



# Mountain Lion UEFI HDMI Audio

[Easy Guide] ML: UEFI HDMI Audio

A simple HDMI Audio dsdt editing tool for OS X HDMI audio UEFI motherboards. Despite the perception, all Intel based systems (including UEFI), have a dsdt. OS X HDMI audio requires dsdt edit to enable HDMI audio. Based on MaciASL built by SJ\_UnderWater, the Apply button automatically makes the HDMI audio dsdt edits.

## Benefits

1. Automated dsdt editing for HDMI audio
2. Installs HD4K/HD3K HD Graphics HDMI audio dsdt edits
3. Installs AMD/Nvidia discrete graphics HDMI audio dsdt edits
4. Enables native CPU and GPU power management (with proper sysdef and ssdt)
5. Enables HD4K/HD3K HD Graphics with GraphicsEnabler=No
  - 5a. Nvidia 6xx, 7xx
  - 5b. AMD HD7xxx
6. Supports HDMI audio on all Nvidia 6xx Kepler video connectors (HDMI, DP, DVI)
7. Minimum edits, no Method (DTGP., faster boot

## 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. Delete any audio enablers (S/L/E/HDAEnabler1.kext)
4. Remove any property-type injection (Extra/org.chameleon.Boot.plist)

## Requirements

1. AMI UEFI/Intel based motherboard
  - 1a. Not supported - X79
2. OS X
  - 2a. Mountain Lion - 10.8.3 and newer
3. dsdt - no compile errors
  - 3a. If no dsdt, extract dsdt, see **I. Preparation**, Step 9

- 3b. See PJALM's DSDT Patches
- 4. Motherboard onboard audio codec
  - 4a. Realtek supported audio codecs (8xy): 885, 887, 888, 889, 892, 898
  - 4b. Unsupported audio codecs: ML HDMI audio works with any unsupported audio codec/no onboard audio
- 5. AppleHDA.kext (one of the following)
  - 5a. ML: MultiBeast 5.2.1 or newer/Audio/Realtek ALC8xx/With DSDT/ALC...
  - 5b. ML: Native AppleHDA.kext (unsupported audio codecs)

### **Not Supported**

- 1. AMD HD7xxx HDMI audio, 0210 01aa\_v100300 HDMI codec not supported
- 2. GTS 450, GTX 550 ti and GTX 560 ti (work arounds available)

### **More Information**

#### **Special HDMI Audio Considerations**

#### **Detailed Instructions**

See Mountain Lion HDMI Audio - AMI DSDT

### **Tools**

- 1. MaciASL [MaciASL | Free Development software downloads at SourceForge.net](http://sourceforge.net/projects/maciasl/)
- 2. IORegistryExplorer see [\[Guide\] How to Make a Copy of IOReg](#)
- 3. CarbonCopyCloner or SuperDuper
- 4. Download/ZIP: toleda/audio\_hdmi\_uefi · GitHub

### **Mountain Lion Audio IDs** (10.8.3 AppleHDA.kext\_v2.3.7 or newer)

- 1. Audio ID 1/A1: supports AMD/Nvidia HDMI and 3, 5 and 6 port ALC8xx onboard audio (HD3000/HD4000 HDMI audio not available)
- 2. Audio ID 3/A3: supports HD3000/HD4000 with or without AMD/Nvidia HDMI and 3, 5 and 6 port ALC8xx onboard audio (Black port - not available)

### **Patches** - [github.com/toleda/audio\\_hdmi\\_uefi/tree/master/Patches](https://github.com/toleda/audio_hdmi_uefi/tree/master/Patches)

- ib1. UEFI-Clean Compile - fix native dsdt compiler errors for successful dsdt edits
- uefi1. Desktop-AMD/Nvidia-A1 - AMD/Nvidia HDMI audio dsdt edits
- uefi2. Desktop-HD4K/HD3K/AMD/Nvidia-A3 - HD4000 HDMI audio dsdt edits
- uefi3. Laptop-A3-FB\_01 - Laptop HD4K/HD3K HDMI audio dsdt edits
- uefi4. Laptop-A3-FB\_03 - Laptop HD4K/HD3K HDMI audio dsdt edits
- uefi5. NUC-HD4K-A1 - NUC HDMI audio edits (2xHDMI and TB)
- ib4. HD4K-on-6\_Series\_MEI - HD4K MEI dsdt edit (apply once, only with uefi1 - uefi4)
- sb5. HD3K-on-7\_Series\_MEI - HD3K MEI dsdt edit (apply once, only with uefi1 - uefi4)

### **Attachments**

N/A HDMI audio dsdt edits are available in MaciASL/Patch

### **Patch File Edits**

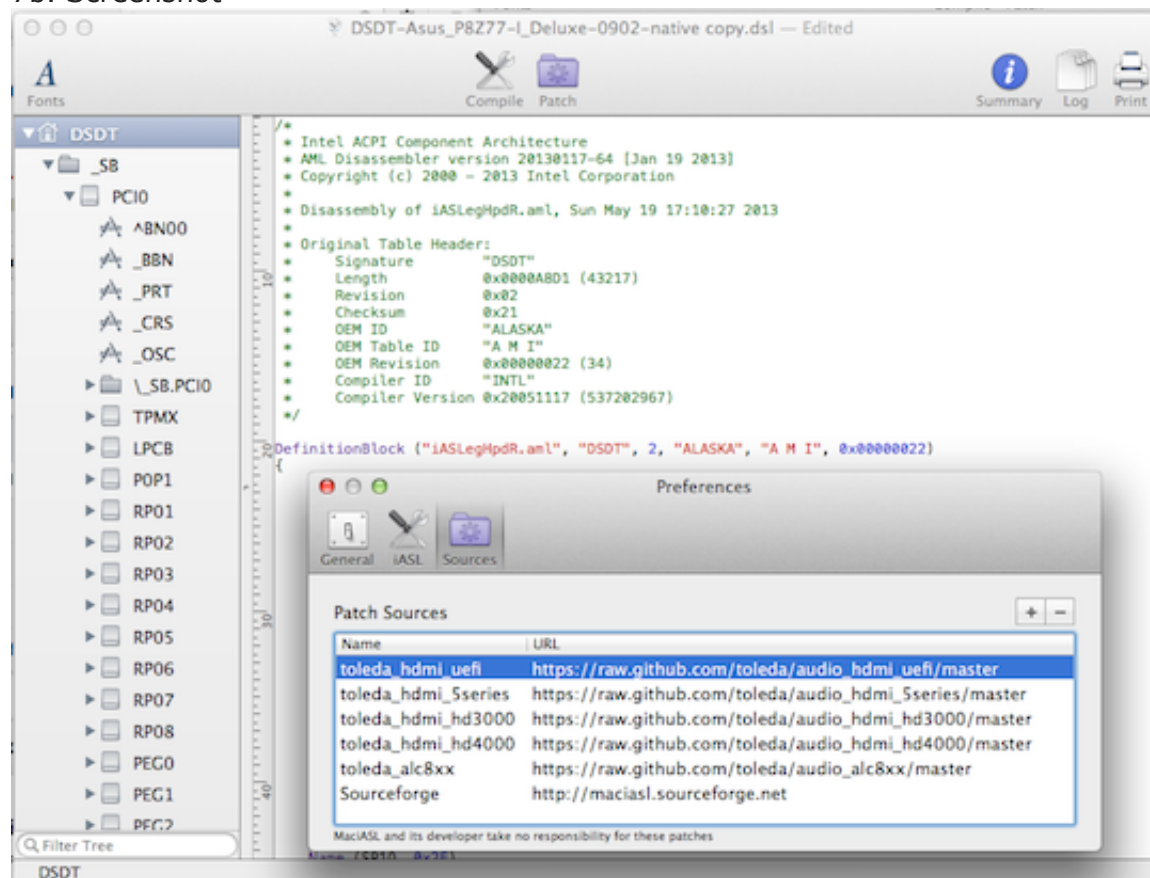
- 1. If the Patch file requires edits,
- 2. Edit the Patch file in MaciASL/Patch window or
  - 2a. Download the Patch from:  
[github.com/toleda/audio\\_hdmi\\_uefi/tree/master/Patches](https://github.com/toleda/audio_hdmi_uefi/tree/master/Patches)
  - 2b. Select Folder/Select Patch/Raw/Copy/Save to Desktop
  - 2c. edit with TextEdit and save to desktop.

## Start of Procedure

### ML: UEFI HDMI audio edits

#### I. Preparation

1. Make bootable backup of system (CarbonCopyCloner or SuperDuper)
2. Make a copy of IOREG, see **Tools/2**.
3. Verify no audio enablers (S/L/E/HDAEnabler1.kext, HDAEnabler8xx.kext, etc.)
4. MultiBeast 5.3.1 or newer - Select/Drivers & Bootloaders/Drivers/Audio/Realtek ALC8xx/With DSDT/ALC8-- , if Realtek ALC8xx audio,
5. Download MaciASL and install/Applications, see **Tools/1**.
6. Applications/MaciASL
7. MaciASL/Preferences/Sources/+/[https://raw.githubusercontent.com/toleda/audio\\_hdmi\\_uefi/master](https://raw.githubusercontent.com/toleda/audio_hdmi_uefi/master)
- 7a. URL: [https://raw.githubusercontent.com/toleda/audio\\_hdmi\\_hd4000/master](https://raw.githubusercontent.com/toleda/audio_hdmi_hd4000/master)
- 7b. Screenshot



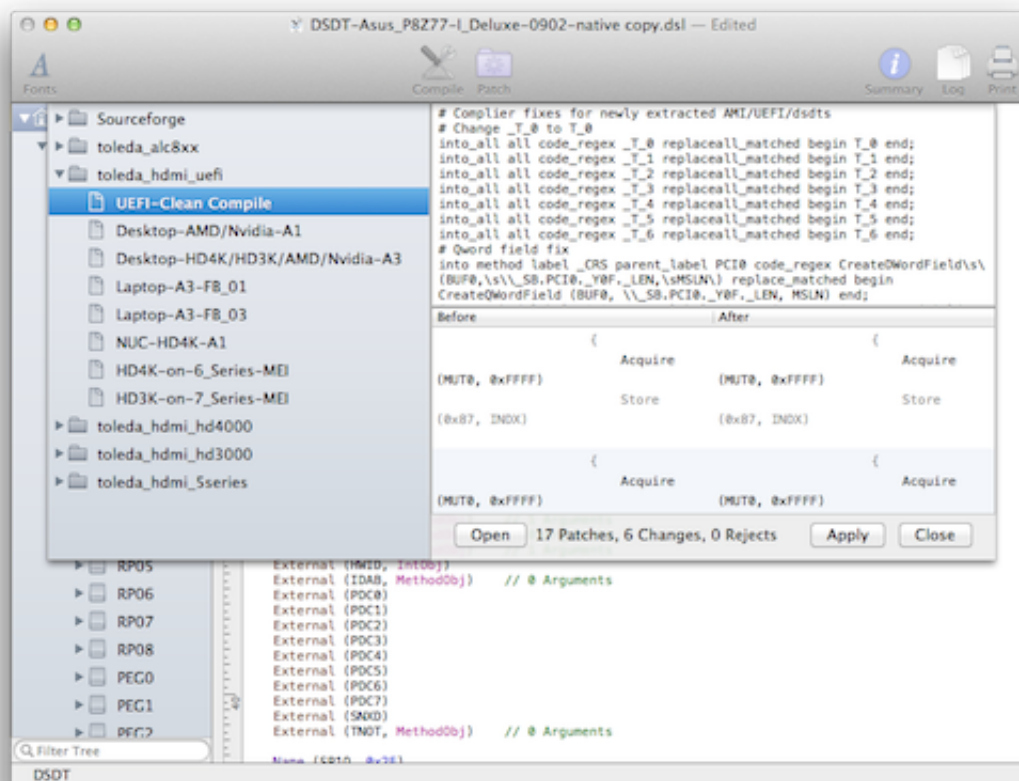
8.

With dsdt,

- 8a. Copy Extra/dsdt.aml to Desktop
- 8b. MaciASL/File/Open/Desktop/dsdt.aml
- 8c. jump to **II. Native Compile**
9. If no dsdt,
- 9a. MaciASL/File/New from ACPI/DSDT
- 9b. MaciASL/File/Save As../Desktop/dsdt-motherboard-native.dsl

## II. Native Compile

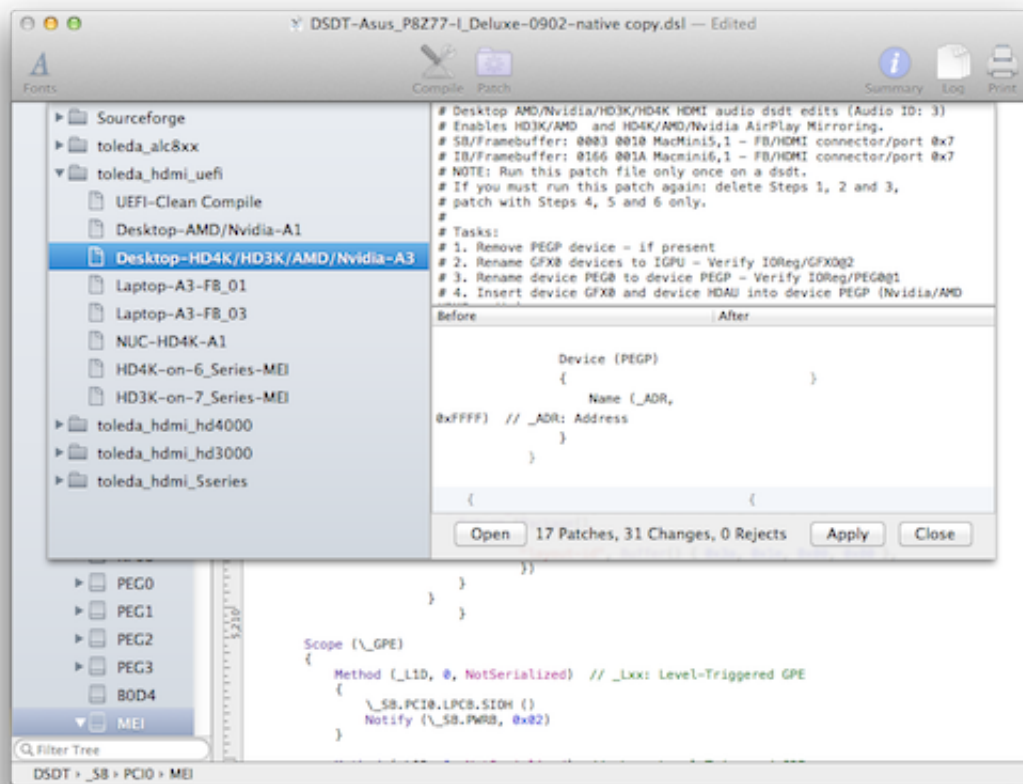
10. Verify AMI dsdt (1st line)
  - 10a. DefinitionBlock ("./dsdt.aml", "DSDT", 2, "ALASKA", "A M I", 0x000000..)
  - 10b. See Screenshot at 7b.
  - 10c. If dsdt is not AMI, this method will not work. Full Stop.
11. MaciASL/Patch/Select AMI/Clean Compile
  - 11a. Screenshot



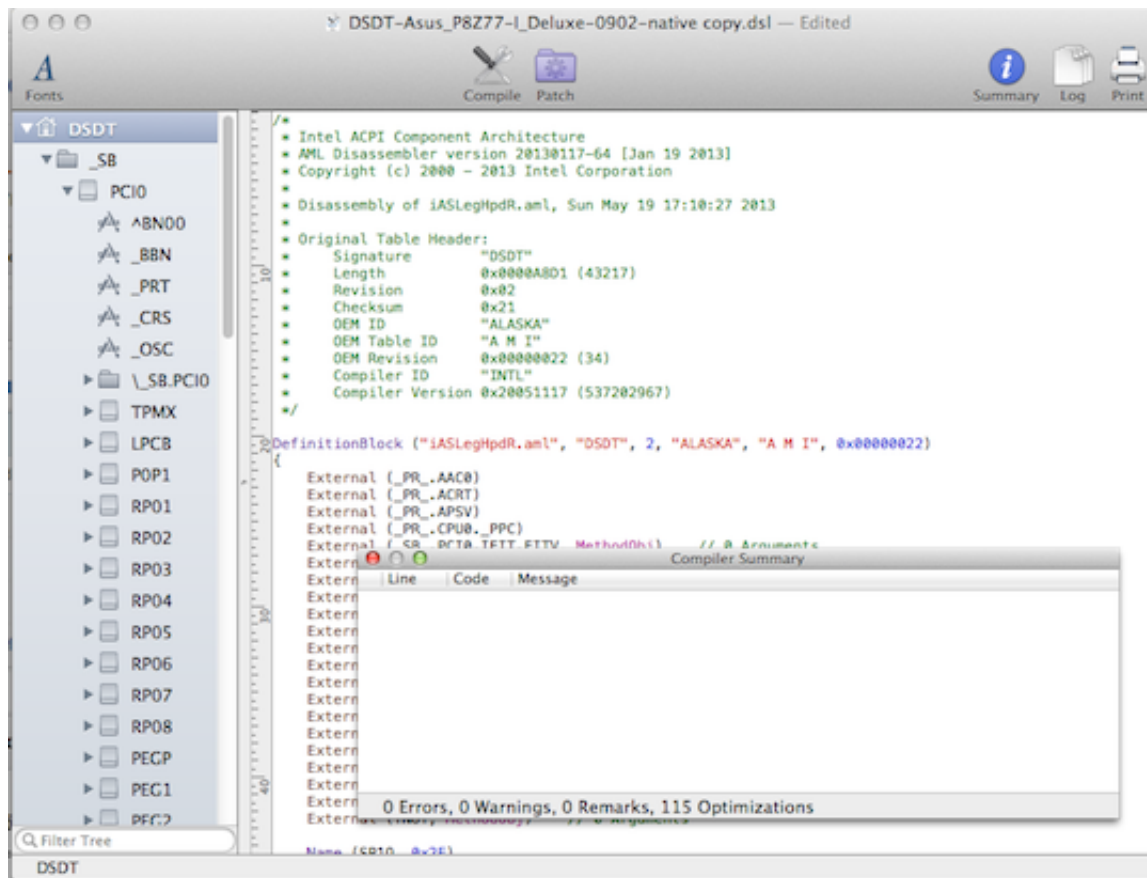
12. MaciASL/Patch/Apply
13. MaciASL/Patch/Close
14. MaciASL/Compile
- 14a. See Screenshot at 19a
15. If no errors, jump to **III. Apply Patch file - MaciASL**
- 15a. Errors, see Troubleshooting/Problem Reporting/4.

### III. Apply Patch file - MaciASL

16. Patch/toleda\_hdmi\_hd4000/Select appropriate Patch file/make any edits  
16a. Screenshot



17. MaciASL/Patch/Apply
18. MaciASL/Patch/Close
19. MaciASL/Compile
- 19a. Screenshot



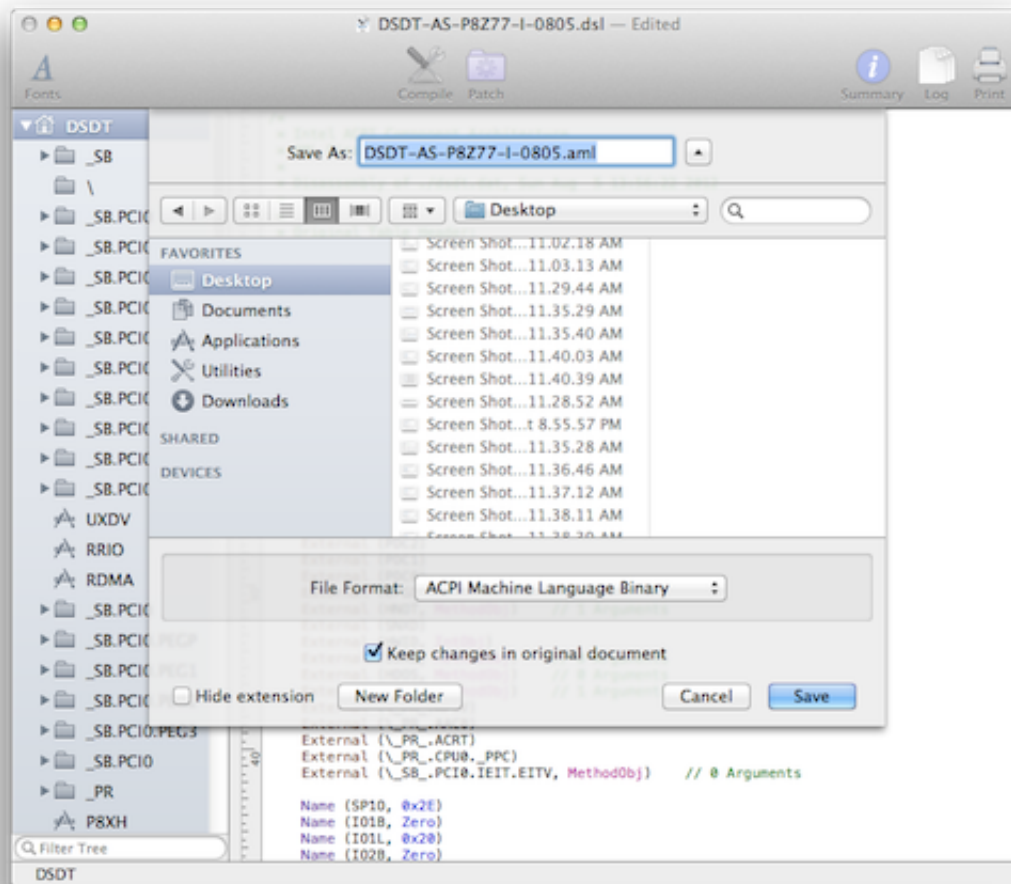
20. If no errors, jump to **IV. Save dsdt.aml - MaciSL**

20a. Errors, see Troubleshooting/Problem Reporting/4.

#### **IV. Save dsdt.aml - MaciSL**

21. MaciSL/File/Save As... /ACPI Machine Language Binary/Desktop/dsdt.aml (add extension)

21a. Screenshot



## V. Install dsdt.aml - MaciASL

22. MaciASL/File/Save As... /ACPI Machine Language Binary/Extra/dsdt.aml (add extension)

## VI. Restart

23. Repair permissions and cache (Ex., Disk Utility, Kext Beast, Kext Utility, Kext Wizard, etc.)

24. Restart

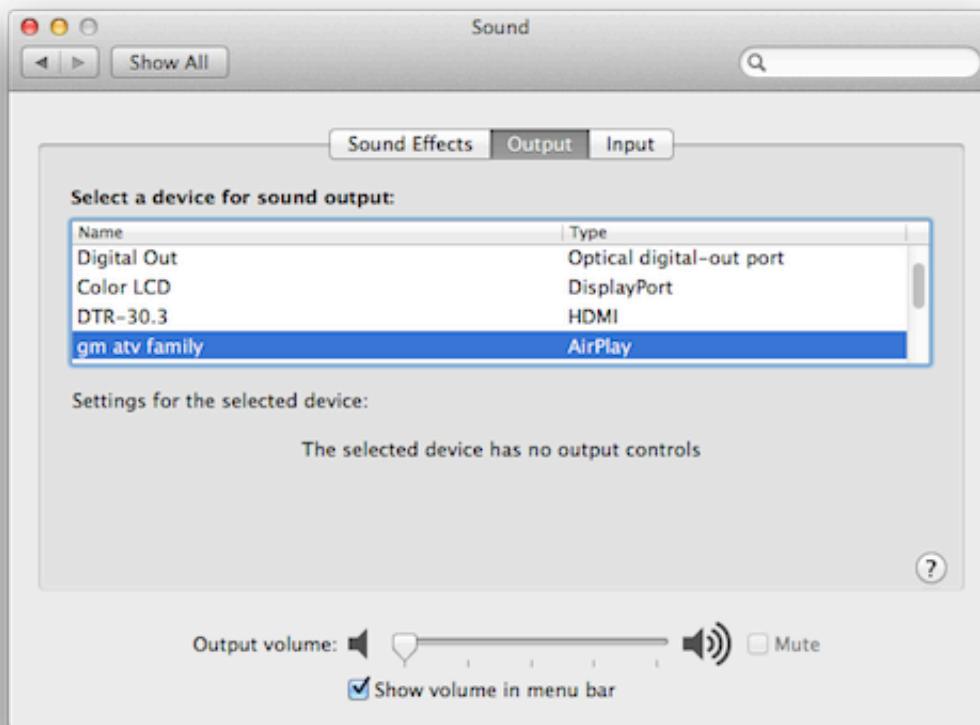
## VII. Notes

1. HD4K/HD3K HD Graphics may require framebuffer edits for working HDMI audio
2. AMD HD 5xxx and 6xxx graphics may require framebuffer edits for working HDMI audio

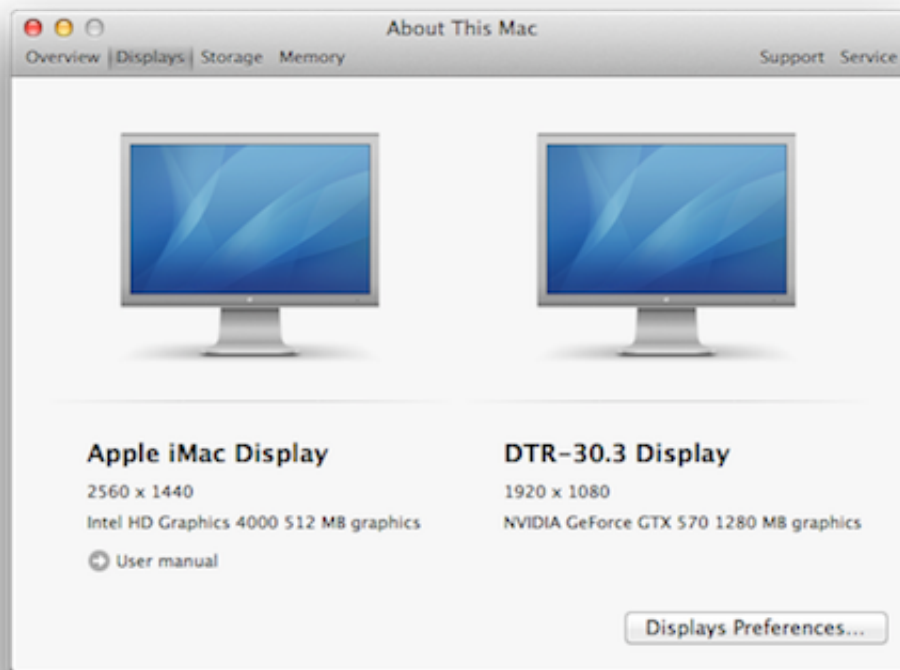
## VII. Verify HDMI Audio

P8Z77 I Deluxe/i7-3770K/HD4000 DP audio/NVidia HDMI audio/AirPlay Mirroring

25. System Preferences/Sound/Outputs/Select HDMI







Mac mini				
▼ Hardware	Video Card ▲			
	Intel HD Graphics 4000	GPU	Built-In	
	NVIDIA GeForce GTX 570	GPU	PCIe	PCIEX16
ATA				
Audio				
Bluetooth				
Card Reader				
Diagnostics				
Disc Burning				
Ethernet Cards				
Fibre Channel				
FireWire				
Graphics/Displays	<b>Intel HD Graphics 4000:</b>  Chipset Model: Intel HD Graphics 4000 Type: GPU Bus: Built-In VRAM (Total): 512 MB Vendor: Intel (0x8086) Device ID: 0x0166 Revision ID: 0x0009 Displays: <b>iMac:</b> Display Type: LCD Resolution: 2560 x 1440 Pixel Depth: 32-Bit Color (ARGB8888) Main Display: Yes Mirror: Off Online: Yes Rotation: Supported Connection Type: DisplayPort			
Hardware RAID				
Memory				
PCI Cards				
Parallel SCSI				
Power				
Printers				
SAS				
Serial-ATA				
Thunderbolt				
USB				
▼ Network				
Firewall				
Locations				
Modems				
Volumes				
WWAN				
Wi-Fi				
▼ Software				
Accessibility				
Applications				
Components				
Developer				
Extensions				
Fonts				
Frameworks				
Installations				
Logs				
Managed Client				
Preference Panes				
Printer Software				
Profiles				
Startup Items				
Sync Services				
	<b>NVIDIA GeForce GTX 570:</b>  Chipset Model: NVIDIA GeForce GTX 570 Type: GPU Bus: PCIe Slot: PCIEX16 PCIe Lane Width: x16 VRAM (Total): 1280 MB Vendor: NVIDIA (0x10de) Device ID: 0x1086 Revision ID: 0x00a1 ROM Revision: preset 1.0.0 Displays: <b>DTR-30.3:</b> Resolution: 1920 x 1080 @ 60 Hz Pixel Depth: 32-Bit Color (ARGB8888) Mirror: Off Online: Yes Rotation: Supported Television: Yes			

## Troubleshooting

1. Verify HDMI device connected
  - 1a. System Information/Graphics/Display/HDMI device name/Television/Yes
2. Verify Extra/dsdt.aml is
  - 2a. .aml file
  - 2b. edited
3. Run IOREg/Verify Devices (PEGP, GFX0, HDAU, HDEF and IGPU)
  - 3a. Device (IGPU) may not be present if HD4000 Graphics is not enabled
  - 3b. Device (GFX0) and Device (HDAU) may not be present if no discrete graphics
4. Problem Reporting/Post to [Easy Guide] ML: UEFI HDMI Audio
  - 4a. Motherboard/BIOS version/processor/graphics/OS and version
  - 4b. Procedure/Guide Used
  - 4c. dsdt/native (.dsl)
  - 4d. dsdt/edited (.dsl)
  - 4d. copy of IOREg

## References

[Easy Guide] ML: UEFI HDMI Audio  
[Mountain Lion HDMI Audio - AMI DSDT](#)  
toleda/audio\_hdmi\_uefi · GitHub

## Credits:

PikeRAAlpha:USB 3.0 DSDT mods  
PJALM: PJALM's DSDT Patches  
RehabMan:ASUS DSDT Patch Repository for MaciASL - Page 3  
SJ\_UnderWater: [Native DSDT/AML IDE & Compiler: MaciASL Open Beta](#)  
VCH888: [ALC889A, Gigabyte \(Intel\): now having a working front mic - Page 38 - Sound - InsanelyMac Forum](#)

[Guide] ML-uefi-hdmi\_audio\_dsdt\_edits\_v2.0