

i.MX 6Solo/6DualLite Linux LDO Patch Release Notes

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1 Release Purpose

This patch release is based on the i.MX 6Solo/6DualLite Linux L3.0.35_3.0.0 release. The purpose of this patch release is to manage the LDO and PMIC ramp-up time correctly.

NOTE

Before implementing this patch release, you need to ensure that you have installed the i.MX 6Solo/6DualLite Linux L3.0.35_3.0.0 BSP on your board and have compiled a Min Profile Image, following the instructions provided in the i.MX 6Solo/6DualLite Linux L3.0.35_3.0.0 user guide.

2 Patch List

The patches included in this release are as follows:

- 0001-ENGR00241003-1-mx6-need-to-add-delay-in-LDO-voltage-.patch
- 0002-ENGR00241003-2-pfuze-using-_sel-interface-to-add-del.patch

NOTE

All patches in this release are based on the i.MX

Patch Description

6Solo/6DualLite Linux L3.0.35_3.0.0 release.

3 Patch Description

Table 1. Patch Description

CR Number	Description	Impact
ENGR00241003	The CPUFreq driver uses a fixed delay ramp-up time assumption for the internal LDOs on the i.MX 6 series. The LDO ramp-up time is modified by setting the LDO_VOLT_CHANG_EN fuse. The ramp-up time is already set correctly through the regulator voltage setting, which calculates the ramp-up time based on the register setting and makes a mathematical calculation of the proper delay and thus ensures that when the set voltage function returns, the voltage is stable. This patch ensures that the LDO ramp-up time is set correctly.	When the LDO_VOLT_CHANG_EN fuse is blown without applying this patch, then the default delay for the LDO ramp-up time is not sufficient and will cause the system to hang, when transitioning from the boot frequency to a higher frequency/voltage point. This patch corrects the LDO ramp-up time and ensures proper operation. This patch is required for all systems.
ENGR00241003	This patch implements the regulator _sel interface API that supports auto delay to account for the time required to ramp up to the required voltage.	This patch will let the regulator core framework handle the delay automatically according to the input delay time.

4 Applying Patches using LTIB

Apply the patches by using the following steps:

1. Install and do a first compilation of the i.MX 6Solo/6DualLite Linux L3.0.35_3.0.0 BSP by following the instructions provided in user guide of the Linux BSP.
2. In the ~/ltib directory, extract the Linux kernel source file by executing this command: `./ltib -m prep -p kernel`
3. Copy the patches files of this release to this path: ~/ltib/rpm/BUILD/linux-3.0.35
4. In the ~/ltib/rpm/BUILD/linux-3.0.35 directory, execute the following commands:

```
patch -p1 -i 0001-ENGR00241003-1-mx6-need-to-add-delay-in-LDO-voltage-.patch
patch -p1 -i 0002-ENGR00241003-2-pfuzе-using-_sel-interface-to-add-del.patch
```

5 Building Kernel ulmage through Command Prompt

To build kernel ulmage, execute the following commands in the ~/ltib/rpm/BUILD/linux-3.0.35/arch/arm/boot directory:

```
make imx6_defconfig ARCH=arm CROSS_COMPILE=/opt/freescale/usr/local/gcc-4.6.2-glibc-2.13-
linaro-multilib-2011.12/fsl-linaro-toolchain/bin/arm-none-linux-gnueabi-
```

```
make uImage ARCH=arm CROSS_COMPILE=/opt/freescale/usr/local/gcc-4.6.2-glibc-2.13-linaro-
multilib-2011.12/fsl-linaro-toolchain/bin/arm-none-linux-gnueabi-
```

When the make command is completed, the kernel uImage is created in the ~/lrb/rpm/BUILD/linux-3.0.35/arch/arm/boot directory.

6 Building MFGTool Firmware

If you are using the MFGTool from this patch release package, you do not need to do anything because updated firmware with necessary patches applied is included in this patch release package.

If you are using the MFGTool from the i.MX 6Solo/6DualLite Linux L3.0.35_3.0.0 release, you need to perform the following steps to update the MFGTool firmware:

1. Copy the kernel uImage created in the previous section to MFGTool directory (to replace the old one): Profiles \MX6DL Linux Update\OS Firmware\files\
2. Execute the following commands:

```
make distclean imx6_updater_defconfig ARCH=arm CROSS_COMPILE=/opt/freescale/usr/local/
gcc-4.6.2-glibc-2.13-linaro-multilib-2011.12/fsl-linaro-toolchain/bin/arm-none-linux-
gnueabi-
```

```
make uImage ARCH=arm CROSS_COMPILE=/opt/freescale/usr/local/gcc-4.6.2-glibc-2.13-linaro-
multilib-2011.12/fsl-linaro-toolchain/bin/arm-none-linux-gnueabi-
```

7 Updated MFGTool Package

The updated MFGTool package is included in this patch release package.

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