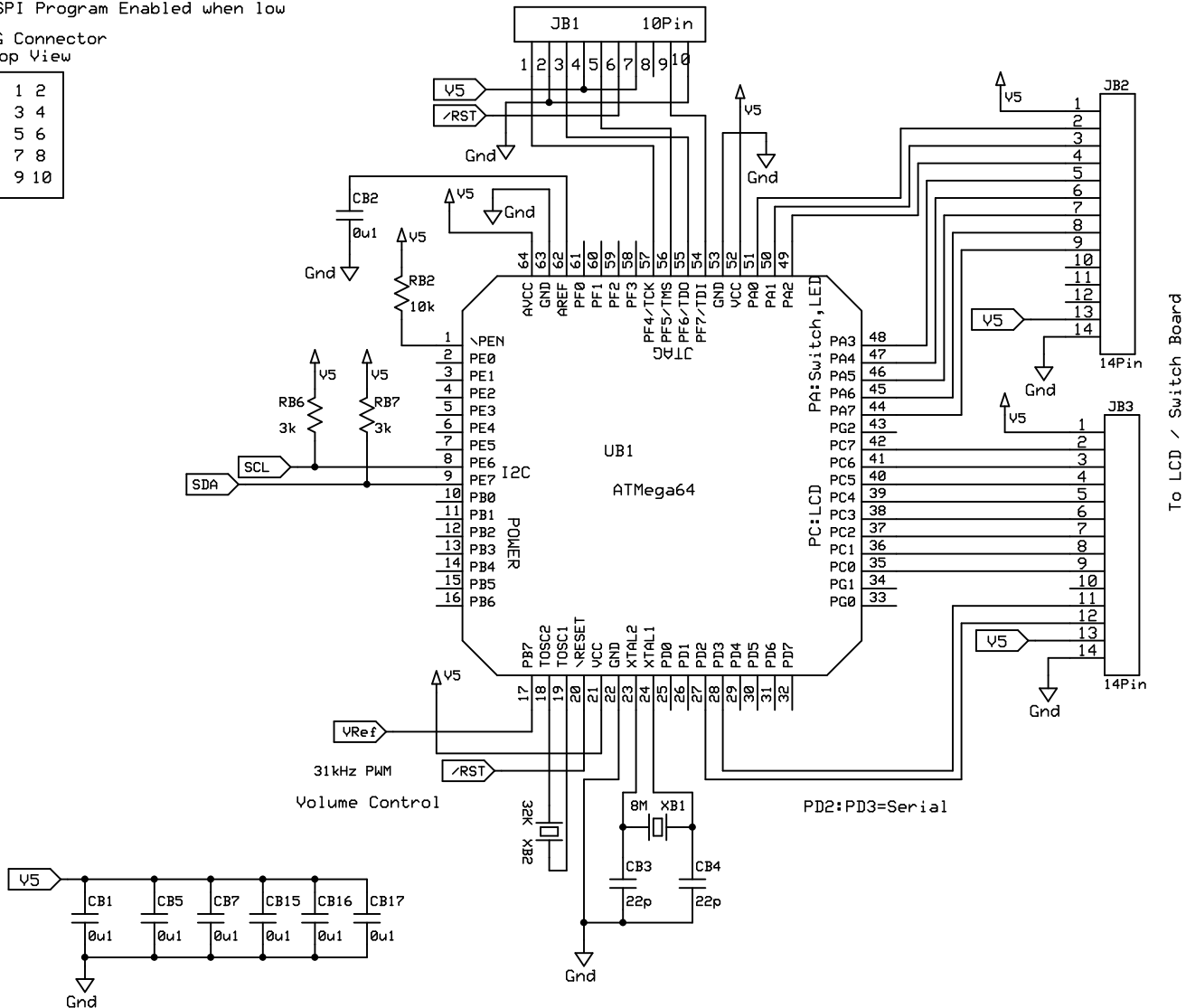
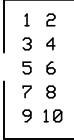


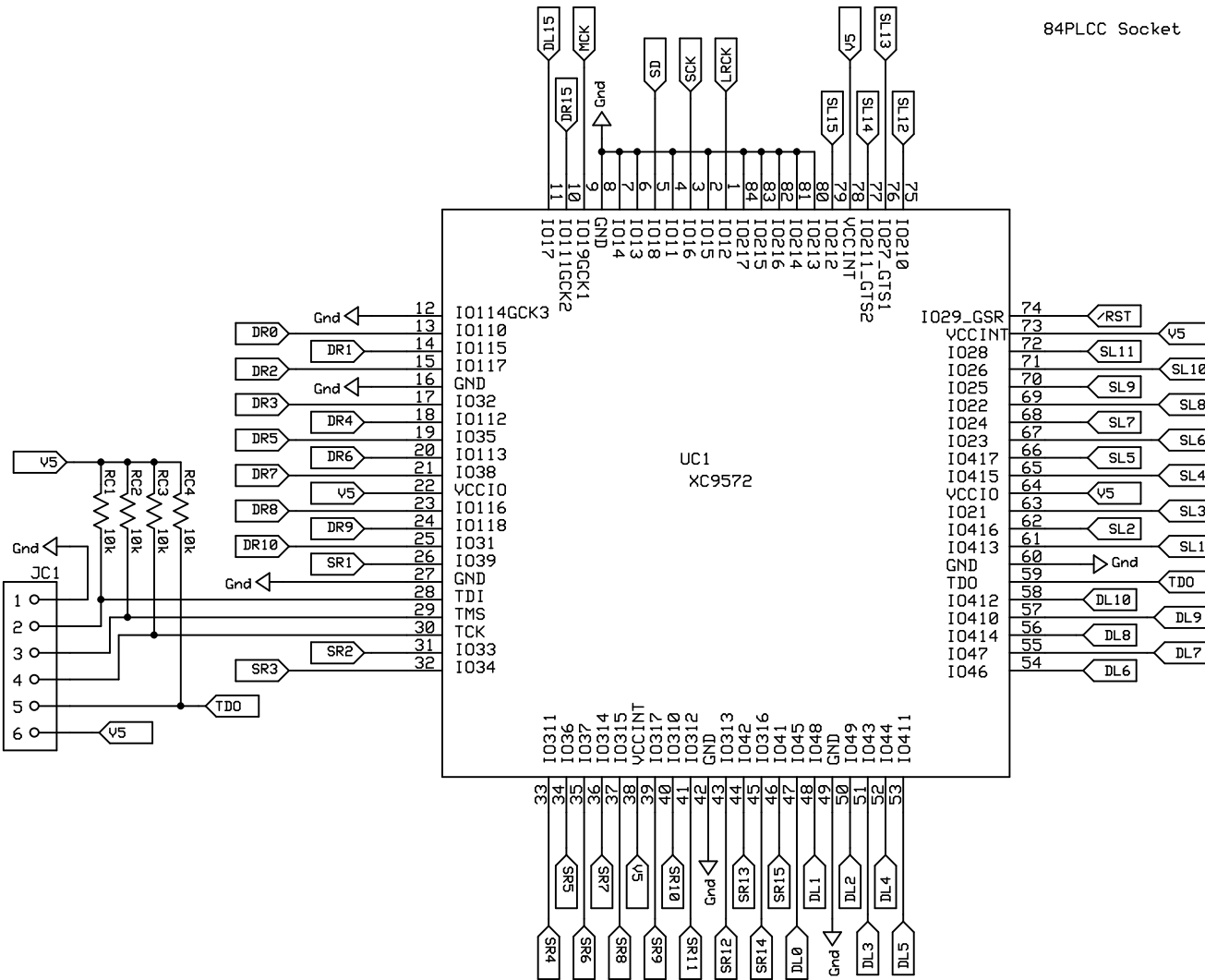
KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Power
	11/28/2007	

\PEN: SPI Program Enabled when low

JTAG Connector
Top View



KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	AVR
	11/28/2007	



84PLCC Socket

Sx15-1
Number accumulated Speaker drive.
Calculated from Dx14-11

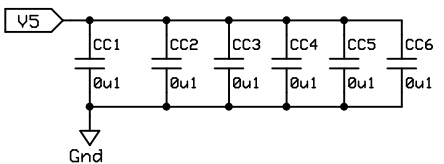
D14-D11	SL15-1
0000	00000000000000
0001	00000000000001
0010	00000000000011
:	:
1110	01111111111111
1111	11111111111111

Dx10-0
PCM Data Bit 10-0
To Voltage Magnitude Speaker drive,
Dx10: 1/2
Dx9: 1/4
Dx8: 1/8
Dx7: 1/16
Dx6: 1/32
Dx5: 1/64
Dx4: 1/128
Dx3: 1/256
Dx2: 1/512
Dx1: 1/1024
Dx0: 1/2048

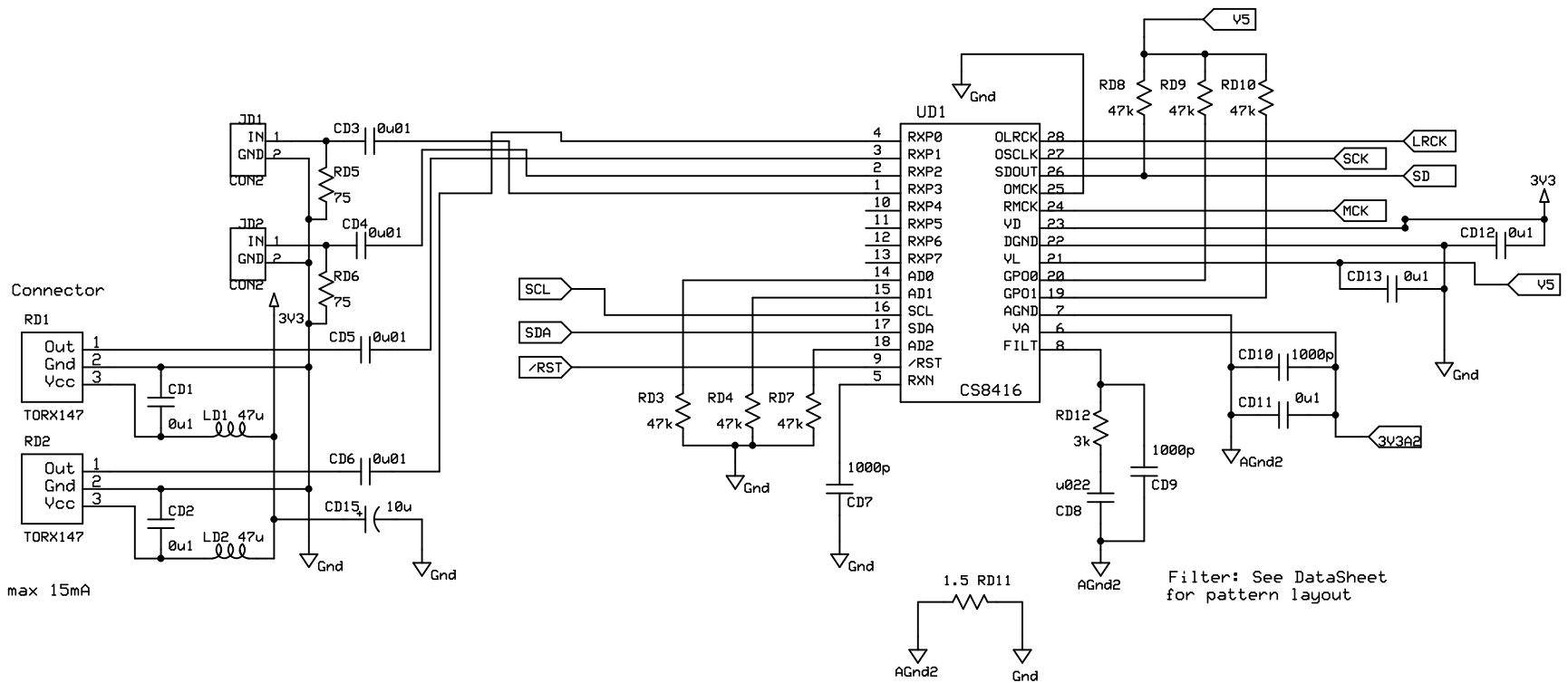
Both Signal through Diff Amp

Differential Amp

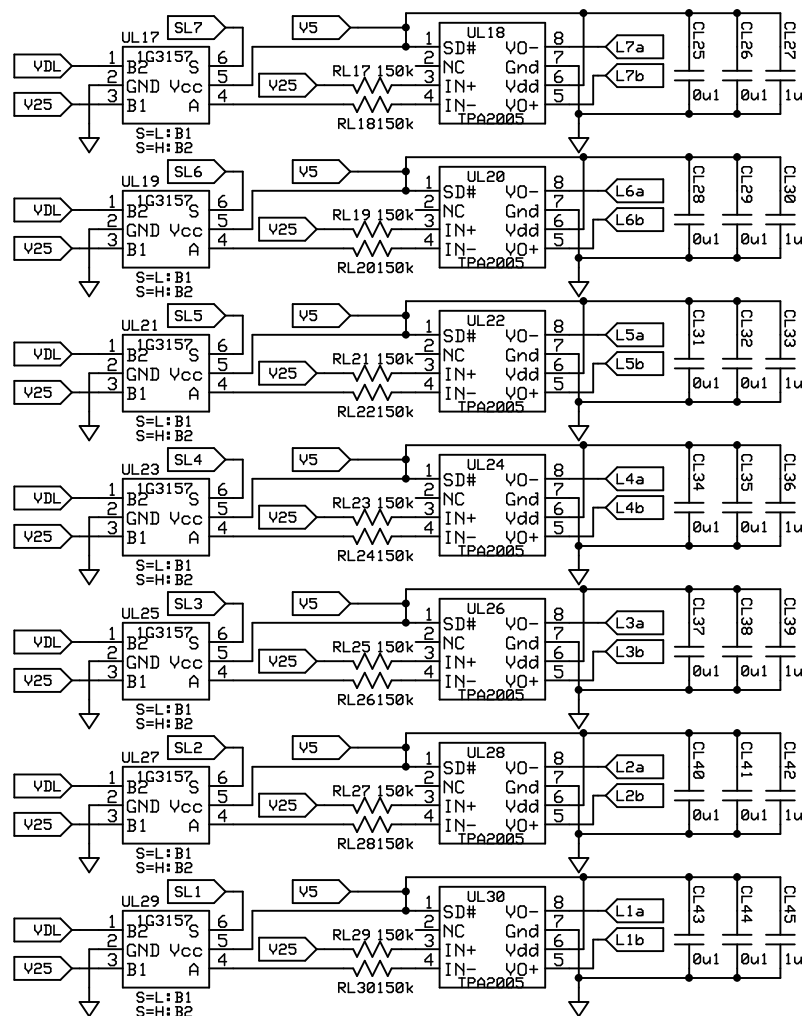
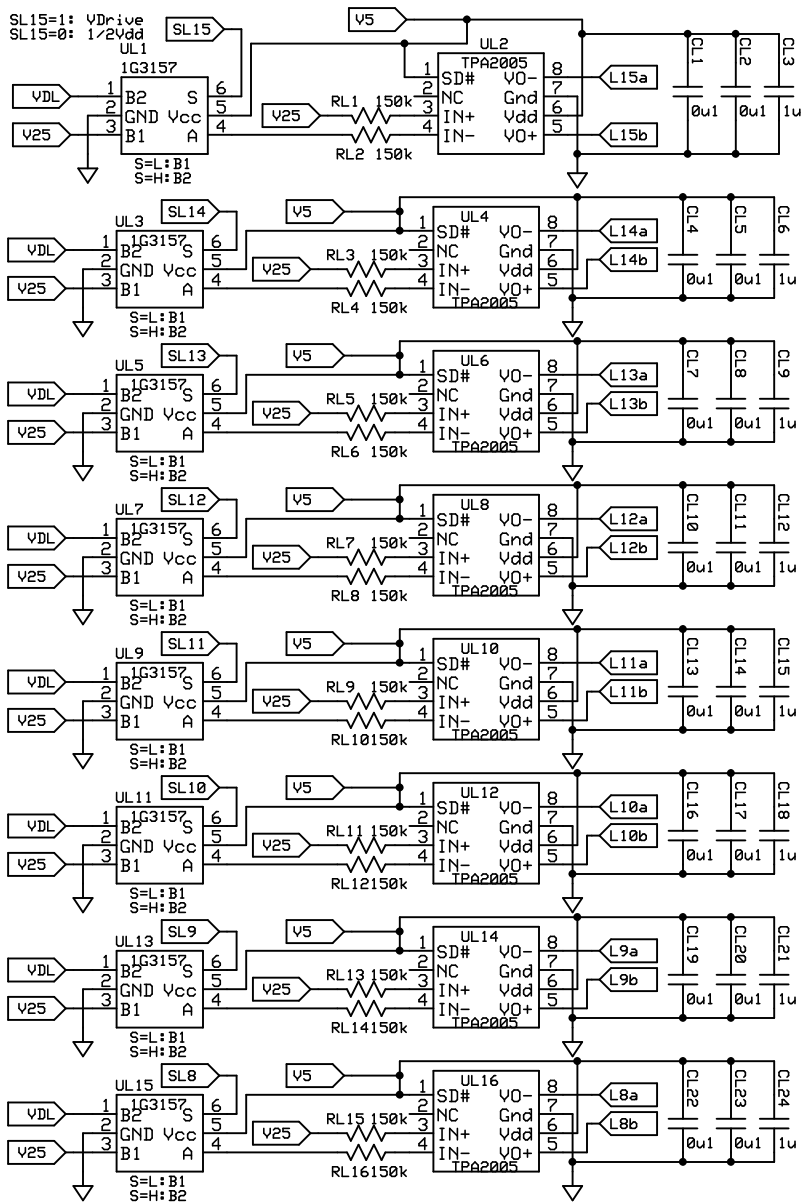
D15	Bit_N	Vout = R2/R1*(Bit_N - D15)
0	0	0
0	1	1
1	0	-1
1	1	0



KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	CPLD
	11/28/2007	

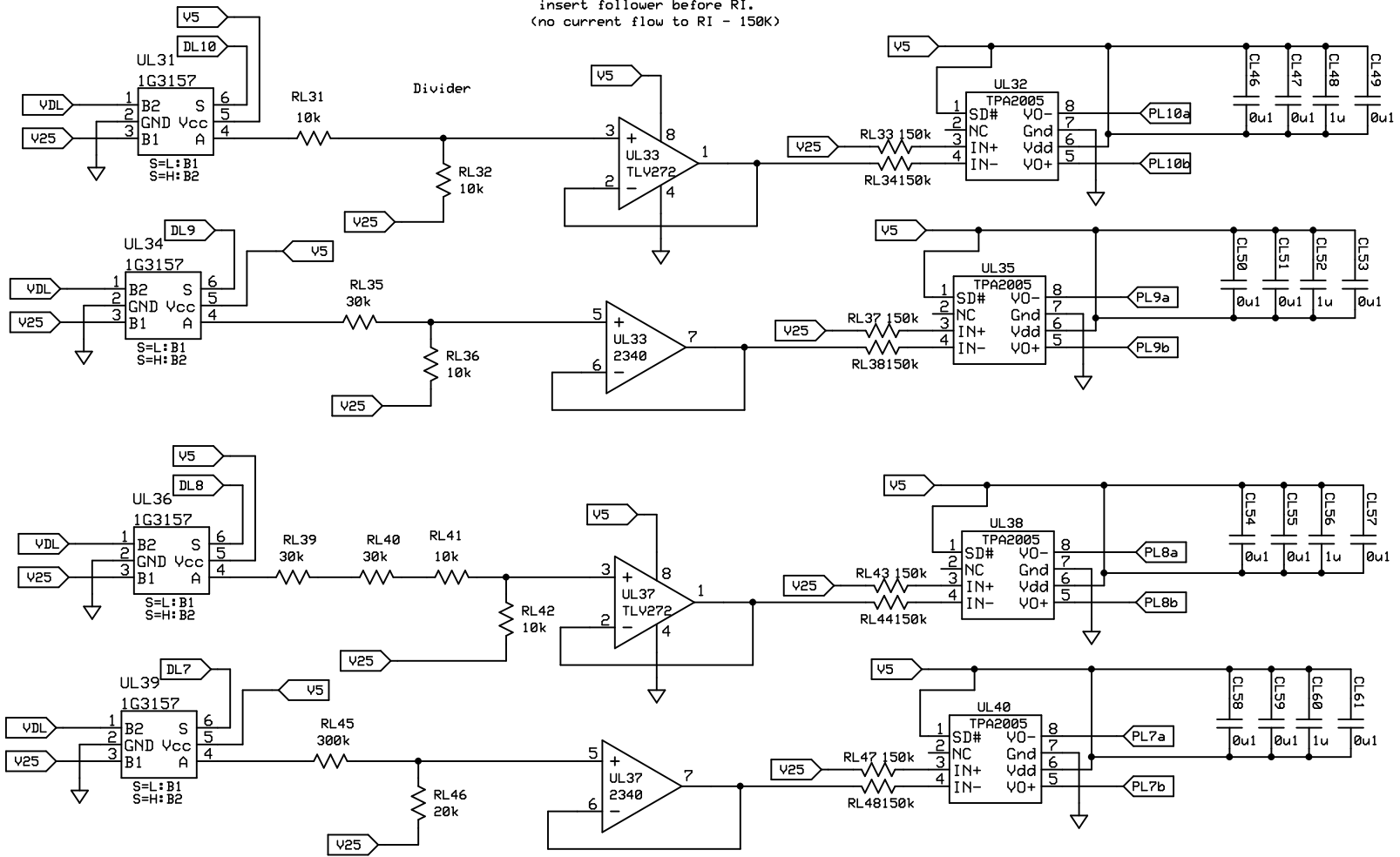


KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	DAI
	11/28/2007	



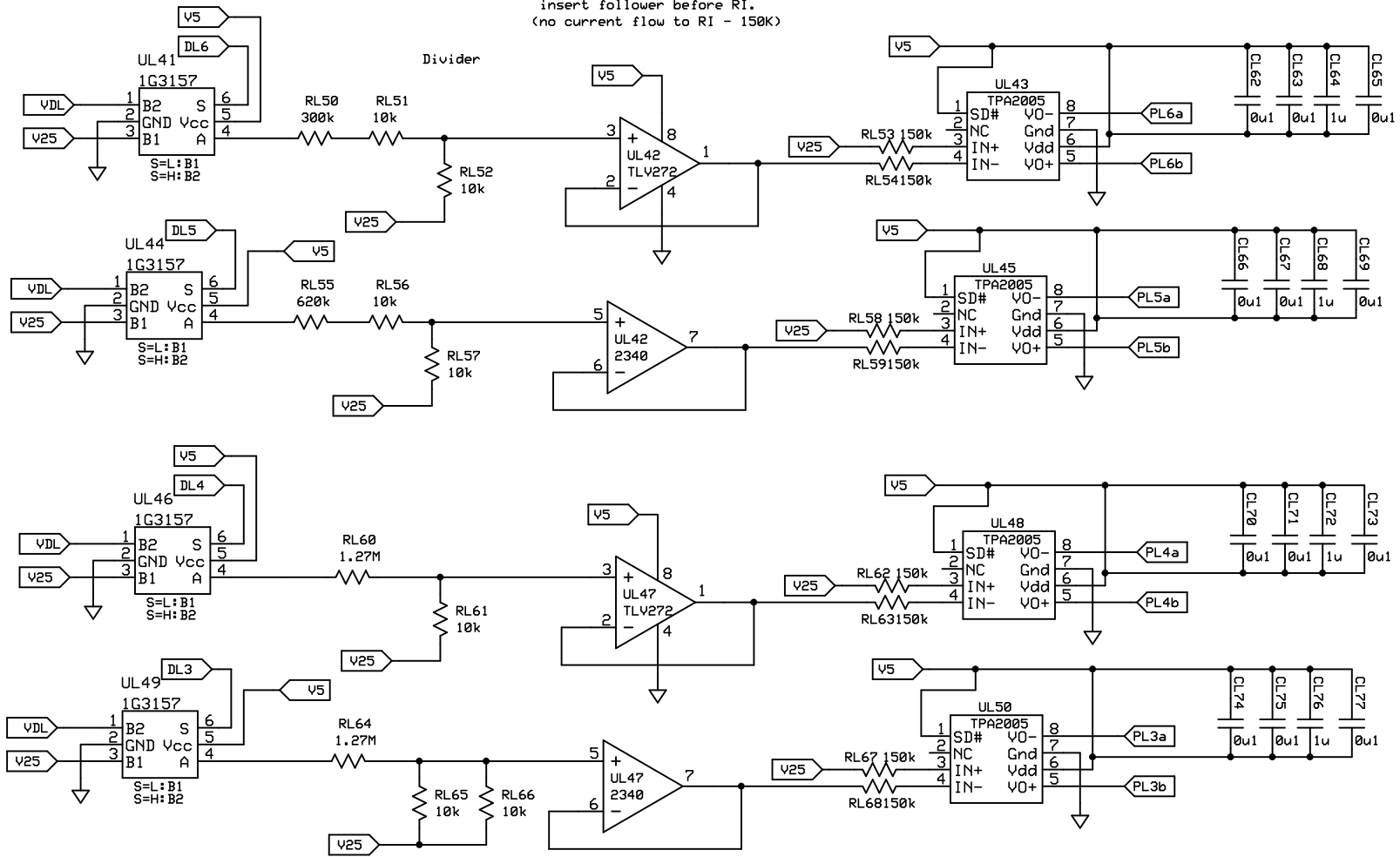
KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Left Side
	11/28/2007	Driven by Number

insert follower before RI.
 (no current flow to RI - 150K)

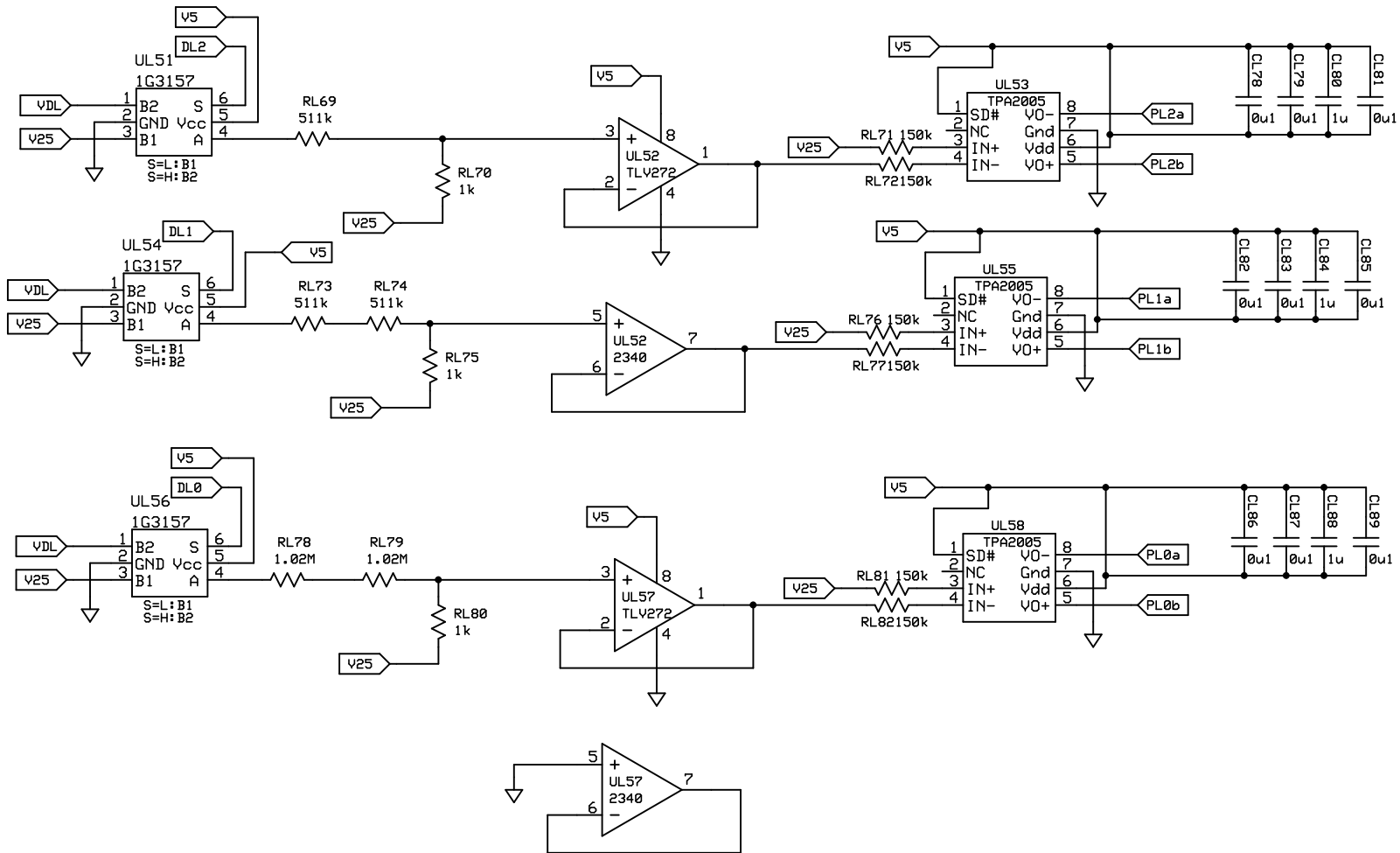


KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Left Side
	11/28/2007	Driven by Voltage

insert follower before RI.
(no current flow to RI - 150k)



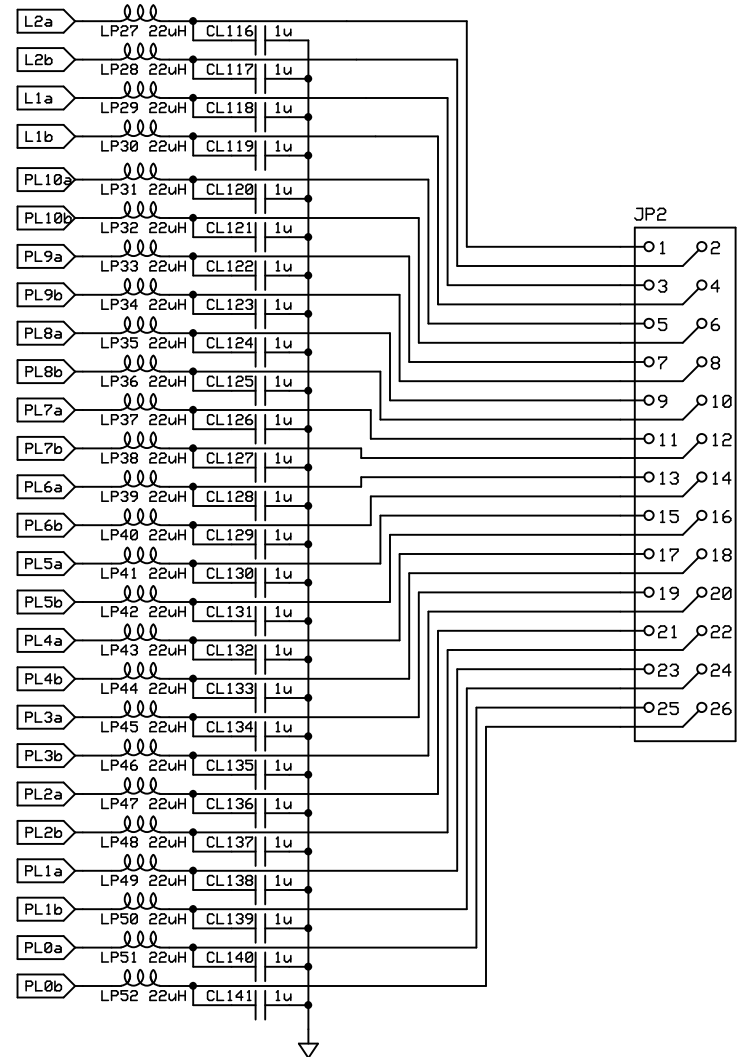
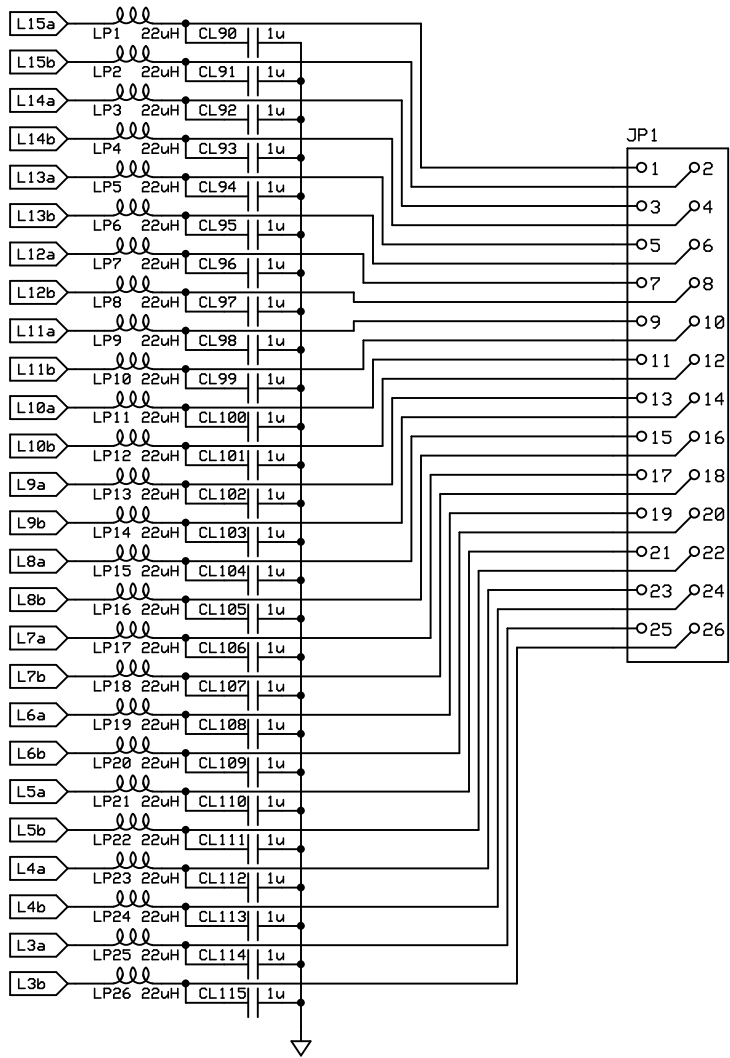
KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Left Side Driven by Voltage
	11/28/2007	



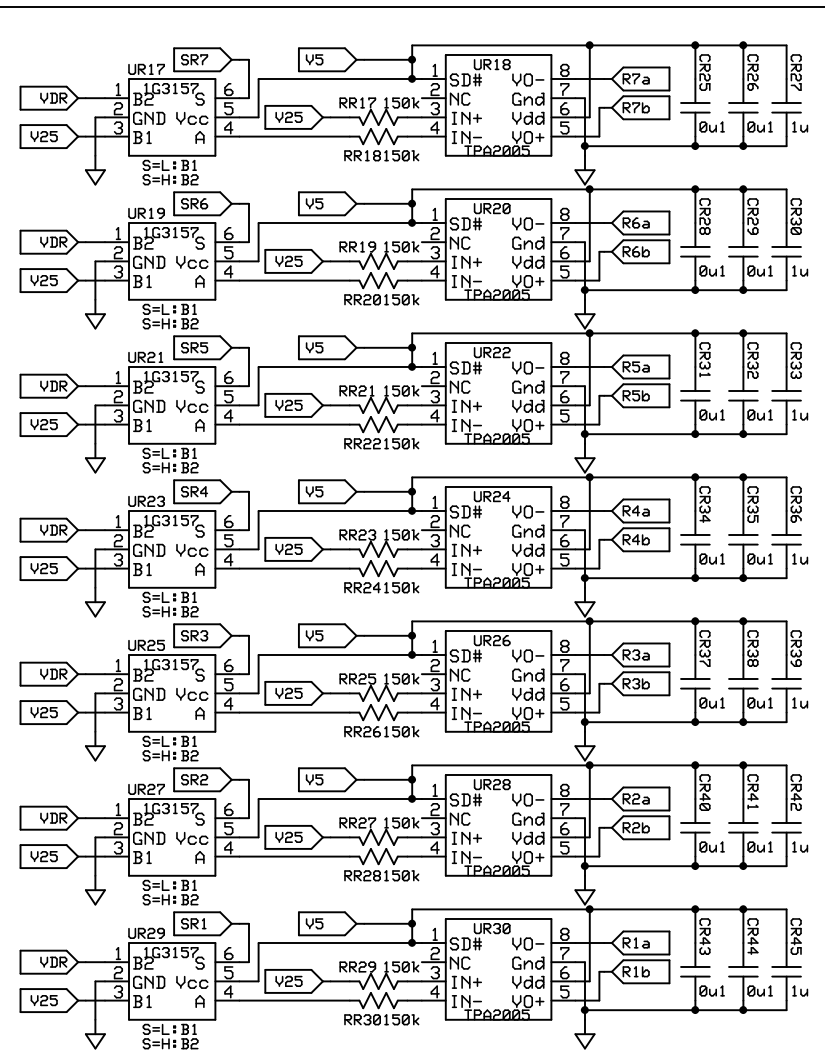
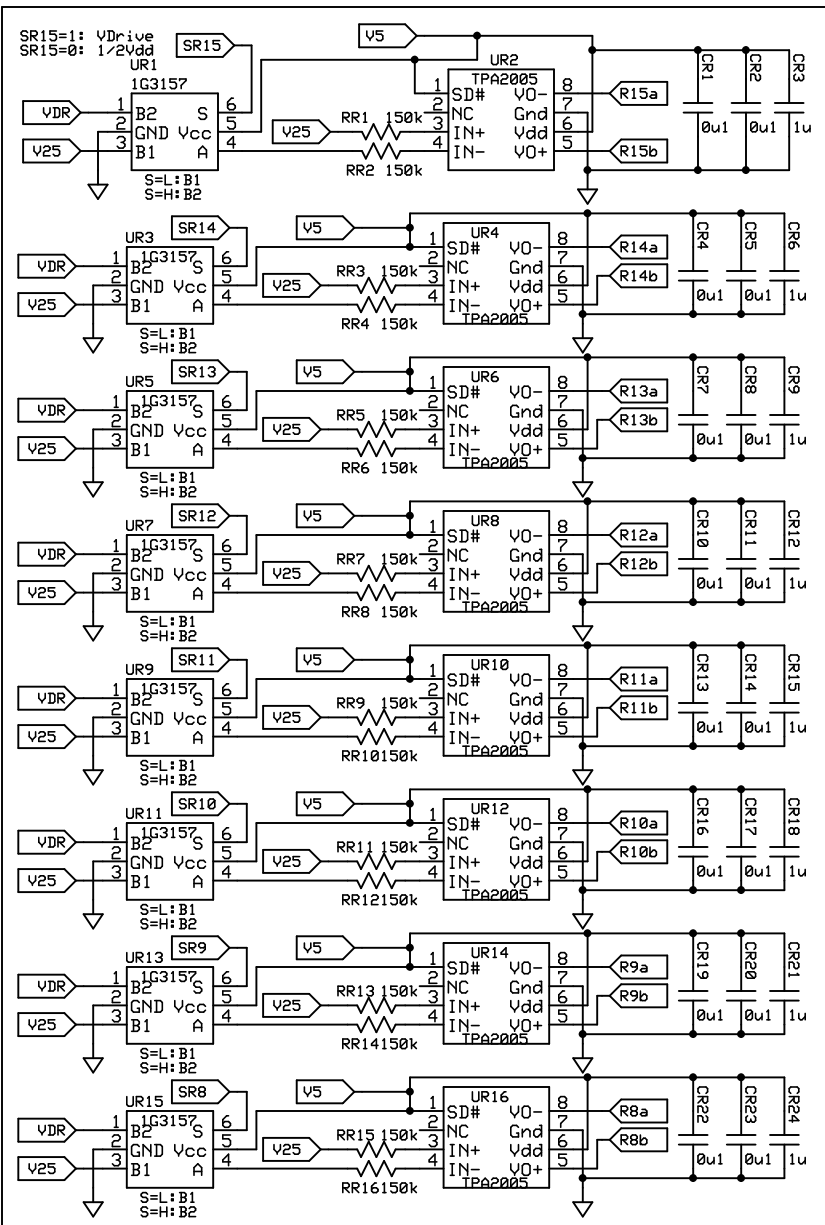
KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Left Side Driven by Voltage
	11/28/2007	

587-1627-1-ND 22uH Taiyo Yuden 1210

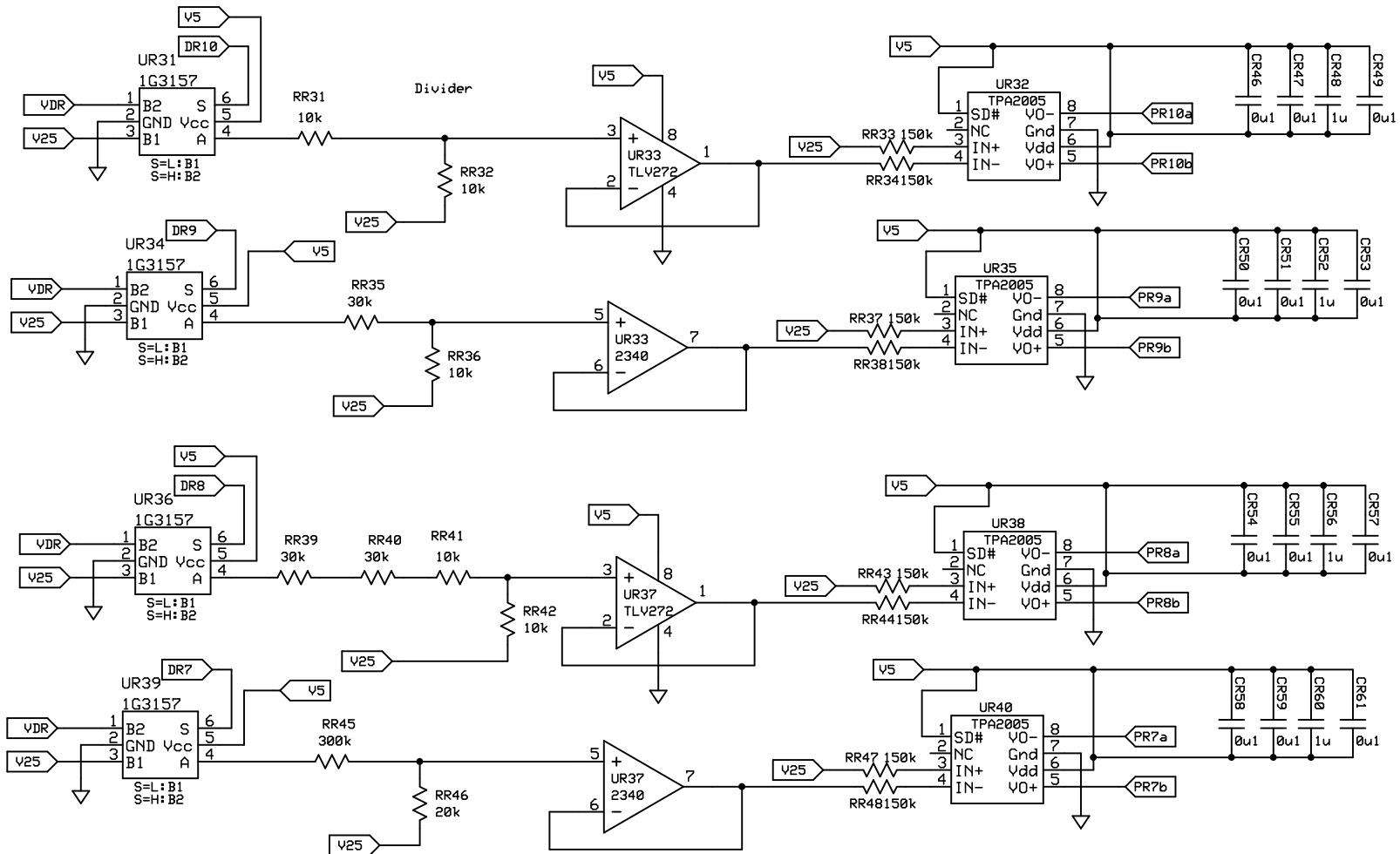
CABLE MC26G-10-ND, 26 FLAT, 10 FT
26 pin Sock IDC MKC26K-ND



KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0 11/28/2007	OUTPUT

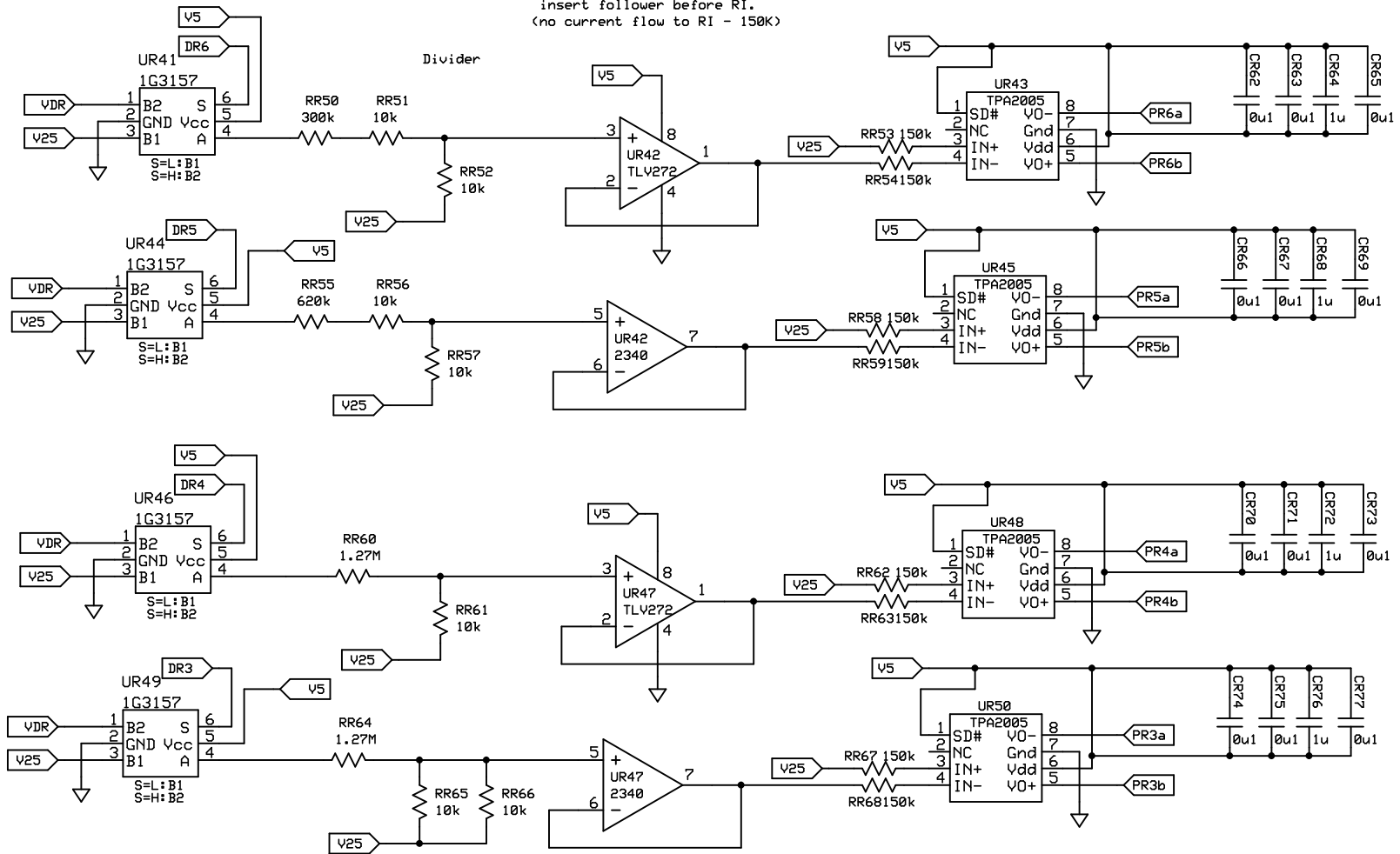


Koon Lab		
Full Digital Speaker		
Koon	Rev 2.0 11/28/2007	Right Side Driven by Number

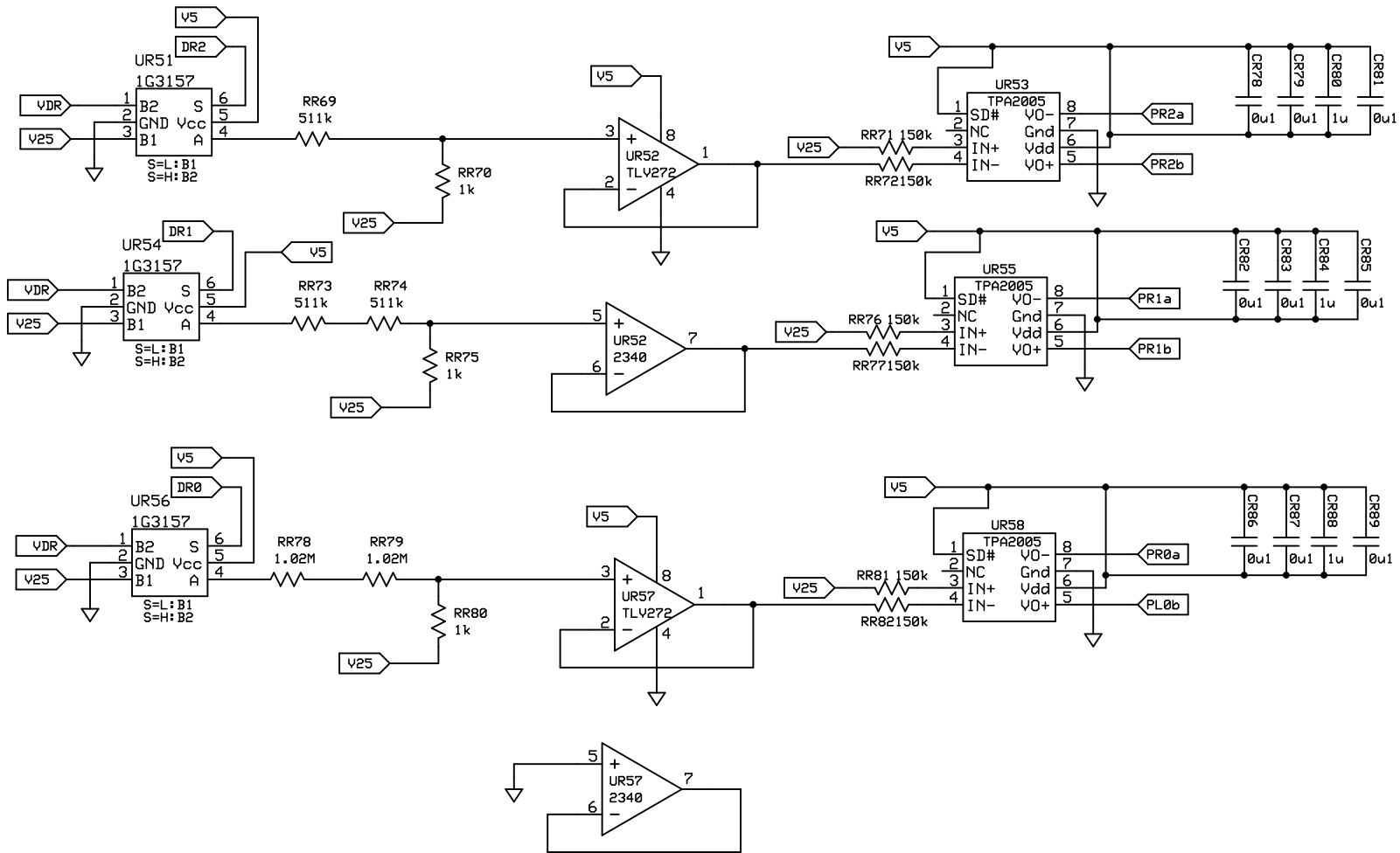


KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Right Side
	11/28/2007	Driven by Voltage

insert follower before RI.
(no current flow to RI - 150K)



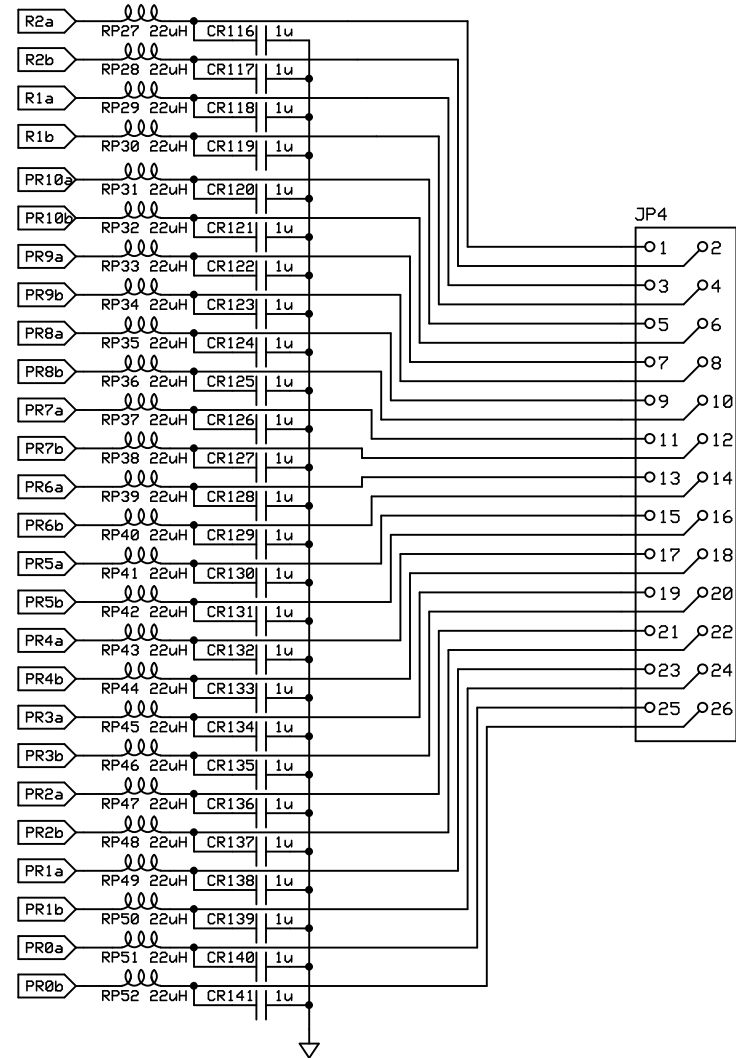
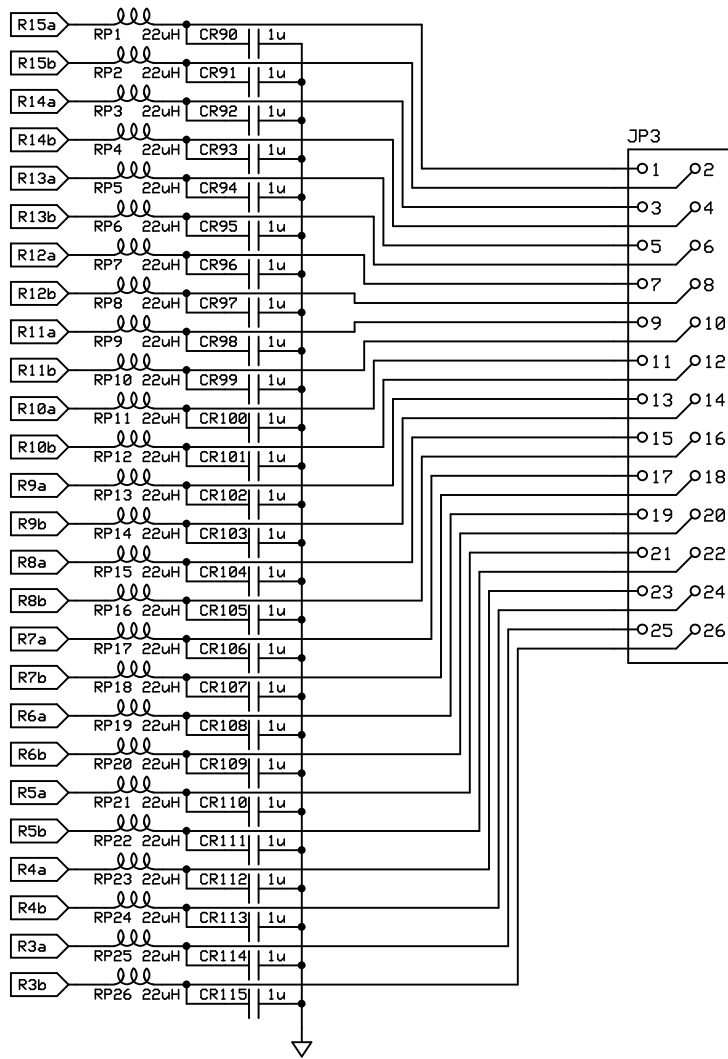
KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0 11/28/2007	Right Side Driven by Voltage



KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Right Side Driven by Voltage
	11/28/2007	

587-1627-1-ND 22uH Taiyo Yuden 1210

CABLE MC26G-10-ND, 26 FLAT, 10 FT
26 pin Sock IDC MKC26K-ND



KOON Lab		
Full Digital Speaker		
Koon	Rev 2.0	Right Side OUTPUT
	11/28/2007	