

1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ZONE	ECN	DESCRIPTION OF CHANGE	CK APPD DATE	ENG APPD DATE
02		38403	ENGINEERING RELEASED	06/01/05	

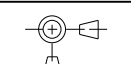

SCHEM, TATIC, Q16C

06/01/2005

(EVT)

PDF	CSA	CONTENTS	SYNC MASTER	DATE
1	1	Table of Contents	N/A	N/A
2	2	Board Information	N/A	N/A
3	3	Block Diagram	N/A	N/A
4	5	Revision History	N/A	N/A
5	7	Functional Test Signals	N/A	N/A
6	11	Signal & Power Aliases	SPDIF-AUDIO	05/31/2005
7	12	DC Power Connector	N/A	N/A
8	25	Internal USB/Audio/DC Connector	N/A	N/A
9	93	Left USB Connector	N/A	N/A
10	100	BrownOdio Codec	SPDIF-AUDIO	05/31/2005
11	101	Line In Filter	SPDIF-AUDIO	05/31/2005
12	102	S/PDIF Receiver	SPDIF-AUDIO	05/31/2005
13	104	Headphone Amp	SPDIF-AUDIO	05/31/2005
14	105	MAX9715 Speaker Amps	SPDIF-AUDIO	05/31/2005
15	106	Audio Connectors	SPDIF-AUDIO	05/31/2005
16	107	Audio Power Supply	SPDIF-AUDIO	05/31/2005
17	108			
18	109	Cross Reference Page		
19	110	Cross Reference Page		

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
051-6847	1	SCHEM, TATIC, Q16C	SCH1	
820-1820	1	PCBF, TATIC, Q16C	PCB1	

DIMENSIONS ARE IN MILLIMETERS XX : _____ X.XX : _____ X.XXX : _____ ANGLES : _____ DO NOT SCALE DRAWING  THIRD ANGLE PROJECTION	METRIC		 Apple Computer Inc. NOTICE OF PROPRIETARY PROPERTY THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE COMPUTER, INC. THE POSSESSOR AGREES TO THE FOLLOWING I TO MAINTAIN THE DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART	
	DRAPTR	DESIGN CK		TITLE
	ENG APPD	MFG APPD		DRAWING NUMBER
	QA APPD	DESIGNER		REV.
RELEASE	SCALE	SIZE	SHT	
		NONE	1 OF 110	
	MATERIAL/FINISH NOTED AS APPLICABLE	D		

PCB SPECS

THICKNESS : 1.2 MM / 0.047 IN
 1/2 OZ CU THICKNESS: 0.0177 MM
 1.0 OZ CU THICKNESS: 0.0356 MM

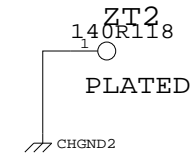
IMPEDANCE : 50 OHMS +/- 10%
 DIELECTRIC: FR-4
 LAYER COUNT: 12

SEE PCB CAD FILES FOR MORE SPECIFIC INFO.

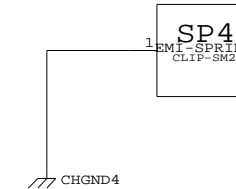
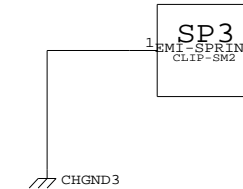
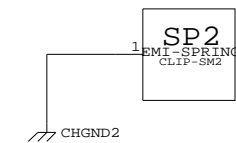
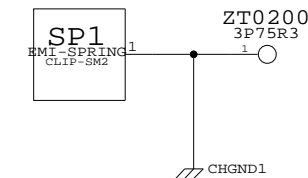
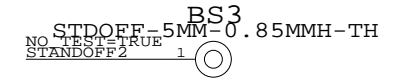
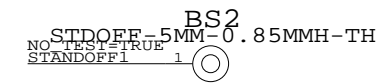
BOARD STACK-UP AND CONSTRUCTION

1		SIGNAL
2	PREPREG	GROUND
3	LAMINATE	SIGNAL
4	PREPREG	SIGNAL
5	LAMINATE	GROUND
6	PREPREG	CUT POWER PLANE
7	LAMINATE	CUT POWER PLANE
8	PREPREG	GROUND
9	LAMINATE	SIGNAL
10	PREPREG	SIGNAL
11	LAMINATE	GROUND
12	PREPREG	SIGNAL

BOARD HOLES



PCB BOARD STANDOFFS / FINGER SPRINGS



Board Information

SYNC_MASTER=N/A SYNC_DATE=N/A

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-6847	02
SCALE	NONE	SHT	2 OF 110

8

7

6

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3

2

1

D

D

C

C

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B

A

A

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Block Diagram

SYNC_MASTER=N/A SYNC_DATE=N/A

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APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-6847	02
SCALE	SHT	OF
NONE	3	110

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Revision History

D

D

C

C


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02	
SYNC_MASTER=N/A	SYNC_DATE=N/A
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	D	051-6847	02
SCALE	SHT	OF	
NONE	5	110	

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D

FUNCTIONAL TEST POINTS

D

SIG_NAME	FUNC_TEST	FUNC_QTY
AUDIO_LO_DET_L	TRUE	8 15
AUDIO_LO_OPTICAL_PLUG_L	TRUE	8 15
AUDIO_LI_DET_L	TRUE	8 15
AUDIO_LI_OPTICAL_PLUG_L	TRUE	8 15
AUDIO_CODEC_RESET_L	TRUE	8 10
AUDIO_SPDIFRX_RESET_L	TRUE	8 12
I2C_AUDIO_SDA	TRUE	6
I2C_AUDIO_SCL	TRUE	6
AUDIO_I2S_DTIB_SEL	TRUE	8 12
GND_AUDIO_SGND	TRUE	6
I2S_DEV_TO_SB_DTI	TRUE	6 8
I2S_SB_TO_DEV_DTO	TRUE	6 8
I2S_BITCLK	TRUE	6 8
I2S_MCLK	TRUE	6 8
AUDIO_SPKR_MUTE_L	TRUE	8 14
AUDIO_LO_MUTE_L	TRUE	8 13
AUDIO_EXT_MCLK_SEL	TRUE	8 12
AUDIO_SPDIFRX_GPO0	TRUE	6 8
PP3V3_PWRON_AUDIO_AVDD	TRUE	6
PP5V_PWRON_AUDIO_AVDD	TRUE	6

C

C

B

B

A

A

Functional Test Signals

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APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-6847	02
SCALE	SHT	OF
NONE	7	110

8

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2

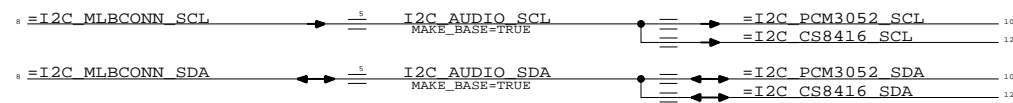
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Power Aliases

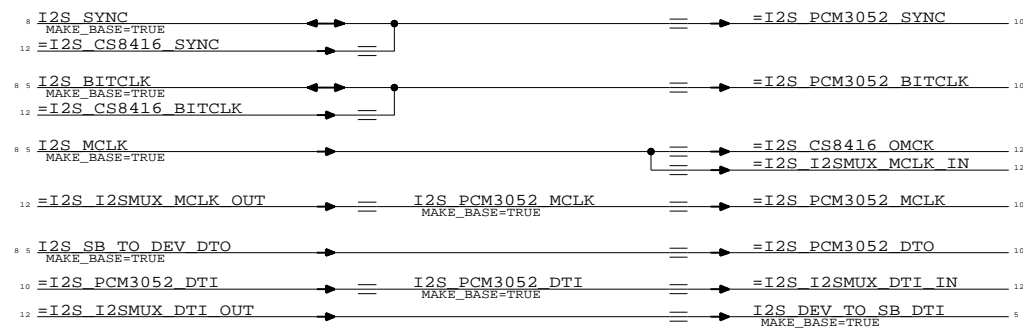


Signal Aliases

I2C Connections



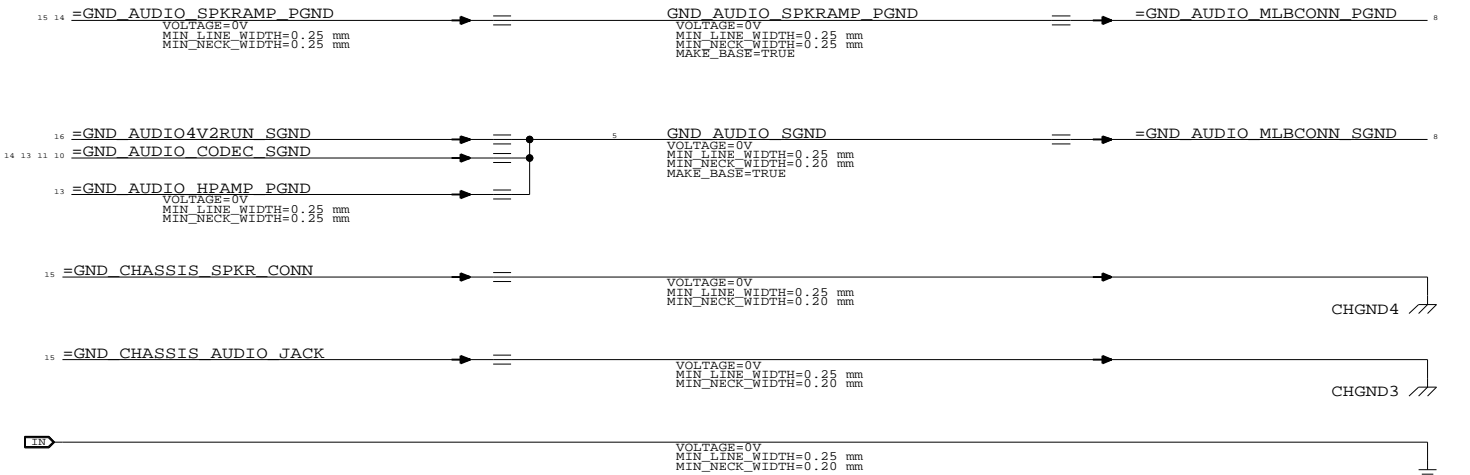
I2S Connections



Misc Signals



Ground Aliases



Signal & Power Aliases

SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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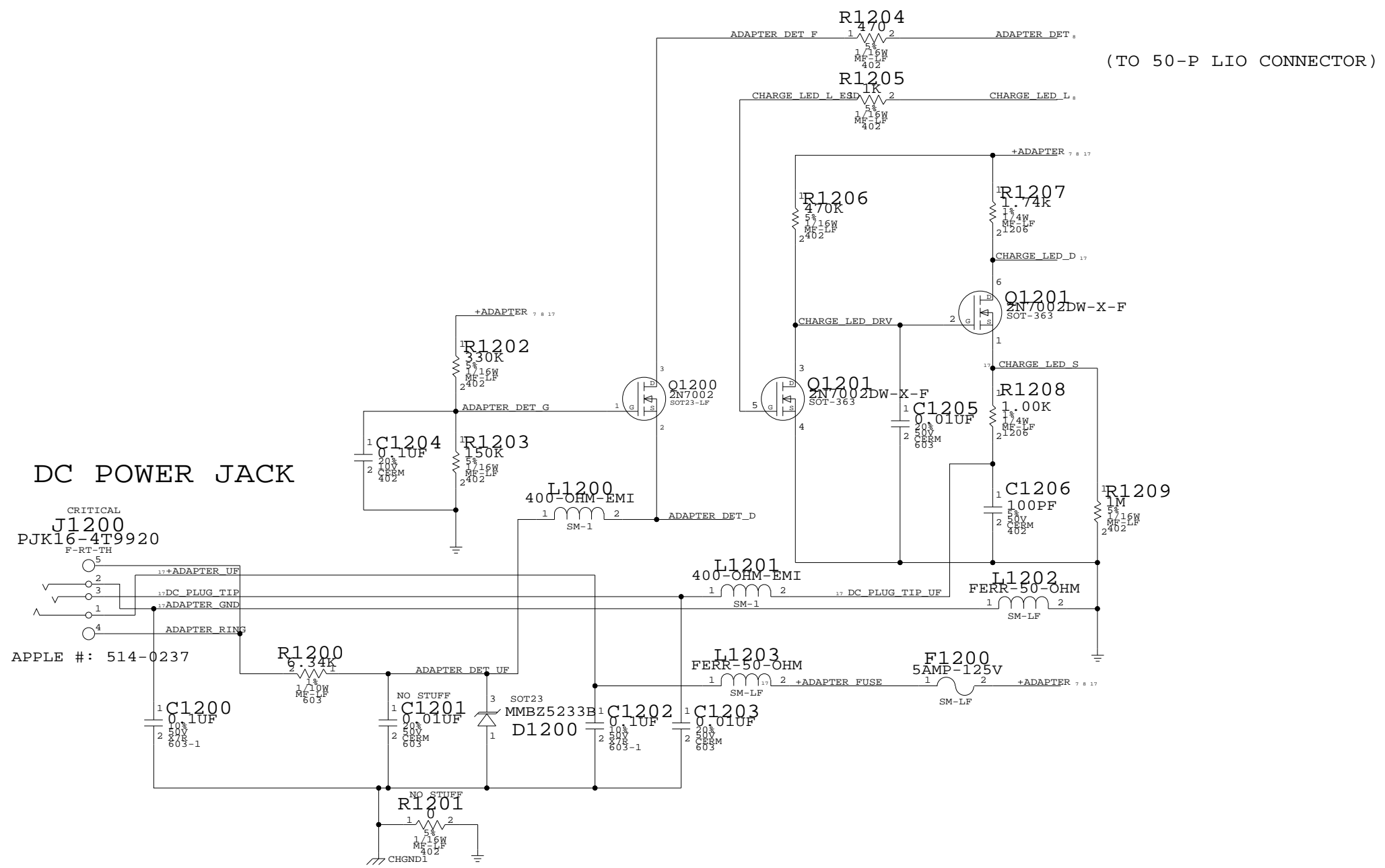
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	D	051-6847	02
SCALE	NONE	SHT	OF
		11	110

CHARGE LED SUPPORT



(TO 50-P LIO CONNECTOR)

DC POWER JACK

CRITICAL
J1200
PJK16-4T9920

APPLE #: 514-0237

PLACE C2, C3 AND R2 CLOSE TO J1200
PLACE L1, L2 AND L3 CLOSE TO J1200

DC Power Connector
SYNC_MASTER=N/A SYNC_DATE=N/A

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	NONE	051-6847	02
SCALE		SHT	OF
NONE		12	110

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		
	SPACING	PHYSICAL	DIFFERENTIAL_PAIR
I2S_SB_TO_DEV.DTO	I2S	I2S	
I2S_DEV_TO_SB.DTI	I2S	I2S	
I2S.MCLK	I2S	I2S	
I2S.BITCLK	I2S	I2S	

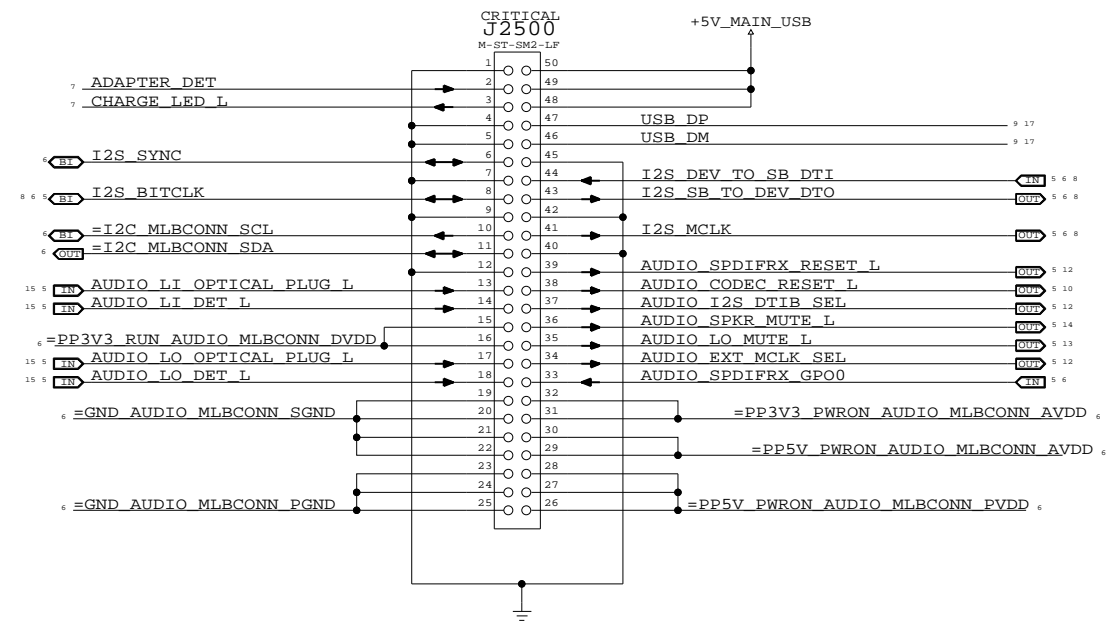
Page Notes

Power aliases required by this page:
 - =PP5V_PWRON_AUDIO_MLBCONN_PVDD
 - =PP5V_PWRON_AUDIO_MLBCONN_AVDD
 - =PP3V3_PWRON_AUDIO_MLBCONN_AVDD
 - =PP3V3_RUN_AUDIO_MLBCONN_DVDD
 - =GND_AUDIO_MLBCONN_SGND (GND for AVDD)
 - =GND_AUDIO_MLBCONN_PGND (GND for PVDD)

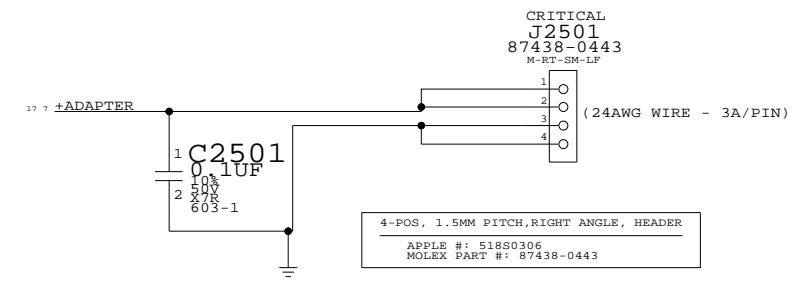
Signal aliases required by this page:
 - =I2C_MLBCONN_SCL
 - =I2C_MLBCONN_SDA

BOM options provided by this page:
 (NONE)

AUDIO CONNECTOR (TO MLB)



POWER CONNECTOR (TO MLB)

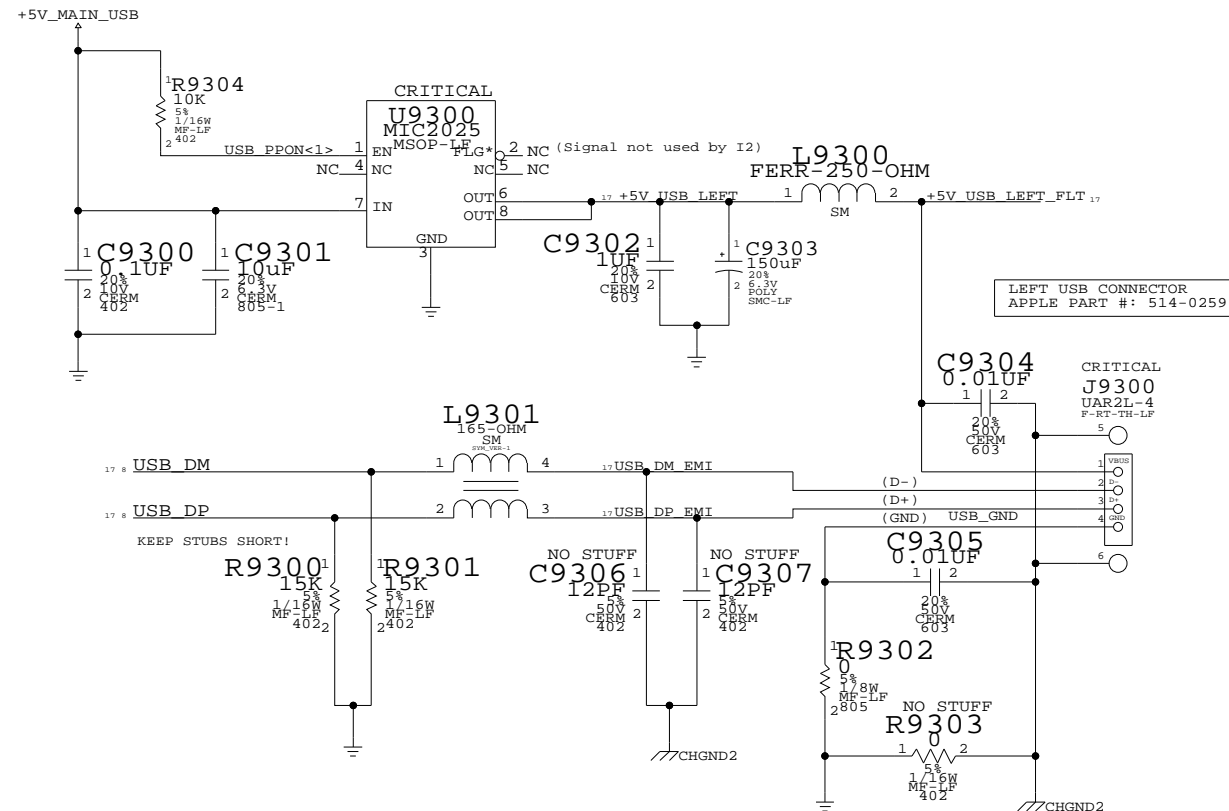


Internal USB/Audio/DC Connector
 SYNC_MASTER=N/A SYNC_DATE=N/A

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-6847	02
SCALE	NONE	SHT	OF
		25	110

LEFT USB CONNECTOR (System Left USB Port)



Place R9302, L9301 ACROSS THE MOAT

Left USB Connector
 SYNC_MASTER=N/A SYNC_DATE=N/A
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-6847	02
SCALE	SHT	OF	
NONE	93	110	

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		DIFFERENTIAL_PAIR
	SPACING	PHYSICAL	
I2S	I2S		

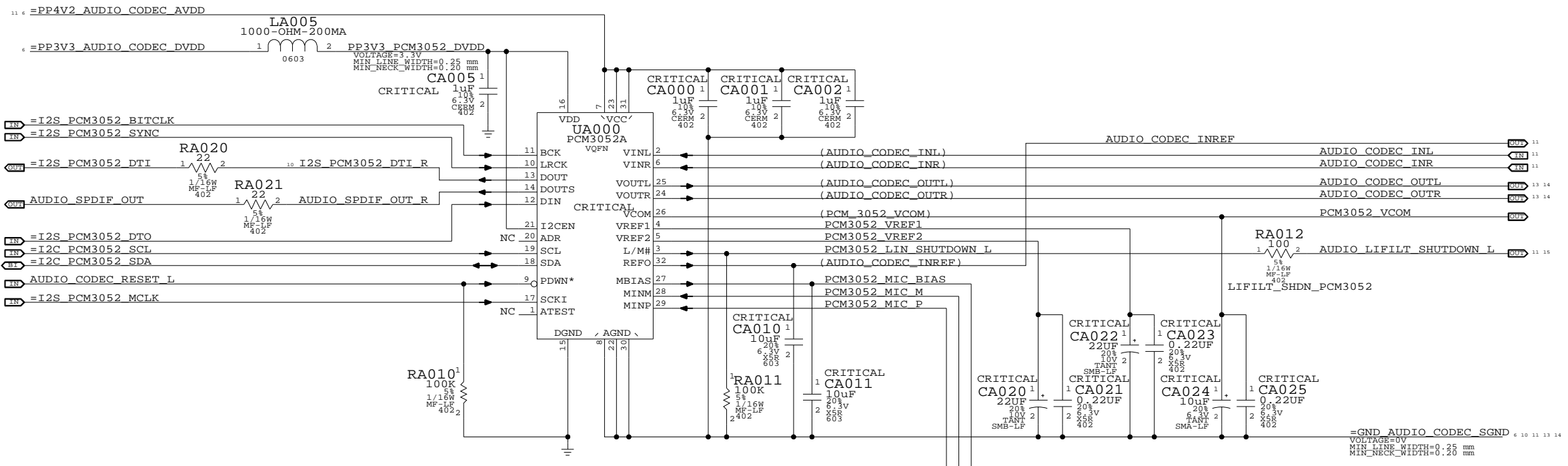
I2S_PCM3052_DTI_R 10

Page Notes

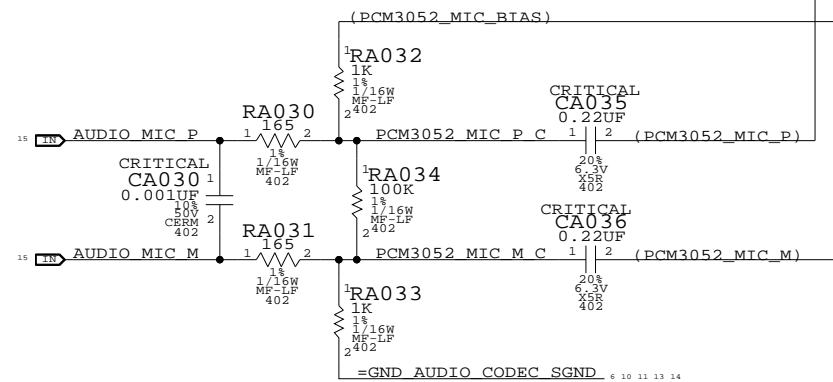
- Power aliases required by this page:
 - =PP4V2_AUDIO_CODEC_AVDD
 - =PP3V3_AUDIO_CODEC_DVDD
 - =GND_AUDIO_CODEC_SGND
- Signal aliases required by this page:
 - =I2C_PCM3052_SCL
 - =I2C_PCM3052_SDA
 - =I2S_PCM3052_DTI
 - =I2S_PCM3052_DTO
 - =I2S_PCM3052_MCLK
 - =I2S_PCM3052_BITCLK
 - =I2S_PCM3052_SYNC
- BOM options provided by this page:
 (NONE)

BrownOdio CODEC (TI PCM3052A)

If 3052 uses I2S-a, ADR = NC or low, I2C Addr=8C
 If 3052 uses I2S-b, ADR = high, I2C Addr=8E



Microphone Interface



BrownOdio Codec
 SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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	D	051-6847	02
SCALE	NONE	SHT	OF
		100	110

Page Notes

Power aliases required by this page:

- =PP4V2_AUDIO_LIFILT_AVDD
- =GND_AUDIO_CODEC_SGND

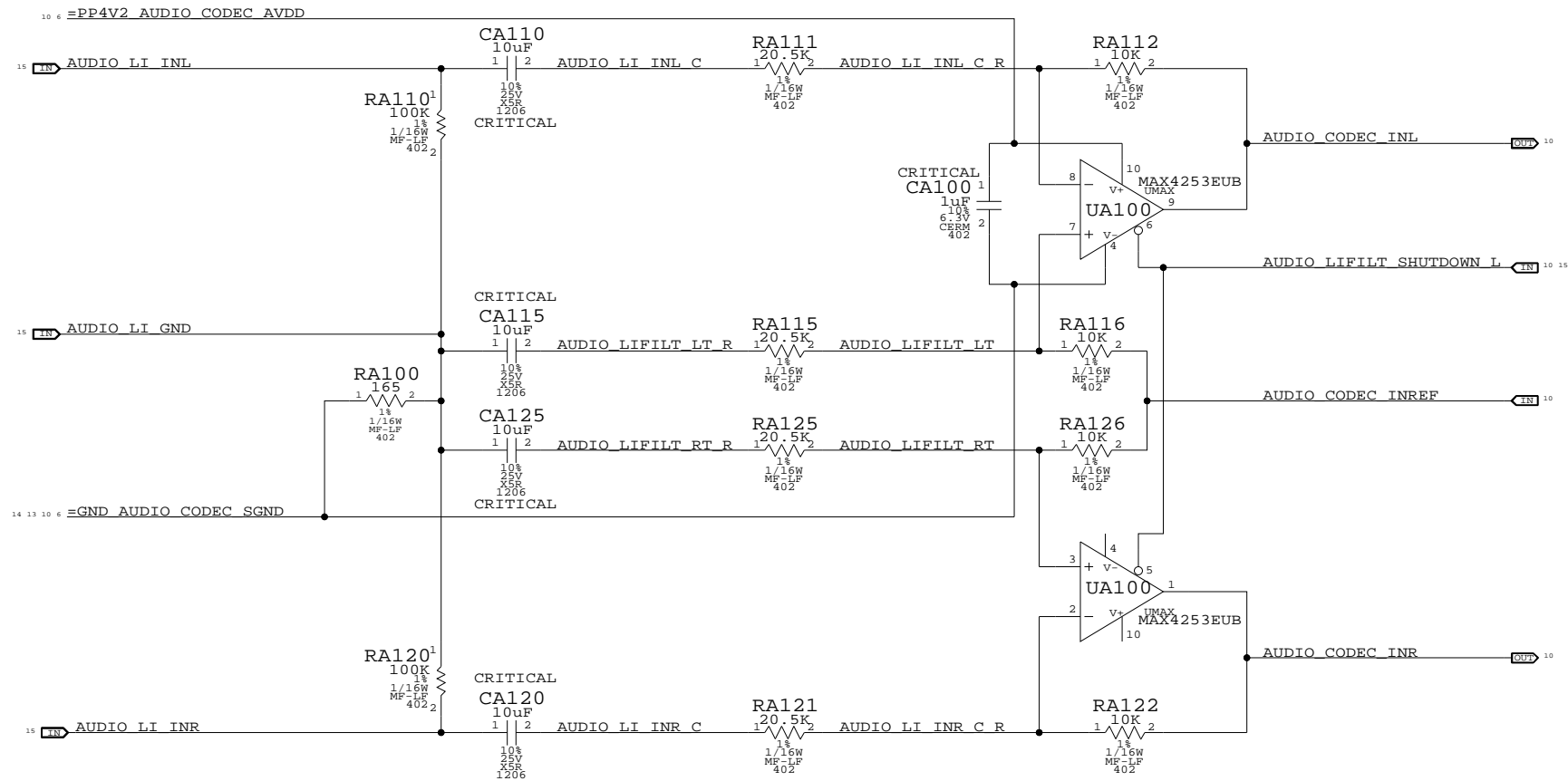
Signal aliases required by this page:

(NONE)

BOM options provided by this page:

(NONE)

Pseudo-Diff Line-In Filter
 Gain = -6.24dB Av = 0.49
 Fc = 0.78 Hz



Line In Filter

SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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	D	051-6847	02
SCALE	NONE	SHT	OF
		101	110

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		DIFFERENTIAL_PAIR
	SPACING	PHYSICAL	
I2S I2SMUX MCLK_OUT R	I2S	I2S	
	I2S	I2S	
I2S I2SMUX DTI_OUT R	I2S	I2S	
	I2S	I2S	
I2S CS8416 DTI R	I2S	I2S	
	I2S	I2S	
I2S CS8416 RMCK R	I2S	I2S	
	I2S	I2S	
I2S CS8416 BITCLK R	I2S	I2S	
	I2S	I2S	
I2S CS8416 SYNC R	I2S	I2S	
	I2S	I2S	
I2S CS8416 DTI	I2S	I2S	
	I2S	I2S	
I2S CS8416 RMCK	I2S	I2S	
	I2S	I2S	

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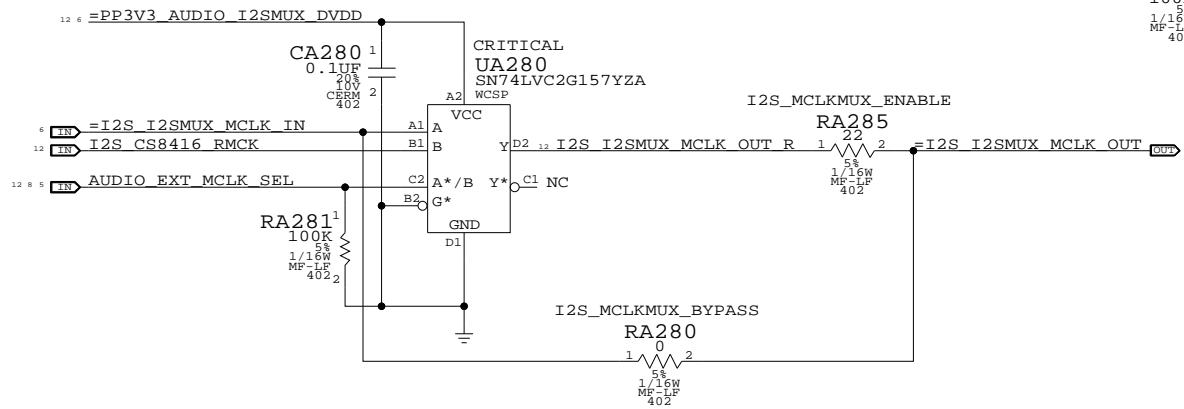
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 - =PP3V3_AUDIO_SPDIFRX_DVDD
 - =PP3V3_AUDIO_I2SMUX_DVDD

Signal aliases required by this page:
 - =I2C_CS8416_SCL
 - =I2C_CS8416_SDA
 - =I2S_CS8416_OMCK
 - =I2S_CS8416_BITCLK
 - =I2S_CS8416_SYNC
 - =I2S_I2SMUX_MCLK_IN
 - =I2S_I2SMUX_MCLK_OUT
 - =I2S_I2SMUX_DTI_IN
 - =I2S_I2SMUX_DTI_OUT
 - =CS8416_GPO0

BOM options provided by this page:
 - CS8416_I2CADDR_0X22 / CS8416_I2CADDR_0X2A
 Selects between two I2C addresses for CS8416.
 - CS8416_RESET_ISOL / CS8416_RESET_NOISOL
 Stuffs or bypasses isolation circuit for CS8416 RESET input. This circuit protects the CS8416 from leakage on the RESET GPIO from I/O ASIC.
 - I2S_MCLKMUX_ENABLE / I2S_MCLKMUX_BYPASS
 Connects or bypasses I2S MCLK mux circuit. When enabled, I/O ASIC GPIO AUDIO_EXT_MCLK_SEL selects CS8416 MCLK output instead of I/O ASIC MCLK output to be used as input to CODEC circuit.
 - I2S_CLKSW_ENABLE / I2S_CLKSW_BYPASS
 Enable or disable UA270 tristate functionality for SYNC and BITCLK
 Allows for alternate method of removing CS4216 from the hostbus when SB I2S a is in Master mode.

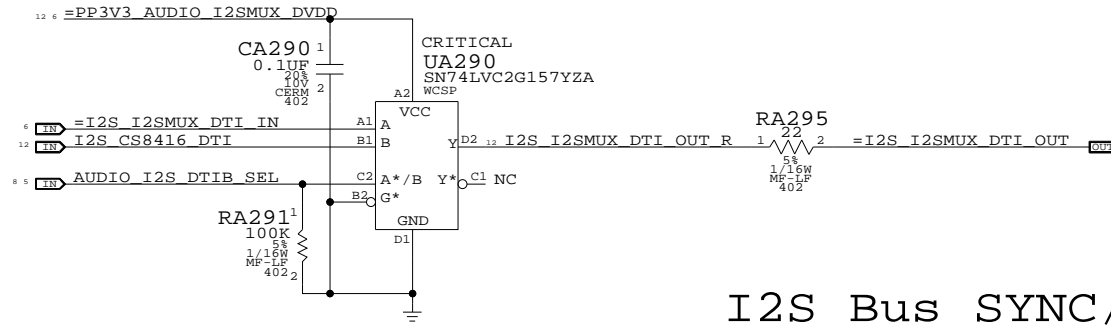
I2S Bus MCLK Mux

CODEC receives either host I2S bus MCLK or CS8416 RMCK



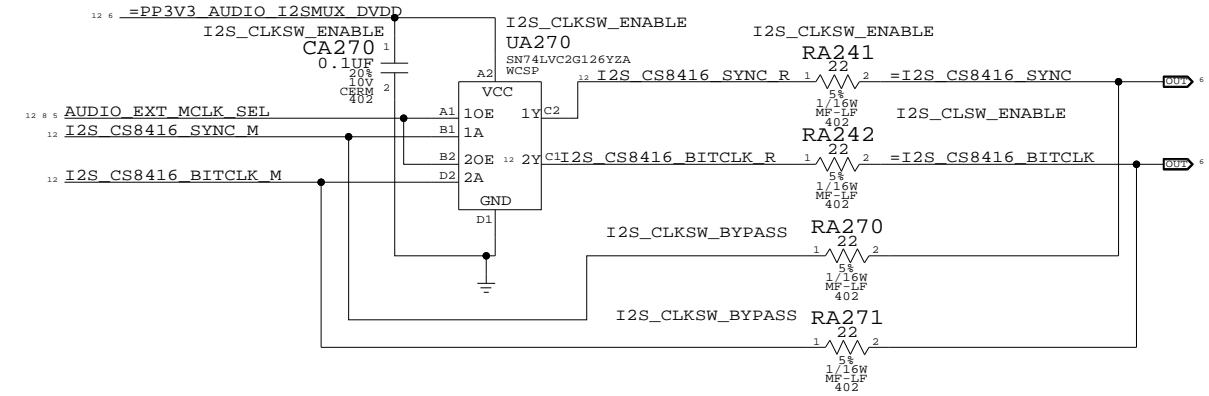
I2S Bus DTI Mux

Host bus receives either CODEC DTI or CS8416 DTI

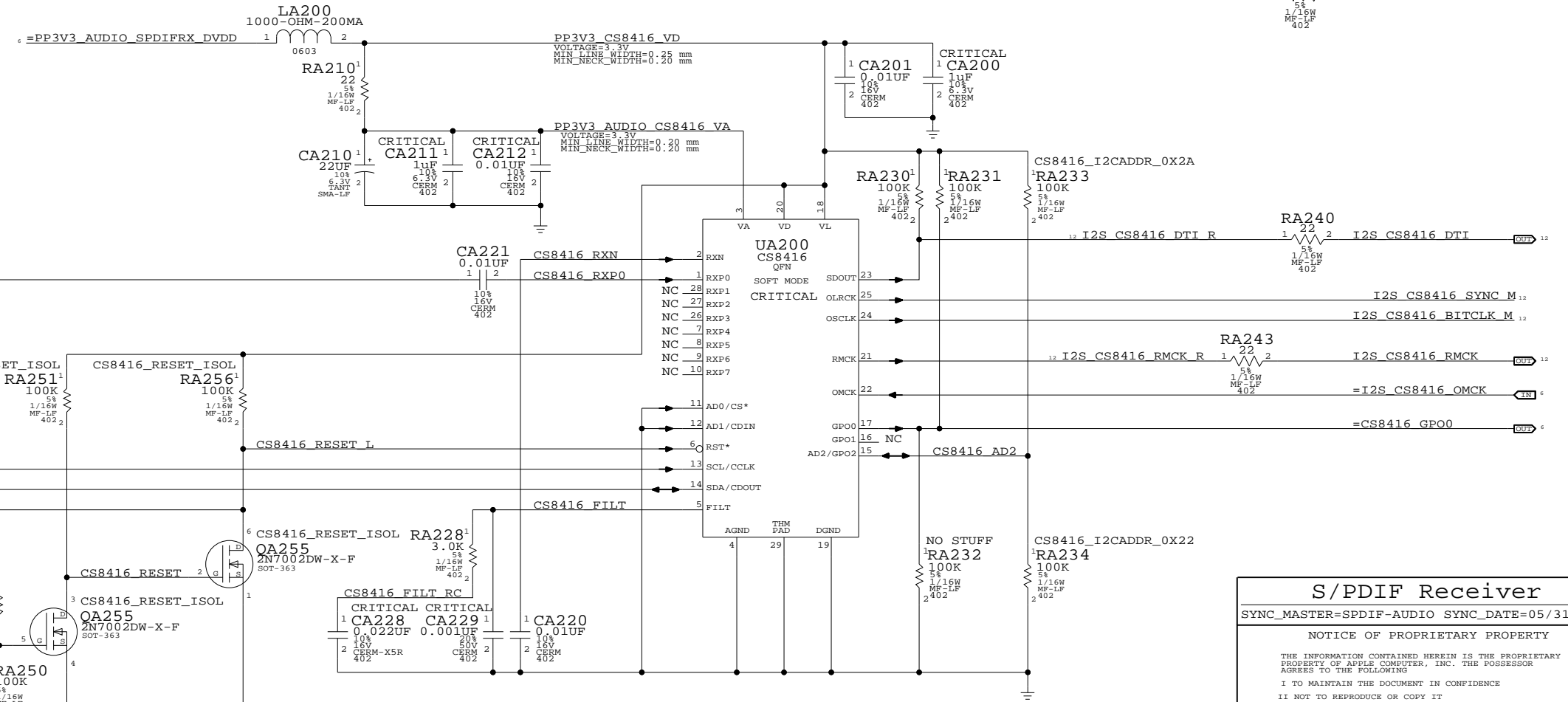


I2S Bus SYNC/BCLK Switch

Host bus SYNC/BITCLK direction switch



S/PDIF Receiver (CS8416)



AUDIO SPDIF IN

I2C Address selection

i2s-a	AD2=0, AD1=0, AD0=0
i2s-b	AD2=0, AD1=0, AD0=1
i2s-c	AD2=0, AD1=1, AD0=0
i2s-d	AD2=0, AD1=1, AD0=1

=I2C_CS8416_SCL
 =I2C_CS8416_SDA

CS8416 Pin To Supply Leakage Isolator

S/PDIF Receiver

SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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	SCALE	SHEET	OF
	NONE	102	110

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		
	SPACING	PHYSICAL	DIFFERENTIAL_PAIR
Ⓛ	AUDIO	AUDIO	
Ⓛ	AUDIO	AUDIO	
Ⓛ	AUDIO	AUDIO	
Ⓛ	AUDIO	AUDIO	

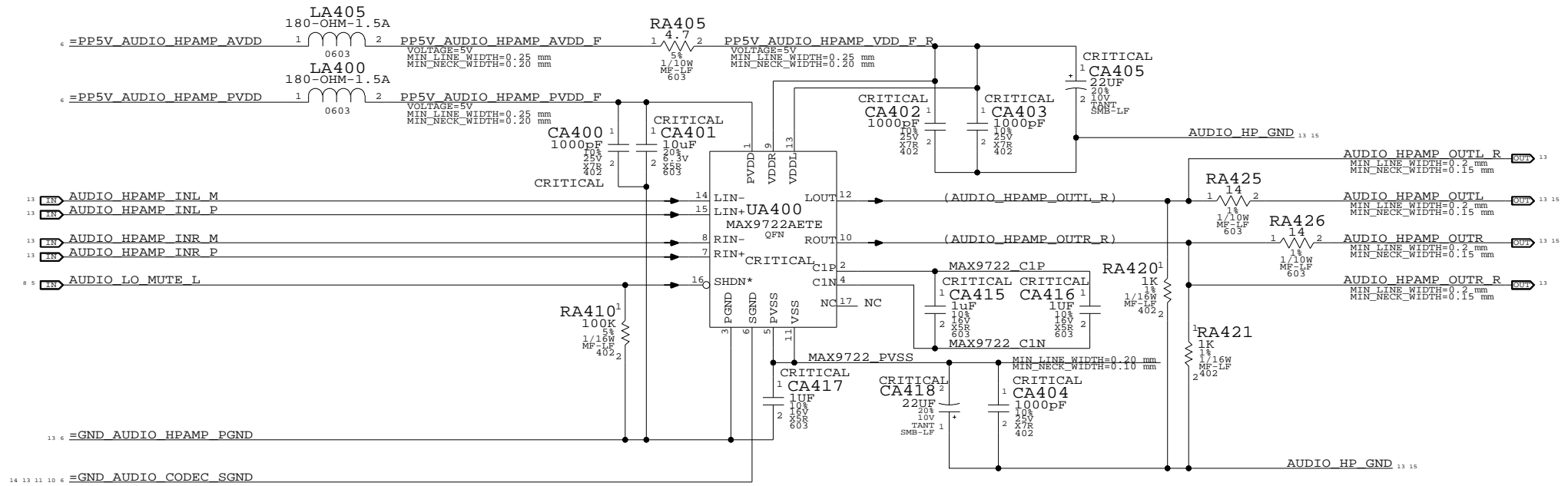
Page Notes

Power aliases required by this page:
 - =PP5V_AUDIO_HPAMP_AVDD
 - =PP5V_AUDIO_HPAMP_PVDD
 - =GND_AUDIO_HPAMP_PGND (GND for power)
 - =GND_AUDIO_HPAMP_SGND (GND for signal)
 - =GND_AUDIO_CODEC_SGND
 - =GND_AUDIO_HP_STAR_GND

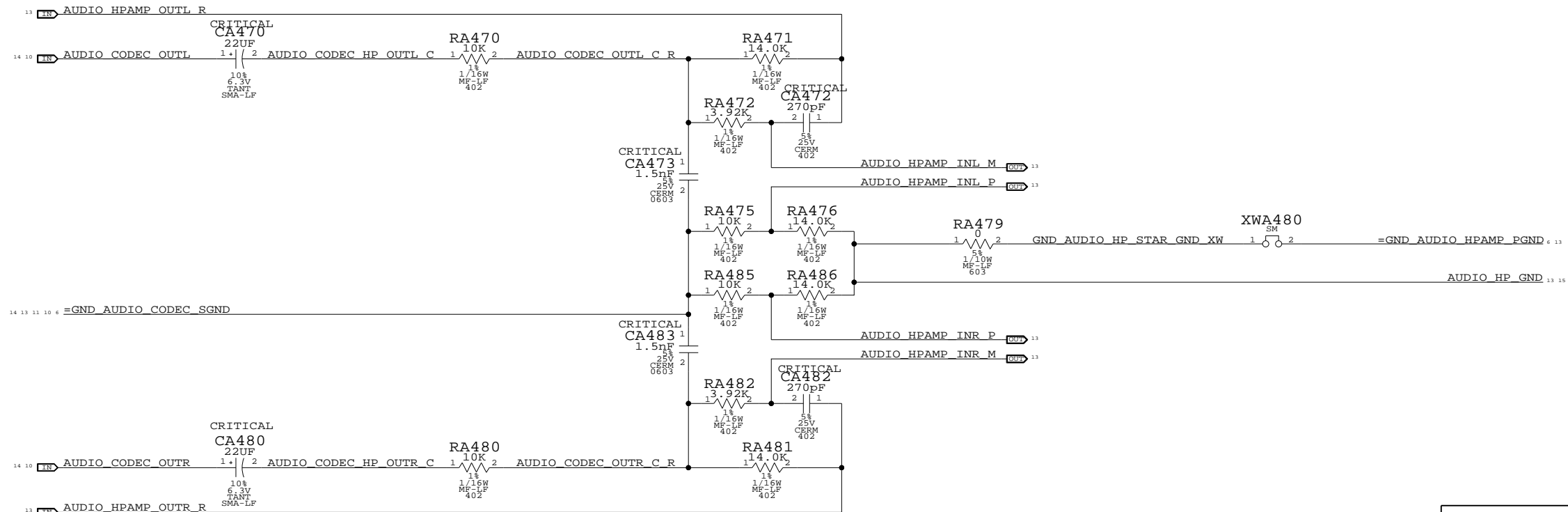
Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)

Headphone Amplifier (MAX9722)



2nd Order DAC Filter



Headphone Amp		
SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005		
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	SCALE	SHT	OF
	NONE	104	110

Page Notes

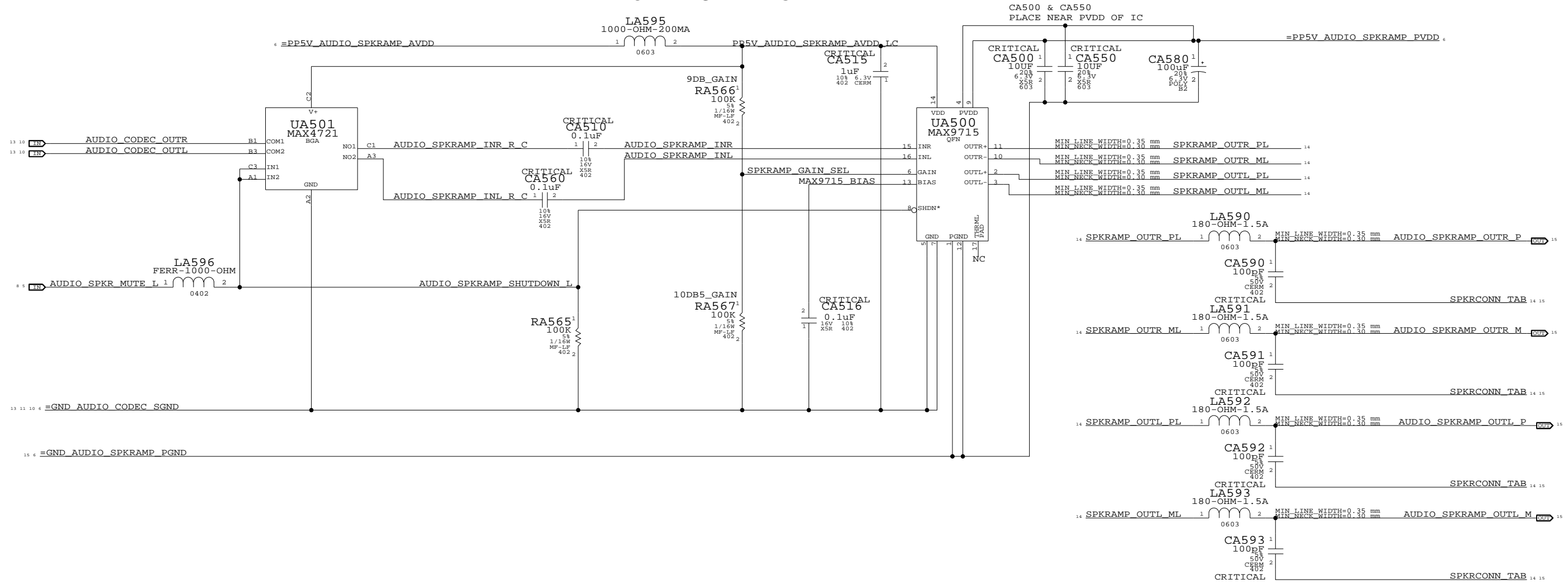
Power aliases required by this page:
 - =PP5V_AUDIO_SPKRAMP_PVDD
 - =PP5V_AUDIO_SPKRAMP_AVDD
 - =GND_AUDIO_SPKRAMP_PGND (GND for power)
 - =GND_AUDIO_SPKRAMP_SGND (GND for signal)

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 - 10DB5_GAIN
 MAX9715 GAIN is set through this pin
 HIGH = 9dB
 LOW = 10.5dB

STEREO SPEAKER AMPLIFIERS

Gain = 10.5dB
 118 < FC < 245Hz



MAX9715 Speaker Amps

SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-6847	02
SCALE	NONE	SHT	OF
		105	110

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		
	SPACING	PHYSICAL	DIFFERENTIAL_PAIR
□	AUDIO	AUDIO	AUDIO LOCONN OUTL F 15
□	AUDIO	AUDIO	AUDIO LOCONN OUTR F 15
□	AUDIO	AUDIO	AUDIO LOCONN GND F 15
□	AUDIO	AUDIO	AUDIO LOCONN OUTL 15
□	AUDIO	AUDIO	AUDIO LOCONN OUTR 15
□	AUDIO	AUDIO	AUDIO LOCONN GND 15
□	AUDIO	AUDIO	AUDIO HP GND 13 15

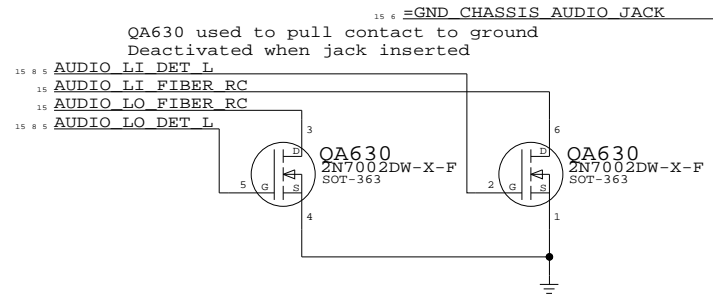
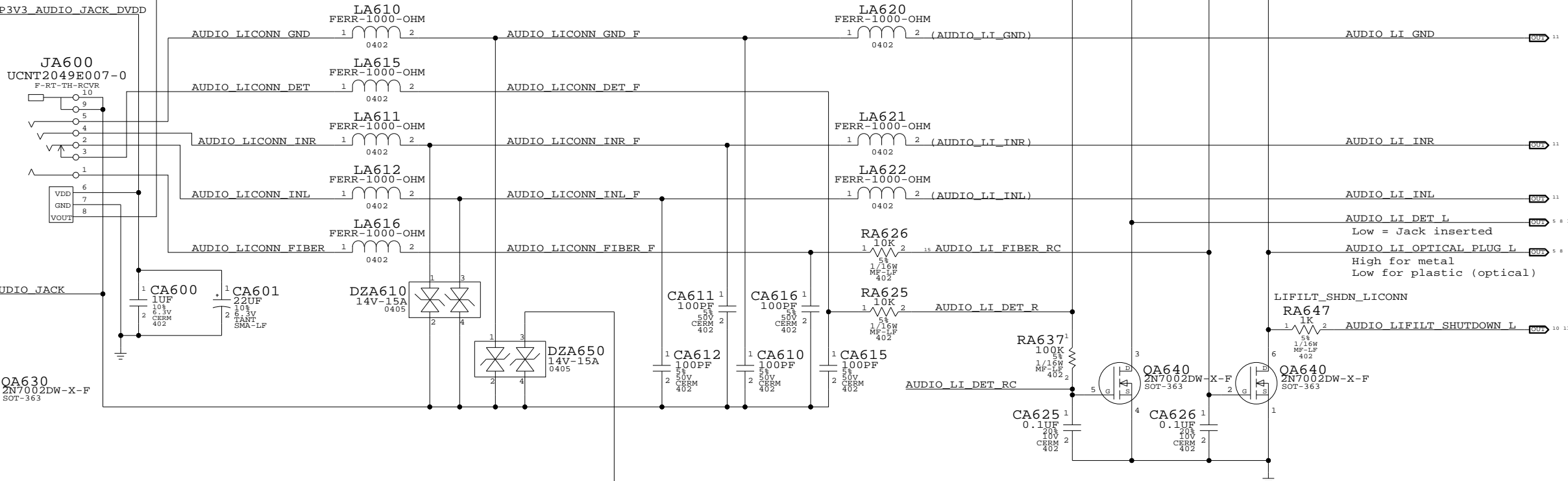
Page Notes

Power aliases required by this page:
 - =PP3V3_AUDIO_JACK_DVDD
 - =PPVIO_AUDIO_JACKDET_DVDD
 - =GND_AUDIO_SPKRAMP_PGND
 - =GND_CHASSIS_AUDIO_JACK

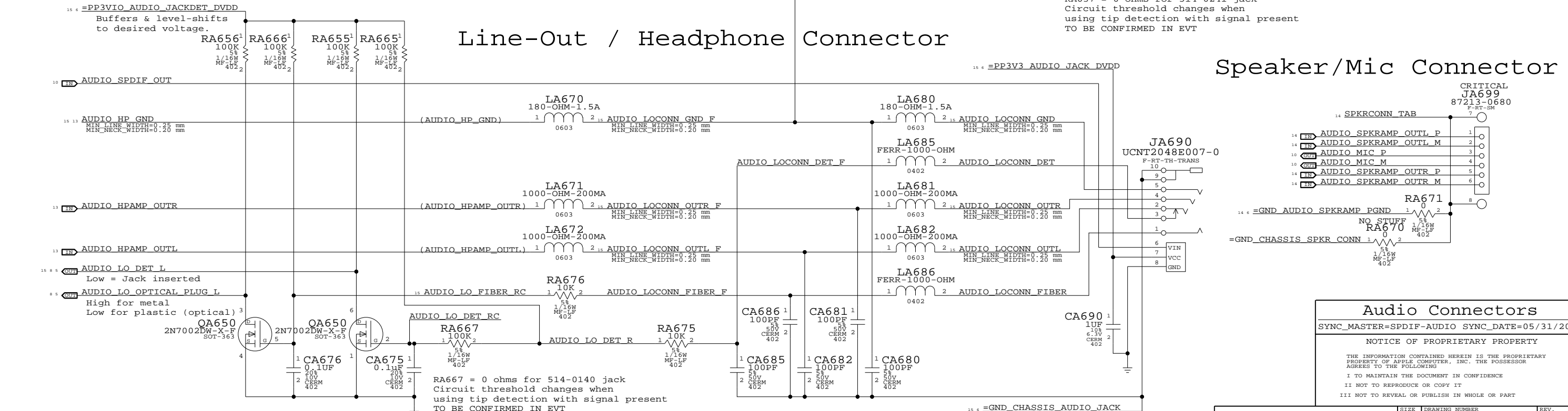
Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 - LIFILT_SHDN_LICONN
 Uses line-in connector optical plug detect to control line-in filter shutdown signal. When no cable or an optical cable is inserted, this signal will be low, so it can be used as an active-low shutdown for the line-in filter circuit.
 BOM option to be confirmed and made permanent in EVT

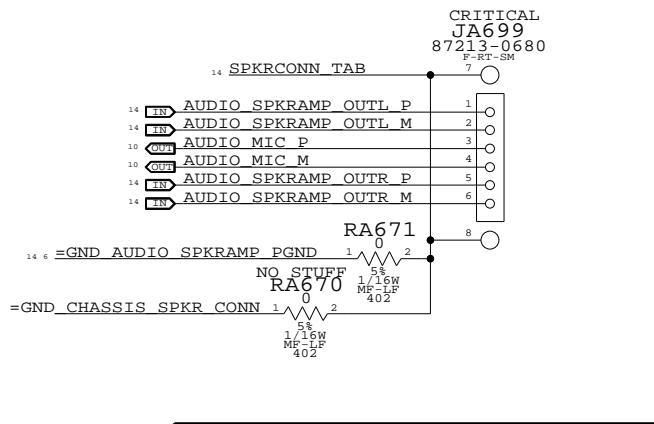
Line-In Connector



Line-Out / Headphone Connector



Speaker/Mic Connector



Audio Connectors
 SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-6847	02
SCALE	SHT	OF	
NONE		106	110

Page Notes

Power aliases required by this page:

- =PP5V_AUDIO4V2RUN
- =PP4V2_RUN_AUDIO_LDO
- =GND_AUDIO4V2RUN_SGND

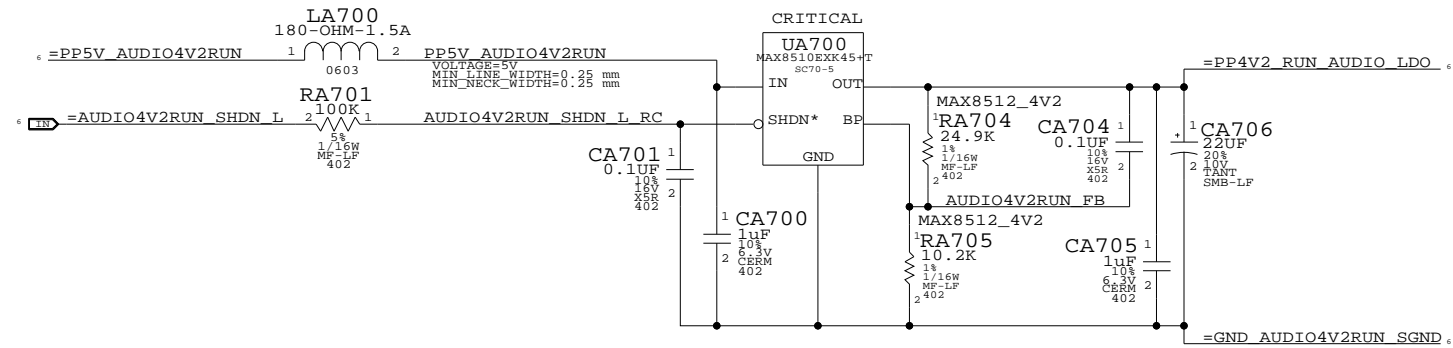
Signal aliases required by this page:

- =AUDIO4V2RUN_SHDN_L

BOM options provided by this page:

- MAX8512_4V2
- Used when MAX8512 is stuff at UA700
- MAX8512 is an adjustable regulator that needs RA704/705 to program Vout


Audio 4.5V LDO (CODEC)



UA700 to be verified and confirmed in proto
 Component option in order of preference
 -MAX8510EXK45-T(353S0960) 4.5V Fixed regulator
 -MAX8510EXK42-T (New part) 4.2V Fixed regulator
 -MAX8512EXK-T(353S1110) Adjustable regulator

Audio Power Supply
 SYNC_MASTER=SPDIF-AUDIO SYNC_DATE=05/31/2005

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	D	051-6847	02
SCALE	SHT		OF
NONE	107		110

SIGNAL CONSTRAINTS

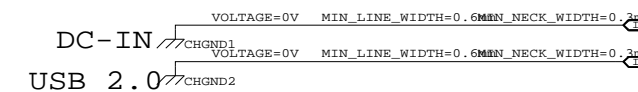
SIGNAL NAME	DIFF_PAIR	MATCHED_DELAY	MIN_LINE_WIDTH NET_PHYSICAL_TYPE	NET_SPACING_TYPE
USB_DM	USB_D1	USB_DM:J2500.46:L9301	1:0.5 USB2	USB2_PAIR
USB_DP	USB_D1	USB_DP:J2500.47:L9301	2:0.5 USB2	USB2_PAIR
USB_DM_EMI	USB_D1_EMI	USB_EMI_DM:L9301.4:J9300.2:0.5		USB2_EMI_PAIR
USB_DP_EMI	USB_D1_EMI	USB_EMI_DP:L9301.3:J9300.3:0.5		USB2_EMI_PAIR
I2SQ_MCLK	N/A	N/A	MIN_LINE_WIDTH=0.125MM	9 MIL SPACING

LAYER 4 (STRIP LINES)
E=3.8, W=3.9, B=8.7, T=0.7, S=5.6 (IN MIL)
ZSINGLE = 47.5 OHM
ZDIFF = 88.0 OHM

LAYER 2 (STRIP LINES)
E=3.8, W=4.7, H=3, T=0.7, S=12.3 (IN MIL)
ZSINGLE = 45.0 OHM
ZDIFF = 89.1 OHM

POWER NET CONSTRAINTS

GROUP	SIG_NAME	VOLTAGE	MIN_LINE_WIDTH	MIN_NECK_WIDTH
MAIN/SLEEP	+5V MAIN USB	VOLTAGE=5V	MIN_LINE_WIDTH=0.89mm	MIN_NECK_WIDTH=0.25mm
	+3V MAIN BT	VOLTAGE=3.3V	MIN_LINE_WIDTH=0.375mm	MIN_NECK_WIDTH=0.25mm
	+5V MAIN AUD	VOLTAGE=5V	MIN_LINE_WIDTH=0.600mm	MIN_NECK_WIDTH=0.25mm
	+3V MAIN AUD	VOLTAGE=3.3V	MIN_LINE_WIDTH=0.500mm	MIN_NECK_WIDTH=0.25mm
DC ADAPTER	+ADAPTER	VOLTAGE=24V	MIN_LINE_WIDTH=1.270mm	MIN_NECK_WIDTH=0.25mm
	+ADAPTER UF	VOLTAGE=24V	MIN_LINE_WIDTH=1.270mm	MIN_NECK_WIDTH=0.25mm
	+ADAPTER FUSE	VOLTAGE=24V	MIN_LINE_WIDTH=1.270mm	MIN_NECK_WIDTH=0.25mm
	ADAPTER GND	VOLTAGE=0V	MIN_LINE_WIDTH=1.270mm	MIN_NECK_WIDTH=0.25mm
	CHARGE_LED_D		MIN_LINE_WIDTH=0.375mm	MIN_NECK_WIDTH=0.25mm
	CHARGE_LED_S		MIN_LINE_WIDTH=0.375mm	MIN_NECK_WIDTH=0.25mm
	DC_PLUG_TIP		MIN_LINE_WIDTH=0.375mm	MIN_NECK_WIDTH=0.25mm
	DC_PLUG_TIP_UF		MIN_LINE_WIDTH=0.375mm	MIN_NECK_WIDTH=0.25mm
USB 2.0	+5V USB LEFT FLT	VOLTAGE=5V	MIN_LINE_WIDTH=0.890mm	MIN_NECK_WIDTH=0.25mm
	+5V USB LEFT	VOLTAGE=5V	MIN_LINE_WIDTH=0.890mm	MIN_NECK_WIDTH=0.25mm



SIGNAL & POWER CONSTRAINTS

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	SCALE	SHT	OF
	NONE	108	110

	8	7	6	5	4	3	2	1
D	<pre> *** Signal Cross-Reference for the entire design *** +SV_MAIN_AUD 1702> +SV_MAIN_BT 1702> +SV_MAIN_AUD 1702> +SV_MAIN_USB 1702> +SV_USB_LEFT 9C3> 1702> +SV_USB_LEFT_FLT 9C3> 1702> +ADAPTER 784< 704< 704< 886< 1702> +ADAPTER_PUSH 784< 1702> +ADAPTER_SF 787< 1702> +AUDIO4V2RIN_SHDN_L 6A5< 1404> +CS8416_GND 6A5< 12A1> +GND_AUDIO4V2RIN_GND 684< 10A4< 10A4< 10B1< 11B7< 13A8< +GND_AUDIO_CODEC_SND 684< 10A4< 10A4< 10B1< 11B7< 13A8< +GND_AUDIO_HPAMP_POND 684< 13A2< 13C6< +GND_AUDIO_MLBCONN_POND 681< 8C6< +GND_AUDIO_MLBCONN_SND 681< 8C6< +GND_AUDIO_SPKRAMP_POND 684< 14B8< 15A2> +GND_CHASSIS_AUDIO_JACK 684< 15A4< 15C7> +GND_CHASSIS_SVR_CONN 684< 15A2> +I2C_CS8416_SCL 685< 12A8> +I2C_CS8416_SDA 685< 12A8> +I2C_MLBCONN_SCL 688< 8C6> +I2C_MLBCONN_SDA 688< 8C6> +I2C_PCM3052_SCL 685< 10C7> +I2C_PCM3052_SDA 685< 10C7> +I2R_CS8416_BITCLK 688< 12C1> +I2R_CS8416_SYNC 688< 12C1> +I2R_I2SINX_DTI_IN 6A5< 12D5> +I2R_I2SINX_DTI_OUT 6A8< 12D5> +I2R_I2SMUX_MCLK_IN 685< 12C7> +I2R_I2SMUX_MCLK_OUT 6A8< 12C4> +I2R_PCM3052_BITCLK 685< 10C7> +I2R_PCM3052_DTI 6A8< 10C7> +I2R_PCM3052_DTO 6A5< 10C7> +I2R_PCM3052_MCLK 6A5< 10C7> +I2R_PCM3052_SYNC 685< 10C7> +PP3V3_AUDIO_CODEC_DVDD 6C1< 10D7> +PP3V3_AUDIO_I2SMUX_DVDD 6C1< 12C4< 12D5< 12D7> +PP3V3_AUDIO_JACK_DVDD 6B1< 15B4< 15D7> +PP3V3_AUDIO_SSP1PFX_DVDD 6C1< 12C6> +PP3V3_PWRON_AUDIO_MLBCONN_AVDD 6D4< 8C3> +PP3V3_SIN_AUDIO_MLBCONN_DVDD 6C4< 8C6> +PP3V3_AUDIO_JACKDET_DVDD 6C1< 15B8< 15D3> +PP4V2_AUDIO_CODEC_AVDD 6C1< 10D7< 11C7> +PP4V2_SIN_AUDIO_LDO 6C4< 14D3> +PP5V_AUDIO4V2RIN 6C1< 14D6> +PP5V_AUDIO_HPAMP_AVDD 6C1< 13D6> +PP5V_AUDIO_HPAMP_PVDD 6C1< 13D6> +PP5V_AUDIO_SPKRAMP_AVDD 6C1< 14C7> +PP5V_AUDIO_SPKRAMP_PVDD 6C1< 14C7> +PP5V_PWRON_AUDIO_MLBCONN_AVDD 6C4< 8C3> +PP5V_PWRON_AUDIO_MLBCONN_PVDD 6D4< 8C3> ADAPTER_DET_D 785< ADAPTER_DET_F 704< ADAPTER_DET_P 704< ADAPTER_DET_SF 786< ADAPTER_GND 787< 1702> ADAPTER_SIG 787< AUDIO4V2RIN_FB 16C4> AUDIO4V2RIN_SHDN_L_RC 14D5> AUDIO_CODEC_HP_OUTL_C 13B7> AUDIO_CODEC_HP_OUTR_C 13A7> AUDIO_CODEC_INL 10C1< 11C2> AUDIO_CODEC_INR 10C1< 11B2> AUDIO_CODEC_INREF 10C1< 11B2> AUDIO_CODEC_OUTL 10C1< 13B8< 14C8> AUDIO_CODEC_OUTR 10C1< 13A8< 14C8> AUDIO_CODEC_OUTL_C_R 13A6> AUDIO_CODEC_OUTR_C_R 13A6> AUDIO_CODEC_RESET_L 5C6< 8C3< 12C7> AUDIO_EXT_MCLK_SEL 5C6< 8C3< 12C4> 12C7> AUDIO_HPAMP_INL_M 13B4< 13C6> AUDIO_HPAMP_INR_M 13A4< 13C6> AUDIO_HPAMP_INL_P 13A4< 13C6> AUDIO_HPAMP_INR_P 13A4< 13C6> AUDIO_HPAMP_OUTL 13C1< 13D6< 15A8> AUDIO_HPAMP_OUTL_R 13B8< 13C1< 13D6> AUDIO_HPAMP_OUTR 13C1< 13D6< 15A8> AUDIO_HPAMP_OUTR_R 13A8< 13C1< 13D6> AUDIO_HP_GND 13A2< 13C2< 13C2< 15B8< 15D6> AUDIO_I2R_DTI_SEL 8C6< 8C3< 12D5> AUDIO_LI_CONN_DET 15D6> AUDIO_LI_CONN_DET_F 15D6> AUDIO_LI_CONN_FIBER 15C5> AUDIO_LI_CONN_FIBER_F 15C5> AUDIO_LI_CONN_GND 15D6> AUDIO_LI_CONN_GND_F 15A4> AUDIO_LI_CONN_INL 15C5> AUDIO_LI_CONN_INL_F 15C5> AUDIO_LI_CONN_INR 15C5> AUDIO_LI_CONN_INR_F 15C5> AUDIO_LIFILT_LP 11C4> AUDIO_LIFILT_RT 11C5> AUDIO_LIFILT_RT 11B4> AUDIO_LIFILT_RT_B 11B4> AUDIO_LIFILT_SHUTDOWN_L 10C1< 11C2< 15C1> AUDIO_LI_DET_L 5D6< 8C6< 15C1< 15C8> AUDIO_LI_DET_R 15C3> AUDIO_LI_DET_RC 15C3> AUDIO_LI_FIBER_RC 15C3> 15C8> AUDIO_LI_GND 11C7< 15C1> AUDIO_LI_INL 11C7< 15C1> AUDIO_LI_INL_C 11C5> AUDIO_LI_INL_C_R 11C4> AUDIO_LI_INR 11B7< 15C1> AUDIO_LI_INR_C 11B5> AUDIO_LI_INR_C_R 11B4> AUDIO_LI_OPTICAL_PLUG_L 5D6< 8C6< 15C1> AUDIO_LO_CONN_DET 15B4> AUDIO_LO_CONN_DET_F 15B4> AUDIO_LO_CONN_FIBER 15A4> AUDIO_LO_CONN_FIBER_F 15A4> AUDIO_LO_CONN_GND 15B4> 15D6> AUDIO_LO_CONN_GND_F 15B4> 15D6> AUDIO_LO_CONN_OUTL 15A4> 15D6> AUDIO_LO_CONN_OUTL_F 15A4> 15D6> AUDIO_LO_CONN_OUTR 15A4> 15D6> AUDIO_LO_CONN_OUTR_F 15A4> 15D6> AUDIO_LO_DET_L 5D6< 8C6< 15A8< 15C8> AUDIO_LO_DET_R 15A8> AUDIO_LO_DET_RC 15A8> AUDIO_LO_FIBER_RC 15A8> 15C8> AUDIO_LO_MUTE_L 5C6< 8C3< 13C6> AUDIO_LO_OPTICAL_PLUG_L 5B8< 8C6< 15A8> AUDIO_MIC_M 10A5< 15B2> AUDIO_MIC_P 10A5< 15B2> AUDIO_SSP1PFX_GND 5B6< 6A5< 8C3> AUDIO_SSP1PFX_RESET_L 5C6< 8C3< 12A8> AUDIO_SSP1PFX_RESET_L_P 12A7> AUDIO_SSP1P_IN 12B8< 15D1> AUDIO_SSP1P_OUT 10C7< 15B8> AUDIO_SSP1P_OUT_R 10C6> AUDIO_SPKRAMP_INL 14C5> AUDIO_SPKRAMP_INL_C 14C6> AUDIO_SPKRAMP_INR 14C5> AUDIO_SPKRAMP_INR_C 14C6> AUDIO_SPKRAMP_OUTL_M 14A1< 15B2> AUDIO_SPKRAMP_OUTL_P 14B1< 15B2> AUDIO_SPKRAMP_OUTR_M 14B1< 15A2> AUDIO_SPKRAMP_OUTR_P 14B1< 15B2> AUDIO_SPKRAMP_SHUTDOWN_L 14B6> AUDIO_SVR_MUTE_L 5C6< 8C3< 14B8> CHANGE_LED_D 7C4< 17D2> CHANGE_LED_DV 7C5> CHANGE_LED_L 7D4< 8D6> CHANGE_LED_L_RSD 7D5> CHANGE_LED_S 7C4< 17D2> CS8416_AZ 12A3> CS8416_FILT 12A4> CS8416_FILT_RC 12A5> CS8416_RESET 12A6> CS8416_RESET_L 12A5> CS8416_RSN 12B4> CS8416_RSQ 12B4> SCL_PLUG_TIP 787< 17D2> SCL_PLUG_TIP_SF 784< 17D2> GND_AUDIO_HP_STAR_GND_XM 13A4> GND_AUDIO_SND 5C6< 6B3 GND_AUDIO_SPKRAMP_POND 6B3 I2C_AUDIO_SCL 5C6< 6B7 I2C_AUDIO_SDA 5C6< 6B7 I2SM_MCLK 17C5> I2R_BITCLK 5C6< 6B8< 8C5< 8D6> </pre>		<pre> I2R_CS8416_BITCLK_M 12B1> 12C4> I2R_CS8416_BITCLK_R 12C2> 12D6> I2R_CS8416_DTI 12B1> 12D5< 12D6> I2R_CS8416_DTI_L 12B2> 12D6> I2R_CS8416_DTI_R 12B2> 12D6> I2R_CS8416_RMCK 12B1> 12C7> 12D6> I2R_CS8416_SYNC_M 12B1> 12C4> I2R_CS8416_SYNC_R 12C2> 12D6> I2R_DEV_TO_DEV_DTI 5C8< 6A5< 8C3< 8D6> I2R_I2SMUX_DTI_OUT_L 11D3> 12D6> I2R_I2SMUX_MCLK_OUT_R 12C5< 12D6> I2R_MCLK 5C6< 6B8< 8C3< 8D6> I2R_PCM3052_DTI 6A7 I2R_PCM3052_DTI_R 10C6< 10D6> I2R_PCM3052_MCLK 6A7 I2R_SIN_TO_DEV_DTO 5C8< 6A8< 8C3< 8D6> I2R_SYNC 6B8< 8C6> MAX9715_BIAS 14C4> MAX9722_CIR 13C3> MAX9722_CIP 13C3> MAX9722_PVSS 13C3> PCM3052_L1N_SHUTDOWN_L 10C4> PCM3052_MIC_BIAS 10C4> PCM3052_MIC_M 10C4> PCM3052_MIC_R 10A4> PCM3052_MIC_P 10C4> PCM3052_VDDM 10C1> PCM3052_VREF1 10C4> PCM3052_VREF2 10C4> PP3V3_AUDIO_CS8416_VA 12B4> PP3V3_CS8416_VD 12C4> PP3V3_PCM3052_DVDD 12D6> PP3V3_PWRON_AUDIO_AVDD 5B6< 6D2> PP3V3_SIN_AUDIO_DVDD 6A8< 6C3 PP4V2_SIN_AUDIO_AVDD 6C3 PP5V_AUDIO4V2RIN 14D5> PP5V_AUDIO_HPAMP_AVDD_P 13D5> PP5V_AUDIO_HPAMP_PVDD 6C1> PP5V_AUDIO_HPAMP_PVDD_F 13D5> PP5V_AUDIO_HPAMP_VDD_F_R 13D4> PP5V_AUDIO_SPKRAMP_AVDD_LC 14C5> PP5V_AUDIO_SPKRAMP_PVDD 6D3 PP5V_PWRON_AUDIO_AVDD 5B6< 6C3> SPKRAMP_OUTL_SEL 14C5> SPKRAMP_OUTL_ML 14A3< 14C2> SPKRAMP_OUTL_PL 14B3< 14C2> SPKRAMP_OUTR_ML 14B3< 14C2> SPKRAMP_OUTR_PL 14B3< 14C2> SPKRAMP_TAB 14A3< 14B3< 14B3< 14B3< 15B2> STANDOFF1 2C3> STANDOFF2 2C2> USB_DM 8C3> 9B6< 17D5> USB_DM_DMI 9B4< 17D5> USB_DP 8C3> 9B6< 17D5> USB_DM_DMI 9B4< 17D5> USB_GND 9B4> USB_PPON<1> 9C5< </pre>		D			
C								
B								
A								

	8	7	6	5	4	3	2	1
D	<p>*** Part Cross-Reference for the entire design ***</p> <p>R82 PCB_STANDOFF 2 R83 PCB_STANDOFF 2 C1200 CAP 7 C1201 CAP 7 C1202 CAP 7 C1203 CAP 7 C1204 CAP 7 C1205 CAP 7 C1206 CAP 7 C2501 CAP 8 C9300 CAP 9 C9301 CAP 9 C9302 CAP 9 C9303 CAP_P 9 C9304 CAP 9 C9305 CAP 9 C9306 CAP 9 C9307 CAP 9 CA000 CAP 10 CA001 CAP 10 CA002 CAP 10 CA005 CAP 10 CA010 CAP 10 CA011 CAP 10 CA020 CAP_P 10 CA021 CAP 10 CA022 CAP_P 10 CA023 CAP 10 CA024 CAP_P 10 CA025 CAP 10 CA030 CAP 10 CA035 CAP 10 CA036 CAP 10 CA100 CAP 11 CA110 CAP 11 CA115 CAP 11 CA120 CAP 11 CA125 CAP 11 CA200 CAP 12 CA201 CAP 12 CA210 CAP_P 12 CA211 CAP 12 CA212 CAP 12 CA220 CAP 12 CA221 CAP 12 CA228 CAP 12 CA229 CAP 12 CA270 CAP 12 CA280 CAP 12 CA290 CAP 12 CA400 CAP 13 CA401 CAP 13 CA402 CAP 13 CA403 CAP 13 CA404 CAP 13 CA405 CAP_P 13 CA415 CAP 13 CA416 CAP 13 CA417 CAP 13 CA418 CAP_P 13 CA470 CAP_P 13 CA472 CAP 13 CA473 CAP 13 CA480 CAP_P 13 CA482 CAP 13 CA483 CAP 13 CA500 CAP 14 CA510 CAP 14 CA515 CAP 14 CA516 CAP 14 CA550 CAP 14 CA580 CAP_P 14 CA590 CAP 14 CA591 CAP 14 CA592 CAP 14 CA593 CAP 14 CA600 CAP 15 CA601 CAP_P 15 CA610 CAP 15 CA611 CAP 15 CA612 CAP 15 CA615 CAP 15 CA616 CAP 15 CA625 CAP 15 CA626 CAP 15 CA675 CAP 15 CA676 CAP 15 CA680 CAP 15 CA681 CAP 15 CA682 CAP 15 CA685 CAP 15 CA686 CAP 15 CA690 CAP 15 CA700 CAP 16 CA701 CAP 16 CA704 CAP 16 CA705 CAP 16 CA706 CAP_P 16 DI200 DIENER 7 DE0410 SUPPR_TRANSIENT_491 15 DE0450 SUPPR_TRANSIENT_491 15 F1200 FUSE 7 J1200 CON_F8RT_SMT_TH3 7 J2500 CON_MS08M_SMM 8 J2501 CON_M48T_E_SM 8 J9300 CON_F48T_USR_SMT_TH 9 JA600 CON_F8RT_SSD1PFCVW_TH2 15 JA690 CON_F8RT_SSD1PFCVW_TH2 15 KA690 CON_F8RT_SMT_TH 15 L1200 IND 7 L1201 IND 7 L1202 IND 7 L1203 IND 7 L9300 IND 9 L9301 FILTER_4P 9 LA005 IND 10 LA200 IND 12 LA200 IND 12 LA400 IND 13 LA405 IND 13 LA500 IND 14 LA501 IND 14 LA502 IND 14 LA503 IND 14 LA505 IND 14 LA510 IND 15 LA611 IND 15 LA612 IND 15 LA615 IND 15 LA616 IND 15 LA620 IND 15 LA621 IND 15 LA622 IND 15 LA670 IND 15 LA671 IND 15 LA672 IND 15 LA680 IND 15 LA681 IND 15 LA682 IND 15 LA685 IND 15 LA686 IND 15 LA700 IND 16 Q1200 TRA_2N7002 7 Q1201 TRA_2N7002ZW 7 QA355 TRA_2N7002ZW 13 QA610 TRA_2N7002ZW 15 QA640 TRA_2N7002ZW 15 QA650 TRA_2N7002ZW 15 R1200 RES 7 R1201 RES 7 R1202 RES 7 R1203 RES 7 R1204 RES 7 R1205 RES 7 R1206 RES 7 R1207 RES 7 R1208 RES 7 R1209 RES 7 R9300 RES 9 R9301 RES 9 R9302 RES 9 R9303 RES 9 R9304 RES 9 RA010 RES 10</p>		<p>RA011 RES 10 RA012 RES 10 RA020 RES 10 RA021 RES 10 RA030 RES 10 RA031 RES 10 RA032 RES 10 RA033 RES 10 RA034 RES 10 RA100 RES 11 RA110 RES 11 RA111 RES 11 RA112 RES 11 RA115 RES 11 RA116 RES 11 RA120 RES 11 RA121 RES 11 RA122 RES 11 RA125 RES 11 RA126 RES 11 RA210 RES 12 RA228 RES 12 RA230 RES 12 RA231 RES 12 RA232 RES 12 RA233 RES 12 RA234 RES 12 RA240 RES 12 RA241 RES 12 RA242 RES 12 RA243 RES 12 RA250 RES 12 RA251 RES 12 RA255 RES 12 RA256 RES 12 RA270 RES 12 RA271 RES 12 RA280 RES 12 RA281 RES 12 RA285 RES 12 RA291 RES 12 RA295 RES 12 RA405 RES 13 RA410 RES 13 RA420 RES 13 RA421 RES 13 RA425 RES 13 RA426 RES 13 RA470 RES 13 RA471 RES 13 RA472 RES 13 RA475 RES 13 RA476 RES 13 RA478 RES 13 RA480 RES 13 RA481 RES 13 RA482 RES 13 RA485 RES 13 RA486 RES 13 RA555 RES 14 RA566 RES 14 RA567 RES 14 RA525 RES 15 RA626 RES 15 RA635 RES 15 RA637 RES 15 RA645 RES 15 RA646 RES 15 RA647 RES 15 RA655 RES 15 RA656 RES 15 RA666 RES 15 RA667 RES 15 RA670 RES 15 RA671 RES 15 RA675 RES 15 RA676 RES 15 RA701 RES 16 RA704 RES 16 RA705 RES 16 SP1 SPRING_CLIP_IP_BMI 2 SP2 SPRING_CLIP_IP_BMI 2 SP3 SPRING_CLIP_IP_BMI 2 SP4 SPRING_CLIP_IP_BMI 2 U9300 SMT_MIC2025 9 UA000 AUDDI_PCM3052A 10 UA100 OPAOP_MAK4253 11 UA200 CS8416_SOFT 12 UA270 SN74VVC0120VZA 12 UA280 SN74VVC0157VZA 12 UA290 SN74VVC0157VZA 12 UA400 MAX9722 13 UA500 MAX9715 14 UA501 MAX4721 14 UM700 MA65510 16 XMA101 SHORT 6 XMA480 SHORT 13 T12 MICROBLE 2 T20200 MICROBLE 2</p>		D			
C								
B								
A								
	8	7	6	5	4	3	2	1