

## 1. SOC jump when reset

Description:

SOC jump when reset especially plug in with charger

Analysis:

Battery profile is loaded again for some condition meeting, most is the voltage diff is more than 30mV

Detail, you can check bellow codes or add some logs in fg\_batt\_profile\_init( )

```

vbat_in_range = get_vbat_est_diff(chip)
                < settings[FG_MEM_VBAT_EST_DIFF].value * 1000;
profiles_same = memcmp(chip->batt_profile, data,
                        PROFILE_COMPARE_LEN) == 0;
if (reg & PROFILE_INTEGRITY_BIT) {
    fg_cap_learning_load_data(chip);
    if (vbat_in_range && !fg_is_batt_empty(chip) && profiles_same) {
        if (fg_debug_mask & FG_STATUS)
            pr_info("Battery profiles same, using default\n");
        if (fg_est_dump)
            schedule_work(&chip->dump_sram);
        goto done;
    }
} else {
    pr_info("Battery profile not same, clearing data\n");
    clear_cycle_counter(chip);
    chip->learning_data.learned_cc_uah = 0;
}

```

Solution

For the voltage diff, 30mV is too small, normal we suggest increase it to 100mV

But still has some special case, the diff will be more than 100mV, you still can increase it according requirement.

Voltage diff description:

If the estimated voltage based on SoC and battery current/resistance differs from the actual voltage by more than this amount, the fuel gauge will redo the first SoC estimate (reload battery profile) when the driver probes.

Method 1:

```
static struct fg_mem_setting settings[FG_MEM_SETTING_MAX] = {  
  
...  
  
SETTING(VBAT_EST_DIFF, 0x000, 0, 30), //change 30 to 100  
  
...  
};
```

Method 2:

```
pmi8994_fg: qcom,fg {  
  
+ qcom,vbat-estimate-diff-mv = <100>;  
  
}
```

Other condition, need to check whether it is normal, no common method

2. SOC jump more than 1%

Description

SOC jump more than 1% sometimes when charging or discharging

Analysis

Delta SOC interrupt is used to inform system battery capacity change

qcom,fg-delta-soc is used for how many percent the monotonic SoC must change before a new delta\_soc interrupt

is asserted

Default we define it 1%, but for we use 255 for 100%, 1% is 3/255 (1.176%), so SOC don't change in 1%

You can decrease it, but we don't suggest, for it will increase the delta SOC wake up times

Solution

Bellow is the sample, if you want to change 0.392% (1/255) instead of 1% for delta soc :

in fg\_common\_hw\_init():

```
-- rc = fg_mem_masked_write(chip, settings[FG_MEM_DELTA_SOC].address, 0xFF,  
soc_to_setpoint(settings[FG_MEM_DELTA_SOC].value),  
settings[FG_MEM_DELTA_SOC].offset);
```

```
++ rc = fg_mem_masked_write(chip, settings[FG_MEM_DELTA_SOC].address, 0xFF, settings[  
FG_MEM_DELTA_SOC].value,  
settings[FG_MEM_DELTA_SOC].offset);
```

3 :Other SOC Jump issue:

Maybe meet maybe types of SOC issues, please do as bellow:

Capture the kernel FG logs and FG SRAM dump form ADB first

But about SOC issues, just FG logs, it is hard to find the reason, so need to:

Find the method to reproduce the issue and get the FG dump from script

For fg dump script, please refer section 3.7 of doc 80-NM328-52\_  
D\_MSM899x\_Linux\_Android\_PMIC\_Fuel\_Gauge\_SW\_User\_Guide.