

MPC5744P 标定区域读数据错误

问题：程序中读取 C_PowerOffDelayTime，其放在 FLASH 区域 cali_flash，在使用 smpu 配置后，出现 bus_error 错误，请问哪里设置有问题？

1. 程序

```
155     bsw_ee_write_sts = 0;

157     powerOffDelayTime = C_PowerOffDelayTime; //ms
158     powerOffDelayTick= C_PowerOffDelayTime;
159 }

extern void Task_PowerOffCtrl(void);
extern void WriteEE(void);
uint8_t k115_on_ever = 0;

void power_off(void)
167 {
168     PWR_devPowerCtrl(PWR_8VSns1, (~bsw_gw_SnsrEn102)&
169     PWR_devPowerCtrl(PWR_8VSns2, (~bsw_gw_SnsrEn106)&
170     PWR_devPowerCtrl(PWR_5VSns1, bsw_gw_SnsrEn42);

B::Var.Frame /Locals /Caller
┌ Up ── Down ── Argv Locals Caller Task:
-000|PWR_initVar()
-001|initUserVar()
      PWR_initVar();
-002|initTaskVariable()
      * i = 512

:::
_PowerOffDelayTime = ERROR:BUSERROR
emulate trigger devices trace Data Var List
D:00FC729C \\TCU-JH01-B2\Global\C_PowerOffDelayTime
```

2. FLASH 分区

```
MEMORY
{
    flash_rchw      : org = 0x00FA0000, len = 0x4
    cpu0_reset_vec  : org = 0x00FA0004, len = 0x4

    eeprom_flash_bsw1 : org = 0x00800000, len = 16K /*16KB,EEPROM-low block0, R/W_P:0*/
    eeprom_flash_bsw2 : org = 0x00804000, len = 16K /*16KB,EEPROM-low block1, R/W_P:0*/
    eeprom_flash_boot : org = 0x00808000, len = 32K /*32KB,EEPROM-mid block0, R/W_P:2*/
    eeprom_flash_asw  : org = 0x00810000, len = 4K /*32KB,EEPROM-mid block1, R/W_P:3*/

    cali_flash      : org = 0x08FB0000, len = 128K /*0x00FB_0000~0x00FC_FFFF*/

    cali_bsw        : org = 0x08FF0000, len = 64K /*0x00FF_0000~0x00FF_FFFF*/
    m_text          : org = 0x01000000, len = 2048K /*0x0100_0000~0x011F_FFFF*/
}
```

3. smpu 设置

```
void smpu_config(void) {  
    SMPU_0.CESR0.B.GVLD = 0; // First ensure module disabled before config  
  
    // Configure Flash region  
    SMPU_0.RGD[0].WORD0.R = 0x40000000; // start address  
    SMPU_0.RGD[0].WORD1.R = 0x4005FFFF; // end address  
    SMPU_0.RGD[0].WORD2.R = 0xFFFFFFFF; // access control - all bus masters have RW  
    SMPU_0.RGD[0].WORD3.B.CI = 1; // Inhibit cache for this memory region  
    SMPU_0.RGD[0].WORD3.B.VLD = 1; // region descriptor valid  
  
    /* After SMPU initialization, any memory access to a location that is not protected by SMPU  
    * This includes peripheral spaces, RAM, FLASH, everything that is used.  
    * Demo uses SIUL2, MC_ME, PLLDIG, MC_CGM, DMA, and FLASH after this function is executed.  
    * All these regions must be protected. Refer to memory map chapter of MPC574xP RM for more  
    * However, it is common practice to configure a region for the entire flash block and one for  
    * peripheral space.  
    */  
    #if 1  
    /* Configure large flash */  
    SMPU_0.RGD[1].WORD0.R = 0x01000000; //start address  
    SMPU_0.RGD[1].WORD1.R = 0x01FFFFFF; //end address  
    SMPU_0.RGD[1].WORD2.R = 0xFFFFFFFF; // all bus masters have RW control  
    SMPU_0.RGD[1].WORD3.B.VLD = 1; // Cache init = 0. region descriptor valid  
    #endif  
  
    #if 1  
    /* Configure peripheral space */  
    SMPU_0.RGD[2].WORD0.R = 0x08FB0000; //0xF8000000; //Start address of peripheral space  
    SMPU_0.RGD[2].WORD1.R = 0x00020000; //0xFFFFFFFF//End Address of peripheral space  
    SMPU_0.RGD[2].WORD2.R = 0xFFFFFFFF; //all bus masters have RW access to the region  
    SMPU_0.RGD[2].WORD3.B.VLD = 1; //Cache init = 0. Region is valid  
    #endif  
    SMPU_0.CESR0.B.GVLD = 1; // Enable the module  
}
```