kontron

EB8347 LTIB Linux README

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Contents

1 Notes on EB8347 LTIB release

1.1 Package overview

Kontron BSP packages are integrated with LTIB (Linux Target Image Builder) and delivered as CD or ISO image.

```
ltib-eb8347-20090428.iso
MD5 sum: 634d546263be45c2c1eef08d06e6dc21
```

1.1.1 LTIB components

- Linux kernel 2.6.24.7-rt26 with EB8347 board support
- Cross compiler gcc 4.0.2, glibc 2.3.6-nptl-3
- more that 200 userspace packages
- Kontron packages application, drivers, library
- Root filesystem settings and files for EB8347

1.1.2 Peculiarities / Restrictions

- This BSP works correctly only with EB8347 PCB-Index 1 or newer
- NetBootLoader version 0812150759 or newer

1.1.3 Version History

1.1.3.1 Index R13

- Migrated from kernel version 2.6.21 to 2.6.24.7-rt26
- Added support for new audio firmware
- Created LTIB distribution
- Created new manual for BSP based on LTIB
- Integrated bugfix for new board versions (modified clock oscillator) and RTC clock

1.1.3.2 Index 0103:

- Kernel version 2.6.17 + FDT tree
- Corrected big-endian problems with SM501 chip, corrected video and sound drivers. Added I2C interface to set the DVI transmitter parameters
- Added support for TouchPanels 104 and 150 and DMC-10 usbtouchscreen controller

- System without SM501 chip doesn't start with default kernel configuration, added kernel configuration for boards without SM501 chip.
- Removed LM-Sensors package form BSP
- Corrected interrupts order in PCI slot

1.1.3.3 Index 0102:

- The EB8347 HW has floating input signals of the HW-handshake lines. This has lead sporadically to the error message "too much interrupt work", because these input lines caused an interrupt flood sometimes. To workaround this, now IRQs for UART-Handshake lines on ttyS0 and ttyS1 are disabled in the Kernel
- Under Index 0101 the IRQs for the SM501 and for the IDE where edge sensitive. This caused sporadically lost interrupts. A typical effect was, that a media stream including sound hung up, if it was started from the Compact Flash. Now, all Interrupt inputs are level sensitive
- It is yet unclear, whether a board variant without the SM501 graphics controller would cause problems with this BSP. To avoid potential problems, it is now possible to disable the SM501 support totally in the kernel configuration, if required. The default kernel configuration, however, enables and uses all features of the SM501.

1.1.3.4 Index 0101:

- Support for AC97-Sound-Controller
- Support for Graphics via Framebuffer driver Screen resolution and Sync-Frequency configurable via Kernel command line
- Media player mplayer with graphics and sound support
- Support for USB 2.0 (USB 1.1 only via USB-Hub)
- Kontron Logo at Kernel startup
- Simple user application for GPIO-Register access
- LM-Sensors package for HW-monitoring added to BSP

1.1.3.5 Index 0100:

- Initial version

1.2 Installing

During system installation additional activities are required:

- disable firewall

During installation following packages group should be marked for install:

- Basis Development
- C/C++ Development
- Linux Kernel Development

Additionally following network servers should be installed:

- ftp server
- NFS server

And the terminal emulator:

- minicom

1.3 Documentation

Kontron user manual is stored on CDROM in "kontron" directory.

1.4 Special Kernel Parameters

- Kontron TouchPanel 150 1024x768

```
video=sm501fb:panelmode=0x15000018 touch_panel_mode=0x15000018
```

- Kontron TouchPanel 104 800x600

```
video=sm501fb:panelmode=0x10400015 touch_panel_mode=0x10400015
```

- CRT Monitor 1024x768

```
video=sm501fb:crtmode=0x318
```

- CRT Monitor 800x600

```
video=sm501fb:crtmode=0x315
```

- CRT Monitor 640x480

```
video=sm501fb:crtmode=0x312
```

1.5 Special user hints

- The LTIB environment should be installed as a regular user not "root"!
- Installation requires that the regular user is allowed to use command 'rpm' (during first run of ltib environment proper message is presented).
- When first time LTIB is run, it should be done using "./ltib –configure" command. This is needed for seting default LTIB configuration.
- For proper LTIB operation the development host should have properly defined Internet access.
- LTIB "install" script from CDROM must have executable rights, this is made by remount (as root) CDROM with exec rights.

```
# mount -o remount,exec /dev/cdrom
```

1.6 Preconfigured Users

- user root: password="root", group root

Of course it is possible and recommended to change the passwords after the first booting with help of the utility "passwd".

1.7 LM75 support.

Support for LM75 has to be disabled in kernel configuration menu. In other case access to this device will be blocked by existing module, and any Kontron application using the LM75 device will not work correctly.

```
Device Drivers  --->
   Hardware Monitoring support  --->
      < > National Semiconductor LM75 and compatibles
```

Note:

Support for LM75 have to be enabled in kernel to work with "lm-sensors" tools.

1.7.1 Restrictions

Currently no restrictions known.