HICHIP EC1106S 使用说明文档

1. 文档履历

版本号	日期	制/修订人	制/修订记录
1.0	2024/05/14	邱浩佳	新增文档说明

2. 概述

2.1 编写目的

介绍hichip平台下的EC1106S旋转编码器的使用；

2.2 读者对象

hichip软件开发工程师和技术支持工程师。

3. 模块介绍

- 目前hichip平台上EC1106S旋转编码器只支持左旋右旋；

4. linux

4.1 模块接口说明

1、可以通过read函数读取misc节点下ec1106s获得旋转计数；2、通过input节点可以获取旋转方向；

4.2 模块测试用例与Sample Code

```
int fd = open(input_path, O_RDONLY);
pfd.fd = fd;
pfd.events = POLLIN | POLLRDNORM;

if (fd < 0) {
        printf("can't open %s\n", input_buf);
        return -1;
}

char name[256] = "Unknown";
ioctl(fd, EVIOCGNAME(sizeof(name)), name);
printf("\nInput Device Name:[%s]. \n", name);

while (1) {
        if (poll(&pfd, 1, -1) <= 0)
                continue;

        if (read(fd, &t, sizeof(t)) != sizeof(t))
                continue;

        printf("type:%d, code:%d, value:0x%lx\n", t.type, t.code,
               t.value);
}

close(fd);
```

4.2.1 开启模块

在SDK根目录下：输入make linux-menuconfig，根据路径打开测试命令

```
There is no help available for this option.
Symbol: HC_ES1106S [=y]
Type  : boolean
Prompt: es1106s encoder
  Location:
    -> Device Drivers
      -> HC drivers
        -> input driver (HC_INPUT [=y])
          -> misc driver (HC_MISC [=y])
            -> rotate encoder driver (HC_ROTATE_ENCODER [=y])
  Defined at drivers/hcdrivers/input/misc/rotate_encoder/Kconfig:1
  Depends on: HC_INPUT [=y] && HC_MISC [=y] && HC_ROTATE_ENCODER [=y]
```

4.2.2 设备树的配置

在/board/hichip/hc16xx/common/dts/hc16xx-common.dtsi文件下添加

```
ec1106s:ec1106s@0 {
        compatible = "hichip,ec1106s";
        gpio-input-a = <&gpio_B 12 GPIO_ACTIVE_HIGH>;                    //
irq-pin
        gpio-input-b = <&gpio_B 13 GPIO_ACTIVE_HIGH>;                    //
irq-pin
        status = "disabled";
};
```

在对应的板子dts文件下，比如：/board/hichip/hc16xx/common/dts/hc16xx-db-d3100-v30.dts添加以下节点：

```
&ec1106s {
       status = "okay";
};
```

4.2.3 编译

执行命令：make linux-rebuild all；

5. rtos

5.1 模块接口说明

1、可以通过read函数读取/dev/ec1106s获得旋转计数；2、通过input节点可以获取旋转方向；

5.2 模块测试用例与Sample Code

```
static int input_test(int argc, char *argv[])
{
        int fd;
        struct input_event t;
        struct pollfd pfd;
        char input_buf[BUF_SIZE];
        char *s = "/dev/input/event0";

        long tmp;

        fd = open(input_buf, O_RDONLY);
        pfd.fd = fd;
        pfd.events = POLLIN | POLLRDNORM;

        if (fd < 0) {
                printf("can't open %s\n", input_buf);
                return -1;
        }

        while (1) {
                if (poll(&pfd, 1, -1) <= 0)
                        continue;

                if (read(fd, &t, sizeof(t)) != sizeof(t))
                        continue;

                printf("type:%d, code:%d, value:0x%lx\n", t.type, t.code,
                       t.value);
        }

        close(fd);

        return 0;
}
```

测试代码位置：components/cmds/source/input_event/input_test.c；

5.2.1 如何开启测试命令

```
There is no help available for this option.
Symbol: CONFIG_CMDS_INPUT [=y]
Type  : bool
Prompt: input event operations
  Location:
    -> Components
      -> Cmds (BR2_PACKAGE_CMDS [=y])
  Defined at source:46
  Depends on: BR2_PACKAGE_CMDS [=y] && CONFIG_DRV_INPUT [=y]
```

编译命令：make cmds-rebuild all

5.2.2 menuconfig的配置

```
There is no help available for this option.
Symbol: CONFIG_HC_ES1106S [=y]
Type  : bool
Prompt: es1106s
  Location:
    -> Components
      -> kernel (BR2_PACKAGE_KERNEL [=y])
        -> Drivers
          -> input event (CONFIG_DRV_INPUT [=y])
            -> rotary key (CONFIG_ROTARY_KEY [=y])
  Defined at rotary_key:5
  Depends on: BR2_PACKAGE_KERNEL [=y] && CONFIG_DRV_INPUT [=y] &&
CONFIG_ROTARY_KEY [=y]
```

5.2.3 设备树配置

```
ec1106s:ec1106s@0 {
        gpio-input-a = <PINPAD_B12 GPIO_ACTIVE_HIGH>;                   //
irq-pin
        gpio-input-b = <PINPAD_B13 GPIO_ACTIVE_HIGH>;                   //
irq-pin
        status = "okay";
};
```

5.2.4 编译

make kernel-rebuild all

6. 调试信息

暂无。