

TECHNICAL MANUAL

ROTEL[®] RT-850A

AM/FM STEREO TUNER

RT-850AL

MW/LW/FM STEREO TUNER

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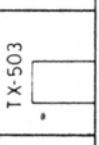
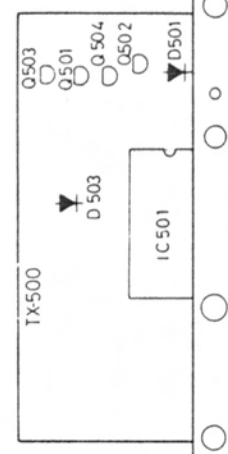
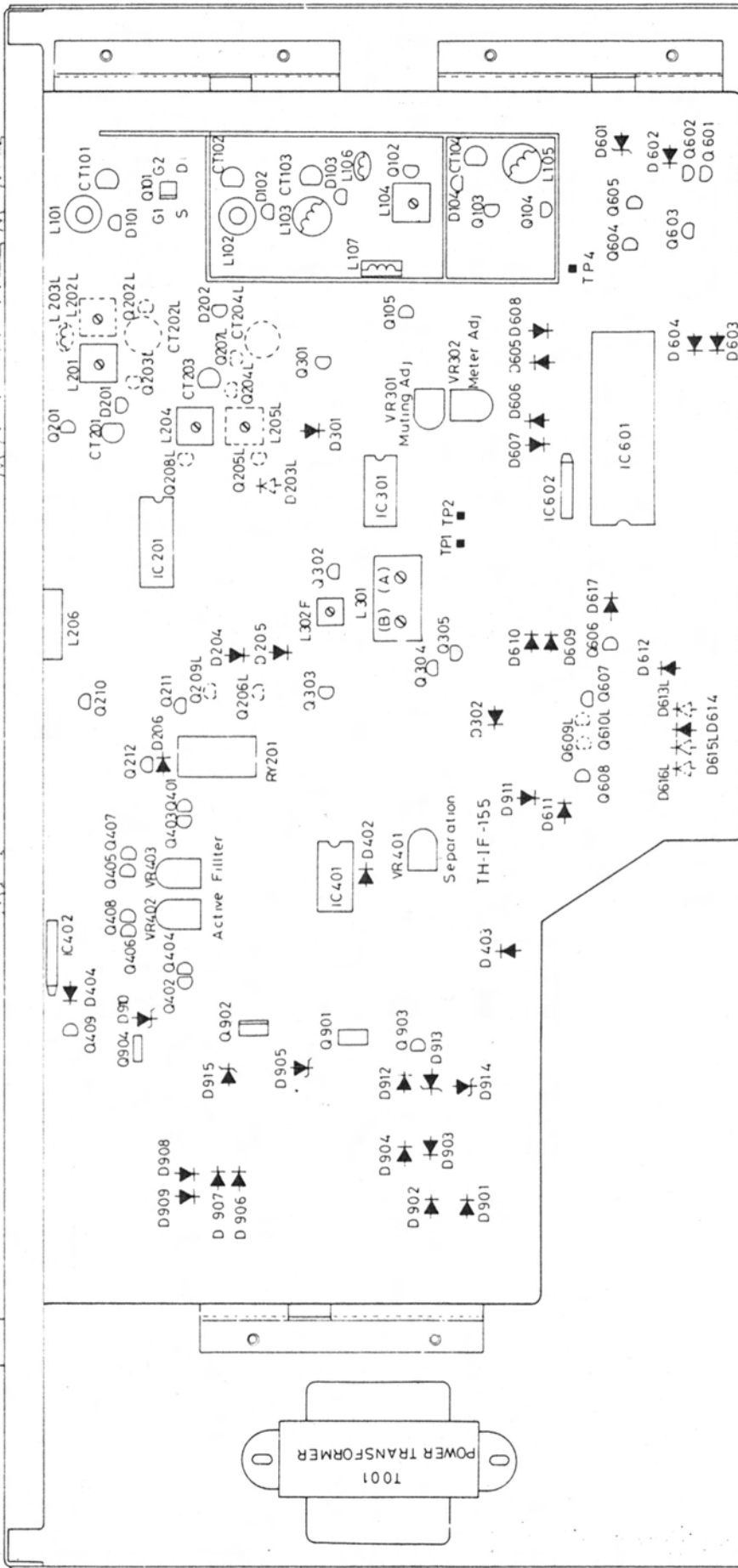
MN20001457

Chassis Layout

AM GND 300Ω FM 75Ω

OUTPUT

POWER CORD



TX-499

TX-501

POWER
LW MW FM AM MUTE OFF FMAUTO WIDE / MONO TUNING
MEMORY M1 M2 M3 M4 M5 M6 M7 M8
DOWN UP

FM IF and RF Alignment

Instruments : FM Signal Generator, (400Hz, 100% Modulated) T.H.D. analyzer, Oscilloscope, AC VTVM, DC Voltmeter, Tuning Meter

Terminated : DC Voltmeter...Between 4 and E2 On TH-IF-155 P.C.B.
Tuning Meter...Between TP1 and TP2 On TH-IF-155 P.C.B.

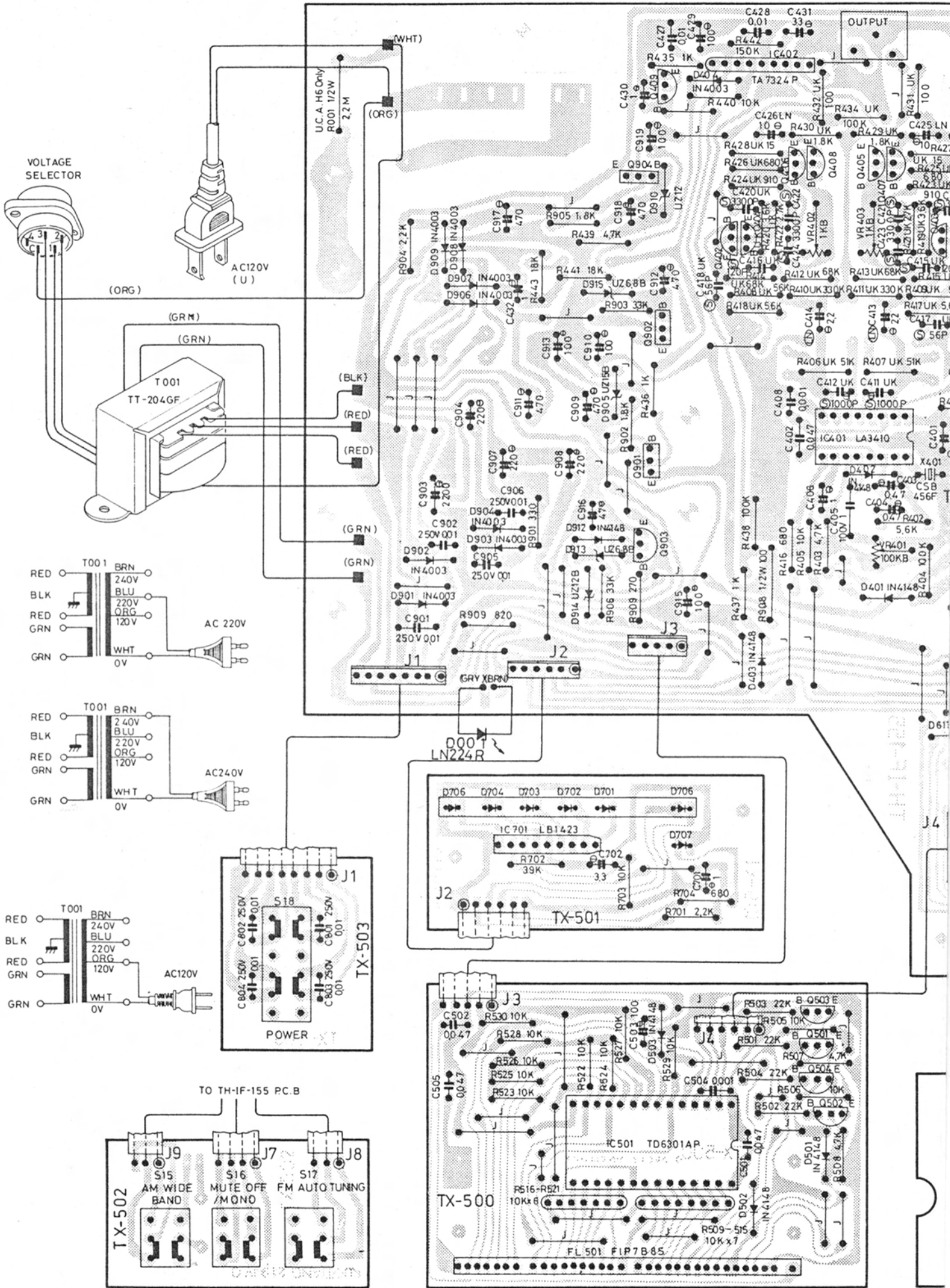
Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use.		87.5 MHz	L105	3V reading on DC Voltmeter
2			108 MHz	CT104	22V reading on DC Voltmeter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Antenna terminal	90 MHz	90 MHz	L101, L102 L103	Maximum reading on AC VTVM.
5				L104	Adjusting balance of wave form
6		105 MHz	105 MHz	CT101, CT102 CT103	Maximum reading on AC VTVM.
7	Repeat steps 4.5 and 6 unit on further improvement is noticed (Muting OFF)				
8	Antenna terminal 1mV input	90 MHz	90 MHz	L301(A)	Adjust center on Tuning Meter
9				L301(B)	Minimum reading on T.H.D. Analyzer
10	Repeat steps 8 and 9 unit no further improvement is noticed (Muting OFF)				
11	Antenna terminal 15 μ V input	90 MHz	90 MHz	VR301	Muting Level (Muting ON)
12	Antenna terminal 5 μ V input	90 MHz	90 MHz	VR302	Signal Indicator Level (Muting OFF)

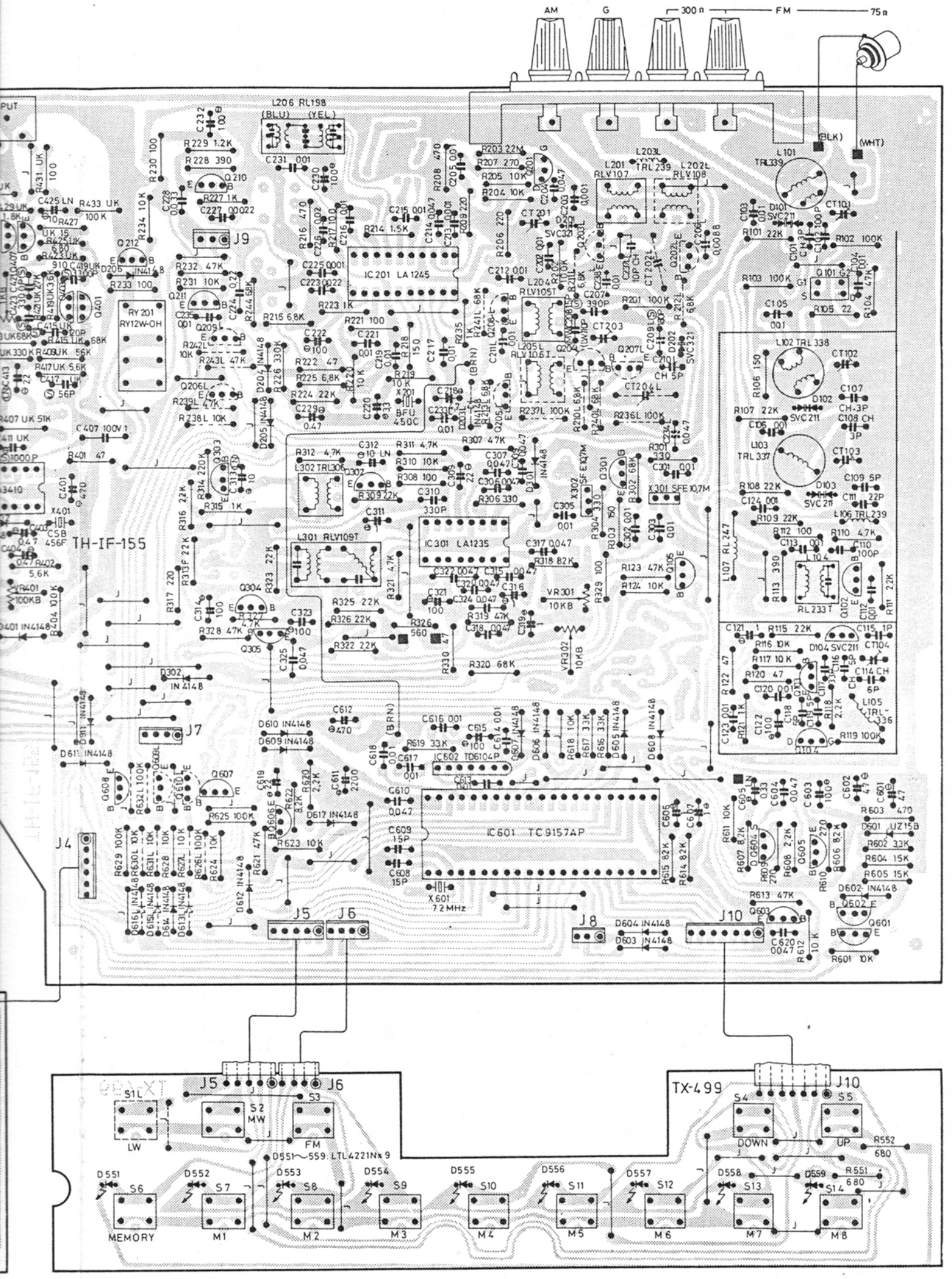
FM MPX Alignment

Instruments : FM Stereo Generator, AC VTVM, Oscilloscope, Frequency Countor and THD Analyzer

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal 1mV input	98 MHz Pilot.....10% 1 KHz.....90% Mod.	98 MHz	L302	Stereo indicator light up (Muting ON) L or R Max. reading on AC VTVM.
2				VR402, VR403	Best separation
3	Antenna terminal 1mV input	98 MHz Pilot.....10% 1 KHz.....90% Mod.	98 MHz	VR401	Pilot Cancel 19 KHz Minimum Dist.
4	Repeat steps 1 to 3 unit no further improvement is noticed. Check the stereo indicator can be operated normally when pilot signal is reduce from 10% to 5%				

Wiring Diagram

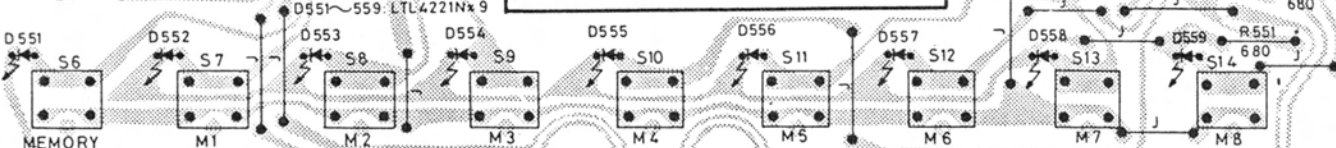




TH-IF-155

S1L XT

TX-499



559: LTL4221N x 9

MEMORY

M1

M2

M3

M4

M5

M6

M7

M8

DOWN

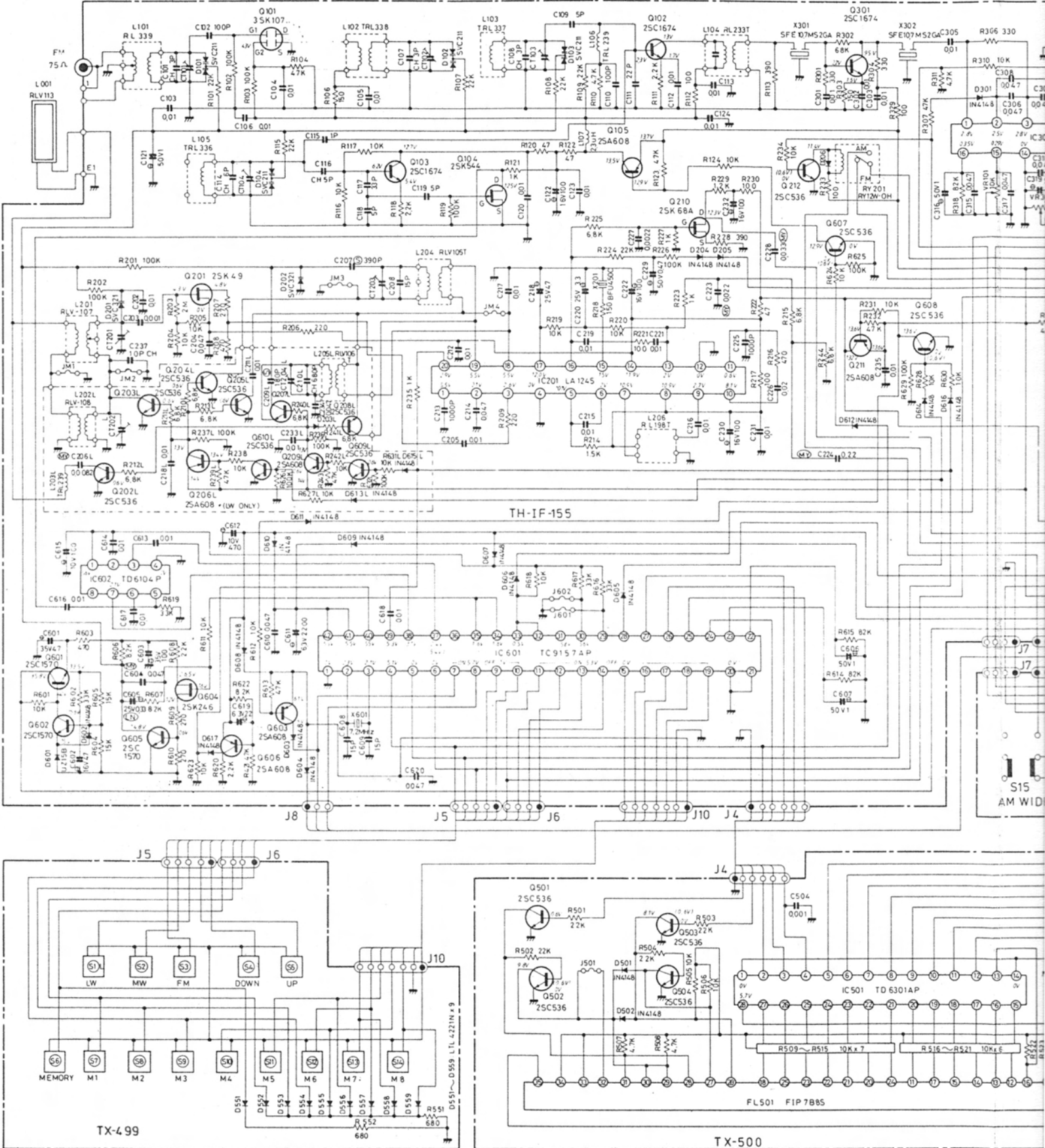
UP

R552 680

R551 680

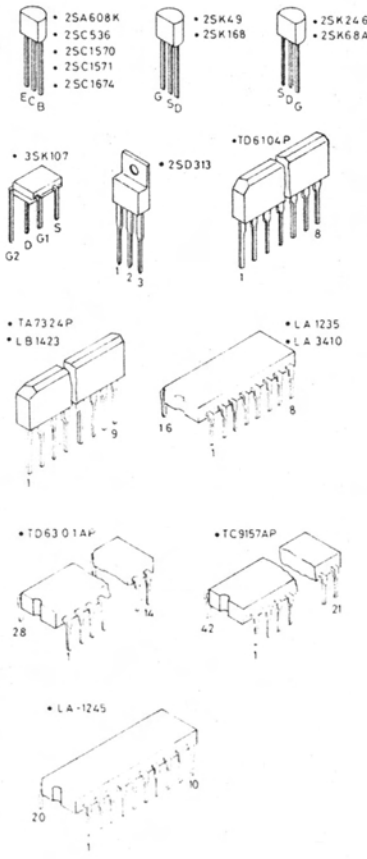
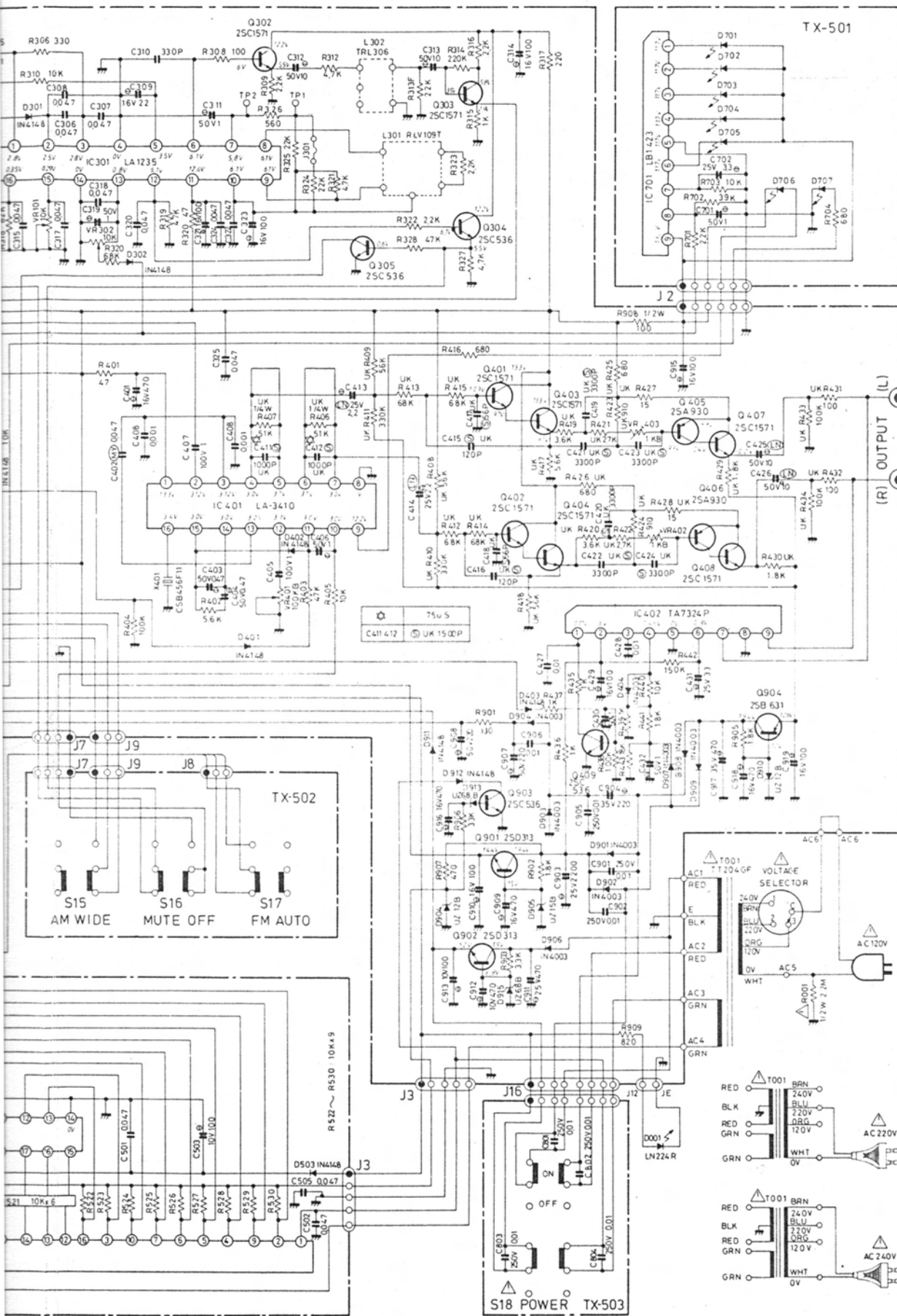
Schematic Diagram

NOTE PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE

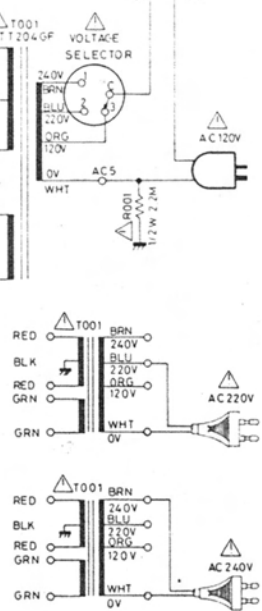


TX-499

TX-500



INSTRUCTIONS FOR SERVICE PERSONNEL
 1) TO USE ONLY REPLACEMENT PARTS THAT HAVE THE CRITICAL CHARACTERISTICS RECOMMENDED BY MANUFACTURER
 2) TO MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER



S18 POWER TX-503

Repair Parts List

Schematic Location	Computer No.	Description
TRANSISTORS, DIODES AND IC'S		
Q101	TR50000140	3SK107-F, FM RF Amp.
Q102	TR30000133	2SC1674, FM MIX
Q103	TR30000133	2SC1674, FM OSC
Q104	TR50000103	2SK544, Buffer Amp.
Q105	TR10000129	2SA608K (F,G), For Switching
Q201	TR50000097	2SK49 (F,H), AM RF Amp.
Q202L	TR30000327	2SC536G, For Switching
Q203L	TR30000327	2SC536G, For Switching
Q204L	TR30000327	2SC536G, For Switching
Q205L	TR30000327	2SC536G, For Switching
Q206L	TR10000126	2SA608K (F,G), For Switching
Q207L	TR30000327	2SC536G, For Switching
Q208L	TR30000327	2SC536G, For Switching
Q209L	TR10000126	2SA608K (F,G) For Switching
Q210	TR50000061	2SK68A-KLM, AM Audio Amp.
Q211	TR10000126	2SA608K (F,G), For Switching
Q301	TR30000133	2SC1674, FM IF Amp.
Q302	TR30000108	2SC1571 (E,F) Buffer Amp.
Q303	TR30000108	2SC1571 (E,F) FM Audio Amp.
Q304	TR30000327	2SC536G, For Switching
Q305	TR30000327	2SC536G, For Audio Stop
Q401 ~ 404	TR30000108	2SC1571 (E,F) Active Filter
Q501 ~ 505	TR30000327	2SC536G, For Switching
Q601,602	TR30000108	2SC1570 (E,F), Stabilizer
Q603	TR10000126	2SA608K (F,G), For Switching
Q604	TR50000127	2SK246-YGR, Low Pass Filter
Q605	TR30000108	2SC1570, Low Pass Filter
Q606	TR10000126	2SA608K (F,G), For Switching
Q607	TR30000327	2SC536G, For Switching
Q608	TR30000327	2SC536G, For Switching
Q609,610	TR30000327	2SC536G, For Switching
Q901,902	TR30000029	2SD313, Stabilizer
Q903	TR30000327	2SC536G, For Switching
Q904	TR10000047	2SB631K (E,F), For Switching
D101 ~ 104	DD50000055	SVC211, Vari-Cap FM Tuning
D201,202	DD50000031	SVC321B, Vari-Cap AM Tuning
D203L	DD10000100	IN4148, Reverse Prevention
D204,205	DD10000100	IN4148, AM Meter Rectifier
D301	DD10000100	IN4148, Reverse Prevention
D302	DD10000100	IN4148, FM Meter Rectifier
D401	DD10000100	IN4148, Switching Diode
D402	DD10000100	IN4148, Switching Diode
D403	DD10000100	IN4148, Switching Diode
D404	DD80000010	IN4003, Switching Diode
D551 ~ 559	DD40000939	LTL422IN, L.E.D.
D601	DD20000193	UZ-15B, Zener Regulator
D602 ~ 617	DD10000100	IN4148, Diode
D701 ~ 705	DD40000691	034 C-3949, Signal Level IND.
D706	DD40000691	034 C-3949, Stereo IND.
D901,902	DD80000010	IN4003, DC Voltage Rectifier Diode
D903,904	DD80000010	IN4003, DC Voltage Rectifier Diode
D905	DD20000193	UZ15B (M,H), Zener Regulator
D906 ~ 909	DD80000010	IN4003, Rectifier
D910	DD20000016	UZ12B, Zener Regulator
D912	DD10000100	IN4148, Diode
D913	DD20000065	UZ-6.8B, Zener Regulator
D914	DD20000016	UZ-12B, Zener Regulator
D915	DD20000065	UZ-6.8B, Zener Regulator
D001	DD40000095	LN224RP, Power IND.
X201	LF00000221	BFU450C, Ceramic Filter
X301,X302	LF00000166	SFE10.7MS2GA, Ceramic Filter
X601	DD60000040	O23HC18U 7.2MHz Crystal Oscillator
FL501	DD40000125	035 FIP7B8S, FL Tube
IC201	IC00001322	LA1245, AM Electronic Tuner

Schematic Location	Computer No.	Description
IC301	IC00001103	LA1235, FM IF Amp.
IC401	IC00001887	LA3410, MPX Decord & Audio Preamp.
IC402	IC00000603	TA7324P, Audio Output POP Cancel Circuit
IC501	IC00000573	TD6301AP, Driver For Frequency Display
IC601	IC00001346	TC9157AP, PPL Synthesizer & Controller
IC602	IC00000482	TD6104P, Prescaller
IC701	IC00000883	LB1423, LED Driver
COILS AND VARIABLE RESISTORS		
L001	LB01130005	021 RLA113A00, Loop ANT.
L101	LC23390009	TRL-339, FM ANT. Coil
L102	LC23380004	TRL-338, FM RF Coil
L103	LC23370000	TRL-337, FM RF Coil
L104	LC02330000	RL-233T, FM IFT
L105	LC23360005	TRL-336, FM OSC Coil
L106	LM00000073	TRL-239, FM IF Trap Coil
L107	LM00000346	RL-247T, Choke Coil
L201	LC31070008	021 RLV107A00, AM RF Coil
L202L	LC31080002	021 RLV108A00, LW RF Coil
L203L	LM00000073	2.2μH TRL-239, LW Trap Coil
L204	LC31050009	RLV-105T, AM OSC Coil
L205L	LC31060003	RLV106T, LW OSC Coil
L206	LC01980000	021 RL-198, AM IFT Coil
L301	LC31090007	RLV-109T, IF Coil
L302	LC23060009	TRL-306, 114KHz Trap
VR301	RV20000193	08-301 10KB, Muting Adj.
VR302	RV20000193	08-301 10KB, FM Meter Adj.
VR401	RV20000181	08-301 100KB, Separation Adj.
VR402,403	RV20000211	08-301 1KB, Active Filter Adj.
SWITCHES AND OTHERS		
S1 ~ S14	SH60000240	Key Board SW, LW/MW/FM Band DOWN, UP, M1 ~ M8, MEMORY
S15 ~ S17	SH13000176	3 Key Push Switch, AM WIDE, MUTE OFF/MONO, FM AUTO TUNING
S18	SH11000197	1 Key Push Switch, POWER
T001	PT128S0094	TT-204-GF, Power Transformer
CT101	CF00000238	045 CVSSA1001 10PF, FM ANT Adj.
CT102	CF00000240	045 CVSSA0701 7PF, FM RF Adj.
CT103	CF00000240	045 CVSSA0701 7PF, FM RF Adj.
CT104	CF00000240	045 CVSSA0701 7PF, FM OSC Adj.
CT201	CF00000238	045 CVSSA1001 10PF AM ANT Adj.
CT202L	CF00000214	AT1-58W, LW RF Adj.
CT203	CF00000238	045 CVSSA1001 10PF, AM OSC Adj.
CT204L	CF00000214	AT1-58W, LW OSC Adj.