

**PERSONAL AUDIO ASSISTANT**

**PAA2**

# SERVICE MANUAL



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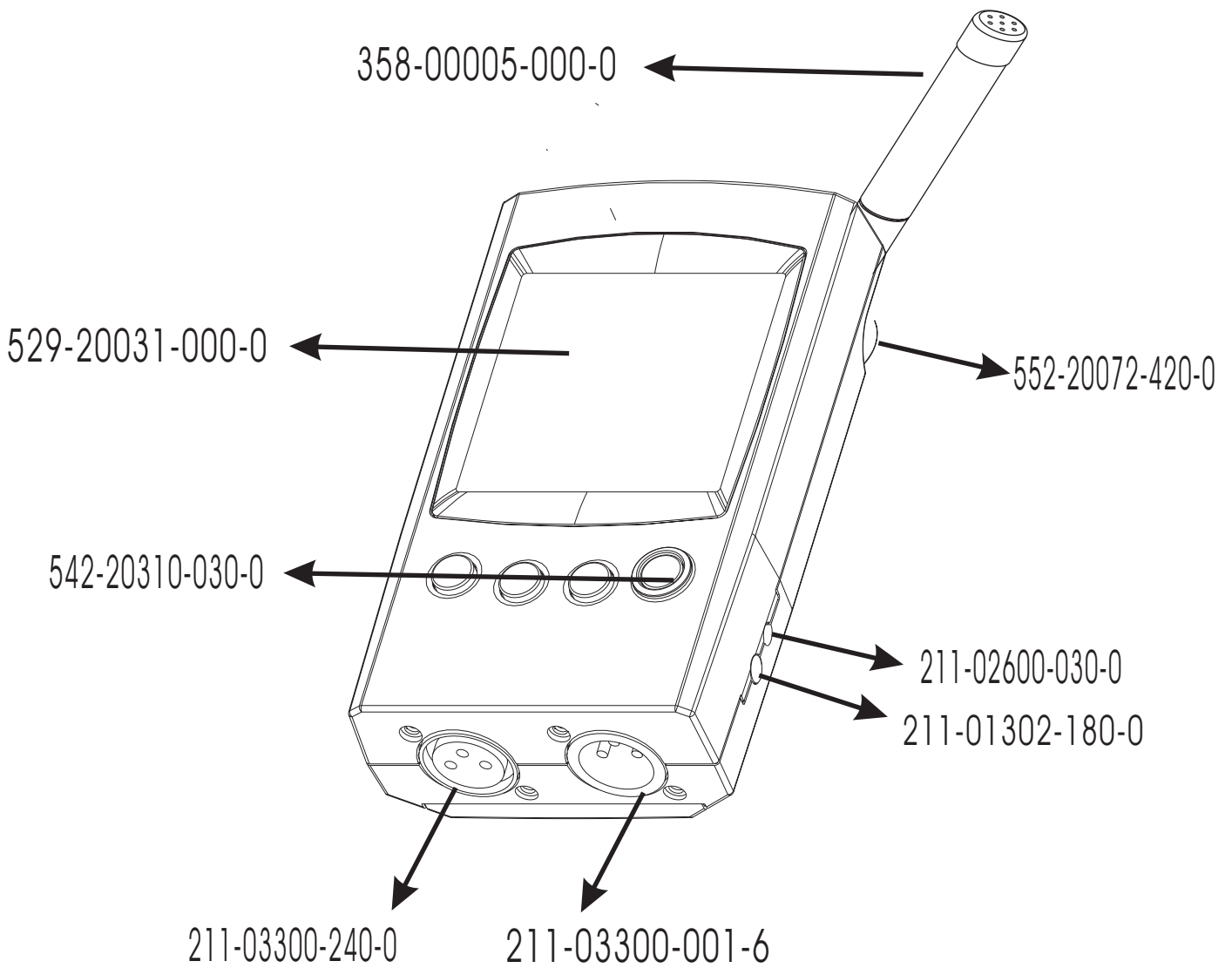
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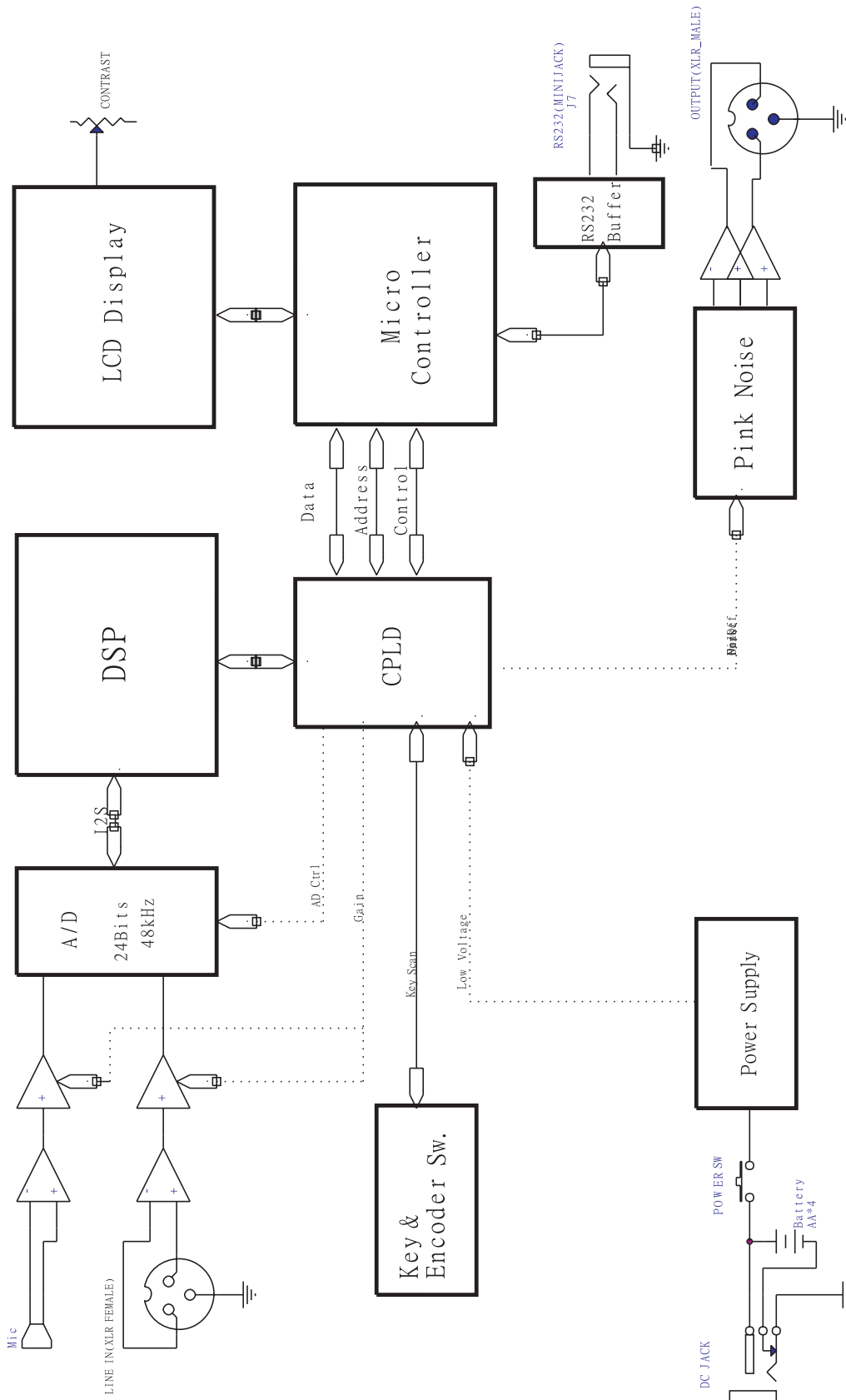
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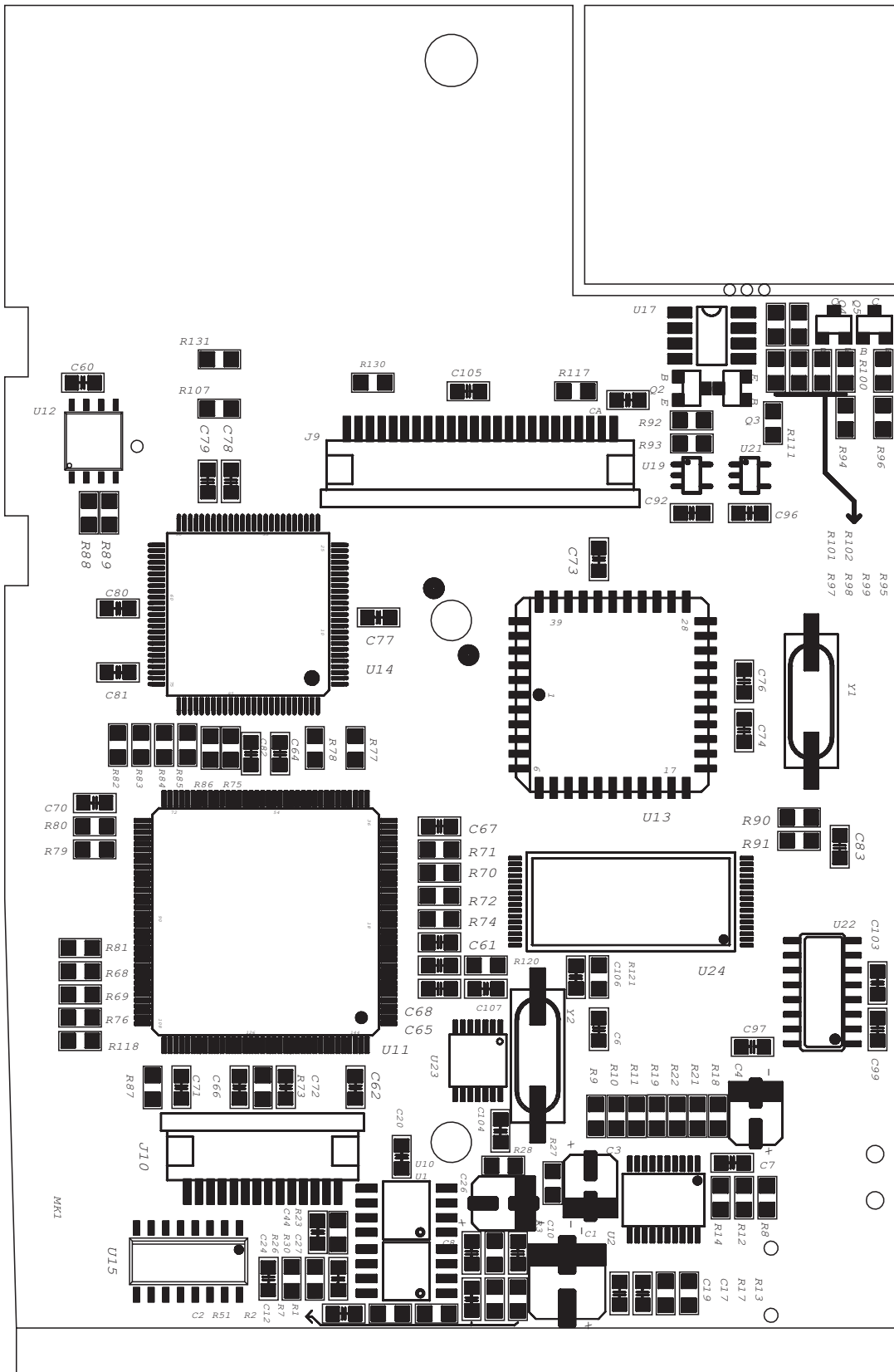
PANEL LAYOUT



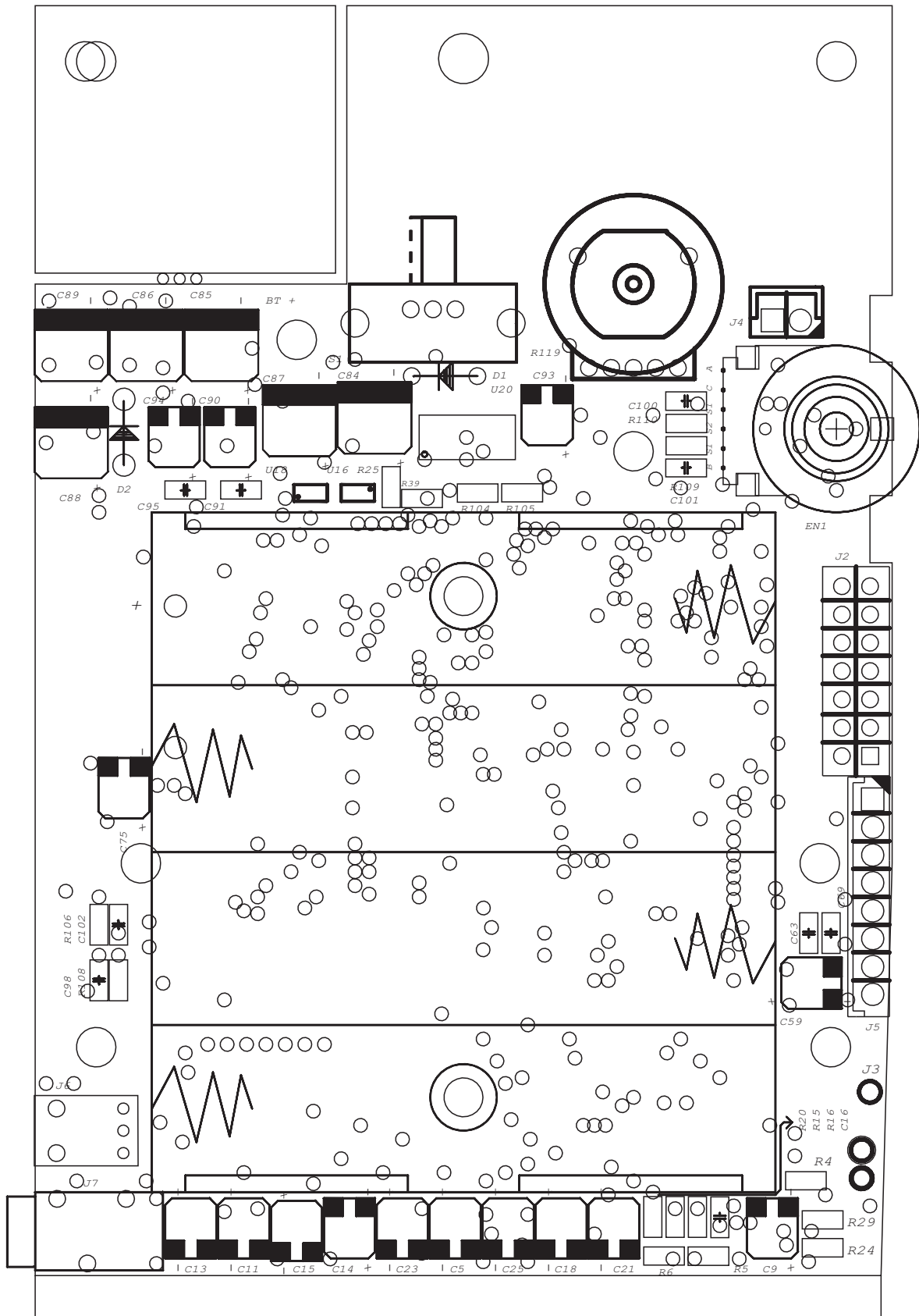
SYSTEM BLOCK DIAGRAM



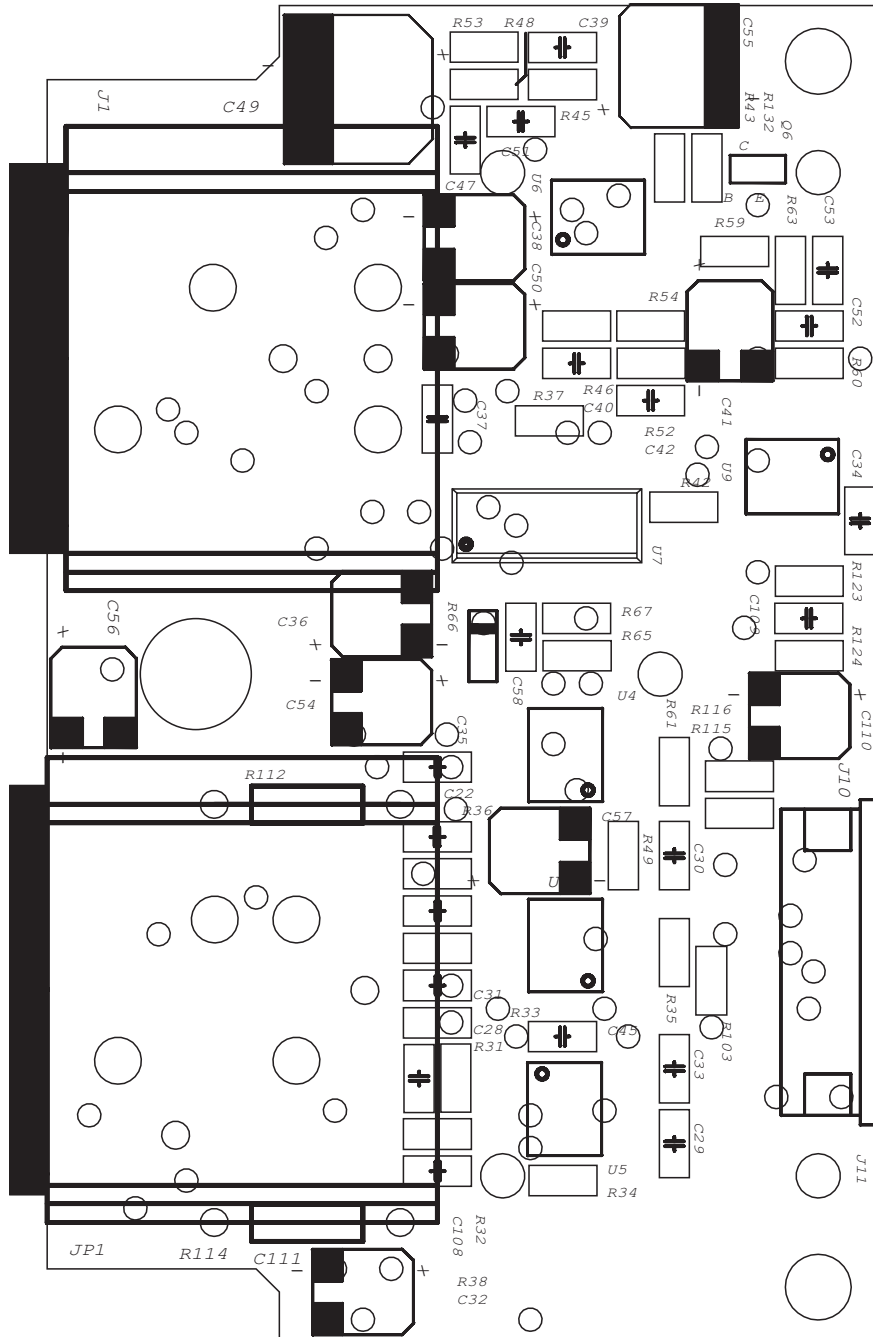
MASTER PCB



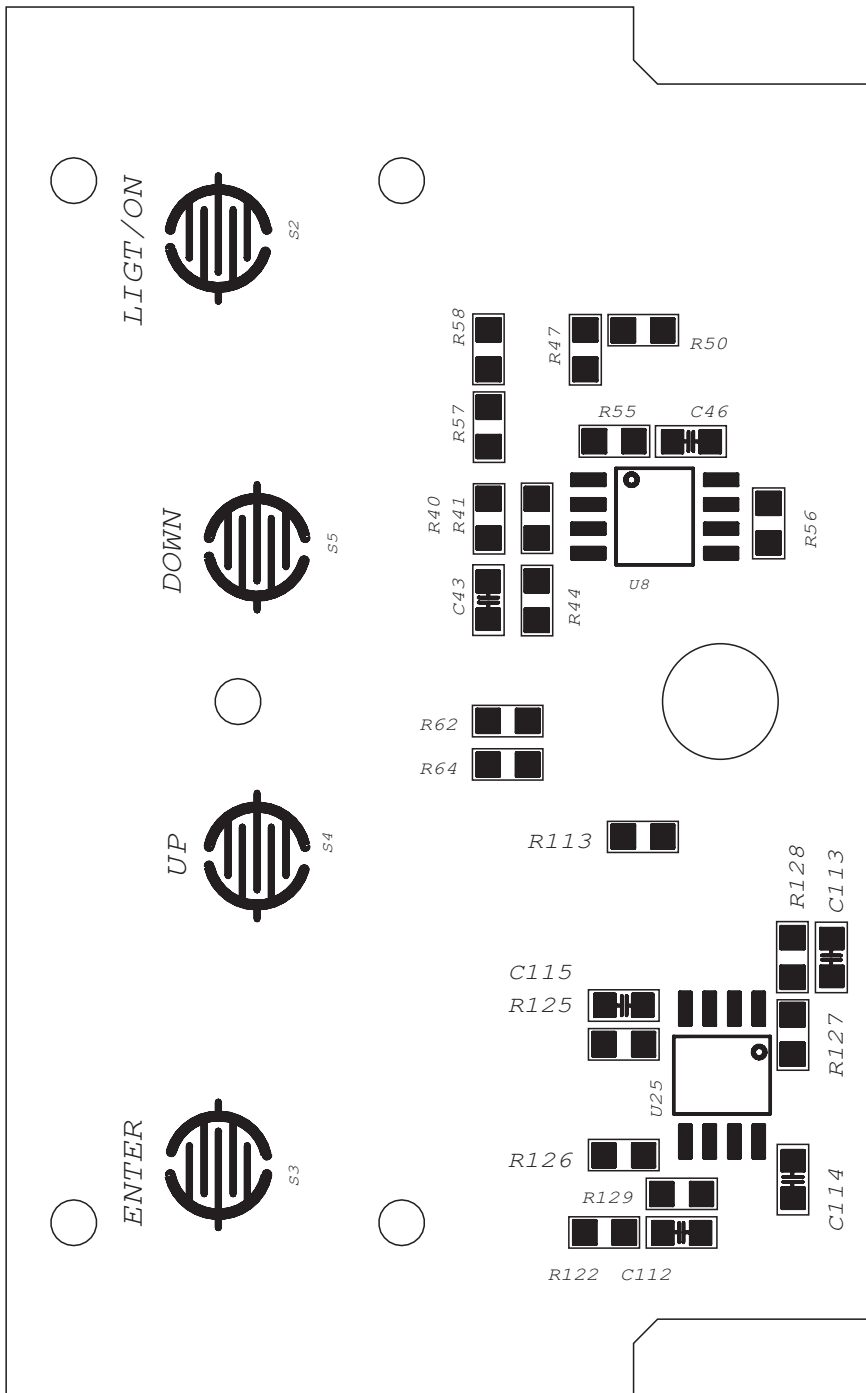
MASTER REAR PCB



INPUT PCB

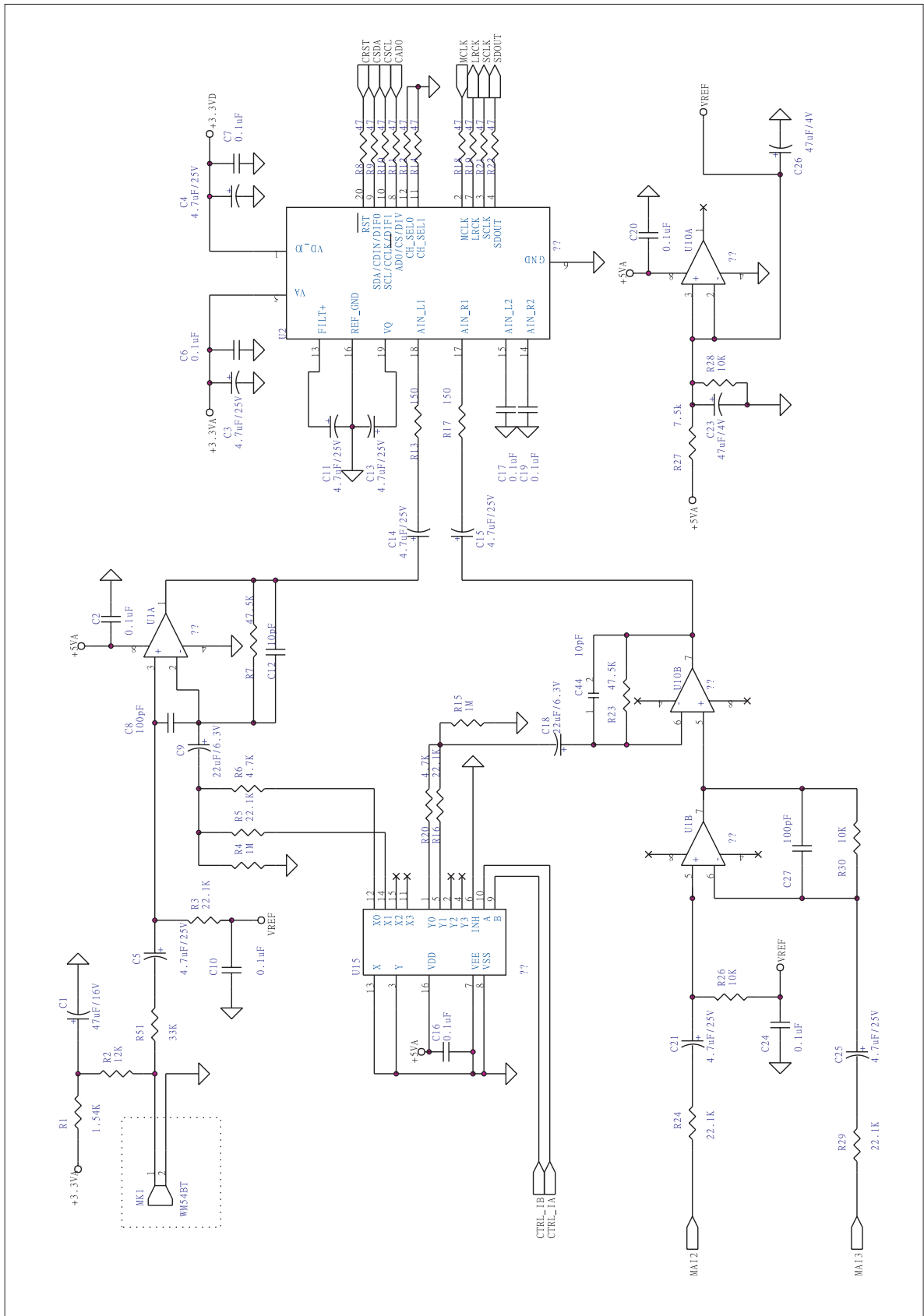


INPUT REAR PCB

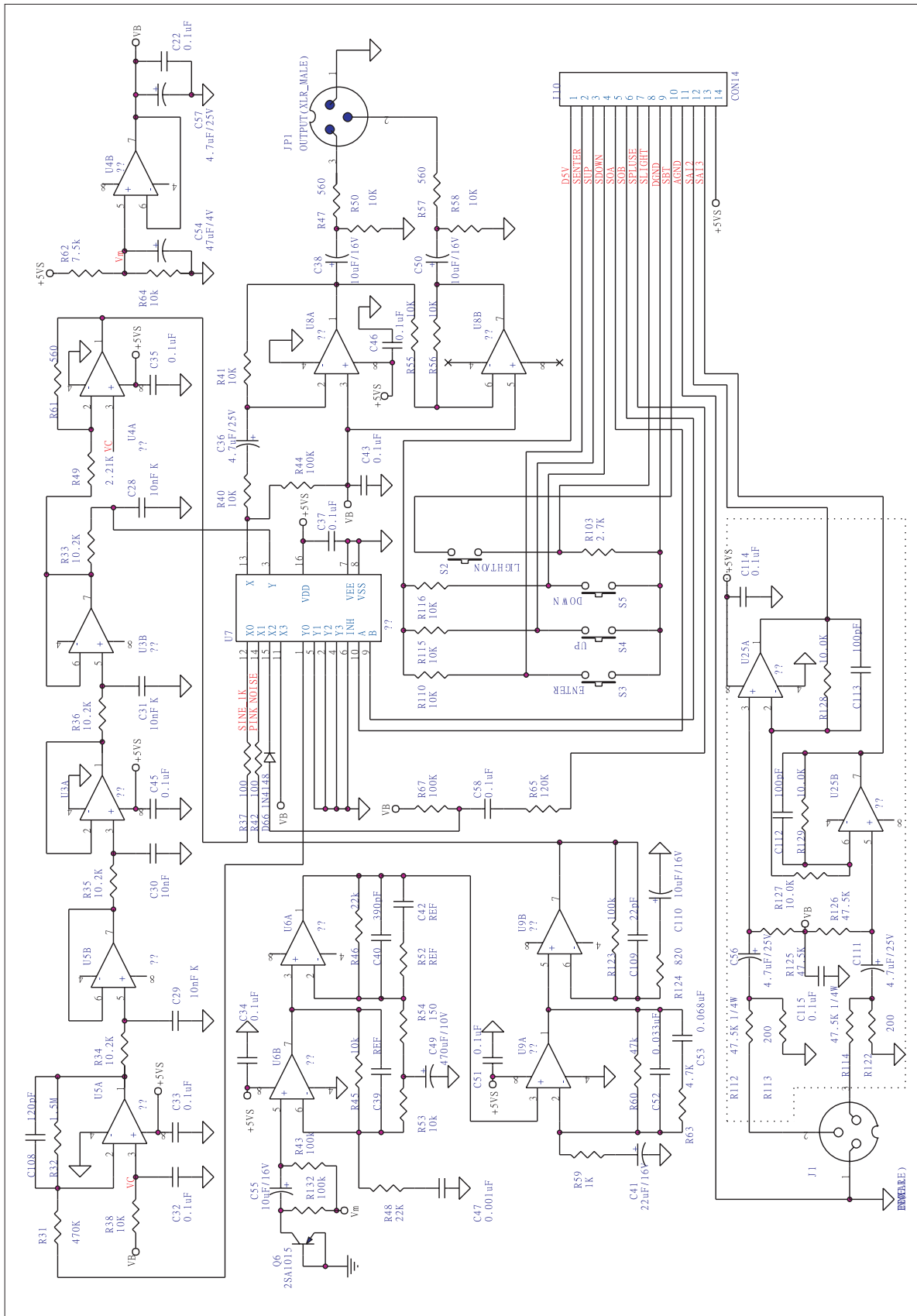




ANALOG INPUT SCHEMATIC

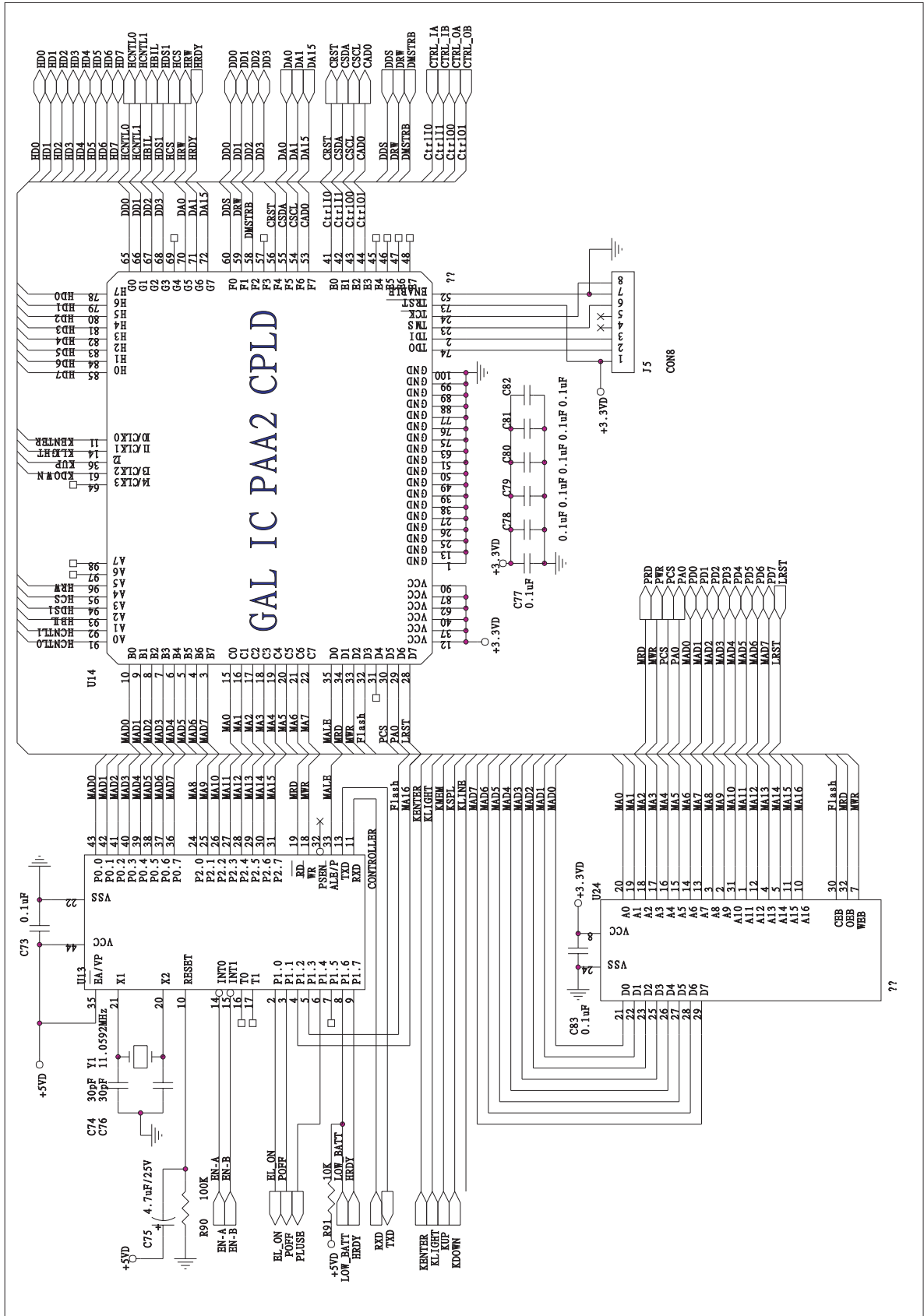


ANALOG OUTPUT SCHEMATIC

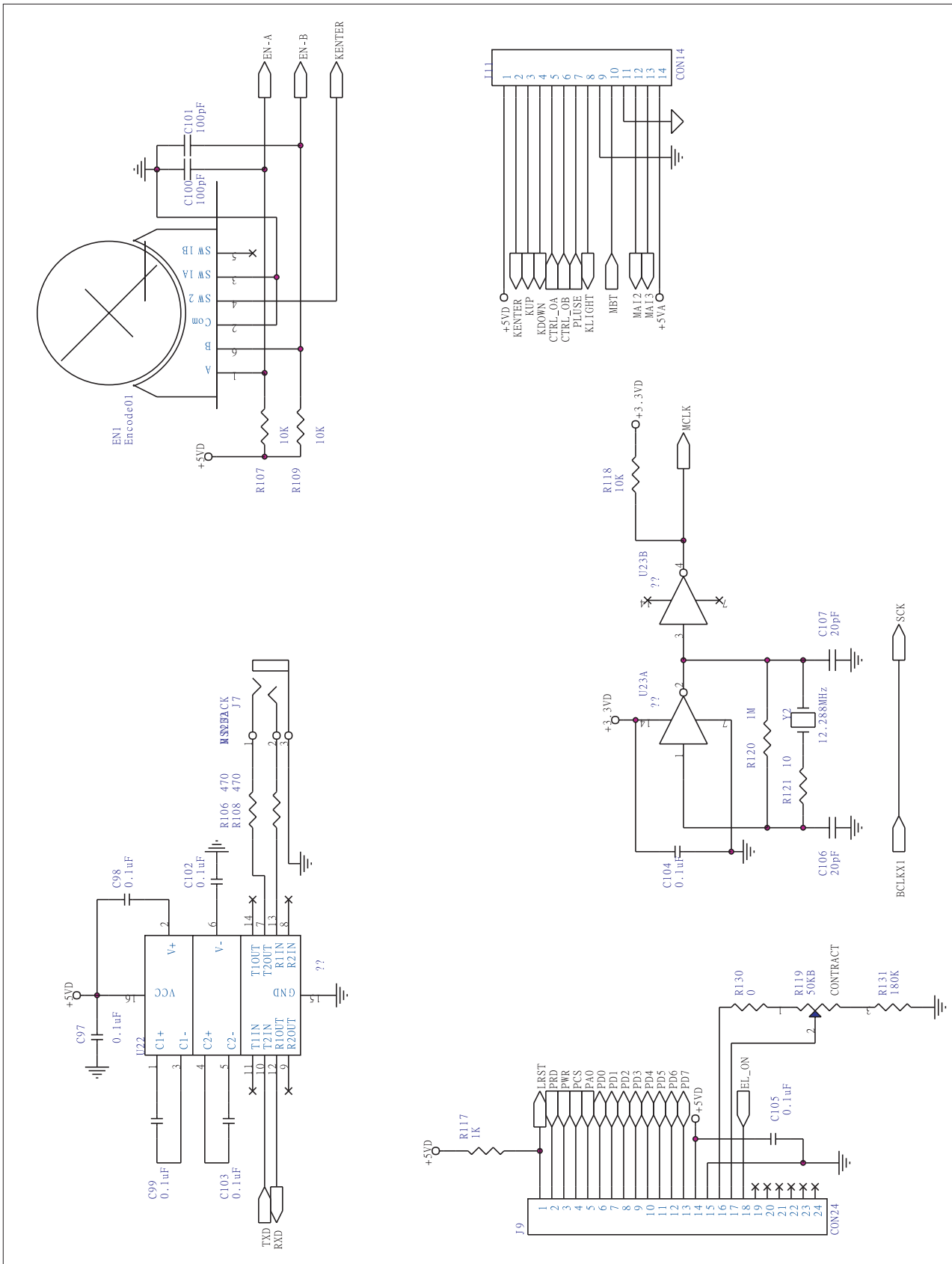




MIC\_CTL SCHEMATIC



USER\_CTL SCHEMATIC





## MAIN PCB-PART LIST

Ref.	Phonic Part No.	Specifications
VR119	020-50322-000-0	T/VR 50KB*2 0.25W D16 5M RK10F12U0132
D1	090-00000-020-0	DIODE 1N4001 SILITEK T
D2	090-02000-020-0	DIODE 1N4148 SPECS T26MM MINI TYPE
S1(POWER SW)	210-01102-040-0	SLD/SW SV71010-0102-6T-NPN
J7	211-01302-180-0	3D5/J SCJ320P00XS0B00
J6	211-02600-030-0	3D5 DC/J SCD-410ACS000000
R89. 130	008-00002-600-0	CHIP RES. 0 J 0603
R26.28.30.70-75.77-88.91.95. 99.100.104.107.109.110.111.1 18	008-10022-400-0	CHIP RES. 10K F 0603
R90.94.96.105	008-10032-400-0	CHIP RES. 100K F 0603
R4.15.120	008-10042-400-0	CHIP RES. 1M F 0603
R121	008-10092-400-0	CHIP RES. 10 F 0603
R2	008-12022-400-0	CHIP RES. 12K F 0603
R13.17	008-15002-400-0	CHIP RES. 150 F 0603
R98	008-15012-400-0	CHIP RES. 1.5K F 0603
R1	008-15412-400-0	CHIP RES. 1.54K F 0603
R131	008-18032-400-0	CHIP RES. 180K F 0603
R102	008-20012-400-0	CHIP RES. 2K F 0603
R25	008-20022-400-0	CHIP RES 20K F 0603
R3.5.16.24.29	008-22122-400-0	CHIP RES. 22.1K F 0603
R101	008-24012-400-0	CHIP RES. 2.4K F 0603
R51	008-33022-400-0	CHIP RES. 33K F 0603
R106.108	008-47002-400-0	CHIP RES. 470 F 0603
R6.20.68.69.92.97.117	008-47012-400-0	CHIP RES. 4.7K F 0603
R8-12.14.18.19.21.22.76	008-47072-400-0	CHIP RES. 47 F 0603
R7.23	008-47522-400-0	CHIP RES. 47.5K F 0603
R27	008-75012-400-0	CHIP RES. 7.5K F 0603
R39	008-82022-400-0	CHIP RES. 82K F 0603
R93	008-91002-400-0	CHIP RES. 910 F 0603
C12.44	039-10024-220-0	CHIP C/C 10PF J 50V 0603
C8.27.100.101	039-10124-220-0	CHIP C/C 100PF J 50V 0603
C91.92.95.96	039-10324-221-0	CHIP 0.01UF J 50V 0603 TDK
C2.6.7.10.16.17.19.20.24.60- 73.77-83.97. 98.99.102-105.A	039-10405-220-0	CHIP C/C 0.1UF K 16V 0603

## MAIN PCB-PART LIST

Ref.	Phonic Part No.	Specifications
C106.107	039-20024-220-0	CHIP C/C 20P J 50V 0603
C9.18	039-22604-900-0	CHIP E/C 22UF M6.3V 4*5.5
C74.76	039-30024-220-0	CHIP C/C 30P J 50V 0603
C3.4.5.11.13-15.21.25.59.75. 90.93.94	039-47556-900-0	CHIP E/C 4.7MF M 35V 4*5.4
C1.84-89	039-47606-900-0	CHIP E/C 47MF M 16V 6.3*5.4
C23.26	039-47666-900-0	CHIP E/C 47UF M 4V 4*5.5
Q2.3.5	120-00010-100-0	TRAN. 2SC2712 TOSHIBA (2SC1815 SMD)
Q4	121-00007-800-0	TRAN. 2SA1162 TOSHIBA(2SA1015 SMD)
U18	160-00023-700-0	IC RT9701-CB SOT-23-5 (RICHTEK)
U19	160-00023-800-0	IC RT9167-50CB SOT-23-5 (RICHTEK)
U21	160-00023-900-0	IC RT9167-33CB SOT-23-5 (RICHTEK)
U17	160-00024-000-0	IC RT9174-CS SOP-8 (RICHTEK)
U1.10	160-00024-100-0	IC NJM4580M DMP
U16	160-00024-200-0	IC RN5VT36AA SOT-23-5 RICOH
U15	160-00025-200-0	IC NJU4052BM JRC DMP-16
U23	170-00006-900-0	TTL IC 74LCX04 TSOP
U20	172-00000-103-0	CMOS IC CD4013BC FAIRCHILD
U13	177-00002-400-0	CPU PAA-1 CONTROLLER
U11	177-00002-900-0	CPU DSP PAA2 PQFP (TMS320VC5402PGE-160)
U12	177-01004-600-0	IC PAA-1 MEMORY
U24	177-01004-800-0	IC ICE28LF010 TSOP
U14	177-02000-800-0	GAL IC PAA2 CPLD
U2	177-04019-000-0	CHIP SET CS53L32A TSSOP (CRYSTAL)
U22	177-04020-000-0	CHIP SET MAX202 SOP
EN1	210-16000-030-0	ENCODER EVQWK4001 PANASONIC
J9	211-10249-000-0	24P WAFER/S SCC103-241A02 SMD PH=1.0
	290-02230-101-0	PCB PAA2 A
Y1	300-11054-000-0	CRYSTAL 11.0592MHz (HC-49/US)
Y2	300-12284-020-0	CRYSTAL 12.288MHZ SM-49/US



## ANALOG PCB-PART LIST

Ref.	Phonic Part No.	Specifications
R112.114	006-47522-440-0	MF RES. 47K5 F 0.25W T
R32&C108	039-15224-220-0	CHIP C/C 0.0015MF J 50V 0603
JP1	211-03300-001-6	XLR/J 99M-108SP1
J1	211-03300-240-0	XLR/J PPM107SP1L
	212-10140-210-0	14P WAFER/P PH01126A 50MM
R37.42	008-10002-400-0	CHIP RES. 100 F 0603
R59	008-10012-400-0	CHIP RES. 1K F 0603
R38.40.41.45.50.53.55.56.58. 64.115.116.127.128.129.	008-10022-400-0	CHIP RES. 10K F 0603
R43.44.67.123.132	008-10032-400-0	CHIP RES. 100K F 0603
R33-36	008-10222-400-0	CHIP RES. 10.2K F 0603
R54	008-15002-400-0	CHIP RES. 150 F 0603
R32	008-15042-400-0	CHIP RES. 1.5M F 0603
R113.122	008-20002-400-0	CHIP RES. 200 F 0603
R46.48.65	008-22022-400-0	CHIP RES. 22K F 0603
R49	008-22112-400-0	CHIP RES. 2.21K F 0603
R103	008-27012-400-0	CHIP RES. 2.7K F 0603
R63	008-47012-400-0	CHIP RES. 4.7K F 0603
R60	008-47022-400-0	CHIP RES. 47K F 0603
R31	008-47032-400-0	CHIP RES. 470K F 0603
R125.126	008-47522-400-0	CHIP RES. 47.5K F 0603
R47.57.61	008-56002-400-0	CHIP RES. 560 F 0603
R62	008-75012-400-0	CHIP RES. 7.5K F 0603
R124	008-82004-400-0	CHIP RES. 820 F 0603
C112.113	039-10124-220-0	CHIP C/C 100PF J 50V 0603
C47	039-10224-220-0	CHIP C/C 0.001MF J 50V 0603
C28.29.30.31	039-10324-221-0	CHIP 0.01UF J 50V 0603 TDK
C22.32.33.34.35.37.43.45.46. 51.58.114.115	039-10405-220-0	CHIP C/C 0.1UF K 16V 0603
C53	039-10424-220-0	CHIP C/C 0.1MF J 50V 0603
C38.50.55	039-10606-900-0	CHIP E/C 10MF M 16V 4*4.5
C108	039-12124-220-0	CHIP C/C 120PF J 0603
C109	039-22024-220-0	CHIP C/C 22PF J 50V 0603
C41	039-22606-900-0	CHIP E/C 22MF M 16V 4*5.4
C52	039-33324-220-0	CHIP C/C 0.033MF J 50V 0603
C40	039-39125-220-0	CHIP C/C 390PF K 50V 0603
C36.56.57.110.111	039-47556-900-0	CHIP E/C 4.7MF M 35V 4*5.4

**ANALOG PCB-PART LIST**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
C54	039-47666-900-0	CHIP E/C 47UF M 4V 4*5.5
C49	039-47735-900-0	CHIP E/C 470MF K 10V
D66	090-02000-010-0	DIODE 1N4148 SMD
Q6	121-00007-800-0	TRAN. 2SA1162 TOSHIBA(2SA1015 SMD)
U3.4.5.6.8.9.25	160-00024-100-0	IC NJM4580M DMP
U7	160-00025-200-0	IC NJU4052BM JRC DMP-16
	290-02230-201-0	PCB PAA2 ANALOG B

## MISCELLANEOUS ITEMS

Ref.	Phonic Part No.	Specifications
	000-00116-008-0	PE PAGE #8
	100-09000-001-0	LCD AT-160160A (SMD 20P WIRE)
	212-14209-000-0	D-SUB/P DB-9F (SIGNAL CABLE)
	306-14000-140-0	CD DISK PAA2
	310-00004-000-0	BATTERY BOX BH341-2P
	311-00007-000-0	BATTRERY 1.5V AA
	358-00005-000-0	KIT MICROPHONE PAA2
	516-20480-020-0	TOP COV. PAA2 PHONIC
	517-20680-020-0	BOT. COV. PAA2 PHONIC
	518-20360-020-0	BATTERY COV. PAA2
	529-20031-000-0	LCD ACRYLIC LENS PAA2 (78.4*69.24*2.4MM)
	542-20310-030-0	P/KNOB 65*20*5.7MM PAA2
	552-20071-420-0	LCD FIXED PAA2
	552-20072-420-0	MIC FIXED PAA2
	553-20014-400-0	SHEIELD PLATE PAA2
	560-21100-000-0	CARTON PAA2
	561-21330-090-0	G/B 236.5*230*68MM PAA2
	562-24360-000-0	PAPER 232*215*65 PAA2
PAD ON LCD	566-20063-011-0	SPONGE 43.6*8.6*3.0MM (FOAMER)
PAD ON LCD	566-20064-011-0	SPONGE 22.6*12.6*3.0MM (FOAMER)
	568-20076-030-0	LEATHERN BAG 165*98*52MM BLK
	572-00000-050-0	DRYER 5g
	573-20418-030-0	BATT LABEL 40*40*0.1MM
	573-60240-000-0	BAR CODE LABEL PHONIC SERIES LABEL
	573-60343-000-0	LABEL LEVEL METER LABEL BLUE D=8mm
	574-02230-110-0	OWN. MNAU. PAA2 PHONIC
	579-00000-068-0	MINI CATALOG PHONIC SERIES
	590-02602-100-0	M/E FLT SCR M2.6*2 N1
FIX BATTERY BOX*2	590-02606-100-0	M/E FLT SCR. M2.6*6 NI
FIX XLR PCB&BOSS*2	590-32606-100-0	M/E RUD SCR. M2.6*6 NI
FIX TOP&BOT COV*4 FIX XLR*4	591-32610-200-0	T/P RUN SCR M2.6*10 BLK
FIX LED HOUSING*2 FIXED WASHER&MIC	591-33008-100-0	T/P RUD SCR. M3*8 NI

**MISCELLANEOUS ITEMS**

<b>Ref.</b>	<b>Phonic Part No.</b>	<b>Specifications</b>
BATTERY BOX*2	600-00262-462-0	HEX. NUT M2.6*2.4 S-2M
	600-00302-562-0	PLASTIC SCREW NUT M3
	610-01201-010-0	PLA WAS. D11*D3.2*1.0NI
MIC	611-20009-000-0	SPRING D9*20*0.8 PAA2
	615-20118-630-0	BOSS M3*(5+10.9)
	615-20119-630-0	BOSS M5*5.8 860050
	615-20120-630-0	BOSS 1/4-20 862520*0.250
	615-20121-630-0	BOSS M3*6.0 860030
FIX LCD HOUSING	615-20122-630-0	BOSS M3*(5+4.7)
	630-20054-460-0	73*74.4*0.3 PAA2
	630-20071-410-0	MYLAR 24.8*9*0.2MM

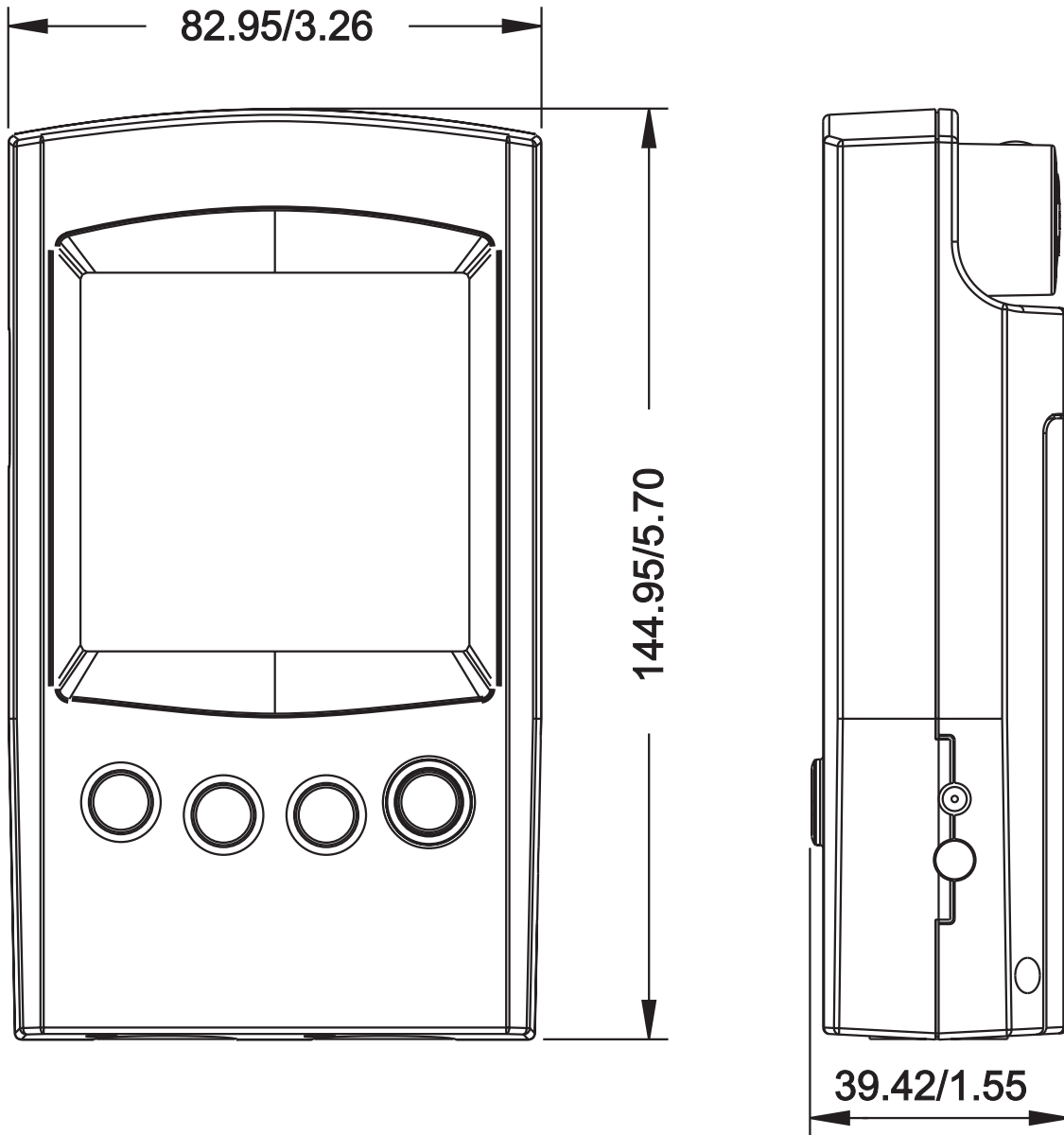
**POWER REQUIREMENT CLASSIFICATION**

<u>Ref.</u>	<u>Phonic Part No.</u>	<u>Specifications</u>
<u>BS</u>	353-23206-000-0	ADAPTOR PAA1 AC240V BS
<u>IEC</u>	353-23204-000-0	ADAPTOR PAA1 AC230V IEC
<u>SA</u>	353-23207-000-0	ADAPTOR PAA1 AC240V SA
<u>SAA</u>	353-23209-000-0	ADAPTOR PAA1 AC240V SAA
<u>UL</u>	353-23201-000-0	ADAPTOR PAA1 AC120V UL

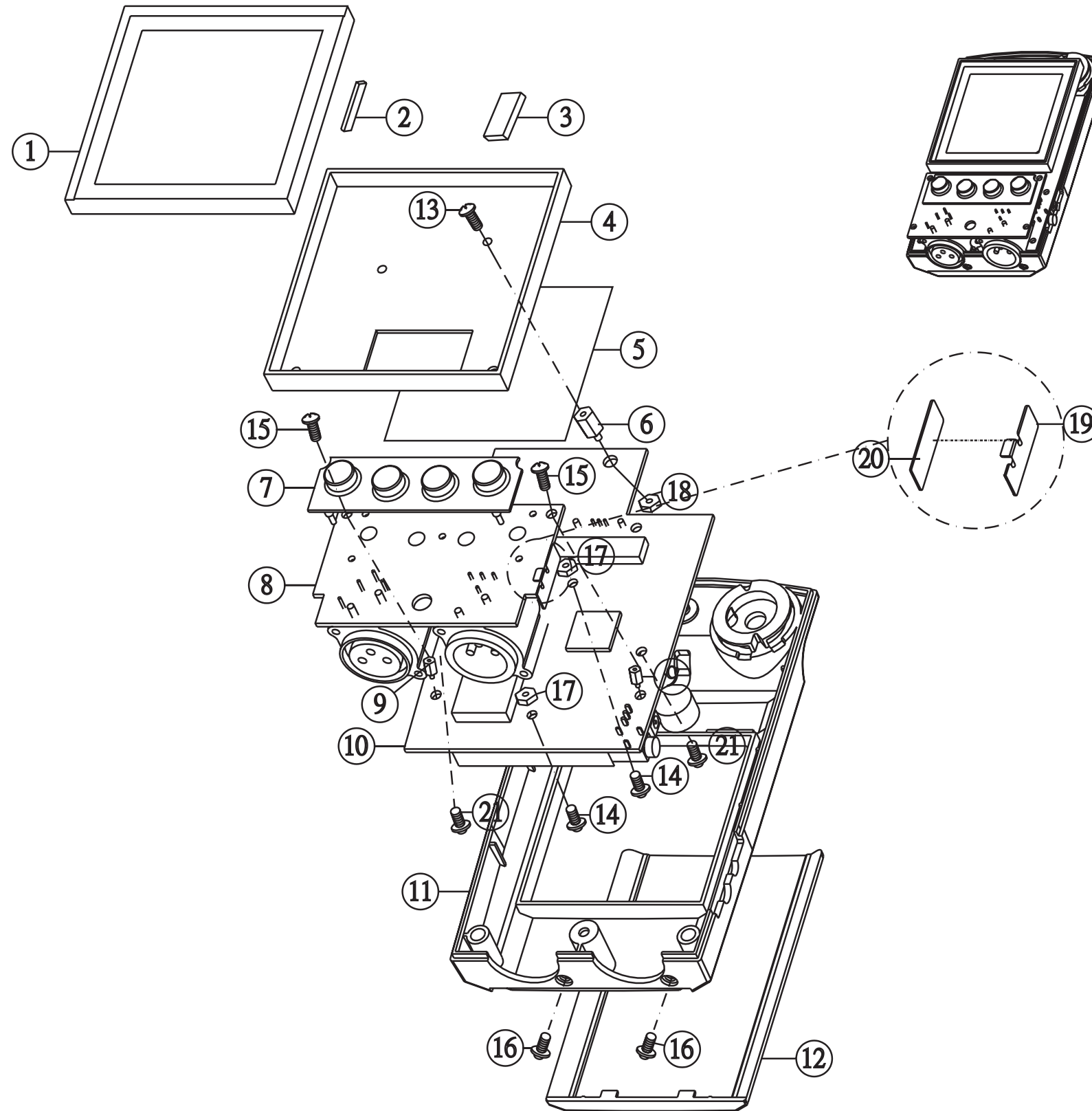
## IC LIST

Ref.	Phonic	Specifications	Supplier
U18	160-00023-700-0	IC RT9701-CB SOT-23-5 (RICHTEK)	<a href="http://www.richtek.com/">http://www.richtek.com/</a>
U19	160-00023-800-0	IC RT9167-50CB SOT-23-5 (RICHTEK)	<a href="http://www.richtek.com/">http://www.richtek.com/</a>
U21	160-00023-900-0	IC RT9167-33CB SOT-23-5 (RICHTEK)	<a href="http://www.richtek.com/">http://www.richtek.com/</a>
U17	160-00024-000-0	IC RT9174-CS SOP-8 (RICHTEK)	<a href="http://www.richtek.com/">http://www.richtek.com/</a>
U1.10	160-00024-100-0	IC NJM4580M DMP	<a href="http://www.njr.com">http://www.njr.com</a>
U16	160-00024-200-0	IC RN5VT36AA SOT-23-5 RICOH	<a href="http://www.ricoh.com/products.html">http://www.ricoh.com/products.html</a>
U15	160-00025-200-0	IC NJU4052BM JRC DMP-16	<a href="http://www.njr.com">http://www.njr.com</a>
U23	170-00006-900-0	TTL IC 74LCX04 TSOP	<a href="http://www.bsi.com.tw/e_index.htm">http://www.bsi.com.tw/e_index.htm</a>
U20	172-00000-103-0	CMOS IC CD4013BC FAIRCHILD	<a href="http://www.fairchildsemi.com/">http://www.fairchildsemi.com/</a>
U12	177-01004-600-0	IC PAA-1 MEMORY	<a href="http://www.semiconductors.philips.com/">http://www.semiconductors.philips.com/</a>
U24	177-01004-800-0	IC ICE28LF010 TSOP	<a href="http://www.bsi.com.tw/e_index.htm">http://www.bsi.com.tw/e_index.htm</a>
U14	177-02000-800-0	GAL IC PAA2 CPLD	<a href="http://www.latticesemi.com/">http://www.latticesemi.com/</a>
U3.4.5.6.8.9.25	160-00024-100-0	IC NJM4580M DMP	<a href="http://www.njr.com">http://www.njr.com</a>
U7	160-00025-200-0	IC NJU4052BM JRC DMP-16	<a href="http://www.njr.com">http://www.njr.com</a>

DIMENSIONS



EXPLODED VIEW



No	Title	Part No	Fig.	QTY
1	LCD	100-09000-001-0		1
2	SPONGE (43.6x8.6x3.6)	566-20063-010-0		1
3	SPONGE (22.6x12.6x3.6)	566-20064-010-0		1
4	LCD HOUSING	522-20071-420-0	PAA2-041-B	1
5	SHIELD	630-20054-460-0	PAA2-151-B	1
6	BOSS M5x5.8	615-20019-630-0		1
7	KEY	542-20310-030-0	PAA2-071-A	1
8	PCB-A	F02-23000-002-0		1
9	BOSS M3x(5+10.9)	615-20118-630-0		2
10	PCB-MAIN	F02-23000-001-0		1
11	BOTTOM COVER	517-20680-000-0	PAA2-061-F	1
12	BATTERY COVER	518-20360-020-0	PAA2-021-B	1
13	M/E FLT SCR M2.6x2	590-02602-100-0		1
14	M/E FLT SCR M2.6x6	590-02606-100-0		2
15	M/E RUD SCR M2.6x6	590-32606-100-0		2
16	T/P RUM SCR M2.6x10	591-32610-200-0		2
17	HEX NUT M2.6x2.4	600-00262-462-0		2
18	HEX NUT 3.0x2.2	600-00302-210-0		1
19	PCB-B-PLATE	553-20014-400-0	PAA2-161-B	1
20	MYLAR-1	630-20071-410-0	PAA2-171-A	1
21	T/P RUD SCR M3x8	591-33008-100-0		2



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