[Guide] ML-uefi-hdmi_audio_dsdt_edits

Mountain Lion
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 the 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**
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

Tools
1. MaciASL MaciASL | Free Development software downloads at SourceForge.net
2. IORegistryExplorer see [Guide] How to Make a Copy of IOReg
3. CarbonCopyCloner or SuperDuper
4. Download/ZIP: https://github.com/toleda/audio_hdmi_uefi

Mountain Lion Audio IDs (10.8.2 AppleHDA.kext_v2.3.1 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_eufi/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)
3b5. 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

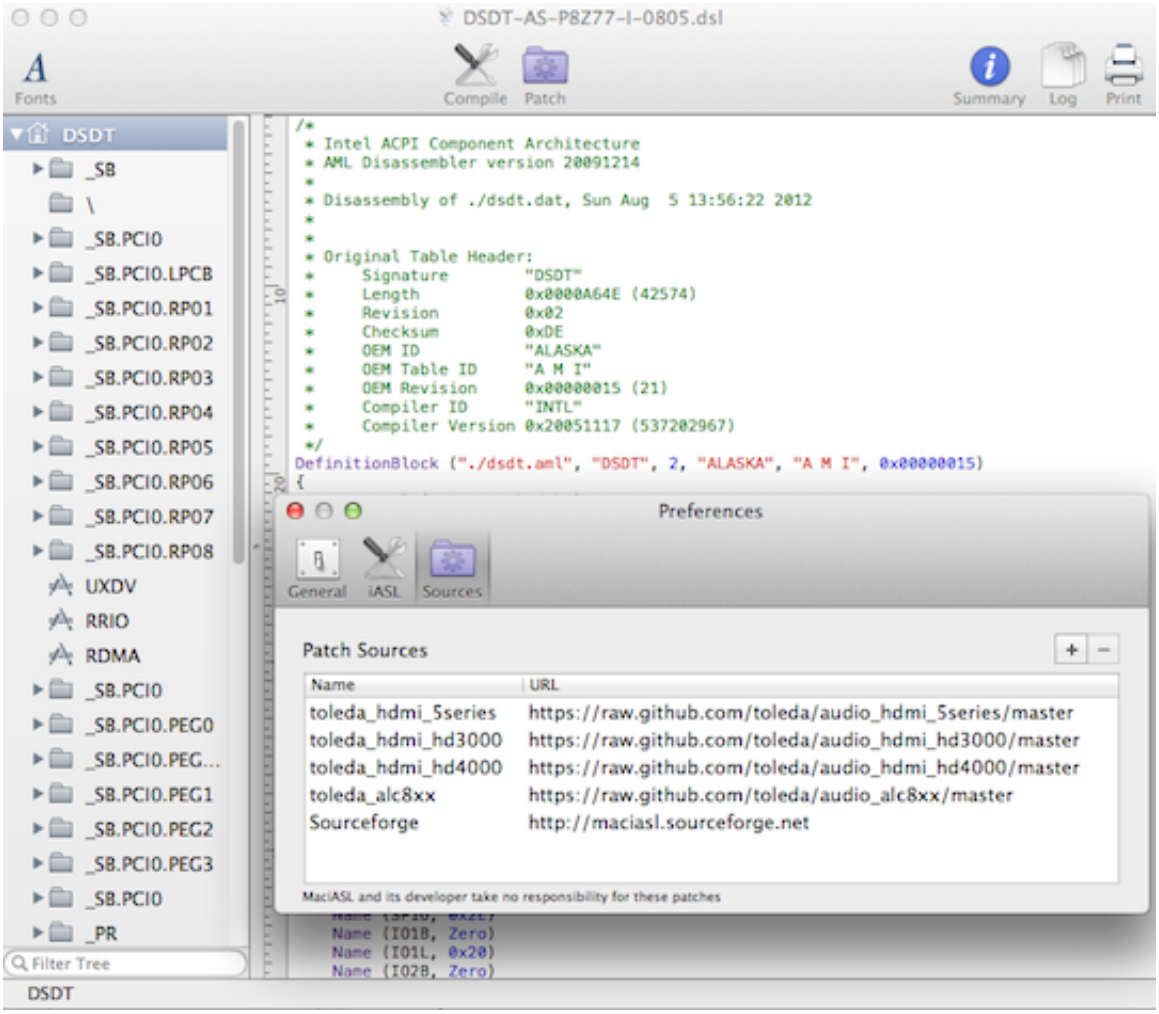
Patch File Edits
1. If the Patch file requires edits,
2. Edit the Patch file in MaciASL/Patch window or
2a. Download the Patch from:
github.com/toleda/audio_hdmi_eufi/tree/master/Patches
2b. Select Folder/Select Patch/Raw/Copy/Save to Desktop
2c. edit with TextEdit and save to desktop.

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.github.com/toleda/audio_hdmi_eufi/master

7a. URL: https://raw.github.com/toleda/audio_hdmi_hd4000/master
7b. Screenshot

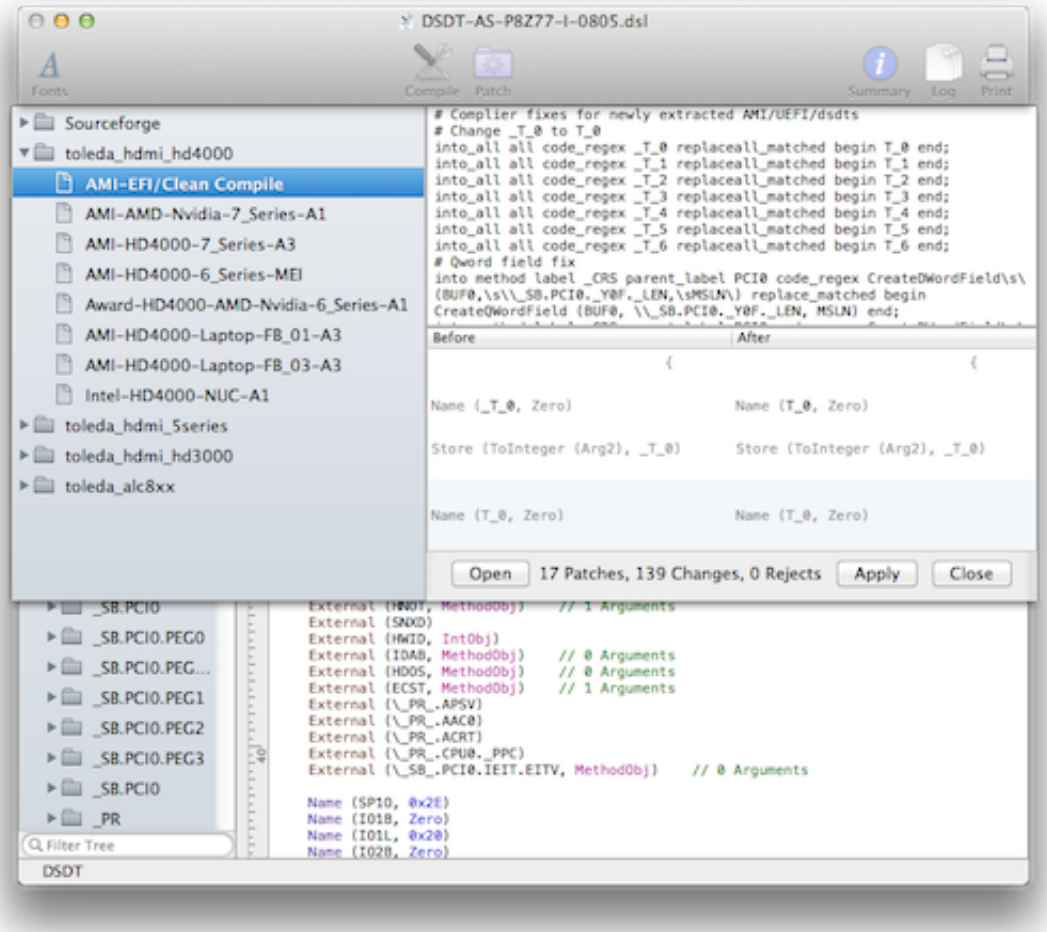


8. With dsdt,

8a. Copy Extra/dsdt.aml to Desktop
8b. MaciASL/File/Open/Desktop/dsdt.aml
8c. jump to **II. Native Compile**
9. If no dsdt,

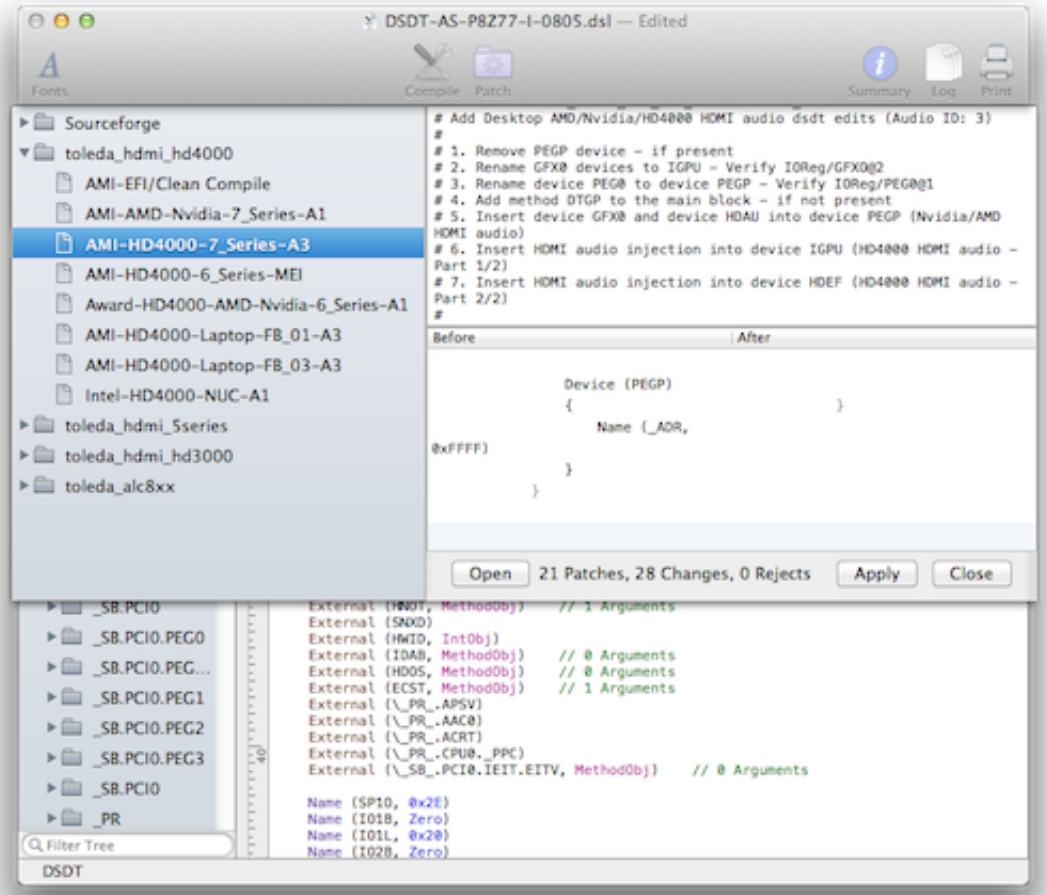
9a. MaciASL/File/New from ACPI/DSDT
9b. MaciASL/File/Save As../Desktop/dsdt-motherboard-native.dsl

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

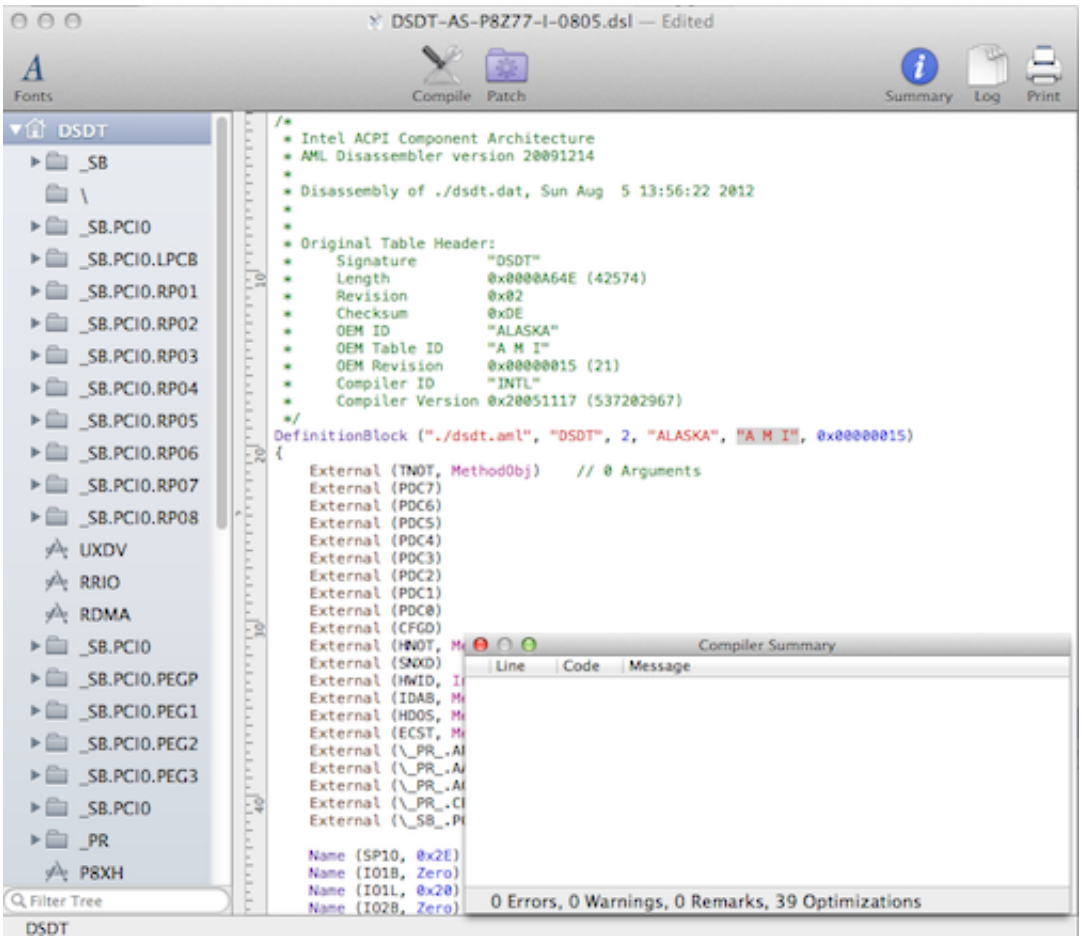


12. MaciASL/Patch/Apply
13. MaciASL/Patch/Close
14. MaciASL/Compile
14a. See Screenshot at 19a
15. If no errors, jump to **III. Apply Patch file - MaciASL**
15a. Errors, see Troubleshooting/Problem Reporting/4.

III. Apply Patch file - MaciASL
16.Patch/toleda_hdmi_hd4000/Select appropriate Patch file/make any edits
16a. Screenshot



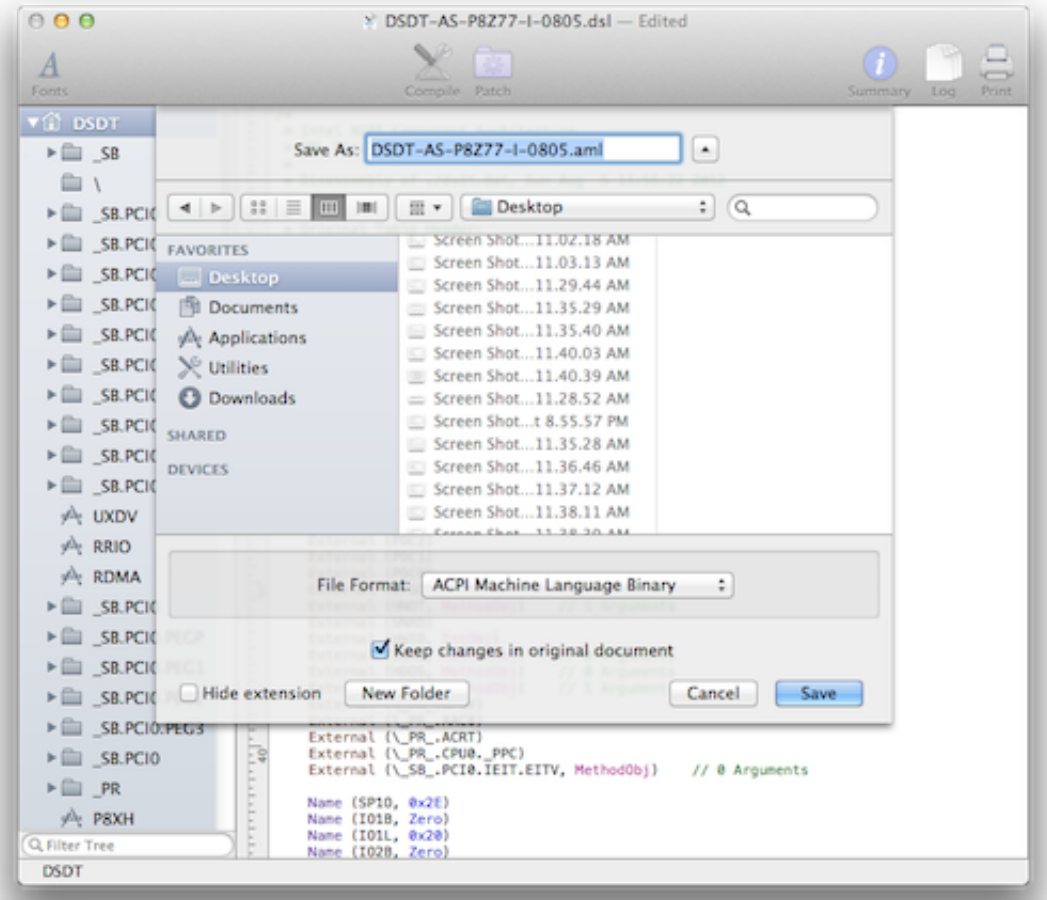
17. MaciASL/Patch/Apply
18. MaciASL/Patch/Close
19. MaciASL/Compile
19a. Screenshot



20. If no errors, jump to **IV. Save dsdt.aml - MaciASL**
20a. Errors, see Troubleshooting/Problem Reporting/4.

IV. Save dsdt.aml - MaciASL

21. MaciASL/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

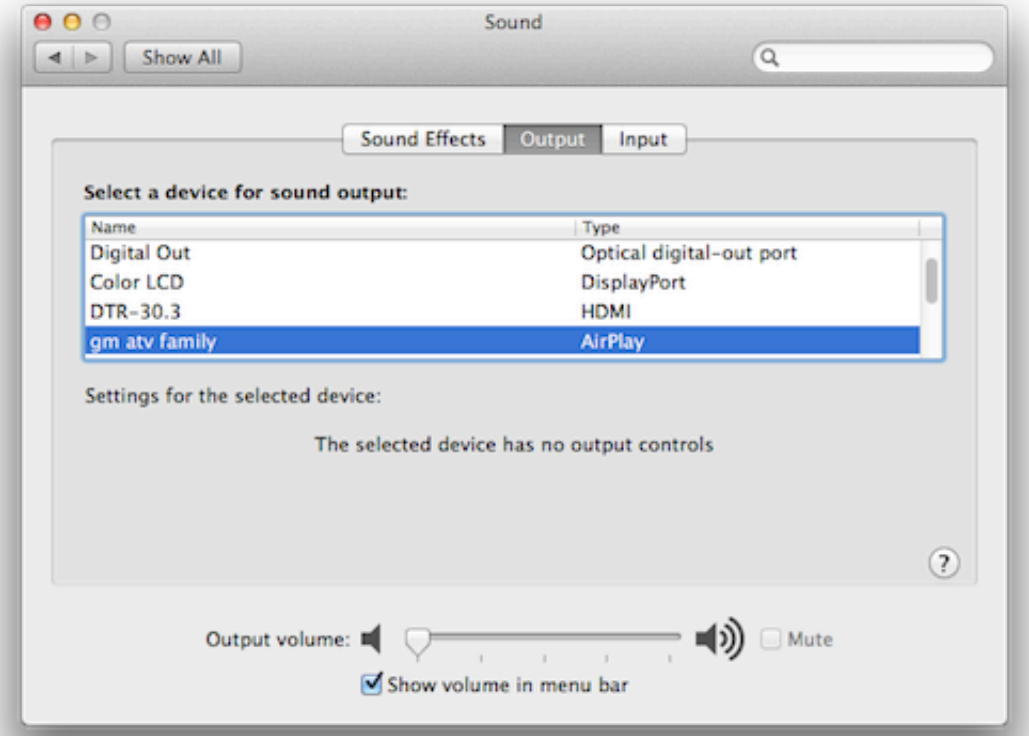
23. Repair permissions and cache (Ex., Disk Utility, Kext Beast, Kext Utility, Kext Wizard, etc.)
24. Restart

VII. Notes

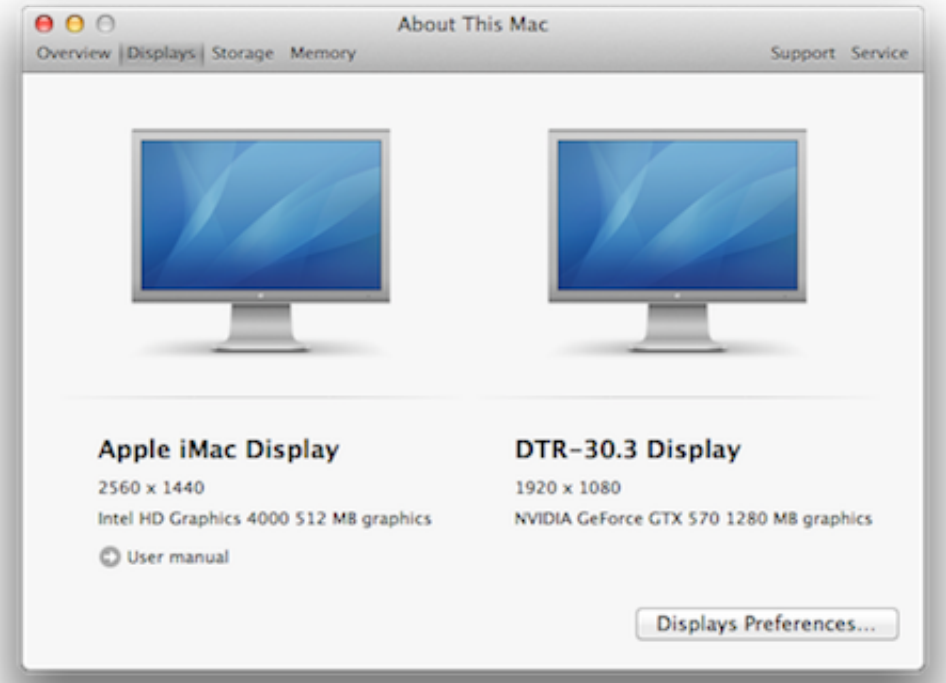
1. HD4K/HD3K HD Graphics may require framebuffer edits for working HDMI audio
2. AMD HD 5xxx and 6xxx graphics may require framebuffer edits for working HDMI audio

VII. Verify HDMI Audio

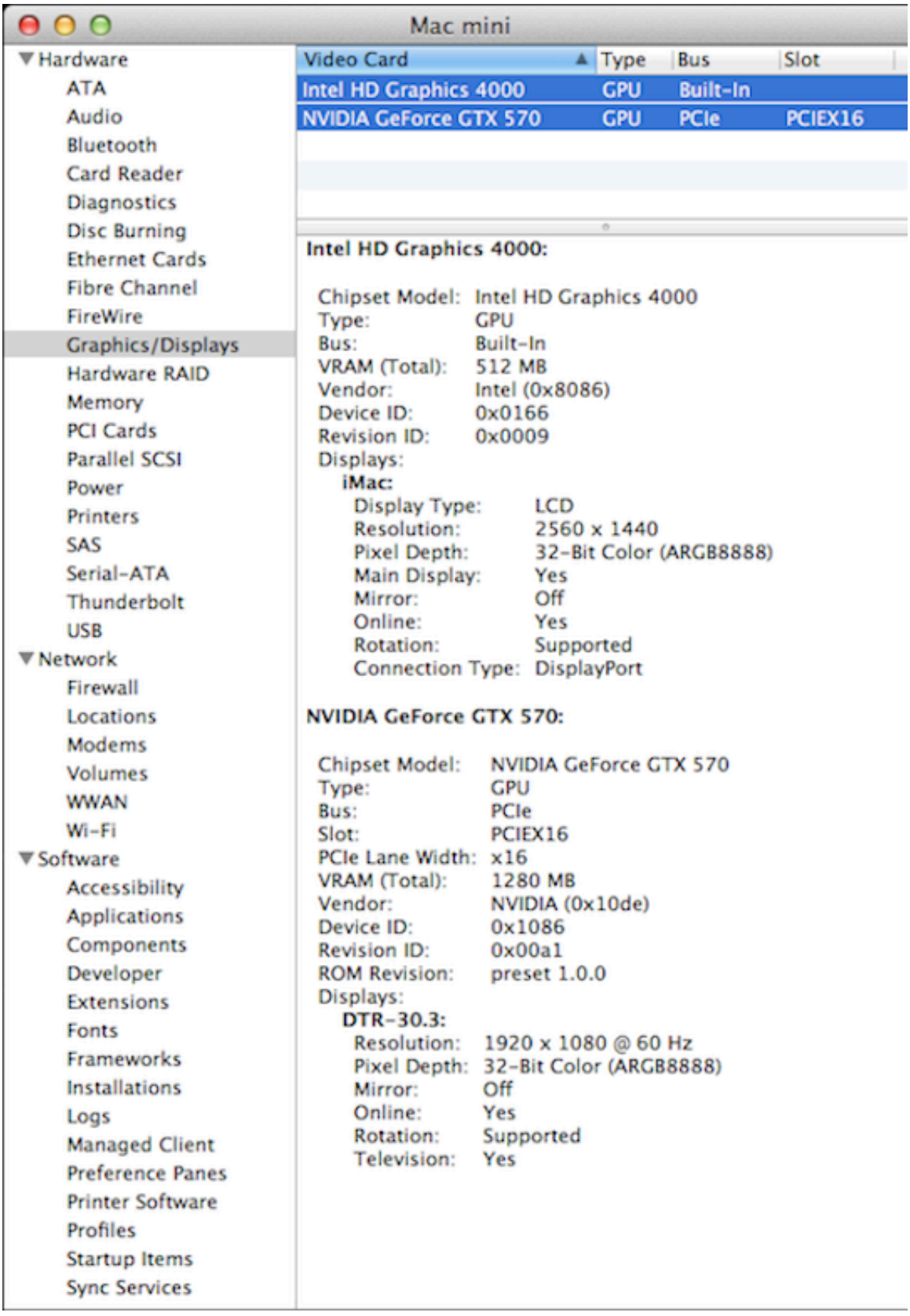
P8Z77 I Deluxe/i7-3770K/HD4000 DP audio/NVidia HDMI audio/AirPlay Mirroring
25. System Preferences/Sound/Outputs/Select HDMI


Sound
Show All
Sound Effects
Output
Input
Select a device for sound output:
Name
Type
Digital Out
Optical digital-out port
Color LCD
DisplayPort
DTR-30.3
HDMI
gm atv family
AirPlay
Settings for the selected device:
The selected device has no output controls
Output volume:
Mute
Show volume in menu bar

About This Mac
Overview
Displays
Storage
Memory
Support
Service
Mac mini
Late 2012
Processor 3.51 GHz Intel Core i7
Memory 8 GB 1333 MHz DDR3
Graphics Intel HD Graphics 4000 512 MB
Serial Number C07JF8Z4DWYL
Software OS X 10.8.2 (12C60)
System Report...
Software Update...


About This Mac
Overview
Displays
Storage
Memory
Support
Service
Apple iMac Display
2560 x 1440
Intel HD Graphics 4000 512 MB graphics
User manual
DTR-30.3 Display
1920 x 1080
NVIDIA GeForce GTX 570 1280 MB graphics
Displays Preferences...

iMac
Show All
Display
Arrangement
Color
Resolution:
Best for display
Best for AirPlay
Scaled
Rotation:
Standard
AirPlay Mirroring:
gm atv family
Overscan correction
Show mirroring options in the menu bar when available
Gather Windows


Mac mini
Hardware
ATA
Audio
Bluetooth
Card Reader
Diagnostics
Disc Burning
Ethernet Cards
Fibre Channel
FireWire
Graphics/Displays
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
Video Card
Type
Bus
Slot
Intel HD Graphics 4000
GPU
Built-In
NVIDIA GeForce GTX 570
GPU
PCIe
PCIEX16
Intel HD Graphics 4000:
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:
iMac:
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
NVIDIA GeForce GTX 570:
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:
DTR-30.3:
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: HDMI Audio/HD4000/7 Series MB
4a. Motherboard/BIOS version/processor/graphics/OS and version
4b. dsdt
4c. copy of IOReg

References
[Easy Guide] ML: HDMI Audio/HD4000/7 Series MB
Mountain Lion HDMI Audio - AMI DSDT
toleda/audio_hdmi_hd4000 · GitHub

Credits:
PikeRAlpha: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