DaVinci PSP 03.20.00.13 Release Notes

Release Notes

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Versioning

This is Release 03.20.00.13 of DaVinci PSP SDK product.

Introduction

The DaVinci PSP Software Development Kit (SDK) serves to provide a fundamental software platform for development, deployment and execution of Linux based applications on Texas Instruments SoCs. The Linux kernel and U-Boot software in this release are based upon the following repositories:

Component	Version	Release Repository Information		
		Repository URL	Baseline Commit-id	Release Tag
DaVinci Linux Kernel	2.6.33-rc4	[1]	887f8d18de5efbeafc76e5c509fd53f9018992fa[†]	v2.6.33-rc4_DAVINCIPSP_03.20.00.13
U-Boot	2009.11	[2]	bb3bcfa2426cc6a0aecec7270e3ee67ca843a125[‡]	v2009.11_DAVINCIPSP_03.20.00.13

[†]This commit id corresponds to the commit from the DaVinci GIT tree [3] based on which the Linux kernel code was developed.

[‡]This commit id corresponds to the commit from the U-Boot mainline GIT tree [4] based on which the U-Boot code was developed.

The file system that was used for testing is based on Arago Project [5]. The file system that was used for testing is based on Arago Project [5]. Starting with this release, the filesystem will not be packaged in PSP release. Please check the secion on Update and Compatibility Information.

For detailed information on the various software components included in the release and how to use them, please refer to the User's Guide.

The kernel and U-Boot have been compiled with CodeSourcery GNU Toolchain for ARM Processors 2009-q1-203 [6] based on GCC 4.3.3.

Device Support

This release supports the Texas Instruments DA830/OMAP-L137/AM17xx and DA850/OMAP-L138/AM18xx Evaluation Modules (EVMs).

Obtaining the Release Package

The PSP release package can be obtained from TI's Technology and Software Publicly Available (TSPA) download site [7].

Documentation

The User's Guide provides instructions on how to use the PSP SDK package. A PDF snapshot is also included in the `docs` folder of the SDK package.

The Features and Performance Guide provides feature information and performance benchmarks on drivers included with the PSP SDK package. A PDF snapshot is also included in the `docs` folder of the SDK package.

What's Supported

The SDK package supports the following components. For a detailed list of features supported, refer to the features and performance guide

Component	Notes
User Boot Loader (UBL)	Serves as the primary bootloader for the device. Requires CCStudiov3.3 or CCStudiov4 for build.
U-Boot	De facto bootloader for Linux on ARM. Serves as the secondary bootloader
Flashing Utilities	Required to flash boot software (UBL and U-Boot) on EVM. Uses CCStudiov3.3 or CCStudiov4 for building and execution. Supports MMC/SD, SPI, NAND and NOR flash (MMC/SD and NOR flash on DA850/OMAP-L138/AM18xx EVM only)
Examples	Help demonstrate device driver usage where no standard utilities are available. Examples are included for EDMA, GPIO, McBSP and VPIF.
Pre-built binaries	Help use release package straightaway without the need to re-build anything. Pre-built binaries for Linux kernel and modules, U-Boot, UBL, flash writer and examples are included.

What's Not Supported

- Booting U-Boot from MMC card.
- Following Linux drivers are not supported:
  - SDIO - WLAN
  - UPP (Universal Parallel Port)
  - eHRPWM
  - eQEP
  - eCAP
- Following driver features are not supported (for a detailed overview of limitations of each driver refer to Features and Performance Guide):
  - USB Dual Role, OTG support over USB0 (MUSB-OTG) interface.
  - VPIF
    - VBI capture and display support

- Raw capture support
- Audio card [8] available with DA830 EVM

New in this Release

Since version 03.20.00.12, the following features have been added:

- Support to boot U-Boot from SD card on DA850/OMAP-L138/AM18x.
- MMC/SD support in U-Boot.
- DDR timing values have been modified for both DA830/OMAP-L137/AM17x and DA850/OMAP-L138/AM18x.

Fixed in this Release

Issue Identifier	Issue headline
SDOCM00074752	Implement MMC/SD boot support from UBL for DA850/OMAP-L138/AM18x

Known Issues

Issue Identifier	Issue headline	Known Workaround(s)
SDOCM00059997	amixer controls to control left/right playback volume is inverted	None. This has to be corrected in the EVM hardware.
SDOCM00060000	amixer controls to switch on/off, left/right playback is inverted	None. This has to be corrected in the EVM hardware.
SDOCM00060007	GLCD flickering is observed whenever SPI flash is accessed. This is due to the muxing of GLCD backlight control pins (EPWM) and SPI flash chip select pins	None. This has to be corrected in the EVM hardware.
SDOCM00062443	Unable to create jffs2 partion on nand using flash_eraseall -j	flash_eraseall can be used without -j option and the partition can still be mounted with jffs2 file system.
SDOCM00064559	audio: Capture fails in mmap mode with -v option	None
SDOCM00067004	VPIF: Modular build fails	Use VPIF as statically built module.
SDOCM00067005	SPI: CPU load is high even in DMA mode	None
SDOCM00067843	DA850: When TPS65070 PMIC is configured for an output voltage of 1.0V, I2C bus becomes un-unsable	This is an issue with EVM hardware. To workaround this issue, the release uses gpio based bit-banging i2c driver in Linux kernel.

Installation and Usage

Please look for detailed installation and usage instructions in User's Guide

Upgrade and Compatibility Information

To upgrade to new PSP release, simply delete the old release and extract the new release in its place.

In this release, default bootargs and bootcmd have been modified in U-Boot. In the earlier release, by default U-Boot was configured to fetch the Linux kernel image from SPI flash and boot using the file system present on MMC/SD card. With the current release, on DA850/OMAP-L138/AM18xx, if MMC/SD card is present in the slot, then Linux Kernel is read from the 1st FAT partition of MMC/SD card. The file system is assumed to be present on the 2nd partition of MMC/SD card. The workaround here is to reset the environment variables according to your requirement.

Starting with the 03.20.00.11 release, the PSP package will not have the filesystem included. Please obtain the filesystem from the latest SDK package for AM1x [9] or OMAP-L1 [10].

Dependencies

Please refer to User's Guide for dependencies.

Validation Information

Please use the Linux Functional Test Bench (LFTB) included in the release package for validating the release. Documentation on using LFTB is included in the LFTB package itself.

Technical Support and Product Updates

For further information or to report any problems, contact http://community.ti.com or http://support.ti.com.

DaVinci Linux Mailing List: http://linux.davincidsp.com/mailman/listinfo/davinci-linux-open-source.

References

[1] http://arago-project.org/git/projects/?p=linux-omapl1.git;a=summary

[2] http://arago-project.org/git/projects/?p=u-boot-omapl1.git;a=summary

[3] http://git.kernel.org/?p=linux/kernel/git/khilman/linux-davinci.git;a=commit;h=887f8d18de5efbeafc76e5c509fd53f9018992fa

[4] http://git.denx.de/?p=u-boot.git;a=commit;h=bb3bcfa2426cc6a0aecec7270e3ee67ca843a125

[5] http://arago-project.org/

[6] http://www.codesourcery.com/sgpp/lite/arm/portal/release858

[7] http://software-dl.ti.com/dsps/dsps_public_sw/psp/LinuxPSP/DaVinci_03_20/03_20_00_13/index_FDS.html

[8] http://support.spectrumdigital.com/boards/dskda830/revc/

[9] http://software-dl.ti.com/dsps/dsps_public_sw/sdo_sb/targetcontent/sdk/AM18x/1_10/1_10_00_00/index_FDS.html

[10] http://software-dl.ti.com/dsps/dsps_public_sw/sdo_sb/targetcontent/sdk/omap_l1138/1_00/latest/index_FDS.html

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