[B family]How to change the VREG voltage limits

Solution Number 00029851

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

Language Key Words

Detail Information

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Solution Details

1. Change the programmable range in DTSI.

```
pm8226_l16: regulator-l16 {
        regulator-name = "8226_l16";
        regulator-min-microvolt = <3000000>;/*minimal voltage*/
        regulator-max-microvolt = <3350000>;/*maximal voltage*/
```

2. Change the programmable range in RPM.

Pm_config_target.c (rpm_proc\core\systemdrivers\pmic\config\msm8x26\)

```
pm_rpm_ldo_rail_info_type ldo_rail_a[NUM_OF_LDO_A] =
{
   {5,  25, 0, 1, 0, PM_NPA_SW_MODE_LDO__IPEAK, 1200, 1250}, // L1 N1200, min = 1200, max = 1250, regulator type is N1200
```

3. Change the HW range in SBL.

a. Check the regulator type

Every regulator belong to different type, for example pmos, nmos...
You can check this type in HW spec or Pm_config_target.c(RPM).

b. Select the regulator range.

Every type of regulator has several ranges for different voltage limits.
You can find these ranges in pm_config_common.c(rpm_proc\core\systemdrivers\pmic\config\commom\)
Below is the example for PMOS range.

```
pm_pwr_volt_info_type pmos_volt[5] =
{   //min,        max,          step
   { 750000,   1537500,        12500},  //LDO    2 (low range)
   {1500000,   3075000,        25000},  //LDO    3 (mid range)
   {1750000,   4900000,        50000},  //LDO    4(high range)
```

c. Set the range in SBL.

Pm_init.c (core\systemdrivers\pmic\framework\src)

```
pm_err_flag_type pm_oem_init ( void )
{   pm_err_flag_type errFlag = PM_ERR_FLAG__SUCCESS;
    pm_ldo_volt_level(0,PM_LDO_16,1200000); //this API will change the range according to voltage
```

4. Check the HW limits(exclude 8916)

Every regulator have the HW limits those are named UL(up limit) and LL(low limit).
So you should read these limits to check whether your voltage within these limits.
These registers named in software interface as below:

LDOXX_LL_VOLTAGE_CTL1 LDOXX_LL_VOLTAGE_CTL2
LDOXX_UL_VOLTAGE_CTL1 LDOXX_UL_VOLTAGE_CTL2

Applicable Products AMSS 8226, AMSS 8626, AMSS 8628, AMSS 8928, AMSS 8936, AMSS 8939, AMSS 8974, AMSS 8974AB, AMSS8916, AMSS8926, AMSS8974AA, AMSS8994, APQ8016, APQ8026, APQ8028, APQ8036, APQ8039, PM8909