Freescale Semiconductor
Release Notes

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i.MX28 EVK Linux Release Notes

This document contains important information about the package contents, supported features, and known issues/limitations.

Contents

1 Release Contents

1.1 Contents

This release package consists of the following package files:

- L2.6.35_1.1.0_SDK_source.tar.gz
- L2.6.35_1.1.0_SDK_images_MX28.tar.gz
- L2.6.35_1.1.0_SDK_docs.tar.gz
- Mfgtools-Rel-1.1.0_SDK_MX28_UPDATER.tar.gz

Table 1 shows the files available in L2.6.35_1.1.0_SDK_source.tar.gz.

Table 1. L2.6.35_1.1.0_SDK_source.tar.gz

File	Description
EULA	Freescale End User License Agreement
Install	Installation script for LTIB
ltib.tar.gz	Linux Target Image Builder (LTIB)
package_manifest.txt	Freescale LTIB package lists
Pkgs	Source and patches for root file system
pkgs/imx-test-1.1.0.tar.gz	Source for unit tests
pkgs/imx-lib-1.1.0.tar.gz	Source for libraries
pkgs/imx-bootlets-src-1.1.0.tar.gz	Source for bootlets
pkgs/linux-2.6.35-imx_1.1.0.bz2	Freescale L2.6.35_1.1.0 kernel patches
pkgs/tc-fsl-x86lnx-armeabi-nptl-4.1.2-3.i386.rpm	Open source toolchain for ARM9 and ARM11
pkgs/u-boot-v2009.08-imx_1.1.0.tar.bz2	Patches for U-Boot
tftp.zip	A Windows TFTP server program

Table 2 shows the files available in L2.6.35_1.1.0_SDK_images_MX28.tar.gz.

Table 2. L2.6.35_1.1.0_SDK_images_MX28.tar.gz

File	Description
imx28/rootfs.ext2	Root file system EXT2 image for the Linux L2.6.35 kernel
imx28/imx28_ivt_linux.sb	SB format file containing bootlets combined with zImage for HAB-enabled chip
imx28/imx28_ivt_uboot.sb	SB format file containing bootlets combined with U-Boot image for HAB-enabled chip
imx28/imx28_linux.sb	SB format file containing bootlets combined with zImage for HAB-disabled chip
imx28/imx28_uboot.sb	SB format file containing bootlets combined with U-Boot image for HAB-disabled chip
imx28/uImage	Binary kernel image for U-Boot

Table 3 shows the files available in L2.6.35_1.1.0_SDK_docs.tar.gz.

Table 3. L2.6.35_1.1.0_SDK_docs.tar.gz

File/Folder	Description
EULA	Freescale End User License Agreement
doc/mx28	Release documentation folder containing the following documents: • i.MX28 EVK Linux Release Notes • i.MX28 EVK Linux User's Guide • i.MX28 EVK Linux Reference Manual • Setting Up a Linux Host for LTIB Builds on Ubuntu 9.04

Table 4 shows the files available in manufacturing tool (MFGTool), Mfgtools-Rel-1.1.0_SDK.tar.gz.

Table 4. Mfgtools-Rel-1.1.0_SDK_MX28_UPDATER.tar.gz

File	Description
MfgTool.exe	MFGTool host tools
Profiles/MX28 Linux Update/OS Firmware/ucl.xml	Main control file
Profiles/MX28 Linux Update/OS Firmware/update_ivt.sb	Linux HAB-enabled image for MFGTool
Profiles/MX28 Linux Update/OS Firmware/update.sb	Linux HAB-disabled image for MFGTool
Profiles/MX28 Linux Update/OS Firmware/files	Demo Linux image
Utils/sb_loader/sb_loader	Tool for downloading boot stream from USB
Utils/cfimager/cfimager	Tool for writing boot stream to SD card

1.2 License

All BSP source-code files are GPL or LGPL or another open source license.

Some binary files included in the root file systems are built from proprietary source code (source not included in the BSP). These files are given below:

- Files in csr-bt-bin-1.2.0.tar.gz package
- Files in gl-gps-1.2.3.tar.gz package

2 System Requirements

2.1 Linux Host Server

To build with LTIB or to program images to an MMC/SD card, it is necessary to set up an Ubuntu 9.04 Linux host server, as explained in the "Setting Up a Linux Host for LTIB Builds on Ubuntu 9.04" document included in this release package.

2.2 MFGTool

Supported operating system (OS): Windows XP SP3

2.3 i.MX28 EVK Components

Table 5 shows the list of components available in the i.MX28 EVK kit.

Table 5. i.MX28 EVK Components

Hardware Modules	Comments
iMX28 EVK (Rev D) Main board	
iMX28 EVK WVGA LCD Panel	
MMC/SD card	
Power Supply (5V)	
USB Cable	

3 What's New

The section describes the new changes in this release, including new features and defect fixes.

3.1 New Features

The following are the main new features:

- Update kernel version to 2.6.35
- Optimize suspend power consumption (board level: 9mA at 3.7V)
- Add support for USB enable low power mode and remote wakeup
- Add support for default image enable NO_HZ and PREEMPT
- Add mDDR support
- Update MFGTool host to 1.6.2.024
- Add suspend-to-RAM support
- Add power source configuration

3.2 Defect Fixes

The following are the main defect fixes:

- ENGR00209679: [MX28]: When bus frequency is changed, system may hang
- ENGR00231543: [MX28]: FEC Switch: UDP transmission packets dropped due to congestion

- ENGR00182409: [MX28]: Some i.MX28 EVK eth0 do not work
- ENGR00137130: Fec: MDIO timeout at plug in cable or down/up ethenet
- ENGR00137418: [MX28]: Fix aplay has no sound after suspend/resume
- ENGR00232538: IEEE1588: imx28: Upgrade driver to support IXXAT stack V1.05.03
- ENGR00140950: mfg: Fix the bug that ubiformat utility breaks UTP protocol
- ENGR00144145: usb: Can be built as loadable modules
- ENGR00138642: usb-device: Fix spin lock recursion problem
- ENGR00154044: usb-otg: The device is invalid when USB device at otg port
- ENGR00155292: usb-host: Do not clear RS bit when USB bus goes to suspend
- ENGR00156159: usb-device: Do not deal with un-enabled device interrupt
- ENGR00238974: mx28-usb: Fix kinds of USB wakeup problems

4 LTIB Profile

Only the FSL gnome release package profile of LTIB profile was tested in this release.

5 BSP Supported Features

Table 6 describes the features that are supported in this BSP.

Table 6. BSP Features

Feature	Supported?	Comments
Kernel		
Kernel	Y	Kernel version: L2.6.35
File System	Y	EXT2 is used as the file system in SD/MMC
Bootloader		
U-Boot	Y	Supports Ethernet download and SD/MMC boot
Machine Specific Layer		
ARM Core	Y	Supports ARM9
Interrupt	Y	
Timer (GPT)	Y	System timer tick support
GPIO/EDIO	Y	
IOMUX	Y	Provides the interfaces for I/O configuration
DMA	Y	
Character Device Drivers		
Debug UART	Y	Console support through internal debug UART
Application UART	Y	
Graphic Drivers		
Frame Buffer Driver	Y	MXC frame buffer driver

Feature	Supported?	Comments
WVGA	Y	Supports WVGA panel
Backlight	Y	
MultiMedia Drivers		
V4L2 Output (PXP)	Y	Provides V4L2 implementations
Camera	N	
Power Management Drivers		
Power Management Unit	Y	
Lower Power mode	Y	Supports stop mode in “standby” state
CPUFreq	Y	CPUFreq can be used for CPU frequency adjustment and bus scaling
Sound Drivers		
SAIF and external audio codec	Y	
SPDIF	Y	
Input Device Drivers		
LRADC	Y	
Keypad	Y	Supports keypad driver
Touch panel	Y	
USB devices	Y	Support USB mouse and USB keypad through USB ports
MTD driver		
SPI NOR	N	
NAND	Y	
Networking Drivers		
Single ENET	Y	
Dual ENET	Y	
L2 Switch	Y	
IEEE1588	Y	
USB Drivers		
USB Host	Y	
USB Device	Y	
Security Drivers		
Security drivers(DCP)	Y	
General drivers		
MMC/SD/SDIO	Y	
WatchDog	Y	Supports Watchdog reset
RTC	Y	
I2C	Y	Supports I2C master. Supports I2C1, I2C2
ERP	Y	
PWM	Y	Supports backlight driver through PWM
LED	Y	0~255 level brightness
flexCAN	Y	
Battery	Y	

6 Supported NAND Flash

Table 7 shows the supported NAND Flash.

Table 7. Tested NAND Flash

Manufacturer	Part Number	Chip Count	Medium Size	Page Geometry
SAMSUNG	K9LBG08U0D	1	1GB	4KiB+128

7 Known Issues/Limitations

Table 8 lists some important known issues and workarounds for them.

Table 8. Known Issues/Limitations

Features	Category	Description	Workaround
eMMC4.4	Hardware	Some bits mismatch in eMMC4.4 DDR mode	Populate R34-R43 pull-up resister on Rev C board
Suspend-to-RAM	Software	[MX28 EVK]LP: Audio playback cannot go on after resuming from mem mode.	

How to Reach Us:

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