

Service Manual

AV600U/K
74AV600/02B

Audio/Video preamplifier/tuner

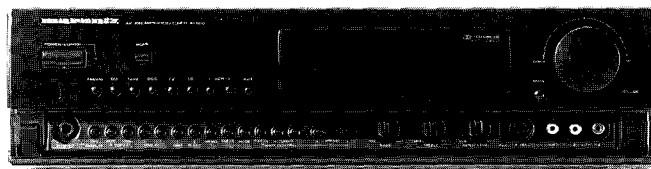


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Please use this service manual with referring to the user guide(D.F.U.) without fail.

marantz®

model AV600

4822 725 51097
PCS 85 893

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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.

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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
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営業本部 〒150 東京都渋谷区恵比寿南1丁目11番9号

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

FM TUNER SECTION

Frequency Range	87.5 – 108.0 MHz
Usable Sensitivity	IHF 1.3 μ V/13.5dB
Signal to Noise Ratio	Mono/Stereo 76/68 dB
Distortion	Mono/Stereo 0.2/0.5 %
Stereo Separation	1 kHz 40 dB
A.C.S.	$\pm$ 400 kHz 65 dB (U version) $\pm$ 300 kHz 65 dB (K version) $\pm$ 300 kHz 65 dB (/02B version)
Image Rejection	98 MHz 50 dB (U/K version) 70 dB (/02B version)
Tuner Output Level	1 kHz, $\pm$ 75 kHz Dev 800 mV (U version) 1 kHz, $\pm$ 40 kHz Dev 800 mV (K version) 1 kHz, $\pm$ 40 kHz Dev 800 mV (/02B version)

MW/LW TUNER SECTION

Frequency Range	520 – 1710 kHz (U version) 531 – 1602 kHz (K version) 152 – 282 kHz (LW, /02B version) 531 – 1602 kHz (MW, /02B version)
Signal to Noise Ratio	50 dB
Usable Sensitivity	Loop 500 μ V
Distortion	1 kHz, 30 % Mod. 0.5 %
Selectivity	$\pm$ 20 kHz 70 dB (U version) $\pm$ 9 kHz 30 dB (K version) $\pm$ 9 kHz 30 dB (/02B version)

AUDIO

Input Sensitivity/Impedance	168 mV/47 Kohms
Output Level/Impedance	1.0 V/600 ohms
Total Harmonic Distortion	0.006 %
Crosstalk	76 dB/ 10 kHz
Audio Frequency Response	10 Hz to 30 kHz (–3 dB)
Noise VOL MIN (Weighted)	3.5 μ V
VOL MAX (Weighted)	15 μ V
S/N	90 dB
Dolby Surround Channel Separation	40 dB

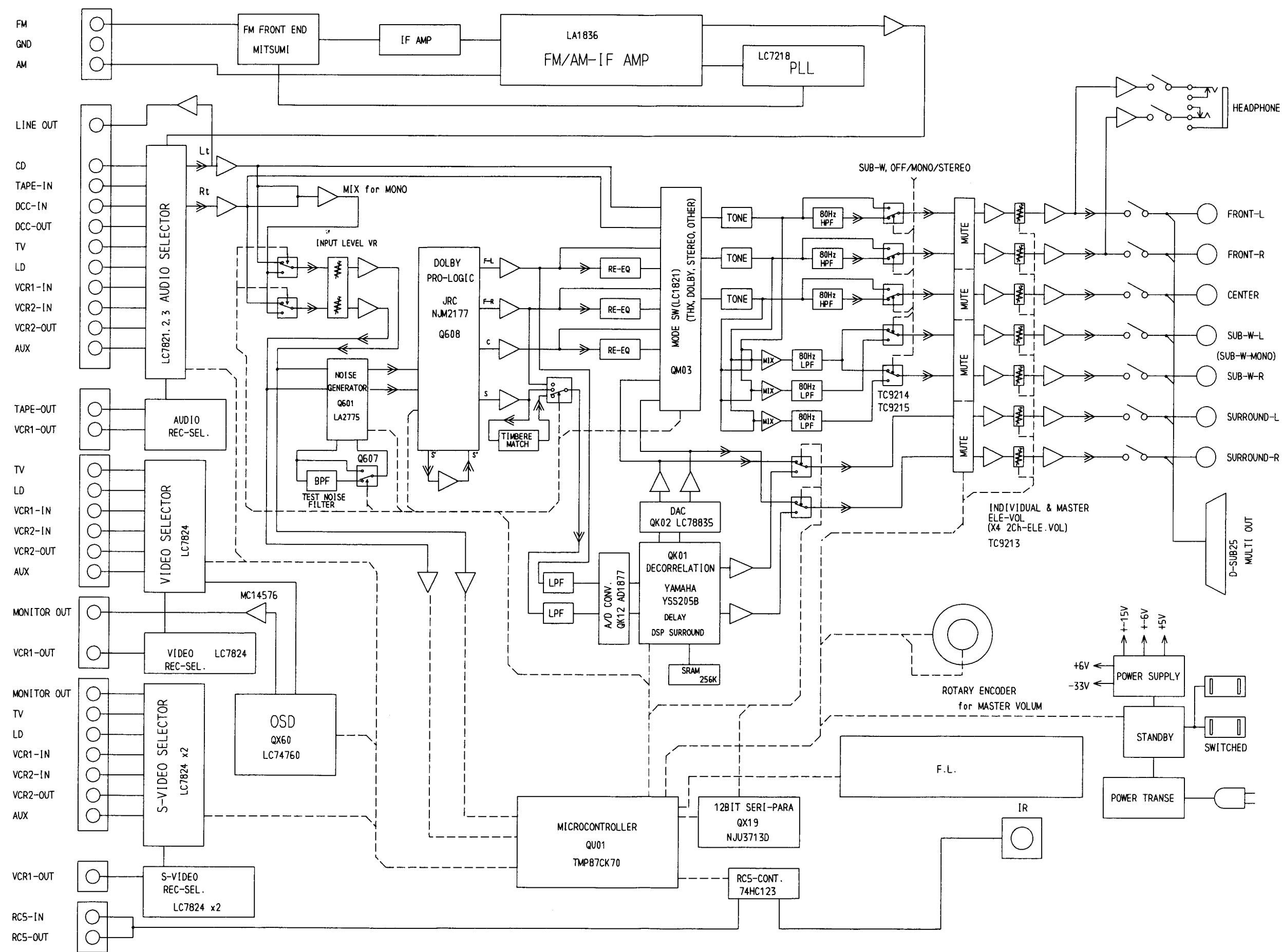
VIDEO

Television Format	NTSC (U version) PAL/SECAM/NTSC (K version) PAL/SECAM/NTSC (/02B version)
Input Level/Impedance	1 Vp-p/75 ohms
Output Level/Impedance	1 Vp-p/75 ohms
Video Frequency Response	5 Hz to 8 MHz (–3 dB)
S/N	60 dB

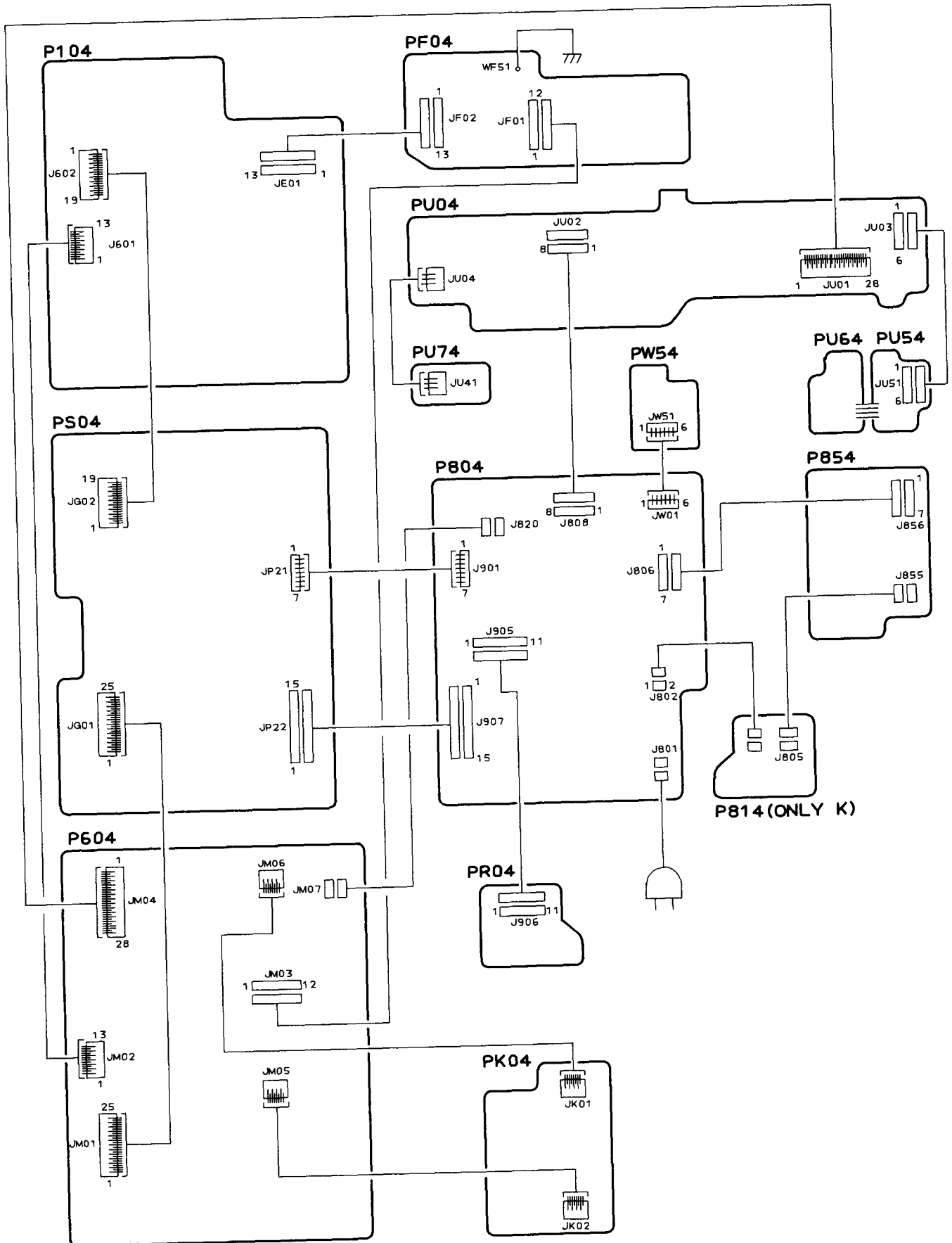
GENERAL

Power Requirement	AC 120 V 60 Hz (U version) AC 110/220 V 50/60 Hz (K version) AC 230 V 50 Hz (/02B version)
Power Consumption	30 W
Dimension (MAX)	
Width	16- ³ / ₄ inches (426 mm)
Height	4- ³ / ₈ inches (112.5mm)
Depth	14- ³ / ₈ inches (366.6mm)
Weight	12 lbs (5.4 kg)

2. BLOCK DIAGRAM



3. WIRING DIAGRAM



4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)

QG15
QG12
QG04
QD02 QG08
QG14 QD11
QD07-QD09

QD01 QD06
QD10 QD05
QS15 QD12
QG10 QG13
QG02 QG06

QS22 QD03
QD03 QD13
QD14 QG05

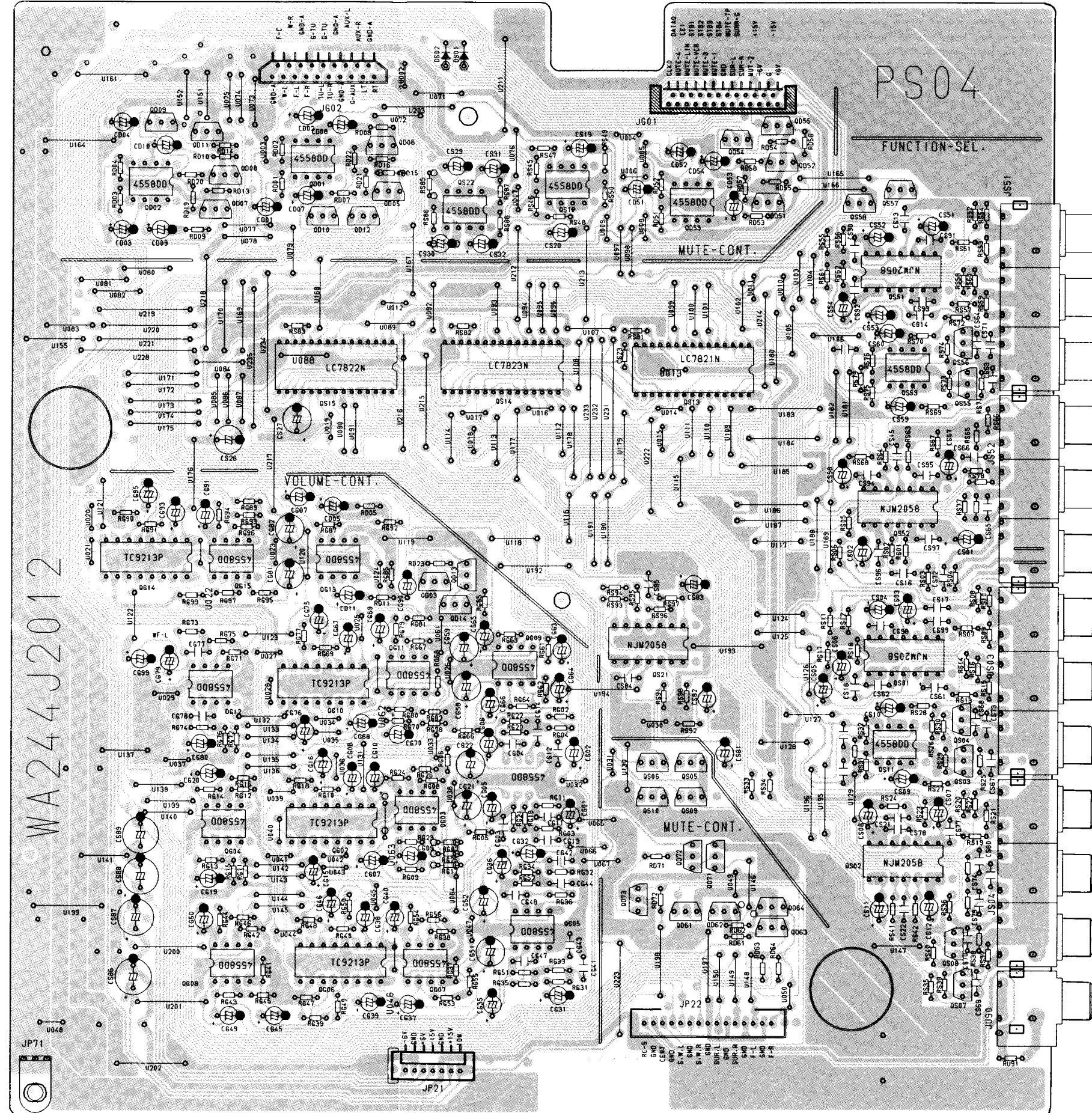
QS14
QG09
QG05

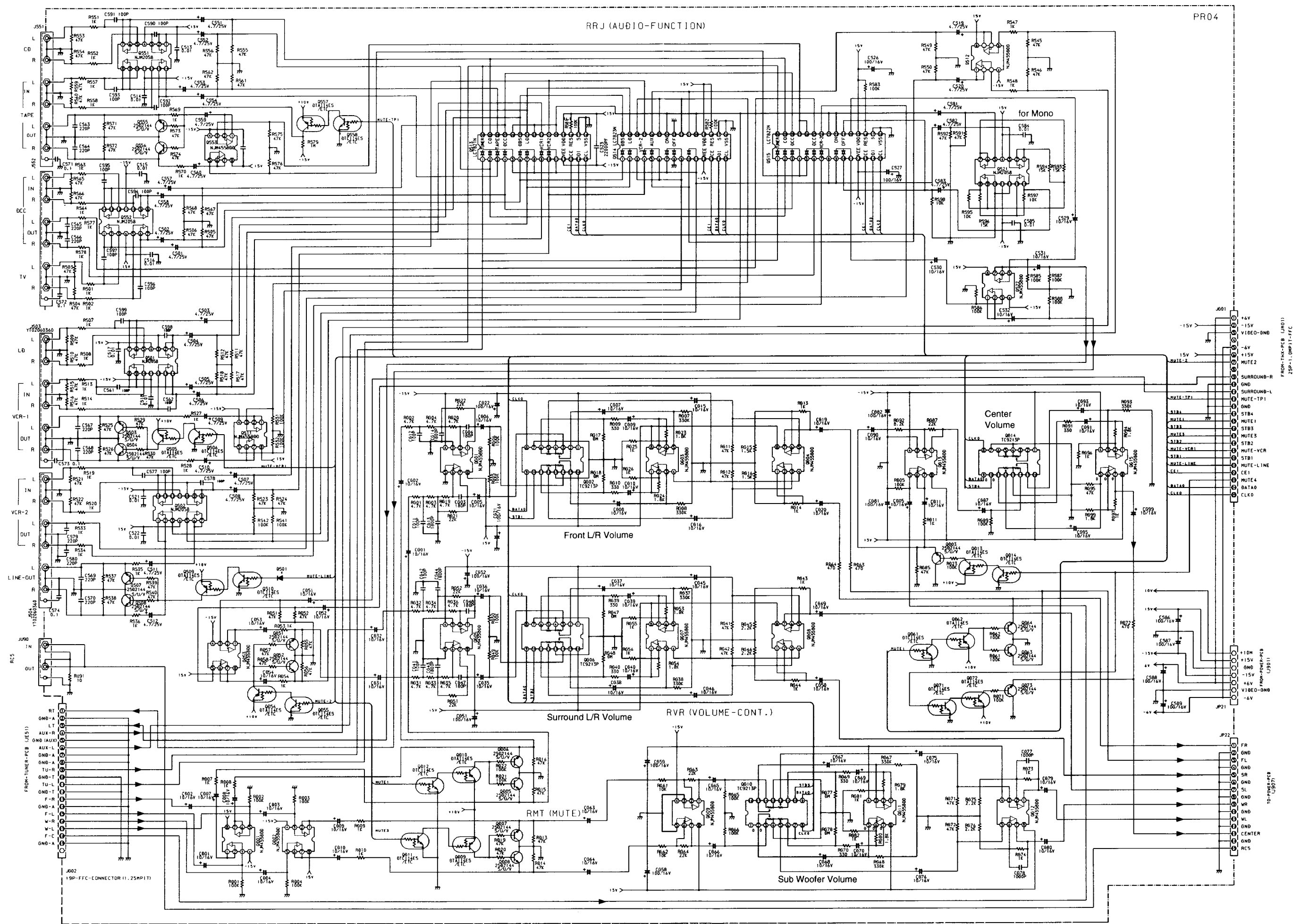
QS12

QS21 QS13
QS06 QS05
QS10 QS09
QD71-QD73
QD61-QD64

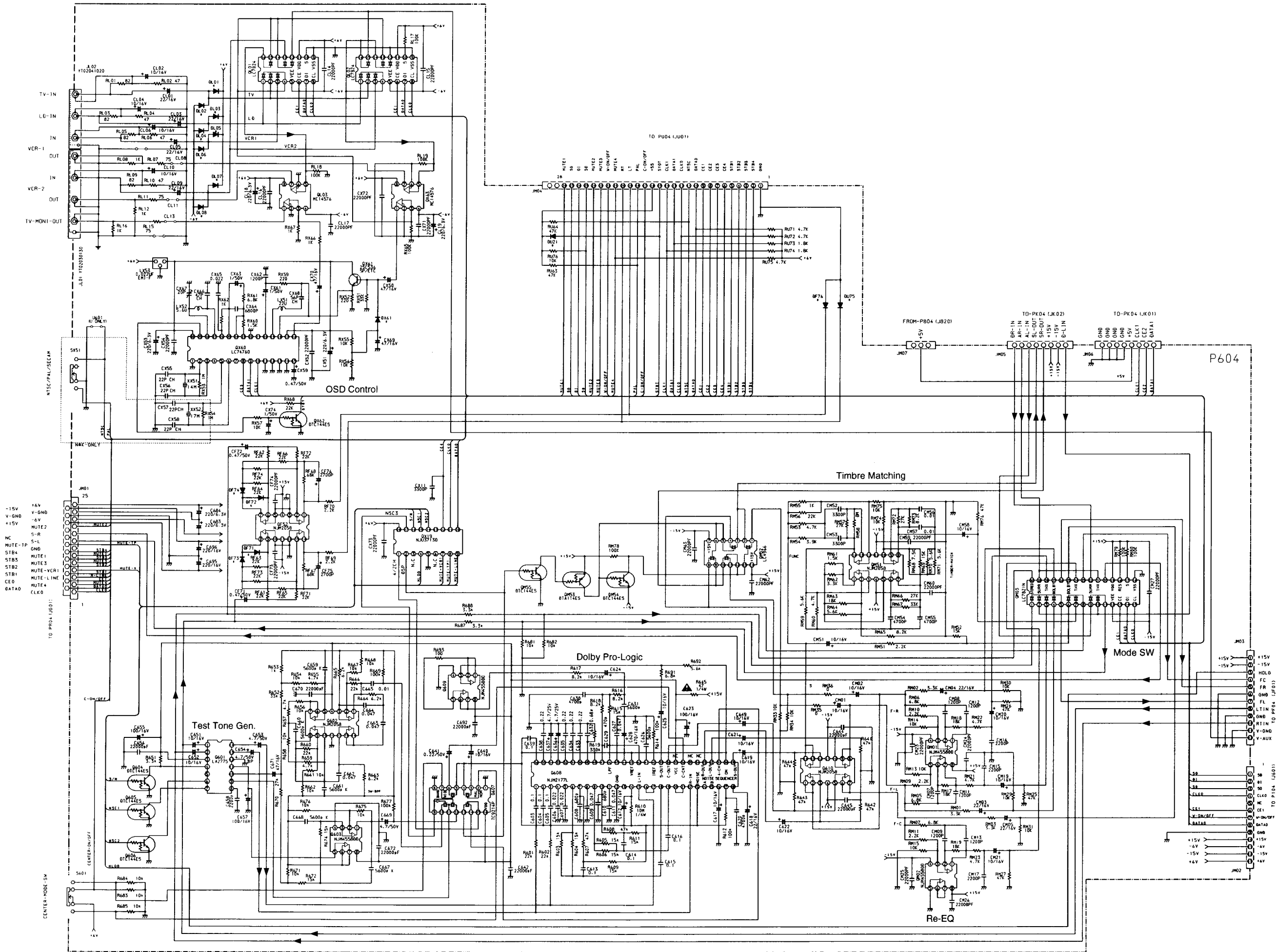
QS55-QS58
QS51-QS53
QS01-QS04
QS11 QS08
QS07

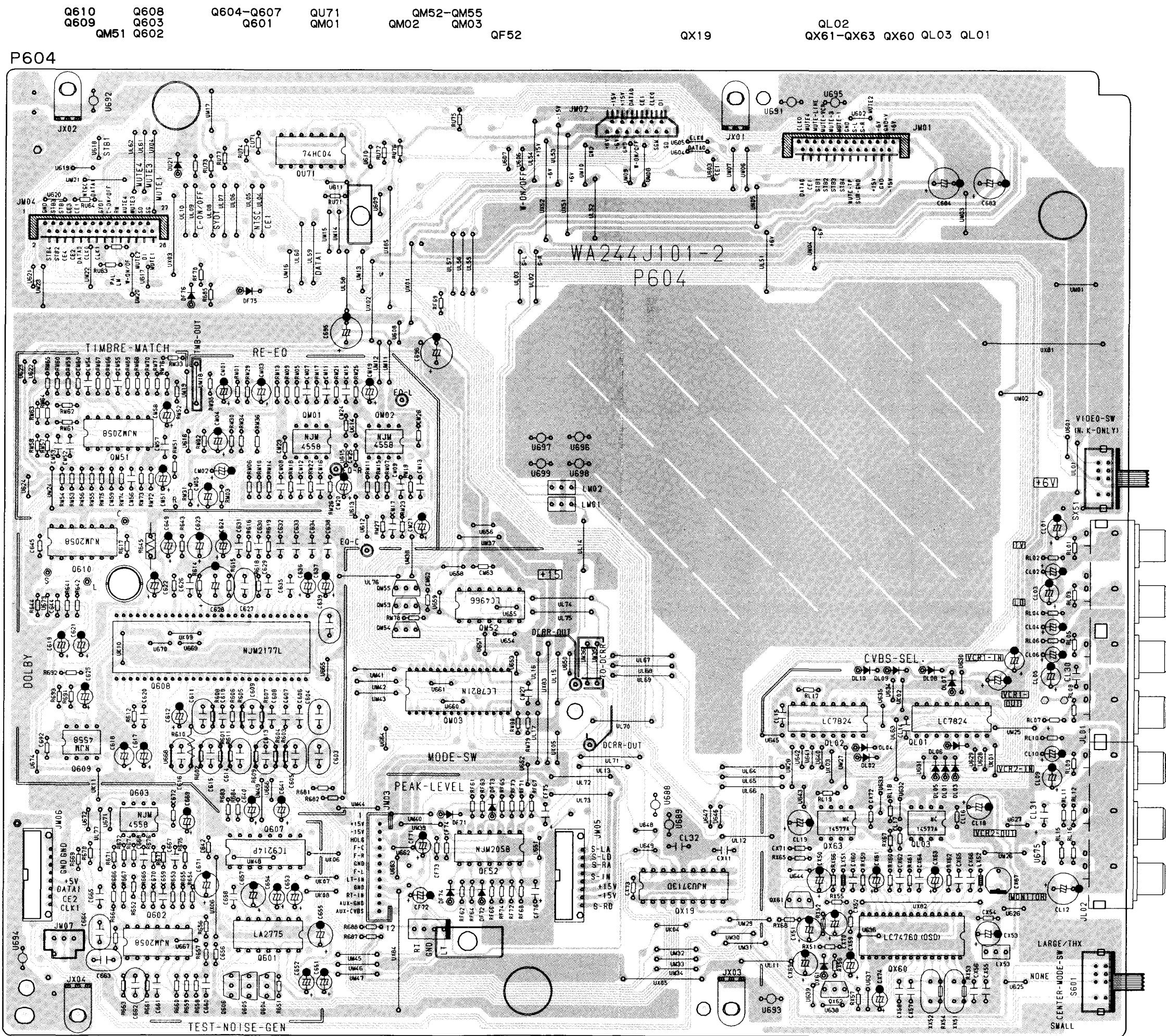
PS04



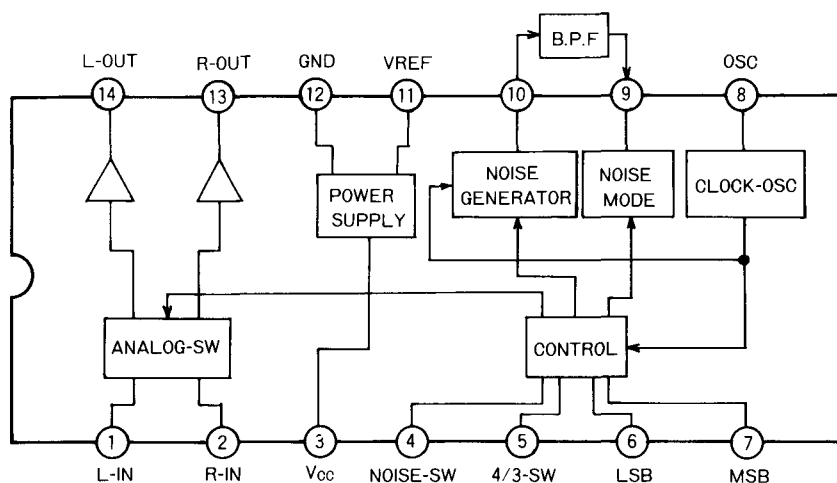


ONLY-N : C561-70 C577-80 C590-99

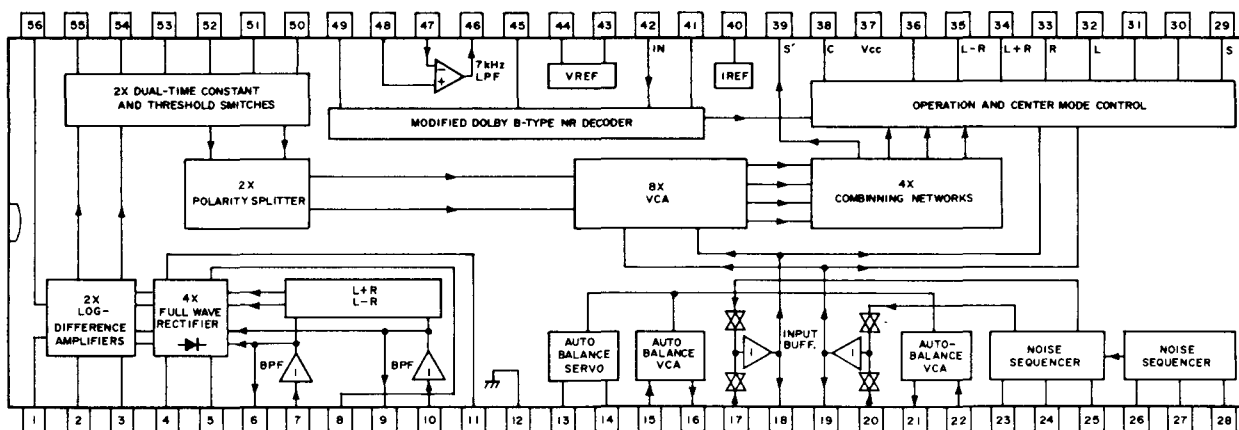




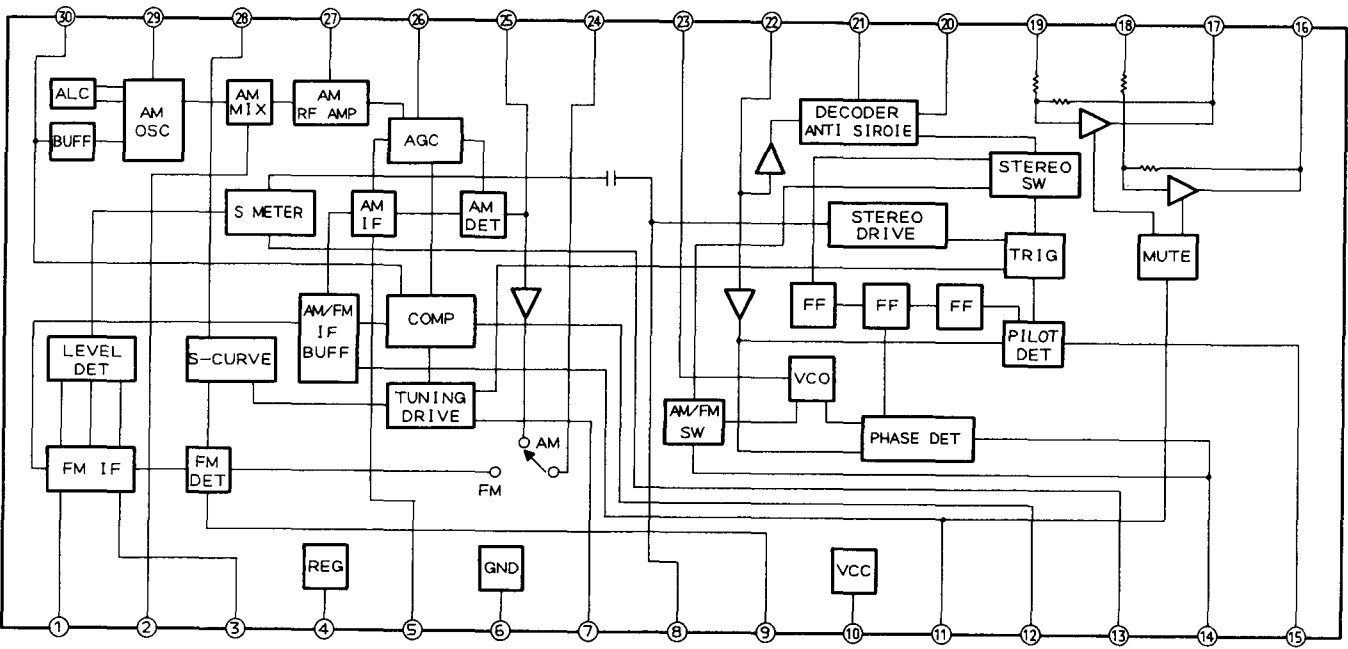
Q601:LA2775



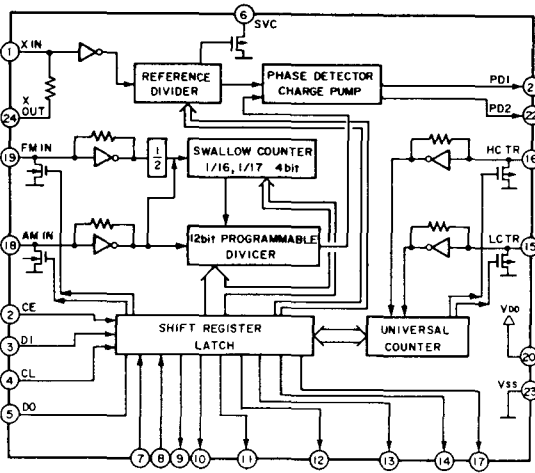
Q608:NJM2177L

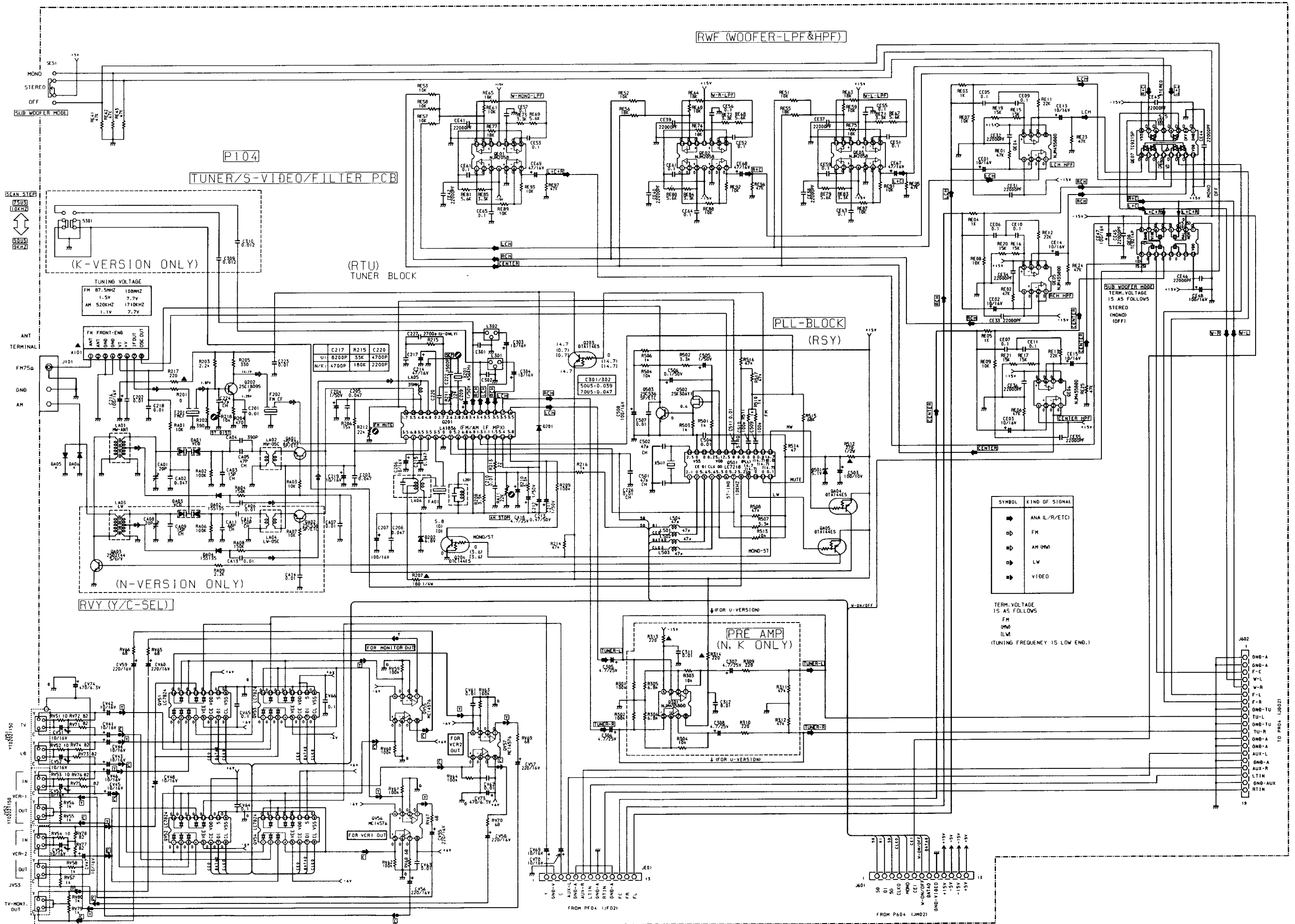


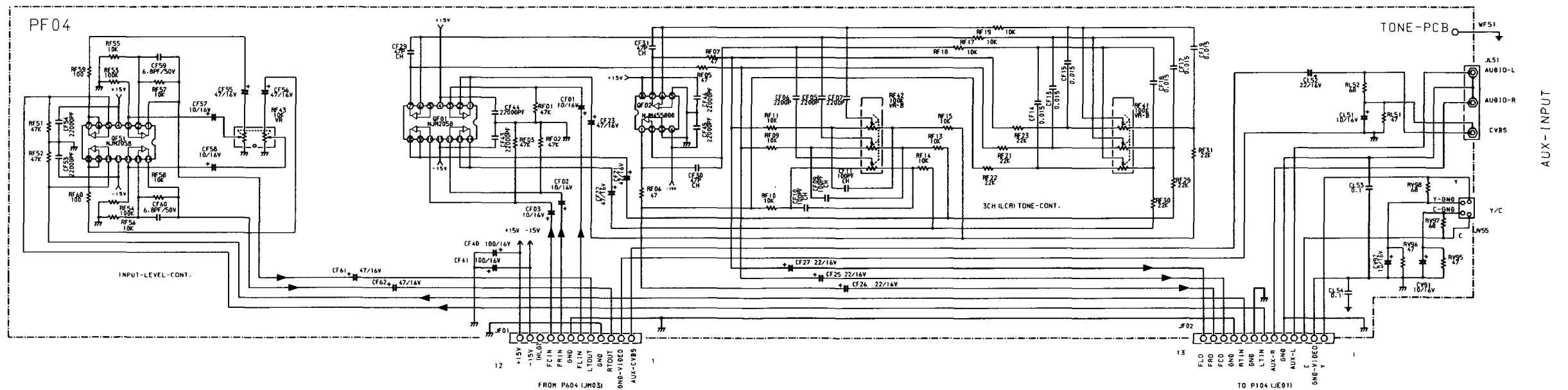
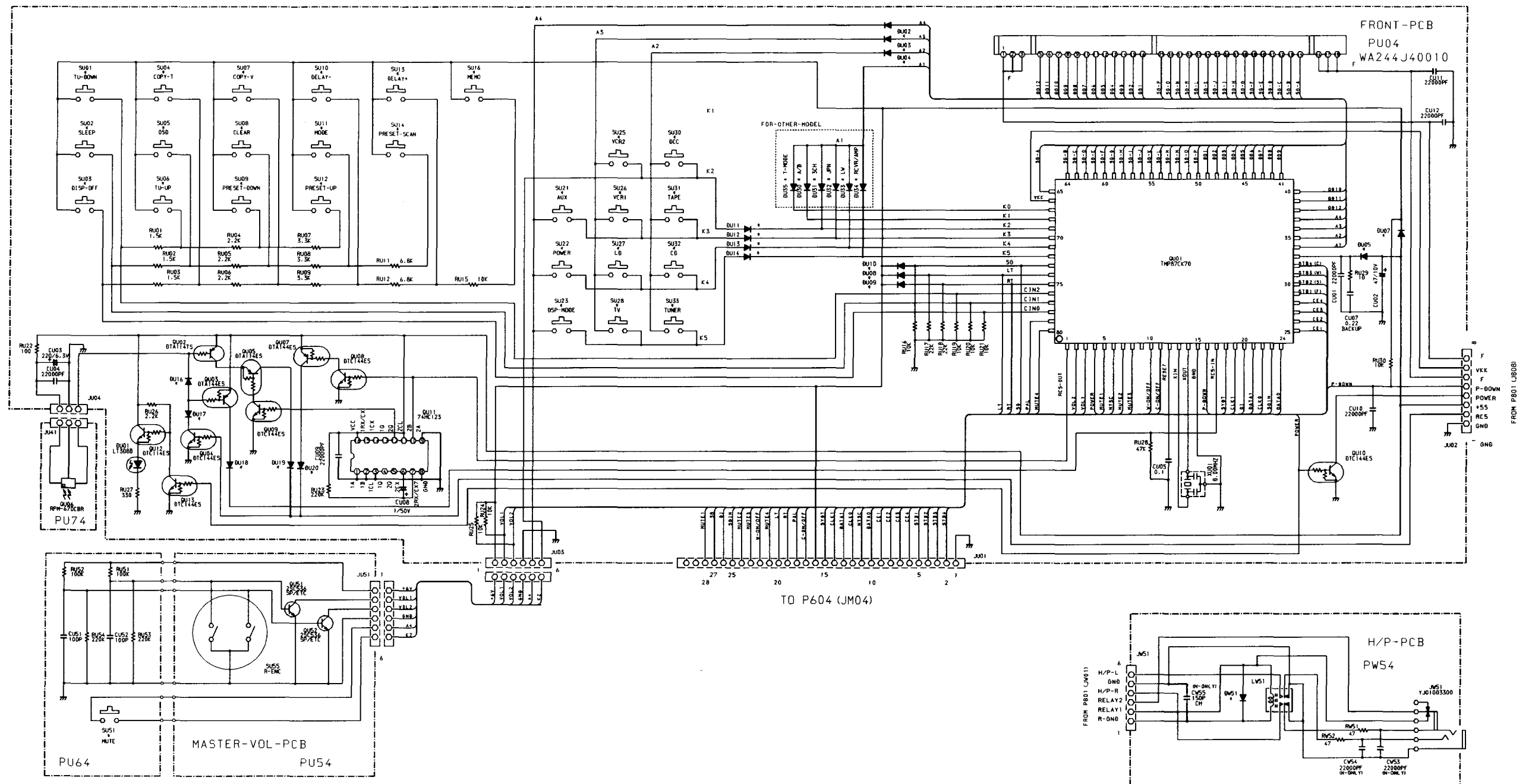
Q201:LA1836

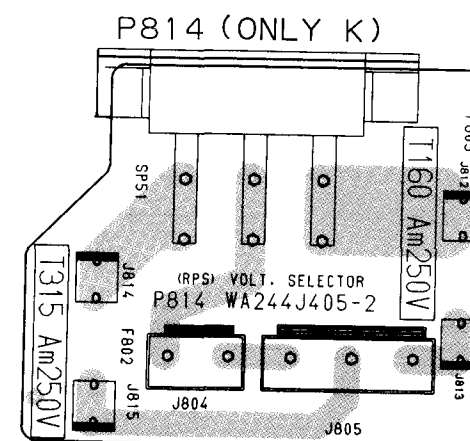
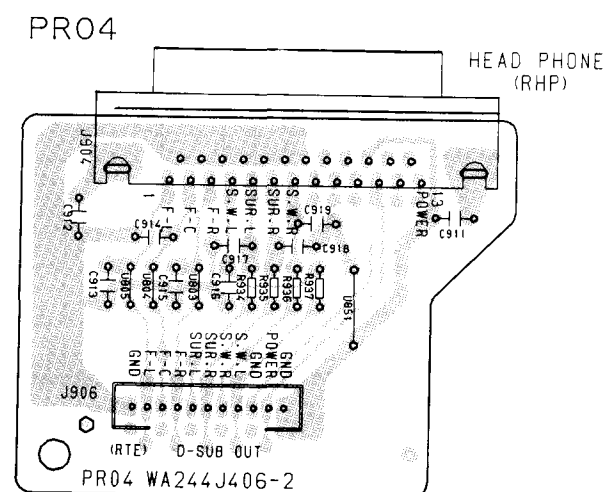
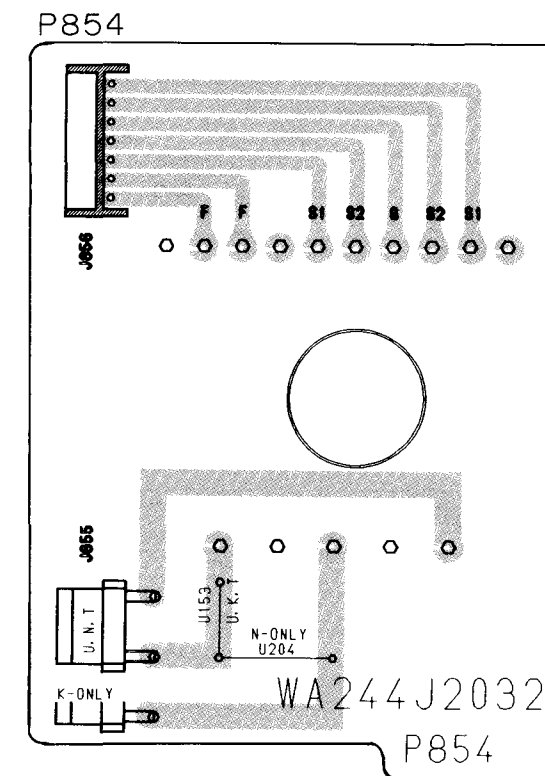
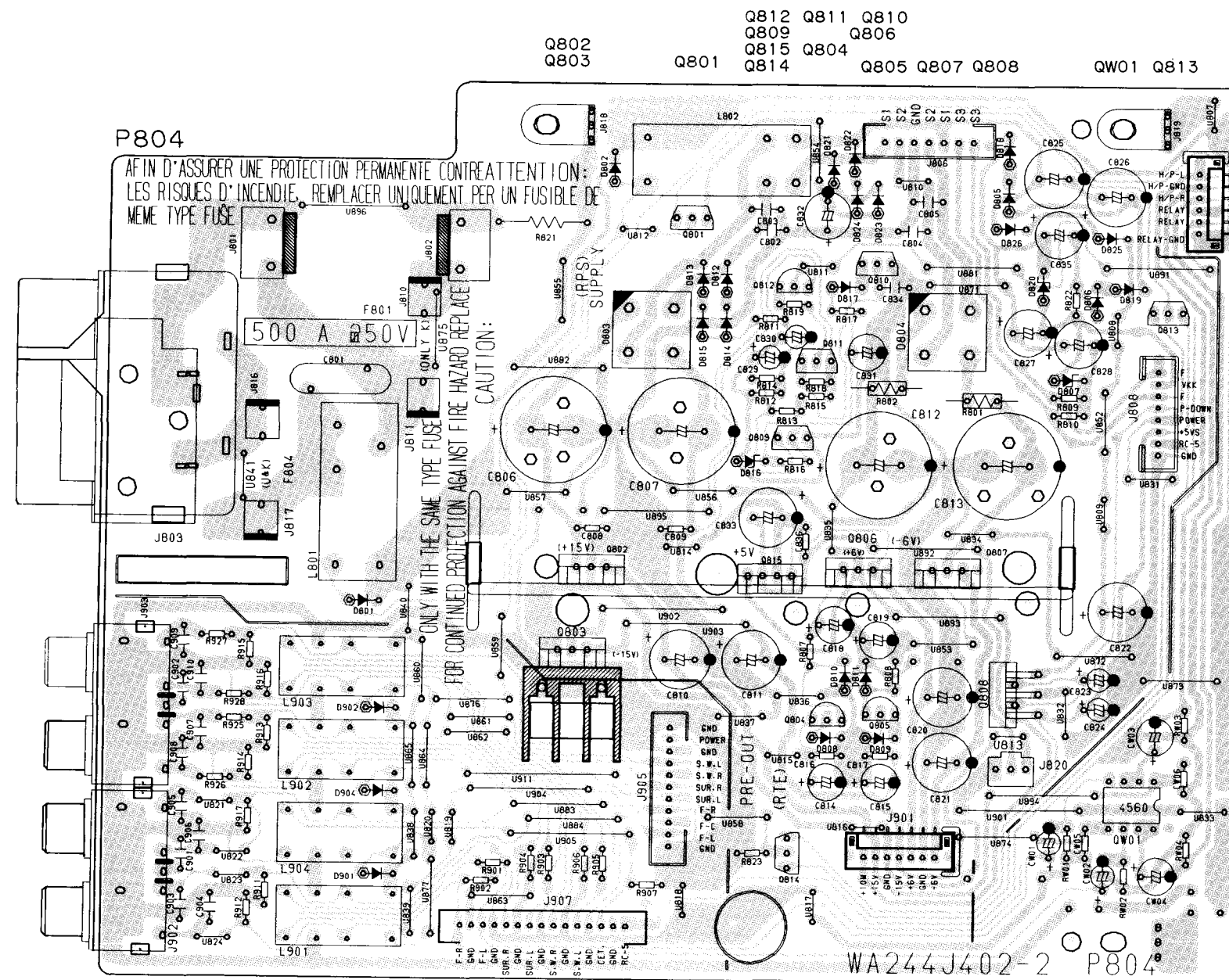


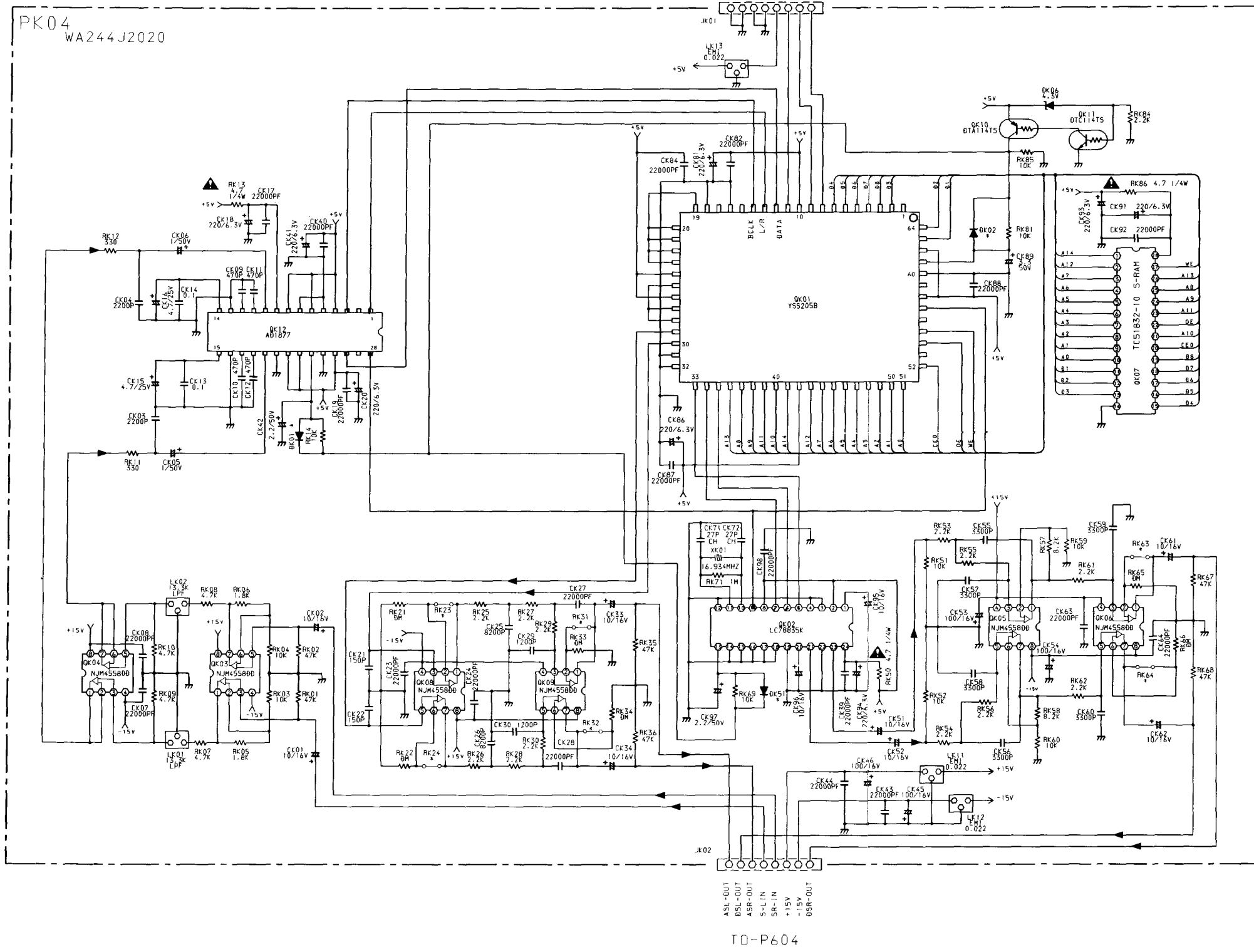
Q501:LC7218



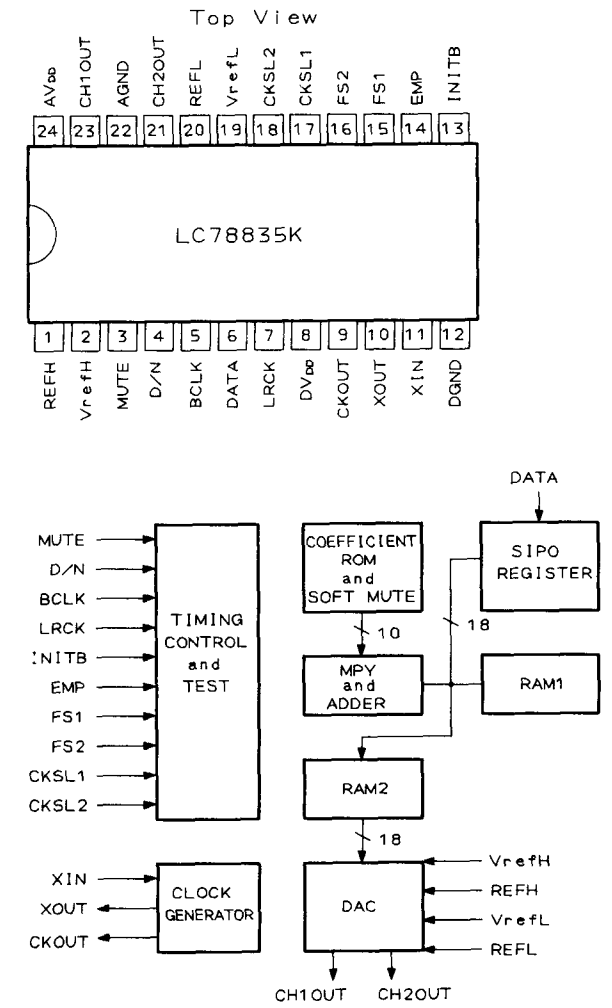




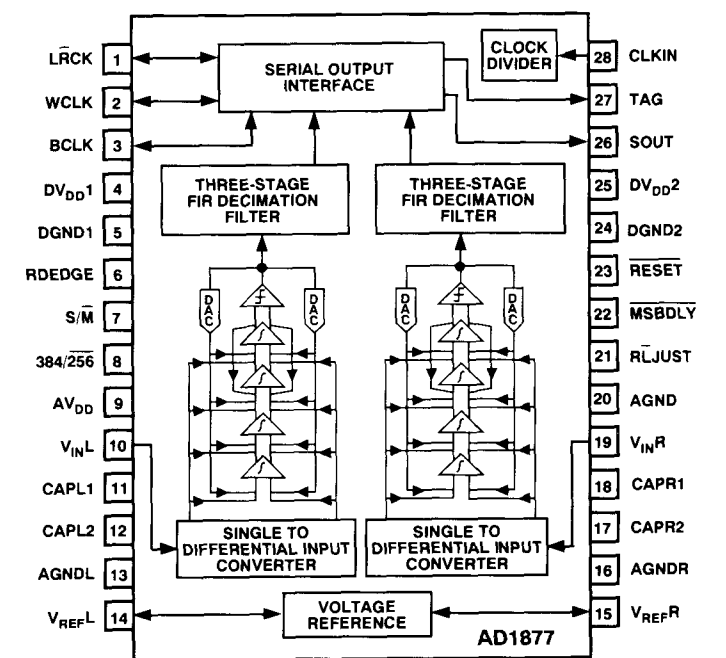




QK02:LC78835K



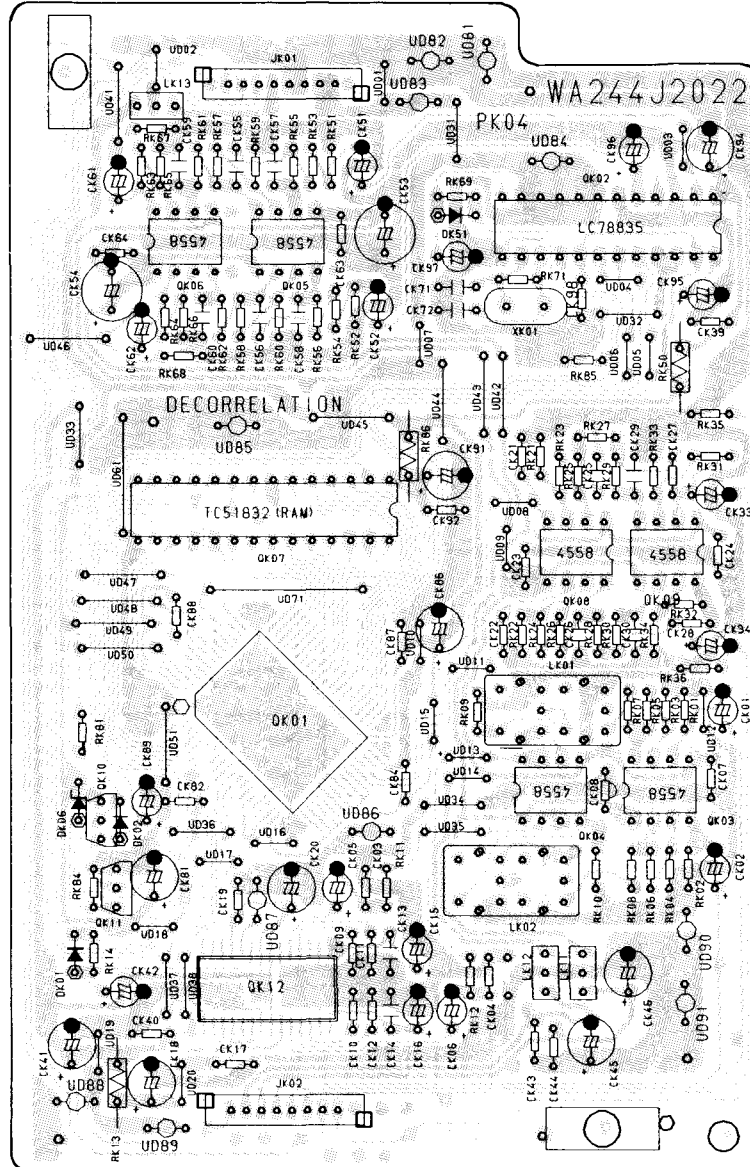
QK12:AD1877



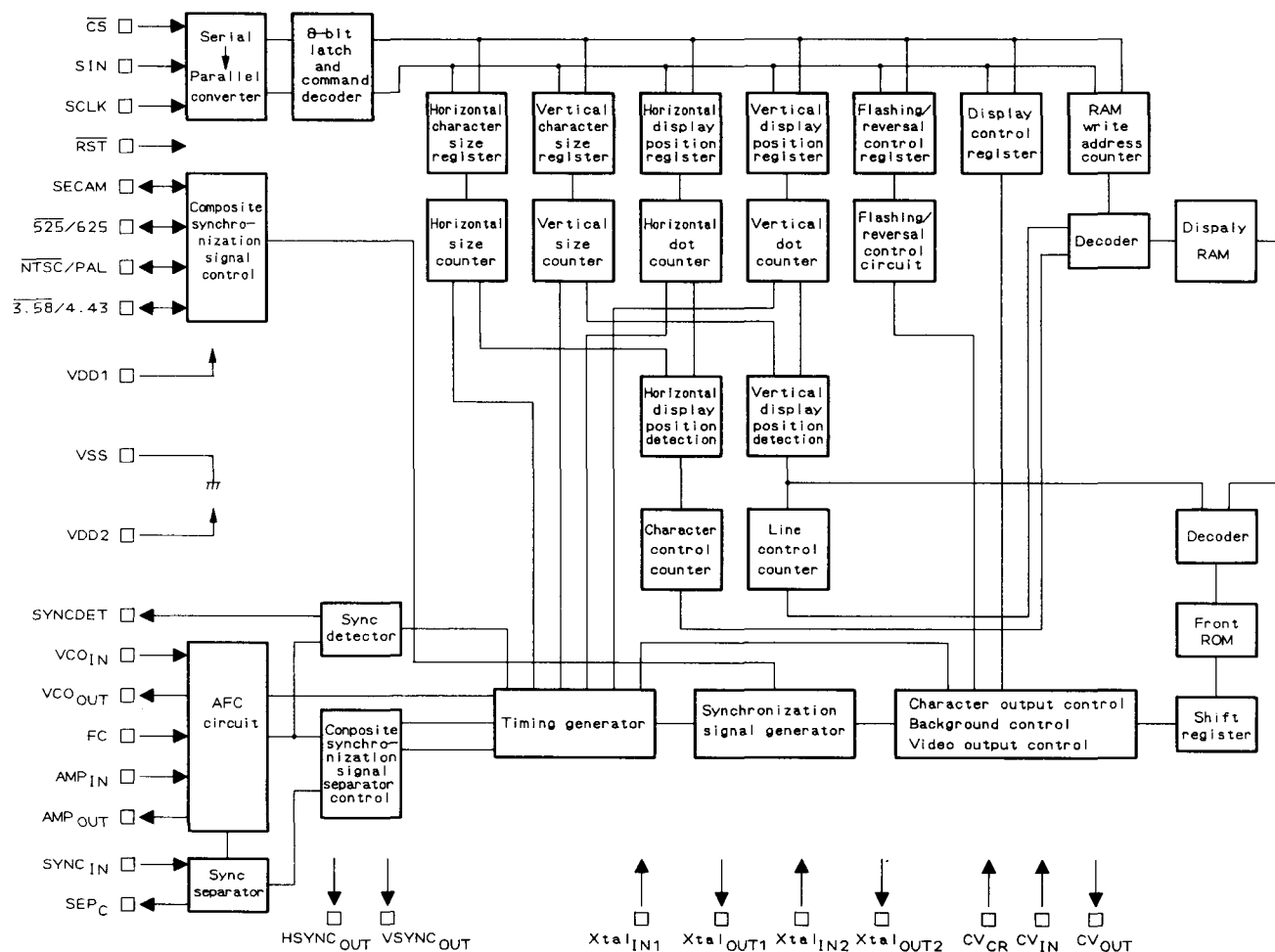
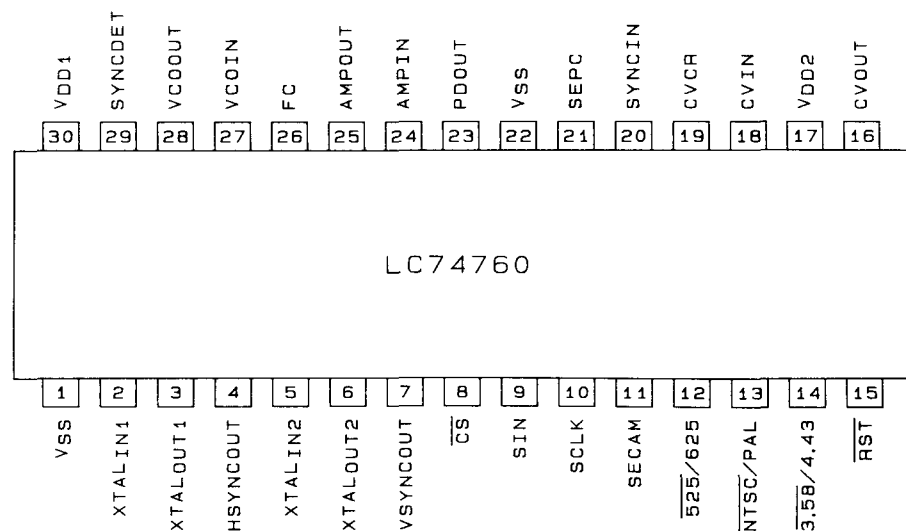
QK10 QK05-QK07
QK11 QK01
QK12

QK02-QK04
QK08 QK09

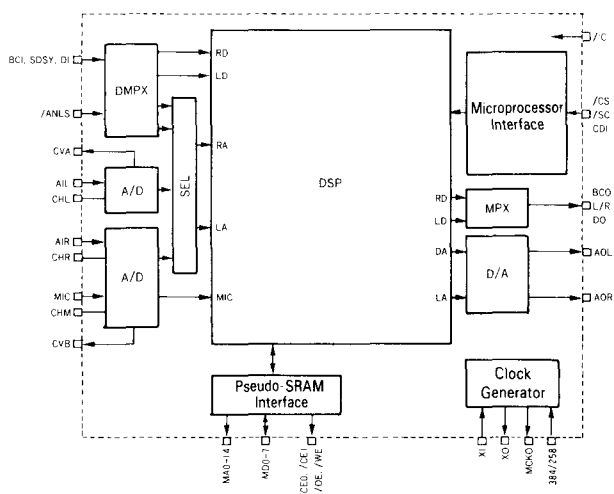
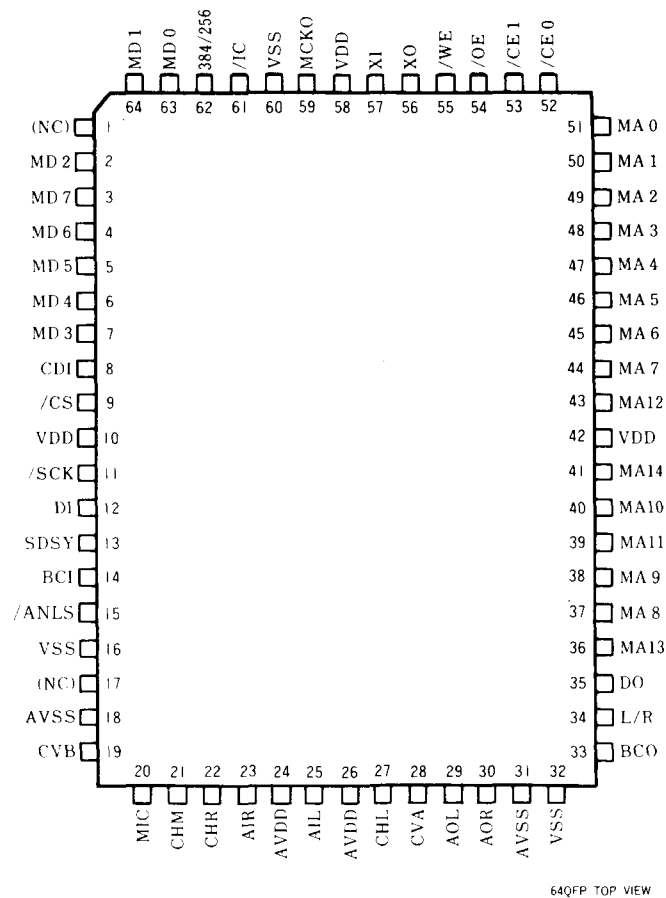
PK04



QX60:LC74760



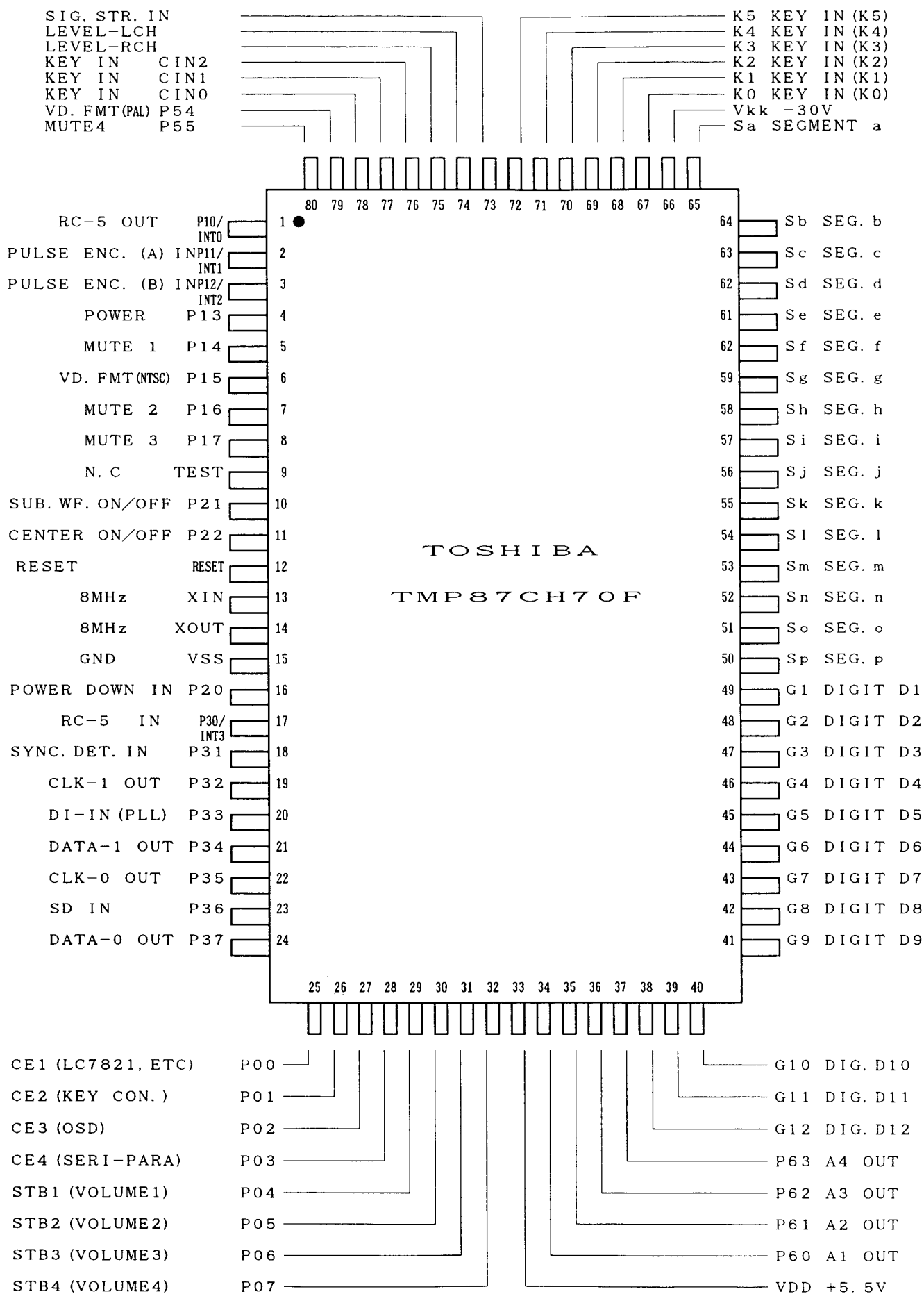
QK01:YSS205



No.	Name	I/O	Function
1	(NC)		(Do not connect externally.)
2	MD2	I/O	External pseudo-SRAM interface data terminal
3	MD7	I/O	External pseudo-SRAM interface data terminal
4	MD6	I/O	External pseudo-SRAM interface data terminal
5	MD5	I/O	External pseudo-SRAM interface data terminal
6	MD4	I/O	External pseudo-SRAM interface data terminal
7	MD3	I/O	External pseudo-SRAM interface data terminal
8	CD1	I	Microprocessor interface serial data
9	/CS	I	Microprocessor interface chip select
10	VDD	—	+5V power supply (for digital block)
11	/SCK	I	Microprocessor interface serial clock
12	DI	I+	Digital audio signal input serial data
13	SDSY	I+	Digital audio signal input L/R clock
14	BCI	I+	Digital audio signal input bit clock
15	/ANLS	I+	YM7110 interface serial data
16	VSS	—	Ground (for digital block)
17	(NC)		(Do not connect externally.)
18	AVSS	A—	Ground (for A/D, D/A converters, Connect with VSS externally.)
19	CVB	A—	ADC center voltage for R and MIC channels
20	MIC	A I	Analog audio signal MIC channel ADC input
21	CHM	A—	Connecting terminal for MIC input sample/hold capacitor
22	CHR	A—	Connecting terminal for AIR input sample/hold capacitor
23	AIR	A I	Analog audio signal R channel ADC input
24	AVDD	A—	+5V power supply (for A/D, D/A converters, Connect with VDD externally.)
25	AIL	A I	Analog audio signal L channel ADC input
26	AVDD	A—	+5V power supply (for A/D, D/A converters, Connect with VDD externally.)
27	CHL	A—	Connecting terminal for AIL input sample/hold capacitor
28	CVA	A—	ADC center voltage for L channel
29	AOL	A O	Analog audio signal L channel DAC output
30	AOR	A O	Analog audio signal R channel DAC output
31	AVSS	A—	Ground (for A/D, C/A converters, Connect with VSS externally.)
32	VSS	—	Ground (for digital block)
33	BCO	O	Digital audio signal output bit clock
34	L/R	O	Digital audio signal output L/R clock
35	DO	O	Digital audio signal output serial data
36	MA13	O	External pseudo-SRAM interface address terminal
37	MA8	O	External pseudo-SRAM interface address terminal
38	MA9	O	External pseudo-SRAM interface address terminal
39	MA11	O	External pseudo-SRAM interface address terminal
40	MA10	O	External pseudo-SRAM interface address terminal
41	MA14	O	External pseudo-SRAM interface address terminal
42	VDD	—	GND (for digital block)
43	MA12	O	External pseudo-SRAM interface address terminal
44	MA7	O	External pseudo-SRAM interface address terminal
45	MA6	O	External pseudo-SRAM interface address terminal
46	MA5	O	External pseudo-SRAM interface address terminal
47	MA4	O	External pseudo-SRAM interface address terminal
48	MA3	O	External pseudo-SRAM interface address terminal
49	MA2	O	External pseudo-SRAM interface address terminal
50	MA1	O	External pseudo-SRAM interface address terminal
51	MA0	O	External pseudo-SRAM interface address terminal
52	/CE0	O	External pseudo-SRAM interface chip select #0
53	/CE1	O	External pseudo-SRAM interface chip select #1 (available when connecting two pseudo-SRAM)
54	/OE	O	External pseudo-SRAM interface OE terminal
55	/WE	O	External pseudo-SRAM interface WE terminal
56	XO	O	Connecting terminal for crystal oscillator
57	XI	I	Connecting terminal for crystal oscillator or external clock input terminal
58	VDD	—	+5V power supply (for digital block)
59	MCKO	O	Master clock (X1 clock) output
60	VSS	—	Ground (for digital block)
61	/IC	I	Initial clear terminal
62	384/256	I+	Master clock rate switching ('H' = 384fs, 'L' = 256fs)
63	MD0	I/O	External pseudo-SRAM interface data terminal
64	MD1	I/O	External pseudo-SRAM interface data terminal

Note) +: Pulled-up terminal, A: Analog terminal

QU01:TMP87CK70



5. SERVICE PROGRAM

1. Tracking point memory

This service program can be use for measurement of the tuner circuit.

When the POWER ON, press the "PRESET +" button while pressing the "MEMO" button.
Frequencies to be memorized are as follows.

	VERSION	P1	P2	P3	P4
FM	02B,U,K	90.0	98.0	106.0	87.5
	JAPAN	78.0	83.0	88.0	76.0

	SCAN STEP	P5	P6	P7	P8	P9	P10	P11	P12~ P30
AM	10 KHz	600.0	1000.0	1400.0	520.0	←	←	←	←
	9 KHz	603.0	999.0	1404.0	531.0	←	←	←	←
LW		↑	↑	↑	171.0	207.0	270.0	152.0	531.0

2. FLD segment luminous

This service program can be luminous all segments by following step.

When the POWER ON, press the "FM/AM(TUNER)" button while pressing the "MEMO" button.
When finish the following procedure this service program should be stop.

Luminous procedure

1. All segments luminous 5 seconds.
2. At the grid "1G", segments luminous following procedure.

① KHz → ② MHz → ③ R → ④ PEAK → ⑤ L → ⑥ MULTI → ⑦ MONO → ⑧ MATRIX →
⑨ HALL → ⑩ P-SCAN → ⑪ TAPE → ⑫ COPY → ⑬ VCR1 → ⑭ SLEEP → ⑮ DISP → ⑯ TX

3. At the grid "2G" to "11G", each one segment luminous step by step.
4. At the grid "12G", segments luminous following procedure.

① VISUAL → ② SIGNAL LEVEL → ③ CH → ④ SIGNAL BAR (LEFT SIDE) →
⑤ SIGNAL BAR (2nd LEFT) → ⑥ SIGNAL BAR (CENTER) → ⑦ SIGNAL BAR (2nd RIGHT) →
⑧ SIGNAL BAR (RIGHT SIDE) → ⑨ STEREO → ⑩ THX CINEMA → ⑪ PRO.LOGIC →
⑫ MOVIE → ⑬ AUTO MEMO → ⑭ 3.LOGIC → ⑮ SIMUL'D → ⑯ SURROUND

3. Input selector and surround mode operation.

This service program can be operate input selector and surround mode in automatically as following procedure. This service program continually repeat until power off.

When the POWER ON, press the "**SURROUND MODE**" button while pressing the "**MEMO**" button.

STEP	INPUT SELECTOR	SURROUND MODE	FM MODE BAND	FREQUENCY	COPY SWITCH		NOTICE
					TAPE	VCR1	
1	FM	STEREO	AUTO	98.0	SOURCE	SOURCE	
2	FM	STEREO	MONO	LAST	↑	↑	
3	CD	THX	AUTO	LAST	↑	↑	
4	TAPE	P-LOGIC	AUTO	LAST	TUNER	SOURCE	TUNER=ON
5	DCC	MOVIE	AUTO	LAST	SOURCE	TV	
6	TV	3 CH	AUTO	LAST	↑	SOURCE	
7	TV	HALL	AUTO	LAST	CD	LD	
8	LD	MATRIX	AUTO	LAST	TAPE	VCR1	
9	VCR1	MONO	AM	1000	DCC	VCR2	
10	VCR2	STEREO	AUTO	98.0	TUNER	SOURCE	TUNER=ON
11	AUX	THX	AUTO	LAST	SOURCE	AUX	

4. All reset

This service program can be clear all memorized operations and functions.

When the POWER ON, press the "**CLEAR**" button while pressing the "**MEMO**" button. FLD shows "**CLEAR MEMO**" and power will be OFF.

5. Volume reset

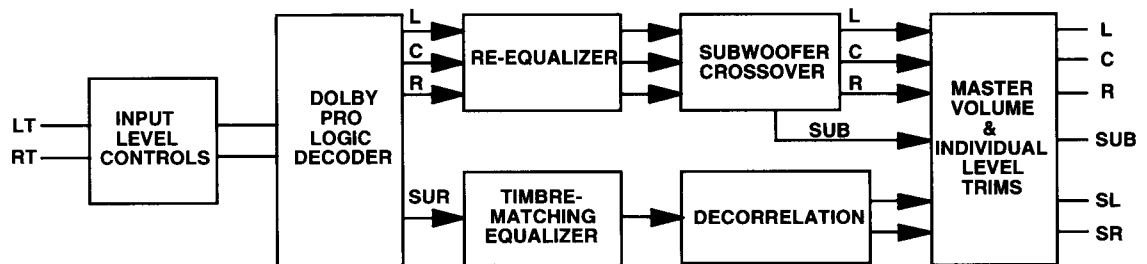
This service program can be reset "MASTER VOLUME LEVEL" and "CHANNEL OUTPUT LEVEL" to initial level. (MASTER VOLUME : -61dB, CHANNEL LEVEL : 0dB)

When the POWER ON, transmit the reset code "**163731**" continually more than 3 seconds by remote control unit(RC500AV or other multi remote controller). FLD shows "**VOL RST**".

6. SURROUND SOUND CONTROLLERS

A. BASIC DESCRIPTION

This basic description gives a quick sketch of the various features required for a Home THX "Controller".



RE-EQUALIZATION CIRCUITS

These circuits in left, center and right front channels aid in translating the correct spectrum of the program material, designed for film dubbing stage and standardized movie theater listening, to the environment of the home.

SURROUND TIMBRE MATCHING CIRCUIT

This equalization circuit makes the perceived response of the surround channel closer to that of the front channels. It allows sounds panned from front to surround, or vice-versa, to stay more nearly alike in timbre.

DECORRELATION

This circuitry splits the single surround output channel into left and right surround outputs. Decorrelation helps to produce an impression of spaciousness in the surround channel, which is highly desirable.

SUBWOOFER CROSSOVER NETWORK

By splitting the frequency spectrum into subwoofer and main channels, the size of the main channel speakers is kept practical, and the high sound pressure level requirements of low frequencies are best accommodated. The network provides for high-pass filtering of the front channels along with low pass filtering of the sum of the three front channels.

7. ELECTRICAL ADJUSTMENT

1. FM MONO. Distortion Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 ohm)	98 MHz	500 uV/m (54 dB/m) MONO 1 KHz / Dev.40KHz 53.3% (/02B,K) MONO 1KHz / Dev. 75KHz 100% (USA)	98 MHz (P2)	L201	Distortion level Minimum at TAPE-OUT

2. FM Muting Level Adjustment

Turn the variable resistor **R212** to no indication ("TUNED") point. And return that valuable resistor in opposite to the "TUNED" indicate point.

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 ohm)	98 MHz	6.3 uV/m (16 dB/m) MONO 1 KHz / Dev.40KHz 53.3% (/02B,K) MONO 1KHz / Dev. 75KHz 100% (USA)	98 MHz (P2)	R212	"TUNED" indicate on FLD
2			Over mentioned level +3 dB	AUTO SCAN	Only Confirm	"TUNED" indicate on FLD

3. FM STEREO Distortion Adjustment

Adjust the **L channel** with the RF signal modulated only **L channel** first and confirm the **R channel** with the RF signal modulated only **R channel**.

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 ohm)	98 MHz	500 uV/m (54 dB/m) L+R 1KHz / Dev. 40KHz 53.3% PILOT 19KHz / Dev. 6KHz 8% (/02B,K)	98 MHz (P2)	IF COIL in FRONT END	Distortion level Minimum at TAPE-OUT
2			L+R 1KHz / Dev. 67.5KHz 90% PILOT 19KHz / Dev. 6.75KHz 9% (USA)		R218	Distortion level Minimum at TAPE-OUT

REMARK: Adjustment with **R128** is not necessary when the distortion level is less than 0.5% with adjusting IF coil.

4. FM STEREO Separation Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 ohm)	98 MHz	same specification as FM STEREO distortion adjustment. Input only L channel.	98 MHz (P2)	R211	Output level Minimum at TAPE-OUT channel R
2		98 MHz	same specification as FM STEREO distortion adjustment. Input only R channel.	98 MHz (P2)	R211	Output level Similar as Rch at TAPE-OUT channel L

5. AM IF Adjustment

Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	1000 KHz (/02B,K) 999 KHz (USA)	300 uV/m (50 dB/m)	Tuning point	LA06	Output level (L or R) Maximum at TAPE-OUT

REMARK: For receiving antenna, the adapted one is available.
This adjustment is not necessary normally, because the coil LA06 is preset by the original supplier.
It is necessary when the incorrect usable sense and frequency response.

6. AM RF Adjustment

Step	**Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	1400 KHz (/02B,K) 1404 KHz (USA)	Level 300 - 400 uV/m Mod. 400 Hz 30%	1400 KHz (/02B,K) 1404 KHz (USA)	CA01	Output level (L or R) Maximum at TAPE-OUT
2		600 KHz (/02B,K) 603 KHz (USA)	Level 300 - 400 uV/m Mod. 400 Hz 30%	600 KHz (/02B,K) 603 KHz (USA)	LA01	Output level (L or R) Maximum at TAPE-OUT
3	Repeat step 1 and 2 until sensitivity be maximized.					

7. AM auto stop Adjustment

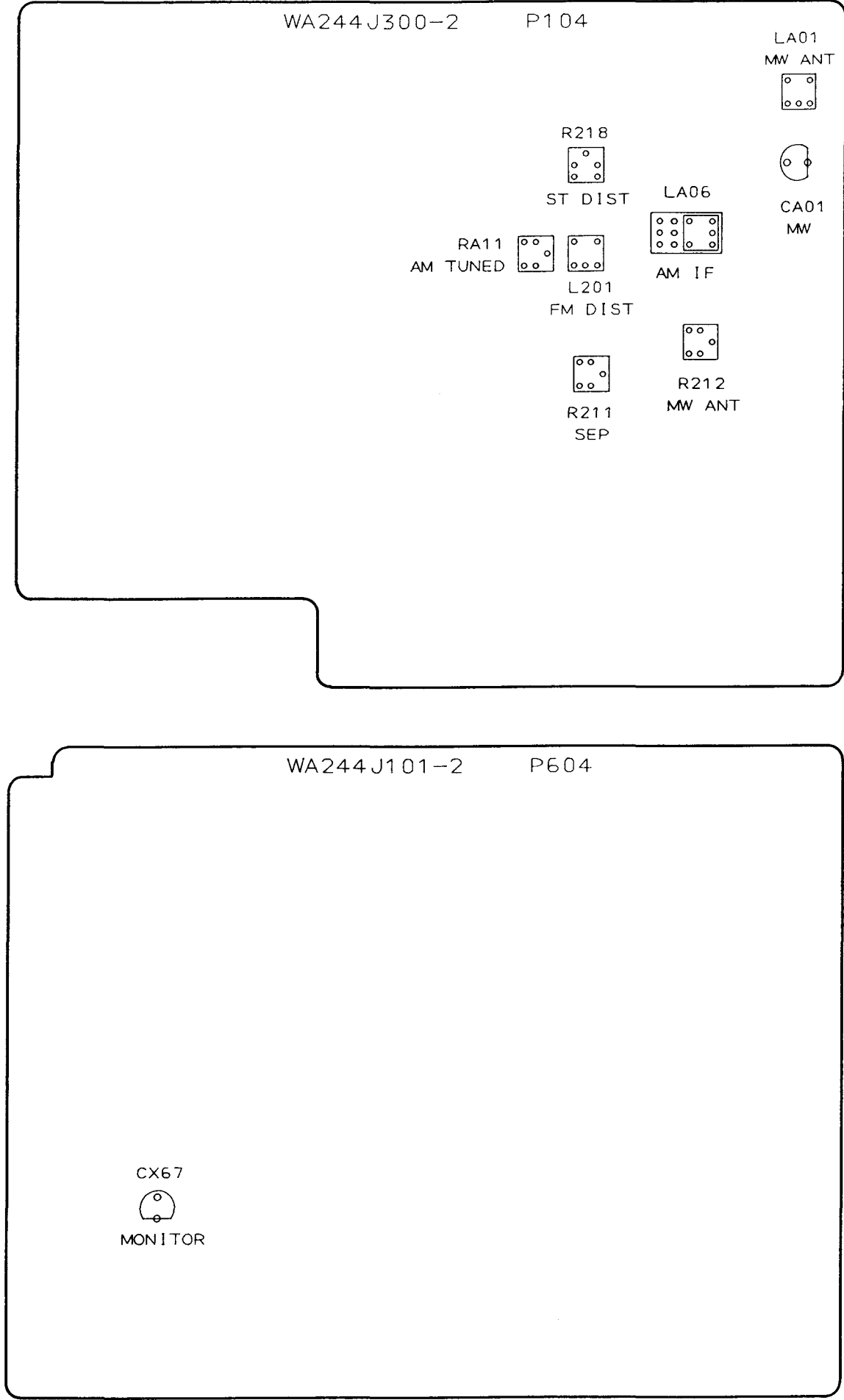
Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to transmission *loop antenna. (*:Standard required loop)	1000 KHz (/02B,K) 999 KHz (USA)	500 uV/m (54 dB/m)	1000 KHz (/02B,K) 999 KHz (USA)	RA11	"TUNED" indicate on FLD
2			1000 uV/m (60 dB/m)	AUTO SCAN	Only Confirm	"TUNED" indicate on FLD

REMARK: This adjustment is related to the FM muting Level Adjustment. The FM muting Level re-adjustment is necessary after this adjustment.

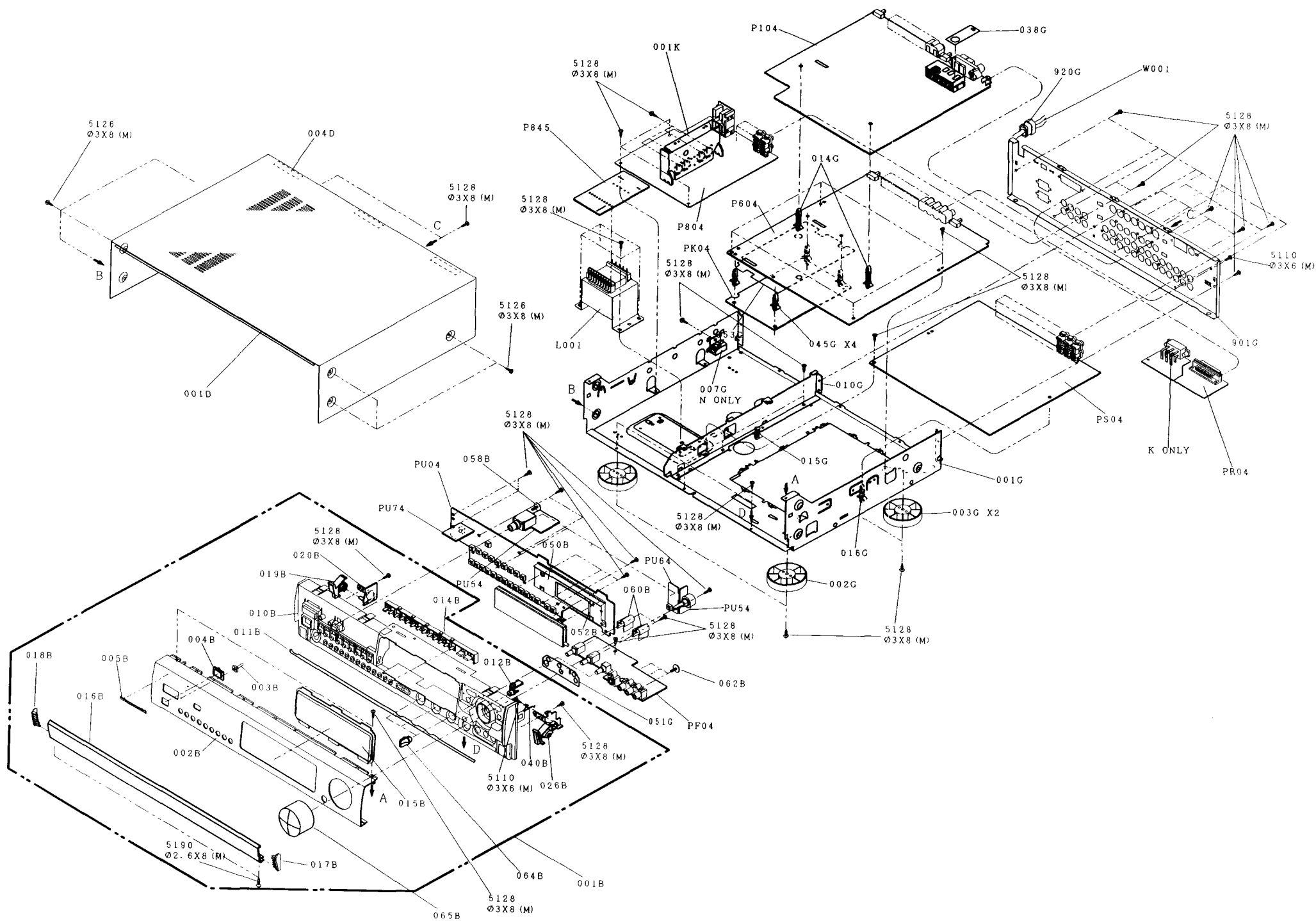
8. On Screen Display VCO Adjustment

Step	Input Signal Source and Connection	Measuring position	Measuring equipment	Input selector	Adjustment Point	Adjustment Value
1	Color bar or other standard video signal. Video signal generator output to LD video input.	IC QX60 26pin and GND.	DC voltmeter (Impedance > 10K ohm/V)	LD	CX67	2.9V +-0.1V

REMARK: Connect the TV monitor to the monitor output terminal of the product.



8. EXPLODED VIEWS AND PARTS LIST



(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
002B		482242651836	FRONT ALMI PANEL	244J248010
003B		482238111596	LENS(STANDBY)	292K355010
004B		482238111597	LENS(IR)	292K355020
005B		482245911172	MARANTZ BADGE	185J251010
010B		482246470667	MOLD FRONT CHASSIS	244J105010
011B		482245412982	ESCUTCHEON	292K063060
012B		482241063736	MUTE BUTTON	292K270010
014B		482241063738	BUTTON 15KEY	292K270030
015B		482245062499	WINDOW	244J158010
016B		482242660663	AL DOOR PANEL	292K248050
017B		482246272102	LINING(R)	292K351010
018B		482246272103	LINING(L)	292K351020
019B			ARM(L)	292K002020
020B			BRACKET(L) KIT	292K160550
025B			ARM(R) ASSY	292K002500
040B			SPRING	292K115020
041B		482250212514	SCREW FOR(030B+040B)	51480306M0
044B			SCREW(DOOR PANEL)	51902608U0
058B			SCREW FOR HEAD PCB	183J010010
062B			SCREW FOR VAL,FRONT INPUT	183J010010
064B		482241060873	tone balance knob	426T154010
065B		482241351522	MAIN VR knob	292K154020
002G		482246242045	LEG(FRONT)	183J057010
003G		482246242048	LFG(REAR)	183J057110
920G		482253260948	MAINS CORD BUSHING	450H259010
001T	U/K		USER MANUAL	244J851250
001T	02B	482273622503	USER MANUAL	244J851310
▲ L001	K		MAINS TRANSF.	TS16031060
▲ L001	02B	482214621833	MAINS TRANSF.	TS16031050
▲ L001	U		MAINS TRANSF.	TS16031040
▲ W001	K/02B	482232110985	MAINS CORD 2.5A 250V	YC01800610
▲ W001	U		MAINS CORD 10A 125V	YC02000540
W601		482232163068	SMCD28X150BDX6(BL)-P1.0-S-4M-N	YU28150560
W602		482232163067	SMCD25X100BDX8-P1.0-S-4M	YU25100550
W603		482232163066	SMCD19X100BDX8(BL)-P1.25-S4M-N	YU19100540
W604		482232163065	SMCD13X60BDX8(BL)-P1.25-S4-M-N	YU13060540
W901			2MMPITCH 7PIN	YU07070270
WP01			SMK W-P7511-11	YU06100270
Z001		482221810591	REMOTE COMMANDER	ZK244J0010

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R*** : 1) GD05 x x x 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
R*** : 2) GD05 x x x 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples :

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

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

C*** : CERAMIC CAP.

1) DD1 x x x 370, Ceramic capacitor
 Disc type
 Temp.coef.P350~N1000.50V

① — Capacity value
 ② — Tolerance

Examples

① Tolerance (Capacity deviation)
 $\pm 0.25\text{pF}$...0
 $\pm 0.5\text{pF}$...1
 $\pm 5\%$...5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF~ 5pF... $\pm 0.25\text{pF}$
 6pF~ 10pF... $\pm 0.5\text{pF}$
 12pF~ 560pF... $\pm 5\%$

② Capacity value

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

C*** : CERAMIC CAP.

1) DK16 x x x 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V

① — Capacity value

Examples

② Capacity value
 100pF...101 1000pF...102 10000pF...103
 470pF...471 2200pF...222

C*** : ELECTROLY CAP. (E), FILM CAP. (F)

1) EA x x x x x 10, Electrolytic capacitor
 One-way lead type, Tolerance $\pm 20\%$

① — Working voltage
 ② — Capacity value

Examples

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

② Working voltage

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

2) DF15 x x x 350 } Plastic film capacitor
 DF15 x x x 310 } One-way type, Mylar $\pm 5\%$ 50V
 DF16 x x x 310 } Plastic film capacitor
 One-way type, Mylar $\pm 10\%$ 50V

① — Capacity value

Examples

① Capacity value
 0.001 μF (1000pF)...102 0.1 μF ...104
 0.0018 μF ...182 0.56 μF ...564
 0.01 μF ...103 1 μF ...105
 0.015 μF ...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(**RI05**, **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.	Type No.	Description
NH05 x x x 140	RF25S x x x x Ω J	($\pm 5\%$ 1/4W)
NH05 x x x 120	RF50S x x x x Ω J	($\pm 5\%$ 1/2W)
NH85 x x x 110	RF73B2A x x x x Ω J	($\pm 5\%$ 1/10W)
NH95 x x x 140	RF73B2E x x x x Ω J	($\pm 5\%$ 1/4W)

* Resistance value (0.1~10k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No.	Type No.	Description
NF05 x x x 140	ERD-2FCJ x x x	($\pm 5\%$ 1/4W)
RF05 x x x 140	ERD-2FCG x x x	($\pm 2\%$ 1/4W)
NF02 x x x 140		
RF02 x x x 140		

* Resistance value

Examples :

* Resistance value

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

ABBREVIATION AND MARKS

1	ANT.	: ANTENNA	2	BATT.	: BATTERY
3	CAP.	: CAPACITOR	4	CER.	: CERAMIC
5	CONN.	: CONNECTING	6	DIG.	: DIGITAL
7	HP	: HEADPHONE	8	MIC.	: MICROPHONE
9	μ -PRO	: MICROPROCESSOR	10	REC.	: RECORDING
11	RES.	: RESISTOR	12	SPK	: SPEAKER
13	SW	: SWITCH	14	TRANSF.	: TRANSFORMER
15	TRIM.	: TRIMMING	16	TRS.	: TRANSISTOR
17	VAR.	: VARIABLE	18	X'TAL	: CRYSTAL
19			20		
21			22		
23			24		
25			26		
27			28		
29			30		

NOTE ON SAFETY :

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

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)	POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
CF01 CF03 CF09 CF11		482212421894	PF04-TONE, AUX INPUT CIRCUIT BOARD PF04-CAPACITORS ELECT CAP. 10μF 16V	EJ10601610	R***			PF04-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W RF01-RF03,RF05-RF07, RF09-RF11,RF13-RF15, RF17-RF19,RF21-RF23, RF29-RF31,RF51-RF60, RL51,RL52,RV95-RV98	
CF21 CF23 CF25 CF27		532212232265	CER.CAP. 100pF J CH 50V	DD15101300	JL51 JV55		482226531298 482226541531	PF04-MISCELLANEOUS 3P GLD JACK S-VIDEO 1P GLD	YT02030330 YT02010900
CF29 CF31 CF43 CF46		482212423056	ELECT CAP. 47μF 16V	EJ47601610				PK04-KEY-CONT. CIRCUIT BOARD PK04-CAPACITORS	
CF53 CF55 CF56 CF57		482212423055	ELECT CAP. 22μF 16V	EJ22601610	CK01 CK02 CK05 CK06 CK07		482212421894 482212421894 482212423053 482212423053 482212240588	ELECT CAP. 10μF 16V ELECT CAP. 10μF 16V ELECT CAP. 1μF 50V ELECT CAP. 1μF 50V CER.CAP. 22000pF 25V	EJ10601610 EJ10601610 EJ10505010 EJ10505010 DA17223110
CF58 CF59 CF60 CF61 CF62		482212231205	CER.CAP. 47pF J CH 50V	DD15470300	CK08 CK09 CK12 CK13		482212240588 482212611127 482212240617	CER.CAP. 22000pF 25V CER.CAP. 470pF ± 10% CER.CAP. 0.1μF 50V +80 -20%	DA17223110 DA16471110 DD38104010
CL51 CL52 CL53 CL54		482212240588	CER.CAP. 22000pF 25V	DA17223110	CK14 CK15 CK16 CK17 CK18		482212240617 482212421899 482212421899 482212240588 482212480087	CER.CAP. 0.1μF 50V +80 -20% ELECT CAP. 4.7μF 25V ELECT CAP. 4.7μF 25V CER.CAP. 22000pF ELECT CAP. 220μF 6.3V	DD38104010 EJ47502510 EJ47502510 DA17223110 EJ22700610
CV91 CV92		482212240588	CER.CAP. 22000pF 25V	DA17223110	CK19 CK20 CK21 CK22 CK23		482212240588 482212480087 482212611069 482212611069 482212240588	CER.CAP. 22000pF ELECT CAP. 220μF 6.3V CER.CAP. 150pF 50V CER.CAP. 150pF 50V CER.CAP. 22000pF 25V	DA17223110 EJ22700610 DA16151110 DA16151110 DA17223110
C***		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010	CK24 CK27 CK28 CK33 CK34		482212240588 482212240588 482212240588 482212421894 482212421894	CER.CAP. 22000pF 25V CER.CAP. 22000pF 25V CER.CAP. 22000pF 25V ELECT CAP. 10μF 16V ELECT CAP. 10μF 16V	DA17223110 DA17223110 DA17223110 EJ10601610 EJ10601610
C***		482212421894	ELECT CAP. 10μF 16V	EJ10601610	CK39 CK40 CK41 CK42 CK43		482212240588 482212240588 482212480087 482212440786 482212240588	CER.CAP. 22000pF 25V CER.CAP. 22000pF 25V ELECT CAP. 220μF 6.3V ELECT CAP. 2.2μF 50V CER.CAP. 22000pF 25V	DA17223110 DA17223110 EJ22700610 EJ22505010 DA17223110
C***		482212421894	ELECT CAP. 10μF 16V	EJ10601610	CK44 CK45 CK46 CK51 CK52		482212240588 482212423052 482212423052 482212421894 482212421894	CER.CAP. 22000pF 25V ELECT CAP. 100μF 16V ELECT CAP. 100μF 16V ELECT CAP. 10μF 16V ELECT CAP. 10μF 16V	DA17223110 EJ10701610 EJ10701610 EJ10601610 EJ10601610
QF01 QF02 QF51		482212423055	ELECT CAP. 22μF 16V	EJ22601610	CK53 CK54 CK61 CK62 CK63		482212423052 482212423052 482212421894 482212421894 482212240588	ELECT CAP. 100μF 16V ELECT CAP. 100μF 16V ELECT CAP. 10μF 16V ELECT CAP. 10μF 16V CER.CAP. 22000pF 25V	EJ10701610 EJ10701610 EJ10601610 EJ10601610 DA17223110
RF41 RF42 RF43		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010				PF04-SEMICONDUCTORS	
		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010				NJM2058D	HC10031090
		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010				NJM4558DD	HC10008090
		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010				NJM2058D	HC10031090
		482212421894	ELECT CAP. 10μF 16V	EJ10601610				PF04-RESISTORS	
		482212421894	ELECT CAP. 10μF 16V	EJ10601610				VAR.RES. 100KB X 4 L=15	RG01040130
		482212421894	ELECT CAP. 10μF 16V	EJ10601610				VAR.RES. 100KB X 4 L=15	RG01040130
		482212421894	ELECT CAP. 10μF 16V	EJ10601610				VAR.RES. 10KB X 2 L=15	RM01030980

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
CK64		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK71		482212230045	CER.CAP. 27pF J CH 50V	DD15270300
CK72		482212230045	CER.CAP. 27pF J CH 50V	DD15270300
CK81		482212480087	ELECT CAP. 220μF 6.3V	EJ22700610
CK82		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK84		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK86		482212480087	ELECT CAP. 220μF 6.3V	EJ22700610
CK87		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK88		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK89		482212421982	ELECT CAP. 3.3μF 50V	EJ33505010
CK91		482212480087	ELECT CAP. 220μF 6.3V	EJ22700610
CK92		482212240588	CER.CAP. 22000pF 25V	DA17223110
CK94		482212480087	ELECT CAP. 220μF 6.3V	EJ22700610
CK95		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CK96		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CK97		482212440786	ELECT CAP. 2.2μF 50V	EJ22505010
CK98		482212240588	CER.CAP. 22000pF 25V	DA17223110
C***			PK04-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, ± 10% 50V: CK03,CK04,CK29,CK30, CK55-CK60	
C***			Plastic Film Capacitor, ± 5% 50V: CK25,CK26	
			PK04-SEMICONDUCTORS	
DK01		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000
DK02		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000
DK06		482213031554	ZENER DIODE 4.3V	HD30431000
DK51		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000
QK01		482220931485	YSS205	HC10003640
QK02		482220990534	LC78835KM	HC10341030
QK03 QK06		482220983631	NJM4558DD	HC10008090
QK07		482220931489	LC33832S-10	HC10351030
QK08		482220983631	NJM4558DD	HC10008090
QK09		482220983631	NJM4558DD	HC10008090
QK10		482213063211	DIG.TRS. DTA114TS	BA10003210
QK11		482213061189	DIG.TRS. DTC114TS	BA20017210
QK12		482220990531	AD1877	HC10005840
			PK04-RESISTORS	
RK13		482211190967	FUSE RES. 4.7 Ω J 1/4W	NF05047140
▲ RK50		482211190967	FUSE RES. 4.7 Ω J 1/4W	NF05047140
RK86		482211190967	FUSE RES. 4.7 Ω ± 5% 1/4W	NF05047140
R***			PK04-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W RK01-RK12,RK14,RK23-RK32, RK35,RK36,RK51-RK64, RK67-RK69,RK71,RK81, RK84,RK85	
			PK04-MISCELLANEOUS	
LK01		482215370065	L.P.F. 13.3KHz	FF30013010
LK02		482215370065	L.P.F. 13.3KHz	FF30013010
LK11 LK13		482224273843	DSS306-91-F-223Z	FM12223010

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
XK01		482224272334	X'TAL 16.9344MHz	JX16002260
			PR04-D-SUB OUT CIRCUIT BOARD	
			PR04-CAPACITORS	
C911		482212240617	CER.CAP. 0.1µF 50V +80 -20%	DD38104010
C912		482212240617	CER.CAP. 0.1µF 50V +80 -20%	DD38104010
<u>C***</u>			PR04-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, ± 10% 50V: (C913-C919[02B])	
<u>R***</u>			PR04-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W R934-R937	
			PR04-MISCELLANEOUS	
J904			DBLC-J25PAF-20L9	YP06902040
			PS04-FUNCTION/VOL. CIRCUIT BOARD	
			PS04-CAPACITORS	
CD01 CD05 CD07 CD11		482212421894	ELECT CAP. 10µF 16V	EJ10601610
		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CD51 CD54		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG01		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG02		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG05 CG10		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG15		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG16		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG19		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG20		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG21		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG22		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG31		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG32		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG35 CG40		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG45		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG46		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG49		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG50		482212421894	ELECT CAP. 10µF 16V	EJ10601610
CG51		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG52		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG58		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG59		482212423052	ELECT CAP. 100µF 16V	EJ10701610
CG63 CG70		482212421894	ELECT CAP. 10µF 16V	EJ10601610

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CG75		482212421894	ELECT CAP. 10μF 16V	EJ10601610	DS01		482213032362	PS04-SEMICONDUCTORS DIODE 1SS176,MA165,1SS254	HD20002000
CG76		482212421894	ELECT CAP. 10μF 16V	EJ10601610					
CG79		482212421894	ELECT CAP. 10μF 16V	EJ10601610					
CG80		482212421894	ELECT CAP. 10μF 16V	EJ10601610					
CG81		482212423052	ELECT CAP. 100μF 16V	EJ10701610	QD01		482220983631	NJM4558DD	HC10008090
					QD02		482220983631	NJM4558DD	HC10008090
CG82		482212423052	ELECT CAP. 100μF 16V	EJ10701610	QD03		482213061892	TRS. 2SD2144S	HT421442A0
CG87		482212421894	ELECT CAP. 10μF 16V	EJ10601610	QD05				
CG90		482212421894	ELECT CAP. 10μF 16V	EJ10601610	I		482213061892	TRS. 2SD2144S	HT421442A0
CG91		482212421894	ELECT CAP. 10μF 16V	EJ10601610	QD08				
CG93		482212421894	ELECT CAP. 10μF 16V	EJ10601610					
CG95		482212421894	ELECT CAP. 10μF 16V	EJ10601610	QD09		482213060766	DTA114ES/UN4111	BA10001000
CG99		482212421894	ELECT CAP. 10μF 16V	EJ10601610	QD10		482213060766	DTA114ES/UN4111	BA10001000
					QD11		482213060588	DTC114ES/UN4211	BA20001000
CS01					QD12		482213060588	DTC114ES/UN4211	BA20001000
I		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	QD13		482213060766	DTA114ES/UN4111	BA10001000
CS12					QD14		482213060588	DTC114ES/UN4211	BA20001000
CS13					QD51		482213061892	TRS. 2SD2144S	HT421442A0
I		482212230043	CER.CAP. 0.01μF Z 50V	DK18103310	QD52		482213061892	TRS. 2SD2144S	HT421442A0
CS18					QD53		482220983631	NJM4558DD	HC10008090
					QD54		482213060766	DTA114ES/UN4111	BA10001000
CS19		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	QD55		482213060588	DTC114ES/UN4211	BA20001000
CS20		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	QD61		482213060588	DTC114ES / UN4211	BA20001000
CS21		482212230043	CER.CAP. 0.01μF Z 50V	DK18103310	QD62		482213060766	DTA114ES / UN4111	BA10001000
CS22		482212230043	CER.CAP. 0.01μF Z 50V	DK18103310	QD63		482213061892	TRS. 2SD2144S	HT421442A0
CS23		482212240588	CER.CAP. 22000pF 25V	DA17223110	QD64		482213061892	TRS. 2SD2144S	HT421442A0
CS26		482212423052	ELECT CAP. 100μF 16V	EJ10701610	QD71		482213060588	DTC114ES/UN4211	BA20001000
CS27		482212423052	ELECT CAP. 100μF 16V	EJ10701610	QD72		482213060766	DTA114ES/UN4111	BA10001000
CS29					QD73		482213061892	TRS. 2SD2144S	HT421442A0
I		482212421894	ELECT CAP. 10μF 16V	EJ10601610					
CS32					QG01		482220983631	NJM4558DD	HC10008090
					QG02		482220931575	TC9213P	HC10304050
CS51					QG03				
I		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	I		482220983631	NJM4558DD	HC10008090
CS54					QG05				
CS57									
I		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	QG06		482220931575	TC9213P	HC10304050
CS60					QG07				
					I		482220983631	NJM4558DD	HC10008090
CS71					QG09				
I		482212240617	CER.CAP. 0.1μF 50V	DD38104010	QG10		482220931575	TC9213P	HC10304050
CS74									
CS81					QG11				
I		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510	I		482220983631	NJM4558DD	HC10008090
CS83					QG13				
					QG14		482220931575	TC9213P	HC10304050
CS84		482212230043	CER.CAP. 0.01μF Z 50V	DK18103310	QG15		482220983631	NJM4558DD	HC10008090
CS85		482212230043	CER.CAP. 0.01μF Z 50V	DK18103310					
CS86					QS01		482220970044	NJM2058D	HC10031090
I		482212423052	ELECT CAP. 100μF 16V	EJ10701610	QS02		482220970044	NJM2058D	HC10031090
CS89					QS03		482213061892	TRS. 2SD2144S	HT421442A0
					QS04		482213061892	TRS. 2SD2144S	HT421442A0
					QS05		482213060766	DTA114ES/UN4111	BA10001000
					QS06		482213060588	DTC114ES/UN4211	BA20001000
					QS07		482213061892	TRS. 2SD2144S	HT421442A0
					QS08		482213061892	TRS. 2SD2144S	HT421442A0
					QS09		482213060766	DTA114ES/UN4111	BA10001000
					QS10		482213060588	DTC114ES/UN4211	BA20001000
					QS11		482220983631	NJM4558DD	HC10008090
					QS12		482220983631	NJM4558DD	HC10008090
					QS13		482220932552	LC7821N	HC10308030
					QS14		482220932554	LC7823N	HC10310030
					QS15		482220932553	LC7822N	HC10309030
C***									
			PS04-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, ± 10% 50V: CG03,CG04,CG11-CG14, CG41-CG44,CG47,CG48, CG77,CG78,(CS61-CS70[02B]), (CS77-CS80[02B]), (CS90-CS99[02B])						

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QS21		482220970044	NJM2058D	HC10031090	QU01		482220990537	TMP87CK70	HU244JT000
QS22		482220983631	NJM4558DD	HC10008090	QU02		482213063211	DTA114TS	BA10003210
QS51		482220970044	NJM2058D	HC10031090	QU03		482213042682	DTA144ES/UN4113	BA10002000
QS52		482220970044	NJM2058D	HC10031090	QU04		482213042594	DTC144ES/UN4213	BA20002000
QS53		482220983631	NJM4558DD	HC10008090	QU05		482213060766	DTA114ES/UN4111	BA10001000
QS55		482213061892	TRS. 2SD2144S	HT421442A0	QU07		482213042682	DTA144ES/UN4113	BA10002000
QS56		482213061892	TRS. 2SD2144S	HT421442A0	QU08				
QS57		482213060766	DTA114ES/UN4111	BA10001000	I		482213042594	DTC144ES/UN4213	BA20002000
QS58		482213060588	DTC114ES/UN4211	BA20001000	QU10				
					QU11		482220932445	74HC123	HC712300B0
R***			PS04-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W RD01-RD05,RD07-RD11, RD13-RD16,RD19-RD23, RD51-RD58,RD61-RD64, RD71,RD72,RG01-RG16, RG19-RG26,RG31-RG46, RG49-RG56,RG61-RG76, RG79-RG82,RG85,RG87, RG89,RG91-RG97,RG99, RS01-RS42,RS45-RS79, RS81-RS83,RS85-RS88, RS91-RS98,RU91		QU12		482213060588	DTC114ES	BA20001000
					QU13		482213042594	DTC144ES/UN4213	BA20002000
			PS04-MISCELLANEOUS SLW25S-1C7 1.00MFFC 19P FFC 9603S-19C	YJ06020250 YJ07008840	R***			PU04-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W RU01-RU09,RU11,RU12, RU15-RU31	
JG01		482226731953	SBRL7S-4 2MM PITCH 7P	YJ06011670	FL01		482213091499	FIP12DM8R 12DIGIT 16SEG	HQ31206060
JG02		482226551389			JU01		482226760416	SLW28R-1C7 28P	YJ06020580
JP21		482226750956			SU01				
JS03		482229061244	RCA 6P(W/R-AU)	YT02060490	I		482227620508	TACT SW	SP01011280
JS04		482229061244	RCA 6P(W/R-AU)	YT02060490	SU14				
JS51		482229061244	RCA 6P(W/R-AU)	YT02060490	SU16		482227620508	TACT SW	SP01011280
JS52		482229061244	RCA 6P(W/R-AU)	YT02060490	SU21				
JU90		482226520724	RC-5 2P GOLD	YT02021310	I		482227620508	TACT SW	SP01011280
			PU04-FRONT CIRCUIT BOARD PU04-CAPACITORS CER.CAP. 22000pF 25V ELECT CAP. 47μF 10V ELECT CAP. 220μF 6.3V CER.CAP. 22000pF 25V CER.CAP. 0.1μF 50V +80 -20%	DA17223110 EJ47601010 EJ22700610 DA17223110 DD38104010	SU23				
CU01		482212240588			SU25		482227620508	TACT SW	SP01011280
CU02		482212423056			I				
CU03		482212480087			SU28				
CU04		482212240588			SU30		482227620508	TACT SW	SP01011280
CU05		482212240617			I				
CU07		482212490406	BIG ELECT CAP. 0.022μF 16V	EX22300530	SU33				
CU08		482212423053	ELECT CAP. 1μF 50V	EJ10505010	XU01		482224272066	RESONATOR CST 8.00MHZ	FQ08004010
CU09								PU54-ROTARY ENCODER CIRCUIT BOARD PU54-SEMICONDUCTORS TRS. 2SC536SP/ETC TRS. 2SC536SP/ETC	HT30001000 HT30001000
I		482212240588	CER.CAP. 0.022μF	DA17223110	QU51		482213042298		
CU12					QU52		482213042298		
			PU04-SEMICONDUCTORS L.E.D. LT3D8B RED 30	HI10062320	SU55		482227310296	PU54-MISCELLANEOUS EC16B ROTARY ENCODER	SR02010040
DU01		482213080326						PU64-ROTARY ENCODER SUB CIRCUIT BOARD PU64-CAPACITORS CER.CAP. 100pF 50V CER.CAP. 100pF 50V	DA16101110 DA16101110
DU02		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	CU51		482212610364		
I					CU52		482212610364		
DU05		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000				PU64-RESISTORS RES. 1Ω ± 5% 1/4W	GG05010140
DU07								PU64-RESISTORS (COMMON) Carbon Film Fixed Resistor, ± 5% 1/6W RU51-RU54	
I					R***				
DU14		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000				PU64-MISCELLANEOUS TACT SW	SP01011280
DU16		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	SU51		482227620508		
I									
DU20		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000					
DU33	02B	482213032362	DIODE 1SS176,MA165,1SS254	HD20002000					

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QU06		482213083887	PU74-IR SENSOR CIRCUIT BOARD PU74-SEMICONDUCTORS IR SENSOR RPM674CBR-S	HW10002210
			PW54-HEAD PHONE CIRCUIT BOARD	
			PW54-CAPACITORS CER.CAP. 0.022μF	DA17223110
CW53 CW54	02B 02B	482212240588 482212240588	CER.CAP. 0.022μF	DA17223110
C***			PW54-CAPACITOR (COMMON) High Dielectric Constant Ceramic Capacitor, ± 10% 50V: CW55[02B]	
DW51		482213082421	PW54-SEMICONDUCTORS DIODE 1D3 1A/200V	HD20002710
			PW54-RESISTORS RES. 47 Ω ± 5% 1/6W	GG05470160
▲ RW51 ▲ RW52		482205210479 482205210479	RES. 47 Ω ± 5% 1/6W	GG05470160
JW52		482226731894	PW54-MISCELLANEOUS PHONE JACKS BLK	YJ01004010
LW51		482228020501	MR62-24SR 24V RELAY	LY20240410
			P104-TUNER,SUB WOOFER CIRCUIT BOARD	
			P104-CAPACITORS	
C201		482212240586	CER.CAP. 10000pF	DA17103110
C202		482212240586	CER.CAP. 10000pF	DA17103110
C203		482212240306	CER.CAP. 0.047μF P 50V	DK18473310
C204		482212423053	ELECT CAP. 1μF M 50V	EJ10505010
C205		482212240306	CER.CAP. 0.047μF P 50V	DK18473310
C206		482212421894	ELECT CAP. 10μF 16V	EJ10601610
C208		482212240306	CER.CAP. 0.047μF P 50V	DK18473310
C209		482212423053	ELECT CAP. 1μF 50V	EJ10505010
C210		482212240586	CER.CAP. 10000pF	DA17103110
C211		482212423053	ELECT CAP. 1μF 50V	EJ10505010
C212		482212423053	ELECT CAP. 1μF 50V	EJ10505010
C213		482212423054	ELECT CAP. 0.47μF 50V	EJ47405010
C214		482212423056	ELECT CAP. 47μF 10V	EJ47601010
C215		482212240306	CER.CAP. 0.047μF P 50V	DK18473310
C218		482212240586	CER.CAP. 0.01μF M 16V	DA17103110
C219		482212421894	ELECT CAP. 10μF 16V	EJ10601610
C223		482212240586	CER.CAP. 10000pF	DA17103110
C224		482212231205	CER.CAP. 47pF J 50V	DD15470300
C225		482212240586	CER.CAP. 0.01μF M 16V	DA17103110
C226		482212240586	CER.CAP. 0.01μF M 16V	DA17103110
C228		482212231205	CER.CAP. 47pF J 50V	DD15470300
C229		482212231205	CER.CAP. 47pF J 50V	DD15470300
C230		482212240586	CER.CAP. 0.01μF Z 16V	DA17103110
C231		482212240586	CER.CAP. 0.01μF Z 16V	DA17103110
C303		482212421894	ELECT CAP. 10μF 16V	EJ10601610
C304		482212421894	ELECT CAP. 10μF 16V	EJ10601610
C305		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510
C306		482212421899	ELECT CAP. 4.7μF 25V	EJ47502510
C307	K/02B	482212421899	ELECT CAP. 4.7μF 25V	EJ47502510

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C308	K/02B	482212421899	ELECT CAP. 4.7μF 25V	EJ47502510
C311	K/02B	482212240586	CER.CAP. 0.01μF M 16V	DA17103110
C312	K/02B	482212240586	CER.CAP. 0.01μF M 16V	DA17103110
C501		482212231205	CER.CAP. 47pF J CH 50V	DD15470300
C502		482212231205	CER.CAP. 47pF J CH 50V	DD15470300
C503			ELECT CAP. 100μF M 10V	EA10701020
C504		482212240586	CER.CAP. 10000pF	DA17103110
C505		482212423053	ELECT CAP. 1μF 50V	EJ10505010
C506		482212441604	ELECT CAP. 0.1μF 50V	EJ10405010
C507		482212240586	CER.CAP. 10000pF	DA17103110
C511		482212240586	CER.CAP. 10000pF	DA17103110
CA01		482212560185	TRIM.CAP. 12pF	CT12000200
CA02		482212240306	CER.CAP. 0.047μF P 50V	DK18473310
CA03		482212231823	CER.CAP. 15pF J CH 50V	DD15150300
CA04		532212154128	FILM CAP. 390pF J 50V	DF55391090
CA05		482212231205	CER.CAP. 47pF J CH 50V	DD15470300
CA06		482212240586	CER.CAP. 10000pF	DA17103110
CA07		482212240586	CER.CAP. 10000pF	DA17103110
CA08	02B	482212560185	TRIM.CAP. 12pF	CT12000200
CA09	02B	482212231823	CER.CAP. 15pF J CH 50V	DD15150300
CA11	02B	482212231349	CER.CAP. 68pF J CH 50V	DD15680300
CA12	02B	482212210367	CER.CAP. 150pF J CH 50V	DD15151300
CA13	02B	482212240586	CER.CAP. 10000pF	DA17103110
CA14	02B	482212240586	CER.CAP. 10000pF	DA17103110
CA18		482212421899	ELECT CAP. 4.7μF M 25V	EJ47502510
CE01				
CE03		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CE13				
CE15		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CE31				
CE46		482212240586	CER.CAP. 10000pF 25V	DA17103110
CE67				
CE69		482212423056	ELECT CAP. 47μF 16V	EJ47601610
CV41				
CV48		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CV51				
CV54		482212421894	ELECT CAP. 10μF 16V	EJ10601610
CV56		482212423056	ELECT CAP. 47μF M 10V	EJ47601010
CV58		482212423056	ELECT CAP. 47μF M 10V	EJ47601010
CV60		482212423056	ELECT CAP. 47μF 10V	EJ47601010
CV61				
CV63		482212240586	CER.CAP. 0.01μF M 16V	DA17103110
CV64				
CV66		482212240617	CER.CAP. 0.1μF 50V +80 -20%	DD38104010
CV68		482212240617	CER.CAP. 0.1μF 50V	DD38104010
CV69		482212421894	ELECT CAP. 10μF M 16V	EJ10601610
CV70		482212421894	ELECT CAP. 10μF M 16V	EJ10601610

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C***			P604-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, $\pm 10\%$ 50V: C629,C658,CF75,CF76, CX11,CX62		▲ R645		482205210479	P604-RESISTORS FUSIBLE RES. $47\Omega \pm 5\%$ 1/4W	GG05470140
C***			Electrolytic Capacitor, $\pm 20\%$: C623,C628,C655,C657, C695,C696		R***			P604-RESISTORS (COMMON) Carbon Film Fixed Resistor, $\pm 5\%$ 1/6W R601-R609,R611,R612, R614-R619,R641-R644, R651-R661,R663-R667, R669-R672,R674-R677, R681-R685,R687,R688, R691-R693,RF61-RF74, RL01-RL12,RL15-RL19, RM01-RM03,RM05-RM07, RM09-RM11,RM13-RM15, RM17-RM19,RM21-RM23, RM25-RM27,RM29-RM31, RM33-RM36,RM51-RM57, RM59-RM76,RM78-RM80, RU63,RU64,RU71-RU76, RX51-RX53,RX54[K/02B], RX55-RX57,RX59-RX62, RX65-RX68	
C***			Plastic Film Capacitor, $\pm 5\%$ 50V: C603-C611,C613-C616,C620, C626,C627,C630-C635,C638, C639,C659-C665,C667,C668, CM07-CM09,CM11-CM13, CM15-CM17,CM52-CM57, CX64,CX65					P604-MISCELLANEOUS 4P RCA PINJACK YEL GOLD 3P RCA PINJACK YEL.GOLD	YT02041080 YT02030340
DF71 DF76		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	JL01 JL02		482226531301 482226531299		
DL01 DL10		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	JM01 JM02 JM04		482226731953 482226731954 482226760415	SLW25S-1C7 1.00MFFC 9603S-13C SLW28S-1C7 28P	YJ06020250 YJ07008780 YJ06020280
DU21		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	LM01 LM02		482212610441 482212610441	DSS306-91FZ103N DSS306-91FZ103N	FM12103010 FM12103010
DX61		482213032362	DIODE 1SS176,MA165,1SS254	HD20002000	LX51 LX52 LX53		482215762909 482215763312 482224273843	LAL02TA220J 22 μ H LAL02TA5R6J 5.6 μ H DSS306-91-F-223Z	LC12233800 LC15623800 FM12223010
Q601 Q602 Q603 Q604 Q606		482220990533 482220970044 482220983631	LA2775 NJM2058D NJM4558DD	HC10340030 HC10031090 HC10008090	S601 SX51		482227721718 482227721718	SLIDE SW SSSS9-23Z SLIDE SW SSSS9-23Z	SS02030560 SS02030560
Q607 Q608 Q609 Q610		482220973275 482220932693 482220983631 482220970044	TC9214P NJM2177L NJM4558DD NJM2058D	HC10209050 HC10126090 HC10008090 HC10031090	XX51 XX52		482224280288 482224273903	X'TAL AT49/14.31818MHz X'TAL AT49 17.7MHz	JX14001260 JX17001260
QF52		482220970044	NJM2058D	HC10031090				P804-POWER SUPPLY, OUTPUT CIRCUIT BOARD	
QL01 QL02 QL03		482220931538 482220931538 482220932513	LC7824 LC7824 MC 14576	HC10275030 HC10275030 HC10046170	▲ C801 C802 C805 C808		482212233276 482212230103 482212240586	CER.CAP. DE7150 F 103M CER.CAP. 0.022 μ F 50V CER.CAP. 10000pF 16V	DK17103840 DK18223310 DA17103110
QM01 QM02 QM03 QM51 QM52		482220983631 482220983631 482220932552 482220970044 482220983804	NJM4558DD NJM4558DD LC7821N NJM2058D LC4966	HC10008090 HC10008090 HC10308030 HC10031090 HC10150030	C809 C816 C817 C818 C819		482212240586 482212240586 482212240586 482212423056 482212423056	CER.CAP. 10000pF 16V CER.CAP. 10000pF 16V CER.CAP. 10000pF 16V ELECT CAP. 47 μ F 10V ELECT CAP. 47 μ F 10V	DA17103110 DA17103110 DA17103110 EJ47601010 EJ47601010
QM53 QM54 QM55		482213060766 482213042594 482213042594	DTA114ES/UN4111 DTC144ES/UN4213 DTC144ES/UN4213	BA10001000 BA20002000 BA20002000	C823 C824 C829 C830 C834		482212441604 482212421894 482212423054 482212423053 482212230043	ELECT CAP. 0.1 μ F 50V ELECT CAP. 10 μ F 16V ELECT CAP. 0.47 μ F 50V ELECT CAP. 1 μ F 50V CER.CAP. 0.01 μ F Z 50V	EJ10405010 EJ10601610 EJ47405010 EJ10505010 DK18103310
QX19 QX60 QX61 QX62 QX63		482220990532 482220912668 482213042298 482213042594 482220932513	NJU3713 LC74760 C536SP,C2458,C3311,C1740S DTC144ES/UN4213 MC14576	HC10161090 HC10328030 HT30001000 BA20002000 HC10046170	C836		482212240588	CER.CAP. 0.022 μ F	DA17223110

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
C901 C902		482212240617 482212240617	CER.CAP. 0.1 μ F 50V +80 -20% CER.CAP. 0.1 μ F 50V +80 -20%	DD38104010 DD38104010
CW01 CW02 CW03 CW04 CW05		482212423057 482212423057 482212423056 482212423056 482212240588	ELECT CAP. 4.7 μ F 50V ELECT CAP. 4.7 μ F 50V ELECT CAP. 47 μ F 16V ELECT CAP. 47 μ F 16V CER.CAP. 22000pF 25V	EJ47505010 EJ47505010 EJ47601610 EJ47601610 DA17223110
CW06		482212240588	CER.CAP. 22000pF 25V	DA17223110
C***			P804-CAPACITORS (COMMON) High Dielectric Constant Ceramic Capacitor, $\pm 10\%$ 50V: (C903-C910(02B))	
C***			Electrolytic Capacitor, $\pm 20\%$: C806, C807, C810-C815, C820-C822, C825-C828, C831-C833, C835	
D801 D802 ▲ D803 ▲ D804 ▲ D805		482213082421 482213082421 482213033057 482213033057 482213082421	DIODE 1D3 1A/200V DIODE 1D3 1A/200V DIODE S2VB20 DIODE S2VB20 DIODE 1D3 1A/200V	HD20002710 HD20002710 HE20011290 HE20011290 HD20002710
▲ D806 D807 D808 D811		482213082421 482213080273 482213032362	DIODE 1D3 1A/200V ZENER DIODE 8.2V DIODE 1SS176, MA165, 1SS254	HD20002710 HD30821000 HD20002000
▲ D812 ▲ D815 D816 D817		482213082421 482213080316 482213032362	DIODE 1D3 1A/200V ZENNER DIODE NTJ3.6A 3.6V DIODE 1SS176, MA165, 1SS254	HD20002710 HD30361000 HD20002000
▲ D818 ▲ D819 D820 ▲ D821 ▲ D826		482213082421 482213082421 482213081729 482213082421	DIODE 1D3 1A/200V DIODE 1D3 1A/200V ZENNER DIODE MTJ33D DIODE 1D3 1A/200V	HD20002710 HD20002710 HD33301000 HD20002710
D901 D902 D904		482213082421 482213082421 482213082421	DIODE 1D3 1A/200V DIODE 1D3 1A/200V DIODE 1D3 1A/200V	HD20002710 HD20002710 HD20002710
Q801 ▲ Q802 ▲ Q803 ▲ Q804 ▲ Q805		482213060588 482220990536 482220961526 482220983819 482220930442	DTC114ES/UN4211 UPS7815H NJM79M15FA NJM78L06A NJM79L06A	BA20001000 HC38915060 HC39515090 HC38106090 HC39106090
▲ Q806 ▲ Q807 ▲ Q808 Q809 Q810		482213061442 482213061359 482220932514 482213042298 482213042298	TRS. 2SD1913 TRS. 2SB1274 L78NR06 TRS. 2SC536SP/ETC. TRS. 2SC536SP/ETC.	HT419132B0 HT212742B0 HC10263030 HT30001000 HT30001000
Q811 Q812 Q813 Q814 Q815		482213060766 482213060696 482213060766 482213060766 482220931925	DTA114ES/UN4111 TRS. 2SC1627 DTA114ES/UN4113 DTA114ES/UN4111 PQ6RA1	BA10001000 HT316272B0 BA10001000 BA10001000 HC36905320

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JPN)
QW01		482220983274	NJM4560D	HC10007090
▲ R801 ▲ R802 ▲ R821	U	482211710158 482211710158	P804-RESISTORS RES. 1 Ω $\pm 5\%$ 1/4W RES. 1 Ω $\pm 5\%$ 1/4W RES. 2.2M Ω $\pm 10\%$ 1/2W	GG05010140 GG05010140 RC10225820
R***			P804-RESISTORS (COMMON) Carbon Film Fixed Resistor, $\pm 5\%$ 1/6W R807-R819, R822, R823, R901-R907, R911-R917, R925-R928, RW01-RW04	
▲ F801 ▲ F801 ▲ F804	02B U 02B	482207032001 482225340166	P804-MISCELLANEOUS FUSE 160mA 250V FUSE 500mA 250V FUSE T2.5A 250V	FS10020850 FS10050350 FS10250850
▲ J803 ▲ J803	U/K 02B	482226731952	CCT1304-0211 AC OUTLET 2P (K)	YJ04002150 YJ04002080
J901 J902 J903		482226750956 482229081723 482229081723	2MM PITCH 7P SOCKET RCA 2L4P W/R AU RCA 2L4P W/R AU	YJ06011670 YT02041070 YT02041070
JW01		482226740869	2MM PITCH 6P SOCKET	YJ06011660
▲ L801 ▲ L802		482228020534 482228070354	RELAY G5P-1 RELAY VB24MBU-510 5A/240VAC	LY10240220 LY20240310
L901 L904		482228020501	MR62-24SR 24V RELAY	LY20240410
			P814-VOLTAGE SEL. CIRCUIT BOARD	
▲ F802 ▲ F803	K K	482225330394	P814-MISCELLANEOUS FUSE 315mA 250V FUSE 160mA 250V	FS10031850 FS10016850
▲ SP51	K		SLIDE SW	SS02021510