

[Guide] ML-Haswell-hdmi\_audio\_(dsdt\_or\_ssdt)\_v1.1

# Haswell HDMI audio with or without dsdt edits

**Haswell/8 Series/Socket 1150 - HD46000/AMD/Nvidia HDMI Audio**

**Update v1.1: 10/14/13 - HDMIx2 and DVI2HDMI audio working**

Mountain Lion HDMI audio for Haswell/HD4600 systems with either: 1. HDMI audio edited dsdt or 2. the Haswell HDMI audio ssdt. Both techniques enable native Haswell graphics power management. Haswell HDMI audio is not native; an AppleIntelFramebufferAzul.kext edit is always required as well as an AppleHDA.kext edit. Credit, PikeRAAlpha for both fixes.

**Haswell HDMI Audio dsdt edits/HDMI Audio ssdts - Desktop**

[toleda/audio\\_hdmi\\_8series](https://github.com/toleda/audio_hdmi_8series)

Configure MaciASL/Preferences/Sources/+ with URL: (copy/paste URL)  
[https://raw.githubusercontent.com/toleda/audio\\_hdmi\\_8series/master](https://raw.githubusercontent.com/toleda/audio_hdmi_8series/master)

## News:

1. Haswell/HD4600/AMD/Nvidia HDMI audio is working
2. This guide assumes Azul framebuffer 0x0300220D, edit AAPL,ig-platform-id (dsdt or ssdt) for your preferred framebuffer
3. New Azul patch supports HDMIx2 and DVI2HDMI audio

**Requirements** (this version, Haswell HDMI audio)

1. AMI UEFI/Haswell/8 Series/Socket 1150 Intel motherboard
2. HD4600 graphics and/or native OS X HDMI audio graphics support including Nvidia 4xx, 5xx, 6xx and some AMD 5xxx, 6xxx
3. OS X 10.8.5 and newer
4. Haswell motherboard audio codecs
  1. Supported: ALC887, ALC892, ALC898 and ALC1150
  2. Unsupported/HDMI audio only, see Note 4, below

## Before You Start

1. OS X does not provide HDMI audio controls (no volume, no mute, no balance, etc.)
2. The connected HDMI device (TV, receiver, etc.) provides any and all audio controls
3. Remove S/L/E/HDAEnabler1.kext or S/L/E/HDAEnabler2.kext (if present)
4. Remove any property-type injection (Extra/org.chameleon.Boot.plist or Clover/config.plist, remove the injection not the plist file)
5. Apply kext patches per **Notes** 1 and 2, below
6. CAUTION: Do not hot plug the HDMI cable; the system will freeze with a fatal Intel error and restart
7. Wake issues with 10.8.5 and Supplemental Update 1.0, see **Notes**, 7

**ML Haswell HDMI audio enabling techniques** - select one

1. ML: Haswell HDMI Audio dsdt (with dsdt edits)
2. ML: Haswell HDMI Audio ssdt (with native dsdt)

### 1. Installation - Haswell HDMI audio dsdt

1. MaciASL, see **Tools**, 1.
2. dsdt must compile before HDMI audio editing dsdt
3. MaciASL/Preferences/Sources/raw.github.com/toleda/audio\_hdmi\_8series/master
4. MaciASL/Patch/Open/
5. MaciASL/Apply/Compile/Save
6. Install Extra/dsdt.aml
7. Rebuild kernel cache - see **Tools**: 3.
8. Restart
9. Verify HDMI audio

### 2. Installation - Haswell HDMI audio ssdt

1. [audio\\_hdmi\\_8series/ssdt\\_8series at master · toleda/audio\\_hdmi\\_8series](#)
2. Copy Downloads/ssdt-ami-8\_series\_hdmi\_audio-1/SSDT-1.aml to Extra
  1. If Extra/SSDT.aml is present, install Downloads/audio\_ssdt-uefi\_hdmi\_v3/SSDT-1.aml as Extra/SSDT-1.aml
  2. If no Extra/SSDT.aml, rename Downloads/audio\_ssdt-uefi\_hdmi\_v3/SSDT-1.aml to SSDT.aml and install as Extra/SSDT.aml
3. Enable SSDT
  1. Chimera or Chameleon - Extra/org.chameleon.Boot.plist
 

```
<key>DropSSDT</key>
<string>Yes</string>
```
  2. Clover\_v2000+ - EFI/Clover/config.plist/ACPI/SSDT
 

```
<key>DropOem</key>
<true/>
```
4. Rebuild kernel cache, see **Tools** 3.
5. Restart
6. Verify HDMI audio

### Native ML/10.8.5 HDMI Audio Graphics

1. HD4600 (no native HDMI audio support, framebuffer edits required)
  1. HDMI display (Azul framebuffer 0x0300220D)
    1. AppleIntelFramebuffer@0, native supports DP
    2. AppleIntelFramebuffer@1, with edit, supports DVI or HDMI
    3. AppleIntelFramebuffer@2, with edit, supports HDMI
  2. DP audio supported
  3. DVI audio supported
  4. Three displays supported, two with HDMI audio
    1. DP + HDMI or DP + DVI
    2. DVI (w/DVI2HDMI adapter)
    3. HDMI, HDMIX2 or HDMI + DVI
    4. Special case: DP and DPx2, no Azul edit required.
2. Nvidia 4xx/5xx/6xx7xx
  1. Not supported natively: GTS 450, GTX 550ti, and GTX560ti
  2. All Nvidia graphic card connectors support HDMI audio (DVI2HDMI, DP2HDMI)

3. DP audio supported
4. DVI audio supported
3. AMD HD5xxx/HD6xxx (framebuffer injection/editing may be required)
  1. Framebuffers, see [ATI/AMD 5xxx & 6xxx Graphics Cards Framebuffer Personalities](#),
  2. Framebuffer edits,
    1. [Lion HDMI Audio - Part 3a: Kext Edits - AMD](#)
    2. [Editing custom personalities for ATI Radeon HD\[45\]xxx - ATi - InsanelyMac Forum](#))
  3. DP audio supported
  4. DVI audio not supported
4. Supported Configurations (ML Haswell HDMI Audio)
  1. HD4600 only
  2. Nvidia only
  3. AMD only
  4. HD4600 and Nvidia
  5. HD4600 and AMD

## Notes

1. Haswell/ApplesHDA.kext\_v2.4.7 only edit
  1. MultiBeast 5.5.3 or newer
  2. Select View Row: [audio\\_hdmi\\_8series/audio\\_hdmi\\_hd5K-hda-85\\_patch.command.zip at master · toleda/audio\\_hdmi\\_8series](#)
2. Haswell/ApplesIntelFramebufferAzul.kext
  1. Select View Row: [audio\\_hdmi\\_8series/audio\\_hdmi\\_hd5k-azul-85\\_patch.command.zip at master · toleda/audio\\_hdmi\\_8series](#)
3. Haswell HDMI audio works with two ML Audio IDs select one ID
  1. Audio\_ID: 1 supports HD4600/AMD/Nvidia HDMI and 3, 5 and 6 port Realtek ALC onboard audio
  2. Audio\_ID: 2 supports HD4600/AMD/Nvidia HDMI and 3 port Realtek ALC onboard audio
4. For unsupported motherboard audio codecs, the native 10.8.5 ApplesHDA.kext supports HDMI audio only when configured properly (Notes 1, 2 and 3-1)
5. Haswell patches must be applied after each software update.
6. No testing on laptops has been performed to date.
7. 10.8.5 and 10.8.5 Supplemental Update 1.0
  1. No HDMI audio after wake, restart required. (DP audio OK)
  2. 2nd HDMI display may wake to black screen

## **AppleIntelFramebufferAzul.kext**/Framebuffer 0x0300220D/edit

1. Native
 

```
01 05 12 00 00 04 00 00 87 00 00 00
02 04 14 00 00 04 00 00 87 00 00 00
03 06 10 00 00 04 00 00 11 00 00 00
```
2. Edited
 

```
01 05 12 00 00 04 00 00 07 01 00 00
02 04 14 00 00 08 00 00 06 00 00 00
03 06 12 00 00 08 00 00 06 00 00 00
```

## Troubleshooting

1. Verify HDMI device connected
  1. System Information/Graphics/Display/HDMI device name/Television/Yes
2. Run IOReg/IOJones/Verify Devices (PEGP, IGPU and HDAU)
  1. Device (IGPU and HDAU) may not be present if HD4600/HD5000 Graphics is not enabled
  2. Device (PEGP) may not be present if no discrete graphics
  3. If GFX0@2 exists, edited dsdt or ssdt not installed or installed improperly
3. IOreg/IOJones/Verify HDAU@3
  1. IOHDACodecDevice@3/IOHDACodecVendorID: ...80862807
  2. If no codec, apply **Notes**: 1. AppleHDA.kext edit
4. IOreg/IOJones/Verify IGPU@2
  1. AppleIntelFramebuffer@2/connector-type=<00 08 00 00>
  2. if wrong connector, apply **Notes**: 2: AppleIntelFramebufferAzul.kext edit

## Problem Reporting

1. Motherboard/BIOS version/processor/graphics/OS and version
2. Copy of dsdt (if edited)
3. Copy of HDMI audio SSDT ((if installed)
4. Copy of IORegistryExplorer/IOJones
5. Post: see README.txt/Problem Reporting, [toleda/audio\\_hdmi\\_8series](#)

## Credit

PikeAlpha [Haswell HDAU solution | Pike's Universum](#)

bcc9 <http://www.insanelymac.com/forum/top...ort/?p=1934889>, Post #11

## Tools (Guides below)

1. Edit dsdt with MaciASL <http://maciasl.sourceforge.net/>
2. Rebuild kernel cache: see <http://sourceforge.net/projects/dpcimanager/>
3. Find HD4600 HDMI port-number: [Alternative to IORegistryExplorer: IOJones](#)

## Guides

### Rebuild kernel cache

### Find HD4600 HDMI AppleIntelFramebuffer

**Successful Terminal**/audio\_hdmi\_hd5K-hda-85\_patch.command

**Successful Terminal**/audio\_hdmi\_hd5K-azul-85\_patch.command

### Rebuild kernel cache

1. Open Downloads/DPCIManager/DPCIManager
2. Select: Rebuild Cache

### Find HD4600 HDMI AppleIntelFramebuffer

1. Boot system with only HDMI display connected
2. Open Downloads/IOJones
3. Search: AppleIntelFr

- Screenshot
- 4. Open each framebuffer to find display0
- 5. Select: AppleIntelFramebuffer (with display0)
- 6. Cancel Search (X)
- 7. Scroll up for AppleIntelFramebuffer to show
- 8. Note AppleIntelFramebuffer#0, 1 or 2
- 9. If HDMI display is attached to
- 10. AppleIntelFramebuffer#2, no further edits
- 11. AppleIntelFramebuffer#0, see instructions below
- 12. AppleIntelFramebuffer#1, see instructions below

**Successful Terminal/audio\_hdmi\_hd5K-hda-85\_patch.command**

Last login: Sat Sep 28 15:32:41 on ttys000  
\$ ../Downloads/audio\_hdmi\_hd5K-hda-85\_patch.command ; exit;  
Patch binary ...  
Fix permissions ...  
Kernel cache...  
Finished, restart required.  
logout

[Process completed]

**Successful Terminal/audio\_hdmi\_hd5K-azul-85\_patch.command**

Last login: Sat Sep 28 15:28:45 on console  
\$ ../Downloads/audio\_hdmi\_hd5k-azul-85\_patch.command ; exit;  
Patch binary ...  
Password:  
Fix permissions ...  
Kernel cache...  
Finished, restart required.  
logout

**[Process completed]**