



## Surround Sound - Realtek ALC AppleHDA\_v3

Realtek ALC/Desktop: 885, 887, 888, 892, 898 and 1150 on board audio

Plex Home Theater

Audio Engine Running

# Surround Sound - Realtek ALC AppleHDA

These solutions enable OS X surround sound audio for HDMI, optical, analog and USB. There are many other solutions providing similar capabilities. Professional audio is beyond the scope of this guide.

[toleda/audio\\_ALC\\_guides](#)

## Change Log

1. v3.0 - 1/22/15 - El Capitan
2. v2.0 - 12/20/14 - Yosemite
3. v1.0 - 5/25/14 - Mavericks 1st Release

## Requirements

- A. OS X
  1. El Capitan/10.11+
  2. Yosemite/10.10+
  3. Mavericks/10.9+
- B. Surround Speakers - 2.1, 3.0, 3.1, 4.0, 4.1 or 5.1
- C. 5.1 Content

## Recommendations

- A. HDMI - highest quality surround solution, native/nearly native (Note 1, 2 and 3)
  1. Players
    - a. PlexHT\_v1.0.13
    - b. XBMC\_v13.0 - select System/Audio/Enable Passthrough
    - c. VLC\_v2.1.4 - select Audio/Audio Devices/HDMI (Encoded Output)
- B. Optical 5.1 - optical input DD/DTS receiver/speakers (Note 2, 3 and 4)
  1. Players
    - a. PlexHT\_v1.0.13
    - b. XBMC\_v13.0 - select System/Audio/Enable Passthrough
- C. Analog 5.1 - 2.1, 3.0, 3.1, 4.0, 4.1 or 5.1 speakers (Note 2, 3 and 4)
  1. Players
    - a. PlexHT\_v1.0.13
    - b. XBMC\_v12.3 - select System/Audio/Analog\_5.1\_Surround
    - c. VLC\_v2.1.4 - select Audio/Audio Devices/Analog\_5.1\_Surround
- D. USB 5.1 - 2.1 or 5.1 speakers with or without Receiver/optical
  1. USB2Optical 5.1, same as Optical 5.1 above
  2. USB 2Analog 5.1, same as Analog 5.1 above

## Installation

- A. HDMI audio
  1. HDMI audio
    - a. [HDMI Audio AppleHDA](#)
    - b. [El Capitan AppleHDA HDMI Audio](#)
  2. Select System Preferences/Sound/Output/HDMI

- B. Optical audio
  - 1. Onboard audio
    - a. MultiBeast
    - b. [Realtek ALC AppleHDA](#)
    - c. [El Capitan: Realtek ALC AppleHDA Audio](#)
  - 2. Select System Preferences/Sound/Output/Built-in Digital
- C. Analog audio
  - 1. Onboard audio
    - a. MultiBeast
    - b. [Realtek ALC AppleHDA](#)
    - c. [El Capitan: Realtek ALC AppleHDA Audio](#)
  - 2. Audio MIDI Setup/Aggregate Device/Analog\_5.1\_Surround
    - a. See Audio MIDI Setup/Create Aggregate Device - Below
  - 3. Select System Preferences/Sound/Output/Analog\_5.1\_Surround
- D. USB audio (example, [Sound Blaster Omni Surround 5.1](#))
  - 1. USB2Optical 5.1
    - a. Audio MIDI Setup/Aggregate Device/USB2Optical
      - i. See Audio MIDI Setup/USB2Optical/Format - Below
    - b. Select System Preferences/Sound/Output/USB2Optical\_5.1\_Surround
  - 2. USB2Analog 5.1
    - a. Audio MIDI Setup/Aggregate Device/USB2Analog
      - i. Audio MIDI Setup/USB2Analog/Configure Speakers - Below
    - b. Select System Preferences/Sound/Output/USB2Analog\_5.1\_Surround

## Player Downloads

- A. PlexHT- Plex Media Server/Computer/Mac: [Plex](#) and Plex Home Theater: [Plex](#)
- B. VLC: [VLC media player for Mac OS X](#)
- C. Kodi/XBMC: Gotham: [XBMC 13.0](#), Eden: [Index of /releases/osx](#)
- D. MPlayerX: [mplayerx](#)

## Details

- I. Solutions
- II. Player Test Result
- III. Configurations
- IV. Audio MIDI Setup/Create Aggregate Device
- V. Audio MIDI Setup/USB2Optical/Format
- VII. Audio MIDI Setup/USB2Analog/Configure Speakers
- VIII. Notes
- IX. Problem Resolution
- X. Screenshots

## I. Solutions

- A. Digital audio - HDMI/DP/DVI devices
  - 1. Supported codec (Note 2)
    - a. Realtek ALC AppleHDA.kext
    - b. Audio ID: 1, 2 or 3

2. Other codec (Note 3)
  - a. Native AppleHDA.kext
  - b. Audio ID: 1
3. HDMI2Optical Adapter
- B. Optical audio - Receiver/Soundbar w/SPDIF input
  1. Supported codec (Note 2)
    - a. Realtek ALC AppleHDA.kext
    - b. Audio ID: 1, 2 or 3
- C. Analog audio - 3, 4, 5, 6, 8 speakers
  1. Supported codec (Note 2)
    - a. Realtek ALC AppleHDA.kext
    - b. Audio ID: 1 or 2 (Audio ID: 3, not supported)
- D. USB audio - 3, 4, 5, 6 speakers
  1. Other codec/No codec (Note 3)
  2. USB2Optical 5.1 Adapter (DD/DTS Encoded Digital Audio capable)
  3. USB2Analog 5.1 Adapter (up to 48000 Hz/24 bit)

## II. **Player Test Results** (OSX: 10.9.2/C1021/DD 5.1/DTS 5.1)

- A. HDMI 5.1
  1. Plex\_v0.9.3.4 - Yes/DD D/DTS
  2. PlexHT\_v1.0.7 - Yes/DD D/DTS
  3. PlexHT\_v1.0.13 - Yes/DD D/DTS
  4. XBMC\_v12.3 - Yes/DD D/DTS
  5. XBMC\_v13.0 - Yes/DD D/DTS (Enable Passthrough), Yes/LPCM
  6. VLC\_v2.1.4 - Yes/DD D/DTS (HDMI (Encoded Output)
  7. MPlayerX\_v1.0.22.1 - Yes/DD D/DTS (Preferences/Audio/Pass through AC3=Yes/DTS=Yes)
  8. iTunes/QuickTime/DVDPlayer - Yes/DD (AC3), No DTS
- B. Optical 5.1 (48k Hz/2ch-16bit integer)
  1. Plex\_v0.9.3.4 - Yes/DD D/DTS
  2. PlexHT\_v1.0.7 - No (Video problem - pause/play)
  3. PlexHT\_v1.0.13 - Yes/DD D/DTS
  4. XBMC\_v12.3 - No (Video problem - 0.5x)
  5. XBMC\_v13.0 - Yes/DD D/DTS (Enable Passthrough) Yes/DD PL II/LPCM (DD/DTS)
  6. VLC\_v2.1.4 - Yes/DD PL II/LPCM (DD/DTS)
  7. MPlayerX\_v1.0.22.1 - Yes/DD D/DTS (Preferences/Audio/Pass through AC3=Yes/DTS=Yes)
  8. iTunes/QuickTime/DVDPlayer - No (885 yes)
- C. Analog 5.1
  1. Plex\_v0.9.3.4 - No/2 channel
  2. PlexHT\_v1.0.7 - No/2 channel
  3. PlexHT\_v1.0.13 - Yes/DD D/DTS
  4. XBMC\_v12.3 - Yes/DD D/DTS
  5. XBMC\_v13.0 - No/6 channel (Video problem - 2x)
  6. VLC\_v2.1.4 - Yes/DD D/DTS
  7. MPlayerX\_v1.0.22.1 - No/2 channel

8. iTunes/QuickTime/DVDPlayer - No/2 channel
- D. USB 5.1
  1. Optical 5.1 (48k Hz/Encoded Digital Audio) - as above
  2. Analog 5.1 (48k Hz/6ch-16bit integer) - as above

### III. **Configurations** (audio only)

- A. HDMI 5.1
  1. OS X/Player > HDMI > Receiver > Speakers
  2. OS X/Player > HDMI > Sound Bar
  3. OS X/Player > HDMI > TV > Receiver > Speakers
  4. OS X/Player > HDMI > TV > Sound Bar
  5. OS X/Player > HDMI > TV
- B. Optical 5.1
  1. OS X/Player > Optical > Receiver > Speakers
  2. OS X/Player > Optical > Sound Bar
- C. Analog 5.1
  1. OS X/Player > Speakers
- D. USB 5.1
  1. OS X/Player > USB > Optical > Receiver > Speakers
  2. OS X/Player > USB > Optical > Sound Bar
  3. OS X/Player > USB > Speakers

### IV. **Audio MIDI Setup/Create Aggregate Device**

- A. Analog\_5.1\_Surround (applies to 2.1, 3.0, 3.1, 4.0, 4.1 and 5.1)
  1. See [How to enable 5.1-channel analogue audio in OS X](#)
  2. Applications/Utilities/Audio MIDI Setup
    - a. Format: 48000 Hz/2ch-24bit integer, verify the following devices
      - i. Built-in Output
      - ii. Built-in Line Output
      - iii. Built-in Line Output
    - b. Audio Devices/+/Create Aggregate Device
    - c. Select - see see Screenshot 1.
      - i. Built-in Output
      - ii. Built-in Line Output
      - iii. Built-in Line Output
    - d. Verify Selections
      - i. Stream 1 checked
      - ii. Stream 2 checked
      - iii. Stream 3 checked
    - e. Select/Configure Speakers - see Screenshot 2.
      - i. Multichannel
      - ii. 5.1 Surround
    - f. Verify Speakers
      - i. Select/Left Front
      - ii. Verify Left Front/Sound
      - iii. Repeat for each speaker
    - g. Apply

- h. Done
- i. Rename Aggregate Device
  - i. Analog\_5.1\_Surround

## **V. Audio MIDI Setup/USB2Optical/Format**

- A. USB2Optical\_5.1\_Surround
  - 1. Applications/Utilities/Audio MIDI Setup
    - a. Audio Devices/USB digital audio - see see Screenshot 3.
    - b. Format: 48000 Hz Encoded Digital Audio
    - c. Done

## **VI. Audio MIDI Setup/USB2Analog/Configure Speakers**

- A. USB2Analog\_5.1\_Surround
  - 1. Applications/Utilities/Audio MIDI Setup
    - a. Audio Devices/USB analog audio- see see Screenshot 4.
    - b. Format: 48000 Hz/6ch-16bit integer
    - c. Select/Configure Speakers
      - i. Multichannel
      - ii. 5.1 Surround
    - d. Verify Speakers - see see Screenshot 5.
      - i. Select/Left Front
      - ii. Verify Left Front/Sound
      - iii. Repeat for each speaker
    - e. Apply
    - f. Done

## **VII. Notes**

- A. HDMI includes
  - 1. HDMI audio
  - 2. DP audio
  - 3. DP2HDMI audio
  - 4. DVI audio
    - a. Nvidia 4xx and newer
    - b. Intel HD4600
- B. Realtek ALC AppleHDA.kext
  - 1. onboard audio codec support
    - a. ALC885
    - b. ALC887
    - c. ALC888
    - d. ALC889
    - e. ALC892
    - f. ALC898
    - g. ALC1150
- C. HDMIDP/DVI audio codec support
  - a. AMD HD 5xxx, HD 6xxx, HD 7xxx, R7/R9 2xx, R7/R9 3xx
    - No HDMI/AMD8000Controller/Hawaii/Bonaire
  - b. Intel HD3000, HD 4000, HD4600+

- c. Nvidia GT/S/X 4xx, 5xx, 6xx, 7xx, 9xx (750/9xx: Web Drivers)
- D. Onboard audio is not available with an unsupported codec
- E. 8 series motherboard onboard audio may frequently unexpectedly stop
  - 1. Best fix is HDMI audio
  - 2. USB audio may stop, significantly. less often

## VIII. Problem Resolution (limited support)

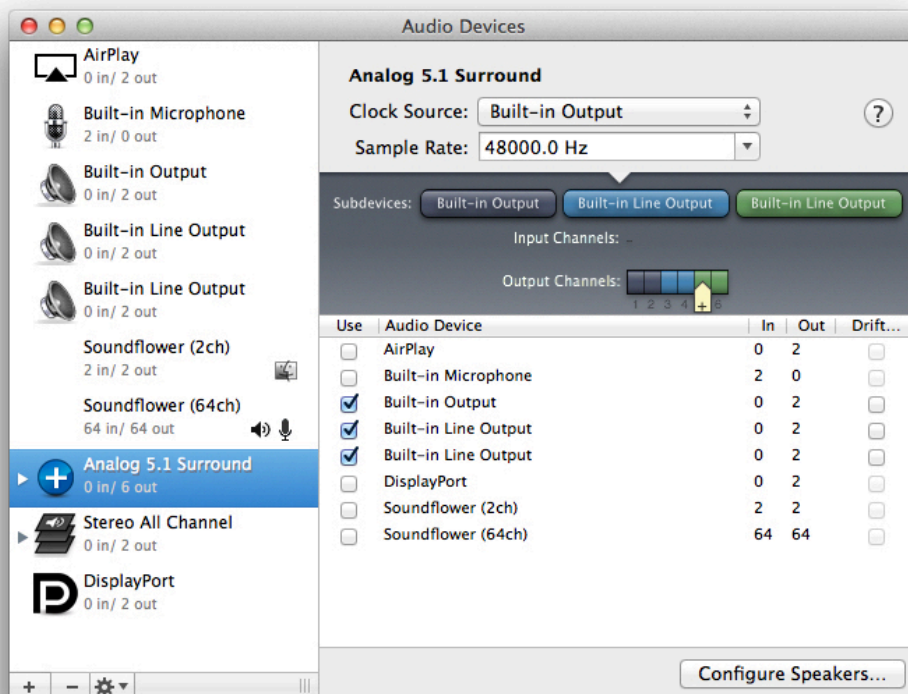
- A. AppleHDA: [Problem Reporting.md/Problem Reporting](#)
- B. HDMI audio: [Problem Reporting.md/Problem Reporting](#)
- C. USB - Start a new thread with device, specs and problem description
  - 1. Install not working
    - a. USB device incompatible with OS X
    - b. Incorrect setup, verify Audio MIDI Setup/Format
  - 2. Stopped working/poor sound quality
    - a. Incorrect setup, verify Audio MIDI Setup/Format
    - b. Restart

## IX. More Information

- A. Alexander Thomas: [Setting up surround sound in OS X with a multi-channel sound card](#)

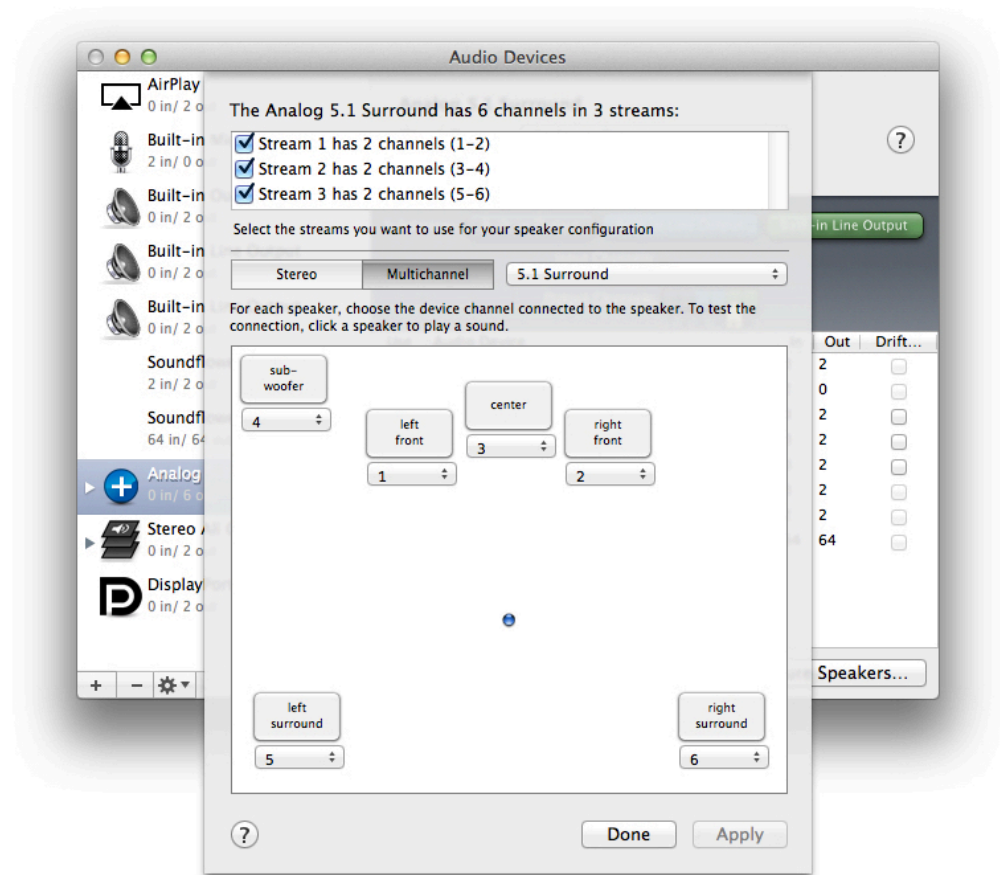
## X. Screenshots

- A. Audio MIDI Setup/Audio Devices/+/Create Aggregate Device/Format

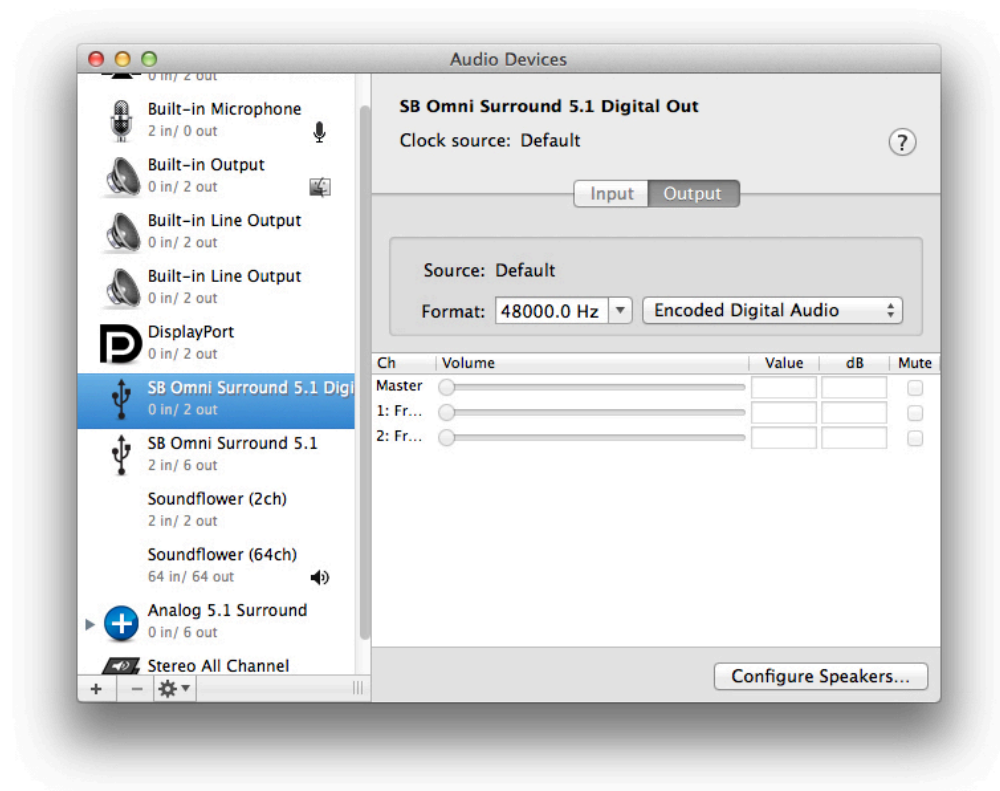




B. Audio MIDI Setup/Audio Devices/+/Create Aggregate Device/Configure Speakers

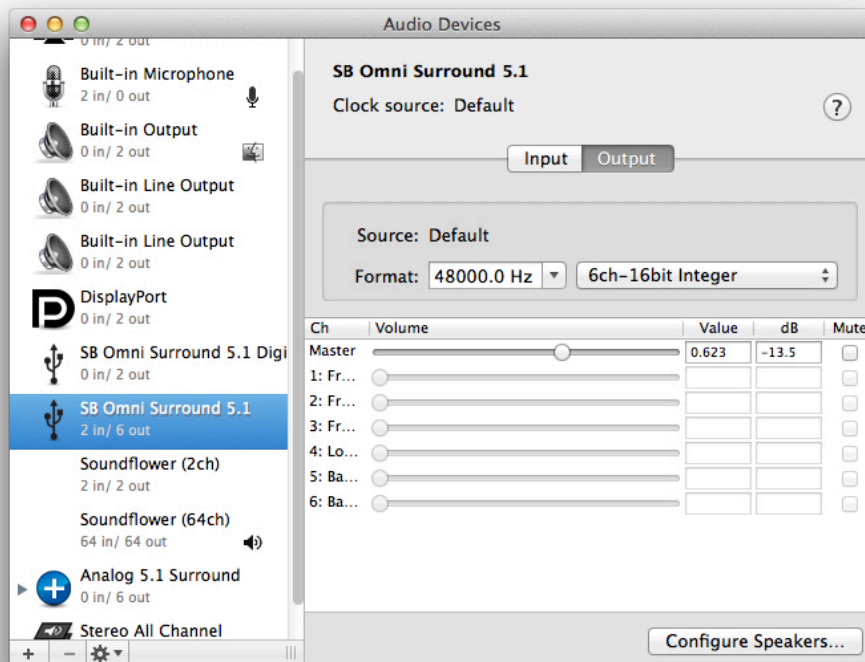


C. Audio MIDI Setup/USB2Optical/Format





#### D. Audio MIDI Setup/USB2Analog/Format



#### E. Audio MIDI Setup/USB2Analog/Configure Speakers

