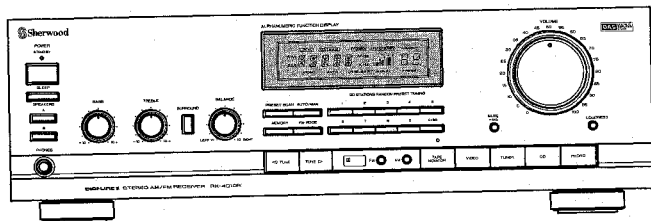


SERVICE MANUAL

RX-4010R AM/FM STEREO RECEIVER



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Electrical Parts List	15	Schematic Diagram	Separate Sheet

 **Sherwood**

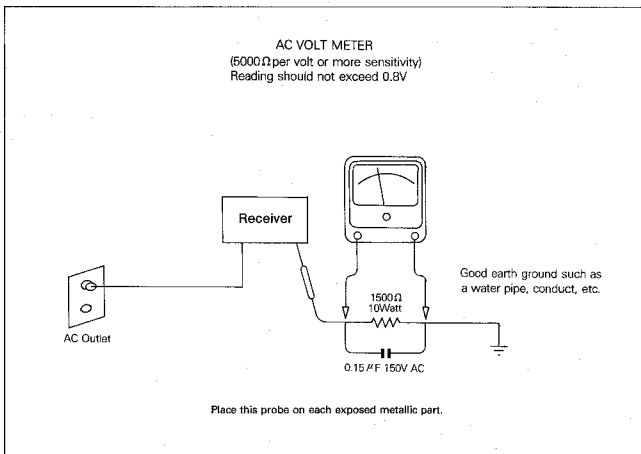
Safety Precaution

WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by a Δ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.
2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as

terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (120V Version only). (Do not use a line isolation transformer during this check.) Use an AC voltmeter having 5000 Ω per volt or more sensitivity in the following manner: Connect a 1500 Ω 10watt resistor paralleled by a 0.15 μ F 150V AC capacitor, between a known good earth ground (water pipe, conduct, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 Ω resistor and 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



Specifications

Tuning Range

Scanning Frequency Interval(Auto / Manual) ;	
USA / Canada Version	87.50-107.90MHz / 200kHz
Europe / Australia Version	87.50-108.00MHz / 50kHz
Usable Sensitivity	
IHF at S + N + D / ND=30dB	11.2dB
THD at 1kHz ;	
HIF at 75kHz mod. Mono	0.2%
(40kHz for DIN) Stereo	0.4%
Stereo Separation at 1kHz	45dB
Signal to Noise Ratio	
HIF at 75kHz mod. Mono	70dB
Stereo	65dB
Frequency Response 20Hz-15kHz	± 1.5 dB
Audio Output Voltage, 1kHz, 100% Mod	600mV
Capture Ratio	2dB
Alternate channel selectivity	60dB
Image Rejection	40dB
IF Rejection	60dB
AM Rejection	50dB
Muting Level	10 μ V

AM Section

Tuning Range	
AM USA / Canada Version	520-1710kHz
Europe / Australia Version	522-1611kHz
Scanning Frequency Interval(Auto / Manual)	
USA / Canada Version	10kHz
Europe / Australia Version	9kHz
Usable Sensitivity IHF	
at 20dB S / N Loop Antenna	
AW	500 μ V / m
Signal to Noise Ratio, 30% Mod ref.	
AW	45dB
Audio Output Voltage, 400Hz, 30% Mod	500mV
Power Consumption	280 Watts

Power Requirements ;

- A : 120V 60Hz for American / Canadian version
- B : 120 / 220V, 60 / 50Hz for multi-voltage version(switchable)
- C : 230V 50Hz for general European version
- D : 230V 50Hz for German / Italian version
- E : 240V 50Hz for U.K / Australian version
- F : 230V 50Hz for Swiss / Scandinavian version

Dimensions	440(W) $\times$ 125(H) $\times$ 280(D)mm
	17.3(W) $\times$ 4.9(H) $\times$ 11.0(D)inch
Weight(Net)	7.2kg(16lbs, 13oz)

Note : Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the American (A) standard, and provides information on regional circuit modification through use of alternate schematic diagrams or wiring diagram, and information on regional component variations through use of parts list. Design and specifications subject to change without notice for improvement.

Alignment Procedures

*Before making adjustment, operate the appliance for more than 2 minutes.

*Note : 1. 0dB=1V 2. FM 100% Mod=75kHz Dev. 3. DVM=Digital Volt Meter

4. SG=Signal Generator 5. SSG=Stereo Signal Generator

1. AM Adjustment

● Selector SW.....Tuner, AM

● In case of 2 band appliance(AM/FM).

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjst Point	Adjst For	Remark
		From	To					
1.	Tuning Voltage	520kHz		*1) 520kHz	Connect DVM to TP1	T104	DC $1.2 \pm 0.2V$	
		1710kHz		*2) 1710kHz		TC102	DC $8.6 \pm 0.2V$	
		<ul style="list-style-type: none">● Repeat the step*1) and *2) until DVM reads the tuning voltage mentioned above.● In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 522kHz *2) 1611kHz						
2.	IF	AM IF Genescope	ANT.		Connect IF Genescope	T105	Symmetrical curve on AM IF Genescope	
3.	RF Tuning	*1) AM SG 600kHz, 74dB 400Hz(30&MOD.)	ANT.	600kHz	Output Connect AC Voltmeter & Oscilloscope	T101	Maximize audio output	<div><div>AM SG</div><div>TEST LOOP ANT 60cm</div><div>APPLIANCE</div></div>
		AM SG 1400kHz, 74dB 400Hz(30%MOD.)	ANT.	1400kHz		TC101		
		<ul style="list-style-type: none">● Feed Signal should be fed to Loop ant. through the TEST Loop ant., 60cm distant from the appliance● Repeat the step *1) & *2) until no further improvement occurs.● In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 603kHz *2) 1404kHz						
4.	Tuned Level	AM SG 1000kHz, 80dB 400Hz(30% mod.)	ANT.	1000kHz		VR101	'Tuned' Light on	In FL Display
● In case the freq. step is 9kHz, the freq. of AM SG and appliance should be changed to 999kHz.								

2. FM Adjustment

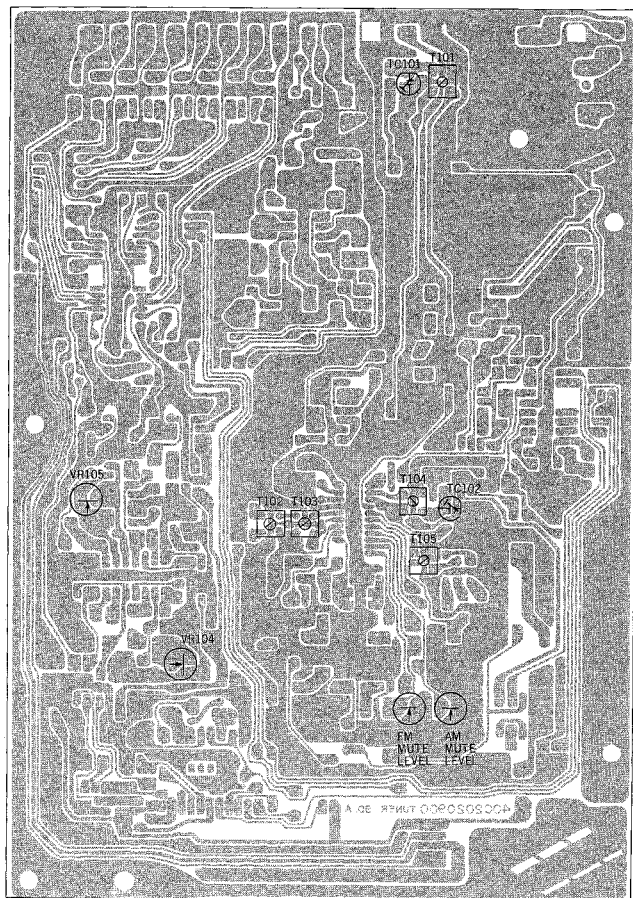
● Selector SW.....TUNER, FM(Mono/Stereo)

● Deviation.....USA/CANADA(75kHz Dev) EUROPE(40kHz Dev.)

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjst Point	Adjst For	Remark
		From	To					
1.	Tuning Voltage			87.50MHz 107.90MHz	Connect DVM to TP1		DC $2.0 \pm 0.2V$ DC $8.6 \pm 0.2V$	
2.	IF	FM IF Genescope	ANT.	98MHz 60dB	TP2 & TP3 Connect IF Genescope TP2 & TP3 Connect DVM	T103	Symmetrical S curve on FM IF Genescope DC $0 \pm 50mV$	
				Detune	Connect Oscilloscope TP2 & TP3 Connect DVM	T103	Maximize noise output DC $0 \pm 50mV$	

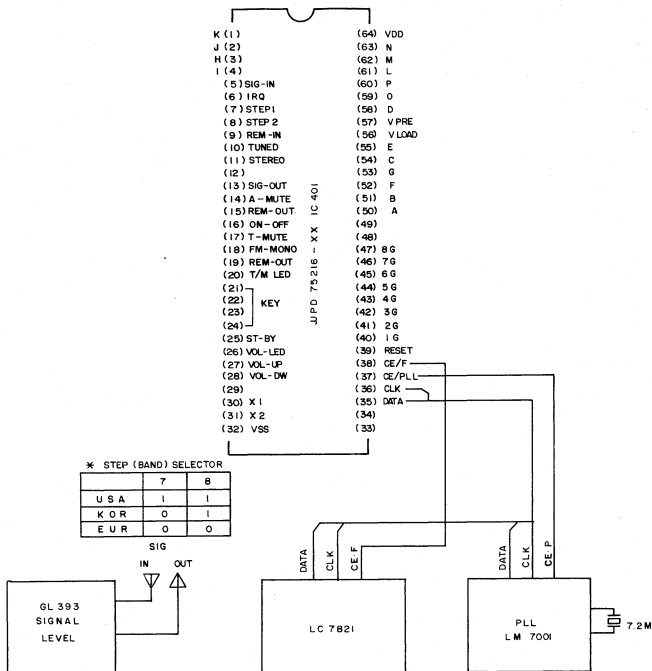
No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjst Point	Adjst For	Remark
		From	To					
3.	THD (Mono)	FM SG 98.10MHz,60dB 1kHz (75kHz dev.)	ANT.	98.10MHz Mono	*1)Output Connect DVM	T102	DC 0±0.05V	
					*2)Output Connect AC Voltmeter & Distortion Analyzer		Minimize distortion	
● Adjust the step *1) 1st and the step *2) next and repeat until no further improvement occurs.								
4.	MPX (VCO)	FM SSG 98.10MHz,60dB 1kHz (75kHz Dev.) Pilot 19kHz (9% Mod.)	ANT.	98.10MHz Mono	TP4 Connect freq.Counter	VR104	Read 76kHz	
● Before adjustment, set the FM SSG to "Mod. OFF"								
5.	THD (Stereo)	FM SSG 98.10MHz,60dB 1kHz (75kHz Dev.) Pilot 19kHz (9% Mod.)	ANT.	98.10MHz Stereo	Output connect AC voltmeter & distortion	Front- End	Minimize distortion	
6.	Mute Level	FM SSG 98.10MHz,10 μV (5 μV for Europe) 1kHz(75kHz Dev.) (40kHz dev.for Europe)	ANT.	98.10MHz Stereo	Output connect Oscilloscope	VR102	Muting occurs marginally	
7.	Seperation	*1) FM SSG 98.10MHz,60dB 1kHz(75kHz,Dev) Pilot19kHz(9%Mod) (Lch→Rch)	ANT.	98.10MHz Stereo	R ch Mod connect AC voltmeter & distortion analyzer and oscilloscope	VR105	Minimize output	L ch Mode
		*2) Same as above (Rch→Lch)			L ch Mod connect same as above		Minimize output	R ch Mode
● Repeat the step *1) and *2) until no further improvement occurs.								

Adjustment Point



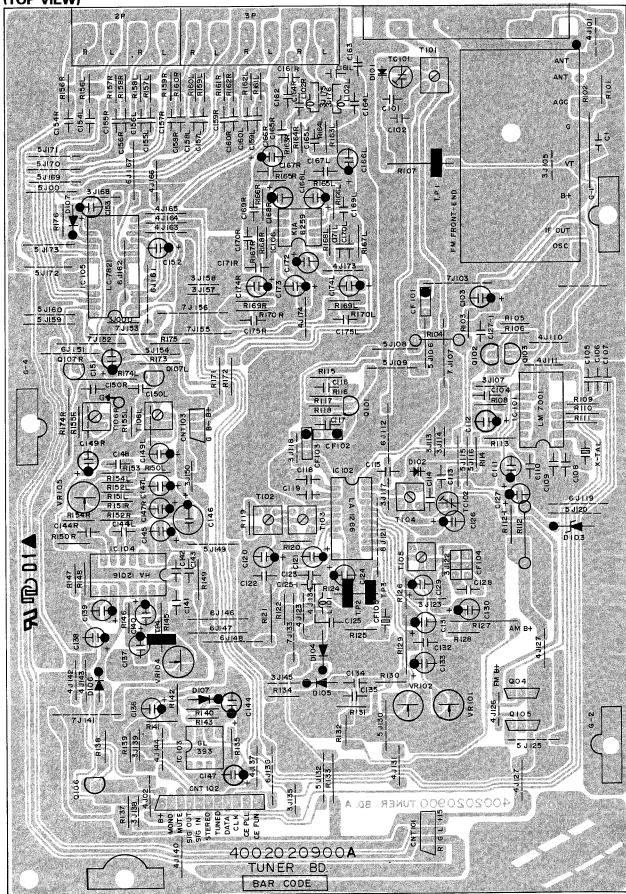
Circuit Description

Pin Assignment

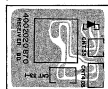


TUNER P.C. BOARD 4002020900A
(TOP VIEW)

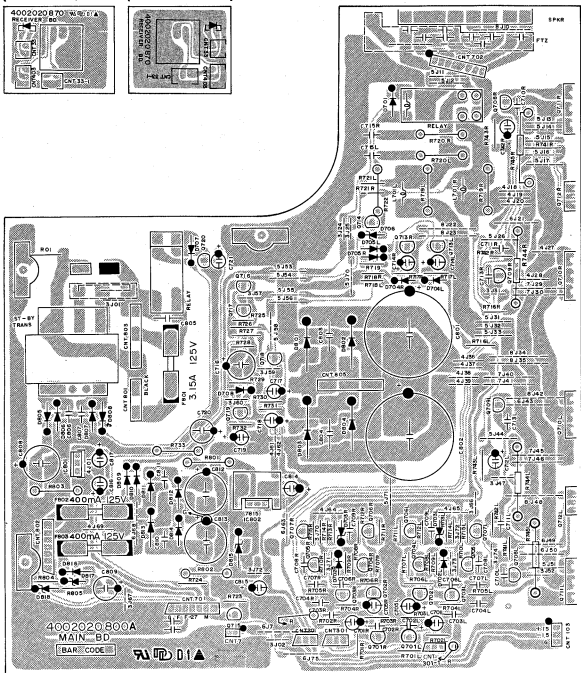
TUNER P.C. BOARD 4002020900A
(TOP VIEW)



RECEIVER P.C. BOARD 4002020870
(TOP VIEW) (BOTTOM VIEW)



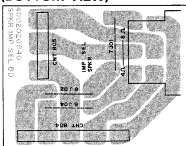
MAIN P.C. BOARD 4002020800A
(TOP VIEW)



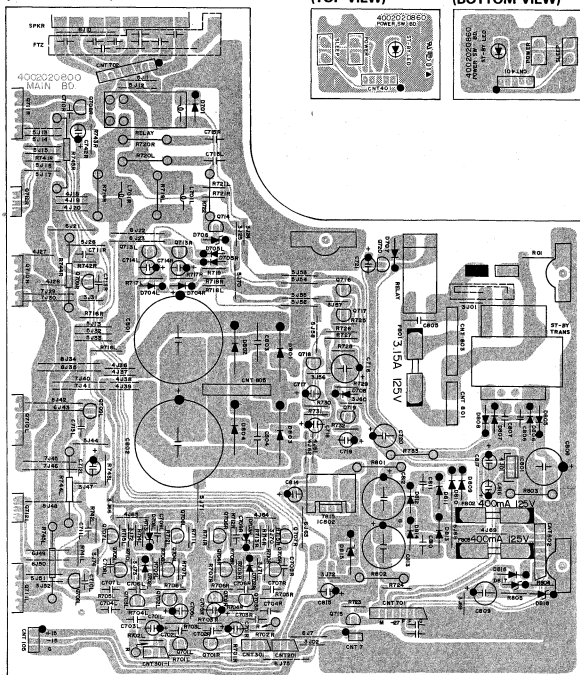
SPKR IMP SEL P.C. BOARD 4002020840

(TOP VIEW)

(BOTTOM VIEW)

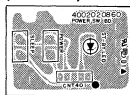


(BOTTOM VIEW)

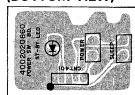


POWER SW P.C. BOARD 4002020860

(TOP VIEW)

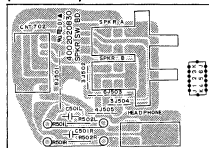


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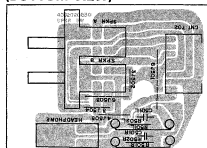


SPKR SW P.C. BOARD 4002020830

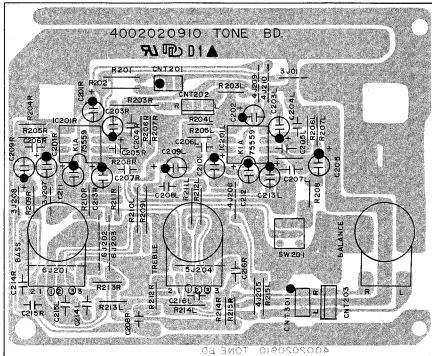
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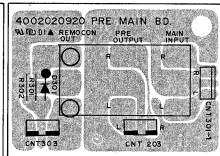
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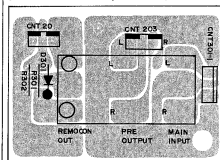
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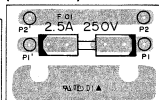
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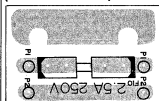
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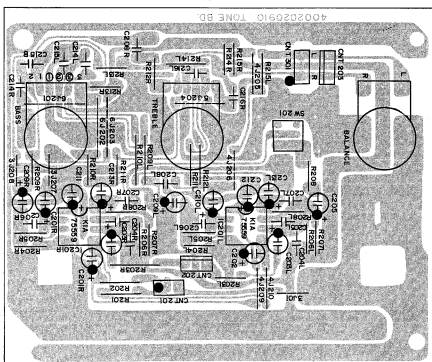
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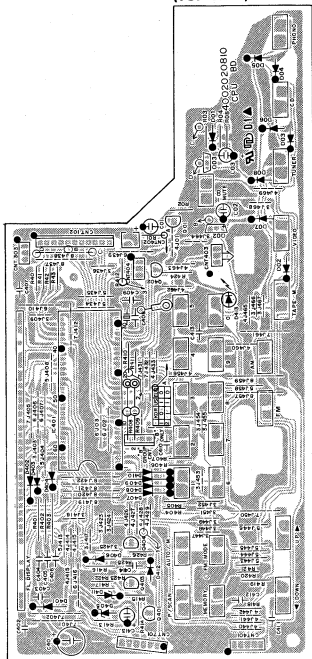


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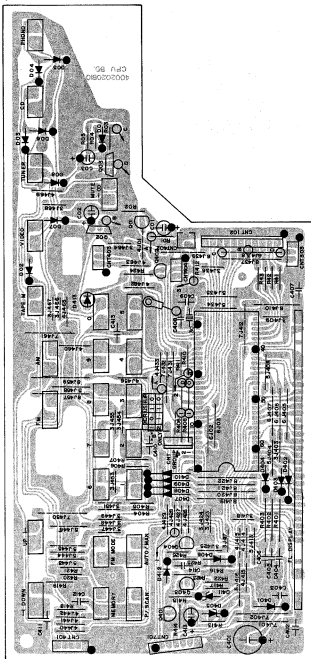


CPU P.C. BOARD 4002020810

(TOP VIEW)



(BOTTOM VIEW)



V.R. LED P.C. BOARD 4002020880

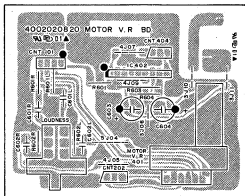
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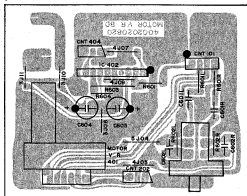
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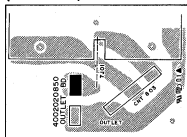
(TOP VIEW)



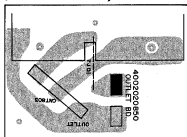
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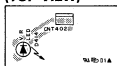
(TOP VIEW)



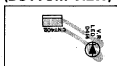
(BOTTOM VIEW)



(TOP VIEW)



(BOTTOM VIEW)



Electrical Parts List

PRODUCT SAFETY NOTICE: Products Marked with Δ have special characteristics important to safety. If you replace any of these components, carefully read the product safety notice of this manual. Don't degrade the safety of the Product through improper servicing.

Resistors & Capacitors tolerance, D($\pm 5\%$), J(± 0.5), K($\pm 10\%$), M($\pm 20\%$), Z($+80\%$, -20%).

Ref.No	Part No.	Description	Remark
Main Board 4002020800			
Capacitors			
C701L/R	3479233971	Electric SA 3.3 μ F 50V M	
C702L/R	3579331130	Ceramic 330pF 50V J	
C703L/R	.	Not used !	
C704L/R	3579309030	Ceramic 3 μ F 50V J	
C705L/R	3479233031	Electric SA 33 μ F 16V M	
C706L/R	3579471130	Ceramic 470pF 50V J	
C707L/R	3579309030	Ceramic 3 μ F 50V J	
C708L/R	3579270130	Ceramic 27pF 50V J	
C709L/R	3679473120	Mylar 0.047 μ F 100V J	
C710L/R	3579221130	Ceramic 220pF 50V J	
C711L/R	3579102530	Ceramic 1000pF 50V J	
C712L/R	3479247071	Electric SA 0.47 μ F 50V M	
C713L/R	3579221130	Ceramic 220pF 50V J	
C714L/R	3479247071	Electric SA 4.7 μ F 50V M	
C715L/R	3679473120	Mylar 0.047 μ F 100V J	
C716	3409247119	Electric SA 470 μ F 6.3V M	
C717	3479247071	Electric SA 4.7 μ F 50V M	
C718	3479222071	Electric SA 2.2 μ F 50V M	
C719	3409247119	Electric SA 100 μ F 18V M	
C720	3409210189	Electric SA 100 μ F 35V M	
C721	3479210971	Electric SA 1 μ F 50V M	
C801/C802	3419568280	Electric SA 8800 μ F 63V M	
C803/C804	3609334120	Mylar 0.33 μ F 100V J	
C805	3509103450	Ceramic 0.01 μ F 500V J	D
C805/C807	3549472407	Ceramic AC 0.0047 μ F 400V J	
C806/C807	3579683120	Mylar 0.008 μ F 100V J	
C806/C807	3509103450	Ceramic 0.01 μ F 500V J	D
C808	3409247119	Electric SA 470 μ F 25V M	
C809	3409210189	Electric SA 100 μ F 35V M	
C810/C811	3579683120	Mylar 0.008 μ F 100V J	
C810/C811	3509103450	Ceramic 0.01 μ F 500V J	D
C812/C813	3409247119	Electric SA 470 μ F 35V M	
C814/C815	3479247041	Electric SA 47 μ F 25V M	
C816	.	Not used !	
C817	3479247041	Electric SA 47 μ F 25V M	
.	3679472530	Ceramic 0.0047 μ F 50V J	D
Connectors			
CNT103	4119103403	Assy 3P 400mm to Tuner BD	
CNT201	4428565710	Plug 3P	
CNT301	4428565710	Plug 3P	
CNT3011	4428565710	Plug 3P	
CNT701	4428565410	Plug 7P	
CNT702	4119108309	Assy 8P 300mm to Speaker Switch B'D	
CNT801	4428525780	PCB Pin 2P	
CNT802	4428525410	Plug 7P	
CNT903	4428525790	PCB Pin 3P	
CNT905	4428525790	PCB Pin 3P	
Coils			
L701L/R	2648001010	Inductor, 0.5 μ H	

Ref.No	Part No.	Description	Remark
Diodes			
D701	2258100135	1N4002	
D702L/R	2058306101	1N4148	
D703L/R	2258522119	Zener 128M	
D704L/R	2058306101	1N4148	
D705L/R	2058306101	1N4148	
D706	2258522118	Zener 118M	
D707	2258100135	1N4002	
D708	2058306101	1N4148	
D801-D804	2058100135	1N5402	
D805-D814	2258100135	1N4002	
D815	2258522121	Zener 158M	
D816	2258100135	1N4002	
D817	2258522110	Zener 5.18M	
D818	2258596115	Zener 278M	
Fuses			
F801	5508202721	NB20mm 3.15A 20mm 125V	A
F801	5508302435	T2.0A 20mm 250V	C,D,E,F
F801	5508202730	NB3.15A 20mm 250V(MKS)	DOM.
F802/F803	5508201521	NB 400mA 20mm 125V	A
F802/F803	5508301534	NB 1400mA 20mm 125V	C,D,E,F
F802/F803	5508201530	NB 400mA 20mm 125V	DOM.
IC			
IC802	2168601105	GD7815	
Resistors : All Resistors are 1/5W carbon film $\pm 5\%$ tolerance, unless otherwise specified. M is metal film, M.O is metal oxide and C is cement type.			
R701L/R	3069102970	1k Ω	
R702L/R	3069102970	1k Ω	
R703L/R	3069393970	39k Ω	
R704L/R	3069102970	1k Ω	
R705L/R	3069222970	22k Ω	
R706L/R	3069681970	680 Ω	
R707L/R	3069103970	10k Ω	
R708L/R	3069221970	220 Ω	
R709L/R	3069221970	220 Ω	
R710L/R	3069680970	68 Ω	
R711L/R	3069221970	220 Ω	
R712L/R	3069102970	1k Ω	
R713L/R	3069103970	10k Ω	
R714L/R	3069103970	10k Ω	
R715L/R	3069680970	68 Ω	
R716L/R	3069222970	2.2k Ω	
R717L/R	3069222970	2.2k Ω	
R718L/R	3069153970	15k Ω	
R719	3069222970	22k Ω	
R719L/R	3069100476	10 Ω 1W	
R720L/R	3069100476	10 Ω 1W	
R721L/R	3069123970	12k Ω	
R722	3069479476	M.O. 47 Ω 1W	
R723/R724	3069332970	3.3k Ω	
R725	3069473970	47k Ω	
R726	3069103970	10k Ω	

Ref.No	Part No.	Description	Remark
R727	3069105970	1MΩ	
R728	3069162970	1.5kΩ	
R729	3069163970	18kΩ	
R730	3069223970	22kΩ	
R731 / R732	3069101970	100Ω	
R733	3059222476	M.O., 2.2kΩ 1W	
R734-R740	*	Not used!	
R741/L/R	3069102970	1kΩ	
R742/L/R	3069242970	2.4kΩ	
R743/L/R	3069161970	180Ω	
R744/L/R	3059278662	0.27Ω 3W	
R745/L/R	3059278662	0.27Ω 3W	
R801	3039479476	M.O 4.7Ω 1W	
R802	3039681372	M.880Ω 1/2W	
R803	3039820476	M.O 82 1W	
R804	3069682970	5.8kΩ	
R805	3059271976	270Ω	

Relay

•	5528001320	Speaker, VB24MB-610UL/24VDC
•	5528001250	Transformer, VS12MBNR12V

Transistors

Q701/L/R	2206806112	2SD1302 NPN
Q702/L/R	2208806108	KTC2240BL NPN
Q703/L/R	2208006108	KTC2240BL NPN
Q704/L/R	2206206106	KT41015 PNP
Q705/L/R	2208206102	KT4949 PNP
Q706/L/R	2208806104	KT41815 NPN
Q707/L/R	5508806107	KTC2229V NPN
Q708/L/R	2228106107	2SA985 PNP
Q709/L/R	2228406120	2SC2235 NPN
Q710/L/R	2028407109	2SD718, With MICA NPN
Q711/L/R	2028107106	2SB688, With MICA NPN
Q712/L/R	2206606114	MPSA06 NPN
Q713/L/R	2206606104	KT41815 NPN
Q714	2208606114	MPSA06 NPN
Q715	2208206105	KT41015 PNP
Q716	2208606104	KT41815 NPN
Q717	2208606114	MPSA06 NPN
Q718	2208206105	KT41015 PNP
Q719 / Q720	2208606114	MPSA06 NPN

Transformers

•	2828068207	STBY Trans 120V/60Hz	A
•	2828068807	STBY Trans 230V/50Hz	C,D,F
•	2828068907	STBY Trans 240V/50Hz	E
•	2828072607	STBY Trans 110V/220V	DOM.
•	2828082201	Main Trans 120V/60Hz	A
•	2828083601	Main Trans 230V/50Hz	C,D,F
•	2828094501	Main Trans 240V/50Hz	E
•	2828094601	Main Trans 110V/220V	DOM.

Tuner Board 4002020900

Capacitors

C1	3579103530	Ceramic	0.01µF	50V	J	D
C101/C102	3579473530	Ceramic	0.047µF	50V	J	
C103	3479210131	Electric SA	100µF	16V	M	
C104	3579223530	Ceramic	0.022µF	50V	J	
C105	3579101130	Ceramic	100µF	50V	J	
C106/C107	*	Not used!				

Ref.No	Part No.	Description	Remark
C106/C109	3529270210	Ceramic CH	27µF 50V J
C110	3579103530	Ceramic	0.01µF 50V J
C111	3479247041	Electric SA	47µF 25V M
C112	3479210871	Electric SA	1µF 50V M
C113	3516471110	Poly	470µF 50V J
C114	*	Not used!	
C115	3579103530	Ceramic	0.01µF 50V J
C116/C117	3579203530	Ceramic	0.02µF 50V J
C118/C119	3579473530	Ceramic	0.047µF 50V J
C120	3479210071	Electric SA	10µF 50V M
C121	3479247071	Electric SA	4.7µF 50V M
C122	3579103530	Ceramic	0.01µF 50V J
C123	3579331130	Ceramic	330µF 50V J
C124	3479210971	Electric SA	1µF 50V M
C125	3579101130	Ceramic	100µF 50V J
C125-1	3579820130	Ceramic	82µF 50V J
C126	3479210071	Electric SA	10µF 50V M
C127	3479247041	Electric SA	47µF 25V M
C127-1	3579103530	Ceramic	0.01µF 50V J
C128	3579470130	Ceramic	47µF 50V J
C129/C130	3479210071	Electric SA	10µF 50V M
C131	3479233971	Electric SA	3.3µF 50V M
C132	3579223120	Mylar	0.022µF 100V J
C133	3479210071	Electric SA	10µF 50V M
C134	3579563126	Mylar	0.066µF 100V J
C135	3579332126	Mylar	0.0033µF 100V J
C136	3479210071	Electric SA	10µF 50V M
C137	3479233971	Electric SA	3.3µF 50V M
C138	3479210971	Electric SA	1µF 50V M
C139	3479233971	Electric SA	3.3µF 50V M
C140	3479210971	Electric SA	1µF 50V M
C141	3519102110	Poly	1000µF 50V J
C142	3579473120	Mylar	0.047µF 100V J
C143	3519881110	Poly	880µF 50V J
C144	3479210971	Electric SA	1µF 50V M
C144/L/R	3579152120	Mylar	0.0015µF 100V J
C144/L/R	3579102120	Mylar	0.001µF 100V J
C145	3479233971	Electric SA	3.3µF 50V M
C146	3408222139	Electric SA	220µF 16V M
C147	3479247071	Electric SA	0.47µF 50V M
C147/L/R	3479222071	Electric SA	22µF 50V M
C148	3579151130	Ceramic	150µF 50V J
C148/L/R	3479222971	Electric SA	2.2µF 50V M
C150/L/R	3579382120	Mylar	0.0039µF 100V J
C151/C152	3479247041	Electric SA	47µF 25V M
C153	3479210971	Electric SA	1µF 50V M
C154/L/R	3579101130	Ceramic	100µF 50V J
C155/L/R	3579101130	Ceramic	100µF 50V J
C156/L/R	3579101130	Ceramic	100µF 50V J
C157/L/R	3579101130	Ceramic	100µF 50V J
C158/L/R	3579101130	Ceramic	100µF 50V J
C158/L/R	3579101130	Ceramic	100µF 50V J
C160/L/R	3579101130	Ceramic	100µF 50V J
C161/L/R	*	Not used!	
C162	*	Not used!	
C163	3579473530	Ceramic	0.047µF 50V J
C164/L/R	*	Not used!	
C165/L/R	3579101130	Ceramic	100µF 50V J
C166/L/R	3479210971	Electric SA	10µF 50V M
C167/L/R	3579100130	Ceramic	10µF 50V J
C168/L/R	3479247041	Electric SA	47µF 25V M
C169/L/R	3579222530	Ceramic	0.0022µF 50V J
C170/L/R	3579182120	Mylar	0.0018µF 100V J

Ref.No	Part No.	Description	Remark
C171/L/R	3679562120	Mylar 0.0065 μ F 100V J	
C172/C173	3479247041	Electric SA 47 μ F 25V M	
C174/L/R	3479268871	Electric SA 0.68 μ F 50V M	
C175/L/R	3679152120	Mylar 0.0015 μ F 100V J	
Trimmer			
TC101/TC102	2838001010	Capacitor, 20pF	
Ceramic Filters			
CF101/CF102	3908011001	SFE 10.7MAGH-A-TE20	A
CF101/CF102	3908011011	SFE 10.7MS3GH	C, E, F
CF101-CF103	3908011011	SFE 10.7MS3GH	D
CF104	3908001150	SFZ450	
CF105	3908001020	BFU450C	
Connectors			
CNT101	4428505610	Plug 4P	
CNT102	4428510710	Plug 11P	
CNT103	4428505710	Plug 3P	
Coils			
L101	2648601430	Inductor, 20.8mH	
T101	2608201120	AM ANT	
T102	2838501210	FM DET(B)	
T103	2838501110	FM DET(A)	
T104	2838201150	AM OSC	
T105	2648001250	AM IFT	
T106/L/R	2658301100	MPX Filter 19kHz	D
Diodes			
D101/D102	2058819106	Varactor KV1236Z	
D103	2258522110	Zener 5.1BM	
D104/D105	2058306101	1N4148	
D106/D107	2058306101	1N4148	
IC's			
IC101	2138017112	LM7001	
IC102	2168017128	LA1268	
IC103	2168801100	GL393	
IC104	2168411105	HA12016	
IC105	2168017132	LC7821	
IC106	2168206107	KIA6259P	
Transistors			
Q101	2008408101	LM9018 NPN	
Q102	2018211100	FET, 25K168	
Q103	2208606108	KTC2140BL	
Q104/Q105	2208222105	KTA114YS	
Q106	2208206105	KTA1015	
Q107/L/R	2208906112	2SD1302	
<ul style="list-style-type: none"> 3828801930 Front end Pack, Pack FE306-A15 3828801890 Front end Pack, Pack FE407-G60 			
X-TAL	3508101030	Crystal 7.2MHz	
Resistors			
R101	3069563970	58k Ω	D
R102	3069104970	100k Ω	D

Ref.No	Part No.	Description	Remark
R103-R105	3069101970	100 Ω	
R106	3069103970	10k Ω	
R107	3069104970	100k Ω	
R108	3069152970	1.5k Ω	
R109-R111	3069101970	100 Ω	
R112	3039221372	M.O., 220 Ω 1/2W	
R112-1	3069101970	100 Ω	
R113	3068821970	820 Ω	
R114	3069104970	100k Ω	
R115	3068561970	560 Ω	
R116	3069471970	470 Ω	
R117	3069332970	3.3k Ω	
R118	3068531970	330 Ω	
R119	3068332970	3.3k Ω	
R120	3069103970	10k Ω	
R121	3068820970	82 Ω	
R122	3069472970	4.7k Ω	
R123	*	Not used!	
R124	3069183970	18k Ω	ADOM.
R124)	3069393970	39k Ω	C, D, E, F
R125	3068823970	82k Ω	
R126	3069103970	10k Ω	
R127	3069472970	4.7k Ω	
R128	3069683970	68k Ω	
R129	3069243970	24k Ω	
R130	3069222970	2.2k Ω	ADOM.
R130)	3069332970	3.3k Ω	C, D, E, F
R131	3069272970	2.7k Ω	ADOM.
R131)	3069182970	1.8k Ω	C, D, E, F
R132	3069104970	100k Ω	
R133/R134	3069103970	10k Ω	
R135	3069474970	470k Ω	
R136	*	Not used!	
R137	3069103970	10k Ω	
R138	3069332970	3.3k Ω	
R139	3069562970	5.6k Ω	
R140	3069683970	68k Ω	
R141	3069103970	10k Ω	
R142	3069470970	47 Ω	
R143	3069472970	4.7k Ω	
R144	*	Not used!	
R145	3069662970	5.6k Ω	
R146	3069102970	1k Ω	
R147	3069104970	100k Ω	
R148	3069223970	22k Ω	
R149	3069470970	47 Ω	
R150/L/R	3068332670	3.3k Ω	ADOM.
R150/L/R)	3069102970	1k Ω	C, D, E, F
R151/L/R	3069223970	22k Ω	
R152/L/R	3069332970	3.3k Ω	
R153	3069392970	3.9k Ω	
R154/L/R	3069473970	47k Ω	
R156/L/R	3069332970	3.3k Ω	
R156/L/R)	3069102970	1k Ω	
R157/L/R	3069102970	1k Ω	
R158/L/R	3069121970	120 Ω	
R159	3069102970	1k Ω	D
R160/L/R	3069121970	120 Ω	
R161/L/R	3069102970	1k Ω	
R162/L/R	3069121970	120 Ω	
R163/L/R	3069102970	1k Ω	
R164/L/R	3069104970	100k Ω	
R166/L/R	3069104970	100k Ω	
R168/L/R	3069911970	910 Ω	

Ref.No	Part No.	Description	Remark
R167L/R	3069433970	43kΩ	
R168L/R	3069584970	560kΩ	
R169L/R	3069102970	1kΩ	
R170L/R	3069104970	100kΩ	
R171/R172	3069470970	47Ω	
R173/R175	3069470970	47Ω	
R174L/R	3069333970	3.3kΩ	
R176	3069104970	100kΩ	
VR101/V102	3249050343	50kΩ(B)	
VR104	3249050343	5kΩ(B)	
VR105	3248020443	200kΩ(B)	

Tone Board 4002020910

Capacitors			
C201/C202	3479247041	Electric SA	47 pF 25V M
C203L/R	3479247971	Electric SA	4.7 pF 50V M
C204L/R	3579620130	Ceramic	82pF 50V J
C205	3479247971	Electric SA	4.7 pF 50V M
C205L/R	3579221130	Ceramic	220pF 50V J
C206L/R	3579470130	Ceramic	47pF 50V J
C207L/R	3579620130	Ceramic	82pF 50V J
C208L/R	3579561130	Ceramic	560pF 50V J
C209L/R	3479210971	Electric SA	1 pF 50V M
C210L/R	3479247971	Electric SA	4.7 pF 50V M
C211/C212	3479247041	Electric SA	47 pF 25V M
C213L/R	3479247971	Electric SA	4.7 pF 50V M
C214L/R	3679223120	Mylar	0.022 pF 100V J
C215L/R	3679223120	Mylar	0.022 pF 100V J

Connectors

CNT201	4119103163	Assy 3P 160mm to Main B'D	
CNT202	4358103356	Shield 3P 350mm to Motor Volume B'D	
CNT203	4358103502	Shield 3P 500mm to Pre-Main B'D	
CNT301	4119103083	Assy 3P 80mm to Main B'D	

IC

IC201L/R	2186206104	KIA76559P	
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Resistors

R201/R202	3069470970	47Ω	
R203L/R	3069102970	1kΩ	
R204L/R	3069224970	220kΩ	
R205L/R	3069225970	2.2MΩ	
R206L/R	3069104970	100kΩ	
R207L/R	3069520970	82Ω	
R208	3069181970	180Ω	
R208L/R	3069561970	560Ω	
R209L/R	3069333970	33kΩ	
R210L/R	3069203970	20kΩ	
R211L/R	•	Not used!	
R212L/R	3069103970	10kΩ	
R213L/R	3069203970	20kΩ	
R214L/R	•	Not used!	
R215L/R	3069222970	2.2kΩ	

CPU Board 4002020810

Ref.No	Part No.	Description	Remark
Capacitors			
C401	3439147312	Electric SA	0.047 pF 5.5V M
C402	3579222530	Ceramic	0.022 pF 50V Z
C403	•	Not used!	
C404-C406	3579101130	Ceramic	100pF 50V J
C407	3579222530	Ceramic	0.022 pF 50V J
C408/C409	3579101130	Ceramic CH	27pF 50V J
C410-C413	3579101130	Ceramic	100pF 50V J
C414	3579103530	Ceramic	0.01 pF 50V J
C415	3479210971	Electric SA	1 pF 50V M

Connectors

CNT102	4119111143	Assy 11P 140mm to Tuner B'D	
CNT303	4119103343	Assy 3P 340mm to Pre-Main B'D	
CNT401	4119105262	Assy 5P 250mm to Power Switch B'D	
CNT402	4428519420	Plug 2P	
CNT403	4119103143	Assy 3P 140mm to Receiver B'D	
CNT404	4119103143	Assy 3P 140mm to Motor Volume B'D	
CNT701	4119107183	Assy 7P 180mm to Main B'D	

Diodes

D401-D404	2058306101	1N4148	
D405	2258522116	Zener 9.18M	
D406-D412	2058306101	1N4148	
D411	2258522110	Zener 5.18M	
D413	2371124701	LED, SLR34URC(Red)	

IC

IC401	2138313151	CPU # D75212	
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Resistors

R40-R43	3069272970	2.7kΩ	
R44-R406	•	Not used!	
R401-R407	3069102970	1kΩ	
R408/R409	3069103970	10kΩ	
R410	3069472970	4.7kΩ	
R411/R412	3069331970	330Ω	
R413	3069622970	6.8kΩ	
R414	3069309970	39Ω	
R415	3069331970	390Ω	
R416	3069103970	10kΩ	
R417	3069105970	1MΩ	
R418-R421	3069122970	12kΩ	
R422	3069361970	390Ω	
R423	3069562970	5.6kΩ	
R424	•	Not used!	
R425	3069473970	47kΩ	
R426	3069222970	22kΩ	

Transistors

Q401	2208206105	KT41016 PNP	
Q402-Q404	2208306104	KT31815 NPN	
•	2228130322	PL Display, FPG CPM8	
•	3838131469	Resistor, 4.19MΩ	

Ref.No	Part No.	Description	Remark
Motor Volume Board 4002020820			
Capacitors			
C601L/R	3579151130	Ceramic 150pF 50V J	
C602L/R	3679563120	Mylar 0.066 μ F 100V J	
C603/C604	3479210131	Electric SA 100 μ F 16V M	
Connectors			
CNT101	4119104083	Assy 4P 60mm to Tuner BD	
CNT202	4428525240	Plug 3P	
CNT404	4428525240	Plug 3P	
IC			
IC402	2168007204	TA7291S	
Resistors			
R601	3069470970	47 Ω	
R601L/R	3069333370	33k Ω	
R602L/R	3069622970	6.2k Ω	
R603	3069103870	10k Ω	
R604	3069472970	4.7k Ω	

Speaker Board 4002020830

Resistor			
R501L/R	3039471576	M.O., 470 Ω 2W	
Connector			
CNT702	4428513480	Plug 8P	

Speaker Impedance Selector Board 4002020840

Connectors			
CNT804	4428525810	PCB Pin 5P From Trans	
CNT805	4428525790	PCB Pin 3P to Main BD	

Outlet Board 4002020850

Connector			
CNT903	4428526790	PCB Pin 3P	A
	4225001410	Terminal Pin Solder	A

Power Switch Board 4002020860

Diode			
D415	2371124701	LED, SLR 34URC(Red)	

Receiver Board 4002020870

Connectors			
CNT403	4428513430	Plug 3P	A
CNT33-1	4428513430	Plug 3P	
IC			
Sensor	2408513430	Sensor, KRM-88	

Ref.No	Part No.	Description	Remark
Volume LED Board 4002020880			
Connector			
CNT402	4358102184	Assy 2P 160mm to CPU B'D	
Diode			
D414	2371124701	LED, SLR 34URC(Red)	

Pre-Main Board 4002020920

Connectors			
CNT203	4428513430	Plug 3P	
CNT301	4358103502	Shield 3P 500mm to Main B'D	
CNT303	4428513430	Plug 3P	
Diode			
D301	2058305101	1N4148	
Resistors			
R301	3069223970	22k Ω	
R302	3069224970	220k Ω	

Remocon Board 4005113400

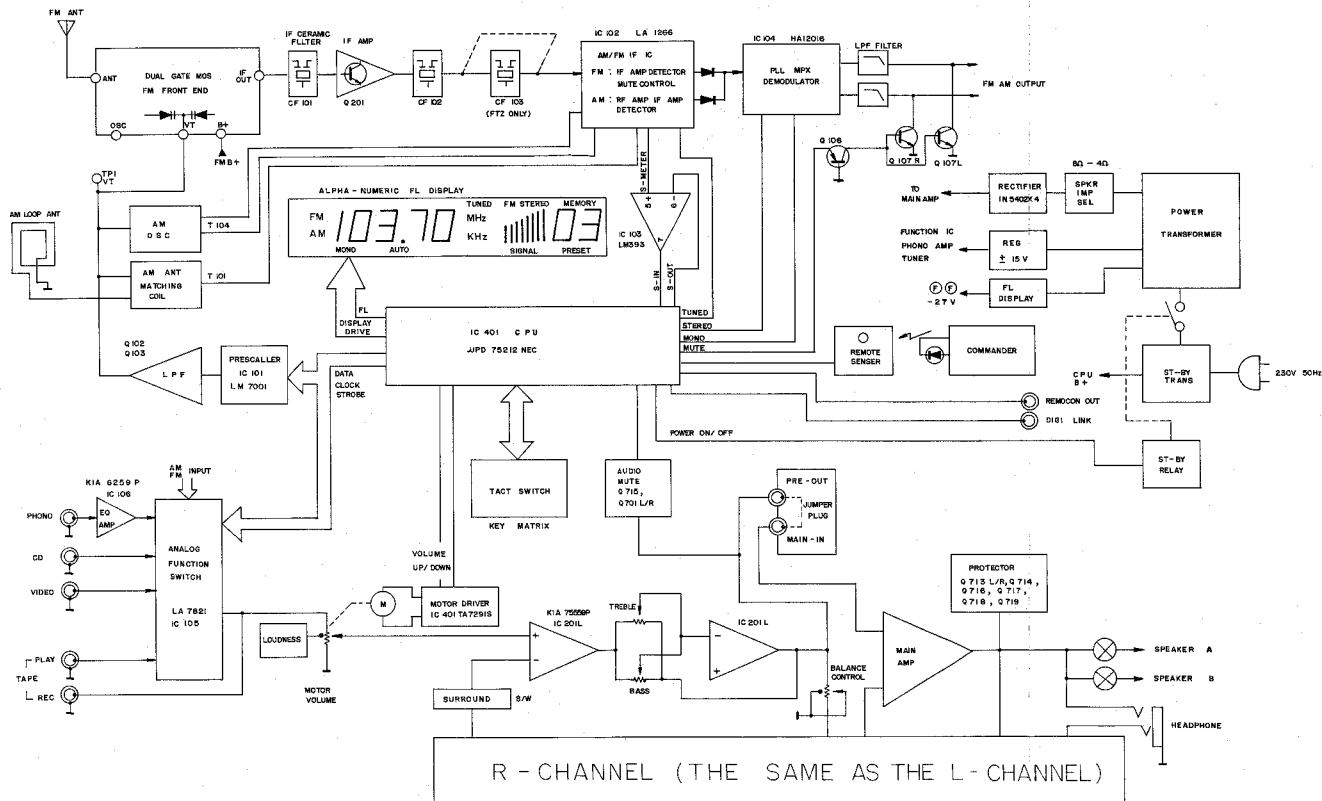
Capacitors			
C801/C802	3579101130	Ceramic 100pF 50V J	
C803	3409247021	Electric SA 47 μ F 10V M	
Diodes			
D802	2408001100	LED IREL2	
IC			
IC801	2138313140	MN15614KA-A	
Resistors			
R802-R805	3069224970	220k Ω	
Resonator	3938001001	Resonator, CSB455E	
Transistor	C801	2206906112	
Transistor			
Q801	2206906112	1TD1302S	

Mechanical Parts List

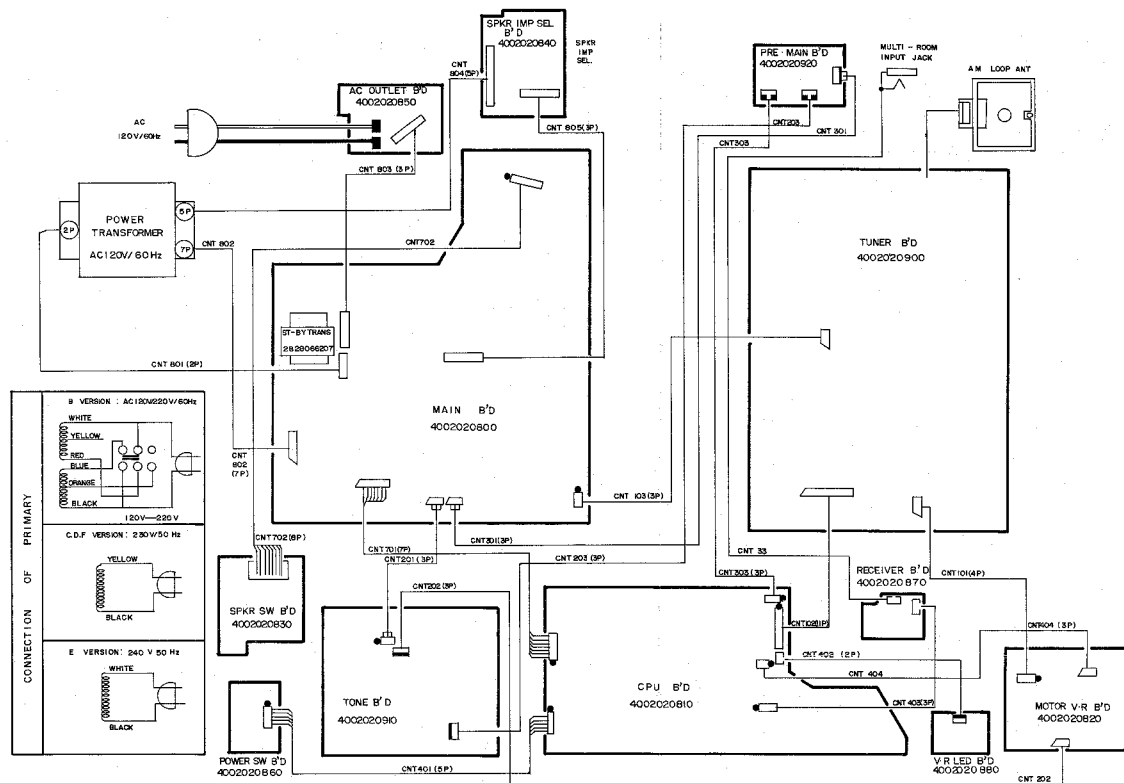
No.	Description	Part No.	Qty	Remark
1	Cover Top, Black	046122021521	1	
2	Bottom Cover	6122417010	1	
3	Bracket P.C.Board	6505101310	1	
4	Bracket P.C.Board	6503018410	1	
5	Bracket Heat Sink	6502002010	1	
6	Foot, Gold	046033101611	2	
7	Foot, Black	6033101610	2	A,B
(7)	Foot, Gold	046033101611	2	C,D,E,F
8	Frame Side(L)	6123620240	1	
9	Frame Side(R)	6123620211	1	
10	Heat Sink Power	7503012710	1	
11	Holder TR	6515002312	2	
12	Button Surround, Black	6545062910	1	
13	Shield Fence	6165139210	1	
14	Shield Fence	6165139110	2	
15	Button Speaker, Black	6545062210	2	
16	Bracket, Phone	6505106310	1	
17	Regulator TR Heatsink	7502206210	1	
18	Panel Front, Black	048501019411	1	
19	Badge, Black	048535031111	1	
20	Indicator	6545062010	3	
21	Shield Fence	6163110810	1	
22	Button Power, Black	6545074330	1	
23	Button Spring	6556004360	1	
24	Button Sleep, Black	6545062110	1	
25	Knob Tone, Black	048545082911	3	
26	Window Display, Wine	04853012011	1	
27	Button Preset, Black	6543033010	1	
28	Button Function, Black	048543033111	1	
29	Window Sensor, Dark Wine	048555033711	1	
30	Bezel AMFM, Black	048545082411	1	
31	Button AMFM, Black	6545062510	2	
32	Button Mute, Black	6545062510	2	
33	Button Spring	6556002510	2	
34	Knob Volume, Black	6543033210	1	
35	Chassis Back, Black	046102029721	1	A
(35)	Chassis Back, Black	046102029731	1	B
(35)	Chassis Back, Black	046102029741	1	C
(35)	Chassis Back, Black	046102029751	1	D
(35)	Chassis Back, Black	046102029761	1	E
(35)	Chassis Back, Black	046102029771	1	F
36	Terminal Ground	4409103720	1	
37	Cord AC Power, Black	4306001410	1	A
(37)	Cord AC Power, Black	4308001410	1	B
(37)	Cord AC Power, Black	4308000430	1	C
(37)	Cord AC Power, Black	4308000430	1	D
(37)	Cord AC Power, Black	4308003610	1	E
(37)	Cord AC Power, Black	4308000430	1	F
38	Stopper Cord, Black	6518000710	1	A
(38)	Stopper Cord, Black	6518000710	1	B
(38)	Stopper Cord, Black	6518000111	1	C
(38)	Stopper Cord, Black	6518000111	1	D
(38)	Stopper Cord, Black	6518000111	1	E
(38)	Stopper Cord, Black	6518000111	1	F

No.	Description	Part No.	Qty	Remark
39	Switch Test	4659003710	26	
40	Switch Push, Speaker	4628056410	1	
41	Switch Push, Surround	4628056410	1	
42	Switch Push, Loudness	4628056310	1	
43	VR Bass/Treble	3208041810	2	
44	VR Balance	3208052010	1	
45	Jack Phone, Gold	4438005020	1	
46	VR Motor	3223013610	1	
47	Switch Slide	4618006510	1	
48	Terminal Antenna	4408001510	1	A
(48)	Terminal Antenna	4408001510	1	B
(48)	Terminal Antenna	4408001610	1	C
(48)	Terminal Antenna	4408001610	1	D
(48)	Terminal Antenna	4408001610	1	E
(48)	Terminal Antenna	4408001610	1	F
49	Jack RCA, 4P	4438103110	1	
50	Jack RCA, 6P	4438103210	1	
51	Jack RCA Dglink	4438109010	1	
52	AC Out let	4448102710	1	A
(52)	AC Out let	4448102710	1	B
(52)	AC Out let	4448103610	1	C
(52)	AC Out let	4448103610	1	D
53	Terminal Speaker	4409105510	1	
54	Plug Jumper	4328204210	2	
55	Jack Multi	4438006610	1	
Screws				
S1	WSAM 4X8 ZNB	8158440063	8	
S2	#2 BTC 3X8 ZNB	8109230063	61	
S3	#2 TTC 3X8 ZNB	8109230063	3	
S4	#2 WPTC 3X8 ZNY	8159230081	9	
S5	HEX MSW 3X12 ZNY	8489130121	4	
S6	#3 BTC 3X8 ZNB	8109230063	4	
S7	#2 BTC 2.6X8 ZNB	8109230063	2	

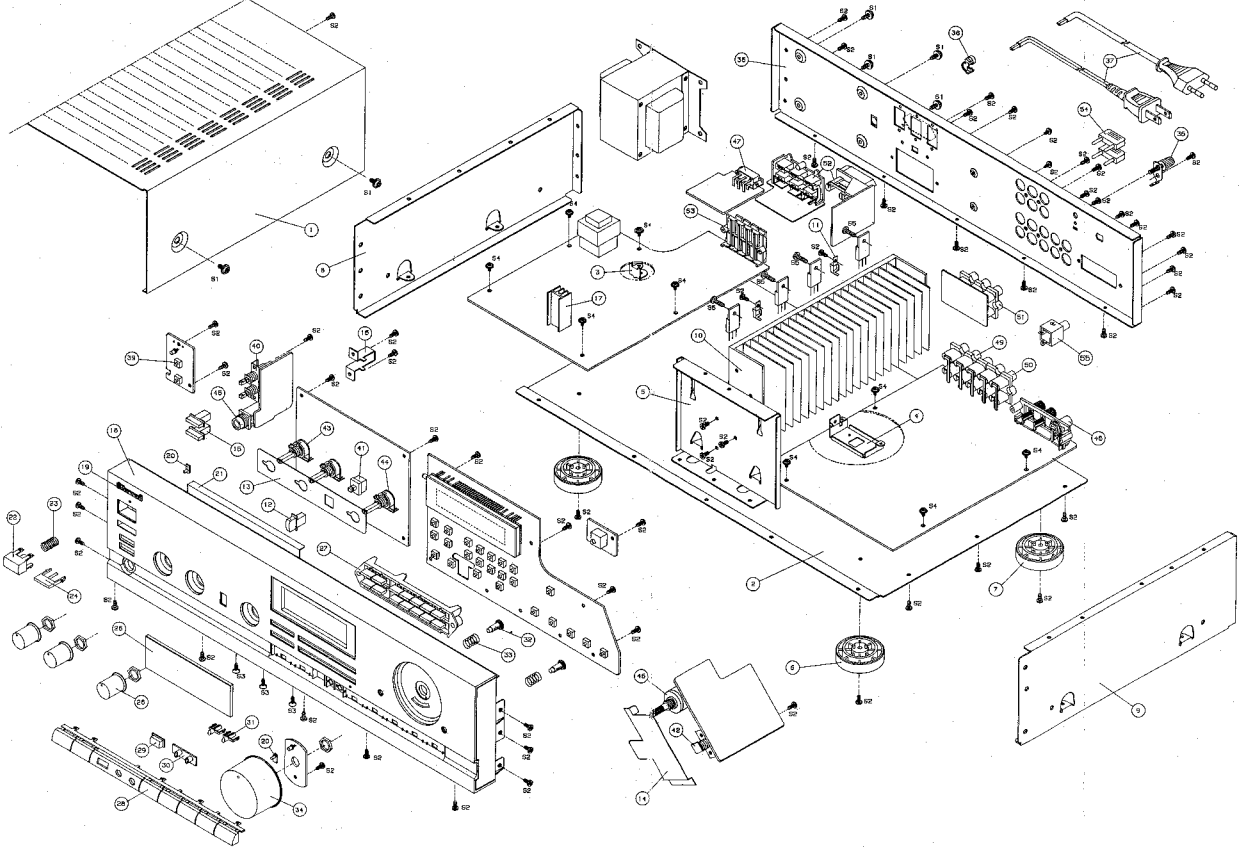
Block Diagram



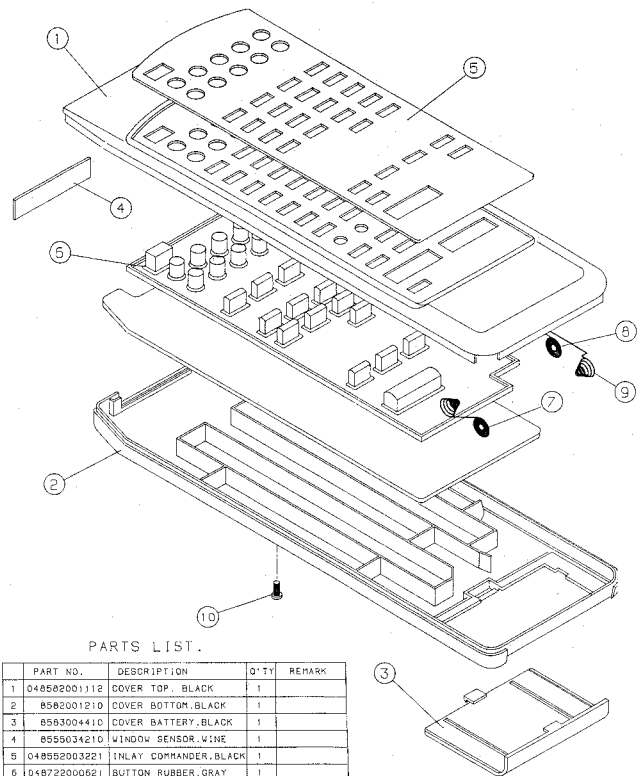
Wiring Diagram



Exploded View(Cabinet & chassis)



Exploded View(Remocon Ass'y)

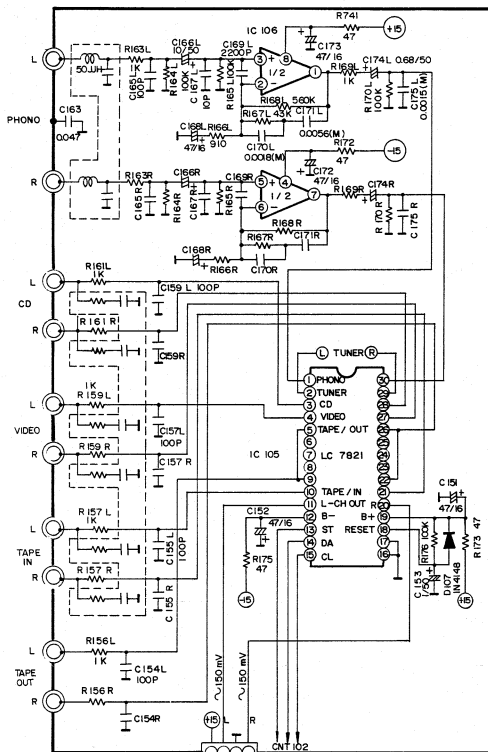
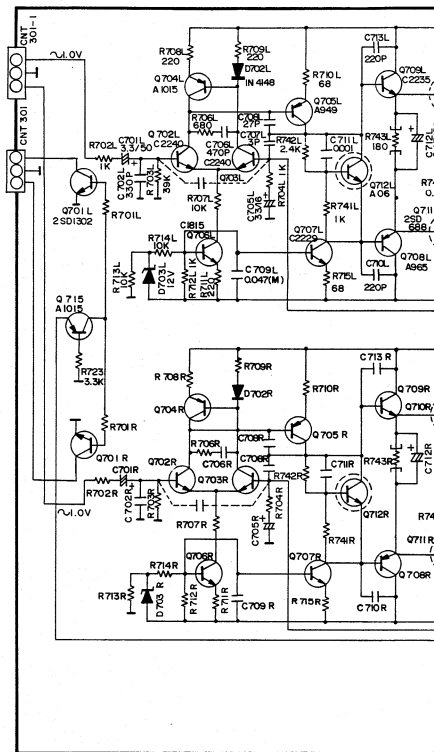
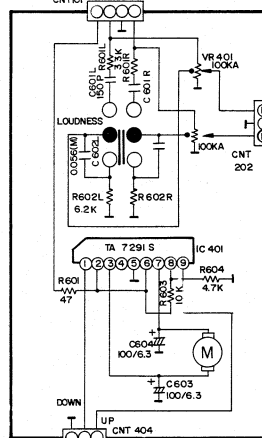
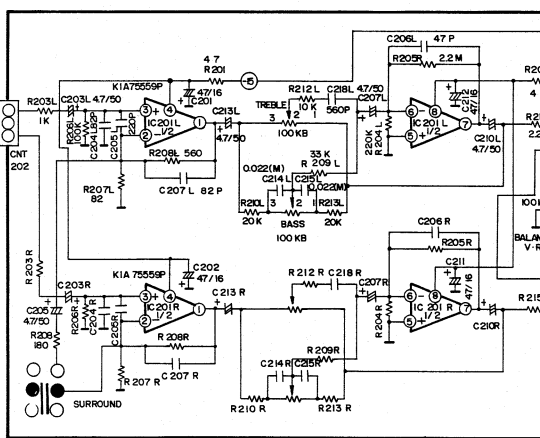


PARTS LIST.

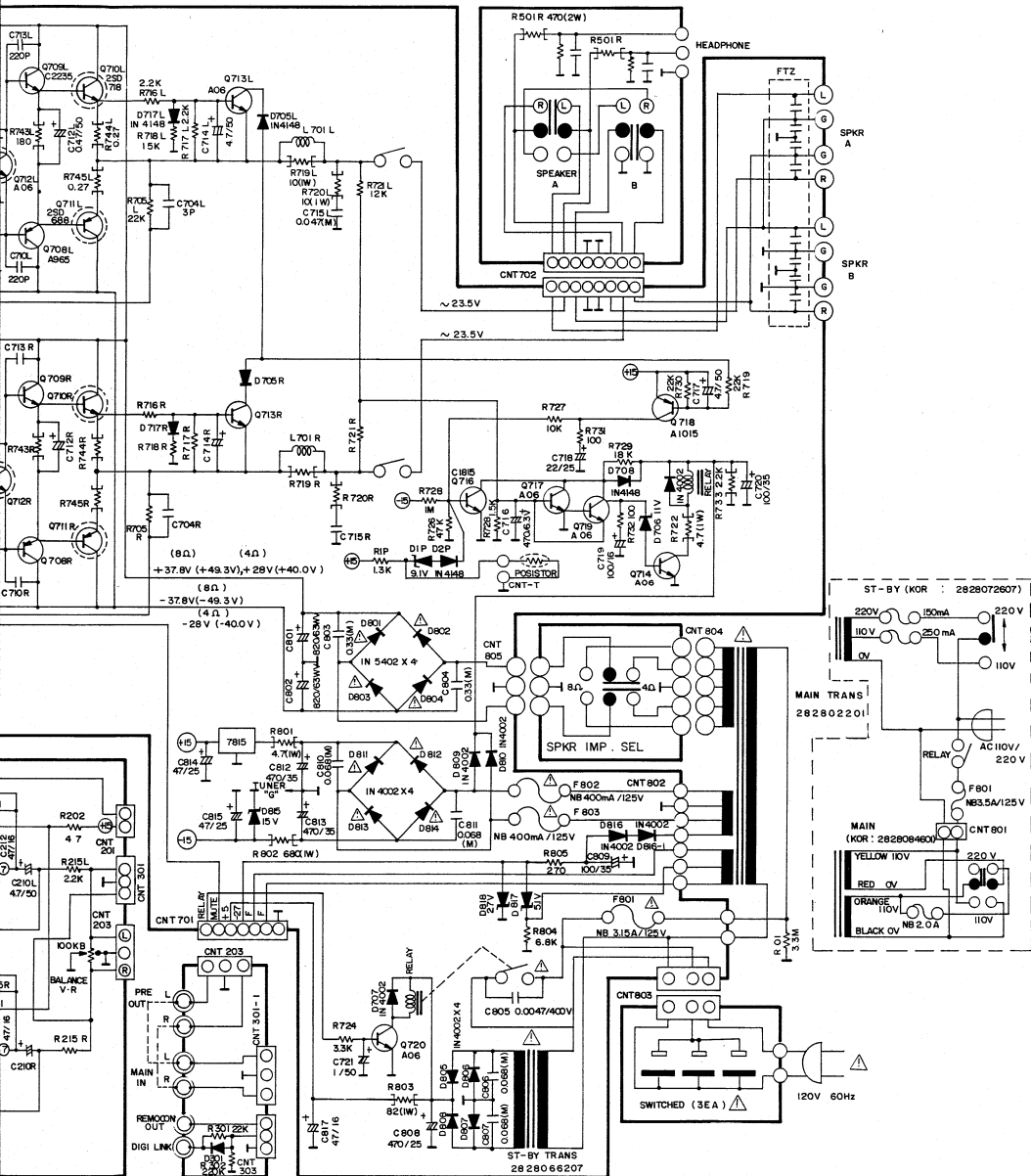
PART NO.	DESCRIPTION	Q'TY	REMARK
1	048582001112 COVER TOP, BLACK	1	
2	8582001210 COVER BOTTOM, BLACK	1	
3	8583004410 COVER BATTERY, BLACK	1	
4	8555034210 WINDOW SENSOR, WINE	1	
5	048552003221 INLAY COMMANDER, BLACK	1	
6	048722000621 BUTTON RUBBER, GRAY	1	
7	6555605310 SPRING BATTERY (+, -)	1	
8	6555009710 SPRING BATTERY (+)	1	
9	6555009810 SPRING BATTERY (-)	1	
10	8119620084 SCREW #2 PC2X8 ZNB	1	

Note

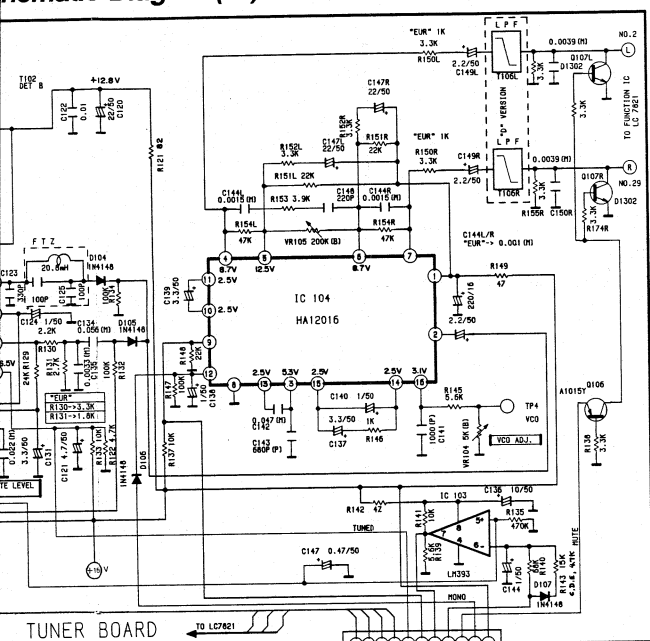
Schematic Diag



ic Diagram(I)



Schematic Diagram(Ⅱ)



SERVICE INFORMATION

*NOTES 1. Resistance values are indicated in ohms unless otherwise specified (K=1,000 M=1,000,000).
2. Capacitance values are shown in microfarads unless otherwise noted (P=micro - micro farads).

CAUTION: Safety precautions to be followed during servicing

- 1) Since those parts marked with Δ are critical parts for safety, use the one described in parts list.
- 2) Before returning the receiver to the customer make appropriate leakage current or resistance measurements to determine that exposed parts are properly insulated from the supply circuit.

