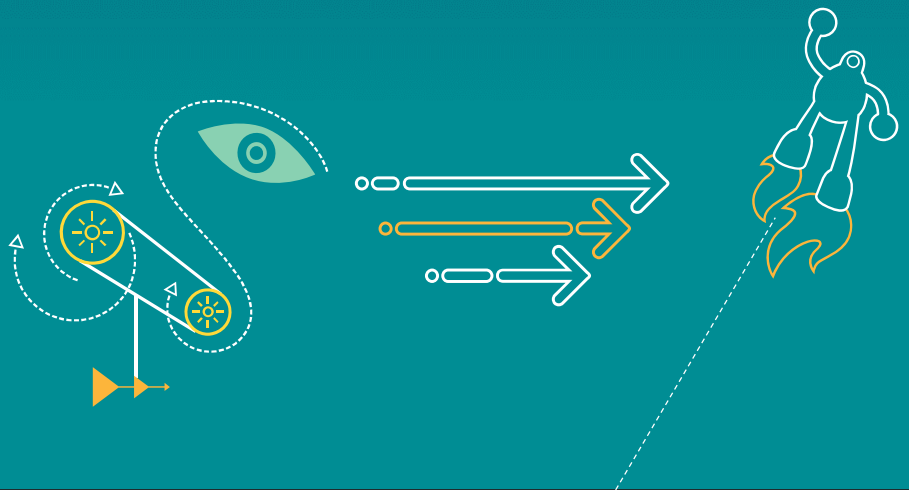
高通多媒体技术期刊　20151125

Qualcomm Technologies, Inc.



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Revision History

Revision	Date	Description
A	Nov. 2015	Initial release

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

内容

- Audio
  - Important docs update
  - Low latency playback
  - MBHC Code Flow
  - MBHC Customization
  - Audio common issues
- Display Tuning
  - 无级白点校正

Audio

Important docs update

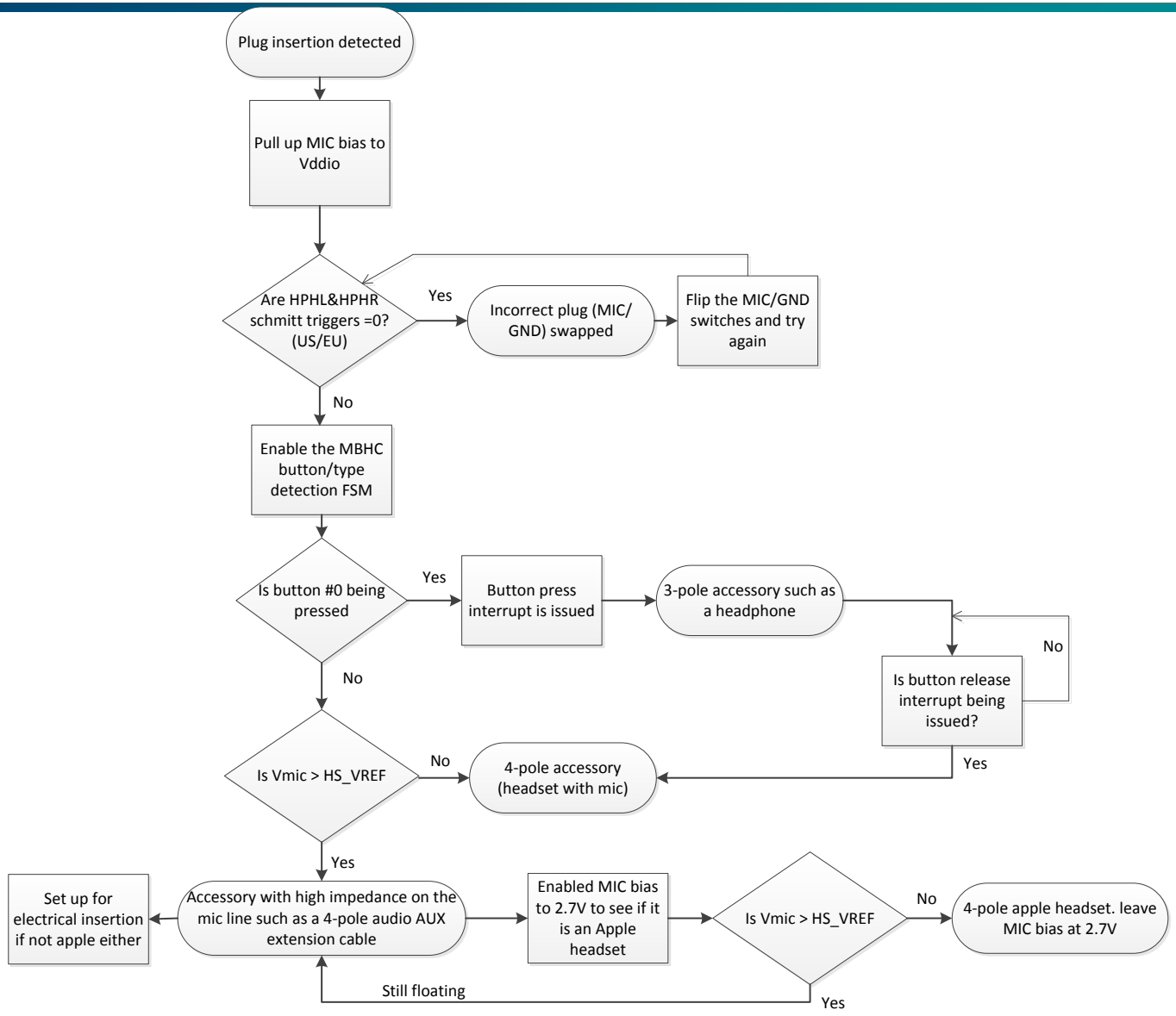
- Docs
  - 80-N3470-4 Rev.C Hexagon DSP Audio PCM-Bitstream Logging
  - 80-NT781-13 WCD9335/WCD9326 44.1 KHZ AUDIO PLAYBACK APPLICATION NOTE
- Solutions
  - Solution#00031205 - How to collect ADSP SSR dump

Low latency playback

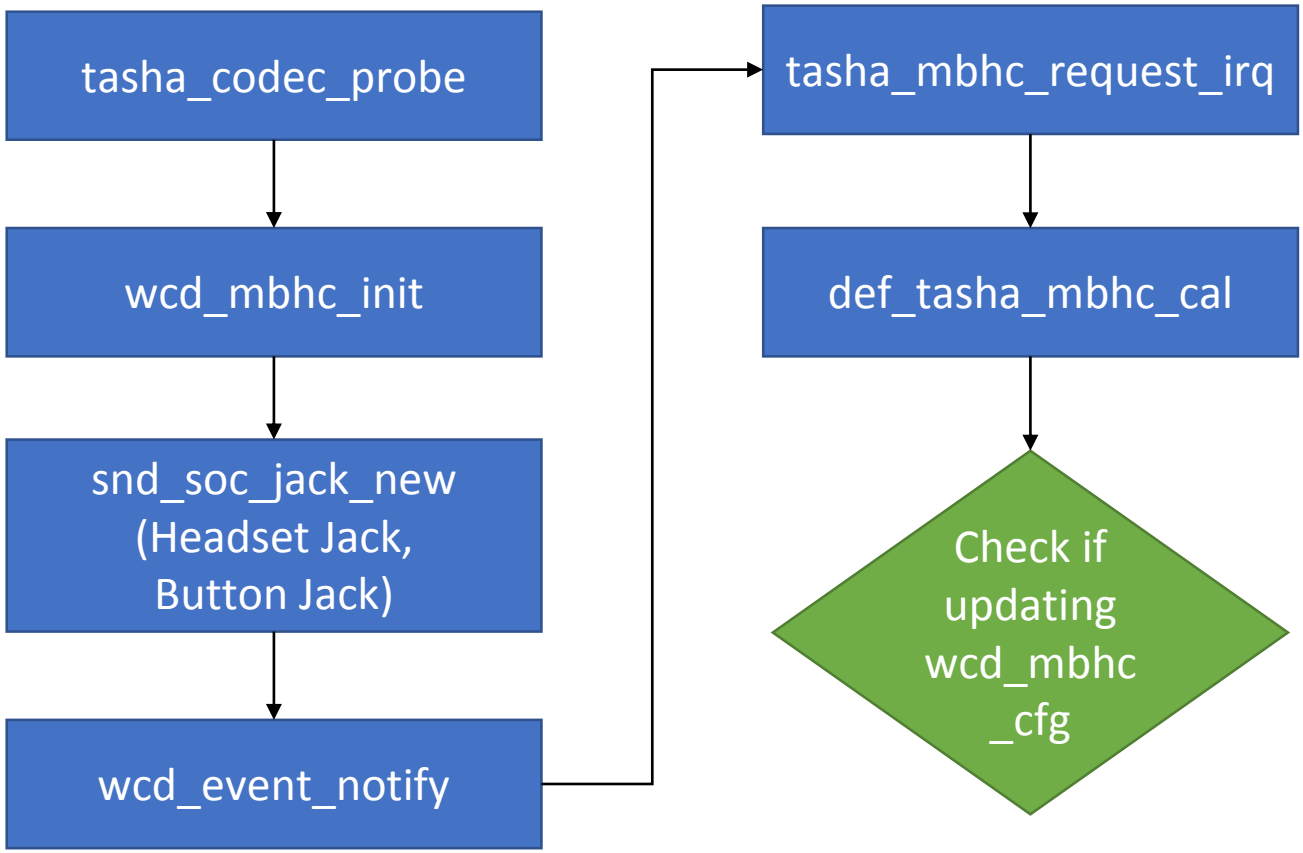
- On 8952/8976 LL (low latency) playback is enabled by default ,it's not ULL (ultra-low latency).
- Basic difference between LL and ULL is on DSP topology. ULL uses NONE topology where as LL can have various topologies. This difference makes LL can drive LL playback to combo devices
- 配置：
  - msmxxxx.dtsi
  - pcm1: qcom,msm-pcm-low-latency {
  - compatible = "qcom,msm-pcm-dsp";
  - qcom,msm-pcm-dsp-id = <1>;
  - qcom,msm-pcm-low-latency;
  - qcom,latency-level = "**regular**";
  - };
  - "ultra" - ULL
  - "regular" - LL

  - q6audio-v2.h
  - enum {
  - LEGACY_PCM_MODE = 0,
  - LOW_LATENCY_PCM_MODE,
  - ULTRA_LOW_LATENCY_PCM_MODE,
  - };

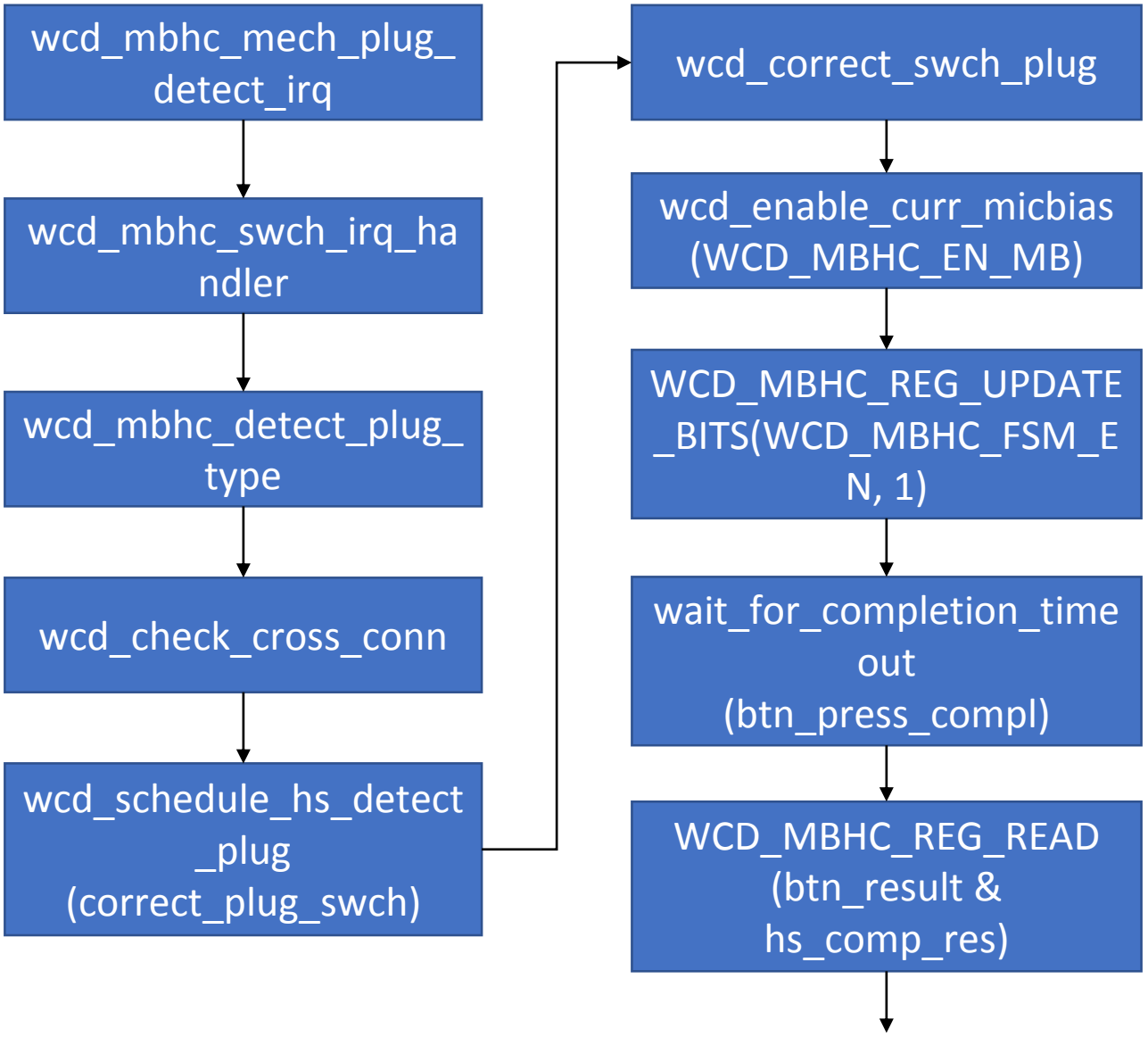
MSM8996 MBHC v2 driver (wcd-mbhc-v2.c) flow chart



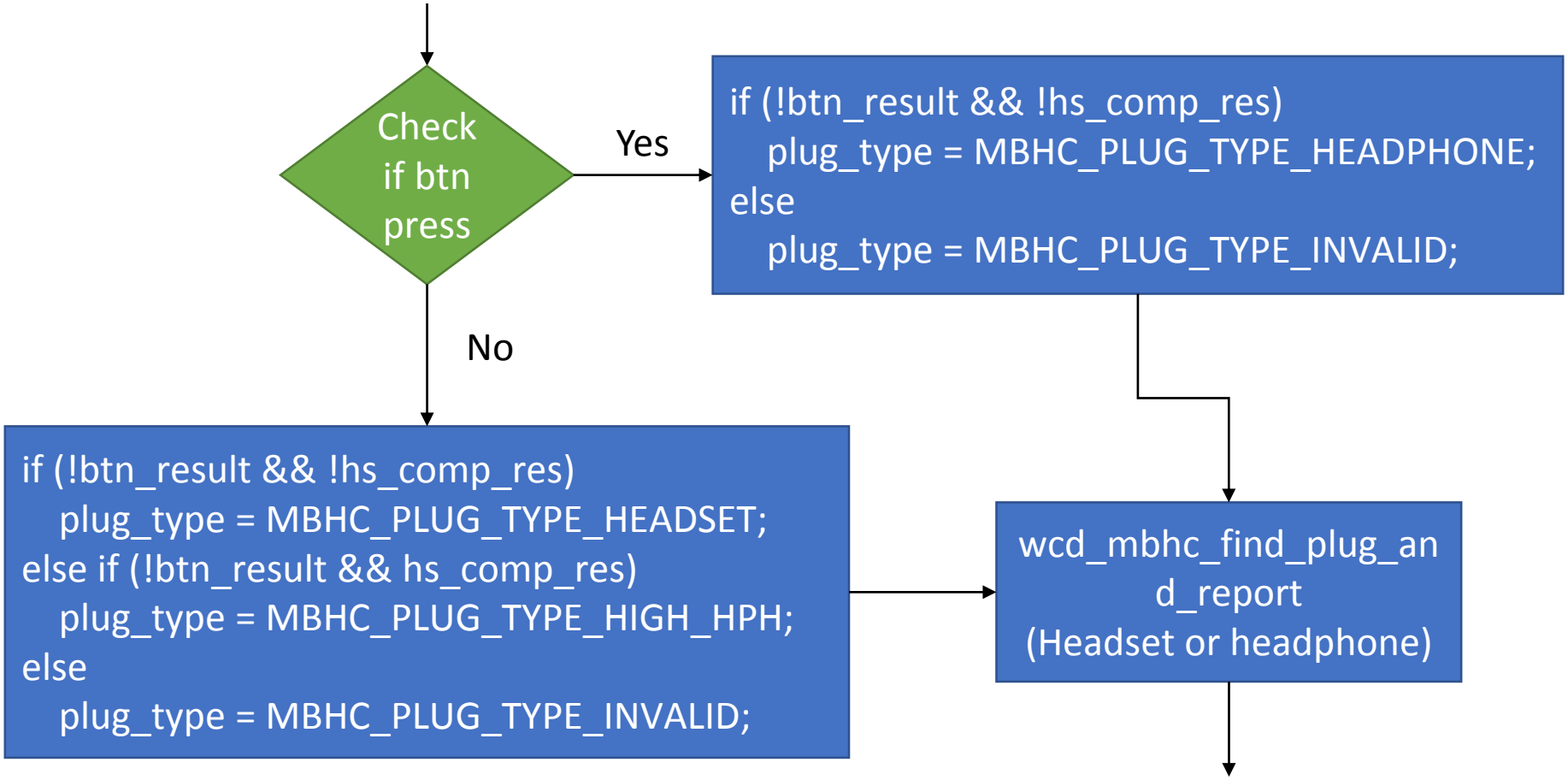
MBHC Code Flow (MBHC Init)



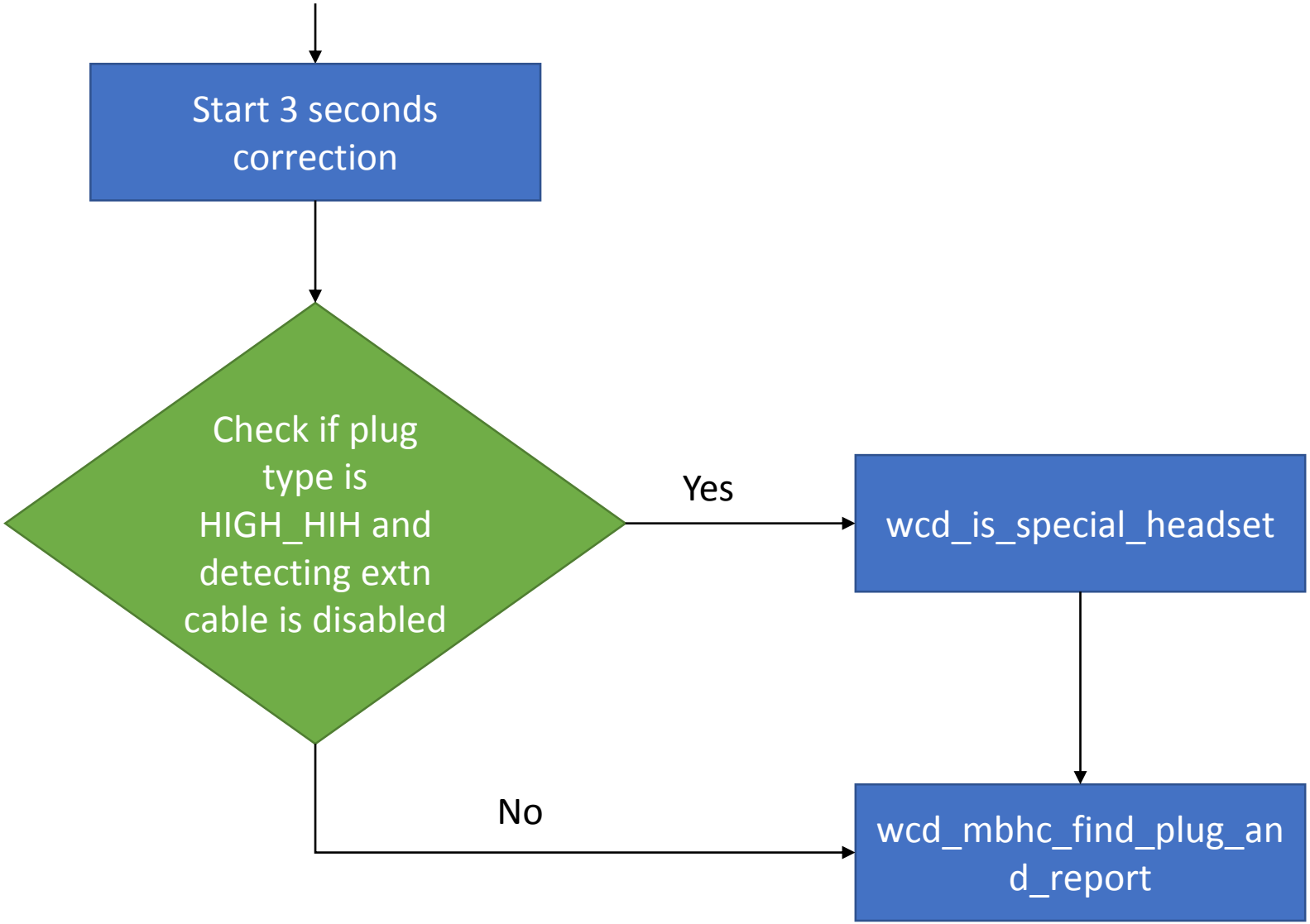
MBHC Code Flow (Headset Insertion - 1)



MBHC Code Flow (Headset Insertion - 2)



MBHC Code Flow (Headset Insertion - 3)



MBHC Customization

- ./kernel/sound/soc/msm/msm8996.c
- Btn thresholds (btn_high)
- S(v_hs_max, 1500);
- wcd_mbhc_cfg
  - .key_code[0] = KEY_MEDIA,
  - .key_code[1] = KEY_VOICECOMMAND,
  - .key_code[2] = KEY_VOLUMEUP,
  - .key_code[3] = KEY_VOLUMEDOWN,
  - .key_code[4] = 0,
  - .key_code[5] = 0,
  - .key_code[6] = 0,
  - .key_code[7] = 0,
  - .linein_th = 5000,
  - .moist_cfg = { V_45_MV, I_3P0_UA },

Audio common issues（1）

- 描述：SRVCC(Single Radio Voice Call Continuity) mute issue if Mi2S used
- 复现步骤和现象：
  - 1. make Volte call, switch to speaker mode
  - 2. Move to a non-LTE place, let the call handover to GSM call
  - Result: TX is muted
  - Rate: 100%
- 基线：MSM8939.LA.2.1, with customization as external QUAT I2S is enabled.
- CR：NA
- 代码修改：
  - 如果发现该问题，提交case要求patch

Audio common issues（2）

- 描述：In call recording, DSP error, device no sound and UI freezing
- 复现步骤和现象：
  - 1, Make a call
  - 2, In call recording, touch tone is enabled along with low-latency playback
  - Result: With high rate device no sound, and UI is very slow, no response
- 基线： MSM8952.LA.1.0
- CR：939454 (AP) + 939107 (ADSP)
- 代码修改：
  - 创建case，申请修改

Audio common issues（3）

- 描述：EVRC decoder noise.
- 复现步骤和现象：
  - Start a voice call with a EVRC vocoder and provide full scale input to the decoder.
  - Result: The end user will hear distortion on the incoming voice.
- 基线： MSM8996.LA.1.0/ADSP.8996.2.7
- CR： 940137
- 代码修改：
  - 创建case，申请修改

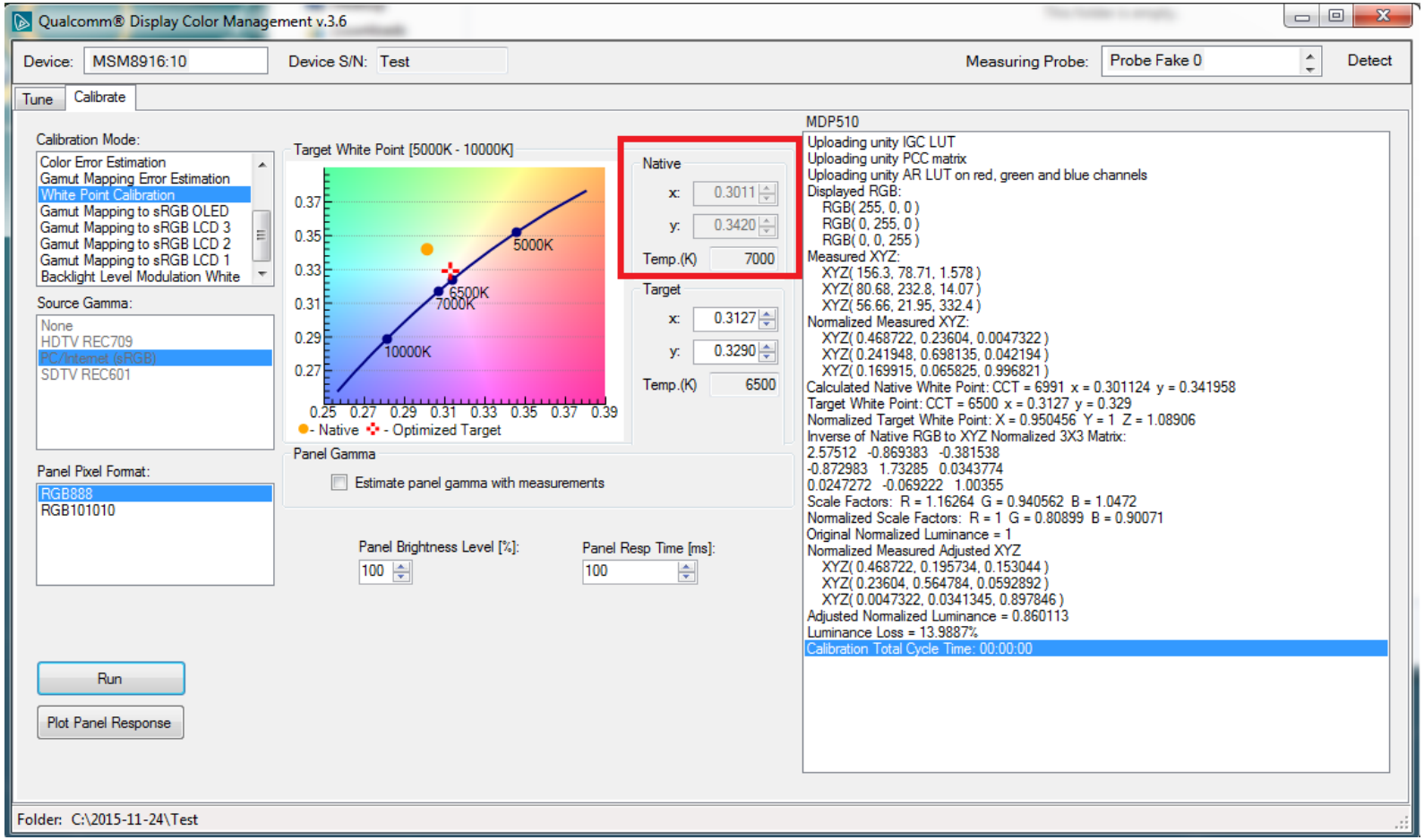
Audio common issues（4）

- 描述：3pole/4pole at end of extension cable is not detected
- 复现步骤和现象：
  - 1, Insert external cable
  - 2, Insert/Remove headset
  - 3, Remove external cable
  - Result: After 3, no IRQ for re-insertion of external cable or headset.
- 基线： MSM8996.LA.1.0, kernel/msm-3.18
- CR： 889803+943148
- 代码修改：
  - 创建case，申请修改

Display Tuning

无级白点校正(1) – 测原生白点

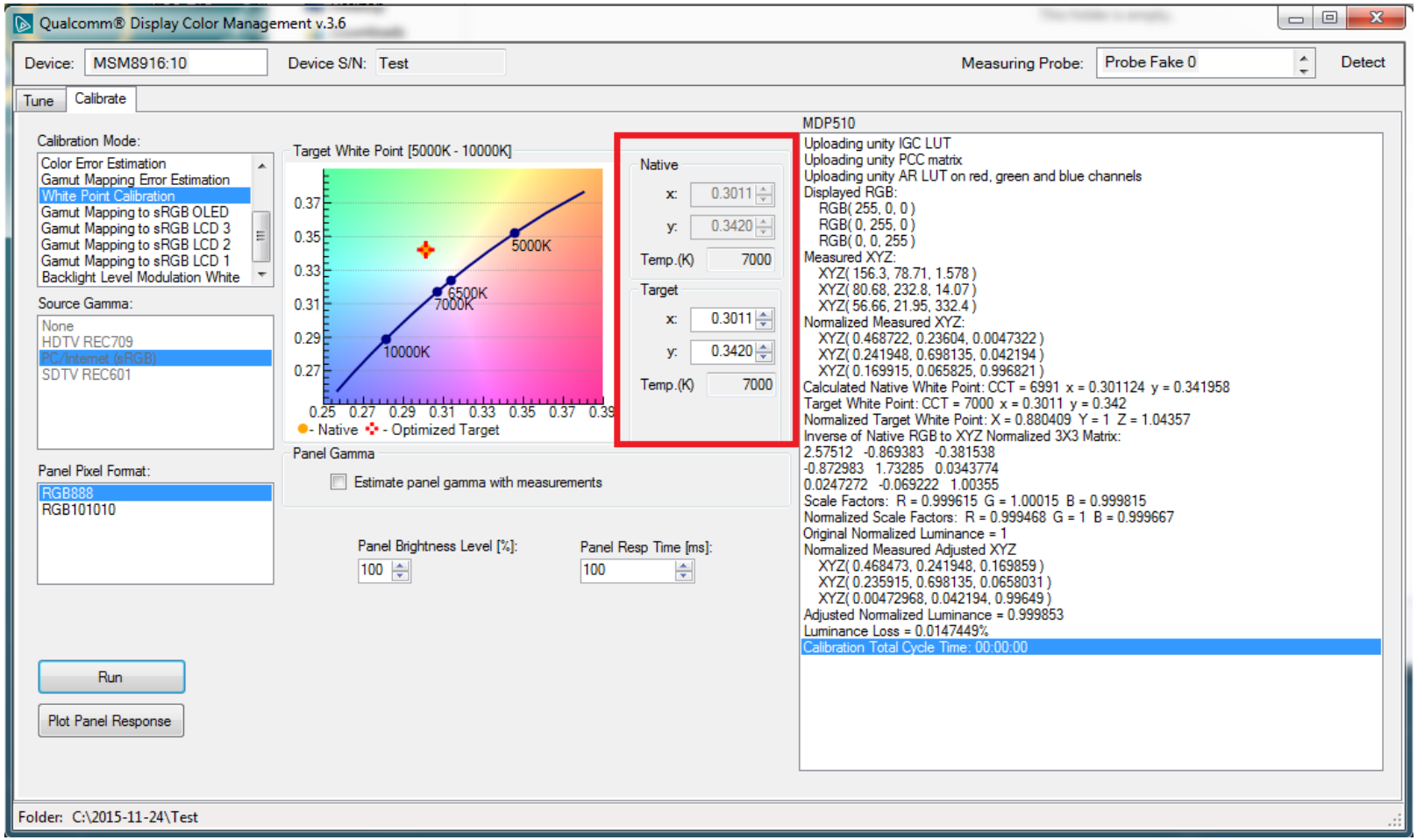
- 首先用QDCM测试屏的原生白点 (Calibrate – White Point Calibration)



- 测原生白点的时候，目标白点(Target)可以为任意值。测完之后，在截图的Native框中x, y, Temp会由 N/A 变为测量的结果。

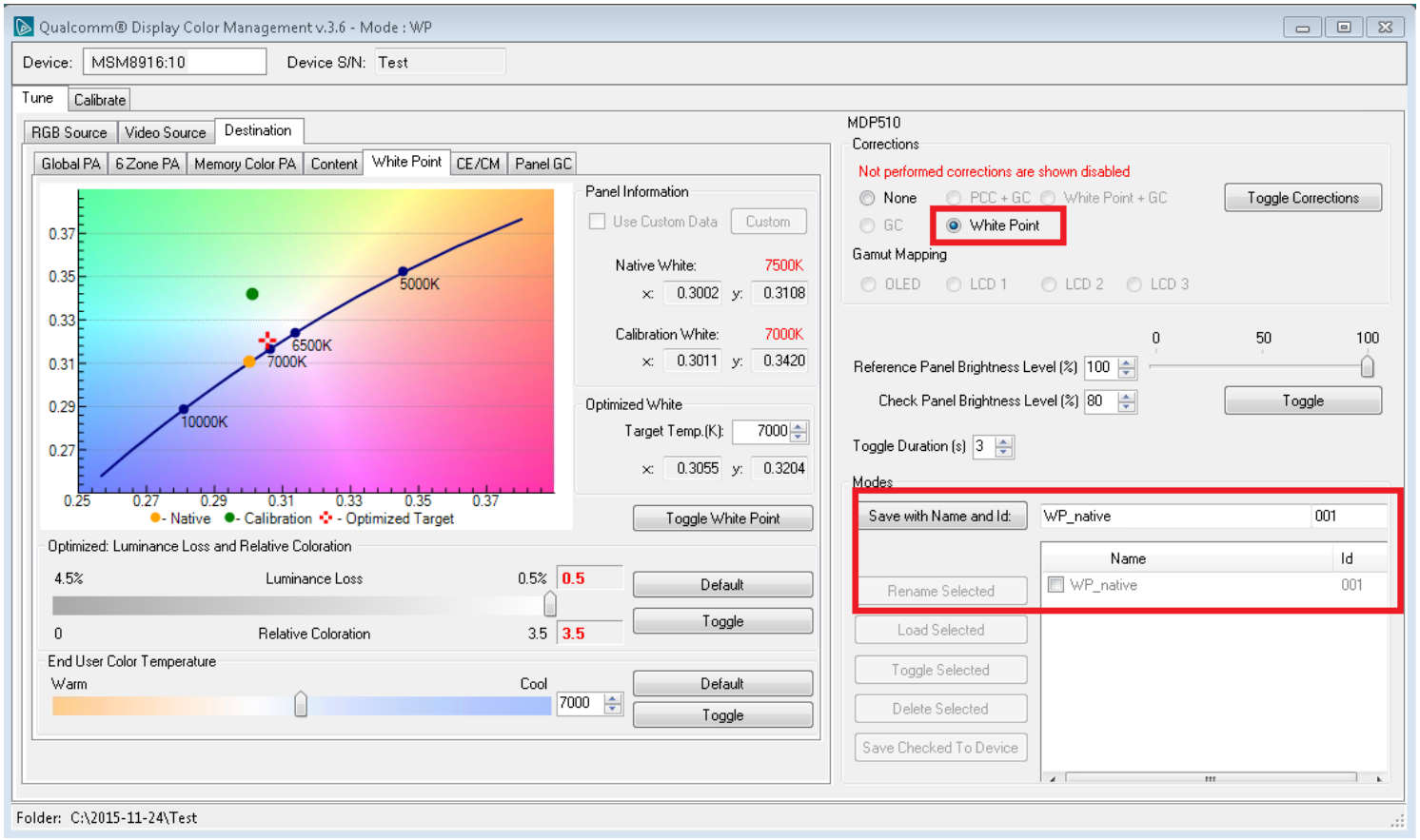
无级白点校正(2) – 二次校正到原生白点

- 然后把目标白点(Target)设置为刚才原生白点的测量结果，做第二次白点校正。当键入x, y的值之后，Temp的值会自动更新。



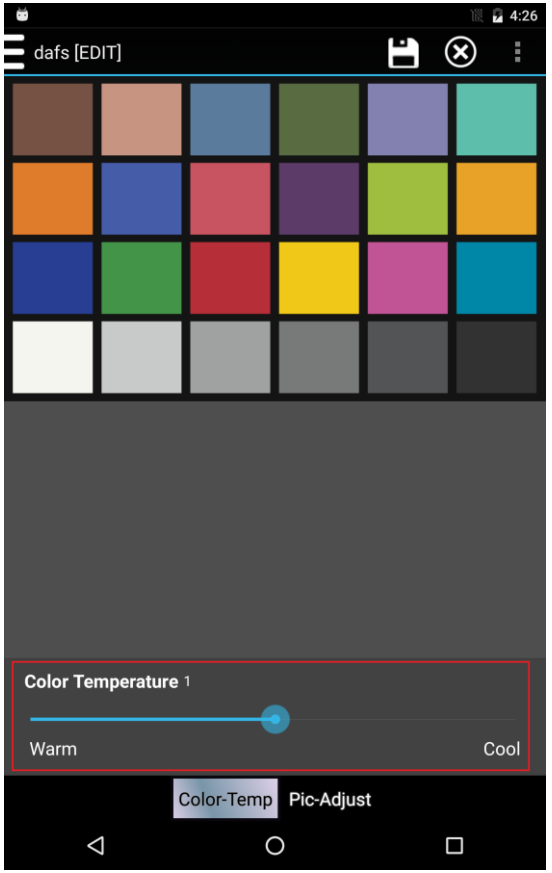
无级白点校正(3) – 保存校正值

- 在Calibrate界面做完校正之后，切到Tune – Destination – White Point界面。在Corrections中选中White Point选项。(此选项只有在做完白点校正之后才能被选中)
- 保存白点校正完的结果为一个模式。(例如:mode name: WP_native, mode id: 001)

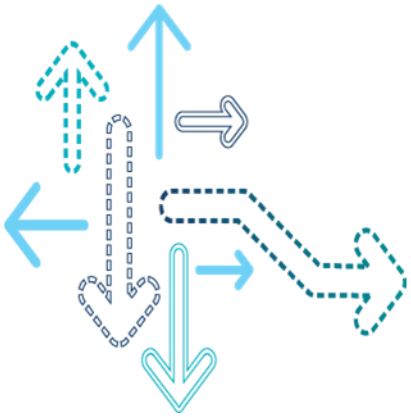


无级白点校正(4) – 手机端调节色温

- 在手机端会生成pp_calib_data_xxx.xml (xxx为panel name)文件，一般在此路径下: /data/misc/display/
- 将在手机端生成的xml文件push到 /system/etc/ 目录下，并删除原有路径下的xml文件。
- 断开QDCM PC端工具的连接。
- 打开手机端的APK (QDCM Mobile.apk)，拖动滑条调节色温。



- 注：
  - QDCM无级白点校正目前只针对LCD屏。



Questions?

https://support.cdmatech.com