Release Notes for the Broadcom BCM91x80 Evaluation Platform BSP#

System requirements#

Target system#

- Broadcom BCM1x80 Evaluation Platform
  - Dual CPU on the BCM1280 (SMP)
  - QUAD CPU on the BCM1480 (SMP)
  - Ethernet (4 on-chip 10/100/1000)
  - Flash (AMD AM29LV128)
  - Serial port (On-chip DUART x 2)
  - PCI controller (On-chip)
  - 2 slot mode PCMCIA (memory only)
  - M41T81 Real Time Clock

Host development system#

- QNX Momentics 6.4.1, one of the following host systems:
  - QNX Neutrino 6.4.1
  - Microsoft Windows Vista, XP SP2 or SP3, 2000 SP4
  - Linux Red Hat Enterprise Workstation 4 or 5, Red Hat Fedora Core 6 or 7, Ubuntu 6.0.6 LTS or 7, or SUSE 10
- Terminal emulation program (Qtalk, Momentics IDE Terminal, tip, HyperTerminal, etc.)
- RS-232 serial port
- NULL-modem serial cable (provided with the board)
- Ethernet link

Getting Started#

Starting Neutrino#

Step 1: Build the BSP
You can build a BSP OS image from the source code or the binary components contained in a BSP package. For instructions about building a BSP OS image, please refer to the chapter Working with a BSP in the Building Embedded Systems manual.

Step 2: Connect your hardware

- Connect the serial cable to DUART A of the BCM1x80 Evaluation Platform to the first serial port of your host machine (e.g. ser1 on a Neutrino host).
- If you have a Neutrino host with a serial mouse, you may have to move the mouse to the second serial port on your host, because some terminal programs require the first serial port.
- Connect Ethernet Port 0 to the network or directly to your host machine. The ROM Monitor (CFE) will boot OS images using TFTP.

On your host machine, start your favorite terminal program with these settings:

- Baud: 115200
- Bits: 8

- Stop bits: 1
- Parity: none
- Flow control: none

Apply power to the target board. You should see output similar to the following:

```
CFE version 1.2.3 for BCM91480B (64bit,MP,BE,MIPS)
Build Date: Thu Jun  2 13:02:05 PDT 2005 (khinzaw@hardy.sj.broadcom.com)
Copyright (C) 2000,2001,2002,2003,2004,2005 Broadcom Corporation.

[AREN]
Initializing Arena.
Initializing PCI. [normal]
[PCIH]
PCI[0] bus 0 slot 0/0: configuring bus for 133MHz PCI-X
[PCIB]
[PCIS]
PCI[0] bus 0 slot 0/0: SiByte, Inc. BCM1480 PCI-X Host Bridge (host bridge, rev 0x01)
[PCIH]
HT maxima: 700MHz, 16 bits
[PCIB]
PCI[1] bus 0 slot 0/0: secondary bad or never ready
PCI[1] bus 0 slot 1/0: secondary bad or never ready
[PCIS]
PCI[1] bus 0 slot 0/0: SiByte, Inc. BCM1480 HyperTransport Bridge (Secondary) (PCI bridge, rev 0x01)
PCI[1] bus 0 slot 1/0: SiByte, Inc. BCM1480 HyperTransport Bridge (Secondary) (PCI bridge, rev 0x01)
PCI[1] bus 0 slot 2/0: SiByte, Inc. BCM1480 HyperTransport Bridge (Secondary) (PCI bridge, rev 0x01)
PCI[1] bus 0 slot 4/0: SiByte, Inc. BCM1480 HyperTransport Host Bridge (host bridge, rev 0x01)
PCI[1] bus 3 slot 1/0: Advanced Micro Devices (PLX) HT7520 PCI-X Tunnel (PCI bridge, rev 0x12)
PCI[1] bus 3 slot 1/1: Advanced Micro Devices (PLX) HT7520 PCI-X IOAPIC (8259 PIC system, interface 0x10, rev 0x01)
PCI[1] bus 3 slot 2/0: Advanced Micro Devices (PLX) HT7520 PCI-X Tunnel (PCI bridge, rev 0x12)
PCI[1] bus 3 slot 2/1: Advanced Micro Devices (PLX) HT7520 PCI-X IOAPIC (8259 PIC system, interface 0x10, rev 0x01)
PCI[1] bus 5 slot 2/0: Intel 82557 Fast Ethernet LAN Controller (ethernet network, rev 0x0c)
[DEVI]
Initializing Devices.
BCM91480B board revision 1
BCM91480B configuration switches: 0xc1018
sbeth: found phy 1, vendor 000818 part 0B
sbeth: found phy 2, vendor 000818 part 0B
sbeth: found phy 3, vendor 000818 part 0B
sbeth: found phy 4, vendor 000818 part 0B
PCIIDE: 0 controllers found
CPU: 1480 A1 (pass1), 4 cpus
L2Cache: 1MB
SysCfg: 0000000060752380 [PLL_DIV:14, SW_DIV:4, CCNUMA:disable, IOB_DIV:CPUCLK/4]
Memory controller #0: 233MHz
Memory controller #1: 140MHz
Switch Clock: 350MHz
CPU type 0x1041100: 700MHz
Total memory: 0x40000000 bytes (1024MB)

Total memory used by CFE:  0x8FE7B000 - 0x8FFFFC60 (1592416)
Initialized Data:         0x8FEEF2C0 - 0x8FEFCB50 (55440)
BSS Area:                 0x8FEFCB50 - 0x8FEFDC50 (4352)
Local Heap:               0x8FEFDC60 - 0x8FFFDC60 (1048576)
Stack Area:               0x8FFFDC60 - 0x8FFFFC60 (8192)
Text (code) segment:      0x8FE7B000 - 0x8FEEE3F0 (472048)
Boot area (physical):     0x0FE3A000 - 0x0FE7A000
Relocation Factor:        I:F027B000 - D:F027B000
```

```
[ENVI]

[CFE ]
CFE>
```

Step 3: Setup the environment and boot the IFS image

You can use TFTP download (the default) or serial download to transfer the image from your host to the target.

On your target, type the following, filling in the appropriate IP addresses and ifs file:

```
CFE> ifconfig eth0 -addr=TARGET_IP
CFE> boot -elf HOST_IP:/full_path_to/ifs-bcm91x80.elf
```

Where TARGET_IP is the IP address of the BCM1x80 Evaluation Platform, HOST_IP is the IP address of the host machine and the full path should be specified for the ELF image.

Summary of driver commands#

The driver command lines below are specific to the Broadcom BCM1x80 Evaluation Platform. See the online docs for each driver for additional command-line options and other details.

Component	Buildfile Command	Required Binaries	Required Libraries	Source Location
Startup	`startup-bcm1x80`	.	.	`src/hardware/startup/boards/bcm1x80`
Serial	`devc-serbcm1x80 -e -b115200 0x10060100,0x8005006c`	devc-serbcm1x80	.	`src/hardware/devc/serbcm1x80`
NOR	`devf-generic -s0x1fc00000,16M`	devf-generic flashctl	.	`src/hardware/flash/boards/generic`
PCI	`pci-bcm1x80`	pci-bcm1x80 pci	.	`src/hardware/pci/bcm1x80`
Network	`io-pkt-v4 -dbcm1250 ioport=0x10064000,irq=0x800500[illegible] -ptcpip`	io-pkt-v4-hc ifconfig	devn-bcm1250.so libsocket.so	`src/hardware/devn/bcm1250`
PCMCIA	`devp-bcm1x80`	devp-bcm1x80	pin	`src/hardware/devp/bcm1x80`
RTC	`rtc m41t81`	rtc date	.	`src/utils/r/rtc`

Some of the drivers are commented out in the default buildfile. To use the drivers in the target hardware, you'll need to uncomment them in your buildfile, rebuild the image, and load the image into the board.