

ROTEL*hifi*

AM/FM STEREO TUNER

RT-950BX

TECHNICAL MANUAL

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THE ROTEL CO., LTD.

1-36-8, OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

ROTEL ELECTRONICS CO., LTD.

3F-2, NO.35, FU HSING NORTH ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20001950

Specifications

RT-950BX

FM TUNER SECTION

Usable Sensitivity.....10.8 dBf/ 0.95 μ V (75 ohms)

50 dB Quieting Sensitivity:

Mono.....14.8 dBf/ 1.5 μ V (75 ohms)

Stereo.....37.2 dBf/ 20 μ V (75 ohms)

Signal to Noise Ratio (at 65 dBf):

Mono.....80 dB

Stereo.....75 dB

Harmonic Distortion (at 65 dBf):

1 kHz.....0.05 % (mono), 0.25 % (stereo)

Frequency Response.....30 to 15,000 Hz, $\pm$ 1.5 dB

Capture Ratio.....1.0 dB

Alternate Channel Selectivity:

($\pm$ 400 kHz).....63 dB

Spurious Response Ratio.....95 dB

Image Response Ratio.....75 dB

IF Response Ratio.....95 dB

AM Suppression Ratio.....60 dB

Stereo Separation:

100 Hz/ 1 kHz/ 10 kHz.....43 dB/ 46 dB/ 38 dB

Subcarrier Product Ratio.....60 dB

SCA Rejection Ratio.....70 dB

Output Level.....1.0 V

Antenna Input.....75 ohms unbalanced

AM TUNER SECTION

MW

LW

Sensitivity.....350 μ V/ m

750 μ V/ m

Selectivity:

Wide27 dB

25 dB

Narrow42 dB

40 dB

Signal to Noise Ratio55 dB

55 dB

Image Response Ratio40 dB

40 dB

If Response Ratio60 dB

60 dB

Antenna.....Loop Antenna

MISCELLANEOUS

Power Requirement.....120 V/ 60 Hz, 220 V/ 50 Hz,
240 V/ 50 Hz (depending on
destinations)

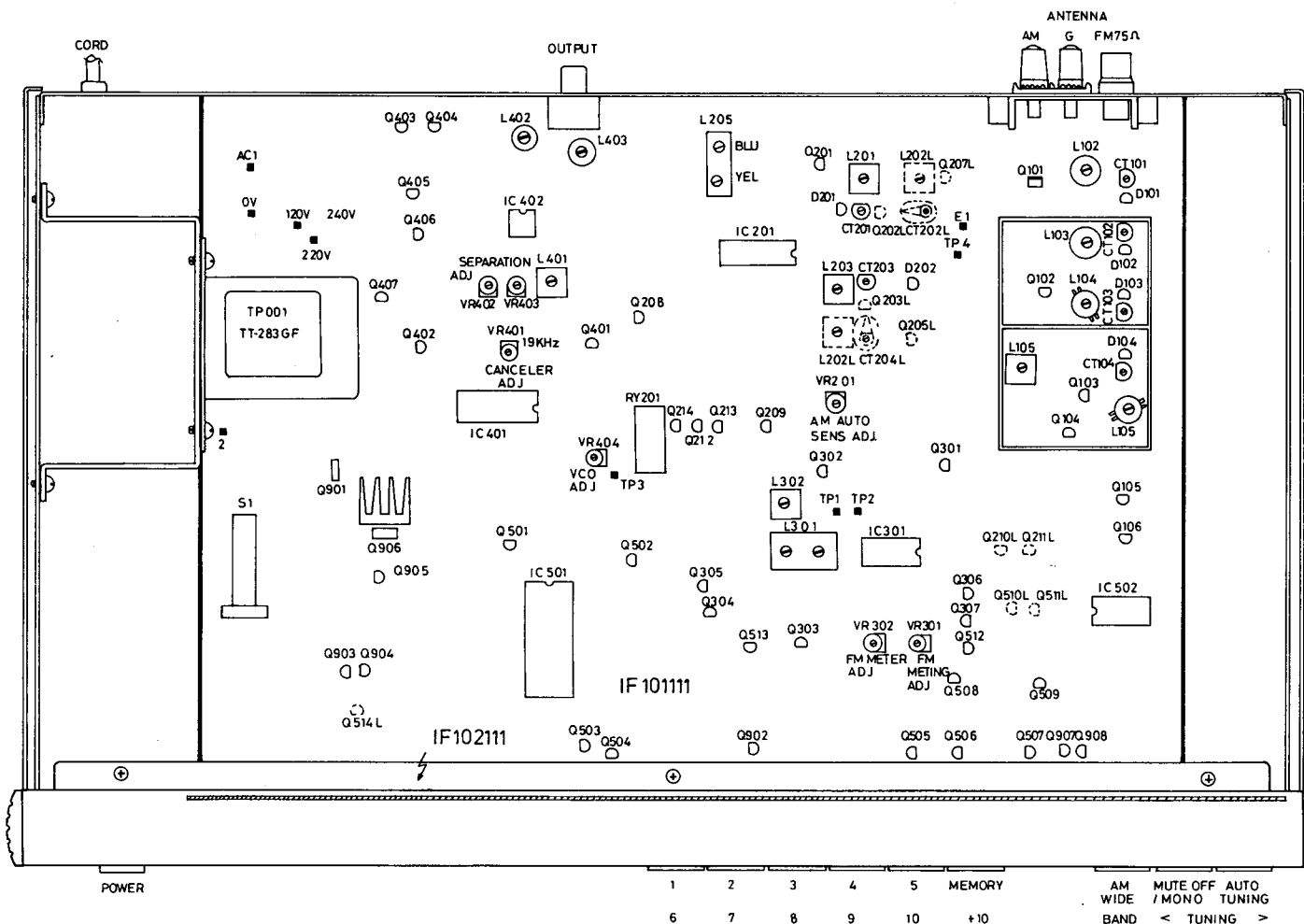
Power Consumption.....10 watts

Dimension (overall).....440 (W) x 72 (H) x 284 (D) mm
17-3/8" x 2-7/8" x 11-1/4"

Weight (net).....3.6 kg / 7.92 lbs

• Specifications and design subject to possible modification without notice.

Chassis Layout



FM IF and RF Alignment

Instruments: FM Signal Generator (400Hz,100% Modulated), THD Analyzer, Oscilloscope, AC VTVM, DC Voltmeter, Tuning Meter.

Terminated : DC Voltmeter---Between TP4 and Earth on IF101111 P.C.B.
Tuning Meter---Between TP1 and TP2 on IF101111 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	23V reading on DC Voltmeter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Antenna terminal	90 MHz	90 MHz	L102,103 L104	Maximum reading on AC VTVM.
5		105 MHz	105 MHz	CT101- CT103	Maximum reading on AC VTVM.
6	Repeat steps 4 and 5 unit no further improvement is noticed.				
7	Antenna terminal 1mV input	90 MHz	90 MHz	L301(A)	Adjust center on Tuning Meter
8				L301(B)	Minimum reading on THD Analyzer
9	Repeat steps 7 and 8 unit no further improvement is noticed (Muting OFF)				
10	Antenna terminal 5uV input	90 MHz	90 MHz	VR301	Muting Level (Muting ON)
11	Antenna terminal 1mV input	90 MHz	90 MHz	VR302	Signal Indicator Level (Muting OFF)

FM MPX Alignment

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

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use		98 MHz	VR404	VCO 76kHz+/-100Hz (Muting ON) TP3, Earth
2	Antenna terminal 1mV input	98 MHz Pilot--10% 1 kHz--90% Mod.	98 MHz	L106 L401 VR401	Minimum Dist.
3	Antenna terminal 1mV input	98 MHz Pilot--10% 1 kHz--90% Mod.	98 MHz	VR402 VR403 VR404	Best separation
4	Repeat steps 2 and 3 unit no further improvement is noticed. Check the stereo indicator can be operated normally when pilot signal is reduce from 10% to 5%.				

MW IF and RF Alignment

Instruments: AM Signal Generator (400Hz, 30% Modulated), AC VTVM, Oscilloscope, DC Voltmeter.

Terminated : DC Voltmeter---Between TP4 and Earth on IF101111 P.C.B.

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use		530 kHz (531 kHz) Europe	L203	About 1.2V+/-0.1V on DC Voltmeter
2			1600 kHz (1602kHz) Europe	CT203	About 9V+/-0.2V on DC Voltmeter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Test loop radiate signal into loop antenna	450 kHz	530 kHz	L205	Maximum reading on AC VTVM.
5		600 kHz	600 kHz	L201 L205	
6		1400 kHz	1400 kHz	CT201	
7	Repeat steps 4 to 6 unit no further improvement is noticed.				

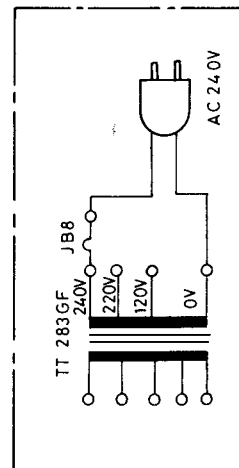
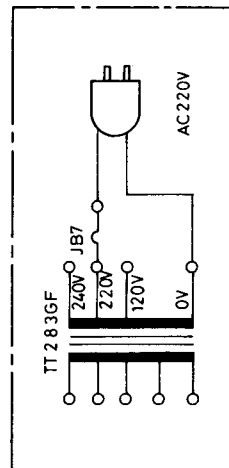
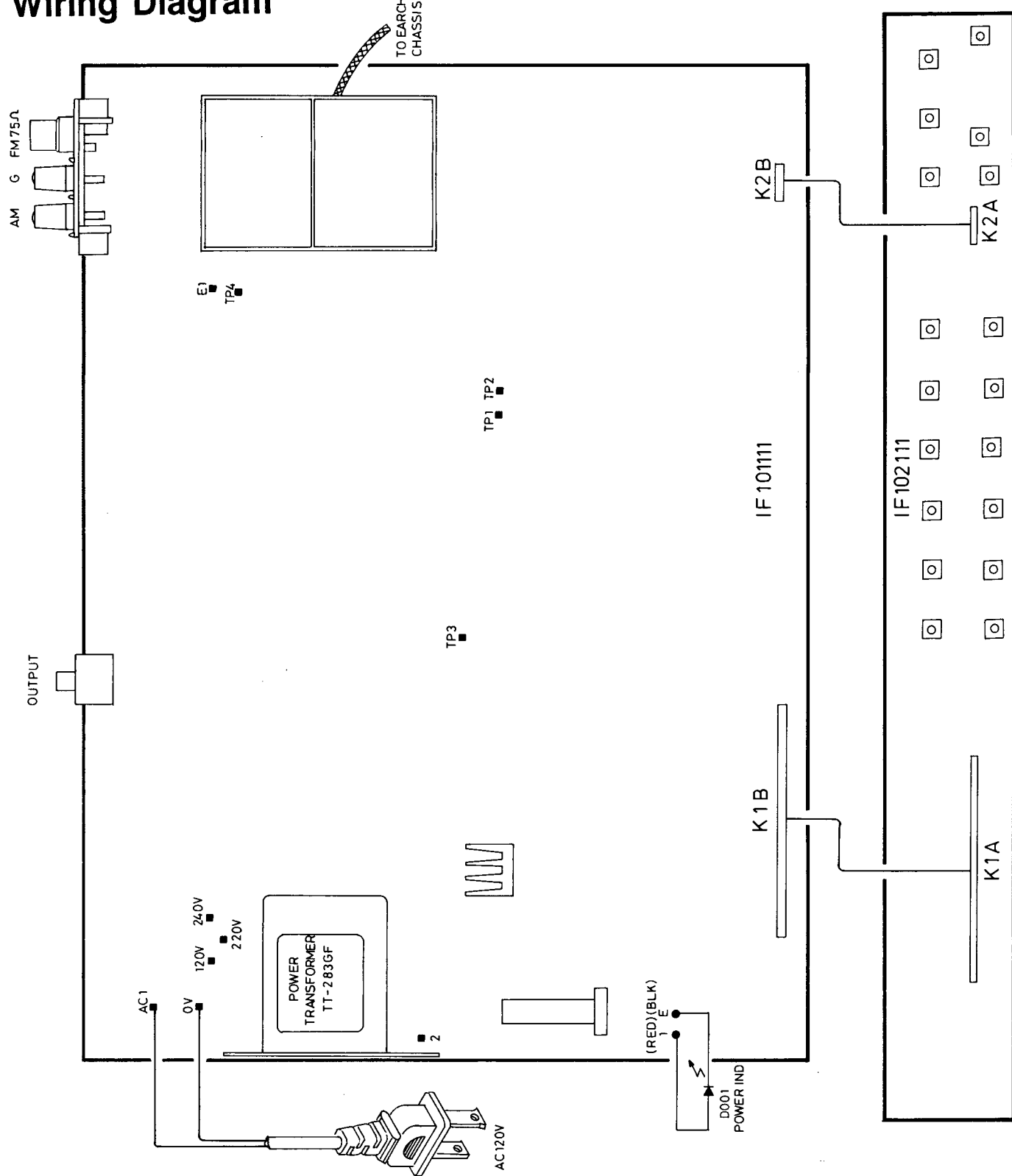
LW RF Alignment

Instruments: AM Signal Generator (400Hz, 30% Modulated), AC VTVM, Oscilloscope, DC Voltmeter.

Terminated : DC Voltmeter---Between TP4 and Earth on IF101111 P.C.B.

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use		153 kHz	L204L	About 2.5V+/-0.1V on DC Voltmeter
2			281 kHz	CT204L	About 7.5V+/-0.2V on DC Voltmeter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Test loop radiate signal into loop antenna	160 kHz	160 kHz	L202L	Maximum reading on AC VTVM.
5		250 kHz	250 kHz	CT202L	
6	Repeat steps 4 and 5 unit no further improvement is noticed.				

Wiring Diagram



Parts List

NOTE: THE COMPONENTS IDENTIFIED BY Δ MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION	SYMBOL	PARTS NO.	DESCRIPTION
	IF101111	PCB ASSEMBLY			
R101	RD51003820	R, CARBON 100K 1/4W J	R207, 208	RD51003820	R, CARBON 100K 1/4W J
R102	RD54702824	R, CARBON 47K 1/4W J	R209L	RD51003820	R, CARBON 100K 1/4W J
R103	RD51003820	R, CARBON 100K 1/4W J	R210L	RD51003820	R, CARBON 100K 1/4W J
R104	RD52702821	R, CARBON 27K 1/4W J	R211L	RD56801829	R, CARBON 6.8K 1/4W J
R105	RD52209820	R, CARBON 22 1/4W J	R212L	RD56801829	R, CARBON 6.8K 1/4W J
			R213L	RD56801829	R, CARBON 6.8K 1/4W J
			R214L	RD56801829	R, CARBON 6.8K 1/4W J
R106	RD52702821	R, CARBON 27K 1/4W J	R215L	RD56801829	R, CARBON 6.8K 1/4W J
R107	RD51500827	R, CARBON 150 1/4W J	R216L	RD56801829	R, CARBON 6.8K 1/4W J
R108	RD54709820	R, CARBON 47 1/4W J	R217	RD52200827	R, CARBON 220 1/4W J
R109	RD52202824	R, CARBON 22K 1/4W J	R218	RD51501820	R, CARBON 1.5K 1/4W J
R110	RD54701820	R, CARBON 4.7K 1/4W J	R219	RD54709820	R, CARBON 47 1/4W J
R111	RD52201820	R, CARBON 2.2K 1/4W J	R220	RD54700827	R, CARBON 470 1/4W J
R112	RD52702821	R, CARBON 27K 1/4W J	R221	RD51000820	R, CARBON 100 1/4W J
R113, 114	RD51002827	R, CARBON 10K 1/4W J	R222	RD51001823	R, CARBON 1K 1/4W J
R115	RD52201820	R, CARBON 2.2K 1/4W J	R223, 224	RD51002827	R, CARBON 10K 1/4W J
R116	RD26800823	R, CARBON 680 1/4W J	R225	RD51000820	R, CARBON 100 1/4W J
R117	RD51003820	R, CARBON 100K 1/4W J	R226	RD51500827	R, CARBON 150 1/4W J
R118	RD54700827	R, CARBON 470 1/4W J	R227	RD53301822	R, CARBON 3.3K 1/4W J
R119, 120	RD54709820	R, CARBON 47 1/4W J	R228	RD51502824	R, CARBON 15K 14W J
R121	RD54700827	R, CARBON 470 1/4W J	R229	RD52202824	R, CARBON 22K 1/4W J
R122	RD54709820	R, CARBON 47 1/4W J	R230	RD56801829	R, CARBON 6.8K 1/4W J
R123	RD51000820	R, CARBON 100 1/4W J	R231	RD51001823	R, CARBON 1K 1/4W J
R124	RD58201829	R, CARBON 8.2K 1/4W J	R232	RD52700824	R, CARBON 270 1/4W J
R125	RD54701820	R, CARBON 4.7K 1/4W J	R233	RD21201822	R, CARBON 1.2K 1/4W J
R126	RD51000820	R, CARBON 100 1/4W J	R234	RD51000820	R, CARBON 100 1/4W J
R127	RD53300829	R, CARBON 330 1/4W J	R235	RD52202824	R, CARBON 22K 1/4W J
R128	RD51001823	R, CARBON 1K 1/4W J	R236	RD56802822	R, CARBON 68K 1/4W J
R129	RD58201829	R, CARBON 8.2K 1/4W J	R237	RD51002827	R, CARBON 10K 1/4W J
R130	RD52200827	R, CARBON 220 1/4W J	R238	RD51003820	R, CARBON 100K 1/4W J
C103	CC31011435	CAP, CERAMIC 100P 50V	R239L	RD54702824	R, CARBON 47K 1/4W J
C104	CC31010431	CAP, CERAMIC 0.001uF 50V	R240L	RD51002827	R, CARBON 10K 1/4W J
C105	CC13013417	CAP, CERAMIC 3P CH 50V	R241L	RD54702824	R, CARBON 47K 1/4W J
C106, 107	CC31009465	CAP, CERAMIC 0.01uF 50V	R242L	RD51002827	R, CARBON 10K 1/4W J
C108, 109	CC13013417	CAP, CERAMIC 3P CH 50V	R243-246	RD51003820	R, CARBON 100K 1/4W J
C110	CC01512434	CAP, CERAMIC 15P 50V	R247	RD52202824	R, CARBON 22K 1/4W J
C111	CC31011435	CAP, CERAMIC 100P 50V	R248	RD51002827	R, CARBON 10K 1/4W J
C112	CC31009465	CAP, CERAMIC 0.01uF 50V	R249	RD51002827	R, CARBON 10K 1/4W J
C113	CC31013481	CAP, CERAMIC 1P 50V	R250	RD51000820	R, CARBON 100 1/4W J
C114	CC16013416	CAP, CERAMIC 6P CH 50V	C201	CC31010431	CAP, CERAMIC 0.001uF 50V
C115	CC15013410	CAP, CERAMIC 5P CH 50V	C202	CC13013417	CAP, CERAMIC 3P CH 50V
C116	CC33312438	CAP, CERAMIC 33P 50V	C203L	CC15013410	CAP, CERAMIC 5P CH 50V
C117, 118	CC15013410	CAP, CERAMIC 5P CH 50V	C204	CC31009465	CAP, CERAMIC 0.01uF 50V
C119, 120	CC31009465	CAP, CERAMIC 0.01uF 50V	C205L	CM08210426	CAP, MYLAR 822 J 50V
C121	CE01005167	CAP, ELEC. 100uF 16V	C206, 207	CC31009465	CAP, CERAMIC 0.01uF 50V
C122	CC31009465	CAP, CERAMIC 0.01uF 50V	C208	CC11012410	CAP, CERAMIC 10P CH 50V (LW)
C123	CC31010431	CAP, CERAMIC 0.001uF 50V		CC11512418	CAP, CERAMIC 15P CH 50V
C124	CC31009465	CAP, CERAMIC 0.01uF 50V	C209	CS43911424	CAP, STYROL 390P 50V
C125	CE04708505	CAP, ELEC. 0.47uF 50V	C210L	CC16812416	CAP, CERAMIC 68P CH 50V
C126	CM04709426	CAP, MYLAR 473 J 50V	C211L, 112L	CC31009465	CAP, CERAMIC 0.01uF 50V
C127	CC31009465	CAP, CERAMIC 0.01uF 540V	C213L	CC31009465	CAP, CERAMIC 0.01uF 50V
C128	CE01005350	CAP, ELEC. 100uF 35V	C214	CC31009465	CAP, CERAMIC 0.01uF 50V
Q101	TR50000140	TRANSISTOR 3SK107-F	C215	CC31010431	CAP, CERAMIC 0.001uF 50V
Q102, 103	TR30000133	TRANSISTOR 2SC1674 (K, L)	C216	CC05009457	CAP, CERAMIC 0.047uF 50V
Q104	TR50000103	TRANSISTOR 2SK544 (F)	C217, 218	CC31009465	CAP, CERAMIC 0.01uF 50V
Q105	TR30000103	TRANSISTOR 2SC1570 (E, F)	C219	CC02009458	CAP, CERAMIC 0.02uF 50V
Q106	TR50000127	TRANSISTOR 2SK246-Y	C220	CC31010431	CAP, CERAMIC 0.001uF 50V
D101-104	DD50000055	DIODE SVC211	C221	CC31009465	CAP, CERAMIC 0.01uF 50V
L102	LC23390009	FM ANT. COIL TRL339	C222	CE01005167	CAP, ELEC. 100uF 16V
L103	LC23380004	FM RF COIL TRL338	C223	CC05009457	CAP, CERAMIC 0.047uF 50V
L104	LC23370000	FM RF COIL TRL337	C224	CE01007504	CAP, ELEC. 1uF 50V
L105	LC23360005	FM OSC COIL TRL336	C225, 226	CC31009465	CAP, CERAMIC 0.01uF 50V
L106	LC02330000	FM IF COIL RL233T	C227	CE03307254	CAP, ELEC. 3.3uF 25V
L107, 108	LM00000073	MICRO INDUCTOR TRL239 2.2uH	C228	CE01007504	CAP, ELEC. 1uF 50V
CT101-104	CF00000184	CAP, FILM TRIMMER VCT51A	C229	CE01338508	CAP, ELEC. 0.33uF 50V
R201	RD22204820	R, CARBON 2.2M 1/4W J	C230	CM02209426	CAP, MYLAR 223 J 50V
R202, 203	RD51002827	R, CARBON 10K 1/4W J	C231	CM02210428	CAP, MYLAR 222 J 50V
R204	RD52700824	R, CARBON 270 1/4W J	C232	CM01008423	CAP, MYLAR 104 J 50V
R205	RD54700827	R, CARBON 470 1/4W J	C233	CM03309423	CAP, MYLAR 333 J 50V
R206	RD52200827	R, CARBON 220 1/4W J			

Parts List

SYMBOL	PARTS NO.	DESCRIPTION
C234	CE01005167	CAP,ELEC. 100uF 16V
C235L	CS41811426	CAP,STYROL 180P 50V
C236	CE01005167	CAP,ELEC. 100uF 16V
Q201	TR50000103	TRANSISTOR 2SK544 (F)
Q202L	TR30000327	TRANSISTOR 2SC536G
Q203L	TR30000327	TRANSISTOR 2SC536G
Q204L	TR30000327	TRANSISTOR 2SC536G
Q205L	TR30000327	TRANSISTOR 2SC536G
Q206L	TR30000327	TRANSISTOR 2SC536G
Q207L	TR30000327	TRANSISTOR 2SC536G
Q208	TR50000061	TRANSISTOR 2SK68A-KLM
Q209	TR30000327	TRANSISTOR 2SC536G
Q210L	TR10000126	TRANSISTOR 2SA608K (F,G)
Q211L	TR10000126	TRANSISTOR 2SA608K (F,G)
Q212,213	TR30000108	TRANSISTOR 2SC1570 (E,F)
Q214	TR30000327	TRANSISTOR 2SC536G
IC201	IC00001322	IC LA1245
D201,202	DD50000031	DIODE SVC321B
D203-205	DD80000021	DIODE 1N4148
D206L	DD80000021	DIODE 1N4148
D207,208	DD80000021	DIODE 1N4148
CT201	CF00000159	CAP,FILM TRIMMER VCT51C
CT202L	CF00000263	CAP,FILM TRIMMER ATI-53-9W
CT203	CF00000159	CAP,FILM TRIMMER VCT51C
CT204L	CF00000263	CAP,FILM TRIMMER ATI-53-9W
L201	LC23720009	AM ANT. COIL TRL372
L202L	LC31080002	LW ANT. COIL RLV108A00
L203	LC31050009	AM OSC COIL RLV105T
L204L	LC31060003	LW OSC COIL RLV106T
L205	LC01980000	AM IFT COIL RL198T
L206L	LM00000073	MICRO INDUCTOR TRL239 2.2uH
X201	LF00000221	CERAMIC FILTER BFL450C
RY201	LY00000253	RELAY RY-12W-OH-KJ 
VR201	RV20000466	R,SEMI-FIXED RH0615C33300
R301	RD53300829	R,CARBON 330 1/4W J
R302	RD51000820	R,CARBON 100 1/4W J
R303	RD56802822	R,CARBON 68K 1/4W J
R304	RD53300829	R,CARBON 330 1/4W J
R305	RD51000820	R,CARBON 100 1/4W J
R306	RD53300829	R,CARBON 330 1/4W J
R307,308	RD54702824	R,CARBON 47K 1/4W J
R309	RM81000619	R,METAL MK2100RFEFZ.
R310	RD55600828	R,CARBON 560 1/4W J
R311	RD54709820	R,CARBON 47 1/4W J
R312	RD52202824	R,CARBON 22K 1/4W J
R313	RD58201829	R,CARBON 8.2K 1/4W J
R314,315	RD54702824	R,CARBON 47K 1/4W J
R316	RD23302824	R,CARBON 33K 1/4W J
R317	RD52202824	R,CARBON 22K 1/4W J
R318	RD54701820	R,CARBON 4.7K 1/4W J
R319,320	RD51002827	R,CARBON 10K 1/4W J
R321	RD52202824	R,CARBON 22K 1/4W J
R322	RD54709820	R,CARBON 47 1/4W J
R323	RD51003820	R,CARBON 100K 1/4W J
R324	RD52202824	R,CARBON 22K 1/4W J
R325	RD51002827	R,CARBON 10K 1/4W J
R326	RD52202824	R,CARBON 22K 1/4W J
R327	RD51000820	R,CARBON 100 1/4W J
R328	RD54702824	R,CARBON 47K 1/4W J
R329	RD51002827	R,CARBON 10K 1/4W J
R330	RD51002827	R,CARBON 10K 1/4W J
R331	RD51002827	R,CARBON 10K 1/4W J
R332	RD22401820	R,CARBON 2.4K 1/4W J
R333	RM82211614	R,METAL MK22K21FEFZ.
R334	RM84751612	R,METAL MK24K75FEFZ.
R335	RD52200827	R,CARBON 220 1/4W J
R336	RM82212618	R,METAL MK22K1FEFZ.
C301-304	CC31009465	CAP,CERAMIC 0.01uF 50V
C305-307	CC05009457	CAP,CERAMIC 0.047uF 50V

SYMBOL	PARTS NO.	DESCRIPTION
C308	CE04707252	CAP,ELEC. 4.7uF 25V
C309	CS43311421	CAP,STYROL 330P 50V
C310	CE01007504	CAP,ELEC. 1uF 50V
C311,312	CC05009457	CAP,CERAMIC 0.047uF 50V
C313	CE01007504	CAP,ELEC. 1uF 50V
C314-316	CC05009457	CAP,CERAMIC 0.047uF 50V
C317,318	CE01005167	CAP,ELEC. 100uF 16V
C319	CC05009457	CAP,CERAMIC 0.047uF 50V
C320	CE51006477	CAP,ELEC. 50BGF10M
C321,322	CE01005167	CAP,ELEC. 100uF 16V
IC301	IC00001103	IC LA1235
D301,302	DD80000021	DIODE 1N4148
Q301	TR30000133	TRANSISTOR 2SC1674
Q302	TR30000108	TRANSISTOR 2SC1570 (E,F)
Q303-305	TR30000327	TRANSISTOR 2SC536G
Q306,307	TR10000126	TRANSISTOR 2SA608K
L301	LC31090007	IF COIL RLV109T
L302	LC23060009	MPX FILTER TRL306
X301,302	LF00000166	CERAMIC FILTER SFE10.7MS2GA (RED)
VR301	RV20000430	R,SEMI-FIXED RH0615C10300
VR302	RV20000466	R,SEMI-FIXED RH0615C33300
R401	RD81003610	R,METAL MK2100KFEFZ.
R402	RD83322614	R,METAL MK233K2FEFZ.
R403	RD81001612	R,METAL MK2001KFEFZ.
R404	RM82211614	R,METAL MK22K21FEFZ.
R405	RD23309820	R,CARBON 33 1/4W J
R406	RD22002821	R,CARBON 20K 1/4W J
R407,408	RM81002616	R,METAL MK2010KFEFZ.
R409	RD56801829	R,CARBON 6.8K 1/4W J
R410,411	RD52202824	R,CARBON 22K 1/4W J
R412,413	RM83012613	R,METAL MK230K1FEFZ.
R414	RD55600828	R,CARBON 560 1/4W J
R415	RD51002827	R,CARBON 10K 1/4W J
R416	RD51003820	R,CARBON 100K 1/4W J
R417	RD54700827	R,CARBON 470 1/4W J
R418	RD28202820	R,CARBON 82K 1/4W J
R419	RD51502824	R,CARBON 15K 1/4W J
R420	RD51503828	R,CARBON 150K 1/4W J
R421,422	RM81003610	R,METAL MK2100KFEFZ.
R423-426	RM84752616	R,METAL MK247K5FEFZ.
R427,428	RM81003610	R,METAL MK2100KFEFZ.
R429,430	RM84750619	R,METAL MK2475RFEFZ.
R431	RD22701826	R,CARBON 2.7K 1.4W J
R432,433	RD51002827	R,CARBON 10K 1/4W J
R434	RD24703826	R,CARBON 470K 1/4W J
R435	RD51001823	R,CARBON 47K 1/4W J
R436	RD51002827	R,CARBON 10K 1/4W J
R437	RD54702824	R,CARBON 47K 1/4W J
R438	RD51001823	R,CARBON 1K 1/4W J
R439	RD51002827	R,CARBON 10K 1/4W J
R440,441	RD51003820	R,CARBON 100K 1/4W J
R442	RD51002827	R,CARBON 10K 1/4W J
R443	RD54702824	R,CARBON 47K 1/4W J
R444	RD51502824	R,CARBON 15K 1/4W J
R445	RD53301822	R,CARBON 3.3K 1/4W J
R446	RD51001823	R,CARBON 1K 1/4W J
C401	CE51006477	CAP,ELEC. 50BGF10M
C402	CE61005743	CAP,ELEC. 16BGF100M
C403	CE52206670	CAP,ELEC. 25BGF22M
C404	CE04705164	CAP,ELEC. 470uF 16V
C405,406	CS44710426	CAP,STYROL 4700P 50V
C407,408	CS48211428	CAP,STYROL 820P 50V
C409,410	CS31510302	CAP,POLYSTYRENE 160V 1500P
C411,412	CE54707478	CAP,ELEC. 50BGF4R7
C413,415	CE01006251	CAP,ELEC. 10uF 25V
C414	CM01009427	CAP,MYLAR 103 J 50V
C416	CE04708505	CAP,ELEC. 0.47uF 50V
C417	CE04707252	CAP,ELEC. 4.7uF 25V
C418	CS42710423	CAP,STYROL 2700P 50V

Parts List

NOTE: THE COMPONENTS INDENTIFIED BY Δ MARK ARE FOR SAFFTY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION
C419	CS43911424	CAP, STYROL 390P 50V
C420	CS48211428	CAP, STYROL 820P 50V
C421	CM04709426	CAP, MYLAR 473 J 50V
C422	CE74705645	CAP, ELEC. 470uF 25V HFS
C423, 424	CS31011310	CAP, POLYSTYRENE 160V 100P
C425, 426	CS32211306	CAP, POLYSTYRENE 160V 220P
C427, 428	CE51006477	CAP, ELEC. 50BGF10M
C429, 430	CM02210428	CAP, MYLAR 222 J 50V
C431-433	CE71005259	CAP, ELEC. 100uF 25V HFS
C434	CE03307254	CAP, ELEC. 3.3uF 25V
C435	CE02205255	CAP, ELEC. 220uF 25V
C436	CE01007504	CAP, ELEC. 1uF 50V
Q401	TR30000108	TRANSISTOR 2SC1570 (E, F)
Q402	TR30000327	TRANSISTOR 2SC536G
Q403, 404	TR30000583	TRANSISTOR 2SC2878 (A, B)
Q405	TR10000126	TRANSISTOR 2SA608K
Q406, 407	TR30000327	TRANSISTOR 2SC536G
D401	DD80000021	DIODE 1N4148
D402	DD20000193	DIODE RD15E
D403, 404	DD80000021	DIODE 1N4148
IC401	IC00001826	IC UPC1223C
IC402	IC00001693	IC NE5532AN
L401	LM00000360	MICRO INDUCTOR TRL312
L402, 403	LM00000516	MICRO INDUCTOR TRL371
VR401	RV20000466	R, SEMI-FIXED RH0615C 33300
VR402, 403	RV20000480	R, SEMI-FIXED RH0615C 10400
VR404	RV20000430	R, SEMI-FIXED RH0615C 10300
R501, 502	RD51009822	R, CARBON 10 1/4W J
R503	RD51003820	R, CARBON 100K 1/4W J
R504	RD52202824	R, CARBON 22K 1/4W J
R505	RD51502824	R, CARBON 15K 1/4W J
R506	RD51002827	R, CARBON 10K 1/4W J
R507, 508	RD54702824	R, CARBON 47K 1/4W J
R509-513	RD51002827	R, CARBON 10K 1/4W J
R514, 516	RD52202824	R, CARBON 22K 1/4W J
R515, 517	RD51503828	R, CARBON 150K 1/4W J
R518L	RD51003820	R, CARBON 100K 1/4W J
R519L	RD52202824	R, CARBON 22K 1/4W J
R520L	RD51002827	R, CARBON 10K 1/4W J
R521L	RD51001823	R, CARBON 1K 1/4W J
R522L	RD51003820	R, CARBON 100K 1/4W J
R523	RD52209820	R, CARBON 22 1/4W J
R524	RD51002827	R, CARBON 10K 1/4W J
R525	RD51003820	R, CARBON 100K 1/4W J
R526	RD52201820	R, CARBON 2.2K 1/4W J
R527	RD52702821	R, CARBON 27K 1/4W J
R528	RD51002827	R, CARBON 10K 1/4W J
R529	RD51003820	R, CARBON 100K 1/4W J
R530L	RD51002827	R, CARBON 10K 1/4W J
R531L	RD51003820	R, CARBON 100K 1/4W J
R532L	RD51002827	R, CARBON 10K 1/4W J
R533L	RD51003820	R, CARBON 100K 1/4W J
R534	RD52201820	R, CARBON 2.2K 1/4W J
R535	RD51003820	R, CARBON 100K 1/4W J
R536	RD51002827	R, CARBON 10K 1/4W J
R537	RD52202824	R, CARBON 22K 1/4W J
R538	RD51002827	R, CARBON 10K 1/4W J
R539	RD52202824	R, CARBON 22K 1/4W J
R540	RD51003820	R, CARBON 100K 1/4W J
R541	RD51002827	R, CARBON 10K 1/4W J
R542	RD51003820	R, CARBON 100K 1/4W J
R543	RD51503828	R, CARBON 150K 1/4W J
R544	RD55600828	R, CARBON 560 1/4W J
C501-506	CC32211432	CAP, CERAMIC 220P 50V
C507L	CC32211432	CAP, CERAMIC 220P 50V
C508	CC05009457	CAP, CERAMIC 0.047uF 50V
C509, 510	CC01512434	CAP, CERAMIC 15P 50V
C511	CE02204068	CAP, ELEC. 2200uF 6.3V
C512-514	CC31009465	CAP, CERAMIC 0.01uF 50V

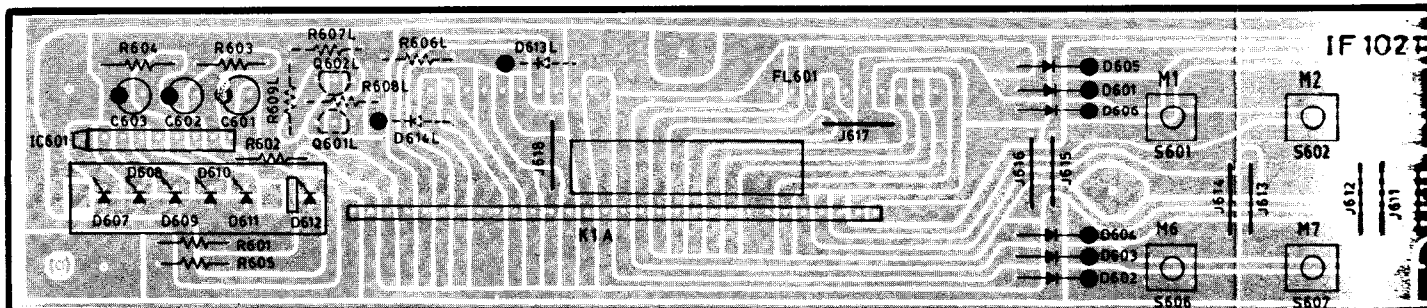
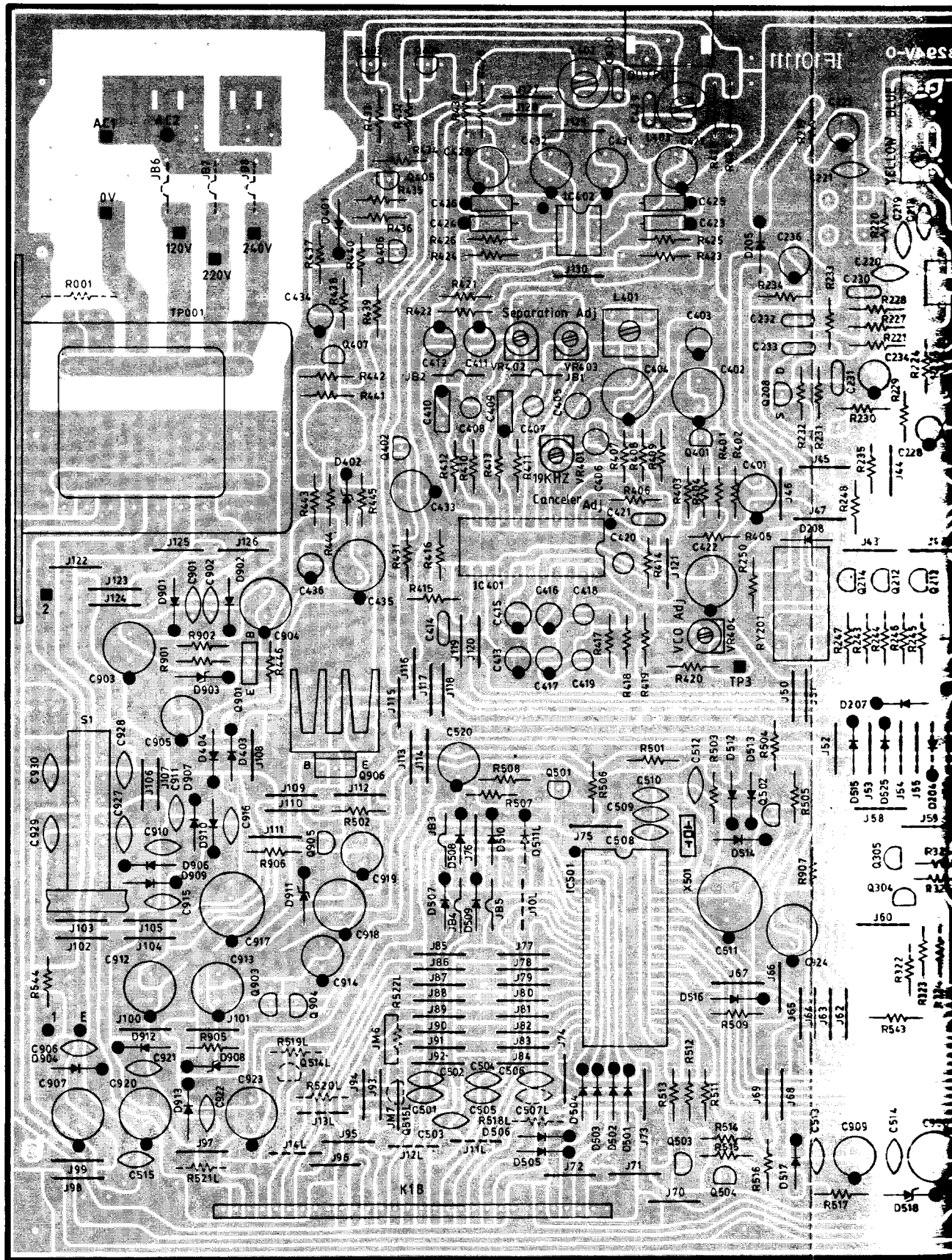
SYMBOL	PARTS NO.	DESCRIPTION
C515, 516	CC05009457	CAP, CERAMIC 0.047uF 50V
C517	CE01005167	CAP, ELEC. 100uF 16V
C518, 519	CC31009465	CAP, CERAMIC 0.01uF 50V
C520	CE01005167	CAP, ELEC. 100uF 16V
C521	CC31009465	CAP, CERAMIC 0.01uF 50V
Q501	TR30000327	TRANSISTOR 2SC536G
Q502-504	TR10000126	TRANSISTOR 2SA608K (F, G)
Q505-509	TR30000327	TRANSISTOR 2SC536G
Q510L	TR30000327	TRANSISTOR 2SC536G
Q511L	TR30000327	TRANSISTOR 2SC536G
Q512, 513	TR30000327	TRANSISTOR 2SC536G
Q514L	TR10000126	TRANSISTOR 2SA608K (F, G)
Q515L	TR30000327	TRANSISTOR 2SC536G
D501-510	DD80000021	DIODE 1N4148
D511L	DD80000021	DIODE 1N4148
D512-517	DD80000021	DIODE 1N4148
D518	DD20000168	DIODE RD5.6E
D519-521	DD80000021	DIODE 1N4148
D522L	DD80000021	DIODE 1N4148
D523L	DD80000021	DIODE 1N4148
D524, 525	DD80000021	DIODE 1N4148
D526-528	DD80000021	DIODE 1N4148
D529	DD20000181	DIODE RD6.2E
IC501	IC000001814	IC TC9303AN001
IC502	IC000001826	IC TC9172P
X501	DD60000040	CRYSTAL OSCILATOR HC49U7.2MHZ
R901	RD51000820	R, CARBON 100 1/4W J
Recommend increasing the wattage of this resistor to 1/2 watt.		
R902	RD53301822	R, CARBON 3.3K 1/4W J
R903	RD54709820	R, CARBON 47 1/4W J
R904	RD52201820	R, CARBON 2.2K 1/4W J
R905, 906	RD53301822	R, CARBON 3.3K 1/4W J
R907	RD25601820	R, CARBON 5.6K 1/4W J
R908	RD51002827	R, CARBON 10K 1/4W J
R909	RD51000820	R, CARBON 100 1/4W J
R910	RD53301822	R, CARBON 3.3K 1/4W J
R911, 912	RD51502824	R, CARBON 15K 1/4W J
C901, 902	CC01009256	CAP, CERAMIC 0.01uF 250V Δ
C903	CE01005350	CAP, ELEC. 470uF 35V
C904	CE04705164	CAP, ELEC. 470uF 16V
C905	CE01005167	CAP, ELEC. 100uF 16V
C906	CC01009256	CAP, CERAMIC 0.01uF 250V Δ
C907, 908	CE04705255	CAP, ELEC. 470uF 25V
C909	CE01005258	CAP, ELEC. 100uF 25V
C910, 911	CC01009256	CAP, CERAMIC 0.01uF 250V Δ
C912	CE04705255	CAP, ELEC. 470uF 25V
C913	CE04705164	CAP, ELEC. 470uF 16V
C914	CE01005167	CAP, ELEC. 100uF 16V
C915, 916	CC01005258	CAP, CERAMIC 0.01uF 250V Δ
C917	CE01004254	CAP, ELEC. 1000uF 25V Δ
C918	CE04705164	CAP, ELEC. 470uF 16V
C919	CE01005167	CAP, ELEC. 100uF 16V
C920	CE02205358	CAP, ELEC. 220uF 35V
C921, 922	CC01009256	CAP, CERAMIC 0.01uF 250V Δ
C923	CE02205504	CAP, ELEC. 220uF 50V
C924	CE01005507	CAP, ELEC. 100uF 50V
C925	CE04705164	CAP, ELEC. 470uF 16V
C926	CE01005350	CAP, ELEC. 100uF 35V
C927-930	CC01009256	CAP, CERAMIC 0.01uF 250V Δ
Q901	TR40000069	TRANSISTOR 2SD600K (E, F)
Q902	TR10000140	TRANSISTOR 2SA984K (E, F)
Q903	TR10000126	TRANSISTOR 2SA608K (F, G)
Q904	TR10000140	TRANSISTOR 2SA984K (E, F)
Q905	TR30000327	TRANSISTOR 2SC536G
Q906	TR30000029	TRANSISTOR 2SD313D
Q907, 908	TR30000108	TRANSISTOR 2SC1570 (E, F)
D901, 902	DD80000010	DIODE 1N4003-TB
D903	DD20000181	DIODE RD6.2E
D904	DD80000010	DIODE 1N4003-TB

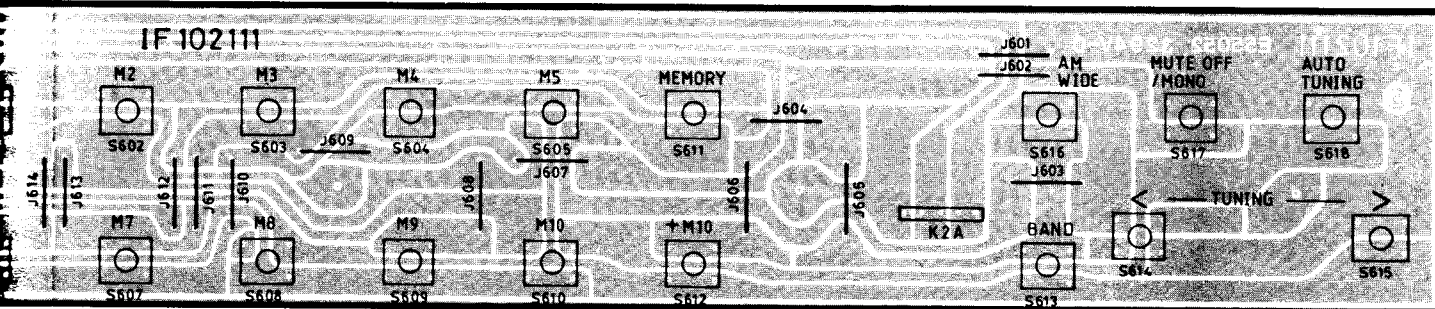
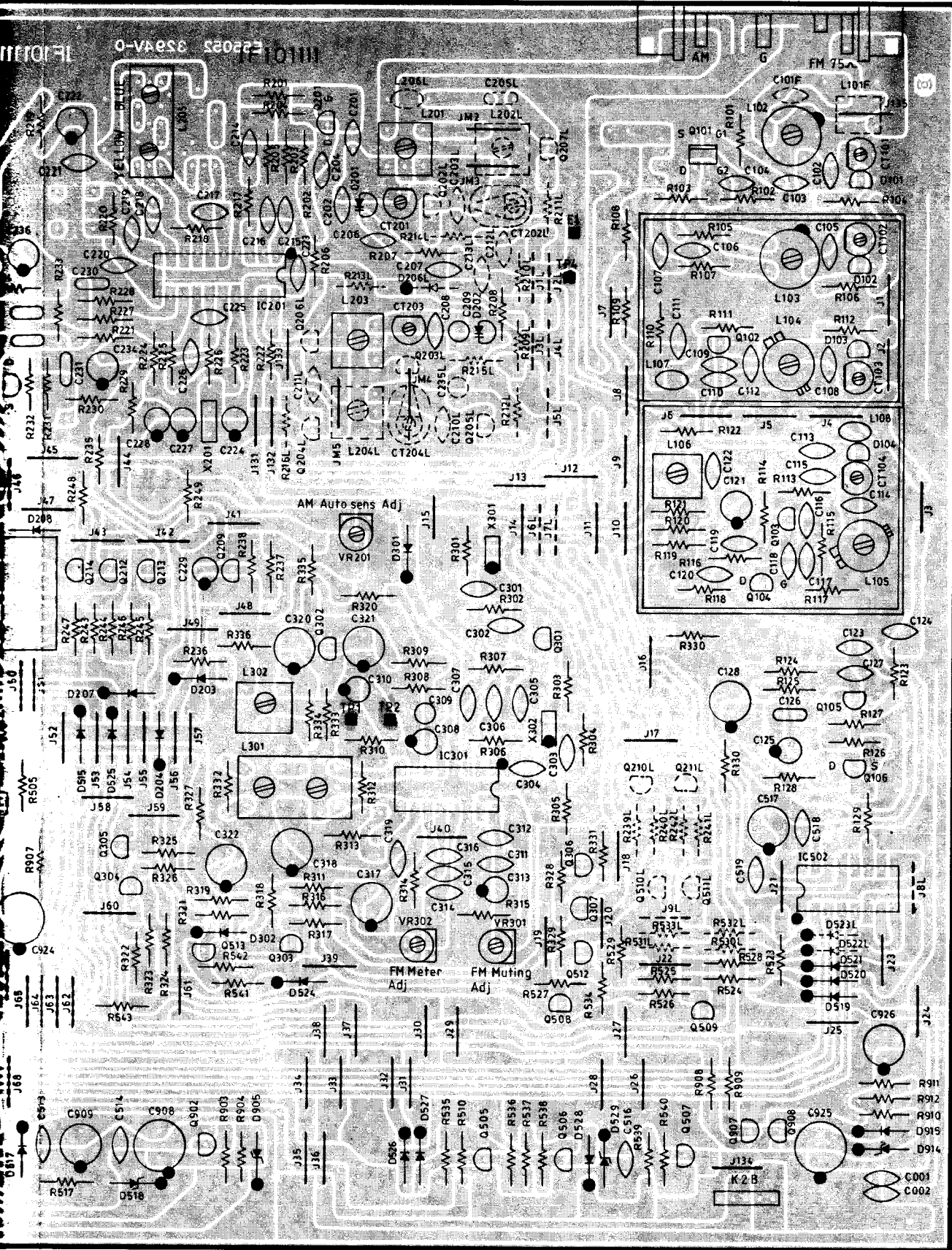
Parts List

SYMBOL	PARTS NO.	DESCRIPTION
D905	DD20000028	DIODE RD20E
D906,907	DD80000010	DIODE IN4003-TB
D908	DD20000193	DIODE RD15E
D909,910	DD80000010	DIODE IN4003-TB
D911	DD20000193	DIODE RD15E
D912,913	DD80000010	DIODE IN4003-TB
D914	DD20000193	DIODE RD15E
D915	DD80000021	DIODE IN4148
R001	RD02204928	R,CARBON 2.2M 1/2W (U,C,A,J,H6) ⚠
C001	CC05009457	CAP,CERAMIC 0.047uF 50V
S1	SH10000434	1 KEY PUSH SW 4TR-2889 ⚠
T001	PT28307101	POWER TRANSFORMER TT-283GF ⚠
IF102111 PCB ASSEMBLY		
R601	RD22200825	R,CARBON 220 1/4W J
R602	RD21001821	R,CARBON 1K 1/4W J
R603,604	RD21002825	R,CARBON 10K 1/4W J
R605	RD23300827	R,CARBON 330 1/4W J
R606L	RD21003829	R,CARBON 100K 1/4W J
R607L	RD54702824	R,CARBON 47K 1/4W J
R608L	RD21003829	R,CARBON 100K 1/4W J
R609L	RD54702824	R,CARBON 47K 1/4W J
C601	CE01005167	CAP,ELEC. 100uF 16V
C602	CE01007504	CAP,ELEC. 1uF 50V
C603	CE03307254	CAP,ELEC. 3.3uF 25V
IC601	IC00000883	IC LB1423
Q601L	TR30000327	TRANSISTOR 2SC536G
Q602L	TR30000327	TRANSISTOR 2SC536G
D601-606	DD80000021	DIODE 1N4148
D607-611	DD40000095	LED LN224R
D612	DD40000101	LED LN324G
D613L	DD80000021	DIODE IN4148
D614L	DD80000021	DIODE IN4148
FL601	DD40001166	FL TUBE CP2372GR
D601-618	SH60000240	KEY BOARD SW 4TR-2343
OTHERS		
AB00000596		PAINTED BOTTOM BOARD 4TQN-12A
AF30000140		FRONT CHASSIS 2TQN-2
AR30000167		PRINTED REAR CHASSIS TRP-592
AS01000350		SIDE CHASSIS 3TQG-1B#2
BC00000180		CYLINDER BUSH 4TVL-7#1 6MM
FT00000229		PLASTIC FOOT 4TSH-19#2 50F×14H
SB00000650		P.V.C SHIELD PLATE (A) 4TQN-15
SP10006491		CONNECTOR SUPPORT 4TQN-11
SP10006594		P.T SUPPORT 4TQN-13
CD00000218		AC CORD SPT-2 AWG#18 4TR-670#4(U,C,A,J) ⚠
CD00000292		AC POWER CORD UP-401F 4TR-2631#1 (D) ⚠
CD00000048		AC POWER CORD 4TR-1037 (H1,H3,H6,E1,E3,E5,E6,E8, K2) ⚠
CD00000085		AC POWER CORD C-2504A (K1) ⚠
CD00000115		AC POWER CORD C-3763-T (G) ⚠
NP00001949		NAME STICKER AC-120V 4TR-2828#1 TNP-382
NP00001974		NAME STICKER AC-120V (C) 4TR-2828#4 TNP-385
NP00001950		NAME STICKER AC-220V 4TR-2828#2 TNP-383

PARTS NO.	DESCRIPTION
NP00001962	NAME STICKER AC-240V 4TR-2828#3 TNP-384
NP00001998	NAME STICKER AC-230V 4TR-2828#5 TNP-389
NP00002012	NAME STICKER AC-100V 4TR-2828#6 TNP-391
SC00000131	AC CORD STOPPER SR-5N-4 ⚠ (K1,A)
SC00000039	AC CORD STOPPER SR-6W-1 ⚠ (D)
SC00000027	AC CORD STOPPER SR-4N-4 ⚠
AA30000370	FRONT PANEL 2TQN-1#1
AW00000575	PANEL WINDOW 4TQS-7#4
BU00001145	POWER RING 4TQF-13 14×14
KB20002760	TACT BUTTON 2TQN-6 12 KEY
KB20002772	TACT BUTTON 2TQN-7 5 KEY
OM10001260	ORNAMENTAL SIDE BOARD 4TR-2797#1 H=60MM
AU00001183	TOP COVER 3TTE-6#3
KB20002681	POWER BUTTON 4TQF-15 14×14
OM10001375	POWER SW CONNECTOR 3TQN-10
OM10001363	FL ORNAMENTAL PLATE 4TQN-5
DD40000095	LED LN224R
LB03650004	AM LOOP ANT. TRL-365
SN00000179	BUTTON SPRING 4TR-1988A#2
SR00000882	UPPER COVER SPACER 4TR-2418
OM70000259	FILTER BOARD 4TSJ-9#4 83×22
MN10002835	OWNER'S MANUAL RT-950BX/BXL
TN10003811	INSIDE CARTON 4TR-2851#2

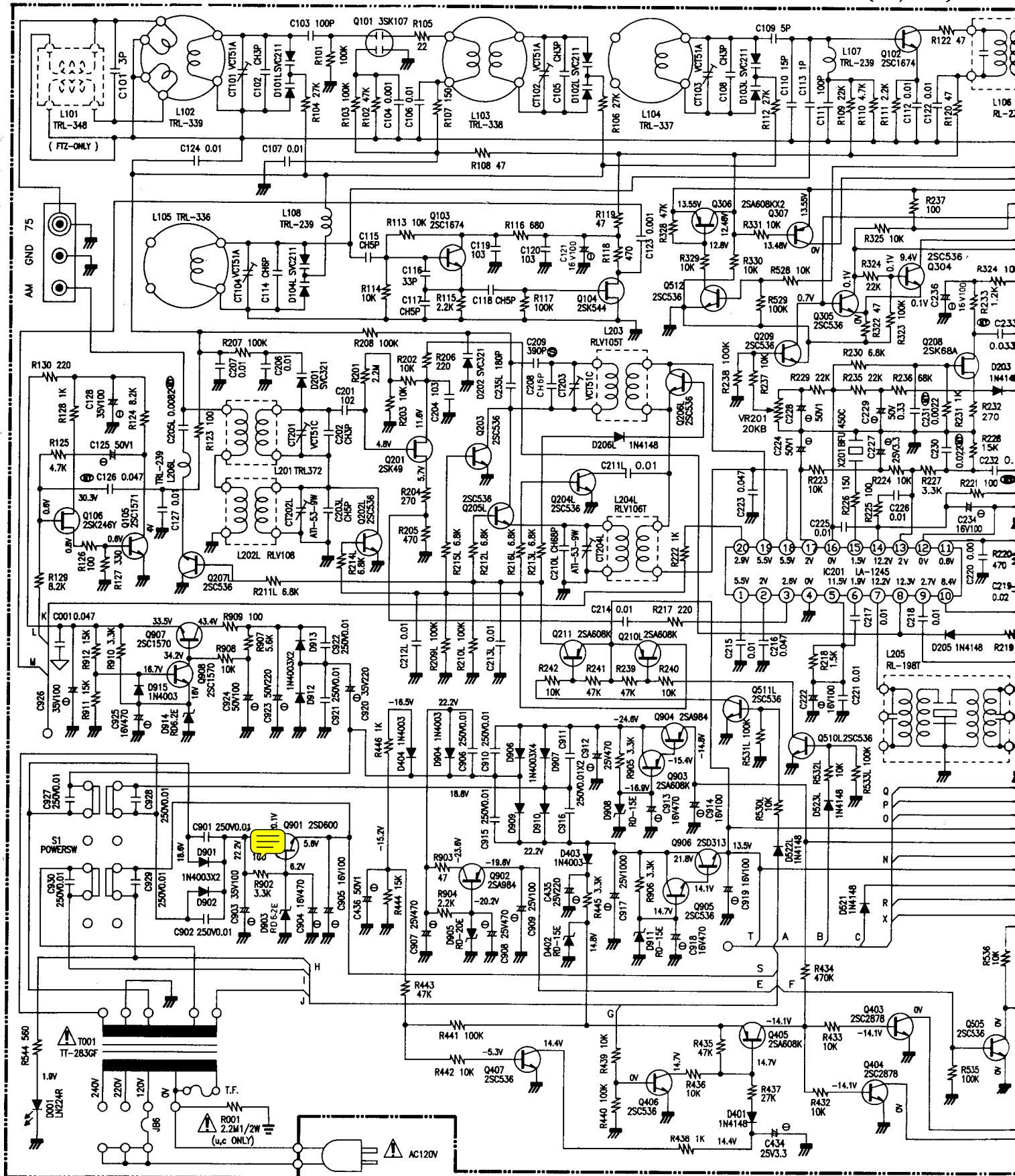
Printed Circuit Boards

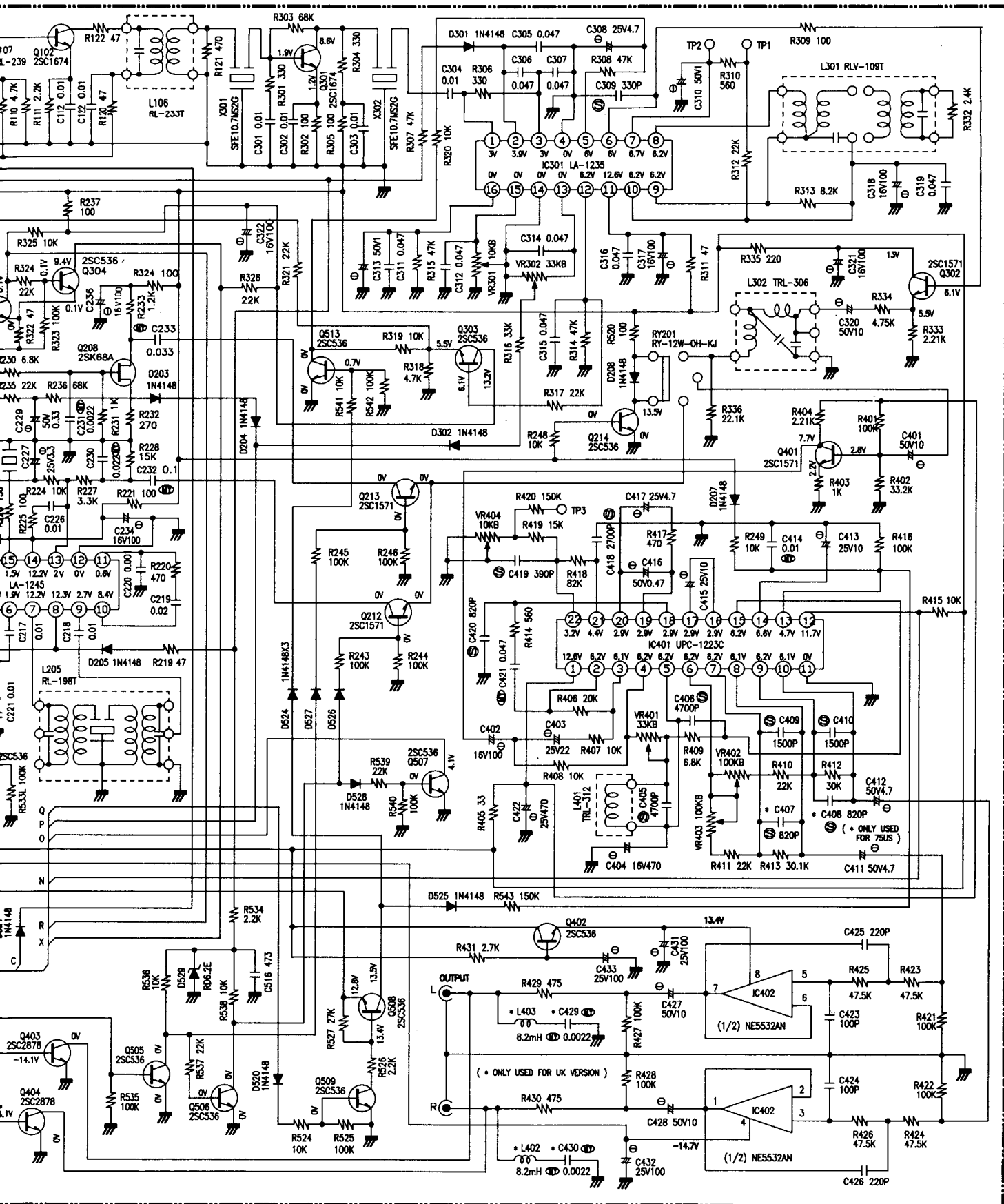




Schematic Diagram

SCHEMATIC DIAGRAM RT-950BX (1/2) (NOTE:)

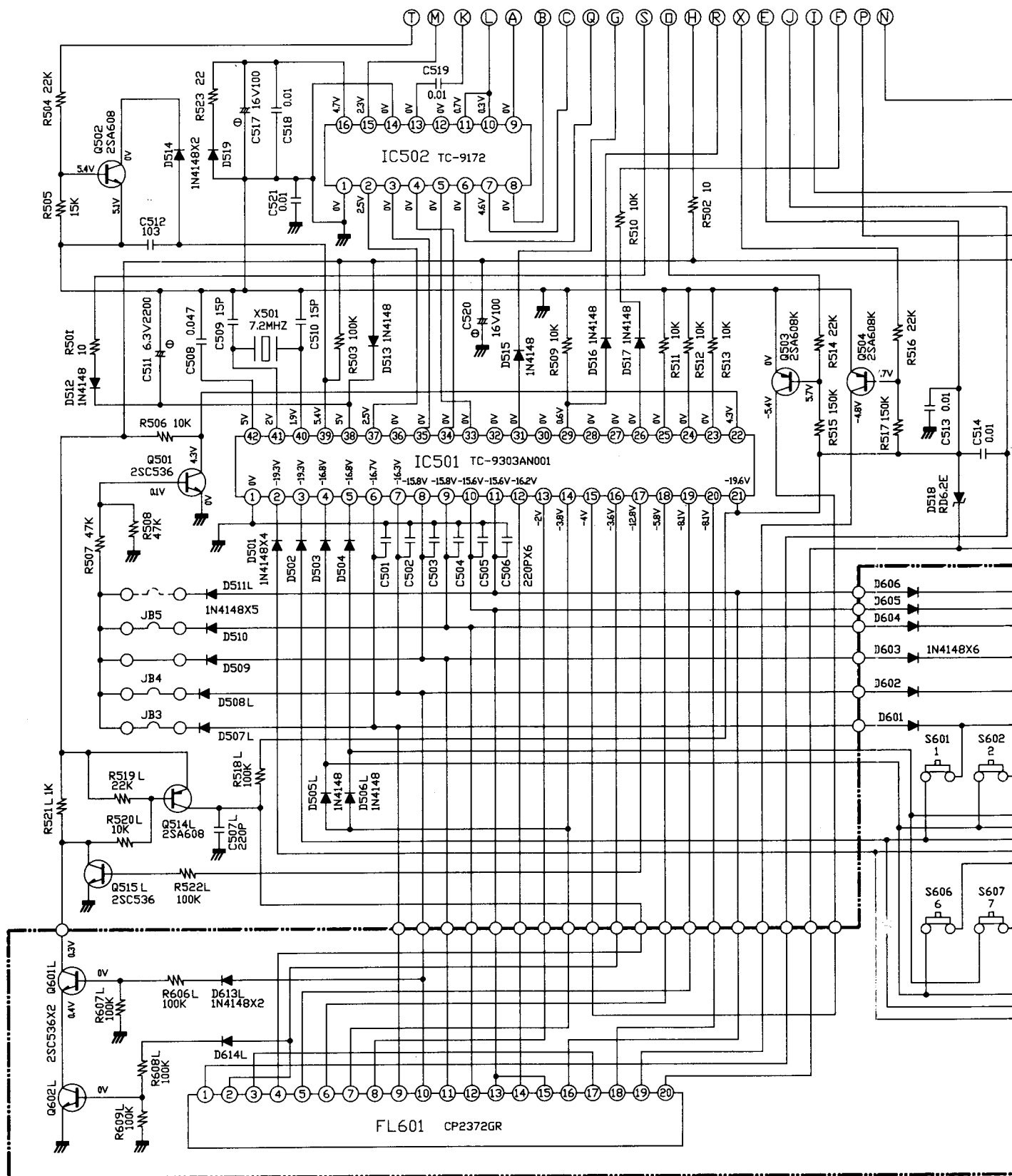


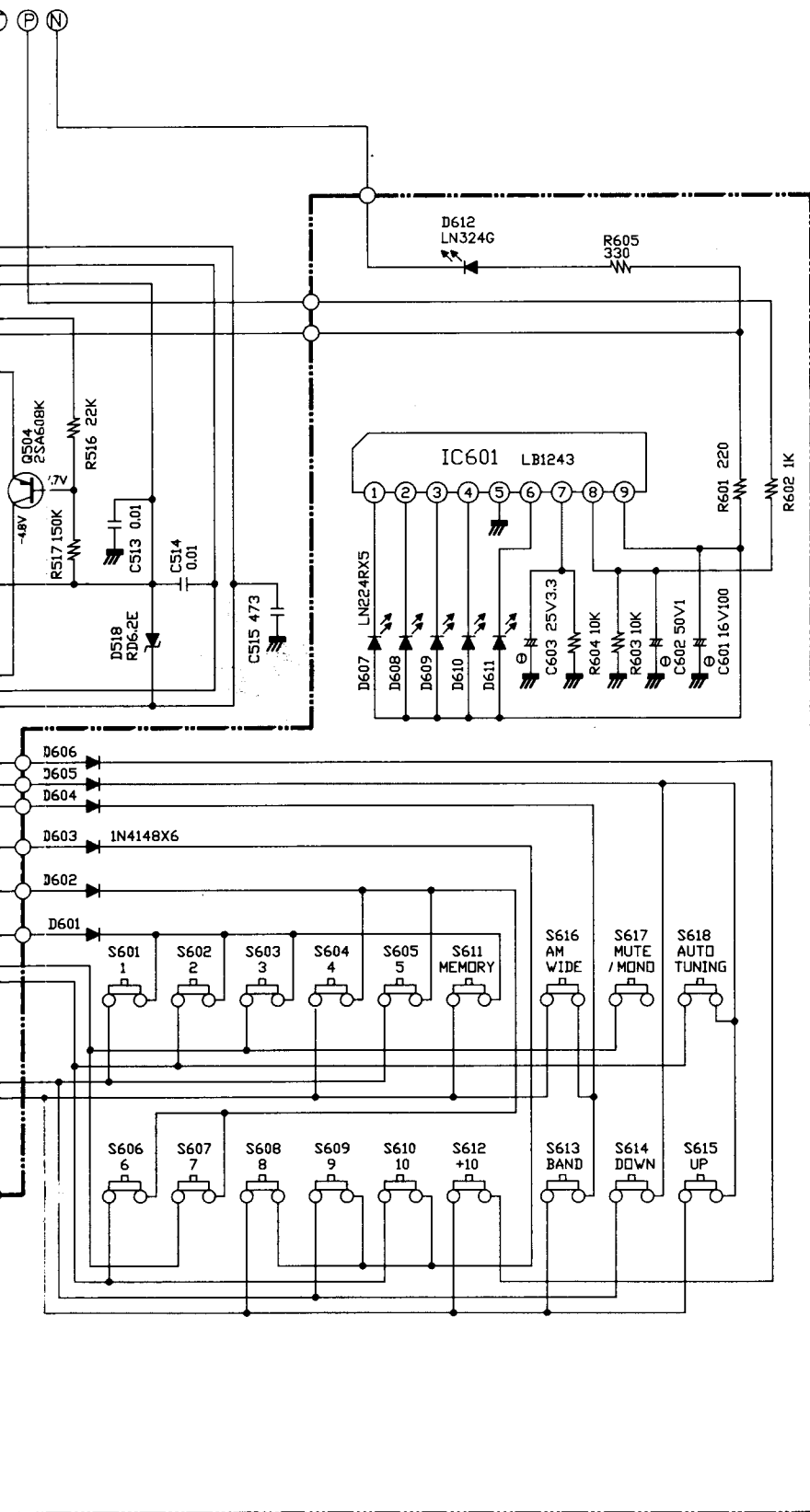


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- TC-9172
 LA-1235
 16
 1
 8
 3SK107
 G2
 D
 S
 G1
 2SD600
 E
 C
 B
 2SD313
 D
 C
 E
 2SA608K
 2SC1674
 2SC536
 2SC1571
 2SC1570
 2SA984
 E
 C
 B
 2SK49
 D
 S
 G
 2SK68A
 2SK246
 S
 G
 D
 2SK544
 G
 S
 D
 8
 1
 4
 NE5532AN

Schematic Diagram

SCHEMATIC DIAGRAM RT-950BX (2/2)





	RT-950BX	RT-950BXL
L402,L403	TRL-371	---
C429,C430	222J	---
L202L	JUMPERX2	RLV108
L204L	JUMPER	RLV106T
Q203L	JUMPER	2SC536
CT204L	JUMPER	ATI-53-9W
C208	CH15P	CH10P
Q515L	JUMPER	2SC536
R522L	JUMPER	100K

	120V	220V	240V
R001	1/2W 2.2M	---	---
JB6	JUMPER	---	---
JB7	---	JUMPER	---
JB8	---	---	JUMPER

	USA	EUROPE
JB3	OPEN	CLOSE
JB4	CLOSE	OPEN
JB5	CLOSE	OPEN

