



# A20 音频驱动使用说明

**V1.0**

**2013-06-27**

Confidential



## Revision History

Version	Date	Changes compared to previous issue
V1.0	2013-06-27	

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## 1. 音频模块:

audio-codec,hdmi,hdcp,sdpif,i2s,pcm

## 2. 代码位置:

lichee\linux-3.4\sound\soc\sun7i

		文件夹	
hdcp		文件夹	2013-6-24 16:43
hdmaudio		文件夹	2013-6-24 13:30
i2s		文件夹	2013-6-24 16:28
pcm		文件夹	2013-6-21 16:19
spdif		文件夹	2013-6-21 16:19
built-in.o	158 KB	O 文件	2013-6-24 10:07
Kconfig	1 KB	文件	2013-6-21 16:16
Makefile	1 KB	文件	2013-6-21 16:16
modules.builtin	1 KB	BUILTIN 文件	2013-6-25 14:56
modules.order	0 KB	ORDER 文件	2013-6-25 15:38
sun7i-codec.c	56 KB	UltraEdit Docum...	2013-6-21 16:42
sun7i-codec.h	5 KB	UltraEdit Docum...	2013-6-21 16:16
sun7i-codec.o	158 KB	O 文件	2013-6-24 10:07

图 1 音频驱动代码位置

## 3. 编译方式:

打来配置方式，路径如下图 2-6。对应的方式如图 6 所示，分别对应编译 audio-codec,hdmi,hdcp,sdpif,i2s,pcm 模块。例如：只是需要 audio-codec，选择第一个即可，默认的情况全部编译到内核。

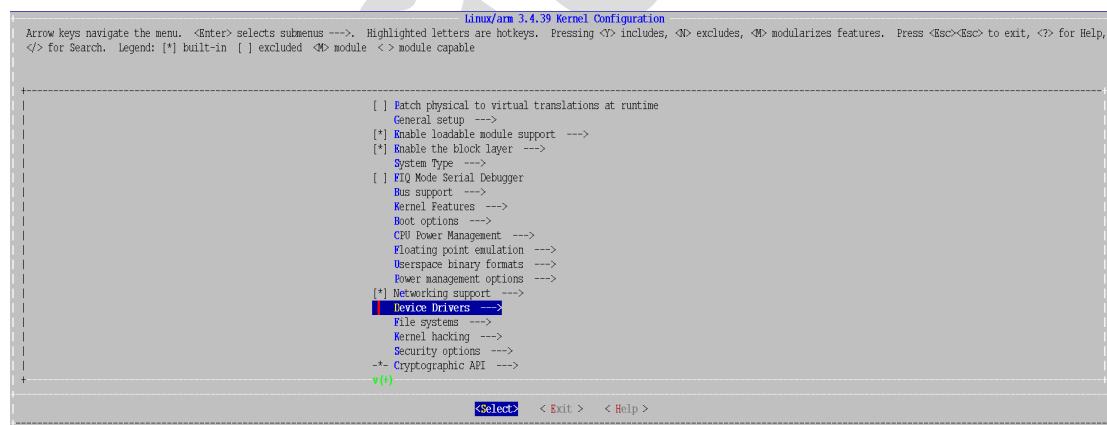


图 2



```
Device Drivers  
Arrow keys navigate the menu. <Enter> selects submenus -->. Highlighted letters are hotkeys. Pressing <?> includes, <> excludes, <>> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ] excluded <>> module <> module capable  
+-----+  
| * PTP clock support --->  
| * GPIO Support --->  
| <> Dallas's 1-wire support --->  
| <> Power supply class support --->  
| <> Hardware Monitoring support --->  
| <> Generic Thermal sysfs driver --->  
| [ ] Watchdog Timer Support --->  
|   | Sonics Silicon Backplane --->  
|   | Broadcom specific AMBA --->  
|   | Multifunction device drivers --->  
| [*] Voltage and Current Regulator Support --->  
| <>> Multimedia support --->  
|   | Graphics support --->  
| <>> Sound card support --->  
| [*] HID Devices --->  
| [*] USB support --->  
| <>> MMC/SD/SDIO card support --->  
| <> Sony MemoryStick card support (EXPERIMENTAL) --->  
| [ ] LED Support --->  
v(t)  
<Select> < Exit > < Help >
```

图 3

```
Sound card support  
Arrow keys navigate the menu. <Enter> selects submenus -->. Highlighted letters are hotkeys. Pressing <?> includes, <> excludes, <>> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ] excluded <>> module <> module capable  
+-----+  
| --- Sound card support  
| <>> Advanced Linux Sound Architecture --->  
| <> Open Sound System (DEPRECATED) --->  
+  
<Select> < Exit > < Help >
```

图 4

```
Advanced Linux Sound Architecture  
Arrow keys navigate the menu. <Enter> selects submenus -->. Highlighted letters are hotkeys. Pressing <?> includes, <> excludes, <>> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ] excluded <>> module <> module capable  
+-----+  
| --- Advanced Linux Sound Architecture  
| <> Sequencer support  
| <> OSS Mixer API  
| <> OSS PCM (digital audio) API  
| <> HW-timer backend support  
| [ ] Dynamic device file minor numbers  
| [*] Support old ALSA API  
| [*] Verbose probefs contents  
| [ ] Verbose printk  
| [ ] Debug  
| [*] Generic sound devices --->  
| [*] ARM sound devices --->  
| [*] USB sound devices --->  
| <>> ALSA for SoC audio support --->  
+  
<Select> < Exit > < Help >
```

图 5



图 6

## 4. 配置项说明

### Audio-codec

#### [audio\_para]

audio\_used = 1

hp\_mute\_used=0

audio\_pa\_ctrl = port:PH15<1><default><default><0>

;hp\_mute = port:PI3<1><default><default><0>

audio\_used: audio 模块是否加载到内核, 默认选择 1

hp\_mute\_used: 控制外部 mute 电路的使能, 有硬件电路时候再选择, 默认的时候没有这电路, 不使用

audio\_pa\_ctrl: 外部 PA 使能控制, 默认配置的是 PH15, 输出为低电平, 驱动里有对应的开关操作。

hp\_mute: 外部 mute 电路的使能

Hdmi

#### [hdmi\_para]

hdmi\_used = 1

hdcp\_enable = 0//为 1, 音频部分走 HDCP, 默认为 0, 音频走 HDMI

#### [i2s2\_para]

i2s\_channel = 2

i2s\_master = 4

i2s\_select = 1

audio\_format = 1

signal\_inversion = 1

over\_sample\_rate = 256

sample\_resolution = 16

word\_select\_size = 32

---

```

pcm_sync_period = 256
msb_lsb_first = 0
sign_extend = 0
slot_index = 0
slot_width = 16
frame_width = 1
tx_data_mode = 0
rx_data_mode = 0
;i2s_mclk = port:PB05<2><1><default><default>
;i2s_bclk = port:PB06<2><1><default><default>
;i2s_lrclk = port:PB07<2><1><default><default>
;i2s_dout0 = port:PB08<2><1><default><default>
;i2s_dout1 =
;i2s_dout2 =
;i2s_dout3 =
;i2s_din = port:PB12<2><1><default><default>

```

i2s2\_para 是专门为 HDCP 使用的，默认配置就可以，不需要任何改动。HDMI 的音频部分走 HDMI 还是 HDCP，在 hdmi 配置项里可以切换，见上面 HDMI 配置说明。

### [spdif\_para]

```

spdif_used = 0
spdif_mclk =
spdif_dout = port:PB13<4><1><default><default>
spdif_din =

```

Spdif 默认不配置到内核里，输出口配置 PB13，不需要改动

### [i2s\_para]

```

i2s_used = 0
i2s_channel = 2
i2s_master = 4
i2s_select = 1
audio_format = 1
signal_inversion = 1
over_sample_rate = 256
sample_resolution = 16
word_select_size = 32
pcm_sync_period = 256
msb_lsb_first = 0
sign_extend = 0
slot_index = 0
slot_width = 16
frame_width = 1

```

---

tx_data_mode	= 0
rx_data_mode	= 0
i2s_mclk	= port:PB05<2><1><default><default>
i2s_bclk	= port:PB06<2><1><default><default>
i2s_lrclk	= port:PB07<2><1><default><default>
i2s_dout0	= port:PB08<2><1><default><default>
i2s_dout1	=
i2s_dout2	=
i2s_dout3	=
i2s_din	= port:PB12<2><1><default><default>

主要项目说明：

i2s\_used: 默认情况下 I2S 不使用。

i2s\_select: 为 1 配置为 I2S, 为 0 配置为 PCM, 默认配置为 1

### [pcm\_para]

pcm_used	= 0
pcm_channel	= 2
pcm_master	= 4
pcm_select	= 1
audio_format	= 4
signal_inversion	= 1
over_sample_rate	= 256
sample_resolution	= 16
word_select_size	= 32
pcm_sync_period	= 256
msb_lsb_first	= 0
sign_extend	= 0
slot_index	= 0
slot_width	= 16
frame_width	= 1
tx_data_mode	= 0
rx_data_mode	= 0
pcm_mclk	= port:PA09<6><1><default><default>
pcm_bclk	= port:PA14<6><1><default><default>
pcm_lrclk	= port:PA15<6><1><default><default>
pcm_dout0	= port:PA16<6><1><default><default>
pcm_dout1	=
pcm_dout2	=
pcm_dout3	=
pcm_din	= port:PA17<6><1><default><default>

主要项目说明：

pcm\_used : 默认情况下 pcm 不使用。



---

pcm\_select: 为 1 配置为 pcm, 为 0 配置为 i2s, 默认配置为 1

## 5. Declaration

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