



[Guide] ML: How to Add or Edit HDEF/dsdt v2

For Realtek ALC AppleHDA

Realtek ALC AppleHDA Audio ID Injection adds or edits dsdt/HDEF for Realtek ALC Audio.

audio_ALCInjection

toleda/audio_ALCInjection

Version 2

1. Minimum edits, no Method (DTGP., faster boot, credit: PikeRAAlpha)
2. Added Audio ID: 3 (HD3K/HD4K HDMI audio)

Requirements

1. OS X versions supported:
 1. Mountain Lion/10.8.4 and newer
 2. Mavericks/10.9 or newer
2. Realtek ALC, one of the following Device_ID - Codec Name
 1. 10ec0885 - ALC885/ALC889a
 2. 10ec0887 - ALC887/ALC888b
 3. 10ec0888 - ALC888/ALC888s
 4. 10ec0889 - ALC889
 5. 10ec0892 - ALC892
 6. 10ec0899 - ALC898
 7. 10ec0900 - ALC1150 - 10.8.5 or newer
3. Supported Audio-IDs (Audio_ID = layout-id)
 1. Audio_ID: 1 - 5/6 port Realtek ALC onboard audio and HD5K/AMD/Nvidia HDMI audio
 2. Audio_ID: 2 - 3 port Realtek ALC onboard audio and HD5K/AMD/Nvidia HDMI audio
 3. Audio_ID: 3 - 3/5/6 port Realtek ALC onboard audio and HD3K/HD4K/AMD/Nvidia HDMI audio
 4. Audio_IDs: 1 and 2 support analog 5.1 surround sound, 3 does not
 5. Audio_IDs: 1, 2 and 3 require HDMI audio dsdt edits/ssdts for HDMI audio.
4. Successfully compiled dsdt.aml
 1. If no dsdt, MaciASL/File/New from ACPI/DSDT

Tools

1. MaciASL <http://maciasl.sourceforge.net/>
2. IORegistryExplorer/File/Save a Copy As... (use IOReg_v2.1: https://github.com/toleda/audio_ALCInjection/blob/master/IORegistryExplorer_v2.1.zip)
3. Carbon Copy Cloner or SuperDuper

Backup System

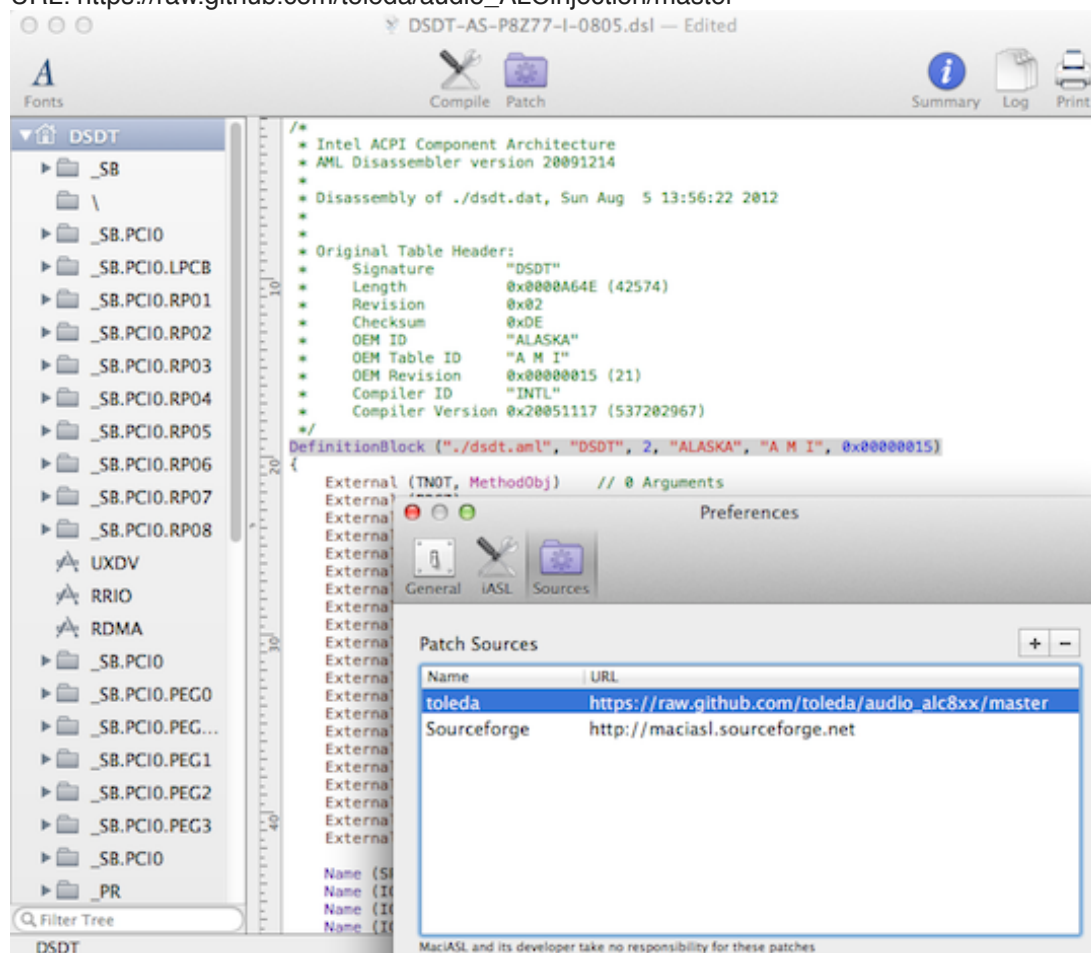
1. Make a bootable backup with Carbon Copy Cloner or SuperDuper

Remove Enabler (if installed)

1. Remove any audio enablers
 1. kexts, S/L/E/HDAEnabler1.kext, HDAEnabler8--.kext, ALC8xxHDA.kext, etc.
 2. ssdt, remove ssdt/HDEF/layout-id

Configure MaciASL

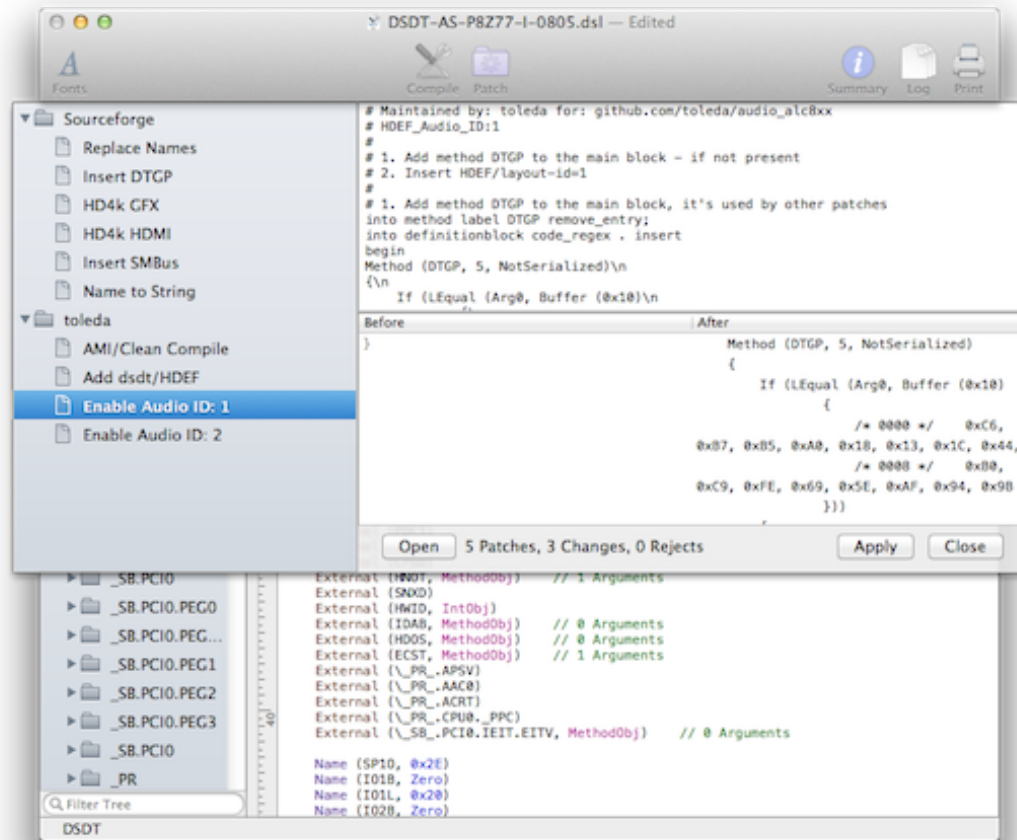
1. Copy Downloads/MaciASL to Applications
2. Open Applications/MaciASL
3. MaciASL/Preferences/Source+/https://raw.githubusercontent.com/toleda/audio_ALCInjection/master
 1. URL: https://raw.githubusercontent.com/toleda/audio_ALCInjection/master



Apply Edits - MaciASL/File

1. MaciASL/File/Open dsdt.aml
 1. Determine BIOS supplier (see DefinitionBlock, highlighted in Screenshot, above)
2. MaciASL/Compile, if no errors, jump to 3
 1. MaciASL/Patch/toleda/AMI/Clean Compile (Note: AMI only)
 2. MaciASL/Compile, if no errors, jump to 3
 3. If errors, seek assistance
3. MaciASL/Edit/Find/Find.../HDEF
 1. If "Device (HDEF)" present, jump to 4.

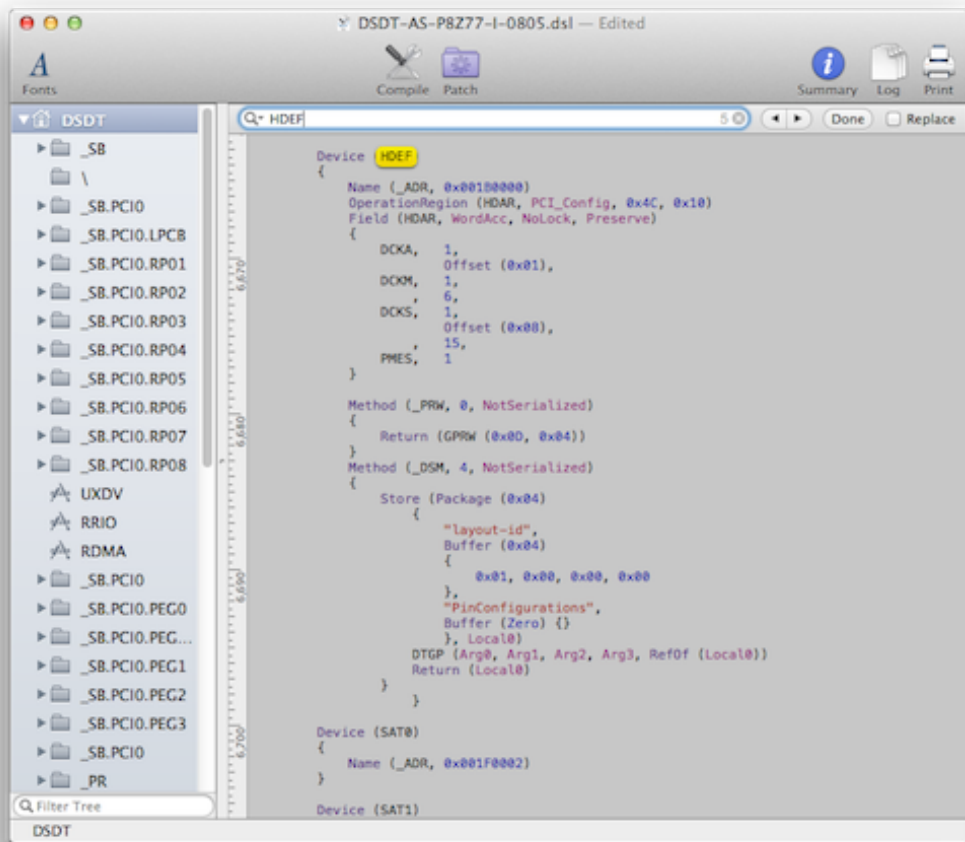
2. MaciASL/Patch/toleda/Add dsdt/HDEF/Audio ID: 1
3. Jump to 5.
4. MaciASL/Patch/toleda/Select
 1. Enable Audio ID: 1 or
 2. Enable Audio ID: 2 or
 3. Enable Audio ID: 3



5. MaciASL/Patch/Apply
6. MaciASL/Patch/Close
7. MaciASL/Compile, if no errors, jump to **Verify Edits**
 1. If errors, seek assistance

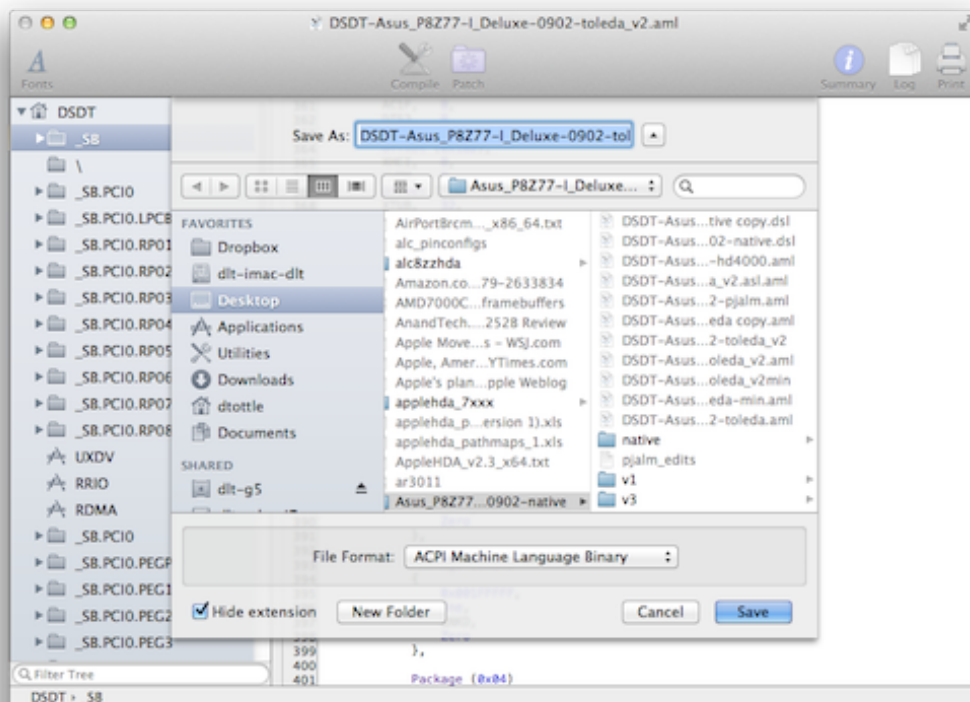
Verify Edits - MaciASL/File

1. MaciASL/Edit/Find HDEF (1x), represented as Device (HDEF)
2. Verify HDEF/layout-id is:
 1. 0x01, 0x00, 0x00, 0x00 or
 2. 0x02, 0x010, 0x00, 0x00 or
 3. 0x03, 0x010, 0x00, 0x00



Save dsdt - MaciASL/File

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



Install dsdt.aml - MaciASL/File

1. MaciASL/File/Save As.../ACPI Machine Language Binary/Extra/dsdt.aml (add extension)
 1. Alternative: Copy (Drag/Hold Option key) Desktop/dsdt.aml to Extra

Verification

1. Restart
2. IORegistryExplorer
 1. Search: HDEF
 2. Locate: layout-id (right pane, scroll down)
 3. Verify:
 - <01 00 00 00> or
 - <02 00 00 00>

Troubleshooting

1. Realtek ALC AppleHDA Capabilities.pdf
2. Post to <http://www.insanelymac.com/forum/topic/290796-realtek-alc-applehda-audio-injection/>
3. Post to <http://www.tonymacx86.com/audio/76309-mountain-lion-multibeast-no-audio-solutions-problem-reporting.html>

Credits:

VCH888; [ALC889A, Gigabyte \(Intel\): now having a working front mic - Page 38 - Sound - InsanelyMac Forum](#)

SJ_UnderWater: [SourceForge.net: MaciASL - Project Web Hosting - Open Source Software](#)

PikeAlpha: [Intel HD4600 with full resolution | Pike's Universum](#)

dsdt Edits

1. HDEF

After patch (del)

Device (HDEF)

```
{
    Name (_ADR, 0x001B0000)
....
....
    Method (_DSM, 4, NotSerialized)
    {
        If (LEqual (Arg2, Zero)) { Return (Buffer() { 0x03 } ) }
        Return (Package()
            {
                "layout-id", Buffer() { 0x01, 0x00, 0x00, 0x00 },
                "PinConfigurations", Buffer(Zero) {},
                "hda-gfx", Buffer() { "onboard-1" },
            })
    }
}
```

Compiled (.aml)

Device (HDEF)

```
{
    Name (_ADR, 0x001B0000)
....
....
    Method (_DSM, 4, NotSerialized) // _DSM: Device-Specific Method
    {
        If (LEqual (Arg2, Zero))
        {
            Return (Buffer (One)
                {
                    0x03
                })
        }

        Return (Package (0x06)
            {
                "layout-id",
                Buffer (0x04)
                {
                    0x01, 0x00, 0x00, 0x00
                },

                "PinConfigurations",
                Buffer (Zero) {},
                "hda-gfx",
                Buffer (0x0A)
                {
                    "onboard-1"
                }
            })
    }
}
```

