How to adjust BT power on MSM8952 platform

Solution Number 00030972

Please Note:
If Qualcomm documentation is referenced in this solution, your access to it is based on your company's

Language Key Words BT Power MSM8952

Detail Information

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Solution Details

Background:

Bluetooth have 3 classes of power, defined as below

Class type	Max Power	Min Power
Class 1	100mW(20dBm)	1mW(0dBm)
Class 2	2.5mW(4dBm)	0.25mW(-6dBm)
Class 3	1mW(0dBm)	N/A

We usually use BT Power Class 1 on Cell phone, There is sometimes we need to adjust the Power for RF.

Solution:

There are 2 ways to adjust Bluetooth Power.

Method 1: Set the BT power to Class 2
We set our BT power class in init.qcom.bt.sh using PWR_CLASS and LE_PWR_CLASS, Just set these Marco to 2.

Method 2: Adjust BT Power Class 1's Max Power.
We define our BT power level in SOC NV tag 36,
The code is in vendor/qcom/proprietary/bt/hci_qcomm_init/btqsocnvmtags.c

```
static bt_qsoc_cfg_cst_element_type bt_qsoc_cfg_tag_36_riva_CLASS1[] = \
{
0x0F, 0x01, 0x24, 0x0C,
0xFF, 0x03, 0x07, 0x09, 0x09, 0x09, 0x00, 0x00,
0x09, 0x09, 0x04, 0x00
};
```

We need to modify the blue values. Detail as below.
"TagNum = 36 ;"
"TagLength = 12 ;"
"TagValue = FF 03 07 09 09 09 00 00 09 09 04 00 ;"
Details of all bytes to perform manual configurations:
Byte 0 (power level enable mask0): 0 = disable, 1 = enable, default = 0xFF, the range is 0x00–0xFF.
Byte 1 (power level enable mask1): 0 = disable, 1 = enable, default = 0x03, the range is 0x00–0x03.
Byte 2 (starting power level): default = 0x07, the range is 0x00–0x09.
Byte 3 (GFSK maximum power level): default = 0x09, the range is 0x00–0x09.
Byte 4 (DQPSK maximum power level): default = 0x09, the range is 0x00–0x09.
Byte 5 (8DPSK maximum power level): default = 0x09, the range is 0x00–0x09.
Byte 6 (DQPSK minimum power level): default = 0x00, the range is 0x00–0x09.
Byte 7 (8DPSK minimum power level): default = 0x00, the range is 0x00–0x09.
Byte 8 (broadcast power level): default = 0x09, range is 0x00–0x09.
Byte 9 (class 2 fallback power level): default = 0x07, range is 0x00–0x09
Byte 10 (power class): default = 0x04, range is 0x00–0x04
0x01 = class 1
0x02 = class 2
0x03 = class 3
0x04 = class 1.5
Byte 11 (platform power fine adjust): default = 0x00, range is 0x00–0x03).

Applicable Products MSM8952, WCN3610 (BT), WCN3615, WCN3620, WCN3660, WCN3660A, WCN3660B, WCN3680, WCN3680B