



Customization - Realtek ALC AppleHDA

Realtek ALC/Desktop: 885, 887, 888, 892, 898 and 1150 on board audio

Change Log

1. v3.0 - 12/20/16 - El Capitan,
2. v2.0 - 12/20/14 - Yosemite, cloverALC (see **Before You Begin**, H)
3. v1.0 - 10//8/13 - Mavericks 1st Release

[audio_ALC_guides](#)

Guidelines

- A. This is not a how to guide. It tells what something looks like before and what it should look like after the edit. The how is left to the reader.

Requirements

- A. OS X versions supported:
 1. El Capitan/10.11+/AppleHDA.kext_v272.50 and newer
 2. Yosemite/10.10+/AppleHDA.kext_v266.5 and newer
 3. Mavericks/10.9+/AppleHDA.kext_v2.5.2 and newer
- B. 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 /see **Before You Begin**, G

Tools

- A. Property List Editors (PLE)
 - 1. Xcode
 - 2. Property List Editor
 - 3. PListEdit Pro [Fat Cat Software – PlistEdit Pro](#)
 - 4. Pref Setter [Pref Setter](#)
- B. [zlib_terminal.zip](#)
- C. Kext Install Utility
 - 1. Kext Wizard
 - 2. Kext Utility
 - 3. DPCIManager
 - 4. KextBeast

Before You Begin

- A. Review Appendix 1 and 2 for AppleHDA.kext details
- B. Copy S/L/E/AppleHDA.kext to Folder for editing
- C. Duplicate AppleHDA.kext and rename copy AppleHDA-orig.kext.
- D. See [zlib_terminal](#) to uncompress AppleHDA.kext compressed files
 - 1. Use Terminal to inflate layout(Audio ID).xml.zlib
 - 2. Use Terminal to inflate Platforms.xml.zlib
- E. Identify PathMapID
 - 1. Find Audio ID
 - 1. System Information/Audio/Intel High Definition Audio/Audio ID
 - 2. Find PathMapID
 - 1. Property List Editor/Open layout(Audio ID).xml/Note PathMapID
- F. Identify Info.plist/Platforms.xml Item
 - 1. Find Item number/PathMap
 - 1. Use Item/PathMapID Table, see Appendix 2
 - 2. Property List Editor/Open Platforms.xml/Item ?/PathMap
- G. ALC1150 only
 - 1. Info.plist/ConfigData
 - 2. 1150 ConfigData edits
 - 1. 1150 only, edit each entry, 21 to 01
 - 2. Example/Find
 - 1. Orig: 21171cf0 21171d00 21171e00 21171f40
 - 2. After: 01171cf0 01171d00 01171e00 01171f40
 - 3. Repeat for all Find and Replace pinconfigs
- H. cloverALC patch - edit the files noted, not the native files
 - 1. AppleHDA.kext is native
 - 2. S/L/E/AppleHDA.kext/Contents/Resources/ (note: **.zml.zlib**)
 - 1. layout1.zml.zlib
 - 2. layout2.zml.zlib (na, 885)
 - 3. layout3.zml.zlib (na, 885, 1150)
 - 4. Platforms.zml.zlib
 - 3. EFI/CLOVER/kexts/realtekALC.kext/Contents/
 - 1. Info.plist

Procedures

1. Add SPDIFIn
2. Manual Mic and Front Mic Selection
3. Manual Speaker and Headphone Selection
4. Add Boost to input (Mic/Rear. Mic/Front and/or Line In)
5. Substitute Gray (Side) for Black (Rear)
6. Add Line Out (Gray/Rear -Rear Speakers) for analog 7.1 Surround Sound
7. Substitute SPDIF-2 Wire Output
8. SPDIF Optical Output/Encoded Digital Audio - Not supported in 10.9
9. 2x HD3000/HD4000 HDMI Audio

Installation

- A. Run kext installer
- B. Restart

Problem Reporting, see

- A. [toleda/audio_RealtekALC/README/Problem Reporting/thread link](#)

Editing Tips

- A. To add a property to a plist
 1. Copy (Command C) the property
 2. Select the parent of the property receiving the copied property
 3. Paste (Command V) on the parent property
- B. To reorder children in a parent property
 1. The property added is given the Item 0 name
 2. To move Item 0 to the Item 2 location
 1. Drag Item 2 to the parent item (above Item 0)
 2. Drag Item 2 to the parent item (above Item 0), 2 times total
- C. To ensure successful pasting of printed data into a plist
 1. paste first to TextEdit and make plain text (Format/Plain Text)
 2. copy from TextEdit and paste into plist

Appendix

- A. Native AppleHDA.kext Assumptions, Structure and Documents
- B. Realtek ALC AppleHDA.kext (details)

Credits

THE KiNG [\[HOW TO\] Patch AppleHDA - Knowledge Base - Project OS X Forums](#)
VHC888 [ALC889A, Gigabyte \(Intel\): now having a working front mic - InsanelyMac Forum](#)
RevoGirl

Procedures

1. Add SPDIFIn: Copy 885 SPDIFIn attributes to your Codec/Audio_ID

A. Prep

1. Adds Sound/Input/Digital In (Copy 885 SPDIFIn to your codec)
2. Download 885.zip, [audio_ALC885/885.zip at master · toleda/audio_ALC885](#)
3. See zlib_terminal to uncompress 885 folder compressed files
 1. Use Terminal to inflate layout1.xml.zlib
 2. Use Terminal to inflate Platforms.xml.zlib

B. Edit Layout1.xml/zml

1. 885/layout1.xmlOpen PathMapRef/Open Item 0
2. Copy SPDIFIn
3. layout1.xml/Open PathMapRef/Open Item 0
4. Paste SPDIFIn on Item 0
5. Drag each entry above SPDIFOut to Item 0, repeat until SPDIFIn is above SPDIFOut
6. Verify PathMapID
7. For PathMapID, find Item number N, see Appendix 2/Item/PathMapID Table and Item/CodecID Table

C. Edit Platforms.xml/zml

1. 885/Platforms.xmlOpen PathMaps/Open Item 0/Verify PathMapID 885/Open PathMap
2. Copy Item 2
3. Platforms.xmlOpen PathMaps/Open Item N, verify PathMapID/Open PathMap
5. Paste Item on Pathmap
6. Drag Item 2 to PathMap (2 times)

D. Edit HDAHardwareConfigDriver/info.plist or realtekALC/Info.plist

1. Open Item/CodecID
2. Verify CodecID/LayoutID
3. Edit ConfigData
 - Find: 21f71cf0 21f71d00 21f71e00 21f71f40
 - Replace: 21f71ca0 21f71d01 21f71ecb 21f71f01

E. Save, install and restart

2. Manual Mic/Rear and Mic /Front Selection: Displays both Internal Microphone and Line In (Mic/Front) audio output devices (For 892 and 1150, see below)

885, 887, 888, 889, 898

A. Edit Platforms.xml/zml - 885, 887, 888, 889, 898

1. Open Item/PathMapID
2. Verify PathMapID
3. Copy the current Rear Mic /Front Mic
4. Paste the current Rear Mic /Front Mic on PathMap so there are two of the same (Item 0 and 1)
5. Open Item 0 and Item 0 and Item 1 appear; delete Item 1 (front mic).
6. Open Item 1 and Item 0 and Item 1 appear; delete Item 0 (rear mic).
7. Edit this path map as follows:
 - Current:
 - Item 0/NodeID/Number/9
 - Item 1/NodeID/Number/34
 - Item 2/NodeID/Number/25
 - New:
 - Item 0/NodeID/Number/7
 - Item 1/NodeID/Number/36
 - Item 2/NodeID/Number/25

B. Save, install and restart

892 and 1150

A. Edit Platforms.xml/zml

1. Open Item/PathMapID
2. Verify PathMapID
3. Line In (Blue/Rear) is not available
4. open Item 0, Item 0 and Item 1 appear; delete Item 1 (front mic)
5. open Item 1
6. Edit this path map as follows:
 - Current:
 - Item 0/NodeID/Number/8
 - Item 1/NodeID/Number/35
 - Item 2/NodeID/Number/26
 - New:
 - Item 0/NodeID/Number/8
 - Item 1/NodeID/Number/35
 - Item 2/NodeID/Number/25

B. Save, install and restart

3. Manual Internal Speaker and Headphone Selection - Displays both Internal Speaker and Headphones audio output devices. Note: An existing audio output device must be deleted to add Headphones as an audio output device. See Procedure 9.

A. Edit Platforms.xml/zml

1. Open Item/PathMapID
2. Verify PathMapID
3. Copy the current speaker/headphone (Item 2)
4. Paste the current speaker/headphone so there are two of the same (Item 0 and 3)
5. Drag Item 2 up to PathMap - 2 times (moves new item to correct position)
6. In Item 2, open next level and there are Item 0 and Item 1; delete Item 1 (headphones).
7. In Item 3, open next level and there are Item 0 and Item 1; delete Item 0 (speakers).
8. Edit this path map as follows:
 - Current
 - Item 0/NodeID/Number/27
 - Item 1/NodeID/Number/12
 - Item 2/NodeID/Number/2
 - New:
 - Item 0/NodeID/Number/27
 - Item 1/NodeID/Number/38
 - Item 2/NodeID/Number/37

B. Save, install and restart.

4. Add Boost to input (Mic/Rear. Mic/Front and/or Line In): Increase audio level for audio input devices

A. Edit Platforms.xml/zml (add to audio input devices as appropriate)

1. Open Item/PathMapID
2. Verify PathMapID

B. Mic/Rear

1. Current:
 - Item 0/NodeID/Number/9
 - Item 1/NodeID/Number/34
 - Item 2/NodeID/Number/24
2. Select Item1
3. Select Add Item
4. Enter Boost
5. Select Number
6. Enter 3
7. New
 - Item 0/NodeID/Number/9
 - Item 1
 - Boost/Number/3
 - NodeID/Number/34
 - Item 2/NodeID/Number/24
8. Save

C. Mic/Front (displayed as Line In/Built-In) Note: NodeIDs are different if 2. Manual Mic/Rear and Mic /Front Selection (above) is implemented

1. Current:
 - Item 0/NodeID/Number/9
 - Item 1/NodeID/Number/34
 - Item 2/NodeID/Number/25
2. Select Item1
3. Select Add Item
4. Enter Boost
5. Select Number
6. Enter 3
7. New
 - Item 0/NodeID/Number/9
 - Item 1
 - Boost/Number/3
 - NodeID/Number/34
 - Item 2/NodeID/Number/25
8. Save

D. Line In

1. Current:
 - Item 0/NodeID/Number/8
 - Item 1/NodeID/Number/35
 - Item 2/NodeID/Number/26

2. Select Item1
3. Select Add Item
4. Enter Boost
5. Select Number
6. Enter 3
7. New
 - Item 0/NodeID/Number/8
 - Item 1
 - Boost/Number/3
 - NodeID/Number/35
 - Item 2/NodeID/Number/26

E. Save, install and restart.

5. Substitute Gray (Side Speakers) for Black (Rear Speakers): Allows configuring Side Speakers in 5.1 analog surround sound.

A. Edit Platforms.xml/zml

1. Open Item/PathMapID
2. Verify PathMapID
3. Open 2nd to last item
4. Edit this path map as follows:
5. Current:
 - Item 0/NodeID/Number/21
 - Item 1/NodeID/Number/13
 - Item 2/NodeID/Number/3
6. New:
 - Item 0/NodeID/Number/23
 - Item 1/NodeID/Number/15
 - Item 2/NodeID/Number/5

B. Edit HDAHardwareConfigDriver/info.plist or realtekALC/Info.plist

1. Open Item/CodecID
2. Verify CodecID/LayoutID
3. Edit ConfigData (1150 only, edit each entry, 21 to 01)
 - Find: 21771cf0 21771d00 21771e00 21771f40
 - Replace: 21771c80 21771d20 21771e01 21771f01
 - Find: 21571c80 21571d20 21571e01 21571f01
 - Replace: 21571cf0 21571d00 21571e00 21571f40

C. Save, install and restart

6. Add Line Out (Rear Speakers) for analog 7.1 Surround Sound: Adds side speaker for 7.1 analog surround sound. SPDIFOut must be deleted to add Line Out as an audio output device. Note: Not available for Audio ID: 3

A. Edit Platforms.xml/zml

1. Open Item/PathMapID
2. Verify PathMapID
3. Delete Item 5
4. Copy the Line Out
5. Paste the Line Out on PathMap so there are two of the same. (Item 0 and 5)
6. Drag Item 4 up to PathMap - 4 times (moves new item to correct position)
7. Edit this path map as follows:
8. Current:
 - Item 0/NodeID/Number/21
 - Item 1/NodeID/Number/13
 - Item 2/NodeID/Number/3
9. New:
 - Item 0/NodeID/Number/23
 - Item 1/NodeID/Number/15
 - Item 2/NodeID/Number/5

B. Edit HDAHardwareConfigDriver/info.plist or realtekALC/Info.plist

1. Open Item/CodecID
2. Verify CodecID/LayoutID
3. Edit ConfigData (1150 only, edit each entry, 21 to 01)
 - Find: 21771cf0 21771d00 21771e00 21771f40
 - Replace: 21771c80 21771d20 21771e01 21771f01
 - Find: 21e71c90 21e71d61 21e71e4b 21e71f01
 - Replace: 21e71cf0 21e71d00 21e71e00 21e71f40

C. Save, install and restart

7. Substitute SPDIF-2 Wire Output: Replaces SPDIFOut Optical with motherboard SPDIF 2 wire SPDIF audio output device

Credit: intamara: [Lion HDMI Audio - Part 2a: DSDT Edits/Discrete - AMD/Nvidia - Page 29](#), Post 289

A. Edit Platforms.xml/zml

1. Open Item/PathMapID
2. Open the current SPDIFOut (last item)
3. Edit this path map as follows:
4. Current:
 - Item 0/NodeID/Number/30
 - Item 1/NodeID/Number/6
5. New:
 - Item 0/NodeID/Number/17
 - Item 1/NodeID/Number/16

B. Edit HDAHardwareConfigDriver/info.plist or realtekALC/Info.plist

1. Open Item/CodecID
2. Verify CodecID/LayoutID
3. Edit ConfigData (1150 only, edit each entry, 21 to 01)
 - Find: 21171cf0 21171d00 21171e00 21171f40
 - Replace: 21171ca0 21171d01 21171e43 21171f99
 - Find: 21e71c90 21e71d61 21e71e4b 21e71f01
 - Replace: 21e71cf0 21e71d00 21e71e00 21e71f40

C. Save, install and restart

8. SPDIF OpticalOut/Encoded Digital Audio - Not supported in 10.10+/10.9+

9. 2x HD3000/HD4000 HDMI Audio/Delete Audio Output Device: Deletes an existing audio output device to allow an additional HDMI audio output to be present (AppleHDA supports a total of 4 audio output devices). For Audio ID: 3, the orange port/line out audio device is removed for HD3000/HD4000 HDMI audio

For Audio_ID:1, Select the audio output device to delete:

Item 3: Orange port/rear/line out/center and sub speakers

Item 4: Black port/rear/line out/rear speakers

Item 5: SPDIFOut

For Audio_ID:3, Select the audio output device to delete:

Item 3: Black port/rear/line out

Item 4: SPDIFOut

A. Edit Platforms.xml/zml

1. Verify PathMapID
2. Open Item/PathMapID
3. Delete Item (Selected from Audio ID above)

B. Edit HDAHardwareConfigDriver/info.plist or realtekALC/Info.plist

1. Open Item/CodecID
2. Verify CodecID/LayoutID
3. Edit ConfigData
4. If Orange deleted (1150 only, edit each entry, 21 to 01)
 - Find: 21671c30 21671d60 21671e01 21671f01
 - Replace: 21671cf0 21671d00 21671e00 21671f40
5. If Black deleted (1150 only, edit each entry, 21 to 01)
 - Find: 21571c20 21571d10 21571e01 21571f01
 - Replace: 21571cf0 21571d00 21571e00 21571f40
6. If SPDIFOut deleted (1150 only, edit each entry, 21 to 01)
 - Find: 21e71c90 21e71d61 21e71e4b 21e71f01
 - Replace: 21e71cf0 21e71d00 21e71e00 21e71f40

C. Save, install and restart

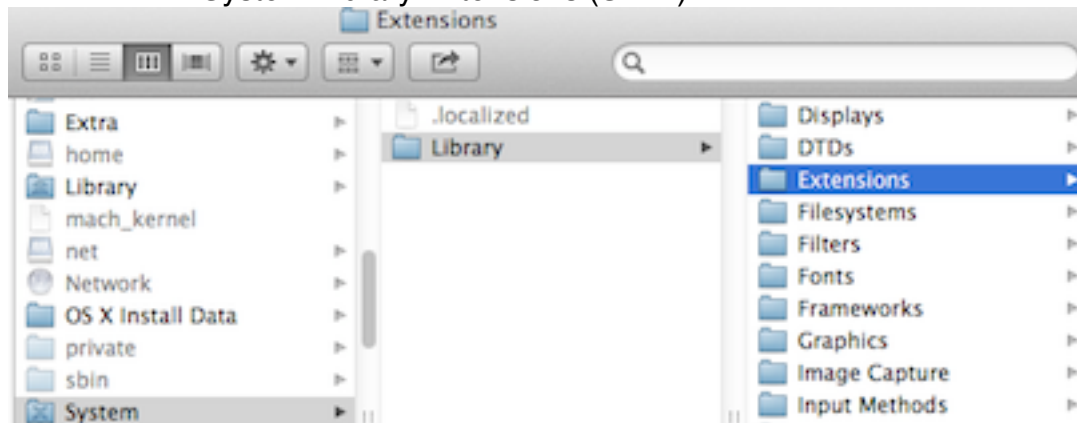
Appendix A. Native AppleHDA.kext Assumptions, Structure and Documents

1. AppleHDA.kext Assumptions

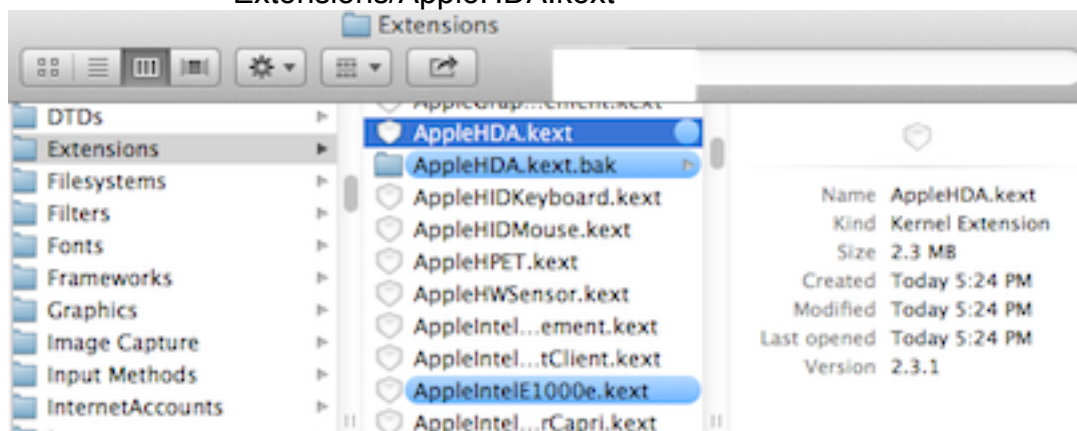
- a. **CodecID**= decimal (codec_vendor_device_id)
Ex. dec (283904137) = hex (10ec0889)
- b. **Audio_IDs** (Audio_ID = layout-id = 1, 2 or 3)
 1. 5/6 audio port on board with and without HD4600+/AMD/Nvidia HDMI audio
 2. 3 port on board with and without HD4600+/AMD/Nvidia HDMI audio
 3. 3/5/6 onboard audio with HD3000/HD4000 HDMI audio (only)
- c. Realtek ALC AppleHDA.kext support, see **Requirements 2.** (above)

2. AppleHDA.kext Structure

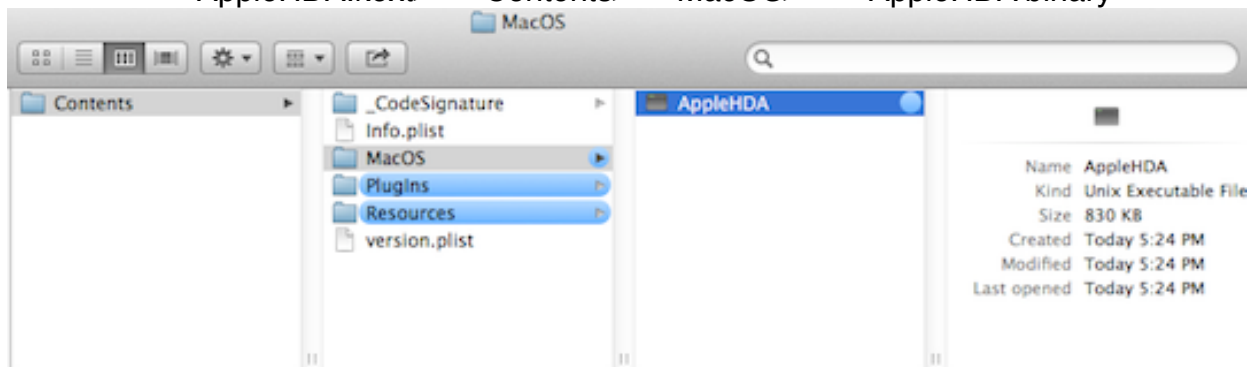
- a. AppleHDA.kext>
System/Library/Extensions (S/L/E)



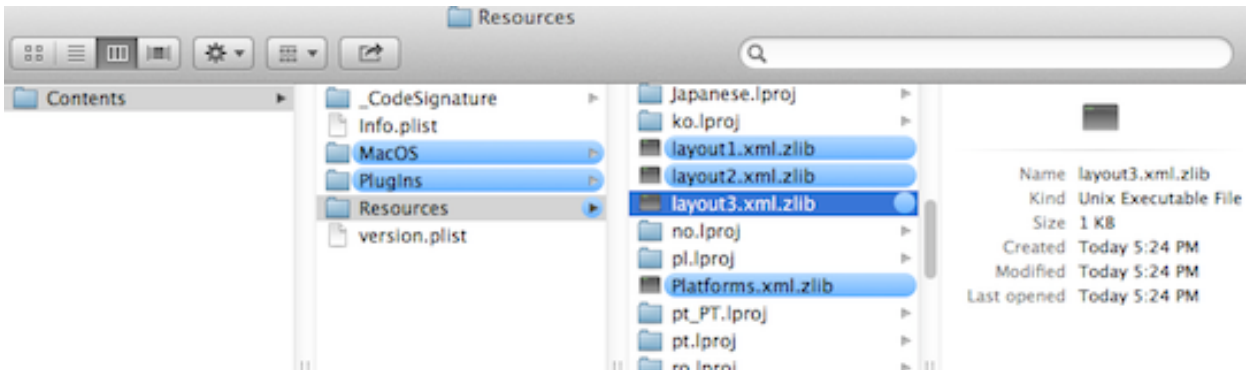
Extensions/AppleHDA.kext



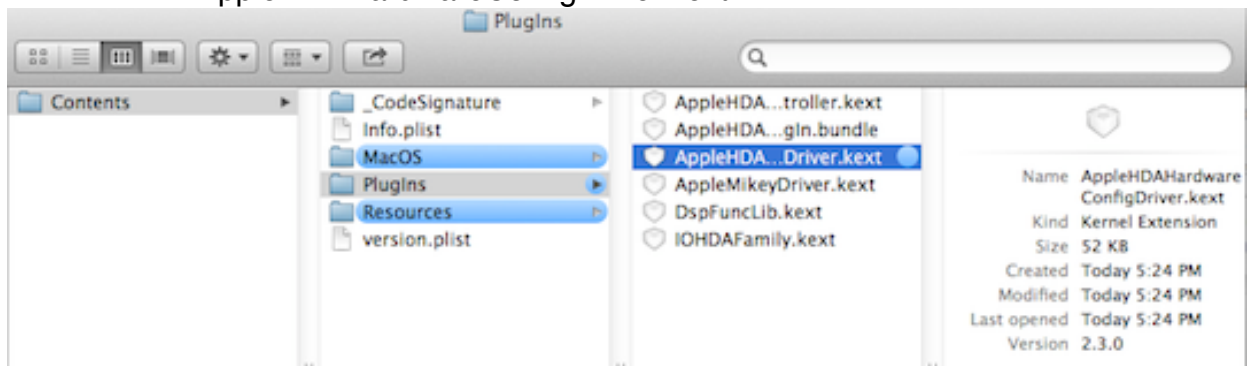
- b. AppleHDA.kext>
 AppleHDA.kext> Contents> MacOS> AppleHDA binary



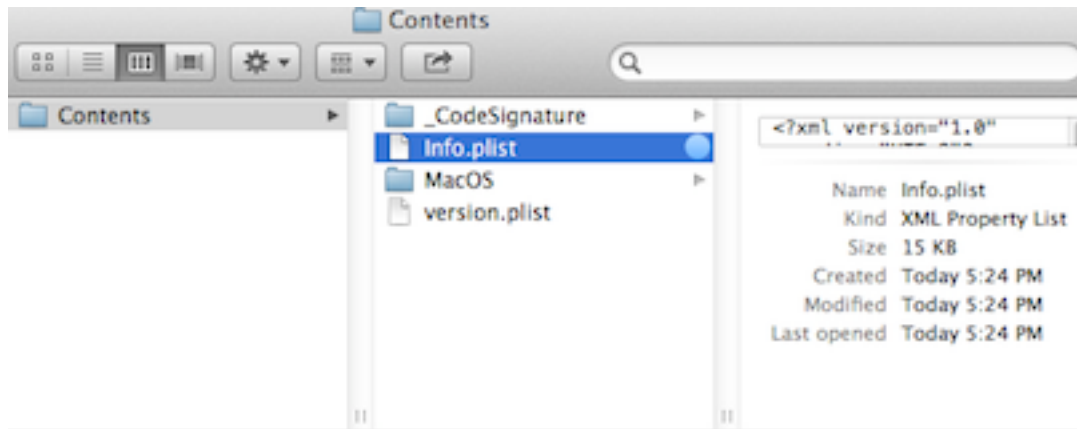
- c. layoutx.xml
 d. Platforms.xml
 AppleHDA.kext> Contents> Resources> layoutx.xml/zml
 Platforms.xml/zml



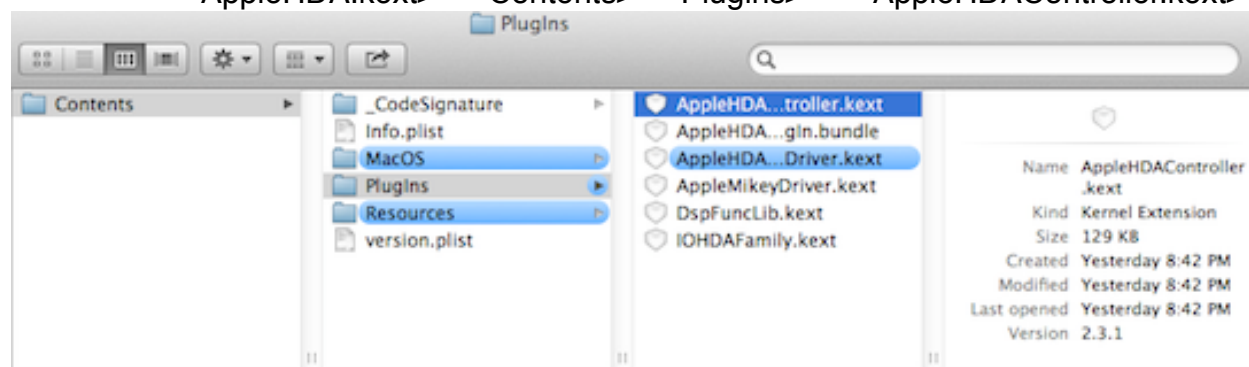
- e. Info.plist
 AppleHDA.kext> Contents> Plugins>
 AppleHDAHardwareConfigDriver.kext



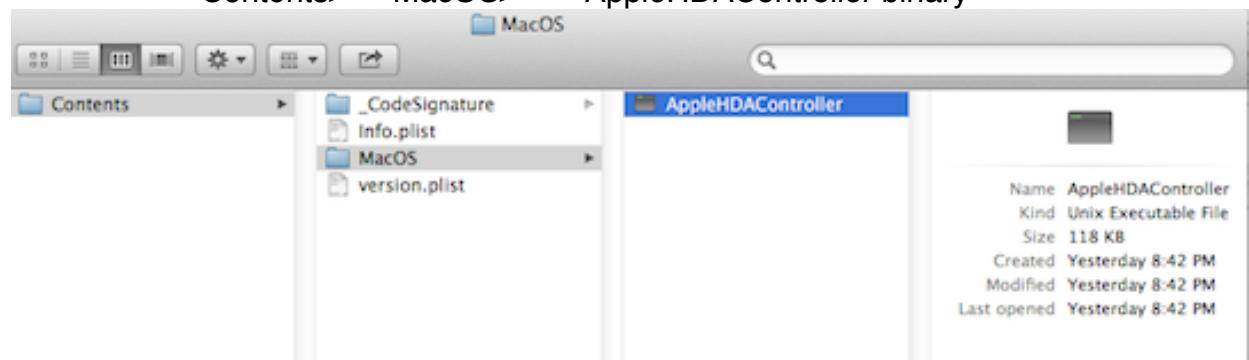
- AppleHDAHardwareConfigDriver.kext> Contents> Info.plist



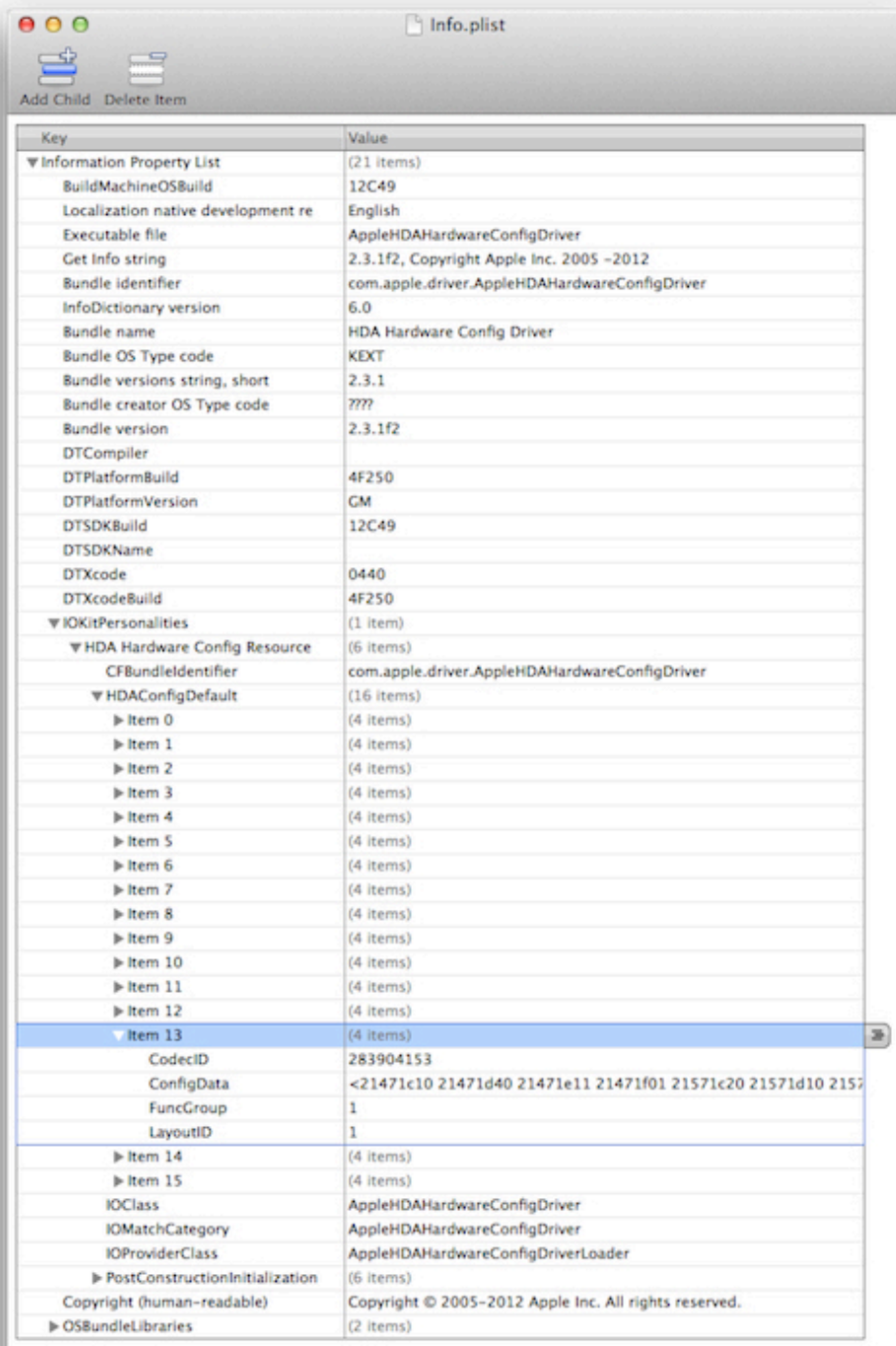
f. AppleHDAController binary
 AppleHDA.kext> Contents> Plugins> AppleHDAController.kext>



Contents> MacOS> AppleHDAController binary

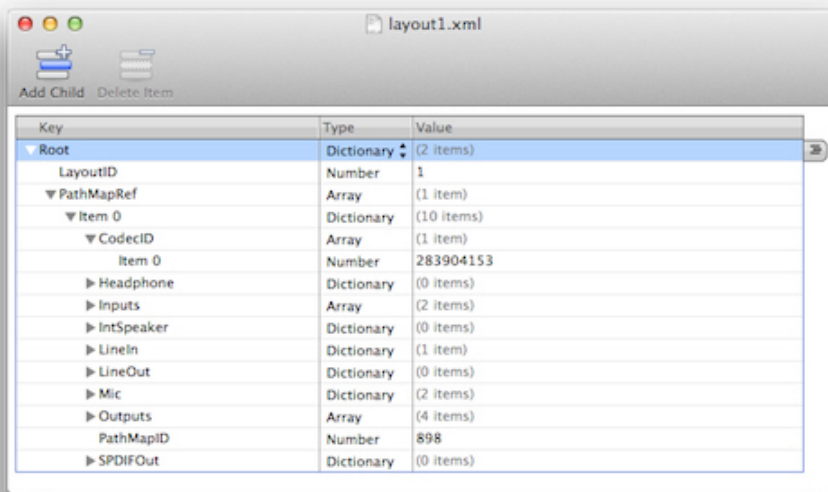


3. **AppleHDA.kext documents and their location**
 - a. Info.plist AppleHDA.kext/Contents/Plugins/
AppleHDAHardwareConfigDriver.kext/Contents>info.plist
 - a1. Info.plist realtekALC..kext/Contents>info.plist



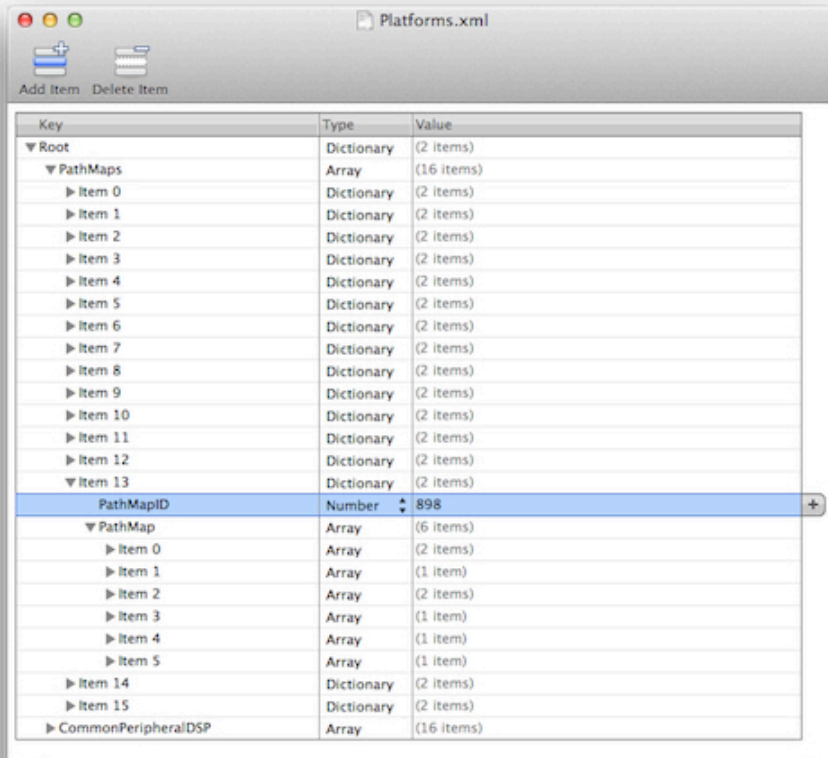
Key	Value
▼ Information Property List	(21 items)
BuildMachineOSBuild	12C49
Localization native development re	English
Executable file	AppleHDAHardwareConfigDriver
Get Info string	2.3.1f2, Copyright Apple Inc. 2005 - 2012
Bundle identifier	com.apple.driver.AppleHDAHardwareConfigDriver
InfoDictionary version	6.0
Bundle name	HDA Hardware Config Driver
Bundle OS Type code	KEXT
Bundle versions string, short	2.3.1
Bundle creator OS Type code	???
Bundle version	2.3.1f2
DTCompiler	
DTPlatformBuild	4F250
DTPlatformVersion	GM
DTSDKBuild	12C49
DTSDKName	
DTXcode	0440
DTXcodeBuild	4F250
▼ IOKitPersonalities	(1 item)
▼ HDA Hardware Config Resource	(6 items)
CFBundleIdentifier	com.apple.driver.AppleHDAHardwareConfigDriver
▼ HDAConfigDefault	(16 items)
▶ Item 0	(4 items)
▶ Item 1	(4 items)
▶ Item 2	(4 items)
▶ Item 3	(4 items)
▶ Item 4	(4 items)
▶ Item 5	(4 items)
▶ Item 6	(4 items)
▶ Item 7	(4 items)
▶ Item 8	(4 items)
▶ Item 9	(4 items)
▶ Item 10	(4 items)
▶ Item 11	(4 items)
▶ Item 12	(4 items)
▼ Item 13	(4 items)
CodecID	283904153
ConfigData	<21471c10 21471d40 21471e11 21471f01 21571c20 21571d10 21571e11 21571f01>
FuncGroup	1
LayoutID	1
▶ Item 14	(4 items)
▶ Item 15	(4 items)
IOClass	AppleHDAHardwareConfigDriver
IOMatchCategory	AppleHDAHardwareConfigDriver
IOProviderClass	AppleHDAHardwareConfigDriverLoader
▶ PostConstructionInitialization	(6 items)
Copyright (human-readable)	Copyright © 2005-2012 Apple Inc. All rights reserved.
▶ OSBundleLibraries	(2 items)

- b. layout(Audio_ID).xml AppleHDA.kext/Contents/Resources/layout1.xml
b1. layout(Audio_ID).zml AppleHDA.kext/Contents/Resources/layout1.zml



Key	Type	Value
Root	Dictionary	(2 items)
LayoutID	Number	1
PathMapRef	Array	(1 item)
Item 0	Dictionary	(10 items)
CodecID	Array	(1 item)
Item 0	Number	283904153
Headphone	Dictionary	(0 items)
Inputs	Array	(2 items)
IntSpeaker	Dictionary	(0 items)
LineIn	Dictionary	(1 item)
LineOut	Dictionary	(0 items)
Mic	Dictionary	(2 items)
Outputs	Array	(4 items)
PathMapID	Number	898
SPDIFOut	Dictionary	(0 items)

- c. Platforms.xml AppleHDA.kext/Contents/Resources/Platforms.xml
c1. Platforms.zml AppleHDA.kext/Contents/Resources/Platforms.zml



Key	Type	Value
Root	Dictionary	(2 items)
PathMaps	Array	(16 items)
Item 0	Dictionary	(2 items)
Item 1	Dictionary	(2 items)
Item 2	Dictionary	(2 items)
Item 3	Dictionary	(2 items)
Item 4	Dictionary	(2 items)
Item 5	Dictionary	(2 items)
Item 6	Dictionary	(2 items)
Item 7	Dictionary	(2 items)
Item 8	Dictionary	(2 items)
Item 9	Dictionary	(2 items)
Item 10	Dictionary	(2 items)
Item 11	Dictionary	(2 items)
Item 12	Dictionary	(2 items)
Item 13	Dictionary	(2 items)
PathMapID	Number	898
PathMap	Array	(6 items)
Item 0	Array	(2 items)
Item 1	Array	(1 item)
Item 2	Array	(2 items)
Item 3	Array	(1 item)
Item 4	Array	(1 item)
Item 5	Array	(1 item)
Item 14	Dictionary	(2 items)
Item 15	Dictionary	(2 items)
CommonPeripheralDSP	Array	(16 items)

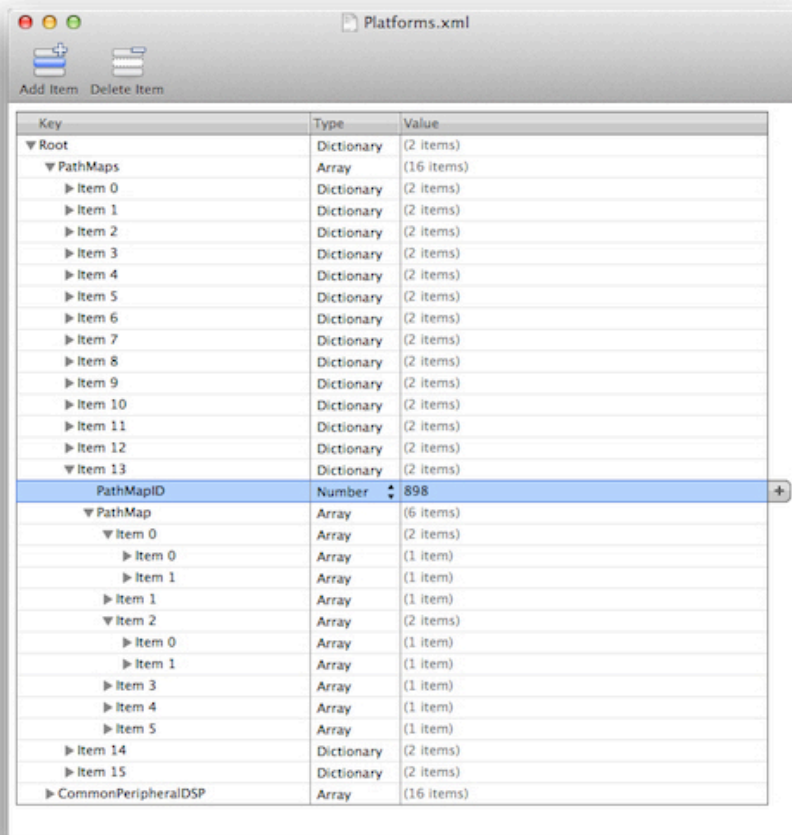
Appendix B. Realtek ALC AppleHDA.kext (details, before any customization)

1. Item/PathMapID Table and Item/CodecID Table

Item	PathMapID	CodecID	Audio ID
Item 0	885	283904133	1
Item 1	887	283904135	1
Item 2	287	283904135	2
Item 3	387	283904135	3
Item 4	888	283904136	1
Item 5	288	283904136	2
Item 6	388	283904136	3
Item 7	889	283904137	1
Item 8	289	283904137	2
Item 9	389	283904137	3
Item 10	892	283904146	1
Item 11	292	283904146	2
Item 12	392	283904146	3
Item 13	898	283904153	1
Item 14	298	283904153	2
Item 15	398	283904153	3
Item 16	900	283902595	1
Item 17	200	283902595	2
Item 18	269	283902569	1
Item 19	283	283902595	1

2. PathMapID 898/All Audio Devices (example)

Item	Sub Item	I/O	Device	Color	Location	NodeID
Item 0	Item 0	Input	Mic	Pink	Rear	24
	Item 1	Input	Mic	Pink	Front	25
Item 1		Input	Line In	Blue	Rear	26
Item 2	Item 0	Output	Speakers	Green	Rear	20
	Item 1	Output	Headphones	Green	Front	27
Item 3		Output	Line Out	Orange	Rear	22
Item 4		Output	Line Out	Black	Rear	21
Item 5		Output	SPDIFOut	N/A	Rear	30

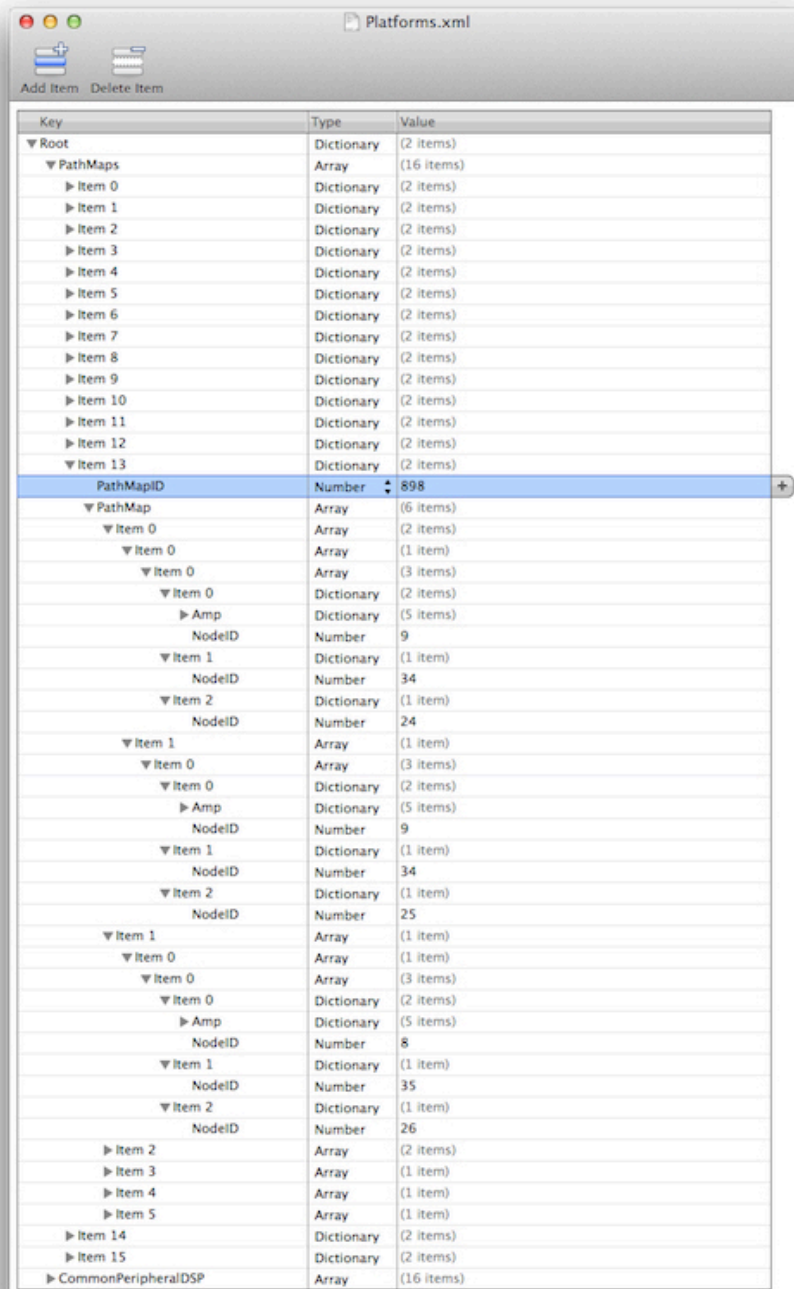


The screenshot shows a software interface titled "Platforms.xml" with a tree view of configuration data. The tree structure is as follows:

- Root (Dictionary, 2 items)
 - PathMaps (Array, 16 items)
 - Item 0 (Dictionary, 2 items)
 - Item 1 (Dictionary, 2 items)
 - Item 2 (Dictionary, 2 items)
 - Item 3 (Dictionary, 2 items)
 - Item 4 (Dictionary, 2 items)
 - Item 5 (Dictionary, 2 items)
 - Item 6 (Dictionary, 2 items)
 - Item 7 (Dictionary, 2 items)
 - Item 8 (Dictionary, 2 items)
 - Item 9 (Dictionary, 2 items)
 - Item 10 (Dictionary, 2 items)
 - Item 11 (Dictionary, 2 items)
 - Item 12 (Dictionary, 2 items)
 - Item 13 (Dictionary, 2 items)
 - PathMapID (Number, 898) - **Selected**
 - PathMap (Array, 6 items)
 - Item 0 (Array, 2 items)
 - Item 0 (Array, 1 item)
 - Item 1 (Array, 1 item)
 - Item 2 (Array, 2 items)
 - Item 0 (Array, 1 item)
 - Item 1 (Array, 1 item)
 - Item 3 (Array, 1 item)
 - Item 4 (Array, 1 item)
 - Item 5 (Array, 1 item)
 - Item 14 (Dictionary, 2 items)
 - Item 15 (Dictionary, 2 items)
 - CommonPeripheralDSP (Array, 16 items)

3. PathMapID 898/Input Audio Devices (example)

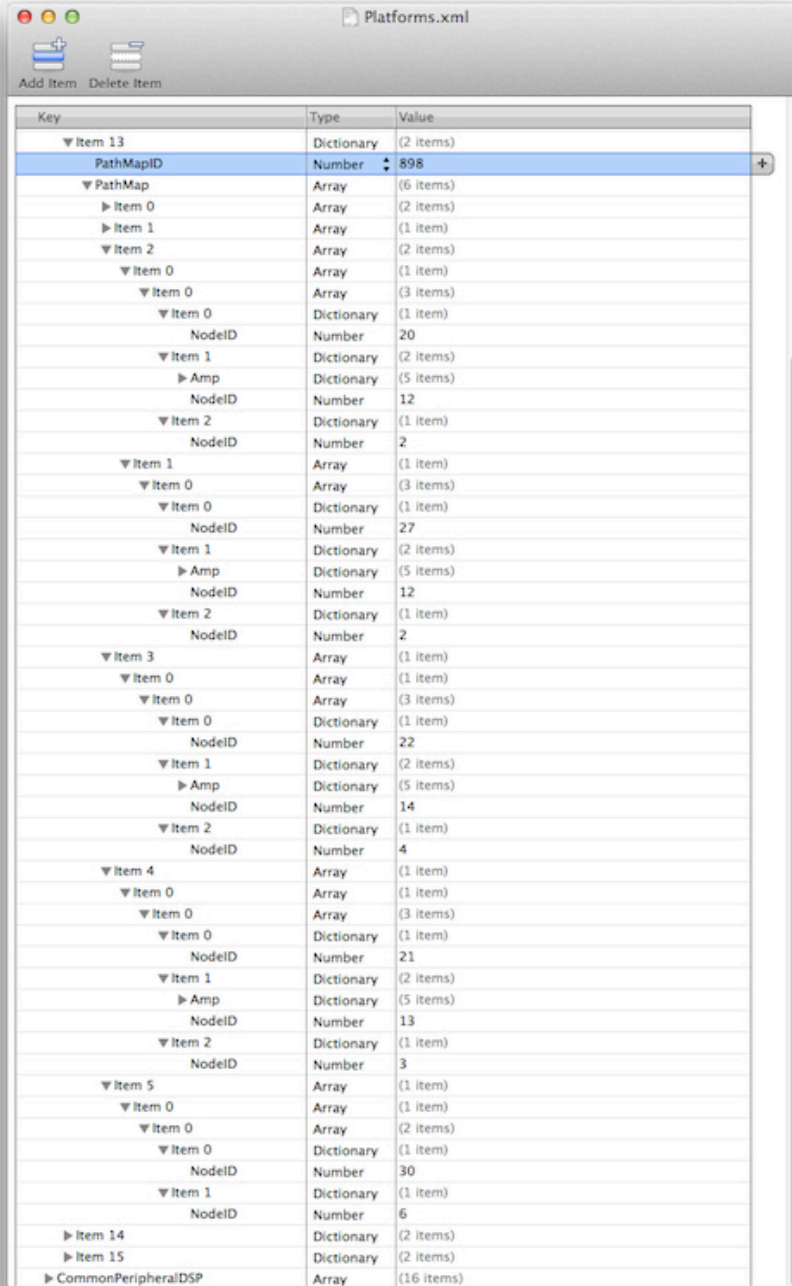
Item	Sub Item	I/O	Device	Color	Location	NodeID
Item 0	Item 0	Input	Mic	Pink	Rear	24
	Item 1	Input	Mic	Pink	Front	25
Item 1		Input	Line In	Blue	Rear	26



Key	Type	Value
▼ Root	Dictionary	(2 items)
▼ PathMaps	Array	(16 items)
▶ Item 0	Dictionary	(2 items)
▶ Item 1	Dictionary	(2 items)
▶ Item 2	Dictionary	(2 items)
▶ Item 3	Dictionary	(2 items)
▶ Item 4	Dictionary	(2 items)
▶ Item 5	Dictionary	(2 items)
▶ Item 6	Dictionary	(2 items)
▶ Item 7	Dictionary	(2 items)
▶ Item 8	Dictionary	(2 items)
▶ Item 9	Dictionary	(2 items)
▶ Item 10	Dictionary	(2 items)
▶ Item 11	Dictionary	(2 items)
▶ Item 12	Dictionary	(2 items)
▶ Item 13	Dictionary	(2 items)
PathMapID	Number	898
▼ PathMap	Array	(6 items)
▼ Item 0	Array	(2 items)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	9
▼ Item 1	Dictionary	(1 item)
NodeID	Number	34
▼ Item 2	Dictionary	(1 item)
NodeID	Number	24
▼ Item 1	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	9
▼ Item 1	Dictionary	(1 item)
NodeID	Number	34
▼ Item 2	Dictionary	(1 item)
NodeID	Number	25
▼ Item 1	Array	(1 item)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	8
▼ Item 1	Dictionary	(1 item)
NodeID	Number	35
▼ Item 2	Dictionary	(1 item)
NodeID	Number	26
▶ Item 2	Array	(2 items)
▶ Item 3	Array	(1 item)
▶ Item 4	Array	(1 item)
▶ Item 5	Array	(1 item)
▶ Item 14	Dictionary	(2 items)
▶ Item 15	Dictionary	(2 items)
▶ CommonPeripheralDSP	Array	(16 items)

4. PathMapID 898/Output Audio Devices (example)

Item	Sub Item	I/O	Device	Color	Location	NodeID
Item 2	Item 0	Output	Speakers	Green	Rear	20
	Item 1	Output	Headphones	Green	Front	27
Item 3		Output	Line Out	Orange	Rear	22
Item 4		Output	Line Out	Black	Rear	21
Item 5		Output	SPDIFOut	N/A	Rear	30



Key	Type	Value
▼ Item 13	Dictionary	(2 items)
PathMapID	Number	898
▼ PathMap	Array	(6 items)
▶ Item 0	Array	(2 items)
▶ Item 1	Array	(1 item)
▼ Item 2	Array	(2 items)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(1 item)
NodeID	Number	20
▼ Item 1	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	12
▼ Item 2	Dictionary	(1 item)
NodeID	Number	2
▼ Item 1	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(1 item)
NodeID	Number	27
▼ Item 1	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	12
▼ Item 2	Dictionary	(1 item)
NodeID	Number	2
▼ Item 3	Array	(1 item)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(1 item)
NodeID	Number	22
▼ Item 1	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	14
▼ Item 2	Dictionary	(1 item)
NodeID	Number	4
▼ Item 4	Array	(1 item)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(3 items)
▼ Item 0	Dictionary	(1 item)
NodeID	Number	21
▼ Item 1	Dictionary	(2 items)
▶ Amp	Dictionary	(5 items)
NodeID	Number	13
▼ Item 2	Dictionary	(1 item)
NodeID	Number	3
▼ Item 5	Array	(1 item)
▼ Item 0	Array	(1 item)
▼ Item 0	Array	(2 items)
▼ Item 0	Dictionary	(1 item)
NodeID	Number	30
▼ Item 1	Dictionary	(1 item)
NodeID	Number	6
▶ Item 14	Dictionary	(2 items)
▶ Item 15	Dictionary	(2 items)
▶ CommonPeripheralDSP	Array	(16 items)

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https://github.com/toleda/audio_ALC_guides