Amlogic Buildroot Openlinux Release Note

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Revision History

Revision	Date	Author	Changes
V20190131	Jan 31, 2019	Yeping Miao	Alpha Release for Sondbar Reference
V20190228	Feb 28, 2019	Yeping Miao	Release for Linux Soundbar Reference

Content

1. Basic Information

1.1. Introduction

This document provides the Openlinux notes for Amlogic Linux SBR (SoundBar Reference) source code release running on Amlogic SBR hardware. To obtain Amlogic Linux SBR reference source code, you need to have an account to access Amlogic GIT source code repository.

1.2. Change List

1. Resolved background noise issue
2. Resolved LINEIN cannot work issue
3. Added the feature switching between BT and other source
4. Resolved HDMI Dolby Atmos TruHD cannot work issue
5. Resolved clock conflict issue between HDMI and LINEIN

1.3. How to Get Code

1) repo command

You can download Linux BSP source code by running the following repo commands:

- **China openlinux server**

```
$ cd ~/<your-repo-dir>/
$ repo init -u ssh://git@openlinux.amlogic.com/buildroot/platform/manifest.git
$ repo init -m buildroot-openlinux-201902-a113-sbr-rc1.xml
$ repo sync
```

- **Overseas openlinux server**

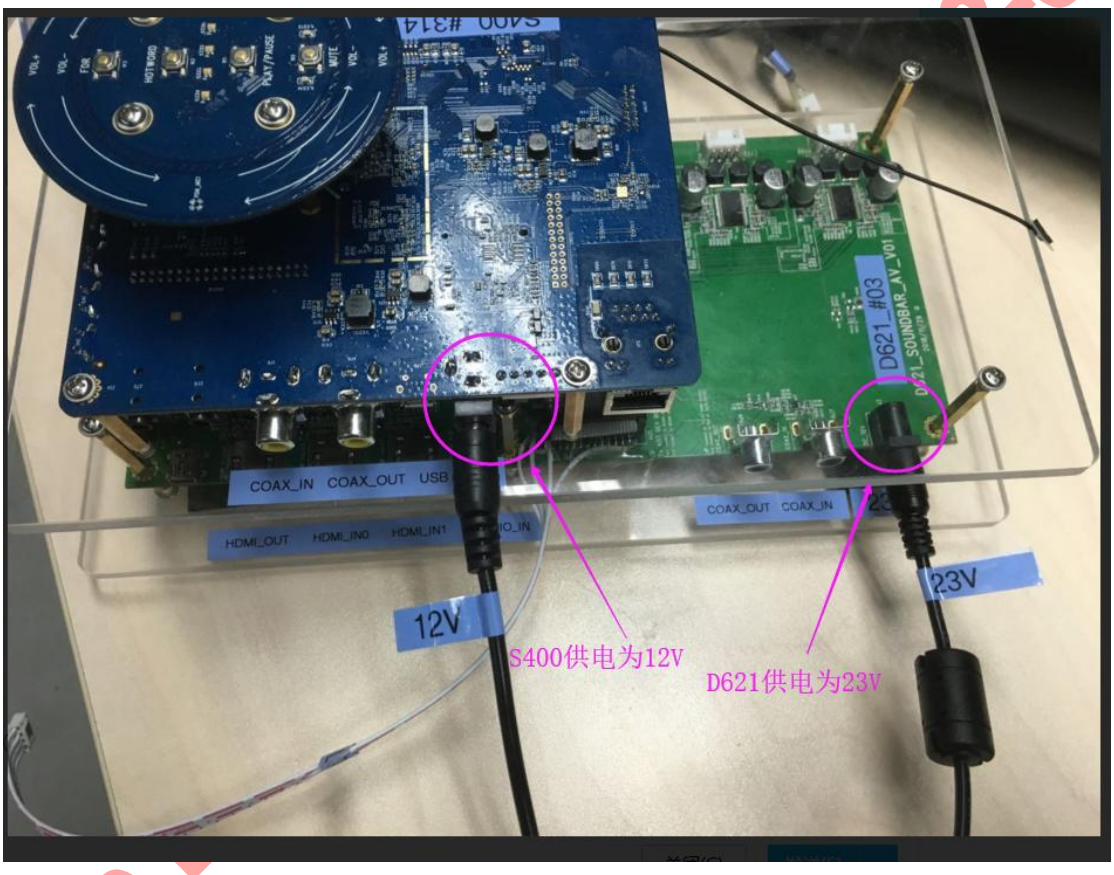
```
$ cd ~/<your-repo-dir>/
$ repo init -u ssh://git@openlinux2.amlogic.com/buildroot/platform/manifest.git
$ repo init -m buildroot-openlinux-201902-a113-sbr-rc1.xml
$ repo sync
```

1.4. Reference Platform

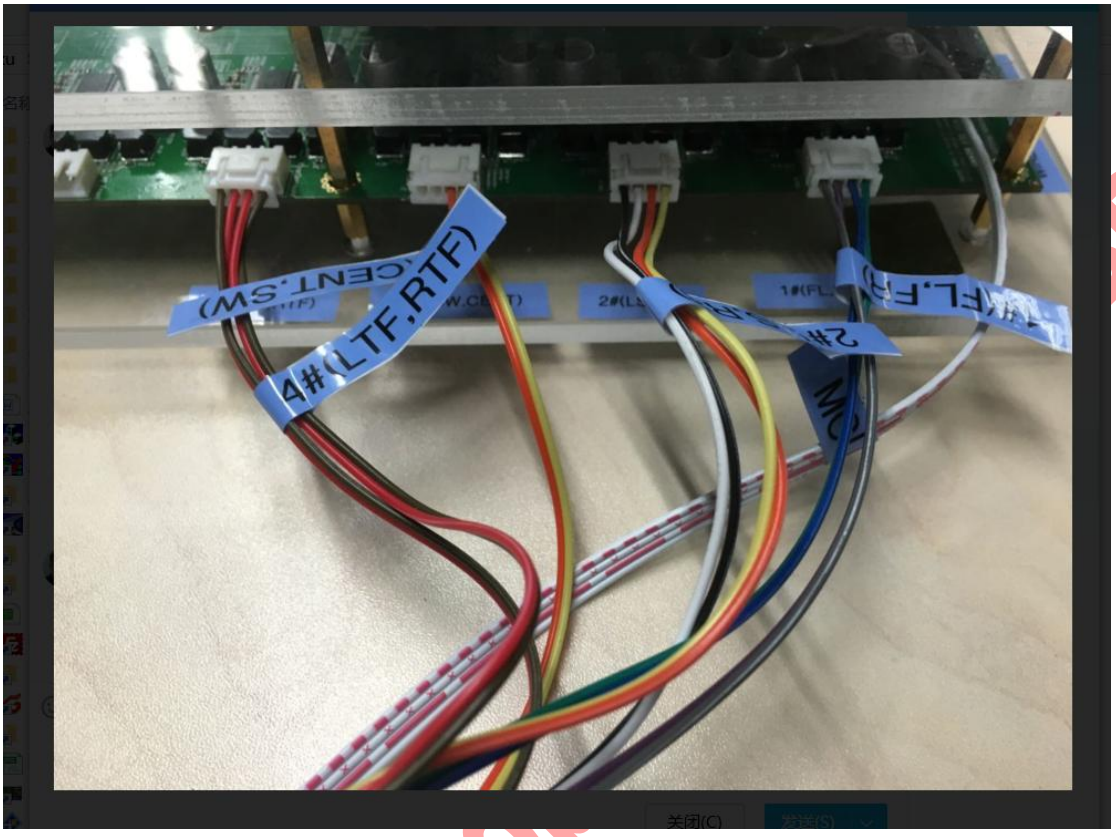
- **S400(A113D)**
  EMMC,WIFI AP6398S,DDR 1GB, Flash 512M
- **SD621**
  MCU IT6350, HDMI IT66321, TAS5782M x 6

1.4.1. How connect power supply

S400 and D621 use the different power supplies. S400 uses 12v, and D621 uses 23v.
Please plugin power supply according to the instruction, otherwise it will damage the boards.

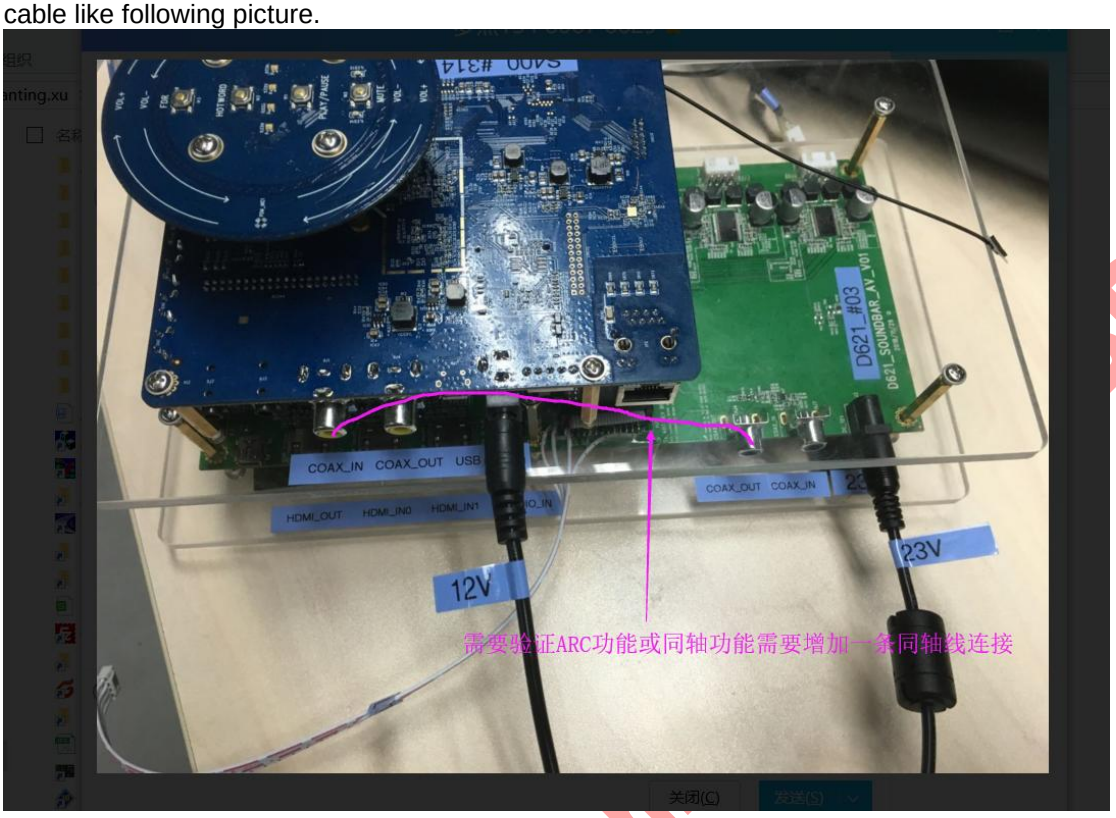


1.4.2. Speaker Connection



1.4.3. SPDIF & Coax Connection

Plug in the Coax to COAX_IN of D621, and we should connect COAX_OUT of D621 to COAX_IN of S400 by a cable like following picture.



1.5. How to Build Code

1.5.1. Build

You can find corresponding Buildroot setenv config and kernel config for the reference hardware by doing the following:

1) SoundBar Reference (S400+D621)

```
. buildroot/build/setenv.sh
select mesonaxg_s400_sbr_32_release
make
```

Note: Do not use make -jN here as Buildroot does not support top-level parallel make. This does not mean that Buildroot does not support parallel compilation, but just that it will handle this inside the Buildroot compilation system.

The upgrade file aml_upgrade_package.img will be generated in output/[config_build_folder]/images/.

1.6. How to Upgrade

- For Windows: Upgrade with USB burn tool. (version 2.1.5 or upper)
- For Linux: Upgrade with bash script aml_update_whole_package.sh. Make sure usb driver has been installed correctly.
  1) plugin power cable, at the same time, hold down the POWER key.
  2) plugin the usb cable within 5 seconds.
  3) cd the script directory.
  4) ./aml_update_whole_package.sh path/to/aml_upgrade_package.img.

1.7. Dolby Atmos Library

By default Dolby Atmos library is not included in build because license issue.
Please contract with Dai Liang, then push to platform manually (/usr/lib/libdolby_atmos.so).

1.8. How to operate with remote controller

Now we can support following keys, please reference the following picture, the keys with red text have been supported.

SOURCE: Switch to next source. HDMI1->HDMI2->SPDIF(COAX)->LINEIN->OTT(local stream player)->BT->HDMI1
BlueTooth: Switch to BT directly. Or you can use your mobile to connect the platform by BT.
LINEIN: Switch to LINEIN (AUX) directly.
SPDIF: Switch to SPDIF (COAX) directly.
HDMI1: Switch to HDMI1 directly.
HDMI2: Switch to HDMI2 directly.
Mute: Mute/un-mute audio.
Vol+: Volume up.
Vol-: Volume down.

1.9. How configure 2 Channels output

A) Change the related dts file for 2 channel output and rebuild kernel
B) cp /etc/halaudio/2ch_aml_audio_config.json /etc/aml_audio_config.json
By /etc/default aml_audio_config.json is for 8 channels.
C) Change /etc/default_audioservice.conf like following
"speakers=lr:c:lfe:lrs:lre" ==> "speakers=lr"

2. Test Report

Test Platform：SBR A113						
Test Software： http://jenkins-sh.amlogic.com:8080/job/autobuild/job/Buildroot/BOARD=s400_sbr,BUILD_ARCH=32,KERNEL_VERSION=4.9,label=Walle02-sh/794/						
Tester：Jing.Wang						
Test Description：1. :Linux+kernel4.9 2. gira 3. 32bit						
Chip	**Function Modules**		**Test Target**	Test Cases and Test Sources	**Result**	
A113	**Upgrade**		Update and bootup successfull with the release image	1. Use the PC tool to burn the release image 2. System can bootup with the release version 3. Check whether there is abvious error log from UART	Pass	
A113		power on	After power on system can work normally	1. Power on System 2. Check whether HDMI1 can work normally	Pass	
	Power		power key on keypad or remote controller	Check whether the power key(includes remote controller or panel key) can power on/off system.	Skip	

			LED	Check Whether LED can show correct information.	Skip	
A113	**Remote**		Remote controller should work normally	Reference the remote mapping (remote-layout.png) and check each keys and the related functions.	Pass	
A113	**Input**	Switch Input	Switch to each input source and check whether the audio is OK.	Switch between the supported input and check whether audio can work normally.	Pass	
A113	**HDMI**	PCM	Audio output is OK	Test some common PCM formats	Pass	
		AC3(no ATMOS)	Audio output is OK	DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\addbsi\ddplus\6ch_addbsi_7.ac3	Pass	
		EC3	Audio output is OK	**None Atmos:** DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\addbsi\ddplus\8ch_addbsi_21.ec3 **Atmos:** DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\changing_configs_objects\ddplus\music_changing_configs_objects.ec3 **Channel Mapping:** 5.1.2 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\ddplus\general_listening_5_1_2.ec3 5.1.4 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\ddplus\general_listening_5_1_4.ec3 7.1.4 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\ddplus\general_listening_7_1_4.ec3	Pass	

		MAT	Audio output is OK	**None Atmos:** DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\changing_configs_channels\mat\music_changing_configs_channels.mat **Atmos:** DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\changing_configs_objects\music_changing_configs_objects.mat **Channel Mapping:** 5.1.2 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\mat\general_listening_5_1_2.mat 5.1.4 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\mat\general_listening_5_1_4.mat 7.1.4 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\mat\general_listening_7_1_4.mat	Pass	
		TRUEHD	Audio output is OK	**Atmos:** DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\changing_configs_objects\music_changing_configs_objects.mat **Channel Mapping:** 5.1.2 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\truehd\general_listening_5_1_2.mlp 5.1.4 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\truehd\general_listening_5_1_4.mlp 7.1.2 DolbyAtmosForSoundBarProducts\Test_Materials\Test_Signals\general_listening\truehd\general_listening_7_1_4.mlp	Pass	
A113	**HDMI ARC**	PCM	Audio output is OK		Skip	
		Bitstream	Audio output is OK	Same as HDMI-IN AC3&EC3	Skip	

A113	SPDIF	PCM	Audio output is OK		Pass	
		Bitstream	Audio output is OK	Same as HDMI-IN AC3	Pass	
A113	LINEIN	PCM	Audio output is OK		Pass	
A113	BT	Play	Audio output is OK		Pass	
		Switch	Audio output is OK	Switch between BT and other sources	Pass	
		Volume Control	Audio output is OK	User the mobile to control volume	Pass	
A113	Control	Volume	Audio output is OK		Pass	
		Mute	Audio output is OK		Pass	

3. Known Issues

1) Suspend/Resume does not work
2) HDMI ARC does not work
3) I2C (mcu6350, tas5782m) access potential issue. It need more protection.
4) Connect HDMI with ATMOS bitstream input, SBR should connect a TV with HDMI output.
5) TDM output mode is still in bring up.