

# HELIX BOARD 17

Integrated Mobile Sound System

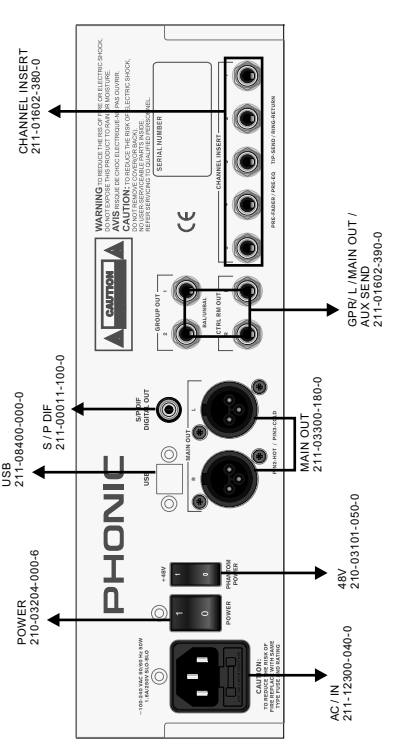
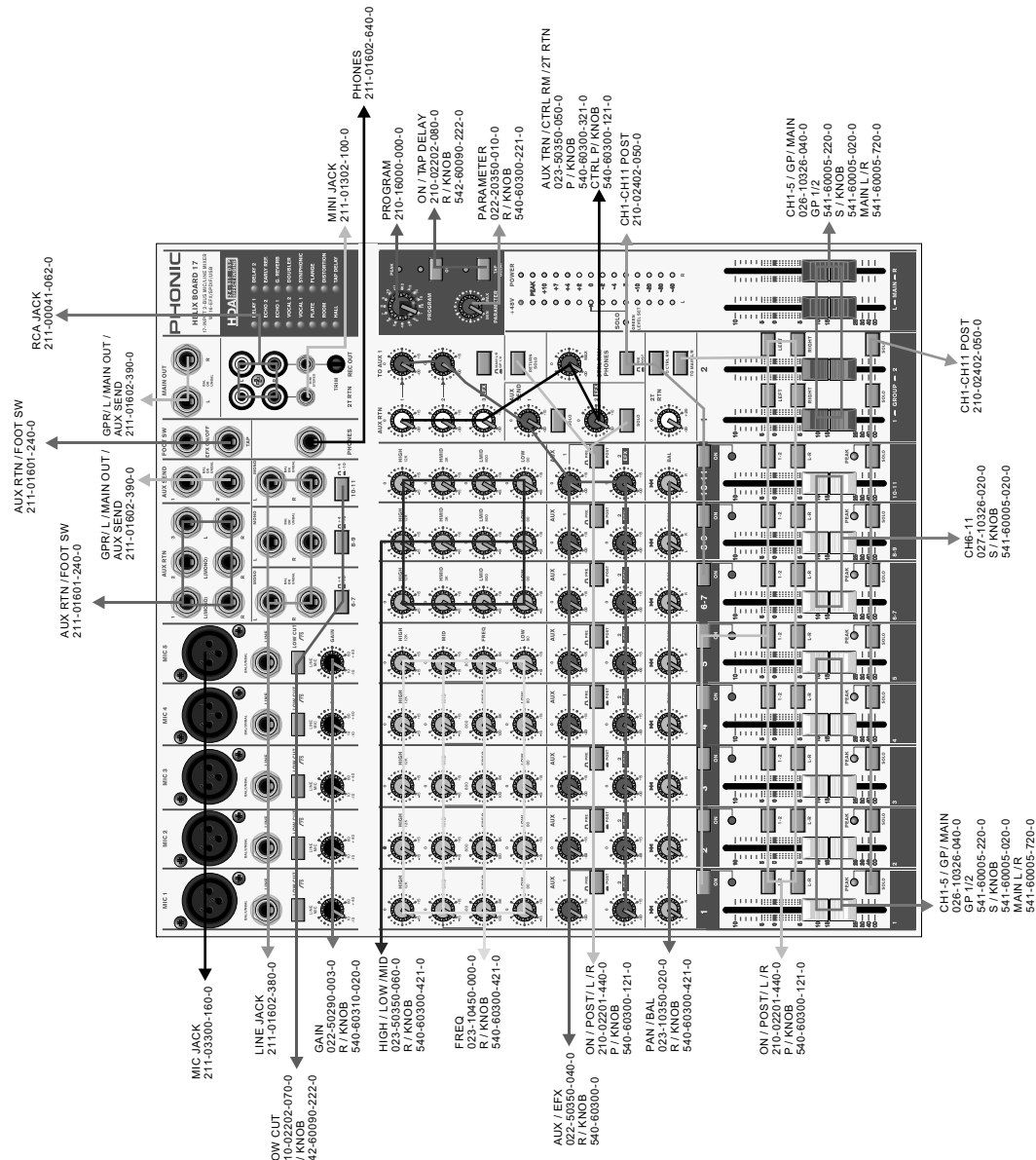
## SERVICE MANUAL



# HELIX BOARD 17 SERVICE MANUAL

## CONTENTS

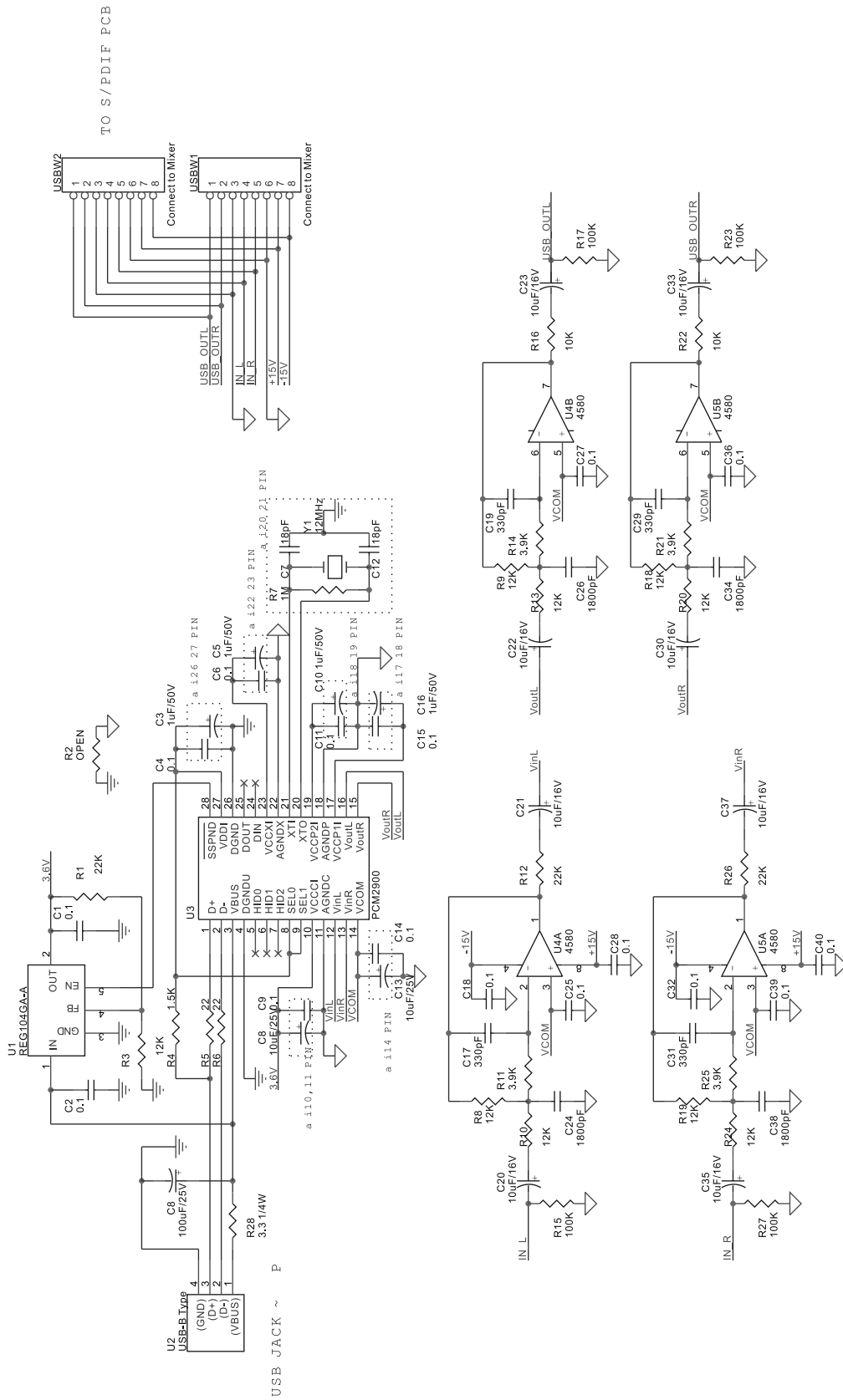
	<b>PAGE</b>
PANEL LAYOUT .....	3
POWER.....	4
USB.....	5
SPDIF.....	6
RTN 1_2T.....	7
RTN 2_3.....	8
RTN 1_2 USB .....	9
REC AUX USB.....	10
METER CTRL .....	11
MAIN GP .....	12
DSP .....	13
CTRL RM .....	14
CH 1_5 .....	15
CH 6 _11 .....	16
BLOCK.....	17
<b>BOM</b>	
POWER PCB-PART LIST.....	18
CH2 INPUT VUMETER.....	19
S/PDIF PCB-PART LIST.....	20
CH2 OUTPUT VUMETER.....	21
USB PCB-PART LIST.....	22
DSP PCB-PART LIST .....	23
MAIN PCB-PART LIST .....	24
MISCELLANEOUS ITEMS .....	32
POWER REQUIREMENT CLASSIFICATION .....	34





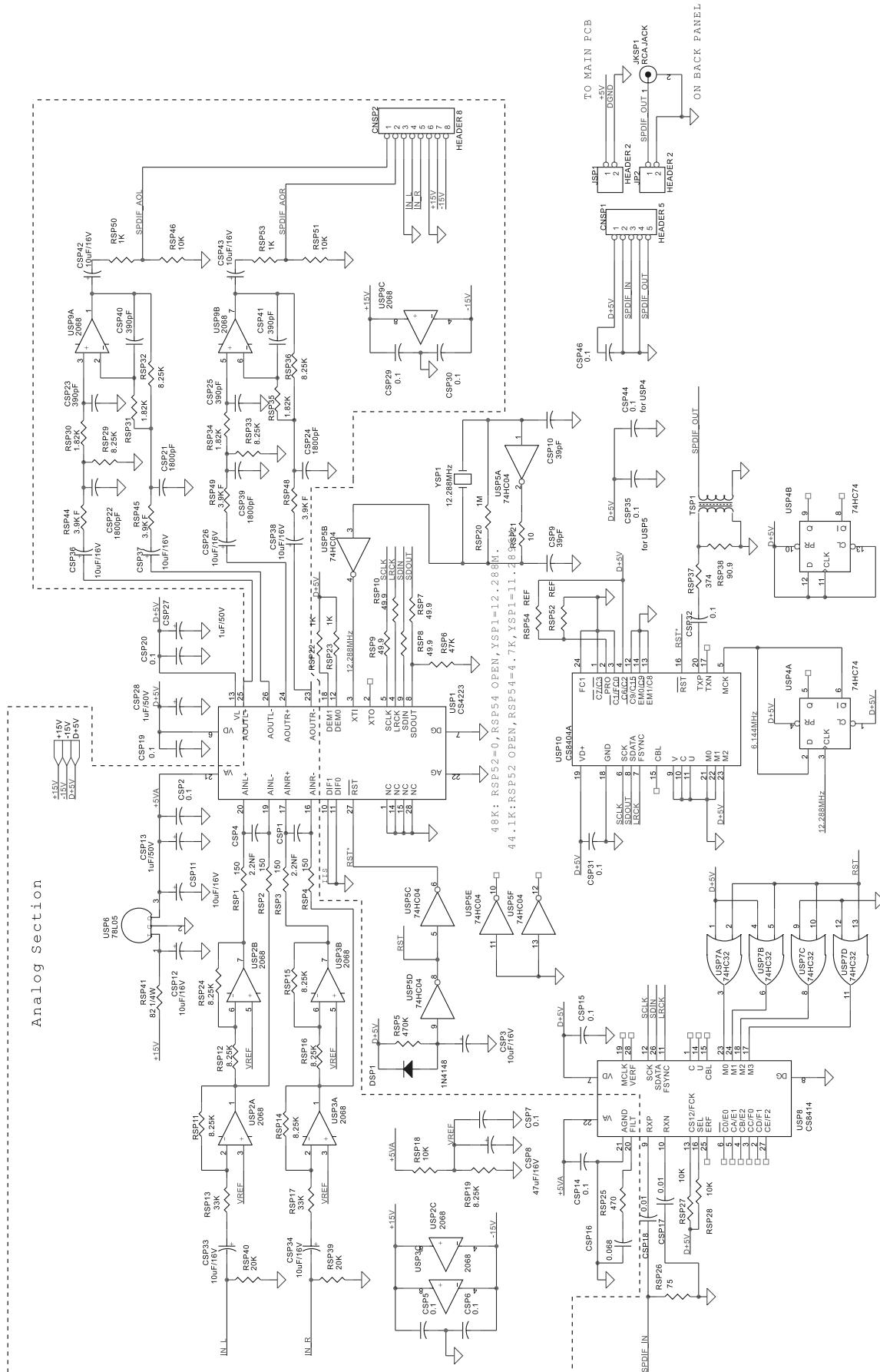


USB

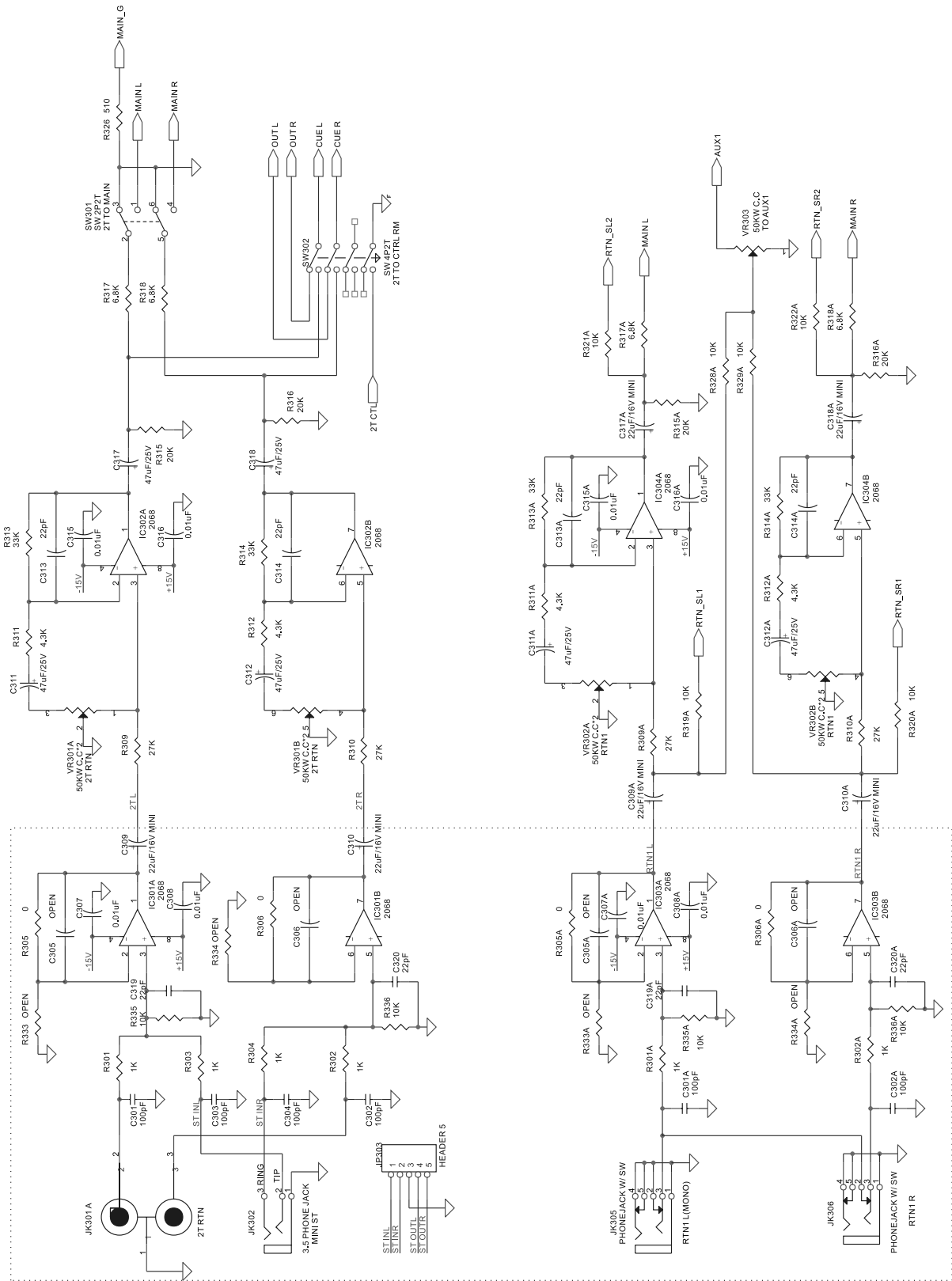


TO S/PDIF PCB

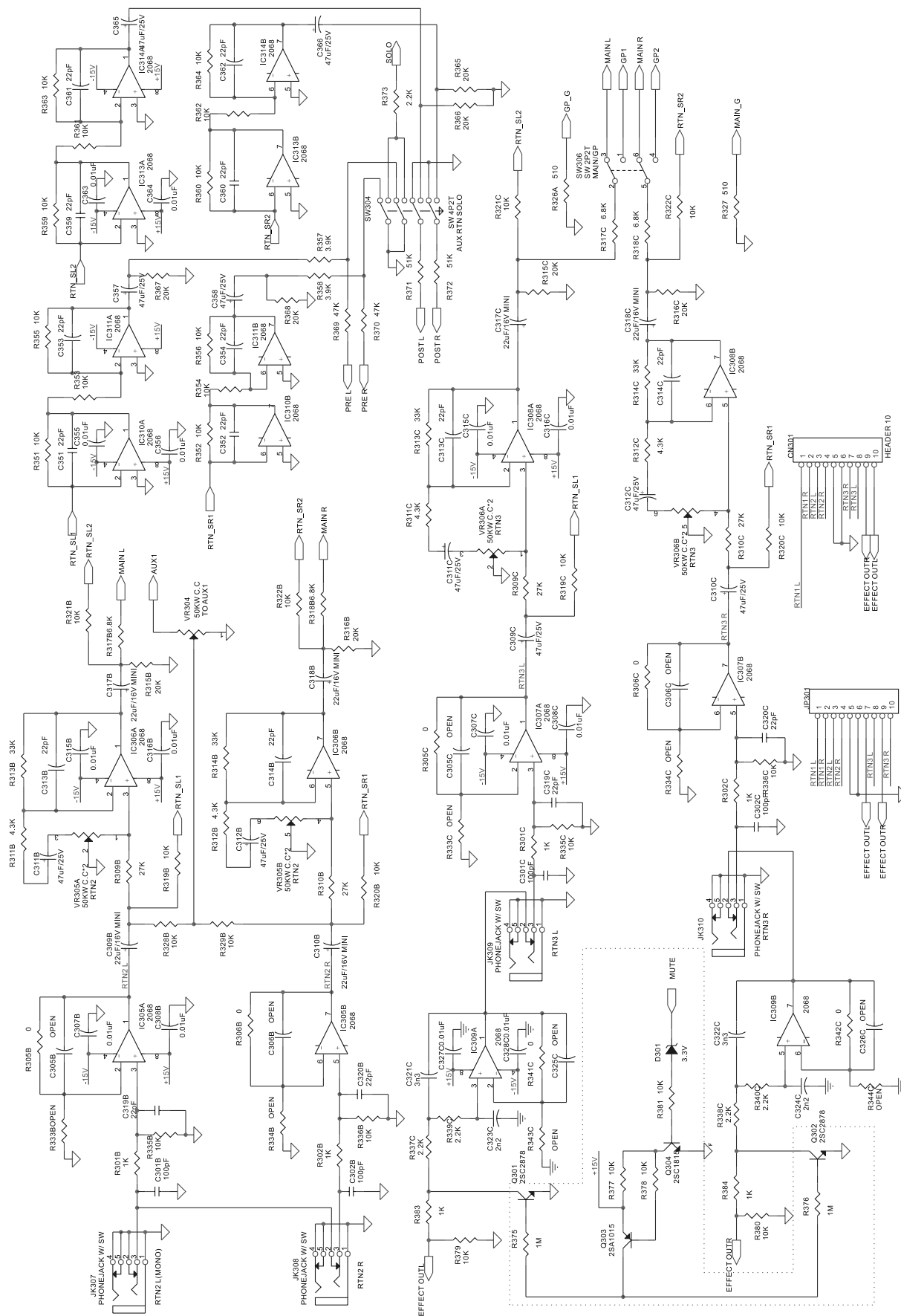
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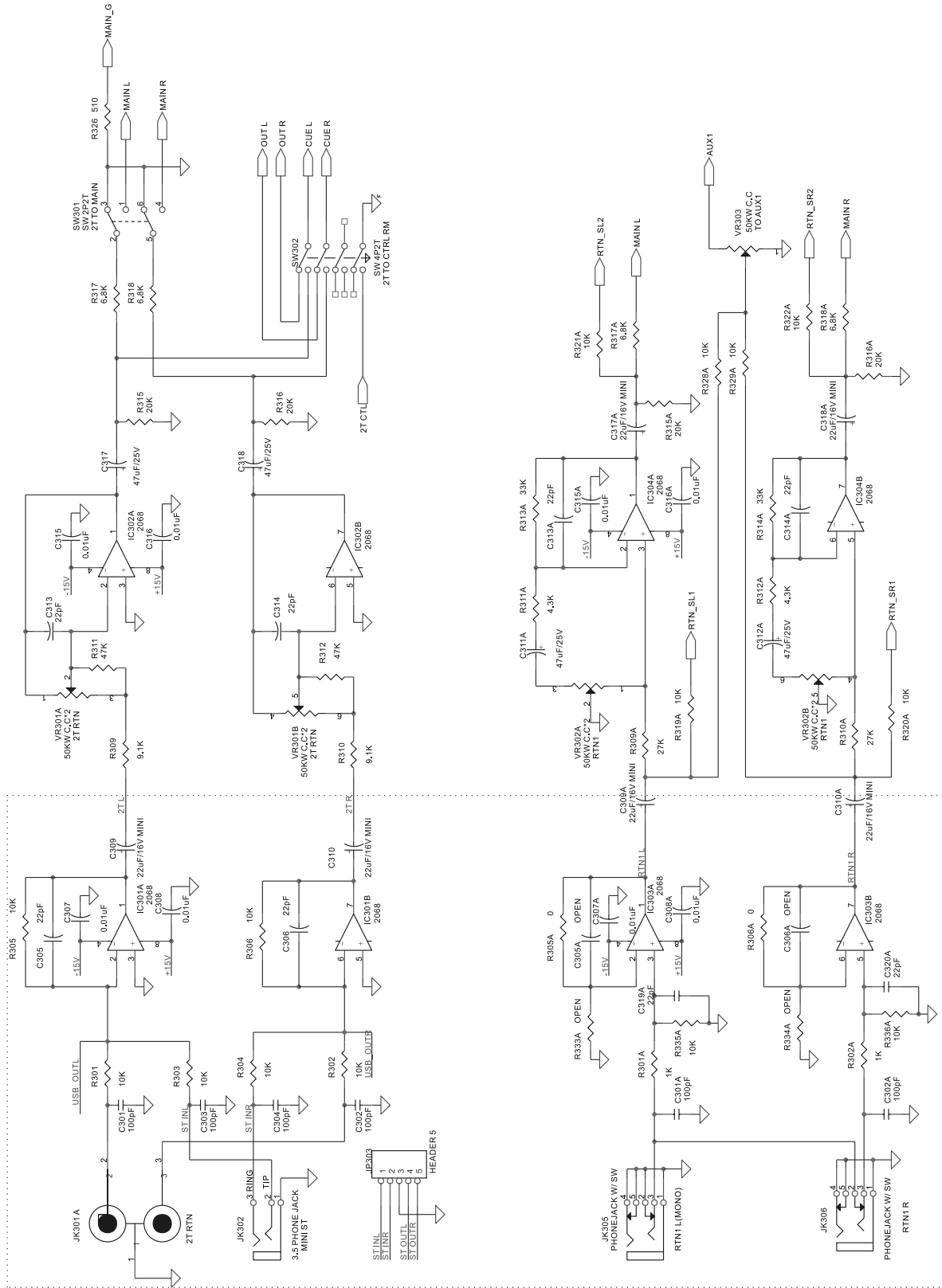
RTN 1\_2T



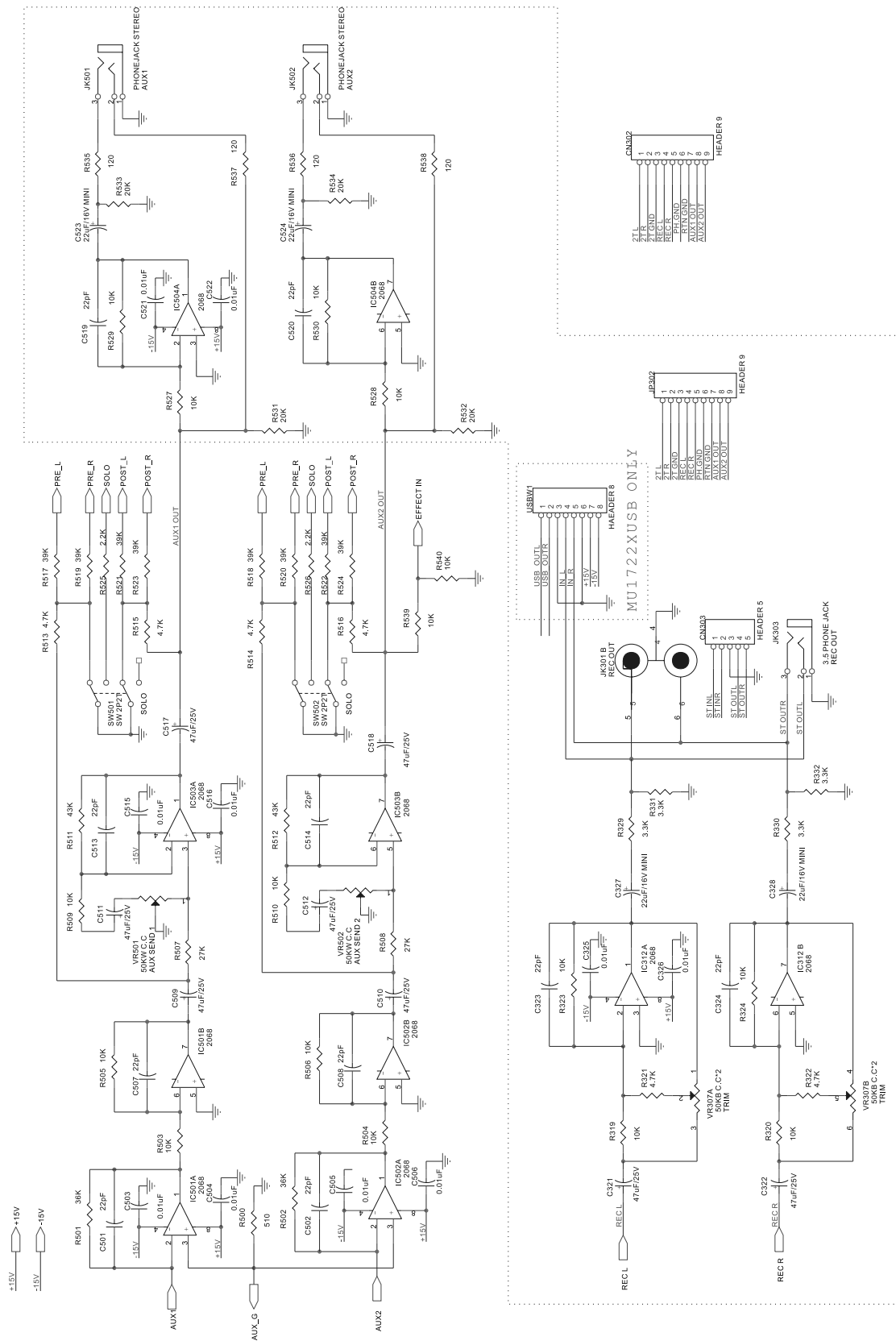
RTN\_2\_3



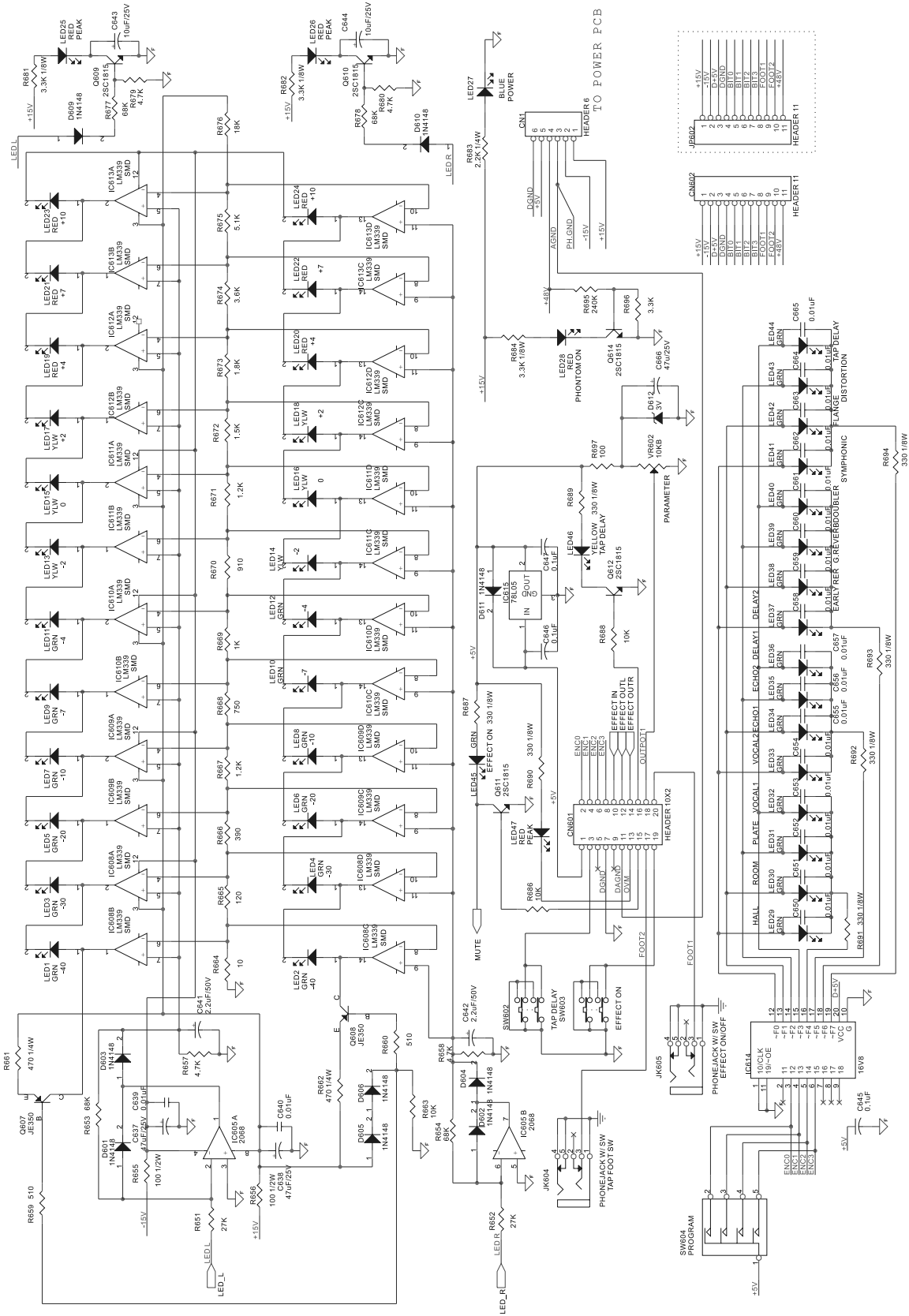
RTN 1\_2 USB



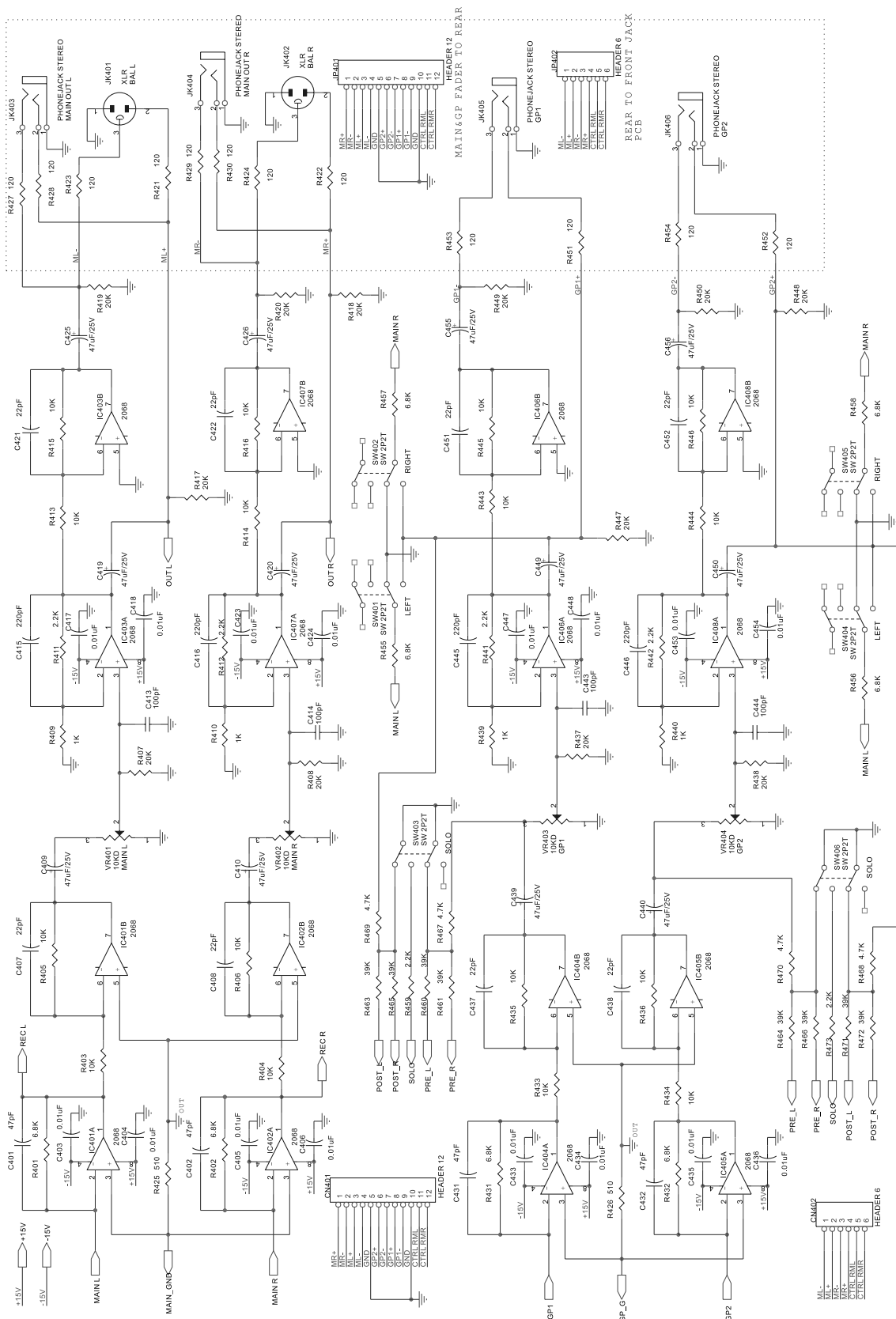
REC AUX USB



METER CTRL

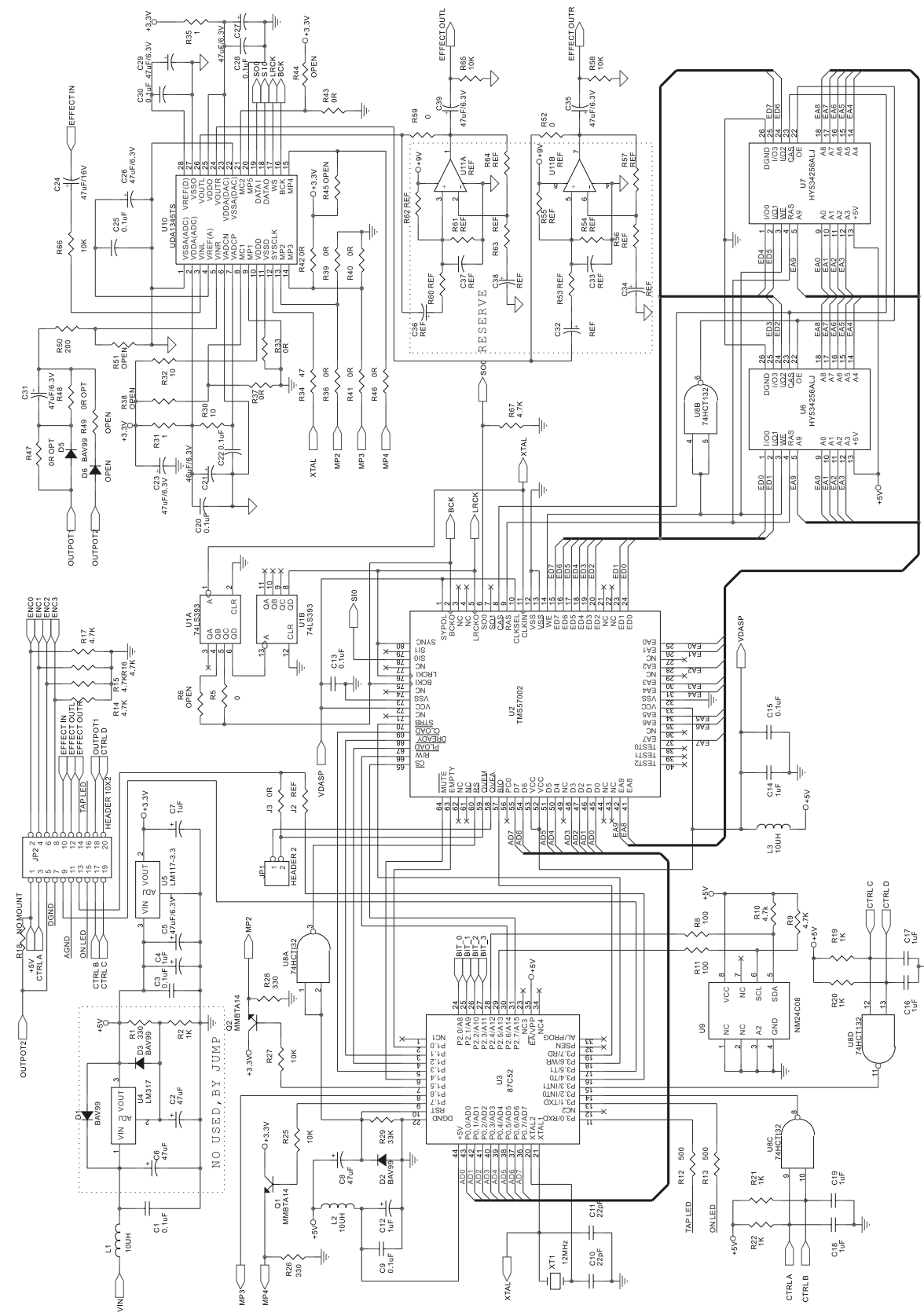


MAIN GP

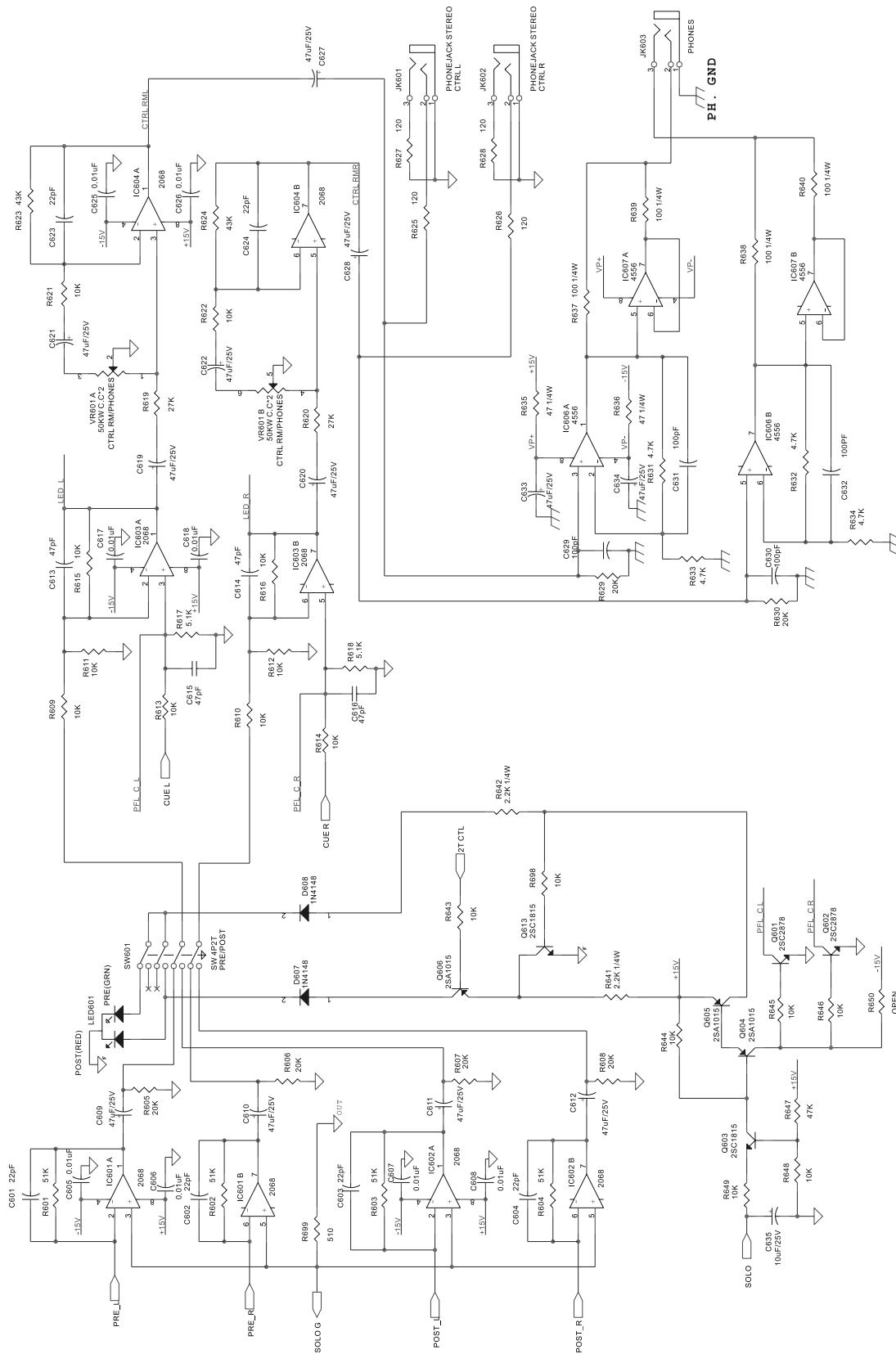




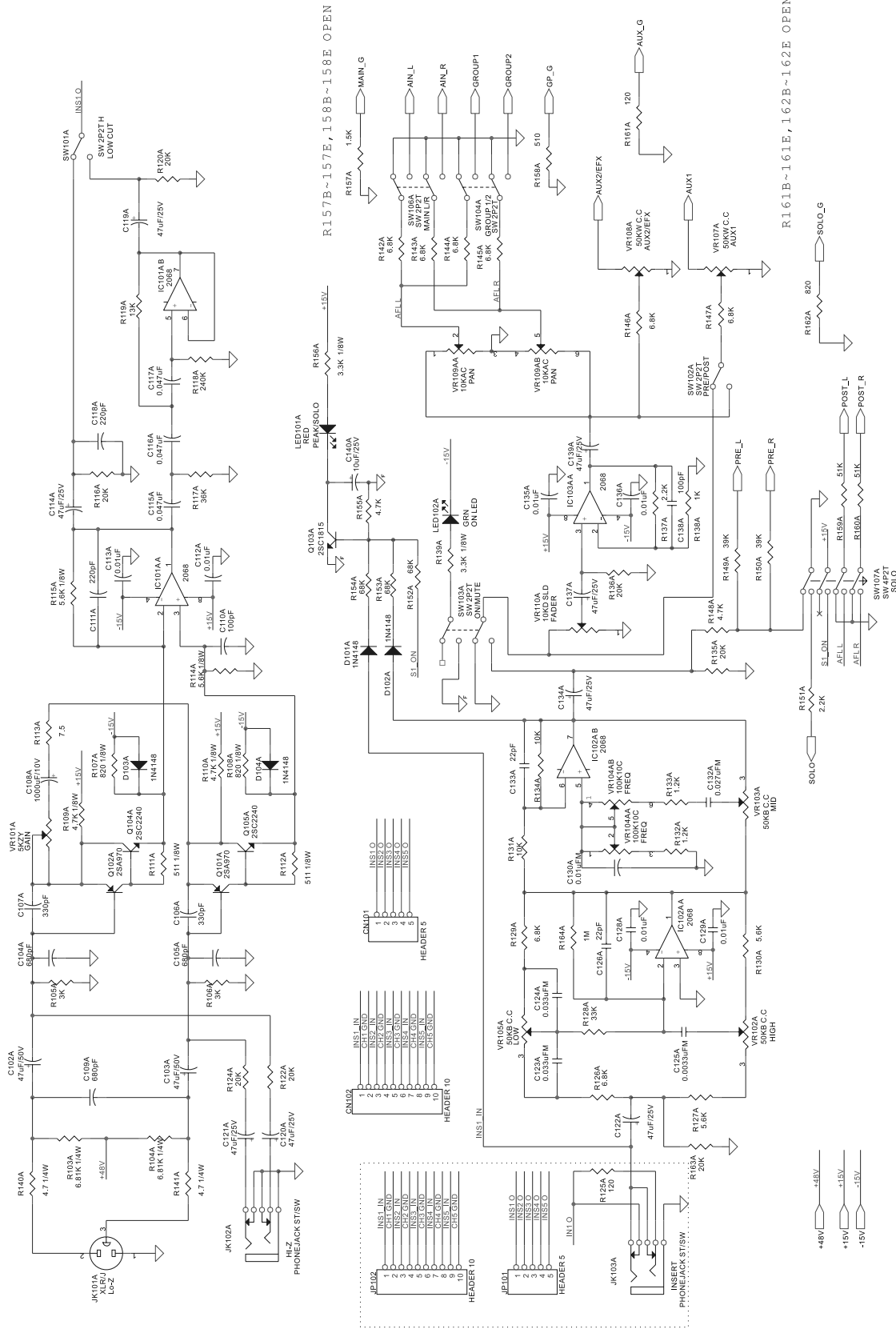
DSP



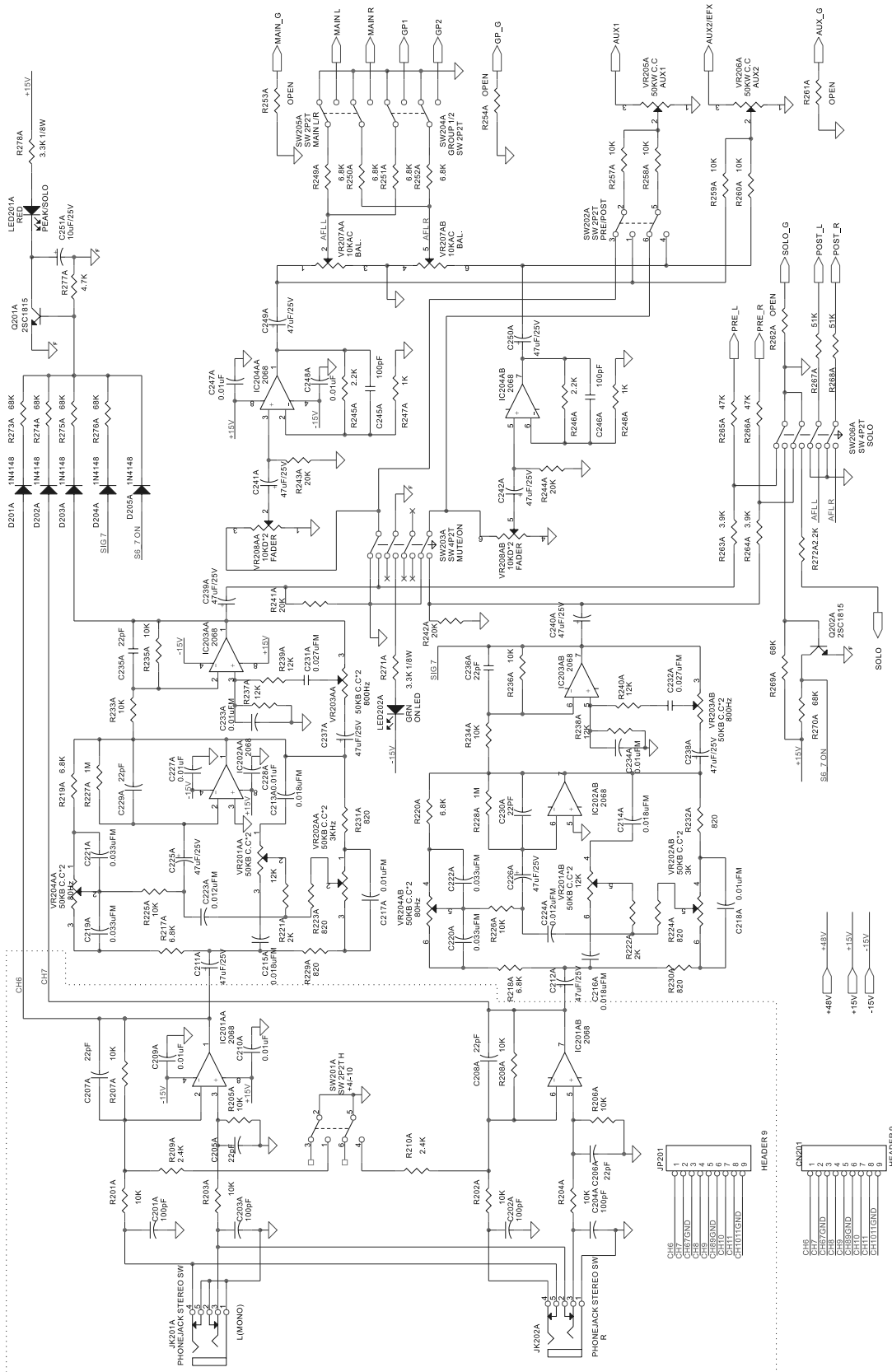
CTRL RM



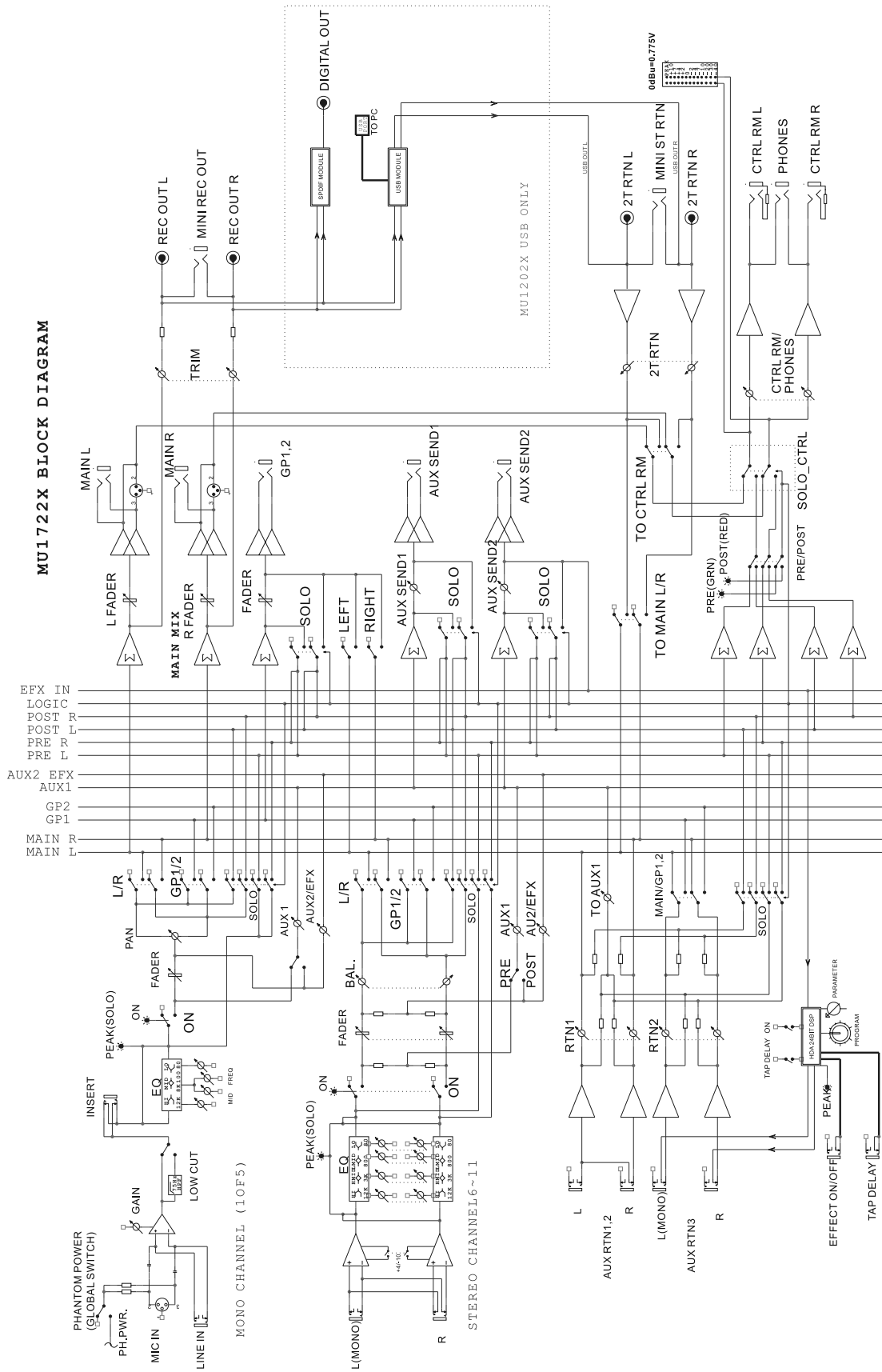
CH 1\_5



CH 6\_11



BLOCK



## POWER PCB-PART LIST

Ref.	Phonic Part No.	Specifications
R4	000-22136-400-0	CF RES 220 1/2W
R2.3	000-33136-400-0	CF RES 330 J 0.5W T
R5.17	008-01030-600-0	CHIP RES. 10K J 0805
R8.9	008-01210-600-0	CHIP RES. 120 J 0805
R6.7	008-02220-600-0	CHIP RES. 2K2 J 0805
R21	008-02230-600-0	CHIP RES. 22K J 0805
R18	008-03320-600-0	CHIP RES. 3K3 J 0805
R23	008-04710-600-0	CHIP RES. 470 J 0805
R19.20.25	008-04730-600-0	CHIP RES. 47K J 0805
R24	008-05610-600-0	CHIP RES. 560 J 0805
R16	008-05630-600-0	CHIP RES. 56K J 0805
R10-12	008-06840-600-0	CHIP RES. 680K J 0805
R15	008-06870-600-0	CHIP RES. 6.8 J 0805
R22	008-08210-600-0	CHIP RES. 820 J 0805
VT1	011-10040-000-0	MITVR10471KS42-MCN
R1	012-10020-020-0	NTC SCK10103MS
C13	030-10556-0A0-0	E/C 1MF M 50V 5*11 T
C2	030-10638-0A0-0	E/C 10MF Z 25V 5*11 T
C4.5	030-10736-0A0-0	E/C 100MF M 25V 8*11 T
C12.16	030-10838-006-0	E/C 1000MF Z 25V 10*21 P
C7	030-157B6-000-0	E/C 150UF 400V M D25*32
C20	030-33778-000-0	E/C 330MF 80V Z OD13*H20
C10	030-47638-0A0-0	E/C 47MF Z 25V 5*11 T
C18.19	030-47658-001-0	E/C 47MF Z 50V 6*11 P
C9	030-47726-000-0	E/C 470MF M 16V 8*16 P
	035-10556-0A0-0	MINI E/C 1MF M 50V T
C23-26.28-31	039-10425-000-0	CHIP C/C 0.1MF K 50V 0805
C17	042-10196-000-0	C/C2 100PF M 1KV 5
C11.15	042-10296-000-0	C/C2 0.001UF 1KV
C1	042-10396-000-0	C/C2 0.01UF 1KV P10
C8.14	058-10485-000-0	LINE/C 0.1UF 275V L18*H12*W6
C21.22	058-47236-001-0	LINE/C 0.0047MF M 400V
TR1	070-60008-303-0	HF X'MER MU1722X/1822X
L1	072-20139-000-0	CHOKE COIL TF5116
D9	090-00018-010-0	DIODE HER207
D2	090-00018-020-0	DIODE P6KE200A
D3.7	090-00026-000-0	DIODE HER107 ( 1A/800V)
D5.6.8	090-00033-000-0	DIODE HER303 MU1722/1822X
	090-01243-000-0	ZEN/DIODE 24V J 0.5W
D1	090-10011-010-0	B/DIODE RS205
T1.3	120-00008-100-0	TRN TIP41 TO-220-D(ST) DIP
T4.6	120-00011-500-0	TRAN. BC846 SMD PHILIPS

**CH2 INPUT VUMETER**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
T2	121-00005-800-0	TRAN. TIP42 SGS
T5	121-00008-800-0	TRAN. BC856 SMD PHILIPS
IC1	160-00004-114-0	IC 7805 DIP(ST) 400
IC4	160-00010-501-0	IC 4N35 LI
UP3	160-00025-500-0	IC NJM431L TO-92 JRC
IC2	160-00026-501-0	IC TOP245Y TO-220 PH
SW2	210-03101-050-0	SSA/SW R612KKAT0F
SW1	210-03204-000-6	POWER/SW 6A 250V 4P 17*12.5
X4	211-10020-000-0	2P WAFER/S 2.0MM
JK1	211-12300-040-0	AC/S 0717-1-PS
X4 TO +48V SW	212-10021-100-0	2P WAFER/P 300MM UL1007#24 P2.0 TIP5
X1	212-10060-800-0	6P UL1007#24 150MM PH2.0
	290-61722-200-0	MU1722X/1822X POWER PCB 60*108 FR4
IC1.T1.2	313-00000-060-0	RUBBER WASHER TO-2203
IC2	313-00010-130-0	L16*W11.4*T5.8 SRT-111758
IC1.T1.2	314-00000-050-0	BUSHES 602S(V.0)
C21 GND	315-00001-000-0	LUG 3D
	379-05101-1B1-6	M/NIRE UL1007#18 100M YLW/GRN
POWER SW TO PCB X7	379-08080-101-0	M.WIRE UL1015#22 80MM BLK
POWER SW TO PCB X8	379-08101-123-0	M.WIRE UL1015 #22 100MM RED
	379-10650-121-0	M.WIRE UL1015 #18 65MM RED
	526-60085-011-0	HEAT SINK MU1722X/1822X
POWER PCB&HEAT SINK*4	590-43006-100-0	M/E PAN SCR. M3.0*6 NI
FOR IC TRAN&HEAT SINK	590-43008-100-0	M/E PAN SCR. M3.0*8 NI
IC1.T1.2	610-00300-501-0	PLA. WAS. D3.0*D7.0*0.5 NI
C21-GND	610-30300-501-0	TOOTH WAS. D3.0*D6.5*0.5 NI
IC1.T1.2	610-60300-700-0	PAN SPR WAS. D3.0*6.0*0.7ZN
IC2	611-60005-000-0	
	630-60067-450-0	

**S/PDIF PCB-PART LIST**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
RSP41	000-82026-400-0	CF RES. 82 J 0.25W T
RSP21	008-01002-600-0	CHIP RES. 10J SMT 0603 PKG
RSP22.23.50.53	008-01022-600-0	CHIP RES. 1K J 0603
RSP18.27.28.46.51	008-01032-600-0	CHIP RES. 10K J 0603
RSP20	008-01052-600-0	CHIP RES. 1M J 0603
RSP1.2.3.4	008-01512-600-0	CHIP RES. 150 J 0603
RSP39.40	008-02032-600-0	CHIP RES. 20K J 0603
RSP25	008-04712-600-0	CHIP RES. 470J 0603
RSP54	008-04722-600-0	CHIP RES. 4.7K J 0603
RSP6	008-04732-600-0	CHIP RES. 47K J 0603
RSP5	008-04742-600-0	CHIP RES. 470K J 0603
RSP26	008-07502-600-0	CHIP RES. 75 J 0603
RSP30.31.34.35	008-18212-400-0	CHIP RES. 1.82K F 0603
RSP13.17	008-33022-400-0	CHIP RES. 33K F 0603
RSP37	008-37402-400-0	CHIP RES. 374 F 0603
R44.45.48.49	008-39012-400-0	CHIP RES. 3.9K F 0603
RSP7-10	008-49972-400-0	CHIP RES. 49.9R F 0603
RSP11.12.14.15.16.19.24. 29.32.33.36	008-82512-400-0	CHIP RES. 8.25K F 0603
RSP38	008-90972-400-0	CHIP RES. 90.9R F 0603
CSP13.27.28	035-10556-0A0-0	MINI E/C 1MF M 50V T
CSP3.11.12.26.33.34.36.3 7.38.42.43	035-10625-0A0-0	MINI E/C 10MF K 16V T
CSP8	035-47629-0A0-0	MINI E/C 47MF B 16V 5*7 T
CSP17.18	039-10325-220-0	CHIP 0.01UF 50V K 0603 X7R
CSP14.15.19.2.20.29.30.3 1.32.35.44.46.5.6.7	039-10405-220-0	CHIP C/C 0.1UF K 16V 0603
CSP21.22.24.39	039-18225-220-0	CHIP C/C 0.0018MF K 50V 0603
CSP1.4	039-22225-220-0	CHIP C/C 2200PF K 50V 0603
CSP9.10	039-39025-220-0	CHIP C/C 39PF K 50V 0603
CSP23.25.40.41	039-39125-220-0	CHIP C/C 390PF K 50V 0603
CSP16	039-68305-220-0	CHIP C/C 0.068UF K 16V 0603
TSP1	071-20000-000-0	PULSE X'MER MR2643XD SCHOTT
DSP1	090-02000-020-0	DIODE 1N4148
USP6	160-00004-120-0	IC L78L05ACZ DIP (ST/NS) 2K
USP2.3.9	160-00024-100-0	IC NJM4580M DMP (JRC) 2K SMD
USP5	171-00003-300-0	TTL IC 74HC04 SMD
USP4	171-00004-200-0	MOS 74HC74 SMD reel (T1/PH)



**CH2 OUTPUT VUMETER**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
USP7	171-00004-300-0	MOS 74HC32 SMD reel (TI/PH)
USP1	177-04016-000-0	CSI CS4223 SSOP CS
USP8	177-04017-000-0	CSI CS8414 SSOP CS
USP10	177-04018-000-0	CSI CS8404A SSOP CS
CNSP1(+5V&S/PDIF OUT)	211-10021-161-0	2P WAFER/S TJC3-2A P=2.5MM
CNSP2	211-10051-151-0	5P WAFER/S TJC3-5A PH=2.5MM
S/PDIF OUT&D+5V*1	212-10023-250-0	2P WAFER/P 200mm UL1007#22 P=2.5MM
	290-61722-400-0	MU1722XUSB S/PDIF PCB
YSP1	300-11284-000-0	CRYSTAL 11.2896MHz 49S

**USB PCB-PART LIST**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
R28	000-33726-400-0	CF RES.3.3 1/4W T
R16.22	008-01032-600-0	CHIP RES. 10K J 0603
R15.17.23.27	008-01042-600-0	CHIP RES. 100K J 0603
R7	008-01052-600-0	CHIP RES. 1M J 0603
R3.8-10.13.18-20.24	008-01232-600-0	CHIP RES. 12K J 0603
R4	008-01522-600-0	CHIP RES. 1.5K J 0603
R5.6	008-02202-600-0	CHIP RES. 22 J 0603
R1.12.26	008-02232-600-0	CHIP RES. 22K J 0603
R11.14.21.25	008-03922-600-0	CHIP RES. 3.9K J 0603
C8.13	033-10664-0A0-0	LN E/C 10MF J 63V T 6*11
C3.5.10.16	035-10556-0A0-0	MINI E/C 1MF M 50V T
C20-23.30.33.35.37	035-10636-0A0-0	MINI E/C 10MF M 25V T
C41	035-10726-0A0-0	MINI E/C 100MF M 16V T (4*7)
C1.2.4.6.9.11.14.15.18.25. 27.28.32.36.39.40	039-10405-220-0	CHIP C/C 0.1UF K 16V 0603
C7.12	039-18024-220-0	CHIP C/C 18PF J 50V 0603
C24.26.34.38	039-18225-220-0	CHIP C/C 0.0018MF K 50V 0603
C17.19.29.31	039-33024-220-0	CHIP C/C 33PF J 50V 0603
U4.5	160-00024-100-0	IC NJM4580M DMP (JRC) 2K SMD
U3	160-00030-400-0	IC PCM2900E 28SSOP
U1	160-00030-500-0	IC REG104GA-A SOT223-5 DCQ
U2	211-08400-000-0	4P DIN/S 3700-4AWTIS1W (USB B TYPE
USBW1	211-10081-140-0	8P WAFER/S A2501WV2-8P
USBW2	212-10051-380-0	5P WAFER/P 160MM
USBW1	212-10081-020-0	8P 2547 26#*2(6P),1007 24#*2 250MM P2.5
	290-61722-300-0	Helix Board 17 USB PCB FR-4
Y1	300-12004-010-0	CRYSTAL 12.000MHz SMD
	552-60006-000-0	PCB PCB-2

**DSP PCB-PART LIST**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
R5.33.36.37.41.43.46-48.52.59.J3	008-00002-600-0	CHIP RES. 0 J 0603
R30.32	008-01002-600-0	CHIP RES. 10J SMT 0603 PKG
R8.11	008-01012-600-0	CHIP RES. 100 J 0603
R19-22	008-01022-600-0	CHIP RES. 1K J 0603
R25.27.58.65.66	008-01032-600-0	CHIP RES. 10K J 0603
R31.35	008-01072-600-0	CHIP RES. 1 J 0603
R50	008-02012-600-0	CHIP RES. 200 J 0603
R26.28	008-03312-600-0	CHIP RES. 330 J 0603
R29	008-03332-600-0	CHIP RES. 33K J 0603
R34	008-04702-600-0	CHIP RES. 47 J 0603
R9.10.14.15.16.17.67	008-04722-600-0	CHIP RES. 4.7K J 0603
R12.13	008-51002-400-0	CHIP RES. 510 F 0603
C1.3.9.13.15.20.22.25.28.30	039-10426-230-0	CHIP C/C 0.1MF M 50V 0603
C4.7.12.14.16-19	039-10526-900-0	CHIP E/C 1MF M 50V 4*5.4
C35.39	039-10606-900-0	CHIP E/C 10MF M 16V 4*5.4
C10.11	039-22024-200-0	CHIP C/C 22PF J 50V 0603
C5.8.21.23.24.26.27.29.31	039-47646-900-0	CHIP E/C 47MF M 6.3V 4*5.4
L1.2.3	072-10072-100-0	COIL 370MA 10uH
D2	090-00039-000-0	DIODE BAV99 SMD
Q1.2	120-00011-100-0	TRAN. MMBTA14 SOT-23 SMD
U5	160-00027-200-0	IC LD1117S33TR SOT-223-M REEL (ST/NS)
U10	160-00028-800-0	CODEC IC UDA1345TS SSOP28 SMD PHILIPS
U1	170-00007-000-0	TTL 74HC393 reel-M (PH) SMD
U8	171-00004-800-0	MOS 74HCT132 SO14-D reel-M (PH) SMD
U2	177-00003-900-0	DSP TMS57002 QFP-M TI SMD
U9	177-01002-320-0	MOM AT24C08AN SMD reel(ATM)
U3	177-01005-500-0	CPU TSB89C54X2 PLCC-M V.C(PH/SST)SMD
U6	177-01302-100-0	DRAM IC MIIB416256A 35T TSOP ESMT
	290-01660-401-0	K12 DSP REV-B
XT1	300-12004-010-0	CRYSTAL 12.000MHz SMD

**MAIN PCB-PART LIST**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
R637-640	000-10126-400-0	CF RES. 100 J 0.25W T
R655.656	000-10136-400-0	CF RES. 100 J 0.5W T
R683	000-22226-400-0	CF RES. 2K2 J 0.25W T
R641.642	000-22226-400-0	CF RES. 2K2 J 0.25W T
R687.689.690	000-33106-400-0	CF RES. 330 J 1/8W T
R691-694	000-33106-400-0	CF RES. 330 J 1/8W T
R139A-139E.156A- 156E.271A-271C.278A- 278C.681.682.684	000-33206-400-0	CF RES. 3K3 J 1/8W T
R635.636	000-47026-400-0	CF RES. 47 J 0.25W T
R140A-140E.141A-141E	000-47726-400-0	CF RES. 4.7 J 0.25W T
R109A-109E.110A-110E	006-47010-440-0	MF RES 4K7 F 1/8W T
R111A-111E.112A-112E	006-51100-440-0	MF RES 511J F 1/8W T
R114A-114E.115A-115E	006-56010-440-0	MF RES. 5.6K 1/8W T
R103A-103E.104A-104E	006-68112-440-6	MF RES. 6K81 0.25W 1% T
R107A-107E.108A-108E	006-82000-440-0	MF RES. 820 F 1/8W T
R305A-305C.306A-306C	008-00002-600-0	CHIP RES. 0 J 0603
R664	008-01002-600-0	CHIP RES. 10J SMT 0603 PKG
R697	008-01012-600-0	CHIP RES. 100 J 0603
R138A-138E.247A- 247C.248A- 248C.301A-301C.302A- 302C.409.410.439.440	008-01022-600-0	CHIP RES. 1K J 0603
R669.383.384	008-01022-600-1	
R301-306.319.320.319A- 319C.320A- 320C.379.380.621.622	008-01032-600-0	CHIP RES. 10K J 0603
R321A-321C.322A-322C.3 28A.328B.329A.329B.335 A-335C.336A-336C	008-01032-600-1	
R351-354.359-362.403- 406.413-416.433-436.443- 446.503-506.527-530.643- 646.648.649	008-01032-600-2	
R377.378.381.663.686.6 88.698.131A-131E.134A-	008-01032-600-3	
R201A-201C.202A- 202C.203A-203C.204A- 204C.225A-225C.226A- 226C.233A-233C.234A-234C	008-01032-600-4	
R235A-235C.236A- 236C.257A-257C.258A- 258C.259A-259C.260A- 260C.539.540	008-01032-600-5	

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
R205A-208A.205B-208B.205C-208C.355.356.363.364.	008-01032-600-6	
R164A-164E.227A-227C.228A-228C.375.376	008-01052-600-0	CHIP RES. 1M J 0603
R125A-125E.161A.421-424.427-430.535-538.625-628.665.451-454	008-01212-600-0	CHIP RES. 120 J 0603
R132A-132E.133A-133E.667.671	008-01222-600-0	CHIP RES. 1.2K J 0603
R237A-237C.238A-238C.239A-239C.240A-240C	008-01232-600-0	CHIP RES. 12K J 0603
R119A-119E	008-01332-600-0	CHIP RES. 13K J 0603
R157A.158A.672	008-01522-600-0	CHIP RES. 1.5K J 0603
R673	008-01822-600-0	CHIP RES. 1.8K J 0603
R676	008-01832-600-0	CHIP RES. 18K J 0603
R221A-221C.222A-222C	008-02022-600-0	CHIP RES. 2K J 0603
R315.315A-315C.316.316A-316C.365-368.417-420.447-450.531-534.605-608.629.630	008-02032-600-0	CHIP RES. 20K J 0603
R116A-116E.120A-102E.122A-122E.124A-124E.135A-135E.163A-163E.241A-241C.242A-242C	008-02032-600-1	
R136A-136E.243A-243C.244A-244C.407.408.437.438	008-02032-600-2	
R137A-137E.337C-340C.373.411.412.441.442.459.473.525.526	008-02222-600-0	CHIP RES. 2.2K J 0603
R151A-151E.245A-245C.246A-246C.272A-272C	008-02222-600-1	
R209A-209C.210A-210C	008-02422-600-0	CHIP RES. 2.4K J 0603
R118A-118E.695	008-02442-600-0	CHIP RES. 240K J 0603
R507.508.619.620.651.652.309A-309C.310A-310C	008-02732-600-0	CHIP RES. 27K J 0603
R105A-105E.106A-106E	008-03022-600-0	CHIP RES. 3K J 0603
R329-332	008-03322-600-0	CHIP RES. 3.3K J 0603
R128A-128E.313A-313C.314A-314C	008-03332-600-0	CHIP RES. 33K J 0603
R674.696	008-03622-600-0	CHIP RES. 3.6K J 0603
R117A-117E.501.502.	008-03632-600-0	CHIP RES. 36K J 0603
R666	008-03912-600-0	CHIP RES. 390 J 0603

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
R263A-263C.264A-264C.357.358	008-03922-600-0	CHIP RES. 3.9K J 0603
R149A-149E.150A-150E.460.461.463-466.471.472.517-524	008-03932-600-0	CHIP RES. 39K J 0603
R311A-311C.312A-312C	008-04322-600-0	CHIP RES. 4.3K J 0603
R511.512.623.624	008-04332-600-0	CHIP RES. 43KJ 0603
R661.662	008-04710-600-0	CHIP RES. 470 J 0805
R148A-148E.155A-155E.277A-277C.321.322.467-470.513-516.631-634.657.658.679.680	008-04722-600-0	CHIP RES. 4.7K J 0603
R265A-265C.266A-	008-04732-600-0	CHIP RES. 47K J 0603
R326A.425.426.500.659.660.699	008-05112-600-0	CHIP RES. 510 J 0603
R617.618.675	008-05122-600-0	CHIP RES. 5.1K J 0603
R159A-159E.160A-160E.267A-267C.268A-268C.371.372.601-604	008-05132-600-0	CHIP RES. 51K J 0603
R127A-127E.130A-130E	008-05622-600-0	CHIP RES. 5.6K J 0603
R317.317A-317C.318.318A-	008-06822-600-0	CHIP RES. 6K8 J 0603
R126A-126E.129A-129E.142A-142E.143A-143E.144A-144E.145A-145E.146A-146E.147A-147E	008-06822-600-1	
R217A-217C.218A-218C.219A-219C.220A-220C	008-06822-600-2	
R249A-249C.250A-250C.251A-251C.252A-252C	008-06822-600-3	
R152A-152E.153A-153E.154A-154E.269A-269C.270A-270C.273A-273C.274A-274C.275A-275C	008-06832-600-0	CHIP RES. 68K J 0603
R276A-276C.677.678.653.654	008-06832-600-1	
R668	008-07512-600-0	CHIP RES. 750J 0603
R113A-113E	008-07572-600-0	CHIP RES. 7.5 J 0603
R162A.223A-223C.224A-224C.229A-229C.230A-230C.231A-231C.232A-232C	008-08212-600-0	CHIP RES 820 J 0603
R670	008-09112-600-0	CHIP RES. 910 J 0603
R309.310	008-09122-600-0	CHIP RES. 9.1K J 0603
VR602	022-20350-010-0	S.ROT/VR 20KB 30MM P

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
VR101A-101E	022-50290-003-0	S.ROT/VR 5KZY L=30MM RD09F1130001-5KZ
VR107A-107E.108A-108E.205A-205C.206A-206C.303.304.501.502	022-50350-040-0	S.ROT/VR 50KW(C.C) 30MM P
VR102A-102E.103A-103E.105A-105E	022-50350-050-0	S.ROT/VR 50KB(C.C) 30MM P
VR109A-109E.207A-207C	023-10350-020-0	D.ROT/VR 10KA/10KC 30MM P
VR104A-104E	023-10450-000-0	D.ROT/VR 100KRD(C.C)*2 30MM P
VR307	023-50340-050-0	D.ROT/VR 50KB*2 (C.C) 25MM P
VR301.302.305.306.601	023-50350-050-0	D.ROT/VR 50KW(C.C) 30MM P
VR201A-201C.202A-202C.203A-203C.204A-204C	023-50350-060-0	D.ROT/VR 50KB(C.C) 30MM P
VR110A-110E.401-404	026-10326-040-0	S.SLD/VR 10KD 60MM P
VR208A-208C	027-10326-020-0	D.SLD/VR 10KD*2 60MMP
C140A-140E.251A-251C.635.643.644	030-10638-0A0-0	E/C 10MF Z 25V 5*11 T
C108A-108E	030-10818-000-0	E/C 1000MF Z 10V D8*14 P
C309C.310C.311A-311C.312A-312C.317.318	030-47638-0A0-0	E/C 47MF Z 25V 5*11 T
C321.322.357.358.365.366.409.410.419.420.425.426.439.440.449.450.455.456	030-47638-0A0-1	
C509-512.517.518.609-612.619-622.627.628.633.634.637.638	030-47638-0A0-2	
C114A-114E.119A-119E.120A-120E.121A-121E.122A-122E.134A-134E.137A-137E.139A-139E	030-47638-0A0-3	
C211A-211C.212A-212C.225A-225C.226A-226C.239A-239C.240A-240C.241A-241C.242A-242C	030-47638-0A0-4	
C237A-237C.238A-238C.249A-249C.250A-250C.666	030-47638-0A0-5	
C102A-102E.103A-103E	033-22676-0A0-0	LN E/C 22MF 80V M 6.3*12
C641.642	035-22556-0A0-0	MINI E/C 2.2MF M 50V T
C309.310.327.328.309A.309B.310A.310B.317A-317C.318A-318C.523.524	035-22626-0A0-0	MINI E/C 22MF M 16V T
C301.301A-301C.302.302A-302C.303.304.413.414.443.444.629-632	039-10124-220-0	CHIP C/C 100PF J 50V 0603

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
C110A-110E.138A-138E.201A-201C.202A-202C.203A-203C.204A-204C.245A-245C.246A-246C	039-10124-220-1	
C307.307A-307C.308.308A-308C.315.315A-315C.316.316A-316C.327C.328C.355.	039-10324-220-0	CHIP C/C 0.01MF J 50V 0603
C356.363.364.403-406.417.418.423.424.433-436.447.448.453.454.503-506.515.516.521	039-10324-220-1	
C522.605-	039-10324-220-2	
C135A-135E.136A-136E.209A-209C.210A-210C.227A-227C.228A-228C.247A-247C.248A-248C	039-10324-220-3	
C325.326.650-665.	039-10324-220-4	
C645-647	039-10405-220-0	CHIP C/C 0.1UF K 16V 0603 □□
C305.306.313.313A-313C.314.314A-314C.319A-319C.320A	039-22024-220-0	CHIP C/C 22PF J 50V 0603
C320B.320C.323.324.351-354.359-362.407.408.421.422.437.438.451.452.501.502.507.	039-22024-220-1	
C508.513.514.519.520.623.624.126A-126E.133A-133E.205A-205C.206A-206C.	039-22024-220-2	
C207A-207C.208A-208C.229A-229C.230A-230C.235A-235C.236A-236C	039-22024-220-3	
C111A-111E.118A-118E.415.416.445.446	039-22124-220-0	CHIP C/C 220PF J 50V 0603
C323C.324C	039-22225-220-0	CHIP C/C 2200PF K 50V 0603
C106A-106E.107A-107E	039-33124-220-0	CHIP C/C 330PF J 50V 0603
C321C.322C	039-33225-220-0	CHIP C/C 0.0033MF K 50V 0603 10% □□
C401.402.431.432.601-604.613-616	039-47024-220-0	CHIP C/C 47PF J 50V 0603
C115A-115E.116A-116E.117A-117E	039-47324-220-0	CHIP C/C 0.047MF J 50V 0603
C104A-104E.105A-105E.109A-109E	039-68124-220-0	CHIP C/C 680P J 50V 0603
C130A-130E.217A-217C.218A-218C.233A-233C.234A-234C	046-10304-060-0	M/C 0.01MF J 50V 5 T



<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
C223A-223C.224A-224C	046-12304-060-0	M/C 0.012MF J 50V 5 T
C213A-213C.214A-214C.215A-215C.216A-216C	046-18304-060-0	M/C 0.018MF J 50V T
C232A-232C.231A-231C	046-22304-060-0	M/C 0.022MF J 50V 5 T
C132A-132E	046-27305-060-0	M/C 0.027UF K 50V T
C125A-125E	046-33204-060-0	M/C 0.0033MF J 50V 5 T
C123A-123E.124A-124E.219A-219C.220A-220C.221A-221C.222A-222C	046-33304-060-0	M/C 0.033MF J 50V 5 T
D612	090-01302-000-0	ZENER DIODE 1N5225 3V 0.5W
D301	090-01472-020-0	ZENER DIODE 4.7V J 0.5W T
D101A-101E.102A-102E.103A-103E.104A-104E.201A-201C.202A-202C.203A-203C.204A-204C	090-02000-020-0	DIODE 1N4148
D205A-205C.601-610	090-02000-020-1	
LED19-26.28.47.101A-101E.201A-201C	100-00010-030-0	LED BL-B5141 RED
LED13-18.46	100-00040-000-0	LED BL-B3141 YLW
LED1-12.29-45.102A-102E.202A-202C	100-00050-000-0	LED BL-B2141 GRN
LED601	100-00060-000-6	LED D=3MM RED/GRN
LED27	100-00070-030-0	LED 204UBD D3 BLUE
Q103A-103E.201A-201C.202A-202C.304.603.609-614	120-00000-800-0	TRN 2SC1815 GR TO-92-D REEL(TO)
Q104A-104E.105A-105E	120-00001-010-0	TRN 2SC2240 TO-92-D REEL(TO)
Q301.302.601.602	120-00006-200-0	TRN 2SC2878 TO-92-D REEL(TO)
Q303.604-606	121-00000-200-0	TRP 2SA1015GR TO-92-D REEL(TO)
Q101A-101E.102A-102E	121-00000-500-0	TRP 2SA970-BL TO-92-D REEL (TO)
Q607.608	121-00006-100-0	TRP MJE350 SOT-93-D (ON)
IC608-613	160-00006-210-0	IC LM339 SOP-M REEL (ST/NS)
IC606.607	160-00018-000-0	IC NJM4556AL JRC
IC101A-101E.102A-102E.103A-103E.301-314.401-408.501-504.601-605	160-00024-100-0	IC NJM4580M DMP (JRC) 2K SMD
IC201A-201C.202A-202C.203A-203C.204A-204C	160-00024-100-1	
IC614	177-02000-301-0	GAL IC 16V8D-15 LP LATTICE
SW102A-102E.103A-103E.104A-104E.106A-106E.202A-202C.204A-204C.205A-205C	210-02201-440-0	PSH/SW 2P2T □□ SFPC12MC03-PF

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
SW301.306.401-406.501.502	210-02201-440-1	
SW101A-101E.201A-201C	210-02202-070-0	PUSH/SW SPEC12HC11-JP
SW602.603	210-02202-080-0	PUSH SW UNLOCK MR4283
SW107A-107E.203A-203C.206A-206C.302.304.601	210-02402-050-0	P/SW SFPE14MD01-PJ
SW604	210-16000-000-0	ENCODER SDB161PVB20F-1-4-16PC
JK301	211-00041-062-0	RCA/JACK
JK302.303	211-01302-100-0	3D5/J EJ 3536B
JK305-310.604.605	211-01601-240-0	6D3/J JY-6351-02-130 SCJ-0658
JK102A-102E.103A-103E.201A-201C.202A-202C	211-01602-380-0	6D3/J (SCJ-0658-Y)
JK403-406.501.502.601.602	211-01602-390-0	6D3/J JY-6351-02-030 SCJ-0658
JK603	211-01602-610-0	6D3/J
JK101A-101E	211-03300-160-0	XLR/J SKCA229-1K3F2
JK401.402	211-03300-180-0	XLR/J 94M-008P
DSP J1	211-06204-010-0	PIN/S PHDRST-10 6MM
W301	211-09082-010-0	B.E/PIN 8P P=2.54 L=30MM
CN601	211-09202-010-0	20P B.E./S PH=2.54MM
CN101	211-10051-151-0	5P WAFER/S TJC3-5A PH=2.5MM
CN1	211-10060-090-0	6P WAFER/S PITCH2.0MM
CN402	211-10061-180-0	6P WAFER/S A2501WV2-6P
CN201.302	211-10091-130-0	9P WAFER/S 2532-09 PH=2.5MM
CN301.602	211-10101-020-0	WAFER/S 10P 90° PH=2.5MM
CN102	211-10101-080-0	10P WAFER/S 2532-10
CN401	211-10121-050-0	12P WAFER/P P=2.5
IC614	211-11202-002-0	IC/S 20P 9.8*25MM
JP101	212-10051-010-6	5P WAFER/P UL1007#24 100MM PH=2.5MM
JP402	212-10061-210-0	6P WAFER/P 100MM UL1007#24 P=2.5MM
JP302	212-10090-390-0	9P WAFER/P 300MM UL1007#24 P=2.5MM
JP201	212-10090-470-0	9P WAFER/P 60MM
JP602	212-10100-210-0	10P WAFER/P 60MM UL1007#24 PH=2.5MM
JP102	212-10100-290-0	10P WAFER/P 150MM UL1007#24 P=2.5MM
JP301	212-10100-330-0	10P WAFER/P 220MM
JP401	212-10121-150-0	12P WAFER/P 1007#24 350mm
W1.W2	290-61722-103-0	MU1722X/Helix Board 17 MAIN PCB
AG-AG.DG1-DG1	376-00123-183-6	D.S WIRE UL2547 #28 230MM GRY
	379-02121-101-0	M.WIRE UL1007 #24 120MM BLK

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
JP303 TO CN303	385-05030-000-0	5P M. RIBBON WIRE 30MM UL2651#28
JK101A-101E	610-00000-800-0	XLR/J FIBER WAS. T0.8
VR307	610-00000-801-0	FIBER WAS. T1.0
MASTER LED	615-60004-620-0	LED BOSS L=13 LEDS=13
DIGITAL LED	615-60073-620-0	LED HOUSING LEC-22

**MISCELLANEOUS ITEMS**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
	000-00116-005-0	
S/PDIF OUT	211-00011-100-0	RCA/J 1P SCJ-0363
	212-05400-080-0	USB CABLE 1800MM 9903C007-001
S/PDIF OUT*1	212-10023-250-0	2P WAFER/P 200mm UL1007#22 P=2.5MM
	280-16263-000-0	FUSE T1.6A 250V VDE SLOW
	321-00000-070-0	CABLE TIE HW-100MM
	510-61550-000-0	PANEL MU1722X USB
	510-61550-000-F	PANEL MU1722X USB MATERIAL
	517-61000-000-0	BOT. COV. MU1722X
	517-61000-000-F	BOT . COV. MU1722X MATERIAL
	518-60230-000-0	HEAT SINK COVER MU1722X
DSP PCB*1,S/PDIF PCB*1	518-60240-001-0	MU2442X
	518-60260-000-0	
	518-60260-010-0	
	524-60009-020-0	HANDLE SIZE:10*50 COLOR:WHT
	525-60010-000-0	FEET SIZE:20*20*8.0MM SF-006
PROGRAM	540-20460-221-0	R/KNOB 12 12.25*18 GREY BODY
CTRL PM/PHONES	540-60300-121-0	R/KNOB 12GREY BODY+RED CAP
MLLX*9,EFX*9,TOALLX1*2,PARAMETER*1	540-60300-221-0	R/KNOB 12 GREY BODY+BLUE CAP
AUXRTN*3,2TRN*1	540-60300-321-0	R/KNOB 12 GREY BODY+WHT CAP
HIGH*8,MID*8,FREQ*8,LOW*8,PAN*8	540-60300-421-0	R/KNOB 12 GREY BODY
LINE MIC*5	540-60310-020-0	R/KNOB 15 BLK
CHANNEL1~CHANNEL11	541-60005-020-0	S/KNOB SIZE 23*9.5 WHITE BODY+BLK POINT
GROUP1/2	541-60005-220-0	S/KNOB 432C BODY+WHT POINT SIZE: 23*9.5
MAIN L/R	541-60005-720-0	S/KNOB RED BODY+WHT POINT
	542-60090-222-0	P/KNOB WHT BODY+COOL GREY 11C
	551-60089-000-0	L BRKT MU1722X
	551-60089-000-F	L BRKT MATERIAL MU1722X
	551-60090-000-0	R BRKT MU1722X
	551-60090-000-F	R BRKT MATERIAL MU1722X
	560-61290-000-0	CARTON Helix Board 17
	561-60920-000-0	G/B Helix Board 17
	565-60103-000-0	FRONT-RIGHT POLYLON
	565-60104-000-0	FRONT-LEFT POLYLON
	565-60105-000-0	BACK-RIGHT POLYLON
	565-60106-000-0	BACK-LEFT POLYLON
	566-10015-010-0	SPONGE 40*10*5

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
	568-00003-000-0	#10 240*340*0.05
POWER COAD	568-30011-000-0	PE BAG 300*110*0.05
	568-60085-000-0	PE BAG MU1722X
	568-60088-000-0	PE BAG 400*160*0.05
	572-00000-050-0	DRYER 5g
	573-60240-000-0	BAR CODE LABEL PHONIC
	573-60343-000-0	LABEL BLUE D=8mm
	574-00D20-110-0	OWN. MANU. Helix Board 17
PANEL&HEATSINK*2	590-03006-100-0	M/E FLT SCR. M3.0*6 NI
PANEL&PCB*14.FIXED USB PCB*2	590-03008-100-0	M/E FLT SCR. M3.0*8 NI
HEX. BOSS&DSP PCB*4,S/PDIF PCB*4	590-43006-100-0	M/E PAN SCR. M3.0*6 NI
FOR PCB BOSS*15	590-43008-100-0	M/E PAN SCR. M3.0*8 NI
PANEL&BOT.COV.*8,HEA TSINK*2	590-53006-100-0	M/E SET SCR. M3.0*6 NI
L/R SIDE PANEL*6	590-54008-100-0	M/E SET SCR. M4*8 NI
MIC JACK*10. MAIN OUT JACK*4	591-03008-100-0	T/P FLT SCR. D3.0*8 NI
FOR RCA JACK	591-53010-100-0	T/P SET SCR. D3.0*10 NI
	610-00301-018-0	FIBER WAS. D3.0*8*1
USB PCB	610-00301-516-0	FIBER WAS. D3.0*D8.0*1.5 RED
S/PDIF OUT JACK	610-00651-010-0	ID6.5*OD10 T1+1.5 TW-14N
S/PDIF OUT JACK	610-00851-016-0	FIBER WASHER ID8.5*OD12*T1.0 RED
	610-20901-001-0	TOOTH WAS D9*12*1 NI
INPUT PCB&PANEL*2.DSP LED□□	615-20056-600-0	BOSS H=25
MAST PCB&PANEL*12	615-20088-620-0	SPACER SUPPORT H-16
	615-60085-630-0	HEX. BOSS M3.0*11MM
	631-10025-000-0	HEMELON 20*70
LED	631-20029-000-0	HEMELON 10*10

**POWER REQUIREMENT CLASSIFICATION**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
<b>UL</b>	370-08010-721-0	P/CORD 120V 10A 6F 3PUL/CSA
<b>IEC</b>	370-15010-921-0	P/CORD IEC 10A 6F 3P VDE
<b>SA</b>	370-06010-321-6	P/CORD 10A/250V SA 2.5M 3P
<b>SAA</b>	370-11010-821-0	P/CORD 240V10A 6F 3P SAA SVT
<b>BS</b>	370-01010-921-0	P/CORD 240V 10A 6F 3P
<b>JIS</b>	370-16510-629-0	P/CORD 7A 125V 2P 6F JIS

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