AMD HD7xxx HDMI Audio Case Studies

1. AMD_HD7750
Sapphire HD7750 Low Profile

VBIOS
a. Download/extract BIOS
b. Terminal $ ./radeon_bios_decode

Ex.
Last login: Sat Apr 27 19:14:54 on console
$ cd /Users/dltottle/Desktop/hdmi_audio_hd7750
$ ./radeon_bios_decode < hd7750.bin
ATOM BIOS Rom:
        SubsystemVendorID: 0x174b SubsystemID: 0xe231
        IOBaseAddress: 0x0000
        Filename: 231P03H6.S25
        BIOS Bootup Message: E231 VERDE PRO 1G GDDR5 64MX32
PCI ID: 1002:683f
Connector at index 0
        Type [@offset 44902]: DisplayPort (10)
        Encoder [@offset 44906]: INTERNAL_UNIPHY2 (0x21)
        i2cid [@offset 44986]: 0x91, OSX senseid: 0x2
Connector at index 1
        Type [@offset 44912]: HDMI-A (11)
        Encoder [@offset 44916]: INTERNAL_UNIPHY2 (0x21)
        i2cid [@offset 45013]: 0x94, OSX senseid: 0x5
Connector at index 2
        Type [@offset 44922]: DVI-I (2)
        Encoder [@offset 44926]: INTERNAL_UNIPHY (0x1e)
        i2cid [@offset 45050]: 0x93, OSX senseid: 0x4
Connector at index 3
        Type [@offset 44932]: DVI-I (2)
        Encoder [@offset 44936]: INTERNAL_KLDSCP_DAC1 (0x15)
        i2cid [@offset 45050]: 0x93, OSX senseid: 0x4
$exit

kext edits
a. ATI7000Controller.kext/Contents/MacOS/AMD7000Controller binary
b. HexEditor

Personality: Dashimaki
ConnectorInfo count in decimal: 4
Disk offset in decimal 608944
0000000 00 04 00 00 04 03 00 00 00 01 01 00 12 04 02 02
0000010 00 04 00 00 04 03 00 00 00 01 02 00 22 05 03 05
0000020 04 00 00 00 14 02 00 00 00 01 03 00 00 00 04 04
0000030 00 08 00 00 04 02 00 00 00 01 04 00 11 02 01 01
0000040

```
native
00 04 00 00 04 03 00 00 00 01 01 00 12 04 02 02
00 04 00 00 04 03 00 00 00 01 02 00 22 05 03 05
04 00 00 00 14 02 00 00 00 01 03 00 00 00 04 04
00 08 00 00 04 02 00 00 00 01 04 00 11 02 01 01

from
00 04 00 00 04 03 00 00 00 01 02 00 22 05 03 05
to
00 08 00 00 04 02 00 00 00 01 02 00 22 05 03 05

from
00 08 00 00 04 02 00 00 00 01 04 00 11 02 01 01
to
00 04 00 00 04 03 00 00 00 01 04 00 11 02 01 01

patched
00 04 00 00 04 03 00 00 00 01 01 00 12 04 02 02
00 08 00 00 04 02 00 00 00 01 02 00 22 05 03 05
04 00 00 00 14 02 00 00 00 01 03 00 00 00 04 04
00 04 00 00 04 03 00 00 00 01 04 00 11 02 01 01
```

dsdt/ssdt edits
a. dsdt.aml/ssdt.aml
b. MaciASL

```
            Device (PEGP)
            {
                Name (_ADR, 0x00010000)
                Name (_STA, 0x0F)
                Method (_PRW, 0, NotSerialized)
                {
                    Return (GPRW (0x09, 0x04))
                }

                Device (GFX0)
                {
                    Name (_ADR, Zero)
                    Name (_SUN, One)
                    Method (_DSM, 4, NotSerialized)
                    {
                        Store (Package (0x10)
                            {
                                "AAPL,slot-name",
                                Buffer (0x07)
                                {
                                    "Slot-1"
                                },

                                "device-id",
```

```
                    Buffer (0x04)
                    {
                        0x3F, 0x68, 0x00, 0x00
                    },

                    "@0,name",
                    Buffer (0x0E)
                    {
                        "ATY,Dashimaki"
                    },

                    "@1,name",
                    Buffer (0x0E)
                    {
                        "ATY,Dashimaki"
                    },

                    "@2,name",
                    Buffer (0x0E)
                    {
                        "ATY,Dashimaki"
                    },

                    "@3,name",
                    Buffer (0x0E)
                    {
                        "ATY,Dashimaki"
                    },

                    "model",
                    Buffer (0x13)
                    {
                        "AMD Radeon HD 7750"
                    },

                    "hda-gfx",
                    Buffer (0x0A)
                    {
                        "onboard-2"
                    }
                }, Local0)
            DTGP (Arg0, Arg1, Arg2, Arg3, RefOf (Local0))
            Return (Local0)
        }
    }

    Device (HDAU)
    {
        Name (_ADR, One)
        Method (_DSM, 4, NotSerialized)
```

```
    {
        Store (Package (0x02)
            {
                "hda-gfx",
                Buffer (0x0A)
                {
                    "onboard-2"
                }
            }, Local0)
        DTGP (Arg0, Arg1, Arg2, Arg3, RefOf (Local0))
        Return (Local0)
    }
}
```