



# **SigmaStar Camera** **SAR 使用参考**

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**REVISION HISTORY**

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## 1. 概述

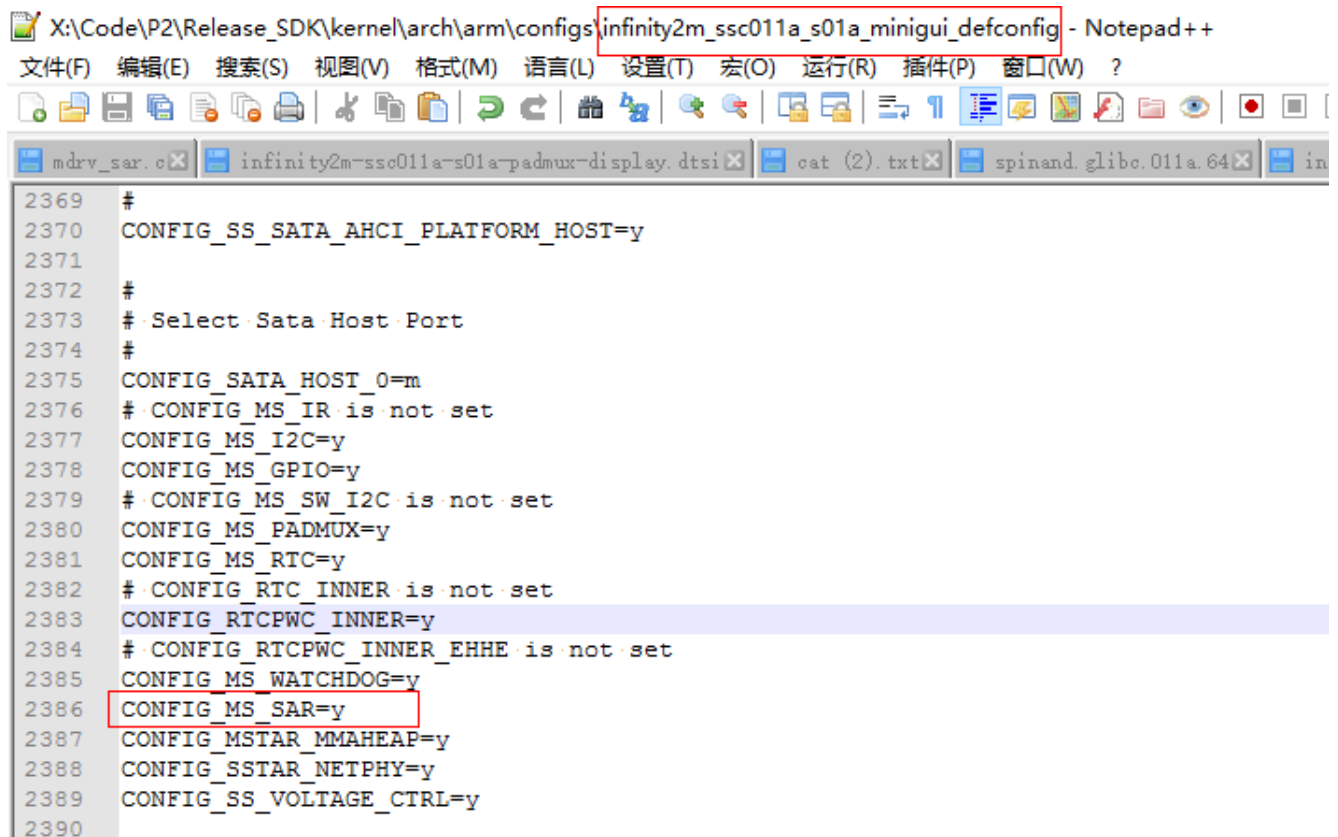
---

目前我们 SAR 口的 ADC 精度是 8bit。

本篇文章主要介绍 sar 口如何配置以及如何如何在用户层使用 sar 口。

## 2. KERNEL 配置

### 2.1. Kernel config 中打开 CONFIG\_MS\_SAR



```
X:\Code\P2\Release_SDK\kernel\arch\arm\configs\infinity2m_ssc011a_s01a_minigui_defconfig - Notepad++
文件(F) 编辑(E) 搜索(S) 视图(V) 格式(M) 语言(L) 设置(T) 宏(O) 运行(R) 插件(P) 窗口(W) ?
mdrv_sar.o infinity2m-ssc011a-s01a-padmux-display.dtsi cat (2).txt spinand.glibc.011a.64 in
2369 #
2370 CONFIG_SS_SATA_AHCI_PLATFORM_HOST=y
2371
2372 #
2373 # Select Sata Host Port
2374 #
2375 CONFIG_SATA_HOST_0=m
2376 # CONFIG_MS_IR is not set
2377 CONFIG_MS_I2C=y
2378 CONFIG_MS_GPIO=y
2379 # CONFIG_MS_SW_I2C is not set
2380 CONFIG_MS_PADMUX=y
2381 CONFIG_MS_RTC=y
2382 # CONFIG_RTC_INNER is not set
2383 CONFIG_RTCPWC_INNER=y
2384 # CONFIG_RTCPWC_INNER_EHHE is not set
2385 CONFIG_MS_WATCHDOG=y
2386 CONFIG_MS_SAR=y
2387 CONFIG_MSTAR_MMAHEAP=y
2388 CONFIG_SSTAR_NETPHY=y
2389 CONFIG_SS_VOLTAGE_CTRL=y
2390
```

配置完成后，重新编译 kernel，替换 kernel image 到 project 烧录



### 3. SAR 控制

#### 3.1. SAR 控制概述

The SAR driver provides ioctl interface for users to initialize SAR and get SAR\_ADC values.

#### 3.2. Using SAR in user space

##### 3.2.1 SAR device

"/dev/sar"

##### 3.2.2 Include file

mdrv\_sar\_io.h

##### 3.2.3 SAR IOCTL Commands

IOCTL command	Parameter	Description
IOCTL_SAR_INIT	NULL	initialize
IOCTL_SAR_SET_CHANNEL_READ_VALUE	<pre>typedef struct {     int channel_value; //[IN]     int adc_value;    //[OUT] } SAR_ADC_CONFIG_READ;</pre> <p><b>channel_value:</b> sar channel number(possible value: 0 or 1)  <b>adc_value:</b> sar adc value</p>	Get sar adc value

##### 3.2.4 Example

```
#include <stdio.h>
#include<sys/types.h>
#include<sys/stat.h>
#include<fcntl.h>
#include<errno.h>
#include <sys/ioctl.h>
#include "mdrv_sar_io.h"
```

```
int main(void)
{
    int i;
    SAR_ADC_CONFIG_READ adcCfg;
    adcCfg.channel_value = 0; //注意: PAD_SAR_GPIO0 = 0 PAD_SAR_GPIO1 = 1 PAD_SAR_GPIO2 = 2
```



```
int fd = open("/dev/sar", O_WRONLY);
if(fd == -1) {
    int err = errno;
    printf("\n!!! FAILED to open /dev/sar, errno: %d %s\n", err, strerror(err));
    return -1;
}

if (ioctl(fd, IOCTL_SAR_INIT, NULL) < 0) {
    int err = errno;
    printf("\n!!! IOCTL_SAR_INIT FAILED, errno: %d, %s\n", err, strerror(err));
}

for (i=0; i < 100; i++)
{
    if (ioctl(fd, IOCTL_SAR_SET_CHANNEL_READ_VALUE, &adcCfg) < 0) {
        int err = errno;
        printf("\n!!! IOCTL_SAR_SET_CHANNEL_READ_VALUE FAILED, errno: %d, %s\n", err,
strerror(err));
    }
    else {
        printf("SAR: get value %d", adcCfg.adc_value);
    }
    usleep(100000);
}
}
```