



**MEDIATEK**

CONFIDENTIAL B

# Basic Tuning Flow – Flash Calibration

# Flash Online calibration

## ➤ Introduction

- a) NVRAM I/O control
  - Calibration
- b) Flash AWB light area
  - List flash point in AWB light area.
- c) Flash AWB
  - Import/Export flash awb setting.
- d) Flash AE
  - Import/Export flash ae setting.



# Flash Online calibration

## ➤ Calibration flow

- a) Setting phone with tripod.
- b) Capture gray chart with 20 cm distance for full screen occupation.
- c) All black environment.
- d) Click “Calibration” button on CCT.
- e) Check the pink points drawing on light area.

Setting Environment



Calibration Processing



# Flash Offline calibration

## ➤ Introduction

If CCT connection is not convenient, we can use adb cmd for full calibration.

adb cmd:

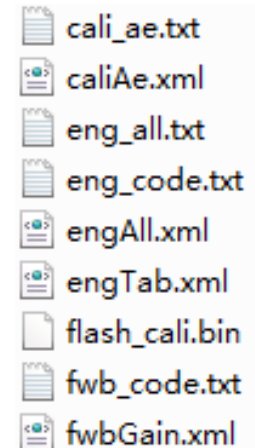
```
adb shell setprop debug.flash_ratio 1
```

Choose Flash on in the Phone UI, Do The calibration on dark environment as introduced in last page.

After calibration, we can get data as the right:

Get data from eng\_code.txt and fwb\_code.txt, and fill in below parameters

```
XXXmipiraw_$Scenario_Flash_Calibration.cpp
```



# Flash Preference Gain

## ➤ Introduction

Different with Prior Platform, P60 has different Preference Gain for Different LV. LV gets from the environment before flash fired.

XXXmipiraw\_\$Scenario\_Flash\_AWB.cpp

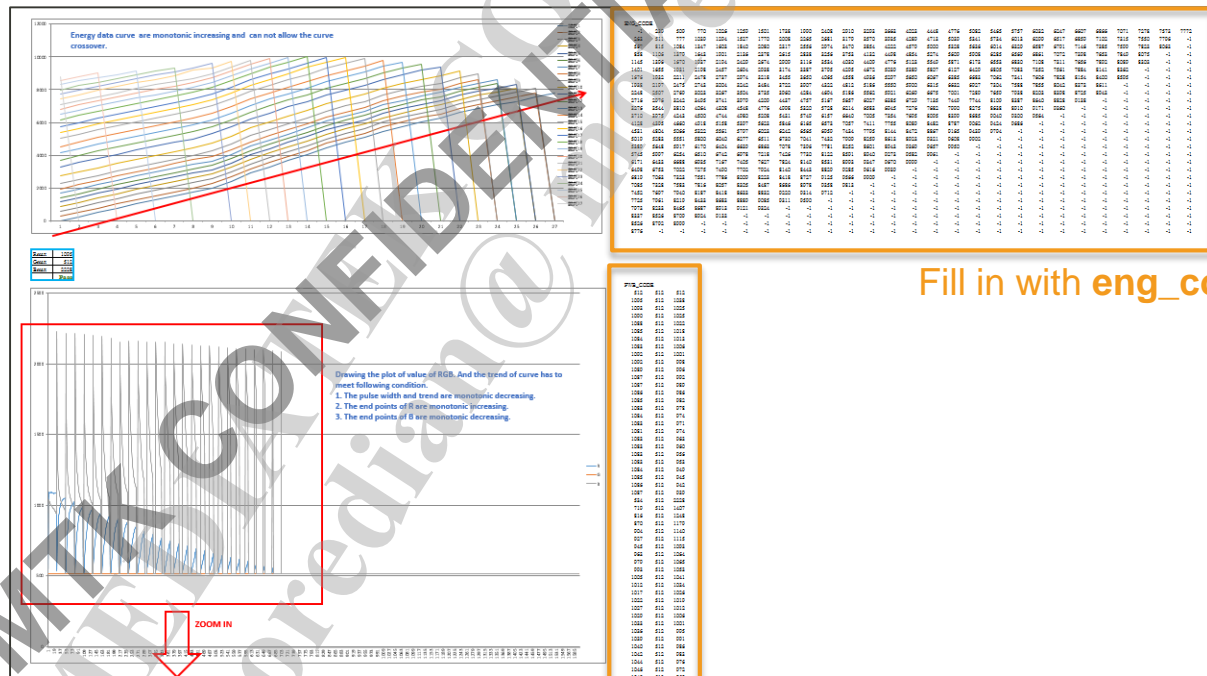
```
// FlashPreferenceGain
{
    {508, 512, 536}, // LV0
    {508, 512, 536}, // LV1
    {508, 512, 536}, // LV2
    {508, 512, 536}, // LV3
    {510, 512, 536}, // LV4
    {510, 512, 536}, // LV5
    {510, 512, 536}, // LV6
    {510, 512, 536}, // LV7
    {512, 512, 536}, // LV8
    {512, 512, 512}, // LV9
    {512, 512, 512}, // LV10
    {512, 512, 512}, // LV11
    {512, 512, 512}, // LV12
    {512, 512, 512}, // LV13
    {512, 512, 512}, // LV14
    {512, 512, 512}, // LV15
    {512, 512, 512}, // LV16
    {512, 512, 512}, // LV17
    {512, 512, 512}, // LV18
}
```

AWB\_TAG\_ALGO\_SCENE\_LV

76

# Verify Flash calibration data

- Method1 : use CCT Flash Calibration data
  - A. **Get result** - Go to root folder to get **fwb\_code.txt**, **eng\_code.txt** after Flash Calibration is done.
  - B. **Verify calibration data** - Fill in the energy data in EXCEL file.  
(use 3A\_Calibration\_Check\_Report.xlsx)



# Verify Flash calibration data

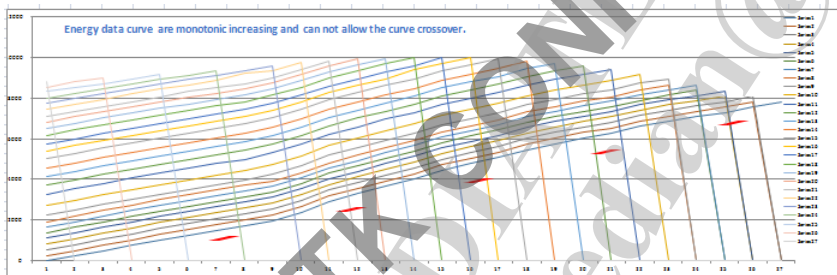
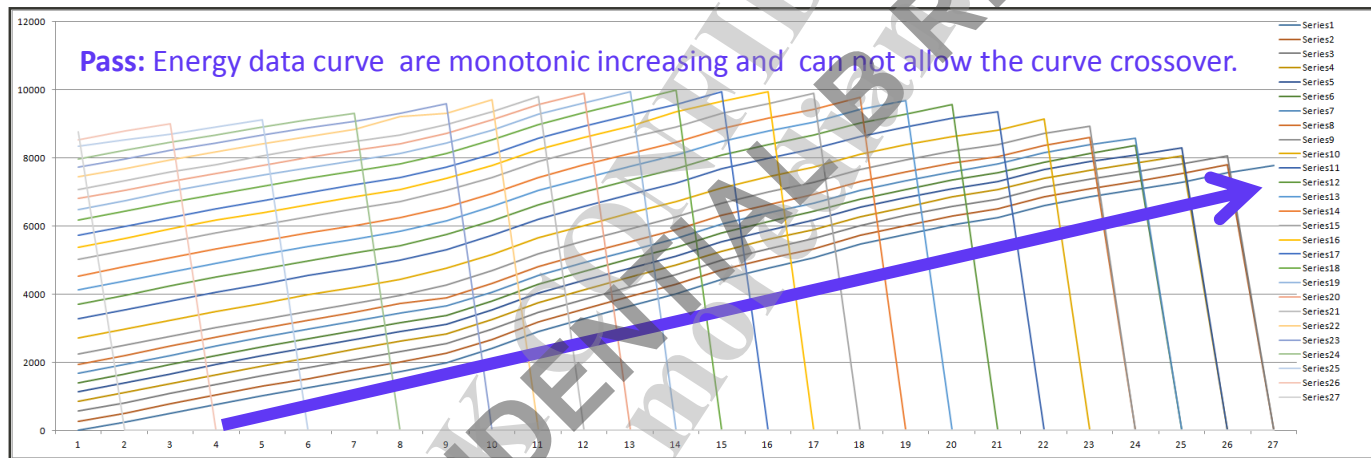
- Method 2 : use ADB command

(The result is the same as CCT Flash Calibration output)

- A. **Environment prepare** - In dark room, Gray card put in front of camera in 15cm ~ 20cm.
- B. **ADB commend** - Connect USB to your computer, and then send ADB commend through USB “**adb shell setprop z.flash\_ratio 1**”.
- C. **Pre-check** - Lunch camera APP and press capture key in low light environment to check ADB commend work well or not.
  - I. Flash will fire several times with different duty
  - II. There are two files (**fwb\_code.txt**, **eng\_code.txt**)will save in the root folder.
- D. **Calibration** - If pre-check is okay, go to the correct environment as **Step A**, then Lunch camera APP and press capture key.
- E. **Get result** - Go to root folder to get **fwb\_code.txt**, **eng\_code.txt**.
- F. **Verify calibration data** - Fill in the energy data in EXCEL file.  
(use 3A\_Calibration\_Check\_Report.xlsx)

# Verify Flash calibration data

- Verify eng\_code.txt (use 3A\_Calibration\_Check\_Report.xlsx)

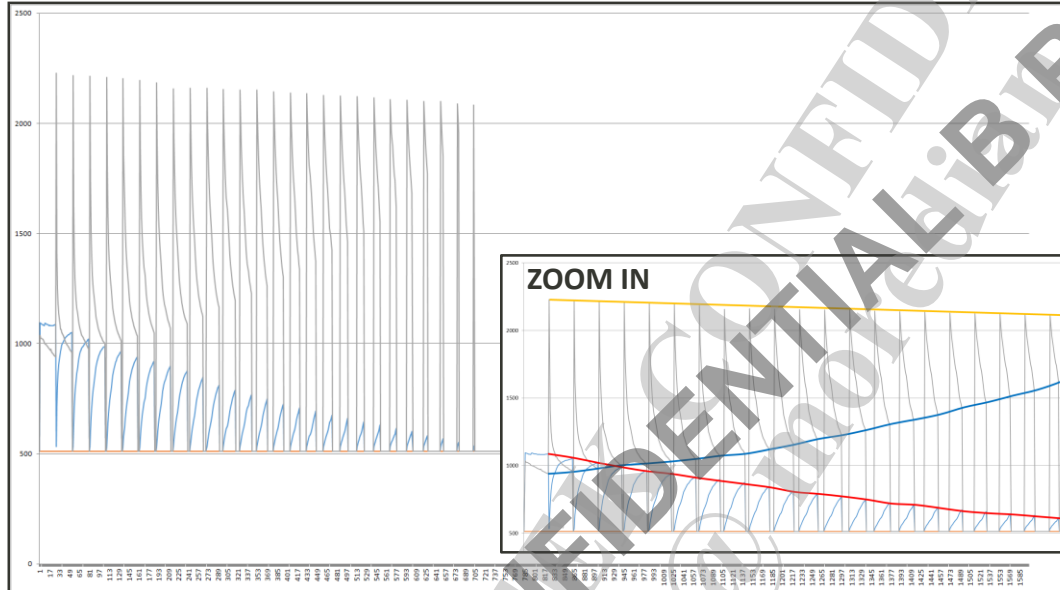


ns_code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	739	569	770	1605	1759	1561	1736	1860	2430	2910	3260	3650	4020	4446	4736	5060	5405	5767	6020	6247	6667	6866	7071	7279	7572	7770	
262	511	777	1038	1264	1507	1777	2066	2365	2681	3076	3456	3826	4202	4584	4972	5369	5724	6013	6299	6577	6869	7164	7455	7750	7946		
367	561	827	1090	1353	1616	1880	2143	2406	2669	2932	3195	3458	3721	3984	4247	4510	4773	5036	5299	5562	5825	6088	6351	6614	6877		
466	1186	1739	1852	2661	2136	2276	2615	2664	3002	3072	3416	3464	3804	3852	4196	4244	4588	4636	4980	5028	5372	5420	5764	5812	6156		
1145	1865	1805	1827	2134	2459	2655	3118	3114	3504	3456	3846	3798	4188	4139	4529	4481	4871	4823	5213	5165	5555	5507	5897	5849	6239		
1621	1821	2111	2412	2713	3014	3315	3616	3917	4218	4519	4820	5121	5422	5723	6024	6325	6626	6927	7228	7529	7830	8131	8432	8733	9034		
1456	1802	2011	2474	2727	2924	3148	3455	3665	4065	4356	4646	5047	5338	5629	5920	6211	6502	6793	7084	7375	7666	7957	8248	8539	8830		
1745	2176	2475	2776	3077	3378	3679	3980	4281	4582	4883	5184	5485	5786	6087	6388	6689	6990	7291	7592	7893	8194	8495	8796	9097			
2294	2527	2769	3027	3287	3547	3795	4064	4364	4614	4864	5164	5464	5764	6064	6364	6664	6964	7264	7564	7864	8164	8464	8764	9064			
2716	2936	3242	3445	3911	3911	4079	4327	4577	5167	5057	5267	5477	5687	5897	6107	6317	6527	6737	6947	7157	7367	7577	7787	7997			
3776	4016	4256	4496	4736	4976	5216	5456	5696	5936	6176	6416	6656	6896	7136	7376	7616	7856	8096	8336	8576	8816	9056					
4736	5076	5316	5556	5796	6036	6276	6516	6756	6996	7236	7476	7716	7956	8196	8436	8676	8916	9156	9396	9636	9876						
5736	6076	6316	6556	6796	7036	7276	7516	7756	7996	8236	8476	8716	8956	9196	9436	9676	9916										
6736	7076	7316	7556	7796	8036	8276	8516	8756	8996	9236	9476	9716	9956														
7736	8076	8316	8556	8796	9036	9276	9516	9756	9996																		
8736	9076	9316	9556	9796																							
9736	10076	10316	10556																								
10736	11076	11316	11556																								
11736	12076	12316	12556																								
12736	13076	13316	13556																								
13736	14076	14316	14556																								
14736	15076	15316	15556																								
15736	16076	16316	16556																								
16736	17076	17316	17556																								
17736	18076	18316	18556																								
18736	19076	19316	19556																								
19736	20076	20316	20556																								
20736	21076	21316	21556																								
21736	22076	22316	22556																								
22736	23076	23316	23556																								
23736	24076	24316	24556																								
24736	25076	25316	25556																								
25736	26076	26316	26556																								
26736	27076	27316	27556																								
27736	28076	28316	28556																								
28736	29076	29316	29556																								
29736	30076	30316	30556																								
30736	31076	31316	31556																								
31736	32076	32316	32556																								
32736	33076	33316	33556																								
33736	34076	34316	34556																								
34736	35076	35316	35556																								
35736	36076	36316	36556																								
36736	37076	37316	37556																								
37736	38076	38316	38556																								
38736	39076	39316	39556																								
39736	40076	40316	40556																								
40736	41076	41316	41556																								
41736	42076	42316	42556																								
42736	43076	43316	43556																								
43736	44076	44316	44556																								
44736	45076	45316	45556																								
45736	46076	46316	46556																								
46736	47076	47316	47556																								
47736	48076	48316	48556																								
48736	49076	49316	49556																								
49736	50076	50316	50556																								
50736	51076	51316	51556																								
51736	52076	52316	52556																								
52736	53076	53316	53556																								
53736	54076	54316	54556																								
54736	55076	55316	55556																								
55736	56076	56316	56556																								
56736	57076	57316	57556																								
57736	58076	58316	58556																								
58736	59076	59316	59556																								
59736	60076	60316	60556																								
60736	61076	61316	61556																								
61736	62076	62316	62556																								
62736	63076	63316	63556																								
63736	64076	64316	64556																								
64736	65076	65316	65556																								
65736	66076	66316	66556																								
66736	67076	67316	67556																								
67736	68076	68316	68556																								
68736	69076	69316	69556																								
69736	70076	70316	70556																								
70736	71076	71316	71556																								
71736	72076	72316	72556																								
72736	73076	73316	73556																								
73736	74076	74316	74556																								
74736	75076	75316	75556																								
757																											



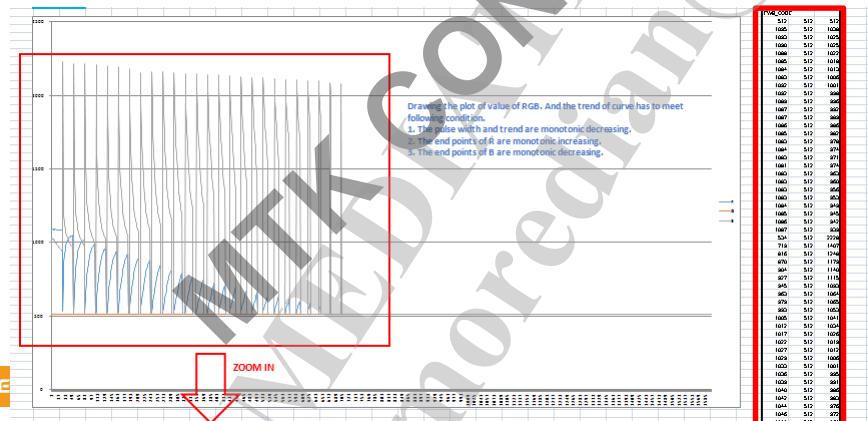
# Verify Flash calibration data

- Verify fw\_b\_code.txt (use 3A\_Calibration\_Check\_Report.xlsx)



Drawing the plot of value of RGB. And the trend of curve has to meet following condition.

1. The pulse width and trend are monotonic decreasing.
2. The end points of B are monotonic increasing.
3. The end points of R are monotonic decreasing.



Fill in area in EXCEL  
with fw\_b\_code.txt