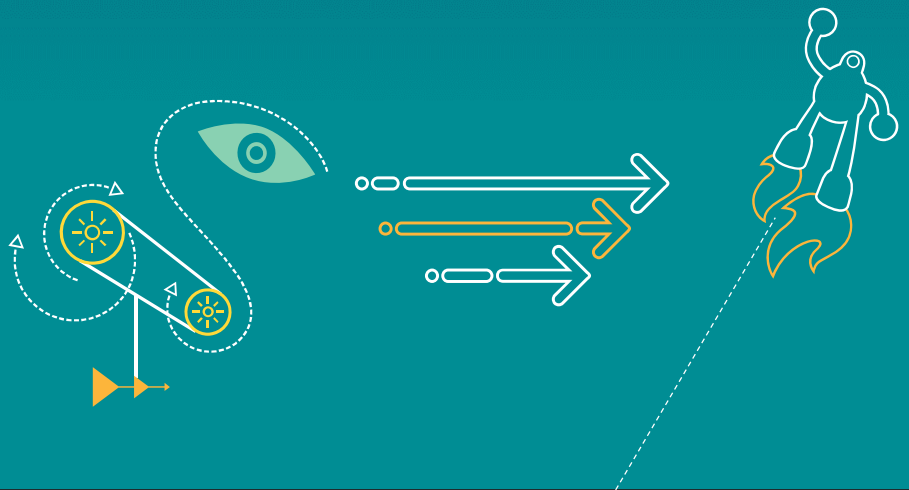
高通多媒体技术期刊　20161130

Qualcomm Technologies, Inc.



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Revision History

Revision	Date	Description
A	Nov. 2016	Initial release

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

内容

- Audio
  - Important docs update
  - [ADSP] dynamic loading failure due to fastrpc issue
  - [MI2S] No sound on MI2S due to new AFE APIs on ADSP.2.8
  - [ADSP stability] ADSP crash in cvd_cal_query()
  - [ANR] BT耳机通话，ANR
  - [Kernel] qurt_mem_region_create fails
  - [SVA] SVA got exception when recognition in screen off
  - [BOA] Change the system time later than the present, the playback will stop
- Display
  - The critical documents for MSM8998 Display bring up
  - How to disable UEFI display on 8998
  - Display Kernel driver location change on 8998
  - MSM8998 MDP wait4pingpong timeout issue

Audio

Important docs update

- Docs
  - 80-P2484-103 MSM8998 USB LOW POWER DIGITAL AUDIO OVERVIEW
  - 80-P8754-21 SDM660 LINUX ANDROID AUDIO OVERVIEW
  - 80-NV610-33 MSM8952 VOICE SOFTWARE ARCHITECTURE
  - 80-NN686-1 DESCRIBES THE SUPPORTED VOICE SERVICES APIS
- Solutions
  - KBA-160718021012 - How to change MI2S Clock source from Digital to Analog PLL

[ADSP] dynamic loading failure due to fastrpc issue

- 描述： Video recording failed due to dynamic loading of aac encoder is failed
- 复现步骤和现象：
  - Clear steps are unknown, but issue is reproduced with following steps.
  - 1. Reboot the device
  - 2. Do any sensor related tests
  - 3. Do video recording
  - 4. Expected results: video recording should be successes.
  - 5. Actual Results: Video recording failed.
- 基线：MSM8953/MSM8940/MSM8976Pro
- CR：**1093033**
- 代码修改：
  - Inside ADSP, please get it with case

[MI2S] No sound on MI2S due to new AFE APIs on ADSP.2.8

- 描述：No sound on MI2S due to AFE APIs change on ADSP.2.8
- 复现步骤和现象：
  - With tinymix command similar with :
    - tinymix 'QUAT_MI2S_RX Audio Mixer MultiMedia1' 1
    - tinyplay /sdcard/1k.wav
  - No sound is found
    - In the QXDM log, it shows :
      - AudioIfClkDriver.cpp 01360 afe_set_audioif_clk_cfg has not been initialized
- 基线： MSM8953/MSM8940/MSM8976Pro
  - N release which has ADSP version 2.8
- CR：1094689
- 代码修改：
  - ADSP 2.8 need new AFE APIs for MI2S from AP kernel driver
  - We missed the change on msm8952-slimbus.c , it presents on msm8952.c
  - 正在mainline, please get it with case

[ADSP stability] ADSP crash in cvd_cal_query()

- 描述：ADSP crash in cvd_cal_query()
- 复现步骤和现象：
  - Voice call和VoIP call并发
- 基线：LA.UM.*
- CR：1086922
- 代码修改：
  - hal/audio_hw.c
  - int select_devices(struct audio_device *adev, audio_usecase_t uc_id)
  - in_snd_device);
  - }
  - …
  - + /* Update VOICE/VOIP device post configuration */
  - + if (usecase->type == VOICE_CALL || usecase->type == VOIP_CALL) {
  - + status = platform_switch_voice_call_device_post(adev->platform,
  - + out_snd_device,
  - + in_snd_device);
  - + }
  - +
  - /* Enable new sound devices */
  - … …
  - if (usecase->type == VOICE_CALL || usecase->type == VOIP_CALL) {
  - - status = platform_switch_voice_call_device_post(adev->platform,
  - - out_snd_device,
  - - in_snd_device);
  - enable_audio_route_for_voice_usecases(adev, usecase);
  - }
  - 正在mainline

[ANR] BT耳机通话，ANR

- 描述：BT call, systemserver died
- 复现步骤和现象：
  - 1. DUT connected the Bluetooth
  - 2. DUT dail the phone number manually, after phone call connected, DUT hang up quickly, Then repeat this step for serval times.
  - 3. DUT’s phone app will be ANR,
  - 4. After a few minutes, systemserver died and phone reboot.
- 基线： MSM8940.LA.2.0, MSM8953.LA.2.0, 8996 N
- CR：1093067
- 代码修改：
  - services/audioflinger/Threads.cpp
  - 正在mainline, please get it with case

[Kernel] qurt_mem_region_create fails

- 描述：qurt_elite_memorymap_region_create qurt_mem_region_create fails, qurt_mem_result:(2)
- 复现步骤和现象：
  - Monkey test, audio no sound, kernel log prints :
    - qurt_elite_memorymap_region_create qurt_mem_region_create fails, qurt_mem_result:(2)
  - Race condition happens between AFE_SVC_CMD_SET_PARAM and AFE_SERVICE_CMD_SHARED_MEM_MAP_REGIONS commands
- 基线： kernel.lnx.4.4, kernel.lnx.3.18
- CR：1094151
- 代码修改：
  - sound/soc/msm/qdsp6v2/q6afe.c

```
static int afe_map_cal_data(int32_t cal_type,
        }

+       mutex_lock(&this_afe.afe_cmd_lock);
        atomic_set(&this_afe.mem_map_cal_index, cal_index);
        ret = afe_cmd_memory_map(cal_block->cal_data.paddr,
                                 cal_block->map_data.map_size);
… …
 done:
+       mutex_unlock(&this_afe.afe_cmd_lock);
        return ret;
 }
```

[Kernel] Crash at AudioDaemon for USB sound card

- 描述：Crash at AudioDaemon for USB sound card
- 复现步骤和现象：
  - press power button to select restart
  - quickly insert C type USB headset before system restart
  - crash occurs at AudioDaemon when doing poll operation
  - Issue may only happen when USB sound card is detected before MSM sound card is detect.
- 基线： MSM8953 etc. which uses USB type C headset.
- CR：1090587
- 代码修改：
  - audiod/AudioDaemon.cpp
  - 正在mainline, please get it with case

[SVA] SVA got exception when recognition in screen off

- 描述： SVA got exception when recognition in screen off
- 复现步骤和现象：
  - 1, open voice activation
  - 2, choose "nihao xiaolong" , then enable the voice activation
  - 3, suspend the phone
  - 4, say "nihao xiaolong"
  - 5.phone was activated, but SVA feature was disabled
- 基线：LA.BR.1.3.4, LA.BR.1.3.5
- CR：1088756
- 代码修改：
  - If need it, please get it with case
    - audio-listen/sva/src/com/qualcomm/qti/sva/MessageType.java
    - audio-listen/sva/src/com/qualcomm/qti/sva/SoundModelRepository.java
    - audio-listen/sva/src/com/qualcomm/qti/sva/VwuService.java
    - audio-listen/sva/src/com/qualcomm/qti/sva/ux/user/MainActivity.java

[QACT] N release need QACT v6.0.13.3 or later version

- 描述： When do audio recording, RTC mode Topology isn't same with Offline mode
- 复现步骤和现象：
  - 1, Open QACT for RTC tuning
  - 2, Start recording, QACT log shows :
    - Error getting payload for tableID:1, Indices: DEVICE-0x00000015 SAMPLERATE-0x00001F40 APPTYPE-0x00011130 MODULE-0x00010719 PARAM-0x0001071A
    - Exception: Failed to get data from Target for following IDs with Error Code: -1
- 基线：MSM8940 N etc.
- CR：1009200
- 代码修改：
  - Due to ADSP image is upgraded to ADSP 2.8
  - Need to use QACT v6.0.13.3 or later version which has the CR#1009200

[BOA] Change the system time later than the present, the playback will stop

- 描述：Change the system time later than the present, the playback will stop
- 复现步骤和现象：
  - As the subject
- 基线：N release
- CR：Bug of Android, Android_7.1.0_r7 will has the fix, Android 7.1 will be merged in Qualcomm's base code in December
- 代码修改：
  - libc/bionic/pthread_cond.cpp

```
extern "C" int pthread_cond_timedwait_relative_np(pthread_cond_t* cond_interface,
                                                  pthread_mutex_t* mutex,
                                                  const timespec* rel_timeout) {
    timespec ts;
    timespec* abs_timeout = nullptr;
    if (rel_timeout != nullptr) {
-     absolute_timespec_from_timespec(ts, *rel_timeout, CLOCK_REALTIME);
+     absolute_timespec_from_timespec(ts, *rel_timeout, CLOCK_MONOTONIC);
      abs_timeout = &ts;
    }
-  return __pthread_cond_timedwait(__get_internal_cond(cond_interface), mutex, true, abs_timeout);
+  return __pthread_cond_timedwait(__get_internal_cond(cond_interface), mutex, false,
abs_timeout);
  }
```

Display

The critical documents for MSM8998 Display bring up

- 对于MSM8998, 在panel bring up时，请先阅读以下文档：

Document ID	Description
80-P2484-11	MSM8998_Linux_Android_Display_Overview
80-NU323-32	MSM8998_Display_Panel_Bring_Up_Guide
80-NH713-1	DSI_Timing_Parameters
80-NB116-2	ACPI_Guide_Display_Drivers_Windows

How to disable UEFI display on 8998

- 在8998平台上，Little kernel (LK) has been replaced with UEFI。
- Continuous splash screen is enabled by default and supported by the UEFI driver.

- 在kernel 进行panel bring up时，有时候需要disable UEFI display，参考如下：
- In /BOOT.XF.1.2/QcomPkg/Library/MDPLib/MDPLib.c
  - MDP_Status MDPExitBoot(uint32 uFlags)
  - {
    - MDP_Panel_AttrType *pDisplayInfo = MDP_GET_DISPLAYINFO(MDP_DISPLAY_PRIMARY);
    - /* If seamless splash is not required, turn off the display before leaving */
    - **+ if (1) /* MDP_PANEL_FLAG_DISABLE_SEAMLESS_SPLASH & pDisplayInfo->eDisplayFlags) */**
    - **- if (MDP_PANEL_FLAG_DISABLE_SEAMLESS_SPLASH & pDisplayInfo->eDisplayFlags)**
    - {
    - // Turn off the displays clocks before exiting
    - MDPDeInit(MDP_DISPLAY_PRIMARY, 0x0);
    - MDPDeInit(MDP_DISPLAY_EXTERNAL, 0x0);
    - // Turn off the core clocks and footswitches as well
    - MDPTerm(0x0);
  - }

Display Kernel driver location change on 8998

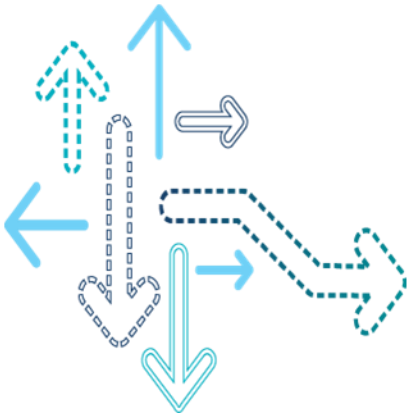
- 在8998平台上，linux kernel 的版本为4.4：
- Display kernel driver folder:
  - \drivers\video\fbdev\msm
- Display PLL driver folder:
  - /kernel/msm-4.4/drivers/clk/qcom/mdss/
- Note that in kernel/msm-4.4/Documentation/devicetree/bindings/fb/ folder, 包括了对Display Port， HDMI, Rotator 属性的描述：
  - mdss-dp.txt
  - mdss-dsi-panel.txt
  - mdss-dsi.txt
  - mdss-mdp.txt
  - mdss-pll.txt
  - mdss-rotator.txt
  - msm-hdmi-tx.txt

MSM8998 MDP wait4pingpong timeout issue

- **Issue description:**
  - During the stability test, sometimes MDP wait4pingpong timeout issue happened.
    - Kernel panic - not syncing: mdss_mdp_cmd_wait4pingpong

- **Fix changes:**

```
diff --git a/drivers/video/fbdev/msm/mdss_fb.c b/drivers/video/fbdev/msm/mdss_fb.c
index 08e06c7..d528305 100644
--- a/drivers/video/fbdev/msm/mdss_fb.c
+++ b/drivers/video/fbdev/msm/mdss_fb.c
@@ -233,9 +233,11 @@ static int mdss_fb_notify_update(struct msm_fb_data_type *mfd,
                        }
        } else if (notify == NOTIFY_UPDATE_STOP) {
                        mutex_lock(&mfd->update.lock);
-                       if (mfd->update.init_done)
+                       if (mfd->update.init_done) {
+                               mutex_unlock(&mfd->update.lock);
+                               mutex_lock(&mfd->no_update.lock);
                                reinit_completion(&mfd->no_update.comp);
-                       else {
+                       } else {
                                mutex_unlock(&mfd->update.lock);
                                pr_err("notify update stop called without init\n");
                                return -EINVAL;
```



Questions?

https://support.cdmatech.com