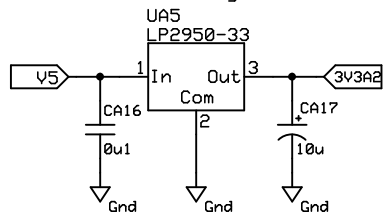
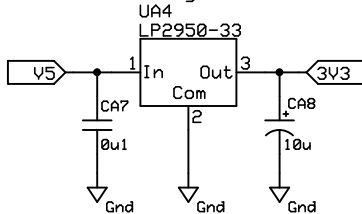


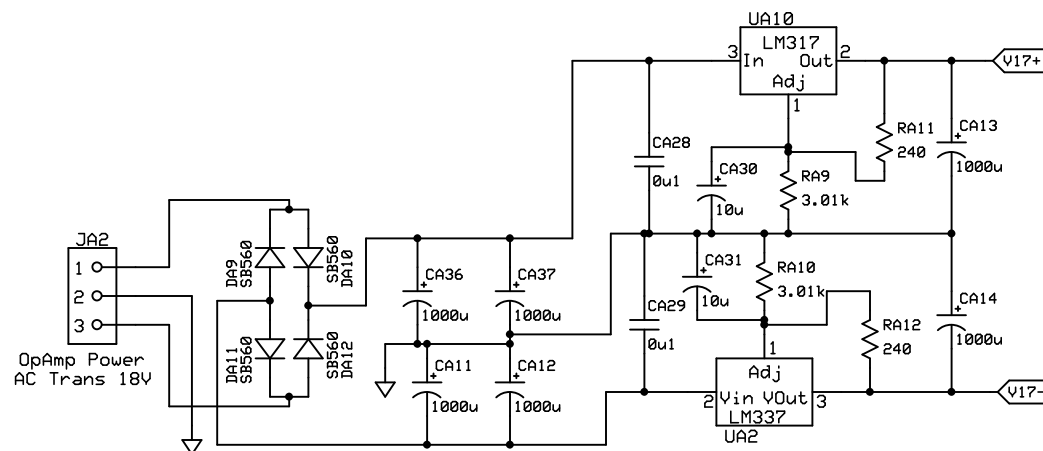
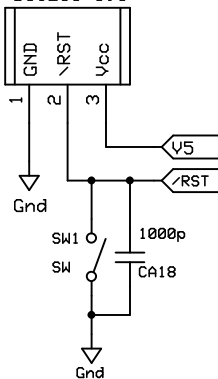
CS8416 Analog Section



CS8416 Digital Section



UA6 DS1233-5.0



KOON Lab

Full Digital Speaker

Koon

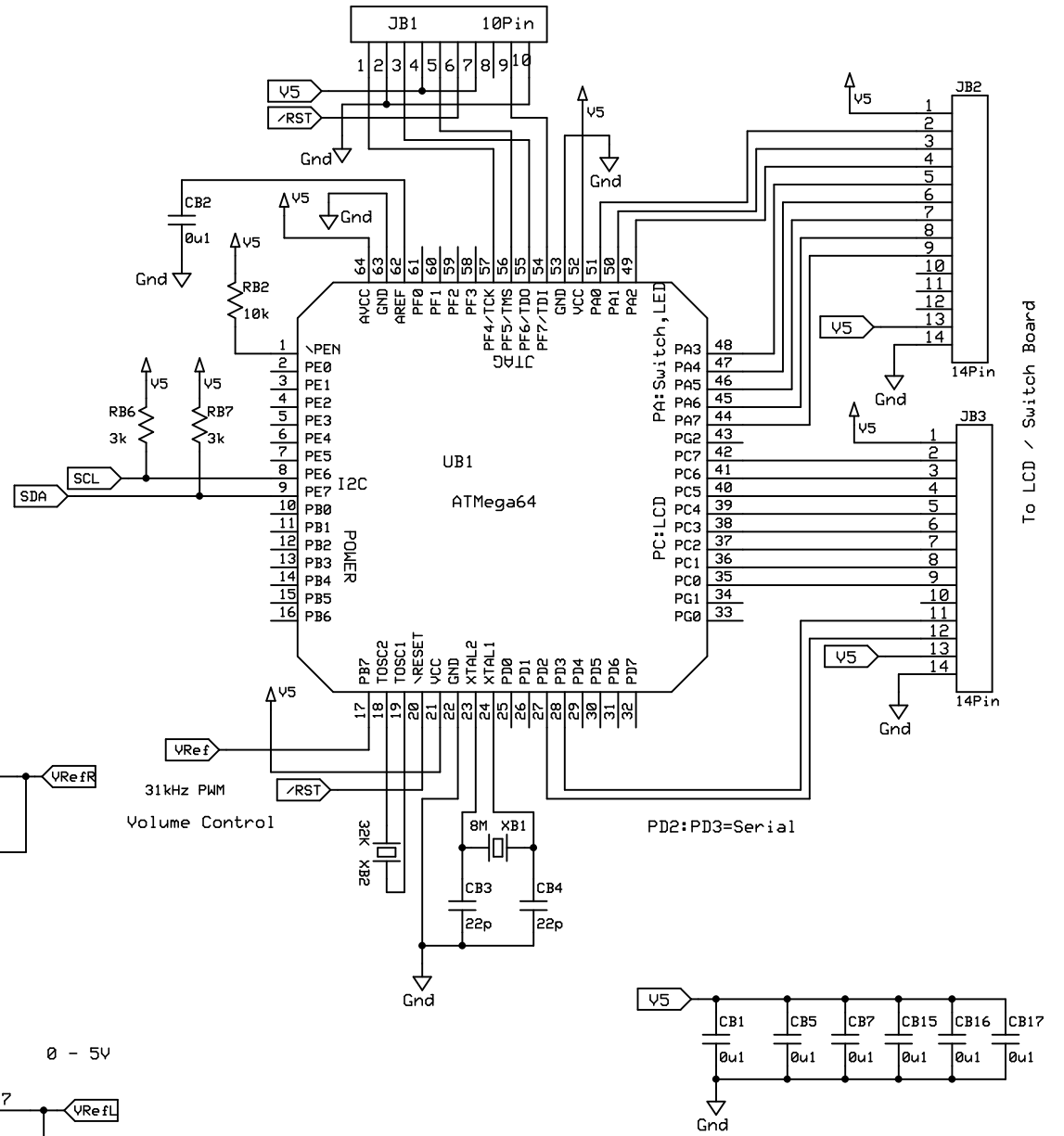
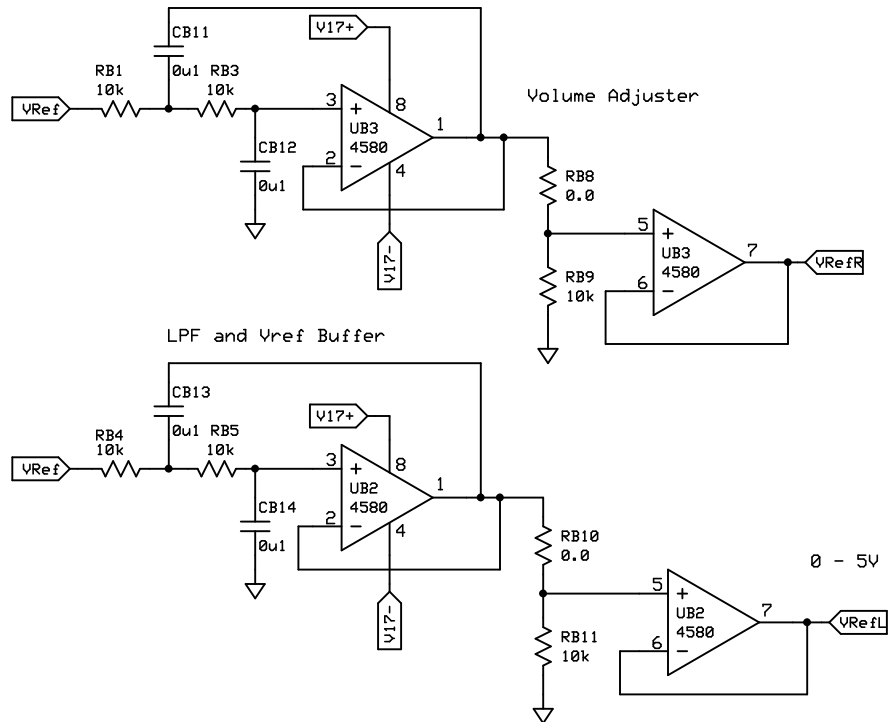
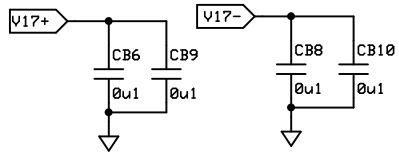
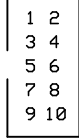
Rev 1.0

9/12/2007

Power

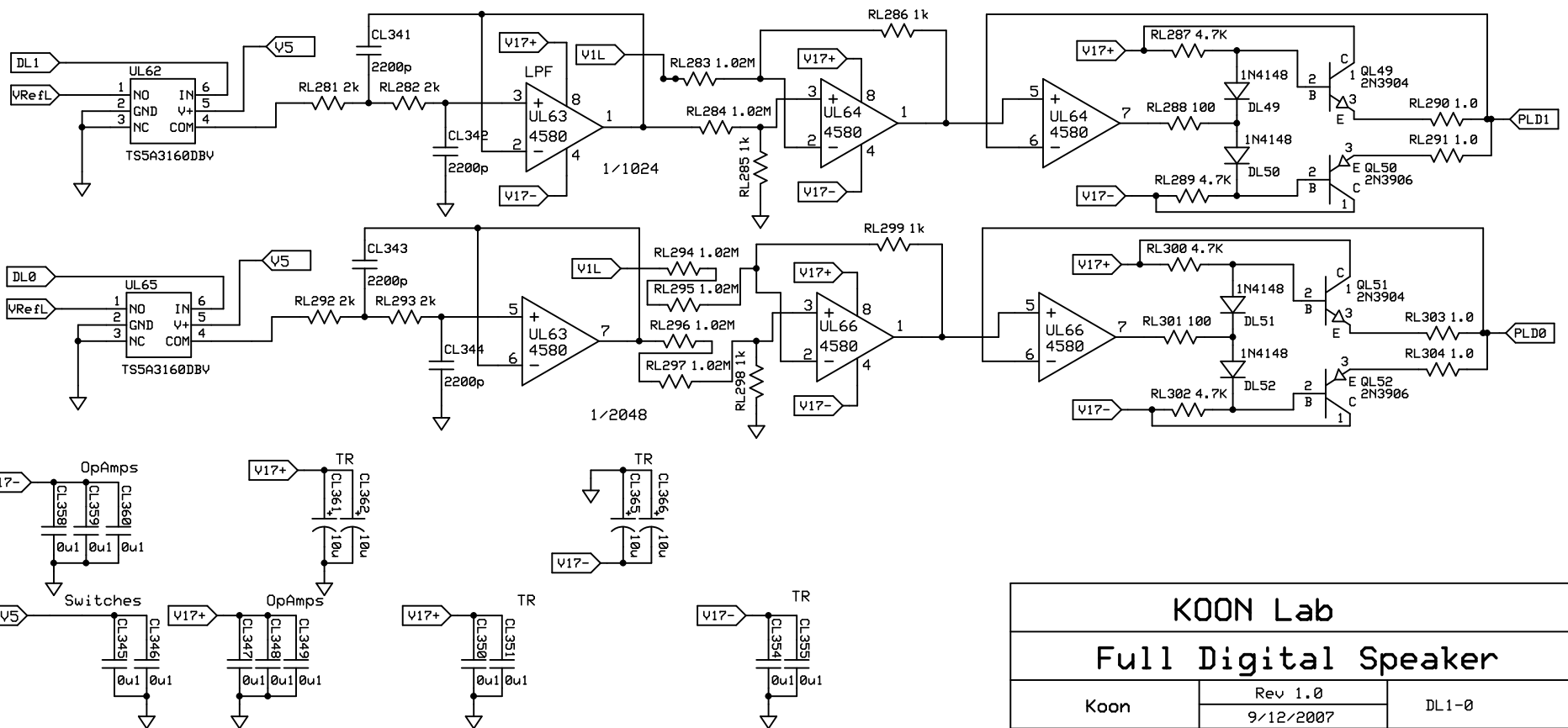
\PEN: SPI Program Enabled when low

JTAG Connector
Top View

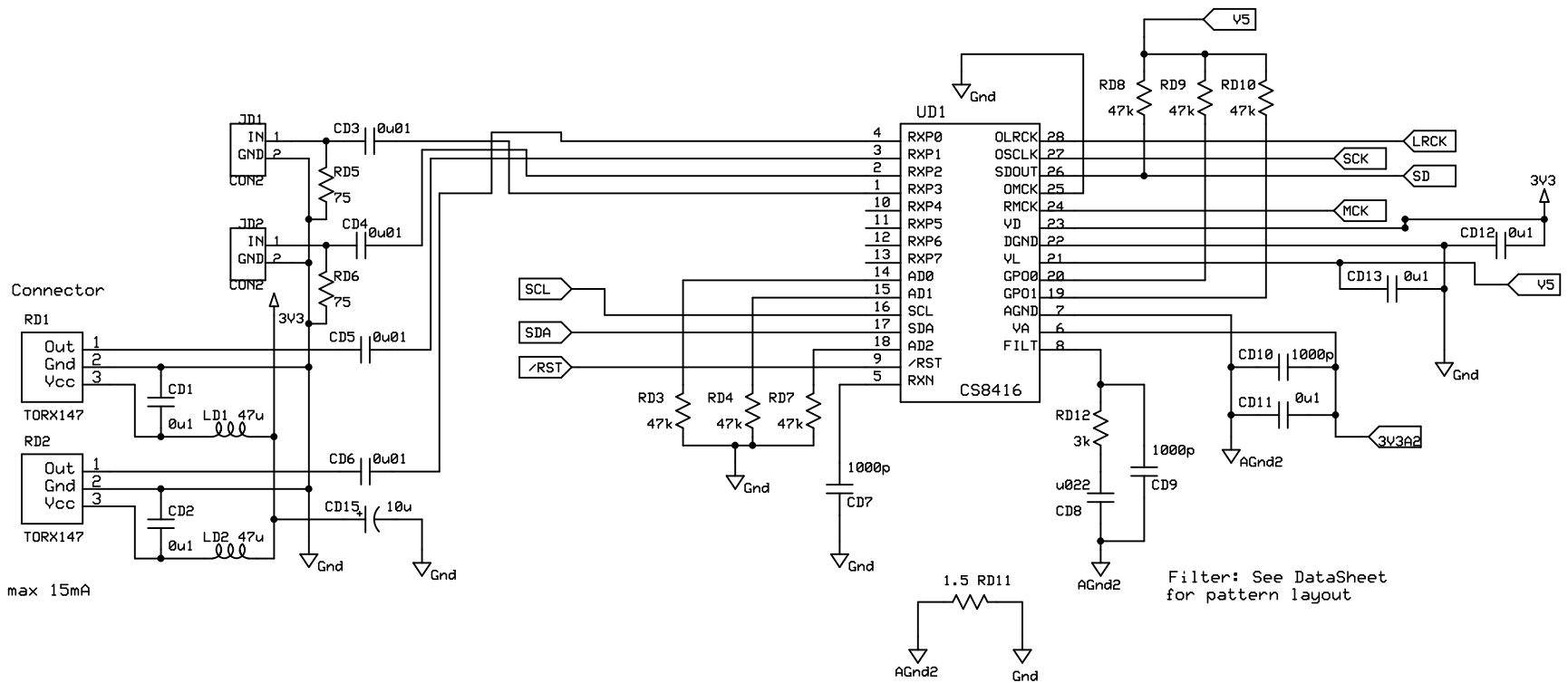


To LCD / Switch Board

KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	AVR
	9/12/2007	



KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DL1-0
	9/12/2007	



Connector

max 15mA

Filter: See DataSheet for pattern layout

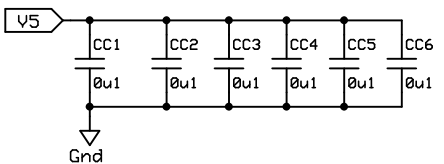
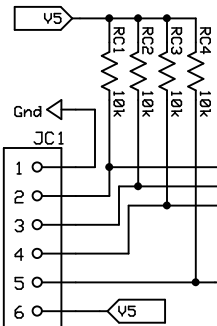
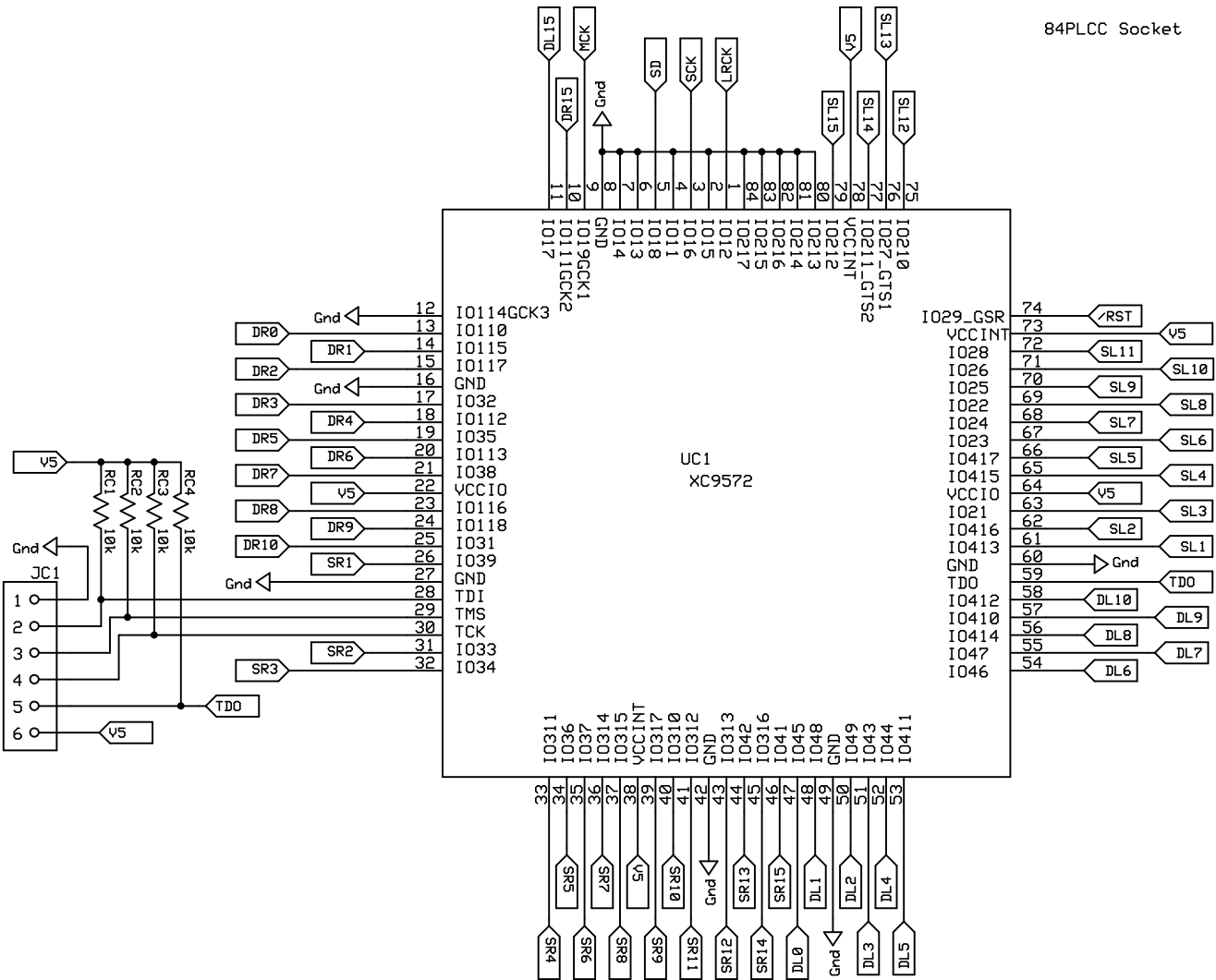
Right Justified 16 bit

SORES[1:0] = 10, 16bit

SOSF = 0, 64fs

SOJUST = 0, Right Justify

KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DAI
	9/12/2007	



84PLCC Socket

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

D14-D11	SL15-1
0000	00000000000000
0001	00000000000001
0010	00000000000011
:	:
1110	0111111111111111
1111	1111111111111111

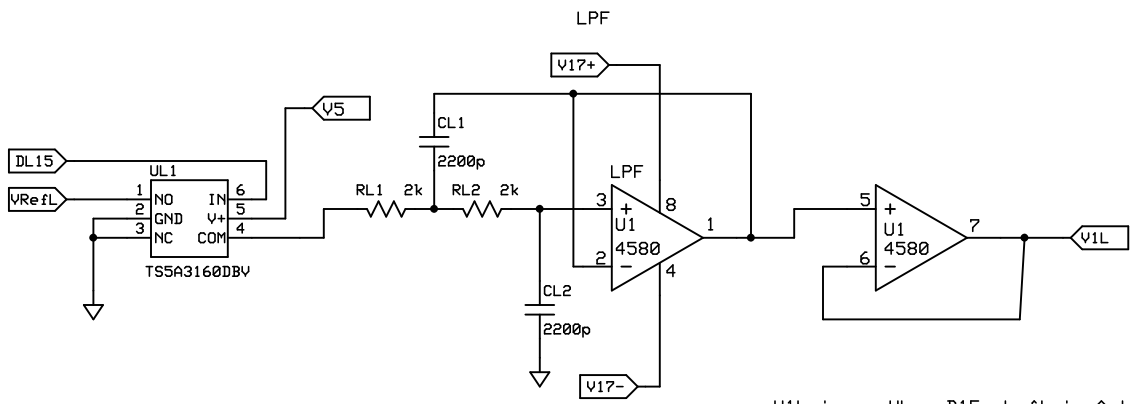
Dx10-0
PCM Data Bit 10-0
To Voltage Magnitude Speaker drive,
Dx10: 1/2
Dx9: 1/4
Dx8: 1/8
Dx7: 1/16
Dx6: 1/32
Dx5: 1/64
Dx4: 1/128
Dx3: 1/256
Dx2: 1/512
Dx1: 1/1024
Dx0: 1/2048

Both Signal through Diff Amp

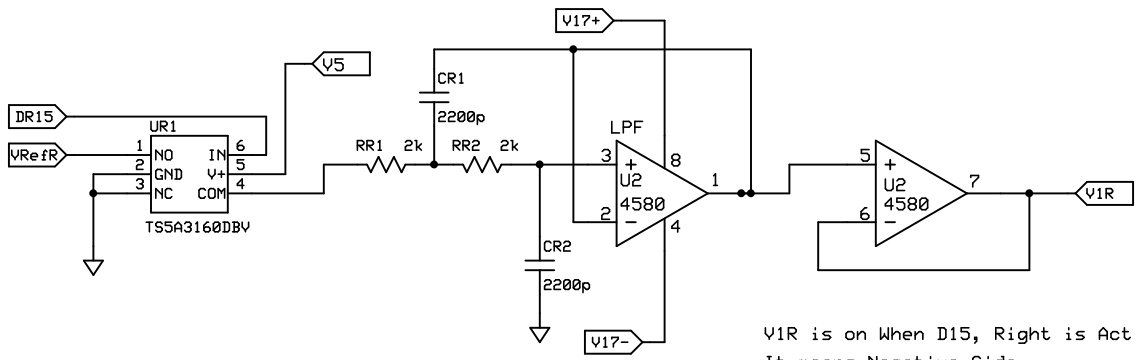
Differential Amp

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

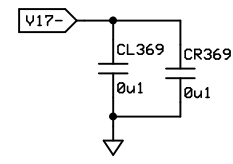
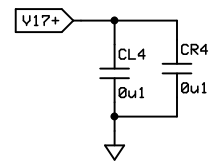
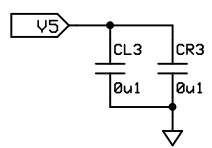
Koon Lab		
Full Digital Speaker		
Koon	Rev 1.0	CPLD
	9/12/2007	



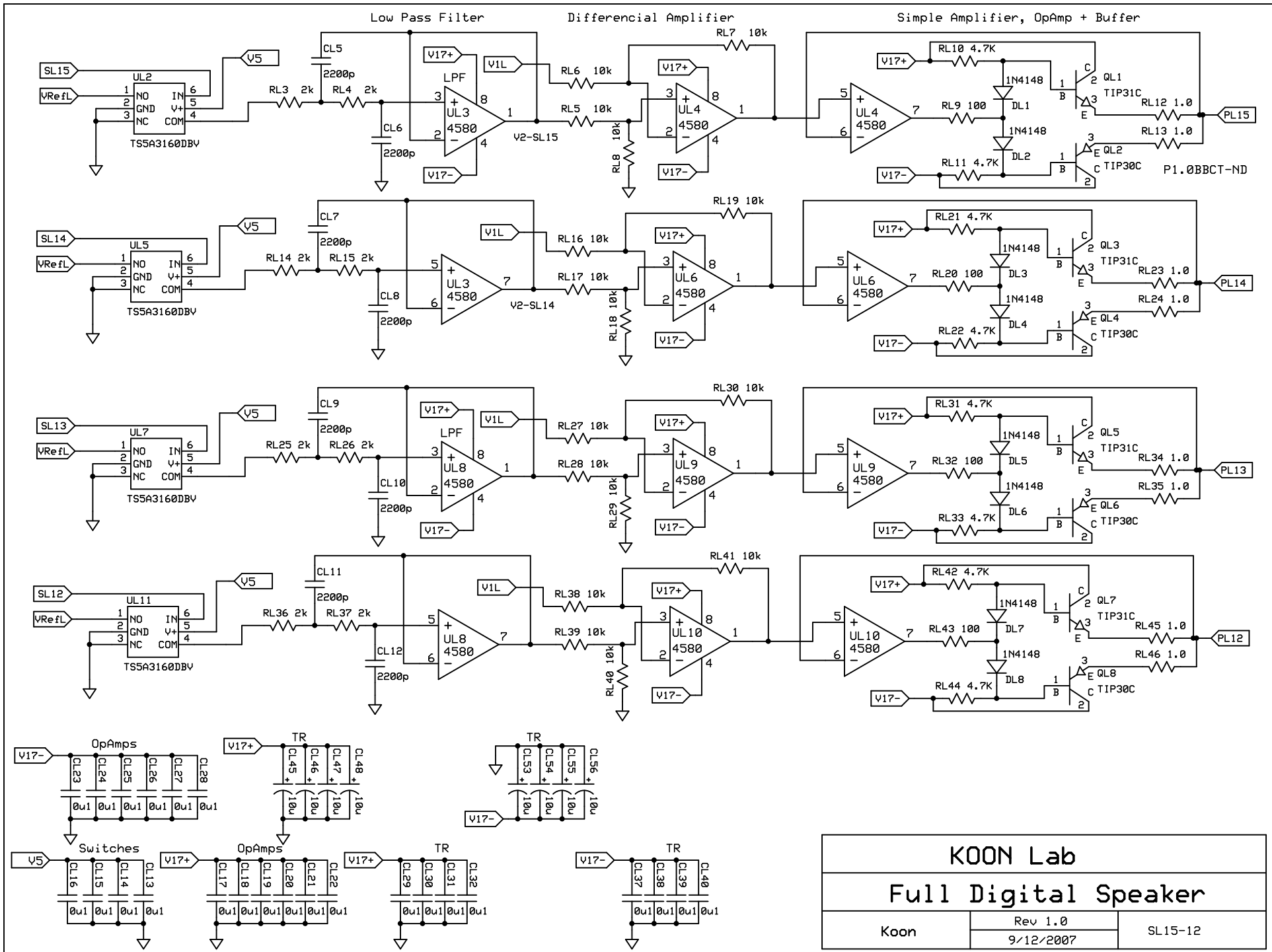
V1L is on When D15, Left is Active.
It means Negative Side



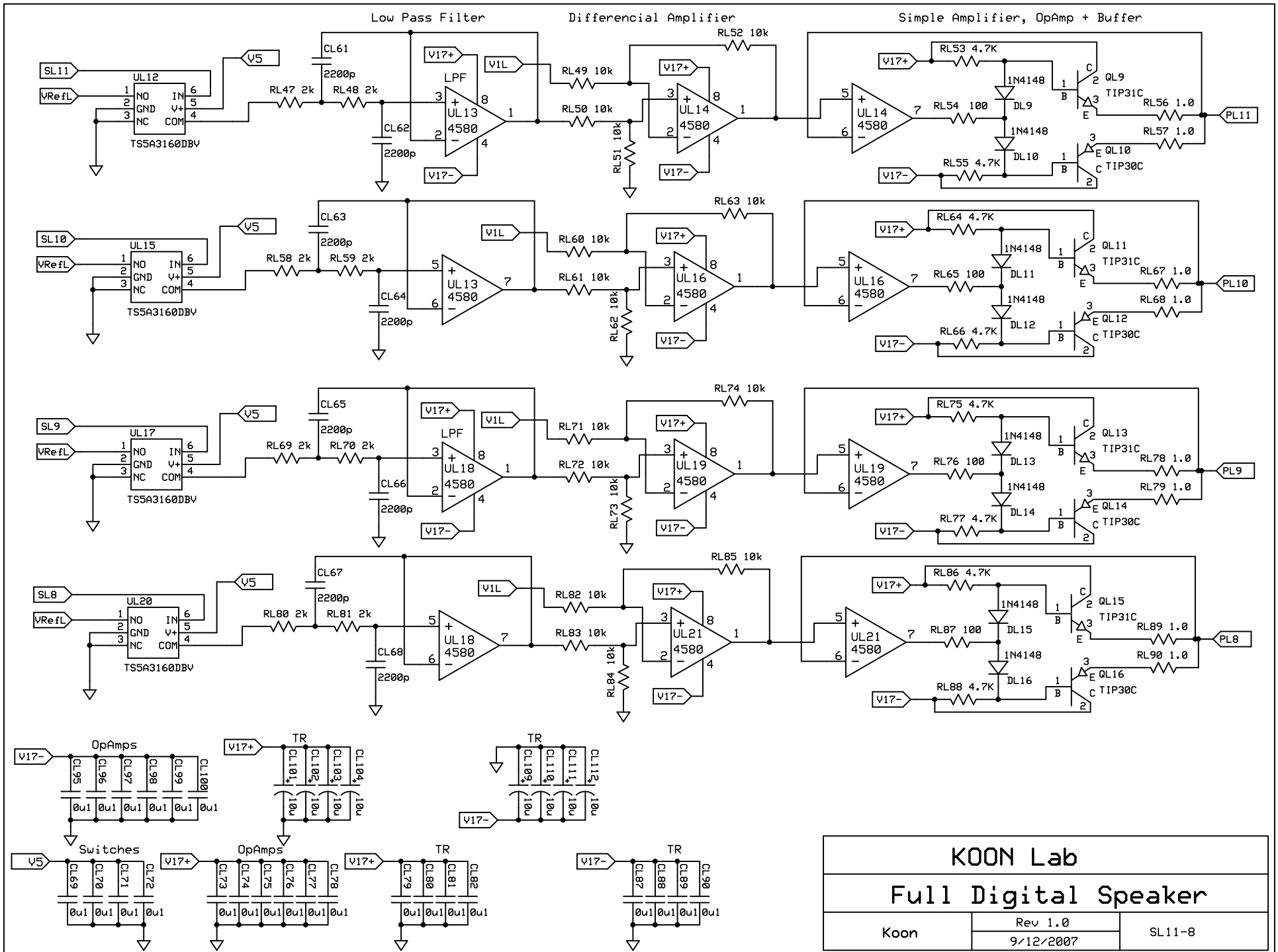
V1R is on When D15, Right is Active.
It means Negative Side



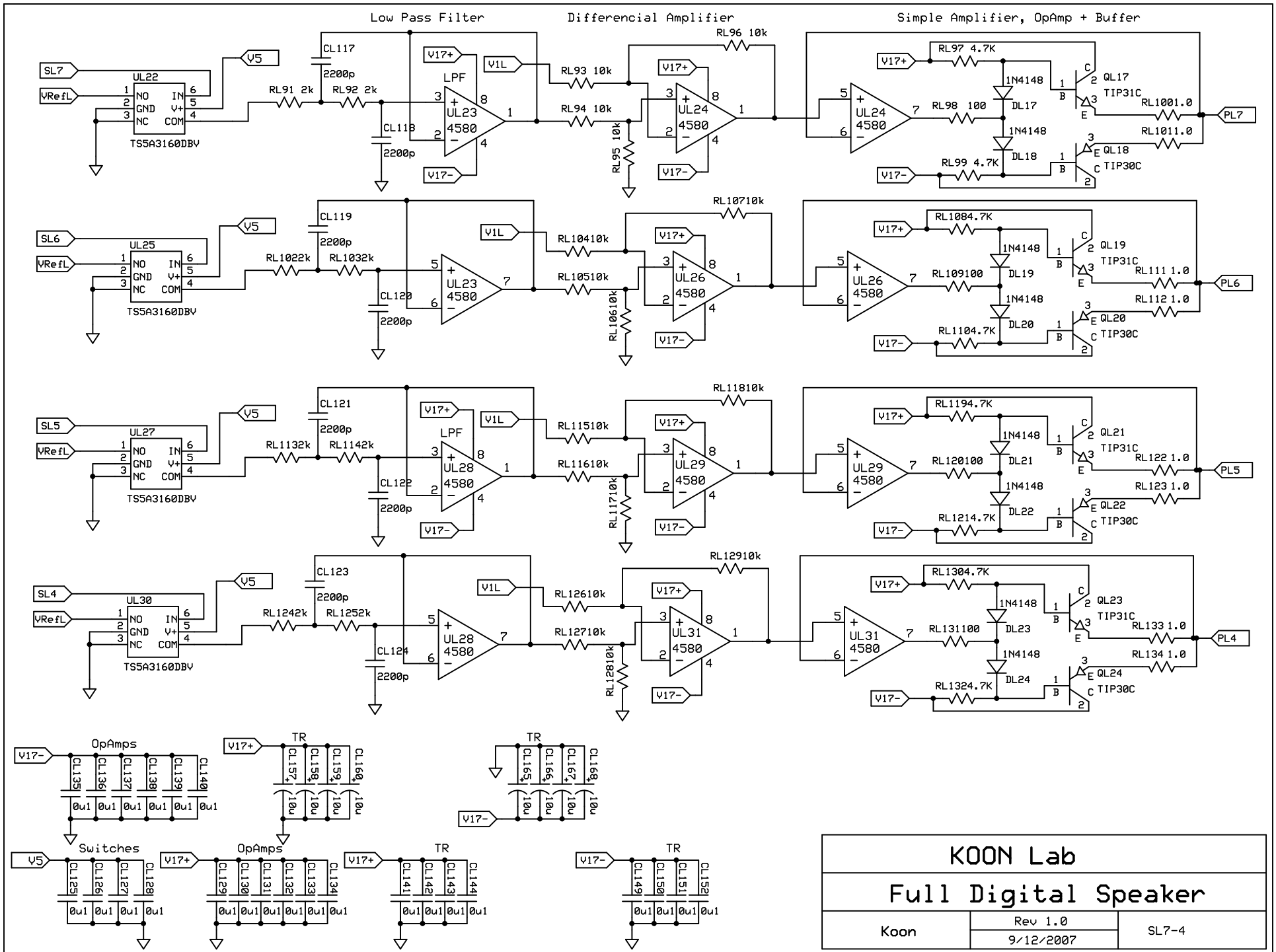
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	Vref Circuit
	9/12/2007	



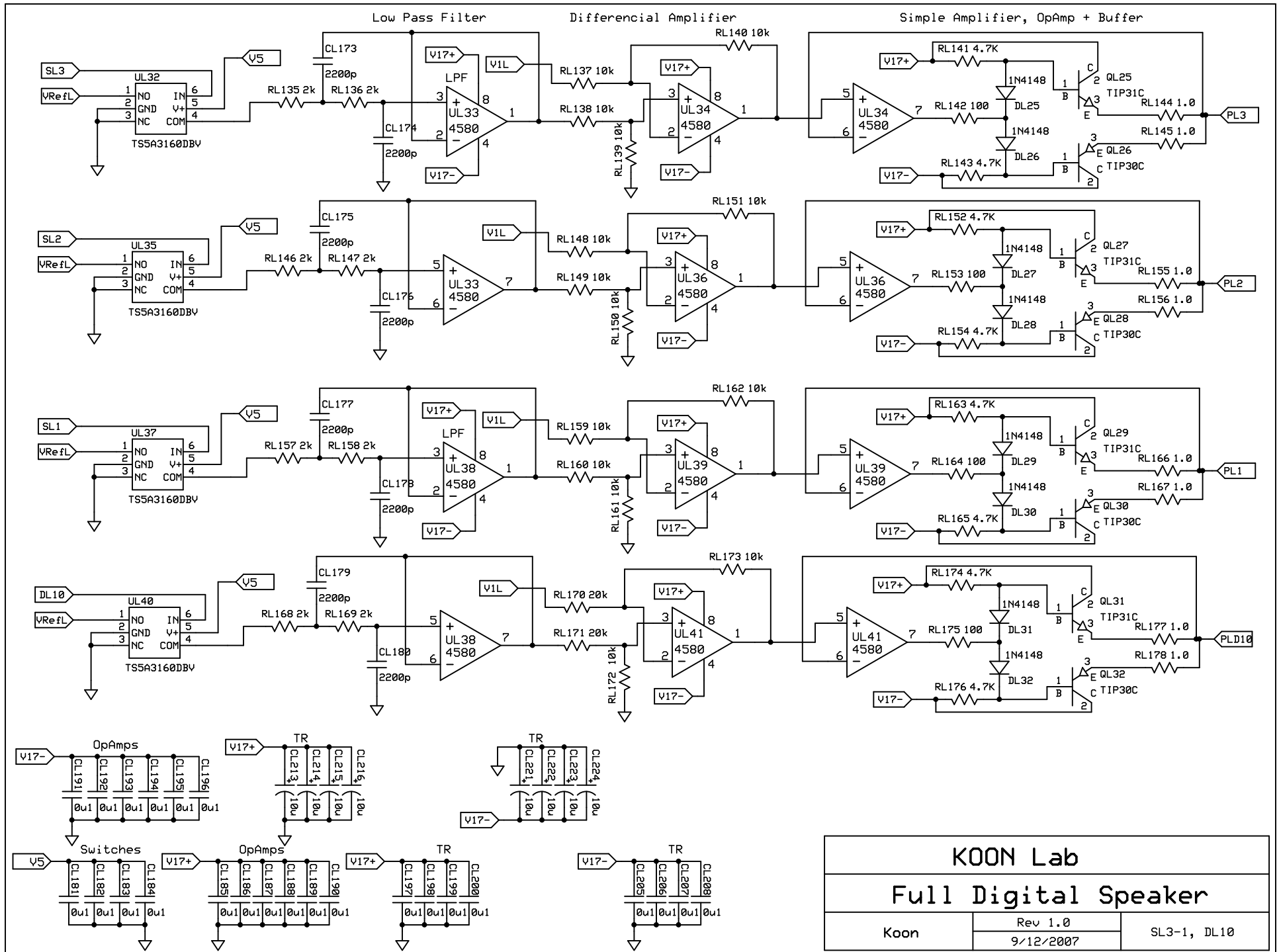
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0 9/12/2007	SL15-12



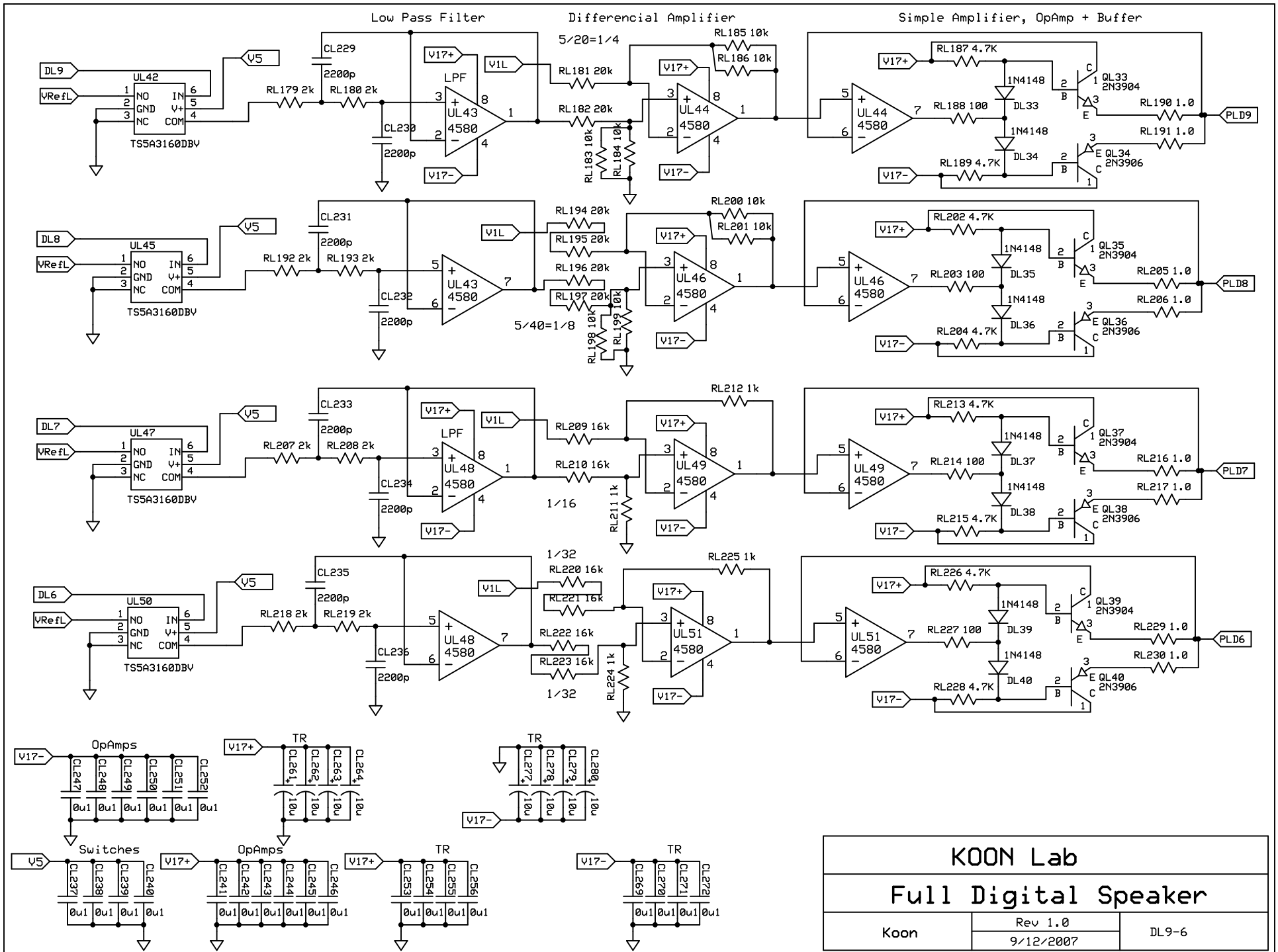
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SL11-8
	9/12/2007	



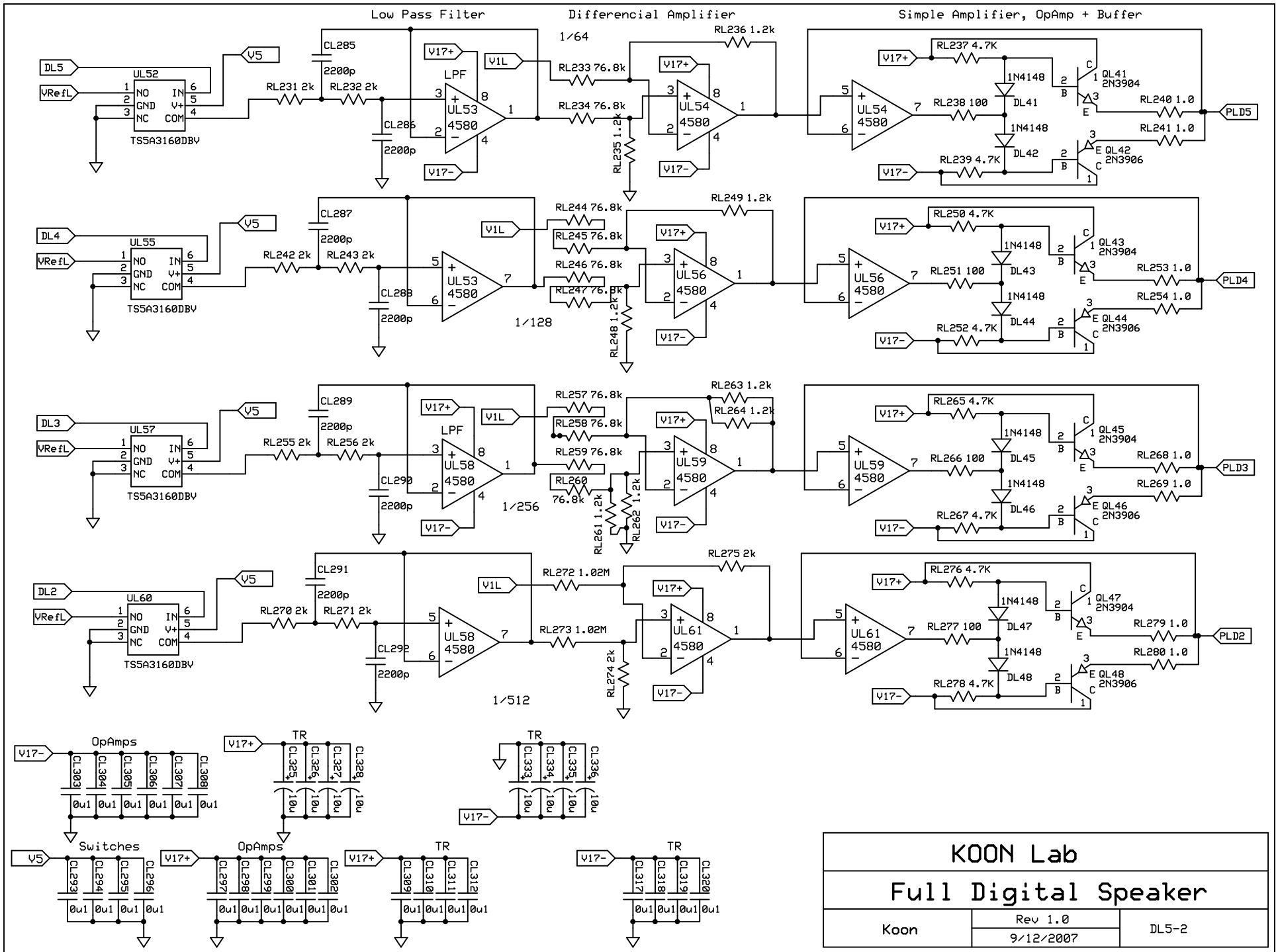
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SL7-4
	9/12/2007	



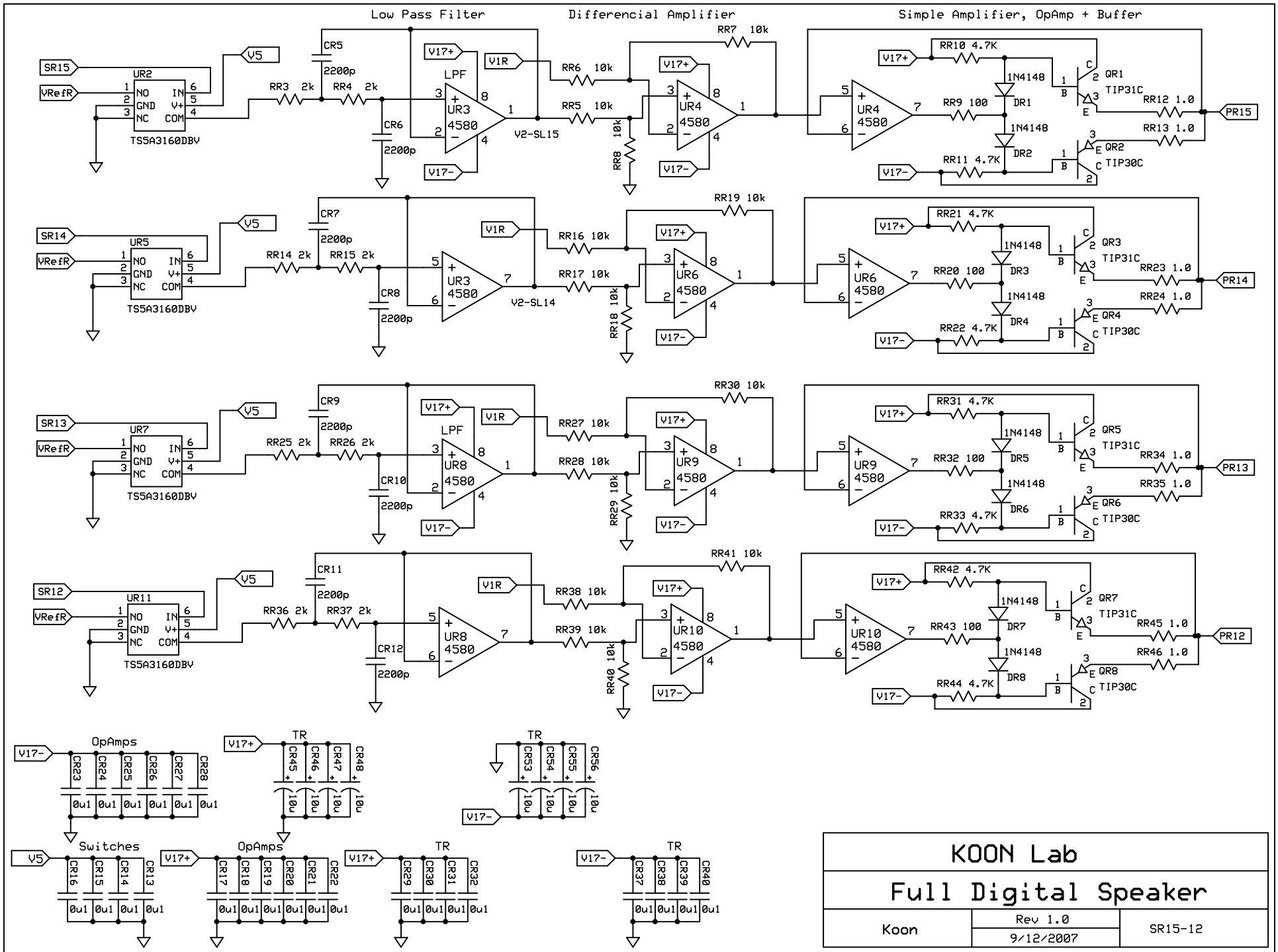
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SL3-1, DL10
	9/12/2007	



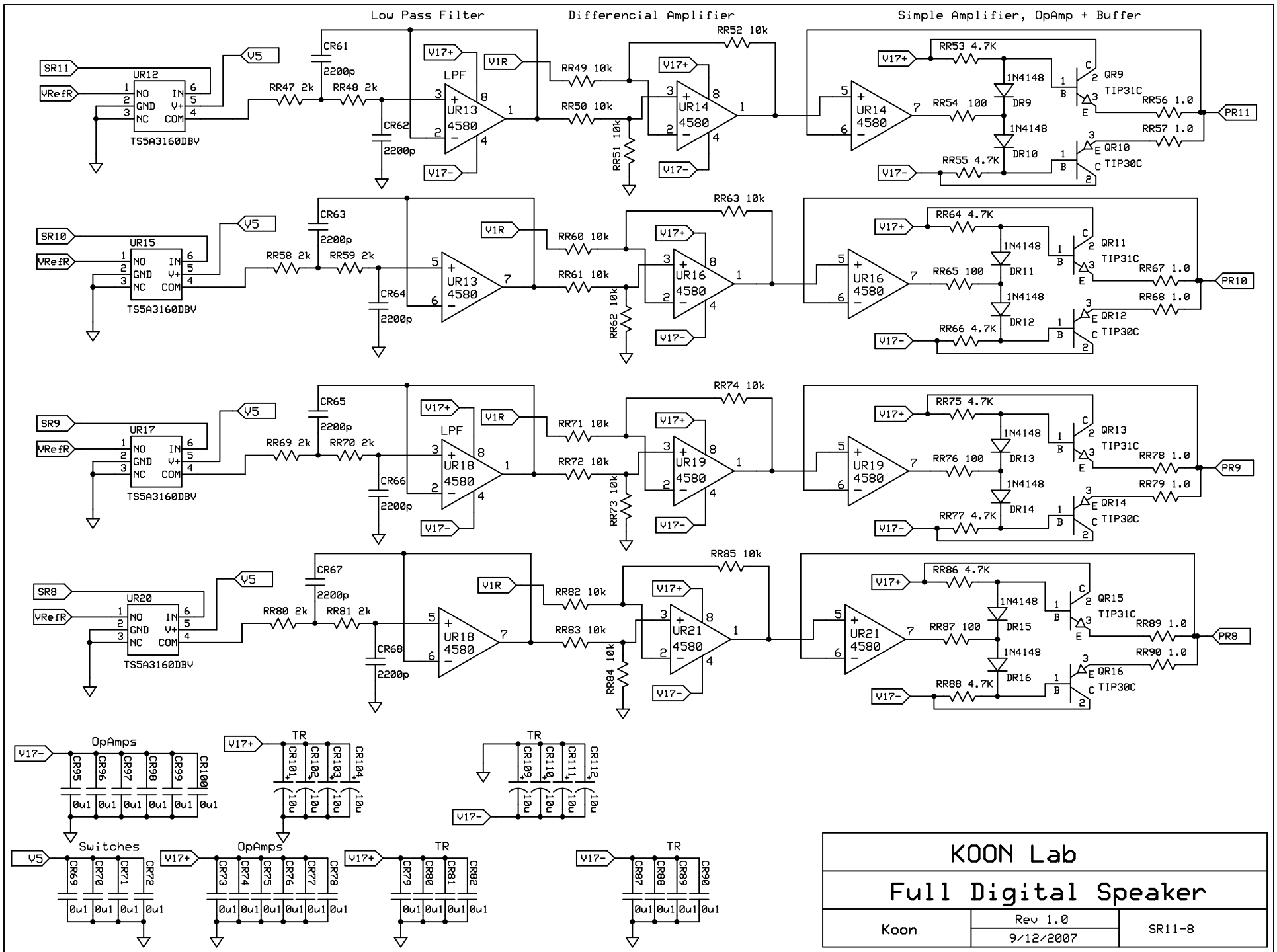
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DL9-6
	9/12/2007	



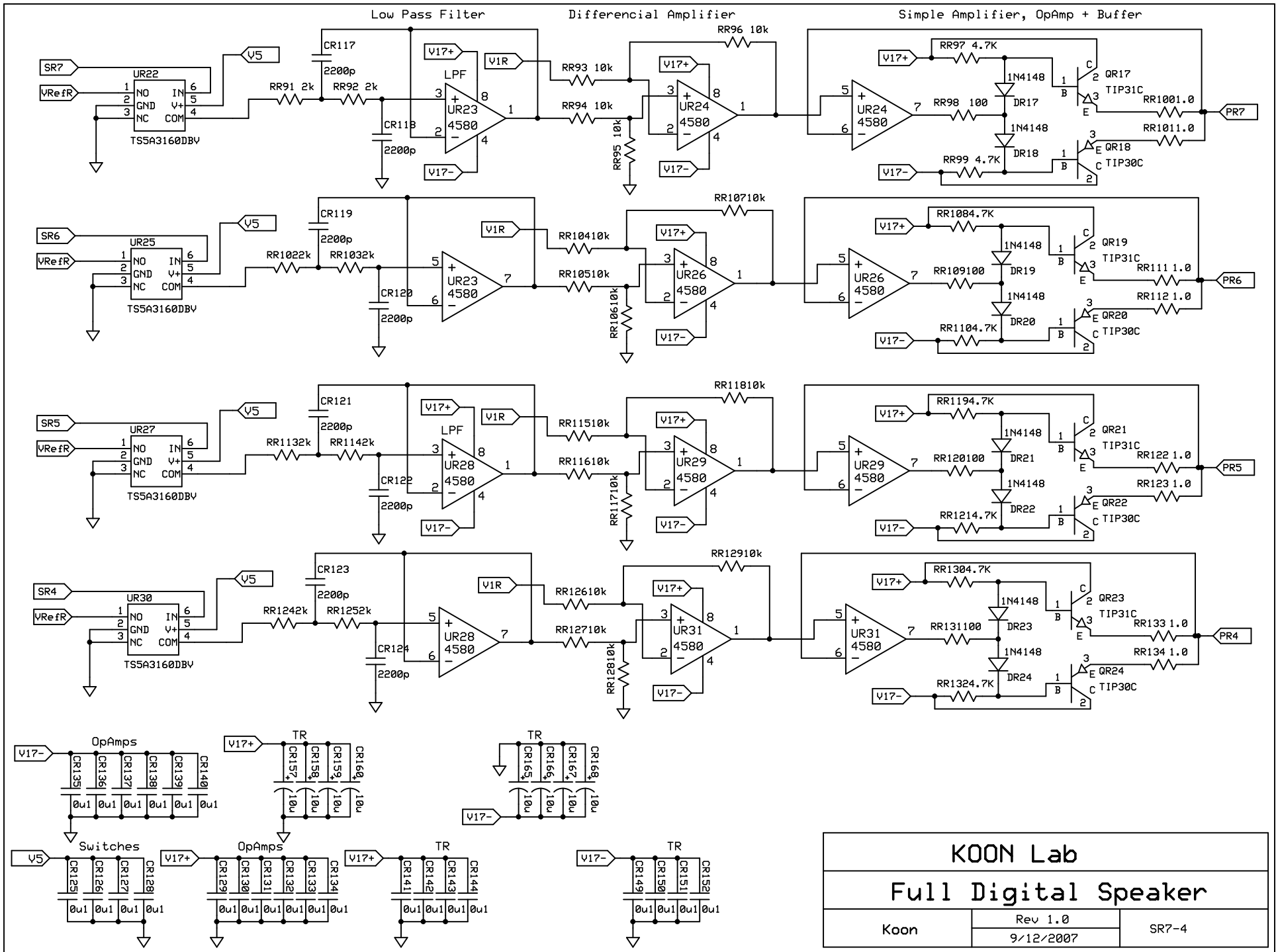
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0 9/12/2007	DL5-2



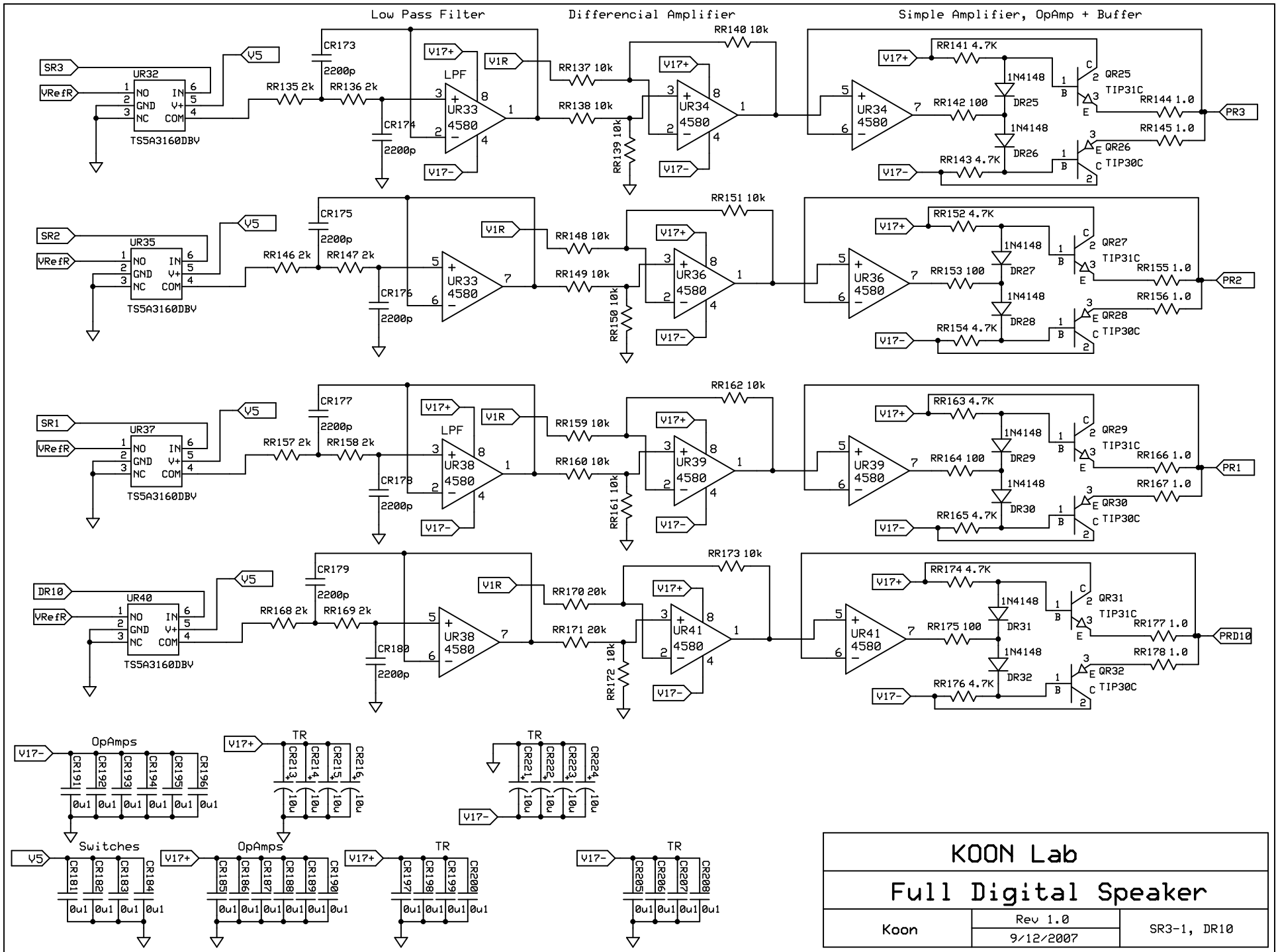
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SR15-12
	9/12/2007	



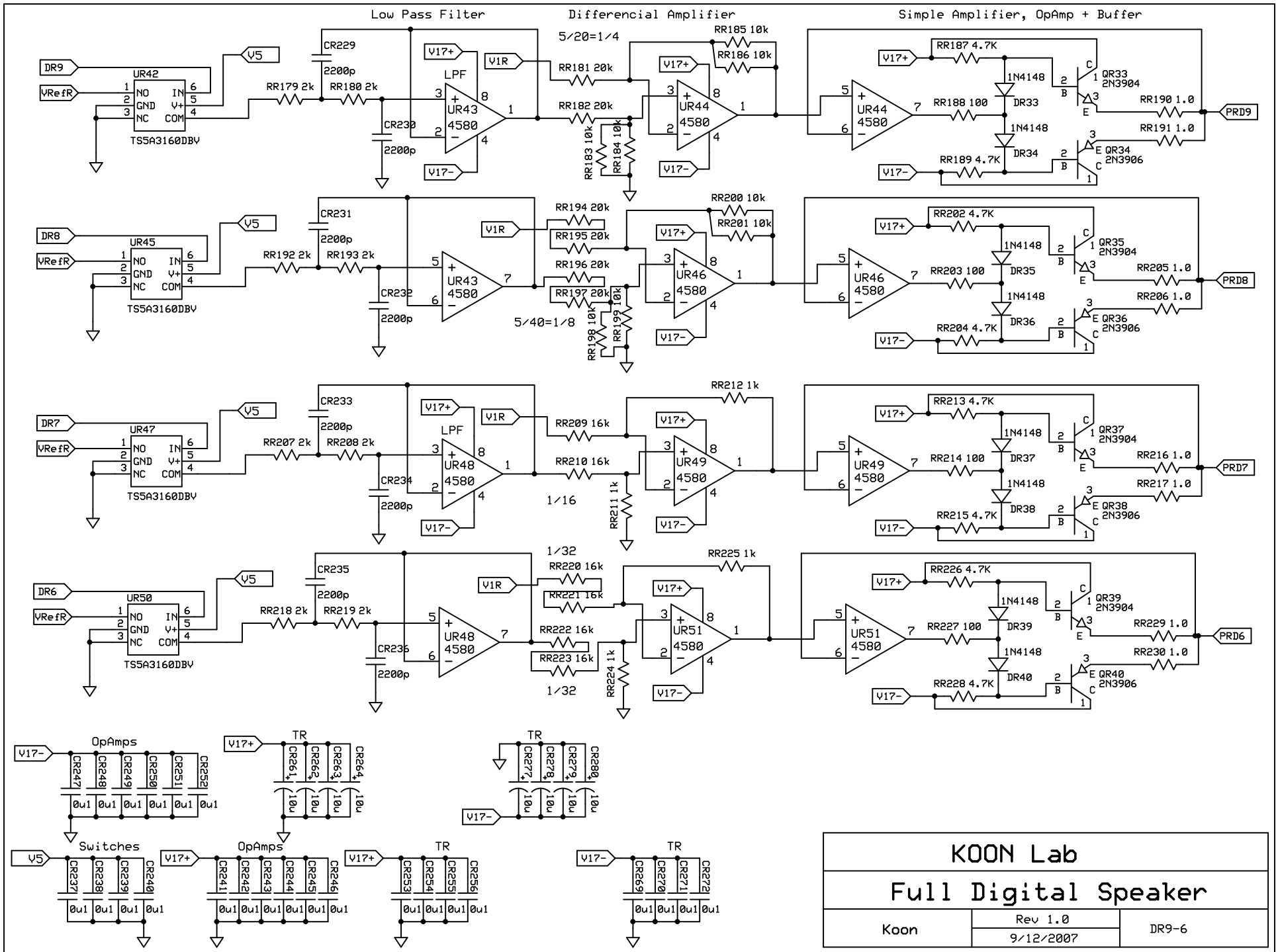
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SR11-8
	9/12/2007	



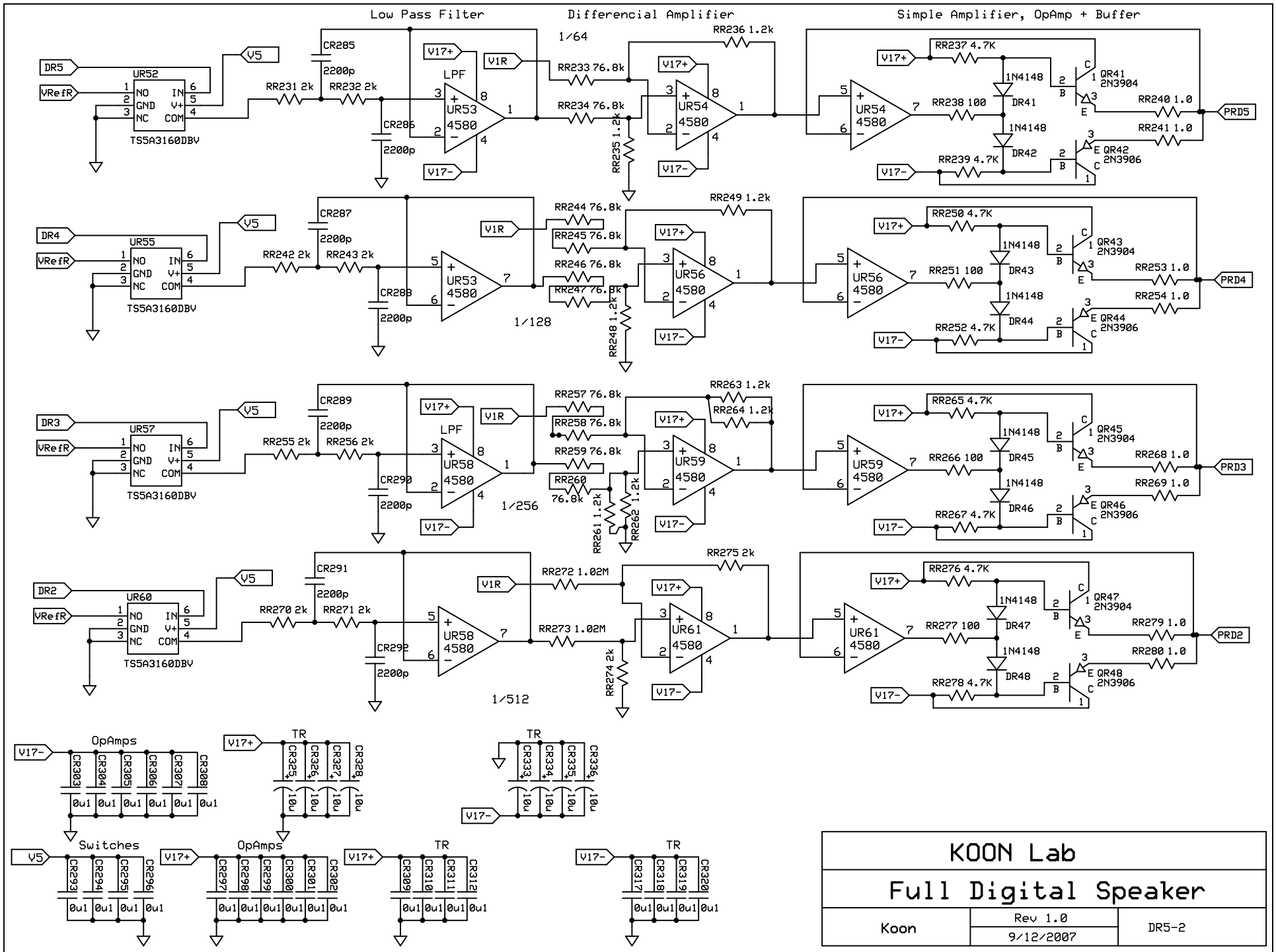
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	SR7-4
	9/12/2007	



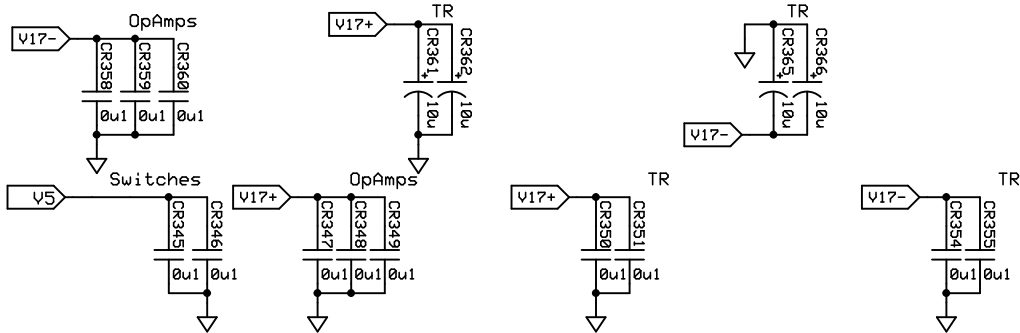
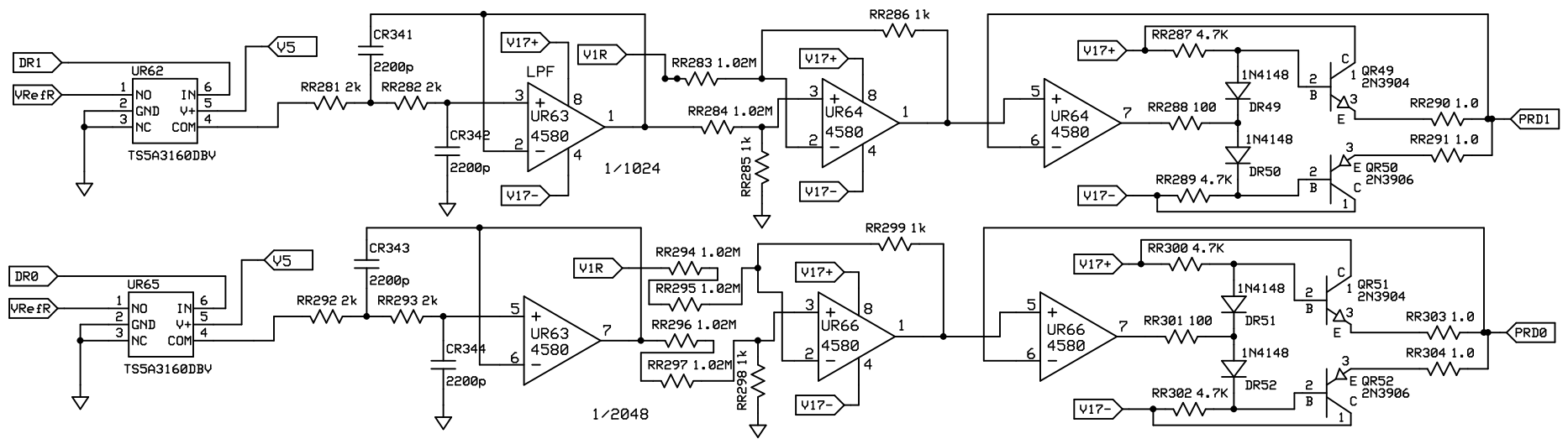
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0 9/12/2007	SR3-1, DR10



KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DR9-6
	9/12/2007	

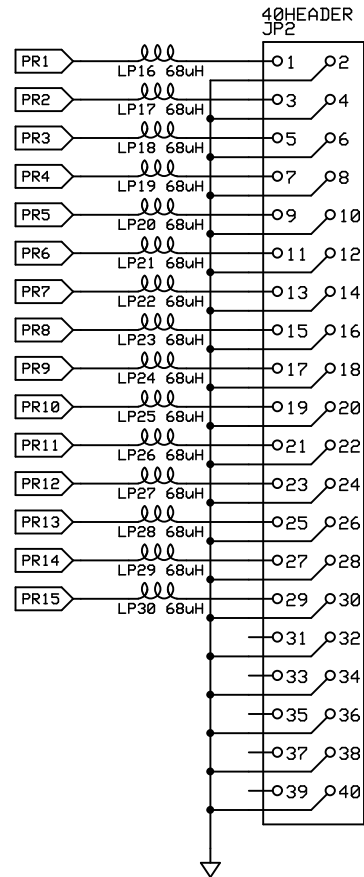
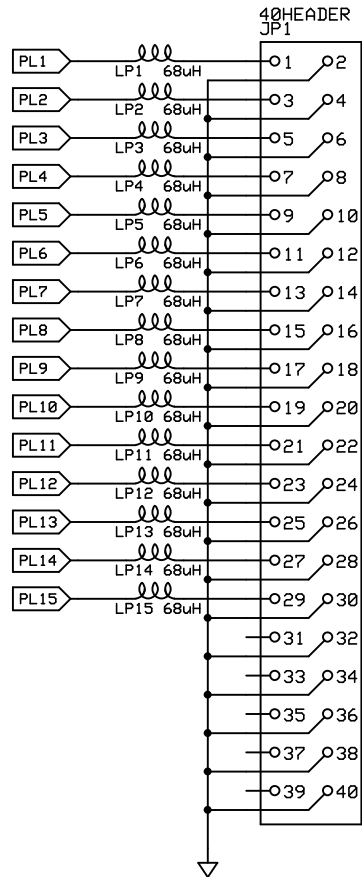


KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DR5-2
	9/12/2007	



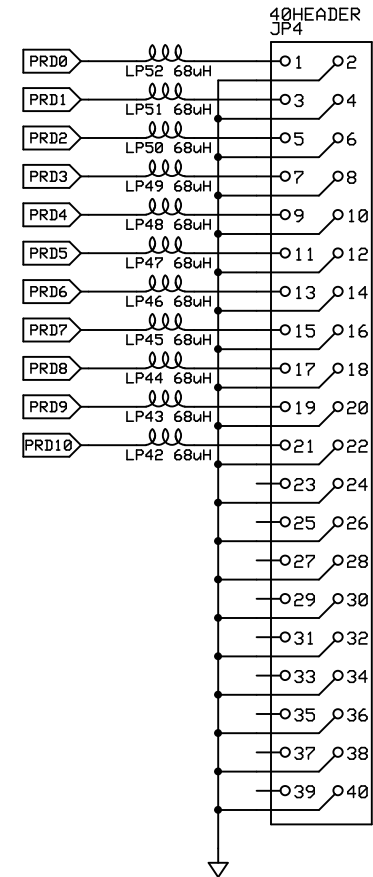
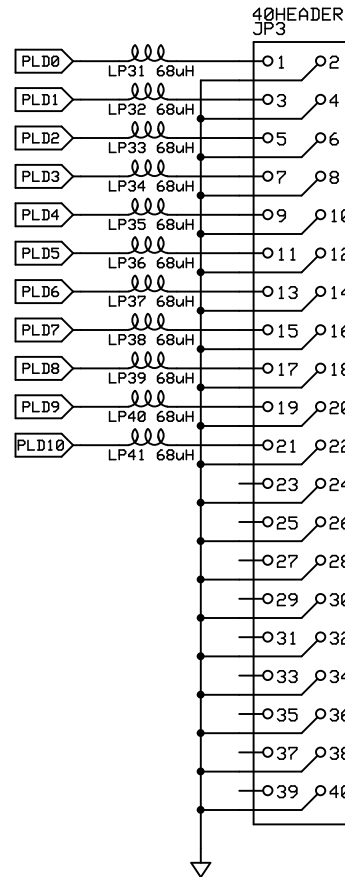
KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	DR1-0
	9/12/2007	

587-1627-1-ND 47uH Taiyo Yuden 1210



CABLE MC40G-10-ND, 40 FLAT, 10 FT
40 pin Sock IDC HKC40H-ND

587-1605-1-ND 47uH Taiyo Yuden 0805



KOON Lab		
Full Digital Speaker		
Koon	Rev 1.0	OUTPUT
	9/12/2007	