LRADC 接口使用说明书

2.0

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文档履历

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1. 概述

1.1 编写目的

介绍按键 key 模块的基本实现原理。

1.2 适用范围

适用 allwinnertech 的平台

1.3 相关人员

按键 key 模块驱动的开发/维护人员

2. 模块介绍

2.1 模块功能介绍

按键模块属于 input 输入子系统，一般包括音量加，音量减，home 键等。

2.2 相关术语介绍

术语	解释说明
KEY	按键
LRADC	low rate analog digital converter 低速率模数转换器

2.3 模块配置介绍

2.3.1 menuconfig 配置说明

在命令行中进入内核根目录，执行 make ARCH=arm menuconfig （64 位平台执行 make ARCH=arm64 menuconfig）进入配置主界面，并按以下步骤操作：首先，选择 Device Drivers 选项进入下一级配置，如下图所示：

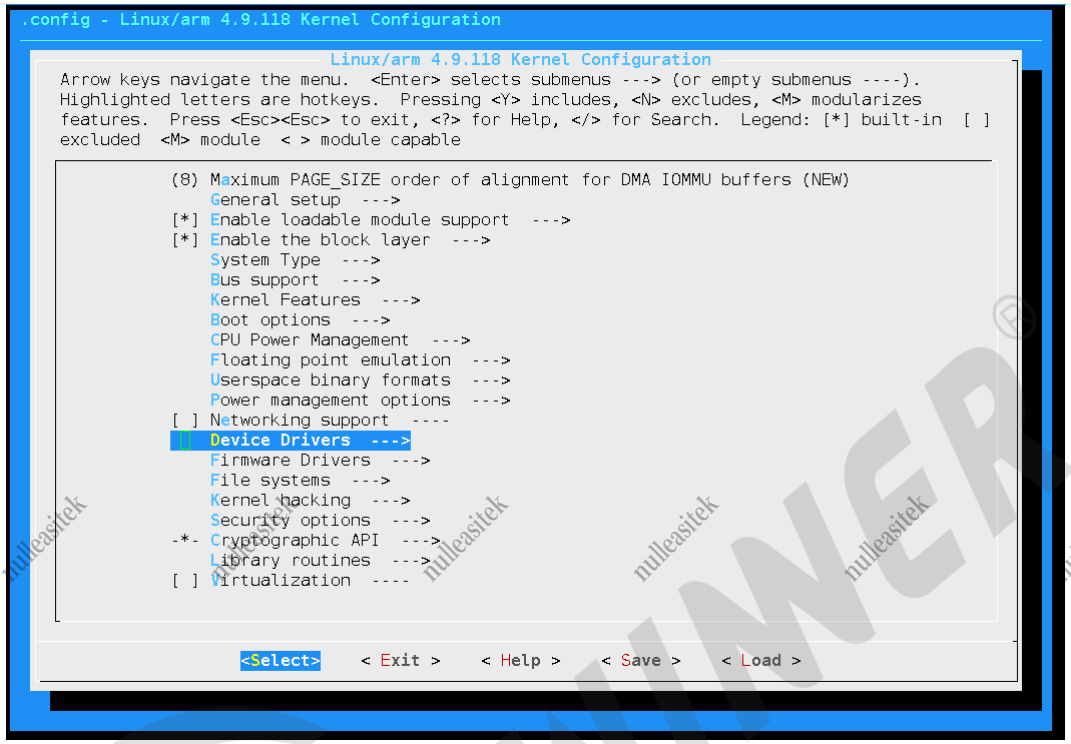

图 1: Device Drivers 选项配置

然后，选择 Input device support 选项，进入下一级配置，如下图所示：

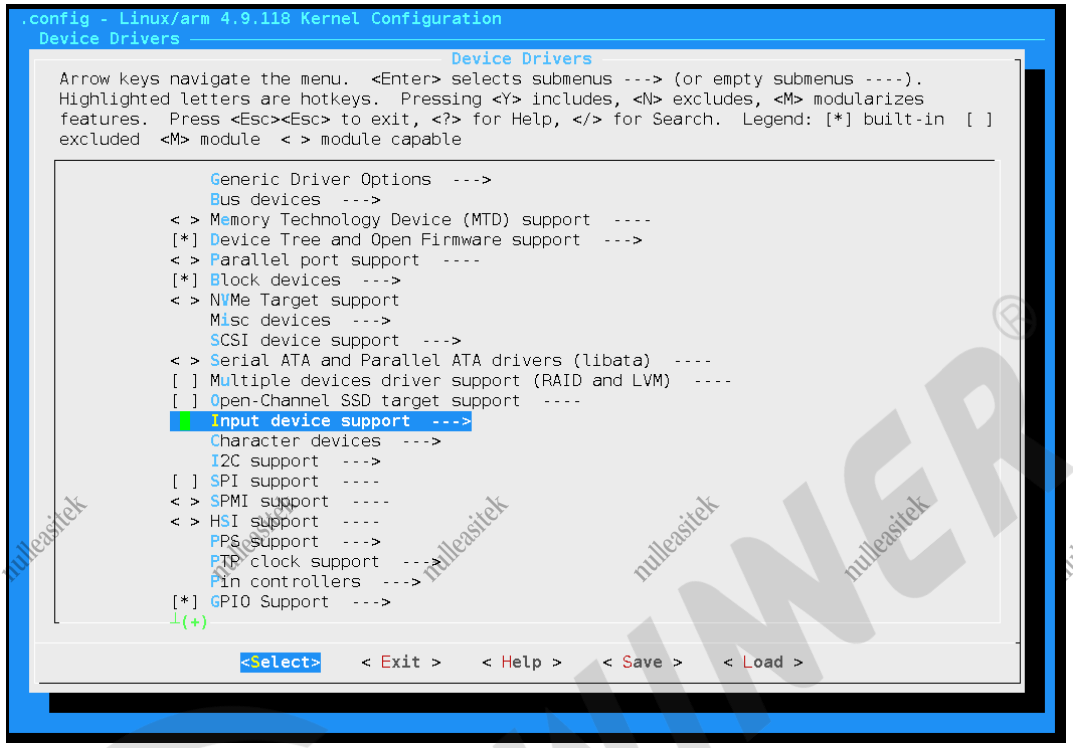

图 2: Device Drivers 选项配置

接着，选择 Keyboards 选项，进入下一级配置，如下图:

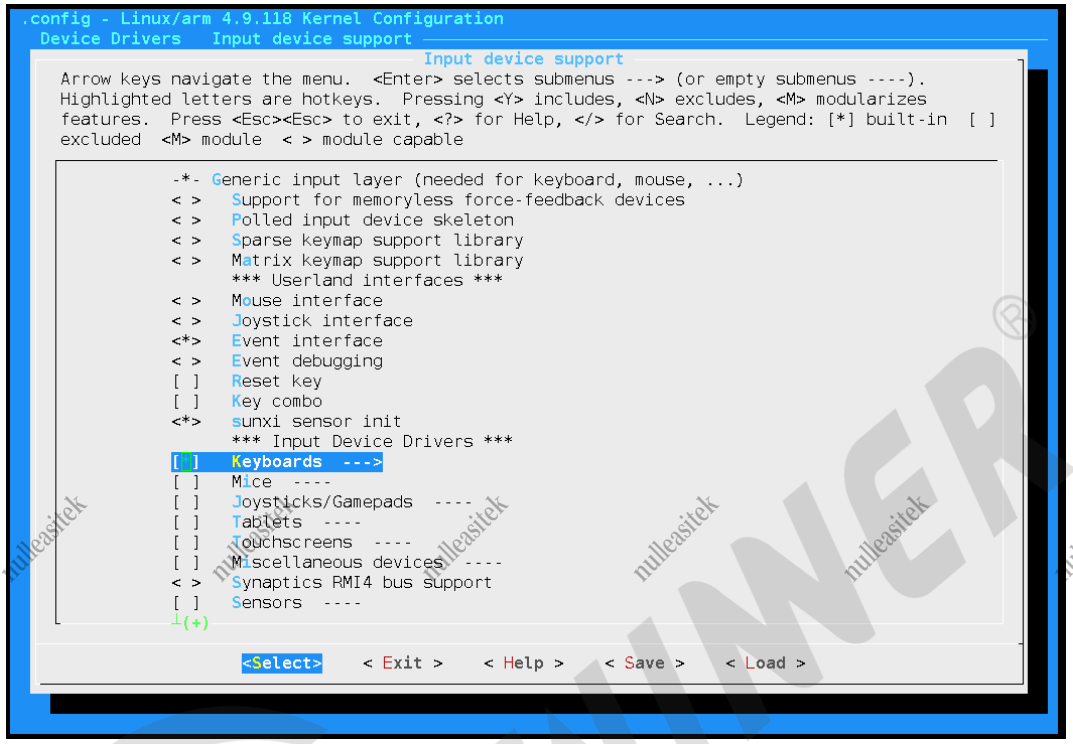

图 3: Device Drivers 选项配置

选择 softwinner KEY BOARD support 选项，可选择直接编译进内核。如下图：

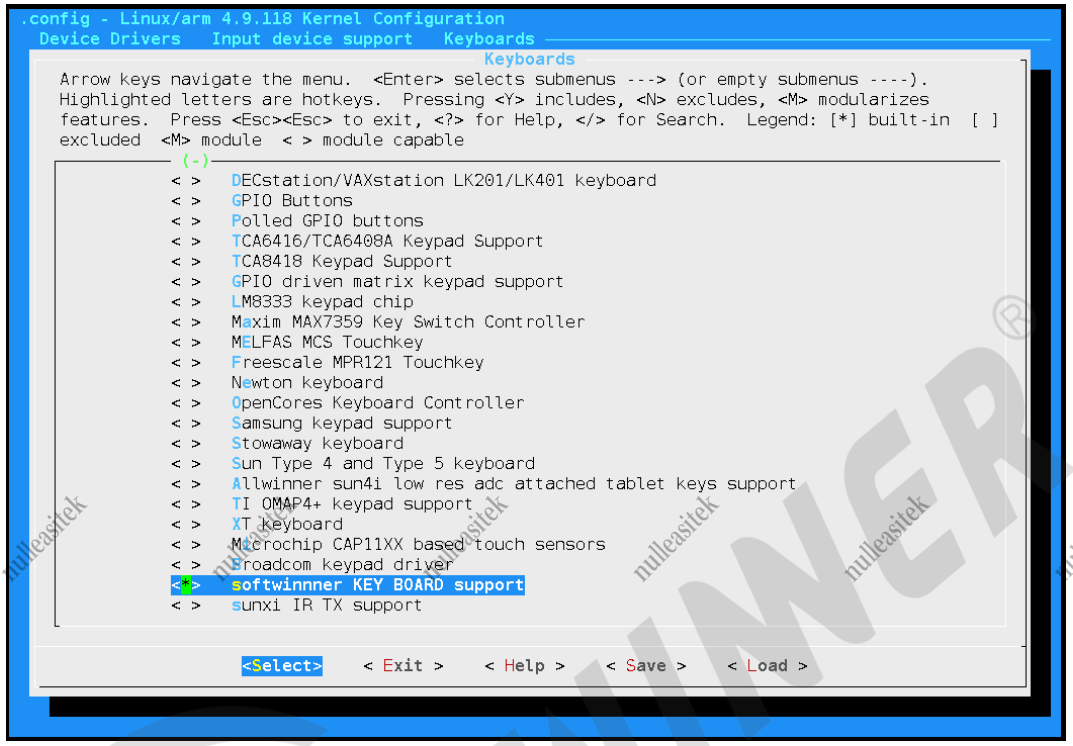

图 4: Device Drivers 选项配置

2.3.2 dts 配置说明

```
keyboard0:keyboard{
    compatible = "allwinner,keyboard_2000mv";
    reg = <0x0 0x07030800 0x0 0x400>;
    interrupts = <GIC_SPI 140 IRQ_TYPE_NONE>;
    status = "okay";
    key_cnt = <5>;
    key0 = <190 115>;
    key1 = <390 114>;
    key2 = <600 139>;
    key3 = <800 28>;
    key4 = <980 102>;
};
```

其中：key_cnt：按键数目；key0：按键 0 的电压值与上报值。

2.4 源码结构介绍

```
drivers/input/keyboard/
├── sunxi-keyboard.c
├── sunxi-keyboard.h
```

3. 接口设计

3.1 内部接口

1、sunxikbd_init
函数原型：int __init sunxikbd_init(void)
功能：初始化 key 模块
参数：无
返回值：成功返回 0，失败返回错误码
2、sunxi_isr_key
函数原型：static irqreturn_t sunxi_isr_key(int irq, void *dummy)
功能：中断服务函数，读取电压值，并解码
参数：irq 中断号，dummy 无作用
返回值：返回 IRQ_HANDLED

4. Declaration

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