In windows 95/98, GIVEIO.SYS isn't needed .

For Windows *2000, use the following procedure:

- 1) Login as administrator
- 2) Copy the giveio.sys file to %systemroot%\system32\drivers.
- 3) Choose Control Panel, and choose Add/Remove Hardware.
- 4) Select 'Add/Troubleshoot a device'
- 5) Select 'Add a new device' and choose Next, and select 'No, I want to select the hardware from a list'
- 6) Select 'Other devices' and choose 'Have Disk.'
- 7) Choose 'Browse' to locate the folder where giveio.inf file (CD_ROM\Tools\)
- 8) Complete the remained process

For Windows *NT, use the following procedure:

- 1) Login as administrator.
- 2) Open a DOS command window.
- 3) Copy giveio.sys to %systemroot%\system32\drivers.
- 4) Install the driver using the instdrv utility specifying the driver name and the FULL PATH NAME to the giveio.sys file.

Instdrv giveio c:\winnt\system32\drivers\giveio.sys

- 5) To enable the driver to start automatically each time you boot, use the following procedure:
 - --Chose Setting and choose Control Panel
 - --Chose Devices, select giveio from the list, and choose Startup

--Select Startup Type Automatic from the Device menu

For Windows *XP, use the following procedure:

- 1) Copy the included GIVEIO.SYS file to your C:\WINNT\system32\drivers directory.
- 2) Choose "Add Hardware" from the Control Panel
- 3) Choose NEXT when the Add Hardware Wizard appears.
- 4) Check "Yes, I have already added the hardware" button; then choose NEXT.
- 5) Scroll down and select "Add a new hardware device", then choose NEXT.
- 6) Select "Install hardware manually from list", then choose NEXT.
- 7) Select "Ports" from the hardware list and then choose NEXT.
- 8) Select "Have Disk" and browse to the giveio.inf file.

9) Choose OK, then NEXT, then NEXT, then CONTINUE ANYWAY when the digital signing warning message appears.

10) Confirm and finish the installation by choosing NEXT and then FINISH.

Burn VIVI to single board

Before the burning is started, please first connect the JTAG supplied with development board to PC's DB25 parallel port, connect the other end to the custom JTAG port of development board, then power on development board

1) In the DOS command window on PC, change the current directory to the one containing SJF2440.exe and sbc_vivi .Run SJF2440.exe as following:

SJF2440.exe **/f:sbc_vivi** Enter '0', detect flash type. Enter '0', select the program function Enter '0', set the program start block number After finish burning, Enter '2', exit Shows as follow:

C:\WINDOWS\cystem32\cmd.exe	_ @ X
E:\sbc>SJF2440.exe /f:sbc_vivi	
++ : SEC JTAG FLASH(SJF) ∪ 0.1 : : (S3C2440X & SMDK2440 B/D) :	
[SJF Main Menu] 0:K9S1208 prog 1:28F128J3A prog 2:AM29LV8 4:Exit	00 Prog 3:Memor
Select the function to test:0	
[K9S1208 NAND Flash JTAG Programmer] K9S1208 is detected. ID=0xec76 0:K9S1208 Program 1:K9S1208 Pr BlkPage 2 Select the function to test :0	:Exit
[SMC(K9S1208U0M) NAND Flash Writing Program]	
Source size:0h~194c3h	
Available target block number: 0~4095 Input target block number:0 target start block number =0 target size (0x4000×n) =0x1c000 STATUS:Epppppppppppppppppppppppppppppppppppp	:E×it
E:\shc>	-
•	▶ //:

Power off and move the JTAG cable away from the SBC2440-I single board.

Power off and move the JTAG cable away from the SBC2440-I single board.

2)

Click the Windows program menu, choose Hyper terminal from accessory and set Bits per second 115200,Data bits 8,Parity none, Stop bits 1,Flow control none.

Use the serial port cable supplied with single board; connect serial port of single board with PC. Power on SBC2440-I while press the SPACE key on PC; vivi output information is displayed in Hyper Terminal. Be sure you have entered ViVi mode, shows as below:

🏶 115200 - HyperTerminal		
File Edit View Call Transfer Help		
VIVI version 0.1.4 (root@vmwarelinux) (gcc version 2.95.3 20010315 (releas .1.4 Mon Feb 5 15:04:36 CST 2007 MMU table base address = 0x33DFC000 Succeed memory mapping.		
FriendlyARM S3C2440A USB Downloader ver R0.03 2004 Jan		
USB: IN_ENDPOINT:1 OUT_ENDPOINT:3 FORMAT: <addr(data):4>+<size(n+10):4>+<data:n>+<cs:2> NOTE: Power off/on or press the reset button for 1 sec in order to get a valid USB device address.</cs:2></data:n></size(n+10):4></addr(data):4>		
NAND device: Manufacture ID: 0xec, Chip ID: 0x76 (Samsung K9D1208V0M) Found default vivi parameters Press Return to start the LINUX/Wince now, any other key for vivi type "help" for help. FriendlyARM>		
Connected 0:08:44 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo		

Power off SBC2440-I single board.

Step 2 Install USB driver

The USB driver is supplied by Samsung Company. Recommend installing USB driver under windows 98, XP or NT operating system. DNW tool is supplied by Sumsung Company.It locates in directory CD\Tools.

Run dnw.exe and select configuration/option menu and set UART/USB Options

DNW v0.50 [COM:x][USB:x]	
Serial Port USB Port Configuration Help	
Options	<u>*</u>

You must set serial part as [COM1, 115200bps]

Baud Rate -	COM Port	OK
115200	• COM 1	Cance
C 57600	C COM 2	
C 38400	C COM 3	
C 19200	C COM 4	
C 14400		
C 9600		
SB Port		
obion		

Select Serial Port/Connect menu.

Power on SBC2440-I single board while press the PC SPACE key and enter vivi mode, show as below:



Then you can see "Found New Hardware Wizard", press "Next" button



Select "Search for a suitable driver for my device (recommended)", Press "Next" button.

Found New Hardware Wizard	
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.	410
This wizard will complete the installation for this device:	
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.	
What do you want the wizard to do?	
 Search for a suitable driver for my device (recommended) 	
O Display a list of the known drivers for this device so that I can choose a specific driver	
<back next=""> Cancel</back>	

Select "Specify a location", press "Next".

Where r	ver Files
Search f	or driver files for the following hardware device:
- Providence and the second se	SEC S3C2410X Test B/D
The wiza any of th	ard searches for suitable drivers in its driver database on your computer and in e following optional search locations that you specify.
To start insert the	the search, click Next. If you are searching on a floppy disk or CD-ROM drive, e floppy disk or CD before clicking Next.
Optiona	I search locations:
F F	loppy <u>d</u> isk, drives
ΠË	D-ROM drives
	pecify a location
. <u>≋</u> ▼ <u>s</u>	
	licrosoft Windows Update

Locate usb_driver directory by "Browse"

Found Ne	w Hardware Wizard	×
2	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from: E:\SBC2440I\usbdriver	Browse

Press"OK"

Press "Next"

Found New Hardware Wizard
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
SEC S3C2410X Test B/D
Windows found a driver for this device. To install the driver Windows found, click Next.
e:\sbc2440i\usbdriver\secbulk.inf
<back next=""> Cancel</back>

Press "Finish" button.

Found New Hardware Wizard	
	Completing the Found New Hardware Wizard SEC SOC Test Board Windows has finished installing the software for this device.
	To close this wizard, click Finish.
	< <u>B</u> ack (Finish) Cancel

Now the USB driver is installed on PC successfully

Step 3. Burn Linux kernel and File System via USB

Use the serial port cable supplied with single board; connect serial port of single board with PC. Connect USB device of single board and PC USB host with a USB cable .

Run the DNW.exe.

🔤 DNW v	0.49 [COM	4:x][USB:x]		<u> </u>
Serial Port	USB Port	Configuration	Help	
				*
				-

Select DNW/Configuration menu and set configuration under DNW as below:



Power on SBC2440I while press the SPACE key on PC, vivi output information is displayed in DNW

Be sure the menu is [COM1, 115200bps], [USB:OK] Be sure you have entered ViVi mode,

DNW v0.49 [COM1,115200bps][USB:OK] _ 🗆 🗙 Serial Port USB Port Configuration Help MMU table base address = 0x33DFC000 * Succeed memory mapping. | FriendluARM S3C2440A USB Downloader ver R0.03 2004 Jan + USB: IN_ENDPOINT:1 OUT_ENDPOINT:3 FORMAT: <ADDR(DATA):4>+<SIZE(n+10):4>+<DATA:n>+<CS:2> NOTE: Power off/on or press the reset button for 1 sec in order to get a valid USB device address. NAND device: Manufacture ID: 0xec, Chip ID: 0x76 (Samsung K9D1208U0M) Found default vivi parameters Press Return to start the LINUX/Wince now, any other key for vivi type "help" for help. FriendlyARM>

Execute command to partition the Nandflash block

bon part 0 320k 2368k

Serial Port USB Port Configuration Help	
FriendlyARM> bon part 0 320k 2368k	
doing partition	Ċ.
size = 0	
size = 327680	
size = 2424832	
check bad block	
part = 0 end = 327680	
part = 1 end = 2424832	
part = 2 end = 67108864	
1228000: is bad	
k = 0 block = 1014	
parte:	n,
offset = 0	
size = 32/680	
bad_block = 0	
part1:	
0++set = 327680	
512e = 2097152	
Dad_DIOCK = 0	
partz:	
UTTSEL = 2424832	
5128 - 04051204	
	4
1014	-

Type command download vivi using USB

Type command download Linux kernel using USB:

Load flash kernel u

ENW v0.49 [COM1,115200bps][USB:OK]	<u> </u>
Serial Port USB Port Configuration Help	
size = 1048576	<u> </u>
bad_block = 0	
part2:	
offset = 1245184	
size = 65847296	
bad_block = 0	
FriendlyARM> load flash vivi u	
USB host is connected. Waiting a download.	
Now, Downloading [ADDRESS:30000000h,TOTAL:103630]	
RECEIVED FILE SIZE: 103630 (101KB/S, 1S)	
Downloaded file at 0x30000000, size = 103620 bytes	
Found block size = 0x0001c000	
Erasing done	
Writing done	
Written 103620 bytes	
FriendlyARM> load flash kernel u	
USB host is connected. Waiting a download.	
	•

Select USB Post/Transmit menu

Locate Linux image directory, select kernel image file. The default kernel is zImage_s35

zlmage type	Description
zImage_cs8900_n35	Image for NEC 3.5" LCD /CS8900 Net Chip
zImage_cs8900_s35	Image for Samsung 3.5" LCD /CS8900 Net Chip
zImage_cs8900_tft84	Image for Sharp 8.4" 640x480LCD /CS8900 Net Chip
zImage_DM9000_n35	Image for NEC 3.5" LCD /dm9000 Net Chip
zImage_DM9000_s35	Image for Samsung 3.5" LCD /dm9000 Net Chip
zImage_DM9000_tft84	Image for Sharp 8.4" 640x480LCD /dm9000 Net Chip

•••• DNW v0.49 [COM1,115200bps][USB:OK]	<u> </u>
Serial Port USB Port Configuration Help	
Downloaded file at 0x30000000, size = 103620 bytes Found block size = 0x0001c000 Erasing done Writing done Written 103620 bytes FriendlyARM> load flash kernel u USB host is connected. Waiting a download.	<u></u>
Now, Downloading [ADDRESS:30000000h,TOTAL:823750] RECEIVED FILE SIZE: 823750 (804KB/S, 1S) Downloaded file at 0x30000000, size = 823740 bytes Found block size = 0x000cc000 Erasing done Writing done Written 823740 bytes Erase TOC of Wince, 0K! FriendluARM>	

Finish downloading Linux image.

Type command download Linux file system:

loadyaffs root u

Locate Linux file system directory, select Linux file system image file.

<pre> root_default.img</pre>	File System without QT
<pre> root_qtopia_mouse.img</pre>	QT File System with USB mouse
root_qtopia_tp.img	QT File System with Tounch panel

•••• DNW v0.49 [COM1,115200bps][USB:OK]	_ 🗆 ×
Serial Port USB Port Configuration Help	
Erasing done	
Writing done	
Written 103620 bytes	
FriendlyARM> load flash kernel u	
USB host is connected. Waiting a download.	
Now, Downloading [ADDRESS:30000000h,TOTAL:823750]	
RECEIVED FILE SIZE: 823750 (804KB/S, 1S)	
Downloaded file at 0x30000000, size = 823740 bytes	
Found block size = 0x000cc000	
Erasing done	
Writing done	
Written 823740 bytes	
Erase TOC of Wince, OK!	
FriendlyARM> loadyaffs -e root u	
USB host is connected. Waiting a download.	
	-

The download procedure will take about 2 minutes.



Now Linux kernel and file system have been burned into Nandflash.

	0bps][USB:OK]	_ 🗆 X
Serial Port USB Port Configura	ition Help	
03944/03947=99		<u> </u>
0x03ff0000/03945 03945/03947=99	0×0000000/00000	
0x03ff4000/03946 03946/03947=99	0×0000000/00000	
0x03ff8000/03947 03947/03947=100	0×0000000/00000	
Load yaffs OK: Blocks scanned: 3947, RECEIVED and Writed F FriendlyARM>	Blocks erased: 3947, Blocks are bad: ILE SIZE:50711242 (369KB/S, 134S)	0

Close DNW.exe.

Click the Windows program menu, choose Hyper terminal from accessory and set Bits per second 115200,Data bits 8,Parity none, Stop bits 1,Flow control none.

Reset SBC2440-I single board, linux start up information will be displayed in Hyper terminal, showing as

VIVI version 0.1.4 (root@vmwarelinux) (gcc version 2.95.3 20010315 (release)) #0.1.4 Tue Mar 20 19:17:15 CST 2007 MMU table base address = 0x33DFC000 Succeed memory mapping. DIVN_UPLL0 MPLLVal [M:7fh,P:2h,S:1h] CLKDIVN:5h +-----+ | FriendlyARM SBC2440 USB Downloader ver1.0 | +-----+

USB: IN_ENDPOINT:1 OUT_ENDPOINT:3 FORMAT: <ADDR(DATA):4>+<SIZE(n+10):4>+<DATA:n>+<CS:2> NOTE: Power off/on or press the reset button for 1 sec

in order to get a valid USB device address.

NAND device: Manufacture ID: 0xec, Chip ID: 0x76 (Samsung K9D1208V0M) Could not found stored vivi parameters. Use default vivi parameters. Press Return to start the LINUX/Wince now, any other key for vivi Copy linux kernel from 0x00050000 to 0x30008000, size = 0x00200000 ... done zImage magic = 0x016f2818 Setup linux parameters at 0x30000100

linux command line is: "noinitrd root=/dev/mtdblock2 init=/linuxrc console=ttySAC0" MACH TYPE = 782NOW, Booting Linux..... Uncompressing Linux...... done, booting the kernel. Linux version 2.6.13 (root@xq) (gcc version 3.4.1) #1 Sat Apr 14 12:03:36 CST 2007 CPU: ARM920Tid(wb) [41129200] revision 0 (ARMv4T) Machine: SBC2440 ATAG_INITRD is deprecated; please update your bootloader. Memory policy: ECC disabled, Data cache writeback CPU S3C2440A (id 0x32440001) BUG: mapping for 0x19000000 at 0xd0000000 overlaps vmalloc space S3C2440: core 405.000 MHz, memory 101.250 MHz, peripheral 50.625 MHz S3C2410 Clocks, (c) 2004 Simtec Electronics CPU0: D VIVT write-back cache CPU0: I cache: 16384 bytes, associativity 64, 32 byte lines, 8 sets CPU0: D cache: 16384 bytes, associativity 64, 32 byte lines, 8 sets **Built 1 zonelists** Kernel command line: noinitrd root=/dev/mtdblock2 init=/linuxrc console=ttySAC0 irq: clearing pending ext status 00000200 irq: clearing subpending status 0000002 PID hash table entries: 512 (order: 9, 8192 bytes) timer tcon=00000000, tcnt a4ca, tcfg 00000200,00000000, usec 00001e57 Console: colour dummy device 80x30 Dentry cache hash table entries: 16384 (order: 4, 65536 bytes) Inode-cache hash table entries: 8192 (order: 3, 32768 bytes) Memory: 64MB = 64MB total Memory: 61696KB available (2325K code, 580K data, 180K init) Mount-cache hash table entries: 512 CPU: Testing write buffer coherency: ok NET: Registered protocol family 16 USB Power Control, (c) 2004 Simtec Electronics S3C2440: Initialising architecture S3C2440: IRQ Support S3C2440: Clock Support, UPLL 48.000 MHz SCSI subsystem initialized usbcore: registered new driver hub S3C2410 DMA Driver, (c) 2003-2004 Simtec Electronics DMA channel 0 at c4800000, irg 33 DMA channel 1 at c4800040, irg 34 DMA channel 2 at c4800080, irq 35 DMA channel 3 at c48000c0, irq 36 NetWinder Floating Point Emulator V0.97 (double precision) devfs: 2004-01-31 Richard Gooch (rgooch@atnf.csiro.au) devfs: boot options: 0x1 yaffs Apr 14 2007 11:58:50 Installing. Initializing Cryptographic API

Console: switching to colour frame buffer device 64x30 S3C24X0 fb0: s3c2410fb frame buffer device initialize done GPIO L3 bus interface for S3C2440, installed S3C2410 RTC, (c) 2004 Simtec Electronics s3c2410-rtc s3c2410-rtc: rtc disabled, re-enabling leds initialized Serial: 8250/16550 driver \$Revision: 1.90 \$ 4 ports, IRQ sharing disabled s3c2410 serial0 at MMIO 0x50000000 (irq = 70) is a S3C2440 devfs_mk_dev: could not append to parent for tts/0 s3c2410_serial1 at MMIO 0x50004000 (irq = 73) is a S3C2440 devfs mk dev: could not append to parent for tts/1 s3c2410_serial2 at MMIO 0x50008000 (irq = 76) is a S3C2440 devfs mk dev: could not append to parent for tts/2 io scheduler noop registered io scheduler anticipatory registered io scheduler deadline registered io scheduler cfq registered RAMDISK driver initialized: 16 RAM disks of 4096K size 1024 blocksize loop: loaded (max 8 devices) nbd: registered device at major 43 Cirrus Logic CS8900A driver for Linux (Modified for SMDK2410) eth0: CS8900A rev E at 0xd0000300 irg=53, no eeprom, addr: 08: 0:3E:26:0A:5B Uniform Multi-Platform E-IDE driver Revision: 7.00alpha2 ide: Assuming 50MHz system bus speed for PIO modes; override with idebus=xx ide_s3c2440_init ide0: S3C2410 IDE interface S3C24XX NAND Driver, (c) 2004 Simtec Electronics s3c2410-nand: mapped registers at c4880000 30 ns is too big for current clock rate 101250 s3c2410-nand: timing: Tacls Ons, Twrph0 4294ns, Twrph1 Ons NAND device: Manufacturer ID: 0xec, Chip ID: 0x76 (Samsung NAND 64MiB 3,3V 8-bit) Scanning device for bad blocks Bad eraseblock 3265 at 0x03304000 Creating 3 MTD partitions on "NAND 64MiB 3,3V 8-bit": 0x0000000-0x00030000 : "bootloader" mtd: Giving out device 0 to bootloader 0x00050000-0x00250000 : "kernel" mtd: Giving out device 1 to kernel 0x00250000-0x03ffc000 : "root" mtd: Giving out device 2 to root s3c2410-ohci s3c2410-ohci: S3C24XX OHCI s3c2410-ohci s3c2410-ohci: new USB bus registered, assigned bus number 1 s3c2410-ohci s3c2410-ohci: irg 42, io mem 0x49000000 hub 1-0:1.0: USB hub found hub 1-0:1.0: 2 ports detected

Initializing USB Mass Storage driver... usbcore: registered new driver usb-storage USB Mass Storage support registered. usbcore: registered new driver usbhid drivers/usb/input/hid-core.c: v2.01:USB HID core driver mice: PS/2 mouse device common for all mice ts: Compaq touchscreen protocol output s3c2410 TouchScreen successfully loaded i2c /dev entries driver s3c2440-i2c s3c2440-i2c: slave address 0x10 s3c2440-i2c s3c2440-i2c: bus frequency set to 98 KHz s3c2440-i2c s3c2440-i2c: i2c-0: S3C I2C adapter mmci-s3c2410: probe: mapped sdi base=c4d00000 irg=37 irg cd=60 dma=0. mmci-s3c2410: initialisation done. SBC2440 SOUND driver register SBC2440 SOUND driver probe! SBC2440 UDA1341 audio driver initialized NET: Registered protocol family 2 IP route cache hash table entries: 1024 (order: 0, 4096 bytes) TCP established hash table entries: 4096 (order: 3, 32768 bytes) TCP bind hash table entries: 4096 (order: 2, 16384 bytes) TCP: Hash tables configured (established 4096 bind 4096) TCP reno registered TCP bic registered NET: Registered protocol family 1 NET: Registered protocol family 17 MMC: sd app op cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd app op cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd app op cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd_app_op_cond: at least one card is busy - trying again. MMC: sd_app_op_cond locked busy. Probably have broken SD-Card. yaffs: dev is 32505858 name is "mtdblock2" yaffs: Attempting MTD mount on 31.2, "mtdblock2" yaffs: yaffs_GutsInitialise() block 3118 is bad yaffs: yaffs_GutsInitialise() done. VFS: Mounted root (yaffs filesystem). Mounted devfs on /dev Freeing init memory: 180K

- [01/Jan/1970:00:00:06 +0000] boa: server version Boa/0.94.13
- [01/Jan/1970:00:00:06 +0000] boa: server built Feb 28 2004 at 21:47:23.
- [01/Jan/1970:00:00:06 +0000] boa: starting server pid=772, port 80

Please press Enter to activate this console. [9;0] [?331 [?251 Create pluginlibman in libqpe Unable to open /usr/share/zoneinfo/zone.tab Timezone data must be installed at /usr/share/zoneinfo/ Unable to open '/usr/share/zoneinfo/America/New York' TimeZone::data Can't create a valid data object for 'America/New_York' TzCache::location unable to find America/New_York initEnvironment() Invalid TimeZone America/New York Use QPEApplication's PluginLibraryManager QMemoryFile::QMemoryFile("/opt/qtopia/etc/dict/dawg") Created QMemoryfile for /opt/qtopia/etc/dict/dawg with a size of 189396 inserting Documents at -1 could not register server found obex lib inserting Applications at 0 inserting Games at 1 inserting Settings at 2 Doing slow search for image: Hello QGDict::hashKeyString: Invalid null key addAppLnk: No view for type (null). Can't add app (null)! Create pluginlibman in libqpe Use QPEApplication's PluginLibraryManager QuickLauncher running Unable to open /usr/share/zoneinfo/zone.tab Timezone data must be installed at /usr/share/zoneinfo/ Unable to open '/usr/share/zoneinfo/America/New York' TimeZone::data Can't create a valid data object for 'America/New_York' TzCache::location unable to find America/New_York Registered QPE/QuickLauncher-783

-sh: can't access tty; job control turned off [root@FriendlyARM /]#