

SERVICE

MANUAL

P O W E R E D
MIXER

CA-8320

interM

www.inter-m.com
MADE IN KOREA
NO: 9017040100

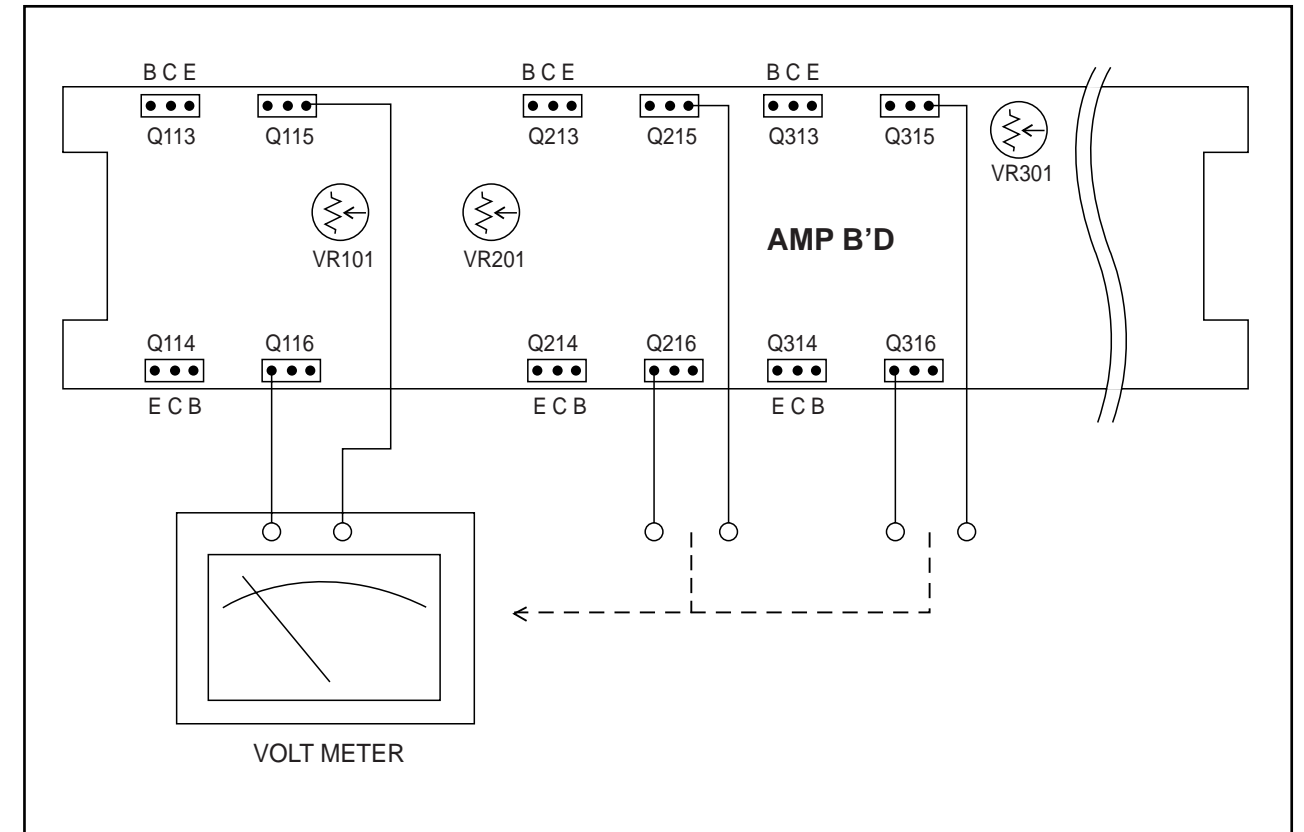
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ELECTRICAL ADJUSTMENT PROCEDURE

■ IDLE CURRENT

- A. Setting
Set the mixer master volume minimum.

B. Connection



C. Adjustment

- Adjust VR101, so that the voltage through the between emitter of Q115 and Q116 become 5mV~6mV.
Adjust VR201, so that the voltage through the between emitter of Q215 and Q216 become 5mV~6mV.
Adjust VR301, so that the voltage through the between emitter of Q315 and Q316 become 5mV~6mV.

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SURROUND PROCESSOR 3

■ OUTLINE

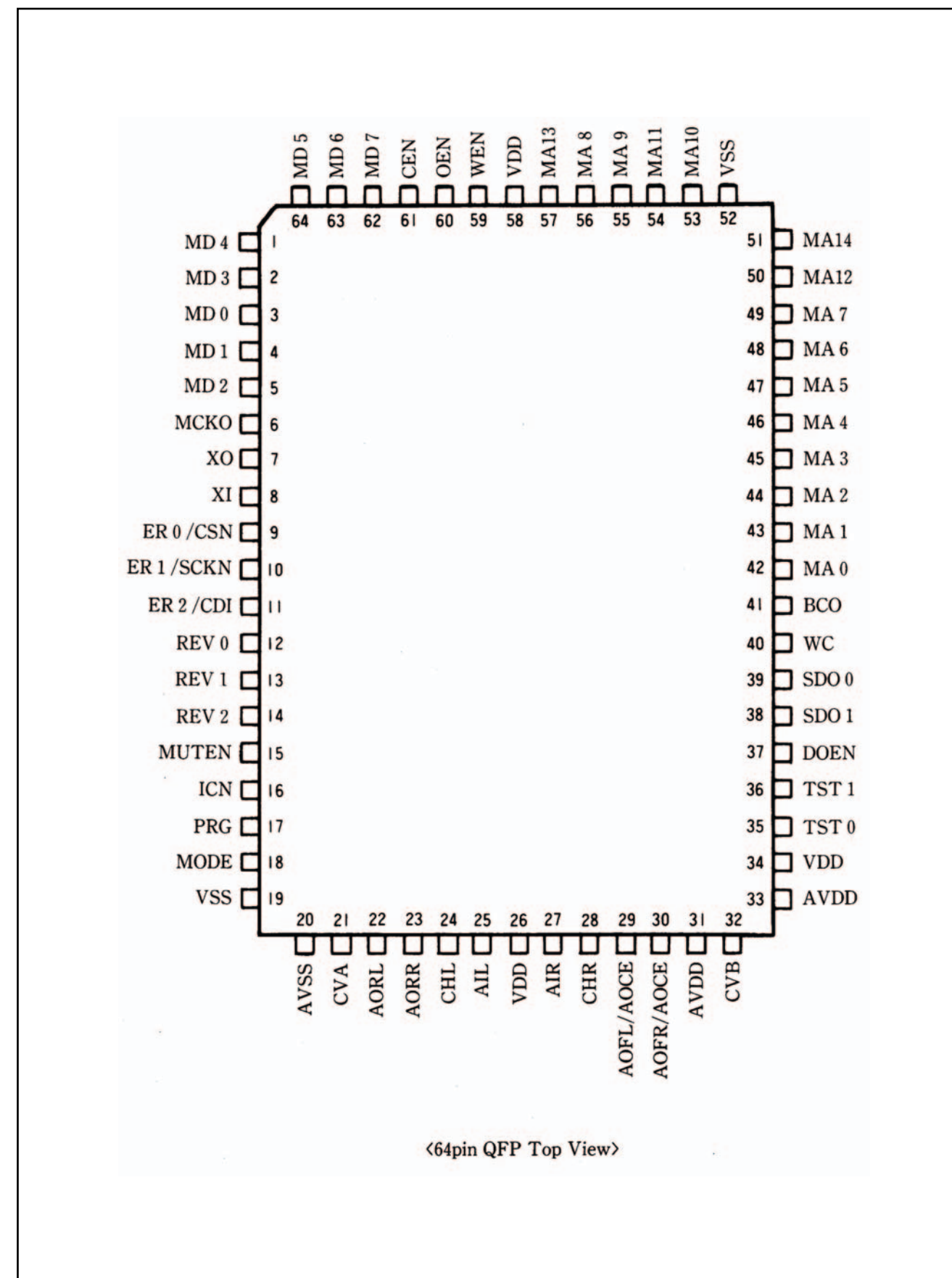
YSS220(SP3) is an LSI which has surround capability by digital audio technology. The LSI has built-in A/D, D/A converters which enable digital sound processing for analog signals. With a 256k pseudo SRAM or SRAM connected, the LSI can process digital delay up to 512ms.

■ FEATURES

- Built-in 15-bit floating ADC (L, R 2 channels) and DAC (FL, FR, RL, RR4 channels) enable digital processing for analog signals with 32kHz internal sampling frequency.
- 4 channels except center output can output digital signals as well. With a DAC connected externally, it will be possible with up to 5 channels (FL, C, FR, RL, RR).
- Hi-performance surround by mixing many echoes with using up to 512ms digital delay.
- Preset mode for easy control by terminal setting.
- Register control mode where it is possible to set various coefficients using microprocessor serial interface for original sound processing.
- Internal DSP is a 24-bit x 13-bit high speed multiplier with 128 steps.
- One 256k (32k x 8) pseudo SRAM or SRAM to be connected.
- 12.288MHz (384fs) master clock.
- 5V single power supply, Si-gate CMOS process.
- 64-pin plastic QFP (YSS220-F)

Note: Due to the nature of the product, the preset data cannot be disclosed although partially.

■ PIN DESCRIPTION

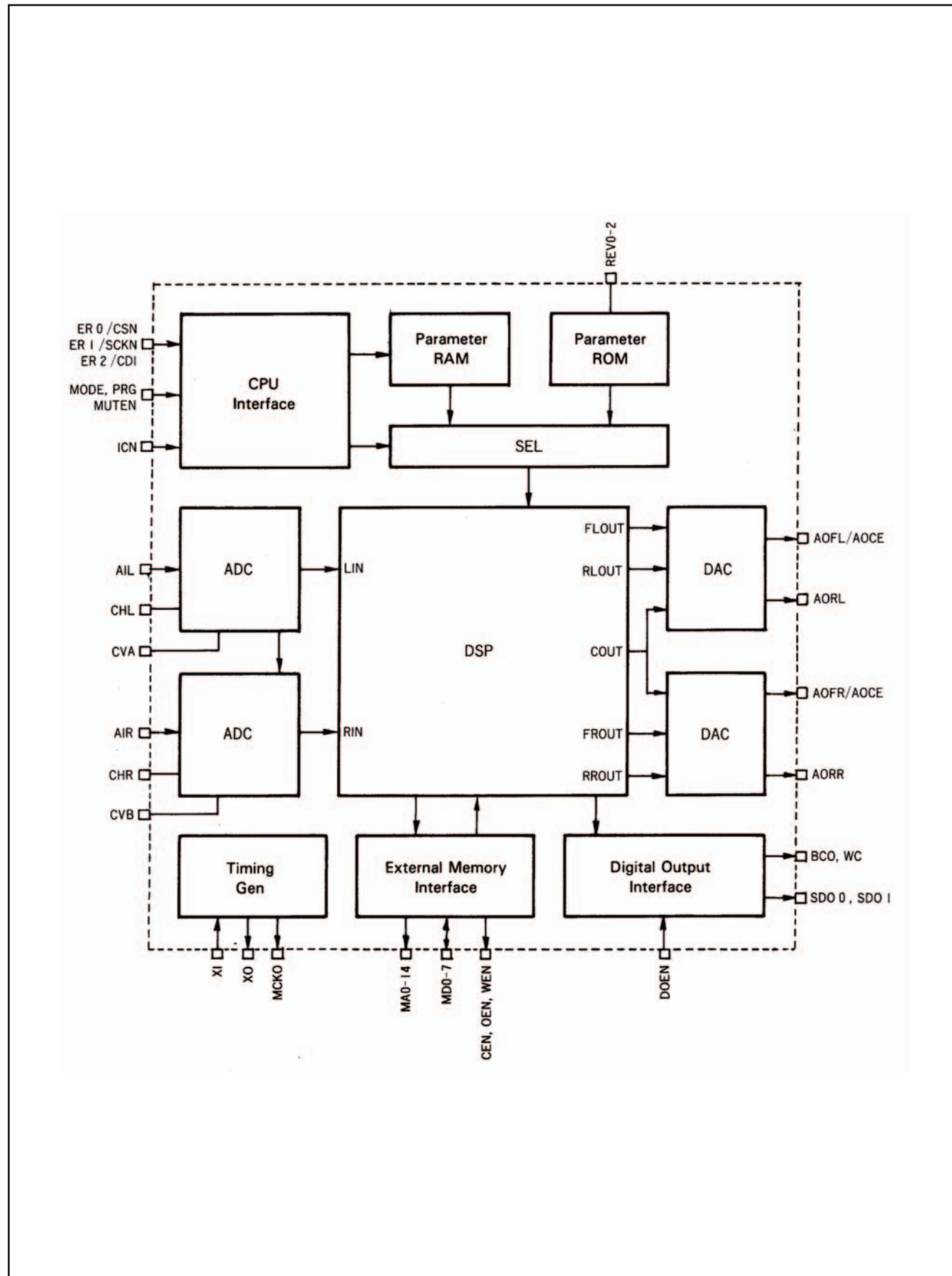


No.	Name	I/O	Pin Function Description	
1	MD4	I/O	External RAM interface data terminal	
2	MD3	I/O	External RAM interface data terminal	
3	MD0	I/O	External RAM interface data terminal	
4	MD1	I/O	External RAM interface data terminal	
5	MD2	I/O	External RAM interface data terminal	
6	MCKO	O	DOEN='L': Master clock output (12.288MHz) DOEN='H': Fixed to 'L'	
7	XO	O	X'tal oscillator terminal	
8	XI	I	X'tal oscillator terminal or external clock input (12.288MHz)	
			MODE='H'	MODE='L'
9	ER0/CSN	I+s	ER0: E/R preset select 0	CSN: CPU I/F chip select
10	ER1/SCKN	I+s	ER1: E/R preset select 1	SCKN: CPU I/F serial clock
11	ER2/CDI	I+s	ER2: E/R preset select 2	CDI: CPU I/F serial data
12	REV0	I+	Reverbration preset select 0	
13	REV1	I+	Reverbration preset select 1	
14	REV2	I+	Reverbration preset select 2	
15	MUTEN	I+	Output muting control (low-active)	
16	ICN	Is	Initial clear input	
17	PRG	I+	DSP program select (available only when MODE='H') 'L': Mode 0, 'H': Mode 1	
18	MODE	I+	Operation mode select 'L': Register control mode, 'H': Preset mode	
19	VSS	-	Ground mode select	
20	AVSS	-A	Ground (analog block)	
21	CVA	-A	L-ch ADC center voltage terminal	
22	AORL	OA	Rear L-ch DAC output	
23	AORR	OA	Rear R-ch DAC output	
24	CHL	-A	AIL input sample/hold capacitor terminal	
25	AIL	IA	L-ch ADC input	
26	VDD	-	+5V power supply (digital block)	
27	AIR	IA	R-ch ADC input	
28	CHR	-A	AIR input sample/hold capacitor terminal	
29	AOFL/AOCE	OA	DOEN='H': Front L-ch DAC output DOEN='L': C-ch DAC output	
30	AOFR/AOCE	OA	DOEN='H': Front R-ch DAC output DOEN='L': C-ch DAC output	
31	AVDD	-A	+5V power supply (analog block)	
32	CVB	-A	R-ch, C-ch ADC center voltage terminal	
33	AVDD	-A	+5V power supply (analog block)	
34	VDD	-A	+5V power supply (digital lock)	
35	TST0	I+	LSI test terminal (Connect to VDD)	
36	TST1	I+	LSI test terminal (Connect to VDD)	

No.	Name	I/O	Pin Function Description	
37	DOEN	I+	Digital signal output/Analog C-ch output enable	
			DOEN='L'	DOEN='H'
38	SDO1	O	Digital signal output rear channel (RL, RR)	
39	SDO0	O	Digital signal output front channel (FL, FR)	
40	WC	O	Digital signal output word clock is	
41	BCO	O	Digital signal output bit clock 64fs	
42	MA0	O	External RAM interface address terminal	
43	MA1	O	External RAM interface address terminal	
44	MA2	O	External RAM interface address terminal	
45	MA3	O	External RAM interface address terminal	
46	MA4	O	External RAM interface address terminal	
47	MA5	O	External RAM interface address terminal	
48	MA6	O	External RAM interface address terminal	
49	MA7	O	External RAM interface address terminal	
50	MA12	O	External RAM interface address terminal	
51	MA14	O	External RAM interface address terminal	
52	VSS	-	Ground (digital block)	
53	MA10	O	External RAM interface address terminal	
54	MA11	O	External RAM interface address terminal	
55	MA9	O	External RAM interface address terminal	
56	MA8	O	External RAM interface address terminal	
57	MA13	O	External RAM interface address terminal	
58	VDD	-	+5V power supply (digital block)	
59	WEN	O	External RAM interface write enable terminal	
60	OEN	O	External RAM interface output enable terminal	
61	CEN	O	External RAM interface chip enable terminal	
62	MD7	I/O	External RAM interface data terminal	
63	MD6	I/O	External RAM interface data terminal	
64	MD5	I/O	External RAM interface data terminal	

NOTE) I+: Input terminal with a pull-up register
IS: Schmitt input
A: Analog terminal

■ BLOCK DIAGRAM



SPECIFICATIONS

ITEM	CONDITION		SPEC
ELECTRICAL			
Amp Rated Power	Main L/4Ω @0.5% THD at 1kHz		200W
	Main R/4Ω @0.5% THD at 1kHz		200W
	Monitor/4Ω @0.5% THD at 1kHz		200W
	Bridge Mono/8Ω @0.5% THD at 1kHz		400W
Input Level All VR Unit Gain	Mono Channel (1~6)	LQ-Z	-50dBm±3dBm
		HI-Z	-40dBm±3dBm
	Stereo Channel (7,8~9,10)	Mic	-50dBm±3dBm
		Line	-5dBm±3dBm
Aux L/R		-10dBm±3dBm	
Tape L/R		-10dBm±3dBm	
Output Level All VR Unit Gain	Main L/R, Monitor, EFX		+4dBm±2dBm
	Rec		-7.98dBm±2dBm
Pad S/W Gain	Unit Gain		30dBm±2dBm
Frequency Response	20Hz~20kHz @1W output into 8Ω (AMP OUT)		+1dBm/-3dBm
	20Hz~20kHz @+4dB output into 600Ω (Main, Monitor, EFX)		+1dBm/-3dBm
T.H.D	20Hz~20kHz @100W output into 4Ω (AMP OUT)		0.5% less than
	20Hz~20kHz @+14dB output into 600Ω (Main, Monitor, EFX)		0.2% less than
Input Channel Tone Control	Unit Gain		High 12kHz ±12dB±2dB Mid 2.5kHz ±12dB±2dB Low 80Hz ±12dB±2dB
	Output 4dBm Check		
Graphic Equalizer	7 bands (63, 160, 400, 1k, 2.5k, 6.4k, 15kHz)		±12dB±2dB
Residual Noise (with 20Hz~20kHz BPF)	All VR Min Check (Main L/R, Monitor, EFX OUT)		90dB
	Output VR only Max (Main L/R, Monitor, EFX OUT)		70dB
Level Meter	7 point @Out 4dBm 0dB setting		-20, -10, -7, -4, 0, +3, +6dB
Phantom Power	Input Channel 1~6 Condenser Mic		48V±2V
Maximum Output Level Befor Clipping	Main L/R, Monitor, EFX		16dBm More than
	Rec		4dBm More than
Crosstalk & Separation (1kHz)	Pan Pot		50dB More than
	Into Out		70dB More than
D.S.P	S-Hall, L-Hall, Vocal		3 Preset Effect
	Foot Switch		Mute
GENERAL			
Power Source	AC 100~240V, 50/60Hz		
Power Consumption	517W		
Weight	22kg		
Dimensions	480(W) × 277(H) × 320(D) mm		

* Specifications and design subject to change without notice for improvements.

ELECTRICAL PARTS LIST

Ref No.	Part No.	Description	Value
POWER SUPPLY			
R401	3039479572-F	FR	4.7 2W
R402	3009332973	RES 1/5W 5%	3.3K
R403	3009471973	RES 1/5W 5%	470
R404	3009122973	RES 1/5W 5%	1.2K
R405	3009122973	RES 1/5W 5%	3.3k
C401	3619474153	CAP S.P.K	0.47UF / 250V
C402	3619474153	CAP S.P.K	0.47UF / 250V
C403	3419510350	CAP (E)	"10,000UF / 80V"
C404	3419510350	CAP (E)	"10,000UF / 80V"
C405	3509103450-T	CAP (C)	0.01UF / 500V
C406	3509103450-T	CAP (C)	0.01UF / 500V
C407	3509103450-T	CAP (C)	0.01UF / 500V
C408	3509103450-T	CAP (C)	0.01UF / 500V
C409	3419233261	CAP (E)	"3,300UF / 35V"
C410	3419233261	CAP (E)	"3,300UF / 35V"
C411	3509103530-T	CAP (C)	0.01UF / 50V
C412	3509103530-T	CAP (C)	0.01UF / 50V
C413	3409222171-T	CAP (E)	220UF / 50V
C414	3409222171-T	CAP (E)	220UF / 50V
C415	3509103530-T	CAP (C)	0.01UF / 50V
C416	3509103530-T	CAP (C)	0.01UF / 50V
C417	3509103450-T	CAP (C)	0.01UF / 500V
C418	3509103450-T	CAP (C)	0.01UF / 500V
C419	3509103450-T	CAP (C)	0.01UF / 500V
C420	3509103450-T	CAP (C)	0.01UF / 500V
C421	3409210208	CAP (E)	"1,000UF / 80V"
C422	3409210181-T	CAP (E)	100UF / 63V
C423	3509103450-T	CAP (C)	0.01UF / 500V
C424	3509103450-T	CAP (C)	0.01UF / 500V
C425	3509103450-T	CAP (C)	0.01UF / 500V
C426	3509103450-T	CAP (C)	0.01UF / 500V
C427	3409210264	CAP (E)	"1,000UF / 35V"
C428	3409210071-T	CAP (E)	10UF / 50V
C429	3409247071-T	CAP (E)	47UF / 50V
C430	3409247147-T	CAP (E)	47UF / 25V
C431	3409210141-T	CAP (E)	100UF / 25V
IC401	2128611206	I. C REG	7805
IC402	2128610900	I. C REG	7815
IC403	2128610800	I. C REG	7915
Q401	2028407990	T. R	2SC4370
Q402	2028407990	T. R	2SC4370
Q403	2008606108-T	T. R	KTC2240BL
D401	2058100988	BRIDGE DIODE	KBP2504
D402	2058100979	BRIDGE DIODE	KBP205
D403	2058100996	DIODE	1N4006
D404	2058100996	DIODE	1N4006
D405	2058100996	DIODE	1N4006
D406	2058100996	DIODE	1N4006
D407	2058100996	DIODE	1N4006
D408	2058100996	DIODE	1N4006
D409	2058502240	ZENER DIODE	UZ24BM
D410	2058502240	ZENER DIODE	UZ24BM
D411	2058100110	BRIDGE DIODE	KBP205
P401	3248347120-T	THD	BE471TS
F401	5508412734	FUSE 20 mm	UL 2 A TS
F402	5508412734	FUSE 20 mm	UL 2 A TS
F403	5508412734	FUSE 20 mm	UL 2 A TS
F404	5508412734	FUSE 20 mm	UL 2 A TS
F405	5508223937	FUSE 31.8 mm	UL 10 A NB
FH01	4458999110	FUSE HOLDER	FUSE CLIP
FH02	4458999110	FUSE HOLDER	FUSE CLIP
FH03	4458999110	FUSE HOLDER	FUSE CLIP
FH04	4458999110	FUSE HOLDER	FUSE CLIP
FH05	4458999110	FUSE HOLDER	FUSE CLIP
FAN1	2099900090-J	FAN	90 mm
PT1	2828061000	TRANS POWER 120V Version (UL/CSA)	P.T (120V)
PT1	2828061010	TRANS POWER 220V Version (DOM)	P.T (220V)
PT1	2828061020	TRANS POWER 230V Version (Europe)	P.T (230V)
PT1	2828061030	TRANS POWER 240V Version (Europe)	P.T (240V)
POWER AMP			
R101	3009271973	RES 1/5W 5%	270
R102	3009473973	RES 1/5W 5%	47K
R103	3009224973	RES 1/5W 5%	220K

Ref No.	Part No.	Description	Value
R104	3009561973	RES 1/5W 5%	560
R105	3009102973	RES 1/5W 5%	1 K
R106	3009123973	RES 1/5W 5%	12K
R107	3009182973	RES 1/5W 5%	1K
R108	3009121973	RES 1/5W 5%	220
R109	3009561973	RES 1/5W 5%	560
R110	3009561973	RES 1/5W 5%	560
R111	3009473973	RES 1/5W 5%	47K
R112	3009473973	RES 1/5W 5%	47K
R113	3009473973	RES 1/5W 5%	47K
R114	3009100973	RES 1/5W 5%	10
R115	3002103953	RES 1/5W 1%	10K
R116	3009000973	RES 1/5W 5%	0
R117	4009100973-J	RES 1/4W 5% NFR	10
R118	4009821973-J	RES 1/4W 5% NFR	82
R119	3009182973	RES 1/5W 5%	1.8K
R120	3009471973	RES 1/5W 5%	470
R121	4009820973-J	RES 1/4W 5% NFR	82
R122	4009100973-J	RES 1/4W 5% NFR	10
R123	4009221973-J	RES 1/4W 5% NFR	220
R124	4009332973-J	RES 1/4W 5% NFR	3.3K
R125	3009563973	RES 1/5W 5%	56K
R126	3009563973	RES 1/5W 5%	56K
R127	4009332973-J	RES 1/4W 5% NFR	3.3K
R128	4009221973-J	RES 1/4W 5% NFR	220
R129	4009221973-J	RES 1/4W 5% NFR	220
R130	4009221973-J	RES 1/4W 5% NFR	220
R131	4009221973-J	RES 1/4W 5% NFR	220
R132	4009221973-J	RES 1/4W 5% NFR	220
R133	4009470073-J	RES 1/4W 5% NFR	4.7
R134	4009101973-J	RES 1/4W 5% NFR	100
R135	3059478783	RES 5W	0.47
R136	3039100674	RES 5W	0.47
R137	4009101973-J	RES 1/4W 5% NFR	100
R138	4009470073-J	RES 1/4W 5% NFR	4.7
R139	4009470073-J	RES 1/4W 5% NFR	4.7
R140	4009101973-J	RES 1/4W 5% NFR	100
R141	3059478783	RES 5W	0.47
R142	3039100674	RES 5W	0.47
R143	4009101973-J	RES 1/4W 5% NFR	100
R144	4009470073-J	RES 1/4W 5% NFR	4.7
R145	3039100674	RES 3W	10
R146	3039479572-F	RES 2W	4.7
R147	3009223973	RES 1/5W 5%	22K
R148	3009223973	RES 1/5W 5%	22K
R149	3009104973	RES 1/5W 5%	100K
R150	3009184973	RES 1/5W 5%	180K
R151	3009104973	RES 1/5W 5%	100K
R152	3009822973	RES 1/5W 5%	8.2K
R153	3009104973	RES 1/5W 5%	100K
R154	3009223973	RES 1/5W 5%	10K
R155	3009223973	RES 1/5W 5%	22K
R156	3009682973	RES 1/5W 5%	6.8K
R157	3009223973	RES 1/5W 5%	22K
R158	3009223973	RES 1/5W 5%	22K
R159	3009223973	RES 1/5W 5%	22K
R160	3009223973	RES 1/5W 5%	22K
R161	3009221973	RES 1/5W 5%	220
R162	3009223973	RES 1/5W 5%	22K
C101	3409547031-T	CAP (AF)	47UF / 16V
C102	3509471130-T	CAP (CE)	470P
C103	3609104120-T	CAP (MA)	104 / 100V
C104	3609104120-T	CAP (M)	104 / 100V
C105	3409810141-T	CAP (E) NP	100UF / 25V
C106	3509822150-T	CAP (C)	822P
C107	3509220150-T	CAP (C)	22P / 500V
C108	3509509060-T	CAP (C)	5P / 500V
C109	3609222120-T	CAP (M)	222 / 100V
C110	3609222120-T	CAP (M)	222 / 100V
C111	3409247991-T	CAP (E)	4.7UF / 100V
C112	3409247991-T	CAP (E)	4.7UF / 100V
C113	3529103531-A	CAP (C)	"10,000P"
C114	3609104120-T	CAP (M)	104 / 100V
C115	3609104120-T	CAP (M)	104 / 100V
C116	3409222171-T	CAP (E)	220UF / 50V
C117	3409810141-T	CAP (E) NP	100UF / 25V

Ref No.	Part No.	Description	Value
C118	3409247137-T	CAP (E)	470UF / 16V
C119	3409247137-T	CAP (E)	470UF / 16V
C120	3409222171-T	CAP (E)	220UF / 50V
C121	3409222871-T	CAP (E)	0.22UF / 50V
D101	2058304100	DIODE	1N4148
D102	2058304100	DIODE	1N4148
D103	2058304100	DIODE	1N4148
D104	2058304100	DIODE	1N4148
D105	2058304100	DIODE	1N4148
D106	2058304100	DIODE	1N4148
D107	2058304100	DIODE	1N4148
D108	2058304100	DIODE	1N4148
D109	2058304100	DIODE	1N4148
D110	2058304100	DIODE	1N4148
D111	2058304100	DIODE	1N4148
D112	2058100110	DIODE	PS2010
D113	2058100110	DIODE	PS2010
D114	2058304100	DIODE	1N4148
Q101	2008206106-T	T. R	KTA2400G
Q102	2008206106-T	T. R	KTA2400G
Q103	2008206106-T	T. R	KTA2400G
Q104	2008606108-T	T. R	KTC2240BL
Q105	2008606108-T	T. R	KTC2240BL
Q106	2008005999	T. R	2SA1546
Q107	2028407990	T. R	2SC4370
Q108	2008405999	T. R	2SC4001
Q109	2008606108-T	T. R	KTC2240BL
Q110	2008206106-T	T. R	KTA2400G
Q111	2028407990	T. R	2SC4370
Q112	2008005999	T. R	2SA1546
Q113	2028407122	T. R	KTC5200
Q114	2028107118	T. R	2SA1943
Q115	2028407122	T. R	KTC5200
Q116	2028107118	T. R	2SA1943
Q117	2008606108-T	T. R	KTC2240BL
Q118	2008206104-T	T. R	A1268BL
VR101	3248347120	SEMI	470B
P101	2438007994	POSISTOR	BE471TS
P102	2438007993	POSISTOR	BE222TS
RY101	3248347120	RELAY	
IC101	2118050410	I. C	TA7317P
L101	2648099940	COIL	1.2 UH
R201	3009271973	RES 1/5W 5%	270
R202	3009473973	RES 1/5W 5%	47K
R204	3009561973	RES 1/5W 5%	560
R205	3009102973	RES 1/5W 5%	1 K
R206	3009123973	RES 1/5W 5%	12K
R207	3009182973	RES 1/5W 5%	1K
R208	3009121973	RES 1/5W 5%	220
R209	3009561973	RES 1/5W 5%	560
R210	3009561973	RES 1/5W 5%	560
R211	3009473973	RES 1/5W 5%	47K
R212	3009473973	RES 1/5W 5%	47K
R213	3009473973	RES 1/5W 5%	47K
R214	3009100973	RES 1/5W 5%	10
R215	3002103953	RES 1/5W 5%	10K
R216	3009000973	RES 1/5W 5%	0
R217	4009100973-J	RES 1/4W 5% NFR	10
R218	4009820973-J	RES 1/4W 5% NFR	82
R219	3009182973	RES 1/5W 5%	1.8K
R220	3009471973	RES 1/5W 5%	470
R221	4009820973-J	RES 1/4W 5% NFR	82
R222	4009100973-J	RES 1/4W 5% NFR	10
R223	4009221973-J	RES 1/4W 5% NFR	220
R224	4009332973-J	RES 1/4W 5% NFR	3.3K
R225	3009563973	RES 1/5W 5%	56K
R226	3009563973	RES 1/5W 5%	56K
R227	4009221973-J	RES 1/4W 5% NFR	3.3K
R228	4009221973-J	RES 1/4W 5% NFR	220

Ref No.	Part No.	Description	Value
R304	3009561973	RES 1/5W 5%	560
R305	3009102973	RES 1/5W 5%	1 K
R306	3009123973	RES 1/5W 5%	12K
R307	3009182973	RES 1/5W 5%	1K
R308	3009121973	RES 1/5W 5%	220
R309	3009561973	RES 1/5W 5%	560
R310	3009561973	RES 1/5W 5%	560
R311	3009473973	RES 1/5W 5%	47K
R312	3009473973	RES 1/5W 5%	47K
R313	3009473973	RES 1/5W 5%	47K
R314	3009100973	RES 1/5W 5%	10
R315	3002103953	RES 1/5W 5%	10K
R316	3009000973	RES 1/5W 5%	0
R317	4009100973-J	RES 1/4W 5% NFR	10
R318	4009820973-J	RES 1/4W 5% NFR	82
R319	3009182973	RES 1/5W 5%	1.8K
R320	3009471973	RES 1/5W 5%	470
R321	4009820973-J	RES 1/4W 5% NFR	82
R322	4009100973-J	RES 1/4W 5% NFR	10
R323	4009221973-J	RES 1/4W 5% NFR	220
R324	4009332973-J	RES 1/4W 5% NFR	3.3K
R325	3009563973	RES 1/5W 5%	56K
R326	3009563973	RES 1/5W 5%	56K
R327	4009332973-J	RES 1/4W 5% NFR	3.3K
R328	4009221973-J	RES 1/4W 5% NFR	220
R329	4009221973-J	RES 1/4W 5% NFR	220
R330	4009221973-J	RES 1/4W 5% NFR	220
R331	4009221973-J	RES 1/4W 5% NFR	220
R332	4009221973-J	RES 1/4W 5% NFR	220
R333	4009470073-J	RES 1/4W 5% NFR	4.7
R334	4009101973-J	RES 1/4W 5% NFR	100
R335	3059478783	RES 5W	0.47
R336	3039100674	RES 5W	0.47
R337	4009101973-J	RES 1/4W 5% NFR	100
R338	4009470073-J	RES 1/4W 5% NFR	4.7
R339	4009470073-J	RES 1/4W 5% NFR	4.7
R340	4009101973-J	RES 1/4W 5% NFR	100
R341	3059478783	RES 5W	0.47
R342	3039100674	RES 5W	0.47
R343	4009101973-J	RES 1/4W 5% FR	100
R344	4009470073-J	RES 1/4W 5% FR	4.7
R345	3039100674	RES 3W	10
R346	3039479572-F	RES 2W	4.7
R347	3009223973	RES 1/5W 5%	22K
R348	3009223973	RES 1/5W 5%	22K
R349	3009104973	RES 1/5W 5%	100K
R350	3009184973	RES 1/5W 5%	180K
R351	3009104973	RES 1/5W 5%	100K
R352	3009822973	RES 1/5W 5%	8.2K
R353	3009104973	RES 1/5W 5%	100K
R354	3009223973	RES 1/5W 5%	3.3K
R355	3009223973	RES 1/5W 5%	22K
R356	3009223973	RES 1/5W 5%	22K
R357	3009223973	RES 1/5W 5%	22K
R358	3009223973	RES 1/5W 5%	22K
R359	3009223973	RES 1/5W 5%	22K
R360	3009221973	RES 1/5W 5%	220
R361	3009223973	RES 1/5W 5%	22K
C301	3409247033-T	CAP (E)	47UF / 16V
C302	3509471130-T	CAP (C)	470P
C303	3609104120-T	CAP (M)	104 / 100V
C304	3609104120-T	CAP (M)	104 / 100V
C305	3409810141-T	CAP (E) NP	100UF / 25V
C306	3509822150-T	CAP (C)	822P
C307	3509220150-T	CAP (C)	22P / 500V
C308	3509509060-T	CAP (C)	5P / 500V
C309	3609222120-T	CAP (M)	222 / 100V
C310	3609222120-T	CAP (M)	222 / 100V
C311	3409247991-T	CAP (E)	4.7UF / 100V
C312	3409247991-T	CAP (E)	4.7UF / 100V
C313	3509102231-A	CAP (C)	"10,000P"
C314	3609104120-T	CAP (M)	104 / 100V
C315	3609104120-T	CAP (M)	104 / 100V
C316	3409222171-T	CAP (E)	220UF / 50V
C317	3409810141-T	CAP (E) NP	100UF / 25V
C318	3409247033-T	CAP (E)	470UF / 16V

Ref No.	Part No.	Description	Value
C319	3409222171-T	CAP (E)	220UF / 50V
C320	3409222871-T	CAP (E)	0.22UF / 50V
D301	2058304100	DIODE	1N4148
D302	2058304100	DIODE	1N4148
D303	2058304100	DIODE	1N4148
D304	2058304100	DIODE	1N4148
D305	2058304100	DIODE	1N4148
D306	2058304100	DIODE	1N4148
D307	2058304100	DIODE	1N4148
D308	2058304100	DIODE	1N4148
D309	2058304100	DIODE	1N4148
D310	2058304100	DIODE	1N4148
D311	2058304100	DIODE	1N4148
D312	2058100110	DIODE	PS2010
D313	2058100110	DIODE	PS2010
D314	2058100996	DIODE	1N4006
D315	2058304100	DIODE	1N4148
Q301	2008206106-T	T . R	KTA2400G
Q302	2008206106-T	T . R	KTA2400G
Q303	2008206106-T	T . R	KTA2400G
Q304	2008606108-T	T . R	KTC2240BL
Q305	2008606108-T	T . R	KTC2240BL
Q306	2008005999	T . R	2SA1546
Q307	2028407990	T . R	2SC4370
Q308	2008405999	T . R	2SC4001
Q309	2008606108-T	T . R	KTC2240BL
Q310	2008206106-T	T . R	KTA2400G
Q311	2028407990	T . R	2SC4370
Q312	2008005999	T . R	2SA1546
Q313	2028407122	T . R	KTC5200
Q314	2028107118	T . R	2SA1943
Q315	2028407122	T . R	KTC5200
Q316	2028107118	T . R	2SA1943
Q317	2008606108-T	T . R	KTC2240BL
Q318	2008206104-T	T . R	A1268BL
VR301	3248347120-T	SEMI	470B
P301	2438007994	POSISTOR	BE471TS
P302	2438007993	POSISTOR	BE222TS
RY301	3248347120	RELAY	
IC301	2118050410	I . C	TA7317P
L301	2648099940	COIL	1.2 UH
MIC INPUT (1CH~6CH)			
R1101	3002682953	RES 1/5W 1%	6.8K
R1102	3002682953	RES 1/5W 1%	6.8K
R1103	3009104973	RES 1/5W 5%	100K
R1104	3009101973	RES 1/5W 5%	100
R1105	3009392973	RES 1/5W 5%	3.3K
R1106	3009392973	RES 1/5W 5%	3.3K
R1107	3009104973	RES 1/5W 5%	100K
R1108	3009104973	RES 1/5W 5%	100K
R1109	3009473973	RES 1/5W 5%	47K
R1110	3009473973	RES 1/5W 5%	47K
R1111	3009100973	RES 1/5W 5%	10
R1112	3009472973	RES 1/5W 5%	4.7K
R1113	3009100973	RES 1/5W 5%	10
R1114	3009682973	RES 1/5W 5%	6.8K
R1115	3009222973	RES 1/5W 5%	2.2K
R1116	3009682973	RES 1/5W 5%	6.8K
R1117	3009222973	RES 1/5W 5%	2.2K
R1118	3003909953	RES 1/5W 1%	9.09K
R1119	3009220973	RES 1/5W 5%	22
R1120	3009182973	RES 1/5W 5%	1.8K
R1121	3003909953	RES 1/5W 1%	9.09K
R1122	3009103973	RES 1/5W 5%	10K
R1123	3009822973	RES 1/5W 5%	8.2K
R1124	3009303973	RES 1/5W 5%	30K
R1125	3009123973	RES 1/5W 5%	12K
R1126	3009563973	RES 1/5W 5%	56K
R1127	3009472973	RES 1/5W 5%	4.7K
R1128	3009103973	RES 1/5W 5%	10K
R1129	3009104973	RES 1/5W 5%	100K
R1130	3009103973	RES 1/5W 5%	10K
R1131	3009103973	RES 1/5W 5%	10K
R1132	3009183973	RES 1/5W 5%	18K
R1133	3009183973	RES 1/5W 5%	18K

Ref No.	Part No.	Description	Value
R1134	3009183973	RES 1/5W 5%	18K
R1135	3009183973	RES 1/5W 5%	18K
C1101	3409247081-T	CAP (E)	47UF / 63V
C1102	3409222081-T	CAP (E)	22UF / 63V
C1103	3409222081-T	CAP (E)	22UF / 63V
C1104	3409222071-T	CAP (E)	22UF / 50V
C1105	3409222071-T	CAP (E)	22UF / 50V
C1106	3529471311-A	CAP (C)	470P
C1107	3529471311-A	CAP (C)	470P
C1108	3529471311-A	CAP (C)	470P
C1109	3529471311-A	CAP (C)	470P
C1110	3409247121-T	CAP (E)	470UF / 10V
C1111	3529220311-A	CAP (C)	22P
C1112	3529220311-A	CAP (C)	22P
C1113	3409247071-T	CAP (E)	47UF / 50V
C1114	3609152120-T	CAP (M)	152 / 100V
C1115	3609222120-T	CAP (M)	222 / 100V
C1116	3609392120-T	CAP (M)	392 / 100V
C1117	3609473120-T	CAP (M)	473 / 100V
C1118	3609473120-T	CAP (M)	473 / 100V
C1119	3529100311-A	CAP (C)	10P
C1120	3409222071-T	CAP (E)	22UF / 50V
C1121	3529103531-A	CAP (C)	"10,000P"
D1101	2058304100	DIODE	1N4148
D1102	2058304100	DIODE	1N4148
D1103	2058304100	DIODE	1N4148
D1104	2058304100	DIODE	1N4148
Q1101	2008206106-T	T . R	KTA2400G
Q1102	2008206106-T	T . R	KTA2400G
IC1101	2168220989	I . C	NJM2068L
VR1101	3228070020	POTENTIOMETER	50KB
VR1102	3228070020	POTENTIOMETER	50KB
VR1103	3228070020	POTENTIOMETER	50KB
VR1104	3228070030	POTENTIOMETER	20KA
VR1105	3228070030	POTENTIOMETER	20KA
VR1106	3228070030	POTENTIOMETER	20KA
VR1107	3228070020	POTENTIOMETER	50KB
SW1101	4628991310	PUSH SWITCH	P 3P
JK1101	4438193810	XLR JACK	INPUT
JK1102	4438192910	PHONE JACK	INPUT
R2101	3002682953	RES 1/5W 1%	6.8K
R2102	3002682953	RES 1/5W 1%	6.8K
R2103	3009104973	RES 1/5W 5%	100K
R2104	3009101973	RES 1/5W 5%	100
R2105	3009392973	RES 1/5W 5%	3.3K
R2106	3009392973	RES 1/5W 5%	3.3K
R2107	3009104973	RES 1/5W 5%	100K
R2108	3009104973	RES 1/5W 5%	100K
R2109	3009473973	RES 1/5W 5%	47K
R2110	3009473973	RES 1/5W 5%	47K
R2111	3009100973	RES 1/5W 5%	10
R2112	3009472973	RES 1/5W 5%	4.7K
R2113	3009100973	RES 1/5W 5%	10
R2114	3009682973	RES 1/5W 5%	6.8K
R2115	3009222973	RES 1/5W 5%	2.2K
R2116	3009682973	RES 1/5W 5%	6.8K
R2117	3009222973	RES 1/5W 5%	2.2K
R2118	3003909953	RES 1/5W 1%	9.09K
R2119	3009220973	RES 1/5W 5%	22
R2120	3009182973	RES 1/5W 5%	1.8K
R2121	3003909953	RES 1/5W 1%	9.09K
R2122	3009103973	RES 1/5W 5%	10K
R2123	3009822973	RES 1/5W 5%	8.2K
R2124	3009303973	RES 1/5W 5%	30K
R2125	3009123973	RES 1/5W 5%	12K
R2126	3009563973	RES 1/5W 5%	56K
R2127	3009472973	RES 1/5W 5%	4.7K
R2128	3009103973	RES 1/5W 5%	10K
R2129	3009104973	RES 1/5W 5%	100K
R2130	3009103973	RES 1/5W 5%	10K
R2131	3009103973	RES 1/5W 5%	10K
R2132	3009183973	RES 1/5W 5%	18K
R2133	3009183973	RES 1/5W 5%	18K
R2134	3009183973	RES 1/5W 5%	18K
R2135	3009183973	RES 1/5W 5%	18K
C2101	3409247081-T	CAP (E)	47UF / 63V

Ref No.	Part No.	Description	Value
C2102	3409222081-T	CAP (E)	22UF / 63V
C2103	3409222081-T	CAP (E)	22UF / 63V
C2104	3409222071-T	CAP (E)	22UF / 50V
C2105	3409222071-T	CAP (E)	22UF / 50V
C2106	3529471311-A	CAP (C)	470P
C2107	3529471311-A	CAP (C)	470P
C2108	3529471311-A	CAP (C)	470P
C2109	3529471311-A	CAP (C)	470P
C2110	3409247121-T	CAP (E)	470UF / 10V
C2111	3529220311-A	CAP (C)	22P
C2112	3529220311-A	CAP (C)	22P
C2113	3409247071-T	CAP (E)	47UF / 50V
C2114	3609152120-T	CAP (M)	152 / 100V
C2115	3609222120-T	CAP (M)	222 / 100V
C2116	3609392120-T	CAP (M)	392 / 100V
C2117	3609473120-T	CAP (M)	473 / 100V
C21			

Ref No.	Part No.	Description	Value
C107	3409247041-T	CAP (E)	47UF / 25V
C108	3409247041-T	CAP (E)	47UF / 25V
C109	3609152120-T	CAP (M)	152 / 100V
C110	3529100311-A	CAP (C)	10P
C111	3609222120-T	CAP (M)	222 / 100V
C112	3609392120-T	CAP (M)	392 / 100V
C113	3609473120-T	CAP (M)	473 / 100V
C114	3609473120-T	CAP (M)	473 / 100V
C115	3529103531-A	CAP (C)	10000P
C120	3409247041-T	CAP (E)	47UF / 25V
C121	3409247041-T	CAP (E)	47UF / 25V
C122	3409247041-T	CAP (E)	47UF / 25V
C123	3409247041-T	CAP (E)	47UF / 25V
C124	3409222081-T	CAP (E)	22UF / 63V
C125	3409222081-T	CAP (E)	22UF / 63V
C126	3529100311-A	CAP (C)	10P
C127	3509220130-A	CAP (C)	22P
C128	3529100311-A	CAP (C)	10P
C129	3409247081-T	CAP (E)	47UF / 63V
C130	3509220231-A	CAP (C)	22P
C131	3509220231-A	CAP (C)	22P
C132	3609152120-T	CAP (M)	152 / 100V
C133	3529100311-A	CAP (C)	10P
C134	3609222120-T	CAP (M)	222 / 100V
C135	3609392120-T	CAP (M)	392 / 100V
C136	3609473120-T	CAP (M)	473 / 100V
C137	3609473120-T	CAP (M)	473 / 100V
C138	3409247041-T	CAP (E)	47UF / 25V
C140	3409247071-T	CAP (E)	47UF / 50V
IC101	2168220981	I . C OP	NJM072BL
IC103	2168220989	I . C OP	NJM2068L
IC104	2168220989	I . C OP	NJM2068L
IC105	2168220981	I . C OP	NJM072BL
IC106	2168220989	I . C OP	NJM2068L
VR101	3238093410	POTENTIOMETER	50KB X 2
VR102	3238093410	POTENTIOMETER	50KB X 2
VR103	3228077210	POTENTIOMETER	20KA X 2
VR104	3228069210	POTENTIOMETER	10KA
VR105	3238093410	POTENTIOMETER	50KB X 2
VR106	3228069210	POTENTIOMETER	10KA
VR107	3238093410	POTENTIOMETER	50KB X 2
JK101	4438192910	INPUT BA	PHONE
JK102	4438192910	INPUT BA	PHONE
JK103	4438193810	INPUT BA	XLR
R151	3009101973	RES 1/5W 5%	100
R152	3009752973	RES 1/5W 5%	7.5K
R153	3002333953	RES 1/5W 1%	33K
R154	3009103973	RES 1/5W 5%	10K
R155	3009753973	RES 1/5W 5%	75K
R156	3009101973	RES 1/5W 5%	100
R157	3009752973	RES 1/5W 5%	7.5K
R158	3002333953	RES 1/5W 1%	33K
R159	3009103973	RES 1/5W 5%	10K
R160	3009753973	RES 1/5W 5%	75K
R161	3009472973	RES 1/5W 5%	4.7K
R162	3009563973	RES 1/5W 5%	56K
R163	3009123973	RES 1/5W 5%	12K
R164	3009303973	RES 1/5W 5%	30K
R165	3009103973	RES 1/5W 5%	10K
R166	3009103973	RES 1/5W 5%	10K
R167	3009101973	RES 1/5W 5%	100
R168	3009473973	RES 1/5W 5%	47K
R169	3009101973	RES 1/5W 5%	100
R170	3009473973	RES 1/5W 5%	47K
R171	3009303973	RES 1/5W 5%	30K
R172	3009393973	RES 1/5W 5%	39K
R173	3009393973	RES 1/5W 5%	39K
R174	3009103973	RES 1/5W 5%	10K
R175	3009103973	RES 1/5W 5%	10K
R176	3009303973	RES 1/5W 5%	30K
R177	3009103973	RES 1/5W 5%	10K
R178	3009822973	RES 1/5W 5%	8.2K
R179	3009103973	RES 1/5W 5%	10K
R180	3009472973	RES 1/5W 5%	4.7K
R181	3009563973	RES 1/5W 5%	56K
R182	3009123973	RES 1/5W 5%	12K

Ref No.	Part No.	Description	Value
R183	3009103973	RES 1/5W 5%	30K
R184	3009103973	RES 1/5W 5%	10K
R185	3009822973	RES 1/5W 5%	8.2K
R186	3009103973	RES 1/5W 5%	10K
R189	3009303973	RES 1/5W 5%	30K
R190	3009751973	RES 1/5W 5%	750
R191	3009751973	RES 1/5W 5%	750
R192	3009682973	RES 1/5W 1%	6.8K
R193	3009683973	RES 1/5W 1%	6.8K
R194	3009104973	RES 1/5W 5%	100K
R195	3009104973	RES 1/5W 5%	100K
R196	3009101973	RES 1/5W 5%	100
C141	3409247041-T	CAP (E)	47UF / 25V
C151	3409247041-T	CAP (E)	47UF / 25V
C152	3409247041-T	CAP (E)	47UF / 25V
C153	3509101231-A	CAP (C)	100P
C154	3509101231-A	CAP (C)	100P
C155	3529100311-A	CAP (C)	10P
C156	3529100311-A	CAP (C)	10P
C157	3509220130-A	CAP (C)	22P
C158	3509220130-A	CAP (C)	22P
C159	3409247041-T	CAP (E)	47UF / 25V
C160	3409247041-T	CAP (E)	47UF / 25V
C161	3609152120-T	CAP (M)	152 / 100V
C162	3529100311-A	CAP (C)	10P
C163	3609222120-T	CAP (M)	222 / 100V
C164	3609392120-T	CAP (M)	392 / 100V
C165	3609473120-T	CAP (M)	473 / 100V
C166	3609473120-T	CAP (M)	473 / 100V
C168	3529103531-A	CAP (C)	10000P
C169	3609152120-T	CAP (M)	152 / 100V
C170	3409247041-T	CAP (E)	47UF / 25V
C171	3409247041-T	CAP (E)	47UF / 25V
C172	3409247041-T	CAP (E)	47UF / 25V
C173	3409247041-T	CAP (E)	47UF / 25V
C174	3529100311-A	CAP (C)	10P
C175	3409247071-T	CAP (E)	47UF / 50V
C176	3609222120-T	CAP (M)	222 / 100V
C178	3609392120-T	CAP (M)	392 / 100V
C179	3609473120-T	CAP (M)	473 / 100V
C180	3609473120-T	CAP (M)	473 / 100V
C181	3529100311-A	CAP (C)	10P
C182	3409222081-T	CAP (E)	22UF / 63V
C183	3409222081-T	CAP (E)	22UF / 63V
C184	3509220130-A	CAP (C)	22P
C185	3529100311-A	CAP (C)	10P
C186	3409247081-T	CAP (E)	47UF / 63V
IC151	2168220981	I . C OP	NJM072BL
IC152	2168220981	I . C OP	NJM072BL
IC153	2168220989	I . C OP	NJM2068L
IC155	2168220989	I . C OP	NJM2068L
IC156	2168220989	I . C OP	NJM2068L
VR151	3238093410	VOLUME	50KB X 2
VR152	3238093410	VOLUME	50KB X 2
VR153	3228077210	VOLUME	20KA X 2
VR154	3228069210	VOLUME	10KA
VR155	3238093410	VOLUME	50KB X 2
VR156	3228069210	VOLUME	10KA
VR157	3238093410	VOLUME	50KB X 2
JK151	4438192910	INPUT BA	PHONE
JK152	4438192910	INPUT BA	PHONE
JK153	4438193810	INPUT BA	XLR
AUX, TAPE INPUT, EFFECT OUT			
R201	3009101973	RES 1/5W 5%	100
R202	3009101973	RES 1/5W 5%	100
R203	3009473973	RES 1/5W 5%	47K
R204	3009473973	RES 1/5W 5%	47K
R205	3009203973	RES 1/5W 5%	20K
R206	3009203973	RES 1/5W 5%	20K
R207	3009753973	RES 1/5W 5%	75K
R208	3009753973	RES 1/5W 5%	75K
R209	3009363973	RES 1/5W 5%	36K
R210	3009363973	RES 1/5W 5%	36K
R251	3009101973	RES 1/5W 5%	100
R252	3009101973	RES 1/5W 5%	100

Ref No.	Part No.	Description	Value
R253	3009473973	RES 1/5W 5%	47K
R254	3009473973	RES 1/5W 5%	47K
R255	3009203973	RES 1/5W 5%	20K
R256	3009203973	RES 1/5W 5%	20K
R257	3009753973	RES 1/5W 5%	75K
R258	3009753973	RES 1/5W 5%	75K
R259	3009363973	RES 1/5W 5%	36K
R260	3009363973	RES 1/5W 5%	36K
R601	3009753973	RES 1/5W 5%	75K
R602	3009221973	RES 1/5W 5%	220
R603	3009104973	RES 1/5W 5%	100K
R604	3009472973	RES 1/5W 5%	4.7K
R605	3009103973	RES 1/5W 5%	10K
R606	3009473973	RES 1/5W 5%	47K
R607	3009750973	RES 1/5W 5%	75
C201	3509101231-A	CAP (C)	100P
C202	3509101231-A	CAP (C)	100P
C203	3409247071-T	CAP (E)	47UF / 50V
C204	3409247071-T	CAP (E)	47UF / 50V
C205	3529100311-A	CAP (C)	10P
C206	3529100311-A	CAP (C)	10P
C207	3409247071-T	CAP (E)	47UF / 50V
C208	3409247071-T	CAP (E)	47UF / 50V
C251	3509101231-A	CAP (C)	100P
C252	3509101231-A	CAP (C)	100P
C253	3409247071-T	CAP (E)	47UF / 50V
C254	3409247071-T	CAP (E)	47UF / 50V
C255	3529100311-A	CAP (C)	10P
C256	3529100311-A	CAP (C)	10P
C257	3409247071-T	CAP (E)	47UF / 50V
C258	3409247071-T	CAP (E)	47UF / 50V
C601	3409247071-T	CAP (E)	47UF / 50V
C602	3509221231-A	CAP (C)	220P
C603	3529680311-A	CAP (C)	68P
C604	3409247071-T	CAP (E)	47UF / 50V
C605	3529103531-A	CAP (C)	"10,000P"
C606	3509101231-A	CAP (C)	100P
C607	3409210142-T	CAP (E)	100UF / 25V
C608	3509101231-A	CAP (C)	100P
IC201	2118010432	I . C OP AMP	2068D
IC251	2118010432	I . C OP AMP	2068D
IC601	2168220989	I . C OP AMP	2068L
VR201	3228077210	VOLUME	20KA X 2
VR251	3228077210	VOLUME	20KA X 2
VR601	3228070030	VOLUME	20KA
JK201	4438192910	INPUT BA	PHONE
JK202	4438192910	INPUT BA	PHONE
JK302C	4499990004-J	RCA 4P	RCA X 2
MONITOR (OUT, EQ, LEVEL)			
R501	3009363973	RES 1/5W 5%	36K
R502	3009221973	RES 1/5W 5%	220
R503	3009104973	RES 1/5W 5%	100K
R504	3009222973	RES 1/5W 5%	2.2K
R505	3009472973	RES 1/5W 5%	4.7K
R506	3009272973	RES 1/5W 5%	2.7K
R507	3009272973	RES 1/5W 5%	2.7K
R508	3009473973	RES 1/5W 5%	47K
R509	3009750973	RES 1/5W 5%	75
R551	3009561973	RES 1/5W 5%	560
R552	3009563973	RES 1/5W 5%	56K
R553	3009561973	RES 1/5W 5%	560
R554	3009563973	RES 1/5W 5%	56K
R555	3009561973	RES 1/5W 5%	560
R556	3009563973	RES 1/5W 5%	56K
R557	3009561973	RES 1/5W 5%	560
R558	3009563973	RES 1/5W 5%	56K
R559	3009561973	RES 1/5W 5%	560
R560	3009563973	RES 1/5W 5%	56K
R561	3009561973	RES 1/5W 5%	560
R562	3009563973	RES 1/5W 5%	56K
R563	3009561973	RES 1/5W 5%	560
R564	3009563973	RES 1/5W 5%	56K
R565	3009302973	RES 1/5W 5%	3K
R566	3009302973	RES 1/5W 5%	3K
R567	3009302973	RES 1/5W 5%	3K

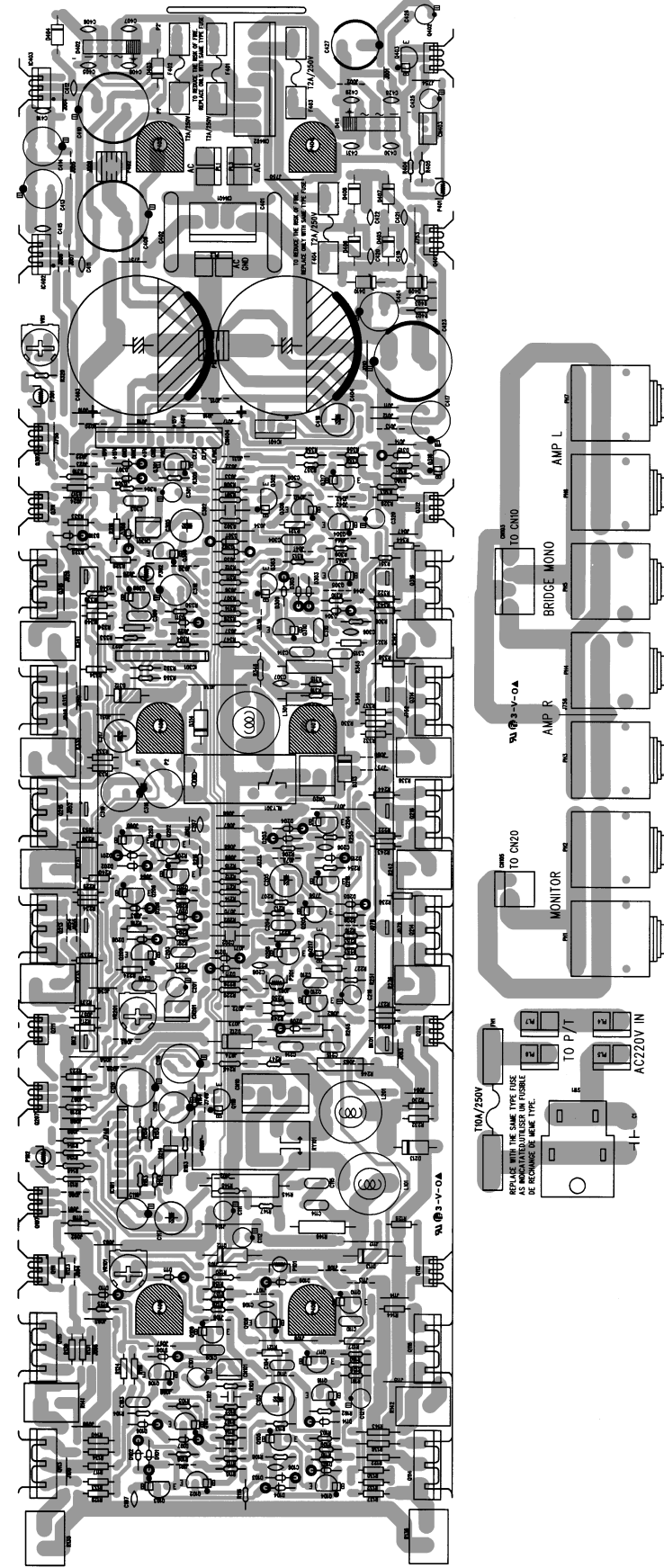
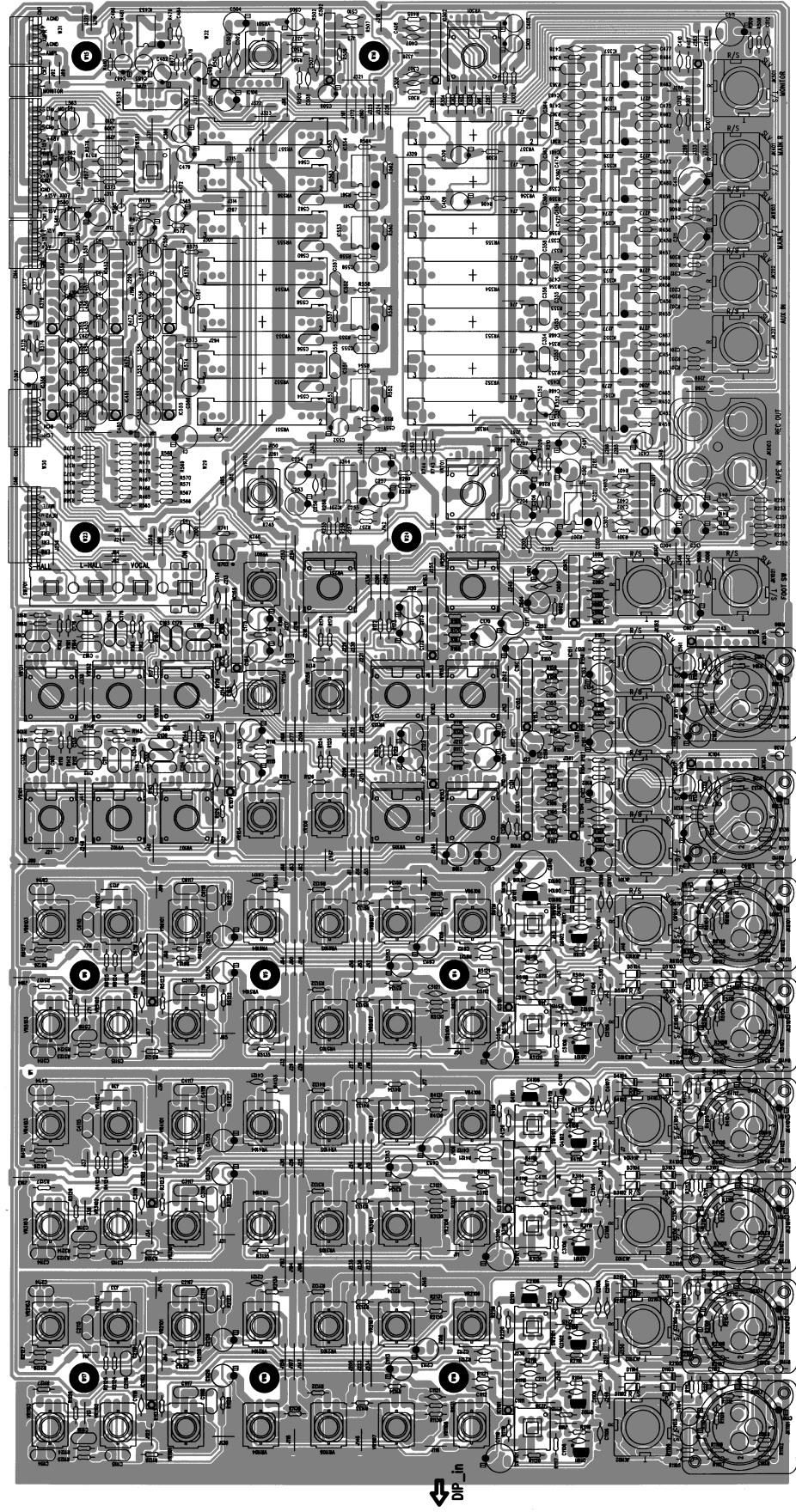
Ref No.	Part No.	Description	Value
R568	3009102973	RES 1/5W 5%	1K
R569	3009102973	RES 1/5W 5%	1K
R570	3009102973	RES 1/5W 5%	1K
R571	3009102973	RES 1/5W 5%	1K
R572	3009303973	RES 1/5W 5%	30K
R573	3009203973	RES 1/5W 5%	20K
R574	3009823973	RES 1/5W 5%	82K
R575	3009683973	RES 1/5W 5%	68K
R576	3009823973	RES 1/5W 5%	82K
R577		RES 1 W	10K
R578		RES 1 W	680
R579		RES 1 W	680
R580	3009152973	RES 1/5W 5%	1.5K
R1		RES 1/5W FR	100
R2	3009152973	RES 1/5W 5%	1.5K
C501	3409210142-T	CAP (E)	100UF / 25V
C502	3509221231-A	CAP (C)	220P
C503	3529680311-A	CAP (C)	68P
C504	3409247071-T	CAP (E)	47UF / 50V
C505	3409222071-T	CAP (E)	22UF / 50V
C506	3529103531-A	CAP (C)	"10,000P"
C507	3509331231-A	CAP (C)	330P
C508	3529470311-A	CAP (C)	47P

Ref No.	Part No.	Description	Value
MAIN L, R (OUT, EQ, LEVEL), REC OUT			
R301	3009683973	RES 1/5W 5%	68K
R302	3009221973	RES 1/5W 5%	220
R303	3009104973	RES 1/5W 5%	100K
R304	3009222973	RES 1/5W 5%	2.2K
R305	3009472973	RES 1/5W 5%	4.7K
R306	3009272973	RES 1/5W 5%	2.7K
R307	3009332973	RES 1/5W 5%	3.3K
R308	3009473973	RES 1/5W 5%	47K
R309	3009750973	RES 1/5W 5%	75
R310	3009152973	RES 1/5W 5%	1.5K
R311	3009122973	RES 1/5W 5%	1.2K
R351	3009561973	RES 1/5W 5%	560
R352	3009563973	RES 1/5W 5%	56K
R353	3009561973	RES 1/5W 5%	560
R354	3009563973	RES 1/5W 5%	56K
R355	3009561973	RES 1/5W 5%	560
R356	3009563973	RES 1/5W 5%	56K
R357	3009561973	RES 1/5W 5%	560
R358	3009563973	RES 1/5W 5%	56K
R359	3009561973	RES 1/5W 5%	560
R360	3009563973	RES 1/5W 5%	56K
R361	3009561973	RES 1/5W 5%	560
R362	3009563973	RES 1/5W 5%	56K
R363	3009561973	RES 1/5W 5%	560
R364	3009563973	RES 1/5W 5%	56K
R365	3009561973	RES 1/5W 5% FR	100
R366	3009302973	RES 1/5W 5%	3K
R367	3009302973	RES 1/5W 5%	3K
R368	3009302973	RES 1/5W 5%	3K
R369	3009102973	RES 1/5W 5%	1K
R370	3009103973	RES 1/5W 5%	1K
R371	3009103973	RES 1/5W 5%	1K
R372	3009103973	RES 1/5W 5%	1K
R373	3009303973	RES 1/5W 5%	30K
R374	3009203973	RES 1/5W 5%	20K
R375	3009823973	RES 1/5W 5%	82K
R376	3009683973	RES 1/5W 5%	68K
R377	3009823973	RES 1/5W 5%	82K
C301	3409210142-T	CAP (E)	100UF / 25V
C302	3509221231-A	CAP (C)	220P
C303	3529680311-A	CAP (C)	68P
C304	3409247071-T	CAP (E)	47UF / 50V
C305	3409222071-T	CAP (E)	22UF / 50V
C306	3529103531-A	CAP (C)	10000P
C307	3509331231-A	CAP (C)	330P
C308	3529470311-A	CAP (C)	47P
C309	3409222071-T	CAP (E)	22UF / 50V
C310	3509471231-A	CAP (C)	470P
C311	3409210142-T	CAP (E)	100UF / 25V
C312	3509101231-A	CAP (C)	100P
C313	3409247071-T	CAP (E)	47UF / 50V
C351	3639184111-T	CAP (M)	0.18UF / 50V
C352	3409210973-T	CAP (E)	1UF / 50V
C353	3609683120-T	CAP (M)	683 / 100V
C354	3639394111-T	CAP (C)	0.39 / 50V
C355	3609273120-T	CAP (M)	273 / 100V
C356	3639184111-T	CAP (M)	0.18UF / 50V
C357	3609123120-T	CAP (M)	123 / 100V
C358	3609683120-T	CAP (M)	683 / 100V
C359	3609472120-T	CAP (M)	472 / 100V
C360	3609273120-T	CAP (M)	273 / 100V
C361	3609182120-T	CAP (M)	182 / 100V
C362	3609103120-T	CAP (M)	103 / 100V
C363	3509821130-T	CAP (C)	820P
C364	3609472120-T	CAP (M)	472 / 100V
C365	3409210142-T	CAP (E)	100UF / 25V
C366	3409247971-T	CAP (E)	4.7UF / 50V
C367	3409247971-T	CAP (E)	4.7UF / 50V
C368	3409247971-T	CAP (E)	4.7UF / 50V
IC301	2168220989	I . C OP AMP	NJM2068L
IC302	2168220989	I . C OP AMP	NJM2068L
IC303	2118010590	I . C OP AMP	NJM4580D
IC351	2118010590	I . C OP AMP	NJM4558D
IC352	2118010590	I . C OP AMP	NJM4558D

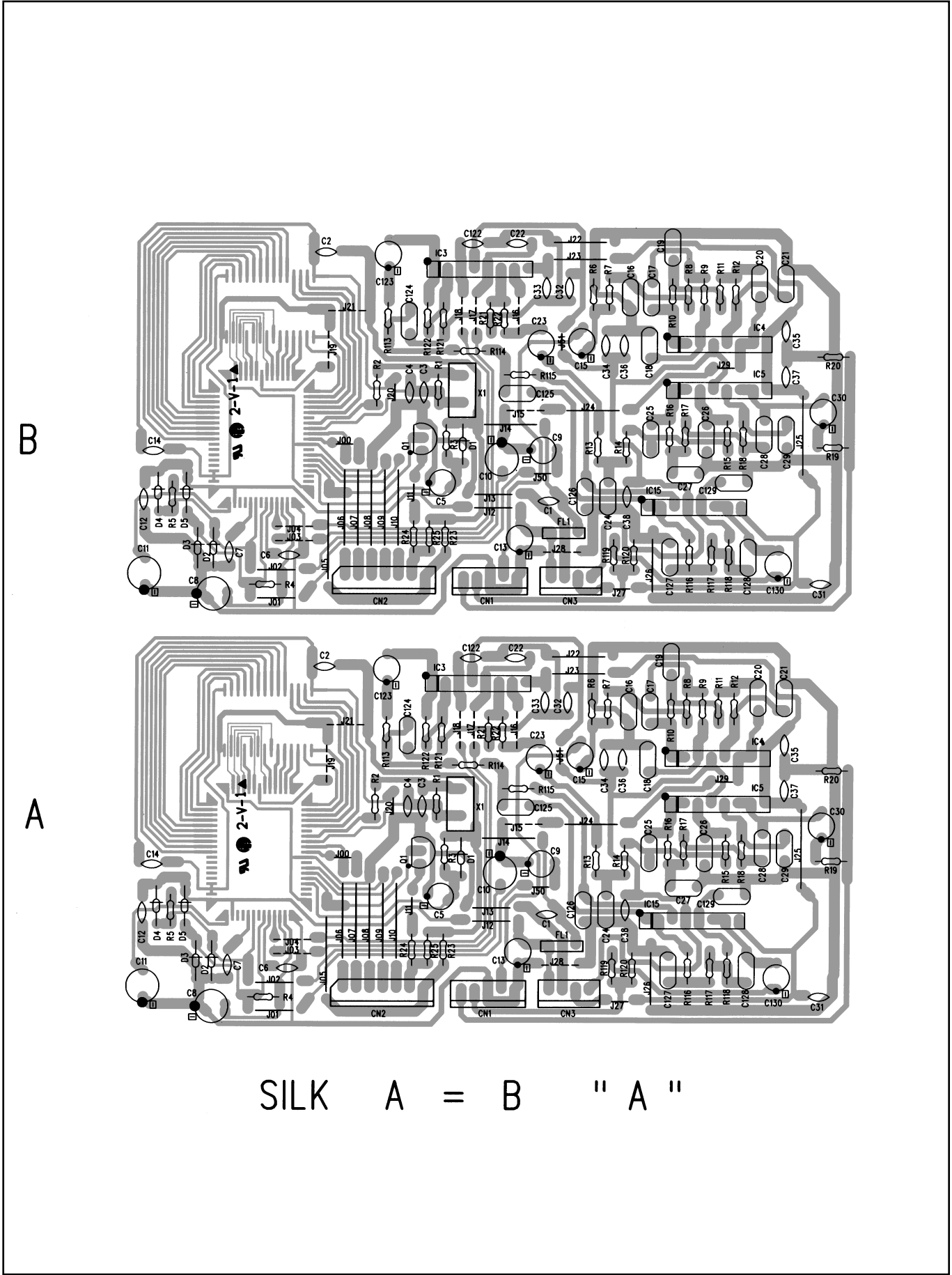
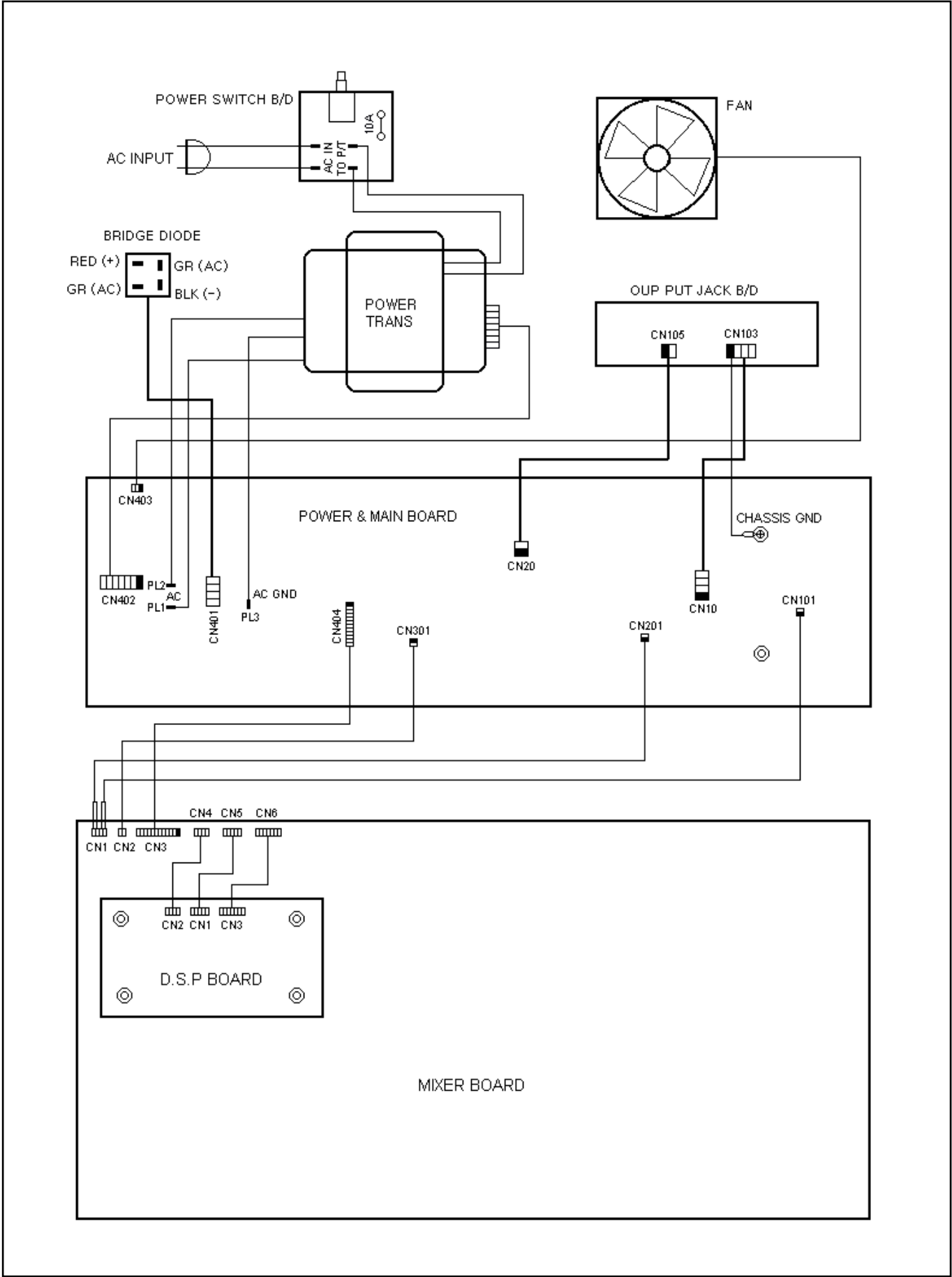
Ref No.	Part No.	Description	Value
IC353	2118010590	I . C OP AMP	NJM4558D
IC354	2118010590	I . C OP AMP	NJM4558D
IC355	2118010590	I . C OP AMP	NJM4558D
IC356	2118010590	I . C OP AMP	NJM4558D
IC357	2118010590	I . C OP AMP	NJM4558D
IC358	2118030405	I . C LEVEL	6966S
IC359	2118030405	I . C LEVEL	6966S
VR301	3228077210	VOLUME	20KA x 2
VR351	3238080010	VOLUME SLIDE	20KW X 2
VR352	3238080010	VOLUME SLIDE	20KW X 2
VR353	3238080010	VOLUME SLIDE	20KW X 2
VR354	3238080010	VOLUME SLIDE	20KW X 2
VR355	3238080010	VOLUME SLIDE	20KW X 2
VR356	3238080010	VOLUME SLIDE	20KW X 2
VR357	3238080010	VOLUME SLIDE	20KW X 2
JK301	4438192910	OUT BA	PHONE
LD351	2300032100	LED	GRE
LD352	2300032100	LED	GRE
LD353	2300032100	LED	GRE
LD354	2300032100	LED	GRE
LD355	2300031100	LED	YEL
LD356	2300031100	LED	YEL
LD357	2300031100	LED	YEL
R401	3009683973	RES 1/5W 5%	68K
R402	3009221973	RES 1/5W 5%	220
R403	3009104973	RES 1/5W 5%	100K
R404	3009222973	RES 1/5W 5%	2.2K
R405	3009472973	RES 1/5W 5%	4.7K
R406	3009272973	RES 1/5W 5%	2.7K
R407	3009332973	RES 1/5W 5%	3.3K
R408	3009473973	RES 1/5W 5%	47K
R409	3009750973	RES 1/5W 5%	75
R410	3009152973	RES 1/5W 5%	1.5K
R411	3009122973	RES 1/5W 5%	1.2K
R451	3009561973	RES 1/5W 5%	560
R452	3009563973	RES 1/5W 5%	56K
R453	3009561973	RES 1/5W 5%	560
R454	3009563973	RES 1/5W 5%	56K
R455	3009561973	RES 1/5W 5%	560
R456	3009563973	RES 1/5W 5%	56K
R457	3009561973	RES 1/5W 5%	560
R458	3009563973	RES 1/5W 5%	56K
R459	3009561973	RES 1/5W 5%	560
R460	3009563973	RES 1/5W 5%	56K
R461	3009561973	RES 1/5W 5%	560
R462	3009563973	RES 1/5W 5%	56K
R463	3009561973	RES 1/5W 5%	560
R464	3009563973	RES 1/5W 5%	56K
R465	3009302973	RES 1/5W 5%	3K
R466	3009302973	RES 1/5W 5%	3K
R467	3009302973	RES 1/5W 5%	3K
R468	3009102973	RES 1/5W 5%	1K
R469	3009102973	RES 1/5W 5%	1K
R470	3009102973	RES 1/5W 5%	1K
R471	3009102973	RES 1/5W 5%	1K
R472	3009303973	RES 1/5W 5%	30K
R473	3009203973	RES 1/5W 5%	20K
R474	3009823973	RES 1/5W 5%	82K
R475	3009683973	RES 1/5W 5%	68K
R476	3009823973	RES 1/5W 5%	82K
R477	3009103973	RES 1/5W 5%	10K
R478	3009103973	RES 1/5W 5%	10K
R479	3009103973	RES 1/5W 5%	10K
R480	3009103973	RES 1/5W 5%	10K
R481	3009103973	RES 1/5W 5%	10K
C401	3409210142-T	CAP (E)	100UF / 25V
C402	3509221231-A	CAP (C)	220P
C403	3529680311-A	CAP (C)	68P
C404	3409247071-T	CAP (E)	47UF / 50V
C405	3409222071-T	CAP (E)	22UF / 50V
C406	3529103531-A	CAP (C)	10000P
C407	3509331231-A	CAP (C)	330P
C408	3529470311-A	CAP (C)	47P
C409	3409222071-T	CAP (E)	22UF / 50V
C410	3509471231-A	CAP (C)	470P
C411	3409210142-T	CAP (E)	100UF / 25V

Ref No.	Part No.	Description	Value
C412	3509101231-A	CAP (C)	100P
C413	3409247071-T	CAP (E)	47UF / 50V
C451	3409210973-T	CAP (E)	1UF / 50V
C452	3639184111-T	CAP (C)	0.18UF / 50V
C453	3639394111-T	CAP (C)	0.39 / 50V
C454	3609683120-T	CAP (M)	683 / 100V
C455	3639184111-T	CAP (C)	0.18UF / 50V
C456	3609273120-T	CAP (M)	273 / 100V
C457	3609683120-T	CAP (M)	683 / 100V
C458	3609123120-T	CAP (M)	123 / 100V
C459	3609273120-T	CAP (M)	273 / 100V
C460	3609472120-T	CAP (M)	472 / 100V
C461	3609103120-T	CAP (M)	103 / 100V
C462	3609182120-T	CAP (M)	182 / 100V
C463	3609472120-T	CAP (M)	472 / 100V
C464	3509821130-T	CAP (C)	820P
C465	3529103531-A	CAP (C)	"10,000P"
C466	3529103531-A	CAP (C)	"10,000P"
C467	3529103531-A	CAP (C)	"10,000P"
C468	3529103531-A	CAP (C)	"10,000P"
C469	3529103531-A	CAP (C)	"10,000P"
C470	3529103531-A	CAP (C)	"10,000P"
C471	3529103531-A	CAP (C)	"10,000P"
C472	3529103531-A	CAP (C)	"10,000P"
C473	3529103531-A	CAP (C)	"10,000P"
C474	3529103531-A	CAP (C)	"10,000P"
C475	3529103531-A	CAP (C)	"10,000P"
C476	3529103531-A	CAP (C)	"10,000P"
C477	3529103531-A	CAP (C)	"10,000P"
C478	3529103531-A	CAP (C)	"10,000P"
C479	3409247971-T	CAP (E)	4.7UF / 50V
C480	3409247971-T	CAP (E)	4.7UF / 50V
C481	3409247971-T	CAP (E)	4.7UF / 50V
C482	3409222071-T	CAP (E)	22UF / 50V
C483	3409222071-T	CAP (E)	22UF / 50V
C484	3529470311-A	CAP (C)	47P
C485	3409222071-T	CAP (E)	22UF / 50V
C486	3529470311-A	CAP (C)	47P
C487	3409222071-T	CAP (E)	22UF / 50V
IC451	2118030405	I . C LEVEL	6966S
IC452	2118030405	I . C LEVEL	6966S
IC453	2168220989	I . C OP AMP	NJM2068D
JK401	4438192910	OUTPUT JACK	PHONE
LD451	2300032100	LED	GRE
LD452	2300032100	LED	GRE
LD453	2300032100	LED	GRE
LD454	2300032100	LED	GRE
LD455	2300031100	LED	YEL
LD456	2300031100	LED	YEL
LD457	2300031100	LED	YEL
SW451	4618999210	SLIDE SWITCH	3P X 2
DISPLAY			
R1	3009105973	RES 1/5W 5%	1M
R2	3009471973	RES 1/5W 5%	470
R3	3009103973	RES 1/5W 5%	10K
R4	3009473973	RES 1/5W 5%	47K
R5	3009473973	RES 1/5W 5%	47K
R6	3009104973	RES 1/5W 5%	100K
R7	3009222973	RES 1/5W 5%	2.2K
R8	3009222973	RES 1/5W 5%	2.2K
R9	3009222973	RES 1/5W 5%	2.2K
R10	3009202973	RES 1/5W 5%	2 K
R11	3009222973	RES 1/5W 5%	2.2K
R12	3009222973	RES 1/5W 5%	2.2K
R13	3009222973	RES 1/5W 5%	2.2K
R14	3009222973	RES 1/5W 5%	2.2K
R15	3009222973	RES 1/5W 5%	2.2K
R16	3009222973	RES 1/5W 5%	2.2K
R17	3009222973	RES 1/5W 5%	2.2K
R18	3009222973	RES 1/5W 5%	2.2K
R19	3009101973	RES 1/5W 5%	100
R20			

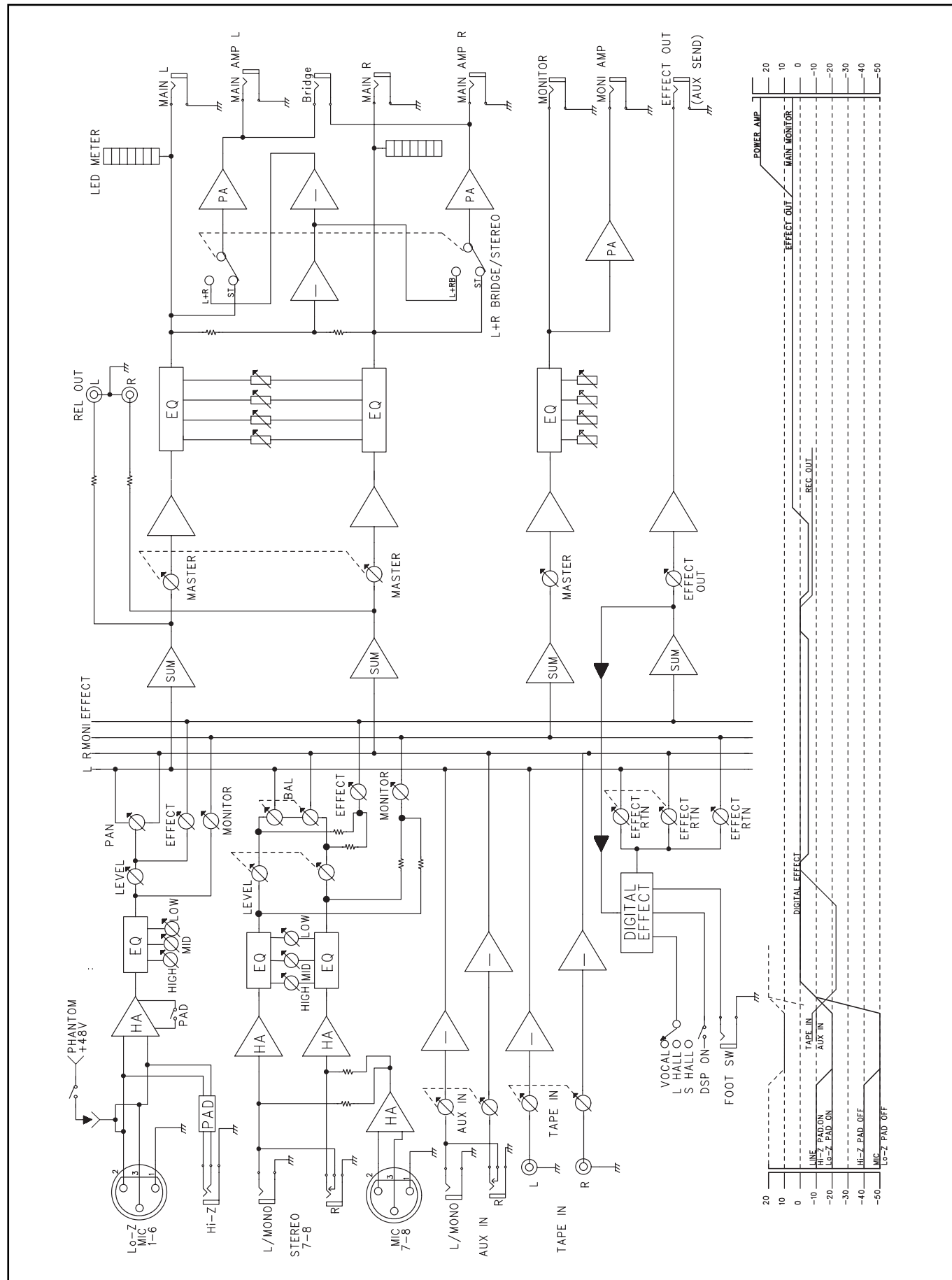
TOP AND BOTTOM VIEW OF P.C. BOARD



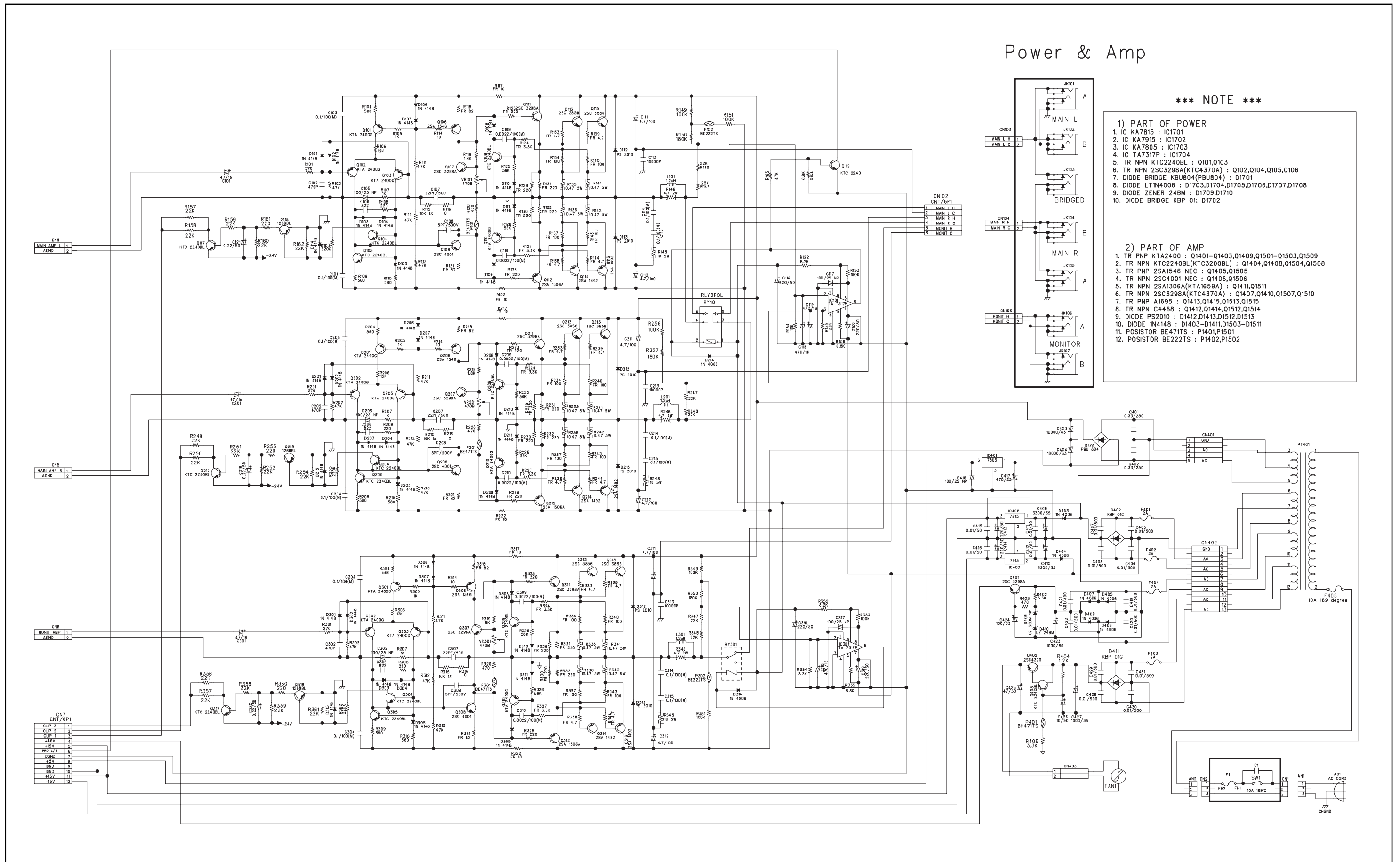
WIRING DIAGRAM



BLOCK DIAGRAM



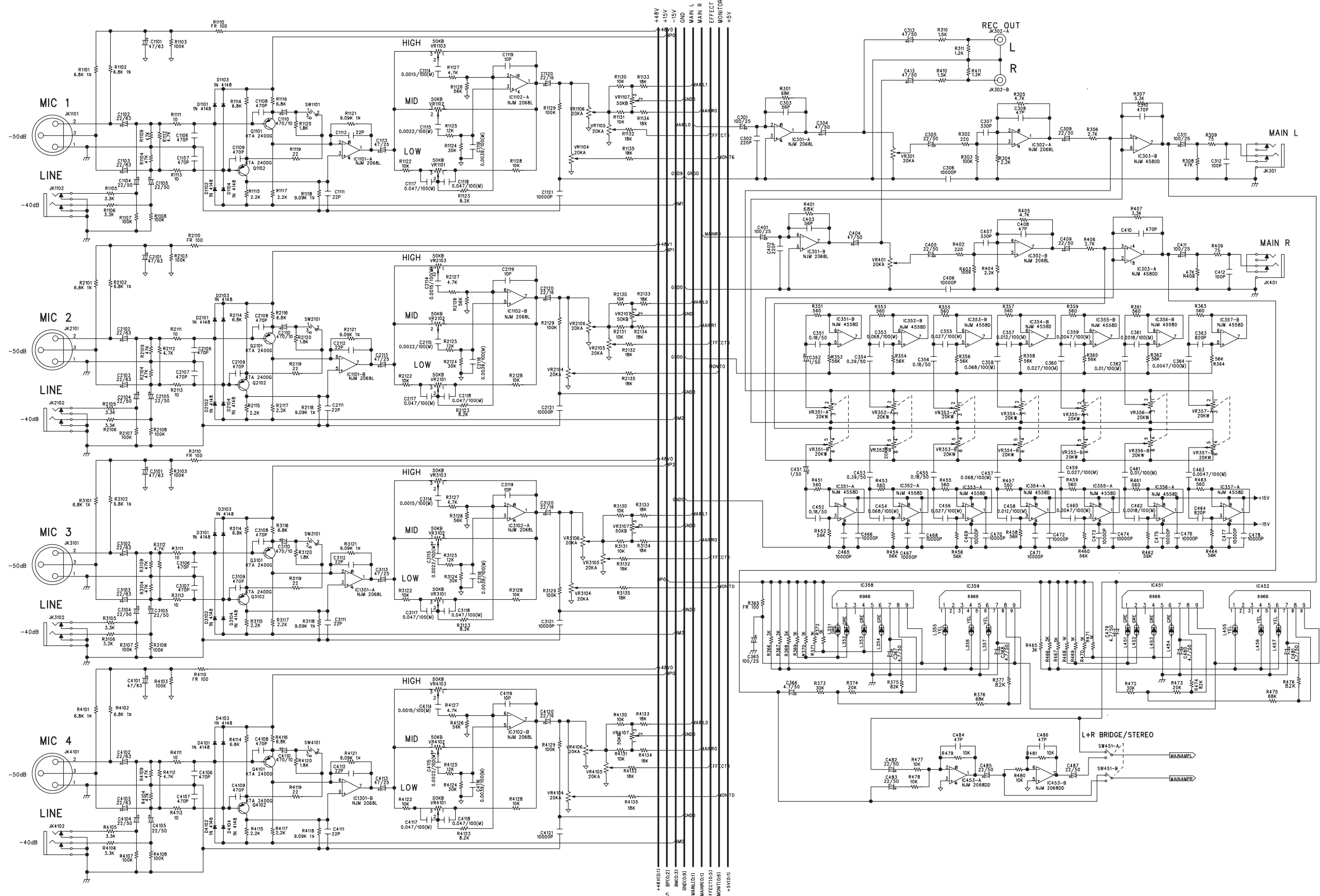
SCHEMATIC DIAGRAM

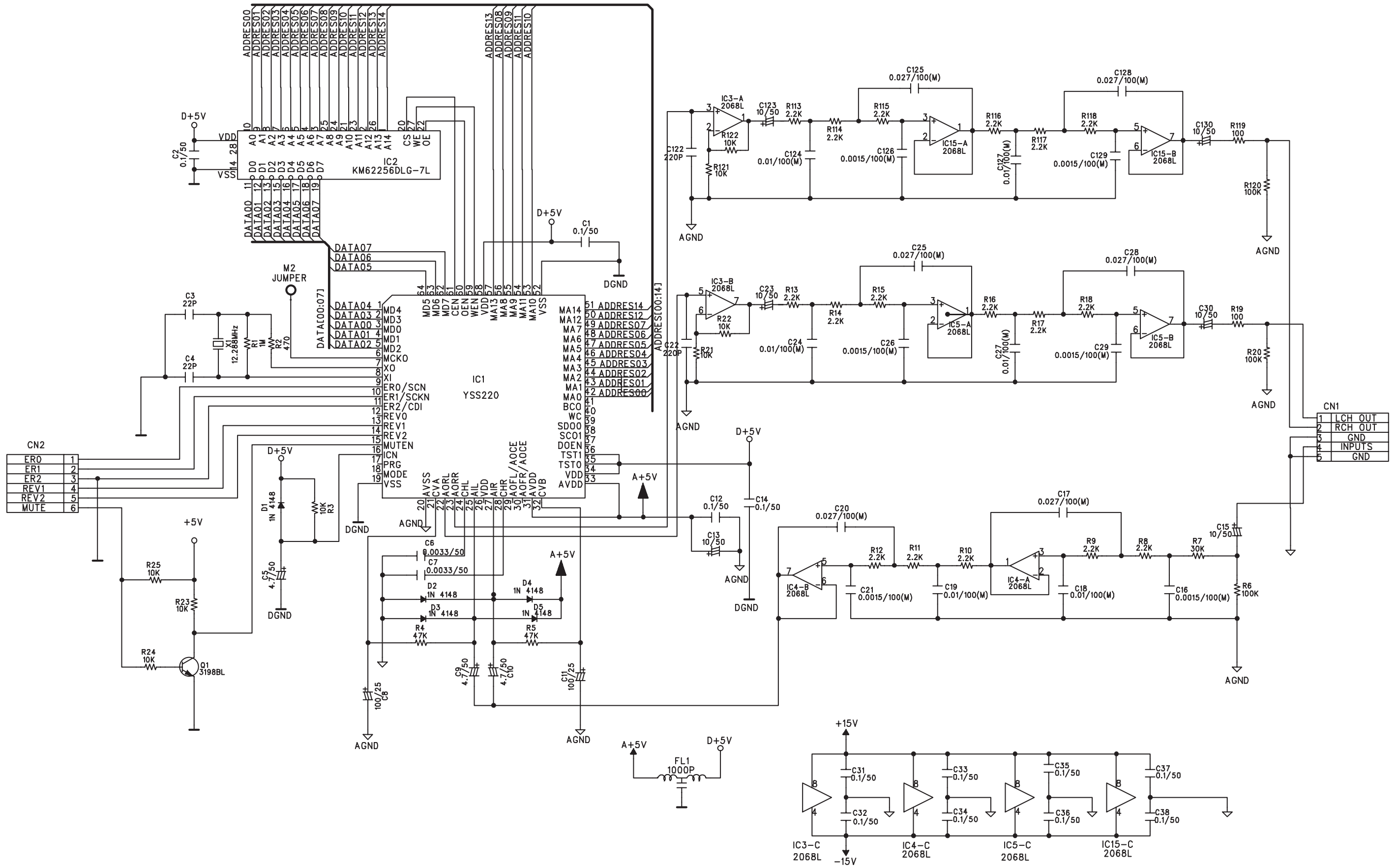


Power & Amp

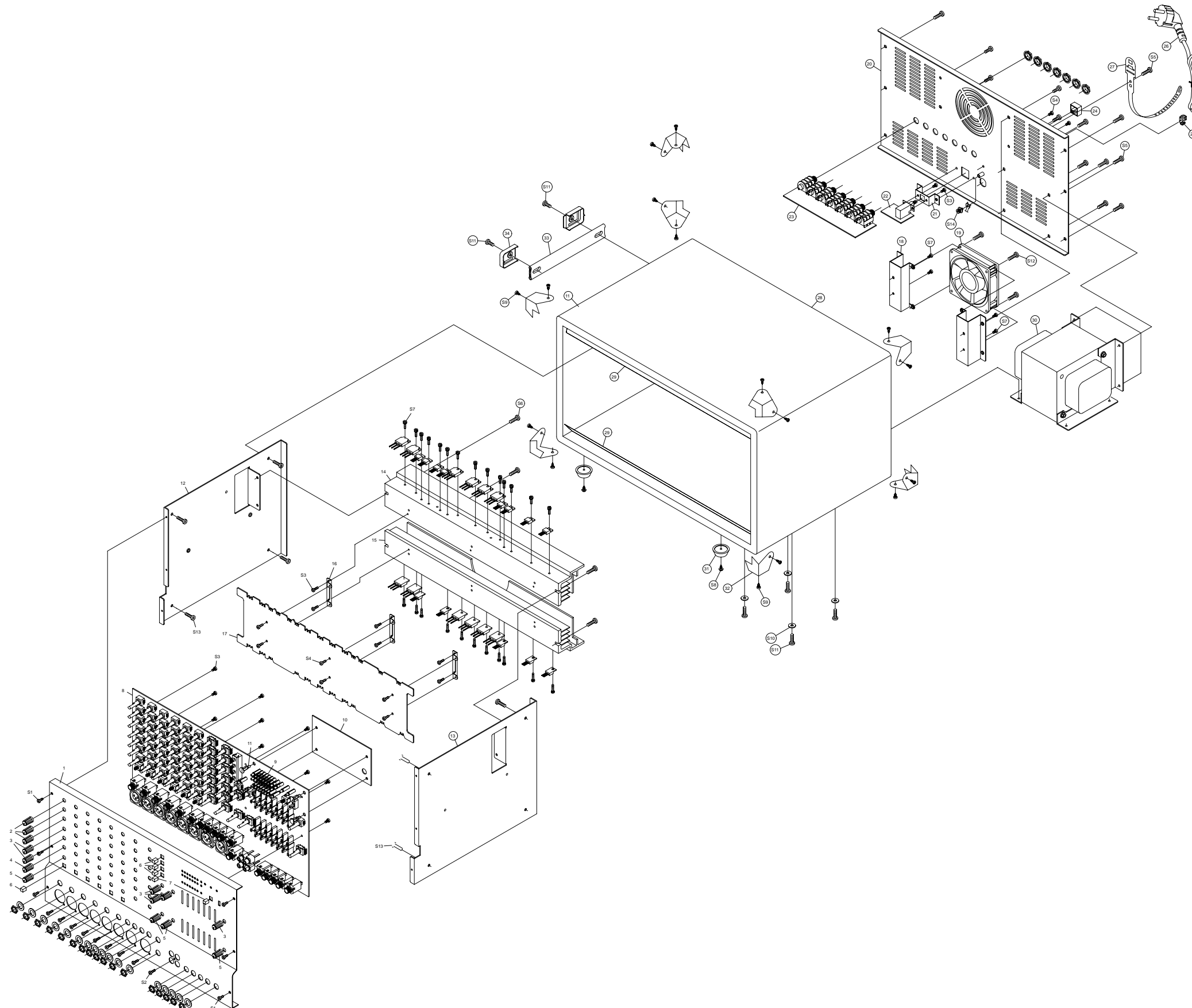
*** NOTE ***

- 1) PART OF POWER
 1. IC KA7815 : IC1701
 2. IC KA7915 : IC1702
 3. IC KA7805 : IC1703
 4. IC TA7317P : IC1704
 5. TR NPN KTC2240BL : Q101,Q103
 6. TR NPN 2SC3298A(KTC4370A) : Q102,Q104,Q105,Q106
 7. DIODE BRIDGE KBP804(PBU804) : D1701
 8. DIODE LTN4006 : D1703,D1704,D1705,D1706,D1707,D1708
 9. DIODE ZENER 248M : D1709,D1710
 10. DIODE BRIDGE KBP 01: D1702
- 2) PART OF AMP
 1. TR PNP KTA2400 : Q1401-Q1403,Q1409,Q1501-Q1503,Q1509
 2. TR NPN KTC2240BL(KTC3200BL) : Q1404,Q1408,Q1504,Q1508
 3. TR PNP 2SA1546 NEC : Q1405,Q1505
 4. TR NPN 2SC4001 NEC : Q1406,Q1506
 5. TR NPN 2SA1306A(KTA1659A) : Q1411,Q1511
 6. TR NPN 2SC3298A(KTC4370A) : Q1407,Q1410,Q1507,Q1510
 7. TR NPN A1695 : Q1413,Q1415,Q1513,Q1515
 8. TR NPN C4468 : Q1412,Q1414,Q1512,Q1514
 9. DIODE PS2010 : D1412,D1413,D1512,D1513
 10. DIODE 1N4148 : D1403-D1411,D1503-D1511
 11. POSISTOR BE471T5 : P1401,P1501
 12. POSISTOR BE222T5 : P1402,P1502





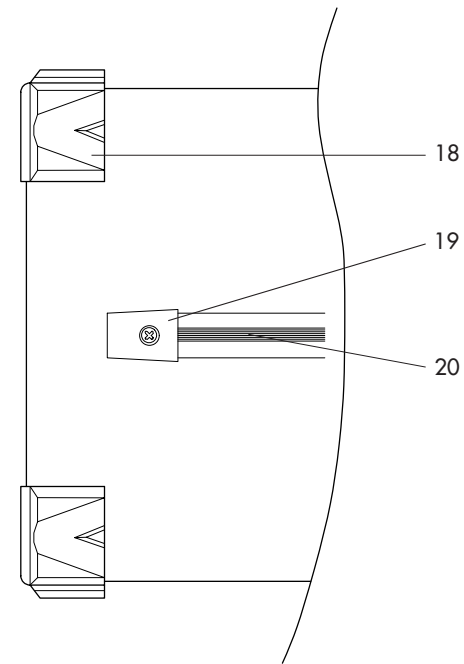
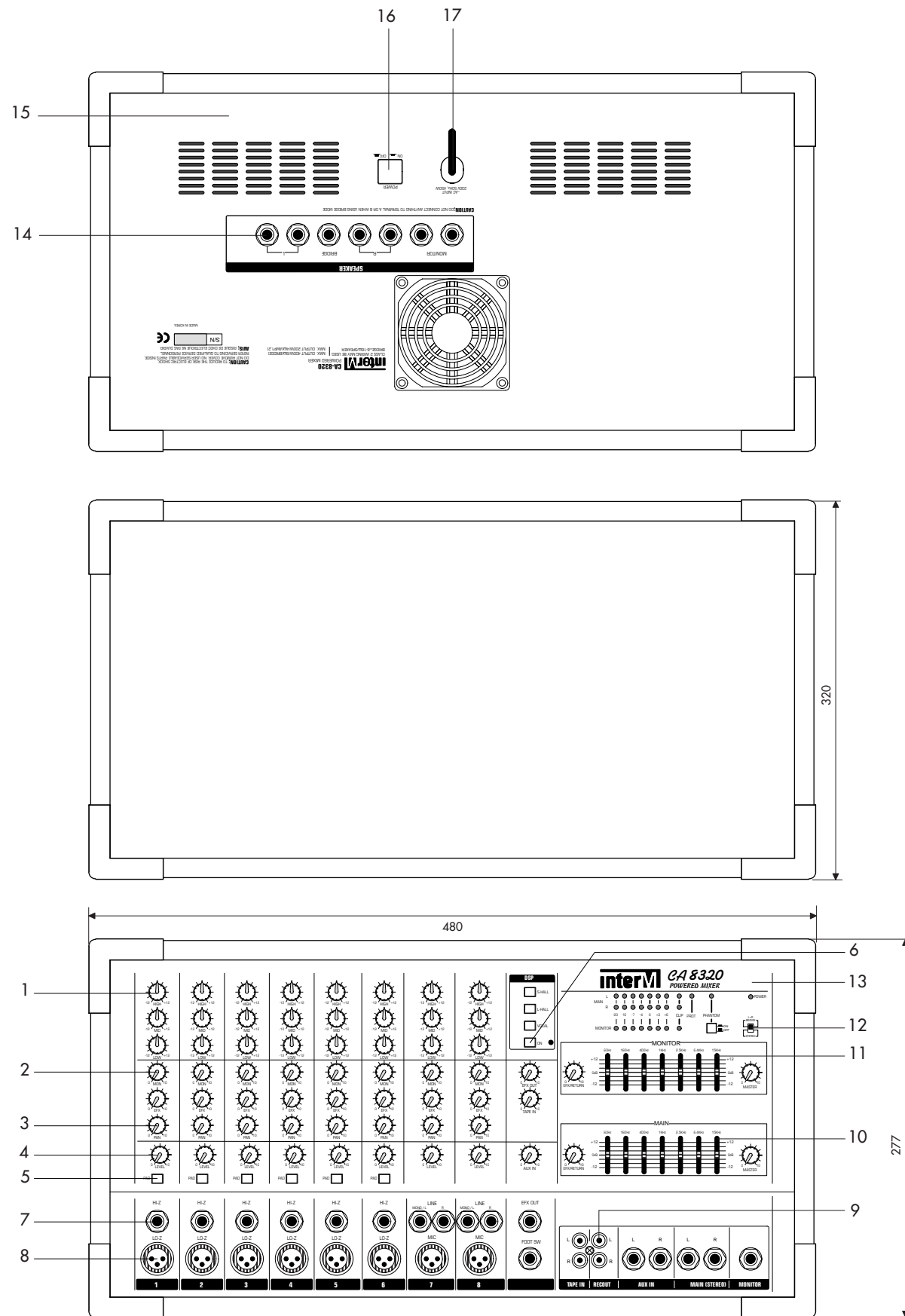
EXPLODED VIEW OF CABINET & CHASSIS/MECHANICAL PARTS LIST



REG.NO	PART NAME	PART NUMBER	Q'TY	REMARK
S14	ASS'Y SCREW PM 4X8B	8095996910	1	
S13	SCREW BM 4X1.5B	8009140153	8	
S12	SCREW BM 4X1.0B	8009140103	4	
S11	SCREW BM 4X3.0B	8009140303	6	
S10	WASHER PLAIN	8309040993	4	
S9	SCREW #1BTC 3X1.0B	8109130103	16	
S8	SCREW #1WPTC 3X1.2Y	8159130121	4	
S7	HEX MSPM 3X1.2Y	8099130121	29	
S6	ASS'Y SCREW PM4X8B	8095996910	4	
S5	SCREW #3BTC 4X8BK	8109340083	15	
S4	SCREW #3BTC 3X6B	8109330063	2	
S3	SCREW BM 3X6B	8009130063	18	
S2	DOT SCREW #2BTC 3X1.0B	8095996520	9	
S1	DOT SCREW #3BTC 3X8B	8095996620	6	

34	BRACKET HANDLE	6505932120	2	
33	HANDLE	8603992020	1	
32	B.K.T CORNER CAP	046505937210	8	
31	RUBBER FOOT	6335000610	1	
30	TRANS POWER	2828061000	1	E (120V)
		2828061010	1	DOM (220V)
		2828061020	1	B,C (230V)
		2828061030	1	D (240V)
29	SHIELD PLATE	6165168210	2	
28	CABINET WOOD	6002996910	1	
27	CORD BAND	6538996130	1	
26	AC CORD	4308000920	1	DOM
		4308990610	1	J
		4308994920	1	B
		4308996110	1	E
		4308996710	1	C
		4308999210	1	D
25	STOPPER CORD 3CORES	6513000210	1	
24	PUSH KNOB	8543995510	1	
23	PCB OUTPUT JACK	4003118320	1	
22	PCB POWER SW	4628988610	1	
21	BRACKET POWER	6505938010	1	
20	CHASSIS BACK	6102979110	1	
19	DC FAN	7308998010	1	
18	BKT FAN "A"	6503969610	2	
17	PCB AMP	4003483100	1	
16	BKT PCB	6505934810	3	
15	HEAT SINK (DOWN)	7502088810	1	
14	HEAT SINK (UP)	7502089310	1	
13	FRAME SIDE "R"	6122690620	1	
12	FRAME SIDE "L"	6122690610	1	
11	BUTTON SUPPORT	6538999932	4	
10	PCB DSP	4003482900	1	
9	LED LIMITER	8545993360	28	
8	PCB MIXER	4003483000	1	
7	PUSH KNOB(RED)	048525997017	2	
6	PUSH KNOB	048525997010	9	
5	CONTROL KNOB(GRAY)	048543990813	11	
4	CONTROL KNOB(RED)	048543990817	8	
3	CONTROL KNOB(BLUE)	048543990815	20	
2	CONTROL KNOB(GREEN)	048543990816	24	
1	PANEL FRONT	6122690710	1	
REG.NO	PART NAME	PART NUMBER	Q'TY	REMARK

ASS'Y DRAWING



No.	Description	Part No	Q'ty	Remark
1	CONTROL KNOB (GREEN)	048543990826	24	
2	CONTROL KNOB (BLUE)	048543990825	20	
3	CONTROL KNOB (RED)	048543990827	8	
4	CONTROL KNOB (GRAY)	048543990823	11	
5	PUSH KNOB (GRAY)	048525997010	9	
6	PUSH KNOB (RED)	048525997017	2	
7	PHONE JACK	4438192910	17	
8	XLR JACK	4438193810	8	
9	RCA JACK	4438194610	1	
10	V.R SLIDE-RS20H123D12B-20KW2	3238080010	7	
11	V.R SLIDE-RS20H113D12B-20KW	3238080610	7	
12	SLIDE SWITCH 3P-SSAF022NB011	4618999210	1	
13	FRONT PANEL	048602969111	1	
14	PHONE JACK	H30280074N	7	
15	BACK CHASSIS	046102979111	1	DOM (220V)
		046102979112	1	B (230V)
		046102979113	1	C (230V)
		046102979114	1	D (240V)
		046102979115	1	E (120V)
	046102979116	1	J (100V)	
16	POWER SWITCH	4628988610	1	
17	AC CORD	4308994920	1	
18	CORNER CAP	048505937210	8	
19	HANDLE BRACKET	6505932120	2	
20	HANDLE	8603992020	1	

