

Y10

CAMERA 自动检测使用说明

文档履历

[illegible]

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前言

1. 1. 编写目的

了解 CAMERA 自动检测注意事项。

1. 2. 适用范围

介绍本模块设计适用 Y10 平台。

1. 3. 适用范围

客户

2. CAMERA 自动检测配置

Y10 方案考虑到客户需要使用同一个固件支持多种不同 camera 模组的需求，重新定义了一套 camera detector 方案，如果需要使用该方案，需要在 sysconfig 中作出相应的配置：

1. 设置相应 csi 上的 vip_define_sensor_list = 1。
2. 明确定义出前后摄像头，例如 vip_dev0_pos = "rear"，vip_dev1_pos = "front"；

使用该检测方案需使用一个 sensor_list_cfg.ini 配置文件，驱动会从该文件中读取模组信息。

如果 csi0 或者 csi1 定义了 vip_define_sensor_list = 1，则驱动就会去试图读取 /system/etc/hawkview/sensor_list_cfg.ini，**如果读取成功**，则驱动会用 sensor_list_cfg.ini 中的相应信息**替换**掉原来从 sysconfig 中读取的信息，**如果读取失败**，则驱动会继续使用 sysconfig 中的配置。

3. 将 sensor_list_cfg.ini 配置文件放在 android/device/softwinner/xxx 方案目录下。

在 Android\device\softwinner\xxx\xxx.mk 文件中按如下方法增加配置：

```
# camera config for camera detector
PRODUCT_COPY_FILES += \
    device/softwinner/xxx/hawkview/sensor_list_cfg.ini:system/etc/hawkview/sensor_list_cfg.
ini
```

下面结合 sensor_list_cfg.ini 配置文件说明 camera detector 功能该如何使用：

1. sensor_list_cfg.ini 中整体上分为前置和后置两套 camera 配置。
2. 每套 camera 的配置分为 bus configs, power configs 和 sensor configs:
 - a) **Bus configs:** 考虑到客户已经习惯在 sysconfig 中配置相关的 bus，在这里暂不配置。
 - b) **Power configs:** 该部分可以根据客户或者开发人员需要，通过 power_settings_enable 来选择使用 sysconfig 中配置还是 sensor_list_cfg.ini 中的配置，例如 power_settings_enable = 0: 代表使用 sysconfig 中配置，power_settings_enable = 1 代表使用 sensor_list_cfg.ini 中配置。
 - c) **Sensor configs:** 考虑到检测速度等方面原因，对前置和后置最大检测数量做出了限制，最大都为 3。
 - d) 各个 sensor 实体配置比较灵活，可以 YUV sensor 也可以是 RAW sensor，也可以独立配置各自的 hflip 和 vflip。对于 RAW sensor 也可以独立配置 VCM。
3. 目前驱动**不支持对供电电压要求不同的** sensor 列表做自动检测
4. 驱动也不能检测出**相同的 sensor 使用不同的 VCM** 的情况。

下面给出一个具体的使用例子：

该例子后置使用 ov5647, gc2035, ov5640。

前置使用 gc0328, gc2035, gc2015

```
#Y10 sensor list configs
#
#####bus configs#####
#
#used: 0: not used, 1: used;                //暂时无需配置，使用 sysconfig 的配置
#csi_sel: 0: mipi, 1: parallel ;            //暂时无需配置，使用 sysconfig 的配置
#device_sel: 0: dev0, 1: dev1;              //暂时无需配置，使用 sysconfig 的配置
#sensor_twi_id: twi id, for example: sensor_twi_id = 0 //暂时无需配置，使用 sysconfig 的配置
```

```

#
#####power configs#####
#power_settings_enable: 0: enable the power settings in sysconfig.fex; 1: enable the power
settings in this file.
#
#iovdd: The name of iovdd for this camera;
#iovdd_vol: The voltage value of iovdd in uV;
#

#####detect sensor configs#####
#
#detect_sensor_num: The number of sensors need be detected in this bus.
#sensor_name[x]: The sensor name in sensor driver.
#sensor_twi_addr[x]: The i2c address of this sensor.
#sensor_type[x]: The sensor type, 0: YUV, 1: RAW;
#sensor_stby_mode[x]: Not used;
#sensor_hflip[x]: Horizontal flip;
#sensor_vflip[x]: Vertical flip;
#act_name[x]: The VCM name in vcm driver, only RAW sensor need be configured;
#act_twi_addr[x]: The VCM i2c address;
#
#####

[rear_camera_cfg]

#bus configs
used                = 1
csi_sel             = 1
device_sel          = 0
sensor_twi_id       = 2

#power configs
power_settings_enable = 1
iovdd                = "axp22_dldo3"
iovdd_vol            = 2800000
avdd                 = "axp22_dldo3"
avdd_vol             = 2800000
dvdd                 = "axp22_eldo2"
dvdd_vol            = 1800000
afvdd                = "axp22_dldo3"
afvdd_vol           = 2800000

#detect sensor configs
detect_sensor_num    = 3

```

```

sensor_name0      = "ov5647"
sensor_twi_addr0  = 0x78
sensor_type0      = 0
sensor_stby_mode0 = 0
sensor_hflip0     = 0
sensor_vflip0     = 0
act_name0         = "ad5820_act"
act_twi_addr0     = 0x18

sensor_name1      = "gc2035"
sensor_twi_addr1  = 0x78
sensor_type1      = 2
sensor_stby_model = 0
sensor_hflip1     = 1
sensor_vflip1     = 1
act_name1         =
act_twi_addr1     =

sensor_name2      = "ov5640"
sensor_twi_addr2  = 0x78
sensor_type2      = 0
sensor_stby_mode2 = 0
sensor_hflip2     = 0
sensor_vflip2     = 0
act_name2         =
act_twi_addr2     =

[front_camera_cfg]

#bus configs
used              = 1
csi_sel           = 1
device_sel        = 0
sensor_twi_id     = 2

#power configs

power_settings_enable = 1

iovdd             = "axp22_dldo3"
iovdd_vol         = 2800000
avdd              = "axp22_dldo3"
avdd_vol          = 2800000
dvdd              = "axp22_eldo2"
dvdd_vol          = 1800000

```

```
afvdd                = "axp22_dldo3"
afvdd_vol             = 2800000

#detect sensor configs
detect_sensor_num     = 3

sensor_name0          = "gc0328"
sensor_twi_addr0      = 0x42
sensor_type0          = 2
sensor_stby_mode0     = 0
sensor_hflip0         = 1
sensor_vflip0         = 1
act_name0             =
act_twi_addr0         =

sensor_name1          = "gc2035"
sensor_twi_addr1      = 0x78
sensor_type1          = 0
sensor_stby_model     = 0
sensor_hflip1         = 0
sensor_vflip1         = 0
act_name1             =
act_twi_addr1         =

sensor_name2          = "gc2015"
sensor_twi_addr2      = 0x60
sensor_type2          = 0
sensor_stby_mode2     = 0
sensor_hflip2         = 0
sensor_vflip2         = 0
act_name2             =
act_twi_addr2         =
```

以上仅作参考，请根据 camera 使用情况进行相应配置。

3. Declaration

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