

Service Manual

SR880mkII U

Audio/Video Receiver

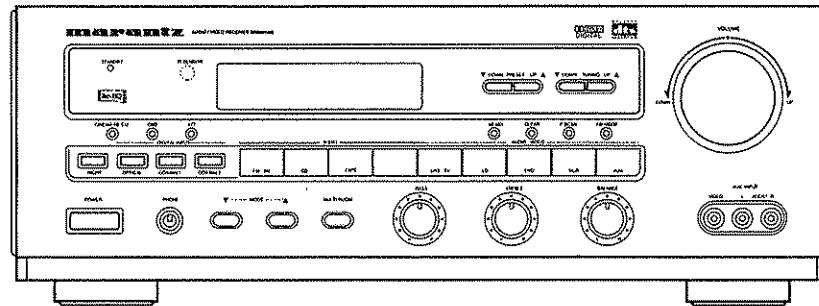


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Please use this service manual with referring to the user guide (D.F.U) without fail.

marantz®

model SR880mkII

1. TECHNICAL SPECIFICATIONS

FM TUNER SECTION

Frequency Range	87.5 – 108.0 MHz
Usable Sensitivity	IHF 1.3 μ V/13.5 dB
Signal to Noise Ratio	Mono/Stereo 76/72 dB
Distortion	Mono/Stereo 0.2 / 0.3%
Stereo Separation	1 kHz 45 dB
Alternate Channel Selectivity	\pm 400 kHz 60 dB (U version) \pm 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 750mV (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 400 μ V
Distortion	1 kHz, 30% Mod. 0.5%
Selectivity	\pm 20 kHz 70 dB (U version) \pm 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 80W / Ch
Surround	8 ohms 80W / Ch
THD Front (20 Hz – 20 kHz)	8 ohms 0.05%
Input Sensitivity/Impedance	
Linear	350mV/47 kohms
Signal to Noise Rate (IHF A)	
Linear	85 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- $\frac{1}{4}$ inches (439 mm)
Height	6- $\frac{1}{4}$ inches (158 mm)
Depth	18 inches (458 mm)
Weight	30.9 ids. (14.0 kg)

ACCESSORIES

Remote Control Unit RC-18SR	1
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Dolby Digital(AC-3) SECTION

Output Level (Master Volume is set 0dB)	
Front L/R, CENTER, SURROUND L/R	
1 KHz, 0 dB FS INPUT	1.1V
SUBWOOFER	
40 Hz, 0 dB FS INPUT	3.8V

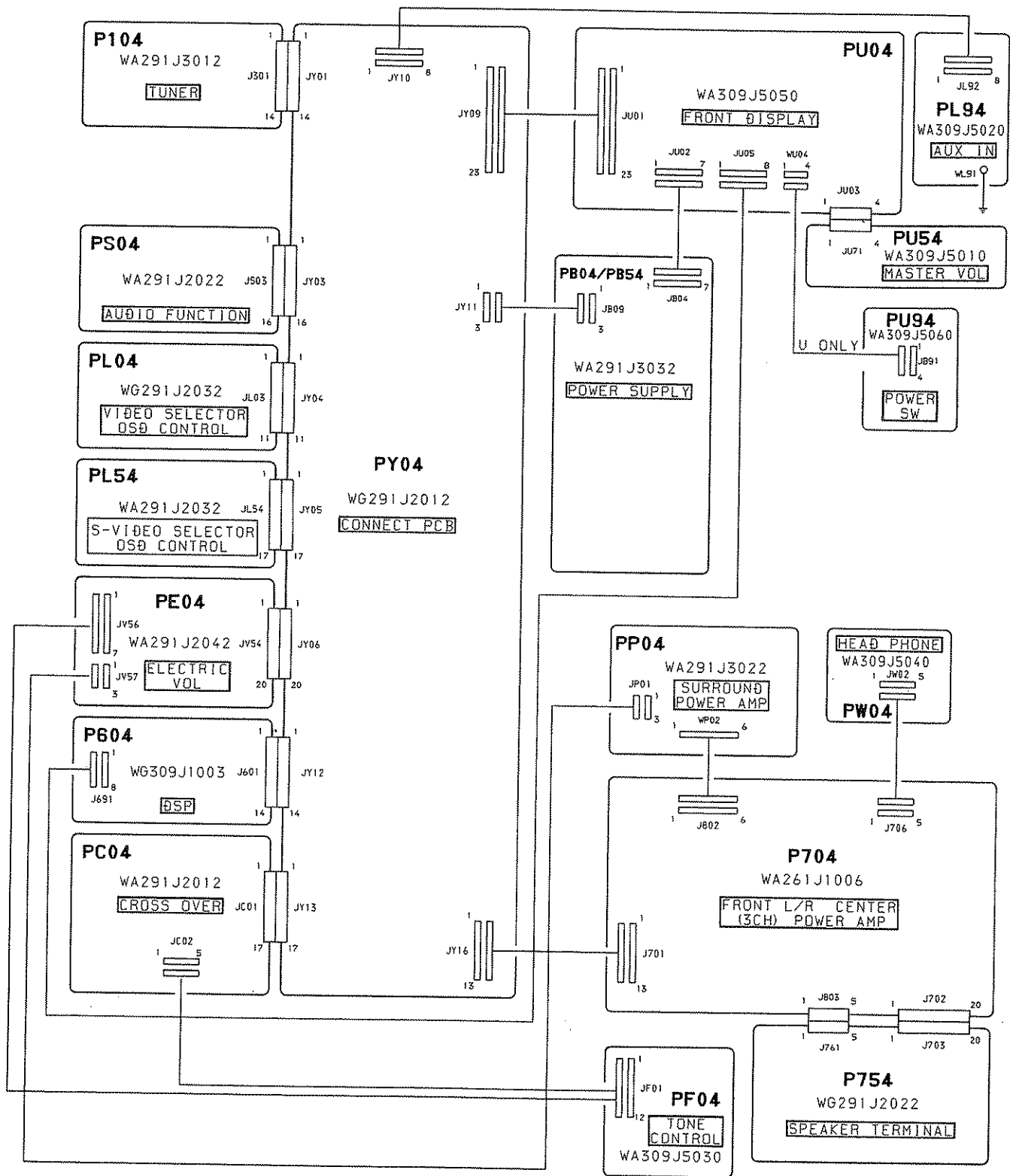
Frequency Response

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

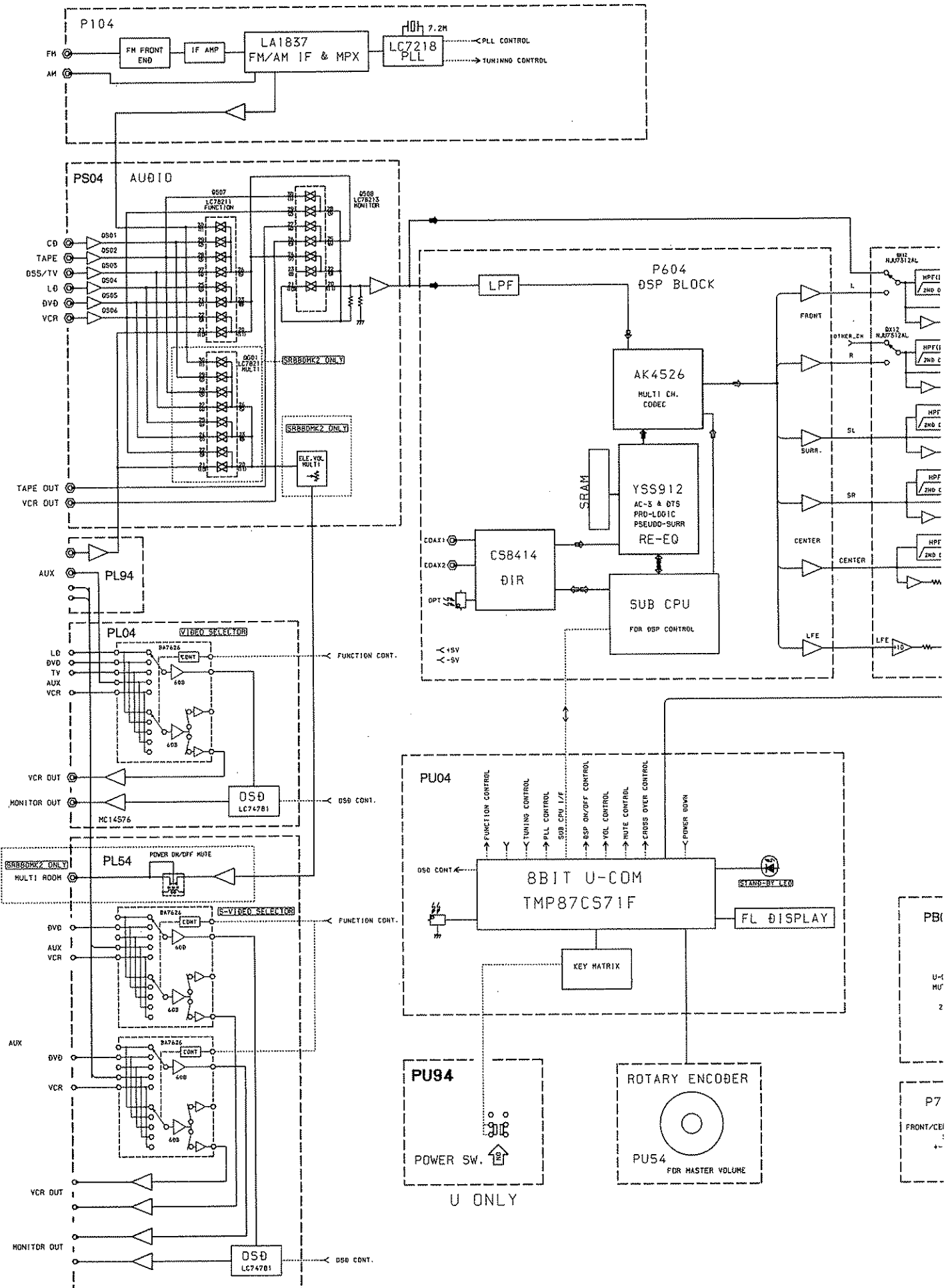
Total Harmonic Distortion

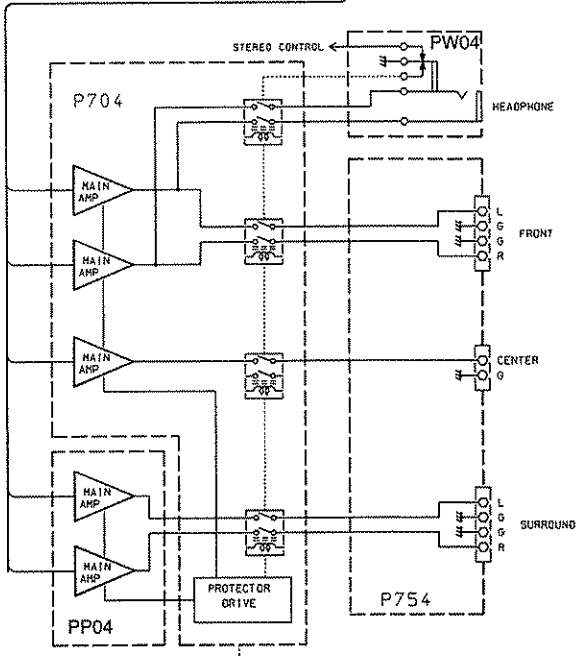
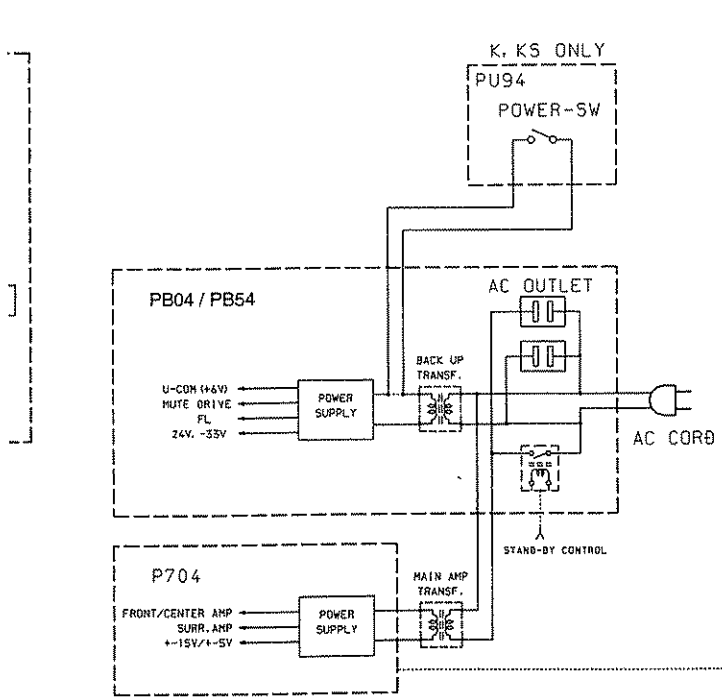
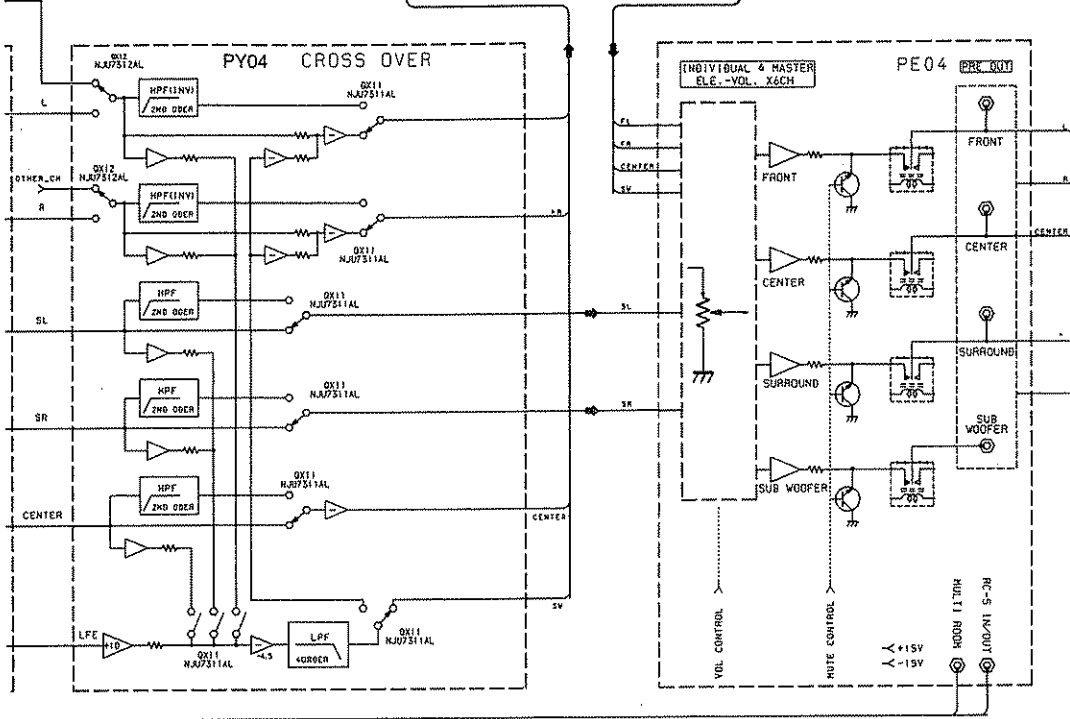
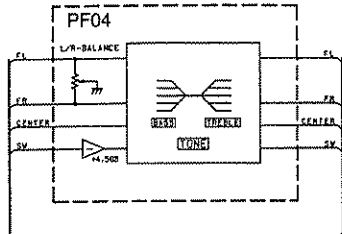
Front L/R, CENTER, SURROUND L/R (1 KHz)	0.01% or less
SUBWOOFER (40 Hz)	0.07% or less
Signal to Noise Ratio (IHF-A)	96 dB
Channel Separation (1 KHz)	57 dB

Specifications subject to change without prior notice.

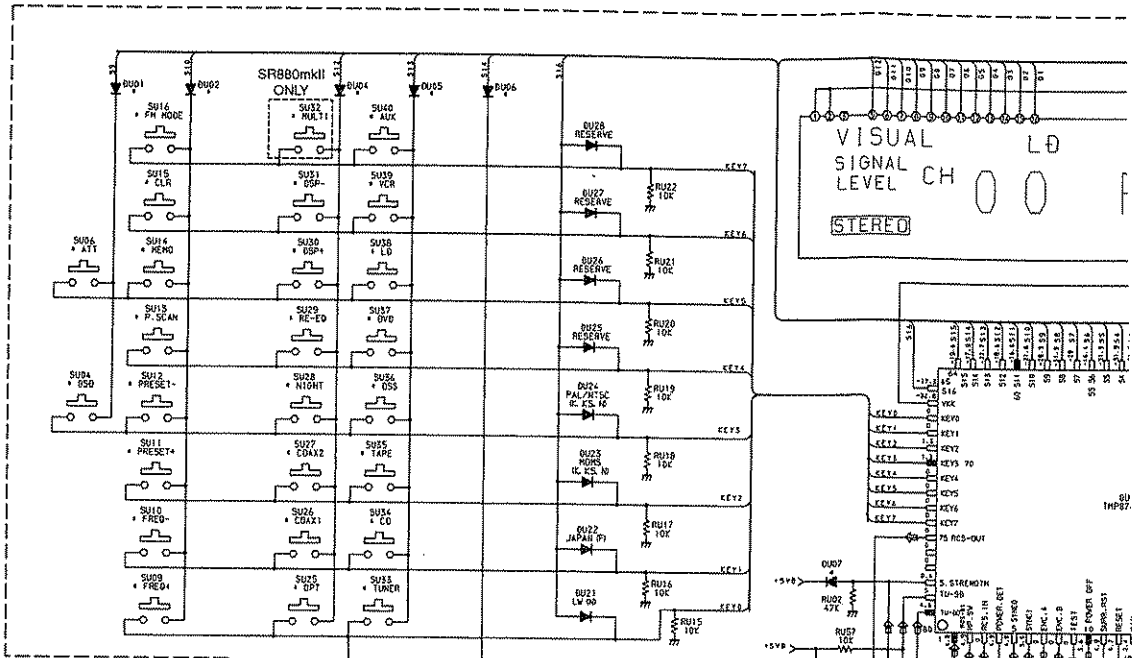


3. BLOCK DIAGRAM

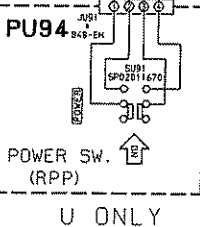
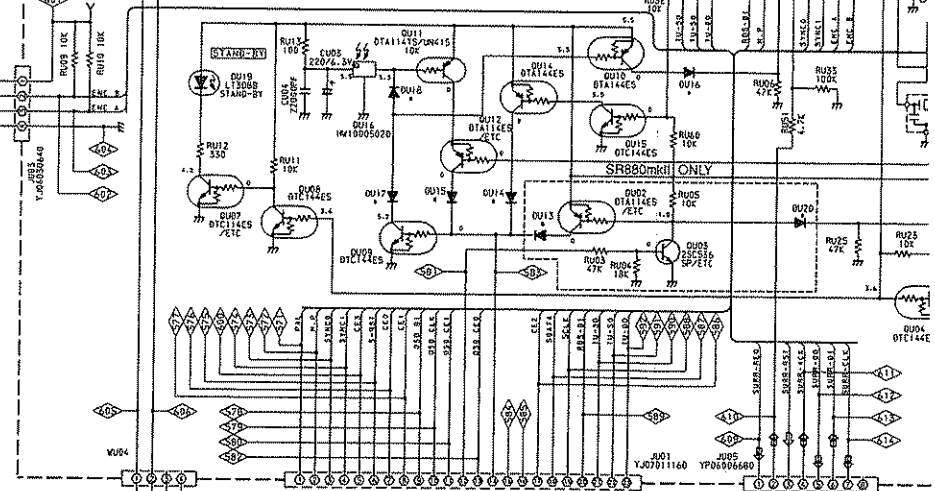
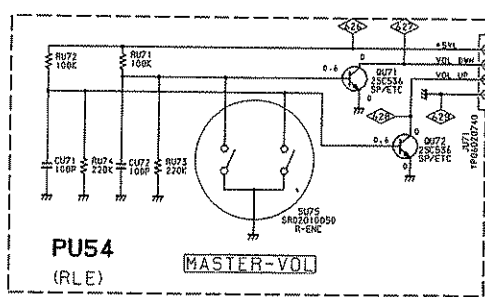




PU04 Front P.C Board

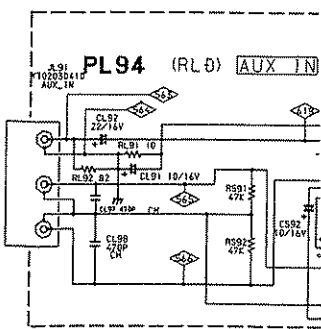


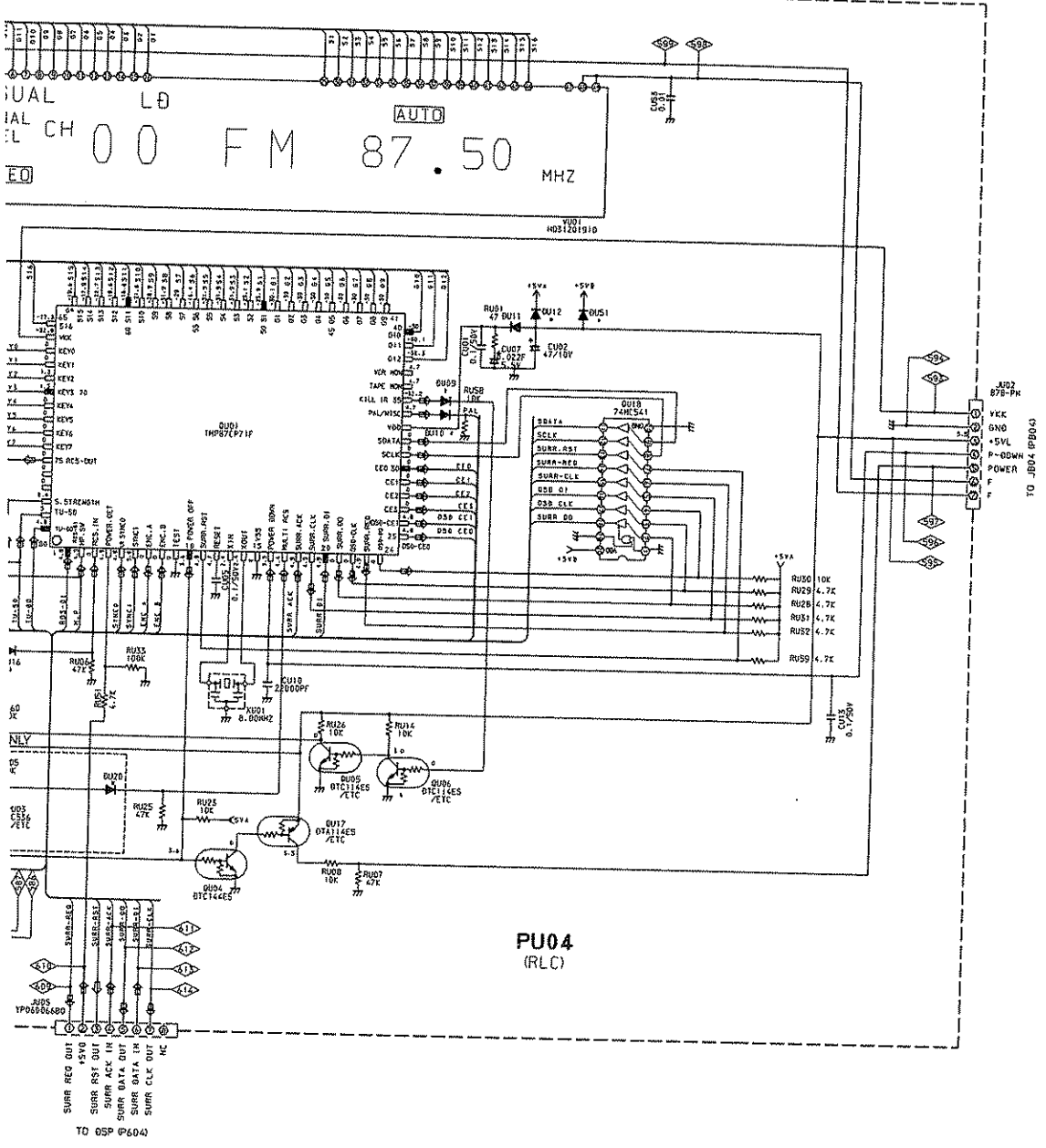
PU54 Master Vol P.C. Board



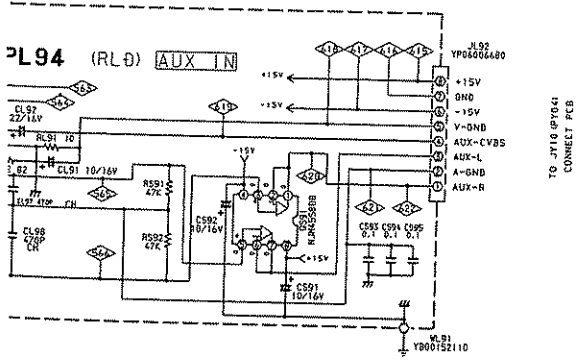
PU94 Power SW P.C. Board U version

PL94 Aux in P.C. Board

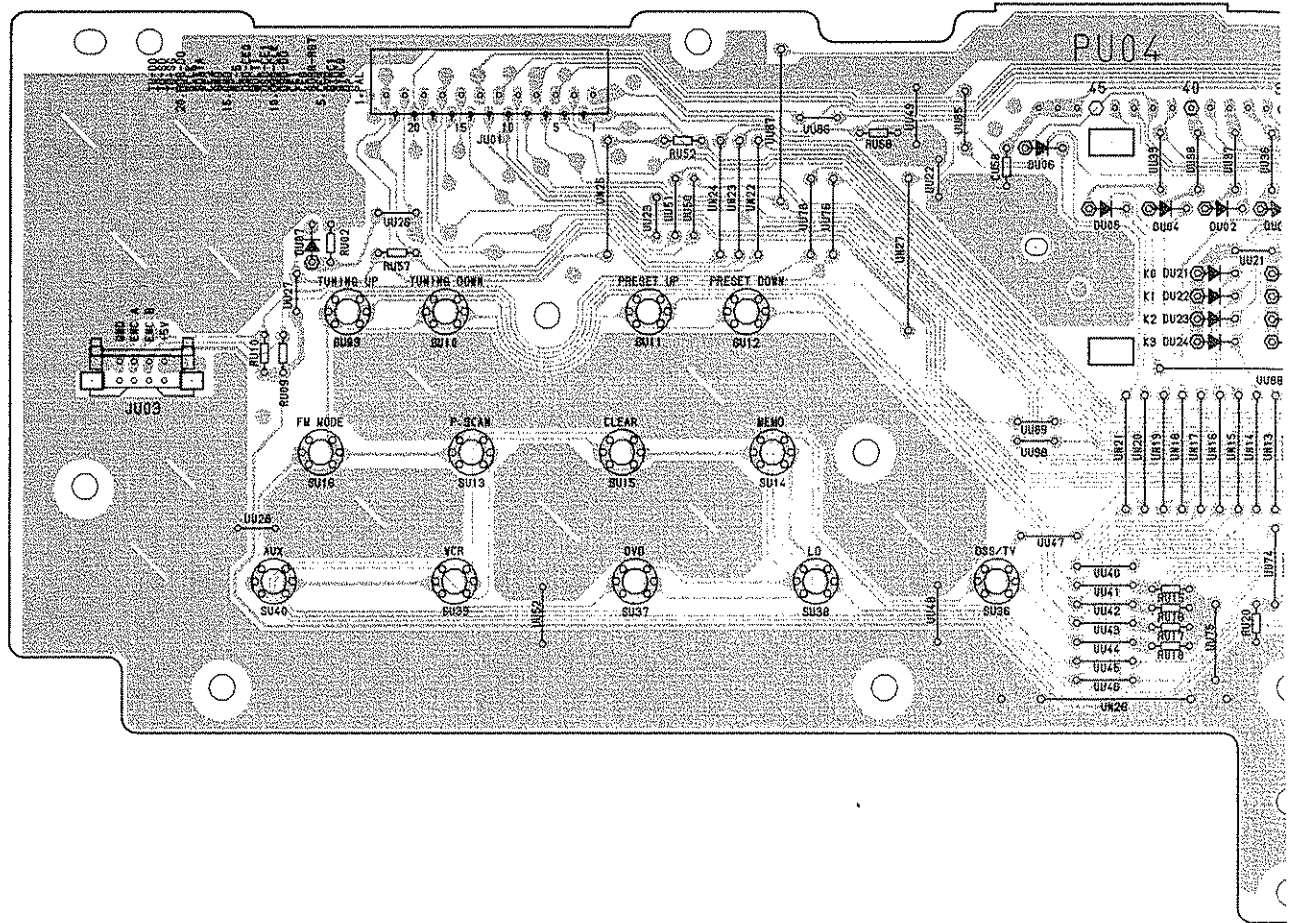




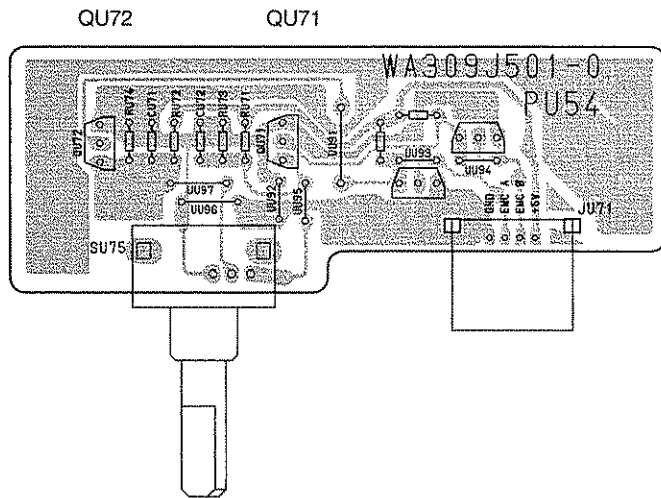
94 Aux in P.C. Board



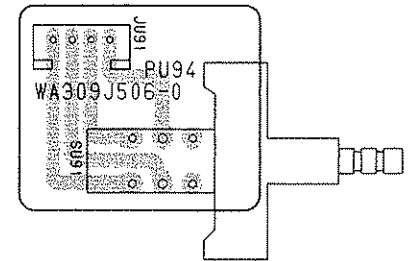
PU04 Front P.C. Board



PU54 Master Vol P.C. Board



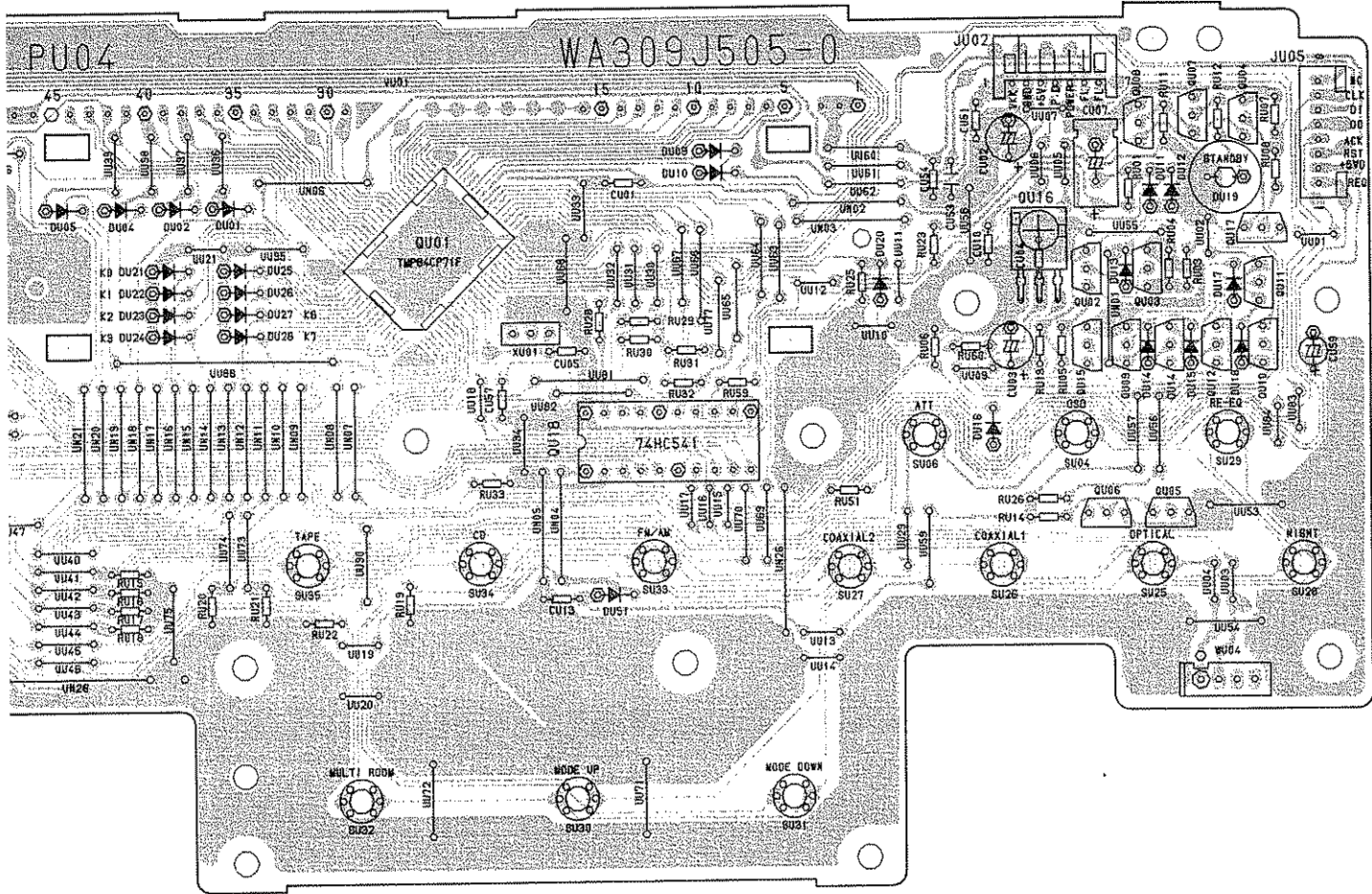
PU94 Aux In P.C. Board



QU08 QU07 QU04
 QU02 QU03 QU17
 QU11
 QU15 QU09 QU14 QU12
 QU10
 QU06 QU05

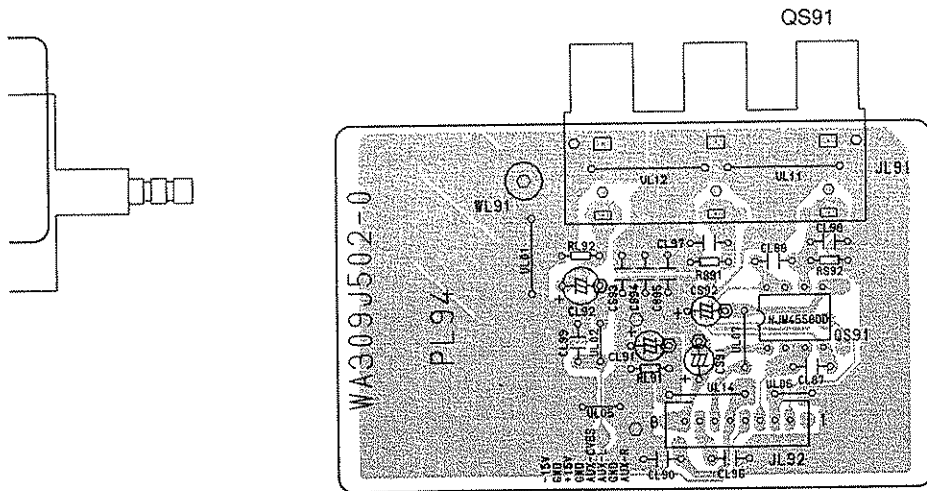
QU01

QU18



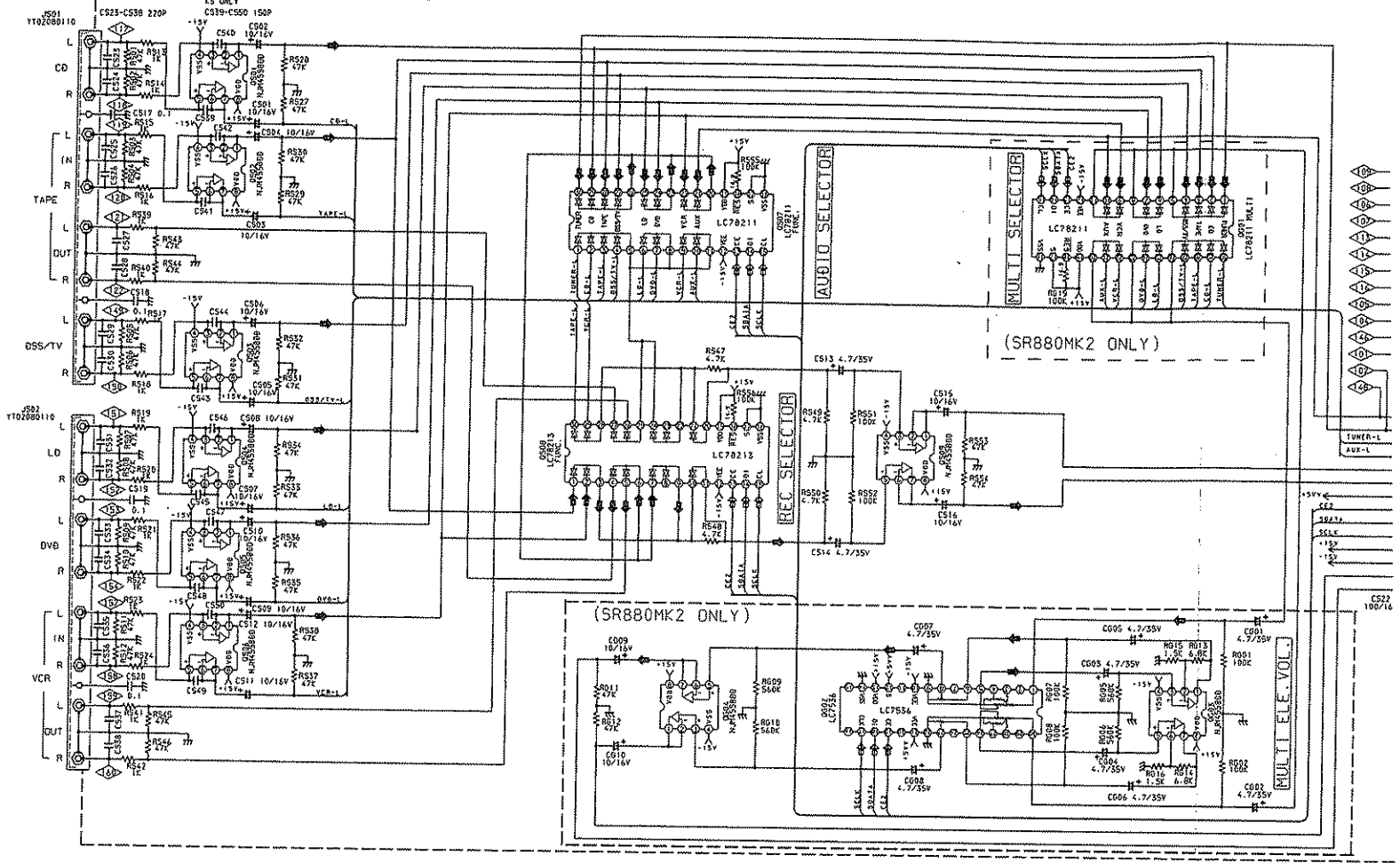
Board

PL94 Aux In P.C. Board

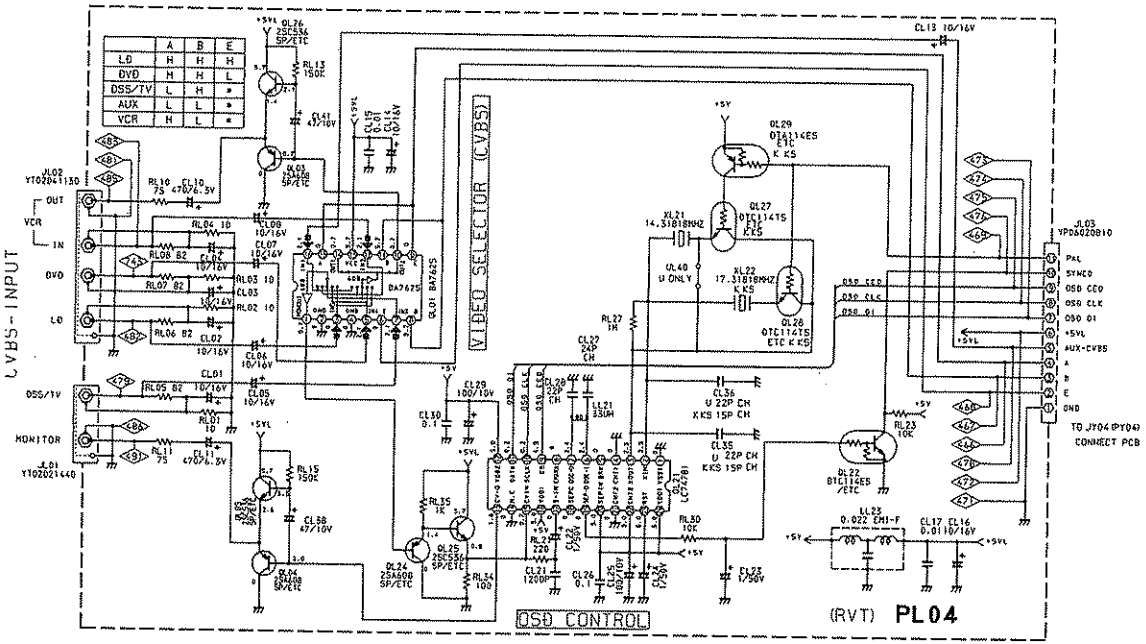


QS91

FS04 (RVJ) (RVQ)



PL04 Video Selector P.C. Board



PS04 Audio Function P.C. Board

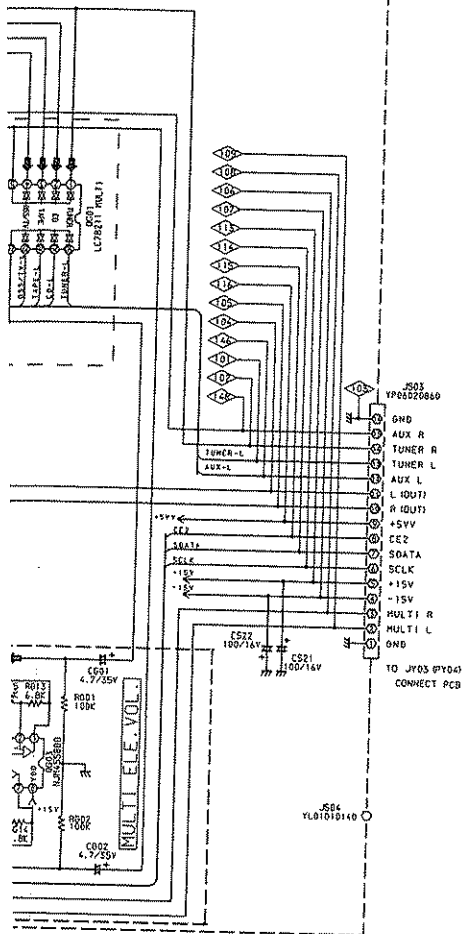
QG01
QS09
QG03

QG02

QS07
QS08

QG04

QS05, QS06
QS03, QS04
QS01, QS02



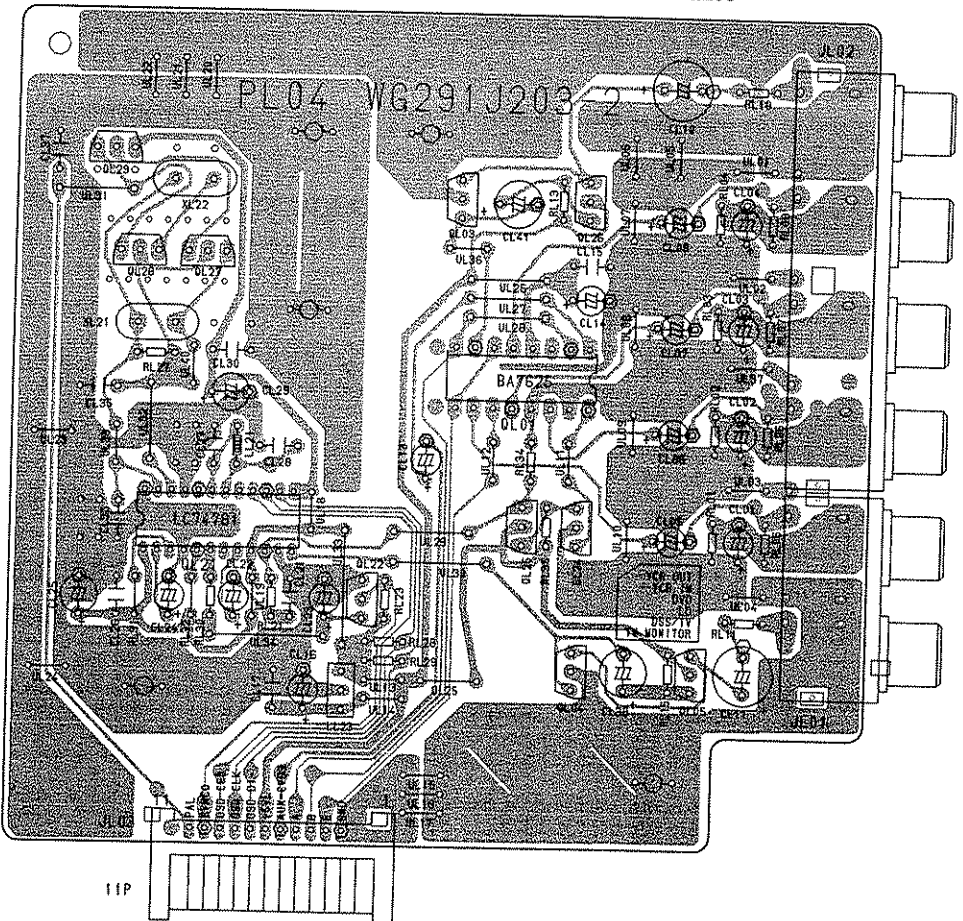
PL04 Video Selector P.C. Board

QL29
QL28 QL27
QL21

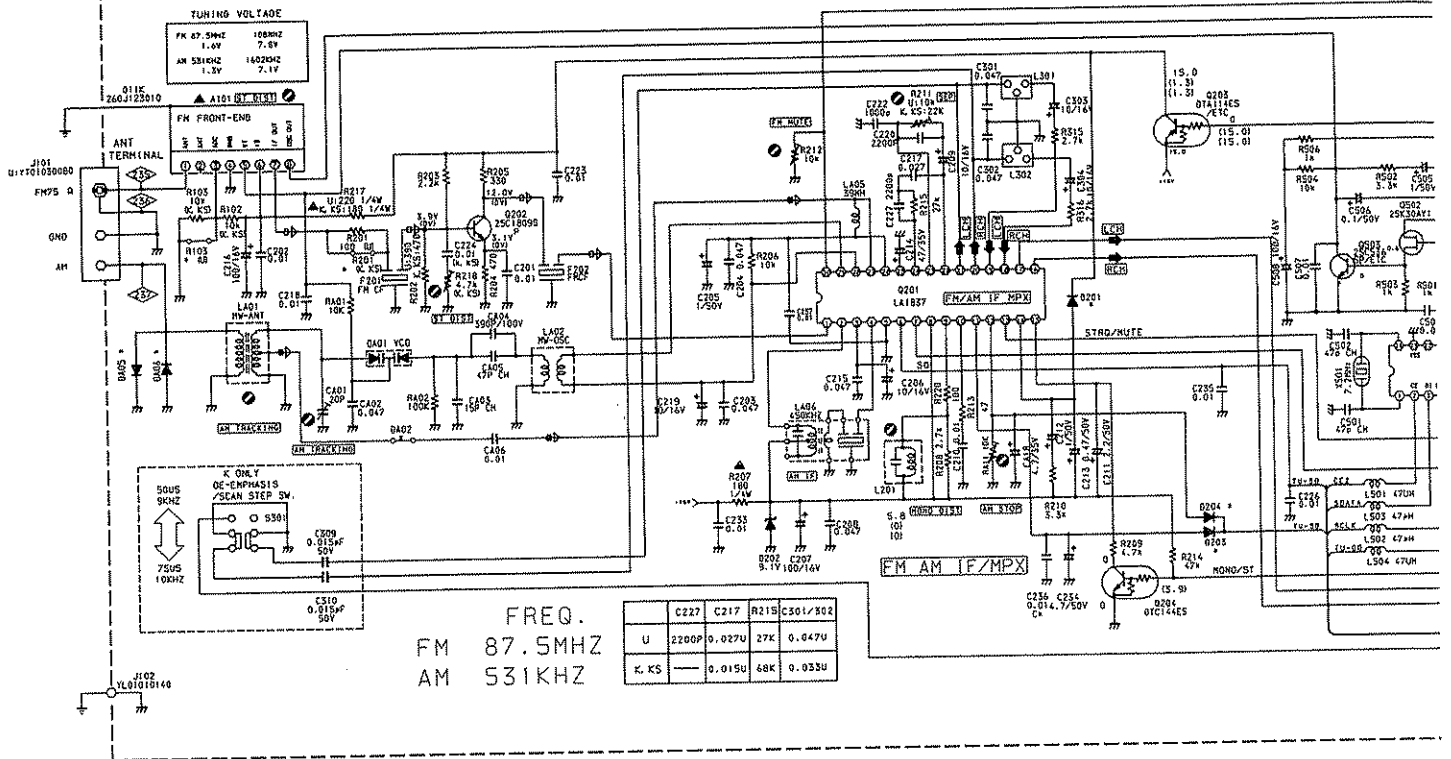
QL22

QL03
QL01
QL25
QL24

QL05

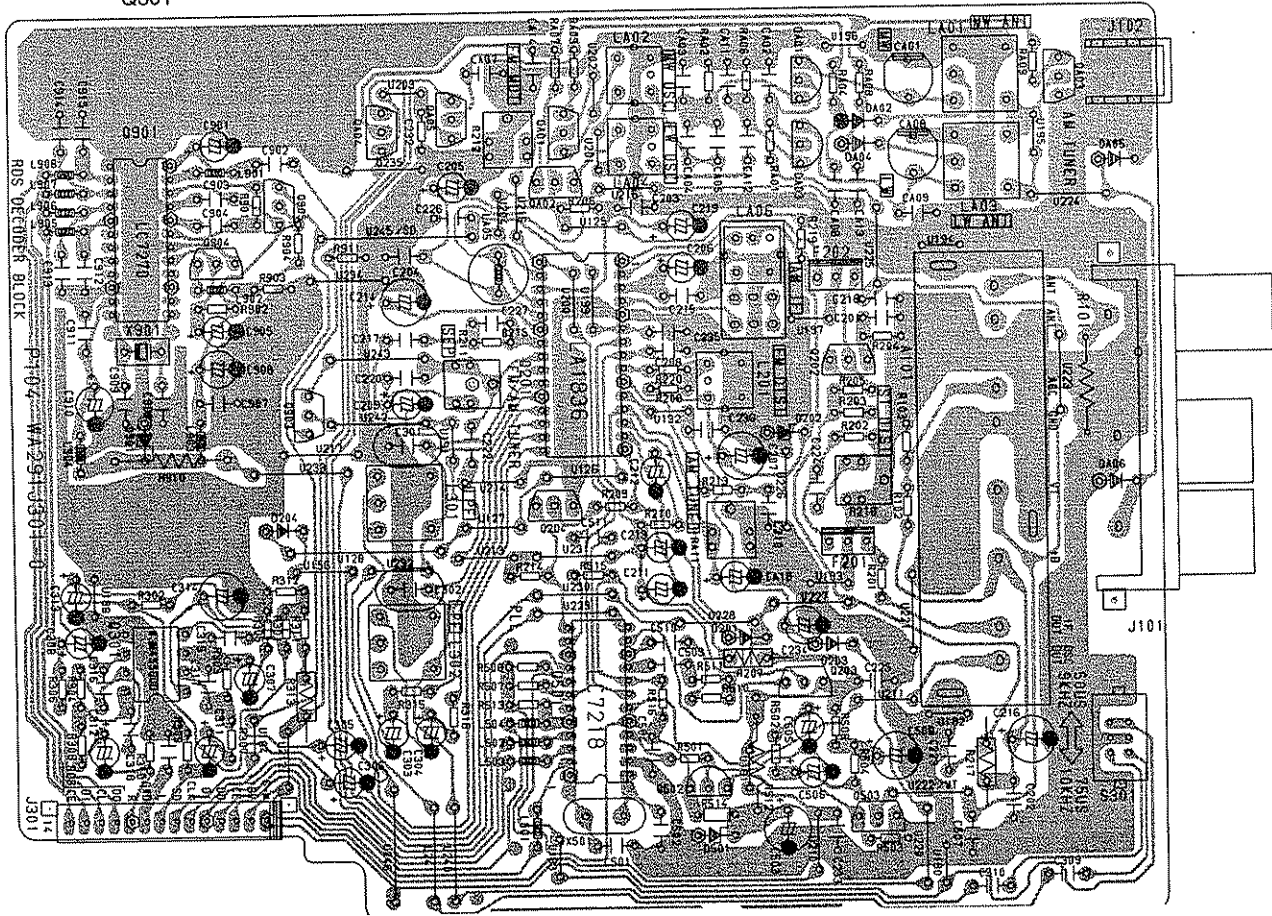


P104 Tuner P.C. Board

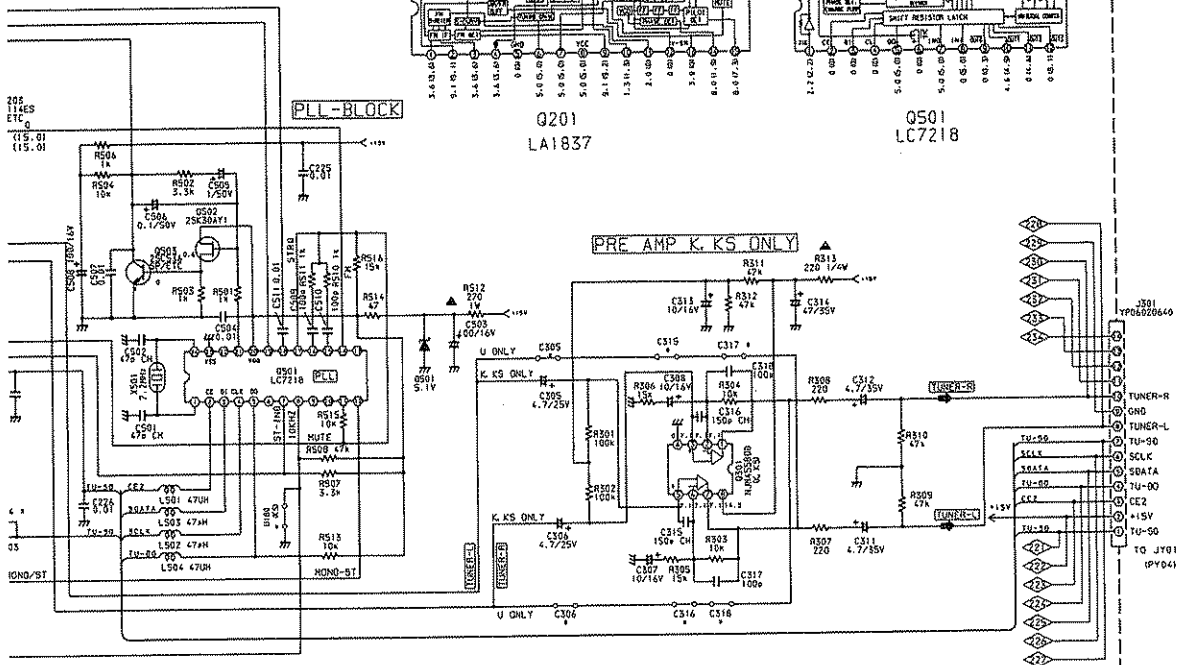


P104 Tuner P.C. Board

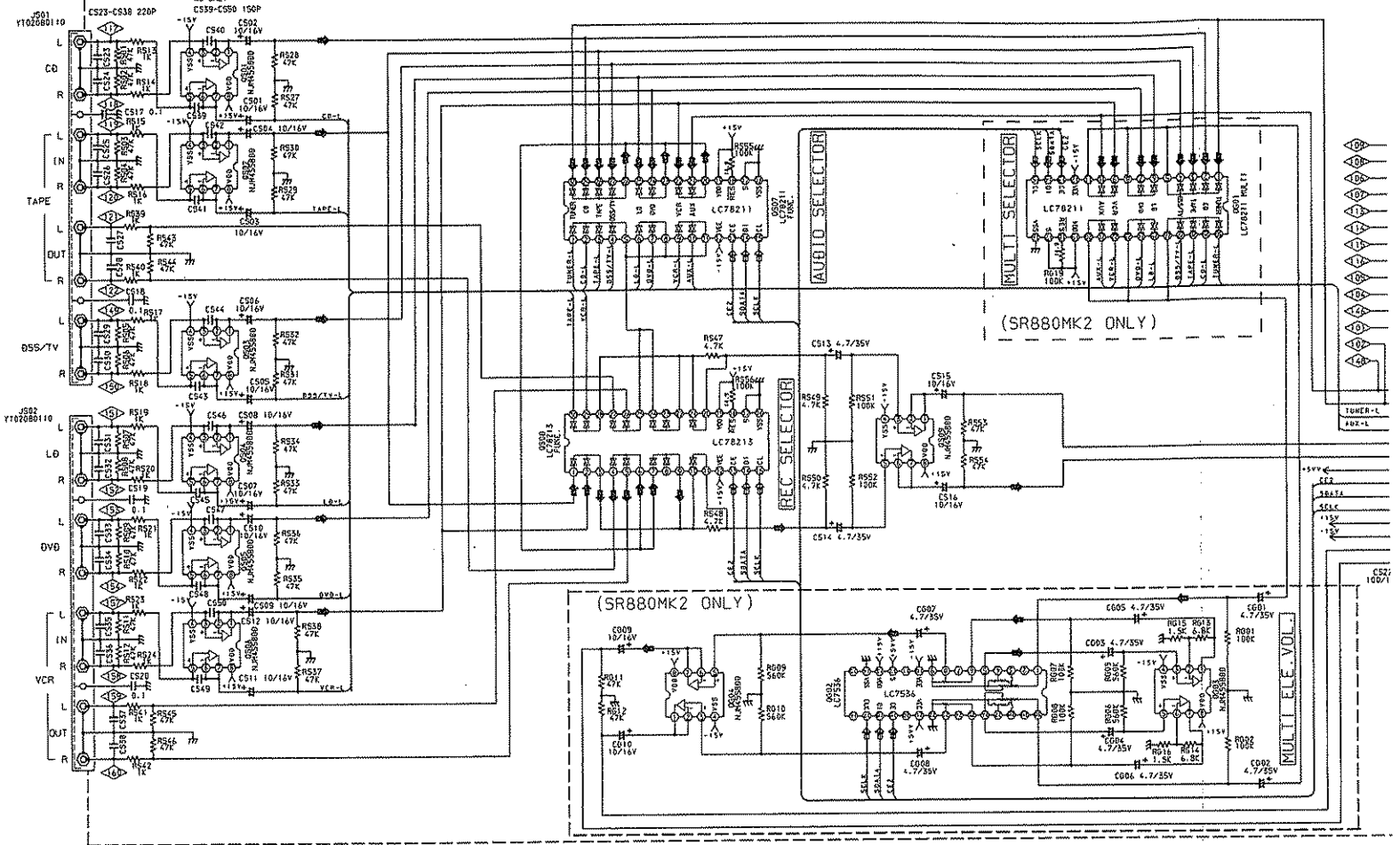
- Q901 Q904 Q905 Q903
 QA04 QA05 QA01,QA02
 Q201 Q202 Q203 Q503
 Q301 Q204 Q501 Q502 Q503



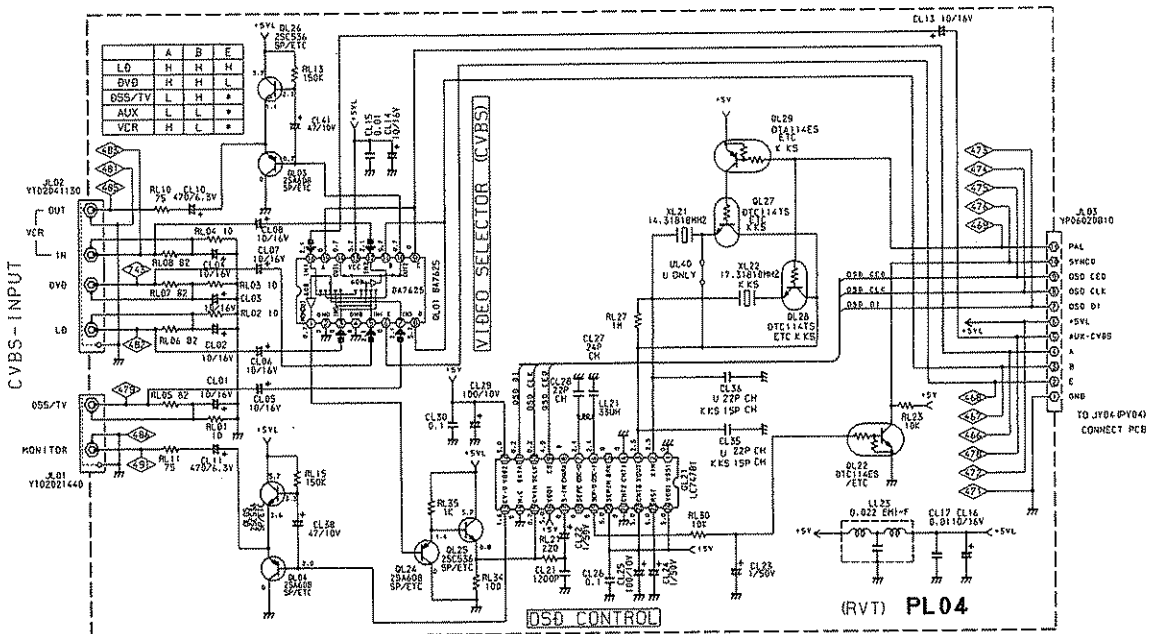
P104 (RTU)

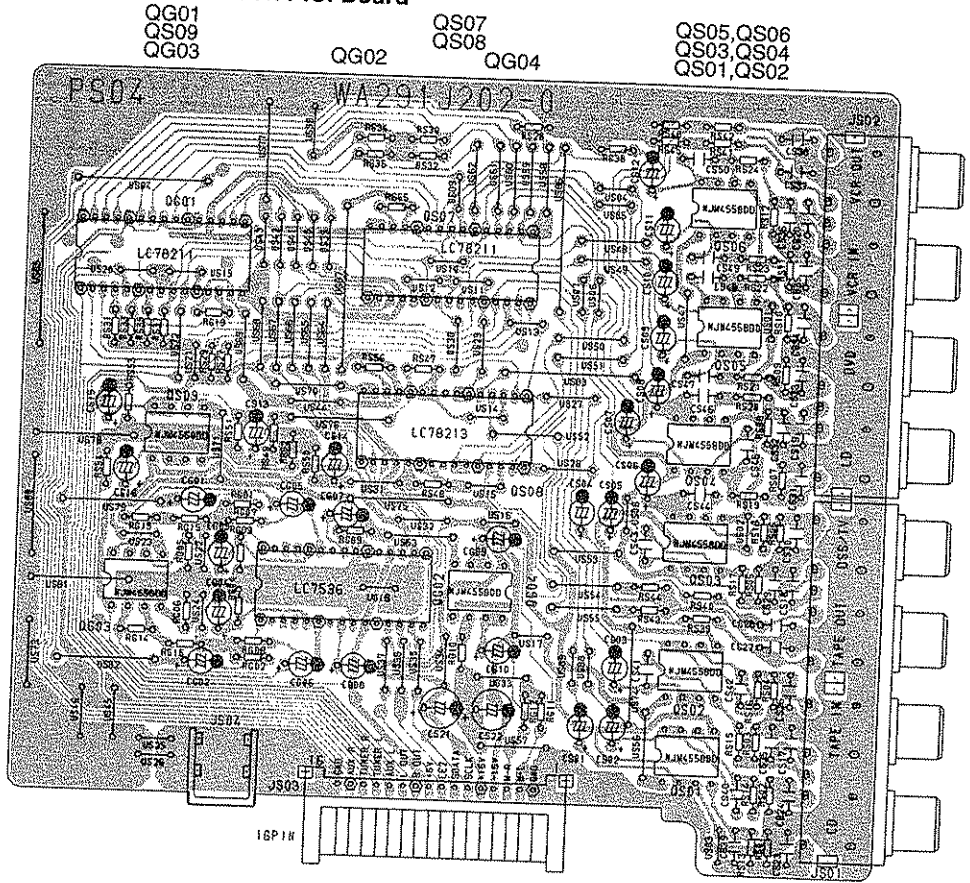
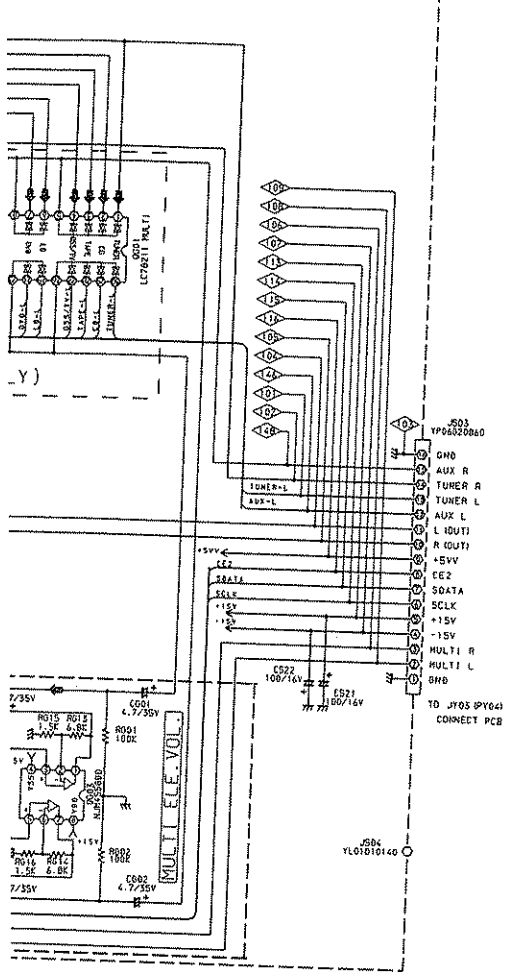


PS04 (RRJ) (RVQ)

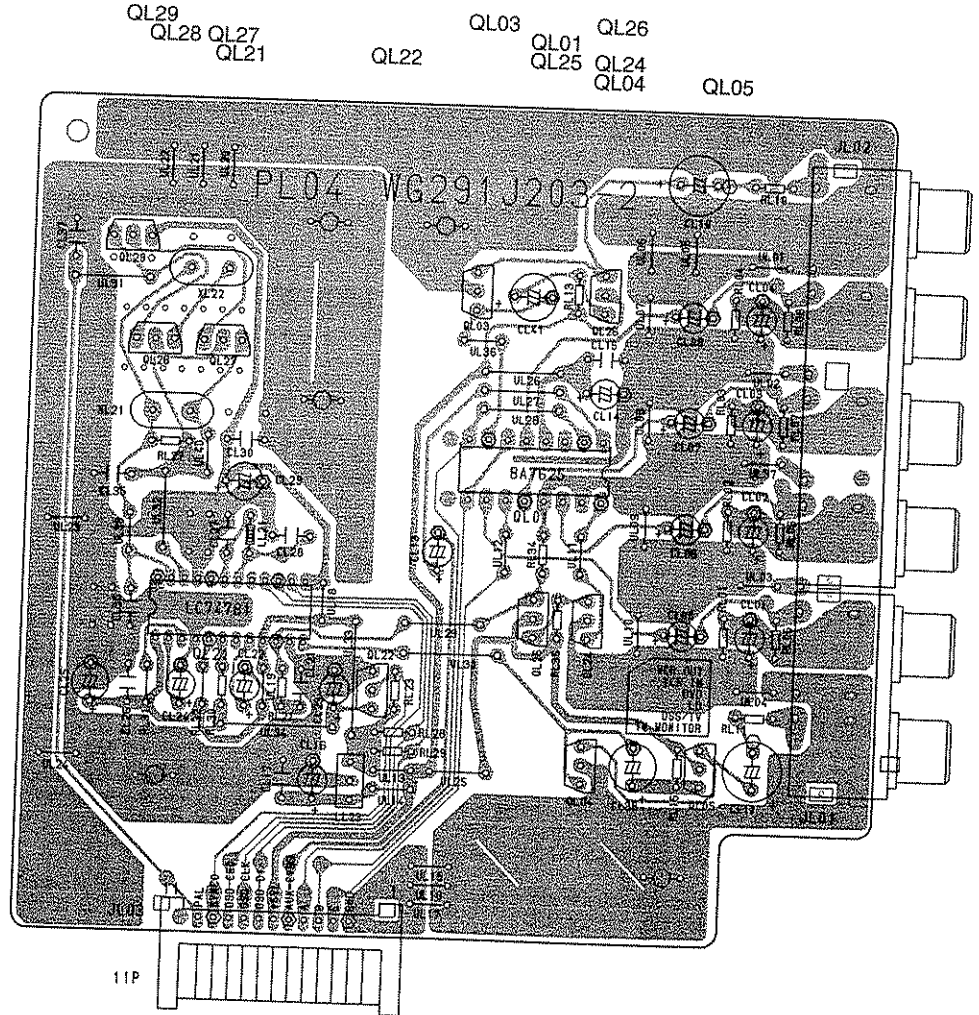


PL04 Video Selector P.C. Board

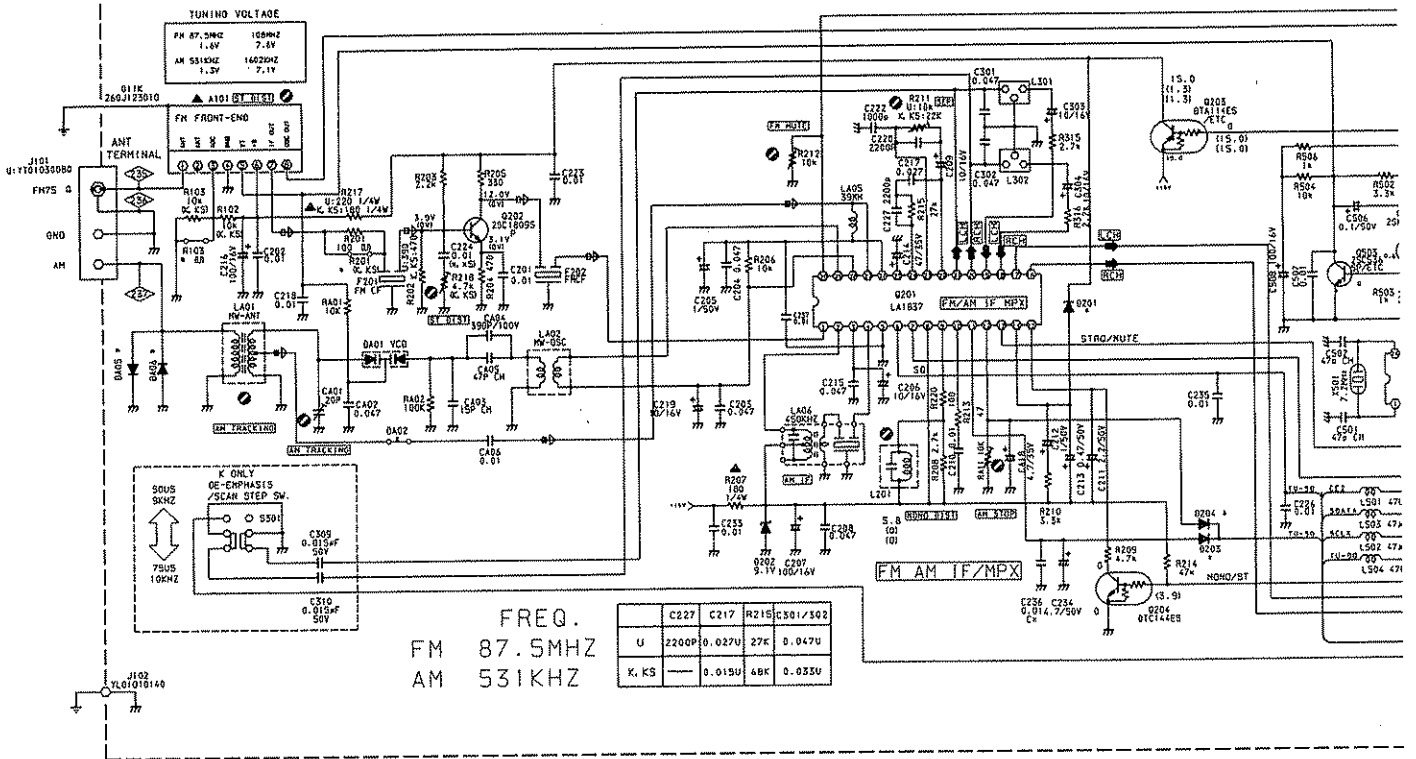




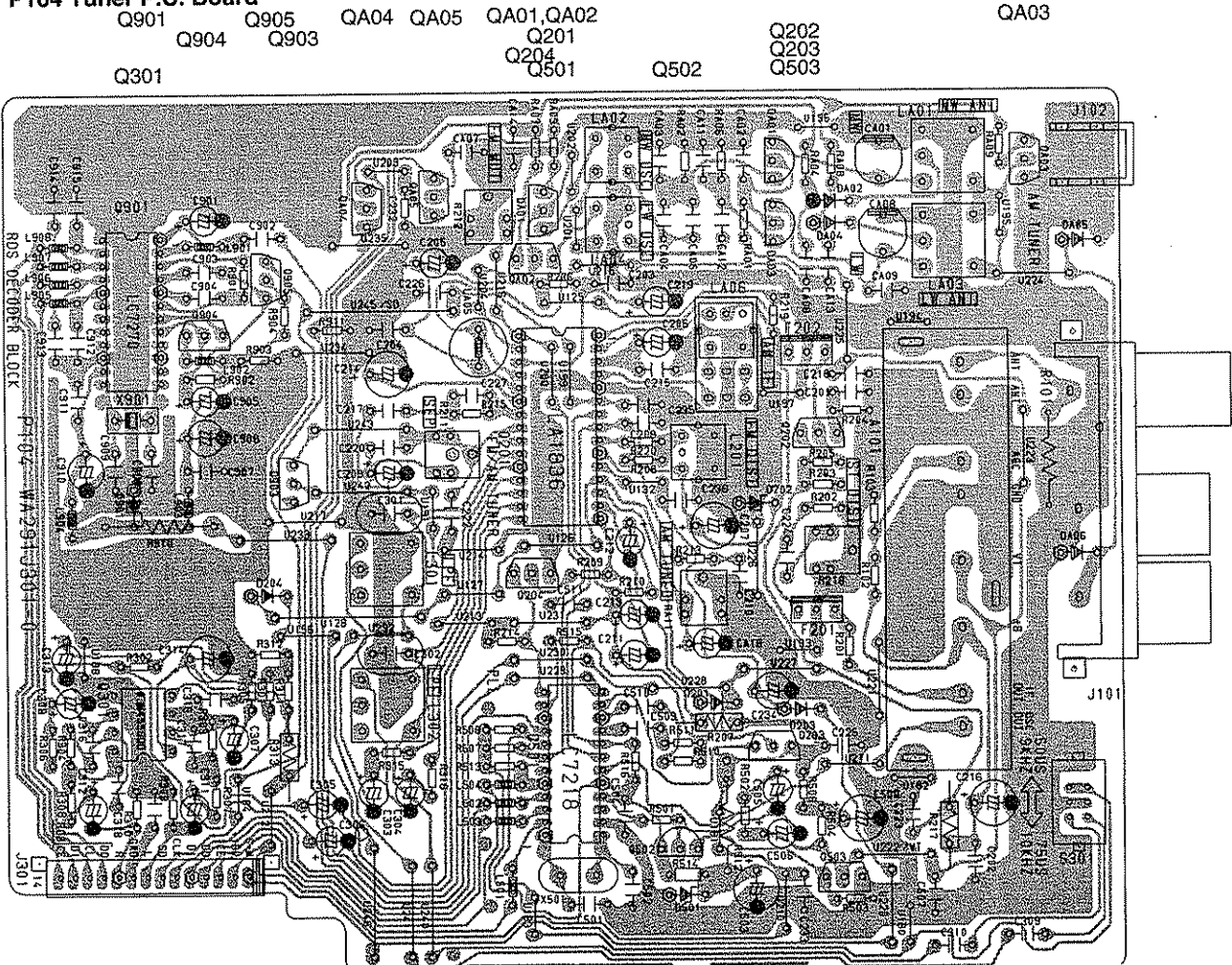
PL04 Video Selector P.C. Board



P104 Tuner P.C. Board

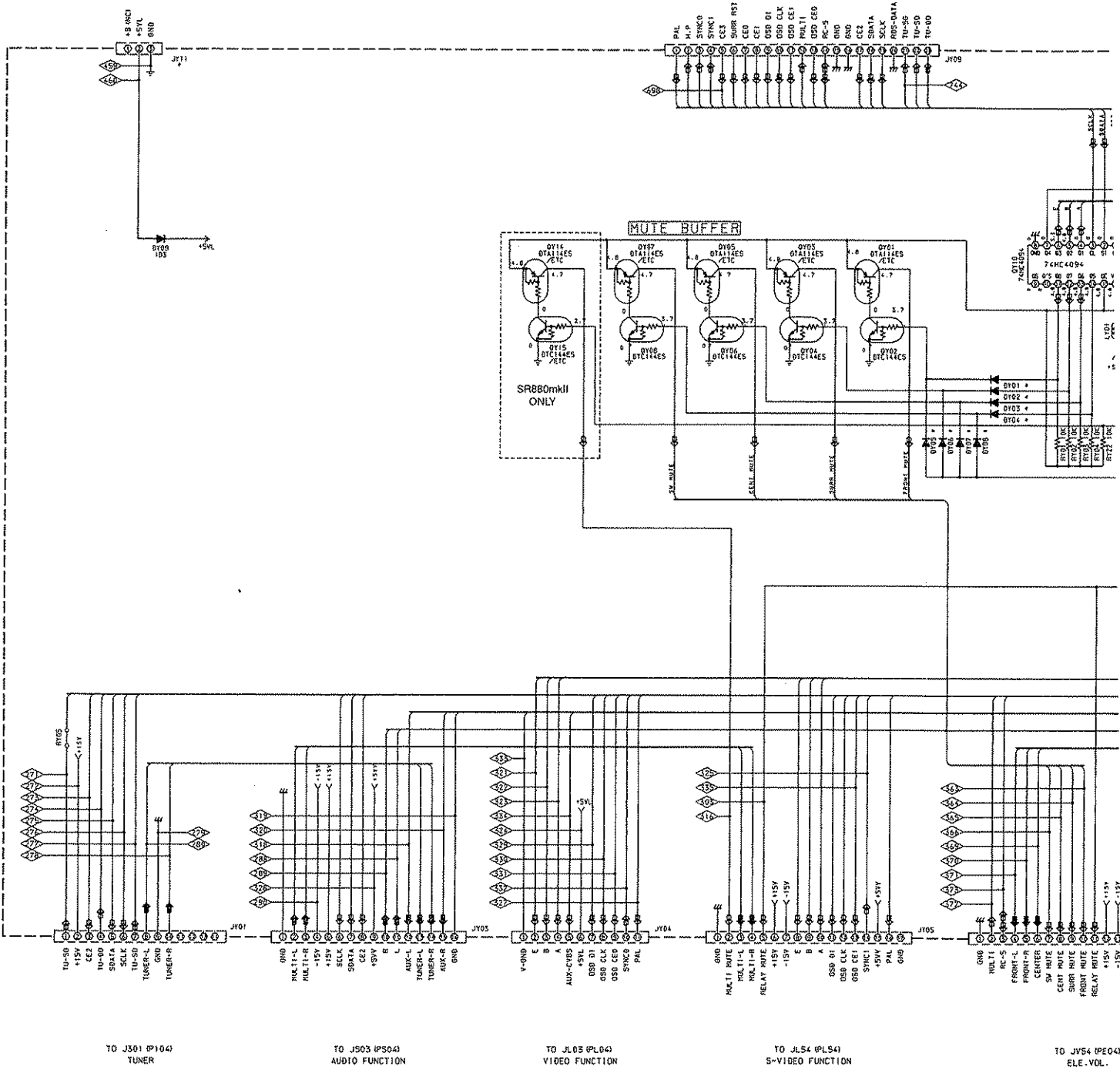


P104 Tuner P.C. Board



TO JB09
(PB04)

TO JU01 (PU04)
FRONT



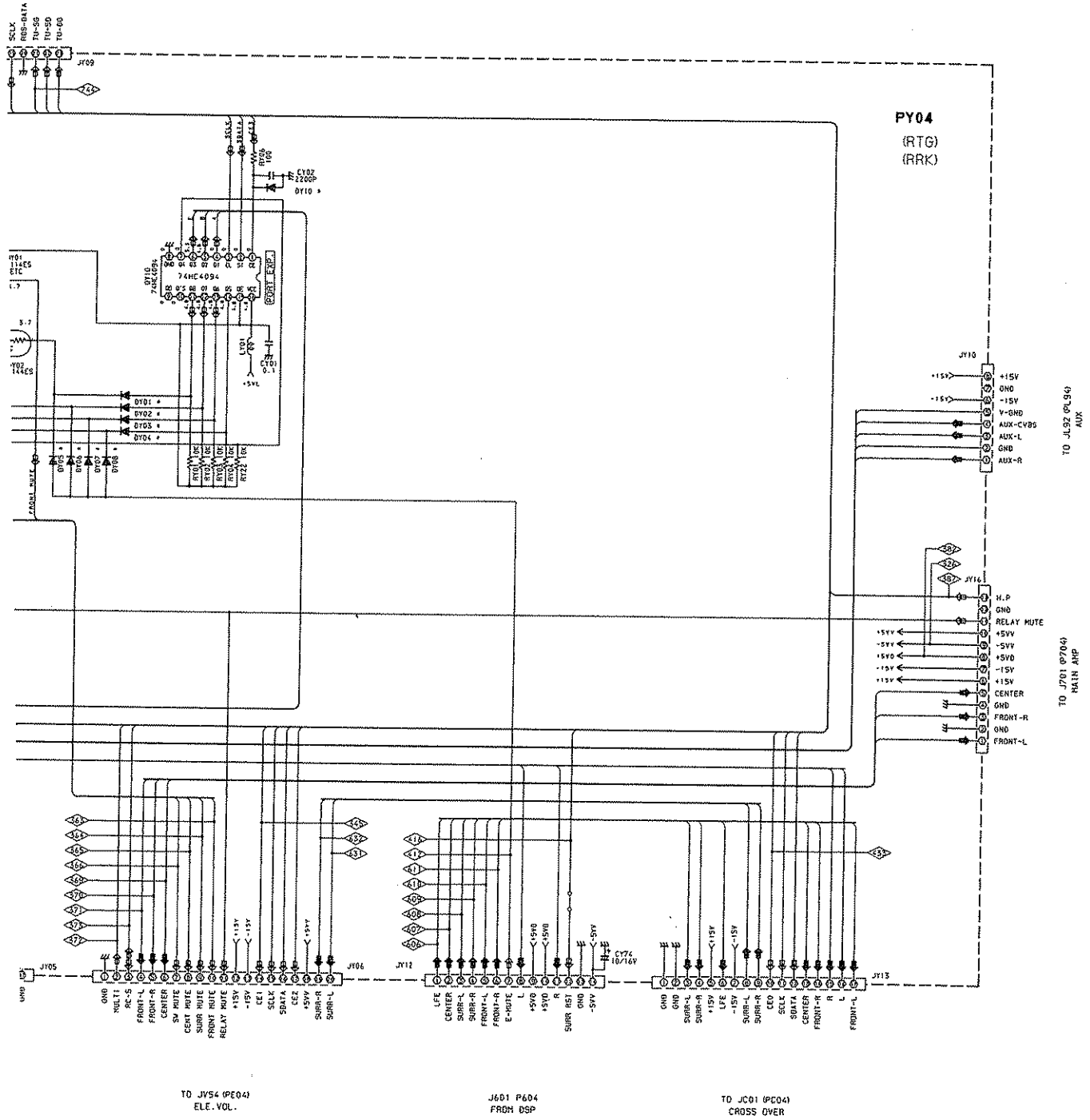
TO J301 (P104)
TUNER

TO J503 (P504)
AUDIO FUNCTION

TO J103 (P104)
VIDEO FUNCTION

TO J154 (P154)
S-VIDEO FUNCTION

TO J54 (PE04)
ELE. VOL.

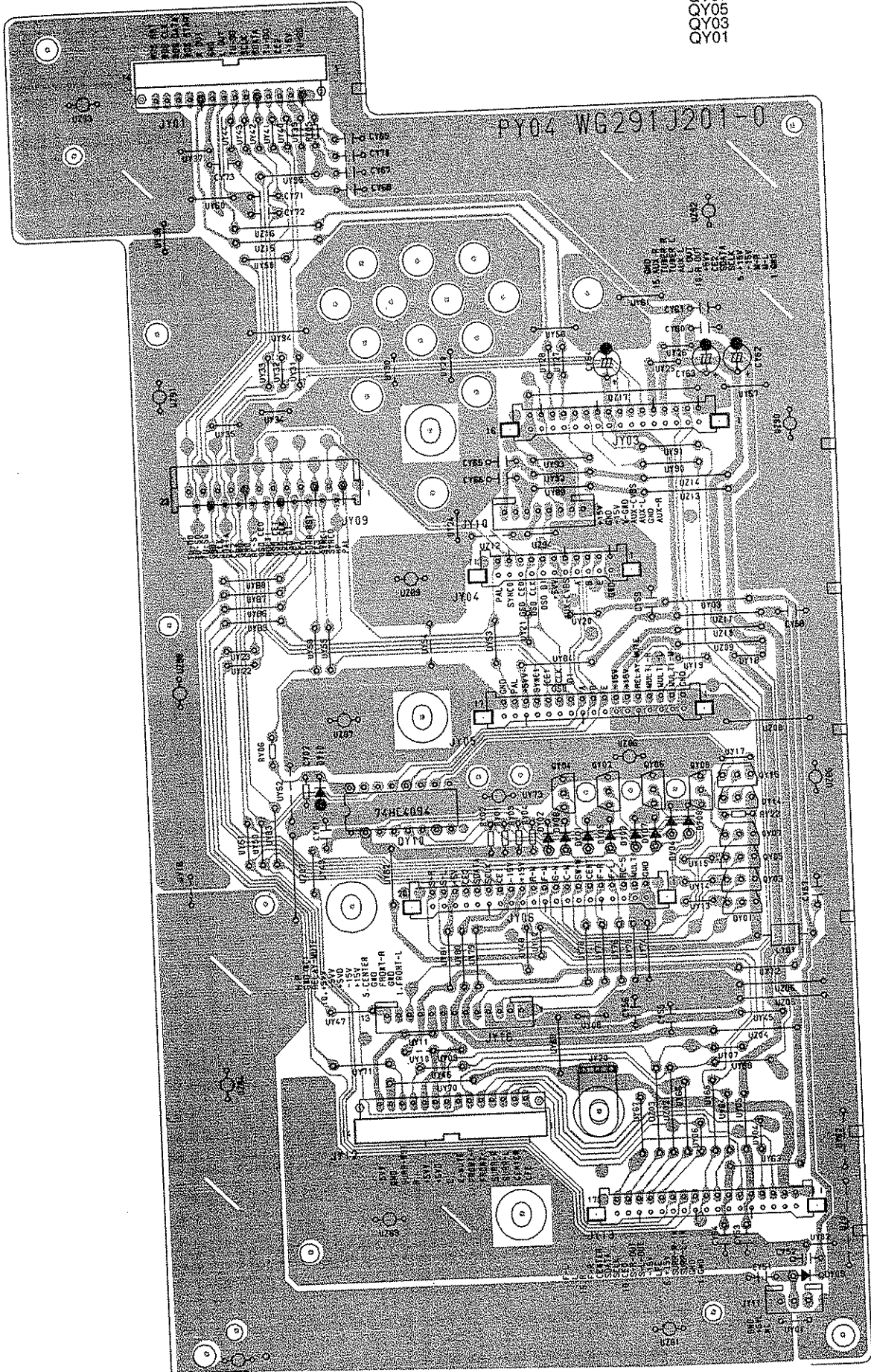


PY04 Connect P.C. Board

QY10

QY04 QY02 QY06 QY08

QY15
QY14
QY07
QY05
QY03
QY01



PE04 Ele.Vol P.C. Board

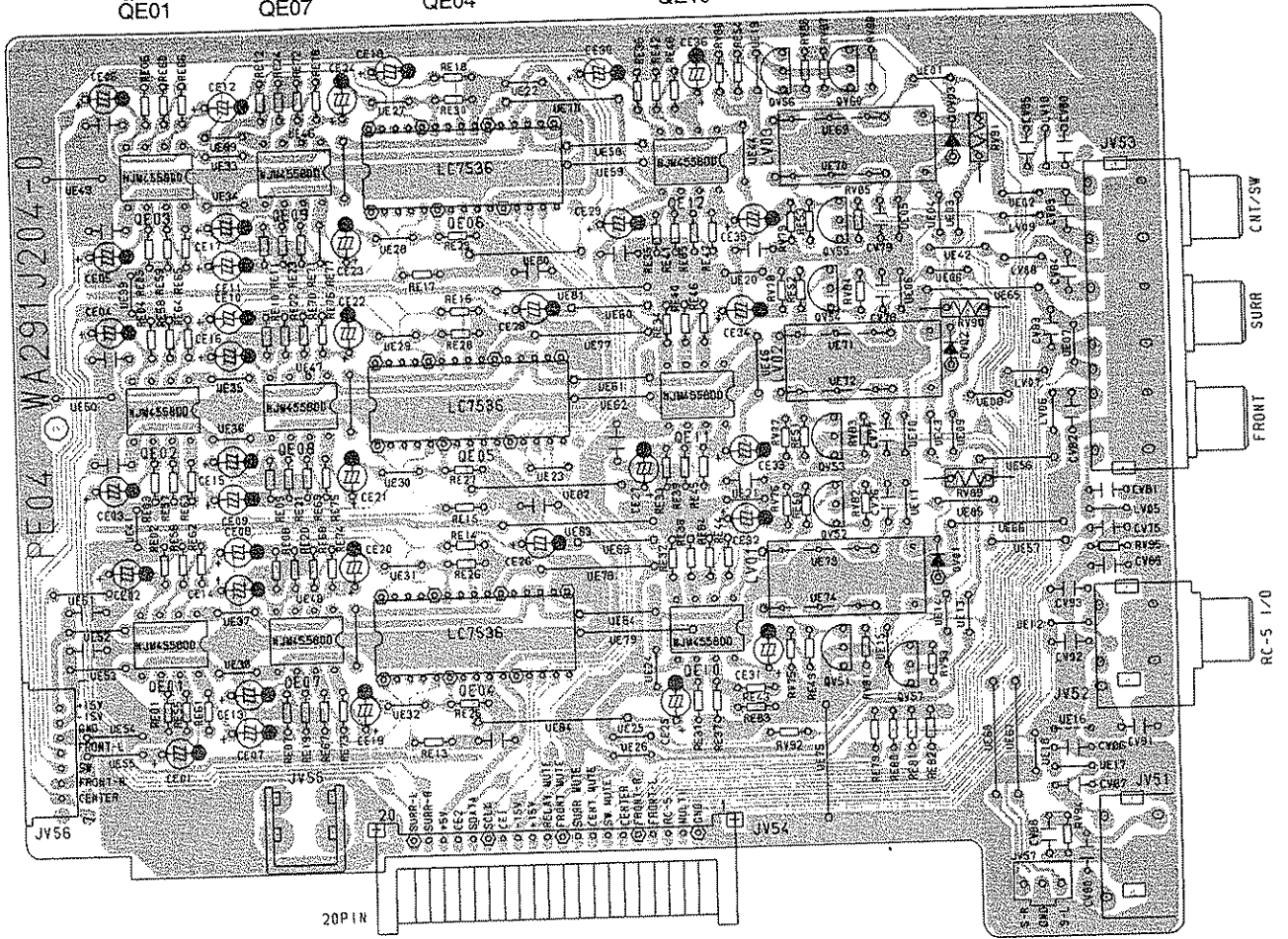
QE03
QE02
QE01

QE09
QE08
QE07

QE06
QE05
QE04

QE12
QE11
QE10

QV53-56 QV60
QV52
QV51 QV57



PL54 S-Video Selector P.C. Board

QL71
QL74

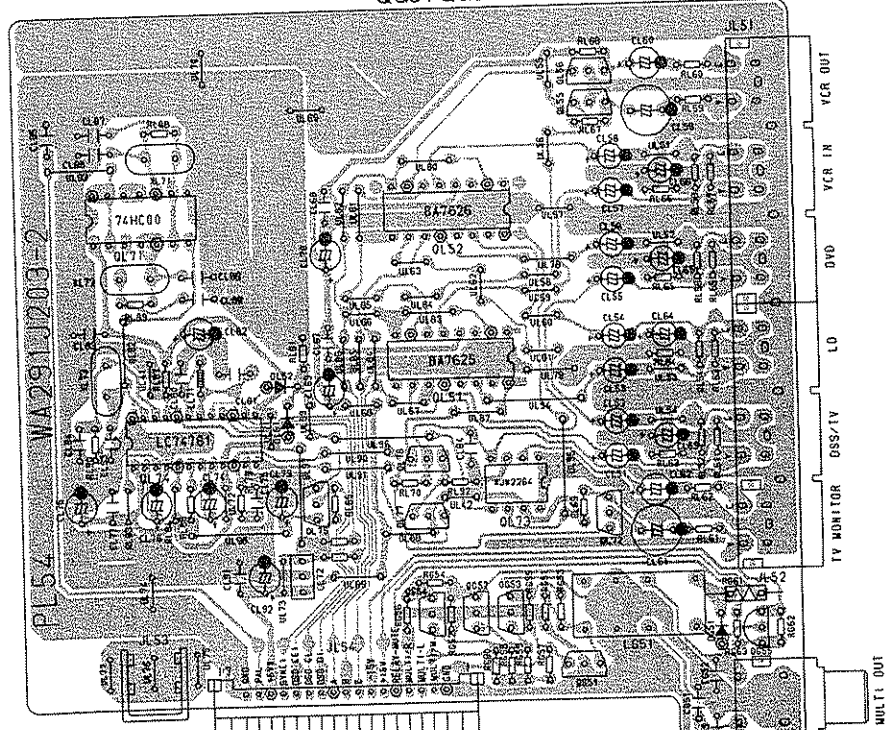
QL75

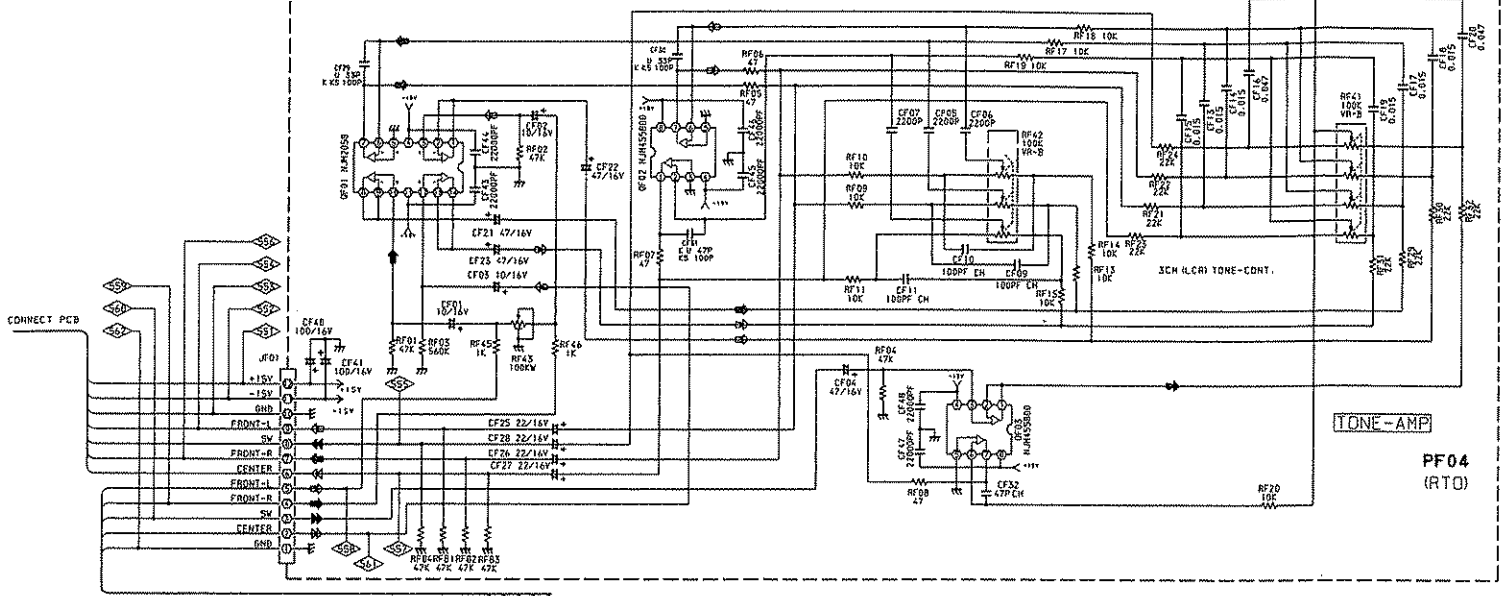
QL52
QL51
QL78
QL77
QG54

QL73
QL72

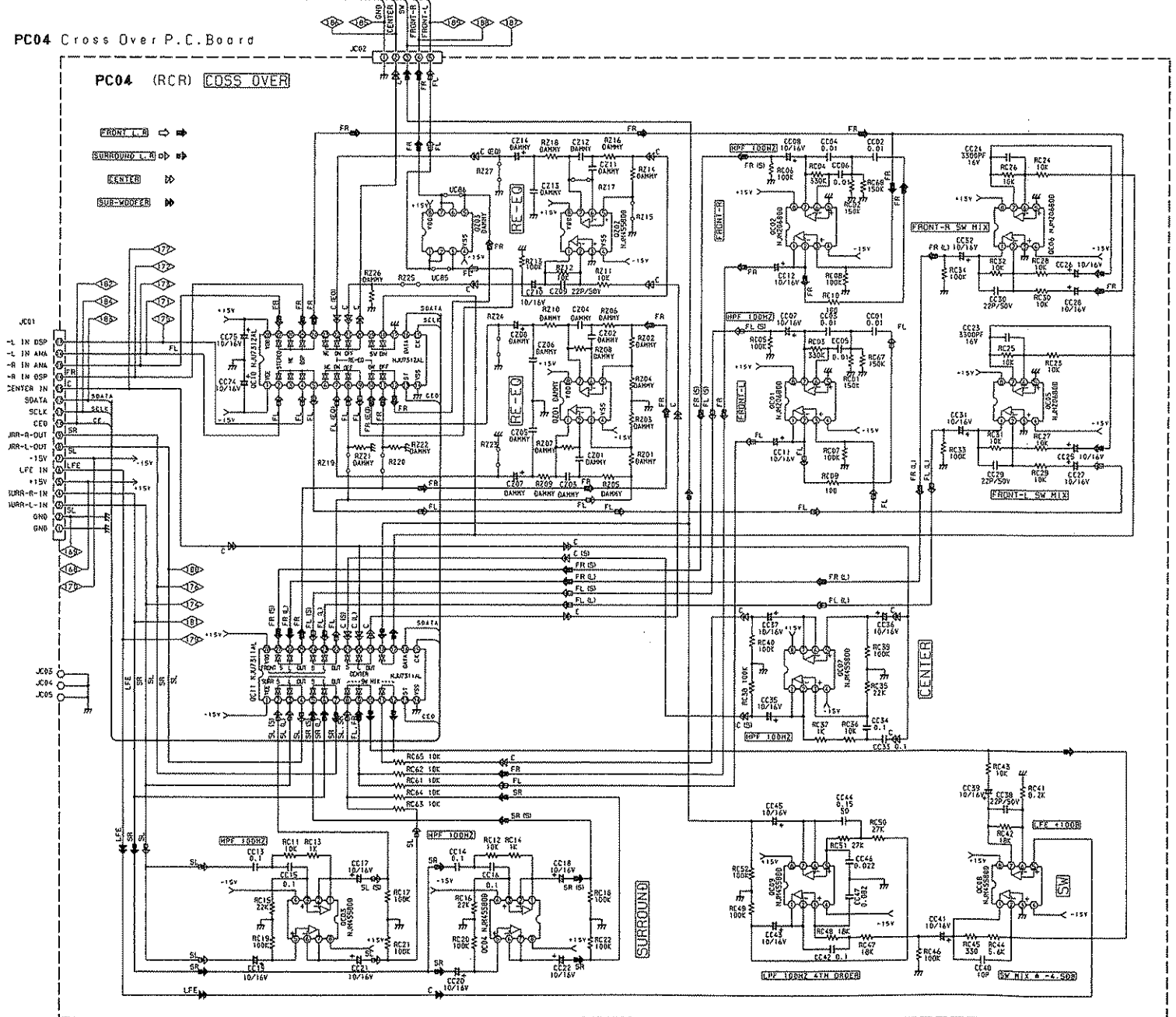
QL55 QL56

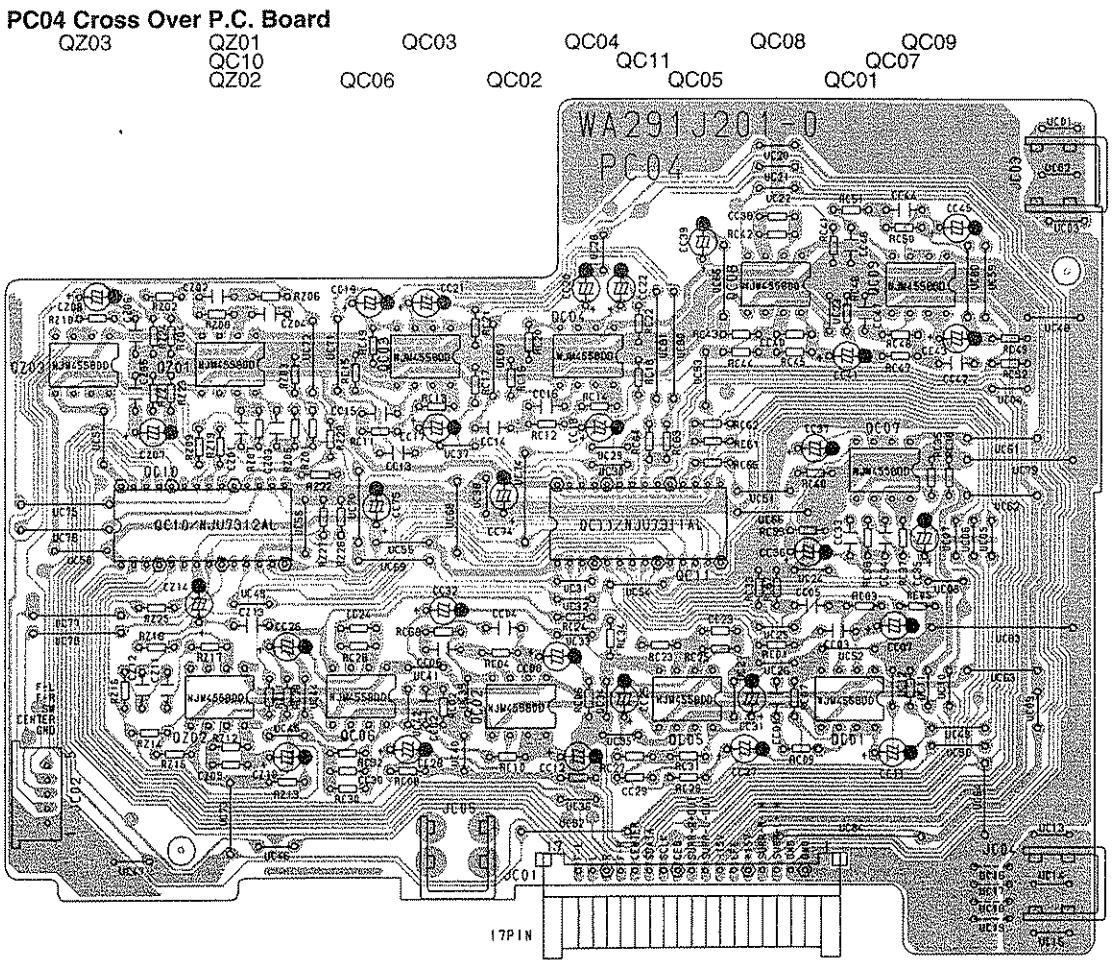
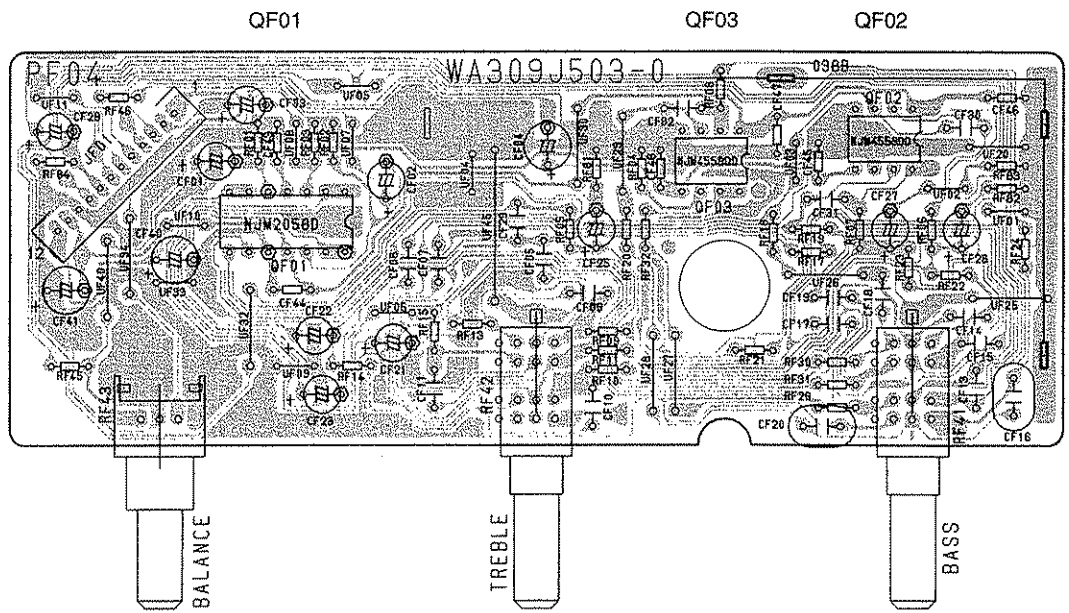
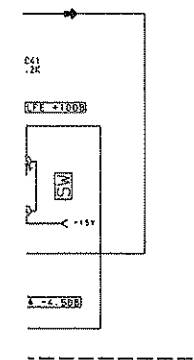
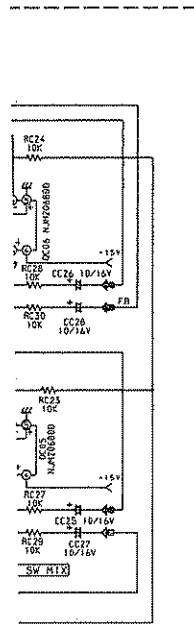
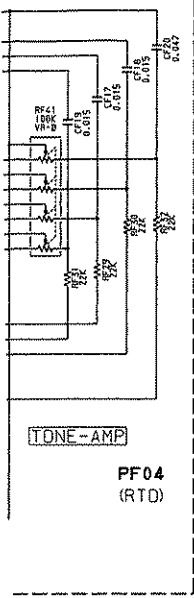
QG55

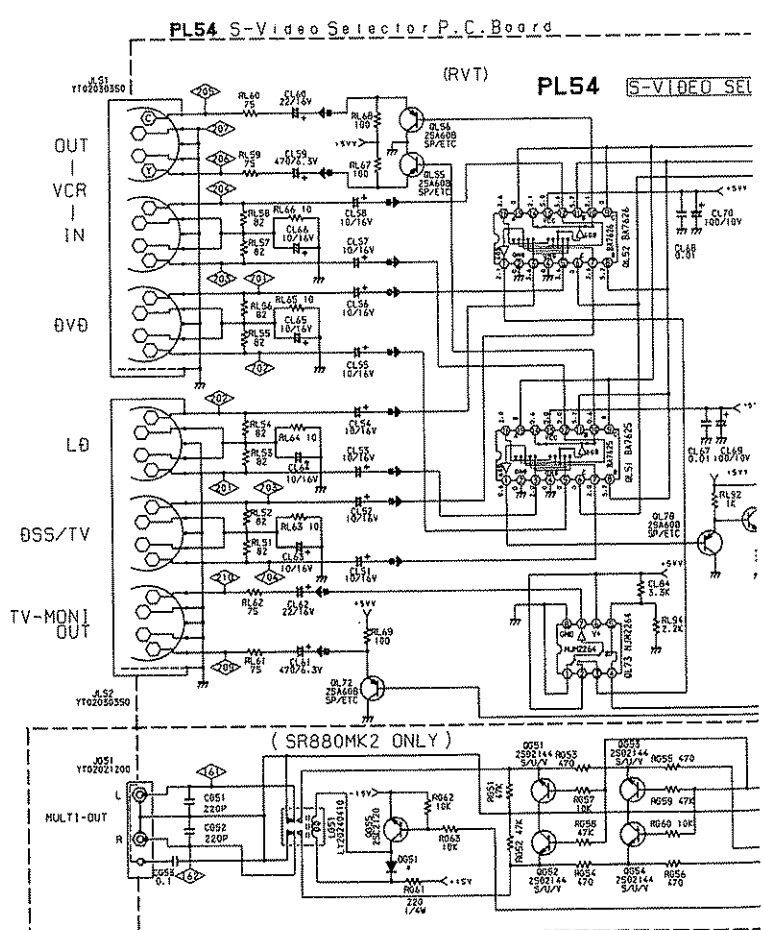
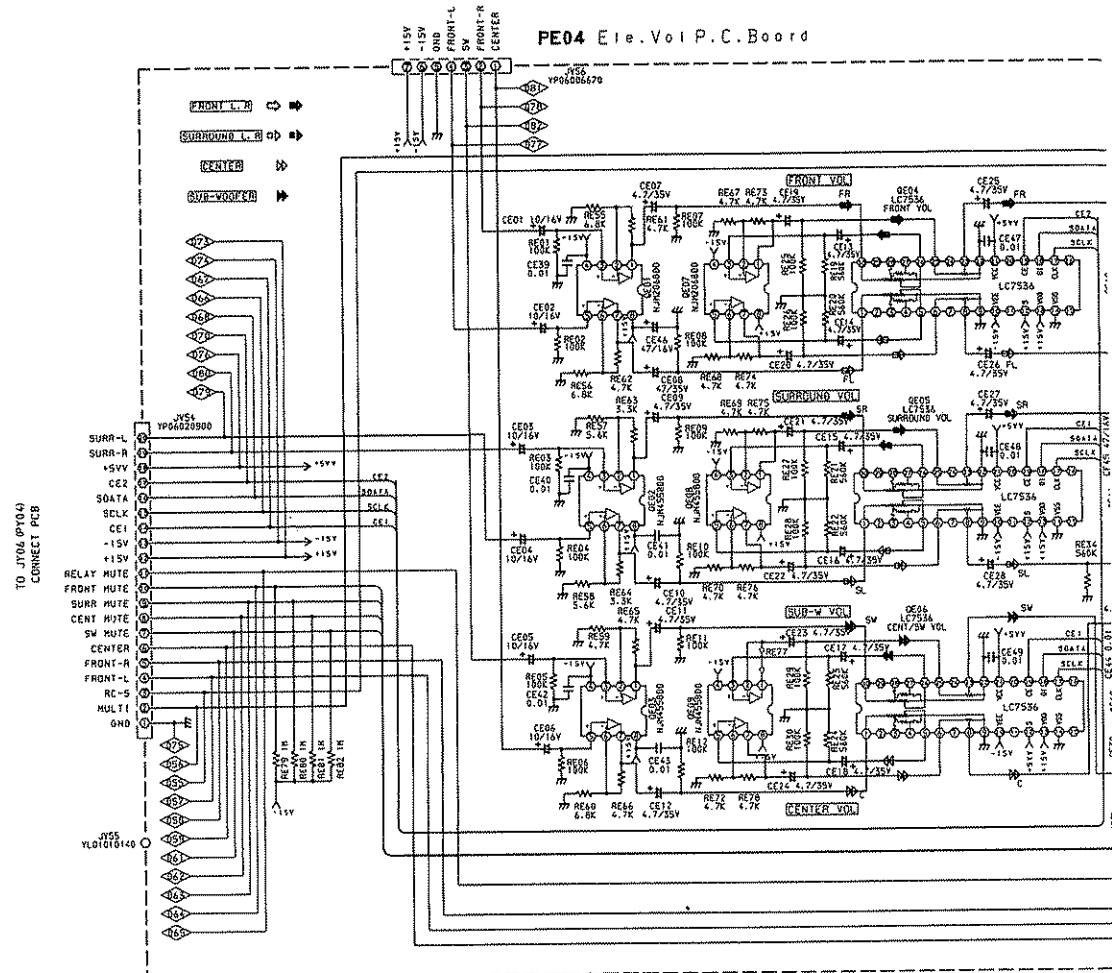


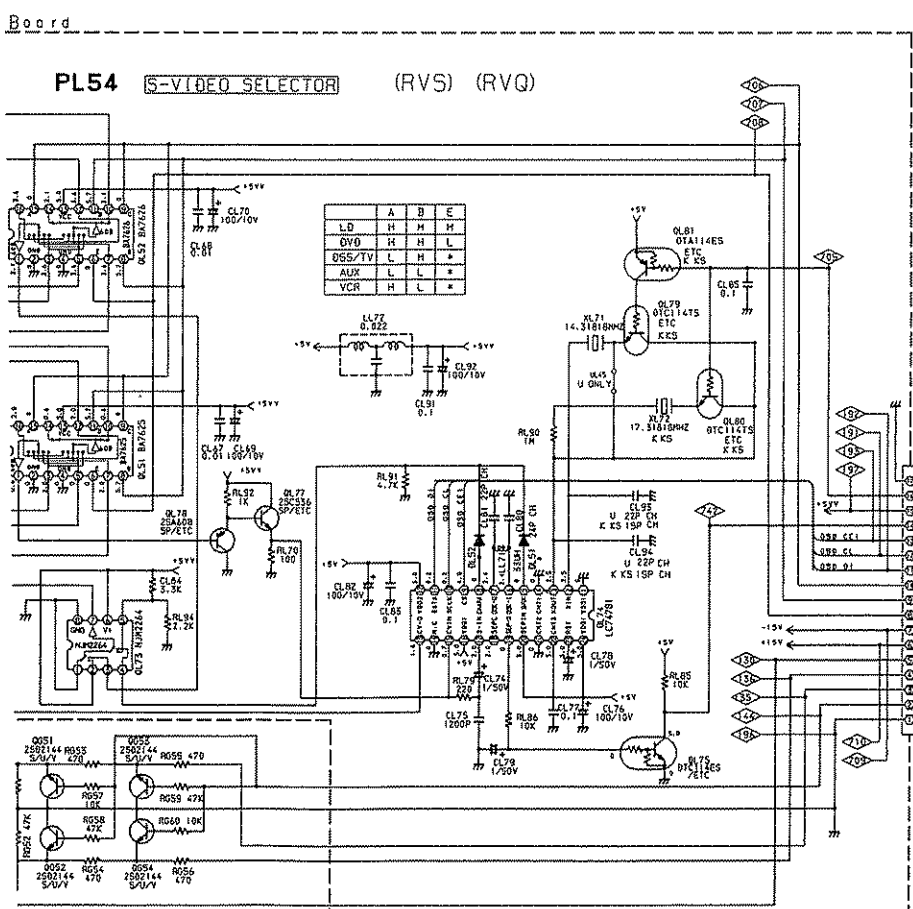
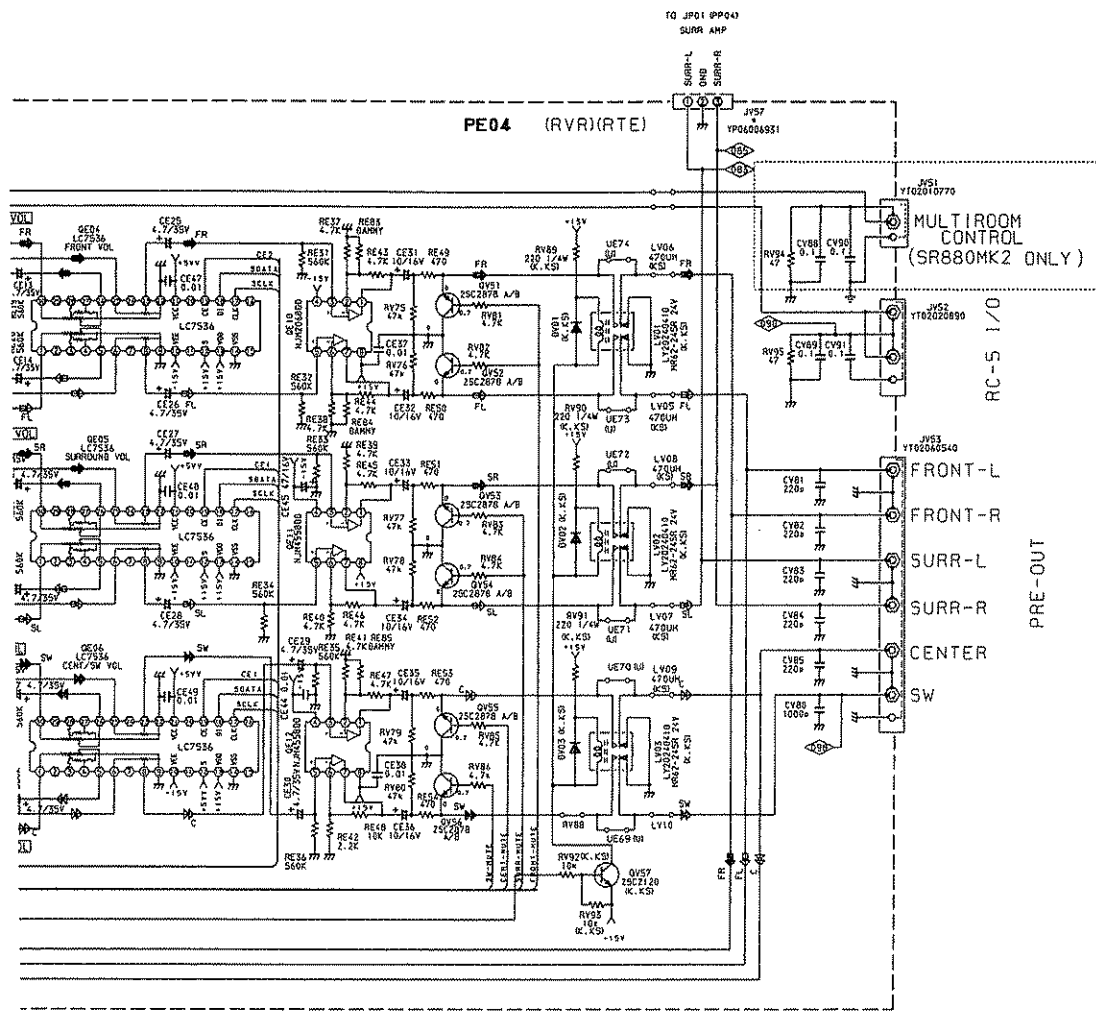


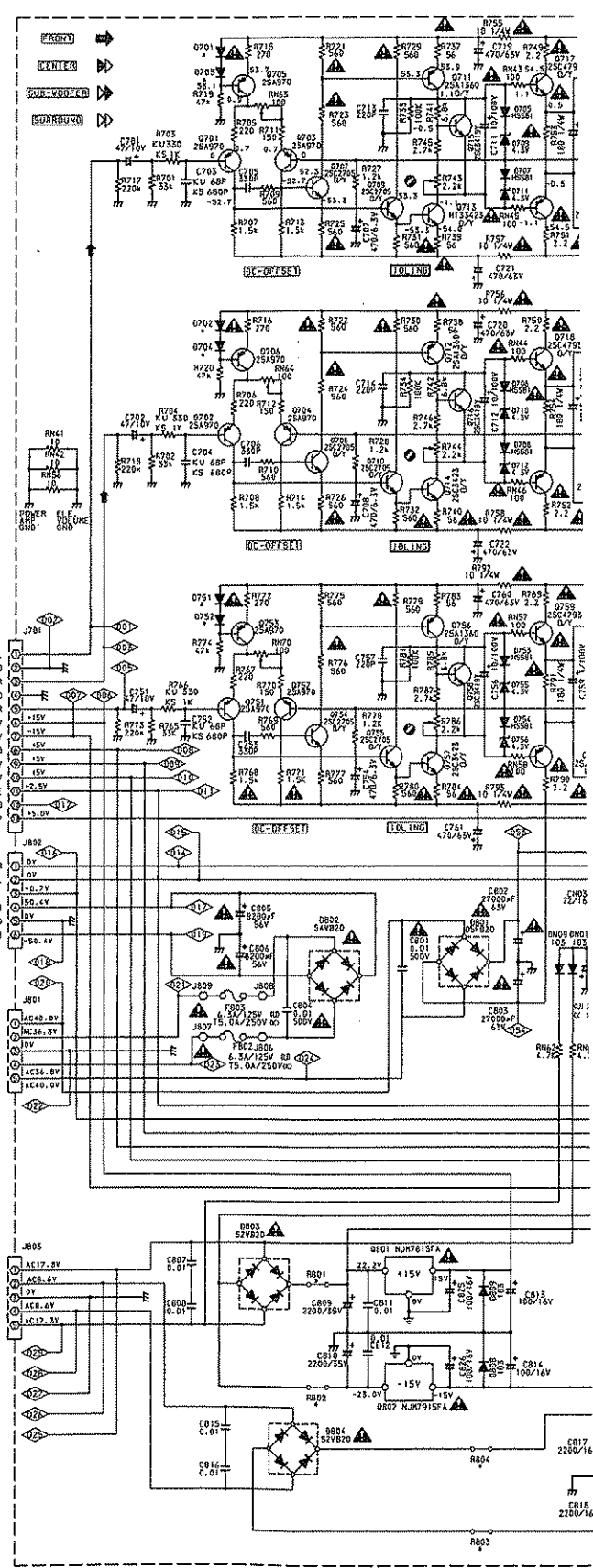
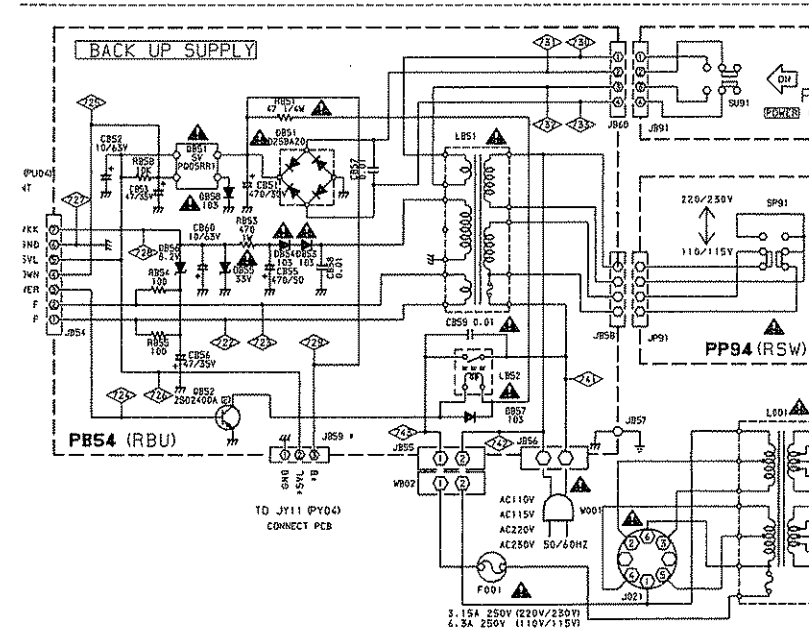
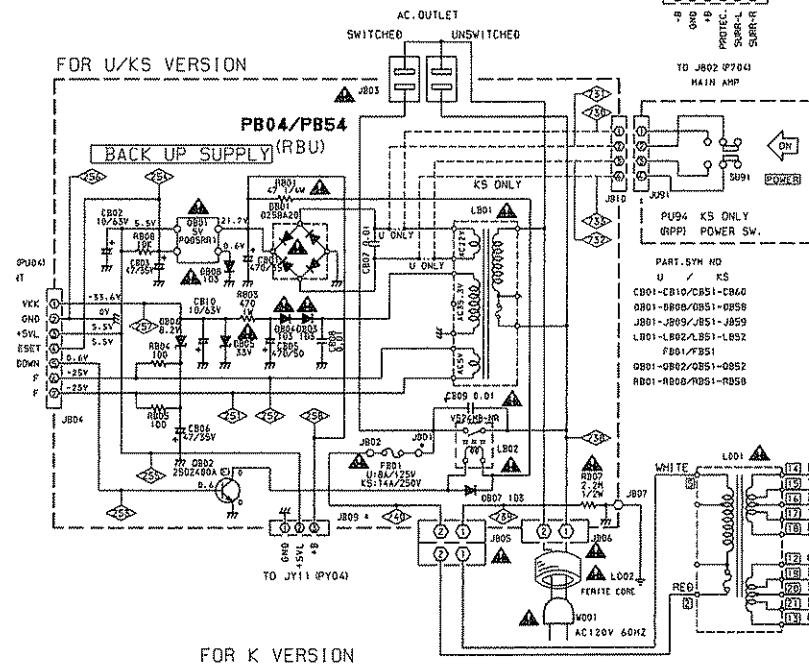
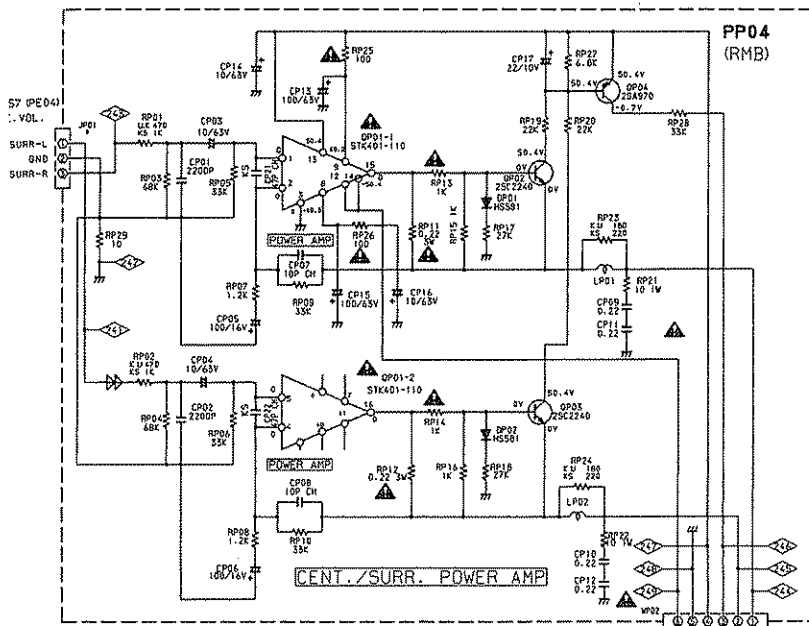
PC04 Cross Over P.C. Board

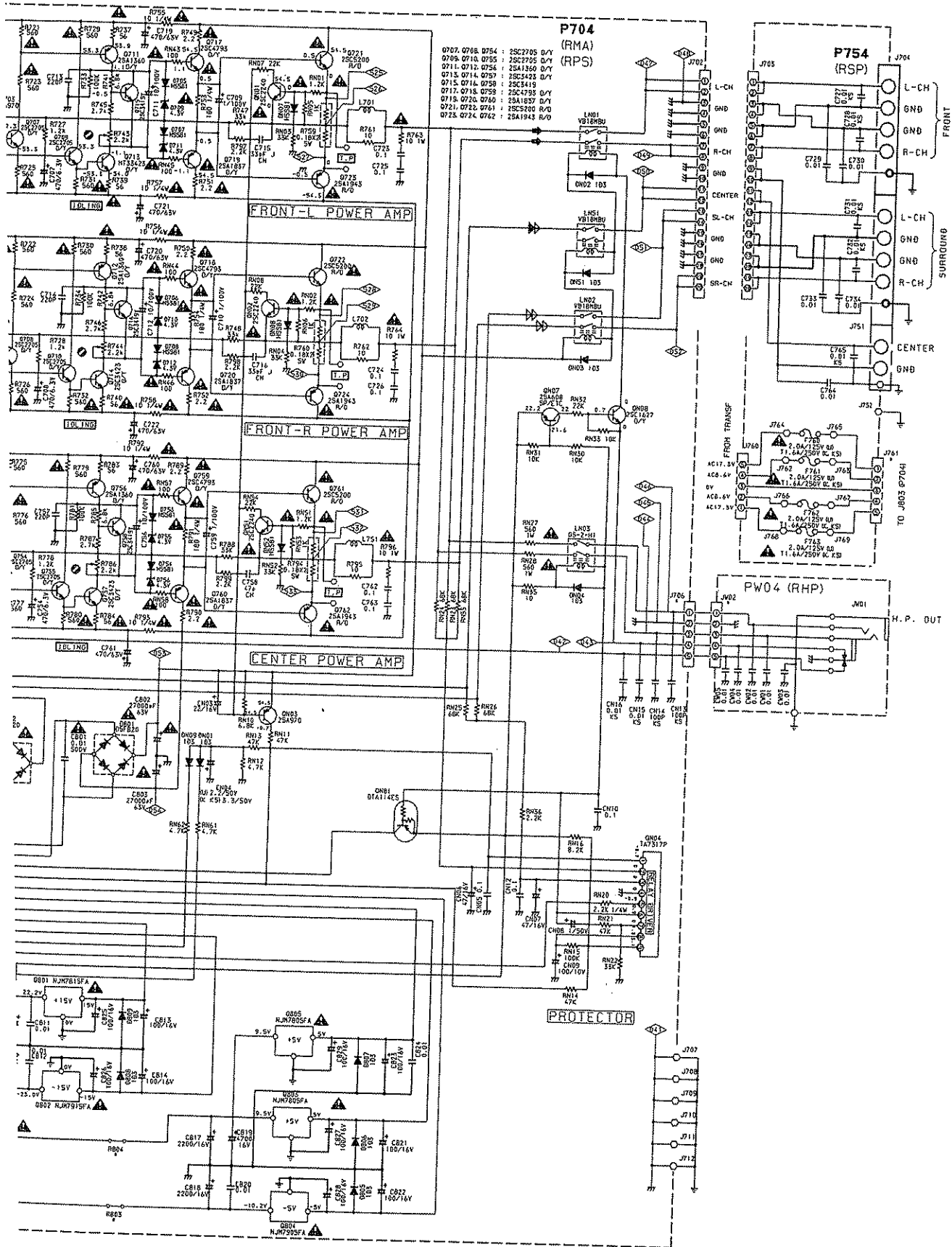






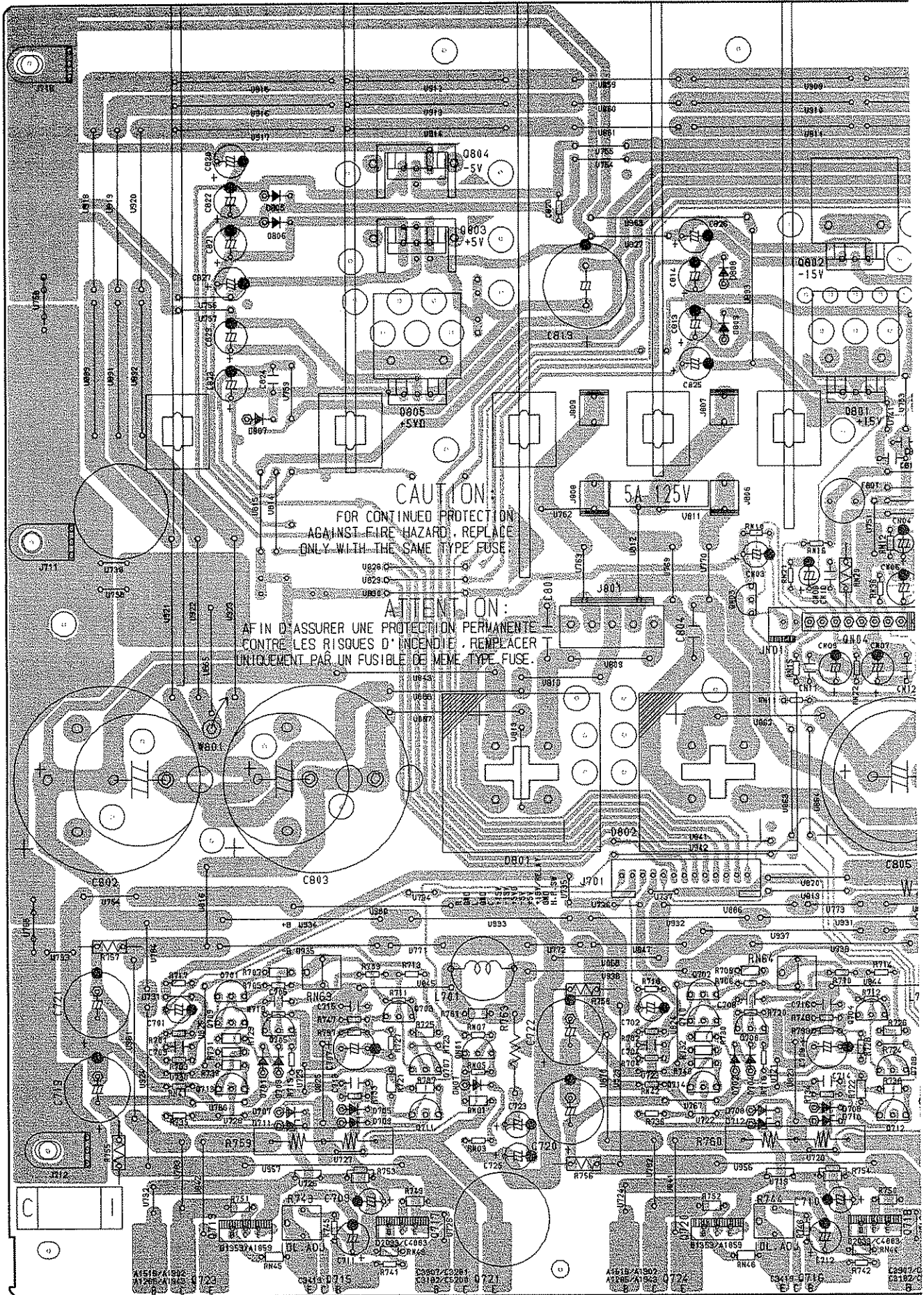




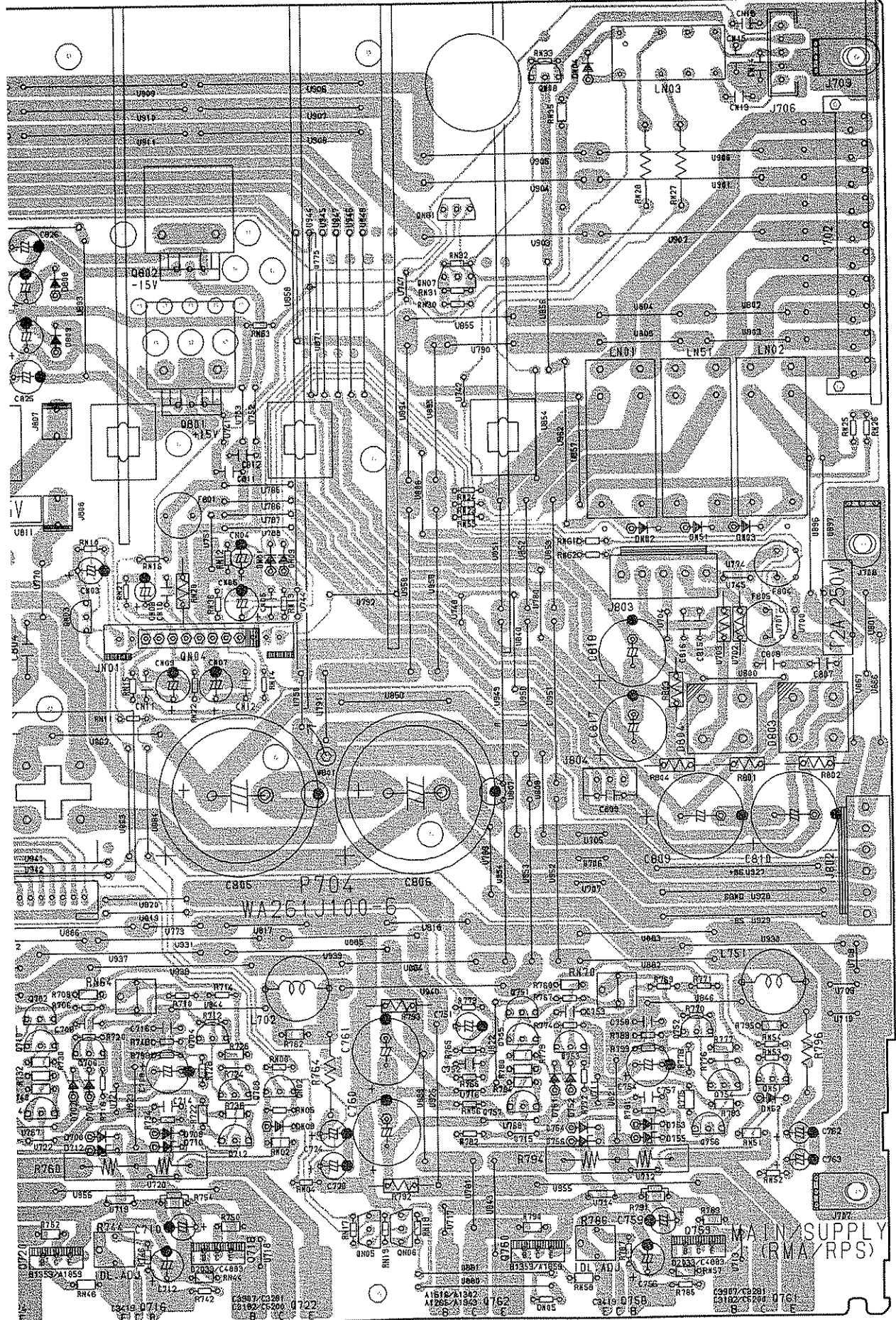


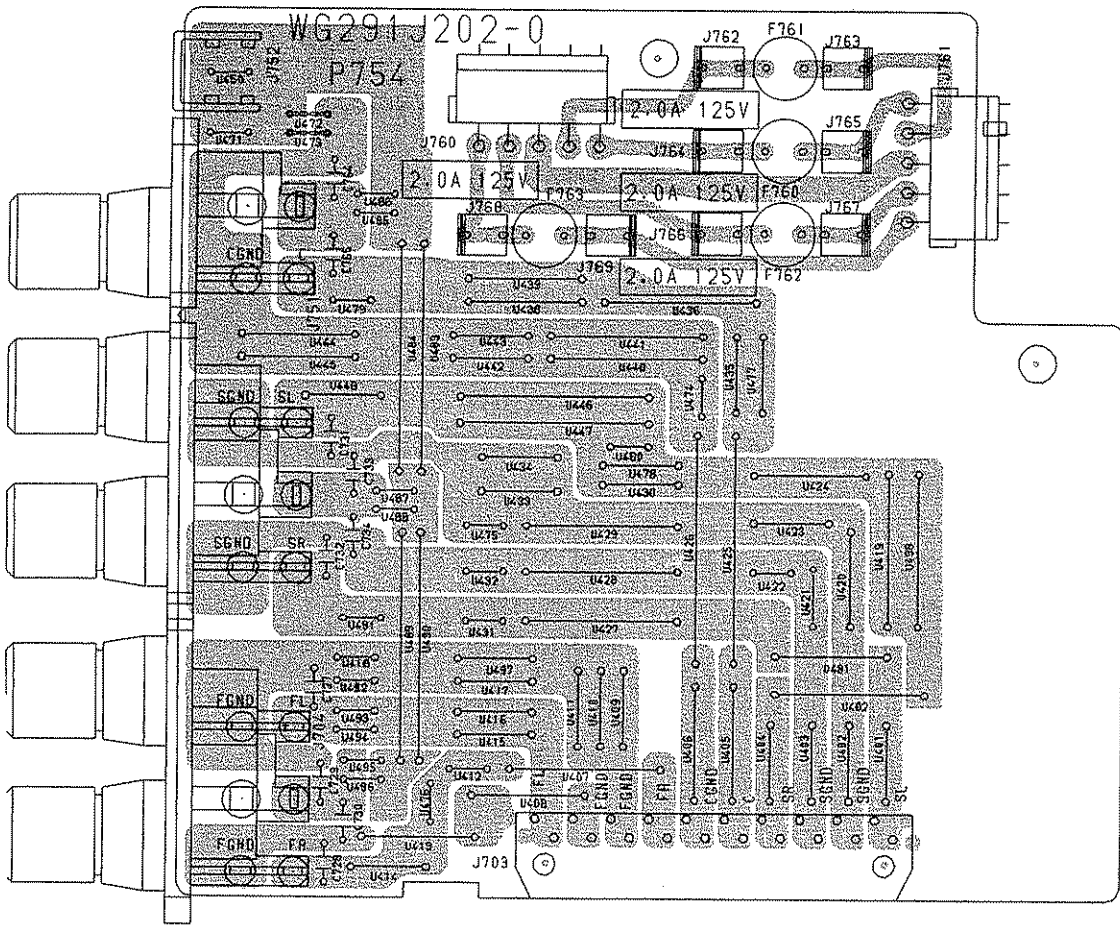
P704-Main Amp P.C.Board

Q701	Q804	Q702	Q704
Q709	Q803 Q707	Q710	Q708
Q713	Q805 Q711	Q714	Q712
Q723	Q719 Q705 Q715	Q720	Q718
	Q703 Q717	Q724	
	Q721	Q706	Q802
		Q716	Q801

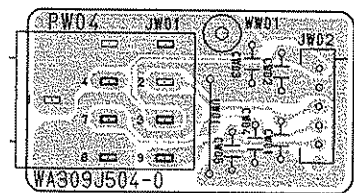


- Q702 Q704 Q751 Q752
- Q710 Q708 Q755 Q754
- Q714 QN03 Q757 Q756 QN51
- Q720 Q706 Q716 QN02 QN05 QN07 Q758 Q759 Q761
- Q802 Q712 QN06 QN81 Q760 Q753
- Q801 Q718 QN08 Q762 Q760 Q753

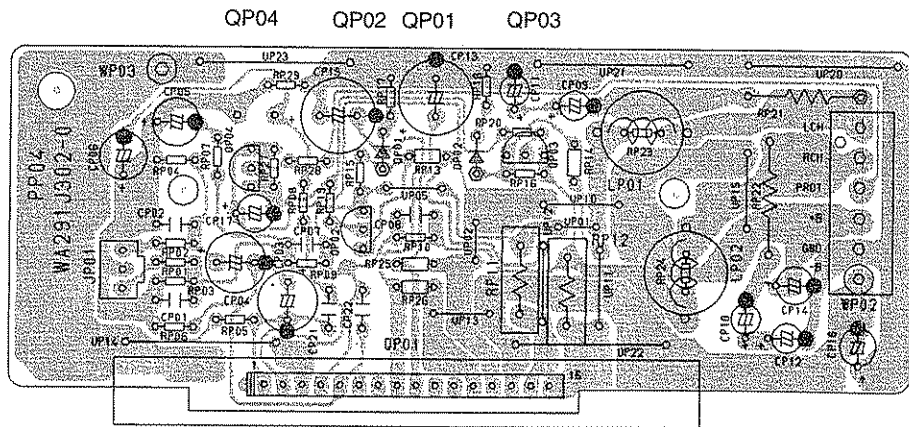




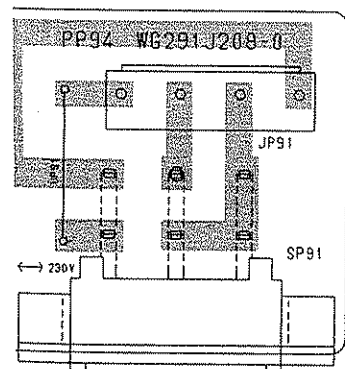
PW94 Aux In P.C. Board



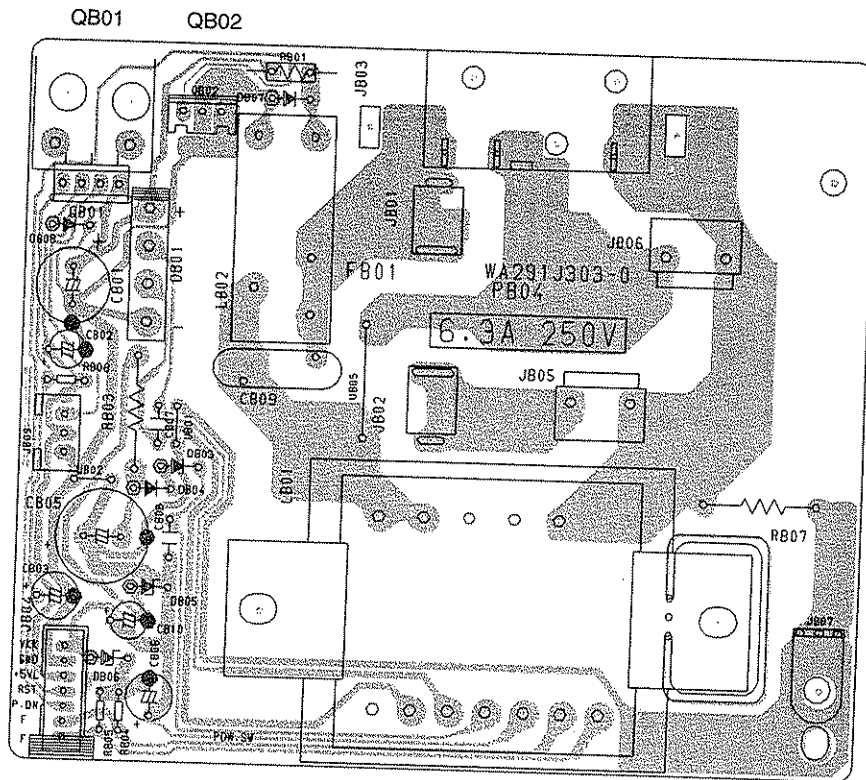
PP04 Surround P.C. Board



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

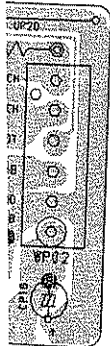
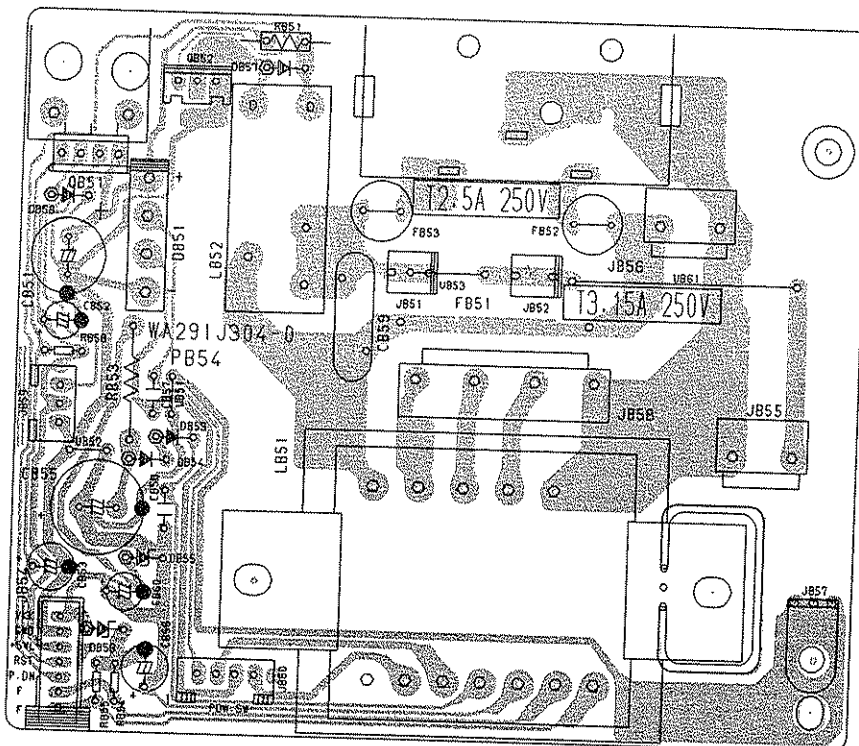


PB04 Back Up P.C. Board (U version)



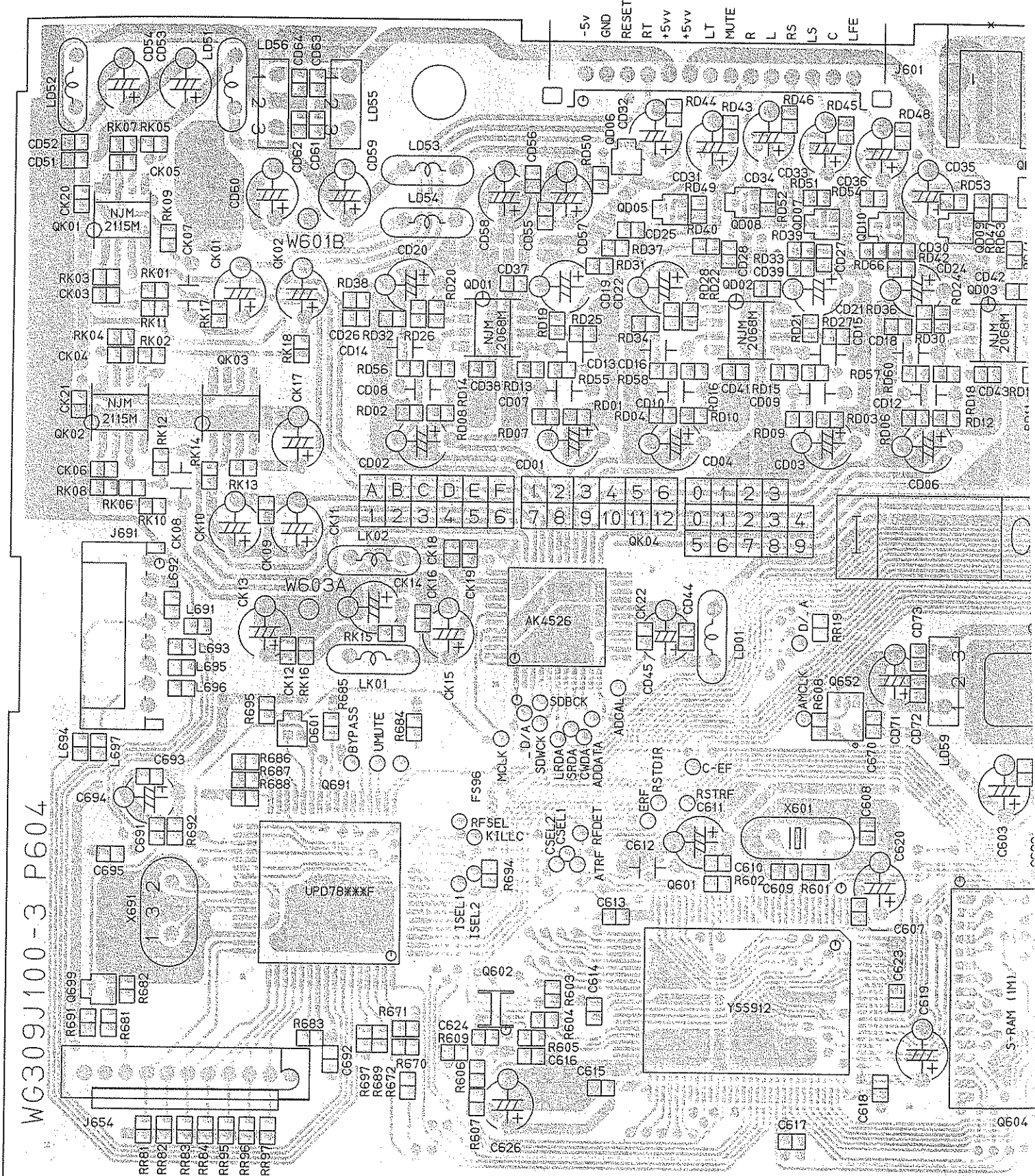
PB54 Back up P.C. Board (K,KS version)

QB51 QB52



P604 DOLBY DIGITAL DSP P.C. Board

QK01 QK02 QK03 QD01 QD06 QD05 QD08 QD07 QD10 QD09 C
 Q699 Q691 QK04 QD02 Q652 Q601 Q602 Q603 Q604



07 QD10 QD09 QD11

QD03

QR06

QR01

QR03

QR02

Q652

QD51

QM06

QR04

QM02

QM03

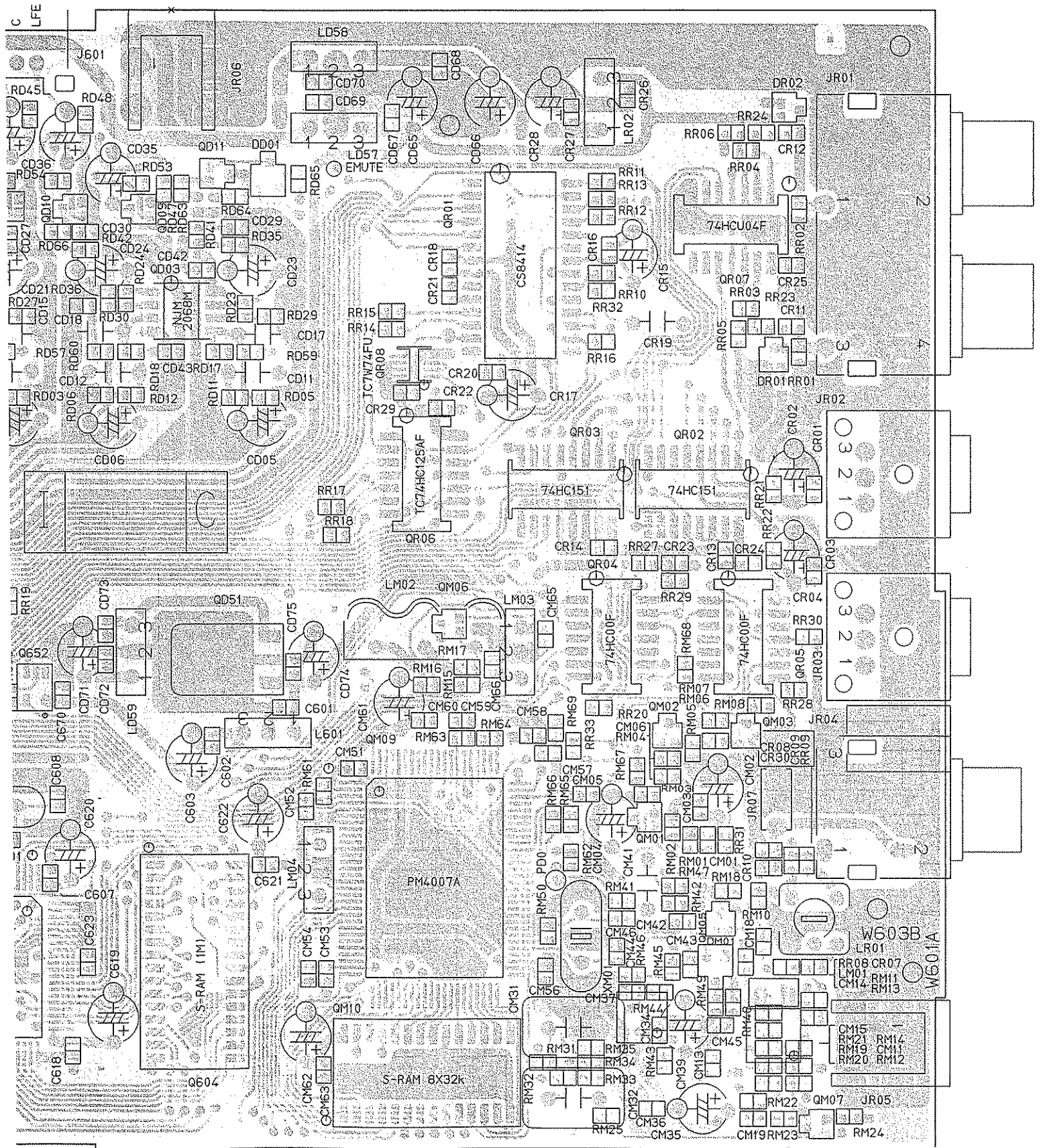
QR07

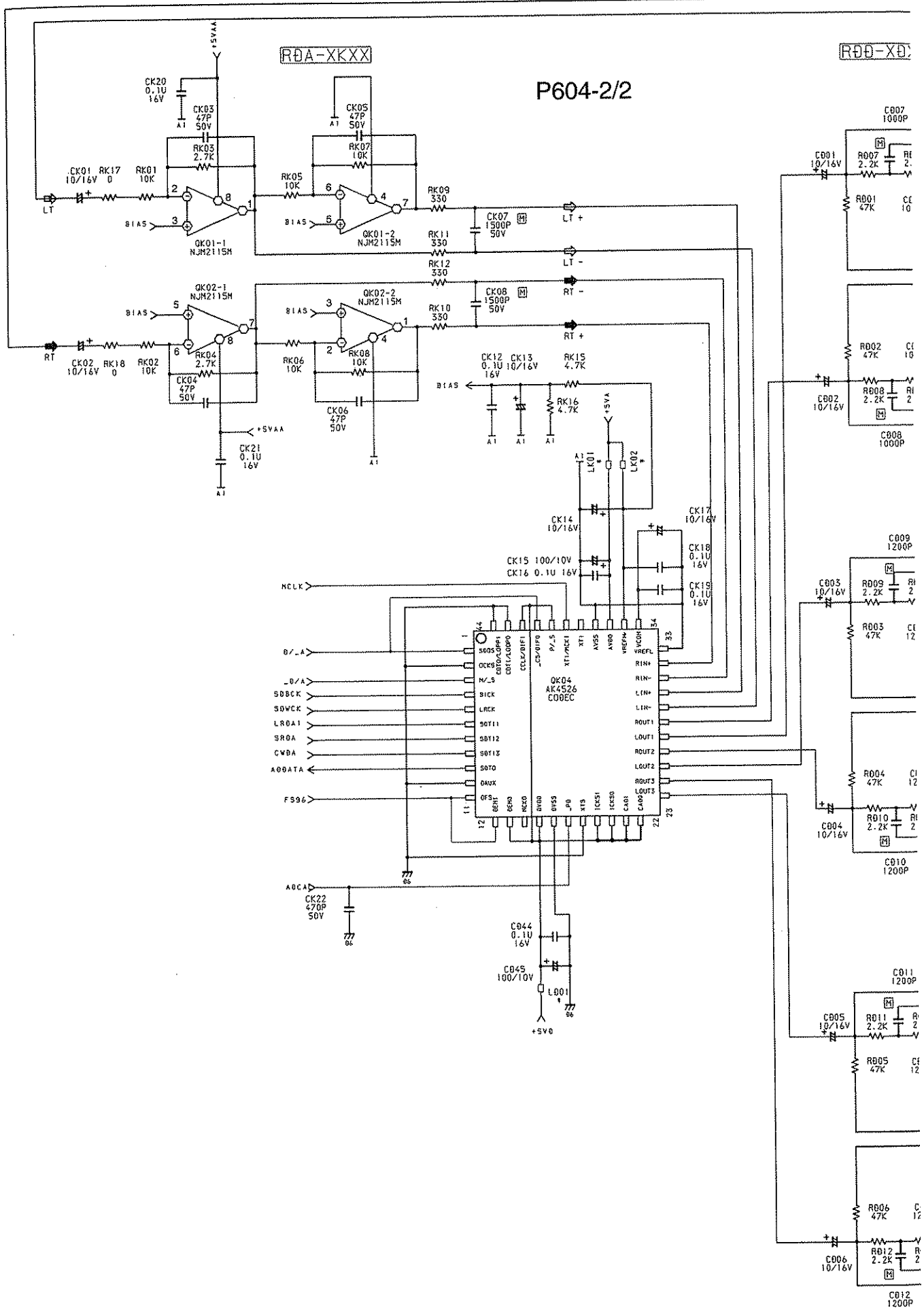
Q604

QM09 QM10

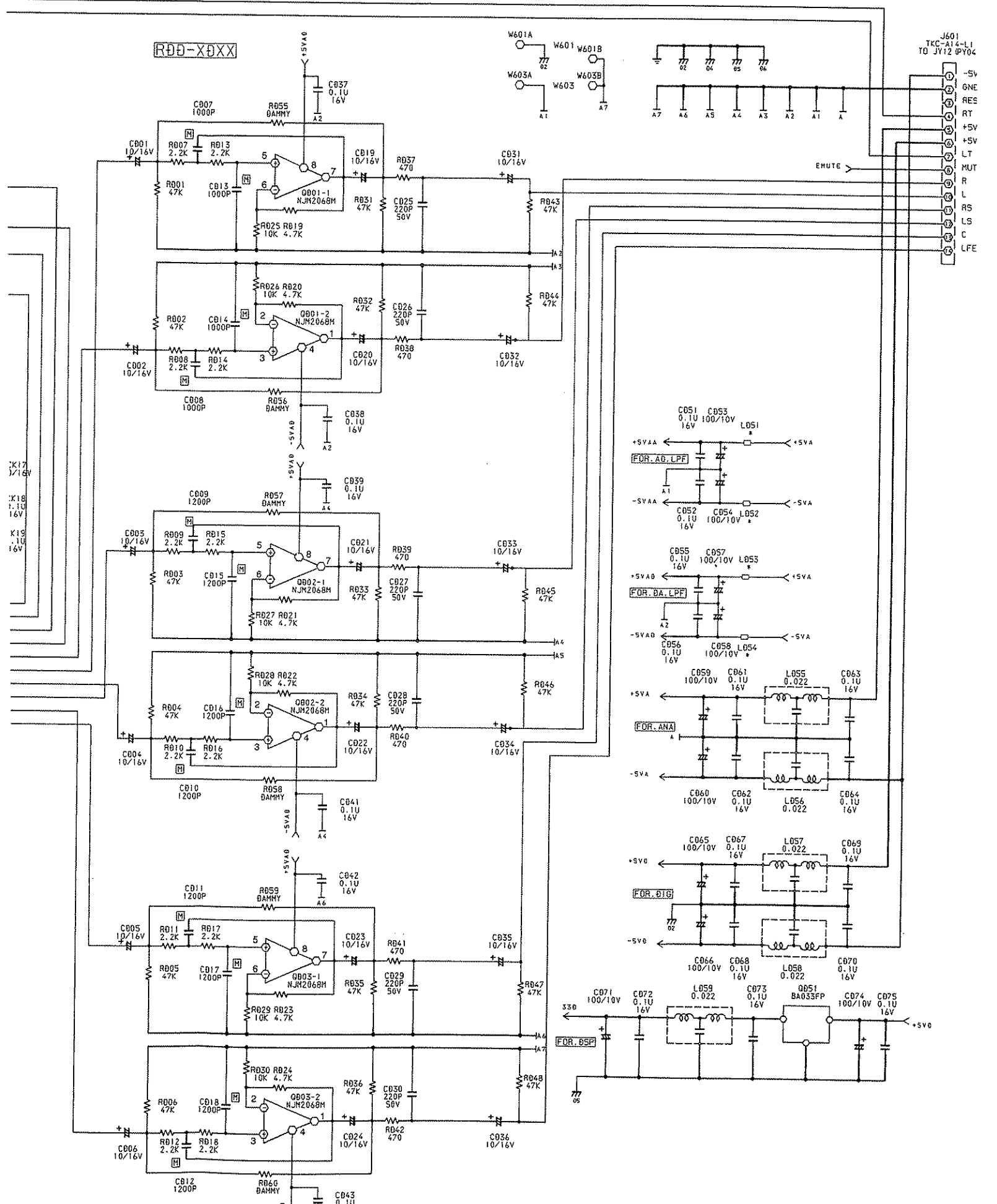
QM05

QM07





R00-X0XX



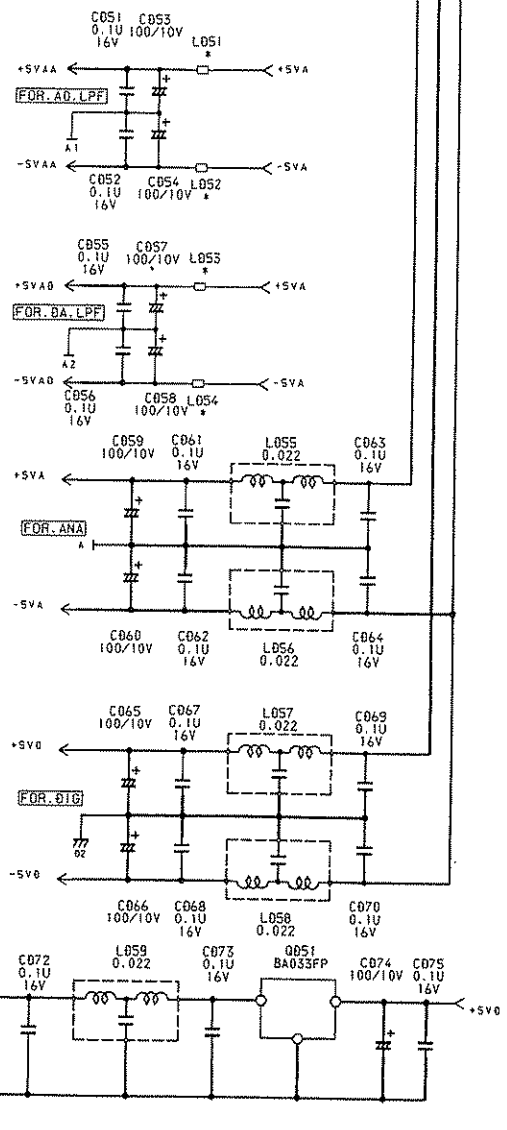
K17
1.1U
16V

K18
.1U
16V

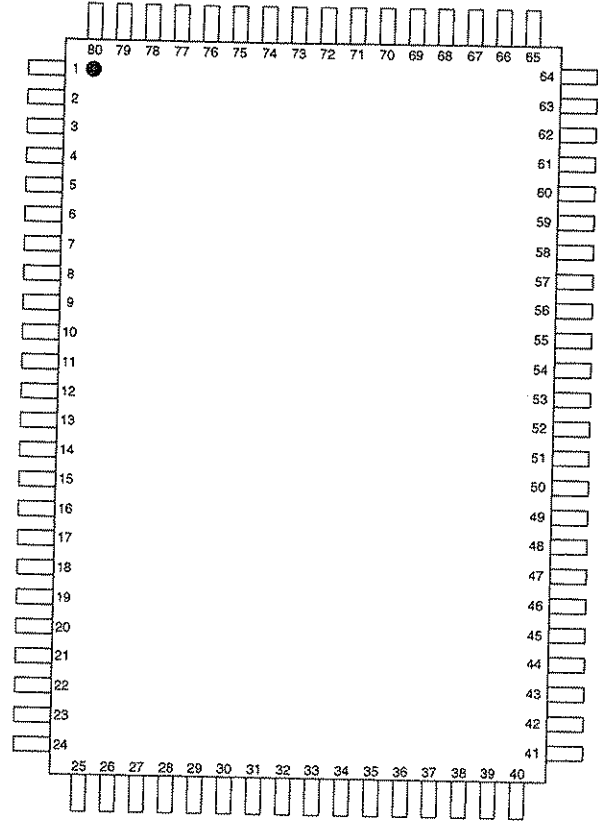
K19
.1U
16V

J601
TKC-A14-L1
TO JY12 (P)04

- ① -SV
- ② GNE
- ③ RES
- ④ RT
- ⑤ +SV
- ⑥ +SV
- ⑦ LT
- ⑧ MUT
- ⑨ R
- ⑩ L
- ⑪ RS
- ⑫ LS
- ⑬ C
- ⑭ LFE



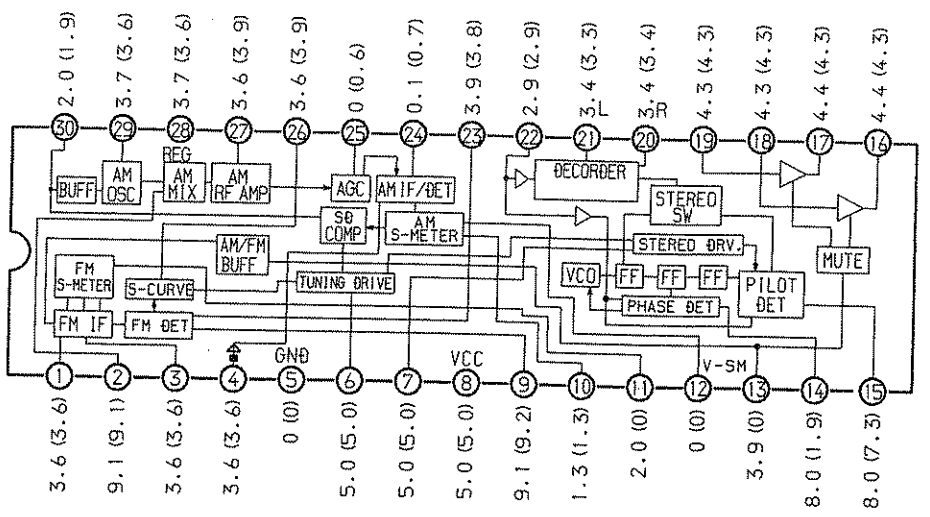
Port Name	Use	Sig.Name	Description
P10/INT0	O		
P11/INT1	I	Head Phone	Head Phone SW input
P12/INT2	INT	MAIN RC-5	Main RC-5 input
P13/DVO	I	POWER DET.	Power Detect input
P14	I	OSD SYNC0	OSD Sync input
P15/TC2	O		
P16	I	Pulse Enc.A	for Master Volume
P17	I	Pulse Enc.B	for Master Volume
TEST			to GND
P21/XTIN	O	POWER OFF	Power Off output
P22/XTOUT	O	SURR.RST	Surr.module Reset
RESET			
XIN			Fc=8.00MHz in
XOUT			Fc=8.00MHz out
Vss			
P20/STOP	STOP	Power Down	used STOP input
P30/INT3	O		
P31/TC4	I/O	SURR.ACK	Surr.module interface
P32/SCK	SCK	SURR.CLK	Surr.module interface
P33/SI	SI	SURR.DI	Surr.module interface
P34/SO	SO	SURR.DO	Surr.module interface
P35/HSCCK	HSCCK	OSD CLK	OSD IC interface
P36	I/O	SURR.REQ	Surr.module interface
P37/HSO	HSO	OSD DO	OSD IC interface
P00	O	OSD CE0	OSD IC interface
P01	O		
P02	O	CE3	for 4094 interface
P03	O	CE2	for TUNER,etc..
P04	O	CE1	for Volume
P05	O	CE0	for Analog SW
P06	O	SCLK	SO interface
P07	O	SDATA	SO interface
Vdd			
P60/G15	O	PAL/NTSC	OSD mode output
P61/G14	O	KILL IR	Kill IR for RC-5 output
P62/G13	O	KILL Video	Kill Video Signal
P63/G12	O	DIGITAL SEL.	(added switch)
P64/G11	G	FTD G12	FTD Grid output
P65/G10	G	FTD G11	FTD Grid output
P66/G9	G	FTD G10	FTD Grid output



Port Name	Use	Sig.Name	Description
P67/G8	G	FTD G9	FTD Grid output
P70/G7	G	FTD G8	FTD Grid output
P71/G6	G	FTD G7	FTD Grid output
P72/G5	G	FTD G6	FTD Grid output
P73/G4	G	FTD G5	FTD Grid output
P74/G3	G	FTD G4	FTD Grid output
P75/G2	G	FTD G3	FTD Grid output
P76/G1	G	FTD G2	FTD Grid output
P77/G0	G	FTD G1	FTD Grid output
P80/S0	S	FTD S1	FTD Segment output
P81/S1	S	FTD S2	FTD Segment output
P82/S2	S	FTD S3	FTD Segment output
P83/S3	S	FTD S4	FTD Segment output
P84/S4	S	FTD S5	FTD Segment output
P85/S5	S	FTD S6	FTD Segment output
P86/S6	S	FTD S7	FTD Segment output
P87/S7	S	FTD S8	FTD Segment output
P90/S8	S	FTD S9	FTD Segment output
P91/S9	S	FTD S10	FTD Segment output
P92/S10	S	FTD S11	FTD Segment output
P93/S11	S	FTD S12	FTD Segment output
P94/S12	S	FTD S13	FTD Segment output
P95/S13	S	FTD S14	FTD Segment output
P96/S14	S	FTD S15	FTD Segment output
P95/S15	S	FTD S16	FTD Segment output
Vkk			FTD Power Supply
'40/KEY0	KEY	Key in 0	Key Matrix input
'41/KEY1	KEY	Key in 1	Key Matrix input
'42/KEY2	KEY	Key in 2	Key Matrix input
'43/KEY3	KEY	Key in 3	Key Matrix input
'44/KEY4	KEY	Key in 4	Key Matrix input
'45/KEY5	KEY	Key in 5	Key Matrix input
'46/KEY6	KEY	Key in 6	Key Matrix input
'47/KEY7	KEY	Key in 7	Key Matrix input
'50/CIN3	O	RC-5 out	RC-5 output
'51/CIN2	O		
'52/CIN1	O		
'53/CIN0	CIN	S.STRENGTH	Signal Strength(A/D)
P54	I	TUNER SD	SD input
55/PWM	I	TUNER DO	DO input

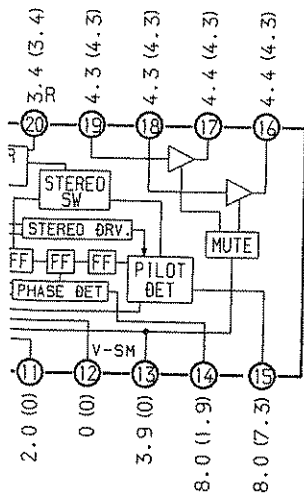
|| UP,USE:Using Port type,act.:active level,OPT:Option
 ort setting when Reset start,STOP:port setting when STOP mode

Q201:LA1837

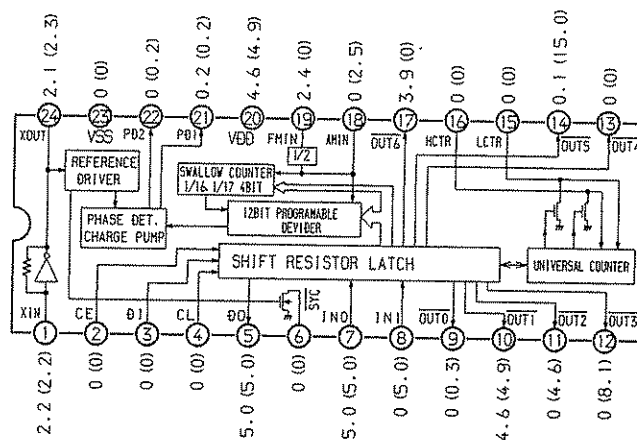


Q691:SUB CPU (DECODING) μ PD78018FGC

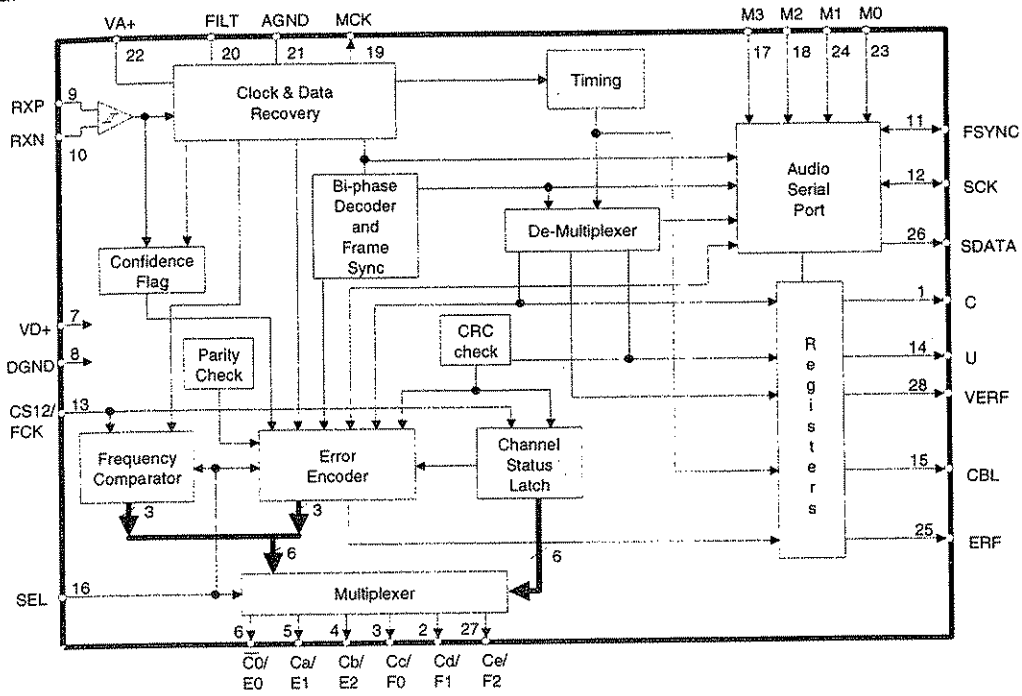
No.	Port name	I/O	Description	No.	Port name	I/O	Description
1	CO_E0	I	DIR Status	33	_IC	O	Reset to DSP1
2	Ca_E1	I	DIR Status	34	RSTDIR	O	DIR Ch. Status Select
3	Cb_E2	I	DIR Status	35	RSTC	I	I/F Master CPU
4	Cc_F0	I	DIR Status	36	RC_5	I	RC-5 input (option) (Not Use)
5	Cd_F1	I	DIR Status	37	n.c.	I	Pull up
6	Ce_F2	I	DIR Status	38	ERF	I	SPDIF Error status
7	n.c.	I		39	_RFDET	I	RF input status (Not Use)
8	OVFB	I	Over load to ADC (Not Use)	40	+5V	-	+5v
9	GND	-	GND	41		-	10MHz
10	ISEL1	O	SPDIF input select	42		-	10MHz
11	ISEL2	O	SPDIF input select	43		-	to GND
12	CSEL1	O	SPDIF output select (Not Use)	44	n.c.	-	Open
13	CSEL2	O	SPDIF output select (Not Use)	45	n.c.	-	Vdd
14	KILLC	O	Kill SPDIF output (Not Use)	46	GND	-	GND
15	ATRF	O	Auto RF select (Not Use)	47	KEY1	ANI	Optional 8 key input
16	RFSEL	O	RF select (Not Use)	48	KEY2	ANI	Optional 8 key input
17	DIG_ANA	O	Digital/ Analog select	49	KEY3	ANI	Optional 8 key input
18	SMUTE	O	Soft mute by DAC (Not Use)	50	KEY4	ANI	Optional 8 key input
19	_UMUTE	O	Hard mute by Tr	51	SWITCH1	I	Link Host or Stand alone
20	FS96	O	Fs=96k set	52	SWITCH2	I	THX (Not Use)
21	BYPASS	O	Bypass DSP	53	SWITCH3	I	CODEC or ADV (Not Use)
22	_CS_DSP1	O	I/F DSP1 (main DSP)	54	PDAD	O	ADC Power Down (Not Use)
23	_CSB_DSP1	O	I/F DSP1 (sub DSP)	55	+5v	-	+5v
24	GND	-	GND	56	+5v	-	+5v
25	_SS_DSP2	O	I/F DSP2 (Not Use)	57	SI1	I	I/F Master CPU
26	C_EF_DIR	O	DIR Status Out Select	58	SO1	O	I/F Master CPU
27	_RSTRF	O	Reset to PM4007 (Not Use)	59	SCK1	I	I/F Master CPU
28	ADCAL	O	Cal. to ADC	60	_ACK	O	I/F Master CPU
29	_RSTDSP2	O	Reset to DSP2 (Not Use)	61	_REQ	I	I/F Master CPU
30	_ATT3	O	Attenuate to Fs=96k (Not Use)	62	SI0	I	I/F DSP (YSS912)
31	_RSTDA1	O	Reset to DAC (Not Use)	63	SO0	O	I/F DSP (YSS912)
32	_RSTDA2	O	Reset to DAC (Not Use)	64	SCK0	O	I/F DSP (YSS912)



Q501:LC7218



QR01:CS8314

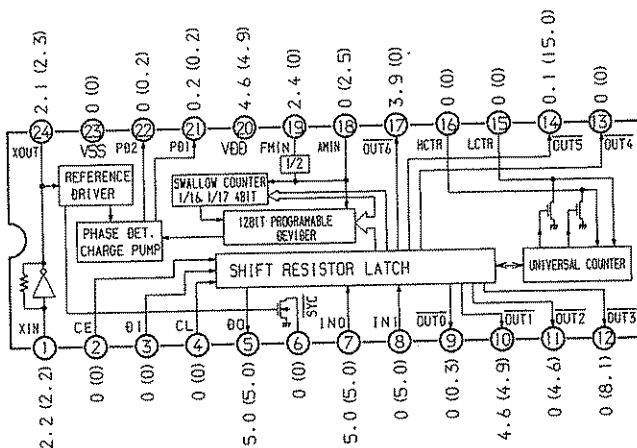
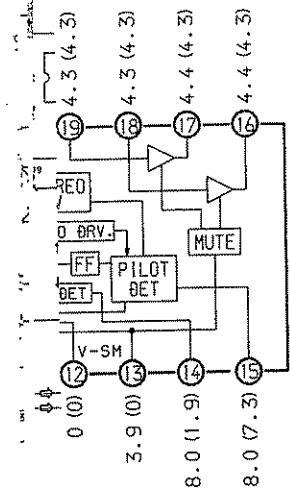


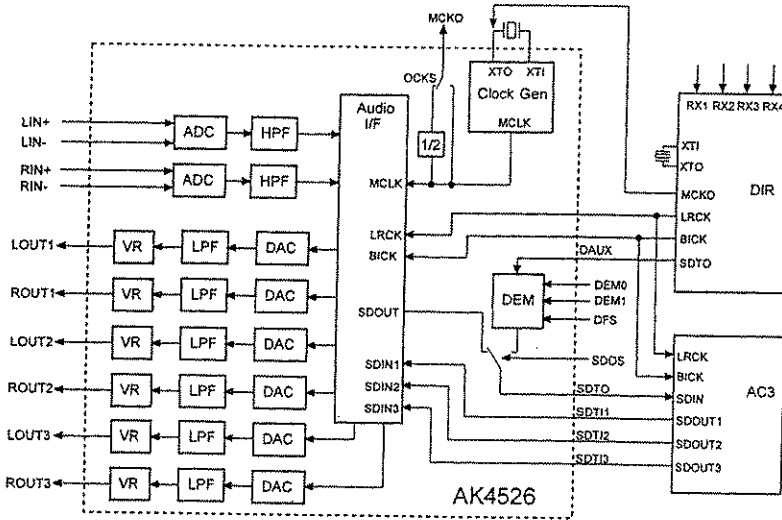
		C	1	•	28	VERF	
CS d/FREQ REPORT 1		Cd/F1	2		27	Ce/F2	CS e/FREQ REPORT 2
CS c/FREQ REPORT 0		Cc/F0	3		26	SDATA	SERIAL OUTPUT DATA
CS b/ERROR CONDITION 2		Cb/E2	4		25	ERF	ERROR FLAG
CS a/ERROR CONDITION 1		Ca/E1	5		24	M1	SERIAL PORT MODE SELECT 1
CS 0/ERROR CONDITION 0		C0/E0	6		23	M0	SERIAL PORT MODE SELECT 0
DIGITAL POWER		VD+	7		22	VA+	ANALOG POWER
DIGITAL GROUND		DGND	8		21	AGND	ANALOG GROUND
RECEIVE POSITIVE		RXP	9		20	FILT	FILTER
RECEIVE NEGATIVE		RXN	10		19	MCK	MASTER CLOCK
FRAME SYNC		FSYNC	11		18	M2	SERIAL PORT MODE SELECT 2
SERIAL DATA CLOCK		SCK	12		17	M3	SERIAL PORT MODE SELECT 3
CHANNEL SELECT/FCLOCK		CS12/FCK	13		16	SEL	FREQ/CS SELECT
		U	14		15	CBL	

Q691:SUB CPU (DECODING) μ PD78018FGC

No.	Port name	I/O	Description	No.	Port name	I/O	Description
1	C0_E0	I	DIR Status	33	_IC	O	Reset to DSP1
2	Ca_E1	I	DIR Status	34	RSTDIR	O	DIR Ch. Status Select
3	Cb_E2	I	DIR Status	35	RSTC	I	I/F Master CPU
4	Cc_F0	I	DIR Status	36	RC_5	I	RC-5 input (option) (Not Use)
5	Cd_F1	I	DIR Status	37	n.c.	I	Pull up
6	Ce_F2	I	DIR Status	38	ERF	I	SPDIF Error status
7	n.c.	I		39	_RFDET	I	RF input status (Not Use)
8	OVPB	I	Over load to ADC (Not Use)	40	+5V	-	+5v
9	GND	-	GND	41		-	10MHz
10	ISEL1	O	SPDIF input select	42		-	10MHz
11	ISEL2	O	SPDIF input select	43	-	-	to GND
12	CSEL1	O	SPDIF output select (Not Use)	44	n.c.	-	Open
13	CSEL2	O	SPDIF output select (Not Use)	45	n.c.	-	Vdd
14	KILLC	O	Kill SPDIF output (Not Use)	46	GND	-	GND
15	ATRF	O	Auto RF select (Not Use)	47	KEY1	ANI	Optional 8 key input
16	RFSEL	O	RF select (Not Use)	48	KEY2	ANI	Optional 8 key input
17	DIG_ANA	O	Digital/ Analog select	49	KEY3	ANI	Optional 8 key input
18	SMUTE	O	Soft mute by DAC (Not Use)	50	KEY4	ANI	Optional 8 key input
19	_UMUTE	O	Hard mute by Tr.	51	SWITCH1	I	Link Host or Stand alone
20	FS96	O	Fs=96k set	52	SWITCH2	I	THX (Not Use)
21	BYPASS	O	Bypass DSP	53	SWITCH3	I	CODEC or ADV (Not Use)
22	_CS_DSP1	O	I/F DSP1 (main DSP)	54	PDAD	O	ADC Power Down (Not Use)
23	_CSB_DSP1	O	I/F DSP1 (sub DSP)	55	+5v	-	+5v
24	GND	-	GND	56	+5v	-	+5v
25	_SS_DSP2	O	I/F DSP2 (Not Use)	57	S11	I	I/F Master CPU
26	C_EF_DIR	O	DIR Status Out Select	58	SO1	O	I/F Master CPU
27	_RSTRF	O	Reset to PM4007 (Not Use)	59	SCK1	I	I/F Master CPU
28	ADCAL	O	Cal. to ADC	60	_ACK	O	I/F Master CPU
29	_RSTDSP2	O	Reset to DSP2 (Not Use)	61	_REQ	I	I/F Master CPU
30	_ATT3	O	Attenuate to Fs=96k (Not Use)	62	S10	I	I/F DSP (YSS912)
31	_RSTDA1	O	Reset to DAC (Not Use)	63	SO0	O	I/F DSP (YSS912)
32	RSTDA2	O	Reset to DAC (Not Use)	64	SCK0	O	I/F DSP (YSS912)

Q501:LC7218



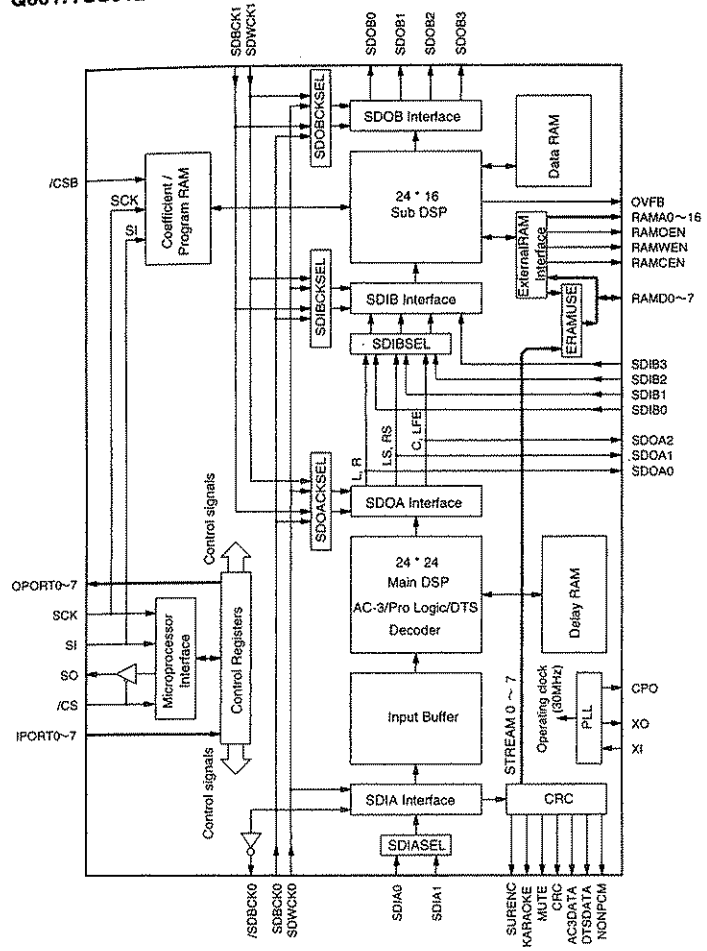


No.	Pin Name	I/O	Function
1	SDOS	I	SDTO Source Select Pin L: Internal ADC output, "H": DAUX input Ored with serial control register if P/S="L".
2	OCKS	I	MCKO Clock Frequency Select Pin L: MCLK, "H" MCLK12 Ored with serial control register if P/S "L"
3	M/S	I	Audio Data Master/Slave Mode Select Pin L: Slave mode, "H": Master mode
4	BICK	I/O	Audio Serial Data Clock Pin
5	LRCK	I/O	Input/Output Channel Clock Pin
6	SDTI1	I	DAC1 Audio Serial Data Input Pin
7	SDTI2	I	DAC2 Audio Serial Data Input Pin
8	SDTI3	I	DAC3 Audio Serial Data Input Pin
9	SDTO	O	Audio Serial Data Output Pin
10	DAUX	I	AUX Audio Serial Data Input Pin
11	DFS	I	Double Speed Sampling Mode Pin "L": Normal Speed, "H": Double Speed, the ADC is powered down. Ored with serial control register if P/S="L".
12	DEM1	I	De-emphasis Pin Ored with serial control register if P/S="L"
13	DEM0	I	De-emphasis Pin Ored with serial control register if P/S="L"
14	MCKO	O	Master Clock Output Pin
15	DVDD	I	Digital Power Supply Pin
16	DVSS	I	Digital Ground Pin
17	PD	I	Power-Down & Reset Pin When "L", the AK4526 is powered-down and the control registers are reset to default state. If the state of P/S, M/S, CAD0-1 changes, then the AK4526 must be reset by PD.
18	XTS	I	X'tal oscillator Select/Test Mode Pin H: X'tal Oscillator selected L: External clock source selected
19	ICKS1	I	Input Clock Select 1 Pin
20	ICKS0	I	Input Clock Select 0 Pin
21	CAD1	I	Chip Address Pin Used during the serial control mode
22	CAD0	I	Chip Address Pin Used during the serial control mode.

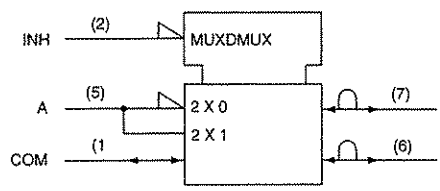
No.	Pin Name	I/O	Function
23	LOUT3	O	Lch #3 analog output pin
24	ROUT3	O	Rch #3 analog output pin
25	LOUT2	O	Lch #2 analog output pin
26	ROUT2	O	Rch #2 analog output pin
27	LOUT1	O	Lch #1 analog output pin
28	ROUT1	O	Rch #1 analog output pin
29	LIN-	I	Lch Analog Negative Input Pin
30	LIN+	I	Lch Analog Positive Input pin
31	RIN-	I	Rch Analog Negative Input Pin
32	RIN+	I	Rch Analog Positive Input pin
33	VREFL	I	Negative Voltage Reference Input Pin, AVSS
34	VCOM	O	Common Voltage Output Pin, AVDD/2 Large external capacitor is used to reduce power-supply noise
35	VREPH	I	Positive Voltage Reference Input Pin, AVDD
36	AVDD	I	Analog Power Supply Pin
37	AVSS	I	Analog Ground pin
38	XTI	I	X'tal Input Pin
39	XTO	O	X'tal Output Pin if XTS="H"
40	MCKI	I	External Master Clock Input Pin if XTS="L"
40	P/S	I	Parallel Serial Select Pin L: Serial control mode, "H": Parallel control mode
41	DIP0	I	Audio Data Interface Format Pin in parallel mode
41	CS	I	Chip Select Pin in serial mode
42	DIF1	I	Audio Data Interface Format Pin in parallel mode
42	CCLK	I	Control Data Clock Pin in serial mode
43	LOOP0	I	Loop-back Mode Pin in parallel mode
43	LOOP1	I	Loop-back Mode Pin in parallel mode
43	CDTI	I	Control Data Input Pin in serial mode
44	LOOP1	I	Loop-back Mode Pin in parallel mode
44	LOOP1	I	Loop-back Mode Pin in parallel mode
44	CDTO	O	Control Data Output Pin in serial mode

If pins XTS, ICKS0, ICKS1, PD, P/S, DFS, DEM0, DEM1, CAD0, CAD1, M/S, OCKS, SDOS are not driven then XTS, ICKS0, ICKS1, CAD0, CAD1 must be tied to either AVSS or AVDD, PD, P/S, DFS, DEM0, DEM1, M/S, OCKS, SDOS must be tied to either DVSS or DVDD

Q601:YSS912



Q602:TC7W53FU



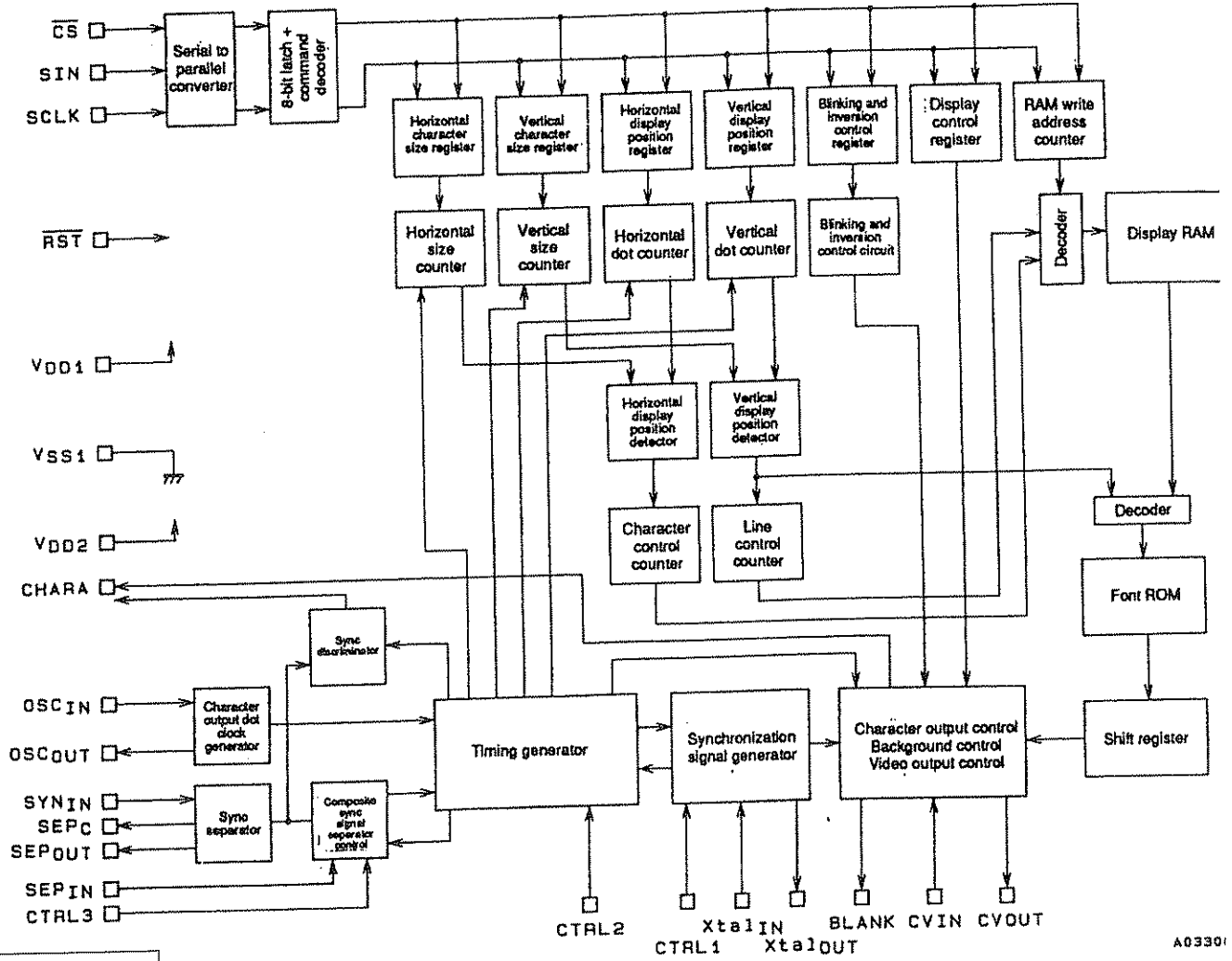
CONTROL INPUT		ON CHANNEL
INH	A	
L	L	ch 0
L	H	ch 1
H	x	NONE

x : Don't care

No.	NAME	I/O	FUNCTION
1	VDD1	-	+5V power supply (for I/Os)
2	RAMCEN	O	External SRAM Interface /CE
3	RAMA16	O	External SRAM Interface address 16
4	RAMA15	O	External SRAM Interface address 15
5	SDIB0	I+	PCM input 0 to Sub DSP
6	SDIB1	I+	PCM input 1 to Sub DSP
7	SDIB2	I+	PCM input 2 to Sub DSP
8	XI	I	Crystal oscillator connection or input external clock (12.288 MHz)
9	XO	O	Crystal oscillator connection
10	VSS	-	Ground
11	AVDD	-	+3.3V power supply (for PLL circuit)
12	SDIB3	I+	PCM input 3 to Sub DSP
13	TEST		Test terminal (to be open in normal use)
14	TEST		Test terminal (to be open in normal use)
15	OVFB	O	Detection of overflow at Sub DSP
16	DTSDATA	O	DTS data detection (Refer to "Status Register".)
17	AC3DATA	O	AC-3 data detection (Refer to "Status Register".)
18	SDOB3	O	PCM output from Sub DSP
19	CPO	A	Output terminal for PLL, to be connected to ground through the external analog filter circuit. (Refer to "External Circuit for PLL".)
20	AVSS	-	Ground (for PLL circuit)
21	VDD2	-	+3.3V power supply (for core logic)
22	SDOA2	O	PCM output from Main DSP (O, LFE)
23	SDOA1	O	PCM output from Main DSP (LS, RS)
24	SDOA0	O	PCM output from Main DSP (L, R)
25	RAMA14	O	External SRAM Interface address 14
26	RAMA13	O	External SRAM Interface address 13
27	RAMA12	O	External SRAM Interface address 12
28	RAMA11	O	External SRAM Interface address 11
29	RAMA10	O	External SRAM Interface address 10
30	VSS	-	Ground
31	VDD1	-	+5V power supply (for I/Os)
32	OPORT0	O	Output port for general purpose. (Refer to "OPORT Register")
33	OPORT1	O	Output port for general purpose. (Refer to "OPORT Register")
34	OPORT2	O	Output port for general purpose. (Refer to "OPORT Register")
35	OPORT3	O	Output port for general purpose. (Refer to "OPORT Register")
36	OPORT4	O	Output port for general purpose. (Refer to "OPORT Register")
37	OPORT5	O	Output port for general purpose. (Refer to "OPORT Register")
38	OPORT6	O	Output port for general purpose. (Refer to "OPORT Register")
39	OPORT7	O	Output port for general purpose. (Refer to "OPORT Register")
40	VSS	-	Ground
41	VDD2	-	+3.3V power supply (for core logic)
42	RAMA9	O	External SRAM interface address 9
43	RAMA8	O	External SRAM interface address 8
44	RAMA7	O	External SRAM interface address 7
45	SDOB2	O	PCM output from Sub DSP
46	SDOB1	O	PCM output from Sub DSP
47	SDOB0	O	PCM output from Sub DSP
48	SDBCK1	I+	Bit clock input for SDOA, SDIB, SDOB. (Refer to "SDOA, SDIB, SDOB Register")
49	SDWCK1	I+	Word clock input for SDOA, SDIB, SDOB. (Refer to "SDOA, SDIB, SDOB Register")
50	VSS	-	Ground

No.	NAME	I/O	FUNCTION
51	VDD2	-	+3.3V power supply (for core logic)
52	NONPCM	O	Detection of non PCM data. (Refer to "Status Register")
53	CRC	O	Detection of AC-3 CRC error. (Refer to "Status Register")
54	MUTE	O	Detection of auto-mute. (Refer to "Status Register")
55	KARAOKE	O	Detection of AC-3 karaoke data. (Refer to "Status Register")
56	SURENC	O	Detection of AC-3 2/0 mode Dolby surround encoded input (Refer to "Status Register")
57	/SDBCK0	O	Inverted SDBCK0 clock output (refer to "Block diagram")
58	RAMA6	O	External SRAM interface address 6
59	RAMA5	O	External SRAM interface address 5
60	VSS	-	Ground
61	RAMA4	O	External SRAM interface address 4
62	/IC	Is	Initial clear
63	TEST		Test terminal (to be open in normal use)
64	RAMA3	O	External SRAM interface address 3
65	/CSB	Is+	Sub DSP Chip select
66	/CS	Is	Microprocessor interface Chip select
67	SO	OI	Microprocessor interface Serial data output
68	SI	Is	Microprocessor interface/Sub DSP Serial data input
69	SCK	Is	Microprocessor interface/Sub DSP clock input
70	RAMA2	O	External SRAM interface address 2
71	VDD1	-	+5V power supply (for I/Os)
72	RAMD0	I+/O	External SRAM interface data (STREAM 0 output when External SRAM is not)
73	RAMD1	I+/O	External SRAM interface data (STREAM 1 output when External SRAM is not)
74	RAMD2	I+/O	External SRAM interface data (STREAM 2 output when External SRAM is not)
75	RAMD3	I+/O	External SRAM interface data (STREAM 3 output when External SRAM is not)
76	RAMD4	I+/O	External SRAM interface data (STREAM 4 output when External SRAM is not)
77	RAMD5	I+/O	External SRAM interface data (STREAM 5 output when External SRAM is not)
78	RAMD6	I+/O	External SRAM interface data (STREAM 6 output when External SRAM is not)
79	RAMD7	I+/O	External SRAM interface data (STREAM 7 output when External SRAM is not)
80	VSS	-	Ground
81	VDD2	-	+3.3V power supply (for core logic)
82	SDWCK0	I	Word clock input for SDIA, SDOA, SDIB, SDOB (Refer to "SDIA, SDOA, SDIB, SDOB Register")
83	SDBCK0	I	Bit clock input for SDIA SDOA SDIB SDOB (Refer to "SDIA, SDOA, SDIB, SDOB Register")
84	SDIA0	I	AC-3/DTS bitstream (or PCM) data input for Main DSP (Refer to "SDIA Register")
85	SDIA1	I	AC-3/DTS bitstream (or PCM) data input for Main DSP (Refer to "SDIA Register")
86	RAMA1	O	External SRAM Interface address 1
87	RAMA0	O	External SRAM Interface address 0
88	RAMWEN	O	External SRAM interface /WE
89	RAMOEN	O	External SRAM interface /OE
90	VSS	-	Ground
91	VDD2	-	+3.3V power supply (for core logic)
92	IPORT7	I+	Input port for general purpose (Refer to "IPORT Register")
93	IPORT6	I+	Input port for general purpose (Refer to "IPORT Register")
94	IPORT5	I+	Input port for general purpose (Refer to "IPORT Register")
95	IPORT4	I+	Input port for general purpose (Refer to "IPORT Register")
96	IPORT3	I+	Input port for general purpose (Refer to "IPORT Register")
97	IPORT2	I+	Input port for general purpose (Refer to "IPORT Register")
98	IPORT1	I+	Input port for general purpose (Refer to "IPORT Register")
99	IPORT0	I+	Input port for general purpose (Refer to "IPORT Register")
100	VSS	-	Ground

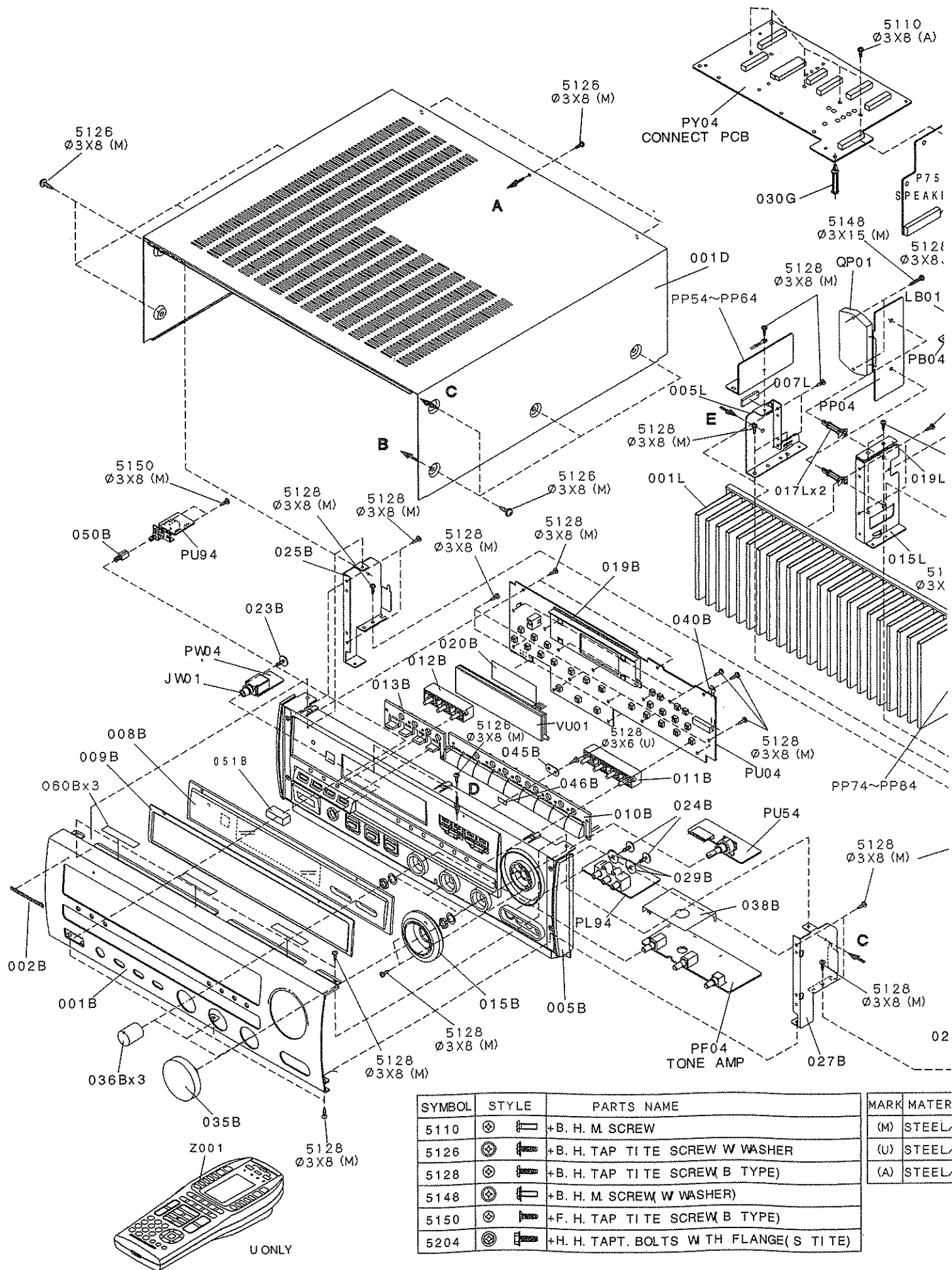
QL21,QL74:LC74781



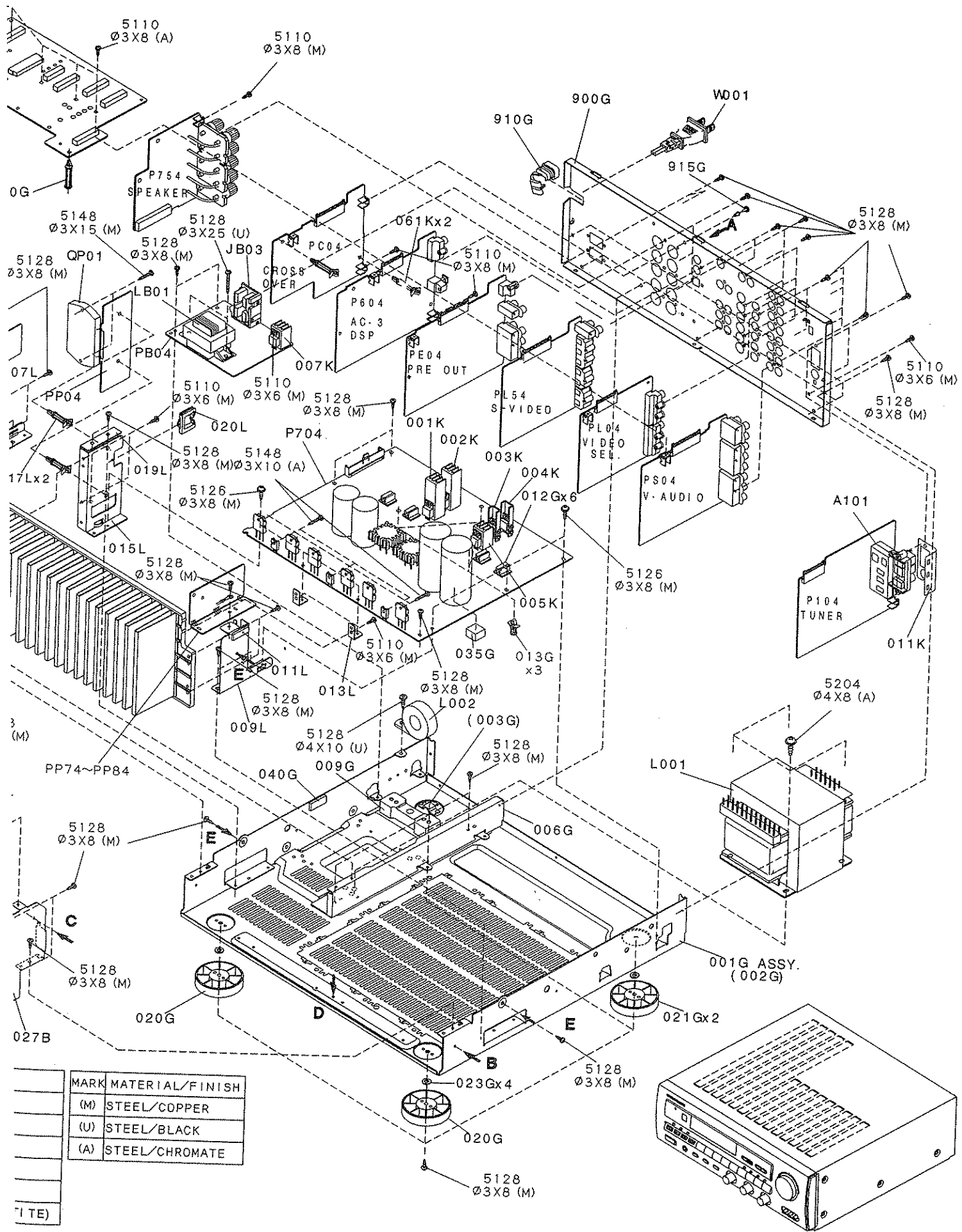
A03301

ic)
 er to * Status Register*)
 refer to * Status Register*)
 * * Status Register*)
 (Refer to * Status Register*)
 y surround encoded input (Refer to * Status Register*)
 refer to * Block diagram*)
 s 6
 s 5
 s 4
 (not use)
 s 3
 select
 Data output
 3P Serial data input
 3P clock input
 s 2
 STREAM 0 output when External SRAM is not in use)
 STREAM 1 output when External SRAM is not in use)
 STREAM 2 output when External SRAM is not in use)
 STREAM 3 output when External SRAM is not in use)
 STREAM 4 output when External SRAM is not in use)
 STREAM 5 output when External SRAM is not in use)
 STREAM 6 output when External SRAM is not in use)
 STREAM 7 output when External SRAM is not in use)
 ic)
 IA, SDIB, SDOB (Refer to * SDIA, SDOA, SDIB, SDOB Register*)
 IDIB SDOB (Refer to * SDIA, SDOA, SDIB, SDOB Register*)
 ata input for Main DSP (Refer to * SDIA Register*)
 ata input for Main DSP (Refer to * SDIA Register*)
 ss 1
 ss 0
 gic)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)
 Refer to * IPORT Register*)

VSS1	1	24	VDD1
XtalIN	2	23	RST
XtalOUT	3	22	CTRL3
CTRL1	4	21	CTRL2
BLANK	5	20	SEPIN
OSCIN	6	19	SEPC
OSCOUT	7	18	SEPC
CHARA	8	17	SYNIN
CS	9	16	VDD1
SCLK	10	15	CVIN
SIN	11	14	NC
VDD2	12	13	CVOUT



SYMBOL	STYLE	PARTS NAME	MARK	MATER
5110		+B. H. M. SCREW	(M)	STEEL
5126		+B. H. TAP TITE SCREW W WASHER	(U)	STEEL
5128		+B. H. TAP TITE SCREW(B TYPE)	(A)	STEEL
5148		+B. H. M. SCREW(W WASHER)		
5150		+F. H. TAP TITE SCREW(B TYPE)		
5204		+H. H. TAPT. BOLTS WITH FLANGE(S TITE)		



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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B	UBL		FRONT PANEL, BLK	309J248010
002B	UBL	4822 459 11172	BADGE, MARANTZ BLK	185J251010
005B	UBL		CHASSIS, FRONT BLK	261J105040
008B	UBL		WINDOW	261J158060
009B	UBL		ESCUTCHEON, WINDOW BLK	261J063020
010B	UBL		BUTTON, FUNCTION BLK	261J270060
011B	UBL		BUTTON, MEMO HINGE BLK	261J270050
012B	UBL	4822 410 10641	BUTTON, OSD HINGE BLK	261J270030
013B	UBL	4822 410 10642	BUTTON, MODE HINGE BLK	261J270040
015B	UBL	4822 454 13137	ESCUTCHEON, VOL. BLK	261J063010
019B		4822 256 92097	HOLDER, FL	183J271020
029B			WASHER	261J012010
035B	UBL	4822 410 10643	KNOB, MAIN VOL BLK	261J154010
036B	UBL	4822 413 41589	KNOB, TONE VOL BLK	090J154010
038B			SHIELD, TONE VOL.	261J109010
050B		4822 404 21012	JOINT, POWER BUTTON	025J125010
051B	UBL	4822 410 62744	BUTTON, POWER SW	285K270010
060B			SHEET, FRONT PANEL UP	173H107010
001D	UBL		LID, TOP COVER BLK	264J257110
020G		4822 462 42045	LEG, GOLD FRONT USE	183J057010
021G		4822 462 42048	LEG, GOLD REAR USE	183J057110
▲ L001	U		MAINS TRANSFORMER, 120V	TS60514010
L002			FERRITE CORE, TRCN-28-16-13	FC50280020
▲ W001	U		MAINS CORD, UL/CSA SPT-2 NI P	YC02000UBL
			PACKING	
001T	U		USER GUIDE	309J851250
Z001	U		REMOTE COMMANDER RC-18SR	ZK300J0010
			NOT STANDARD SPARE PARTS	
001S	UBL		PACKING CASE	309J801010
002S			CUSHION, RIGHT	261J809010
003S			CUSHION, LEFT	261J809020
Z003	U	4822 303 30314	EXT. ANTENNA, FM	ZA02000070
Z004		4822 157 63083	ANT COIL, LA-700HB LOOP	LA00055010
Z005	U		PLUG, ANT ADAPTOR YAE-21-0424	YP90000490

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3 (M)

REMARK

If these service programs are set, All user preset memories will be cleared.

1. Tracking point memory mode

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

When the product is POWER ON, press 3 buttons [**PRESET▲** + **PRESET▼** + **MEMO**] simultaneously over 3 seconds. FLD shows "**FACTORY**" for approx. 3 seconds. Frequencies to be memorized are as follows.

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

	SCAN STEP	P5	P6	P7	P8	P9 ~ P12
AM	10 kHz(for U)	600.0	1000.0	1400.0	520.0	←
	9 kHz	603.0	999.0	1404.0	531.0	←

How to stop the tracking point memory mode :

Press the **POWER** button. FLD shows "**DEFAULT**", then all memories are cleared. And the product will be STAND-BY status.

2. FLD segment check mode

This service program is available for all luminous segments by the following steps.

When the product is POWER ON, press 3 buttons [**TUNING▲** + **TUNING▼** + **MEMO**] simultaneously over 3 seconds. FLD shows "**SERVICE**" for approx. 3 seconds.

1. All segments light up for 5 seconds.
2. Each segment lights up step by step.
3. 1. and 2. will be repeated.

How to stop the FLD segment check mode :

Press 3 buttons [**TUNING▲** + **TUNING▼** + **MEMO**] simultaneously again or Press the **POWER** button.

3. Version of microprocessor (CPU)

This program is available to confirm the version of each CPU by the following steps.

QU01 : When the product is POWER ON, press 3 buttons [**TUNING▲** + **MEMO** + **CLEAR**] simultaneously.

FLD shows version of Program code (QU01:Main CPU) for 5 seconds.

Q691 : When the product is the tracking point memory mode (Refer to the above "1. Tracking point memory mode"), then press 2 buttons [**CLEAR** + **TUNING▼**] simultaneously.

FLD shows version of Program code (Q691:Sub CPU) for 5 seconds.

4. Frequency response for all channels outputs.

This program is available to confirm Cross Over circuit for SPK setup as follows.

Same signal is output from all channel, even though input is Digital or Analog.

Input signal should be L+R signal (L=R).

When the product is the tracking point memory mode (Refer to the above "1. Tracking point memory mode"), then press 2 buttons [**CLEAR** + **PRESET▲**] simultaneously.

FLD shows "**FILTER**"

The filter mode is changed by pressing 2 buttons [**CLEAR** + **PRESET▲**] simultaneously.

FLD shows "**FILTER1**" → "**FILTER2**" → "**FILTER3**" → "**FILTER1**" by pressing them.

Input signals are selectable (Digital or Analog Inputs).

Same signal will be output from all channels. (Except sub woofer)

(Notes : The signal is processed by P604 on this mode)

	SPK setup			
	Front L/R	Center	Surround L/R	Sub Woofer
FILTER1	SMALL 100Hz ~ 20kHz	SMALL 100Hz ~ 20kHz	SMALL 100Hz ~ 20kHz	ON 20Hz ~ 100Hz
FILTER2	LARGE 20Hz ~ 20kHz	LARGE 20Hz ~ 20kHz	LARGE 20Hz ~ 20kHz	ON 20Hz ~ 100Hz
FILTER3	LARGE 20Hz ~ 20kHz	LARGE 20Hz ~ 20kHz	SMALL 100Hz ~ 20kHz	OFF -

5. How to reset the product

When the product is POWER ON, press 3 buttons [**TUNING▲** + **CLEAR** + **MEMO**] simultaneously. FLD shows "DEFAULT", then all memories are cleared. And the product will be STAND-BY status.

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 the product 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

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. These adjustments are necessary when usable sense and frequency response are incorrect.

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

Note : This adjustment is related to the FM muting level adjustment. The FM muting level re-adjustment is necessary after this adjustment.

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

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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

This adjustment is necessary after AM auto stop adjustment.

6. FM STEREO Distortion Adjustment

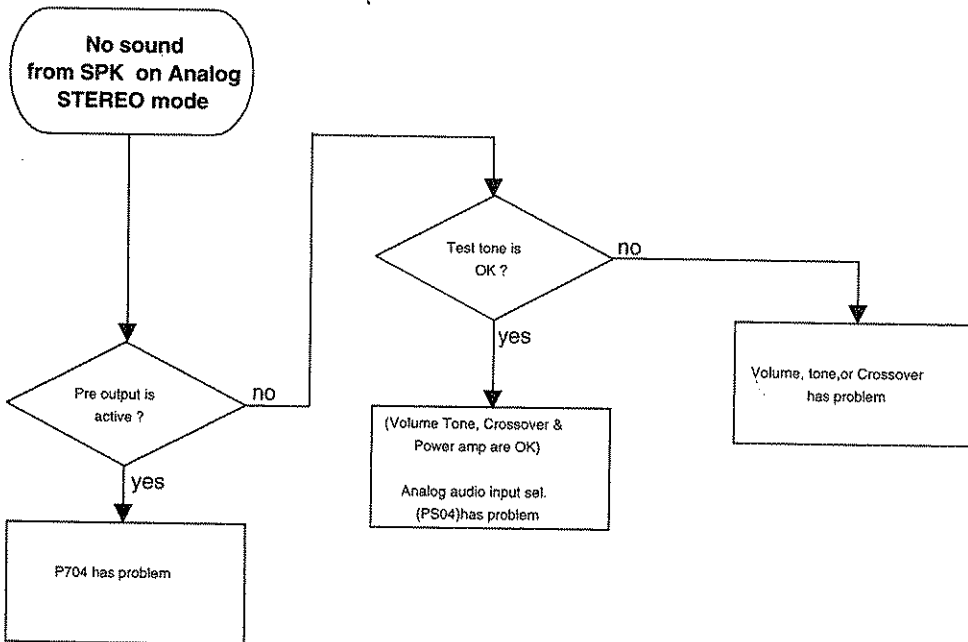
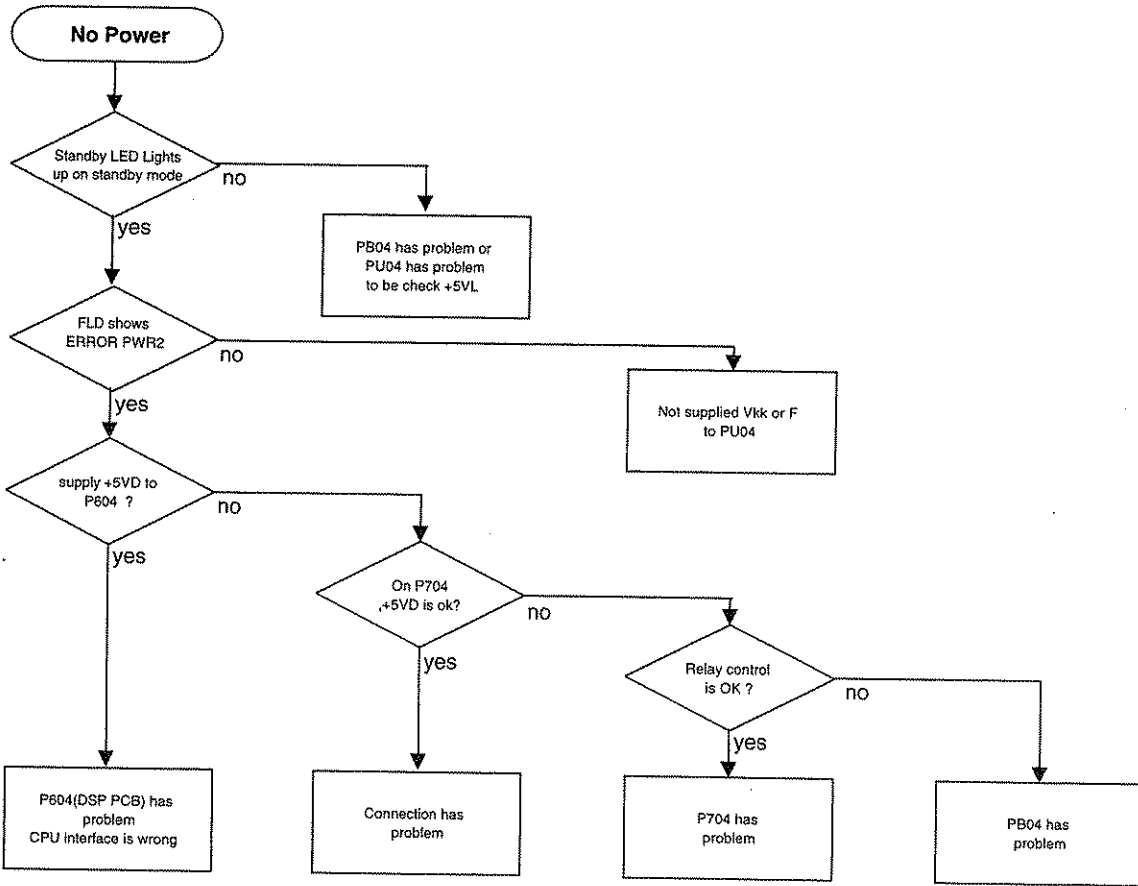
Adjust the **L channel** with the RF signal modulated only **L channel** first and confirm the **R channel** with the RF signal modulated only **R channel**.

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

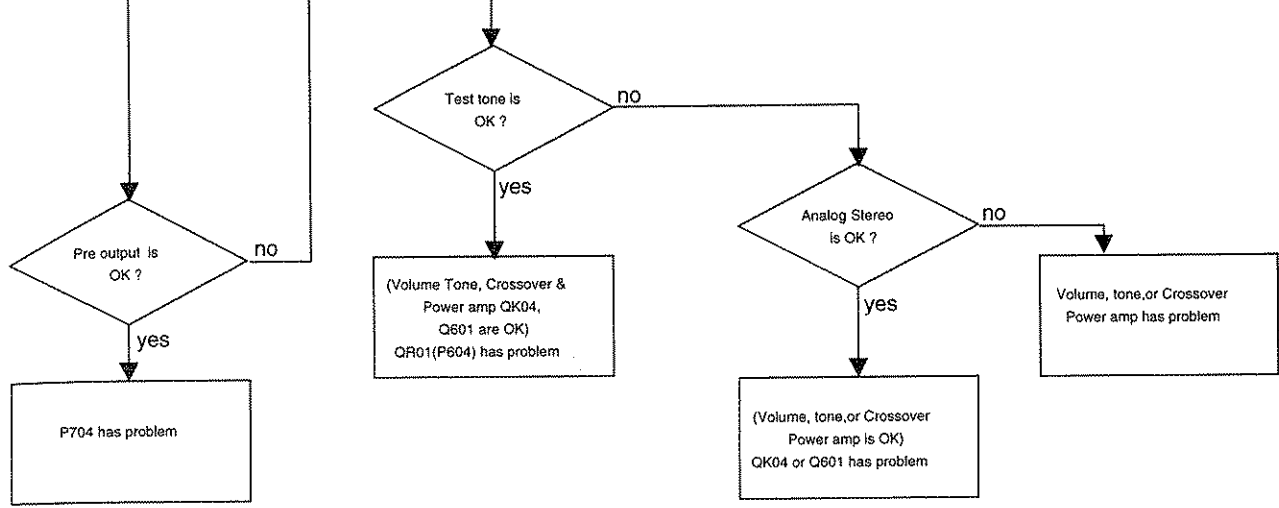
REMARK: Adjustment with R218 is not necessary when the distortion level is less than 0.5% with adjusting IF coil.

7. FM STEREO Separation Adjustment

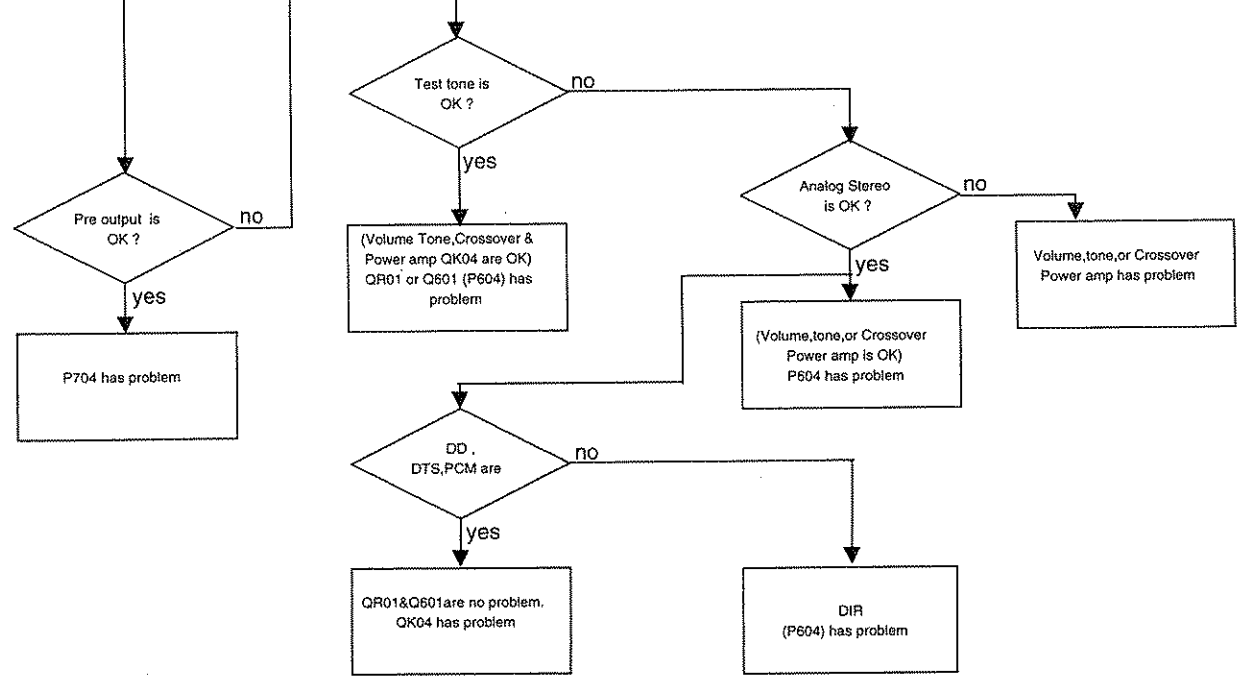
Step	Input Signal Source Connection	Signal Frequency	Source Signal Output Level and Modulation	Reception Frequency	Adjustment Point	Adjustment Value
1	Signal generator output to FM antenna terminal. (75 Ω)	98 MHz	same specification as FM STEREO distortion adjustment. Input only L channel.	98 MHz (P2)	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

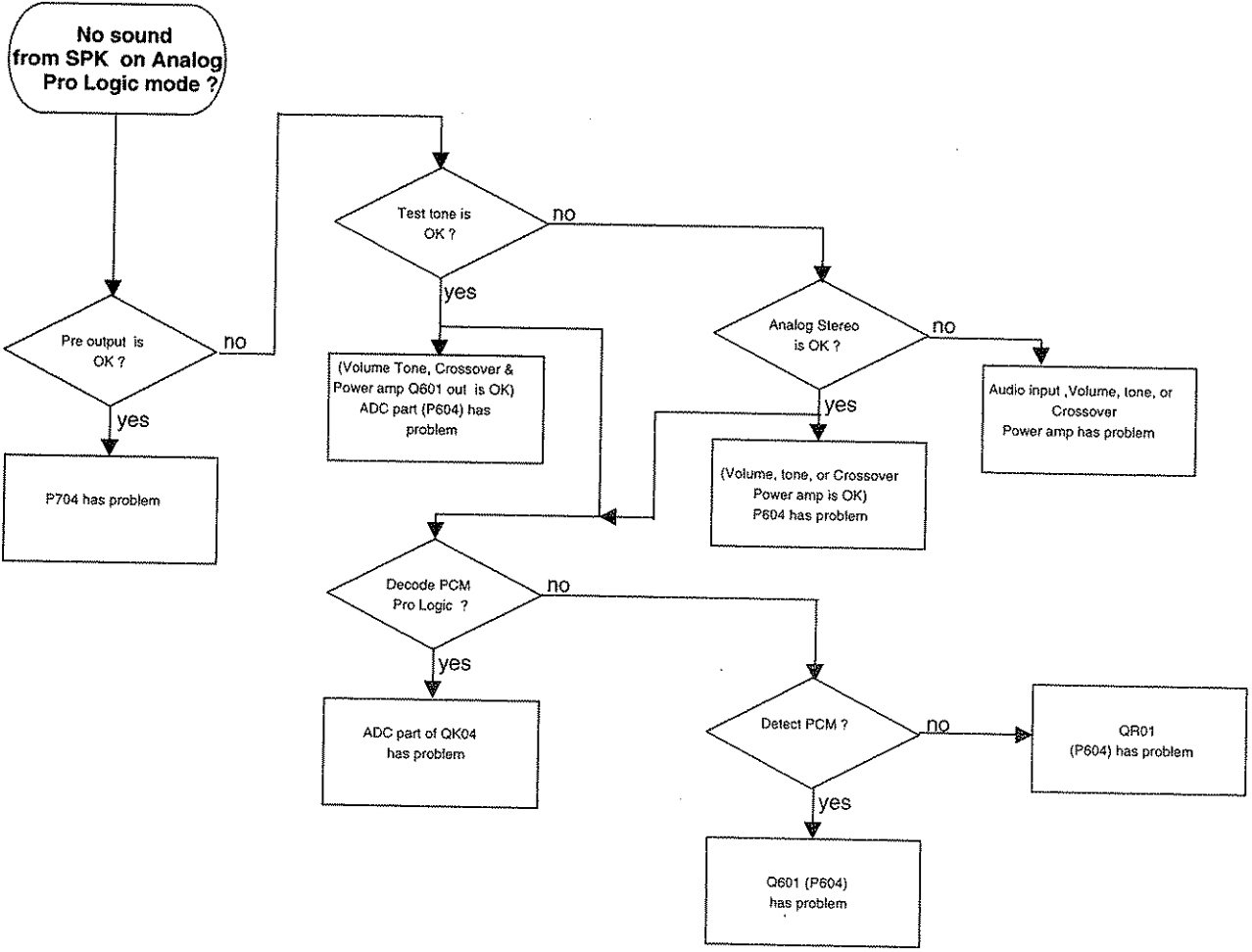


No sound from SPK on PCM STEREO(Digital In)



No sound from SPK on AC-3/DTS decode





12. TECHNICAL DESCRIPTION FOR DECODER

This product has a decoder for Dolby Digital (AC-3) and DTS (Digital Theater System) .
So Multi channel sound is reproduced by connecting with DVD player or LD player.
Also Dolby Pro Logic decode is available to analog audio and PCM digital audio.
Additionally, 96kHz PCM stereo audio playback is possible.
Decode circuit is consist of 4 ICs (DIR, DSP, CODEC, and CPU).

DOLBY DIGITAL (AC-3)

Dolby Digital delivers six totally separate (discrete) channels of sound. Like Dolby Surround Pro Logic, it includes Left, Center and Right channels across the front of the room. Dolby Surround Pro Logic provides a single limited-bandwidth (100 Hz to 7,000 Hz) surround channel which is typically played back in the home through two channels of amplification and two speakers. In comparison, Dolby Digital provides separate (discrete) left surround and right surround channels, for more precise localization of sounds and a more convincing, realistic ambience. And, with Dolby Digital, all five main channels are full range (3 Hz to 20,000 Hz). A subwoofer could be added to each channel, if desired.

The sixth channel, the Low Frequency Effects Channel, will, at times, contain additional bass information to maximize the impact of scenes such as explosions, crashes, etc. Because this channel has only a limited frequency response (3 Hz to 120 Hz), it is sometimes referred to as the ".1" channel. When added to the 5 full range channels, the Dolby Digital system is sometimes referred to as having "5.1" channels.

DTS

An amazing new technology for surround-sound entertainment, DTS Digital Surround is an encode/decode system that delivers six channels (5.1) of master-quality, 20-bit audio. In the encoding process, the DTS algorithm encrypts six channels of 20-bit digital audio information in the space previously allotted for only two channels of 16-bit linear PCM. Then during playback, the DTS decoder reconstructs the original six channels of 20-bit digital audio. Each of these six channels is audibly superior to the 16-bit linear PCM audio found on conventional compact discs.

DIR (Digital audio Interface Receiver)

This circuit extract synchronized clock signals and data from SPDIF signal input.
QR01 (CS8414) generates these signals, this chip supports 96kHz sample rate.

DSP (Digital Signal Processor for Dolby Digital/Pro Logic/DTS)

Q601 (YSS912) decode 6 channels audio from encoded data signal input.
Some effects are processed in addition to multi channel decode on HALL, MATRIX, and MOVIE mode.

Multi channel CODEC (2channel ADC & 6 channel DAC)

2channel ADC and 6channel DAC are in QK04 (AK4526).
6channel analog audio signals are covered from output data of DSP.
Digital signal is converted from analog audio input for Pro Logic or other effect mode.

SUB CPU (Q691: μ PD78018FGC)

This chip controls ICs in P604 and communicate with QU01.
Connect to QU01 with serial interface lines.

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

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			PB04-BACK-UP CIRCUIT BOARD	
			PB04-CAPACITORS	
CB07	U	4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CB08	U	4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
▲ CB09	U	4822 122 33276	CER. 0.01μF ±20%	DK17103840
			PB04-CAPACITORS (COMMON)	
			ELECTROLYTIC CAPACITOR ±20% : (CB01 CB02 CB03 CB05 CB06 CB10[U])	
			PB04-RESISTORS	
▲ RB01	U	4822 052 10479	47Ω ±5% 1/4W	GG05470140
▲ RB03	U	4822 053 10471	470Ω ±5% 1W	GA05471010
▲ RB07	U		2.2MΩ ±10% 1/2W	RC10225820
			PB04-RESISTORS (COMMON)	
			CARBON FILM FIXED RES. ±5% 1/6W : (RB04 RB05 RB08[U])	
			PB04-SEMICONDUCTORS	
▲ DB01	U		DIODE D2SBA20	HE20027290
DB03	U	4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DB04	U	4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DB05	U	4822 130 81729	ZENER DIODE MTZJ33D	HD33301000
DB06	U	4822 130 80273	ZENER DIODE RD8.2JB2 MTZJ8.2C	HD30821000
DB07	U	4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DB08	U	4822 130 82421	DIODE 1D3 1A 200V	HD20002710
▲ QB01	U	4822 209 31927	IC PQ05RR1 5V 1A	HC38905320
▲ QB02	U		TRS. 2SD2400A E 160V	HT424001E0
			PB04-MISCELLANEOUS	
▲ FB01	U		FUSE 8A 125V	FS10800540
▲ JB01	U	4822 256 30285	JACK FUSE CLIP 20MM	YJ08000170
▲ JB02	U	4822 256 30285	JACK FUSE CLIP 20MM	YJ08000170
▲ JB03	U		JACK 2P AC OUTLET	YJ04002040
▲ LB01	U		POWER TRANSF. BACK UP	TS14823230
▲ LB02	U	4822 280 80773	RELAY VS24MB-NR TV-8	LY10240240
			PC04-CROSSOVER CIRCUIT BOARD	
			PC04-CAPACITORS	
CC07		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC08		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC11		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC12		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC17				
}		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC22				
CC23		4822 122 33794	CER. 3300PF	DA17332110
CC24		4822 122 33794	CER. 3300pF	DA17332110
CC25				
}		4822 124 21894	ELECT 10UF 16V	EJ10601610
CC28				
CC29		4822 126 10362	CER. 22pF ±5%	DA15220110
CC30		4822 126 10362	CER. 22pF ±5%	DA15220110
CC31		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC32		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC35		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC36		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC37		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC38		4822 126 10362	CER. 22pF ±5%	DA15220110
CC39		4822 124 21894	ELECT 10μF 16V	EJ10601610

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CC40		4822 122 33792	CER. 10pF ±5%	DA15100120
CC41		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC43		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC45		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC74		4822 124 21894	ELECT 10μF 16V	EJ10601610
CC75		4822 124 21894	ELECT 10μF 16V	EJ10601610
CZ09		4822 126 10362	CER. 22pF ±5%	DA15220110
CZ10		4822 124 21894	ELECT 10μF 16V	EJ10601610
			PC04-CAPACITORS (COMMON)	
			PLASTIC FILM CAPACITOR ±5% 50V : CC01-CC06 CC13-CC16 CC33 CC34 CC42 CC44 CC46 CC47	
			PC04-RESISTORS (COMMON)	
			CARBON FILM FIXED RES. ±5% 1/6W : RC01-RC52 RC61-RC65 RC67 RC68 RZ11 RZ12 RZ13	
			PC04-SEMICONDUCTORS	
QC01		4822 209 73064	IC NJM2068DD	HC10053090
QC02		4822 209 73064	IC NJM2068DD	HC10053090
QC03		4822 209 83631	IC NJM4558DD	HC10008090
QC04		4822 209 83631	IC NJM4558DD	HC10008090
QC05		4822 209 73064	IC NJM2068DD	HC10053090
QC06		4822 209 73064	IC NJM2068DD	HC10053090
QC07		4822 209 83631	IC NJM4558DD	HC10008090
QC08		4822 209 83631	IC NJM4558DD	HC10008090
QC09		4822 209 83631	IC NJM4558DD	HC10008090
QC10		4822 209 16842	IC NJU7312L	HC10124090
QC11		4822 209 16149	IC NJU7311L	HC10123090
QZ02		4822 209 83631	IC NJM4558DD	HC10008090
			PE04-ELE VOL. CIRCUIT BOARD	
			PE04-CAPACITORS	
CE01				
}		4822 124 21894	ELECT 10μF 16V	EJ10601610
CE06				
CE07				
}		4822 124 22726	ELECT 4.7μF 35V	EJ47503510
CE30				
CE31				
}		4822 124 21894	ELECT 10μF 16V	EJ10601610
CE36				
CE37				
}		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CE44				
CE47		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CE48		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CE49		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CV88				
}		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CV91				
			PE04-CAPACITORS (COMMON)	
			HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CV80-CV85	
			PE04-CAPACITORS (COMMON)	
			ELECTROLYTIC CAPACITOR ±20% : CE45 CE46	

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R***			PE04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RE01-RE12 RE19-RE70 RE72-RE76 RE78-RE82 RV75-RV86 RV94 RV95		R***			PF04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RF01-RF11 RF13 RF14 RF15 RF17-RF24 RF29-RF32 RF45 RF46 RF81-RF84	
QE01		4822 209 73064	IC NJM2068DD	HC10053090	QF01		4822 209 70044	IC NJM2058D OP. AMP	HC10031090
QE02		4822 209 83631	IC NJM4558DD	HC10008090	QF02		4822 209 83631	IC NJM4558DD	HC10008090
QE03		4822 209 83631	IC NJM4558DD	HC10008090	QF03		4822 209 83631	IC NJM4558DD	HC10008090
QE04			IC LC7536	HC10383030					
QE05			IC LC7536	HC10383030					
QE06			IC LC7536	HC10383030					
QE07		4822 209 73064	IC NJM2068DD	HC10053090					
QE08		4822 209 83631	IC NJM4558DD	HC10008090	CL01				
QE09		4822 209 83631	IC NJM4558DD	HC10008090	CL08		4822 124 21894	ELECT 10µF 16V	EJ10601610
QE10		4822 209 73064	IC NJM2068DD	HC10053090	CL13		4822 124 21894	ELECT 10µF 16V	EJ10601610
QE11		4822 209 83631	IC NJM4558DD	HC10008090	CL14		4822 124 21894	ELECT 10µF 16V	EJ10601610
QE12		4822 209 83631	IC NJM4558DD	HC10008090	CL15		4822 122 30043	CER. 0.01µF +80%-20%50V	DK18103310
QV51					CL16		4822 124 21894	ELECT 10µF 16V	EJ10601610
QV56		4822 130 43818	TRS. 2SC2878 A B	HT328782A0	CL17		4822 122 30043	CER. 0.01µF +80%-20%50V	DK18103310
JV51		4822 265 10738	TERMINAL RCA 1L1P	YT02010770	CL22		4822 124 23053	ELECT 1µF 50V	EJ10505010
JV52		4822 267 41009	TERMINAL 2P RCA PIN JACK	YT02020890	CL23		4822 124 23053	ELECT 1µF /50V	EJ10505010
					CL24		4822 124 23053	ELECT 1µF 50V	EJ10505010
					CL25		4822 124 90353	ELECT 100µF ±20% 10V	OA10701020
					CL26		4822 122 40617	CER. 0.1µF +80 -20% 50V	DD38104010
					CL27		4822 126 11591	CER. 24pF ±5% 50V	DD15240300
					CL28		5322 122 32143	CER. 22pF ±5% 50V	DD15220300
					CL29		4822 124 90353	ELECT 100µF ±20% 10V	OA10701020
					CL30		4822 122 40617	CER. 0.1µF +80 -20% 50V	DD38104010
					CL35	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
					CL36	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
CF01		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620	C***			PL04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CL21	
CF02		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620				PL04-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : CL10 CL11 CL38 CL41	
CF03		4822 124 90352	ELECT 10µF ±20% 16V	OA10601620				PL04-RESISTORS 75Ω ±5% 1/6W 75Ω ±5% 1/6W	GD05750160 GD05750160
CF04		4822 124 23056	ELECT 47µF 16V	EJ47601610				PL04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RL01-RL08 RL13 RL15 RL21 RL23 RL27 RL30 RL34 RL35	
CF09		5322 122 32265	CER. 100pF ±5% 50V	DD15101300				PL04-SEMICONDUCTORS IC BA7625	HC10189210
CF10		5322 122 32265	CER. 100PF ±5% 50V	DD15101300	QL01			TRS. 2SA608SP 2SA1048	HT10001000
CF11		5322 122 32265	CER. 100pF ±5% 50V	DD15101300	QL03		4822 130 42715	2SA1309 2SA933S	
CF21		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620	QL04		4822 130 42715	TRS. 2SA608SP 2SA1048	HT10001000
CF22		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620	QL05		4822 130 41947	TRS. 2SC536SP 2SC2458	HT30001000
CF23		4822 124 41539	ELECT 47µF ±20% 16V	OA47601620	QL21			2SC3311 2SC1740S	
CF25		4822 124 23055	ELECT 22µF 16V	EJ22601610	QL22		4822 130 60588	IC LC74781 OSD	HC10377030
CF26		4822 124 23055	ELECT 22µF 16V	EJ22601610	QL24		4822 130 42715	DIG. TRS. DTC114ES UN4211	BA20001000
CF27		4822 124 23055	ELECT 22µF 16V	EJ22601610	QL25		4822 130 41947	TRS. 2SA608SP 2SA1048	HT10001000
CF28		4822 124 90358	ELECT 22µF ±20% 16V	OA22601620				2SA1309 2SA933S	
CF29	U	5322 122 32072	CER. 33pF ±5% 50V	DD15330300				2SC536SP 2SC2458	HT30001000
CF30	U	5322 122 32072	CER. 33pF ±5% 50V	DD15330300				2SC3311 2SC1740S	
CF31	U	4822 122 31205	CER. 47pF ±5% 50V	DD15470300				IC LC74781 OSD	HC10377030
CF32		4822 122 31205	CER. 47pF ±5% 50V	DD15470300				DIG. TRS. DTC114ES UN4211	BA20001000
CF40		4822 124 90354	ELECT 100µF ±20% 16V	OA10701620				TRS. 2SA608SP 2SA1048	HT10001000
CF41		4822 124 90354	ELECT 100µF ±20% 16V	OA10701620				2SA1309 2SA933S	
CF43								TRS. 2SC536SP 2SC2458	HT30001000
CF48		4822 122 40588	CER. 0.022µF ±20%	DA17223110				2SC3311 2SC1740S	
C***			PF04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CF05 CF06 CF07						
C***			PF04-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : CF13-CF20						
RF41			PF04-RESISTORS 100KΩ B x4 VAR.	RG01040150					
RF42			100KΩ B x4 VAR.	RG01040150					
RF43		4822 100 12007	100KΩ SPECIAL W VAR.	RK01040620					

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
QL26		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000
JL01			PL04-MISCELLANEOUS	
JL02		4822 265 10676	TERMINAL RCA 2PIN	YT02021440
			TERMINAL RCA 4PIN	YT02041130
LL21		4822 157 62922	CHOKO COIL 33μH	LC13333800
LL23		4822 242 73843	EMI FILTER DSS306-91-F-223Z	FM12223010
XL21		4822 242 80288	CRYSTAL 14.31818MHZ	JX14001260
			PL54-S-VIDEO/MULTI OUT CIRCUIT BOARD	
			PL54-CAPACITORS	
CG53		4822 122 40617	CER. 0.1μF+80 -20% 50V	DD38104010
CL51		4822 124 21894	ELECT 10μF 16V	EJ10601610
CL58				
CL60		4822 124 23055	ELECT 22μF 16V	EJ22601610
CL62		4822 124 23055	ELECT 22μF 16V	EJ22601610
CL63				
CL66		4822 124 21894	ELECT 10μF 16V	EJ10601610
CL67		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CL68		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CL69		4822 124 90353	ELECT 100μF ±20% 10V	OA10701020
CL70		4822 124 90353	ELECT 100μF ±20% 10V	OA10701020
CL74		4822 124 23053	ELECT 1μF 50V	EJ10505010
CL76		4822 124 90353	ELECT 100μF ±20% 10V	OA10701020
CL77		4822 122 40617	CER. 0.1μF+80 -20% 50V	DD38104010
CL78		4822 124 23053	ELECT 1μF 50V	EJ10505010
CL79		4822 124 23053	ELECT 1μF 50V	EJ10505010
CL80		4822 126 11591	CER. 24pF ±5% 50V	DD15240300
CL81		5322 122 32143	CER. 22pF ±5% 50V	DD15220300
CL82		4822 124 90353	ELECT 100μF ±20% 10V	OA10701020
CL83		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CL91		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CL92		4822 124 90353	ELECT 100μF ±20% 10V	OA10701020
CL93	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
CL94	U	5322 122 32143	CER. 22pF ±5% 50V	DD15220300
			PL54-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CG51 CG52 CL75	
			PL54-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : CL59 CL61	
			PL54-RESISTORS 220Ω ±5% 1/4W FUSE	NF02221140
			PL54-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : CL84 RG51-RG60 RG62 RG63 RL51-RL70 RL79 RL85 RL86 RL90 RL91 RL92 RL94	
			PL54-SEMICONDUCTORS DIODE 1SS176 MA165	HD20002000
			1SS254 30V 0.1A	
			DIODE 1SS176 MA165	HD20002000
			1SS254 30V 0.1A	
			DIODE 1SS176 MA165	HD20002000
			1SS254 30V 0.1A	

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
QG51		4822 130 61892	TRS. 2SD2144S U V	HT421442A0
QG54				
QG55			TRS. 2SC2120 O	HT321201A0
QL51			IC BA7625	HC10189210
QL52			IC BA7626	HC10190210
QL55		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000
QL56		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000
QL72		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000
QL73			IC NJM2264	HC10185090
QL74			IC LC74781 OSD	HC10377030
QL75		4822 130 60588	DIG.TRS.DTC114ES UN4211	BA20001000
QL77		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000
QL78		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000
			PL54-MISCELLANEOUS	
JG51		4822 290 81634	TERMINAL RCA 2L2P	YT02021200
JL51		4822 265 31302	TERMINAL 3P S-JACK	YT02030350
JL52		4822 265 31302	TERMINAL 3P S-JACK	YT02030350
LL71		4822 157 62922	CHOKO COIL LAL02TA330J 33μH	LC13333800
LL72		4822 242 73843	EMI FILTER,DSS306-91-F-223Z	FM12223010
XL71		4822 242 80288	CRYSTAL 14.31818MHZ	JX14001260
			PL94-AUX IN CIRCUIT BOARD	
			PL94-CAPACITORS	
CL91		4822 124 21894	ELECT 10μF 16V	EJ10601610
CL92		4822 124 23055	ELECT 22μF 16V	EJ22601610
CS91		4822 124 21894	ELECT 10μF 16V	EJ10601610
CS92		4822 124 21894	ELECT 10μF 16V	EJ10601610
CS93		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CS94		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CS95		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
			PL94-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CL97 CL98	
			PL94-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RL91 RL92 RS91 RS92	
			PL94-SEMICONDUCTOR IC NJM4558DD	HC10008090
			PL94-MISCELLANEOU TERMINAL RCA 3P	YT02030410
			PP04-SURROUND AMP CIRCUIT BOARD	
			PP04-CAPACITORS	
CP03		4822 124 41134	ELECT 10μF ±20% 63V	EQ10606390
CP04		4822 124 41134	ELECT 10μF ±20% 63V	EQ10606390
CP07		4822 122 32185	CER. 10pF 50V	DD11100300
CP08		4822 122 32185	CER. 10pF 50V	DD11100300
CP13		4822 124 23626	ELECT 100μF 63V	EA10706310
CP14		4822 124 41134	ELECT 10μF ±20% 63V	EA10606310
CP15		4822 124 23626	ELECT 100μF 63V	EA10706310
CP16		4822 124 41134	ELECT 10μF ±20% 63V	EA10606310

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CP17		4822 124 23055	ELECT 22μF 10V	EJ22601010				PS04-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : CS21 CS22	
C***			PP04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CP01 CP02					PS04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RG01 RG02 RG05-RG16 RG19 RS01-RS24 RS27-RS56	
C***			PP04-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : CP05 CP06					PS04-SEMICONDUCTORS	
C***			PP04-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : CP09-CP12		QG01		4822 209 32552	IC LC78211	HC10308030
			PP04-RESISTORS		QG02			IC LC7536 MULTI.	HC10383030
RP11		4822 113 80363	0.22Ω ±10% 3W	GO10222030	QG03		4822 209 83631	IC NJM4558DD	HC10008090
RP12		4822 113 80363	0.22Ω ±10% 3W	GO10222030	QG04		4822 209 83631	IC NJM4558DD	HC10008090
RP13		4822 052 10102	1kΩ ±5% 1/6W	GG05102160	QS01			IC NJM4558DD	HC10008090
RP14		4822 052 10102	1kΩ ±5% 1/6W	GG05102160	QS06		4822 209 83631	IC NJM4558DD	HC10008090
RP21		4822 053 10109	10Ω ±5% 1W	GA05100010	QS07		4822 209 32552	IC LC78211	HC10308030
RP22		4822 053 10109	10Ω ±5% 1W	GA05100010	QS08		4822 209 32554	IC LC78213	HC10310030
RP25		4822 052 10101	100Ω ±5% 1/6W	GG05101160	QS09		4822 209 83631	IC NJM4558DD	HC10008090
RP26		4822 052 10101	100Ω ±5% 1/6W	GG05101160				PS04-MISCELLANEOUS	
RP99		4822 052 10109	10Ω ±5% 1/4W	GG05100140	JS01		4822 267 31451	TERMINAL 8P RCA	YT02080110
			PP04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RP01-RP10 RP15-RP20 (RP23 RP24[U]) RP27 RP28 RP29		JS02		4822 267 31451	TERMINAL 8P RCA	YT02080110
			PP04-SEMICONDUCTORS					PU04-FRONT CIRCUIT BOARD	
DP01		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010	CU01		4822 126 11558	CER. 0.1μF ±20% 50V	DA17104110
DP02		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010	CU02		4822 124 23056	ELECT 47μF 10V	EJ47601010
▲QP01		4822 209 32696	IC STK401-110	HC10312030	CU03		4822 124 80087	ELECT 220μF 6.3V	EJ22700610
QP02		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0	CU04		4822 122 40588	CER. 0.022μF ±20%	DA17223110
QP03		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0	CU05		4822 126 11558	CER. 0.1μF +80%-20% 50V	DA17104110
QP04		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0	CU07		4822 124 90406	BIG ELECT 0.022μF	EX22300530
			PP04-MISCELLANEOUS		CU10		4822 122 40588	CER. 0.022μF ±20%	DA17223110
LP01		4822 157 70022	AIR COILSPK CHOCK	ML08010030	CU13		4822 126 11558	CER. 0.1μF +80%-20% 50V	DA17104110
LP02		4822 157 70022	AIR COIL SPK CHOCK	ML08010030	CU53		4822 126 12496	CER. 0.01μF +80%-20%	DD38103010
			PS04-AUDIO FUNCTION CIRCUIT BOARD					PU04-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RU01-RU23 RU25 RU26 RU28-RU33 RU51 RU52 RU57-RU60	
CG01			PS04-CAPACITORS					PU04-SEMICONDUCTORS	
CG08		4822 124 22726	ELECT 4.7μF 35V	EJ47503510	DU01		4822 130 32778	DIODE 1SS133	HD20015210
CG09		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU02		4822 130 32778	DIODE 1SS133	HD20015210
CG10		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU04		4822 130 32778	DIODE 1SS133	HD20015210
CS01					DU05		4822 130 32778	DIODE 1SS133	HD20015210
CS12		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU06		4822 130 32362	DIODE 1SS176 MA165	HD20002000
CS13		4822 124 22726	ELECT 4.7μF 35V	EJ47503510	DU07			1SS254 30V 0.1A	
CS14		4822 124 22726	ELECT 4.7μF 35V	EJ47503510	DU09		4822 130 32362	DIODE 1SS176 MA165	HD20002000
CS15		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU10			1SS254 30V 0.1A	
CS16		4822 124 21894	ELECT 10μF 16V	EJ10601610	DU18		4822 130 32362	DIODE 1SS176 MA165	HD20002000
CS17					DU19			L.E.D. HLMF-K200 RED	HI10005340
CS20		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010	DU20		4822 130 32362	DIODE 1SS176 MA165	HD20002000
			PS04-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CS23-CS38		DU51		4822 130 32362	DIODE 1SS176 MA165	HD20002000
C***								1SS254 30V 0.1A	
					QU01			MICROPROCESSOR TMP87CS71F	HU309JT00F
					QU02		4822 130 61227	DIG. TRS. DTA114ES UN4111	BA10001000
					QU03		4822 130 41947	TRS. 2SC536SP 2AC2458 2SC3311 2SC1740S	HT30001000
					QU04		4822 130 42594	DIG. TRS. DTC144ES UN4213	BA20002000

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QU05		4822 130 60588	DIG.TR.S.DTC114ES UN4211	BA20001000
QU06		4822 130 60588	DIG.TR.S.DTC114ES UN4211	BA20001000
QU07		4822 130 60588	DIG.TR.S.DTC114ES UN4211	BA20001000
QU08		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QU09		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QU10		4822 130 42682	DIG.TR.S.DTC144ES UN4213	BA10002000
QU11		4822 130 63211	DIG.TR.S.DTA114TS/UN4115	BA10004000
QU12		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QU14		4822 130 42682	DIG.TR.S.DTA144ES UN4113	BA10002000
QU15		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QU16		4822 209 16157	PHOTO UNIT PNA4655M00XB IR SENSOR	HW10005020
QU17		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QU18		4822 209 14612	IC 74HC541 DIP	HC754100B0
PU04-MISCELLANEOUS				
SU04		4822 276 14009	PUSH SW.TACT	SP01013310
SU06		4822 276 14009	PUSH SW.TACT	SP01013310
SU09				
SU16		4822 276 14009	PUSH SW.TACT	SP01013310
SU25				
SU40		4822 276 14009	PUSH SW. TACT	SP01013310
VU01			DISPLAY UNIT SVA-12MM21	HQ31201910
XU01		4822 242 72066	CER. RESONATOR 8.0MH	FQ08004010
PU54-MASTER VOL CIRCUIT BOARD PU54-CAPACITORS				
CU71		4822 126 10364	CER. 100pF ±10%	DA16101110
CU72		4822 126 10364	CER. 100pF ±10%	DA16101110
PU54-RESISTORS (COMMON)				
R***			CARBON FILM FIXED RES. ±5% 1/6W : RU71-RU74	
PU54-SEMICONDUCTORS				
QU71		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000
QU72		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000
PU54-MISCELLANEOUS				
SU75			ROTARY SW. ENCODER	SR02010050
PU94- POWER SW CIRCUIT BOARD				
SU91	U	4822 276 12512	PUSH SW. 2 CIRCUIT SPUL	SP02011670
PW04-H.P CIRCUIT BOARD PW04-CAPACITORS				
CW01				
CW05		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
PY04- CONNECT CIRCUIT BOARD PY04-CAPACITORS				
CY01		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010
CY02		4822 126 11726	CER. 2200pF ±20%	DA17222110
CY74		4822 124 21894	ELECT 10μF 16V	EJ10601610
PY04-RESISTORS (COMMON)				
R***			CARBON FILM FIXED RES. ±5% 1/6W : RY01-RY04 RY06 RY22	

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)
PY04-SEMICONDUCTORS				
DY01				
		4822 130 32362	DIODE 1SS176 MA165	HD20002000
DY08			1SS254 30V 0.1A	
DY09		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DY10		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
QY01		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QY02		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QY03		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QY04		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QY05		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QY06		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QY07		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QY08		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
QY10		5322 209 11532	IC 74HC4094 16PIN	HC709449B0
QY14		4822 130 61227	DIG.TR.S.DTA114ES UN4111	BA10001000
QY15		4822 130 42594	DIG.TR.S.DTC144ES UN4213	BA20002000
PY04-MISCELLANEOU FERRITE CORE BEADS				
LY01		4822 158 60605		FC90050060
P104-TUNER CIRCUIT BOARD P104-CAPACITORS				
CA01		4822 125 50384	TRIM. 20pF	CT12000200
CA02		4822 122 40306	CER. 0.047μF +80%-20% 50V	DK18473310
CA03		4822 122 31823	CER. 15pF ±5% 50V	DD15150300
CA04		4822 121 42466	FILM 390pF ±5% 100V	DF15391550
CA05		4822 122 31205	CER. 47pF ±5% 50V	DD15470300
CA06		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
CA18		4822 124 22726	ELECT 4.7μF 35V	EJ47503510
C201		4822 122 30043	CER. 0.01μF +80%-20%50V	DK18103310
C202		4822 122 30043	CER. 0.01μF +80%-20%50V	DK18103310
C203		4822 122 40306	CER. 0.047μF +80%-20%50V	DK18473310
C204		4822 122 40306	CER. 0.047μF +80%-20%50V	DK18473310
C205		4822 124 23053	ELECT 1μF 50V	EJ10505010
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
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
C311		4822 124 22726	ELECT 4.7μF 35V	EJ47503510
C312		4822 124 22726	ELECT 4.7μF 35V	EJ47503510
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
C507		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
C511		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
C***			P104-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : C220 C222 (C227[U]) C509 C510		LA01		4822 157 63084	ANT COIL MW ANT 280µH	LA10295170
C***			P104-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : C207 C214 C216 C234 C503 C508		LA02		4822 157 70779	OSC. COIL MW	LO70013010
C***			P104-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : (C217 C301 C302[U])		LA05		4822 157 53589	CHOKE COIL 39MH J	LC23960710
			P104-RESISTORS		LA06		4822 148 81095	I.F.T. COIL AM IFT	LI70033510
RA11		4822 100 11351	10kΩ TRIM.	RA01030780	L201		4822 157 63904	I.F.T. COIL FM DET	LI70376010
▲ R207		4822 050 21801	180Ω ±5% 1/4W	GG05181140	L301		4822 157 71731	M.P.X. COIL 19.38KHz	LS10293020
R211	U	4822 100 11351	10kΩ TRIM.	RA01030780	L302		4822 157 71731	M.P.X. COIL 19.38KHz	LS10293020
R212		4822 100 11351	10kΩ TRIM.	RA01030780	L501		4822 157 70813	CHOKE COIL 47µH	LC14733800
▲ R217	U	4822 116 83929	220Ω ±5% 1/4W	GG05221140	L504		4822 242 72333	CRYSTAL 7.2MHZ	JX07001260
▲ R512		4822 053 10271	270Ω ±5% 1W	GA05271010	X501				
▲ R514		4822 052 10479	47Ω ±5% 1/6W	GG05470160					
			P104-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RA01 RA02 (R201 R202[U]) R203-R206 R208 R209 R210 R213 R214 (R215[U]) R220 R307-R310 R315 R316 R501-R507 (R508[U]) R510 R511 R513 R515 R516		CD01		4822 124 21894	ELECT 10µF 16V	EJ10601610
R***					CD06				
					CD19		4822 124 21894	ELECT 10µF 16V	EJ10601610
					CD24				
					CD25		4822 126 11682	CER. 220pF ±5% 50V CHIP	DK96221300
					CD30				
					CD31		4822 124 21894	ELECT 10µF 16V	EJ10601610
					CD36				
					CD37		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CD38		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CD39		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CD41				
					CD44		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CD51		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CD52		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
DA01		4822 125 50416	VARIACAP SVC342-L	HD40009030	CD55		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
DA05		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD56		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
DA06		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD61		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
D201		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD64				
D202		4822 130 80319	ZENER DIODE RD5.1JB2 MTZJ5.1B	HD30911000	CD67		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
D203		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD70				
D204		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	CD72		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
D501		4822 130 80317	ZENER DIODE RD5.1JB2 MTZJ5.1B	HD30511000	CD73		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
Q201			IC LA1837 FM AM IF	HC10384030	CD75		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
Q202		4822 130 62294	TRS. 2SC1809S P	HT318091P0	CK01		4822 124 21894	ELECT 10µF 16V	EJ10601610
Q203		4822 130 61227	DIG. TRS. DTA114ES UN4111	BA10001000	CK02		4822 124 21894	ELECT 10µF 16V	EJ10601610
Q204		4822 130 42594	DIG. TRS. DTC144ES UN4213	BA20002000	CK03		4822 122 33777	CER. 47pF ±5% 50V CHIP	DD95470300
Q501		4822 209 30178	IC LC7218 PLL	HC10221030	CK06		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
Q502		4822 130 42121	F.E.T. 2SK30ATM Y1	HF200300B0	CK12		4822 124 21894	ELECT 10µF 16V	EJ10601610
Q503		4822 130 41947	TRS. 2SC536SP 2SC2458 2SC3311 2SC1740S	HT30001000	CK13		4822 124 21894	ELECT 10µF 16V	EJ10601610
					CK14		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CK17		4822 124 21894	ELECT 10µF 16V	EJ10601610
					CK18				
					CK21		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CK22		4822 126 11687	CER. 470pF ±10% CHIP	DK96471300
A101			P104-MISCELLANEOUS VHF TUNER FM FRONT END FE415-G23	AV01202270	CR01		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
FA51			CER. FILTER SFZ450JL3 AM	FF10045410	CR11		4822 126 13837	CER. 0.1µF ±10% 10V CHIP	DK98104200
F201	U	4822 242 70911	CER. FILTER SFF10.7MA8-A	FF11070610	CR12		4822 126 13837	CER. 0.1µF ±10% 10V CHIP	DK98104200
F202		4822 242 70665	CER. FILTER SFE10.7MS3-A	FF11070620	CR13		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
J101	U	4822 290 81632	TERMINAL FM AM	YT03030020	CR14		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CR16		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200
					CR18		4822 126 11687	CER. 0.1µF +80%-20% CHIP	DK98104200

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CR20		5322 126 11583	CER. 0.1 μ F \pm 10% 25V CHIP	DK96103200
CR21		5322 126 11583	CER. 0.1 μ F \pm 10% 25V CHIP	DK96103200
CR22				
}		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
CR25				
CR26		4822 126 11703	CER. 0.01 μ F +80%-20% CHIP	DK98103300
CR27		4822 126 11703	CER. 0.01 μ F +80%-20% CHIP	DK98103300
CR29		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C601		4822 126 11703	CER. 0.01 μ F +80%-20% CHIP	DK98103300
C602		4822 126 11703	CER. 0.01 μ F +80%-20% CHIP	DK98103300
C607		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C608		4822 122 33761	CER. 22pF \pm 5% 50V CHIP	DD95220300
C609		4822 122 33761	CER. 22pF \pm 5% 50V CHIP	DD95220300
C610		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C612		4822 121 42327	FILM 470pF \pm 5% 50V	DF15471350
C613		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C614		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C615		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C616		5322 126 11583	CER. 0.01F \pm 10% 25V CHIP	DK96103200
C617		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C618		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C621		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C623		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C624		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C691		4822 126 11759	CER. 100pF \pm 5% 50V	DD95101300
C692		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C693		4822 126 11687	CER. 0.1 μ F +80%-20% CHIP	DK98104200
C694		4822 126 10935	ELECT 10 μ F 16V	EJ10701010
C695		4822 126 11759	CER. 100pF \pm 5% 50V CHIP	DD95101300
P604-CAPACITORS (COMMON)				
ELECTROLYTIC CAPACITOR				
\pm 20% : CD45 CD53 CD54				
CD57-CD60 CD65 CD66 CD71				
CD74 CR02 CR15 CR17 CR28				
C603 C611 C619 C620 C622				
C626				
P604-CAPACITORS (COMMON)				
PLASTIC FILM CAPACITOR				
\pm 5% 50V : CD07-CD18 CK07				
CK08 CK15 CR19				
P604-RESISTORS CHIP				
RD01				
}		4822 051 30473	47k Ω \pm 5% 1/16W	NN05473610
RD06				
RD07				
}		4822 051 30222	2.2k Ω \pm 5% 1/16W	NN05222610
RD18				
RD19				
}		4822 051 30472	4.7k Ω \pm 5% 1/16W	NN05472610
RD24				
RD25				
}		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RD30				
RD31				
}		4822 051 30473	47k Ω \pm 5% 1/16W	NN05473610
RD36				
RD37				
}		4822 051 30471	470 Ω \pm 5% 1/16W	NN05471610
RD42				
RD43				
}		4822 051 30473	47k Ω \pm 5% 1/16W	NN05473610
RD48				
RK01		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
RK02		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RK03		4822 051 30272	2.7k Ω \pm 5% 1/16W	NN05272610
RK04		4822 051 30272	2.7k Ω \pm 5% 1/16W	NN05272610
RK05				
}		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RK08				
RK09				
}		4822 051 30331	330 Ω \pm 5% 1/16W	NN05331610
RK12				
RK15		4822 051 30472	4.7k Ω \pm 5% 1/16W	NN05472610
RK16		4822 051 30472	4.7k Ω \pm 5% 1/16W	NN05472610
RK17		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RK18		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR01		4822 051 30759	75 Ω \pm 5% 1/16W	NN05750610
RR02		4822 051 30759	75 Ω \pm 5% 1/16W	NN05750610
RR03		4822 051 30104	100k Ω \pm 5% 1/16W	NN05104610
RR04		4822 051 30104	100k Ω \pm 5% 1/16W	NN05104610
RR05		4822 051 30472	4.7k Ω \pm 5% 1/16W	NN05472610
RR06		4822 051 30472	4.7k Ω \pm 5% 1/16W	NN05472610
RR10		4822 051 30391	390 Ω \pm 5% 1/16W	NN05391610
RR12				
}		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR15				
RR16		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR17				
}		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR20				
RR21		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR22		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR23		4822 051 30102	1k Ω \pm 5% 1/16W	NN05102610
RR24		4822 051 30102	1k Ω \pm 5% 1/16W	NN05102610
RR27		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR29		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR30		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR32		4822 051 30759	75 Ω \pm 5% 1/16W	NN05750610
RR33		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR81				
}		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
RR84				
RR96		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
RR97		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R601		4822 051 30105	1M Ω \pm 5% 1/16W	NN05105610
R602		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R603		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R604		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R605		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R606		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R608		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R609		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R671		4822 051 30105	1M Ω \pm 5% 1/16W	NN05105610
R672		4822 116 82487	0 Ω \pm 5% 1/16W	NN05000610
R691		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R692		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R694		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R695		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
R697		4822 051 30103	10k Ω \pm 5% 1/16W	NN05103610
P604-SEMICONDUCTORS				
DR01		4822 130 81324	CHIP DIODE 1SS302	HZ20018050
DR02		4822 130 81324	CHIP DIODE 1SS302	HZ20018050
D601		4822 130 80522	CHIP DIODE 1SS300 DAP202U	HZ21006000
QD01		4822 209 17155	IC NJM2068M	HC10102090
QD02		4822 209 17155	IC NJM2068M	HC10102090
QD03		4822 209 17155	IC NJM2068M	HC10102090
QD51			IC BA033FP 3.3V 1A	HC96J33210
QK01		4822 209 14615	IC NJM2115M	HC10172090
QK02		4822 209 14615	IC NJM2115M	HC10172090

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	VERS. COLOR	P (F)
QK04			IC AK4526 MUL	HC10022480	C760		4822 124 40751	ELECT 470μF ±20% 63V	OA47706320	R755	
QR01			IC CS8414	HC10004880	C761		4822 124 40751	ELECT 470μF ±20% 63V	OA47706320		482
QR02			IC TC74HC151AF	HC715100Z0	C801		4822 126 12453	CER 0.01μF +80%-20% 500V	DK18103560	R758	482
QR04		4822 209 30426	IC CMOS 74HC00 FLAT	HC700000Z0	▲ C802			ELECT 27000μF63V	EB27906310	R759	482
QR06			IC 74HC125	HC712500B0	▲ C803			ELECT 27000μF63V	EB27906310	R760	482
QR07			IC CMOS 74HCU04 FLAT	HC700400Z0	C804		4822 126 12453	CER. 0.01μF +80%-20% 500V	DK18103560	R761	
QR08		4822 209 90909	IC TC7W74FU	HC10400050	▲ C805		4822 124 80646	ELECT 8200μF ±20% 56V	EB82805650	R764	482
Q601			IC YSS912	HC10014640	▲ C806		4822 124 80646	ELECT 8200μF ±20% 56V	EB82805650	R764	
Q602			IC TC7W53FU	HC007105K0	C807		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R775	482
Q604			IC SRAM	HC10088000	C808		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R776	482
Q691			MICROPROCESSOR μPD78018FGC-557-AB8	HU309JN50F	C811		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R777	482
			P604-MISCELLANEOUS		C812		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R779	482
JR01		4822 265 10683	TERMINAL YKC21-3211	YT02021400	C815		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R783	482
JR02		4822 218 11487	OPT. GP1F32R RECIVER	YJ15000150	C816		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R784	482
LD01		4822 526 10584	FERRITE CORE	FC90090010	C820		4822 122 40586	CER. 10000pF ±20%	DA17103110	R786	482
LD51					C824		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310	R789	482
LD54		4822 526 10584	FERRITE CORE	FC90090010				P704-CAPACITORS (COMMON) HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : C705 C706 C713 C714 C753 C757	R791	482	
LD55									R792	482	
LD59		4822 242 73843	EMI FILTER 0.022UF	FM12223010				P704-CAPACITORS (COMMON) ELECTROLYTIC CAPACITOR ±20% : C707 C708 C754 C809 C810 C813 C814 C817-C819 C821-C823 C825-C829	R793	482	
LK01		4822 526 10584	FERRITE CORE	FC90090010					R794	482	
LK02		4822 526 10584	FERRITE CORE	FC90090010					R795	482	
LR02		4822 242 73843	EMI FILTER DSS306-91-F-223Z	FM12223010					R796	482	
L601		4822 242 73843	EMI FILTER DSS306-91-F-223Z	FM12223010				P704-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : C723-C726 C762 C763	R799	482	
L691											
L697		4822 157 10884	EMI FILTER BLM11A221S	FN31000010							
X601		4822 242 10851	CRYSTAL 12.288MHz	JX12013260				P704-RESISTORS			
X691			CER. RESONATOR 10.0MHz	FQ01005010							
			P704-MAIN AMP/POWER SUPPLY CIRCUIT BOARD								
			P704-CAPACITORS								
CN03		4822 124 23055	ELECT 22μF 16V	EJ22601610	▲ RN01		4822 052 10122	1.2kΩ ±5% 1/6W	GG05122160		
CN04	U	4822 124 40786	ELECT 2.2μF 50V	EJ22505010	▲ RN02		4822 052 10122	1.2kΩ ±5% 1/6W	GG05122160		
CN05		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010	RN20		4822 050 22262	2.2kΩ ±5% 1/4W	GG05222140		
CN06		4822 124 23056	ELECT 47μF 16V	EJ47601610	RN27		4822 053 10561	560Ω ±5% 1W	GA05561010	DN01	48
CN07		4822 124 23056	ELECT 47μF 16V	EJ47601610	RN28		4822 053 10561	560Ω ±5% 1W	GA05561010		
CN08		4822 124 23053	ELECT 1μF 50V	EJ10505010	▲ RN35		4822 052 10109	10Ω ±5% 1/6W	GG05100160	DN04	
CN09		4822 124 23052	ELECT 100μF ±20% 16V	EJ10701610	▲ RN43				GG05101160	DN07	48
CN10		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010			4822 052 10101	100Ω ±5% 1/6W	GG05101160	DN08	48
CN12		4822 122 40617	CER. 0.1μF +80 -20% 50V	DD38104010	▲ RN46				GG05101160	DN09	48
C701		4822 124 22275	ELECT 47μF ±20% 10V	OA47601020	▲ RN51		4822 052 10122	1.2kΩ ±5% 1/6W	GG05122160	DN51	48
C702		4822 124 22275	ELECT 47μF ±20% 10V	OA47601020	▲ RN57		4822 052 10101	100Ω ±5% 1/6W	GG05101160	DN52	48
C703	U	4822 122 31349	CER. 68pF ±5% 50V	DD15680300	▲ RN58		4822 052 10101	100Ω ±5% 1/6W	GG05101160		
C704	U	4822 122 31349	CER. 68pF ±5% 50V	DD15680300	RN63		4822 101 11664	100Ω TRIM.	RA01010780	D701	
C709			ELECT 1μF ±20% 100V	EA10510010	RN64		4822 101 11664	100Ω TRIM.	RA01010780		48
C710			ELECT 1μF ±20% 100V	EA10510010	RN70		4822 101 11664	100Ω TRIM.	RA01010780	D704	
C711		4822 124 23562	ELECT 10μF ±20% 100V	OA10610020						D705	
C712		4822 124 23562	ELECT 10μF ±20% 100V	OA10610020	▲ R721						48
C715		5322 122 32072	CER. 33pF ±5% 50V	DD15330300			4822 052 10561	560Ω ±5% 1/6W	GG05561160	D708	
C716		5322 122 32072	CER. 33pF ±5% 50V	DD15330300	▲ R726					D709	
C719					▲ R729						48
C722		4822 124 40751	ELECT 470μF ±20% 63V	OA47706320						D712	
C751		4822 124 22275	ELECT 47μF ±20% 10V	OA47601020						D715	
C752	U	4822 122 31349	CER. 68pF ±5% 50V	DD15680300	▲ R732						48
C756		4822 124 23562	ELECT 10μF ±20% 100V	OA10610020	▲ R737						48
C758		4822 122 31205	CER. 47pF ±5% 50V	DD15470300			4822 052 10569	56Ω ±5% 1/6W	GG05560160	D752	
C759			ELECT 1μF ±20% 100V	EA10510010	▲ R740						48
					R743		4822 100 20681	2.2kΩ TRIM.	RA02220780	D753	48
					R744		4822 100 20681	2.2kΩ TRIM.	RA02220780	D754	48
					▲ R749					D755	48
							4822 052 10228	2.2Ω ±5% 1/6W	GG05022160	D756	48
					▲ R752					D801	48
					▲ R753		4822 050 21801	180Ω ±5% 1/4W	GG05161140	D802	48
					▲ R754		4822 050 21801	180Ω ±5% 1/4W	GG05161140	D803	48
										D804	48

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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
▲ R755		4822 052 10109	10Ω ±5% 1/4W	GG05100140
▲ R758		4822 113 80612	0.18Ω ±10% 5W x2	BZ10182020
▲ R759		4822 113 80612	0.18Ω ±10% 5W x2	BZ10182020
▲ R760		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R761				
R764				
▲ R775		4822 052 10561	560Ω ±5% 1/6W	GG05561160
▲ R776		4822 052 10561	560Ω ±5% 1/6W	GG05561160
▲ R777		4822 052 10561	560Ω ±5% 1/6W	GG05561160
▲ R779		4822 052 10561	560Ω ±5% 1/6W	GG05561160
▲ R780		4822 052 10561	560Ω ±5% 1/6W	GG05561160
▲ R783		4822 052 10569	56Ω ±5% 1/6W	GG05560160
▲ R784		4822 052 10569	56Ω ±5% 1/6W	GG05560160
R786		4822 100 20681	2.2kΩ TRIM.	RA02220780
▲ R789		4822 052 10228	2.2Ω ±5% 1/6W	GG05022160
▲ R790		4822 052 10228	2.2Ω ±5% 1/6W	GG05022160
▲ R791		4822 050 21801	180Ω ±5% 1/4W	GG05181140
▲ R792		4822 052 10109	10Ω ±5% 1/4W	GG05100140
▲ R793		4822 052 10109	10Ω ±5% 1/4W	GG05100140
▲ R794		4822 113 80612	0.18Ω ±10% 5W x2	BZ10182020
R795		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R796		4822 053 10109	10Ω ±5% 1W	GA05100010
R***			P704-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : RN03-RN08 RN10-RN16 RN21-RN26 RN30-RN33 RN36 RN41 RN42 RN52-RN56 RN61 RN62 R701 R702 (R703 R704[U]) R705-R720 R727 R728 R733 R734 R741 R742 R745-R748 R765 (R766[U]) R767-R774 R778 R871 R785 R787 R788 (R797-R799[U])	
			P704-SEMICONDUCTORS	
DN01		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DN04		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
DN07		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
DN08		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DN09		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DN51		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
DN52				
D701		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D704				
D705		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
D708				
D709		4822 130 31554	ZENER DIODE MTZJ4.3B	HD30431000
D712				
D751		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D752		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D753		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
D754		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
D755		4822 130 31554	ZENER DIODE MTZJ4.3B	HD30431000
D756		4822 130 31554	ZENER DIODE MTZJ4.3B	HD30431000
▲ D801		4822 130 33133	DIODE D5FB20 200V 5A	HE20012290
▲ D802		4822 130 31007	DIODE S4VB20	HE20015290
▲ D803		4822 130 33057	DIODE S2VB20	HE20011290
▲ D804		4822 130 33057	DIODE S2VB20	HE20011290

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
D805		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
D809				
QN01		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0
QN02		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0
QN03		4822 130 42949	TRS. 2SA970 GR OR B	HT109702A0
QN04		4822 209 83312	IC TA7317P	HC10042050
QN07		4822 130 42715	TRS. 2SA608SP 2SA1048 2SA1309 2SA933S	HT10001000
QN08		4822 130 60696	TRS. 2SC1627 O Y	HT316272B0
QN51		4822 130 43233	TRS. 2SC2240 GR BL	HT322402A0
QN81		4822 130 61227	DIG. TRS. DTA114ES UN4111	BA10001000
Q701		4822 130 42949	TRS. 2SA970 GR BL	HT109702A0
Q706				
Q707				
Q710		4822 130 43283	TRS. 2SC2705 O Y	HT327052A0
▲ Q711		5322 130 61728	TRS. 2SA1360 O Y	HT113602A0
▲ Q712		5322 130 61728	TRS. 2SA1360 O Y	HT113602A0
▲ Q713		5322 130 61737	TRS. 2SC3423 O Y	HT334232A0
▲ Q714		5322 130 61737	TRS. 2SC3423 O Y	HT334232A0
▲ Q715		4822 130 60117	TRS. 2SC3419Y	HT334191Y0
▲ Q716		4822 130 60117	TRS. 2SC3419Y	HT334191Y0
▲ Q717		4822 130 63635	TRS. 2SC4793 O Y	HT347932A0
▲ Q718		4822 130 63635	TRS. 2SC4793 O Y	HT347932A0
▲ Q719		4822 130 63634	TRS. 2SA1837 O Y	HT118372A0
▲ Q720		4822 130 63634	TRS. 2SA1837 O Y	HT118372A0
▲ Q721			TRS. 2SC5200 R O	HT352002A0
▲ Q722			TRS. 2SC5200 R O	HT352002A0
▲ Q723			TRS. 2SA1943 R O	HT119432A0
▲ Q724			TRS. 2SA1943 R O	HT119432A0
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 43283	TRS. 2SC2705 O Y	HT327052A0
Q755		4822 130 43283	TRS. 2SC2705 O Y	HT327052A0
▲ Q756		5322 130 61728	TRS. 2SA1360 O Y	HT113602A0
▲ Q757		5322 130 61737	TRS. 2SC3423 O Y	HT334232A0
▲ Q758		4822 130 60117	TRS. 2SC3419Y	HT334191Y0
▲ Q759		4822 130 63635	TRS. 2SC4793 O Y	HT347932A0
▲ Q760		4822 130 63634	TRS. 2SA1837 O Y	HT118372A0
▲ Q761			TRS. 2SC5200 R O	HT352002A0
▲ Q762			TRS. 2SA1943 R O	HT119432A0
▲ 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
▲ F802	U		P704-MISCELLANEOUS FUSE 6.3A 125V FTB	FS10630350
▲ F803	U		FUSE 6.3A 125V FTB	FS10630350
▲ J806			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J807			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J808			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J809			JACK CLIP FOR 20MM FUSE	YJ08000580
LN01		4822 280 10305	RELAY VB-18MBU-565-UL3	LY20180020
LN02		4822 280 10305	RELAY VB-18MBU-565-UL3	LY20180020
▲ LN03		4822 280 20501	RELAY MR62-24SR 24V	LY20240410
▲ LN51		4822 280 10305	RELAY VB-18MBU-565-UL3	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

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			P754-SPK TERMINAL CIRCUIT BOARD	
			P754-CAPACITORS	
C729		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
C730		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
C733		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
C734		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
C764		4822 122 30043	CER. 0.01μF +80%-20% 50V	DK18103310
			P754-MISCELLANEOUS	
▲ F760	U		FUSE 2A 125V UL CSA	FS10200350
▲ F761	U		FUSE 2A 125V UL CSA	FS10200350
▲ F762	U		FUSE 2A 125V UL CSA	FS10200350
▲ F763	U		FUSE 2A 125V UL CSA	FS10200350
J704			TERMINAL 4P SPK	YT01040790
J751			TERMINAL 6P SPK	YT01060020
▲ J762			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J763			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J764			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J765			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J766			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J767			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J768			JACK CLIP FOR 20MM FUSE	YJ08000580
▲ J769			JACK CLIP FOR 20MM FUSE	YJ08000580