[Guide]_HD6x0-hdmi_audio_(clover_or_ssdt)_v1

HD6x0 HDMI Audio

Kaby Lake/200 Series/Socket 1151 - Desktop (0x00001259 only)
Laptop/NUC/BRIX - TBA

v1: 7/12/2017 - Initial release

macOS HDMI audio for HD6x0 systems with either: 1. Clover enabled HDMI audio or 2. HDMI audio ssdt (any bootloader). Laptops, use NUC-BRIX Clover/ssdts.

Requirements

1. macOS 10.12.5 and newer
2. AMI UEFI/Kaby Lake/100 or 200 Series/Socket 1151 Intel motherboard
3. HD6x0 graphics, recognized and enabled
4. 200 Series Desktop/Laptop/NUC/BRIX configurations supported
5. 200 Series motherboard audio codecs
    a. Supported: ALC283, ALC887, ALC892 and ALC1150
    b. Unsupported audio codec/HDEF required/HDMI audio only
6. Audio ID: 1 or 2 only

Before You Start

1. macOS 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. Make a bootable backup of your system (CarbonCopyCloner/ SuperDuper)

Tools

1. IORegistryExplorer_v2.1.zip (View Raw)
2. MaciASL
3. Xcode on the Mac App Store

MacOS/HD6x0 HDMI6Graphics and Audio

1. HD6x0 (no native HDMI audio support, framebuffer edits required)
    a. HDMI display (KBL framebuffer 0x00001259)
        i. AppleIntelFramebuffer@0, Port 0x5/DP
        ii. AppleIntelFramebuffer@1, Port 0x6/DP
        iii. AppleIntelFramebuffer@2, Port 0x7/DP
    b. DP audio supported
    c. DVI audio supported (if BIOS enable)
    d. Three displays supported, one with HDMI audio
        i. DP
        ii. DVI (w/DVI2HDMI adapter)
        iii. HDMI
2. Supported Configurations macOS HDMI Audio)
    a. HD5x0 only
    b. Nvidia only
    c. AMD only
    d. HD5x0 and Nvidia
    e. HD5x0 and AMD

HD6x0 HDMI Audio Installation

Step 1: HD6x0 HDMI Audio kext edits

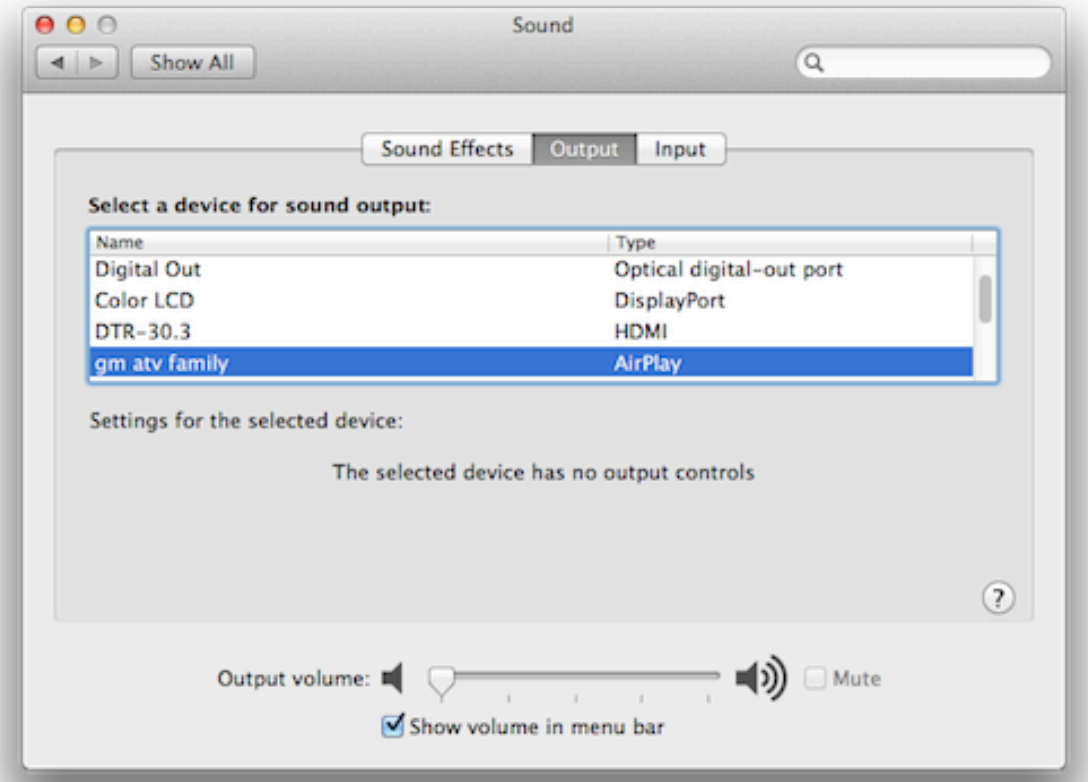
1. None required

Step 2: OS X HDMI Audio Guides- select Clover or ssdt, one method only

1. Clover:
    a. config-hdmi_hd5x0-110.plist
        i. Use Xcode, plist editor, etc.
        ii. Copy and paste each patch
    b. All Kaby Lake: config.plist/

        i. ACPI/DSDT/Patches
            - 10.8+-Rename-GFX02IGPU
            - 10.11+-Rename-HDAS2HDEF
            - 10.11+-Rename-HECI2IMEI
        ii. Device/Arbitrary/
            - 10.8+-Intel-IGPU-HDMI-HDA
    c. HD630/Desktop: config.plist
        i. Device/Arbitrary/
            - 10.11.4+-Intel-HDA-Desktop
        ii. Graphics/
            - ig-platform-id/19120000 (remove " # HD630")
2. ssdt: [Guide]-OSX-hdmi_audio-hdef_audio-ssdt_v3.pdf.zip
    a. ssdt_v3: ssdt_hdmi_hd5x0
        i. ssdt_hdmi-hd630
    b. ssdt - ssdt_hdef (onboard audio, if needed)
        i. ssdt_hdef-1-100-hdas
        ii. ssdt_hdef-2-100-hdas
3. Restart with HDMI device connected, both methods

Step 3: Verify HDMI Audio (Ex., HDMI/DP/AirPlay audio enabled)



kext edit (ex.,HD630)

1. AppleIntelKBLGraphicsFramebuffer.kext
    c. HD530 Only
        i. Hex Editor (ex., connector edit)
            - binary: AppleIntelSKLGraphicsFramebuffer
            - find: 01050900 00040000 87010000
            - repl: 01050900 00080000 87010000
            - cmt: 10.12.6-KBL-5912000-Port_0x5-DP2HDM

ssdt edit (ex.,HD630)

1. Name (GFX0._STA, Zero)
    Device (IGPU)
    {
        Name (_ADR, 0x00020000)
        Method (_INI, 0, NotSerialized)
        {
            Store (Zero, _SB.PCI0.GFX0._ADR)
        }

```
    Method (_DSM, 4, NotSerialized)
    {
        If (LEqual (Arg2, Zero))
        {
            Return (Buffer (One)
            {
                0x03
            })
        }

        Return (Package (0x04)
        {
            "AAPL,ig-platform-id",
            Buffer (0x04)
            {
                0x00, 0x00, 0x12, 0x59
            },

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

2.
```
Name (HECI._STA, Zero)
Name (HECI._STA, Zero)
Device (IMEI)
{
    Name (_ADR, 0x00160000)
    Method (_INI, 0, NotSerialized)
    {
        Store (Zero, \_SB.PCI0.HECI._ADR)
    }

    Method (_DSM, 4, NotSerialized)
    {
        If (LEqual (Arg2, Zero))
```

```
        {
            Return (Buffer (One)
            {
                0x03
            })
        }

        Return (Package (0x02)
        {
            "device-id",
            Buffer (0x04)
            {
                0x3A, 0xA1, 0x00, 0x00
            }
        })
    }
}
```

3.
```
Name (HDAS._STA, Zero)
Device (HDEF)
{
    Name (_ADR, 0x001F0003)
    Method (_INI, 0, NotSerialized)
    {
        Store (Zero, \_SB.PCI0.HDAS._ADR)
    }

    Method (_DSM, 4, NotSerialized)
    {
        If (LEqual (Arg2, Zero))
        {
            Return (Buffer (One)
            {
                0x03
            })
        }

        Return (Package (0x06)
        {
            "hda-gfx",
            Buffer (0x0A)
```

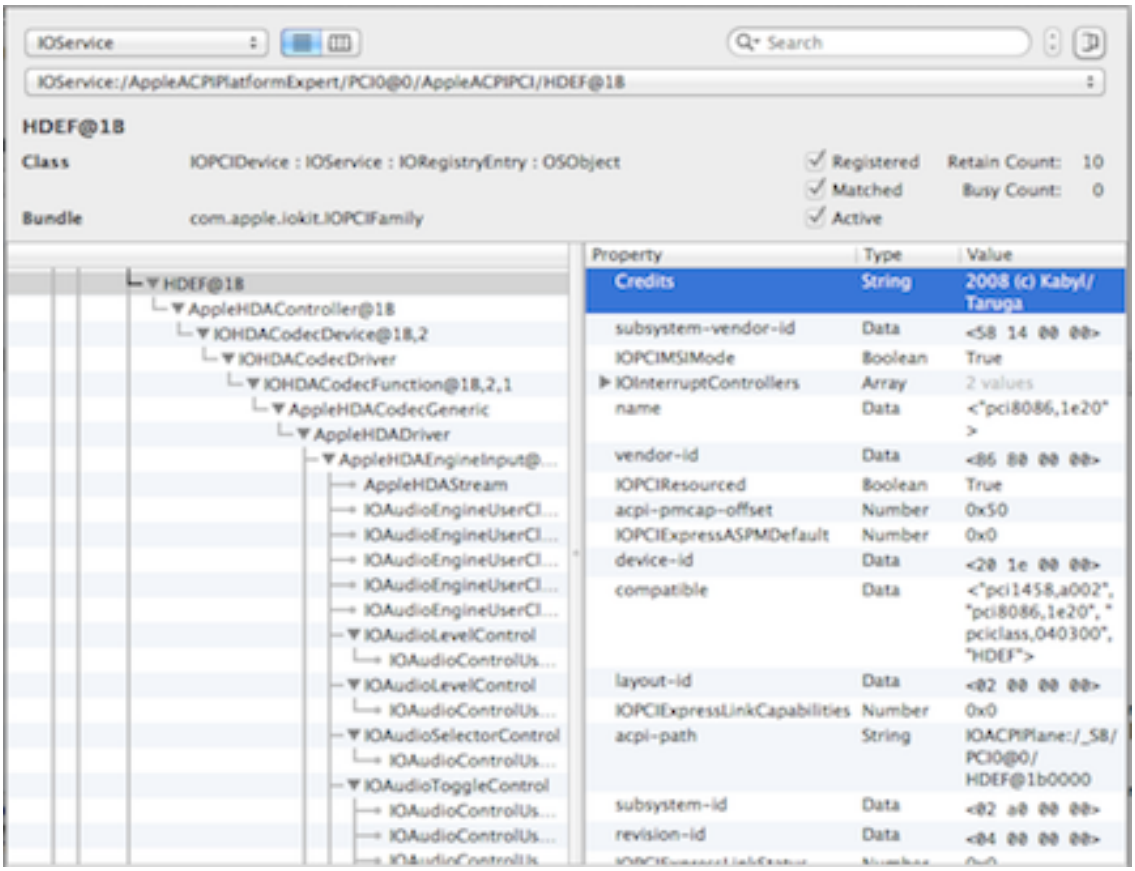
```
            {
               "onboard-1"
            },

            "layout-id",
            Unicode ("\x03"),
            "PinConfigurations",
            Buffer (Zero) {}
         })
      }
   }
```

Troubleshooting

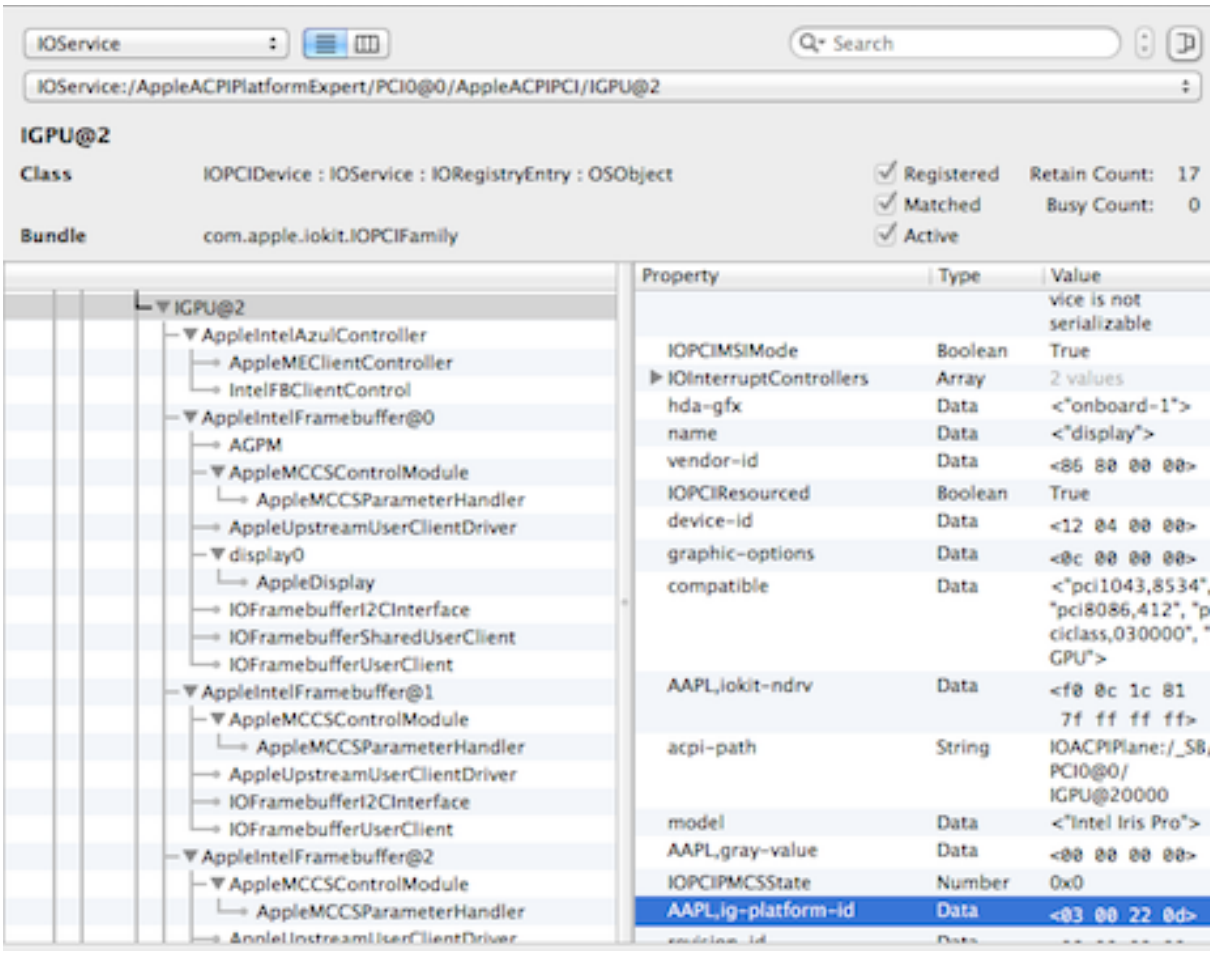
1. Verify HDMI device connected
    a. System Information/Graphics/Display/HDMI device/ Television/Yes
2. Run IOReg/IOJones/Verify Devices HDEF, IGPU (native/GFX0) and HDAU
    a. Ex. IOReg/Search: HDEF
    b. Select HDEF
    c. Cancel Search (x)
    d. Scroll up to view HDEF device and properties
3. IOReg/IOJones/Verify HDEF@1B
    a. If Credits, delete S/L/E/HDAEnabler1.kext or HDAEnabler2.kext
    b. Verify layout-id = 3
    c. Verify hda-gfx = <onboard-1>

d.



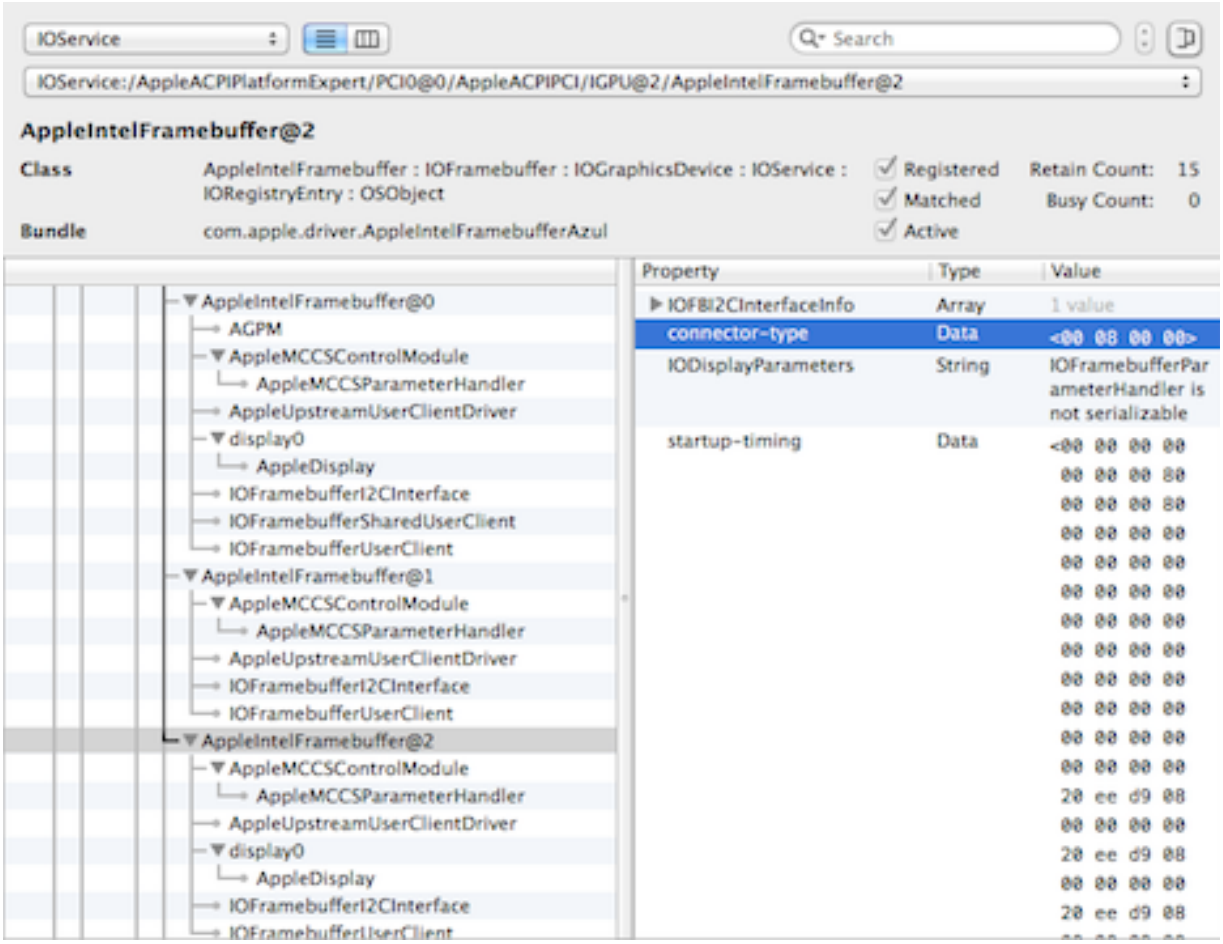
4. IOReg/IOJones/Verify IGPU@2 (or GFX0@2)
    a. If no IGPU@2 verify HD5x0 HDMI audio ssdt
    b. Verify hda-gfx = <onboard-1>
    c. If no AppleIntelSKLController, verify HD5x0 HDMI audio ssdt
    d. Verify HD530/AAPL,ig-platform-id=<00 00 12 59>

f.



5. Verify AppleIntelFramebuffer@[0, 1 or 2] with display0 attached
    a. HDMI: connector-type=<00 08 00 00>
    b. DVI: connector-type=<00 08 00 00>
    c. DP: connector-type=<00 04 00 00>

e.



Problem Reporting

1. Problem Reporting/Post to:
2. Problem Reporting/Attached requested files

Credit

RehabMan

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