Raw Dump on SM6115 and SM4250

Key words: **SM4250, SM6115, Know-How**

1.1 Key information of solution

On SM6115/SM4250, the process flow for Preview, ZSL Snapshot, QCFA/Non-ZSL Snapshot usecases are as following.

For ZSL snapshot, it uses ideal raw out from TFE LSC as RDI, then processed with OPE to get the final ISP output. For QCFA/Non-ZSL snapshot, it uses sensor output as RDI, then goes through SW LSC and OPE node to get final ISP output

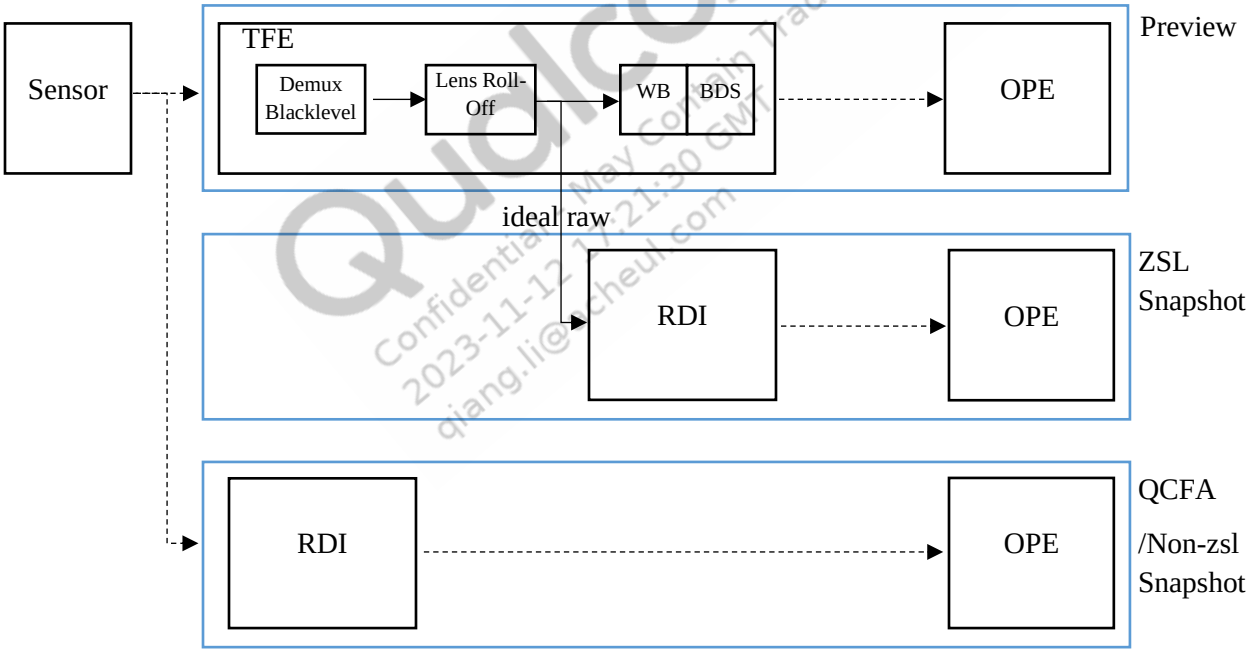

Figure 1. Flow of Preview, ZSL and QCFA Snapshot

1.2 RAW dump for camera basic tuning

For camera basic tuning, we need use sensor output MIPI raws for 3A, ISP calibration in Chromatix 7. You can use Snapdragon Camera App to get them with below steps.

1) Click about ten times on ‘Version Info’ label in camera App Settings to enable Developer Options.

2) Enable the item ‘Save with RAW format’ in developer options.

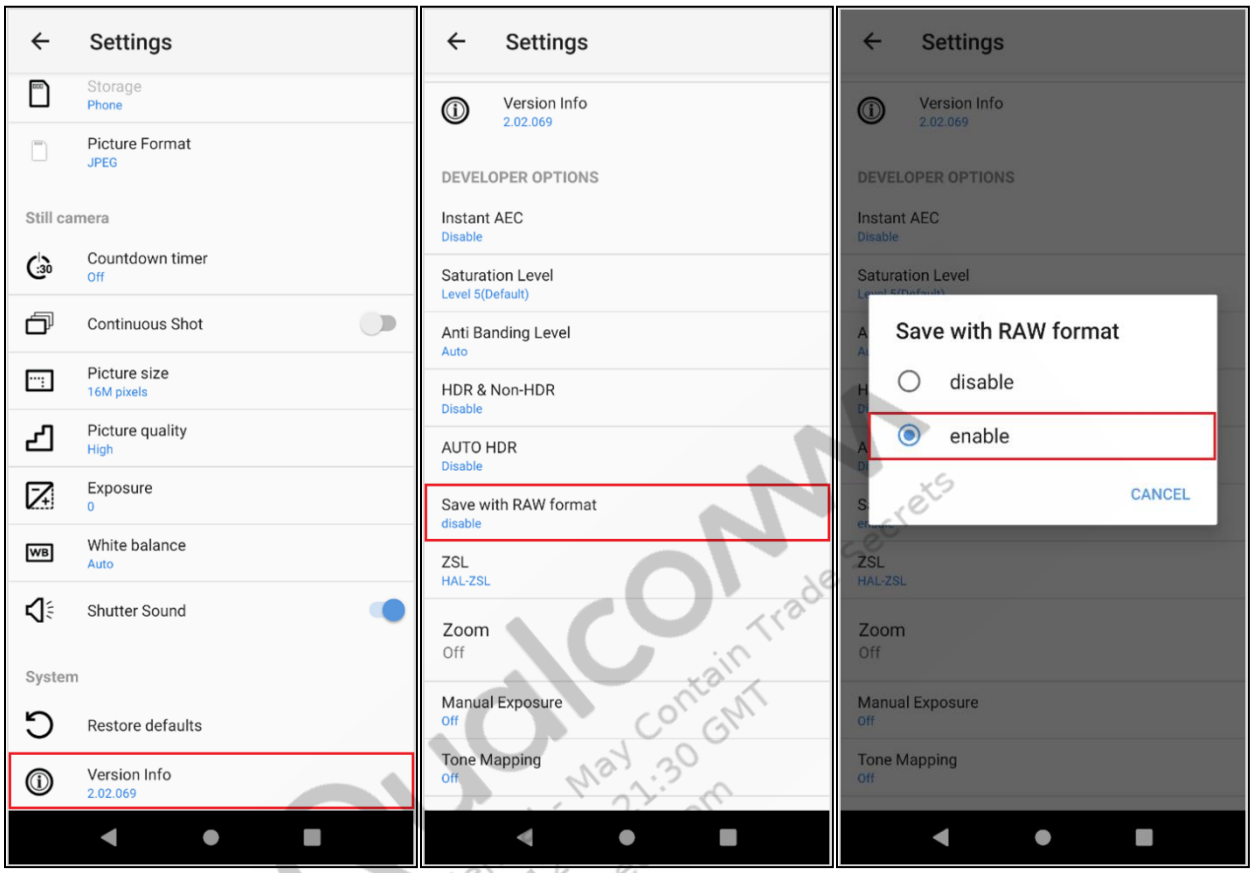

Figure 2. Steps to enable ‘Save with RAW format’

With above settings, when you take pictures, the sensor output MIPI raw image will be stored in /sdcard/DCIM/Camera/raw/.

```
bengal:/sdcard/DCIM/Camera/raw # ls
IMG_20200630_213241_w4640_h3480_f37_bpp0.raw
```

1.3 RAW dump with camxoverridesettings

Usually we set below mask in camxoverridesettings.txt to collect raws of subject test scenes for camera fine tuning. This mask works same on Snapdragon Camera App and customer own camera App.

reprocessDump=TRUE

On previous platform, we use sensor output MIPI raw as RDI buffer for snapshot input, so with above mask, we can get sensor output MIPI raw, such as below dumps on SM8250.

```
SS9811:/data/vendor/camera # ls
p[MfsrBlend]_req[1]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrBlend]_req[2]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrBlend]_req[3]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrBlend]_req[4]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrBlend]_req[5]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrBlend]_req[6]_batch[0]_BPS[1]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
p[MfsrPrefilter]_req[1]_batch[0]_BPS[0]_port[0]_w[4000]_h[3000]_20200119_051058.RAWMIPI
```

On SM6115 and SM4250, For ZSL Snapshot, it uses ideal raw output from TFE LSC as RDI buffer for snapshot input, in this case, we can only get ideal raw, such as below RAWMIPI12 dumps.

```
bengal:/data/vendor/camera # ls
p[ZSLSnapshotYUVHAL]_req[1]_batch[0]_OPE[2]_[in]_port[1]_w[4640]_h[3480]_20200629_210126.RAWMIPI12
p[ZSLSnapshotYUVHAL]_req[1]_batch[0]_OPE[3]_[in]_port[1]_w[4640]_h[3480]_20200629_210126.RAWMIPI12
```

For QCFA/Non-ZSL Snapshot, it uses sensor output as RDI buffer for snapshot input, in this case, we can get sensor output raw dump with 'reprocessDump' mask setting. Such as below.

```
bengal:/data/vendor/camera # ls
p[RealTimeFeatureNZSLSnapshotRDI]_req[1]_batch[0]_TFE[0]_[out]_port[4]_w[9248]_h[6944]_20200115_164208.RawPlain16LSB1
p[ZSLSnapshotYUVHALwithLSC]_req[1]_batch[0]_com.qti.node.swlsc[3]_[in]_port[0]_w[9248]_h[6944]_20200115_164208.RawPlain16LSB1
```

1.4 How to dump sensor output raw for ZSL Snapshot on customer camera APP

If you want to get sensor output raw for ZSL Snapshot on your own camera App, you need configure an extra raw stream request from App, to dump raws of that stream to get the sensor output raw. If you have question on this solution, please file Camera SW case to check it.