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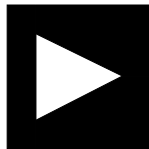
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# ADSP-21489 EZ-BOARD SCHEMATIC



**ANALOG  
DEVICES**

20 Cotton Road  
Nashua, NH 03063  
PH: 1-800-ANALOGD

Title ADSP-21489 EZ-BOARD  
TITLE

Size C	Board No. A0228-2009	Rev 0.1B
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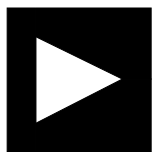
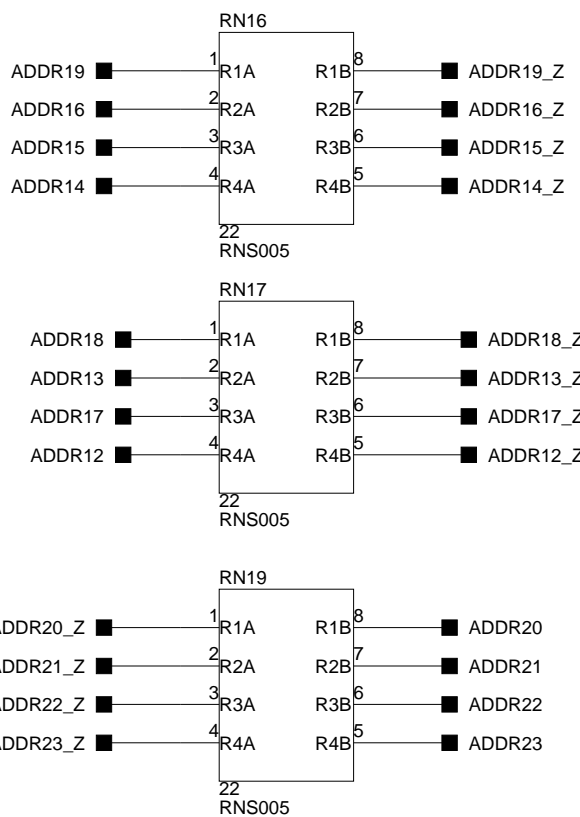
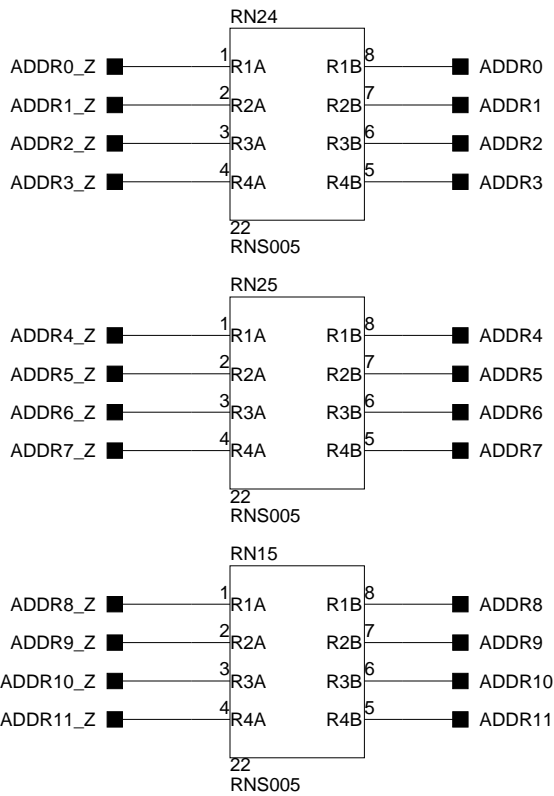
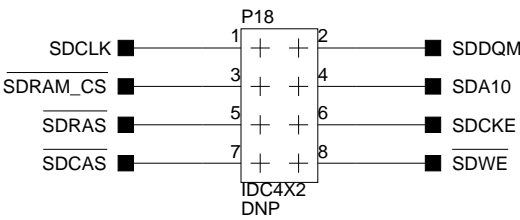
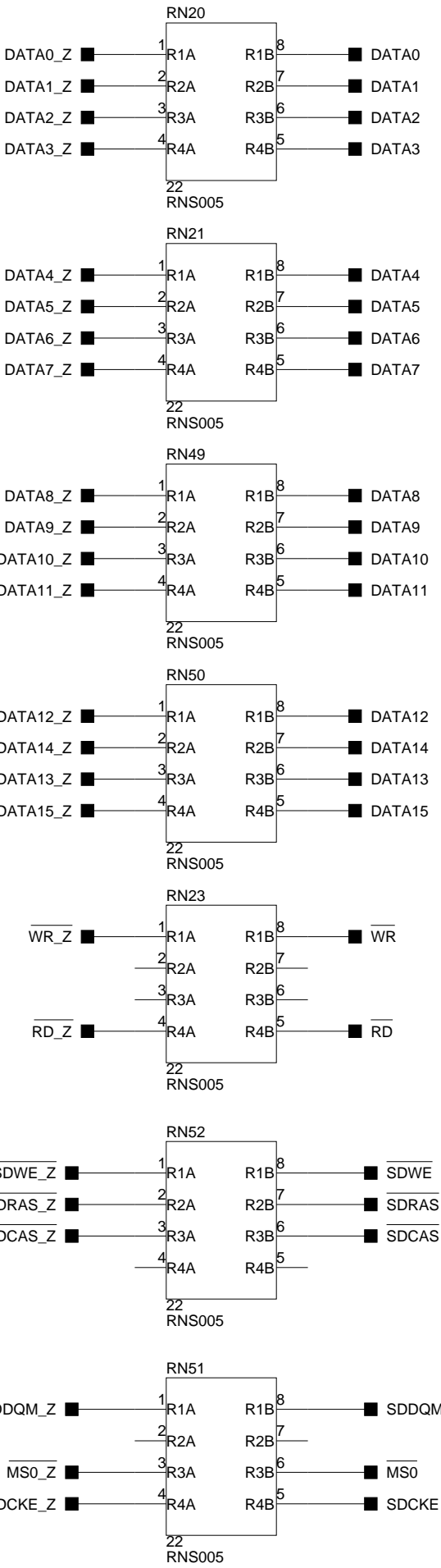
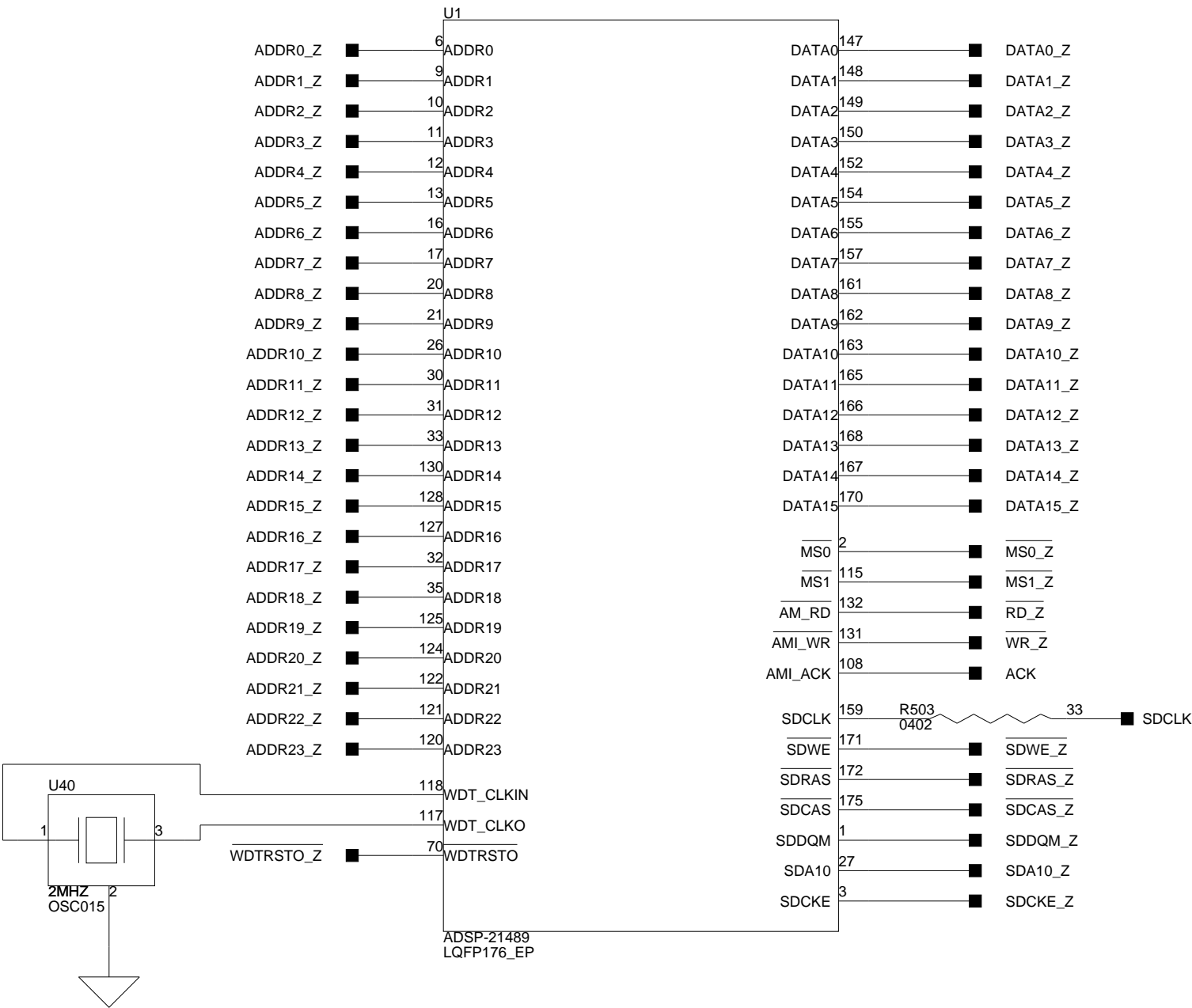
Date 3-18-2010_13:41	Sheet 1 of 16
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**ANALOG  
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20 Cotton Road  
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Title **ADSP-21489 EZ-BOARD  
DSP - EXTERNAL PORT**

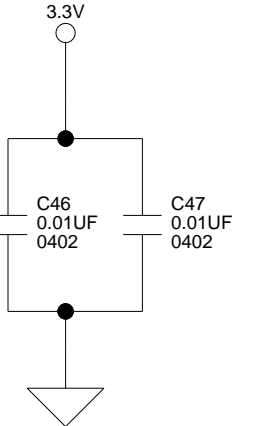
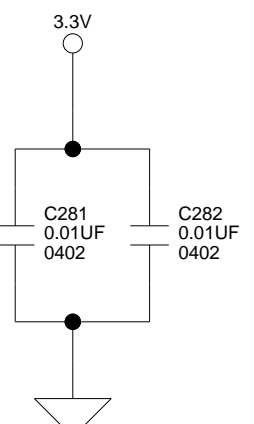
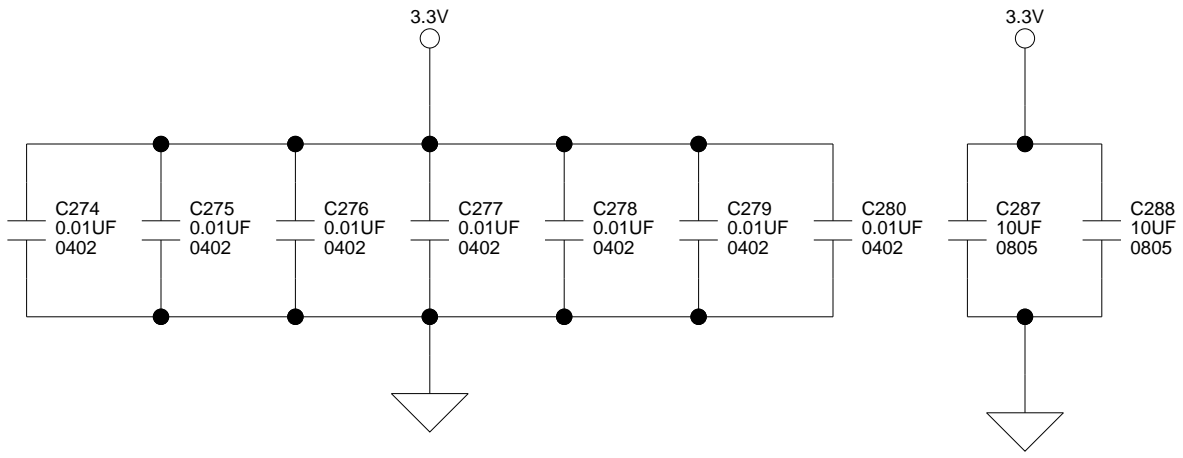
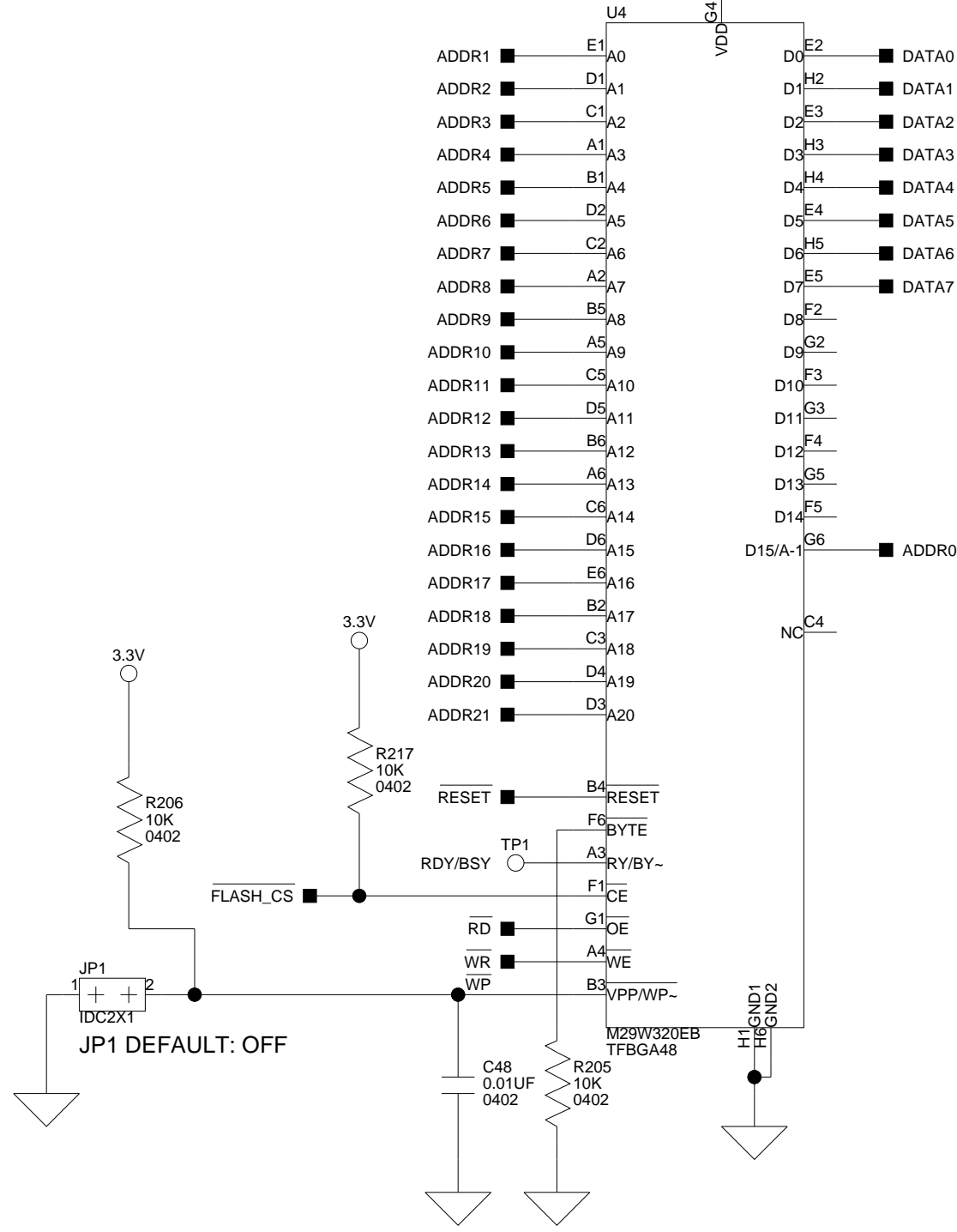
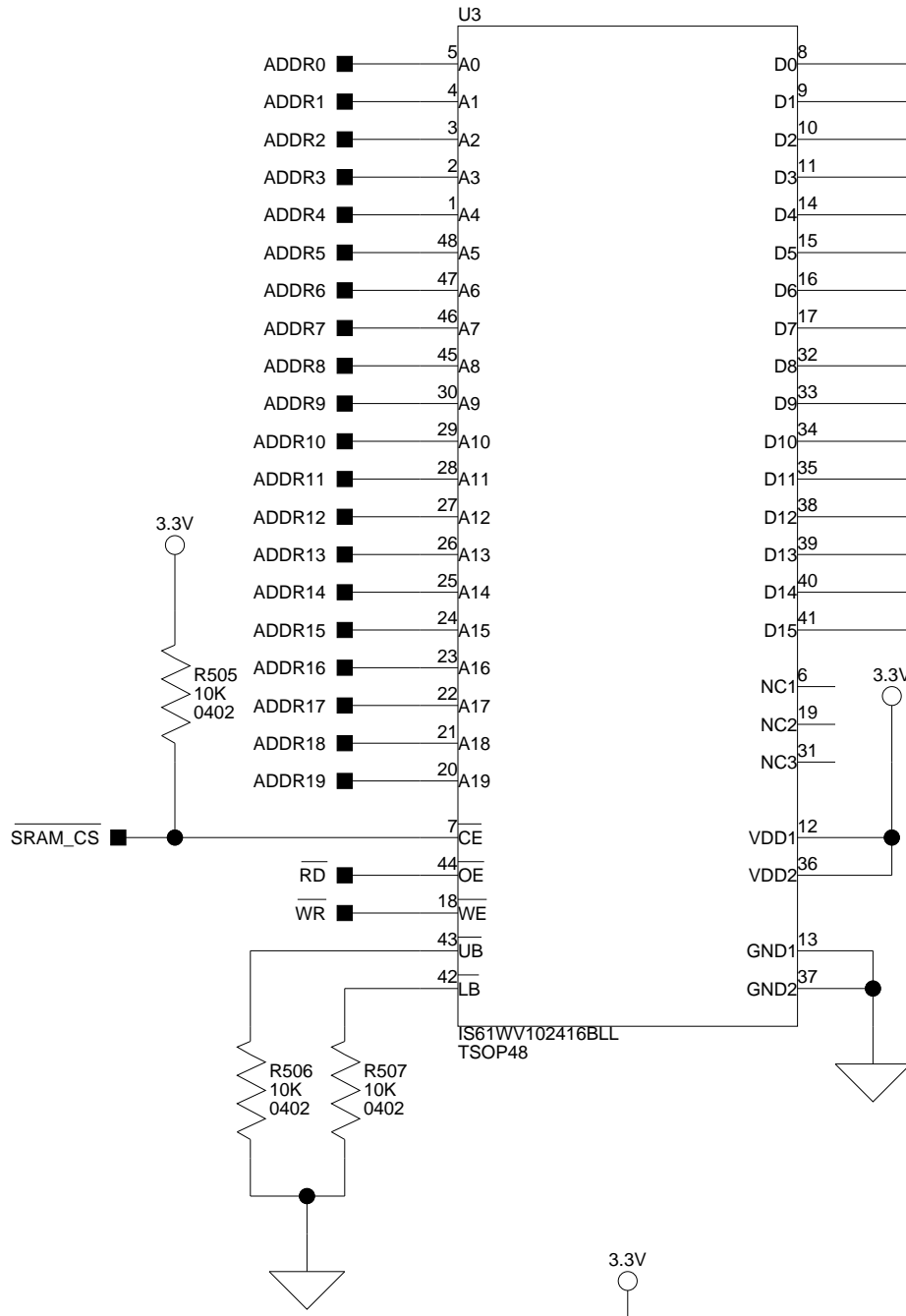
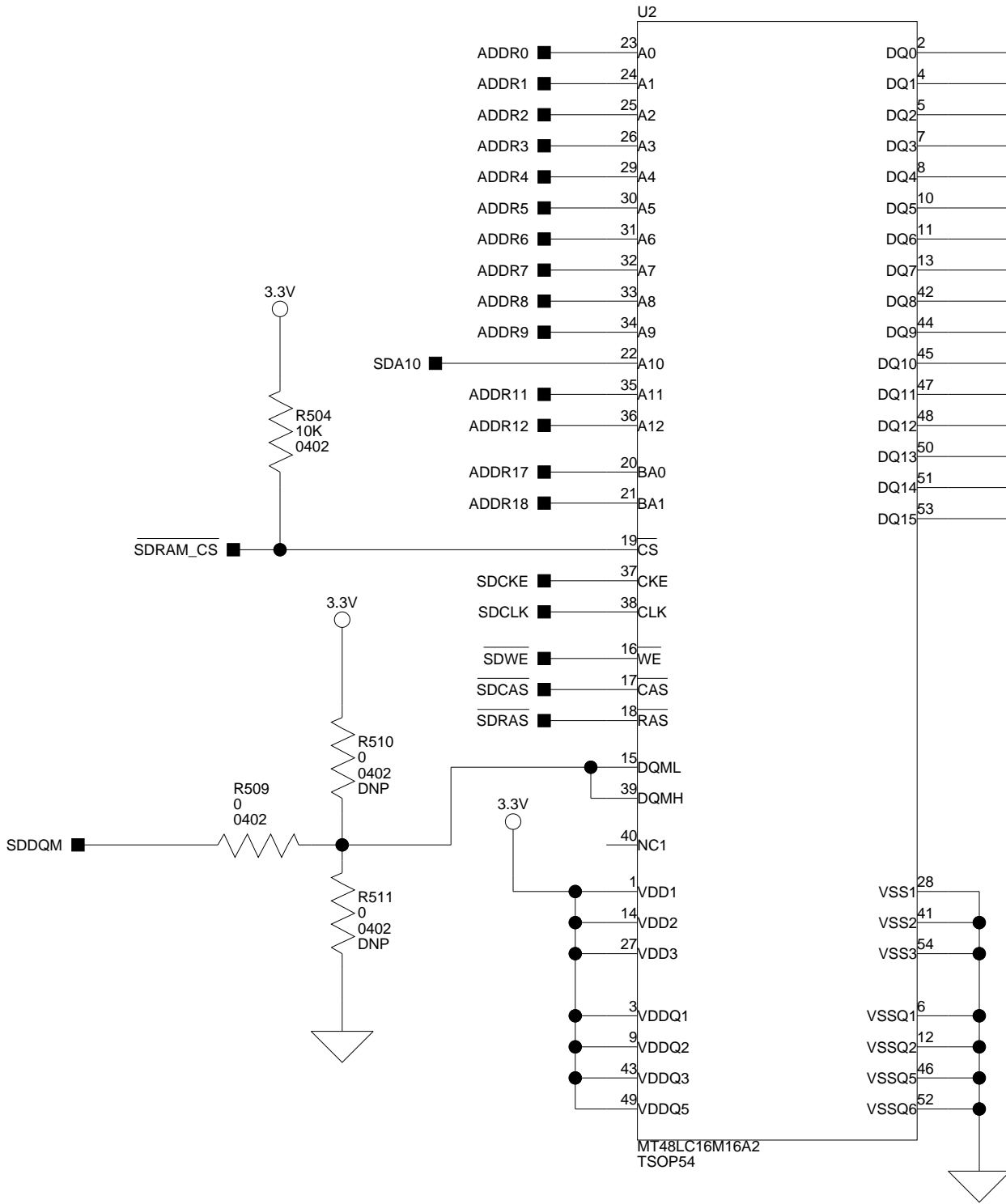
Size C	Board No. <b>A0228-2009</b>	Rev 0.1B
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Date	3-18-2010_13:45	Sheet	2	of	16
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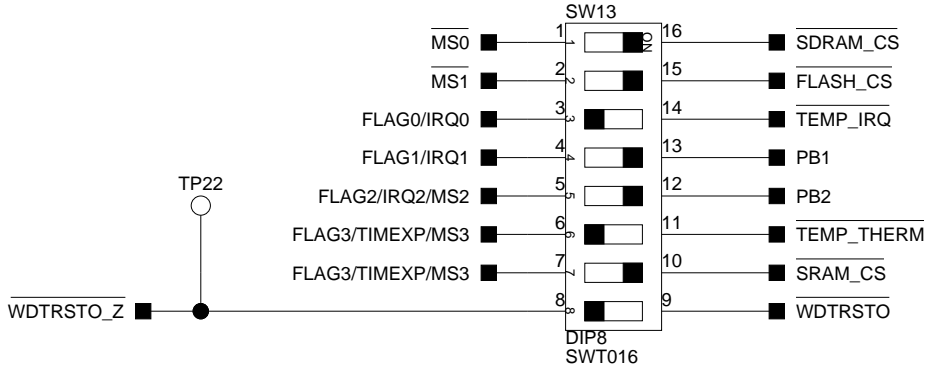
32MB SDRAM  
(4 Mbit X 16 X 4 banks)

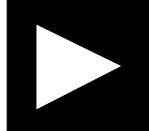
2MB SRAM  
(1 Mbit X 16)

4MB FLASH  
(4 Mbit X 8)



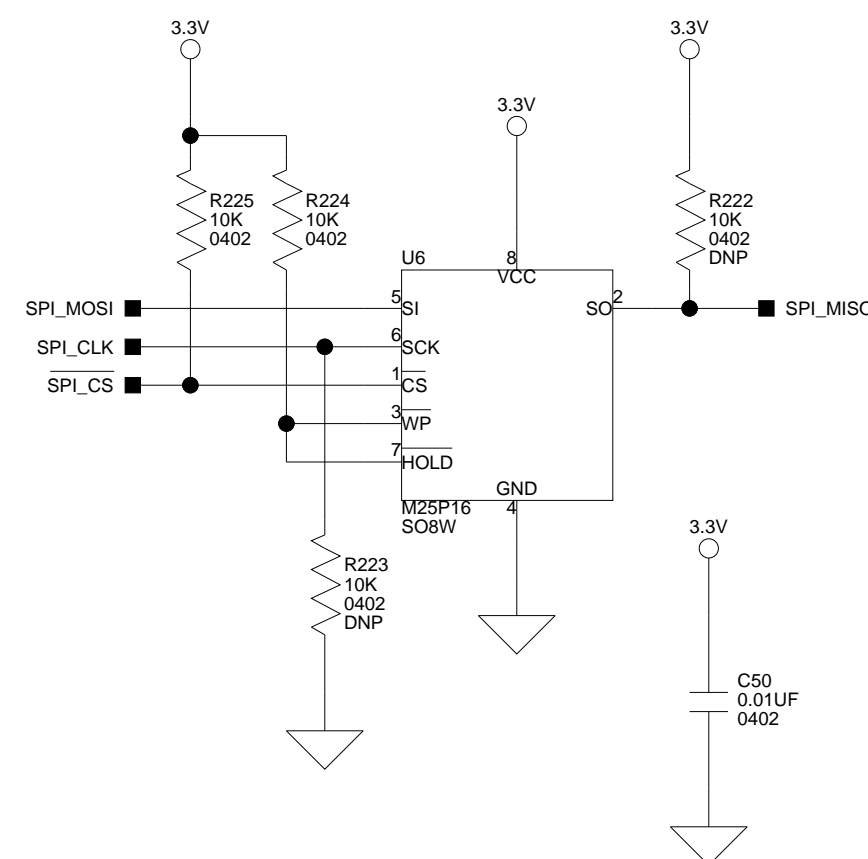
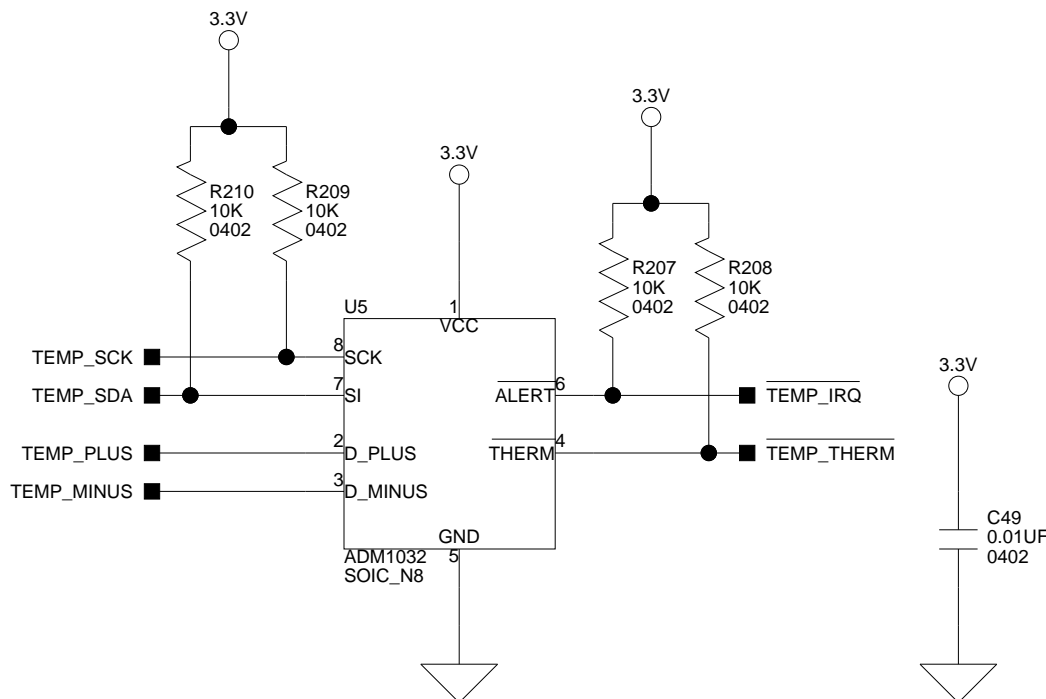
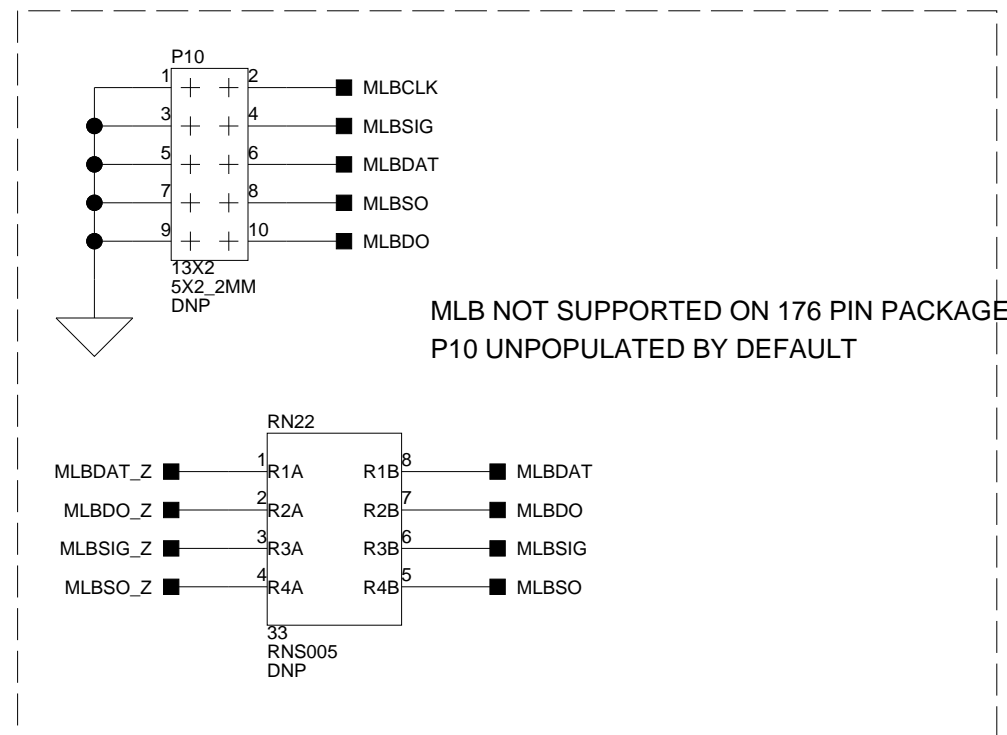
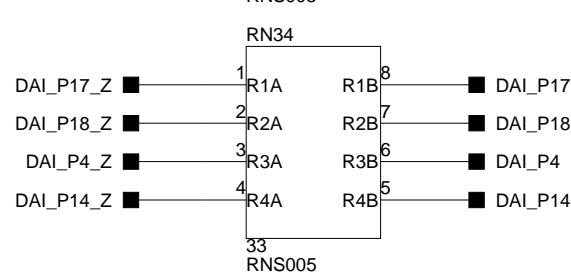
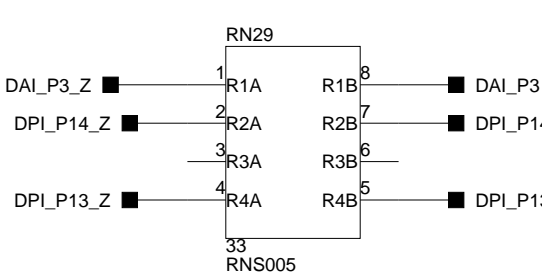
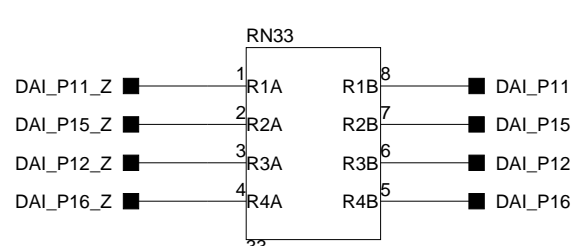
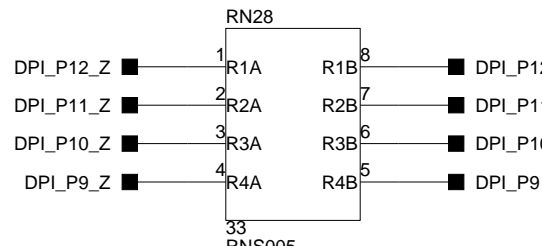
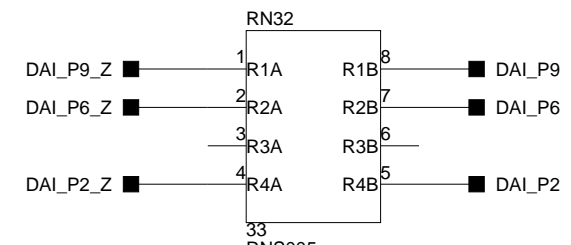
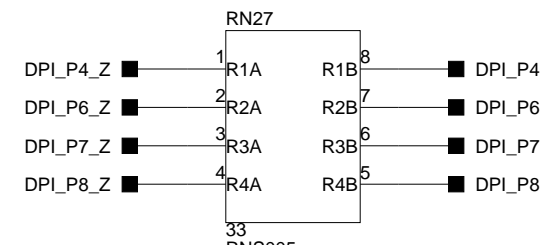
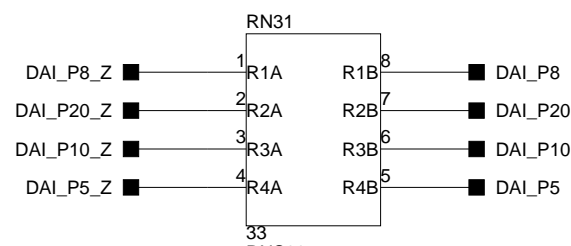
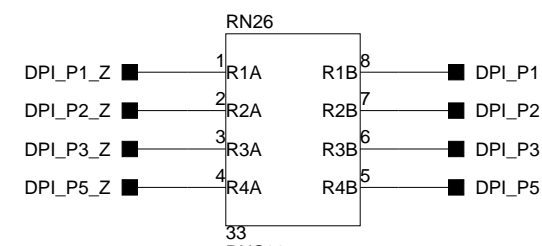
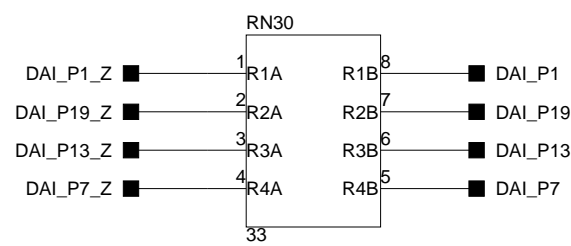
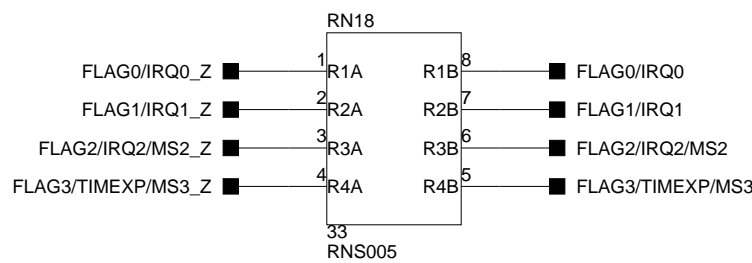
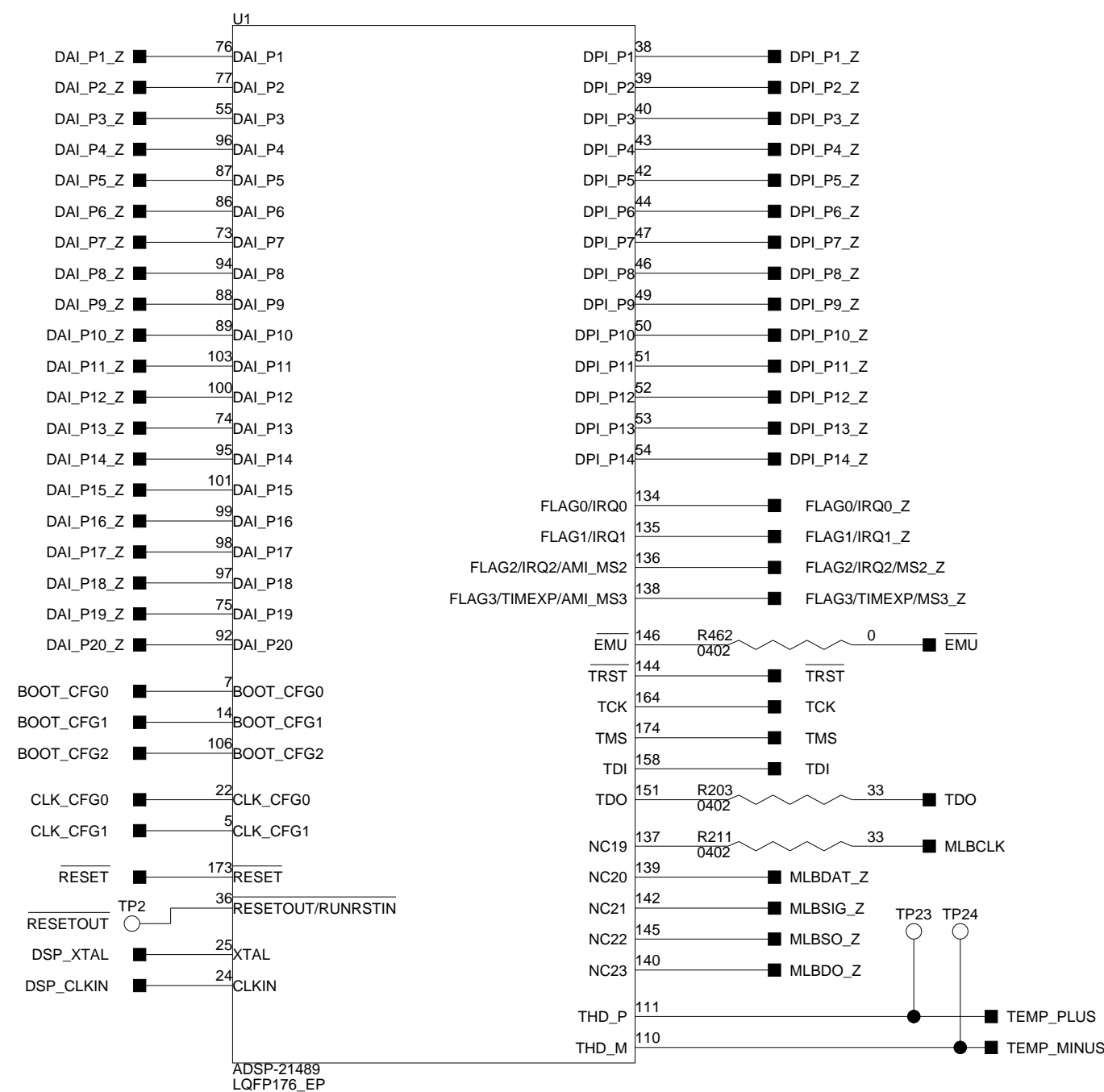
SW13: EXTERNAL PORT ENABLE  
DEFAULT: ON ON OFF ON ON OFF





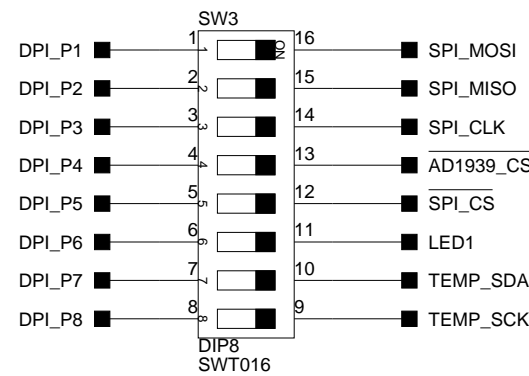
20 Cotton Road  
Nashua, NH 03063  
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Title ADSP-21489 EZ-BOARD MEMORY - PARALLEL		
Size C	Board No. A0228-2009	Rev 0.1B
Date 3-18-2010_13:45	Sheet 3 of 16	

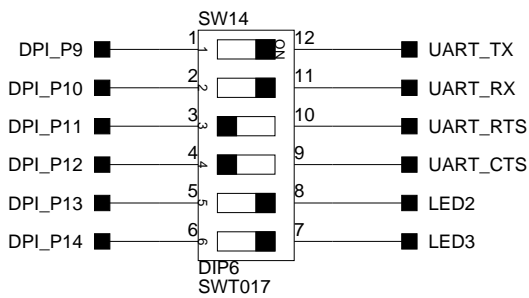


NOTE: SHUTTING OFF DIP SWITCHES SW1, SW2, SW3  
SW7, OR SW14 ALLOWS A USER TO USE THESE DAI OR  
DPI PINS VIA THE EXPANSION II INTERFACE.

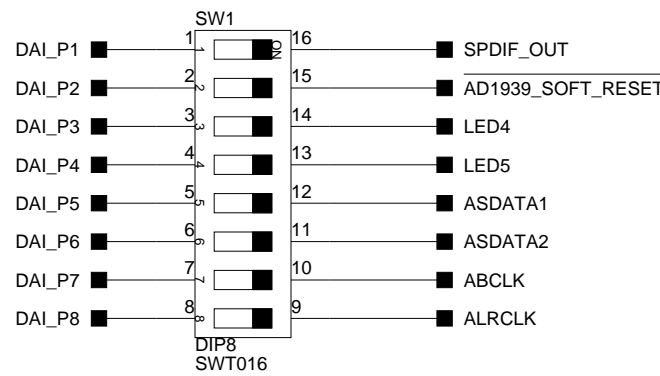
SW3: DPI [1-8] ENABLE  
DEFAULT: ALL ON



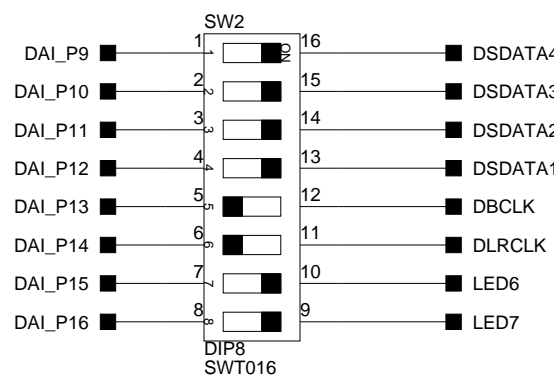
SW14: DPI [9-14] ENABLE  
DEFAULT: ALL ON EXCEPT POS 3 & 4 OFF



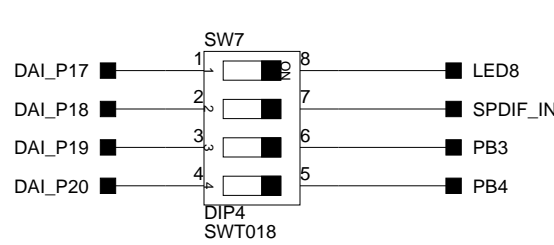
SW1: DAI [1-8] ENABLE  
DEFAULT: ALL ON



SW2: DPI [9-16] ENABLE  
DEFAULT: ALL ON EXCEPT POS. 5 & 6 OFF



SW7: DPI [17-20] ENABLE  
DEFAULT: ALL ON



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Title **ADSP-21489 EZ-BOARD  
DSP - DAI, DPI, MLB INTERFACES**

Size C	Board No. <b>A0228-2009</b>	Rev 0.1B
Date 3-18-2010_13:45	Sheet 4 of	16

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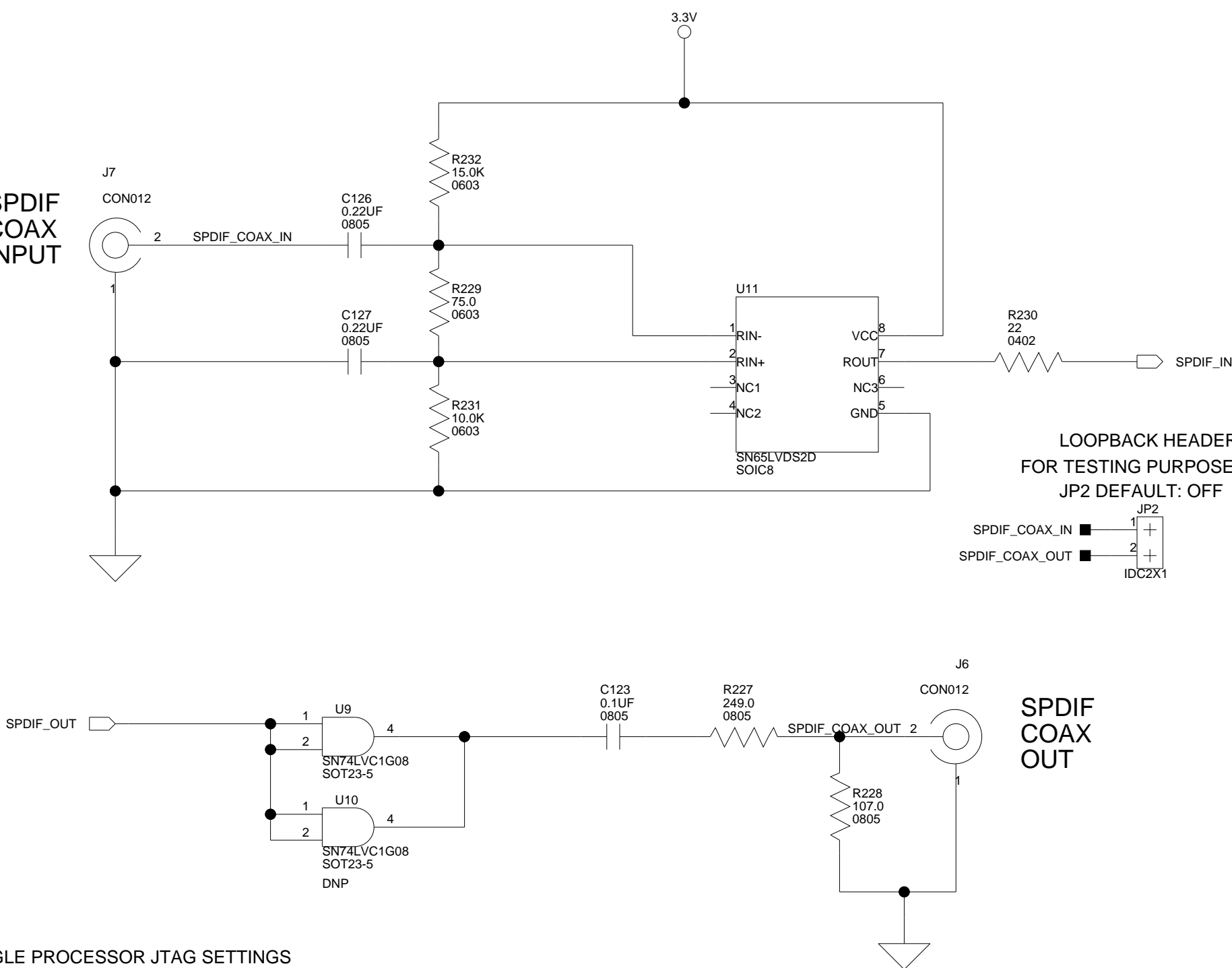
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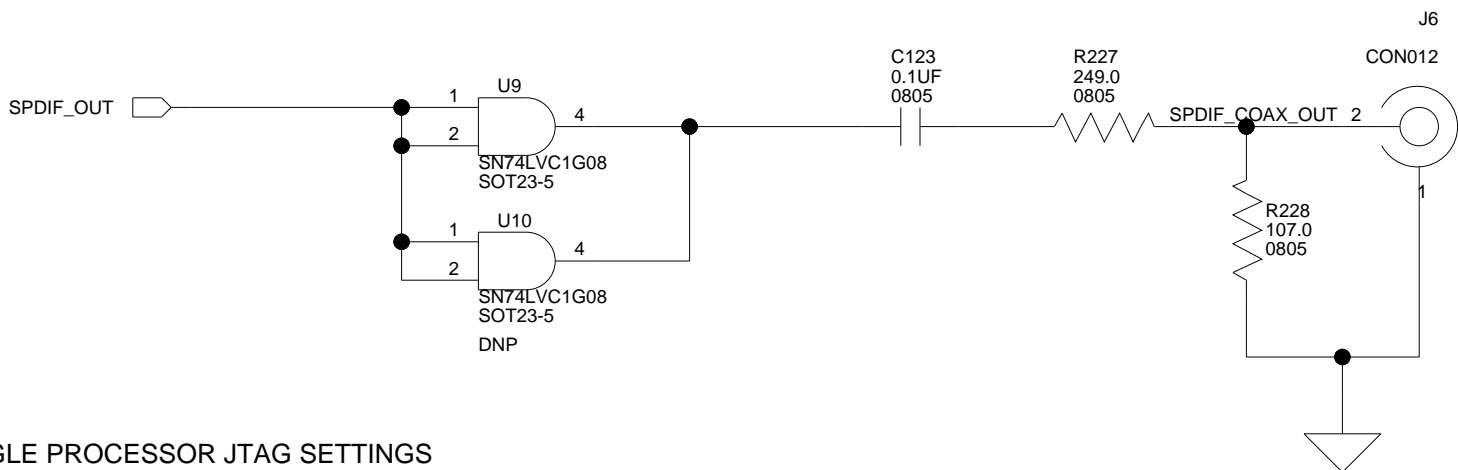
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## SPDIF COAX INPUT



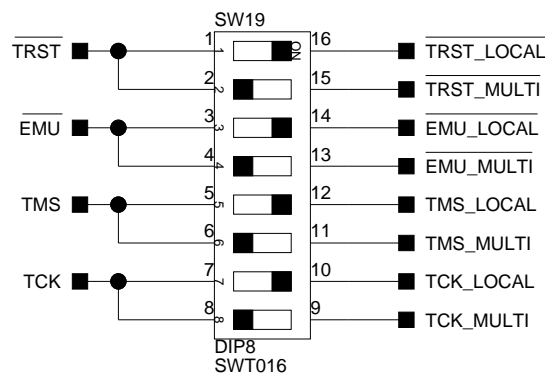
## SPDIF COAX OUT



### SINGLE PROCESSOR JTAG SETTINGS VIA HP-USB EMULATOR OR DEBUG AGENT (DEFAULT)

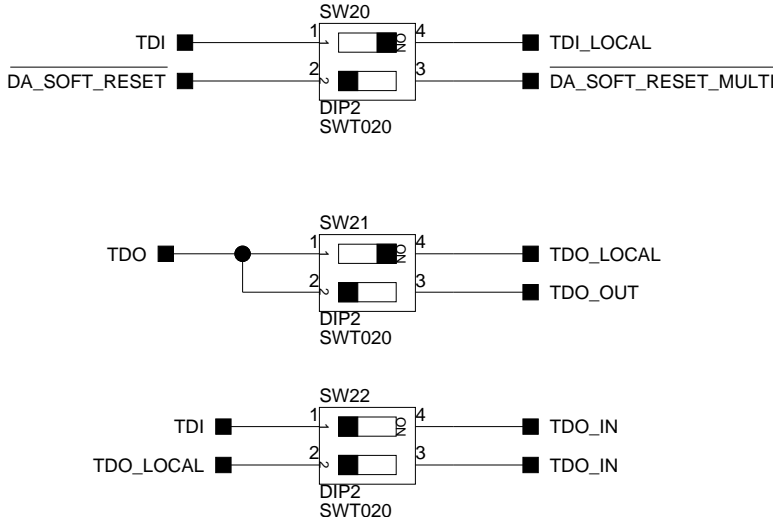
SWITCH	BOARD ATTACHED TO EMULATOR
SW19.1	ON
SW19.2	OFF
SW19.3	ON
SW19.4	OFF
SW19.5	ON
SW19.6	OFF
SW19.7	ON
SW19.8	OFF
SW20.1	ON
SW20.2	OFF
SW21.1	ON
SW21.2	OFF
SW22.1	OFF
SW22.2	OFF

### JTAG SWITCHES

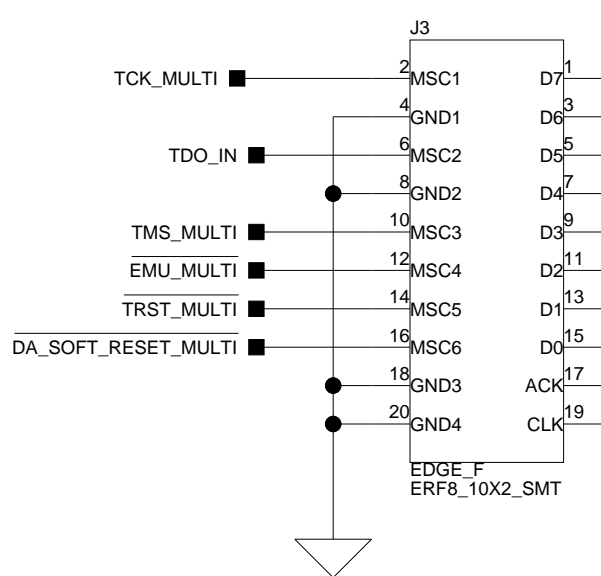


### MULTI PROCESSOR JTAG SETTINGS VIA HP-USB EMULATOR USING TWO OR MORE EZ-BOARDS (LINK PORT CABLES REQUIRED FOR MORE THAN TWO BOARDS)

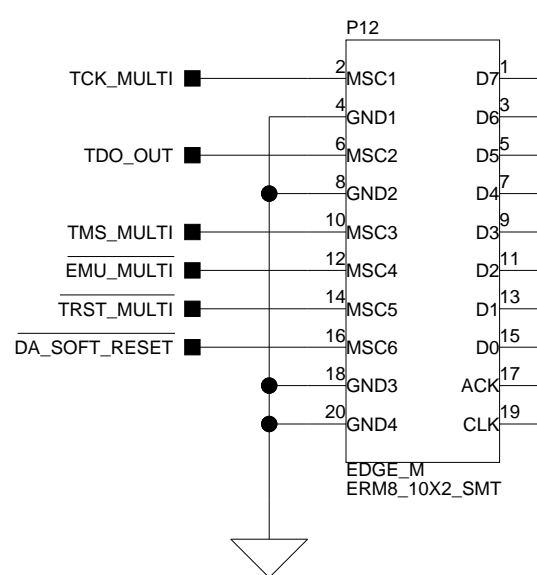
SWITCH	BOARD ATTACHED TO EMULATOR	BOARD(S) NOT ATTACHED TO EMULATOR
SW19.1	ON	OFF
SW19.2	ON	ON
SW19.3	ON	OFF
SW19.4	ON	ON
SW19.5	ON	OFF
SW19.6	ON	ON
SW19.7	ON	OFF
SW19.8	ON	ON
SW20.1	ON	OFF
SW20.2	OFF	OFF
SW21.1	OFF	OFF
SW21.2	ON	ON
SW22.1	OFF	ON
SW22.2	ON	OFF



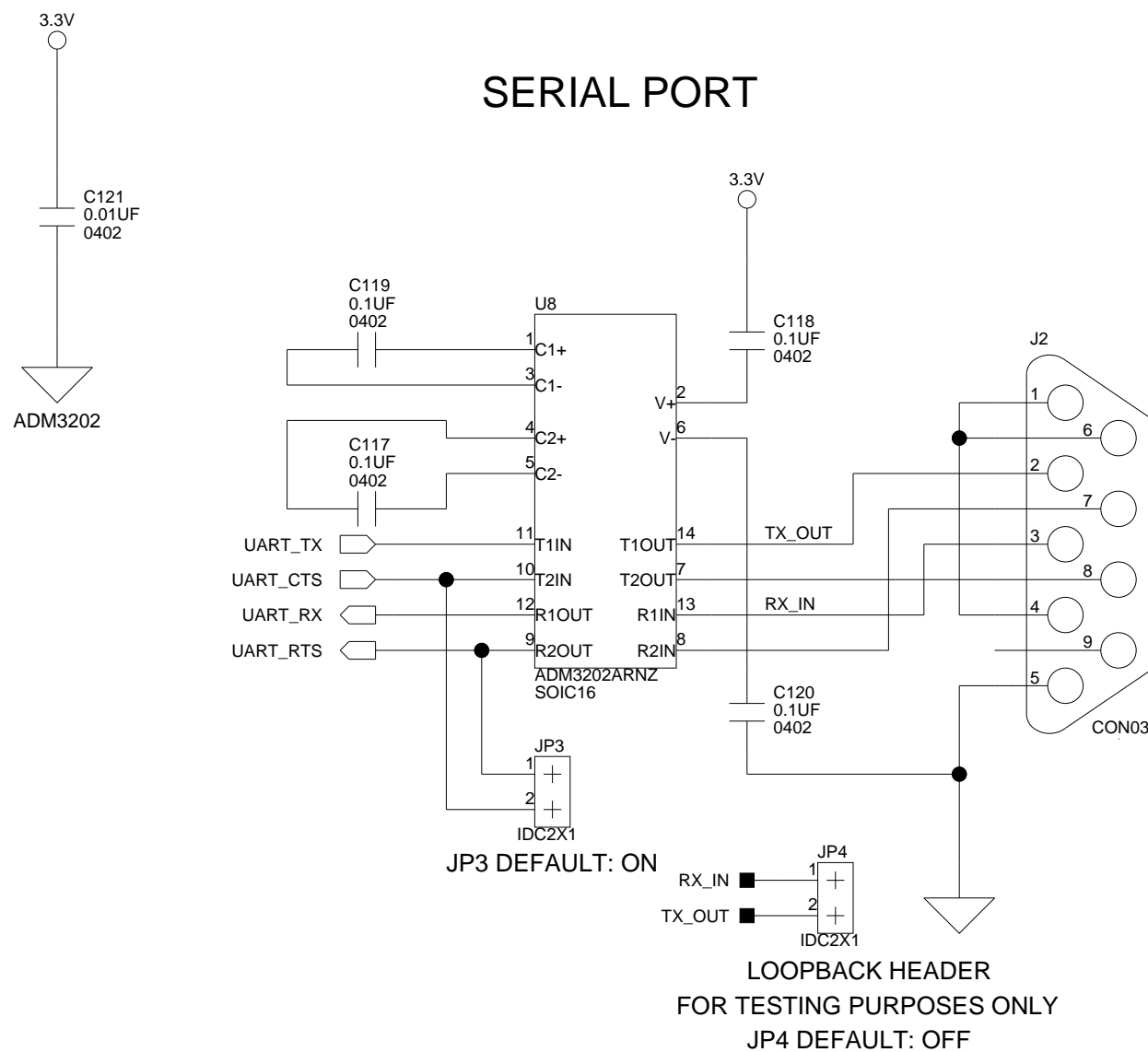
### JTAG IN



### JTAG OUT



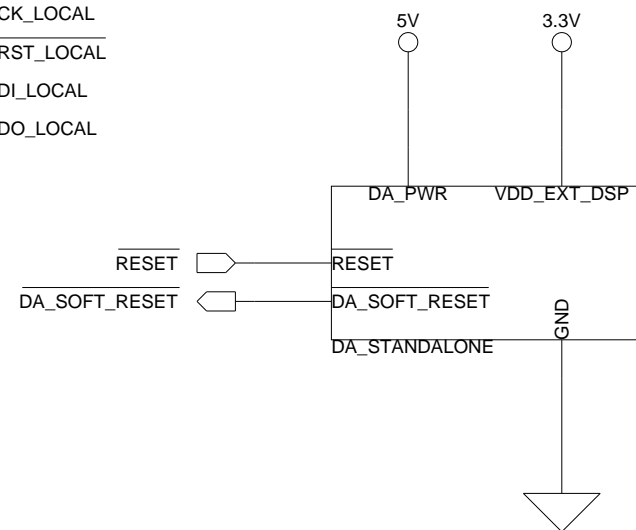
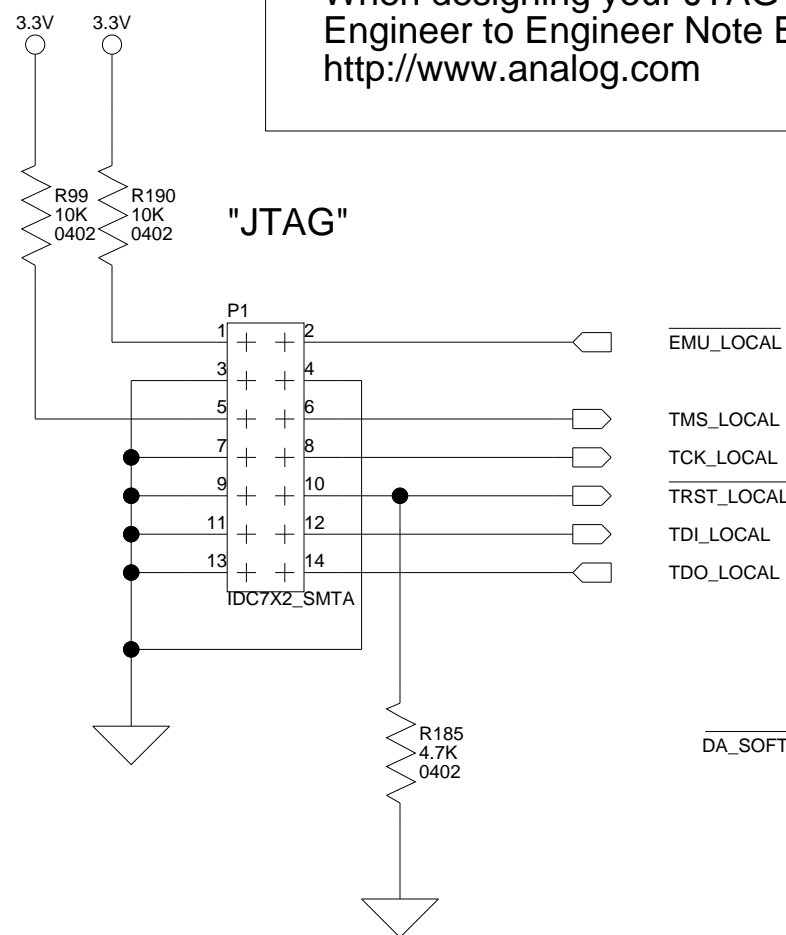
## SERIAL PORT



All debug agent interface circuitry is considered proprietary and has been omitted from this schematic.

When designing your JTAG interface please refer to the Engineer to Engineer Note EE-68 which can be found at <http://www.analog.com>

### "JTAG"



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Title **ADSP-21489 EZ-BOARD  
SPDIF, RS-232, JTAG INTERFACES**

Size C	Board No. A0228-2009	Rev 0.1B
Date	3-18-2010_13:45	Sheet 6 of 16

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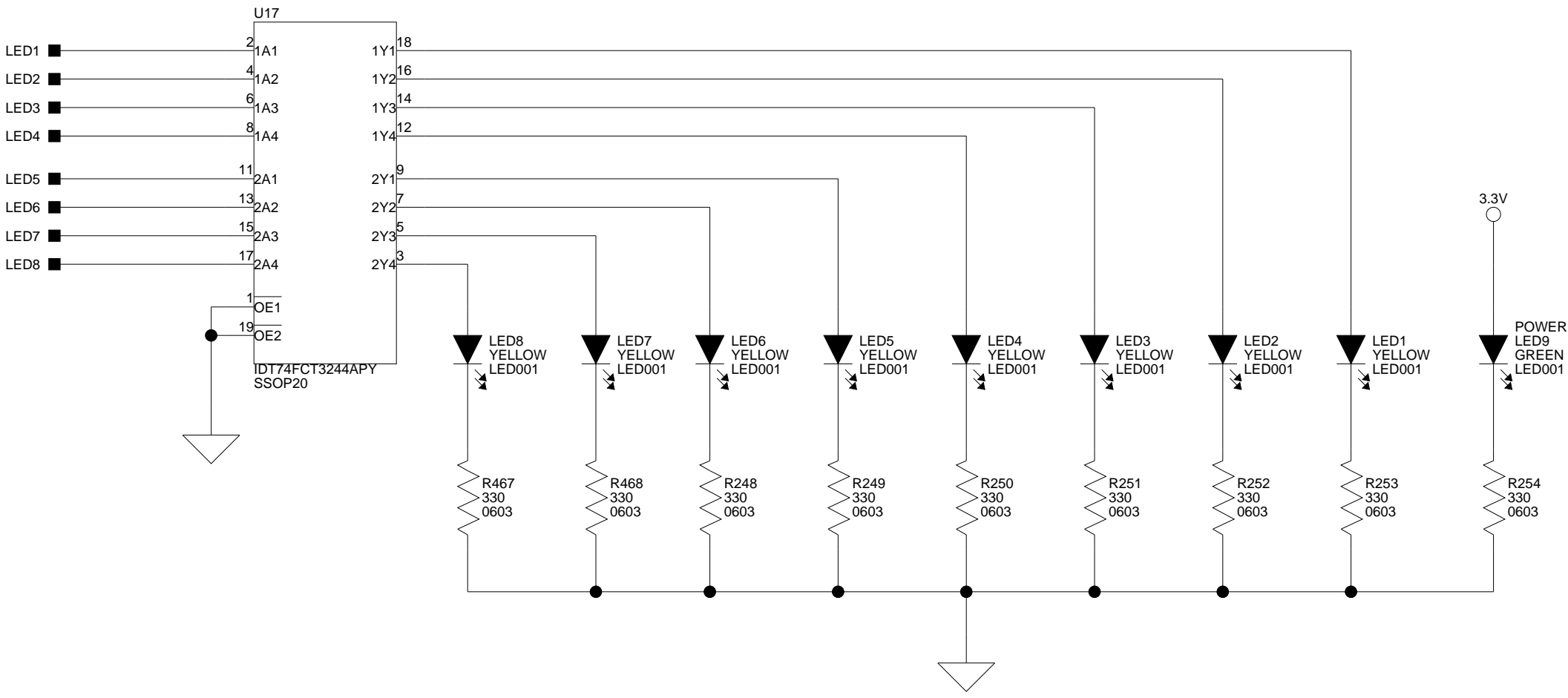
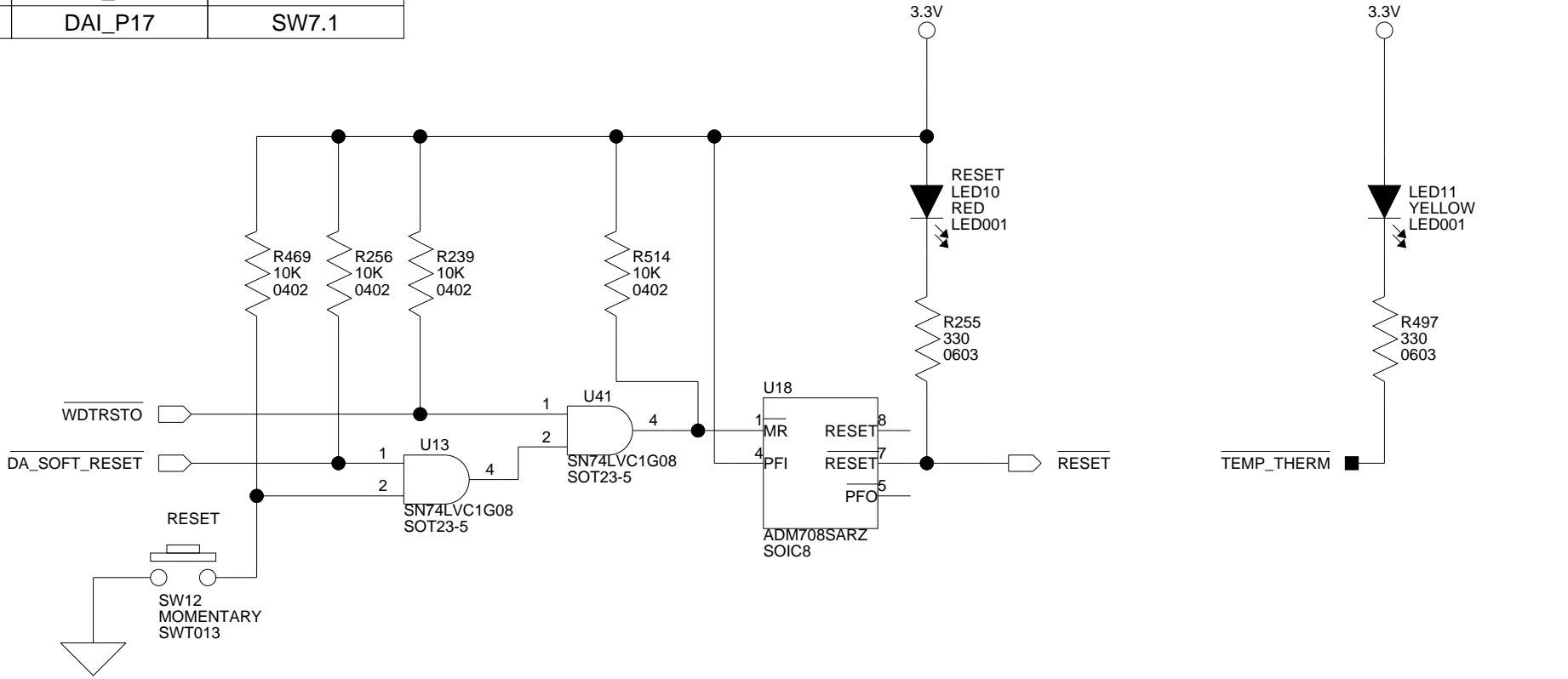
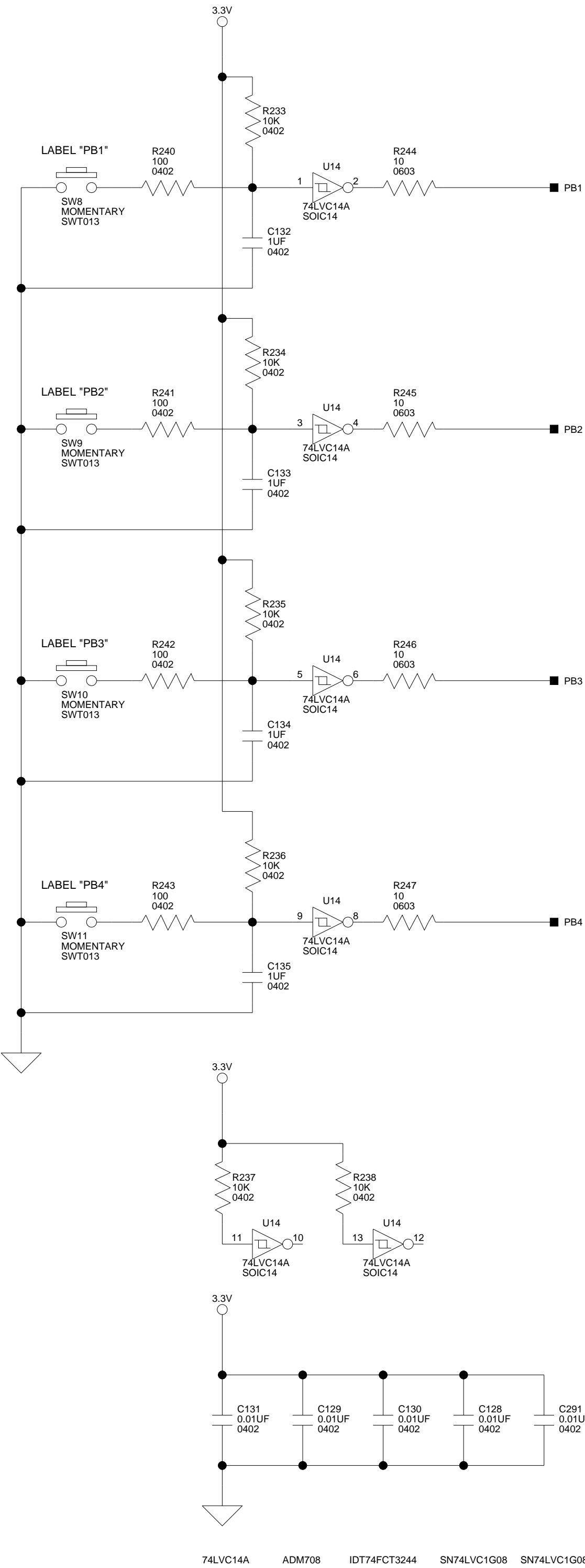
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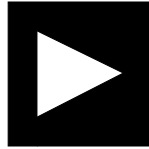
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COMPONENT	DSP PIN	CONNECTED VIA SWITCH
PB1	FLAG1/IRQ1	SW13.4
PB2	FLAG2/IRQ2/MS2	SW13.5
PB3	DAI_P19	SW7.3
PB4	DAI_P20	SW7.4
LED1	DPL_P6	SW3.6
LED2	DPI_P13	SW14.5
LED3	DPI_P14	SW14.6
LED4	DAI_P3	SW1.3
LED5	DAI_P4	SW1.4
LED6	DAI_P15	SW2.7
LED7	DAI_P16	SW2.8
LED8	DAI_P17	SW7.1





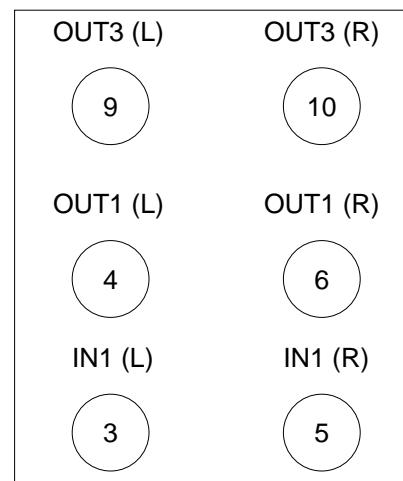
**ANALOG  
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Nashua, NH 03063  
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Title ADSP-21489 EZ-BOARD RESET CIRCUIT, PUSHBUTTONS, LEDS		
Size C	Board No. A0228-2009	Rev 0.1B
Date 3-18-2010_13:45	Sheet 7 of 16	

J4

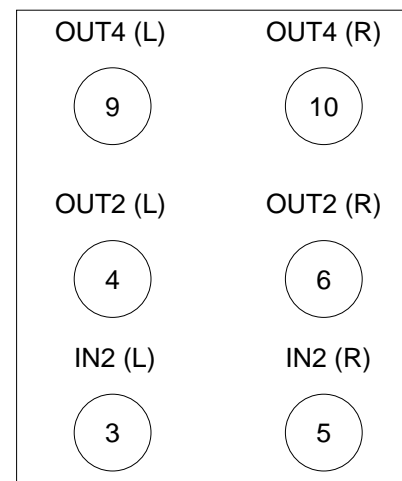
WHITE (LEFT) RED (RIGHT)



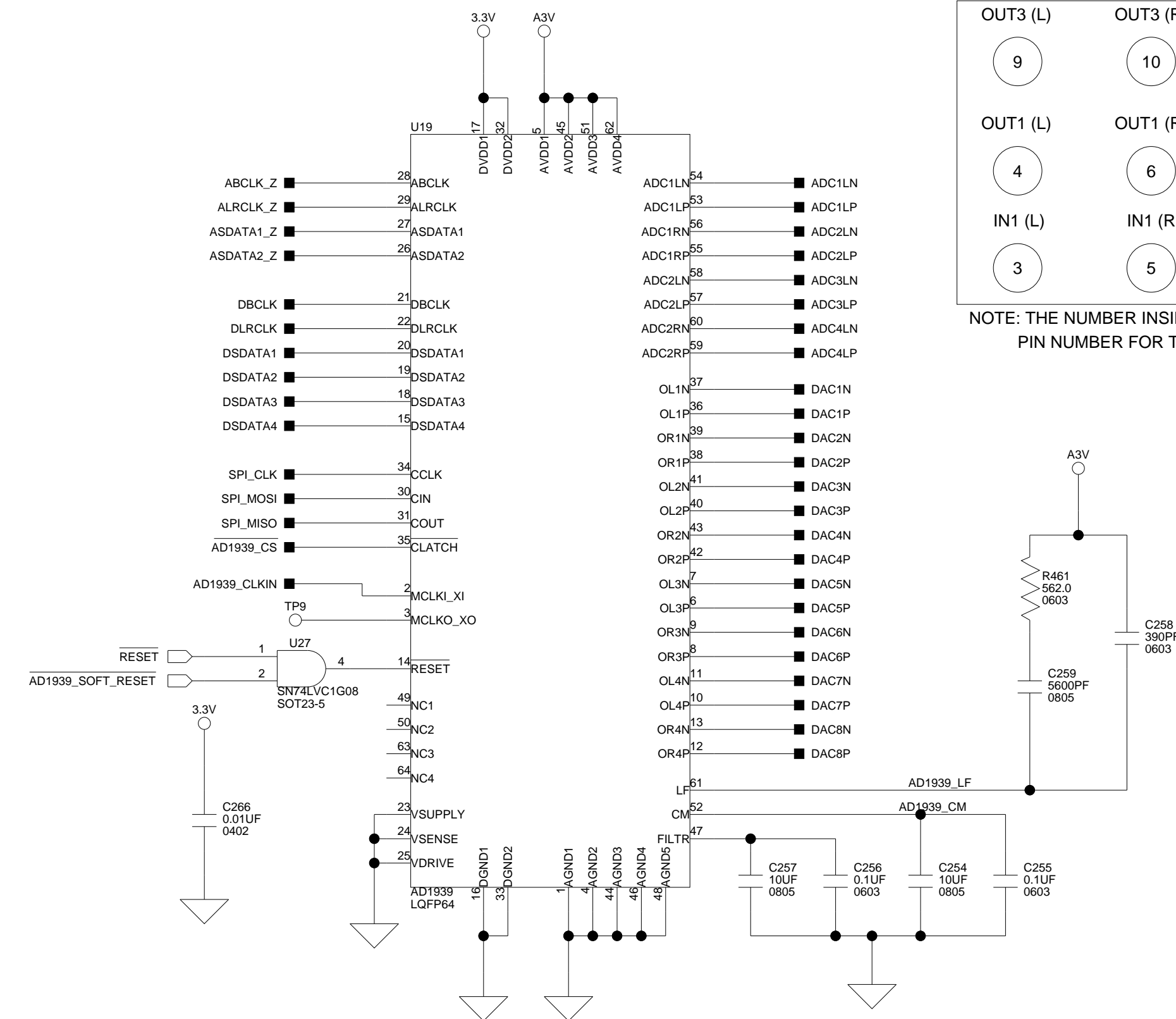
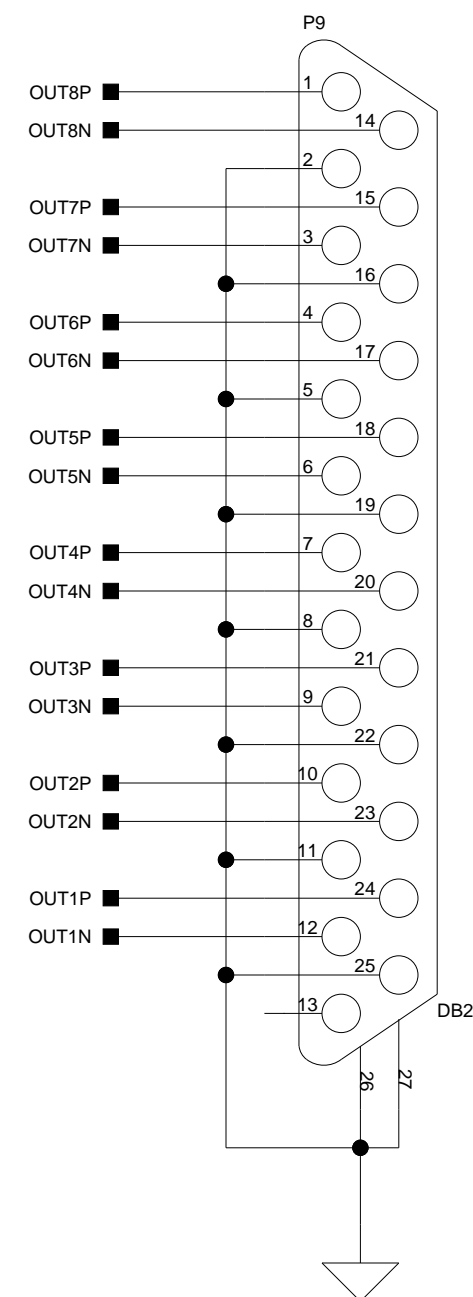
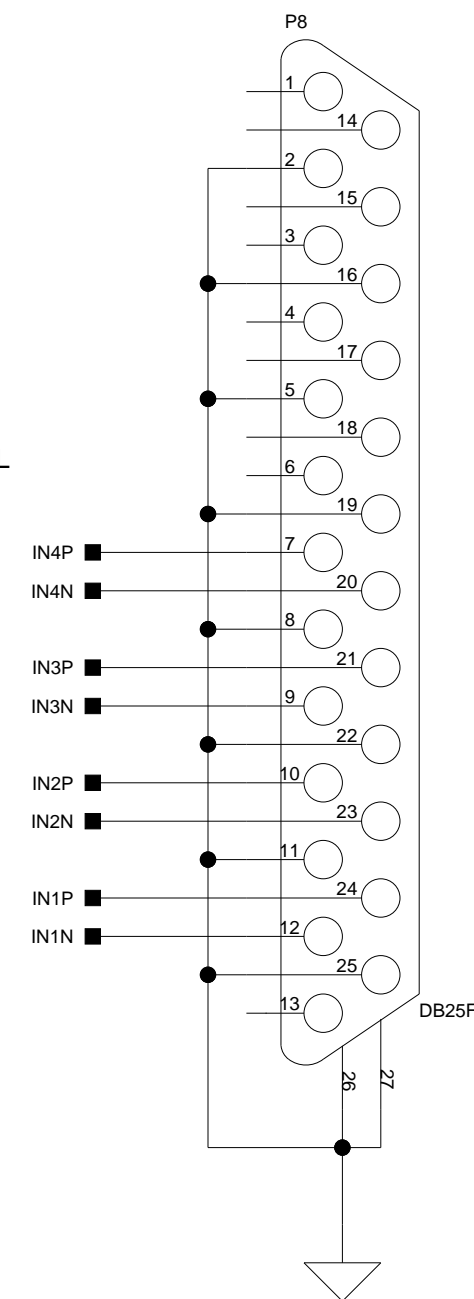
NOTE: THE NUMBER INSIDE EACH OF THE CIRCLES IS THE ACTUAL PIN NUMBER FOR THE RESPECTIVE CONNECTOR.

J5

WHITE (LEFT) RED (RIGHT)



DB25 Female Connectors for Conversion to XLR Connectors

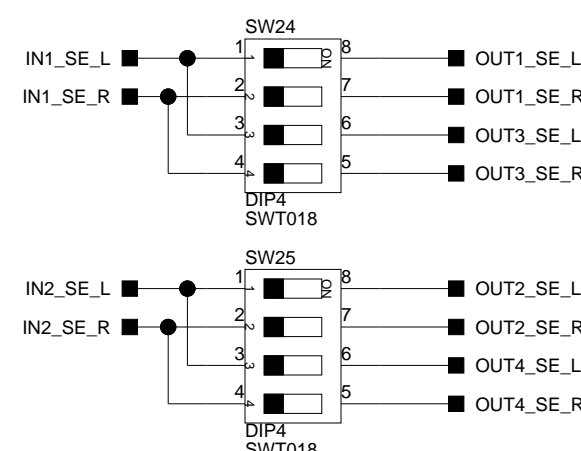


SW23: HEAD PHONE ENABLE  
DEFAULT: ALL OFF

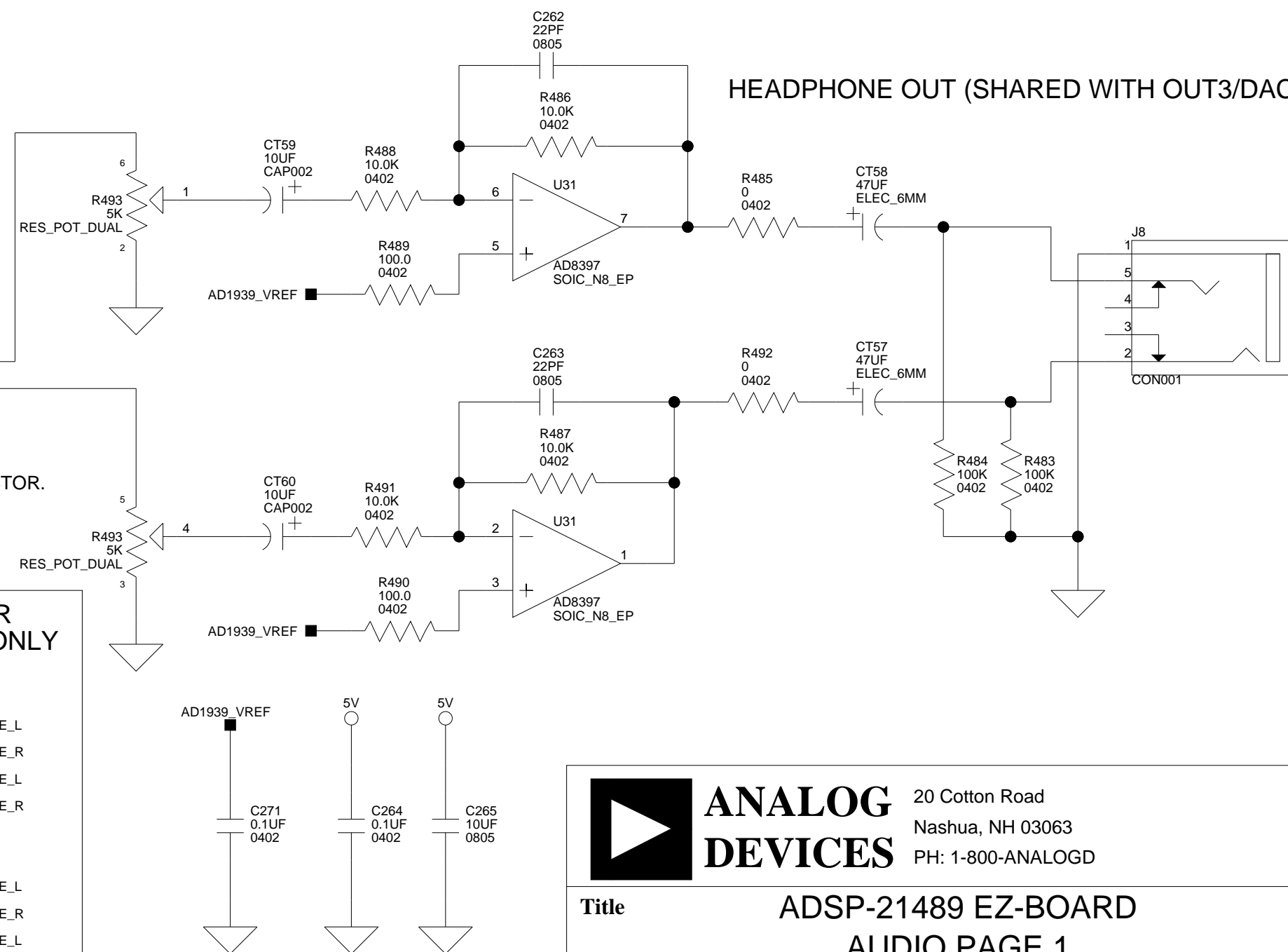


NOTE: A USER NEEDS TO TURN SWITCH SW23  
ON IN ORDER TO USE THE HEAD PHONE CONNECTOR.

LOOPBACK CONNECTOR  
FOR TESTING PURPOSES ONLY  
DEFAULT: ALL OFF



HEADPHONE OUT (SHARED WITH OUT3/DAC5&amp;6)



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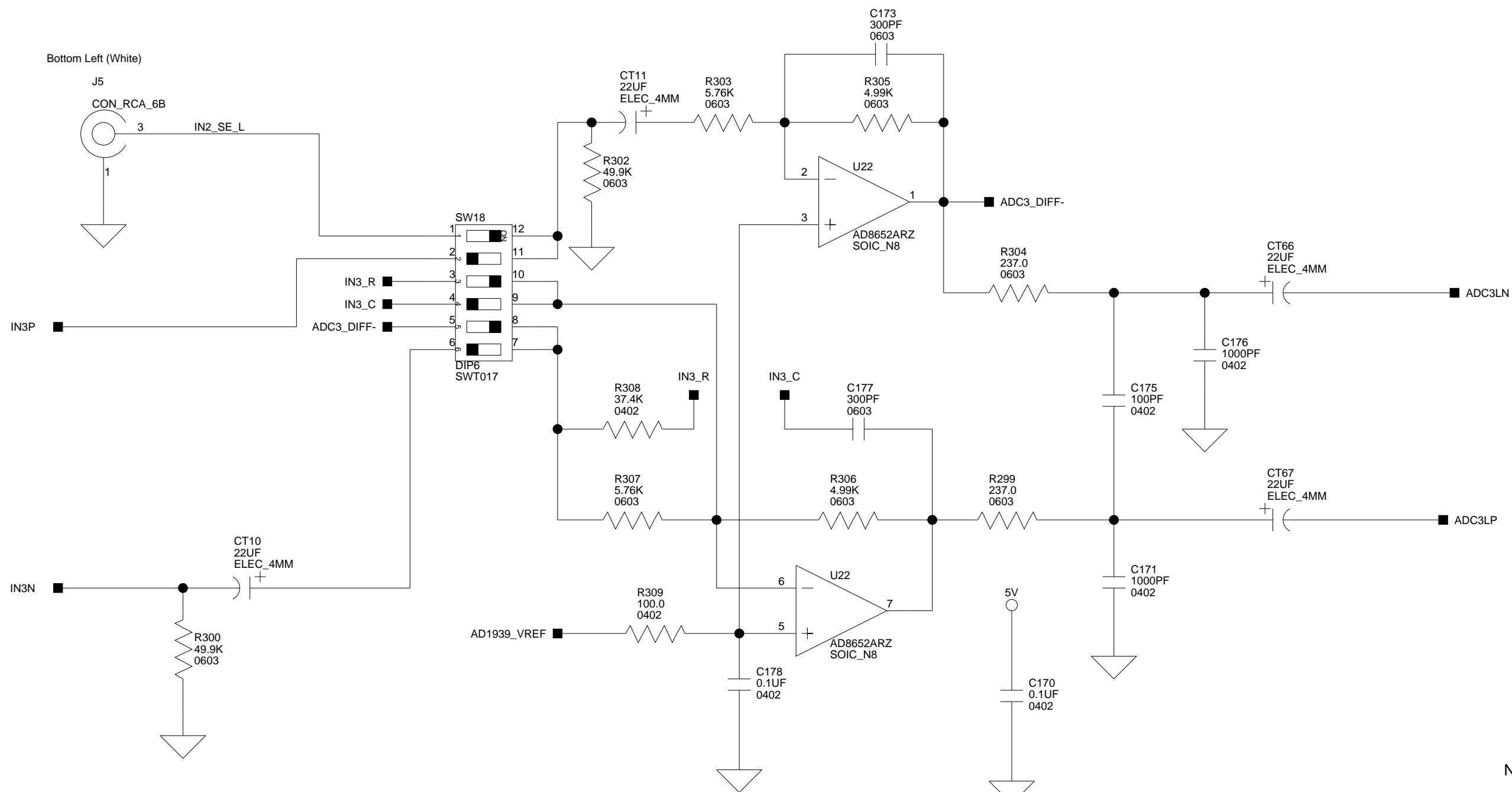
Title **ADSP-21489 EZ-BOARD  
AUDIO PAGE 1**

Size <b>C</b>	Board No. <b>A0228-2009</b>	Rev <b>0.1B</b>
Date <b>3-18-2010_13:45</b>	Sheet <b>8</b>	of <b>16</b>





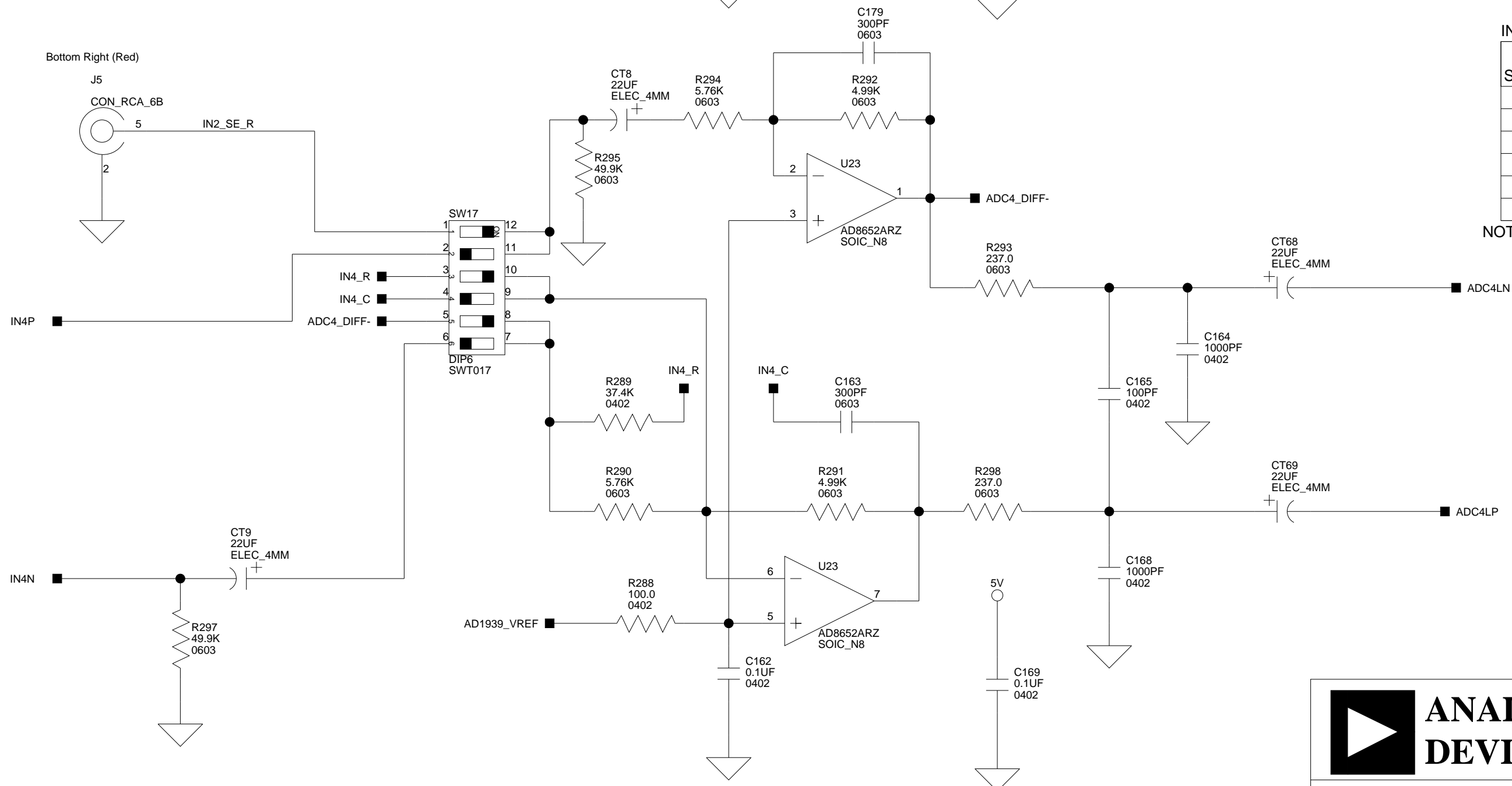
# IN2



IN2 (LEFT) SETTINGS

SWITCH	SINGLE ENDED USE RCA IN (DEFAULT)	DIFFERENTIAL USE DB25 IN (P8)
SW18.1	ON	OFF
SW18.2	OFF	ON
SW18.3	ON	OFF
SW18.4	OFF	ON
SW18.5	ON	OFF
SW18.6	OFF	ON

NOTE: DIFFERENTIAL USE REQUIRES A DB25 TO XLR CABLE.



IN2 (RIGHT) SETTINGS

SWITCH	SINGLE ENDED USE RCA IN (DEFAULT)	DIFFERENTIAL USE DB25 IN (P8)
SW17.1	ON	OFF
SW17.2	OFF	ON
SW17.3	ON	OFF
SW17.4	OFF	ON
SW17.5	ON	OFF
SW17.6	OFF	ON

NOTE: DIFFERENTIAL USE REQUIRES A DB25 TO XLR CABLE.



**ANALOG  
DEVICES**

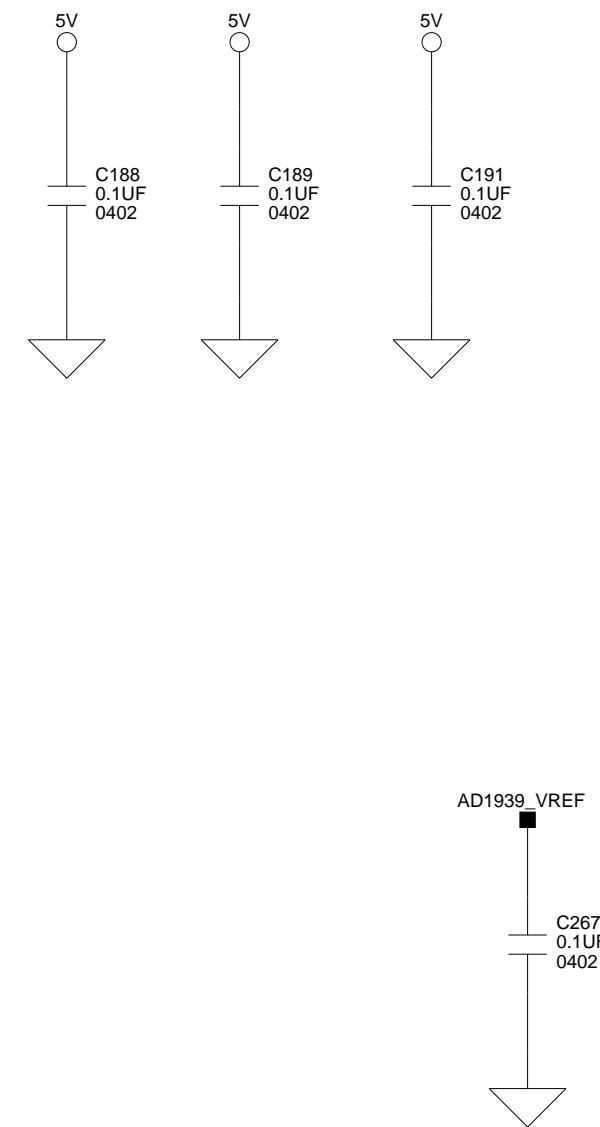
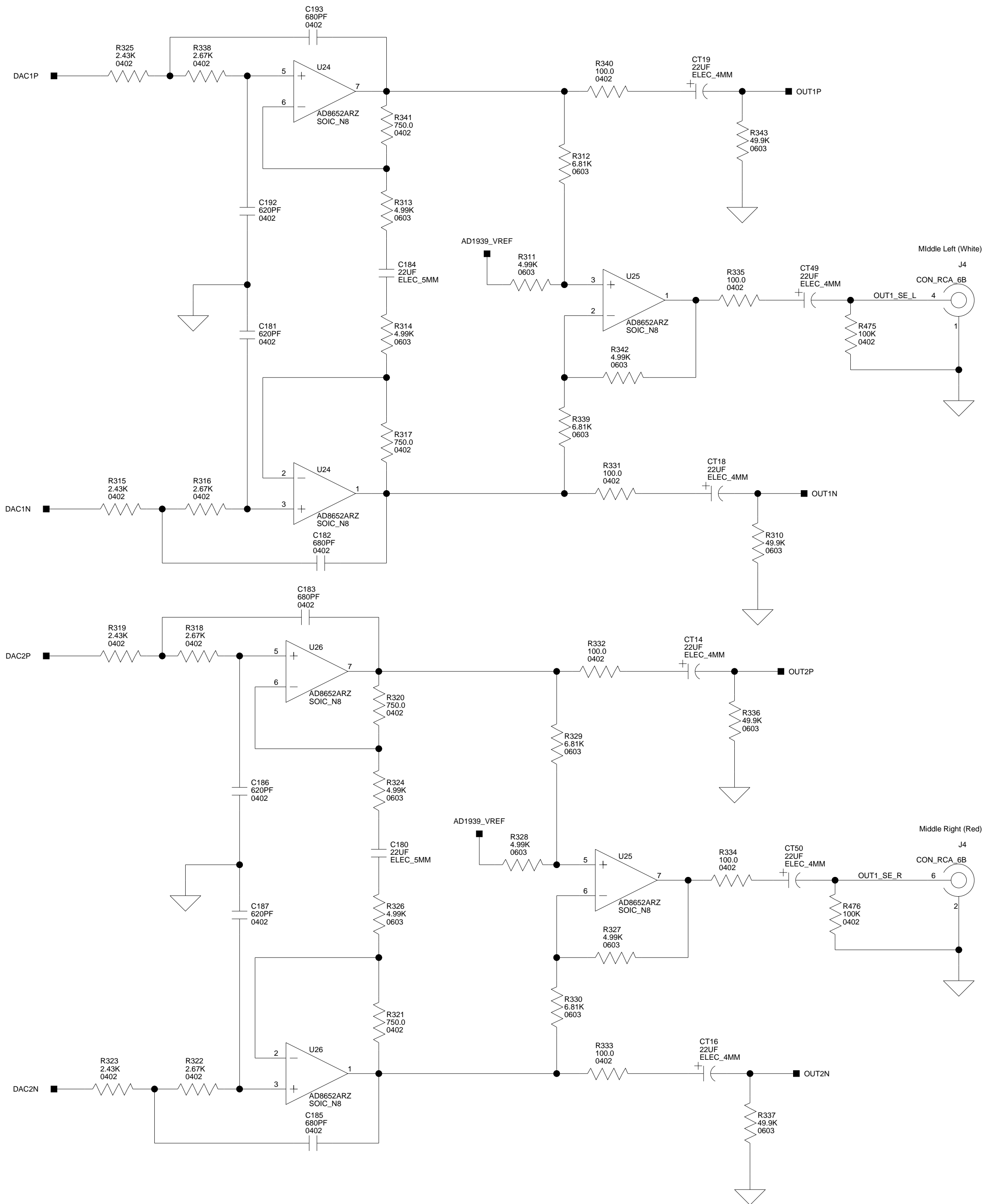
20 Cotton Road  
Nashua, NH 03063  
PH: 1-800-ANALOGD

Title  
**ADSP-21489 EZ-BOARD  
AUDIO PAGE 3**

Size C	Board No. <b>A0228-2009</b>	Rev <b>0.1B</b>
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Date 3-18-2010_13:45	Sheet 10 of 16
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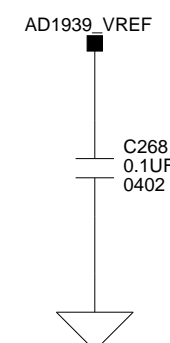
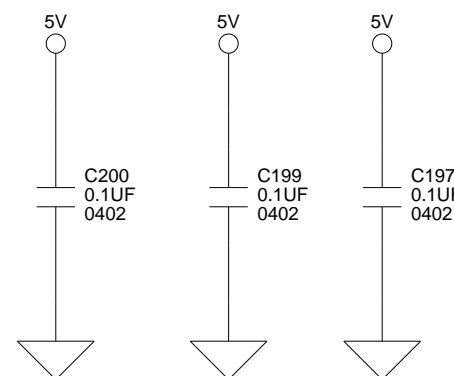
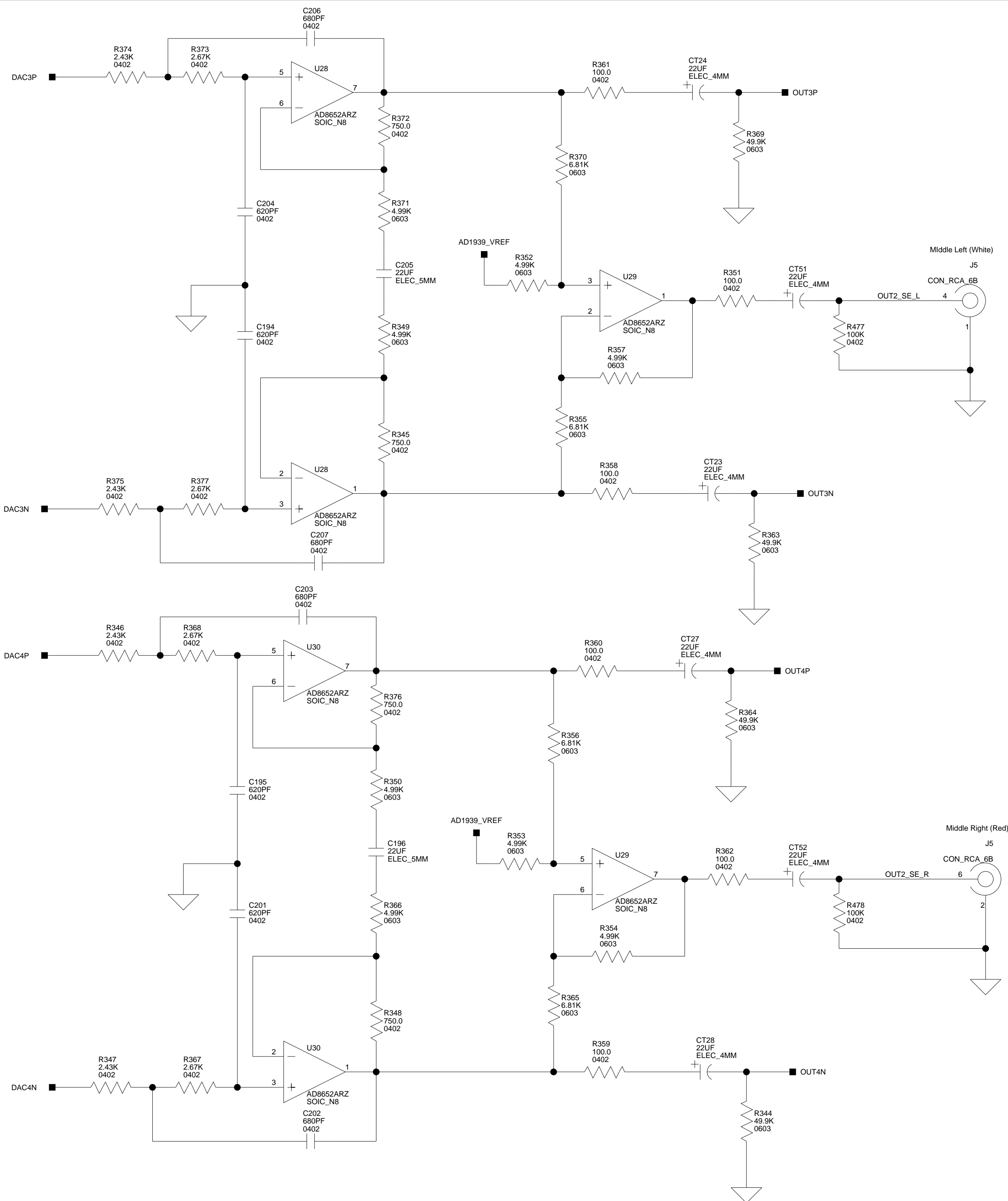
OUT1


ANALOG  
DEVICES

20 Cotton Road  
Nashua, NH 03063  
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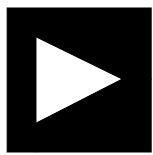
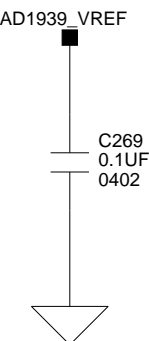
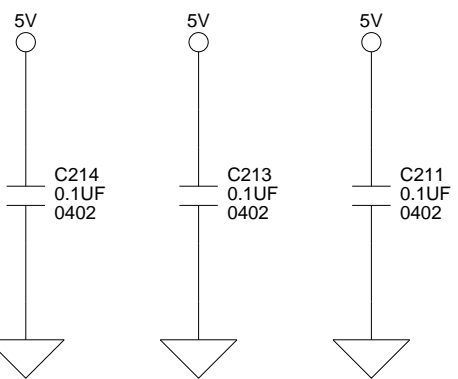
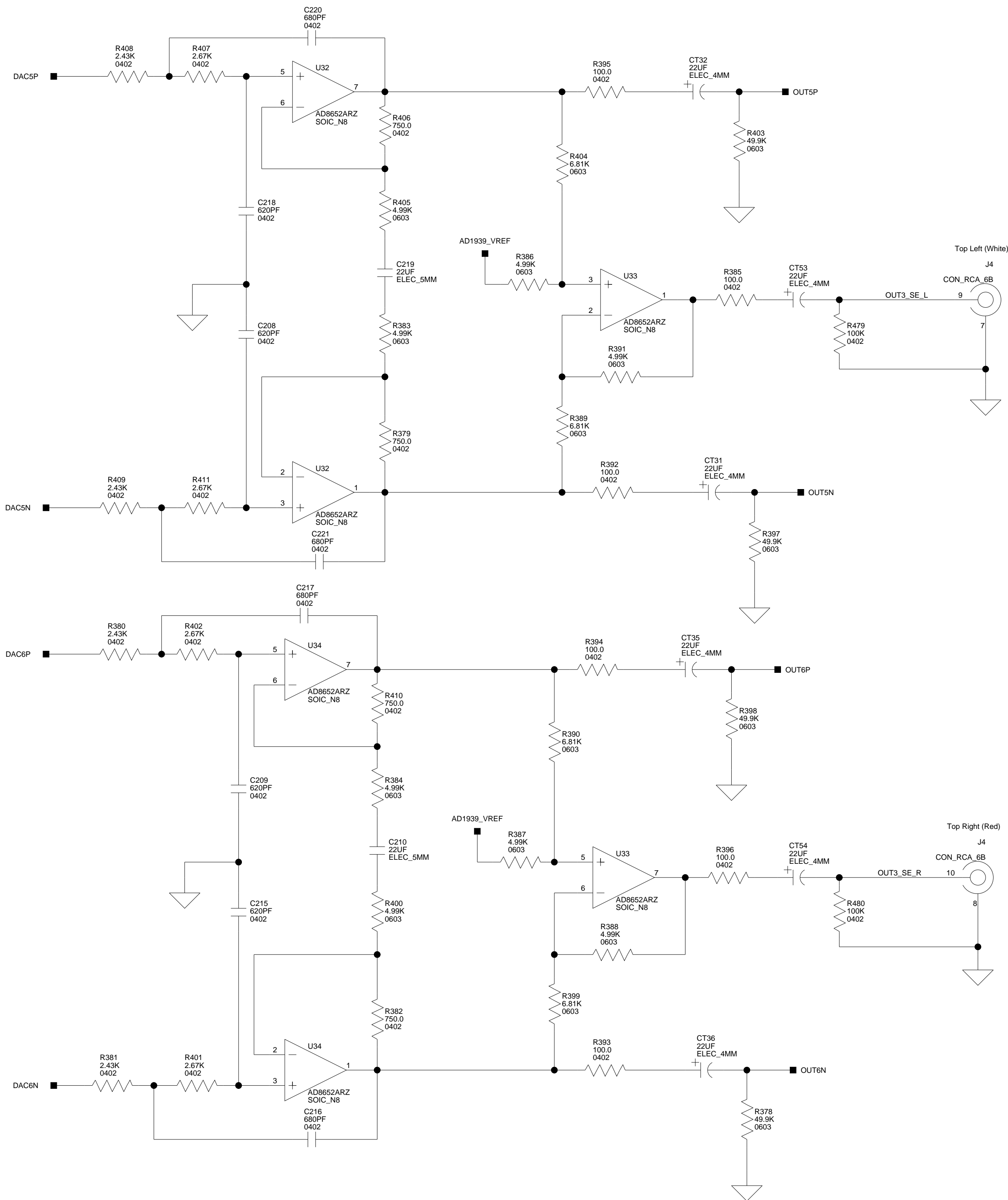
<b>Title</b>				<b>ADSP-21489 EZ-BOARD</b>			
				<b>AUDIO PAGE 4</b>			
<b>Size</b>	<b>Board No.</b>						<b>Rev</b>
<b>C</b>	<b>A0228-2009</b>						<b>0.1B</b>
<b>Date</b>	<b>3-18-2010_13:45</b>			<b>Sheet</b>	<b>11</b>	<b>of</b>	<b>16</b>

# OUT2



		<b>ANALOG DEVICES</b>		20 Cotton Road Nashua, NH 03063 PH: 1-800-ANALOGD	
Title		ADSP-21489 EZ-BOARD AUDIO PAGE 5			
Size C	Board No.			A0228-2009	Rev 0.1B
Date	3-18-2010_13:45			Sheet	12 of 16

# OUT3



**ANALOG  
DEVICES**

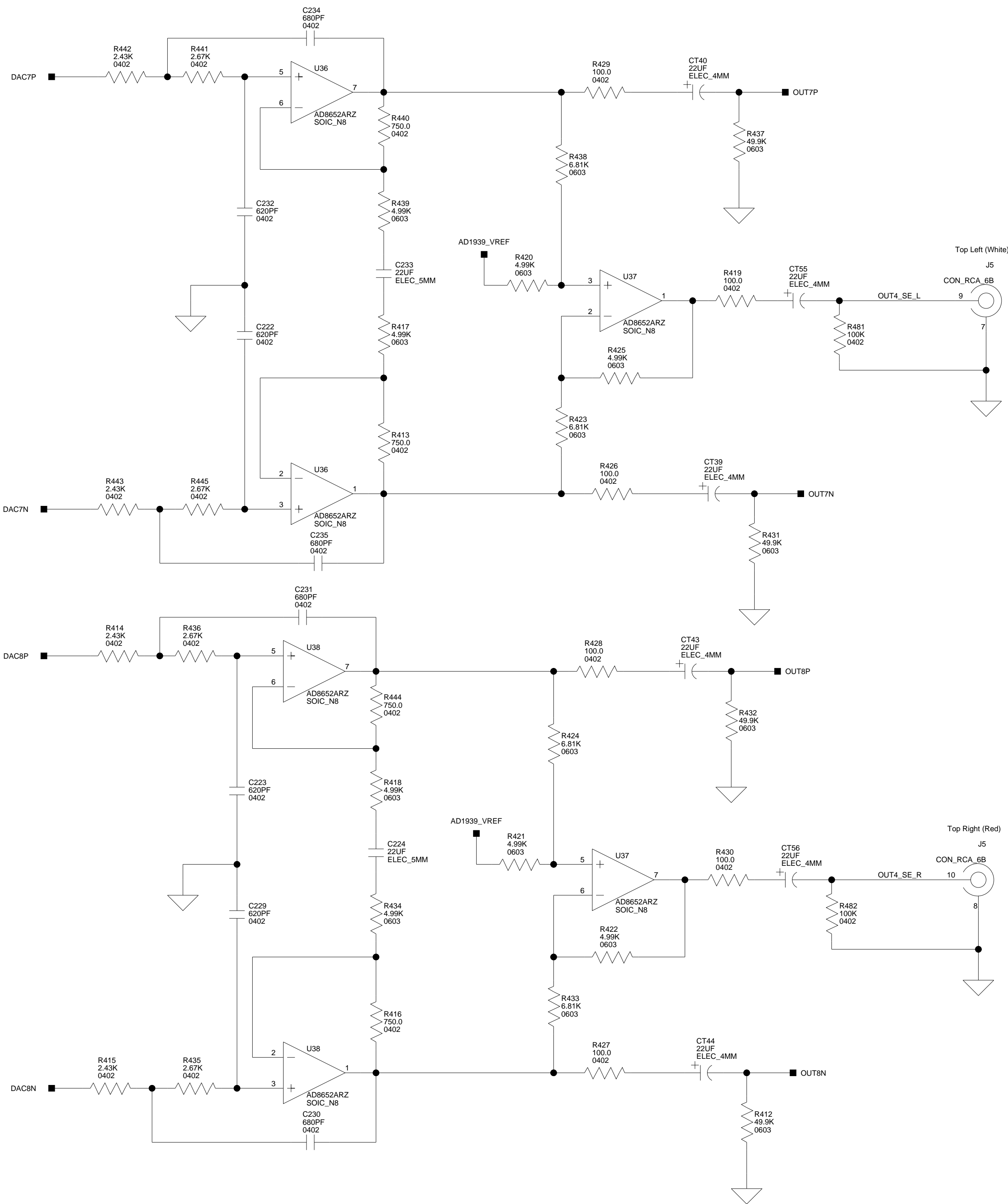
20 Cotton Road  
Nashua, NH 03063  
PH: 1-800-ANALOGD

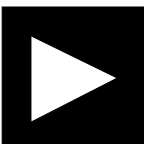
Title ADSP-21489 EZ-BOARD  
AUDIO PAGE 6

Size C	Board No. A0228-2009	Rev 0.1B
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Date 3-18-2010_13:45	Sheet 13 of 16
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OUT4





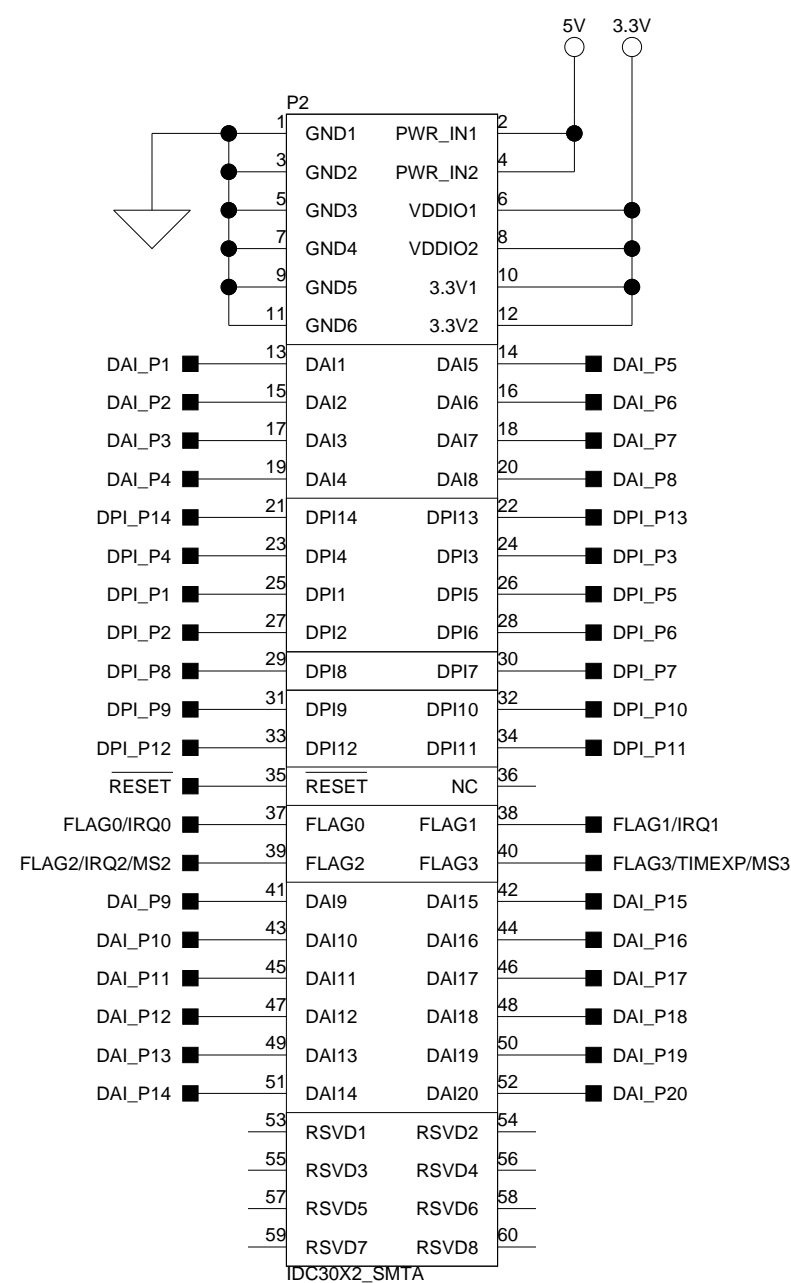
ANALOG  
DEVICES

20 Cotton Road  
Nashua, NH 03063  
PH: 1-800-ANALOGD

Title

ADSP-21489 EZ-BOARD  
AUDIO PAGE 7

Size C	Board No. A0228-2009	Rev 0.1B
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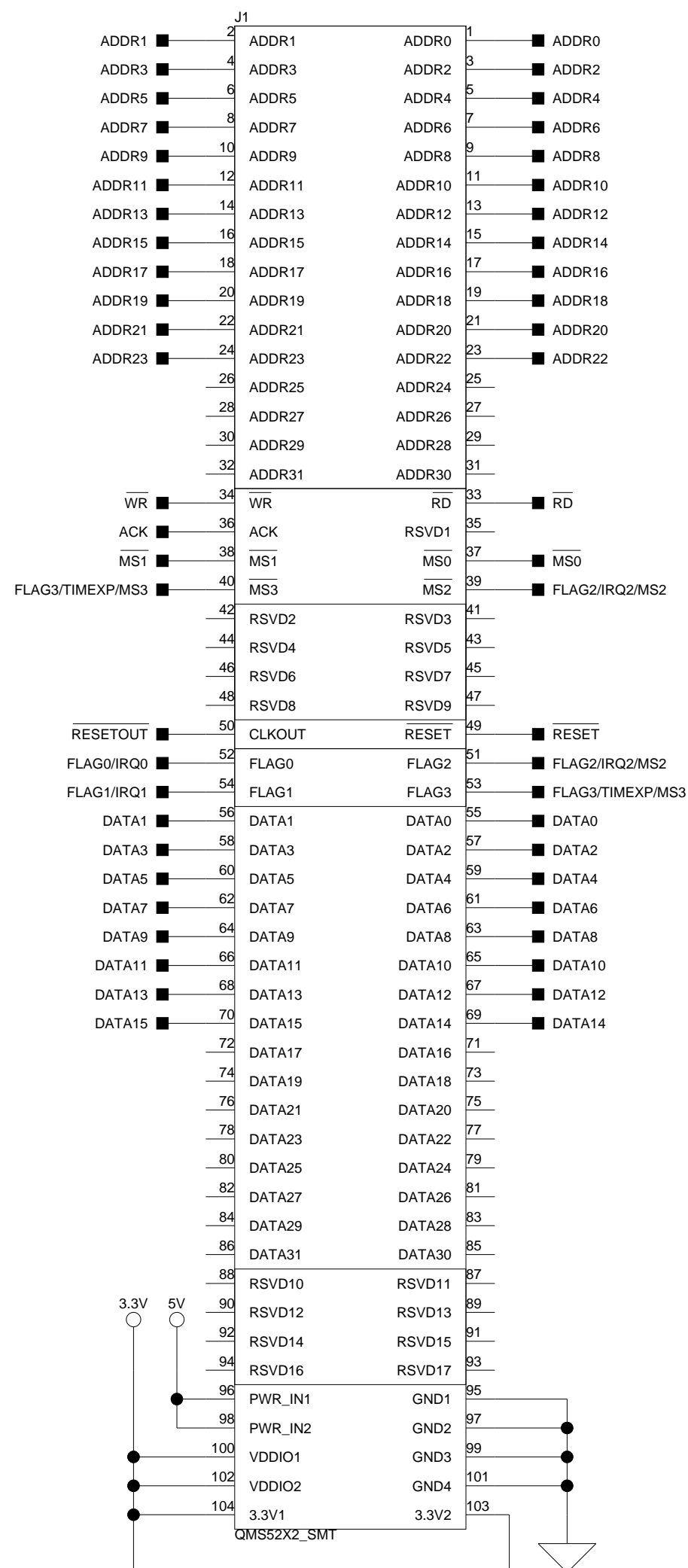


DSP PIN NAME	PERIPHERAL NET CONNECTED TO	CONNECTED VIA SWITCH	SWITCH DEFAULT
DAI_P1	SPDIF_OUT	SW1.1	ON
DAI_P2	AD1939_SOFT_RESET	SW1.2	ON
DAI_P3		SW1.3	ON
DAI_P4	LED5	SW1.4	ON
DAI_P5	ASDATA1	SW1.5	ON
DAI_P6	ASDATA2	SW1.6	ON
DAI_P7	ABCLK	SW1.7	ON
DAI_P8	ALRCLK	SW1.8	ON
DAI_P9	DSDATA4	SW2.1	ON
DAI_P10	DSDATA3	SW2.2	ON
DAI_P11	DSDATA2	SW2.3	ON
DAI_P12	DSDATA1	SW2.4	ON
DAI_P13	DBCLK	SW2.5	OFF
DAI_P14	DLRCLK	SW2.6	OFF
DAI_P15	LED6	SW2.7	ON
DAI_P16	LED7	SW2.8	ON
DAI_P17	LED8	SW7.1	ON
DAI_P18	SPDIF_IN	SW7.2	ON
DAI_P19	PB3	SW7.3	ON
DAI_P20	PB4	SW7.4	ON

NOTE: SHUTTING OFF ANY OF THE SWITCHES FOR EXPANSION USE  
WILL CAUSE LOSS OF FUNCTIONALITY TO THE RESPECTIVE  
PERIPHERAL ON THE EZ-BOARD.

DSP PIN NAME	PERIPHERAL NET CONNECTED TO	CONNECTED VIA SWITCH	SWITCH DEFAULT
DPI_P1	SPI_MOSI	SW3.1	ON
DPI_P2	SPI_MISO	SW3.2	ON
DPI_P3	SPI_CLK	SW3.3	ON
DPI_P4	AD1939_CS	SW3.4	ON
DPI_P5	SPI_CS	SW3.5	ON
DPI_P6	LED1	SW3.6	ON
DPI_P7	TEMP_SDA	SW3.7	ON
DPI_P8	TEMP_SCK	SW3.8	ON
DPI_P9	UART_TX	SW14.1	ON
DPI_P10	UART_RX	SW14.2	ON
DPI_P11	UART_RTS	SW14.3	OFF
DPI_P12	UART_CTS	SW14.4	OFF
DPI_P13	LED2	SW14.5	ON
DPI_P14	LED3	SW14.6	ON

NOTE: SHUTTING OFF ANY OF THE SWITCHES FOR EXPANSION USE  
WILL CAUSE LOSS OF FUNCTIONALITY TO THE RESPECTIVE  
PERIPHERAL ON THE EZ-BOARD.

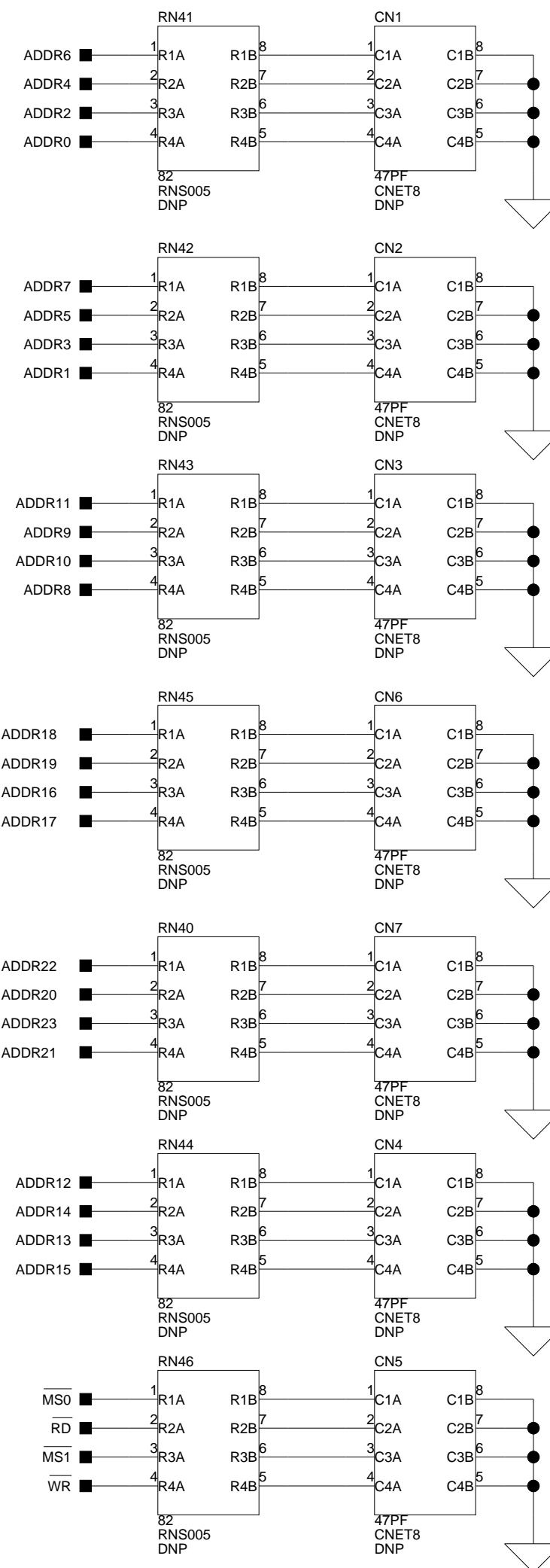
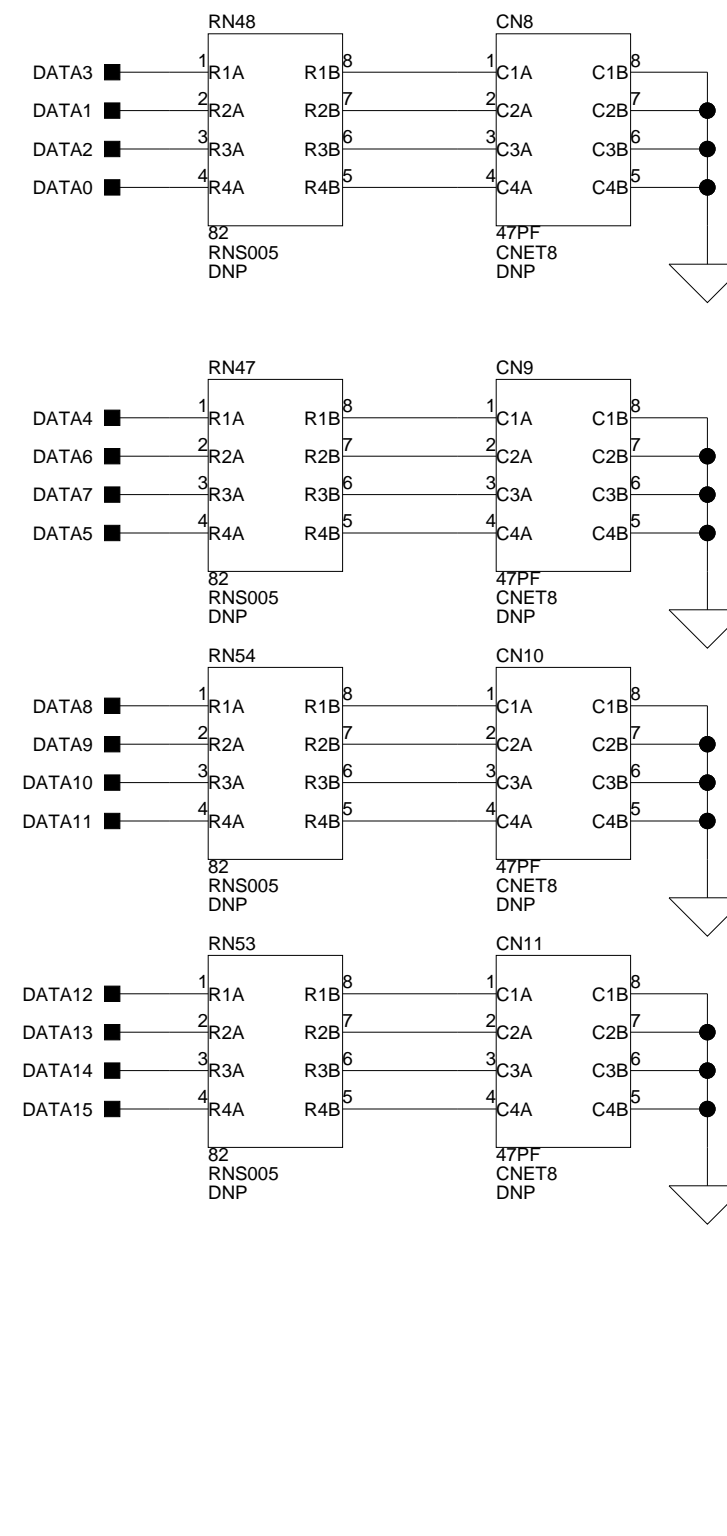


DSP PIN NAME	PERIPHERAL NET CONNECTED TO	CONNECTED VIA SWITCH	SWITCH DEFAULT
MS0	SDRAM_CS	SW13.1	OFF
MS1	FLASH_CS	SW13.2	ON
FLAG0/IRQ0	TEMP_THERM	SW13.3	OFF
FLAG1/IRQ1	PB1	SW13.4	ON
FLAG2/IRQ2/MS2	PB2	SW13.5	ON
FLAG3/TIMEXP/MS3	TEMP_IRQ	SW13.6	OFF

NOTE: SHUTTING OFF ANY OF THE SWITCHES FOR EXPANSION USE  
WILL CAUSE LOSS OF FUNCTIONALITY TO THE RESPECTIVE  
PERIPHERAL ON THE EZ-BOARD.

END OF LINE RC NETWORKS ARE  
DO NOT POPULATED BY DEFAULT.

THESE ARE HERE IN CASE THEY  
ARE NEEDED IN THE FUTURE.

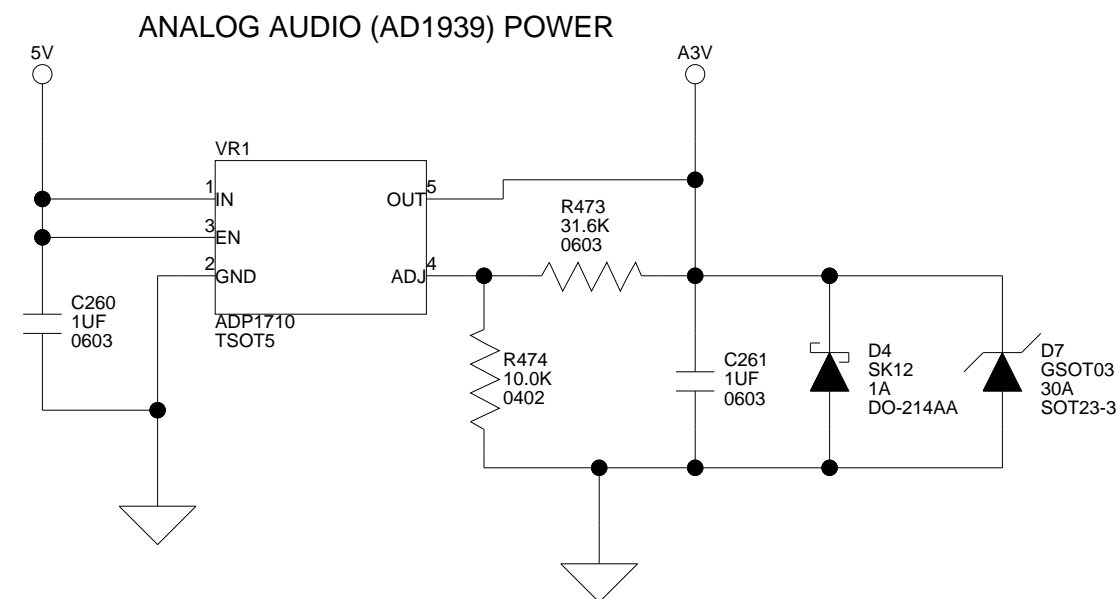
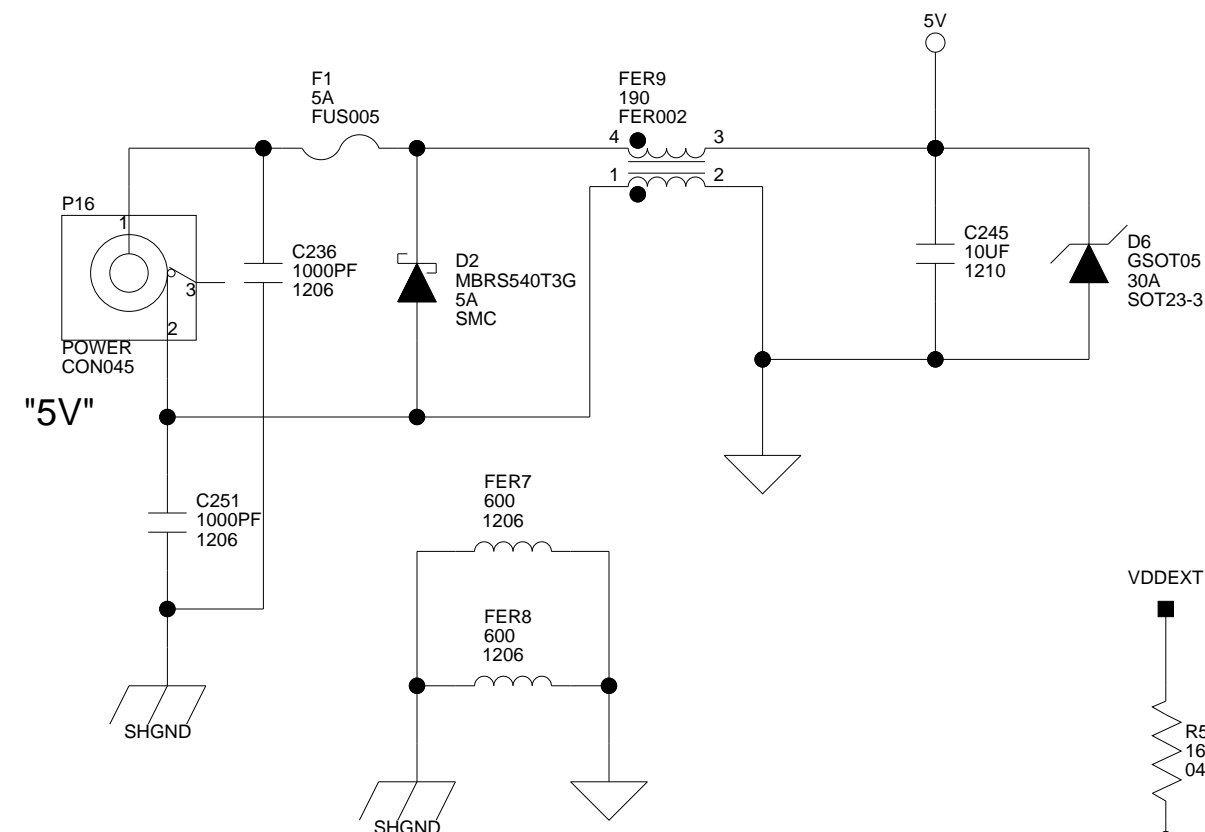


# ANALOG DEVICES

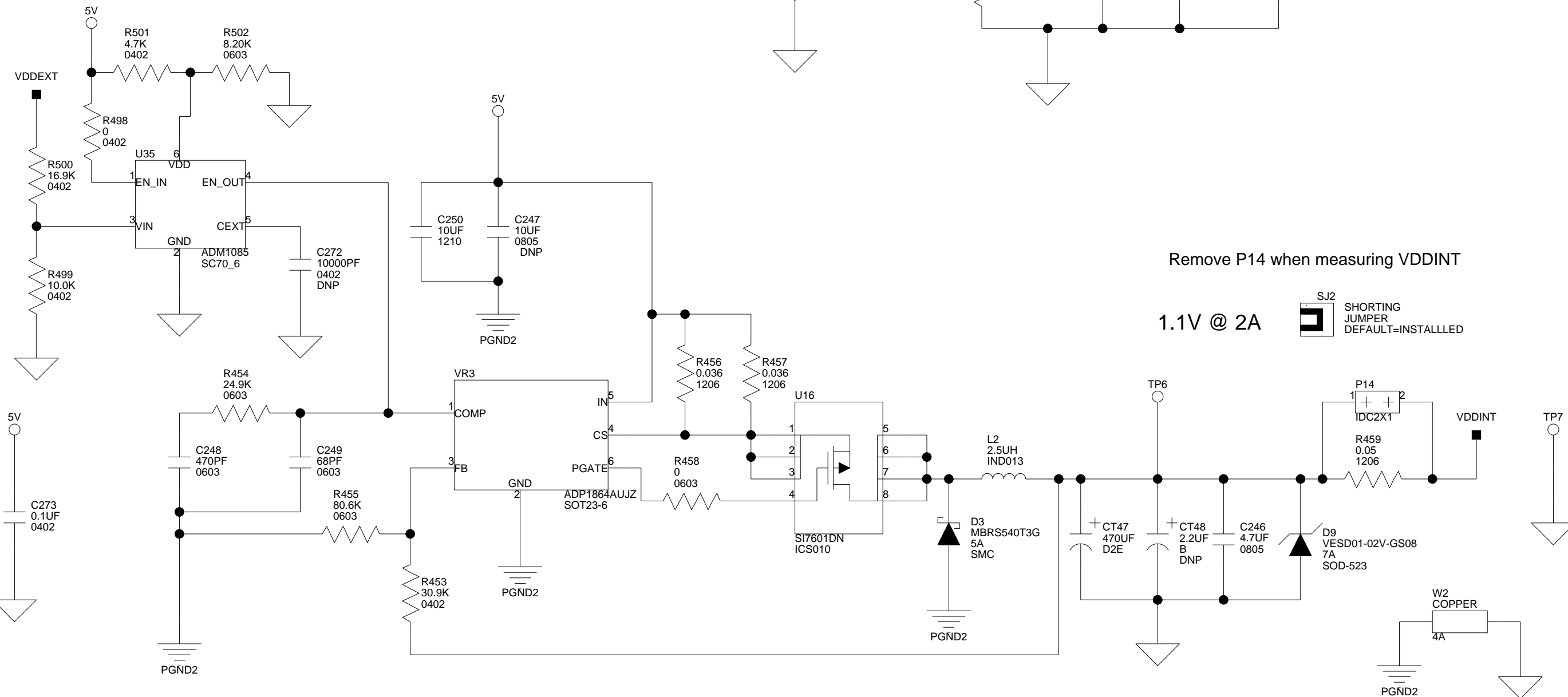
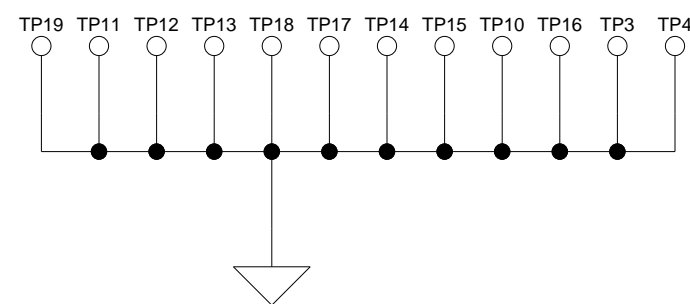
20 Cotton Road  
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PH: 1-800-ANALOGD

<b>Title</b>	ADSP-21489 EZ-BOARD EXPANSION II INTERFACE
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<b>Size</b> <b>C</b>	<b>Board No.</b>  A0228-2009	<b>Rev</b>  0.1B
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GND Test Points are scattered on PCB for Test Measurement Purposes.  
LABEL "GND" ON ALL TPs



Remove P14 when measuring VDDINT

1.1V @ 2A

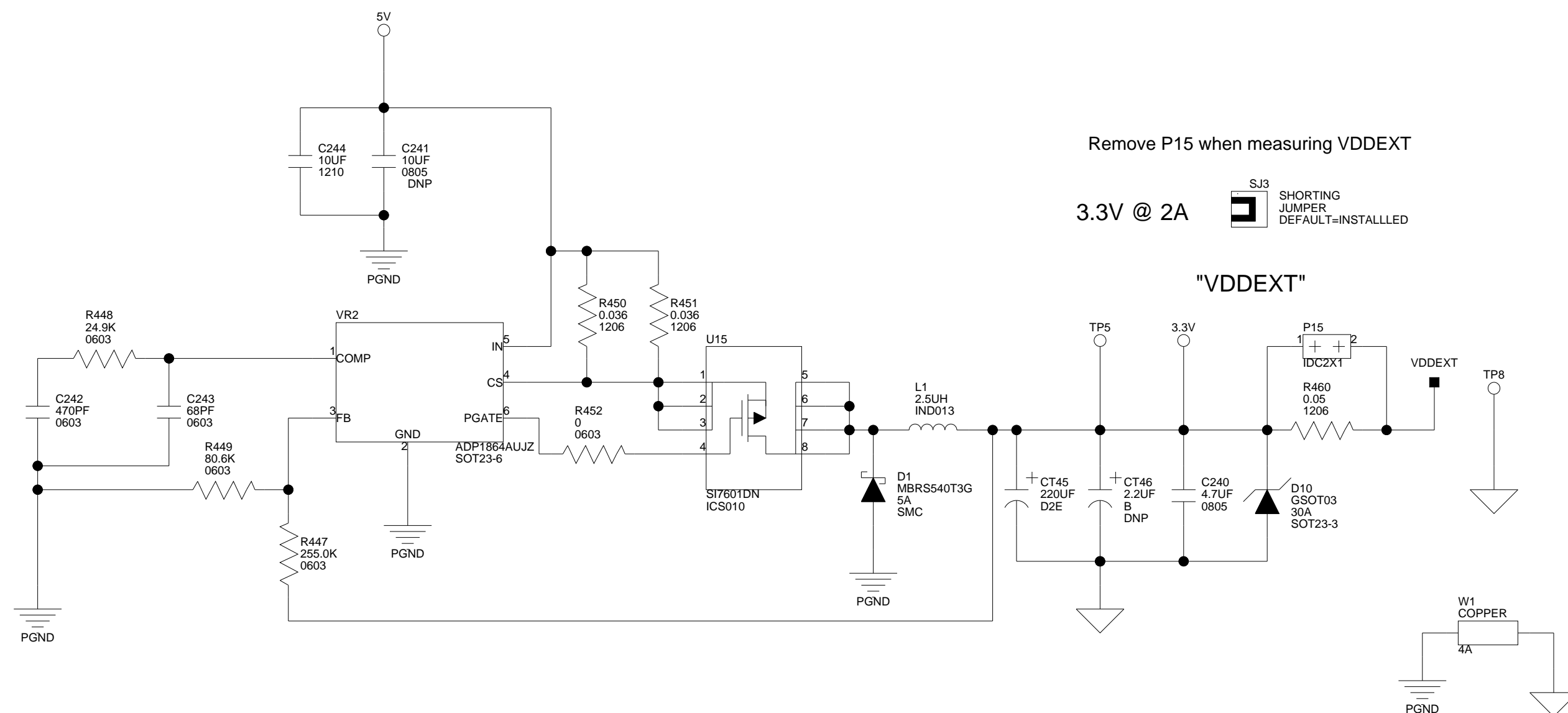
SJ2 SHORTING JUMPER DEFAULT=INSTALLED

Remove P15 when measuring VDDEXT

3.3V @ 2A

SJ3 SHORTING JUMPER DEFAULT=INSTALLED

"VDDEXT"



		20 Cotton Road Nashua, NH 03063 PH: 1-800-ANALOGD
Title ADSP-21489 EZ-BOARD POWER		
Size C	Board No. A0228-2009	Rev 0.1B
Date 3-18-2010_13:45	Sheet 16 of 16	