

[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

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/audio_ssdt-hdmi.. . ./SSDT-1.aml to Extra
 1. If Extra/SSDT.aml is present, install SSDT-1.aml as is: Extra/SSDT-1.aml
 2. If no Extra/SSDT.aml, rename SSDT-1.aml to SSDT.aml and install as: Extra/SSDT.aml
 3. The 1st SSDT is SSDT, 2nd is SSDT-1, 3rd is SSDT-2, etc.; no gaps
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/AppleHDA.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/AppleIntelFramebufferAzul.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 AppleHDA.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

PikeRAAlpha 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]