

Service Manual

SR780 U,K,KS

Audio/Video Receiver

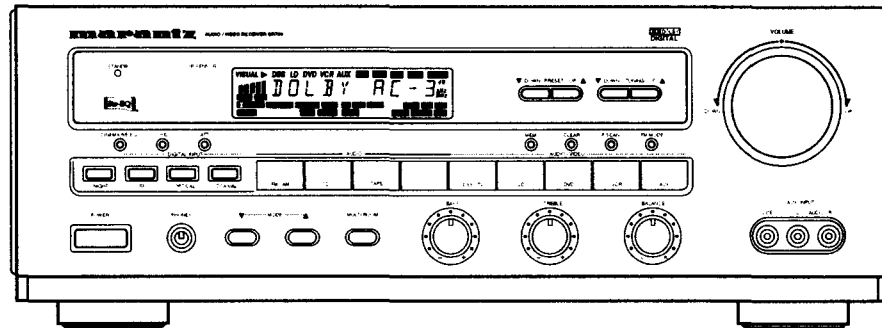


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Please use this service manual with referring to the user guide (D.F.U) without fail.

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model SR780

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.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

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CANADA
PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

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MARANTZ PROFESSIONAL PRODUCTS
1000 CORPORATE BLVD., SUITE D
AURORA, ILLINOIS 60504 USA
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FAX : 630 - 820 - 8103

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TC ELECTRONICS CANADA LTD.
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC H9X 3T2
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PHONE : 0800 - 123123 (Discagem Direta Gratuita)
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THAILAND

MRZ STANDARD CO., LTD.
746 - 754 MAHACHAI RD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 - 9181
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FORWARD INTERNATIONAL CORP., LTD.
3F, BLOCK-B WO KEE HONG BLDG., 585-609
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PHONE : +852 24942033
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52 CROWN STREET, RICHMOND 3121
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FAX : +886 (2) 5630415

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NO. 102 JALAN SS 21/35, DAMANSARA
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SELANGOR DARUL EHSAN,
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営業本部 〒150-0022
東京都渋谷区恵比寿南 1 - 11 - 9

SINGAPORE

FORWARD MARKETING (S) PTE. LTD.
23, LORONG 8, TOA PAYOH,
SINGAPORE 319257.
PHONE : +65 2583640
FAX : +65 3564047

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 N0. 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 1.3µV/13.5 dBf
Signal to Noise Ratio	Mono/Stereo 76/70 dB
Distortion	Mono/Stereo 0.2 / 0.4%
Stereo Separation	1 kHz 40 dB
Alternate Channel Selectivity	±400 kHz 55 dB (U version) ±300 kHz 55 dB (K, KS version)
Image Rejection	98 MHz 50dB (U version) 98 MHz 70 dB (K, KS version)
Tuner Output Level	1 kHz, 75 kHz Dev 800mV (U version) 1 kHz, 40 kHz Dev 800mV (K, KS version)

AM TUNER SECTION

Frequency Range	520 – 1710 kHz (U version) 531 – 1602 or 520 – 1710 kHz (K version) 531 – 1602 kHz (KS version)
Signal to Noise Ratio	50 dB
Usable Sensitivity	Loop 500 µV
Distortion	1 kHz, 30% Mod. 1.0%
Selectivity	±20 kHz 70 dB (U version) ±18 kHz 70 dB (K, KS version)

AUDIO SECTION

Rated Power	
Stereo Mode FRONT (20 Hz – 20 kHz)	8 ohms 85W / Ch (2ch driven)
Center (40 Hz – 20 kHz)	8 ohms 85W / Ch
Surround	8 ohms 85W / Ch
THD Front (20 Hz – 20 kHz)	8 ohms 0.01%
Input Sensitivity/Impedance	
Linear	180mV/47 kohms
Signal to Noise Rate (IHF A)	
Linear	82 dB
Dolby Surround Adjacent Channels Separation	55 dB

VIDEO

Television Format	NTSC (U version) PAL/NTSC (K, KS version)
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response	5 Hz to 8 MHz (– 1 dB)

GENERAL

Power Requirement	AC 120V 60 Hz (U version) AC 110/115/220/230V 50/60 Hz (K version) AC 230V 50 Hz (KS version)
Power Consumption	300W
Dimension (MAX)	
Width	17-¼ inches (439 mm)
Height	6-¼ inches (158 mm)
Depth	18 inches (458 mm)
Weight	30.9 lds. (14.0 kg)

ACCESSORIES

Remote Control Unit RC780SR (K, KS version)	1
RC2000 MKII(U version)	1

Dolby Digital(AC-3) SECTION

Output Level

Front L/R, CENTER, SURROUND L/R	
Master Volume	0dB
1 KHz, 0 dB FS INPUT	1.5V
SUBWOOFER	
40 Hz, 0 dB FS INPUT	4.8V

Frequency Response

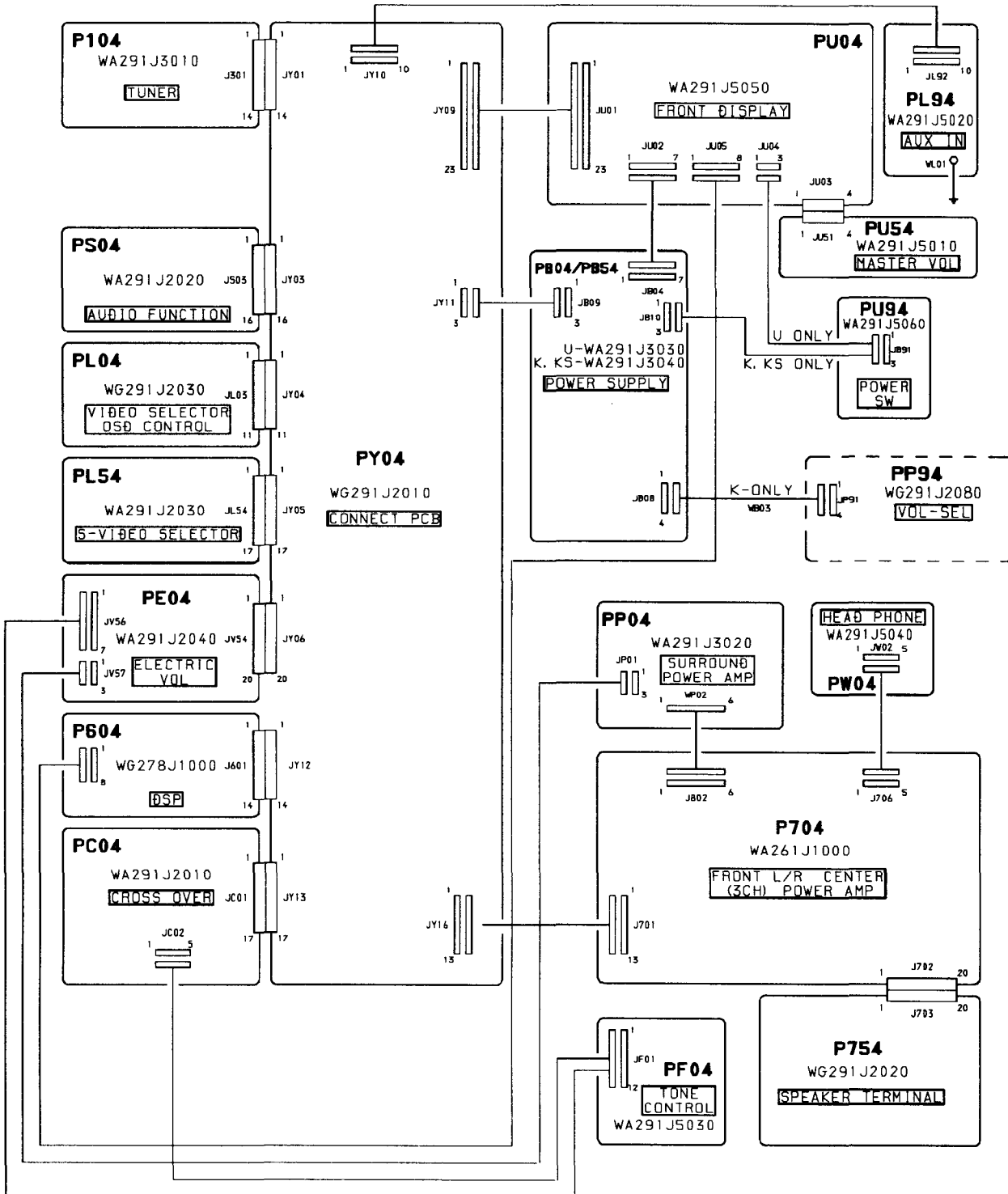
Front L/R, CENTER, SURROUND L/R (LARGE)	
20 Hz – 20 KHz	-1dB

Total Harmonic Distortion

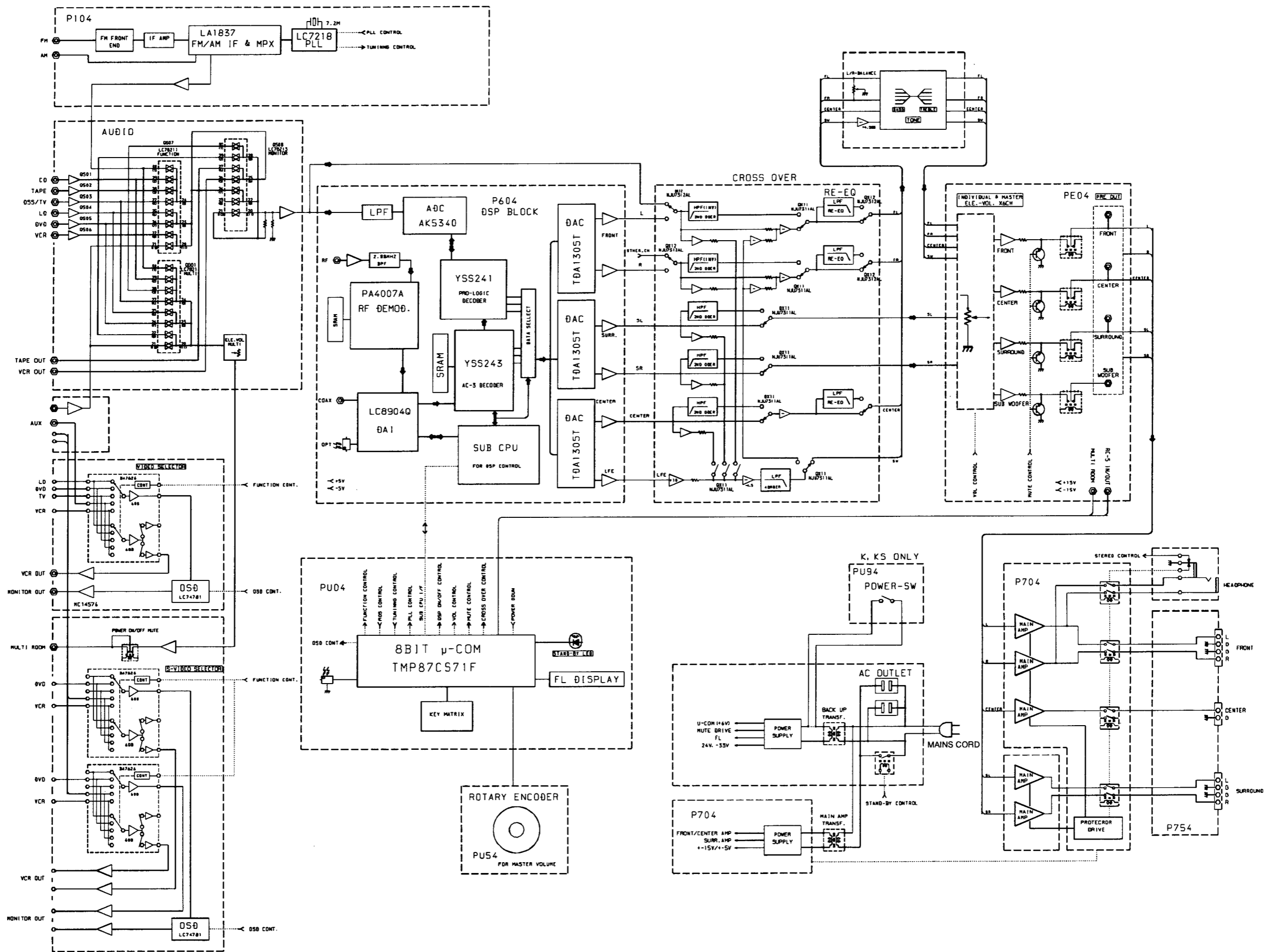
Front L/R, CENTER, SURROUND L/R (1 KHz)	0.01% or less
SUBWOOFER (40 Hz)	0.07% or less
Signal to Noise Ratio (IHF-A)	96 dB
Channel Separation (1 KHz)	57 dB

Specifications subject to change without prior notice.

2. WIRING DIAGRAM

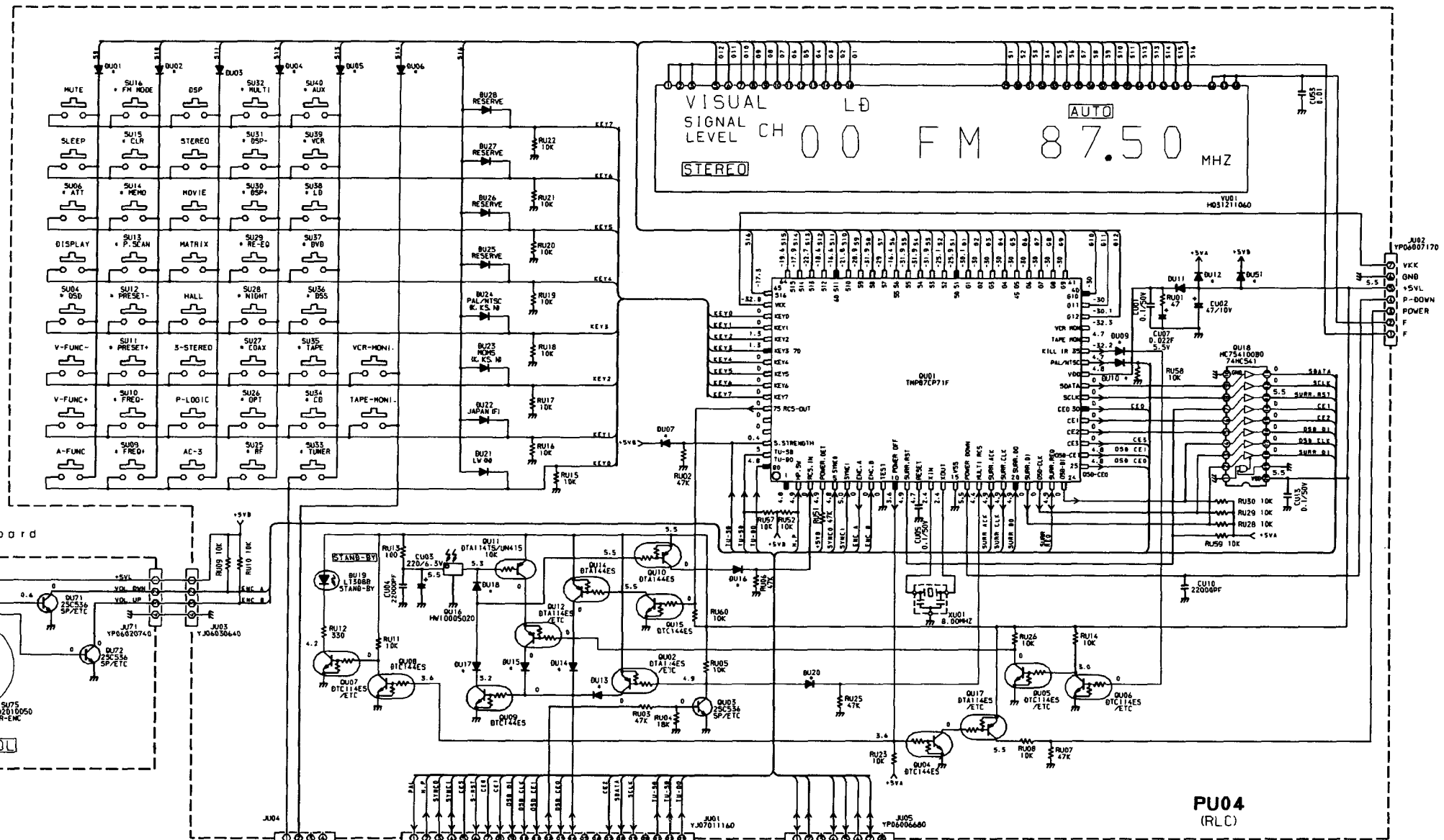


3. BLOCK DIAGRAM



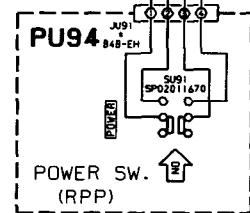
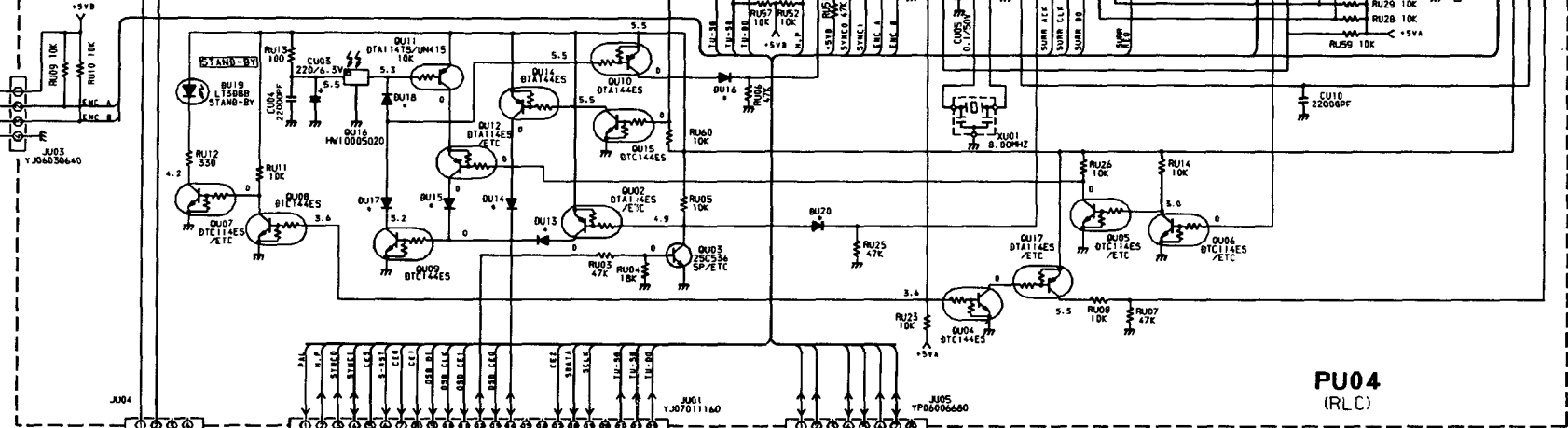
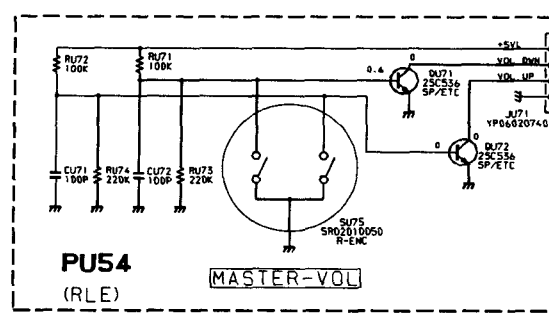
4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)

PU04 Front P.C Board



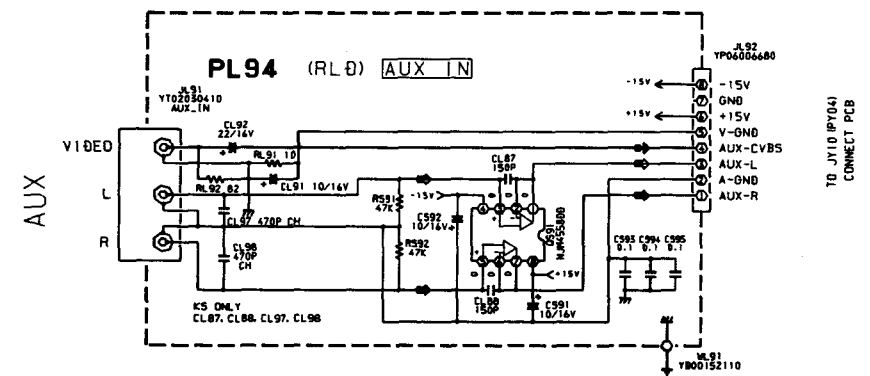
U-TO .J04 (P604)
K-KS-TO .J04 (P604)
BACK UP SUPPLY PCB

PU54 Master Vol P.C. Board

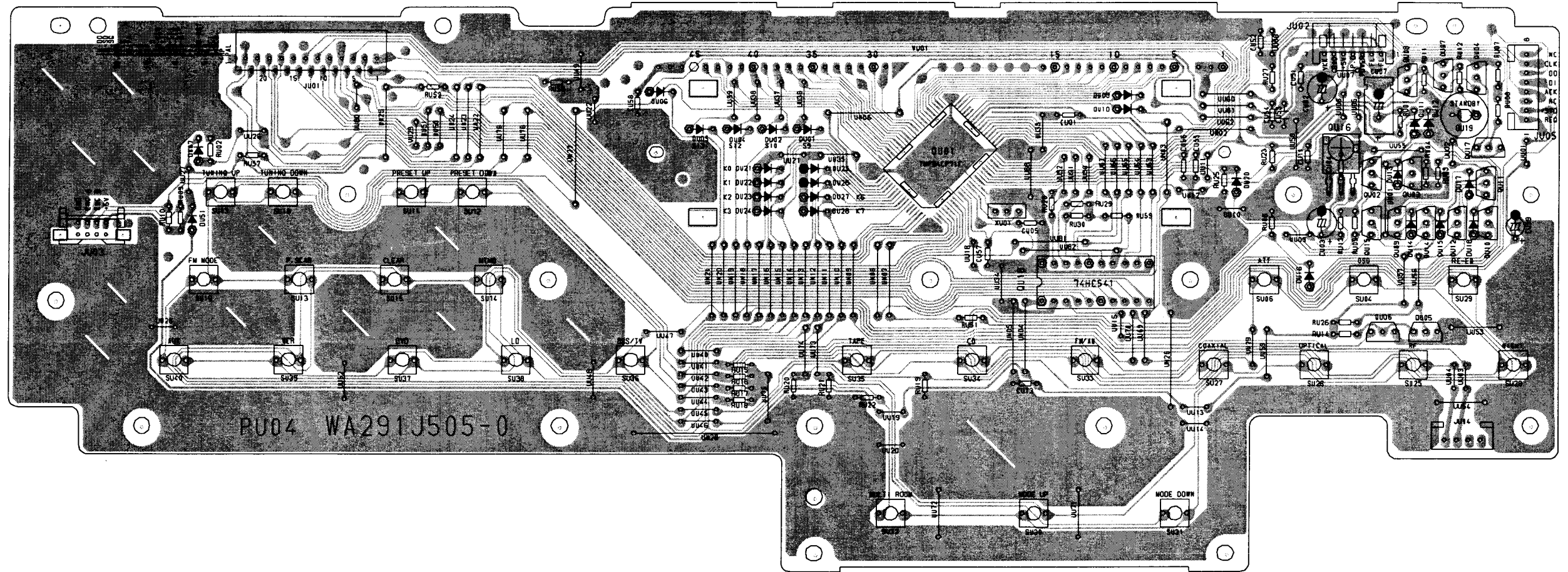


PU94 Power SW P.C. Board U version

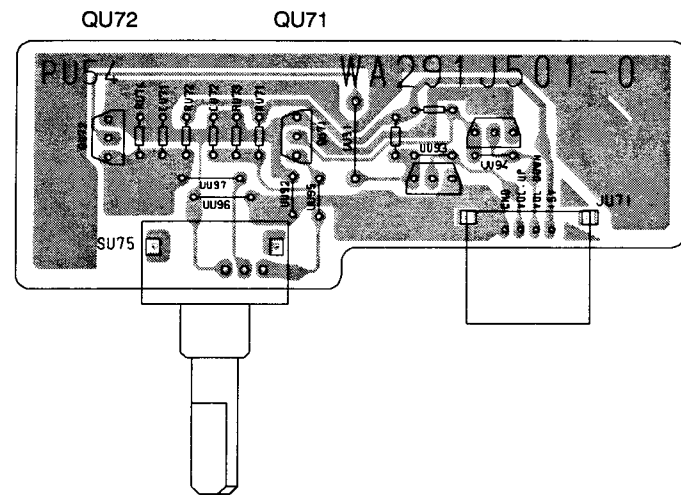
PL94 Aux in P.C. Board



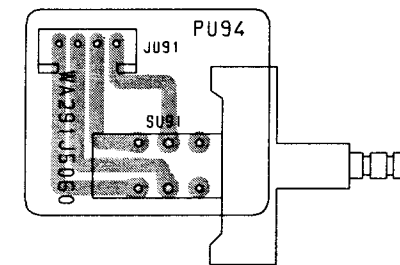
PU04 Front P.C. Board



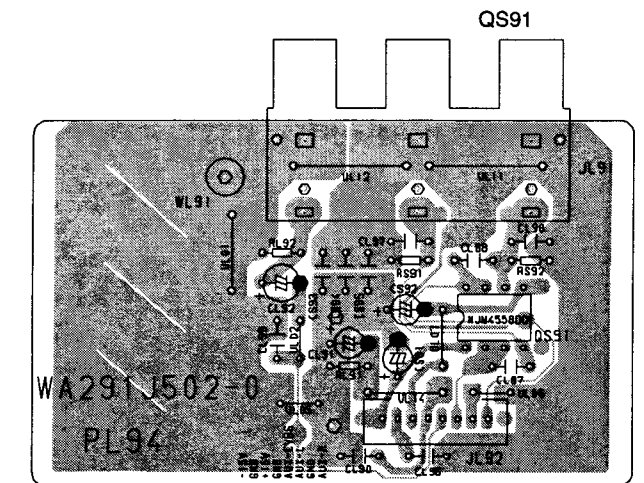
PU54 Master Vol P.C. Board

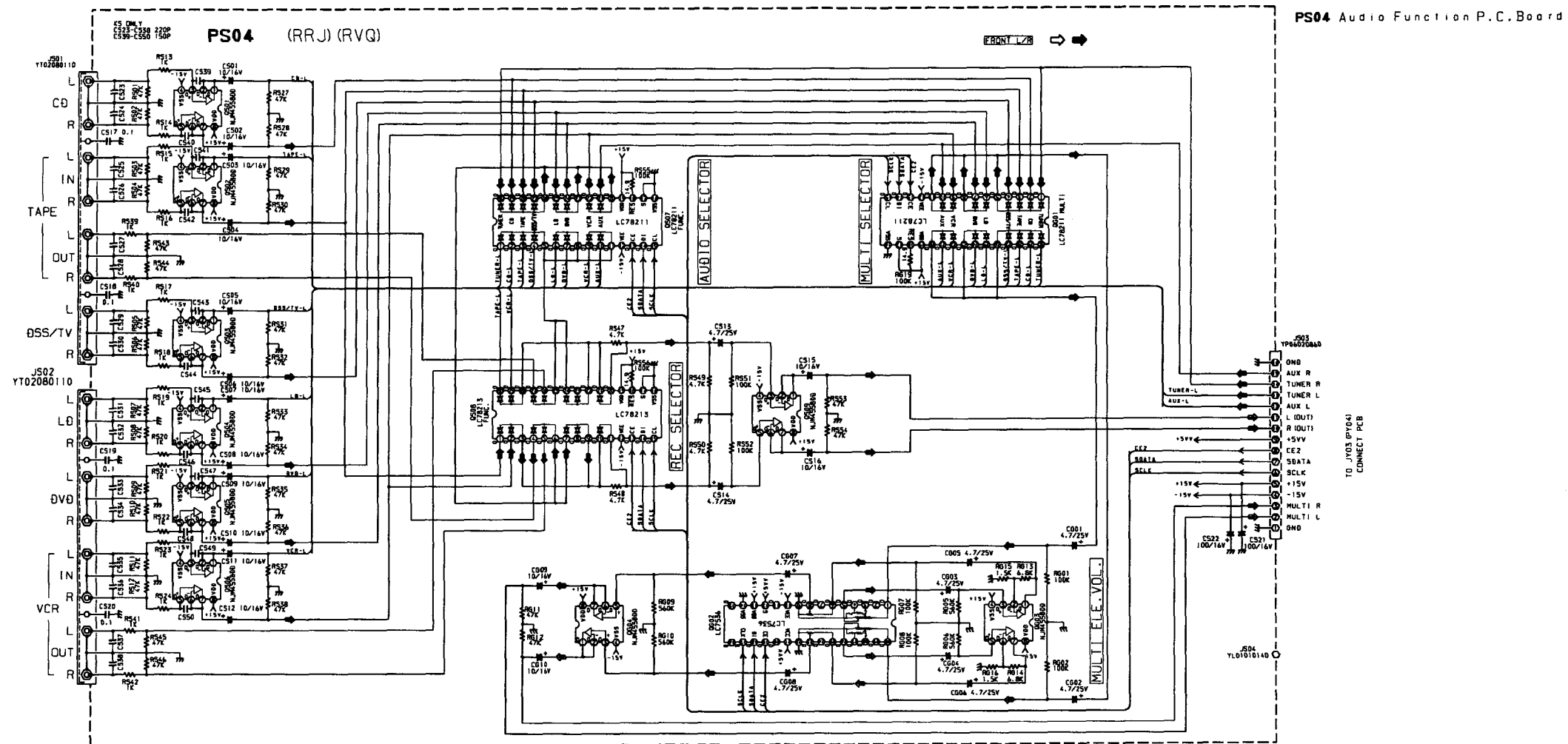


PU94 Power SW P.C. Board

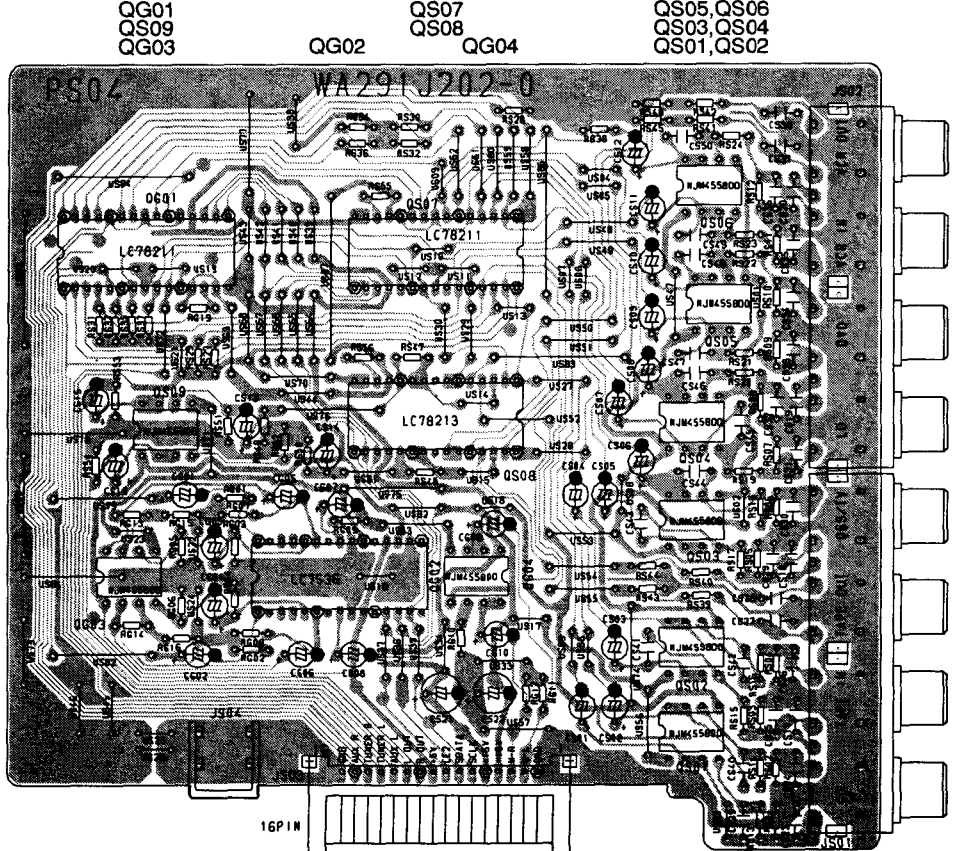


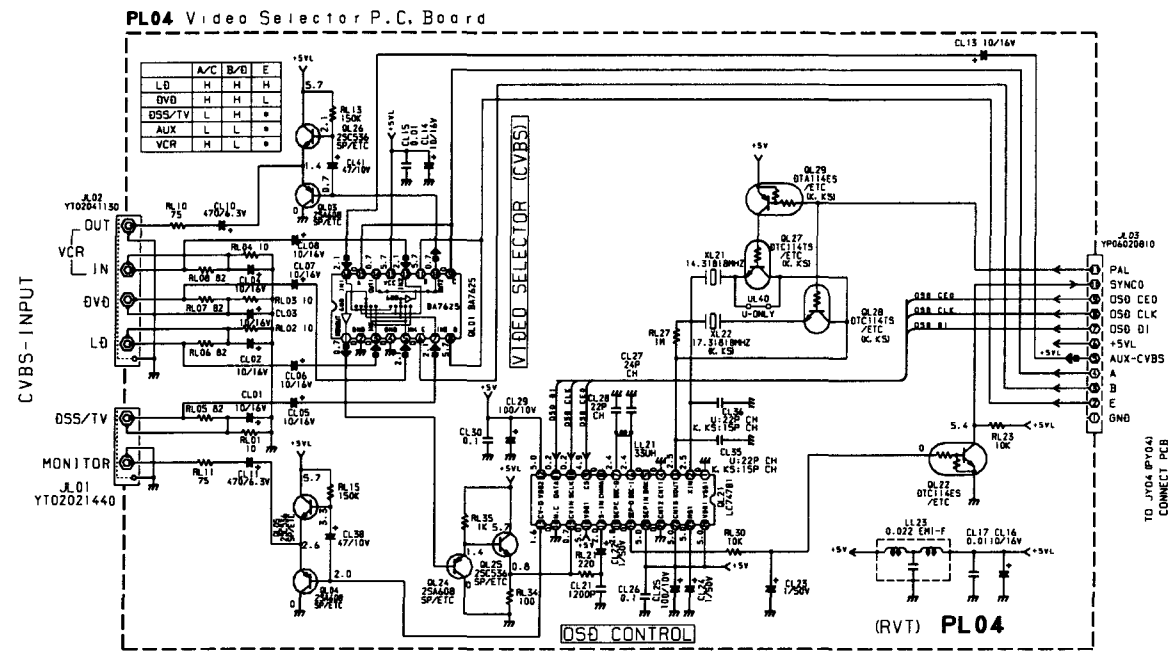
PL94 Aux In P.C. Board



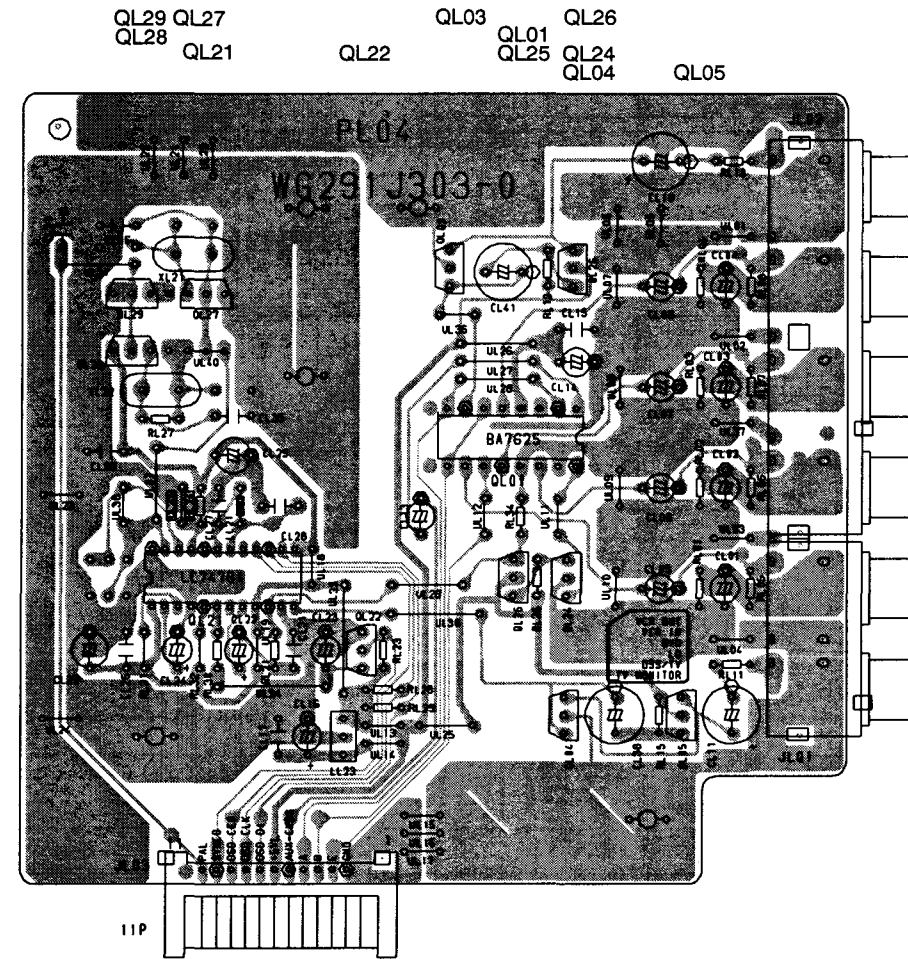


PS04 Audio Function P.C. Board

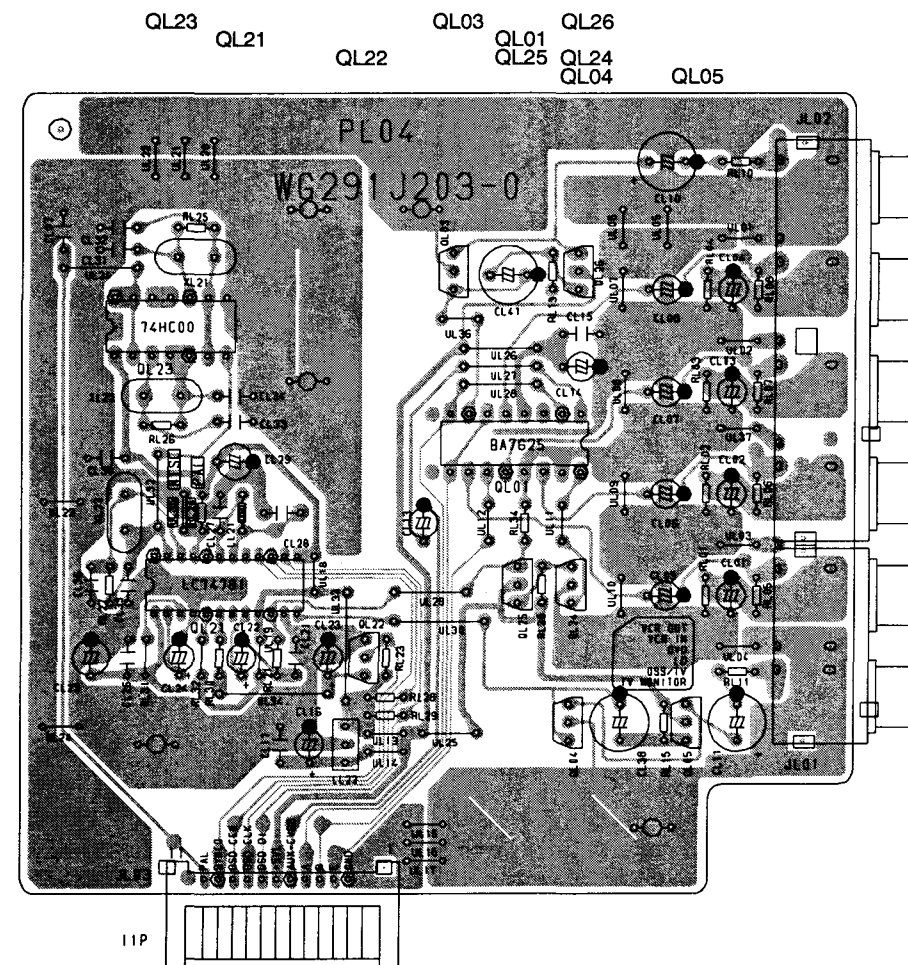


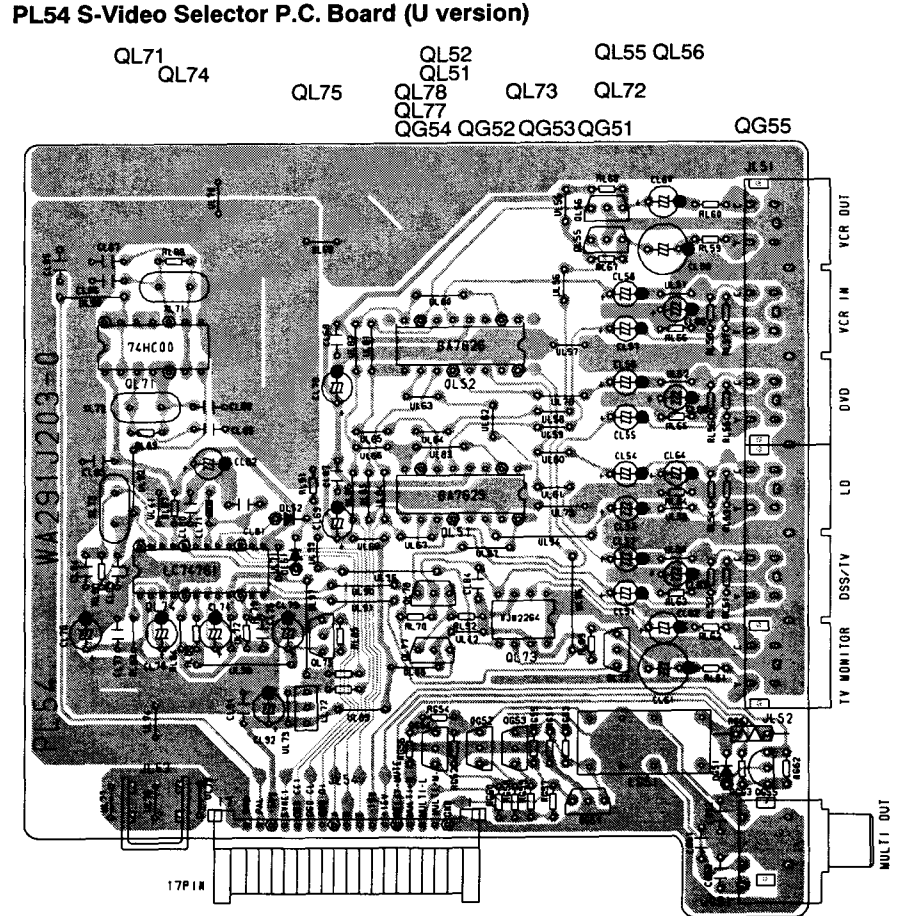
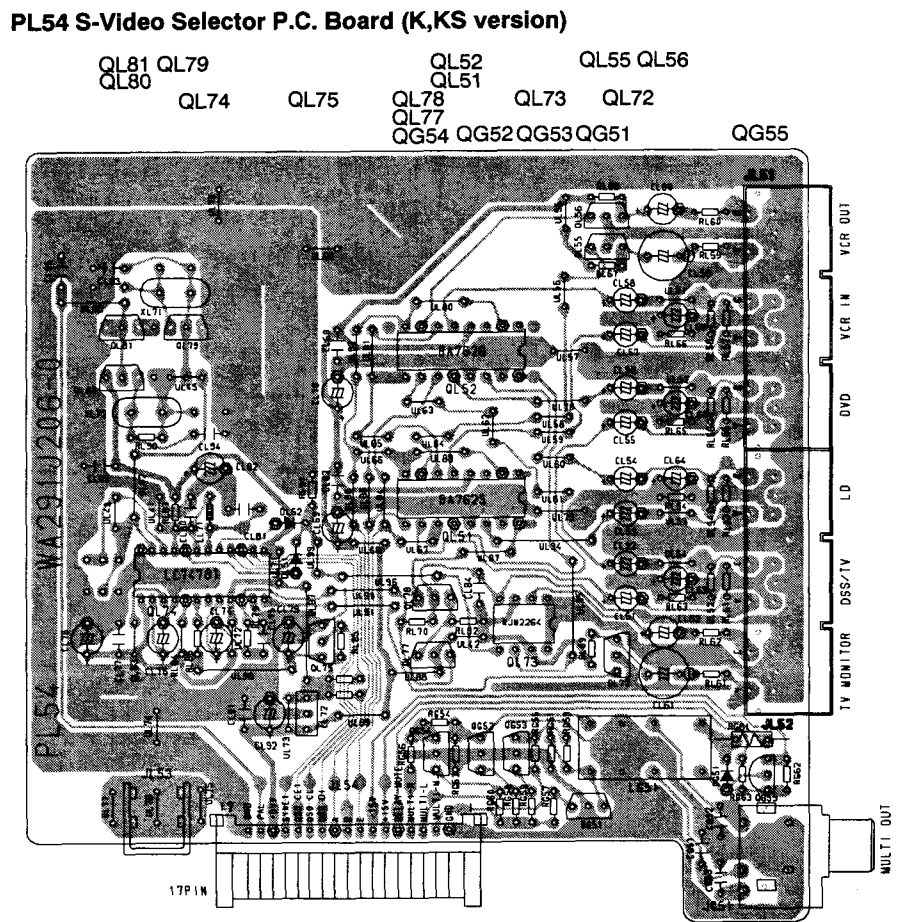
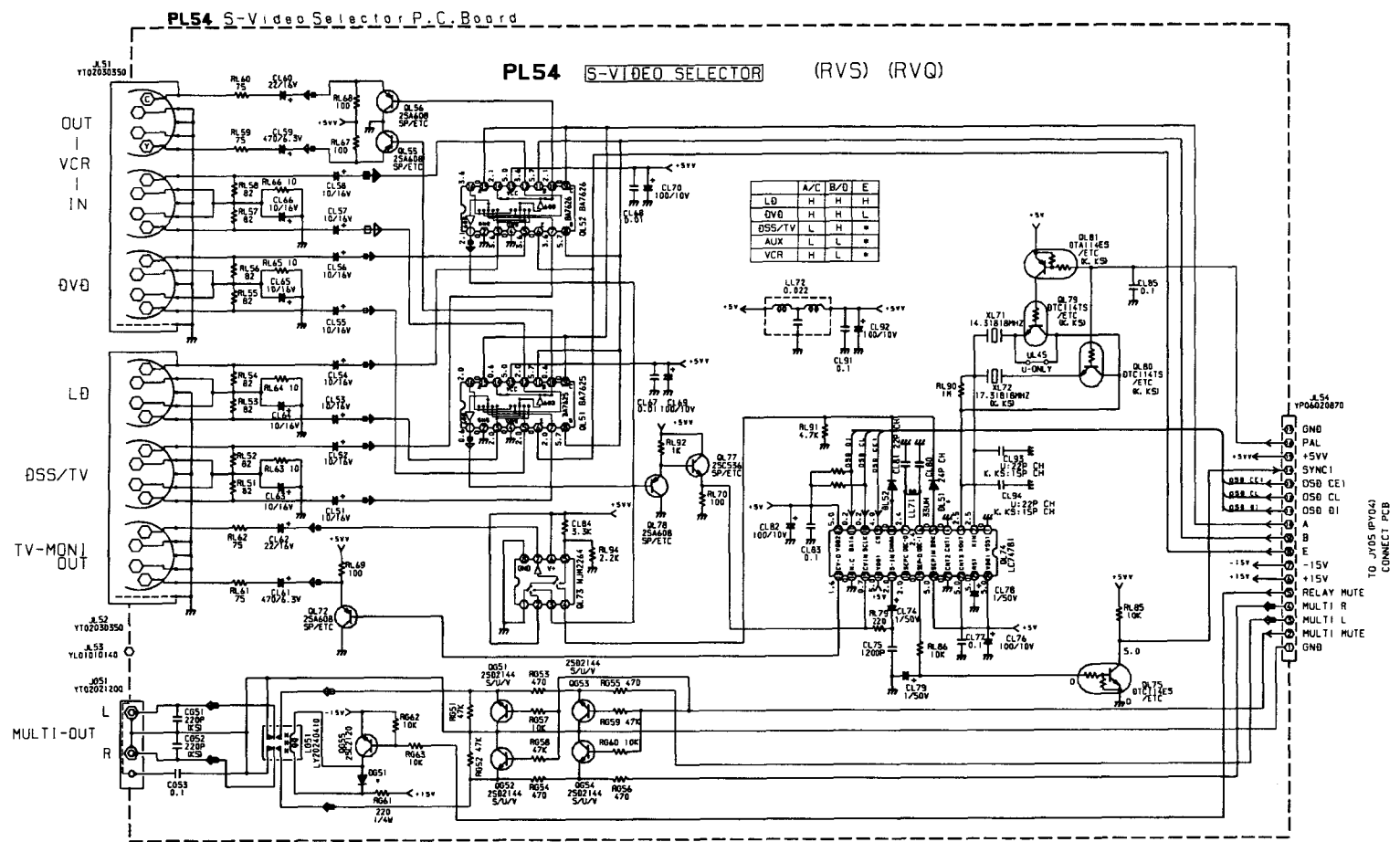


PL04 Video Selector P.C. Board (K,KS version)

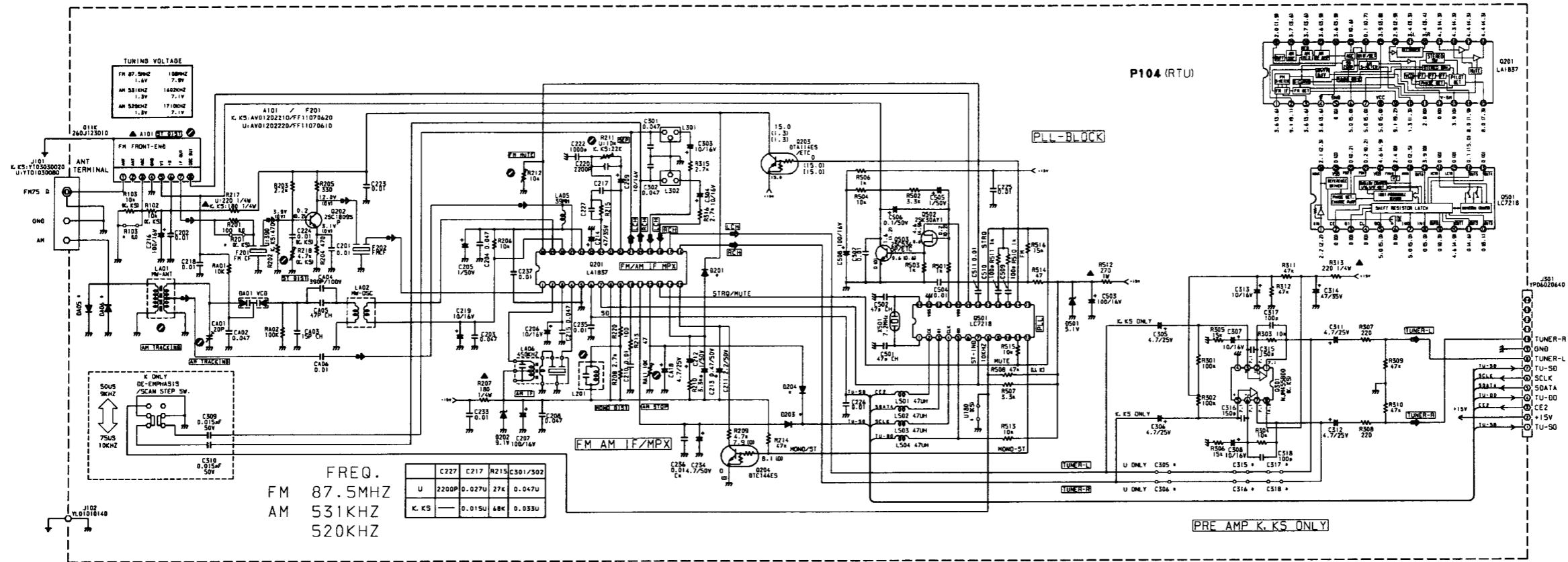


PL04 Video Selector P.C. Board (U version)

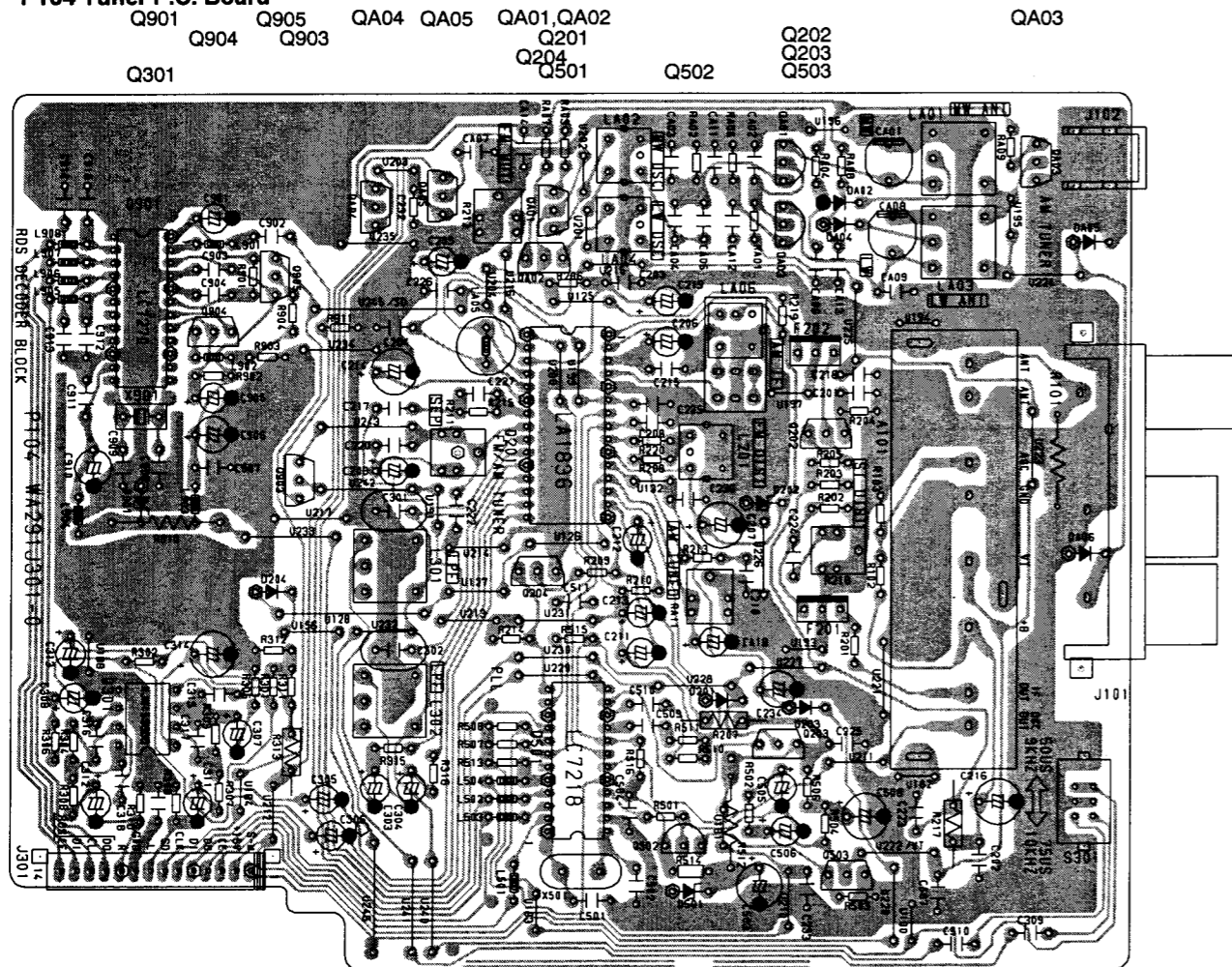


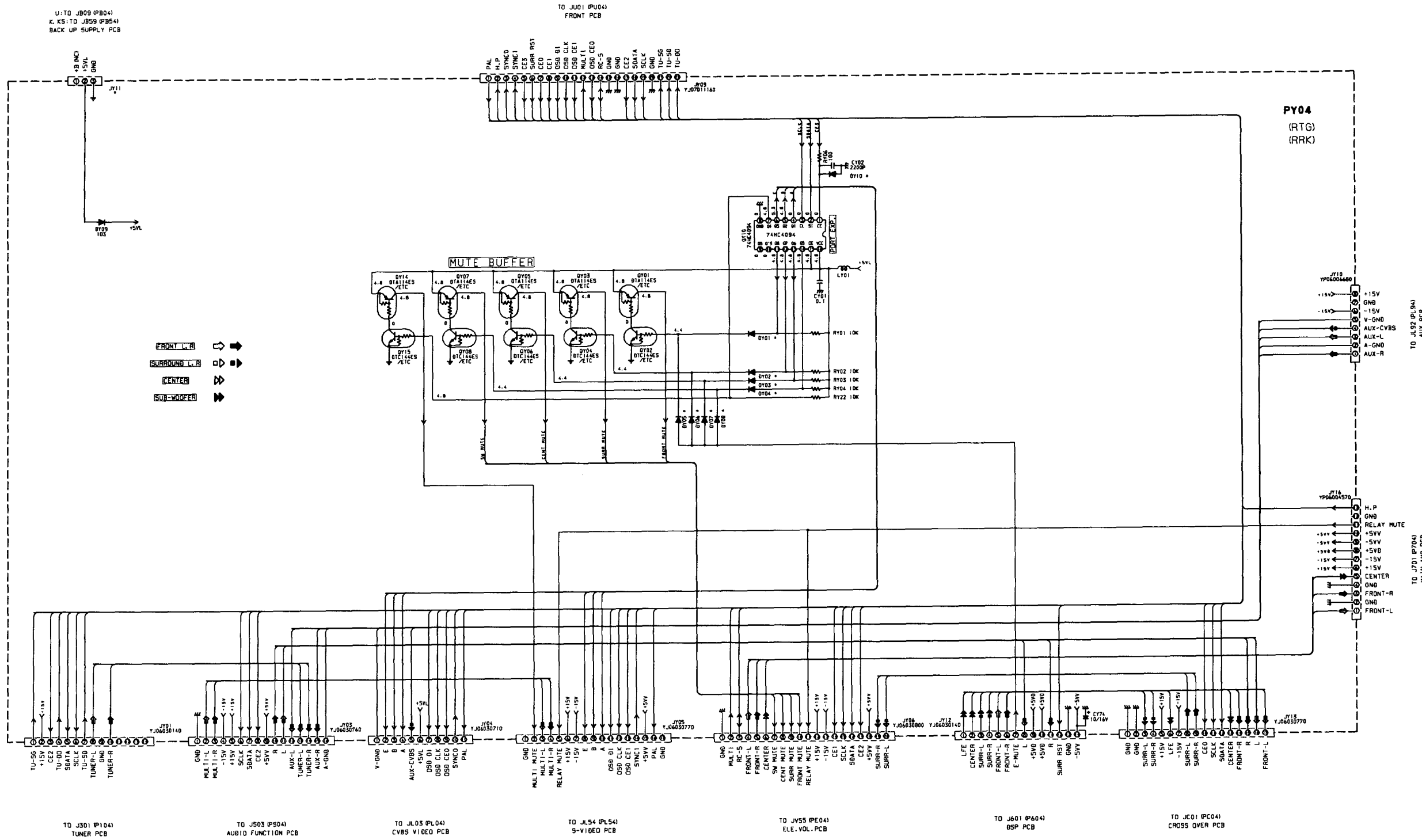


P104 Tuner P.C. Board

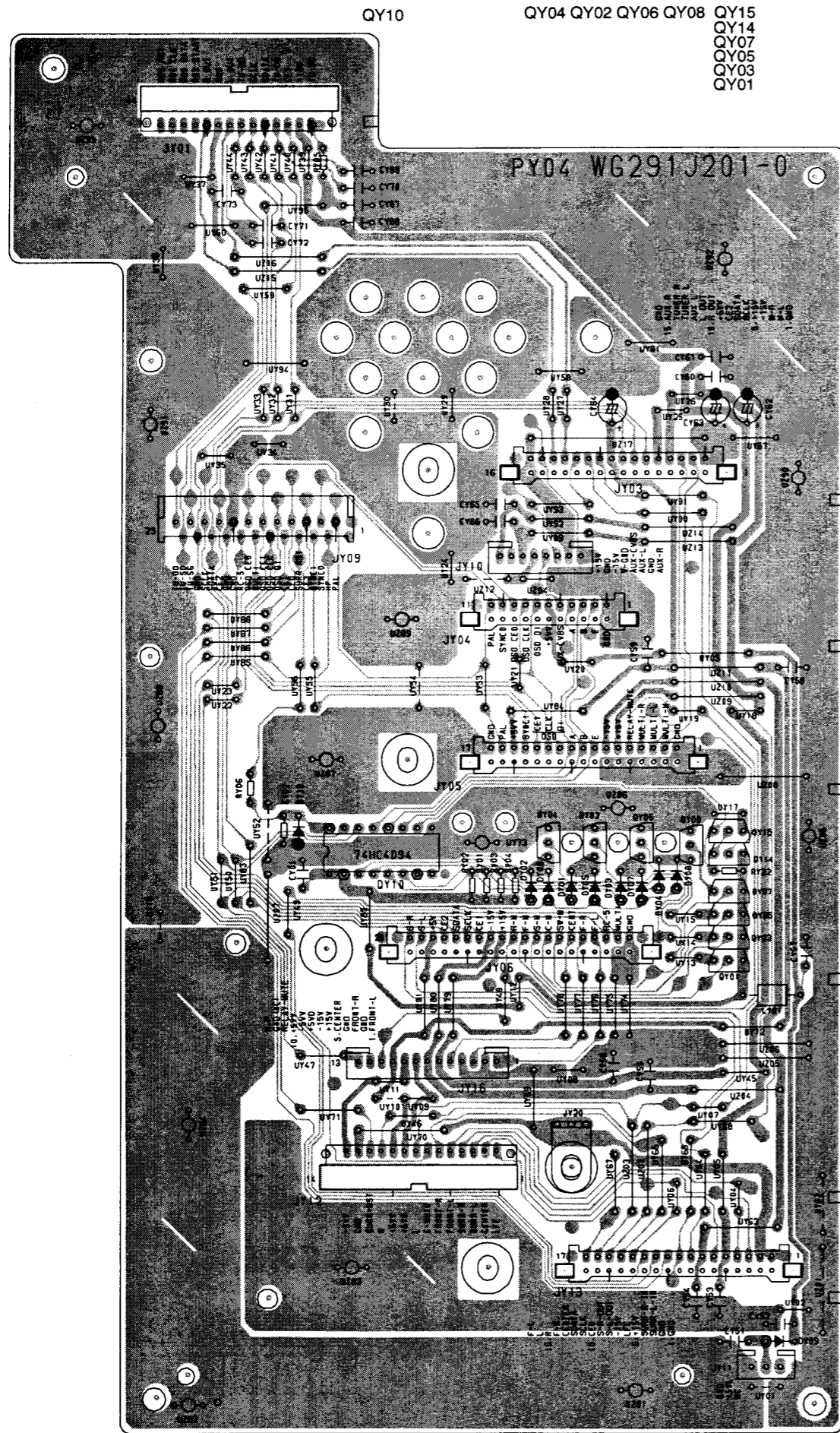


P104 Tuner P.C. Board

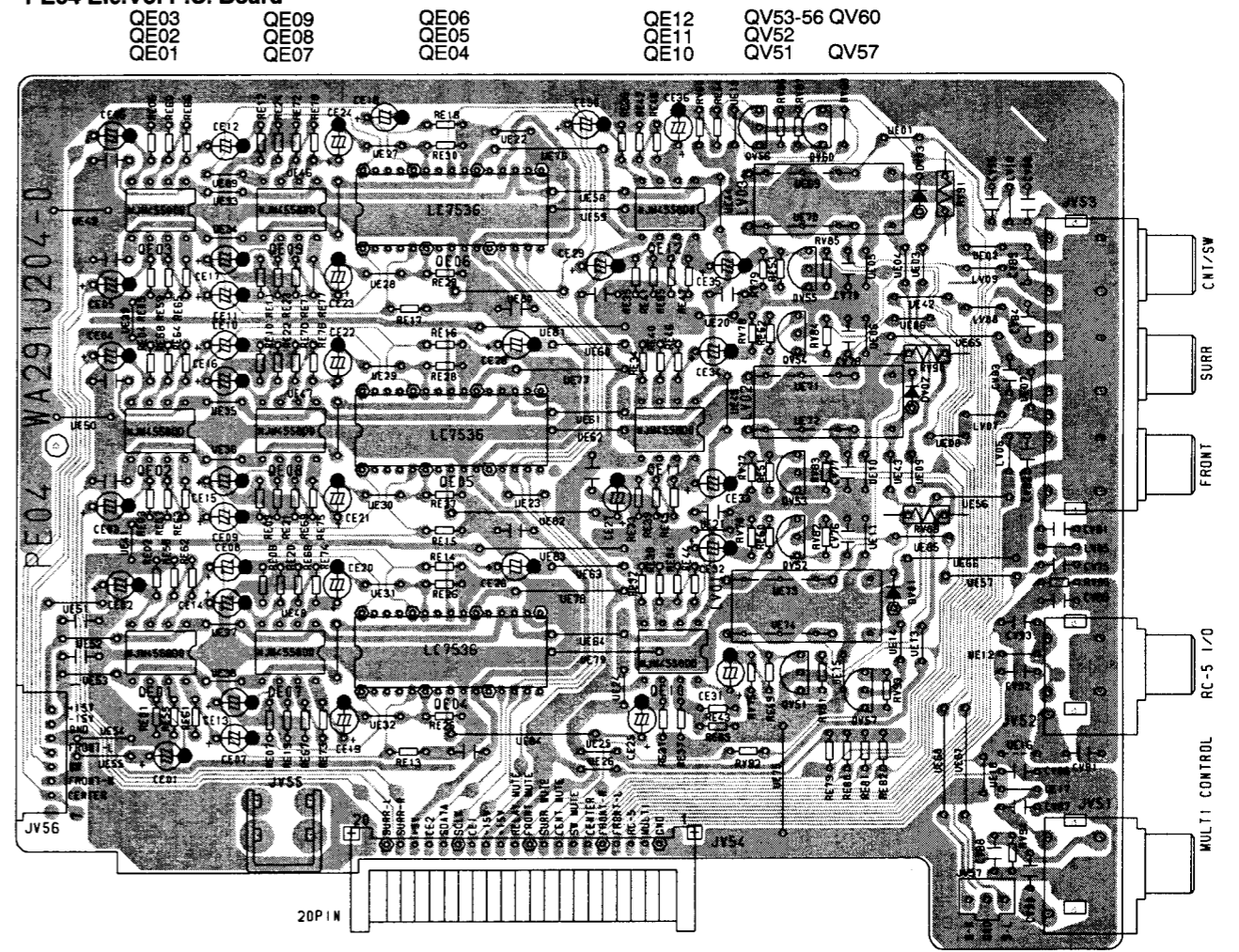


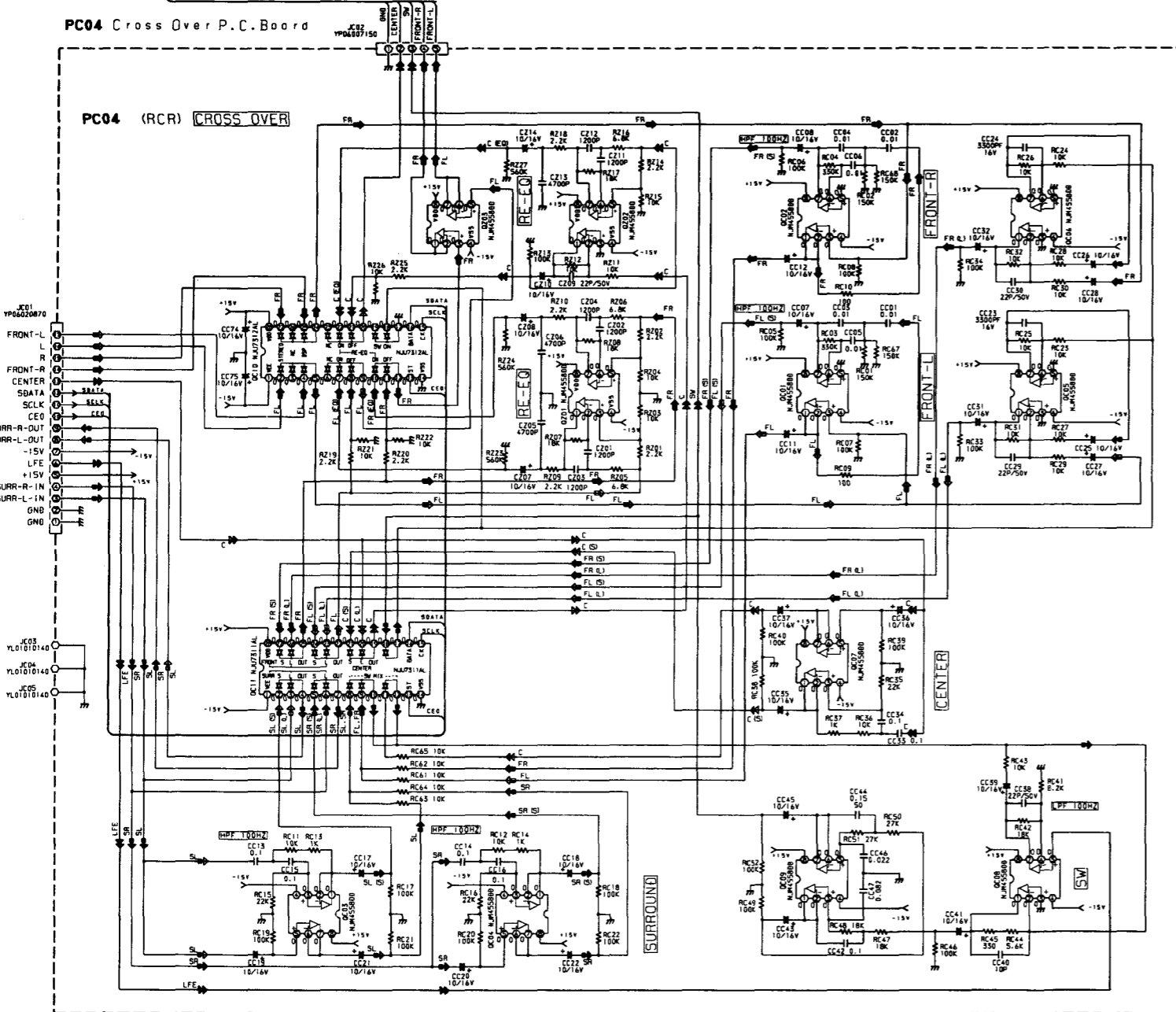
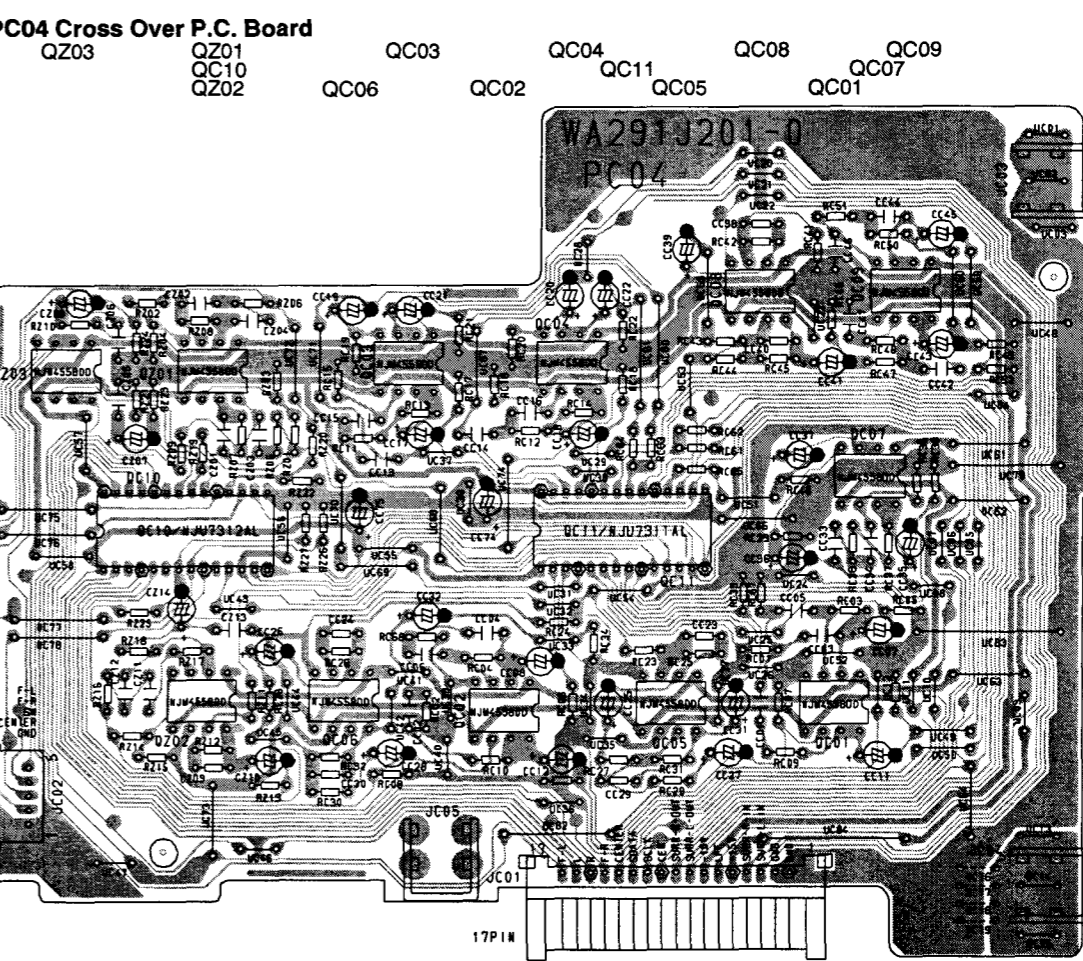
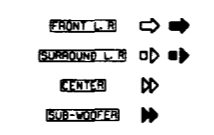
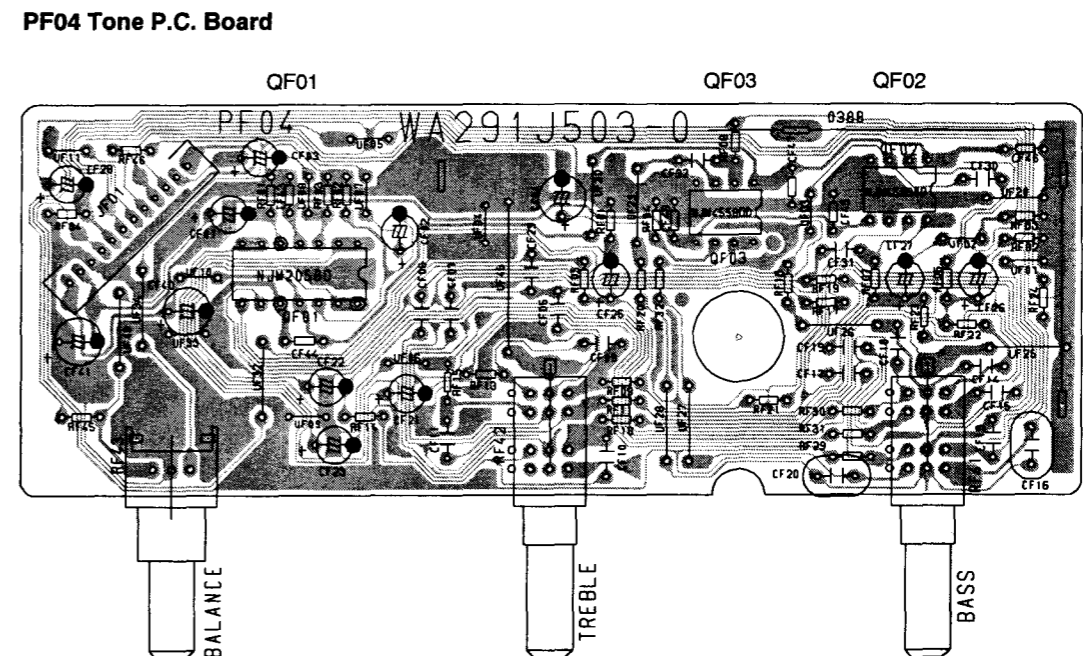
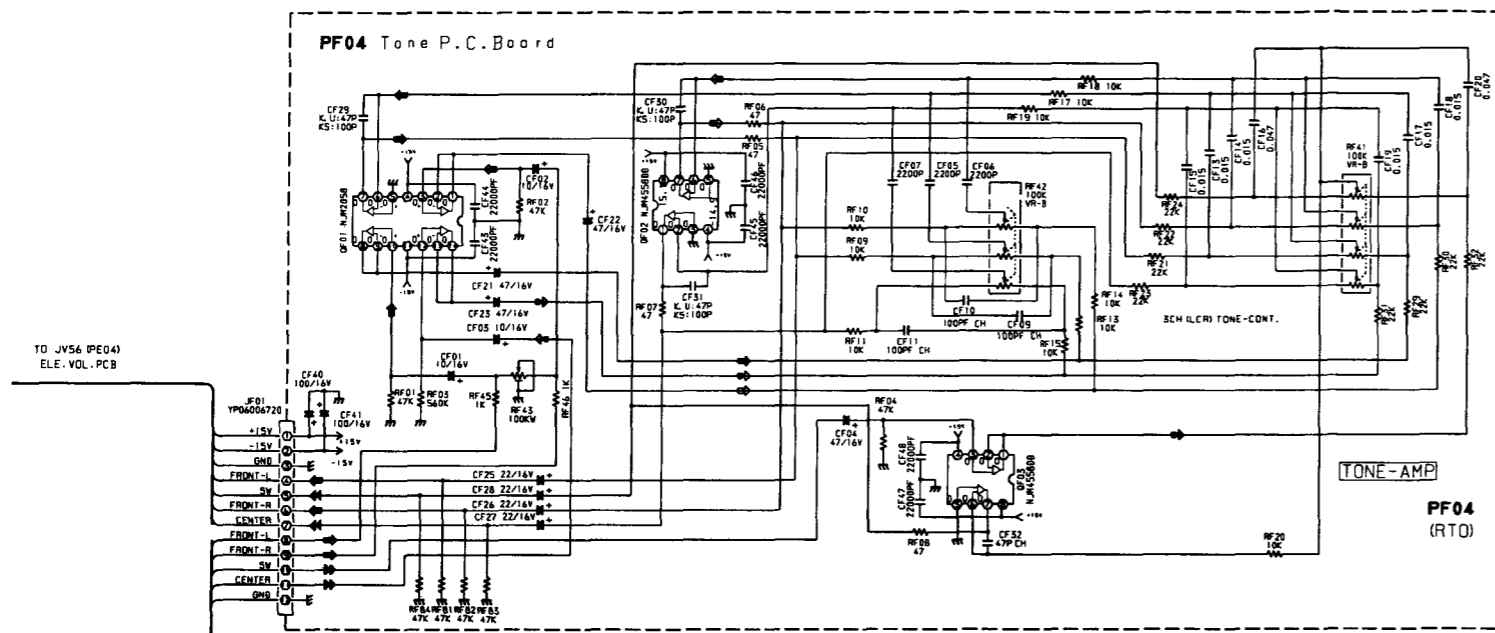


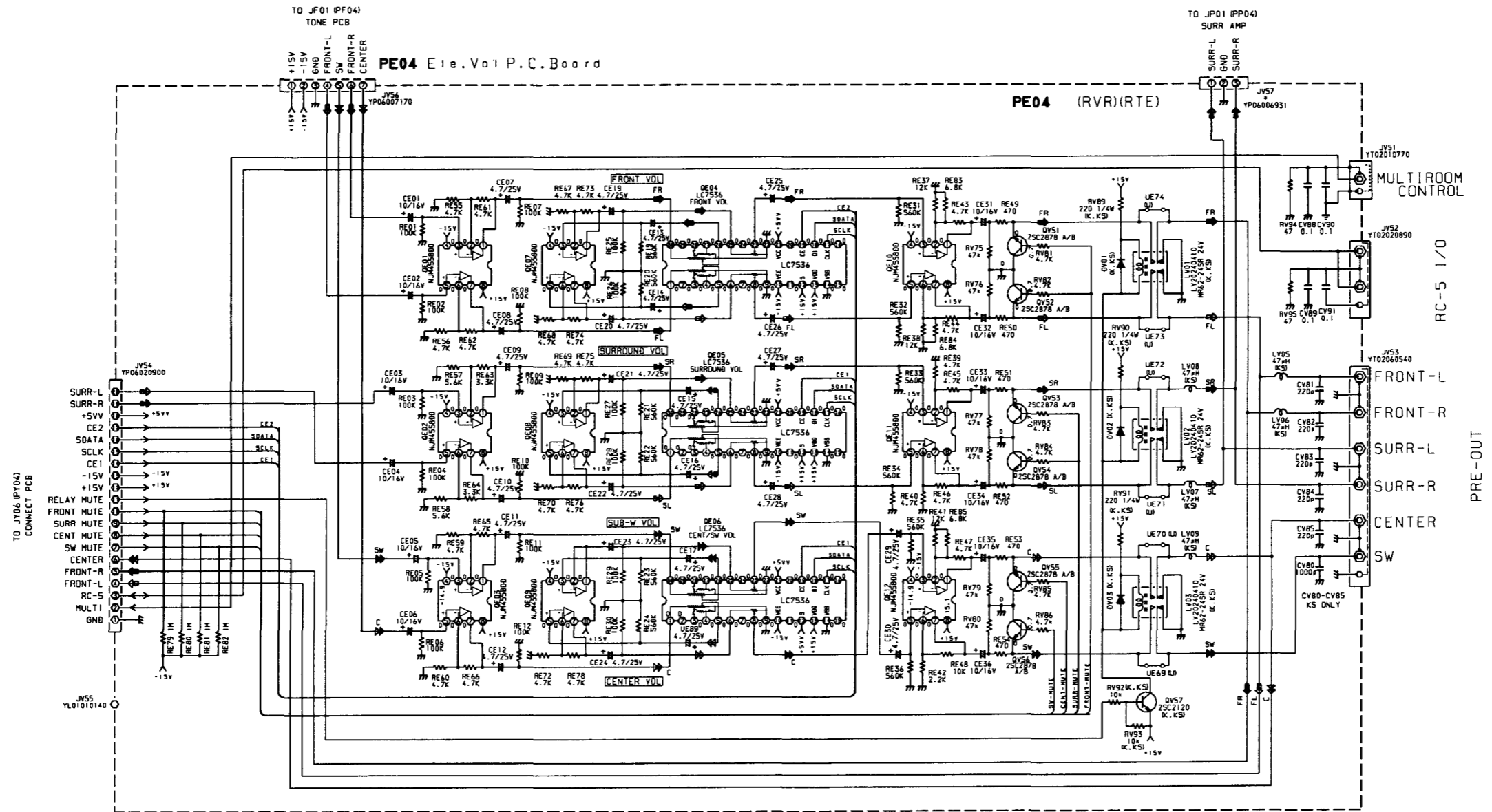
PY04 Connect P.C. Board

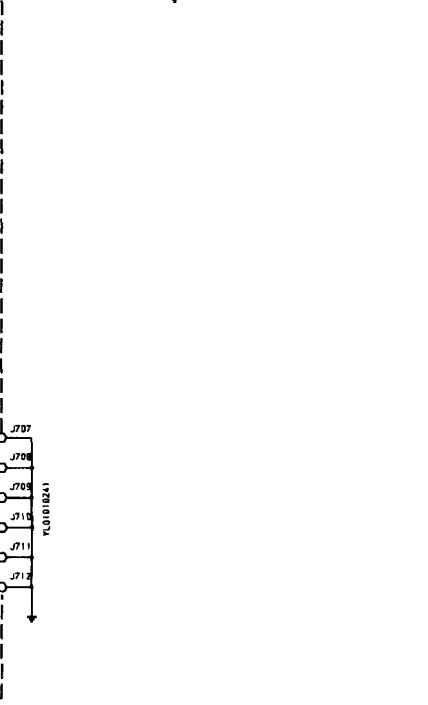
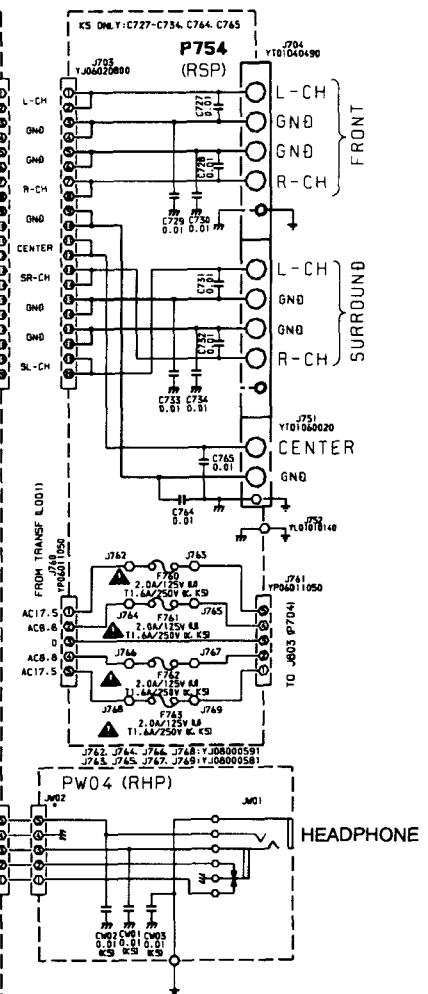
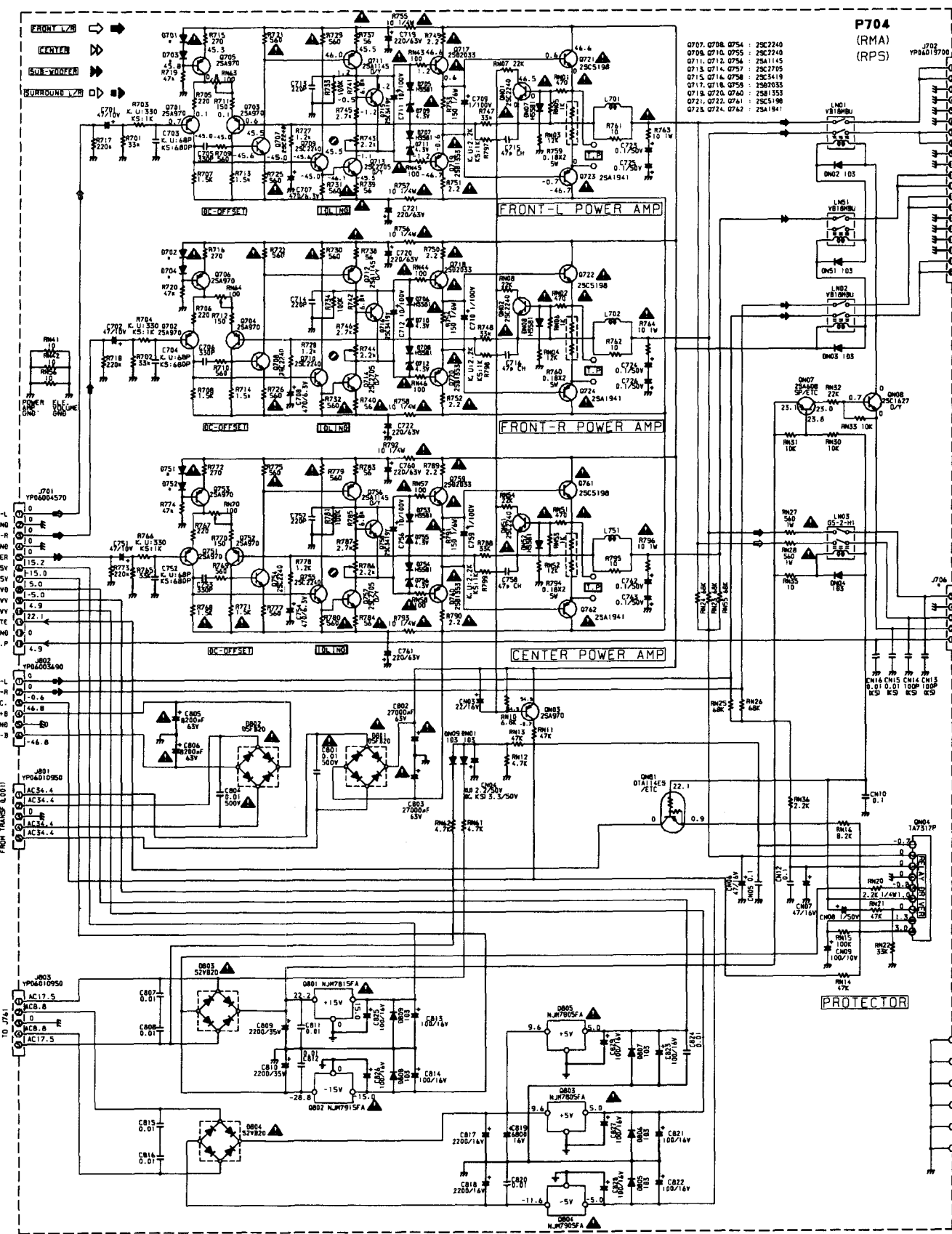
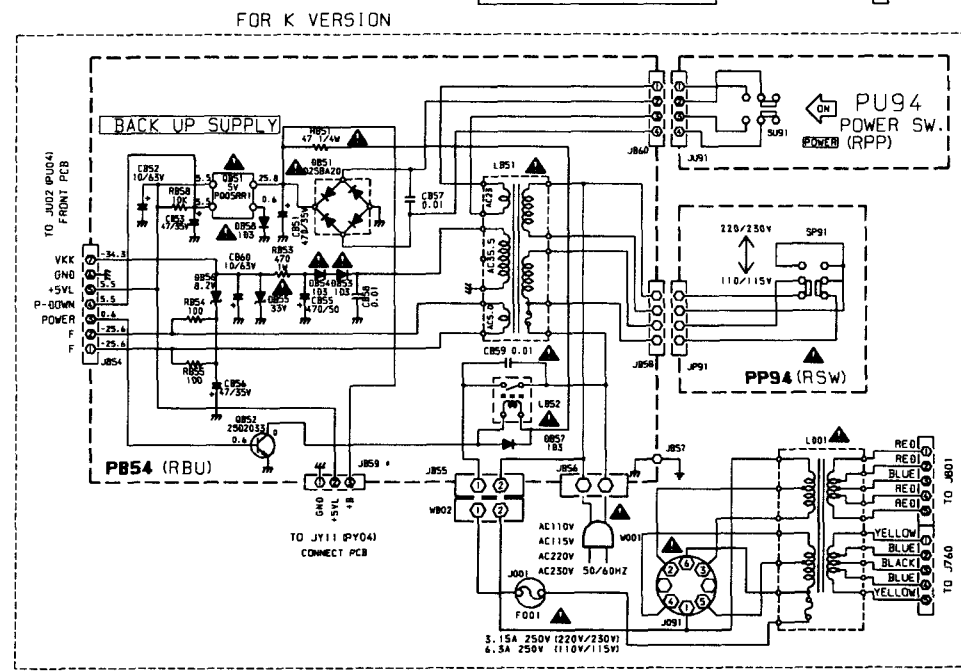
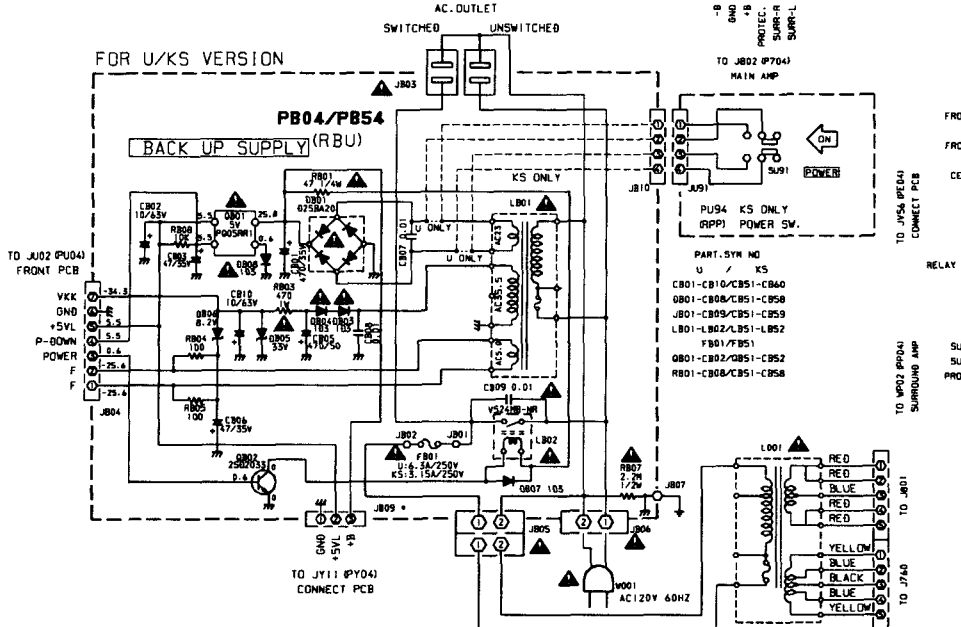
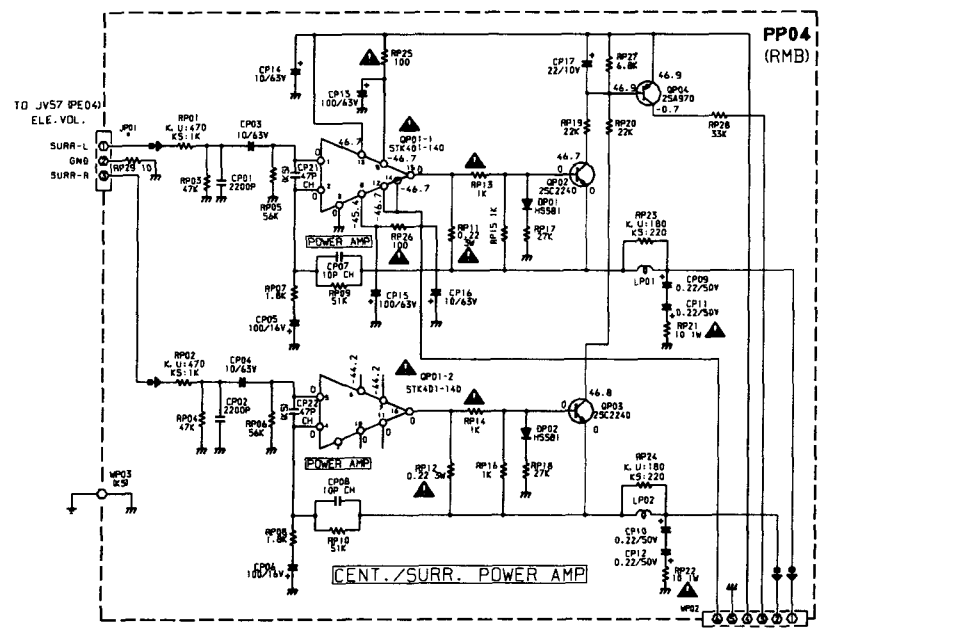


PE04 Ele.Vol P.C. Board

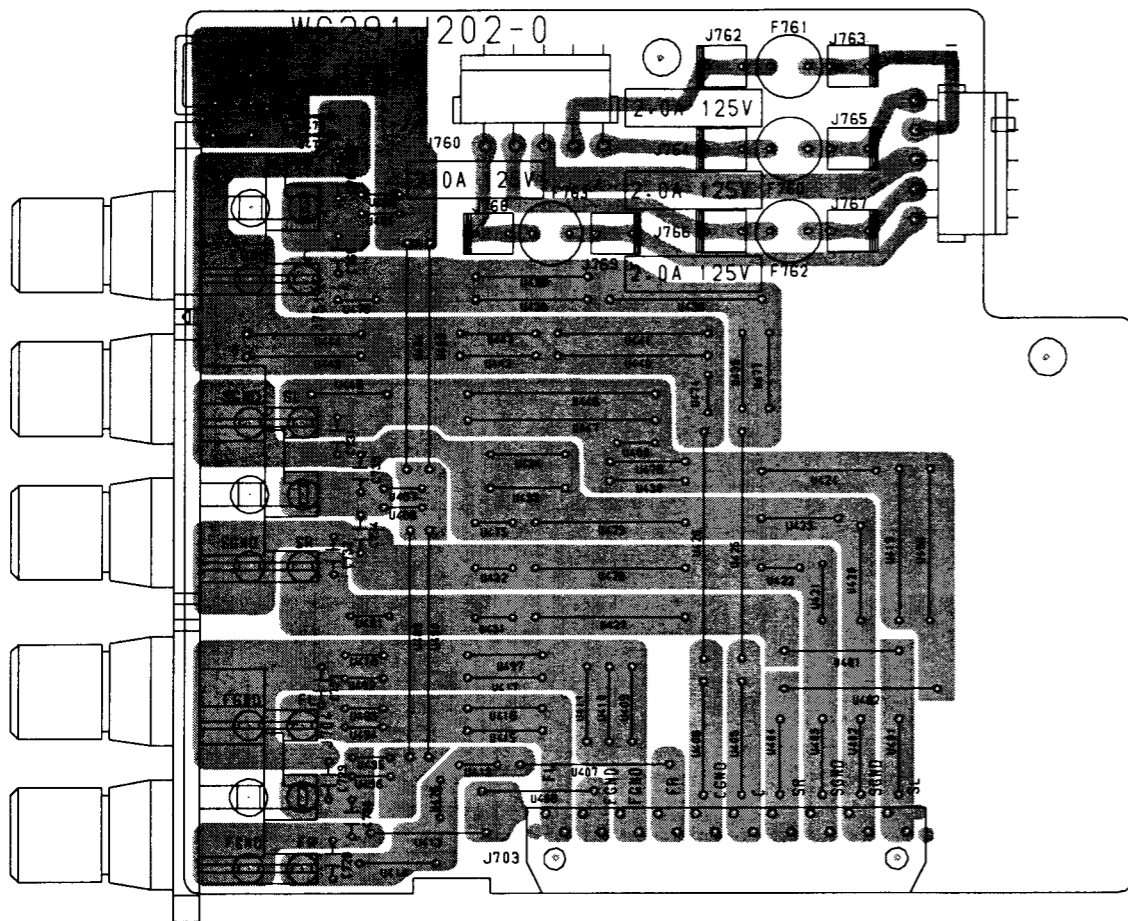




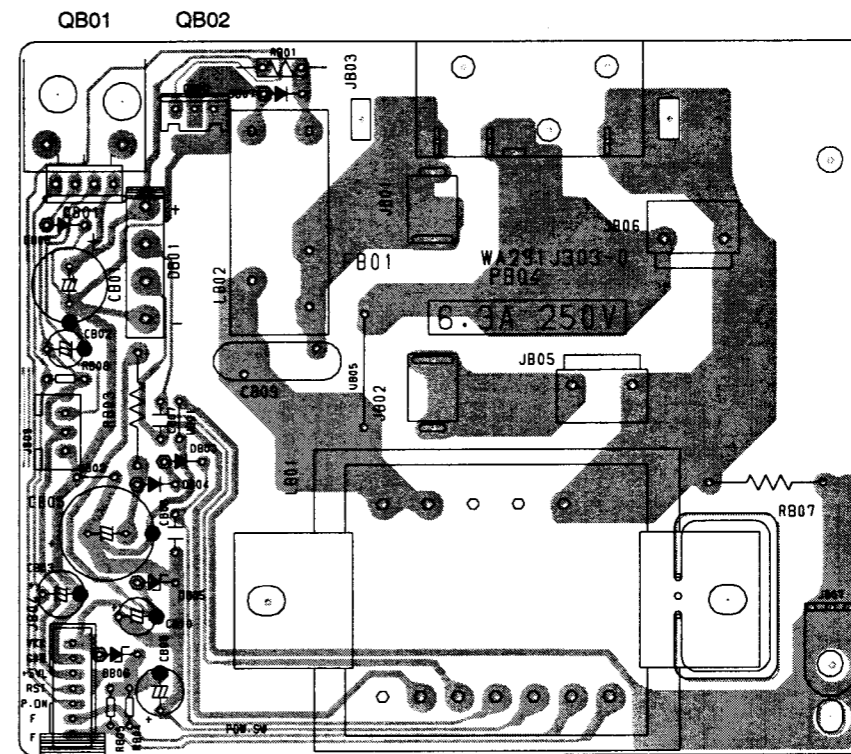




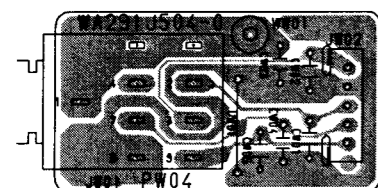
P754 SPK Terminal P.C. Board



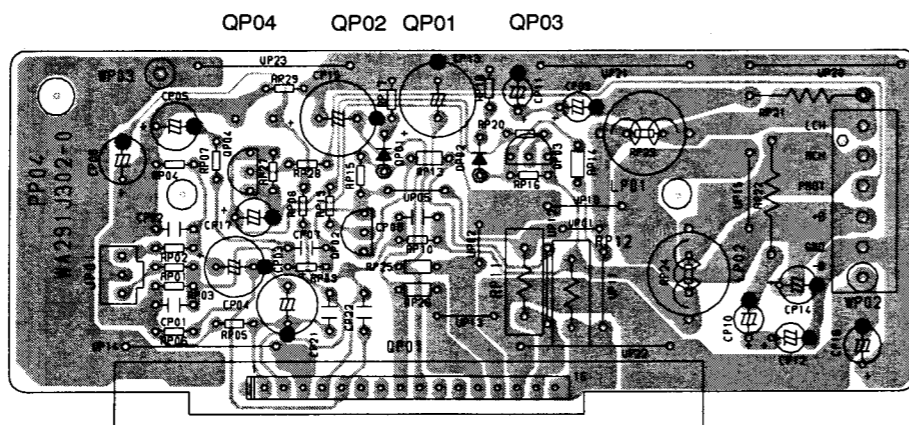
PB04 Back Up P.C. Board (U version)



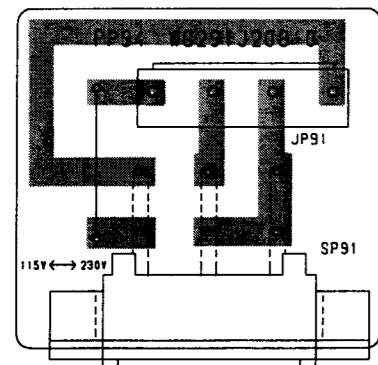
PW04 H.P. P.C. Board



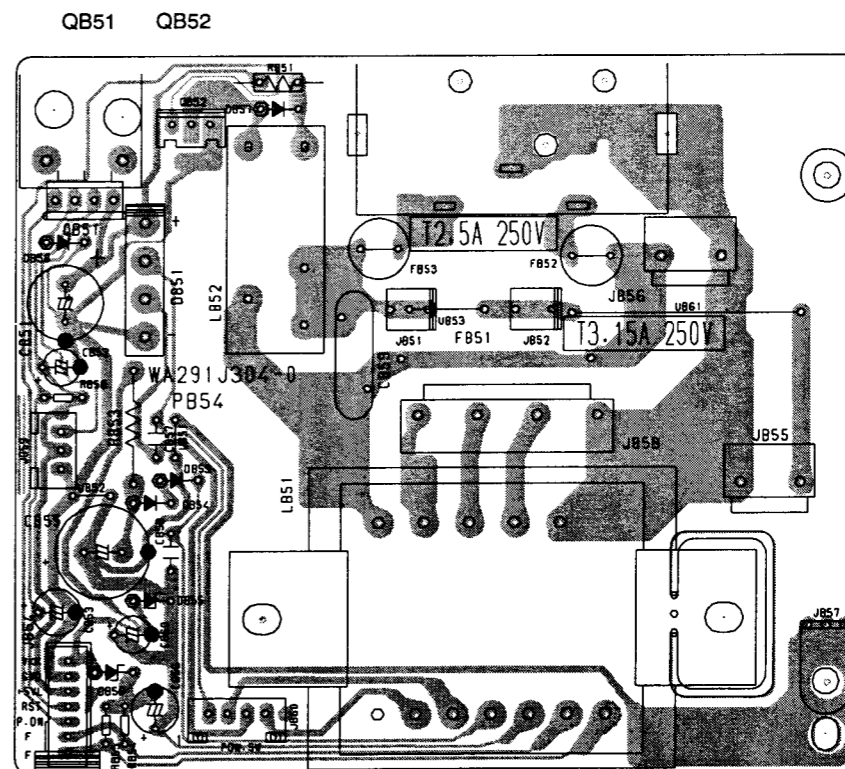
PP04 Surround P.C. Board

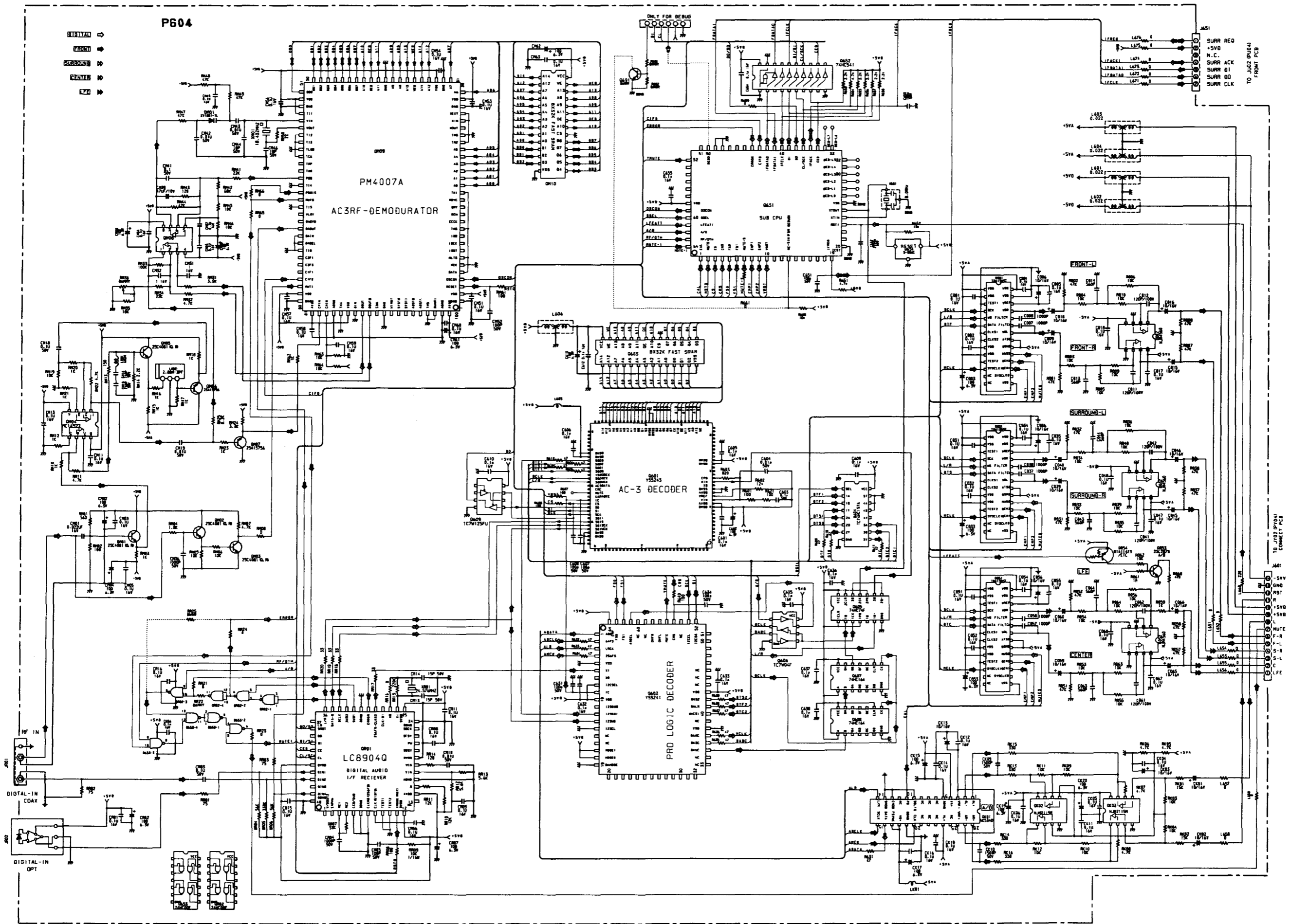


PP94 Vol-Sel P.C. Board (K version)



PB54 Back up P.C. Board (K,KS version)





P604

- DIGITAL IN
- FRONT
- SURROUND
- CENTER
- +

PM4007A
AC 3RF-DEMODULATOR

AC-3 DECODER

PRO LOGIC DECODER

LC89040
DIGITAL AUDIO 1/2 RECEIVER

SUB CPU

FRONT-L

FRONT-R

SURROUND-L

SURROUND-R

CENTER

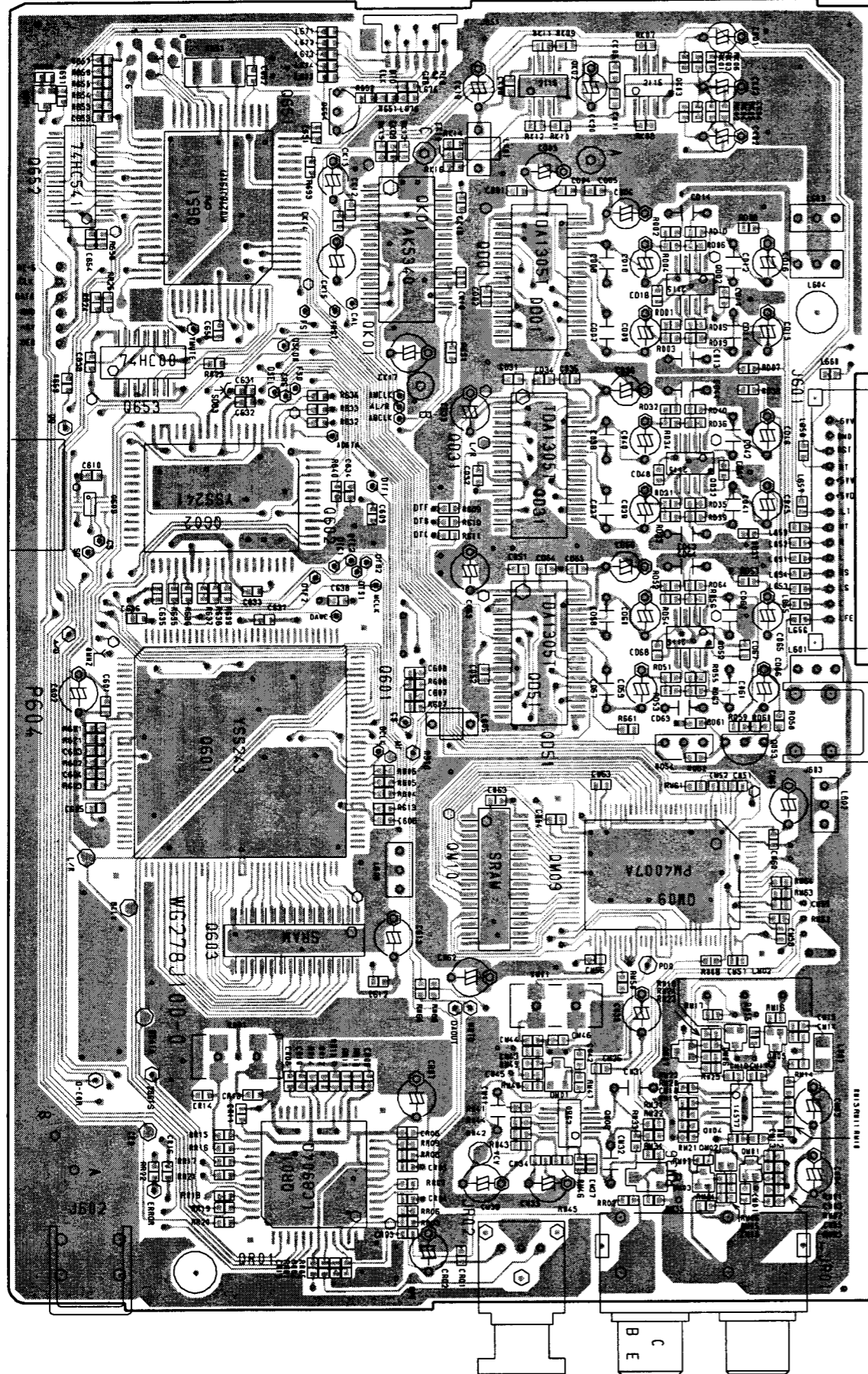
TO J402 (P04)
FRONT PCB

TO J402 (P04)
CONNECT PCB

P604 DOLBY DIGITAL DSP P.C. Board (Component Side)

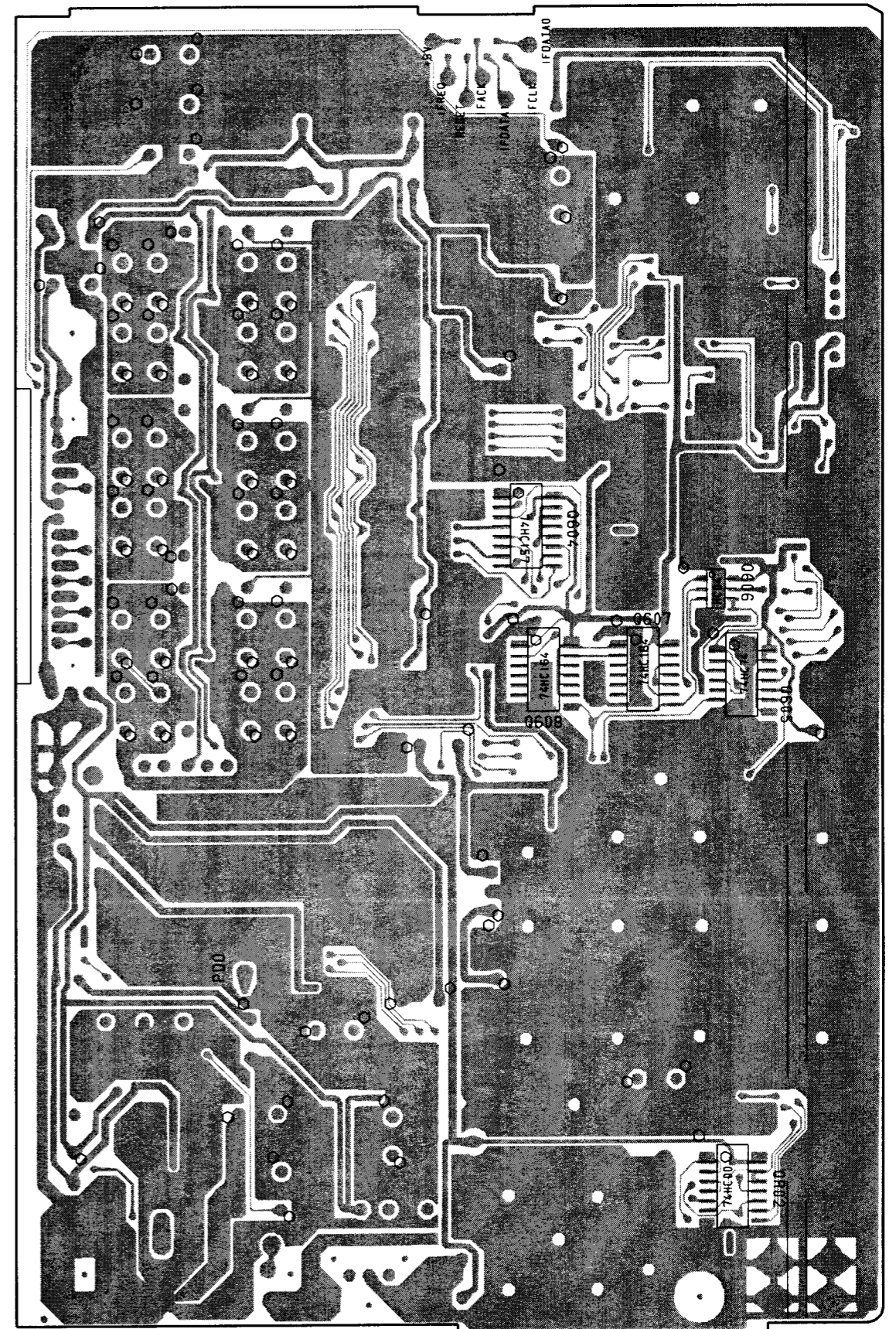
Q691	Q651				
Q652	Q602	Q603	Q654	QK01	QM10
Q609	Q653	QR01			

QK02	QK03	QD02	QD53
QD01	QM09	QD32	QM06
QD31	QM08	QD52	QM05
QD51	QM08	QD54	QM02
		QM07	QM03
			QM04
			QM01



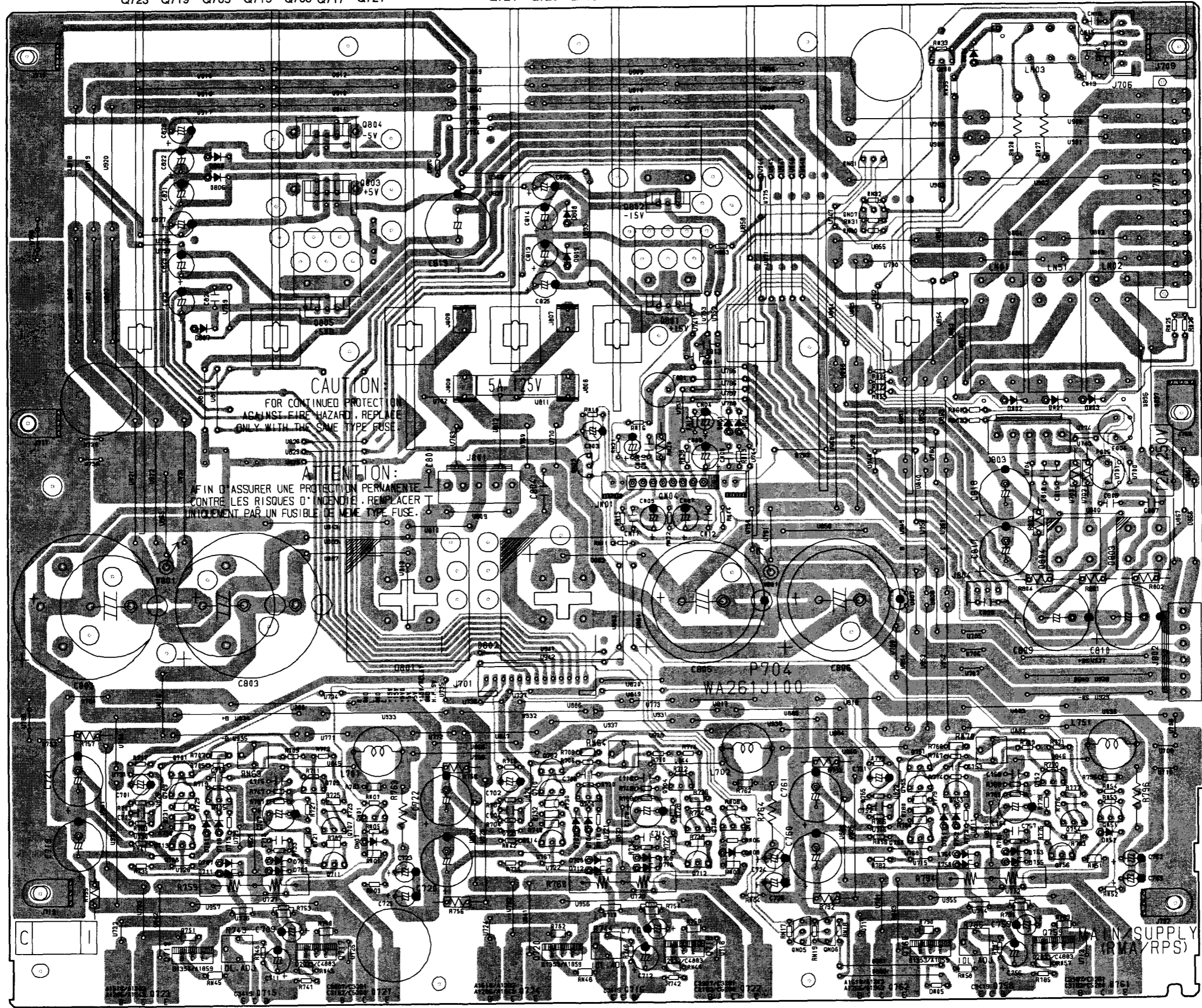
P604 DOLBY DIGITAL DSP P.C. Board (Soldering Side)

Q604	Q607	Q606
Q608		Q605
		QR02



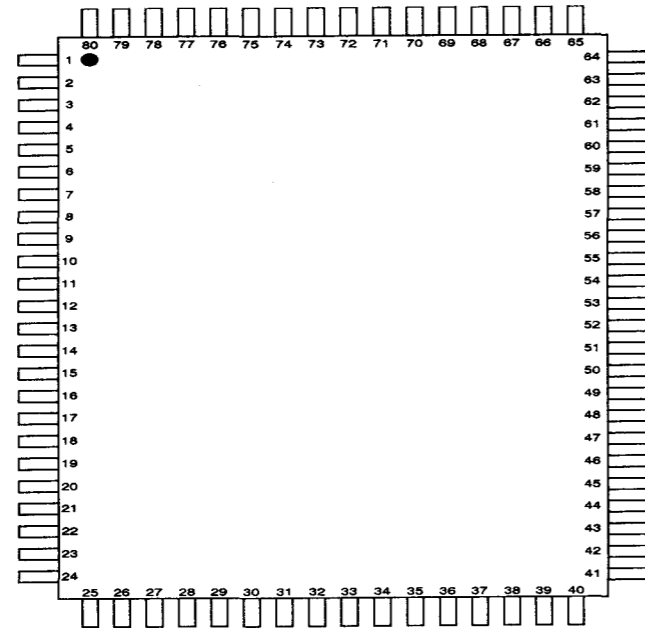
P704 Main Amp P.C. Board

Q701 Q804 Q702 Q704 Q751 Q752
Q709 Q803 Q710 Q802 Q708 Q755 Q754
Q713 Q805 Q711 Q801 Q712 Q757 Q756
Q723 Q719 Q705 Q715 Q703 Q717 Q721 Q724 Q720 Q706 Q716 Q718 Q722 QN05 QN08 QN08 Q758 Q759 QN51
QN02 QN07 Q762 Q760 Q753 Q758 Q761



5. IC DATA

QU01:TMP87CP71F

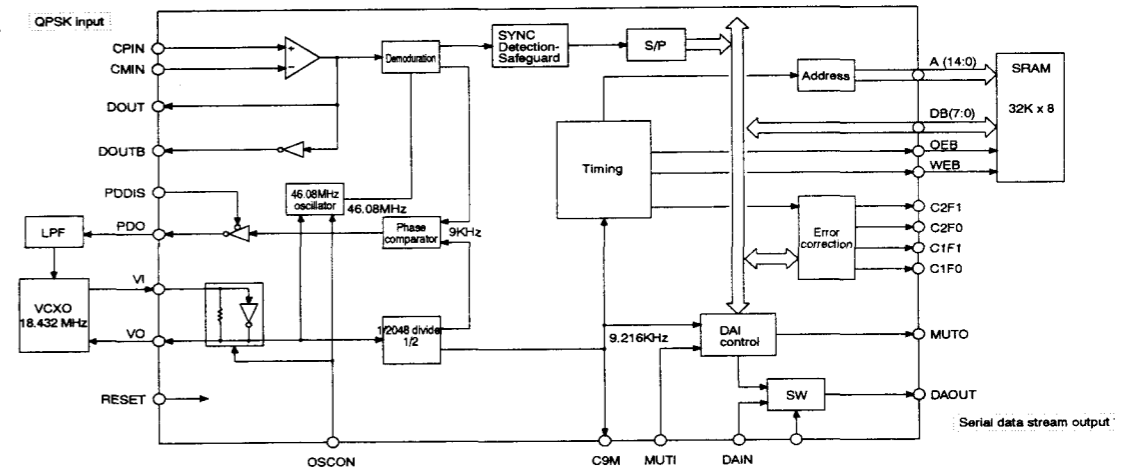


QU01 TMP87CP71F

No.	Port Name	Use	Sig.Name	Description
1	P10/INT0	I	Request	(I2C Request)
2	P11/INT1	I	Head Phone	Head Phone SW input
3	P12/INT2	INT	MAIN RC-5	Main RC-5 input
4	P13/DVO	I	POWER DET.	Power Detect input
5	P14	I	OSD SYNC0	OSD Sync input
6	P15/TC2	I	OSD SYNC1	OSD Sync.For S input
7	P16	I	Pulse Enc.A	Pulse Enc.A
8	P17	I	Pulse Enc.B	Pulse Enc.B
9	TEST			
10	P21/XTIN	O	POWER OFF	Power Off output
11	P22/XTOUT	O	SURR.RST	Surr.module Reset
12	RESET			
13	XIN			Fc=8.00MHz in
14	XOUT			Fc=8.00MHz out
15	Vss			
16	P20/STOP	STOP	Power Down	used STOP input
17	P30/INT3	INT	MULTI RC-5	Multi Room RC-5 in
18	P31/TC4	I/O	SURR.ACK	Surr.module interface
19	P32/SCK	SCK	SURR.CLK	Surr.module interface
20	P33/SI	SI	SURR.DI	Surr.module interface
21	P34/SO	SO	SURR.DO	Surr.module interface
22	P35/HSCK	HSCK	OSD CLK	OSD IC interface
23	P36	I/O	SURR.REQ	Surr.module interface
24	P37/HSO	HSD	OSD DO	OSD IC interface
25	P00	O	OSD CE0	OSD IC interface
26	P01	O	OSD CE1	OSD IC interface for S
27	P02	O	CE3	for 4094 interfac
28	P03	O	CE2	for TUNER,etc..
29	P04	O	CE1	for Volume
30	P05	O	CE0	for Analog SW
31	P06	O	SCLK	SO interface
32	P07	O	SDATA	SO interface
33	Vdd			
34	P60/G15	O	PAL/NTSC	OSD mode output
35	P61/G14	O	KILL_IR	Kill IR for RC-5 output
36	P62/G13	O	KILL_Video	Kill Video Signal
37	P63/G12	O	DIGITAL_SEL	(added switch)
38	P64/G11	G	FTD G12	FTD Grid output
39	P65/G10	G	FTD G11	FTD Grid output
40	P66/G9	G	FTD G10	FTD Grid output
41	P67/G8	G	FTD G9	FTD Grid output
42	P70/G7	G	FTD G8	FTD Grid output
43	P71/G6	G	FTD G7	FTD Grid output
44	P72/G5	G	FTD G6	FTD Grid output
45	P73/G4	G	FTD G5	FTD Grid output
46	P74/G3	G	FTD G4	FTD Grid output
47	P75/G2	G	FTD G3	FTD Grid output
48	P76/G1	G	FTD G2	FTD Grid output
49	P77/G0	G	FTD G1	FTD Grid output
50	P80/S0	S	FTD S1	FTD Segment output
51	P81/S1	S	FTD S2	FTD Segment output
52	P82/S2	S	FTD S3	FTD Segment output
53	P83/S3	S	FTD S4	FTD Segment output
54	P84/S4	S	FTD S5	FTD Segment output
55	P85/S5	S	FTD S6	FTD Segment output
56	P86/S6	S	FTD S7	FTD Segment output
57	P87/S7	S	FTD S8	FTD Segment output
58	P90/S8	S	FTD S9	FTD Segment output
59	P91/S9	S	FTD S10	FTD Segment output
60	P92/S10	S	FTD S11	FTD Segment output
61	P93/S11	S	FTD S12	FTD Segment output
62	P94/S12	S	FTD S13	FTD Segment output
63	P95/S13	S	FTD S14	FTD Segment output
64	P96/S14	S	FTD S15	FTD Segment output
65	P95/S15	S	FTD S16	FTD Segment output
66	Vkk			FTD Power Supply
67	P40/KEY0	KEY	Key in 0	Key Matrix input
68	P41/KEY1	KEY	Key in 1	Key Matrix input
69	P42/KEY2	KEY	Key in 2	Key Matrix input
70	P43/KEY3	KEY	Key in 3	Key Matrix input
71	P44/KEY4	KEY	Key in 4	Key Matrix input
72	P45/KEY5	KEY	Key in 5	Key Matrix input
73	P46/KEY6	KEY	Key in 6	Key Matrix input
74	P47/KEY7	KEY	Key in 7	Key Matrix input
75	P50/CIN3	O	RC-5 out	RC-5 output
76	P51/CIN2	I/O	I2C SCL	(I2C SCL)
77	P52/CIN1	I/O	I2C SDA	(I2C SDA)
78	P53/CIN0	CIN	S.STRENGTH	Signal Strength(A/D)
79	P54		TUNER SD	SD input
80	P55/PWM		TUNER DO	DO input

RU:Pull UP/USE:Using Port type,act.:active level,OPT:Option
RST:port setting when Reset start,STOP:port setting when STOP mode

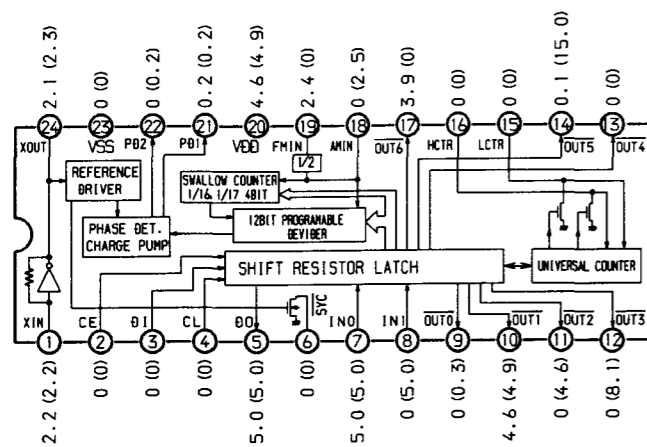
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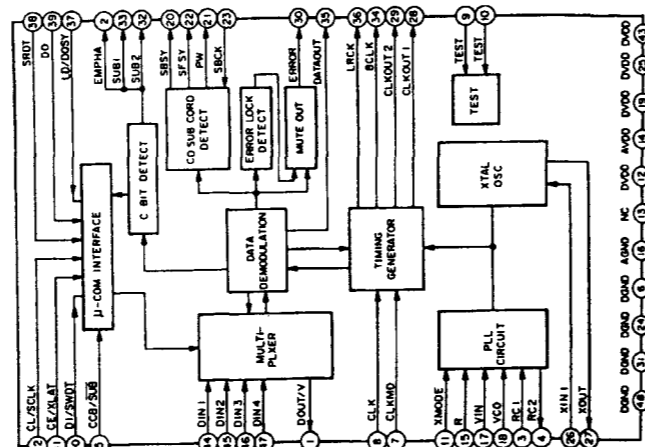
No.	Name	I/O	Function
1	GND	-	GND
2	VDD	-	+5VD
3	RESET	I	System Reset At "L" reset
4	OSCON	I	Oscillator control At "H" during normal operation At "L" during standby
5	DATA	I	TEST
6	MCK	I	TEST
7	MLTB	I	TEST
8	IDST	O	TEST
9	IDCK	O	TEST
10	IDO	O	TEST
11	TM0	I	TEST
12	ECCK	O	TEST
13	DEN	O	TEST
14	DRY	O	TEST
15	MSYC	O	TEST
16	TM1	I	TEST
17	A0	O	RAM A0
18	A1	O	RAM A1
19	A2	O	RAM A2
20	A3	O	RAM A3
21	A4	O	RAM A4
22	A5	O	RAM A5
23	TM2	I	TEST
24	TM3	I	TEST
25	XOUT	O	TEST
26	XIN	I	TEST
27	XEXT	I	TEST
28	GND	-	GND
29	VDD	-	+5VD
30	A6	O	RAM A6
31	A7	O	RAM A7
32	GND	-	GND
33	VDD	-	+5VD
34	A12	O	RAM A12
35	A14	O	RAM A14
36	WEB	O	RAM WEB
37	A13	O	RAM A13
38	A8	O	RAM A8
39	A9	O	RAM A9
40	GND	-	GND
41	A11	O	RAM A11
42	OEB	O	RAM OE
43	A10	O	RAM A10
44	DB7	B	RAM D7
45	DB6	B	RAM D6
46	DB5	B	RAM D5
47	DB4	B	RAM D4
48	DB3	B	RAM D3
49	DB2	B	RAM D2
50	DB1	B	RAM D1

No.	Name	I/O	Function
51	DB0	B	RAM D0
52	VDD	-	+5VD
53	GND	-	GND
54	T11	I	TEST
55	VIN	I	VCXO input
56	VOUT	O	VCXO output
57	T12	I	TEST
58	T13	I	TEST
59	TLDB	I	TEST
60	TCK	I	TEST
61	TRP	O	TEST
62	TDO	O	TEST
63	PDO	O	Phase comparator output (3-state)
64	T14	I	TEST
65	PDDIS	I	Control input for PDO out At "L" Output ON
66	MUTO	O	Muting output. Mutes at "H". Sets to "H" when MUTI = H or the AC-3 period cannot be received.
67	T15	I	TEST
68	VLDY	O	TEST
69	OASYO	O	TEST
70	DAOUT	O	Digital OUT (serial data stream output)
71	DAIN	I	Digital external input : Sets to DAOOUT when DASEL is at "H"
72	DASEL	I	Selects digital OUT
73	T18	I	TEST
74	C2F1	O	N.C.
75	C2F0	O	N.C.
76	C1F1	O	N.C.
77	C1F0	O	Displays C1 correction error status. Outputs error count at C1.
78	MUTI	I	Muting input. Mutes at "H".
79	VDD	-	+5VD
80	GND	-	GND
81	AVDD	I	+5VD
82	CPIN	I	Analog converter inverted input
83	CMIN	I	Analog converter inverted input
84	AGND	-	GND
85	TM4	I	TEST
86	VDD	-	+5VD
87	DIN	I	TEST
88	DOUT	O	Analog converter inverted output
89	DOUTB	O	Analog converter inverted reverse output
90	C9M	O	N.C.
91	GND	-	GND
92	WINGT	O	TEST
93	SYST0	O	TEST
94	SYST1	O	TEST
95	ADST0	O	TEST
96	ADST1	O	TEST
97	TMS	I	TEST
98	BUNRI	I	TEST
99	AGND	-	GND
100	AVDD	-	+5VD

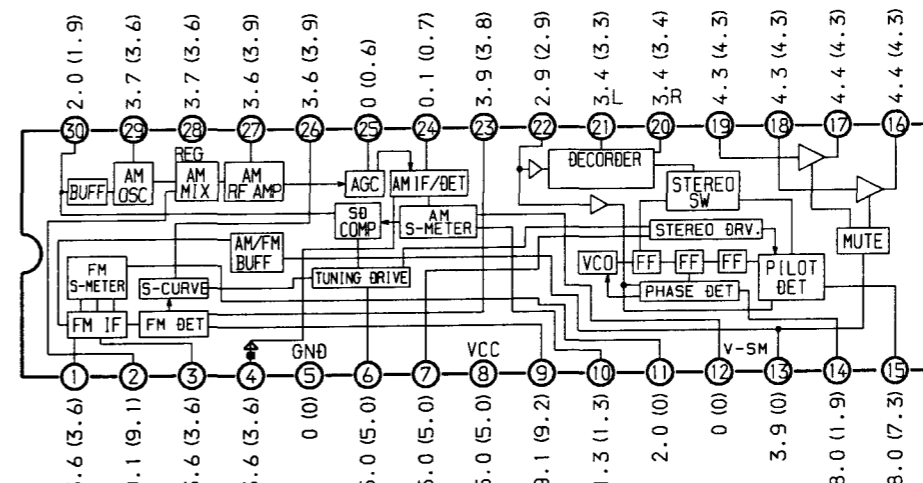
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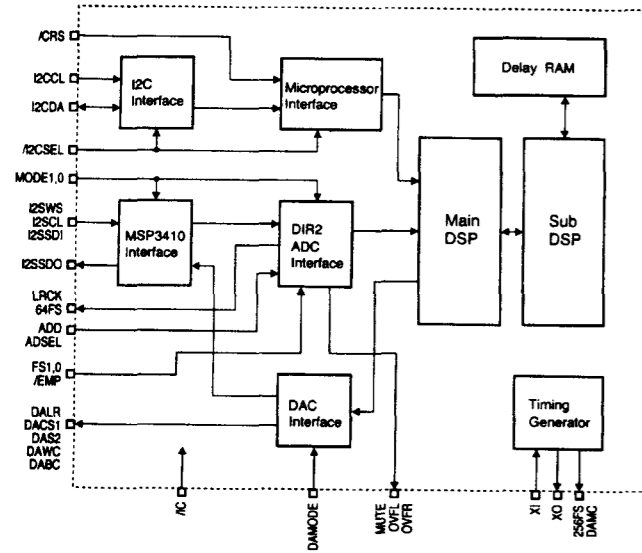
QR01:LC8904Q



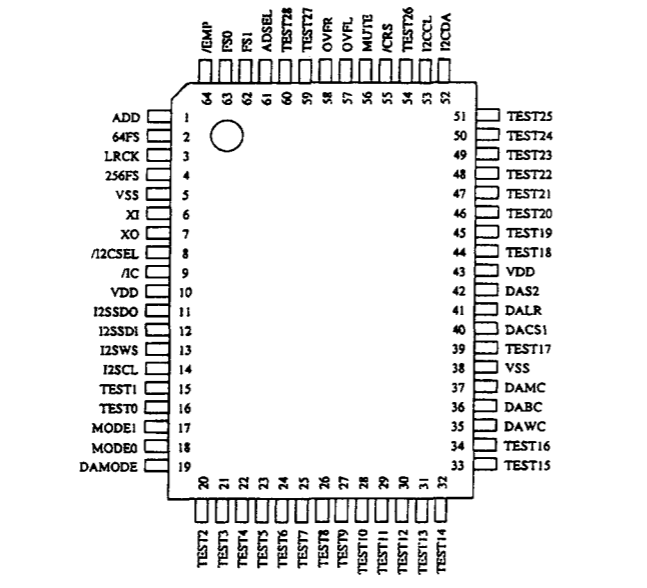
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Q602:YSS241

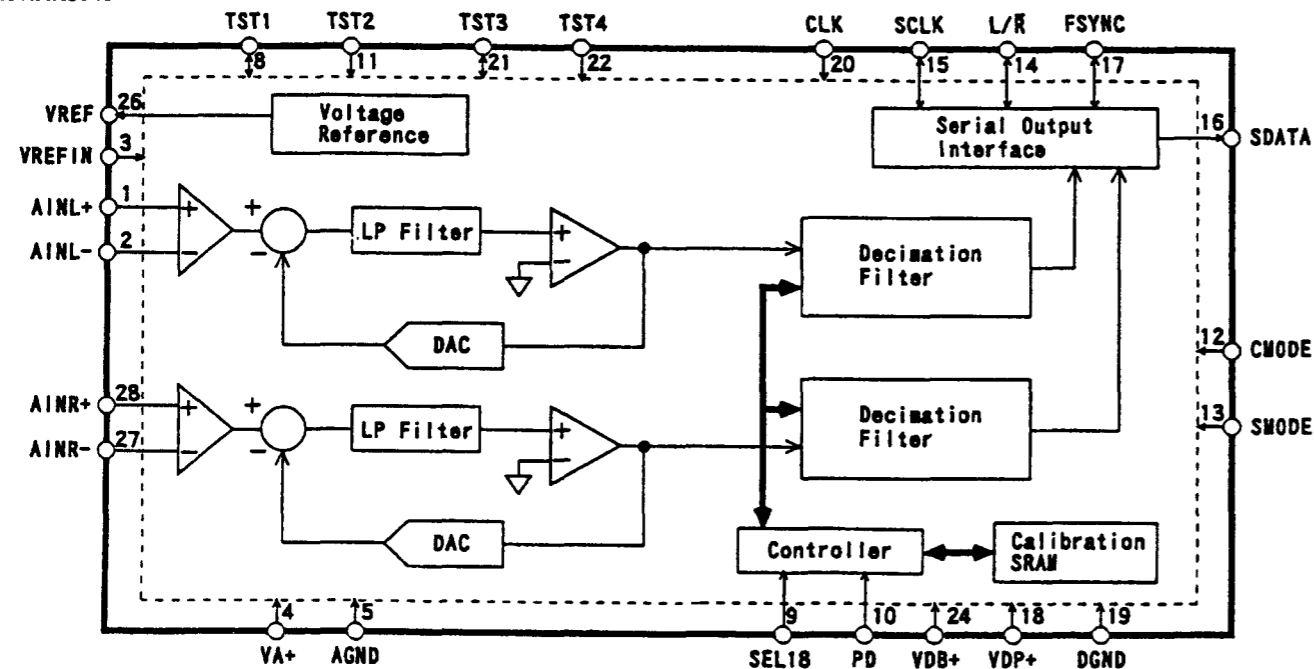


No.	Name	I/O	Function
1	ADD	I	A/D converter sound data input
2	64FS	O	ADC bit clock output
3	L/RCK	O	ADC L/R clock output
4	256FS	O	ADC master clock output
5	VSS	-	GND
6	XI	I	External clock output
7	XO	O	N.C.
8	/I2CSEL	I	Selects CPU interface ("H": serial 3-wire type, "L": I2C bus type)
9	/IC	I	Initial clear input
10	VDD	-	+5V
11	I2SSDO	O	Invalid
12	I2SSDI	I	DIR2 sound data input
13	I2SWS	I	DIR2 L/R clock input
14	I2SCL	I	GND
15	TEST1	I	N.C.
16	TEST0	I	N.C.
17	MODE1	I	N.C.
18	MODE0	I	N.C.
19	DAMODE	I	Selects audio data output format
20	TEST2	I	N.C.
21	TEST3	I	N.C.
22	TEST4	I	N.C.
23	TEST5	I	N.C.
24	TEST6	I	N.C.
25	TEST7	I	N.C.
26	TEST8	I	N.C.
27	TEST9	I	N.C.
28	TEST10	I	N.C.
29	TEST11	I	N.C.
30	TEST12	I	N.C.
31	TEST13	I	N.C.
32	TEST14	I	N.C.

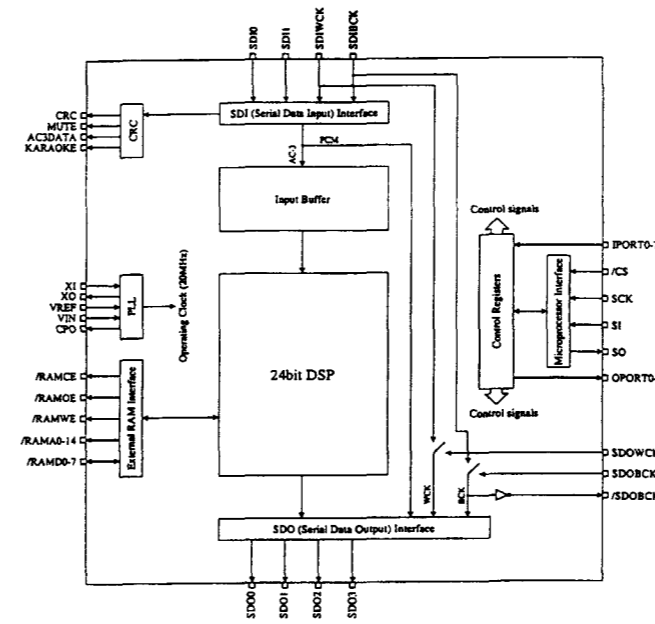


No.	Name	I/O	Function
33	TEST15	I	N.C.
34	TEST16	I	N.C.
35	DAWC	O	DAC L/R clock output
36	DABC	O	DAC bit clock output
37	DAMC	O	DAC master clock output
38	VSS	-	GND
39	TEST17	I	N.C.
40	DACS1	O	DAC audio data output
41	DALR	O	DAC audio data output
42	DAS2	O	DAC audio data output
43	VDD	-	+5V
44	TEST18	I	N.C.
45	TEST19	I	N.C.
46	TEST20	I	N.C.
47	TEST21	I	N.C.
48	TEST22	I	N.C.
49	TEST23	I	N.C.
50	TEST24	I	N.C.
51	TEST25	I	N.C.
52	I2CDA	I/OD	CPU/I2C bus interface serial data input
53	I2CCL	I	CPU/I2C bus interface bit clock input
54	TEST26	I	N.C.
55	/CRS	I	Serial 3-wire type (/I2CSEL = "H"): CPU interface reset input
56	MUTE	O	System mute detection
57	OVFL	O	N.C.
58	OVFR	O	N.C.
59	TEST27	O	N.C.
60	TEST28	O	N.C.
61	ADSEL	I	Audio data input switch ("H": ADD input, "L": I2SSDI input)
62	FS1	I	Sampling frequency switcher (valid only when ADSEL = "L")
63	FS0	I	Sampling frequency switcher (valid only when ADSEL = "L")
64	/EMP	I	Deemphasis processing ("L": ON)

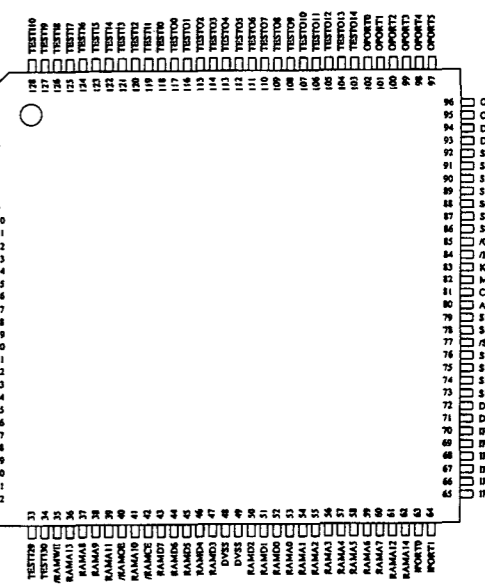
QK01:AK5340



Q601:YSS243



No.	Name	I/O	Function
1	TEST11	I	N.C.
2	TEST12	I	N.C.
3	TEST13	I	N.C.
4	TEST14	I	N.C.
5	TEST15	I	N.C.
6	TEST16	I	N.C.
7	TEST17	I	N.C.
8	TEST18	I	N.C.
9	TEST19	I	N.C.
10	DVDD	-	+5V
11	AVDD	-	+5V
12	VIN	AI	PLL input
13	VREF	AI	PLL input
14	AVSS	-	GND
15	DVSS	-	GND
16	XO	O	N.C.
17	XI	I	External clock input
18	CPO	AO	PLL output
19	TESTBRK	I	N.C.
20	TESTR1	I	N.C.
21	TESTR2	I	N.C.
22	DVDD	-	+5V
23	DVDD	-	+5V
24	TEST20	I	N.C.
25	TEST21	I	N.C.
26	TEST22	I	N.C.
27	TEST23	I	N.C.
28	TEST24	I	N.C.
29	TEST25	I	N.C.
30	TEST26	I	N.C.
31	TEST27	I	N.C.
32	TEST28	I	N.C.
33	TEST29	I	N.C.
34	TEST30	I	N.C.
35	/RAMWE	O	SRAM /WE
36	RAMA13	O	SRAM A13
37	RAMA8	O	SRAM A8
38	RAMA9	O	SRAM A9
39	RAMA11	O	SRAM A11
40	/RAMOE	O	SRAM /OE
41	RAMA10	O	SRAM A10
42	/RAMCE	O	SRAM /CE
43	RAMD7	I/O	SRAM D7
44	RAMD6	I/O	SRAM D6
45	RAMD5	I/O	SRAM D5
46	RAMD4	I/O	SRAM D4
47	RAMD3	I/O	SRAM D3
48	DVSS	-	GND
49	DVSS	-	GND
50	RAMD2	I/O	SRAM D2
51	RAMD1	I/O	SRAM D1
52	RAMD0	I/O	SRAM D0
53	RAMA0	O	SRAM A0
54	RAMA1	O	SRAM A1
55	RAMA2	O	SRAM A2
56	RAMA3	O	SRAM A3
57	RAMA4	O	SRAM A4
58	RAMA5	O	SRAM A5
59	RAMA6	O	SRAM A6
60	RAMA7	O	SRAM A7
61	RAMA12	O	SRAM A12
62	RAMA14	O	SRAM A14
63	I/PORT0	I	N.C.
64	I/PORT1	I	N.C.

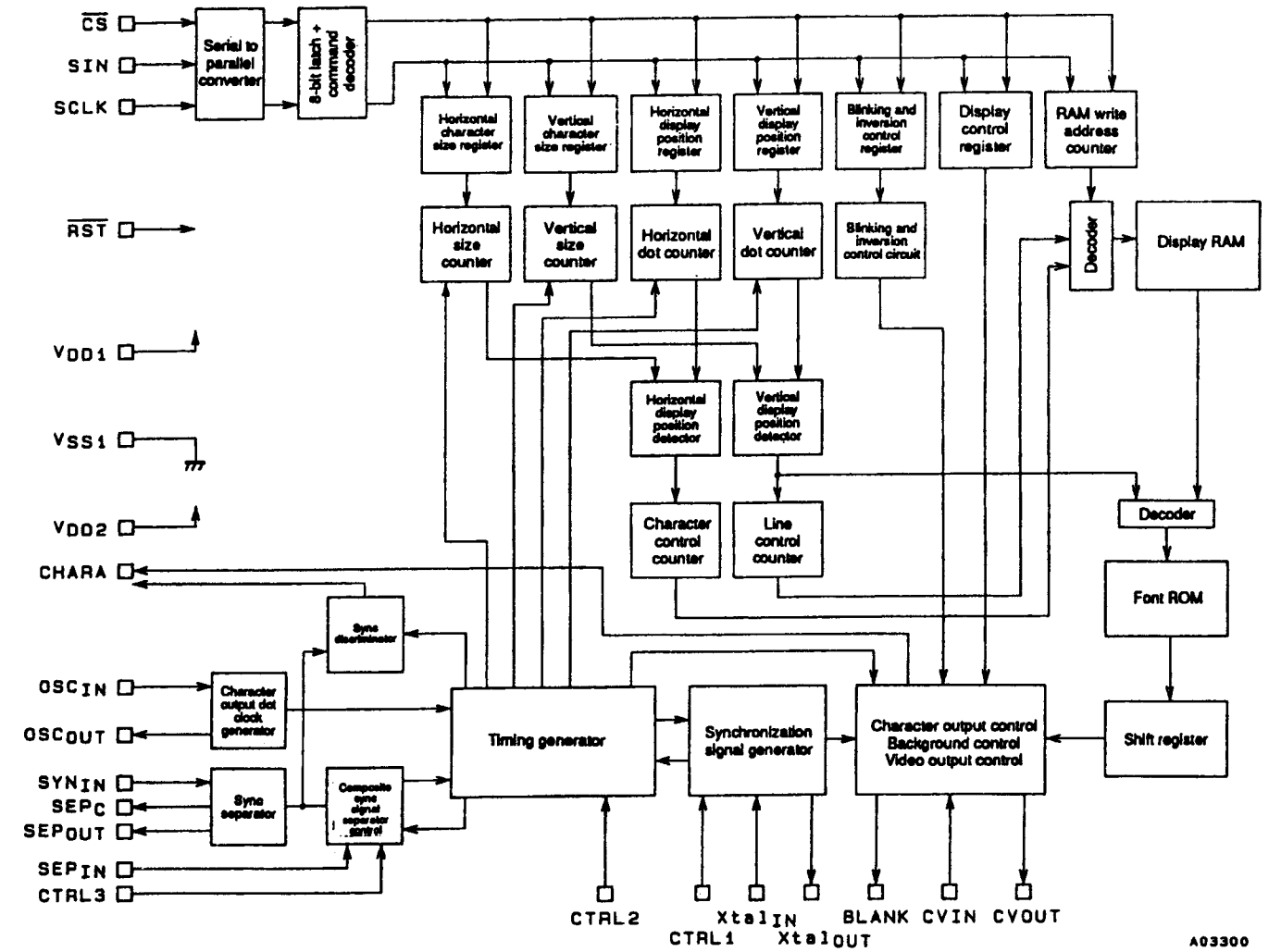


No.	Name	I/O	Function
65	I/PORT2	I	N.C.
66	I/PORT3	I	N.C.
67	I/PORT4	I	N.C.
68	I/PORT5	I	N.C.
69	I/PORT6	I	N.C.
70	I/PORT7	I	N.C.
71	DVDD	-	+5V
72	DVDD	-	+5V
73	SDO3	O	PCM MIX0, MIX1 output
74	SDO2	O	PCM C, LFE output
75	SDO1	O	PCM LS, RS output
76	SDO0	O	PCM L, R output
77	/SDO0CK	O	N.C.
78	SDO0CK	I	SDO bit clock input
79	SDO0WCK	I	SDO word clock input
80	AC3DATA	O	N.C.
81	CRC	O	N.C.
82	MUTE	O	Sets to 1 if error data is detected when auto muting function triggered
83	KARAOKE	O	N.C.
84	/IC	I	Initial clear
85	/CS	I	μ-com interface chip select input
86	SO	O	μ-com interface data output
87	SI	I	μ-com interface data input
88	SCK	I	μ-com interface clock input
89	SDI0	I	N.C.
90	SDI0	I	AC-3 bit stream (or PCM) data input
91	SDIBCK	I	SDI bit clock input
92	SDIWCK	I	SDI word clock input
93	GND	-	GND
94	DVSS	-	GND
95	OPORT7	O	N.C.
96	OPORT6	O	N.C.
97	OPORT5	O	N.C.
98	OPORT4	O	N.C.
99	OPORT3	O	N.C.
100	OPORT2	O	N.C.
101	OPORT1	O	N.C.
102	OPORT0	O	N.C.
103	TEST014	O	N.C.
104	TEST013	O	N.C.
105	TEST012	O	N.C.
106	TEST011	O	N.C.
107	TEST010	O	N.C.
108	TEST09	O	N.C.
109	TEST08	O	N.C.
110	TEST07	O	N.C.
111	TEST06	O	N.C.
112	TEST05	O	N.C.
113	TEST04	O	N.C.
114	TEST03	O	N.C.
115	TEST02	O	N.C.
116	TEST01	O	N.C.
117	TEST00	O	N.C.
118	TEST10	I	N.C.
119	TEST11	I	N.C.
120	TEST12	I	N.C.
121	TEST13	I	N.C.
122	TEST14	I	N.C.
123	TEST15	I	N.C.
124	TEST16	I	N.C.
125	TEST17	I	N.C.
126	TEST18	I	N.C.
127	TEST19	I	N.C.
128	TEST10	I	N.C.

Q651:SUB CPU (AC-3 DSP) TMP87CH40F

PORT No.	PORT NAME	I/O	SIGNAL NAME	FUNCTION	NOTES
1	P76	O	CAI	RESET&CALIBRATE FOR ADC H:RESET&CAL L:NORMAL	
2	P77	O	RSTO	RESET FOR DA1&DEMURATOR L:RESET:H:NORMAL	
3	P00	O	CS	SPI CHIP SELECT FOR YSS243	
4	P01	O	CRS	SPI CPU I/F RESET FOR YSS241	
5	P02	O	FS0	Fa SET FOR YSS241	
6	P03	O	FS1	Fa SET FOR YSS241	
7	P04	O	MUTE-S	DAC MUTE CONT OUT L:MUTE H:NORMAL	
8	P05	O	EMP1	DAC EMP CONT 1	
9	P06	O	EMP2	DAC EMP CONT 2	
10	P07	O	YRST	RESET OUTPUT FOR YSS241&243L:RESET H:NORMAL	
11	P10/INT0			N.C.	
12	P11/INT1			N.C.	
13	P12/INT2	I	(DEBUG)	FIXED+5V	
14	P13/DV0			N.C.	
15	P14/PPG			N.C.	
16	P15/T/C2			N.C.	
17	P16			N.C.	
18	P17			N.C.	
19	P20/INT5	I/O	IFREQ	REQUEST SIGNAL FOR MAIN CPU I/F	
20	TEST			GND	
21	P21/XTIN			N.C.	
22	P22/XTO			N.C.	
23	RESET	I	RSTI	RESET INPUT FROM MAIN CPU L:RESET	
24	XIN	I	XIN	FOR CPU OSC	
25	XOUT	O	XOUT	FOR CPU OSC	
26	VSS			GND	
27	P30			N.C.	
28	P31			N.C.	
29	P32			N.C.	
30	P33			N.C.	
31	P34			N.C.	
32	P35			N.C.	
33	P36			N.C.	
34	P37			N.C.	
35	P40	O	CE0	CHIP ENABLE OUT FOR I/F TO DA1(LC8904Q)	
36	P41	I/O	IFACK	ACKNOWLEDGE SIGNAL FOR MAIN CPU I/F	
37	P42/SCK1	O	CL/SCK	SPI CLOCK OUT TO DA1(LC8904Q)&YSS241,243	
38	P43/SI1	I	DC/SO	SPI DATA IN FROM DA1&DSP(YSS243)	
39	P44/SO1	O	DI/SI	SPI DATA OUT TO DA1&DSP(YSS241&243)	
40	P45/SCK2	O	IFCLK	I/F CLOCK OUT TO MAIN CPU	
41	P46/SI2	I	IFDATAI	I/F DATA IN FROM MAIN CPU	
42	P47/SO2	O	IFDATAO	I/F DATA OUT TO MAIN CPU	
43	P50/INT3	I	C1F0	DEMURATOR ERROR INPUT(FOR DEBUG USE ONLY)	
44	P51/INT4	I	ERROR	DA1 ERROR INPUT L:Error H:OK	
45	P52/PDO			N.C.	
46	P53			N.C.	
47	P54			N.C.	
48	VASS			GND	
49	VAREF			GND	
50	P60/AIN0	O	DEBO	CHIP ENABLE OUT FOR DEBUG USE ONLY	
51	P61/AIN1			N.C.	
52	P62/AIN2	I	YMUTE	YSS241 ERROR MUTE INPUT(H:MUTE ON,L:MUTE OFF)	
53	P63/AIN3			N.C.	
54	P64/AIN4			N.C.	
55	P65/AIN5			N.C.	
56	P66/AIN6			N.C.	
57	P67/AIN7			N.C.	
58	VDD			+5V	
59	P70	O	OSCON	PM4007A OSC CONTROL H:ONL:STOP	
60	P71	O	DSEL	DATA SELECT(YSS243or241H:241L:243	
61	P72	O	LFE-ATT	LFEATT:ON:H:0dB L:-10dB OFF	
62	P73	O	A/D	ADC/DAI SELECT H:DAI L:ADC	
63	P74	O	RF/OTH	RF/OTHER SELECT H:RF L:THER	
64	P75	O	MUTE-1	MUTE CONTROLLED BY SUB CPU H:NORMAL L:MUTE	

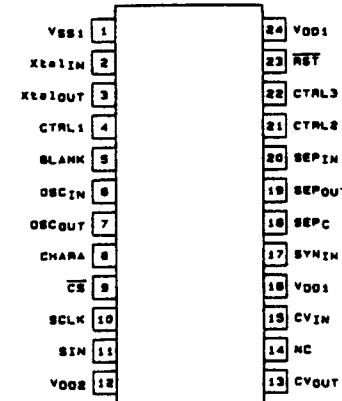
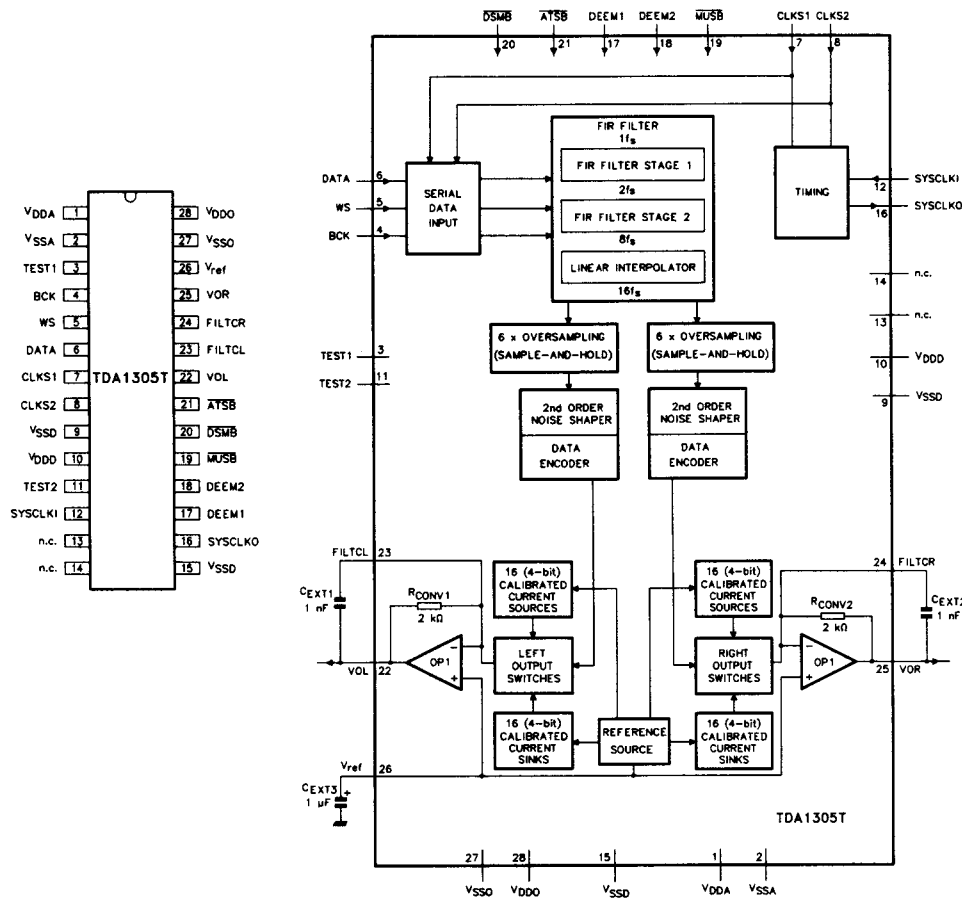
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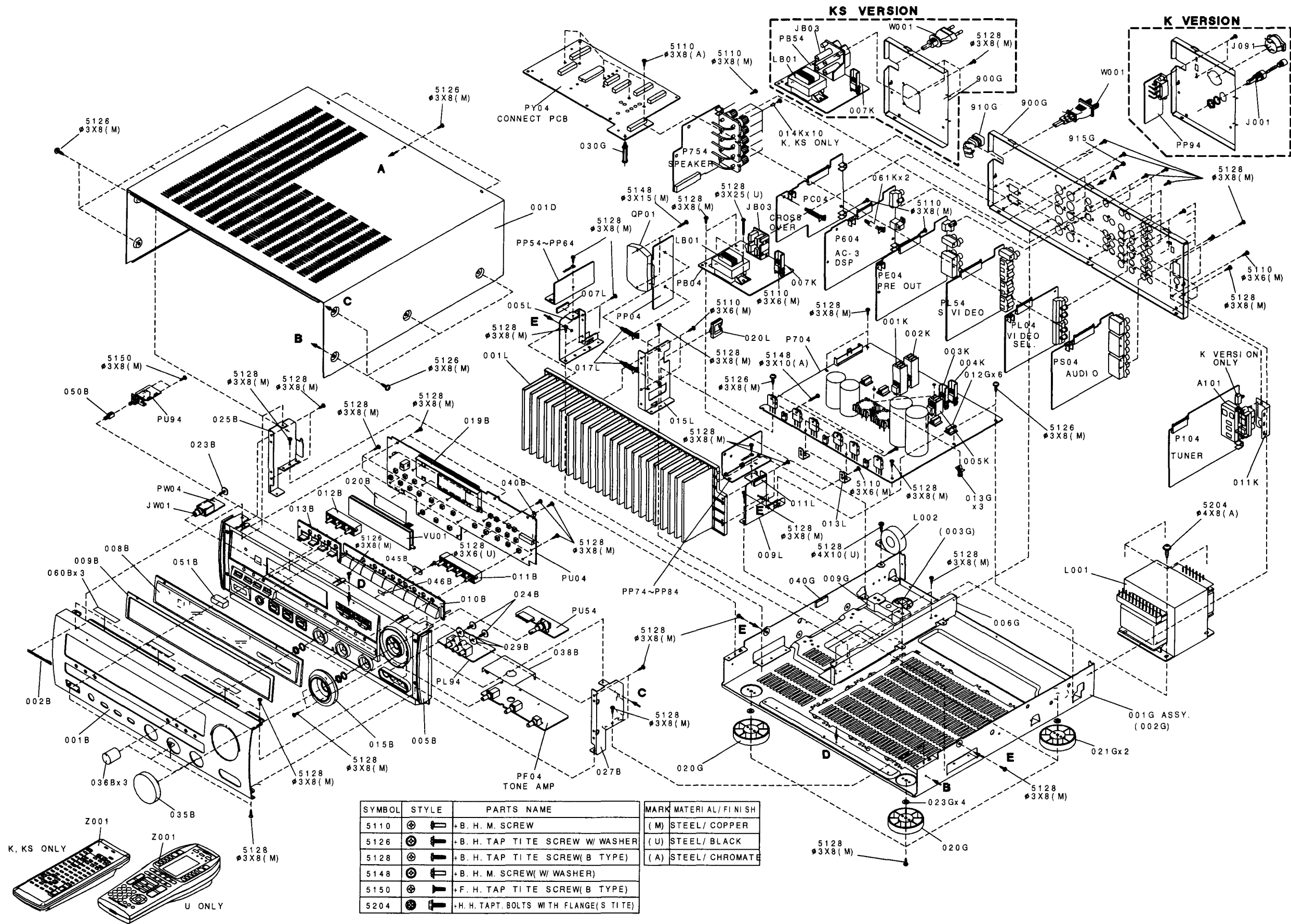
A03300

QD01, QD31, QD51:TDA1305T

PINNING		
SYMBOL	PIN	DESCRIPTION
VDDA	1	analog supply voltage
VSSA	2	analog ground
TEST1	3	test input, pin should be connected to ground (internal pull-down resistor)
BCK	4	bit clock input
WS	5	word select input
DATA	6	data input
CLKS1	7	clock selection 1 input
CLKS2	8	clock selection 2 input
VSSD	9	digital ground
VDDO	10	digital supply voltage
TEST2	11	test input, pin should be connected to ground (internal pull-down resistor)
n.c.	13	not connected (this pin should be left open-circuit)
n.c.	14	not connected (this pin should be left open-circuit)
VSSD	15	digital ground
SYSCLKO	16	system clock output
DEEM1	17	de-emphasis on/off; f _{DEEM} 32 kHz, 44 kHz and 48 kHz
DEEM2	18	de-emphasis on/off; f _{DEEM} 32 kHz, 44 kHz and 48 kHz
MUSB	19	mute input (active LOW)
DSMB	20	double-speed mode input (active LOW)
ATSB	21	12 dB attenuation input (active LOW)
VOL	22	left channel output
FILTCL	23	capacitor for left channel 1st order filter function should be connected between pins 22 and 23
FILTCR	24	capacitor for right channel 1st order filter function should be connected between pins 25 and 24
VOR	25	right channel output
Vref	26	internal reference voltage for output channels (0.5V _{DD})
VSSO	27	operational amplifier ground
VDDO	28	operational amplifier supply voltage



6. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B	BLACK		FRONT PANEL BLK	278J248020				PACKING	
001B	GOLD		FRONT PANEL GLD	278J248120	001T	K,KS		USER GUIDE	291J851350
002B	BLACK	4822 459 11172	BADGE,MARANTZ BLK	185J251010	001T	U		USER GUIDE	291J851250
002B	GOLD	4822 459 11173	BADGE,MARANTZ GLD	185J251110					
005B	BLACK		CHASSIS,FRONT BLK	261J105020	001S	U		PACKING CASE BL	291J801110
005B	GOLD		CHASSIS,FRONT GLD	261J105120					
007B	BLACK		WINDOW,ASSY BLK	261J158530	Z001	K,KS		REMOTE COMMANDER RC780SR	ZK287J0010
007B	GOLD		WINDOW,ASSY GLD	261J158540					
008B			WINDOW	261J158060	Z001	U		REMOTE COMMANDER RC2000MK II	ZK206W0020
009B	BLACK		ESCUTCHEON, WINDOW BLK	261J158530					
009B	GOLD		ESCUTCHEON, WINDOW GLD	261J158540	Z003	K,KS		EXT.ANTENNA,FM	ZA02800020
010B	BLACK		BUTTON,FUNCTION HINGE	261J270060	Z003	U	4822 303 30314	EXT.ANTENNA,FM	ZA02000070
010B	GOLD		BUTTON,FUNCTION HINGE	261J270160	Z004		4822 157 63083	ANT COIL,LA-700HB LOOP	LA00055010
					Z005	U	4822 264 30265	PLUG,ANT ADAPTOR	YP90000310
011B	BLACK	4822 410 10639	BUTTON,MEMO HINGE BLK	261J270020	Z006	K	4822 265 10092	JACK,AC ADAPTER	YJ04001240
011B	GOLD		BUTTON,MEMO HINGE GLD	261J270120	Z007	K	4822 070 36302	FUSE 6.3A 250V	FS10630850
012B	BLACK	4822 410 10641	BUTTON,OSD HINGE BLK	261J270030					
012B	GOLD		BUTTON,OSD HINGE GLD	261J270130					
013B	BLACK	4822 410 10642	BUTTON,MODE HINGE BLK	261J270040					
013B	GOLD		BUTTON,MODE HINGE GLD	261J270140					
015B	BLACK	4822 454 13137	ESCUTCHEON,VOL BLK	261J063010					
015B	GOLD		ESCUTCHEON,VOL GLD	261J063110					
029B			WASHER	261J012010					
035B	BLACK	4822 410 10643	KNOB,MAIN VOL BLK	261J154010					
035B	GOLD		KNOB,MAIN VOL GLD	261J154110					
036B	BLACK	4822 413 41589	KNOB,TONE VOL BLK	090J154010					
036B	GOLD	4822 413 41821	KNOB,TONE VOL GLD	090J154110					
038B			SHIELD,TONE VOL.	261J109010					
050B		4822 404 21012	JOINT,POWER BUTTON	025J125010					
051B	BLACK	4822 410 62744	BUTTON,POWER SW BLK	285K270010					
051B	GOLD	4822 462 72053	BUTTON,POWER SW GLD	285K270110					
001D	BLACK		LID,TOP COVER BLK	264J257110					
001D	GOLD		LID,TOP COVER GLD	264J257120					
020G		4822 462 42045	LEG,GOLD FRONT	183J057010					
021G		4822 462 42048	LEG,GOLD,REAR	183J057110					
▲ F001	K	4822 070 33152	FUSE 3.15A 250V BS LISTED	FS10315850					
▲ J001	K	4822 256 30233	JACK, FUSE HOLDER	YJ08000290					
▲ J091	K	4822 272 10382	VOLT.SELECT.	BY05060090					
▲ L001	K		MAINS TRANSFORMER (110V 115V 220V 230V)	TS60513150					
▲ L001	KS		MAINS TRANSFORMER (230V)	TS60513140					
▲ L001	U		MAINS TRANSFORMER (120V)	TS60513130					
L002		4822 529 10357	FERRITE CORE,ESD-R-38B	FC50380010					
▲ W001	K		MAINS CORD,CCEE APP. AC250V 10A + VAR2P	YC01800880					
▲ W001	KS	4822 321 11343	MAINS CORD,	YC01800790					
▲ W001	U		MAINS CORD, UL CSA SPT-2	YC01900260					

7. SERVICE PROGRAM

1. Tracking point memory

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

When the POWER ON, press 3 buttons simultaneously [**PRESET ▲ + PRESET ▼ + MEMO**].

FLD shows "TRACKING". Frequencies to be memorized are as follows.

	VERSION	P1	P2	P3	P4
FM	K, KS, U	90.0	98.0	106.0	87.5

	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	←	←	←	←

2. FLD segment luminous

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

When the POWER ON, press 3 buttons simultaneously [**TUNING ▲ + TUNING ▼ + MEMO**].

When exiting from the service mode, press 3 buttons simultaneously [**TUNING ▲ + TUNING ▼ + MEMO**].

Luminous procedure

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

① KHz → ② MHz → ③ ATT → ④ LFE → ⑤ NIGHT → ⑥ MULTI → ⑦ COAX → ⑧ OPT →
⑨ RF → ⑩ TAPE1 → ⑪ COPY → ⑫ VCR1 → ⑬ SLEEP → ⑭ P-SCAN → ⑮ DISP

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 BAR (LEFT SIDE) → ③ SIGNAL BAR (2nd LEFT) → ④ SIGNAL BAR (CENTER) →
⑤ SIGNAL BAR (2nd RIGHT) → ⑥ SIGNAL BAR (RIGHT SIDE) → ⑦ AC-3 → ⑧ PCM → ⑨  DIGITAL →
⑩ PRO.LOGIC → ⑪ 3·STEREO → ⑫ MOVIE → ⑬ MATRIX → ⑭ HALL → ⑮ THX CINEMA → ⑯ STEREO

3. All clear

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

When the POWER ON, press 3 buttons simultaneously [**CLEAR + TUNING ▲ + MEMO**]. FLD shows "DEFAULT" and power will be OFF.

8. ELECTRICAL ADJUSTMENTS

1. Main amp idling current adjustment

- 1) With the power OFF, set semi – fixed resistor R743 (Lch), R744 (Rch), R786 (Center ch) on the PC board (P704) to the center position.
- 2) Connect a digital voltmeter, set for the DC range, between the emitter resistor [R759 (Lch), R760 (Rch), R794 (Center ch)] on the PC board (P704).
- 3) After the above, adjust the idling current as follows:
Turn the power ON and adjust semi – fixed resistor R743 (Lch), R744 (Rch), R786 (Center ch) while observing the digital multimeter indication.
* The target value is 7.2 mV (20 mA).

[Reference]

When a set whose idling current has been adjusted is switched on with after 1 minute it reaches about 2.7 – 3.5 mV. After 10 minutes, it reaches a balanced state and stabilizes at 7.2 mV (target). Therefore, if the adjustment is made 30 second after the power is switched on, adjust to 1.3 – 1.8 mV. In the same way, if 1 minute have passed since the power was switched on, adjust to 2.7 – 3.5 mV. From 1 to 2 minutes, adjust to 3.9 – 4.2 mV. From 2 to 4 minutes, adjust to 4.8 – 6.4 mV. From 4 to 7 minutes, adjust to 5.7 – 7.3 mV. After more than 7 minutes since the power was switched on, adjust to the setting of 5.8 – 7.4 mV.

Here is a reference table for the adjustment values.

Time since power switched on	Idling current adjustment
30 second	1.3 – 1.8 mV
1 minute	2.7 – 3.5 mV
1 – 2 minutes	3.9 – 4.2 mV
2 – 4 minutes	4.8 – 6.4 mV
4 – 7 minutes	5.7 – 7.3 mV
More than 7 minutes	5.8 – 7.4 mV

2. Main amp DC offset adjustment

- 1) With the power OFF, connect a digital voltmeter, set for the DC range, to the speaker terminal.
- 2) After the above, adjust the idling current as follows:
Turn the power ON and adjust RN63 (Lch), RN64 (Rch), RN70 (Center ch) so that the output is ± 40 mV.

9. TEST EQUIPMENT REQUIRED

- 1) AM/FM Signal Generator
- 2) Video Signal Generator
- 3) Digital Multimeter
- 4) Distortion level meter

10. ALIGNMENT PROCEDURES

1. 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)	999 kHz (K, KS) 1000 kHz (USA)	Level 300 μ V/m (50dB/m) Mod. 400 Hz 30%	Tuning point	LA06	Output level (L or R) Maximum at TAPE-OUT

This adjustment is normally not necessary, because the coil LA06 is preset by the original supplier

2. AM Tracking 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)	603 kHz (K, KS) 600 kHz (USA)	Level 300 - 400 μ V/m Mod. 400 Hz 30%	603 kHz (K, KS) 600 kHz (USA)	LA01	Output level (L or R) Maximum at TAPE-OUT
2		1404 kHz (K, KS) 1400 kHz (USA)	Level 300 - 400 μ V/m Mod. 400 Hz 30%	1404 kHz (K, KS) 1400 kHz (USA)	CA01	Output level (L or R) Maximum at TAPE-OUT
3	Repeat step 1 and 2 until sensitivity be maximized.					

3. 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)	999 kHz (K, KS) 1000 kHz (USA)	500 μ V/m (54 dB/m)	999 kHz (K, KS) 1000 kHz (USA)	RA11	"TUNED" indicate on FLD
2			1000 μ V/m (60 dB/m)	AUTO SCAN	Only Confirm	"TUNED" indicate on FLD

4. 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 Ω)	98 MHz	500 μ V (54 dB) MONO 1 kHz / Dev.40kHz 53.3% (K,KS) MONO 1kHz / Dev. 75kHz 100% (USA)	98 MHz (P2)	L201	Distortion level Minimum at TAPE-OUT

5. FM Muting Level Adjustment

Turn variable resistor R212 and stop at position "TUNED" is not shown (not indicated), then again turn the variable resistor R212 to the opposite revolution and stop at a position "TUNED" is shown.

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 Ω)	98 MHz	6.3 μV (16 dB) MONO 1 kHz / Dev. 40kHz 53.3% (K,KS) 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

6. 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 Ω)	98 MHz	500 μV (54 dB) L or R 1kHz / Dev. 40kHz 53.3% PILOT 19kHz / Dev. 6kHz 8% (K, KS)	98 MHz (P2)	IF COIL in FRONT END	Distortion level Minimum at TAPE-OUT
2			L or 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.

7. 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 Ω)	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

11. TECHNICAL DESCRIPTION

This product is a "Dolby Digital (AC-3)" decoder. By connecting this product with a Dolby digital compatible component such as a LD player with AC-3 RF output, DVD player or DBS tuner, it will be capable of 5.1 CH (Front L/R, Rear L/R, Center and Sub-woofer) play.

This product is composed approximately of 5 blocks including the AC-3 decoder block (P604), DAC & crossover block (PC04), power supply block (P704), volume control block (PE04) and front key input block (PU04).

Signal path

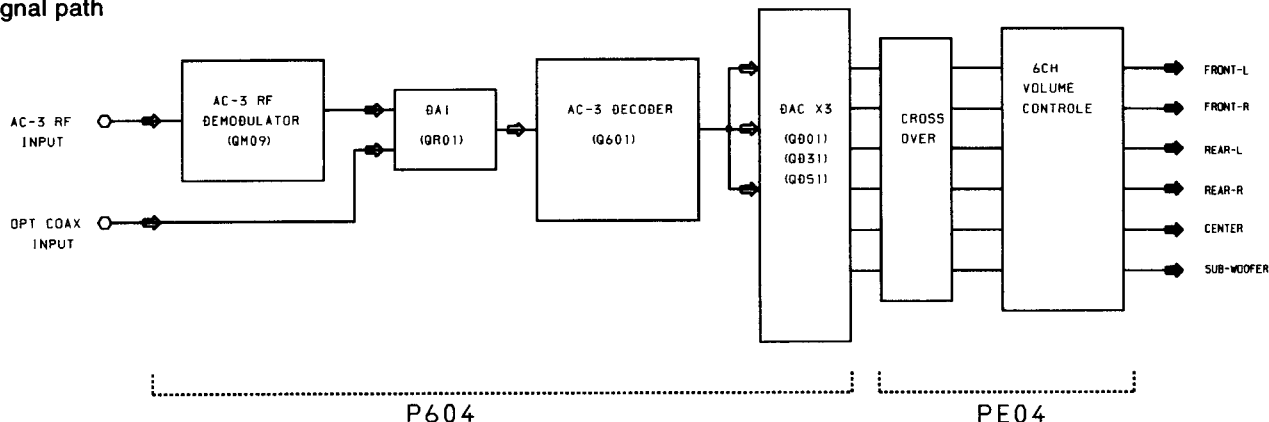


Figure 1

12. SIGNAL AND CIRCUIT DESCRIPTION

AC-3 RF

This signal is based on the Dolby Digital format for Laser Discs, and contains the AC-3 signal inserted in one of the analog audio channels of LD. See diagram below (Figure 2).

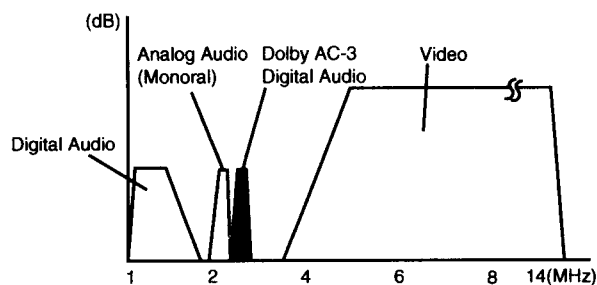


Figure 2

This signal is supplied from LD player with AC-3 RF output.

OPT/COAX (AC-3/PCM input)

This signal is based on an additional format for transmitting the AC-3 data through the conventional digital audio interface (SPDIF). This SPDIF contains the compressed data for AC-3, instead of PCM Audio data. Similarly to the case of ROM data, whether the data is audio or non-audio is identified according to the status in the signal. This signal can be output from a DVD player, etc.

AC-3 RF modulator

This circuit extracts the AC-3 data band from the RF signal output from a LD player using a BPF and converts the extracted data into the digital signal in the SPDIF format by means of QPSK modulation.

DAI (Digital Audio Interface) receiver

This circuit extracts various clock and data signals from the signal input in the SPDIF format.

AC-3 decoder DSP

This circuit generates the 6-channel data (Front L/R, Rear L/R, Center and LFE) based on the data output from the DAI, and outputs the 6-channel data to the DAC as 3 sets of 2-channel data.

Crossover

This circuit consists of 100Hz HPF for each channel, 100Hz LPF for sub-woofer channel, and mixing for sub-woofer output.

Depending on the speaker mode setting, combination of these circuit will be changed.

13. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R*** : 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
R*** : 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value

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

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

CAPACITORS

C*** : CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V

② — Capacity value
 ③ — Tolerance

Examples ;

② Tolerance (Capacity deviation)

±0.25pF 0
±0.5pF 1
±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF ... ±0.25pF
6pF ~ 10pF ... ±0.5pF
12pF ~ 560pF ... ±5%

③ 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.



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

④ — Capacity value

Examples ;

④ Capacity value

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

C*** : 5) ELECTROLY CAP. (), 6) FILM CAP. ()

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%

⑤ — Capacity value
 ⑥ — Working voltage

Examples ;

⑤ Capacity value

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

⑥ Working voltage

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

6) DF15 × × × 350 → Plastic film capacitor
 DF15 × × × 310 → One-way type, Mylar ±5% 50V
 DF16 × × × 310 → Plastic film capacitor
 One-way type, Mylar ±10% 50V

⑦ — Capacity value

Examples ;

⑦ Capacity value

0.001μF (1000pF) 102	0.1μF 104
0.0018μF 182	0.56μF ... 564
0.01μF 103	1μF 105
0.015μF 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. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value (0.1 - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value

Examples ;



* Resistance value

0.1Ω 001	10Ω ... 100	1kΩ 102	100kΩ 104
0.5Ω 005	18Ω ... 180	2.7kΩ 272	680kΩ 684
1Ω 010	100Ω ... 101	10kΩ 103	1MΩ 105
6.8Ω 068	390Ω ... 391	22kΩ 223	4.7MΩ 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	XTAL : CRYSTAL

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. (FOR PCS)	DESCRIPTION	PART NO. (MJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
CB07		4822 122 30043	PB04-BACK-UP CIRCUIT BOARD [U]		DB53		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
CB08		4822 122 30043	PB04-CAPACITORS		DB54		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
▲ CB09		4822 122 33276	CER. 0.01μF +80%-20% 50V	DK18103310	DB55		4822 130 81729	ZENER DIODE MTZJ33D	HD33301000
			CER. 0.01μF +80%-20% 50V	DK18103310	DB56		4822 130 80273	ZENER DIODE	HD30821000
			CER. 0.01μF ±20%	DK17103840				RD8.2JB2 MTZJ8.2C	
			PB04-CAPACITORS (COMMON)		DB57		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
			ELECTROLYTIC CAPACITOR		DB58		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
			±20% : CB01-CB03 CB05 CB06		▲ QB51		4822 209 31927	IC PQ05RR1 5V 1A	HC38905320
			PB04-RESISTORS		▲ QB52		4822 130 62335	TRS. 2SD2033 E 120V 1.8W	HT420331E0
▲ RB01		4822 052 10479	47Ω ±5% 1/4W	GG05470140				PB54-MISCELLANEOUS	
▲ RB03		4822 053 10471	470Ω ±5% 1W	GA05471010	▲ FB51	KS	4822 070 33152	FUSE 3.15A 250V	FS10315850
▲ RB07			2.2MΩ ±10% 1/2W	RC10225820	▲ JB51	KS		JACK FUSE CLIP	YJ08000580
			PB04-RESISTORS (COMMON)		▲ JB52	KS		JACK FUSE CLIP	YJ08000590
			CARBON FILM FIXED RES.		▲ JB53	KS	4822 267 31952	JACK AC OUTLET 2P	YJ04002080
			±5% 1/6W : RB04 RB05 RB08		▲ LB51	K		MAINS TRANSF. 115 230V	TS14823250
			PB04-SEMICONDUCTORS		▲ LB51	KS	4822 146 10582	MAINS TRANSF. BACK UP	TS14823240
▲ DB01			DIODE D2SBA20	HE20027290	▲ LB52		4822 280 80773	RELAY VS24MB-NR	LY10240240
DB03		4822 130 82421	DIODE 1D3 1A 200V	HD20002710				PC04-CROSSOVER CIRCUIT BOARD	
DB04		4822 130 82421	DIODE 1D3 1A 200V	HD20002710				PC04-CAPACITORS	
DB05		4822 130 81729	ZENER DIODE MTZJ33D	HD33301000	CC07		4822 124 21894	ELECT 10μF 16V	EJ10601610
DB06		4822 130 80273	ZENER DIODE	HD30821000	CC08		4822 124 21894	ELECT 10μF 16V	EJ10601610
			RD8.2JB2 MTZJ8.2C		CC11		4822 124 21894	ELECT 10μF 16V	EJ10601610
DB07		4822 130 82421	DIODE 1D3 1A 200V	HD20002710	CC12		4822 124 21894	ELECT 10μF 16V	EJ10601610
DB08		4822 130 82421	DIODE 1D3 1A 200V	HD20002710	CC17				
▲ QB01		4822 209 31927	IC PQ05RR1 5V 1A	HC38905320	}		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ QB02		4822 130 62335	TRS. 2SD2033	HT420331E0	CC22				
			PB04-MISCELLANEOUS		CC23		4822 122 33794	CER. 3300pF ±20%	DA17332110
▲ FB01			FUSE 6.3A 250V	FS10630540	CC24		4822 122 33794	CER. 3300pF ±20%	DA17332110
▲ JB01		4822 256 30285	JACK FUSE CLIP	YJ08000170	CC25				
▲ JB02		4822 256 30285	JACK FUSE CLIP	YJ08000170	}		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ JB03			JACK AC OUTLET 2P	YJ04002040	CC28				
▲ LB01			MAINS TRANSF. BACK UP	TS14823230	CC29		4822 126 10362	CER. 22pF ±5%	DA15220110
▲ LB02		4822 280 80773	RELAY VS24MB-NR	LY10240240	CC30		4822 126 10362	CER. 22pF ±5%	DA15220110
			PB54-BACK-UP CIRCUIT BOARD [K,KS]		CC31		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PB54-CAPACITORS		CC32		4822 124 21894	ELECT 10μF 16V	EJ10601610
CB57		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	CC35		4822 124 21894	ELECT 10μF 16V	EJ10601610
CB58		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	CC36		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ CB59		4822 122 33276	CER. 0.01μF ±20%	DK17103840	CC37		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PB54-CAPACITORS (COMMON)		CC38		4822 126 10362	CER. 22pF ±5%	DA15220110
			ELECTROLYTIC CAPACITOR		CC39		4822 124 21894	ELECT 10μF 16V	EJ10601610
			±20% : CB51-CB53 CB55		CC40		4822 126 11125	CER. 10pF ±5%	DA15100110
			CB56 CB60		CC41		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ RB51		4822 052 10479	47Ω ±5% 1/4W	GG05470140	CC43		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ RB53		4822 053 10471	470Ω ±5% 1W	GA05471010	CC45		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PB54-RESISTORS		CC74		4822 124 21894	ELECT 10μF 16V	EJ10601610
			CARBON FILM FIXED RES.		CC75		4822 124 21894	ELECT 10μF 16V	EJ10601610
			±5% 1/6W : RB54 RB55 RB58		CZ07		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PB54-SEMICONDUCTORS		CZ08		4822 124 21894	ELECT 10μF 16V	EJ10601610
▲ DB51			DIODE D2SBA20	HE20027290	CZ09		4822 126 10362	CER. 22pF ±5%	DA15220110
			PC04-CAPACITORS (COMMON)		CZ10		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PLASTIC FILM CAPACITOR		CZ14		4822 124 21894	ELECT 10μF 16V	EJ10601610
			±5% 50V : CC01-CC06						
			CC13-CC16 CC33 CC34 CC42						
			CC44 CC46 CC47 CZ01-CZ06						
			CZ11-CZ13						

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R***			PC04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RC01-RC52 RC61-RC65 RC67 RC68 RZ01-RZ27		QE07 }		4822 209 83631	IC NJM4558D-D	HC10008090
QC01 }		4822 209 83631	PC04-SEMICONDUCTORS		QE12				
QC09 QC10 QC11			IC NJU7312L ANALOG SW.	HC10124090	QV51 }		4822 130 43818	TRS. 2SC2878 A B	HT328782A0
QZ01 QZ02 QZ03		4822 209 83631	IC NJU7311L ANALOG SW.	HC10123090	QV56 QV57	K,KS		TRS. 2SC2120 O	HT321201A0
			IC NJM4558D-D	HC10008090				PE04-MISCELLANEOUS	
			IC NJM4558D-D	HC10008090	JV51		4822 265 10738	TERMINAL RCA JACK 1P	YT02010770
			IC NJM4558D-D	HC10008090	JV52		4822 267 41009	TERMINAL RCA JACK 2P	YT02020890
					JV53		4822 265 10681	TERMINAL RCA JACK 6P	YT02060540
CE01 }		4822 124 21894	PE04-FLE.VOL		LV01	K,KS	4822 280 20501	RELAY MR62-24SR 24V	LY20240410
CE06 CE07 }		4822 124 21899	CIRCUIT BOARD		LV02	K,KS	4822 280 20501	RELAY MR62-24SR 24V	LY20240410
CE17 CE19 }		4822 124 21899	PE04-CAPACITORS		LV03	K,KS	4822 280 20501	RELAY MR62-24SR 24V	LY20240410
CE30 CE31 }		4822 124 21899	ELECT 10µF 16V	EJ10601610	LV05	KS	4822 157 70813	CHOKO COIL 47µH	LC14733800
CE36 CV88 }		4822 124 21894	ELECT 4.7µF 25V	EJ47502510	LV06	KS	4822 157 70813	CHOKO COIL 47µH	LC14733800
CV91		4822 122 40617	ELECT 4.7µF 25V	EJ47502510	LV07	KS	4822 157 70813	CHOKO COIL 47µH	LC14733800
			CER. 0.1µF +80%-20% 50V	DD38104010	LV08	KS	4822 157 70813	CHOKO COIL 47µH	LC14733800
					LV09	KS	4822 157 70813	CHOKO COIL 47µH	LC14733800
C***			PE04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CV80-CV85					PF04-TONE CIRCUIT BOARD	
▲RV89 ▲RV90 ▲RV91	K,KS K,KS K,KS	4822 113 90141 4822 113 90141 4822 113 90141	PE04-RESISTORS 220Ω ±5% 1/4W FUSE	NF02221140 NF02221140 NF02221140	CF01		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620
R***			PE04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RE01-RE12 RE19-RE70 RE72-RE76 RE78-RE85 RV75-RV86 (RV92 RV93 [K,KS])RV94 RV95		CF02		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620
DV01	K,KS	4822 130 32362	PE04-SEMICONDUCTORS		CF03		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620
DV02	K,KS	4822 130 32362	DIODE 1SS176 MA165	HD20002000	CF04		4822 124 23056	ELECT 47µF 16V	EJ47601610
DV03	K,KS	4822 130 32362	DIODE 1SS254 30V 0.1A	HD20002000	CF09		5322 122 32265	CER. 100pF ±5% 50V	DD15101300
QE01		4822 209 83631	DIODE 1SS176 MA165	HD20002000	CF10		5322 122 32265	CER. 100pF ±5% 50V	DD15101300
QE02		4822 209 83631	DIODE 1SS254 30V 0.1A	HD20002000	CF11		5322 122 32265	CER. 100pF ±5% 50V	DD15101300
QE03		4822 209 83631	DIODE 1SS176 MA165	HD20002000	CF21		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620
QE04			DIODE 1SS254 30V 0.1A	HD20002000	CF22		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620
QE05					CF23		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620
QE06					CF25		4822 124 23055	ELECT 22µF 16V	EJ22601610
					CF26		4822 124 23055	ELECT 22µF 16V	EJ22601610
					CF27		4822 124 23055	ELECT 22µF 16V	EJ22601610
					CF28		4822 124 90358	ELECT 22µF ±20% 16V	OA22601620
					CF29	K	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF29	U	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF30	K	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF30	U	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF31	K	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF31	U	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF32		4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					CF40		4822 124 90354	ELECT 100µF ±20% 16V	OA10701620
					CF41		4822 124 90354	ELECT 100µF ±20% 16V	OA10701620
					CF43				
					CF48		4822 122 40588	CER. 0.022µF ±20%	DA17223110
					C***			PF04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CF05-CF07 CF29-CF31	
					C***			PLASTIC FILM CAPACITOR ±5% 50V : CF13-CF20	
					RF41			PF04-RESISTORS VAR. 100KΩ B x 4	RG01040150
					RF42			VAR. 100KΩ B x 4	RG01040150

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RF43		4822 100 12007	VAR. 100KΩ SPECIAL W	RK01040620	QL24		4822 130 42715	TRS. 2SA608SP 2SA1048	HT10001000
R***			PF04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RF01-RF11 RF13-RF15 RF17-RF24 RF29-RF32 RF45 RF46 RF81-RF84		QL25		4822 130 41947	TRS. 2SC536SP 2SC2458	HT30001000
QF01		4822 209 70044	IC NJM2058D OP.AMP	HC10031090	QL26		4822 130 41947	TRS. 2SC536SP 2SC2458	HT30001000
QF02		4822 209 83631	IC NJM4558DD	HC10008090	QL27	K,KS	4822 130 61189	DIG.TRS. DTC114TS	BA20004000
QF03		4822 209 83631	IC NJM4558DD	HC10008090	QL28	K,KS	4822 130 61189	DIG.TRS. DTC114TS	BA20004000
			PF04-SEMICONDUCTORS		QL29	K,KS	4822 130 61227	DIG.TRS. DTA114ES	BA10007210
			PL04-VIDEO FUNCTION		JL01			PL04-MISCELLANEOUS	
			CIRCUIT BOARD		JL02		4822 265 10676	TERMINAL RCA JACK 2P	YT02021440
			PL04-CAPACITORS					TERMINAL RCA JACK 4P	YT02041130
CL01		4822 124 21894	ELECT 10μF 16V	EJ10601610	LL21		4822 157 62922	CHOKO COIL 33μH	LC13333800
CL08					LL23		4822 242 73843	EMI FILTER DSS306-91	FM12223010
CL13		4822 124 21894	ELECT 10μF 16V	EJ10601610	XL21	K,KS	4822 242 80288	CRYSTAL 14.31818MHz	JX14001260
CL14		4822 124 21894	ELECT 10μF 16V	EJ10601610	XL22	K,KS	4822 242 73903	CRYSTAL 17.7MHz	JX17001260
CL15		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	XL23	U	4822 242 80288	CRYSTAL 14.31818MHz	JX14001260
CL16		4822 124 21894	ELECT 10μF 16V	EJ10601610				PL54-S-VIDEO/MULTI OUT	
CL17		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310				CIRCUIT BOARD	
CL22		4822 124 23053	ELECT 1μF 50V	EJ10505010	CG53		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010
CL23		4822 124 23053	ELECT 1μF 50V	EJ10505010				PL54-CAPACITORS	
CL24		4822 124 23053	ELECT 1μF 50V	EJ10505010	CL51				
CL26		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010	CL58		4822 124 21894	ELECT 10μF 16V	EJ10601610
CL27		4822 126 11591	CER. 24pF ±5% 50V	DD15240300	CL60		4822 124 23055	ELECT 22μF 16V	EJ22601610
CL28		5322 122 32143	CER. 22pF ±5% 50V	DD15220300	CL62		4822 124 23055	ELECT 22μF 16V	EJ22601610
CL30		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010	CL63				
CL35	K,KS	4822 122 31823	CER. 15pF ±5% 50V	DD15150300	CL66		4822 124 21894	ELECT 10μF 16V	EJ10601610
CL35	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300	CL67		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CL36	K,KS	4822 122 31823	CER. 15pF ±5% 50V	DD15150300	CL68		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CL36	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300	CL77		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010
			PL04-CAPACITORS (COMMON)		CL80		4822 126 11591	CER. 24pF ±5% 50V	DD15240300
C***			HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CL21		CL81		5322 122 32143	CER. 22pF ±5% 50V	DD15220300
C***			ELECTROLYTIC CAPACITOR ±20% : CL10 CL11 CL25 CL29 CL38 CL41		CL83		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010
			PL04-RESISTORS		CL85	K,KS	4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010
RL10		4822 111 41355	75Ω ±5% 1/6W	GD05750160	CL91		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010
RL11		4822 111 41355	75Ω ±5% 1/6W	GD05750160	CL93	K,KS	4822 122 31823	CER. 15pF ±5% 50V	DD15150300
			PL04-RESISTORS (COMMON)		CL93	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
R***			CARBON FILM FIXED RES. ±5% 1/6W : RL01-RL08 RL13 RL15 RL21 RL23 RL27 RL30 RL34 RL35		CL94	K,KS	4822 122 31823	CER. 15pF ±5% 50V	DD15150300
QL01			PL04-SEMICONDUCTORS		CL94	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
QL03		4822 130 42715	IC BA7625 VIDEO SEL.	HC10189210	C***			PL54-CAPACITORS (COMMON)	
QL04		4822 130 42715	TRS. 2SA608SP 2SA1048	HT10001000	C***			HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CG51 CG52 CL75	
QL05		4822 130 41947	TRS. 2SA608SP 2SA1048	HT10001000				ELECTROLYTIC CAPACITOR ±20% : CL59 CL61 CL69 CL70 CL74 CL76 CL78 CL79 CL82 CL92	
QL21			IC LC74781 OSD	HC10377030	RG61		4822 113 90141	220Ω ±5% 1/4W FUSE	NF02221140
QL22		4822 130 60588	DIG.TRS. DTC114ES UN4211	BA20001000	RL59		4822 111 41355	75Ω ±5% 1/6W	GD05750160
					RL62				

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R***			PL54-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : CL84 RG51-RG60 RG62RG63 RL51-RL58 RL63-RL70 RL79 RL85 RL86 RL90 RL91 RL92 RL94		C***			PL94-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CL87 CL88 CL97 CL98	
DG51		4822 130 32362	PL54-SEMICONDUCTORS DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	R***			PL94-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RL91 RL92 RS91 RS92	
DL51		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	QS91		4822 209 83631	PL94-SEMICONDUCTOR IC NJM4558DD	HC10008090
DL52		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	JL91		4822 265 10679	PL94-MISCELLANEOUS TERMINAL RCA JACK 3P	YT02030410
QG51 } QG54 QG55		4822 130 61892	TRS. 2SD2144S U OR V TRS. 2SC2120 O	HT421442A0 HT321201A0				PP04-SURROUND AMP CIRCUIT BOARD PP04-CAPACITORS ELECT 10µF ±20% 63V ELECT 10µF ±20% 63V CER. 10pF ±0.5pF 50V CER. 10pF ±0.5pF 50V	EQ10606390 EQ10606390 DD11100300 DD11100300
QL51			IC BA7625 VIDEO SEL.	HC10189210	CP03		4822 124 80542	ELECT 10µF ±20% 63V	EQ10606390
QL52			IC BA7626 VIDEO SEL.	HC10190210	CP04		4822 124 80542	ELECT 10µF ±20% 63V	EQ10606390
QL55		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000	CP07		4822 122 32185	CER. 10pF ±0.5pF 50V	DD11100300
QL56		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000	CP08		4822 122 32185	CER. 10pF ±0.5pF 50V	DD11100300
QL72		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000	CP09				
QL73			IC NJM2264	HC10185090	}		4822 124 21895	ELECT 0.22µF 50V	EJ22405010
QL74			IC LC74781 OSD	HC10377030	CP12				
QL75		4822 130 60588	DIG.TRS. DTC114ES UN4211	BA20001000	CP13		4822 124 23626	ELECT 100µF 63V	EA10706310
QL77		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000	CP14		4822 124 41134	ELECT 10µF 63V	EA10606310
QL78		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000	CP15		4822 124 23626	ELECT 100µF 63V	EA10706310
QL79	K,KS	4822 130 61189	DIG.TRS. DTC114TS	BA20004000	CP16		4822 124 41134	ELECT 10µF 63V	EA10606310
QL80	K,KS	4822 130 61189	DIG.TRS. DTC114TS	BA20004000	CP17		4822 124 23055	ELECT 22µF 10V	EJ22601010
QL81	K,KS	4822 130 61227	DIG.TRS. DTA114ES	BA10007210	CP21	KS	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
			PL54-MISCELLANEOUS TERMINAL RCA JACK 2P	YT02021200	CP22	KS	4822 122 31205	CER. 47pF ±5% 50V	DD15470300
JG51		4822 290 81634	TERMINAL S-JACK 3P	YT02030350	C***			PP04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CP01 CP02	
JL51		4822 265 31302	TERMINAL S-JACK 3P	YT02030350	C***			ELECTROLYTIC CAPACITOR ±20% : CP05 CP06	
JL52		4822 265 31302	TERMINAL S-JACK 3P	YT02030350	R***			PP04-RESISTORS 51kΩ ±5% 1/6W 51kΩ ±5% 1/6W 0.22Ω ±10% 3W 0.22Ω ±10% 3W 1kΩ ±5% 1/6W 1kΩ ±5% 1/6W 10Ω ±5% 1W 10Ω ±5% 1W 100Ω ±5% 1/6W 100Ω ±5% 1/6W 10Ω ±5% 1/4W	GD05513160 GD05513160 GO10222030 GO10222030 GG05102160 GG05102160 GA05100010 GA05100010 GG05101160 GG05101160 GG05100140
LG51		4822 280 20501	RELAY MR62-24SR 24V	LY20240410	RP09		4822 050 11301	51kΩ ±5% 1/6W	GD05513160
LL71		4822 157 62922	CHOKE COIL 33µH	LC13333800	RP10		4822 050 11301	51kΩ ±5% 1/6W	GD05513160
LL72		4822 242 73843	EMI FILTER DSS306-91	FM12223010	RP11		4822 113 80363	0.22Ω ±10% 3W	GO10222030
XL71	K,KS	4822 242 80288	CRYSTAL 14.31818MHz	JX14001260	RP12		4822 113 80363	0.22Ω ±10% 3W	GO10222030
XL72	K,KS	4822 242 73903	CRYSTAL 17.7MHz	JX17001260	RP13		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
XL73	U	4822 242 80288	CRYSTAL 14.21818MHz	JX14001260	RP14		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
			PL94-AUX IN CIRCUIT BOARD PL94-CAPACITORS ELECT 10µF 16V ELECT 22µF 16V ELECT 10µF 16V ELECT 10µF 16V CER. 0.1µF +80%-20% 50V CER. 0.1µF +80%-20% 50V CER. 0.1µF +80%-20% 50V	EJ10601610 EJ22601610 EJ10601610 EJ10601610 DD38104010 DD38104010 DD38104010	R***			PP04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RP01 RP02 RP03-RP08RP15-RP20 RP23 RP24 RP27-RP29	
CL91		4822 124 21894	ELECT 10µF 16V	EJ10601610	RP21		4822 053 10109	10Ω ±5% 1W	GA05100010
CL92		4822 124 23055	ELECT 22µF 16V	EJ22601610	RP22		4822 053 10109	10Ω ±5% 1W	GA05100010
CS91		4822 124 21894	ELECT 10µF 16V	EJ10601610	RP25		4822 052 10101	100Ω ±5% 1/6W	GG05101160
CS92		4822 124 21894	ELECT 10µF 16V	EJ10601610	RP26		4822 052 10101	100Ω ±5% 1/6W	GG05101160
CS93		4822 122 40617	CER. 0.1µF +80%-20% 50V	DD38104010	RP99		4822 052 10109	10Ω ±5% 1/4W	GG05100140
CS94		4822 122 40617	CER. 0.1µF +80%-20% 50V	DD38104010				PP04-SEMICONDUCTORS DIODE HSS81TD 150V 150MA	HD20027010
CS95		4822 122 40617	CER. 0.1µF +80%-20% 50V	DD38104010	DP01		4822 130 80837	DIODE HSS81TD 150V 150MA	HD20027010
					DP02		4822 130 80837	DIODE HSS81TD 150V 150MA	HD20027010

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▲QP01		4822 209 14867	IC STK401-140 POWER AMP	HC10357030				PU04-FRONT	
QP02		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0				CIRCUIT BOARD	
QP03		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0				PU04-CAPACITORS	
QP04		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0	CU01		4822 126 11558	CER. 0.1μF ±20% 50V	DA17104110
					CU02		4822 124 23056	ELECT 47μF 10V	EJ47601010
					CU03		4822 124 80087	ELECT 220μF 6.3V	EJ22700610
					CU04		4822 122 40588	CER. 0.022μF ±20%	DA17223110
LP01		4822 157 70022	AIR COIL SPK CHOCK	ML08010030	CU05		4822 126 11558	CER. 0.1μF ±20% 50V	DA17104110
LP02		4822 157 70022	AIR COIL SPK CHOCK	ML08010030	CU07		4822 124 90406	BIG ELECT 0.022F	EX22300530
					CU10		4822 122 40588	CER. 0.022μF ±20%	DA17223110
					CU13		4822 126 11558	CER. 0.1μF ±20% 50V	DA17104110
					CU53		4822 126 12496	CER. 0.01μF +80%-20%	DD38103010
SP91	K	4822 277 21825	SLIDE SW.SDKGA4	SS02021510				PU04-RESISTORS (COMMON)	
								CARBON FILM FIXED RES.	
								±5% 1/6W : RU01-RU23 RU25	
								RU26 RU28-RU30 RU51 RU52	
								RU57-RU60	
CG01								PU04-SEMICONDUCTORS	
}		4822 124 21899	ELECT 4.7μF 25V	EJ47502510	DU01		4822 130 80589	DIODE 1SS132 DIODE	HD20029210
CG08					DU02		4822 130 80589	DIODE 1SS132 DIODE	HD20029210
CG09		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU04		4822 130 80589	DIODE 1SS132 DIODE	HD20029210
CG10		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU05		4822 130 80589	DIODE 1SS132 DIODE	HD20029210
CS01					DU06		4822 130 80589	DIODE 1SS132 DIODE	HD20029210
}		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU07		4822 130 32362	DIODE 1SS176 MA165	HD20002000
CS12								1SS254 30V 0.1A	
CS13		4822 124 21899	ELECT 4.7μF 25V	EJ47502510	DU09				
CS14		4822 124 21899	ELECT 4.7μF 25V	EJ47502510	}		4822 130 32362	DIODE 1SS176 MA165	HD20002000
CS15		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU18			1SS254 30V 0.1A	
CS16		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU19		4822 130 80326	L.E.D. LT3D8B RED 30	HI10062320
CS17					DU20		4822 130 32362	DIODE 1SS176 MA165	HD20002000
}		4822 122 40617	CER. 0.1μF +80%-20% 50V	DD38104010				1SS254 30V 0.1A	
CS20					DU23	K,KS	4822 130 32362	DIODE 1SS176 MA165	HD20002000
								1SS254 30V 0.1A	
C***			PS04-CAPACITORS (COMMON)		DU24	K,KS	4822 130 32362	DIODE 1SS176 MA165	HD20002000
			HIGH DIELECTRIC CONSTANT					1SS254 30V 0.1A	
			CER. CAPACITOR ±10% 50V :		DU51		4822 130 32362	DIODE 1SS176 MA165	HD20002000
			CS23-CS50					1SS254 30V 0.1A	
C***			ELECTROLYTIC CAPACITOR		QU01			MICROPROCESSOR	HU280JT00F
			±20% : CS21 CS22					TMP87CP71F	
					QU02		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
					QU03		4822 130 41947	TRS. 2SC536SP 2SC2458	HT30001000
								2SC3311 2SC1740S	
			PS04-RESISTORS (COMMON)		QU04		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
			CARBON FILM FIXED RES.		QU05		4822 130 60588	DIG.TRS. DTC114ES UN4211	BA20001000
			±5% 1/6W : RG01 RG02		QU06		4822 130 60588	DIG.TRS. DTC114ES UN4211	BA20001000
			RG05-RG16 RG19 RS01-RS24		QU07		4822 130 60588	DIG.TRS. DTC114ES UN4211	BA20001000
			RS27-RS56		QU08		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
					QU09		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
					QU10		4822 130 42682	DIG.TRS. DTA144ES UN4113	BA10002000
QG01		4822 209 32552	IC LC78211 ANALOG SW	HC10308030	QU11			DIG.TRS. DTA114TS UN4115	BA10004000
QG02			IC LC7536 MULTI ELE.VOL.	HC10383030	QU12		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
QG03		4822 209 83631	IC NJM4558DD	HC10008090	QU14		4822 130 42682	DIG.TRS. DTA144ES UN4113	BA10002000
QG04		4822 209 83631	IC NJM4558DD	HC10008090	QU15		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
QS01					QU16		4822 209 16157	IR RECIVER PNA4655M00XB	HW10005020
}		4822 209 83631	IC NJM4558DD	HC10008090	QU17		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
QS06					QU18		4822 209 14612	IC 74HC541 BUFFER	HC754100B0
QS07		4822 209 32552	IC LC78211 ANALOG SW	HC10308030				PU04-MISCELLANEOUS	
QS08		4822 209 32554	IC LC78213 ANALOG SW	HC10310030	SU04		4822 276 20508	PUSH SW TACT	SP01011280
QS09		4822 209 83631	IC NJM4558DD	HC10008090	SU06		4822 276 20508	PUSH SW TACT	SP01011280
			PS04-MISCELLANEOUS						
JS01		4822 267 31451	TERMINAL 8P RCA JACK	YT02080110					
JS02		4822 267 31451	TERMINAL 8P RCA JACK	YT02080110					

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
SU09 }		4822 276 20508	PUSH SW TACT	SP01011280	QY03		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
SU16					QY04		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
SU25 }		4822 276 20508	PUSH SW TACT	SP01011280	QY05		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
SU40					QY06		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
VU01			DISPLAY UNIT FIP12FM8R	HQ31211060	QY07		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
XU01		4822 242 72066	CER. RESONATOR 8.00MHz	FQ08004010	QY08		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000
CU71		4822 126 10364	CER. 100pF ±10%	DA16101110	QY10		5322 209 11532	IC 74HC4094 PORT EXP.	HC709449B0
CU72		4822 126 10364	CER. 100pF ±10%	DA16101110	QY14		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000
R***			PU54-MASTER VOL CIRCUIT BOARD PU54-CAPACTORS		QY15		4822 130 42594	DIG.TRS. DTA144ES UN4213	BA20002000
QU71		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000	LY01		4822 158 60605	PY04-MISCELLANEOU FERRITE CORE BEADS	FC90050060
QU72		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000				P104-TUNER CIRCUIT BOARD	
SU75			PU54-MISCELLANEOUS ROTARY SW ENCODER	SR02010050				P104-CAPACTORS	
SU91 SU91	K,KS U	4822 276 12217 4822 276 12512	PUSH SW PUSH SW	SP02011570 SP02011670	CA01		4822 125 50384	20pF TRIM.	CT12000200
CW01 CW02 CW03	KS KS KS	4822 122 30043 4822 122 30043 4822 122 30043	CER. 0.01µF +80%-20% 50V CER. 0.01µF +80%-20% 50V CER. 0.01µF +80%-20% 50V	DK18103310 DK18103310 DK18103310	CA02		4822 122 40306	CER. 0.047µF +80%-20% 50V	DK18473310
CY01 CY02 CY74		4822 122 40617 4822 126 11726 4822 124 21894	CER. 0.1µF +80%-20% 50V CER. 2200pF ±20% ELECT 10µF 16V	DD38104010 DA17222110 EJ10601610	CA03		4822 122 31823	CER. 15pF ±5% 50V	DD15150300
R***			PW04-H.P CIRCUIT BOARD PW04-CAPACITORS		CA04		4822 121 42466	FILM 390pF ±5% 100V	DF15391550
DY01 }		4822 130 32362	DIODE 1SS176 MA165	HD20002000	CA05		4822 122 31205	CER. 47pF ±5% 50V	DD15470300
DY08			1SS254 30V 0.1A		CA06		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
DY09		4822 130 82421	DIODE 1D3 1A 200V	HD20002710	CA18		4822 124 21899	ELECT 4.7µF 25V	EJ47502510
DY10		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	C201		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
QY01		4822 130 61227	DIG.TRS. DTA114ES UN4111	BA10001000	C202		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
QY02		4822 130 42594	DIG.TRS. DTC144ES UN4213	BA20002000	C203		4822 122 40306	CER. 0.047µF +80%-20% 50V	DK18473310
			PY04-CONNECT CIRCUIT BOARD PY04-CAPACTORS		C204		4822 122 40306	CER. 0.047µF +80%-20% 50V	DK18473310
			PY04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RY01-RY04 RY06 RY22		C205		4822 124 23053	ELECT 1µF 50V	EJ10505010
			PY04-SEMICONDUCTORS		C206		4822 124 21894	ELECT 10µF 16V	EJ10601610
					C208		4822 122 40306	CER. 0.047µF +80%-20% 50V	DK18473310
					C209		4822 124 21894	ELECT 10µF 16V	EJ10601610
					C210		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C211		4822 124 40786	ELECT 2.2µF 50V	EJ22505010
					C212		4822 124 23053	ELECT 1µF 50V	EJ10505010
					C213		4822 124 23054	ELECT 0.47µF 50V	EJ47405010
					C215		4822 122 40306	CER. 0.047µF +80%-20% 50V	DK18473310
					C218		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C219		4822 124 21894	ELECT 10µF 16V	EJ10601610
					C223		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C224	K,KS	4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C225		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C226		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C233		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C235		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C236		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C237		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C303		4822 124 21894	ELECT 10µF 16V	EJ10601610
					C304		4822 124 21894	ELECT 10µF 16V	EJ10601610
					C305	K,KS	4822 124 21899	ELECT 4.7µF 25V	EJ47502510
					C306	K,KS	4822 124 21899	ELECT 4.7µF 25V	EJ47502510
					C307	K,KS	4822 124 21894	ELECT 10µF 16V	EJ10601610
					C308	K,KS	4822 124 21894	ELECT 10µF 16V	EJ10601610
					C311		4822 124 21899	ELECT 4.7µF 25V	EJ47502510
					C312		4822 124 21899	ELECT 4.7µF 25V	EJ47502510
					C313	K,KS	4822 124 21894	ELECT 10µF 16V	EJ10601610
					C315	KS	4822 122 10367	CER. 150pF ±5% 50V	DD15151300
					C316	KS	4822 122 10367	CER. 150pF ±5% 50V	DD15151300
					C501		4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					C502		4822 122 31205	CER. 47pF ±5% 50V	DD15470300
					C504		4822 122 30043	CER. 0.01µF +80%-20% 50V	DK18103310
					C505		4822 124 23053	ELECT 1µF 50V	EJ10505010
					C506		4822 124 41604	ELECT 0.1µF 50V	EJ10405010

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
C507		4822 122 30043	CER. 0.01 μ F +80%-20% 50V	DK18103310	Q501		4822 209 30178	IC LC7218 PLL	HC10221030
C511		4822 122 30043	CER. 0.01 μ F +80%-20% 50V	DK18103310	Q502		4822 130 42121	F.E.T. 2SK30ATM	HF200300B0
					Q503		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000
C***			P104-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR \pm 10% 50V : C220 C222 C227 (C317 C318 [KS]) C509 C510		A101	K,KS	4822 210 10372	P104-MISCELLANEOUS VHF TUNER	AV01202210
C***			ELECTROLYTIC CAPACITOR \pm 20% : C207 C214 C216 C234 (C314 [K,KS])C503 C508		A101	U	4822 210 10397	FM FRONT END FE415-G09 VHF TUNER FM FRONT END FE337-A05	AV01202220
C***			PLASTIC FILM CAPACITOR \pm 5% 50V : C217 C301 C302 (C309 C310 [K])		F201	K,KS	4822 242 70665	CER. FILTER SFE10.7MS3-A	FF11070620
					F201	U	4822 242 70911	CER. FILTER SFF10.7MA8-A	FF11070610
					F202		4822 242 70665	CER. FILTER SFE10.7MS3-A	FF11070620
RA11		4822 100 11351	10k Ω TRIM.	RA01030780	J101	K,KS	4822 290 81632	TERMINAL FM AM ANT	YT03030020
\blacktriangle R207		4822 050 21801	180 Ω \pm 5% 1/4W	GG05181140	J101	U	4822 290 81537	TERMINAL FM AM ANT	YT01030080
R211	K,KS	4822 100 11352	22k Ω TRIM.	RA02230780	LA01		4822 157 63084	ANT COIL MW 280 μ H	LA10295170
R211	U	4822 100 11351	10k Ω TRIM.	RA01030780	LA02		4822 157 70779	OSC. COIL MW	LO70013010
R212		4822 100 11351	10k Ω TRIM.	RA01030780	LA05		4822 157 53589	CHOKE COIL 39mH J	LC23960710
\blacktriangle R217	K,KS	4822 050 21801	180 Ω \pm 5% 1/4W	GG05181140	LA06		4822 242 71509	CER. FILTER SFL450J3	FF10045330
\blacktriangle R217	U	4822 116 83929	220 Ω \pm 5% 1/4W	GG05221140	L201		4822 157 63904	I.F.T. COIL FM DET	LI70376010
R218	K,KS	4822 100 11373	4.7k Ω TRIM.	RA04720780	L301		4822 157 71731	M.P.X. COIL 19.38kHz	LS10293020
\blacktriangle R313	K,KS	4822 116 83929	220 Ω \pm 5% 1/4W	GG05221140	L302		4822 157 71731	M.P.X. COIL 19.38kHz	LS10293020
\blacktriangle R512		4822 053 10271	270 Ω \pm 5% 1W	GA05271010	L501		4822 157 70813	CHOKE COIL 47 μ H	LC14733800
\blacktriangle R514		4822 052 10479	47 Ω \pm 5% 1/6W	GG05470160	L504				
R***			P104-RESISTORS (COMMON) CARBON FILM FIXED RES. \pm 5% 1/6W : RA01 RA02(R102 R103 [K,KS]) (R201[U]) R202-R206 R208-R210 R213-R215 R220 (R301-R306 [K,KS]) R307-R310(R311 R312 [K,KS]) R315 R316 R501-R504 R506 R507 (R508 [K,U]) R510 R511 R513 R515 R516		S301	K	4822 277 21712	SLIDE SW	SS02021470
DA01		4822 125 50416	VARI SVC342-L	HD40009030	X501		4822 242 72333	CRYSTAL AD0618CTB 7.2MHz	JX07001260
DA05		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD01		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
DA06		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD02		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
D201		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD04		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
D202		4822 130 80319	ZENER DIODE RD9.1JB2 MTZJ9.1C	HD30911000	CD05		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
D203		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD06		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
D204		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD09		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
D501		4822 130 80317	ZENER DIODE RD5.1JB2 MTZJ5.1B	HD30511000	CD10		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
Q201			IC LA1837 FM AM IF	HC10384030	CD11		4822 121 70685	FILM 120pF \pm 5% 100V	DF15121550
Q202		4822 130 62294	TRS. 2SC1809S P	HT318091P0	CD12		4822 121 70685	FILM 120pF \pm 5% 100V	DF15121550
Q203		4822 130 61227	DIG.TR.S. DTA114ES UN4111	BA10001000	CD13		5322 122 32336	FILM 560pF \pm 5% 50V	DF15561350
Q204		4822 130 42594	DIG.TR.S. DTC144ES UN4213	BA20002000	CD14		5322 122 32336	FILM 560pF \pm 5% 50V	DF15561350
Q301	K,KS	4822 209 83631	IC NJM4558DD	HC10008090	CD15		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
					CD16		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
					CD17		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD18		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD31		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD32		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD34		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD35		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
					CD36		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
					CD39		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
					CD40		4822 124 21894	ELECT 10 μ F 16V	EJ10601610
					CD41		4822 121 70685	FILM 120pF \pm 5% 100V	DF15121550
					CD42		4822 121 70685	FILM 120pF \pm 5% 100V	DF15121550
					CD43		5322 122 32336	FILM 560pF \pm 5% 50V	DF15561350
					CD44		5322 122 32336	FILM 560pF \pm 5% 50V	DF15561350
					CD45		4822 124 21894	ELECT 10 μ F 16V	EJ10601610

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
RD10		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RM35		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RD31		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM41		4822 051 30223	22kΩ ±5% 1/16W	NN05223610
RD32		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM42		4822 051 30683	68kΩ ±5% 1/16W	NN05683610
RD33					RM43		4822 116 83206	120Ω ±5% 1/16W	NN05121610
RD36		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RM44		4822 051 30473	47kΩ ±5% 1/16W	NN05473610
RD37		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM45		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RD38		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM46		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RD39		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RM47		4822 051 30473	47kΩ ±5% 1/16W	NN05473610
RD40		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RM48		4822 051 30473	47kΩ ±5% 1/16W	NN05473610
RD51		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM49		4822 051 30473	47kΩ ±5% 1/16W	NN05473610
RD52		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM50		4822 117 12139	22Ω ±5% 1/16W	NN05220610
RD53					RM61		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RD56		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RM62		4822 051 30102	1kΩ ±5% 1/16W	NN05102610
RD57		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM63		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RD58		4822 051 30473	47kΩ ±5% 1/16W	NN05473610	RM64		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RD59		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	RM65		4822 116 82487	0Ω 1/16W	NN05000610
RD60		4822 051 30471	470Ω ±5% 1/16W	NN05471610	RM66		4822 116 82487	0Ω 1/16W	NN05000610
RD61		4822 051 30105	1.0MΩ ±5% 1/16W	NN05105610	RR01		4822 051 30759	75Ω ±5% 1/16W	NN05750610
RD62		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR02		4822 051 30759	75Ω ±5% 1/16W	NN05750610
RD63		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR03		4822 051 30759	75Ω ±5% 1/16W	NN05750610
RD64		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR04		4822 116 83216	56kΩ ±5% 1/16W	NN05563610
RK01		4822 051 30153	15kΩ ±5% 1/16W	NN05153610	RR05		4822 051 30334	330kΩ ±5% 1/16W	NN05334610
RK02		4822 051 30153	15kΩ ±5% 1/16W	NN05153610	RR06		4822 116 83216	56kΩ ±5% 1/16W	NN05563610
RK03		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR07		4822 051 30333	33kΩ ±5% 1/16W	NN05333610
RK04		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR08		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RK05					RR09		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
RK08		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610	RR10		4822 116 83208	12kΩ ±5% 1/16W	NN05123610
RK09					RR11		4822 116 83208	12kΩ ±5% 1/16W	NN05123610
RK12		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR12		4822 116 83215	5.6kΩ ±5% 1/16W	NN05562610
RK13					RR13		4822 116 83215	5.6kΩ ±5% 1/16W	NN05562610
RK16		4822 051 30331	330Ω ±5% 1/16W	NN05331610	RR14		4822 116 83206	120Ω ±5% 1/16W	NN05121610
RM01		4822 051 30561	560Ω ±5% 1/16W	NN05561610	RR15		4822 051 30224	220kΩ ±5% 1/16W	NN05224610
RM02		4822 051 30101	100Ω ±5% 1/16W	NN05101610	RR16		4822 116 82487	0Ω 1/16W	NN05000610
RM03		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	RR17				
RM04		4822 116 83211	1.8kΩ ±5% 1/16W	NN05182610	RR20		4822 051 30339	33Ω ±5% 1/16W	NN05330610
RM05		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR21		4822 116 82487	0Ω 1/16W	NN05000610
RM06		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	RR23		4822 116 82487	0Ω 1/16W	NN05000610
RM07		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610	RR24		4822 116 82487	0Ω 1/16W	NN05000610
RM08		4822 116 82487	0Ω 1/16W	NN05000610	R601		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RM10		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R602		4822 116 83208	12 kΩ ±5% 1/16W	NN05123610
RM11		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610	R603		4822 116 83219	820Ω ±5% 1/16W	NN05821610
RM12		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R604		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM13		4822 051 30151	150Ω ±5% 1/16W	NN05151610	R605		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM14		4822 051 30222	2.2kΩ ±5% 1/16W	NN05222610	R606		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM15					R607		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RM18		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R608		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RM19		4822 051 30103	10kΩ ±5% 1/16W	NN05103610	R609		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM20		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R610		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM21		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R611		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM22		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610	R613		4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM23		4822 051 30102	1kΩ ±5% 1/16W	NN05102610	R621		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RM24		4822 051 30332	3.3kΩ ±5% 1/16W	NN05332610	R631				
RM25		4822 116 83221	8.2kΩ ±5% 1/16W	NN05822610			4822 051 30479	47Ω ±5% 1/16W	NN05470610
RM31		4822 051 30392	3.9kΩ ±5% 1/16W	NN05392610	R639				
RM32		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610	R640		4822 051 30101	100Ω ±5% 1/16W	NN05101610
RM33		4822 051 30104	100kΩ ±5% 1/16W	NN05104610	R651		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610
RM34		4822 051 30223	22kΩ ±5% 1/16W	NN05223610	R652		4822 051 30103	10kΩ ±5% 1/16W	NN05103610
					R653		4822 051 30222	2.2kΩ ±5% 1/16W	NN05222610
					R654		4822 051 30472	4.7kΩ ±5% 1/16W	NN05472610

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
QN03		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0	C764	KS	4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
QN04		4822 209 83312	IC TA7317P RELAY DRIV.	HC10042050	C765	KS	4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
QN07		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000					
QN08		4822 130 60696	TRS. 2SC1627 O Y	HT316272B0	▲ F760	K,KS	4822 253 30415	FUSE 1.6 A 250V BS	FS10160850
QN51		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0	▲ F760	U		FUSE 2A 125V UL CSA	FS10200350
QN81		4822 130 61227	DIG.TRS. DTA114ES	BA10001000	▲ F761	K,KS	4822 253 30415	FUSE 1.6 A 250V BS	FS10160850
					▲ F761	U		FUSE 2A 125V UL CSA	FS10200350
Q701					▲ F762	K,KS	4822 253 30415	FUSE 1.6 A 250V BS	FS10160850
Q706		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0	▲ F762	U		FUSE 2A 125V UL CSA	FS10200350
Q707					▲ F763	K,KS	4822 253 30415	FUSE 1.6 A 250V BS	FS10160850
Q710		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0	▲ F763	U		FUSE 2A 125V UL CSA	FS10200350
Q711		4822 130 42999	TRS. 2SA1145 O Y	HT111452A0	J704			TERMINAL SPK 4P	YT01040790
Q712		4822 130 42999	TRS. 2SA1145 O Y	HT111452A0	J751			TERMINAL SPK 6P	YT01060020
Q713		4822 130 43283	TRS. 2SC2705 O Y	HT327052A0					
Q714		4822 130 43283	TRS. 2SC2705 O Y	HT327052A0					
▲ Q715		4822 130 60117	TRS. 2SC3419Y	HT334191Y0					
▲ Q716		4822 130 60117	TRS. 2SC3419Y	HT334191Y0					
▲ Q717		4822 130 62335	TRS. 2SD2033 E	HT420331E0					
▲ Q718		4822 130 62335	TRS. 2SD2033 E	HT420331E0					
▲ Q719			TRS. 2SB1353 E	HT213531E0					
▲ Q720			TRS. 2SB1353 E	HT213531E0					
▲ Q721			TRS. 2SC5198 R O	HT351982A0					
▲ Q722			TRS. 2SC5198 R O	HT351982A0					
▲ Q723			TRS. 2SA1941 R O	HT119412A0					
▲ Q724			TRS. 2SA1941 R O	HT119412A0					
Q751		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0					
Q752		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0					
Q753		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0					
Q754		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0					
Q755		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0					
Q756		4822 130 42999	TRS. 2SA1145 O Y	HT111452A0					
Q757		4822 130 43283	TRS. 2SC2705 O Y	HT327052A0					
▲ Q758		4822 130 60117	TRS. 2SC3419Y	HT334191Y0					
▲ Q759		4822 130 62335	TRS. 2SD2033 E	HT420331E0					
▲ Q760			TRS. 2SB1353 E	HT213531E0					
▲ Q761			TRS. 2SC5198 R O O	HT351982A0					
▲ Q762			TRS. 2SA1941 R O	HT119412A0					
▲ Q801		4822 209 83317	IC NJM7815FA +15V 1A	HC38915090					
▲ Q802		4822 209 31864	IC NJM7915FA -15V 1A	HC39915090					
▲ Q803		4822 209 31631	IC NJM7805FA +5V 1A	HC38905090					
▲ Q804		4822 209 63179	IC NJM7905FA -5V 1A	HC39905090					
▲ Q805		4822 209 31631	IC NJM7805FA +5V 1A	HC38905090					
			P704-MISCELLANEOUS						
▲ LN01		4822 280 10305	RELAY VB-18MBU	LY20180020					
▲ LN02		4822 280 10305	RELAY VB-18MBU	LY20180020					
▲ LN03		4822 280 20501	RELAY MR62-24SR 24V	LY20240410					
▲ LN51		4822 280 10305	RELAY VB-18MBU	LY20180020					
L701		4822 157 70022	AIR COIL SPK CHOCK	ML08010030					
L702		4822 157 70022	AIR COIL SPK CHOCK	ML08010030					
L751		4822 157 70022	AIR COIL SPK CHOCK	ML08010030					
			P754-SPK TERMINAL CIRCUIT BOARD P754-CAPACITORS						
C727									
Q734	KS	4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310					