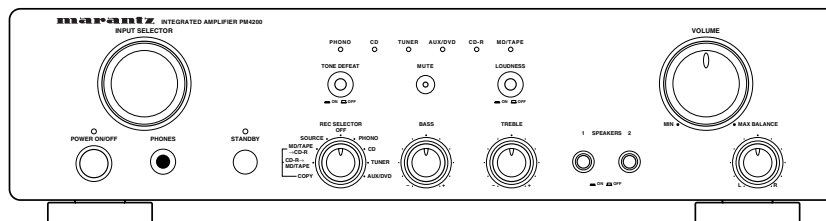


Service Manual

PM4200/N1B, /N1G, /F1B, /F1N

Integrated Amplifier



PM4200

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Please use this service manual with referring to the user guide (D.F.U) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行って下さい。

marantz®

PM4200

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC.
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2732241
FAX : +31 - 40 - 2735578

BRAZIL

PHILIPS DA AMAZONIA IND. ELET. ITDA
CENTRO DE INFORMACOES AO
CEP 04698-970
SAO PAULO, SP, BRAZIL
PHONE : 0800 - 123123(Discagem Direta Gratuita)
FAX : +55 11 534. 8988

PROFESSIONAL AMERICAS

SUPERSCOPE TECHNOLOGIES, INC.
MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL AUSTRALIA

TECHNICAL AUDIO GROUP PTY, LTD
558 DARLING STREET,
BALMAIN, NSW 2041,
AUSTRALIA
PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

AUSTRALIA

QualIFI Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - (0)3 - 9543 - 1522
FAX : +61 - (0)3 - 9543 - 3677

THAILAND

MRZ STANDARD CO.,LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

SINGAPORE

WO KEE HONG DISTRIBUTION PTE LTD
130 JOO SENG ROAD
#03-02 OLIVINE BUILDING
SINGAPORE 368357
PHONE : +65 858 5535 / +65 381 8621
FAX : +65 858 6078

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
PHONE : +64 - 9 - 8451958
FAX : +64 - 9 - 8463554

TAIWAN

PAI- YUING CO., LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
SUITE 8.1, LEVEL 8, MENARA GENESIS,
NO. 33, JALAN SULTAN ISMAIL,
50250 KUALA LUMPUR, MALAYSIA
PHONE : +60 3 - 2457677
FAX : +60 3 - 2458180

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 741 9190

日本マランツ株式会社

本社 〒228-8505
神奈川県相模原市相模大野7-35-1
営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Power output

RMS 8 Ohms/4 Ohms (40 Hz~20 kHz)	30/40 W
DIN 8 Ohms / 4 Ohms	35/45 W

IHF dynamic power

8 Ohms/4 Ohms	50/80 W
THD at 8 Ohms RMS rated output	0.005%
Intermodulation distortion	0.005%
Damping factor	80

Magnetic cartridge input

Input sensitivity impedance	2.3mV/47k ohms
Accuracy of frequency response to RIAA	± 0.5 dB
Signal to noise ratio	80 dB

Tuner / CD / Aux / Tape inputs

Input sensitivity impedance	150mV/20k ohms
Signal to noise ratio	105 dB
Frequency response (-1 dB)	10~50 kHz
Tone characteristic (100 Hz and 10 kHz)	± 6 dB
Channel separation	70 dB

General

Power Requirements

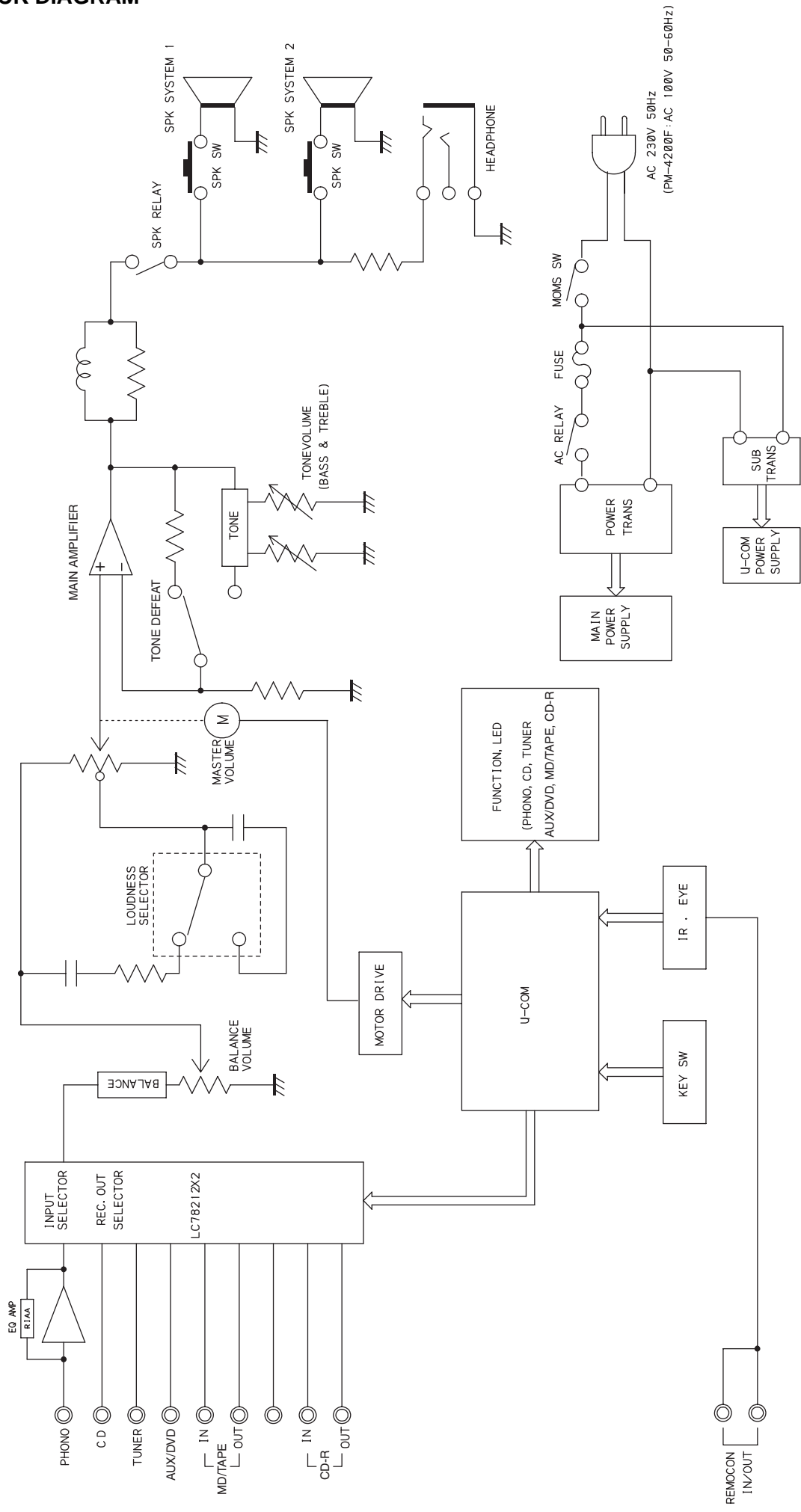
N version	230 V AC,50 Hz
F version	100 V AC,50/60 Hz

Dimensions (MAX)

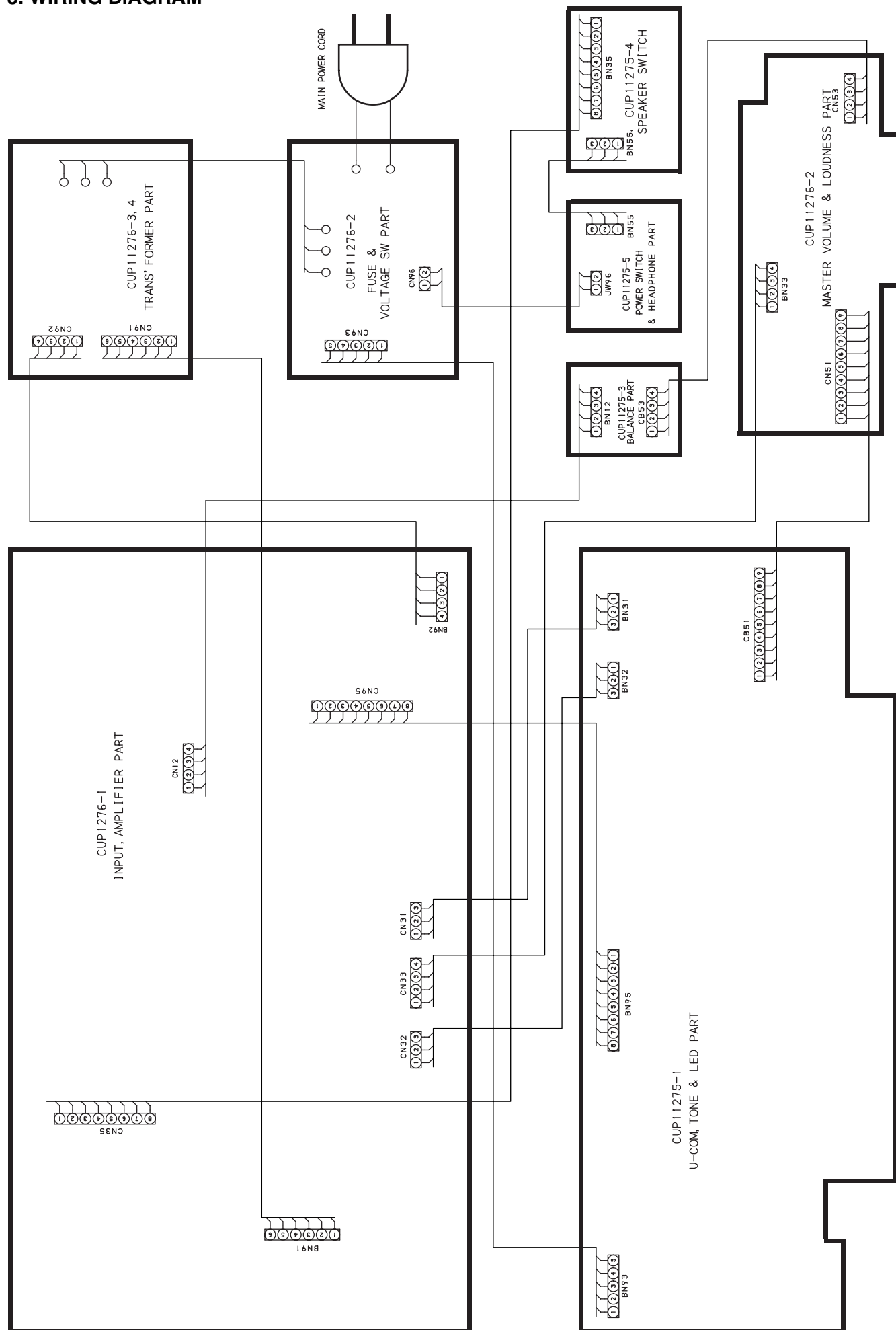
Width	440 mm
Height	116 mm
Depth	343 mm
Weight	6.0 kg

Specifications subject to change without prior notice.

2. BLOCK DIAGRAM



3. WIRING DIAGRAM



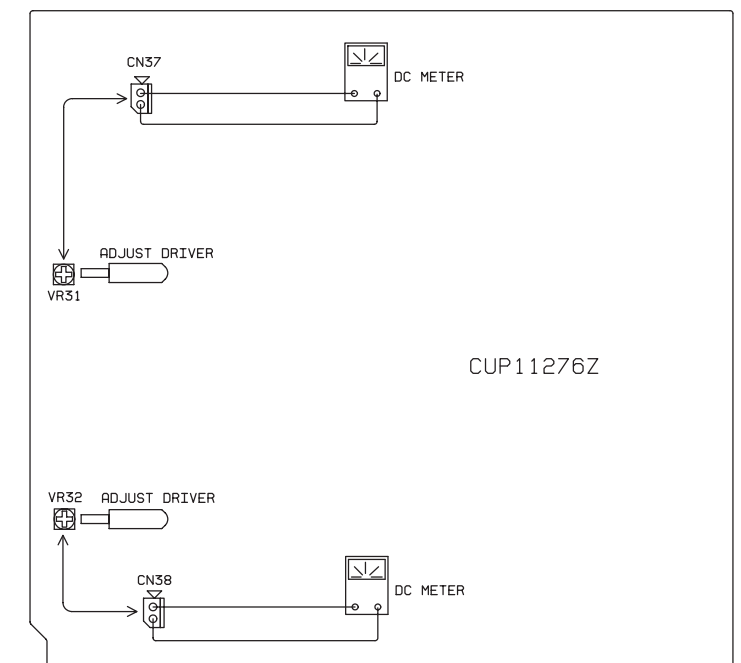
IC61 : M37531E4FP

PIN NO.	SYMBOL	IN/OUT	DESCRIPTION
1	CLK	O	CLOCK OUTPUT
2	DATA	O	DATA OUTPUT
3	CE	O	MICOM CHIP ENABLE
4	R.SEL.	I	REC SELECTOR INPUT
5	GND	I	GROUND
6	GND	I	GROUND
7	GND	I	GROUND
8	GND	I	GROUND
9	ST-BY	O	STANDBY LED OUTPUT
10	VR UP	O	MOTOR VR UP OUTPUT
11	VR DN	O	MOTOR VR DOWN OUTPUT
12	VCC	I	VDD CONNECTION
13	RESET	I	MICOM RESET
14		I	
15	VCC	I	VDD CONNECTION
16	XIN	I	8.0MHz CRYSTAL MICOM OPERATOR
17	XOUT	I	8.0MHz CRYSTAL MICOM OPERATOR
18	GND	I	GROUND
19	EN.1	I	FUNCTION SELECTOR ENCODER INPUT
20	EN.2	I	FUNCTION SELECTOR ENCODER INPUT
21	AMUTE	O	AMP MUTE OUTPUT
22	FMUTE	O	FUNCTION MUTE OUTPUT
23	GND	I	GROUND
24	GND	I	GROUND
25	BACKUP	I	BACK UP INPUT
26	RE-IN	I	REMOCON DATA INPUT
27	P.ON	O	POWER ON/OFF
28	PRO IN	I	PROTECTOR INPUT
29	CD-R	O	CD-R FUNCTION LED OUTPUT
30	MD/TAPE	O	MD/TAPE FUNCTION LED OUTPUT
31	AUX/DVD	O	AUX/DVD FUNCTION LED OUTPUT
32	TUNER	O	TUNER FUNCTION LED OUTPUT
33	CD	O	CD FUNCTION LED OUTPUT
34	PHONO	O	PHONO FUNCTION LED OUTPUT
35	MUTE	O	MUTE LED OUTPUT
36	GND	I	GROUND

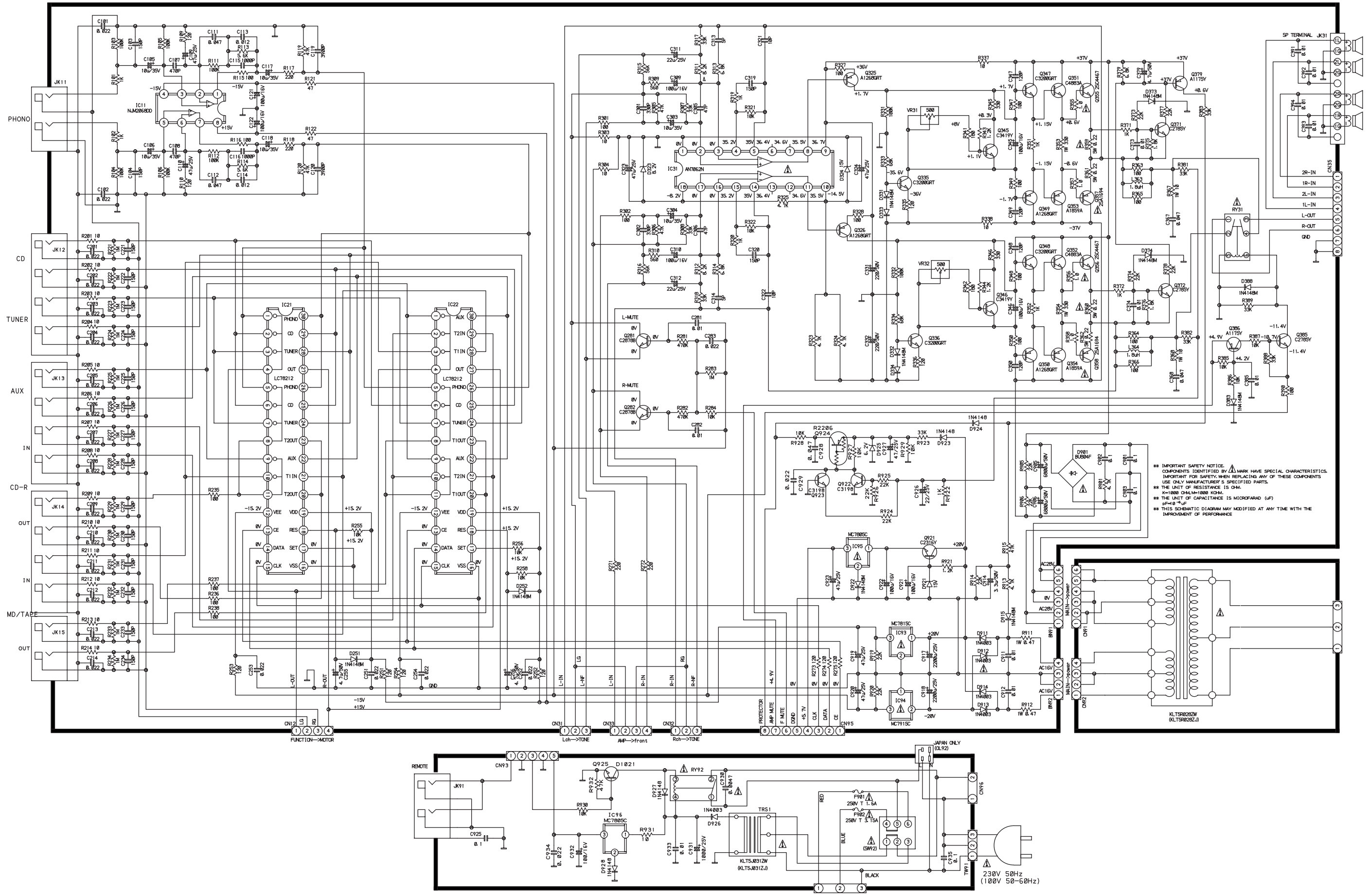
4. IDLING CURRENT ADJUSTMENT

CONTROLS SETTING :
 TONE(BASS & TREBLE),BALANCE - MID POSITION
 VOLUME - MINIMUM POSITION
 LOUDNESS - OFF POSITION
 TONE DEFEAT - OFF POSITION

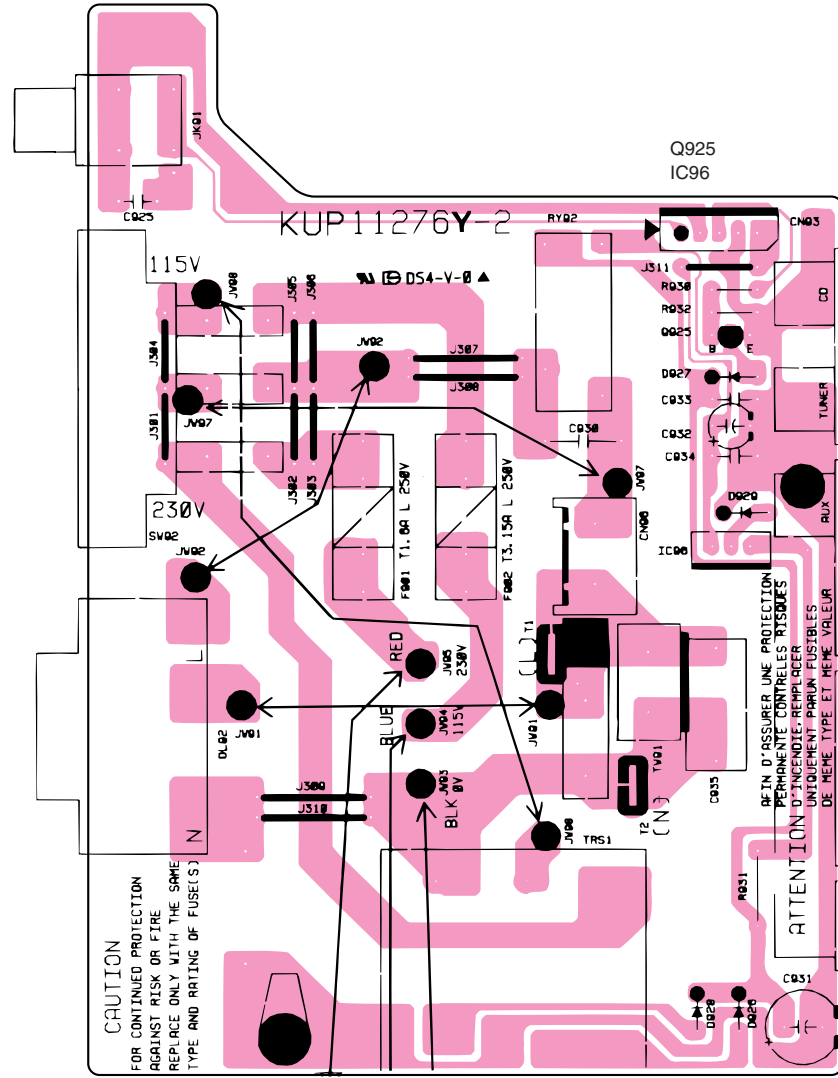
ADJUST	MESURED ACROSS	VOLTMETER READING
VR31	CN37	5 mV
VR32	CN38	5 mV



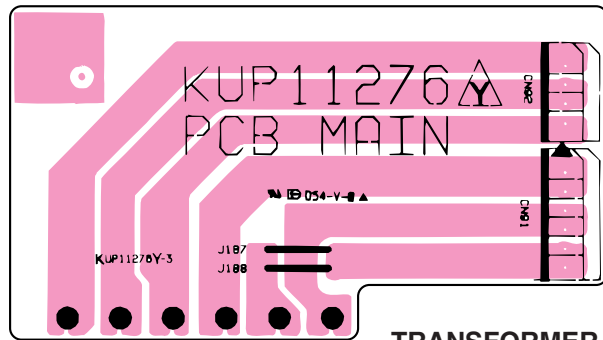
5. SCHEMATIC DIAGRAM AND PARTS LOCATION (Parts side)



FUSE & VOLTAGE SW PCB



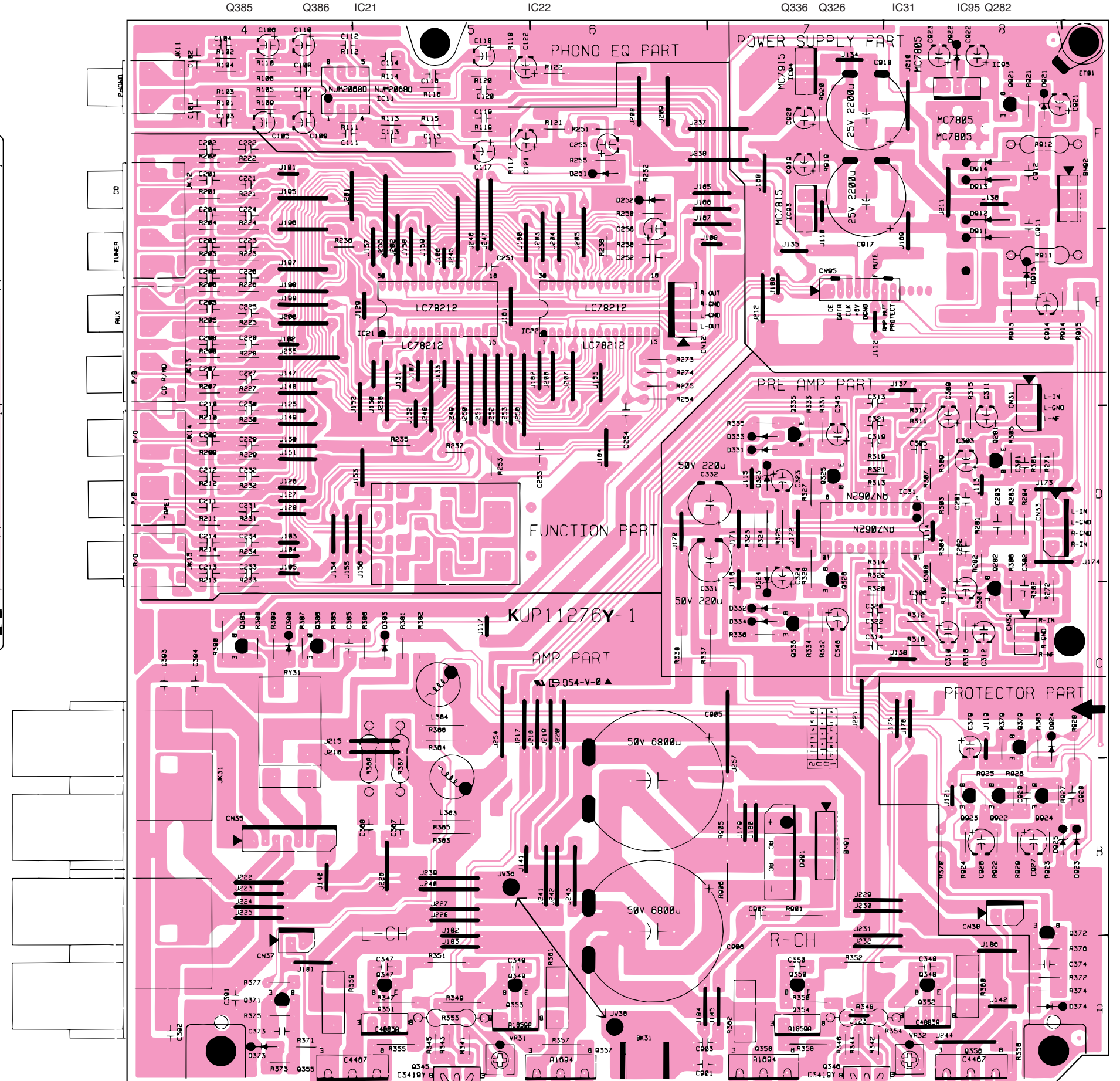
TRANSFORMER PCB



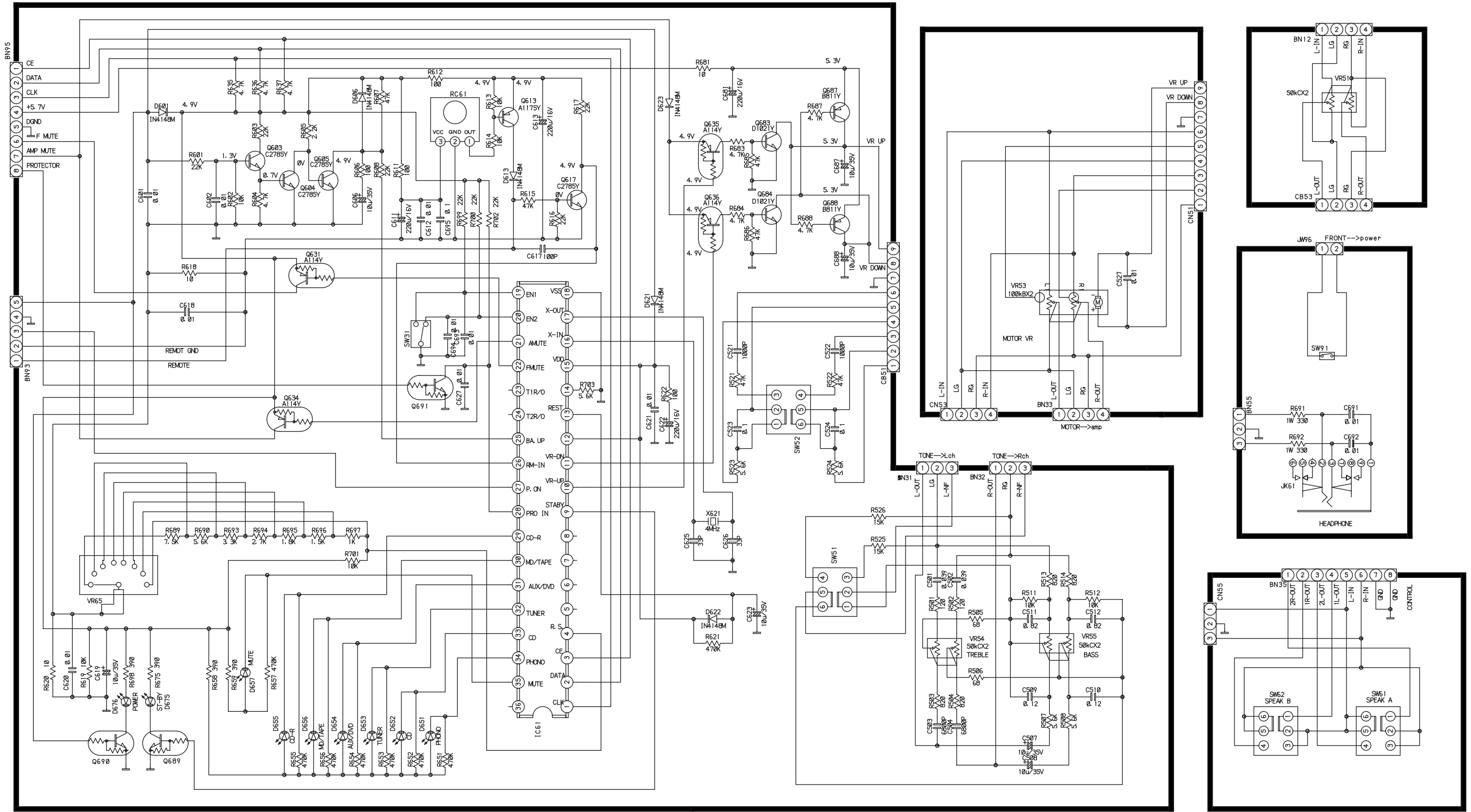
TRANSFORMER PCB



INPUT / AMPLIFIER PCB



Q355 Q347 Q345 Q349 Q357 Q350 Q358 Q354 Q346 Q348 Q923 Q922 Q379 Q924 Q351 Q345 Q353 Q353 Q357 Q358 Q354 Q346 Q352 Q356 Q372 Q370 Q374 Q374 Q374 Q374 Q374



** IMPORTANT SAFETY NOTICE.
 COMPONENTS IDENTIFIED BY Δ MARK HAVE SPECIAL CHARACTERISTICS
 IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS
 USE ONLY MANUFACTURER'S SPECIFIED PARTS.
 ** THE UNIT OF RESISTANCE IS OHM.
 K=1000 OHM, M=1000 KOHM.
 ** THE UNIT OF CAPACITANCE IS MICROFARAD (μ F)
 pF=10⁻¹² F.
 ** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE
 IMPROVEMENT OF PERFORMANCE.

Q603
Q604
Q605

Q690
Q617
Q613

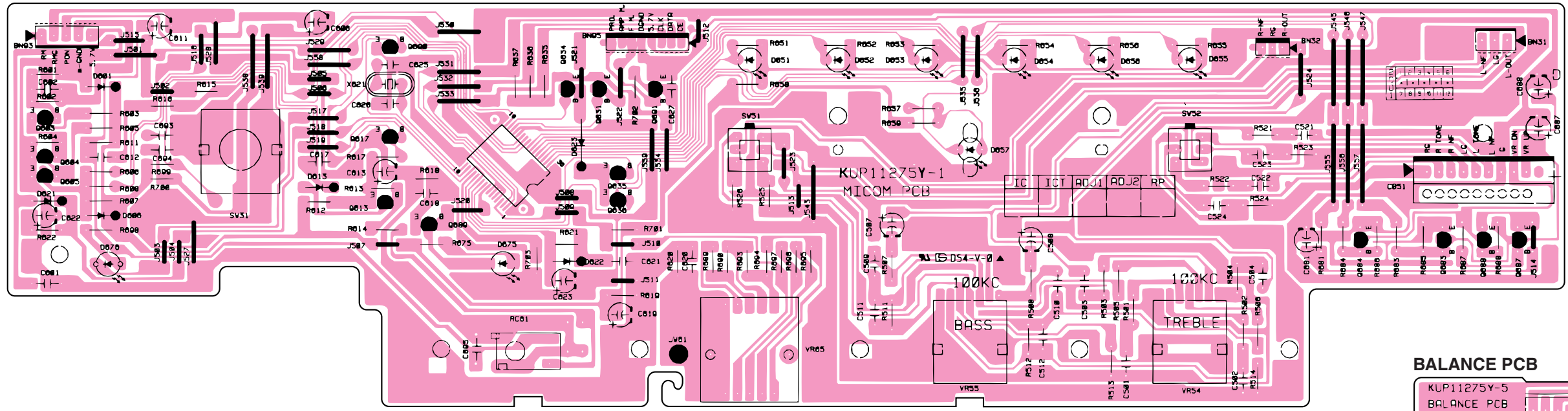
Q689 IC61

Q634 Q631 Q636 Q691

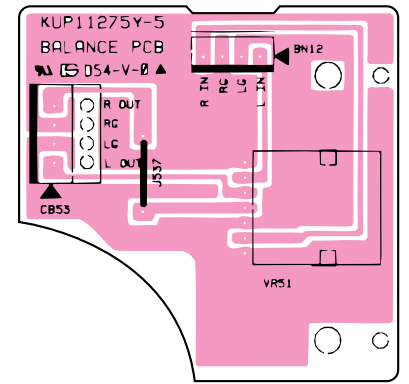
U-COM / TONE & LED PCB

Q684

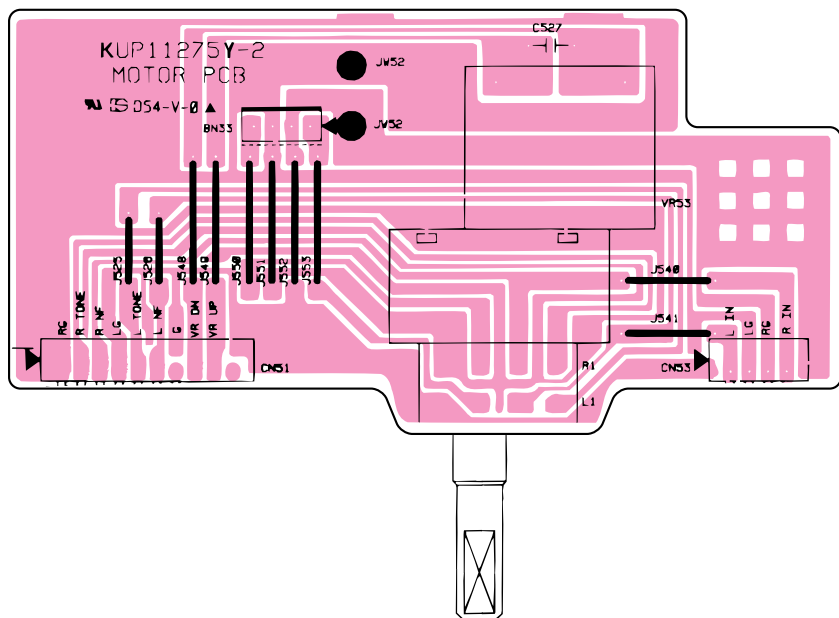
Q683 Q688 Q687



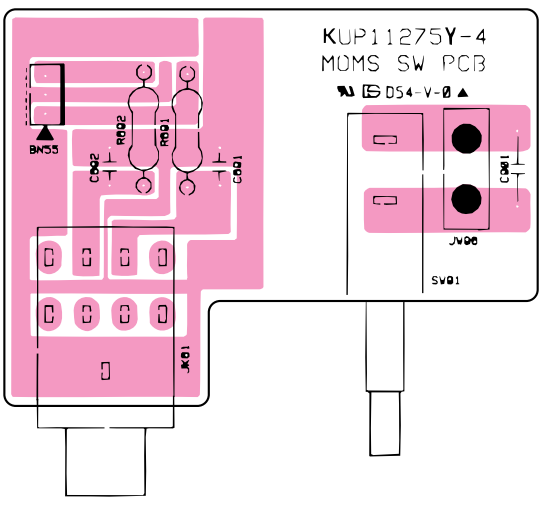
BALANCE PCB



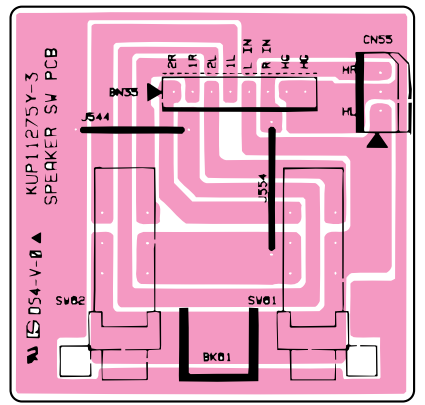
MASTER VOLUME PCB



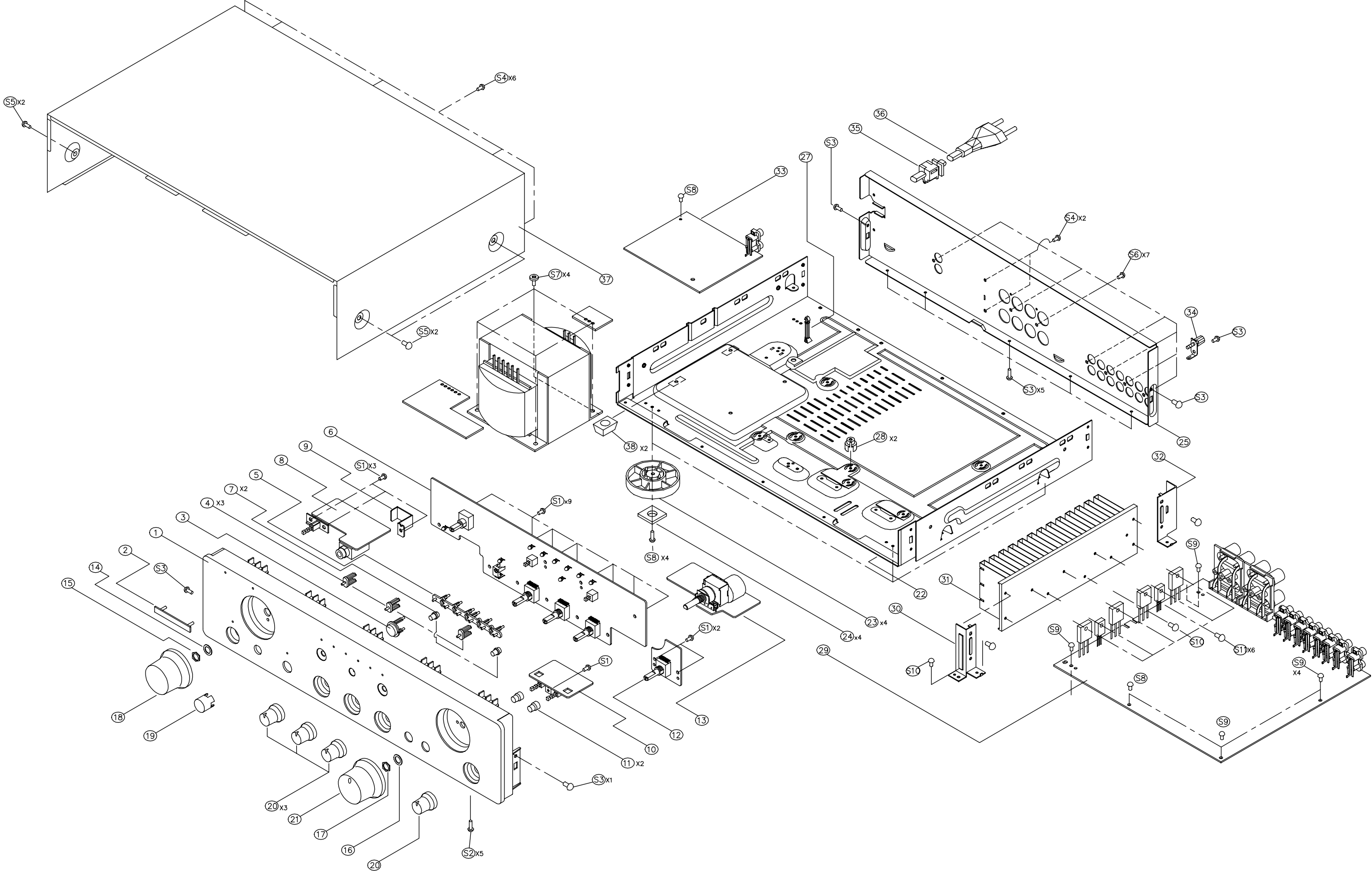
POWER SW PCB



SPEAKER SW PCB



7. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJ)
1	BLACK	9965 000 10439	PANEL FRONT (BLK)	350W248010
1	GOLD	9965 000 10448	PANEL FRONT (GLD)	350W248110
2		4822 454 11825	BADGE MARANTZ	185J251010
3		9965 000 01285	WINDOW SENSOR	274W158010
4		9965 000 01286	INDICATOR MUTE	274W355020
5		9965 000 01287	INDICATOR FUNCTION	274W355010
7	BLACK	9965 000 01288	KNOB LOUDNESS (BLK)	274W270010
7	GOLD	9965 000 10455	KNOB LOUDNESS (GLD)	274W270110
9		nsp	BRACKET PCB	nsp
11	BLACK	9965 000 01289	KNOB SPEAKER (BLK)	285W270060
11	GOLD	9965 000 10456	KNOB SPEAKER (GLD)	285W270160
18	BLACK	9965 000 01290	KNOB FUNCTION (BLK)	274W154020
18	GOLD	9965 000 10457	KNOB FUNCTION (GLD)	274W154120
19	BLACK	9965 000 01291	KNOB POWER (BLK)	285W270010
19	GOLD	9965 000 10458	KNOB POWER (GLD)	285W270110
20	BLACK	9965 000 01292	KNOB BALANCE (BLK)	274W154030
20	GOLD	9965 000 10459	KNOB BALANCE (GLD)	274W154130
21	BLACK	9965 000 01293	KNOB VOLUME (BLK)	274W154010
21	GOLD	9965 000 10460	KNOB VOLUME (GLD)	274W154110
22		nsp	CHASSIS BOTTOM	nsp
23		4822 462 11013	FOOT	243W057010
24		nsp	RUBBER CUSHION	nsp
25	N	nsp	PANEL REAR (N)	nsp
25	F	nsp	PANEL REAR (F)	nsp
27		nsp	BUTTON SUPPORT	nsp
28		nsp	HOLDER PCB	nsp
34		nsp	TERMINAL GROUND	nsp
35		nsp	BUSHING AC CORD	nsp
37		nsp	CABINET TOP	nsp
38		nsp	RUBBER	nsp
S1		nsp	SCREW	nsp
S2		nsp	SCREW	nsp
S3		nsp	SCREW	nsp
S4		nsp	SCREW	nsp
S5		nsp	SCREW	nsp
S6		nsp	SCREW	nsp
S7		nsp	SCREW	nsp
S8		nsp	SCREW	nsp
S9		nsp	SCREW	nsp
S10		nsp	SCREW	nsp
S11		nsp	SCREW	nsp
▲ T001	N	9965 000 01294	MAINS TRANSFORMER (N)	*TS001100R
▲ T001	F	nsp	MAINS TRANSFORMER (F)	*TS001090R
▲ W001	N	4822 321 11425	MAINS CORD (N)	*YC000360R
▲ W001	F	nsp	MAINS CORD (F)	*YC000370R
001T	N	9965 000 10440	PACKING USER GUIDE (N)	350W851310
001T	F	nsp	USER GUIDE (F)	350W851110
001Z		9965 000 10441	REMOTE CONTROL UNIT RC4200PM	ZK350W0010
		nsp	NOT STANDARD SPARE PARTS BOX OUT CARTON	350W801010
		nsp	PAD SNOW	274W809010

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

7. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05xxx140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
 R***: 2) GD05xxx160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples ;

① Resistance value
 0.1 Ω 001 10 Ω 100 1 k Ω 102 100 k Ω 104
 0.5 Ω 005 18 Ω 180 2.7 k Ω 272 680 k Ω 684
 1 Ω 010 100 Ω 101 10 k Ω 103 1 M Ω 105
 6.8 Ω 068 390 Ω 391 22 k Ω 223 4.7 M Ω 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.

3) DD1xxx370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V
 ② ③
 Capacity value
 Tolerance

Examples ;

② Tolerance (Capacity deviation)
 ± 0.25 pF 0
 ± 0.5 pF 1
 $\pm 5\%$ 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5 pF ~ 5 pF ± 0.25 pF
 6 pF ~ 10 pF ± 0.5 pF
 12 pF ~ 560 pF $\pm 5\%$

③ Capacity value

0.5 pF 005 3 pF 030 100 pF 101
 1 pF 010 10 pF 100 220 pF 221
 1.5 pF 015 47 pF 470 560 pF 561

C*** : CERAMIC CAP.

4) DK16xxx300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④
 Capacity value

Examples ;

④ Capacity value
 100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C*** : 5) ELECTROLY CAP. ($\frac{\square}{\square}$), 6) FILM CAP. ($\frac{\square}{\square}$)

5) EAxxx10, Electrolytic capacitor
 One-way lead type, Tolerance $\pm 20\%$
 ⑤ ⑥
 Working voltage
 Capacity value

Examples ;

⑤ Capacity value
 0.1 μ F 104 4.7 μ F 475 100 μ F 107
 0.33 μ F 334 10 μ F 106 330 μ F 337
 1 μ F 105 22 μ F 226 1100 μ F 118
 2200 μ F 228

⑥ Working voltage

6.3V 006 25V 025
 10V 010 35V 035
 16V 016 50V 050

6) DF15xxx350 — Plastic film capacitor
 DF15xxx310 — One-way type, Mylar $\pm 5\%$ 50V
 DF16xxx310 — Plastic film capacitor
 One-way type, Mylar $\pm 10\%$ 50V
 ⑦
 Capacity value

Examples ;

⑦ Capacity value
 0.001 μ F (1000 pF) 102 0.1 μ F 104
 0.0018 μ F 182 0.56 μ F 564
 0.01 μ F 103 1 μ F 105
 0.015 μ F 153

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05xxx140	RF25Sxxx Ω J	($\pm 5\%$ 1/4W)
NH05xxx120	RF50Sxxx Ω J	($\pm 5\%$ 1/2W)
NH85xxx110	RF73B2Axxx Ω J	($\pm 5\%$ 1/10W)
NH95xxx140	RF73B2Exxx Ω J	($\pm 5\%$ 1/4W)

* Resistance value Resistance value
 (0.1 Ω – 10 k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05xxx140	ERD-2FCJxxx	($\pm 5\%$ 1/4W)
RF05xxx140	ERD-2FCGxxx	($\pm 2\%$ 1/4W)
NF02xxx140		
RF02xxx140		

* Resistance value * Resistance value

Examples ;

* Resistance value
 0.1 Ω 001 10 Ω 100 1 k Ω 102 100 k Ω 104
 0.5 Ω 005 18 Ω 180 2.7 k Ω 272 680 k Ω 684
 1 Ω 010 100 Ω 101 10 k Ω 103 1 M Ω 105
 6.8 Ω 068 390 Ω 391 22 k Ω 223 4.7 M Ω 475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ -PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol **▲** Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol **▲**. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

▲がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
			MICOM CIRCUIT BOARD						
			CAPACITORS						
C501	nsp		MYLAR 0.039µF 50V J	nsp	Q617		4822 130 11609	TRS. KSC2785Y	*HT300590R
C502	nsp		MYLAR 0.039µF 50V J	nsp	Q631		9965 000 10443	TRS. KRA107M	*BA001060R
C503	nsp		MYLAR 6800pF 50V J	nsp	Q634		9965 000 10443	TRS. KRA107M	*BA001060R
C504	nsp		MYLAR 6800pF 50V J	nsp	Q635		9965 000 10443	TRS. KRA107M	*BA001060R
C507	nsp		ELECT 10µF 50V	nsp	Q636		9965 000 10443	TRS. KRA107M	*BA001060R
C508	nsp		ELECT 10µF 50V	nsp	Q683		4822 130 11612	TRS. KSD1021Y	*HT400380R
C509	nsp		METAL POLYESTER	nsp	Q684		4822 130 11612	TRS. KSD1021Y	*HT400380R
			0.12µF 63V K		Q687		4822 130 11613	TRS. KSB811Y	*HT200340R
C510	nsp		METAL POLYESTER	nsp	Q688		4822 130 11613	TRS. KSB811Y	*HT200340R
			0.12µF 63V K		Q689		9965 000 10444	TRS. KRC107M	*BA001070R
C511	nsp		METAL POLYESTER	nsp	Q690		9965 000 10444	TRS. KRC107M	*BA001070R
			0.82µF 63V		Q691		9965 000 10444	TRS. KRC107M	*BA001070R
C512	nsp		METAL POLYESTER	nsp				RESISTORS	
			0.82µF 63V		R501	nsp		120 Ω 1/5W J	nsp
C521	nsp		MYLAR 1000pF 50V J	nsp	R502	nsp		120 Ω 1/5W J	nsp
C522	nsp		MYLAR 1000pF 50V J	nsp	R503	nsp		820 Ω 1/5W J	nsp
C523	nsp		MYLAR 0.1µF 50V J	nsp	R504	nsp		820 Ω 1/5W J	nsp
C524	nsp		MYLAR 0.1µF 50V J	nsp	R505	nsp		68 Ω 1/5W J	nsp
C527	nsp		CER. 0.01µF 50V Z	nsp	R506	nsp		68 Ω 1/5W J	nsp
C601	nsp		CER. 0.01µF 50V Z	nsp	R507	nsp		5.6 k Ω 1/5W J	nsp
C602	nsp		CER. 0.01µF 50V Z	nsp	R508	nsp		5.6 k Ω 1/5W J	nsp
C606	nsp		ELECT 10µF 50V	nsp	R511	nsp		10 k Ω 1/5W J	nsp
C611	nsp		ELECT 220µF 16V	nsp	R512	nsp		10 k Ω 1/5W J	nsp
C612	nsp		CER. 0.01µF 50V Z	nsp	R513	nsp		820 Ω 1/5W J	nsp
C613	nsp		ELECT 220µF 16V	nsp	R514	nsp		820 Ω 1/5W J	nsp
C617	nsp		CER. 100pF 50V K	nsp	R521	nsp		47 k Ω 1/5W J	nsp
C618	nsp		CER. 0.01µF 50V Z	nsp	R522	nsp		47 k Ω 1/5W J	nsp
C619	nsp		ELECT 10µF 50V	nsp	R523	nsp		5.6 k Ω 1/5W J	nsp
C620	nsp		CER. 0.01µF 50V Z	nsp	R524	nsp		5.6 k Ω 1/5W J	nsp
					R525	nsp		15 k Ω 1/5W J	nsp
C621	nsp		CER. 0.01µF 50V Z	nsp	R526	nsp		15 k Ω 1/5W J	nsp
C622	nsp		ELECT 220µF 16V	nsp					
C623	nsp		ELECT 10µF 50V	nsp	R601	nsp		22 k Ω 1/5W J	nsp
C625	nsp		CER. 33pF 50V J	nsp	R602	nsp		10 k Ω 1/5W J	nsp
C626	nsp		CER. 33pF 50V J	nsp	R603	nsp		22 k Ω 1/5W J	nsp
C627	nsp		CER. 0.01µF 50V Z	nsp	R604	nsp		4.7 k Ω 1/5W J	nsp
C681	nsp		ELECT 220µF 16V	nsp	R605	nsp		2.2 k Ω 1/5W J	nsp
C687	nsp		ELECT 10µF 50V	nsp	R606	nsp		100 Ω 1/5W J	nsp
C688	nsp		ELECT 10µF 50V	nsp	R607	nsp		47 k Ω 1/5W J	nsp
C691	nsp		MYLAR 0.01µF 50V J	nsp	R608	nsp		22 k Ω 1/5W J	nsp
C692	nsp		MYLAR 0.01µF 50V J	nsp	R611	nsp		100 Ω 1/5W J	nsp
C693	nsp		CER. 0.01µF 50V Z	nsp	R612	nsp		100 Ω 1/5W J	nsp
C694	nsp		CER. 0.01µF 50V Z	nsp	R613	nsp		10 k Ω 1/5W J	nsp
C695	nsp		CER. 0.1µF 50V Z	nsp	R614	nsp		10 k Ω 1/5W J	nsp
					R615	nsp		47 k Ω 1/5W J	nsp
D601		4822 130 30621	DIODE 1N4148M	*HD201550R	R616	nsp		22 k Ω 1/5W J	nsp
D606		4822 130 30621	DIODE 1N4148M	*HD201550R	R617	nsp		22 k Ω 1/5W J	nsp
D613		4822 130 30621	DIODE 1N4148M	*HD201550R	R618	nsp		10 Ω 1/5W J	nsp
D621		4822 130 30621	DIODE 1N4148M	*HD201550R	R619	nsp		10 k Ω 1/5W J	nsp
D622		4822 130 30621	DIODE 1N4148M	*HD201550R	R620	nsp		10 Ω 1/5W J	nsp
D623		4822 130 32778	DIODE 1N4148 or 1SS133	HD20015210	R621	nsp		470 k Ω 1/5W J	nsp
D651					R622	nsp		100 Ω 1/5W J	nsp
∫		4822 130 82725	L.E.D SLR342VCTB7 (RED)	HI10071210	R635	nsp		4.7 k Ω 1/5W J	nsp
D657					R636	nsp		4.7 k Ω 1/5W J	nsp
D675		4822 130 82725	L.E.D SLR342VCTB7 (RED)	HI10071210	R637	nsp		4.7 k Ω 1/5W J	nsp
D676		4822 130 82725	L.E.D SLR342VCTB7 (RED)	HI10071210	R651				
					∫	nsp		470 k Ω 1/5W J	nsp
			INTEGRATED CIRCUIT		R657	nsp		390 Ω 1/5W J	nsp
IC61		9965 000 10442	IC MICOM M37531M4-XXXFP (MUSK)	*HU100530R	R658	nsp		390 Ω 1/5W J	nsp
					R659	nsp		390 Ω 1/5W J	nsp
			TRANSISTORS		R675	nsp		390 Ω 1/5W J	nsp
Q603		4822 130 11609	TRS. KSC2785Y	*HT300590R	R681	nsp		10 Ω 1/5W J	nsp
Q604		4822 130 11609	TRS. KSC2785Y	*HT300590R	R683	nsp		4.7 k Ω 1/5W J	nsp
Q605		4822 130 11609	TRS. KSC2785Y	*HT300590R	R684	nsp		4.7 k Ω 1/5W J	nsp
Q613		4822 130 11611	TRS. KSA1175Y	*HT100390R	R685	nsp		47 k Ω 1/5W J	nsp
					R686	nsp		47 k Ω 1/5W J	nsp
					R687	nsp		4.7 k Ω 1/5W J	nsp
					R688	nsp		4.7 k Ω 1/5W J	nsp

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R689		nsp	7.5 k Ω 1/5W J	nsp	C104		nsp	CER. 150pF 50V K	nsp
R690		nsp	5.6 k Ω 1/5W J	nsp	C105		nsp	ELECT 10 μ F 50V	nsp
R691		4822 053 10331	METAL OXIDE FILM	GA05331010	C106		nsp	ELECT 10 μ F 50V	nsp
			330 Ω 1W J		C107		nsp	CER. 470pF 50V K	nsp
R692		4822 053 10331	METAL OXIDE FILM	GA05331010	C108		nsp	CER. 470pF 50V K	nsp
			330 Ω 1W J		C109		nsp	ELECT 47 μ F 25V	nsp
R693		nsp	3.3 k Ω 1/5W J	nsp	C110		nsp	ELECT 47 μ F 25V	nsp
R694		nsp	2.7 k Ω 1/5W J	nsp	C111		nsp	MYLAR 0.047 μ F 50V J	nsp
R695		nsp	1.8 k Ω 1/5W J	nsp	C112		nsp	MYLAR 0.047 μ F 50V J	nsp
R696		nsp	1.5 k Ω 1/5W J	nsp	C113		nsp	MYLAR 0.012 μ F 50V J	nsp
R697		nsp	1 k Ω 1/5W J	nsp	C114		nsp	MYLAR0.012 μ F 50V J	nsp
R698		nsp	390 Ω 1/5W J	nsp	C115		nsp	MYLAR 1000pF 50V J	nsp
R699		nsp	22 k Ω 1/5W J	nsp	C116		nsp	MYLAR 1000pF 50V J	nsp
R700		nsp	22 k Ω 1/5W J	nsp	C117		nsp	ELECT 10 μ F 50V	nsp
R701		nsp	10 k Ω 1/5W J	nsp	C118		nsp	ELECT 10 μ F 50V	nsp
R702		nsp	22 k Ω 1/5W J	nsp	C119		nsp	MYLAR 3900pF 50V J	nsp
R703		nsp	5.6 k Ω 1/5W J	nsp	C120		nsp	MYLAR 3900pF 50V J	nsp
					C121		nsp	ELECT 100 μ F 16V	nsp
VR51		9965 000 01297	VARIABLE RK14K128030214Y	*RM000400R	C122		nsp	ELECT 100 μ F 16V	nsp
VR53		4822 101 11951	VR MOTOR RK16312MC (100 k Ω)	*RM000350R	C201		nsp	CER. 0.022 μ F 50V Z	nsp
VR54		9965 000 01298	TONE RK14K128030214C	*RM000410R	C214		nsp		
VR55		9965 000 01298	TONE RK14K128030214C	*RM000410R	C221		nsp		
VR65		4822 273 10373	SW ROTARY SRBV18	*SR000100R	C234		nsp	CER. 150pF 50V K	nsp
			WIRE ASS'Y		C251		nsp		
BN12		nsp	SHIELD LG 2.5MM (04P)	nsp	C254		nsp	CER. 0.022 μ F 50V Z	nsp
BN31		nsp	SHIELD 2.5MM (03P)	nsp	C255		nsp	ELECT 4.7 μ F 50V	nsp
BN32		nsp	SHIELD 2.0MM (03P)	nsp	C256		nsp	ELECT 4.7 μ F 50V	nsp
BN33		nsp	SHIELD 2.5MM (04P)	nsp	C281		nsp	CER. 0.01 μ F 50V Z	nsp
BN35		nsp	WIRE ASS'Y	nsp	C282		nsp	CER. 0.01 μ F 50V Z	nsp
BN55		nsp	WIRE ASS'Y	nsp	C283		nsp	CER. 0.022 μ F 50V Z	nsp
BN93		nsp	WIRE ASS'Y	nsp					
BN95		nsp	WIRE ASS'Y	nsp					
JW52		nsp	ST710388-5298T	nsp	C301		nsp	CER. 330pF 50V K	nsp
JW61		nsp	WIRE ASS'Y	nsp	C302		nsp	CER. 330pF 50V K	nsp
JW96		nsp	MOMS POWER S/W	nsp	C303		nsp	ELECT 10 μ F 50V	nsp
			SOCKET TERMINAL		C304		nsp	ELECT 10 μ F 50V	nsp
CB51		nsp	WAFER	nsp	C305		nsp	CER. 47pF 50V J	nsp
CB53		nsp	WAFER	nsp	C306		nsp	CER. 47pF 50V J	nsp
CN51		nsp	WAFER	nsp	C309		nsp	ELECT 100 μ F 16V	nsp
CN53		nsp	WAFER	nsp	C310		nsp	ELECT 100 μ F 16V	nsp
CN55		nsp	WAFER MOLEX 5268-03A	nsp	C311		nsp	ELECT 22 μ F 25V	nsp
					C312		nsp	ELECT 22 μ F 25V	nsp
JK61		9965 000 01300	PHONES JACK HTJ-064-03B (G)	*YT001820R	C313		nsp	CER. 5pF 50V C	nsp
			MISCELLANEOUS		C314		nsp	CER. 5pF 50V C	nsp
BK61		nsp	BRACKET PCB	nsp	C319		nsp	CER. 150pF 50V K	nsp
RC61		9965 000 06833	SENSOR REMOCON RPM6936-H4	HW10008210	C320		nsp	CER. 150pF 50V K	nsp
					C321		nsp	CER. 10pF 50V D	nsp
SW31		9965 000 01301	VR ENCODER EC16B1220408A	*SR000120R	C322		nsp	CER. 10pF 50V D	nsp
SW51		9965 000 01302	SW PUSH (VERTICAL) 220014	*SP000940R	C323		nsp	ELECT 47 μ F 25V	nsp
SW52		9965 000 01302	SW PUSH (VERTICAL) 220014	*SP000940R	C324		nsp	ELECT 47 μ F 25V	nsp
SW61		4822 276 14103	SW PUSH SPUL19XIM071	*SP000860R			nsp		
SW62		4822 276 14103	SW PUSH SPUL19XIM071	*SP000860R	C350		nsp	CER. 120pF 50V K	nsp
SW91		4822 276 14105	SW PUSH (MOMS) JPP1197-1	*SP000850R	C367		nsp	MYLAR 0.047 μ F 50V J	nsp
X621		4822 242 10855	CRYSTAL	*JX000410R	C368		nsp	MYLAR 0.047 μ F 50V J	nsp
			MAIN CIRCUIT BOARD		C373		nsp	MYLAR 0.01 μ F 50V J	nsp
			CAPACITORS		C374		nsp	MYLAR 0.01 μ F 50V J	nsp
C101		nsp	CER. 0.022 μ F 50V Z	nsp	C379		nsp	ELECT 4.7 μ F 50V	nsp
C102		nsp	CER. 0.022 μ F 50V Z	nsp	C385		nsp	CER. 0.01 μ F 50V Z	nsp
C103		nsp	CER. 150pF 50V K	nsp	C391		nsp		
							nsp	MYLAR 0.01 μ F 50V J	nsp

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POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C901		nsp	SEMI 0.1μF 50V Z	nsp	Q348		4822 130 11616	TRS. KTC3200GR	*HT300610R
C902		nsp	SEMI 0.1μF 50V Z	nsp	Q349		4822 130 11615	TRS. KTA1268GR	*HT100400R
C903		nsp	SEMI 0.1μF 50V Z	nsp	Q350		4822 130 11615	TRS. KTA1268GR	*HT100400R
C905		4822 124 12411	ELECT 6800μF 50V	*EA000840R	Q351		4822 130 11618	TRS. DRIVER 2SC4883A	*HT300570R
C906		4822 124 12411	ELECT 6800μF 50V	*EA000840R	Q352		4822 130 11618	TRS. DRIVER 2SC4883A	*HT300570R
C911		nsp	MYLAR 0.01μF 50V J	nsp	Q353		4822 130 11619	TRS. DRIVER 2SA1859A (SAN)	*HT100380R
C912		nsp	MYLAR 0.01μF 50V J	nsp	Q354		4822 130 11619	TRS. DRIVER 2SA1859A (SAN)	*HT100380R
C914		nsp	ELECT 3.3μF 50V	nsp	Q355		4822 130 63433	TRS. POWER 2SC4467	HT344673A0
C917		4822 124 12412	ELECT 2200μF 25V	*EA000830R	Q356		4822 130 63433	TRS. POWER 2SC4467	HT344673A0
C918		4822 124 12412	ELECT 2200μF 25V	*EA000830R	Q357		4822 130 63367	TRS. POWER 2SA1694	HT116943A0
C919		nsp	ELECT 47μF 25V	nsp	Q358		4822 130 63367	TRS. POWER 2SA1694	HT116943A0
C920		nsp	ELECT 47μF 25V	nsp	Q371		4822 130 11609	TRS. KSC2785Y	*HT300590R
C921		nsp	ELECT 100μF 16V	nsp	Q372		4822 130 11609	TRS. KSC2785Y	*HT300590R
C922		nsp	ELECT 100μF 16V	nsp	Q379		4822 130 11611	TRS. KSA1175Y	*HT100390R
C923		nsp	ELECT 47μF 25V	nsp	Q385		4822 130 11609	TRS. KSC2785Y	*HT300590R
C926		nsp	ELECT 22μF 25V	nsp	Q386		4822 130 11611	TRS. KSA1175Y	*HT100390R
C927		nsp	ELECT 47μF 25V	nsp					
C928		nsp	CER. 0.047μF 50V Z	nsp	Q921		4822 130 11617	TRS. KSC2316Y	*HT300580R
C929		nsp	CER. 0.047μF 50V Z	nsp	Q922		4822 130 63485	TRS. KTC3198Y	*HT300690R
C930		nsp	CER. (KH) DE1310-610E472M	nsp	Q923		4822 130 63485	TRS. KTC3198Y	*HT300690R
C931		4822 124 22723	ELECT 1000μF 25V	OA10802520	Q924		9965 000 10443	TRS. KRA107M	*BA001060R
C935		9965 000 04979	LINE ACROSS 0.1μF 250V KD	DF17104630					
			DIODES						
D251		4822 130 30621	DIODE 1N4148M	*HD201550R	R101		nsp	1 k Ω 1/5W J	nsp
D252		4822 130 30621	DIODE 1N4148M	*HD201550R	R102		nsp	1 k Ω 1/5W J	nsp
D323		4822 130 10702	DIODE ZENER 8.2V 1/2W	*HD301600R	R103				
D324		4822 130 11627	DIODE ZENER 15V 1/2W	*HD301590R	}		nsp	100 k Ω 1/5W J	nsp
D331					R106				
}		4822 130 30621	DIODE 1N4148M	*HD201550R	R109		nsp	120 Ω 1/5W J	nsp
D334					R110		nsp	120 Ω 1/5W J	nsp
D373		4822 130 30621	DIODE 1N4148M	*HD201550R	R111		nsp	100 k Ω 1/5W J	nsp
D374		4822 130 30621	DIODE 1N4148M	*HD201550R	R112		nsp	100 k Ω 1/5W J	nsp
D383		4822 130 30621	DIODE 1N4148M	*HD201550R	R113		nsp	5.6 k Ω 1/5W J	nsp
D388		4822 130 30621	DIODE 1N4148M	*HD201550R	R114		nsp	5.6 k Ω 1/5W J	nsp
D901		4822 130 11628	DIODE BRIDGE	*HE200190R	R115		nsp	100 Ω 1/5W J	nsp
D911					R116		nsp	100 Ω 1/5W J	nsp
}		4822 130 31878	DIODE 1N4003	HD200010AR	R117		nsp	220 Ω 1/5W J	nsp
D914					R118		nsp	220 Ω 1/5W J	nsp
D915		4822 130 30621	DIODE 1N4148M	*HD201550R	R119		nsp	47 k Ω 1/5W J	nsp
D921		4822 130 11627	DIODE ZENER 15V 1/2W	*HD301590R	R120		nsp	47 k Ω 1/5W J	nsp
D922		4822 130 30621	DIODE 1N4148M	*HD201550R	R121		nsp	47 Ω 1/5W J	nsp
D923		4822 130 30621	DIODE 1N4148M	*HD201550R	R122		nsp	47 Ω 1/5W J	nsp
D924		4822 130 30621	DIODE 1N4148M	*HD201550R	R201		}		
D925		4822 130 83142	DIODE ZENER 6.2V 1/2W	HD30621000	}		nsp	10 Ω 1/5W J	nsp
D929		4822 130 30621	DIODE 1N4148M	*HD201550R	R214				
			INTEGRATED CIRCUIT		R221				
IC11		4822 209 73064	IC OP AMP NJM2068DD	HC10053090	}		nsp	1M Ω 1/5W J	nsp
IC21		4822 209 13648	IC FUNCTION LC78212	*HC104800R	R234				
IC22		4822 209 13648	IC FUNCTION LC78212	*HC104800R	R235		}		
IC31		4822 209 83732	IC VOLTAGE AMP AN7062N	HC10066020	R238		nsp	100 Ω 1/5W J	nsp
IC93		4822 209 91033	IC KA7815-ABTU	*HC300220R	R251		}		
IC94		5322 209 86361	IC KA7915-ABTU	*HC300230R	R254		nsp	120 Ω 1/5W J	nsp
IC95		4822 209 90086	IC KA7805-ABTU	*HC300210R	R255		nsp	10 k Ω 1/5W J	nsp
F901	N	nsp	HOLDER FUSE	nsp	R256		nsp	10 k Ω 1/5W J	nsp
F902	F	nsp	HOLDER FUSE	nsp	R258		nsp	10 k Ω 1/5W J	nsp
			TRANSISTORS		R271		nsp	220 Ω 1/5W J	nsp
Q281		9965 000 10445	TRS. MUTE KTC2874B	*HT300810R	R272		nsp	220 Ω 1/5W J	nsp
Q282		9965 000 10445	TRS. MUTE KTC2874B	*HT300810R	R273		nsp	120 Ω 1/5W J	nsp
Q325		4822 130 11615	TRS. KTA1268GR	*HT100400R	R274		nsp	120 Ω 1/5W J	nsp
Q326		4822 130 11615	TRS. KTA1268GR	*HT100400R	R275		nsp	120 Ω 1/5W J	nsp
Q335		4822 130 11616	TRS. KTC3200GR	*HT300610R	R281		nsp	470 k Ω 1/5W J	nsp
Q336		4822 130 11616	TRS. KTC3200GR	*HT300610R	R282		nsp	470 k Ω 1/5W J	nsp
Q345		4822 130 60117	TRS. 2SC3419Y	HT334191Y0	R283		nsp	1M Ω 1/5W J	nsp
Q346		4822 130 60117	TRS. 2SC3419Y	HT334191Y0	R284		nsp	10 k Ω 1/5W J	nsp
Q347		4822 130 11616	TRS. KTC3200GR	*HT300610R	R301		nsp	100 Ω 1/5W J	nsp
					R302		nsp	100 Ω 1/5W J	nsp
					R303		nsp	10 Ω 1/5W J	nsp
								RESISTORS	

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POS. NO	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C925		nsp	BACK UP CIRCUIT BOARD CAPACITORS SEMI 0.1μF 50V Z	nsp
C932		nsp	ELECT 47μF 25V	nsp
C933		nsp	CER. 0.01μF 50V Z	nsp
C934		nsp	CER. 0.022μF 50V Z	nsp
▲ D926		4822 130 31878	DIODES DIODE 1N4003	HD200010AR
D927		4822 130 30621	DIODE 1N4148M	*HD201550R
▲ D928		4822 130 31878	DIODE 1N4003	HD200010AR
IC96		4822 209 90086	INTEGRATED CIRCUIT IC KA7805-ABTU	*HC300210R
Q925		4822 130 42292	TRANSISTORS TRS. KTC3203Y	*HT300700R
R930		nsp	RESISTORS 10 k Ω 1/5W J	nsp
R931		4822 115 90166	10 Ω 1/4W	NF02100140
R932		nsp	47 k Ω 1/5W J	nsp
BN91		nsp	WIRE ASS'Y WIRE ASS'Y	nsp
BN92		nsp	WIRE ASS'Y	nsp
JW36		nsp	WIRE (BLACK) MOLEX-5298T	nsp
JW91	F	nsp	WIRE ASS'Y	nsp
JW92	F	nsp	WIRE ASS'Y	nsp
JW93		nsp	WIRE (BLACK) MOLEX-5298T	nsp
JW94	F	nsp	WIRE (BLUE) MOLEX-5298T	nsp
JW95	N	nsp	WIRE (RED) MOLEX-5298T	nsp
JW97		nsp	WIRE (RED) MOLEX-5298T	nsp
JW98	F	nsp	WIRE (BLUE) MOLEX-5298T	nsp
RY92		9965 000 02031	RELAY RELAY SDT-S-112DMR	*LY000230R
▲ TRS1	F	nsp	MISCELLANEOUS TRANSF. SUB 100V	*TS001070R
▲ TRS1	N	9965 000 01305	TRANSF. SUB 230V	*TS001080R
TW91		nsp	WAFER 7.92MM	nsp
▲ OL92	F	nsp	OUTLET 3PIN USA A206D0051P	*YT001810R
▲ F901	N	4822 070 11602	FUSE 250V T1.6A	*FS000530R
▲ F902	F	nsp	FUSE 250V T3.15A	*FS000540R
▲ PWR1	N	9965 000 01294	TRANSF. POWER 230V	*TS001100R
▲ PWR1	F	nsp	TRANSF. POWER 100V	*TS001090R

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