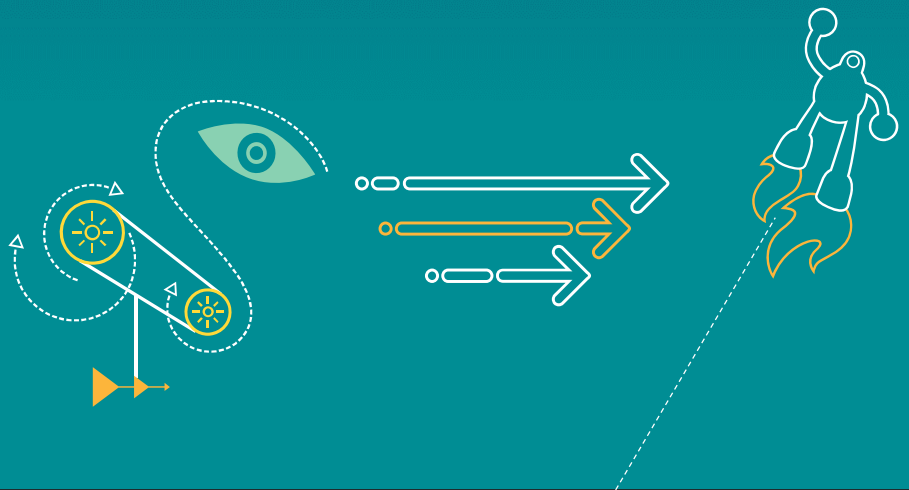
高通多媒体技术期刊　20160413

Qualcomm Technologies, Inc.



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Revision History

Revision	Date	Description
A	Apr. 2016	Initial release

Note: There is no Rev. I, O, Q, S, X, or Z per Mil. standards.

内容

- Display for Panel Bring up on 8953
  - 如何计算DSI panel timing on 8953
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  - 请根据硬件设计开关PMIC BOOST
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Display

如何计算DSI panel timing on 8953

- 对于panel 的bring up：
  - 首先要计算DSI panel timing, 请下载80-NH713-1 Version G文档.
  - 对于8953来说，需要使用DSI PHY 2.0.0 timing setting，且同样适用于8996.
  - 需要注意的是，DSI panel timings的属性为

    qcom,mdss-dsi-panel-timings-8996 =

    [23 1e 08 09 05 03 04 a0
    23 1e 08 09 05 03 04 a0
    23 1e 08 09 05 03 04 a0
    23 1e 08 09 05 03 04 a0
    23 1a 08 09 05 03 04 a0];

- 如何得到上面的panel timing，请参看80-NU323-31中DSI PHY timing calculation章节。
- 如果仅考虑到Single DSI panel的bring up，此文档适用于8996和8953平台，但注意，DSC和split mode在8953上不支持。

- 对于qcom,mdss-dsi-panel-timings，在8953和8996平台上不会使用。

AMOLED panel bring up on 8953

- 对于AMOLED panel 支持，首先必须有下面的changes，如下

- In LK side:
  - target: msmtitanium: Add swire control support for AMOLED panels
    https://us.codeaurora.org/cgit/quic/la/kernel/lk/commit/?h=LA.UM.5.3_rb1.1&id=3dd859bd4604e48a49ff7898684d183223abb4ca

- In Kernel side:
  - regulator: qpnp-labibb: Add support for TTW on PMI8950
    https://us.codeaurora.org/cgit/quic/la/kernel/msm-3.18/commit/?h=LA.UM.5.3_rb1.1&id=660b219c02e869eded42129e3f8a67c74420d23f
  - regulator: qpnp-labibb: Add logic to skip second SWIRE command
    https://us.codeaurora.org/cgit/quic/la/kernel/msm-3.18/commit/?h=LA.UM.5.3_rb1.1&id=18b50de6136c9eb9e99ec5289ca1610d2d9b69e1
  - regulator: qpnp-labibb: Update settings for AMOLED mode
    https://us.codeaurora.org/cgit/quic/la/kernel/msm-3.18/commit/?h=LA.UM.5.3_rb1.1&id=a5f72ee3bdf4d6b09fd7dabddce3dc0396fc297c
  - regulator: qpnp-labibb: modify IBB_SPARE_CTL setting during TTW mode exit
    https://us.codeaurora.org/cgit/quic/la/kernel/msm-3.18/commit/?h=LA.UM.5.3_rb1.1&id=810aa28ba0d9ad97d32f465d0d71c48856201ffc

LK changes for AMOLED panel support on 8953

- 在LK，需要增加对lab/ibb的修改，如下：

- a) 在 panel 的头文件中 /bootable/bootloader/lk/dev/gcdb/display/include/panel_vendor_amoled_xxx_type.h

```
static struct labibb_desc vendor_amoled_xxx_type_labibb = {
        1, 0, 4600000, 4600000, 4600000, 4600000, 3, 3, 1, 1
};
```

- b) 在 OEM panel 文件中 /bootable/bootloader/lk/target/**msm8953**/oem_panel.c

```
pinfo->labibb = &vendor_amoled_xxx_type_labibb;
```

- 其中，
  - LAB 代表 LCD AMOLED Boost
  - IBB 代表 Inverting Buck Boost

LK changes for AMOLED panel support on 8953 –cont1

- 关于labibb_desc的定义，如下：
- /bootable/bootloader/lk/platform/msm_shared/include/msm_panel.h

```
struct labibb_desc {
        char amoled_panel; /* lcd = 0, amoled = 1*/
        char force_config; /* 0 to use default value */
        uint32_t ibb_min_volt;
        uint32_t ibb_max_volt;
        uint32_t lab_min_volt;
        uint32_t lab_max_volt;
        char pwr_up_delay; /* ndx to => 1250, 2500, 5000 and 10000 us */
        char pwr_down_delay; /* ndx to => 1250, 2500, 5000 and 10000 us */
        char ibb_discharge_en;
        bool swire_control;
};
```

Kernel Changes for AMOLED panel support on 8953

- 1：在kernel，首先从panel vendor 获得panel 相关的配置参数，比如所有参数在dsi-panel-vendor-amoled-xxx-type.dtsi

- 2：然后在/arch/arm/boot/dts/qcom/msm8953-mdss-panels.dtsi 中添加下面的修改，举例如下：

```
+#include "dsi-panel-vendor-amoled-xxx-type.dtsi"

+&dsi_vendor_amoled_xxx_type {
+       qcom,mdss-dsi-panel-timings-8996 = [22 1e 07 08 04 03 04 a0
+                       22 1e 07 08 04 03 04 a0
+                       22 1e 07 08 04 03 04 a0
+                       22 1e 07 08 04 03 04 a0
+                       22 18 07 08 04 03 04 a0];
+};
```

- 请注意，对于上面的DSI panel timing值，随着panel的参数变化而变化。

Kernel Changes for AMOLED panel support on 8953 –cont1

- 对于AMOLED panel支持，还需要额外的配置，如下

- 1：在/arch/arm/boot/dts/qcom/msm-pmi8950.dtsi

```
        qcom,leds@d800 {
                compatible = "qcom,qpnp-wled";
                reg = <0xd800 0x100>,
                ... ...
                qcom,ibb-pwrup-dly = <8>;
                qcom,led-strings-list = [00 01];
                qcom,en-ext-pfet-sc-pro;
+               qcom,disp-type-amoled;
        };
```

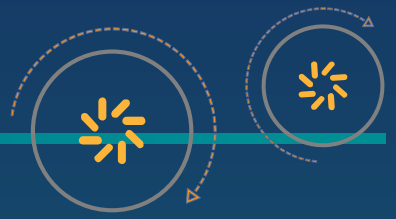
Kernel Changes for AMOLED panel support on 8953 –cont2

- 2：在/arch/arm/boot/dts/qcom/msm8953-<**platform**>.dtsi，用amoled来代替lcd

```
 &labibb {
            status = "ok";
-           qpnp,qpnp-labibb-mode = "lcd";
+           qpnp,qpnp-labibb-mode = "amoled";
+           qpnp,swire-control;
+};
```

- 3：在上面文件中，同时需要disable pulse skipping for lab regulator。

```
+&lab_regulator {
+           /delete-property/ qcom,qpnp-lab-ps-enable;
+};
```



Audio

adspbin.so, OTA SW upgrading issue

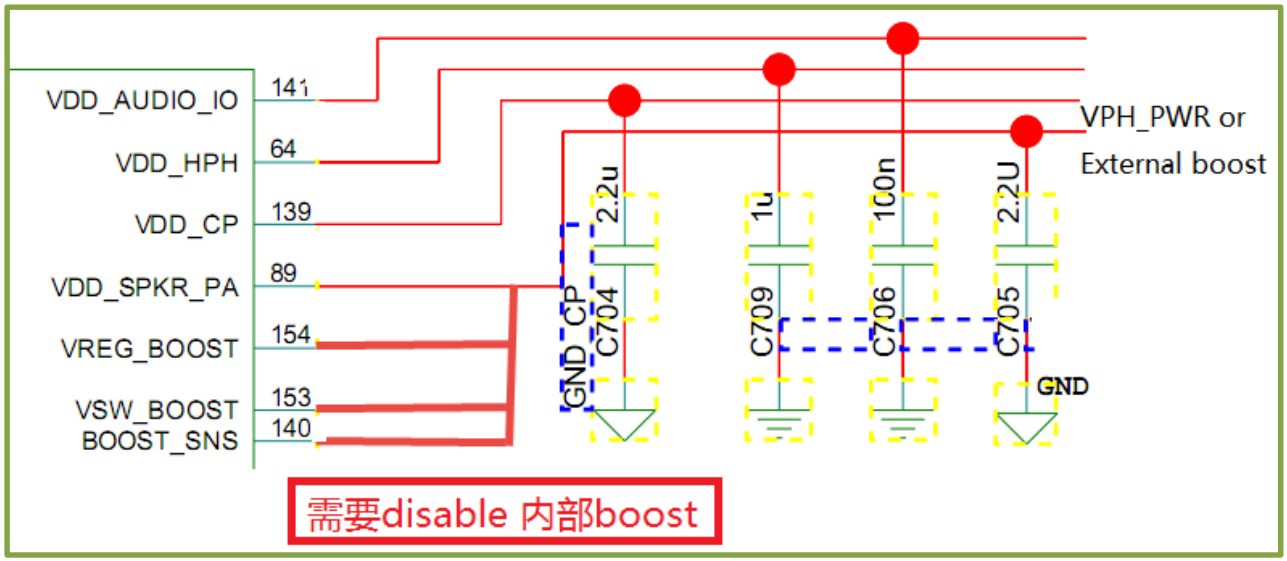
- 问题：OTA升级软件，adspso.bin分区不能访问
- 解决办法：
  - Step1. Build adspso.bin by passing two additional flags to make_ext4fs on Linux:
    - a. Get the file_contexts file from
      - LINUX\android\out\target\product\<msm>\root\file_contexts
    - b. Build a new adspso.bin with the correct SELinux flags
      - $cd adsp_proc
      - $find . -iname make_ext4fs
        - ./build/ext4fs_tools/ubuntu/make_ext4fs
      - $cp build/dynamic_signed/shared_obj .
      - $mkdir temp
      - $./build/ext4fs_tools/ubuntu/make_ext4fs -s **-T -1 -S file_contexts** -L dsp -l 16777216 -a dsp ./temp/adspso_sparse.bin ./build/dynamic_signed/shared_obj
      - $./build/ext4fs_tools/ubuntu/simg2img temp/adspso_sparse.bin temp/adspso.bin

adspbin.so, OTA SW upgrading issue

- Step2. Modify init.target.rc to mount /dsp as a read only partition (and removed restorecon)
  - diff --git a/init.target.rc b/init.target.rc
  - index c748c84..432c44d 100644
  - @@ -54,8 +54,8 @@ on fs
  - mkdir /persist/data 0700 system system
  - wait /dev/block/bootdevice/by-name/dsp
  - - mount ext4 /dev/block/bootdevice/by-name/dsp /dsp nosuid nodev barrier=1
  - - restorecon_recursive /dsp
  - **+ mount ext4 /dev/block/bootdevice/by-name/dsp /dsp ro nosuid nodev barrier=1**
  - **+# restorecon_recursive /dsp**

请根据硬件设计开关PMIC BOOST

- Platforms：MSM8916/39/52/56/76 + PMIC codec
- If you have adopted our HW design connecting BOOST_SNS/VSW_BOOST/VREG_BOOST to VPH_PWR to avoid PMIC overshoot issue, please disable PMIC codec BOOST with SW.



- All mixer paths xml file should be configured to enable or disable the Boost as per the HW design. Below is the mixer path change details :

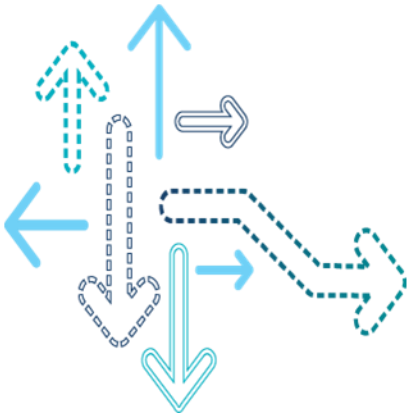
	PMIC Codec BOOST is used	PMIC Codec BOOST is not used
Speaker Amp	<ctl name="Speaker Boost" value="ENABLE" />	<ctl name="Speaker Boost" value="DISABLE" />
Ear Amp	<ctl name="EAR PA Boost" value="ENABLE" />	<ctl name="EAR PA Boost" value="DISABLE" />

Audio common issues（1）

- 描述：Line app calling will be ended if enable handfree mode
- 复现步骤和现象：
  - 1. Build a LINE call
  - 2. Enable handfree mode
- 基线： MSM8916/39
- CR： 784149
- 代码修改：
  - https://codeaurora.org/cgit/quic/la/platform/hardware/qcom/audio/patch/?id=05555ee4801e1f200e6c1fd51e7fbe54a673f4a8

Audio common issues（2）

- 描述：QUIN MI2S is not configured with voice path
- 复现步骤和现象：
  - QUIN MI2S is configured for external speaker path
  - When switch to speaker, it become silence in call mode
- 基线： MSM8953等, kernel/msm-3.18
- CR： 999811
- 代码修改：
  - 请提case获取



Questions?

https://support.cdmatech.com