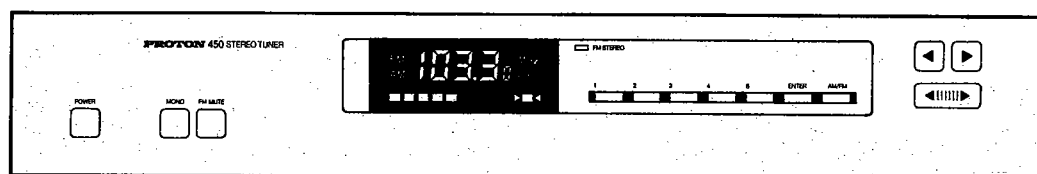
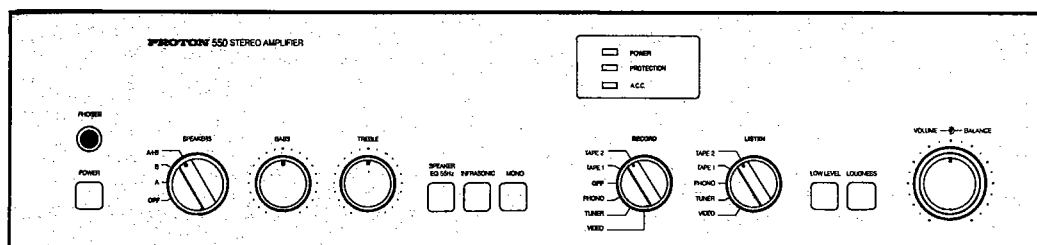


Service Manual

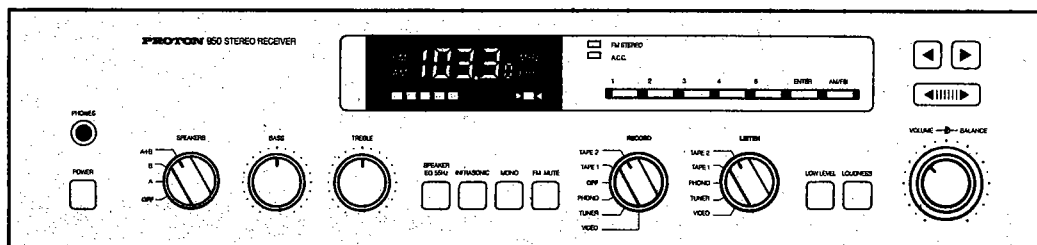


MODELS

450



550



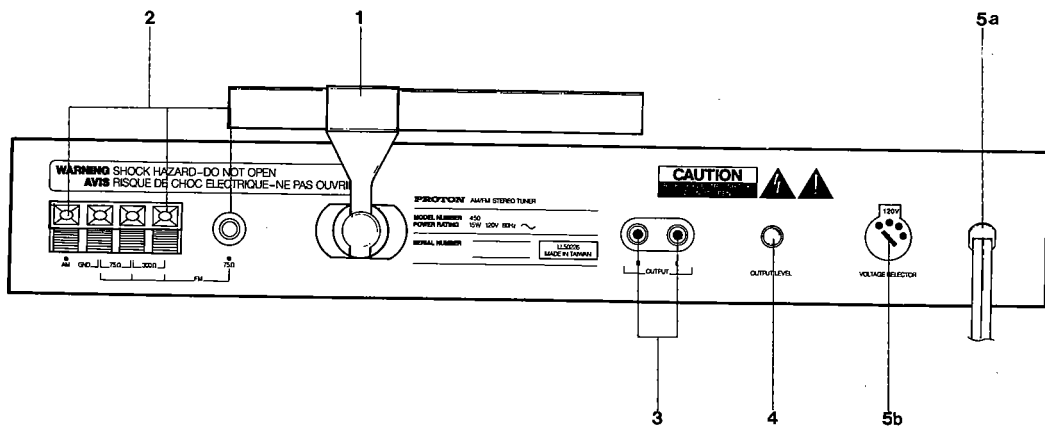
950

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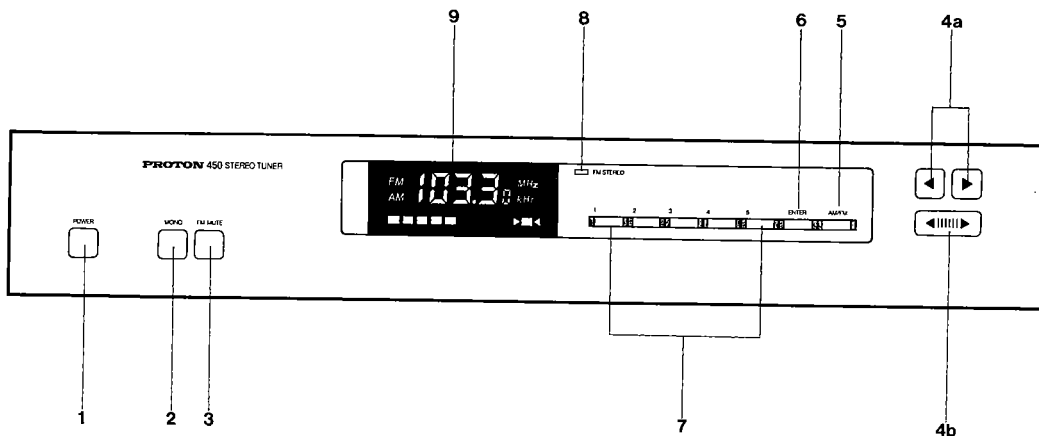
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450 FRONT/REAR VIEW

1. AM Bar Antenna
2. Antenna Terminals
3. Audio Output
4. Output Level
- 5a. Ac Line Cord
- 5b. Voltage Selector (Not in U.S. / Canada models)

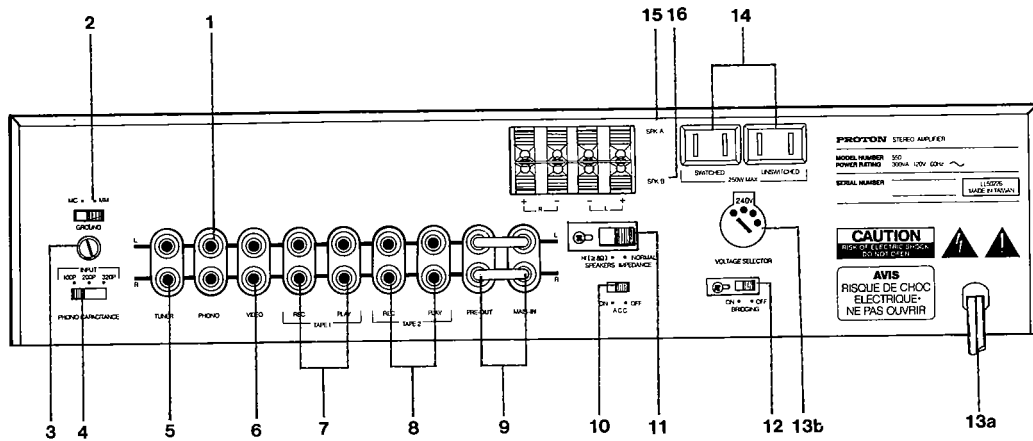


1. Power
2. Mono
3. FM Mute
4. (a) Up/Down Scan
4. (b) Search
5. FM/AM
6. Enter
7. Pre-sets
8. FM Stereo Indicator
9. Tuning Display

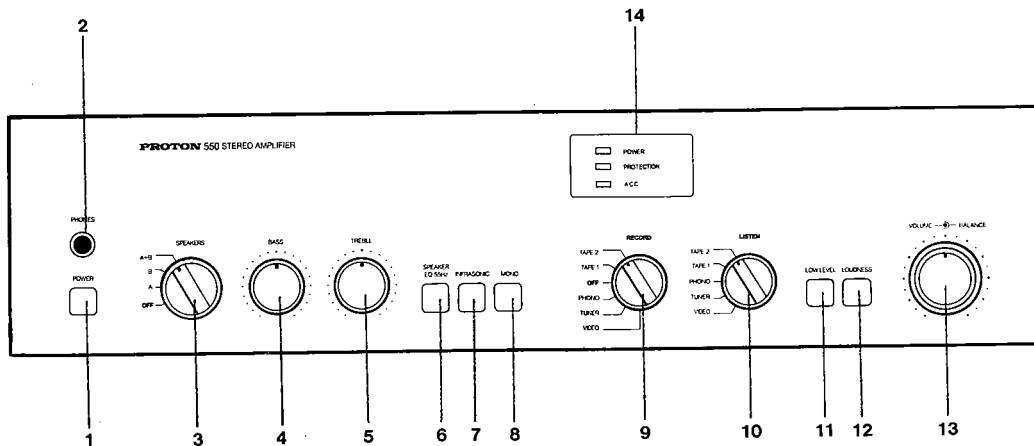


550 FRONT/REAR VIEW

- | | |
|-------------------------|----------------------------------|
| 1. Phono Input | 10. A.C.C. |
| 2. MM/MC Selector | 11. Speaker Impedance |
| 3. Ground | 12. Bridging |
| 4. Capacitance Selector | 13a. AC Line Cord |
| 5. Tuner Input | 13b. (Not in U.S./Canada models) |
| 6. Video Input | 14. AC Convenience Outlets |
| 7. Tape 1 Rec/Play | 15. Speakers A |
| 8. Tape 2 Rec/Play | 16. Speakers B |
| 9. Preamp Out, Main in | |

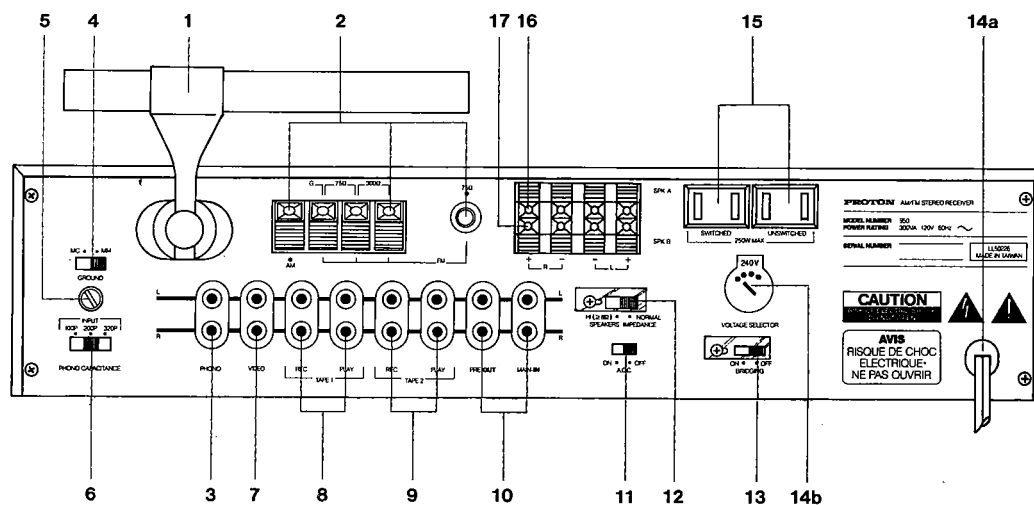


- | | |
|----------------------|---------------------------|
| 1. Power | 8. Mono |
| 2. Phones | 9. Recording Selector |
| 3. Speaker Selector | 10. Listen Selector |
| 4. Bass | 11. Low Level |
| 5. Treble | 12. Loudness Compensation |
| 6. Speaker EQ. | 13. Volume/Balance |
| 7. Infrasonic Filter | 14. Status Indicators |

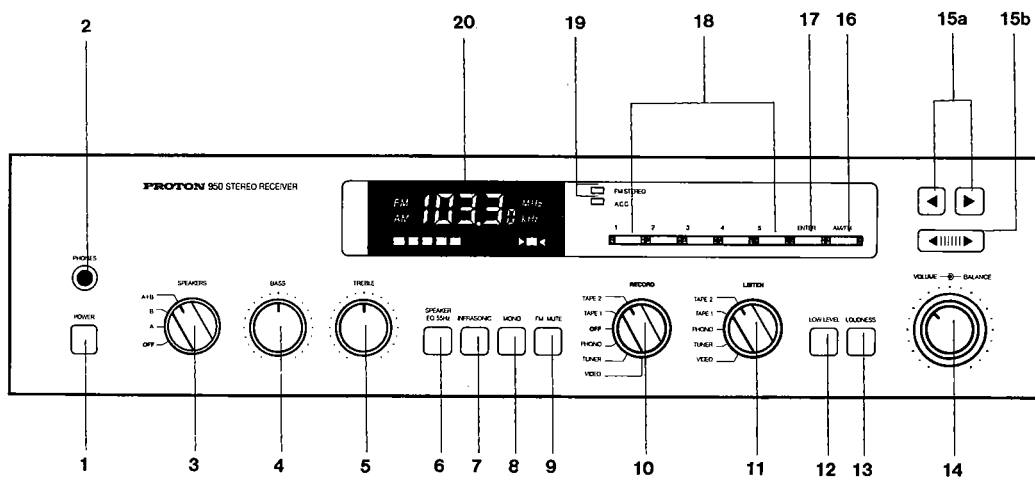


950 FRONT/REAR VIEW

- | | | |
|-------------------------|-------------------------|-----------------------------|
| 1. AM Bar Antenna | 8. Tape 1 Rec/Play | 14b. Voltage Selector |
| 2. Antenna Terminals | 9. Tape 2 Rec/Play | (Not in U.S./Canada models) |
| 3. Phono Input | 10. Preamp Out, Main In | 15. Ac Convenience Outlets |
| 4. MM/MC Phono Selector | 11. A.C.C. | (Not in U.K. model) |
| 5. Ground | 12. Speaker Impedance | 16. Speakers A |
| 6. Capacitance Selector | 13. Bridging | 17. Speakers B |
| 7. Video | 14a. Ac Line Cord | |



- | | | |
|----------------------|---------------------------|-----------------------|
| 1. Power | 8. Mono | 15a. Up/Down |
| 2. Phones | 9. FM Mute | 15b. Search |
| 3. Speaker Selector | 10. Recording Selector | 16. FM/AM |
| 4. Bass | 11. Listen Selector | 17. Enter |
| 5. Treble | 12. Low Level | 18. Pre-sets |
| 6. Speaker EQ. | 13. Loudness Compensation | 19. Status Indicators |
| 7. Infrasonic Filter | 14. Volume/Balance | 20. Tuning Display |



SPECIFICATIONS

950 AUDIO/550 SPECIFICATIONS

* Measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

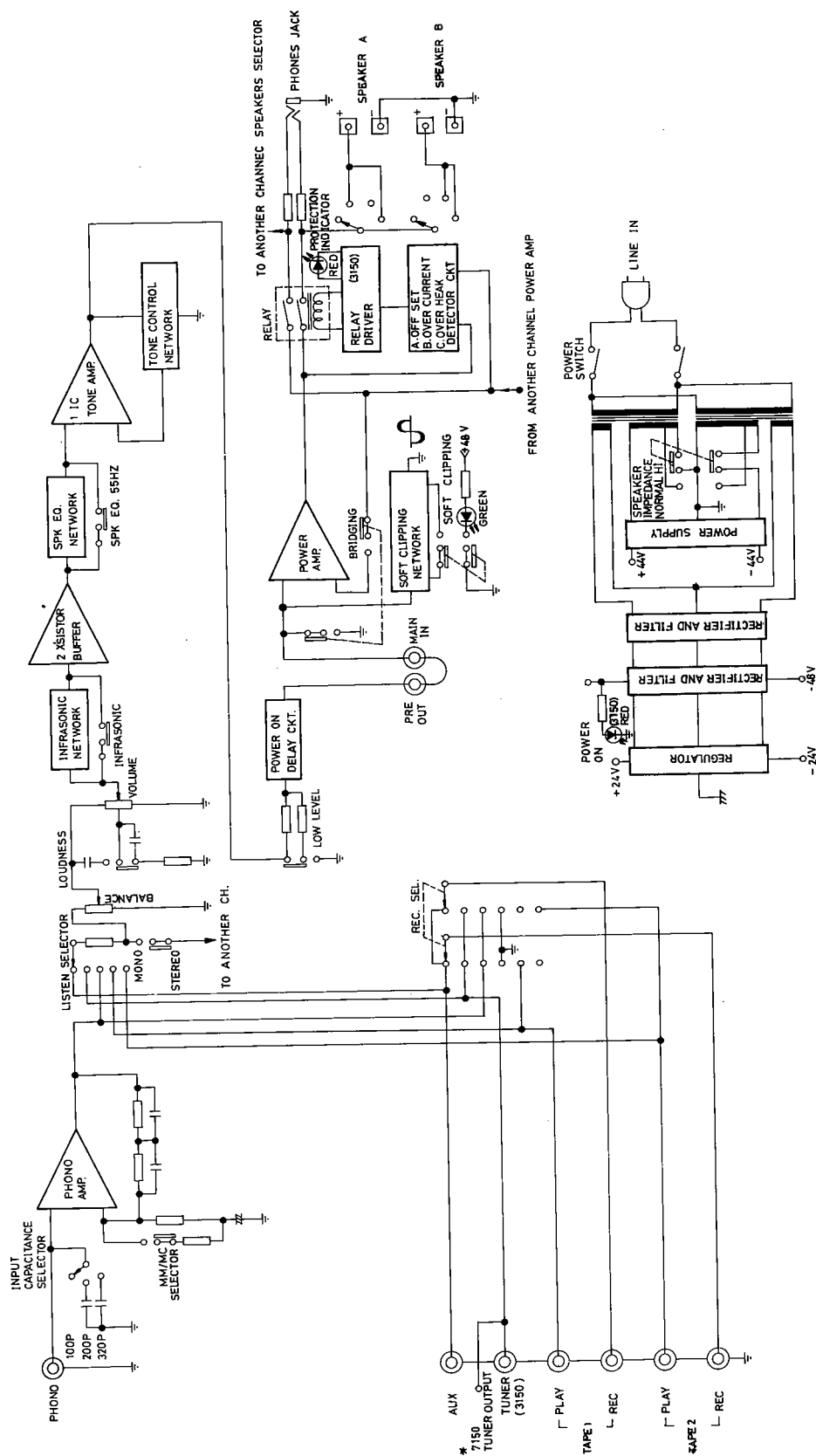
Speaker Impedance Switch Set:	Normal	Hi ($\geq 8 \Omega$)
Power Amplifier Section		
* Continuous average power output at 8 ohms		
20-20K Hz both Channels Driven	50 W	60 W
Rated distortion 20020K Hz	<0.03%	<0.03%
* Clipping Headroom at 8 ohm	+0.5 dB	+0.5 dB
Clipping Power at 8 ohm	57 W	68 W
at 4 ohm	80 W	-
at 2 ohm	90 W	-
Dynamic Headroom at 8 ohm	+1.8 dB	+1.6 dB
Dynamic Power at 8 ohm	90 W	100 W
at 4 ohm	150 W	-
at 2 ohm	180 W	-
* Transient Overload Recovery Time	<1 usec	
* Slew Factor	>50	
Slew Rate	20 V/usec	
Damping factor at 50 Hz (Ref. 8 ohm)	>100	
THD 20-20K Hz From 250 mW to 60 W		
SMPTTE IMD (60K Mz + 7K Hz, 4:1)		
from 250 mW to 60 W	<0.03%	
IHF IMD (19K Hz + 20K Hz) at 60 W	<0.03%	
TIM (15K Hz Sine Wave +3.18K Hz Square Wave)		
at 60 W	<0.03%	
Frequency Response 20-20K Hz	+/-0.5 dB	
Frequency Response Range -3 dB	10-35K Hz	
Preamplifier Section		
Phono Input Resistance	MM 47K ohm	MC 47K ohm
Phono Input Capacitance (Selectable)	100P/200P/320P	100P/200P/320P
Input Sensitivity (1K Hz) * For 1 Watt out	0.4 mV	0.035 mV
50 Watt out	2.5 mV	0.25 mV
Input Overload at 1K Hz	240 mV	24 mV
20Hz	24 mV	2.4 mV
20K Hz	2.4VVV	180 mV
THD (20-20K Hz) and IMD at +30 dB input level	< 0.015%	0.04%
RIAA Response Accuracy	+/-0.2 dB	+/-0.5 dB
Signal to Noise Ratio A-Weighted		
(a) with phono cartridge connected		
Ref 10 mV	>82 dB	
*Ref 5 mV	>76 dB	
*Ref 0.5 mV	>68 dB	
(b) With short-circuit input		
Ref 10 mV	>90 dB	
Ref 0.5 mV		70 dB
High Level Input		
* Input Impedance Resistance/Capacitance	150K ohm/220pF	
Input sensitivity *for 1 Watt out	20 mV	
for 50 Watt out	145 mV	

Signal to Noise Ratio A-Weighted	Ratio	
(a) with mute off Ref 1 Watt out		>80 dB
Ref 50 Watt out		>95 dB
(b) with mute on Ref 1 Watt out		>93 dB
* Maximum Input Signal		15V
Frequency Response, 20-20K Hz		+/-0.5 dB
Controls		
Bass Control, Range at 100K Hz	Range	+/-8 dB
Treble Control, Range at 10K Hz		+/-7 dB
Infrasonic Filter Turn Over Frequency		20 Hz
	Slope (dB/Octave)	12
Speaker Eq	Turn Over Frequency	55
	Slope (dB/Octave)	12
Mute		-20 dB
Physical Specifications		
Dimensions WxHxD (inch)		16.5x3,8x12
(cm)		42x9.6x310
Net Weight		9.0Kg/19.8 Lbs

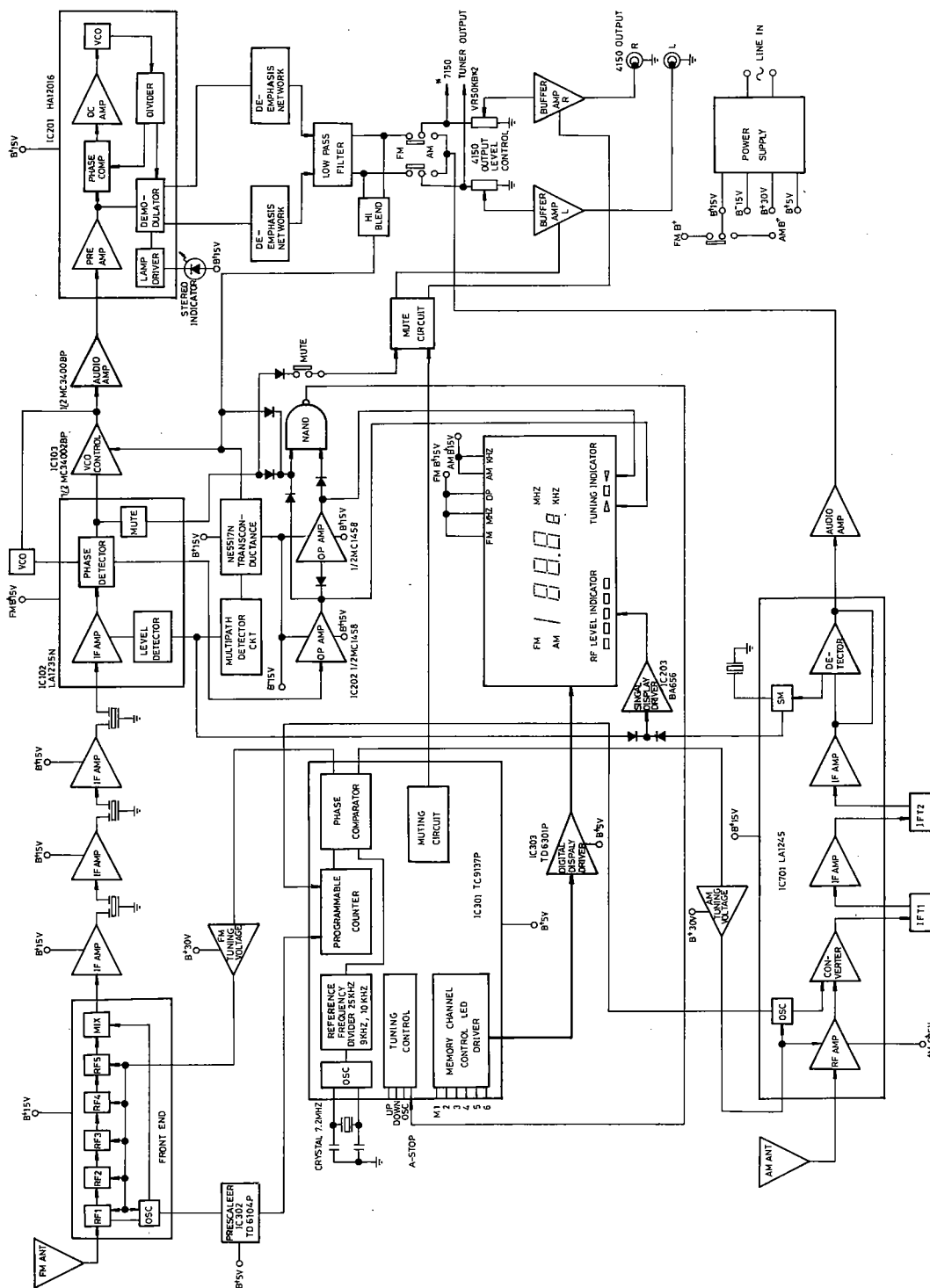
950 TUNER/450 SPECIFICATIONS

FM Tuner Section	Normal	Limited
Input Sensitivity IHF, 30 dB Quieting	1.4uV	1.8 uV
IHF, 50 dB S/N Mono/Stereo	3.5 uV/30 uV	4.5 uV/40 uV
Signal to Noise Ratio (A Weighted, at 65 dBf)		
Mono/Stereo	83 dB/75 dB	78 dB/70 dB
Frequency Response, 30-15K Hz	+/-0.5 dB	+/-0.5 dB
De-emphasis Accuracy, 75 usec	+/-0.5 dB	+/-1 dB
Channel Separation 1K Hz	45 dB	40 dB
30-15K Hz	35 dB	30 dB
Selectivity, Alternate Channel (400K Hz)	70 dB	65 dB
Capture Ratio at 45 dBf and 65 dBf	1.0 dB	2.0 dB
AM Suppression at 45 dBf and 65 dBf	58 dB	53 dB
Image Rejection	100 dB	90 dB
IF Rejection	95 dB	90 dB
SCA Rejection	70 dB	65 dB
Pilot Signal Suppression	60 dB	55 dB
T.H. D. at 100% Modulation 1K Hz Mono/Stereo	0.08%/0.1%	0.15%/0.2%
100K Hz Mono/Stereo	0.10%/0.2%	0.2%/0.3%
6K Hz Mono/Stereo	0.10%/0.2%	0.2%/0.3%
T.H.D. Stereo 1K Hz 50%/150%	0.1%/0.2%	0.2%/0.3%
AM Tuner Section		
Usable Sensitivity	300 uV/m	450 uV/m
Selectivity	30 dB	25 dB
Image Rejection	50 dB	45 dB
IF Rejection	50 dB	45dB

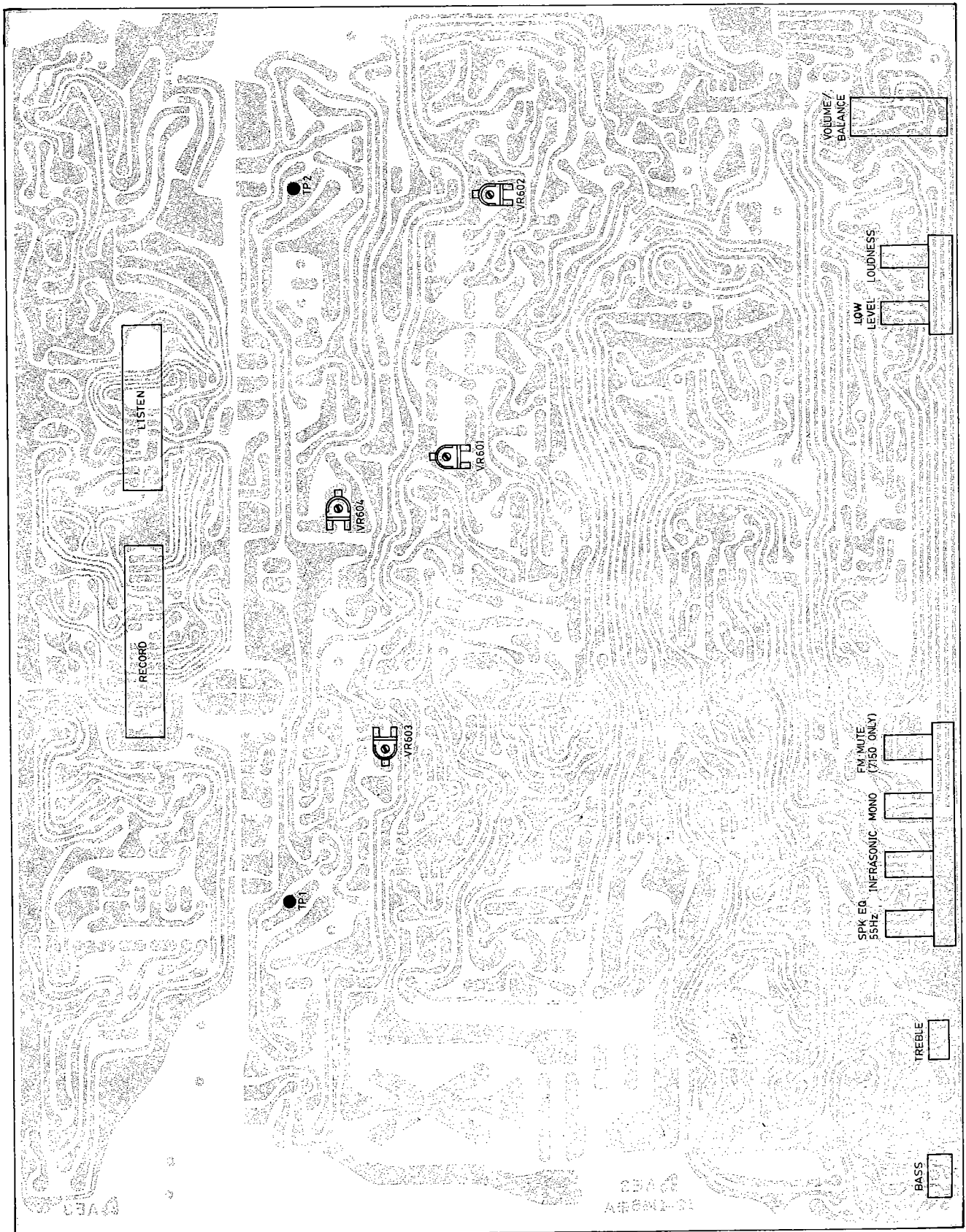
950 AUDIO/550 BLOCK DIAGRAM



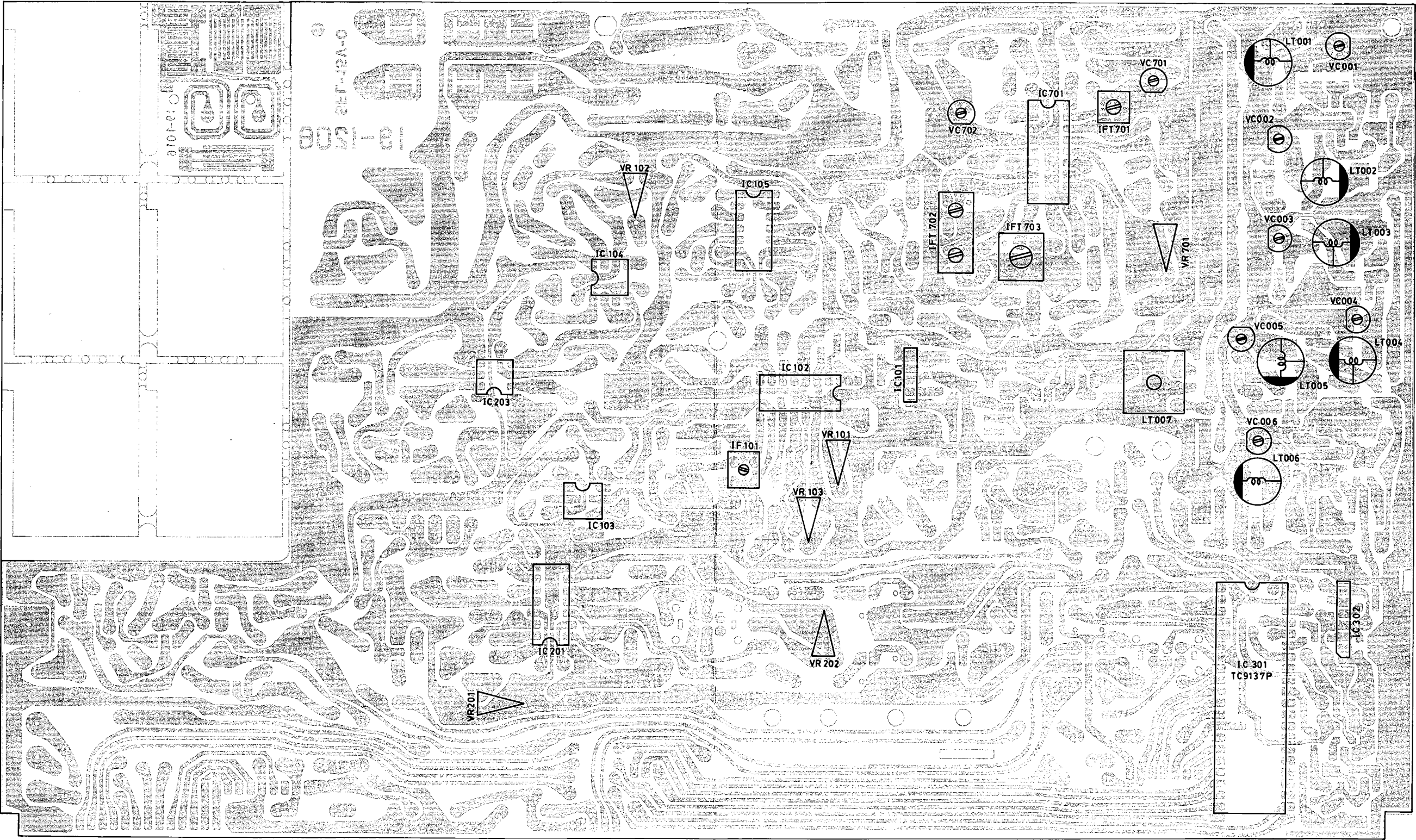
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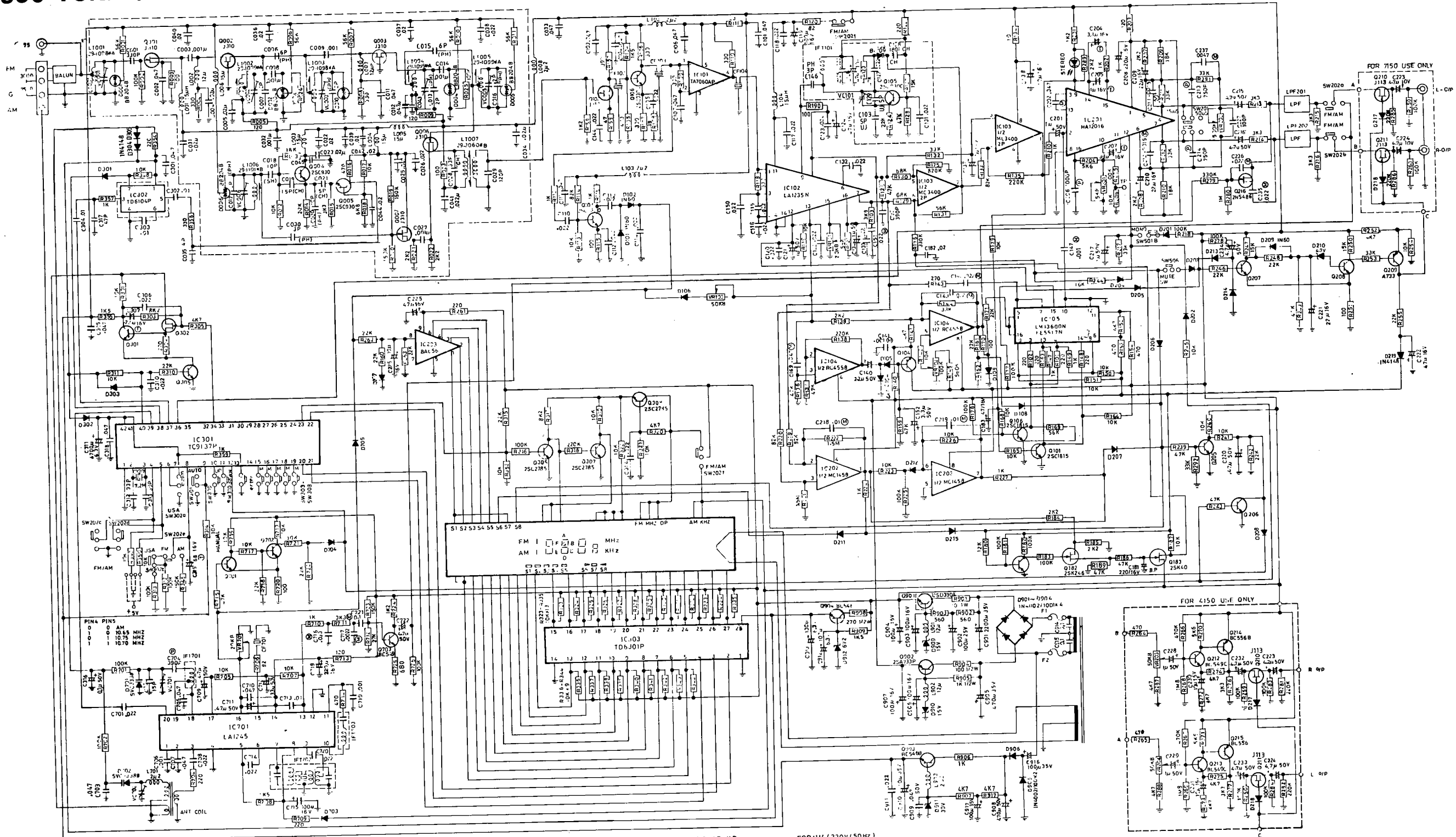
950 AUDIO/550 ADJUSTMENT POINT



950 TUNER/450 ALIGNMENT POINT



950 TUNER/450 CIRCUIT DIAGRAM



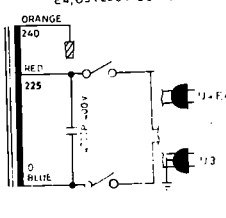
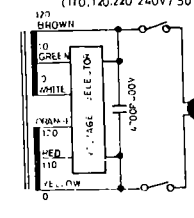
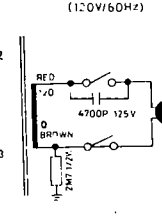
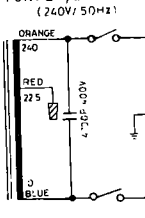
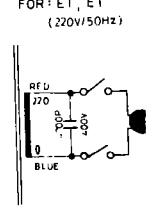
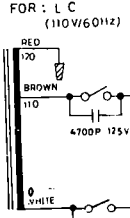
Adjustment	Adjust for
IFT 101	to pin TP3 Voltage OV
LT 006	Tuning Voltage 4.3V $\pm$ 0.1V
VC 006	Tuning Voltage 18.7V $\pm$ 0.2V

LT001 to LT005	Maximum OUTPUT
VC001 to VC005	
LT007	

VR 101	OUTPUT just disappear
--------	-----------------------

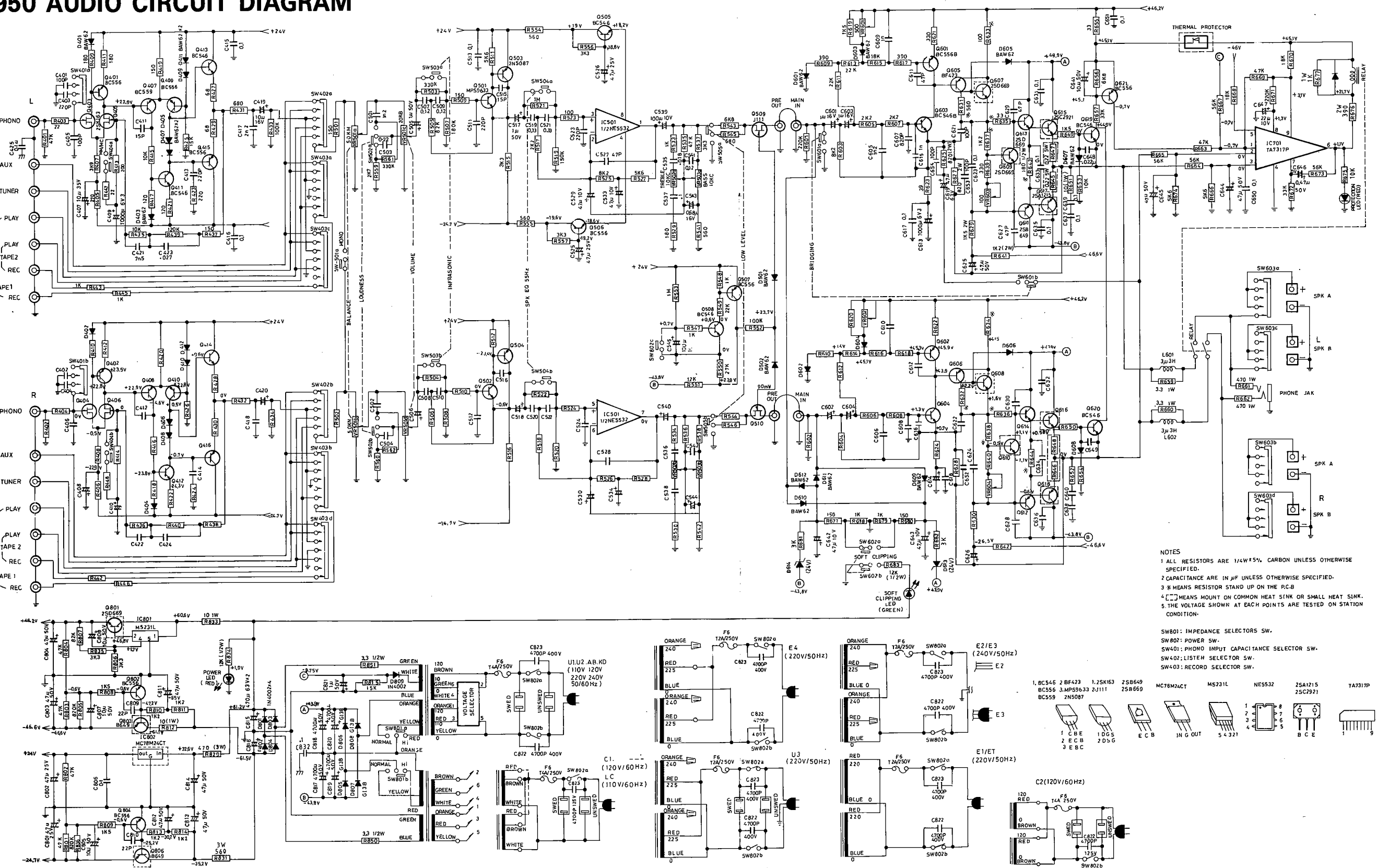
audio OUTPUT
1.2.3

Adjustment	Adjust ofr
IFT 703 IFT 702	Maximum OUTPUT
IFT 701	Tuning Voltage $4.5V \pm 0.1$
VC 701	Tuning Voltage $20.5V \pm 0.2V$
ANT VAR	Maximum OUTPUT
VC 702	



NOTE ALL THE RESISTORS ARE 1/4 W CARBON FILM RESISTOR UNLESS OTHERWISE SPECIFIED.
ALL THE NPN TRANSISTORS ARE 2SC1815GR UNLESS OTHERWISE SPECIFIED
ALL THE DIODES ARE 1N4148 UNLESS OTHERWISE SPECIFIED
F1-F2/F1-RATING.
1 100MA/250V FOR C1,C2,C3,C4,C5
2 500MA/250V FOR C6,C7,C8,C9

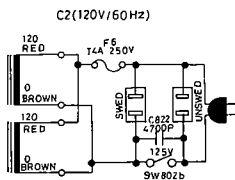
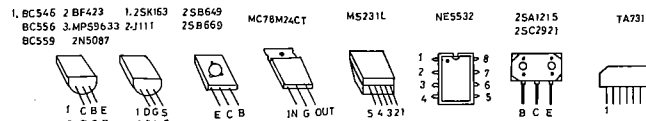
950 AUDIO CIRCUIT DIAGRAM



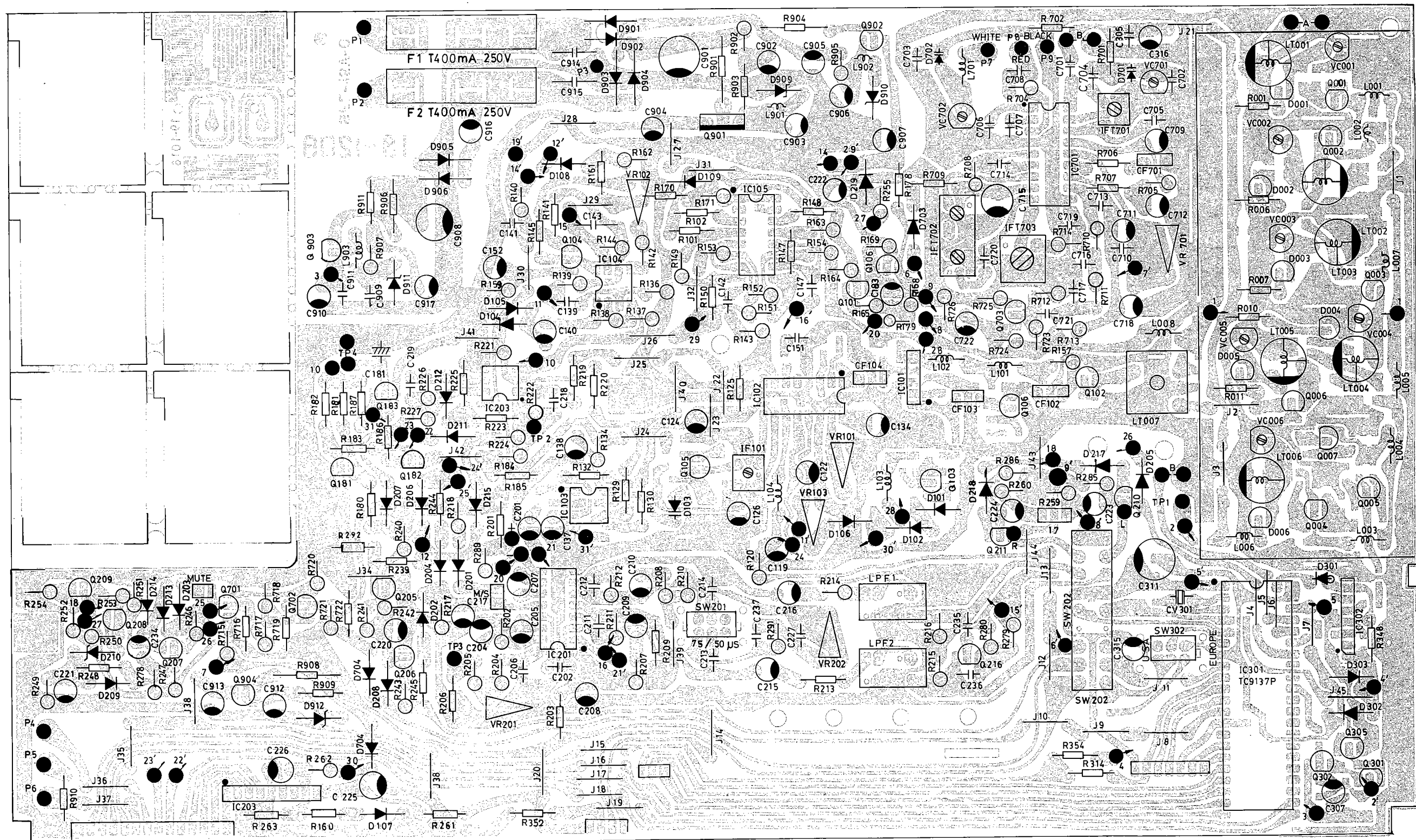
NOTES

- 1 ALL RESISTORS ARE 1/4W*5%. CARBON UNLESS OTHERWISE SPECIFIED.
- 2 CAPACITANCE ARE IN μ F UNLESS OTHERWISE SPECIFIED.
- 3 * MEANS RESISTOR STAND UP ON THE P.C.B
- 4 [] MEANS MOUNT ON COMMON HEAT SINK OR SMALL HEAT SINK.
- 5 THE VOLTAGE SHOWN AT EACH POINTS ARE TESTED ON STATION CONDITION.

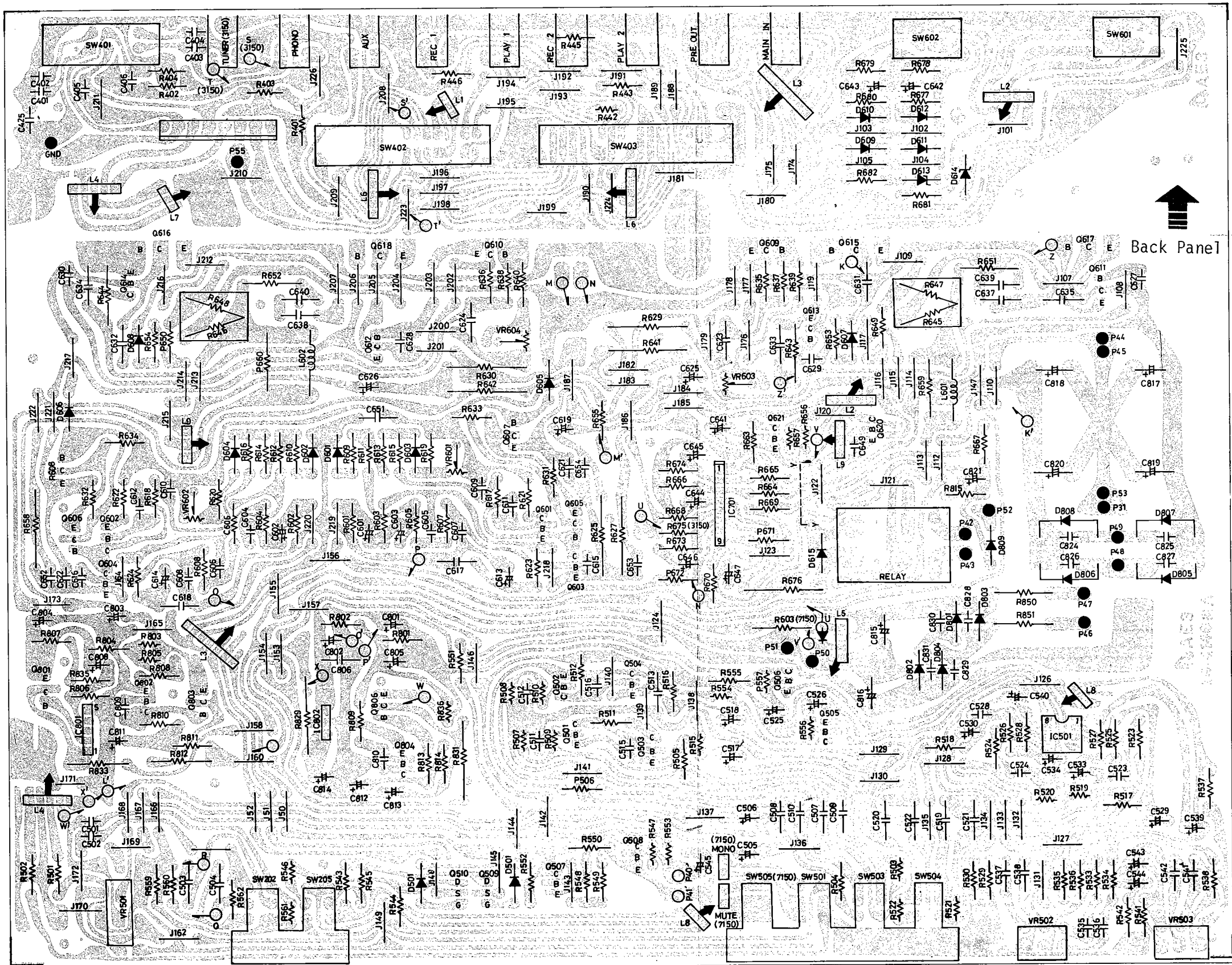
SW801: IMPEDANCE SELECTORS SW.
SW802: POWER SW.
SW401: PHONO INPUT CAPACITANCE SELECTOR SW.
SW402: LISTEN SELECTOR SW.
SW403: RECORD SELECTOR SW.



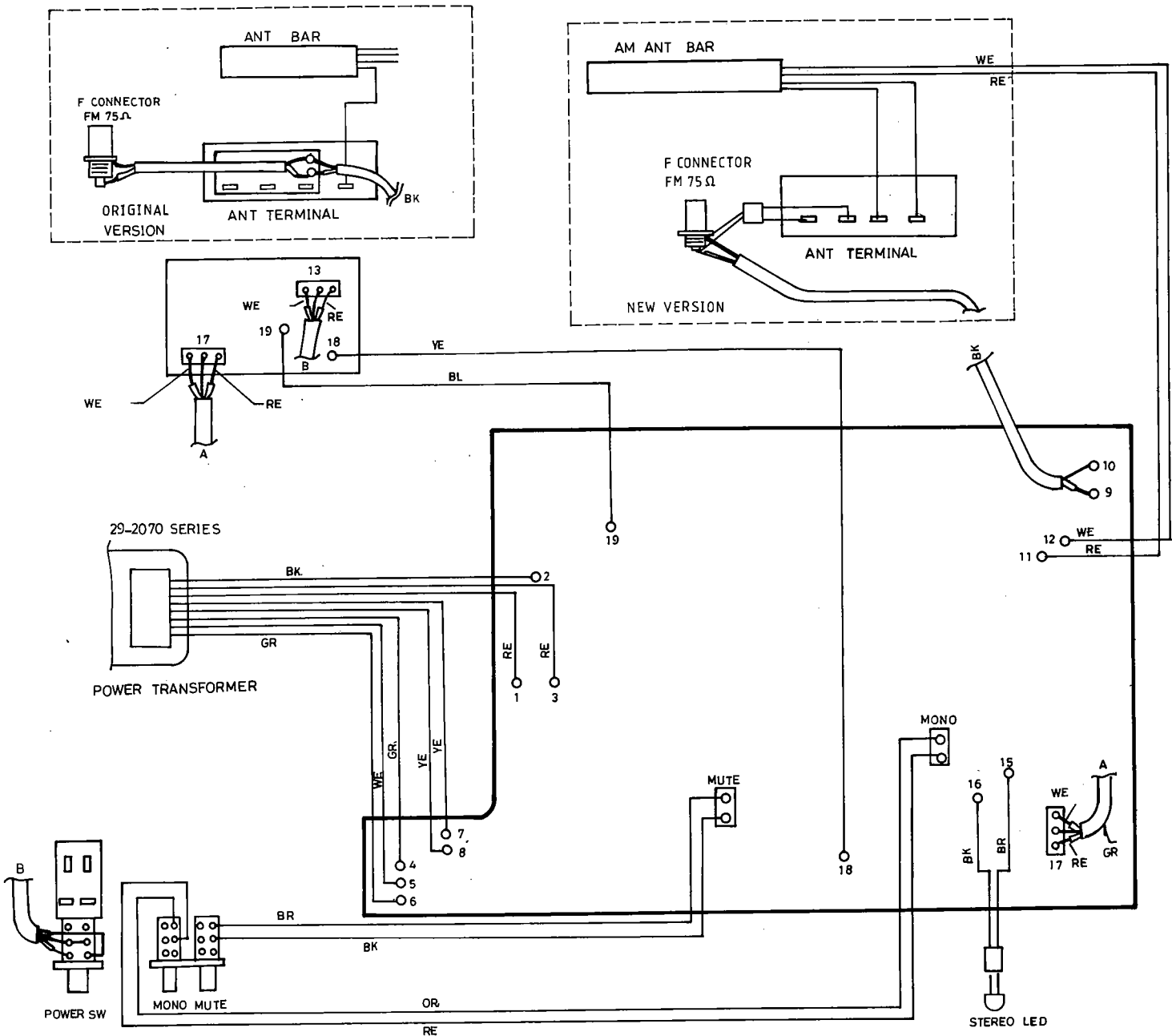
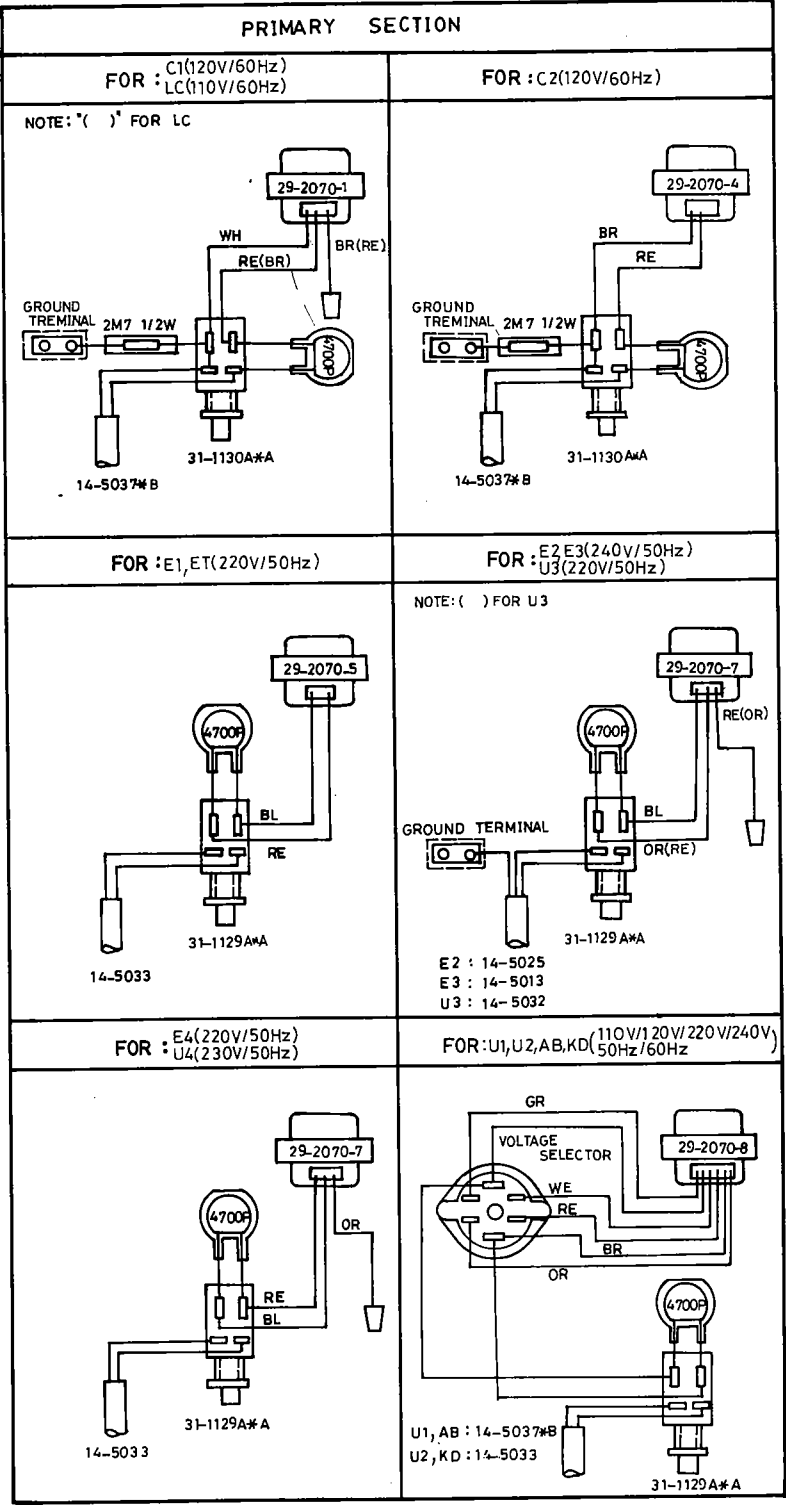
950 TUNER/450 PCB PARTS LOCATION (BOTTOM VIEW)



050 AUDIO/550 PCB PARTS LOCATION (BOTTOM VIEW)

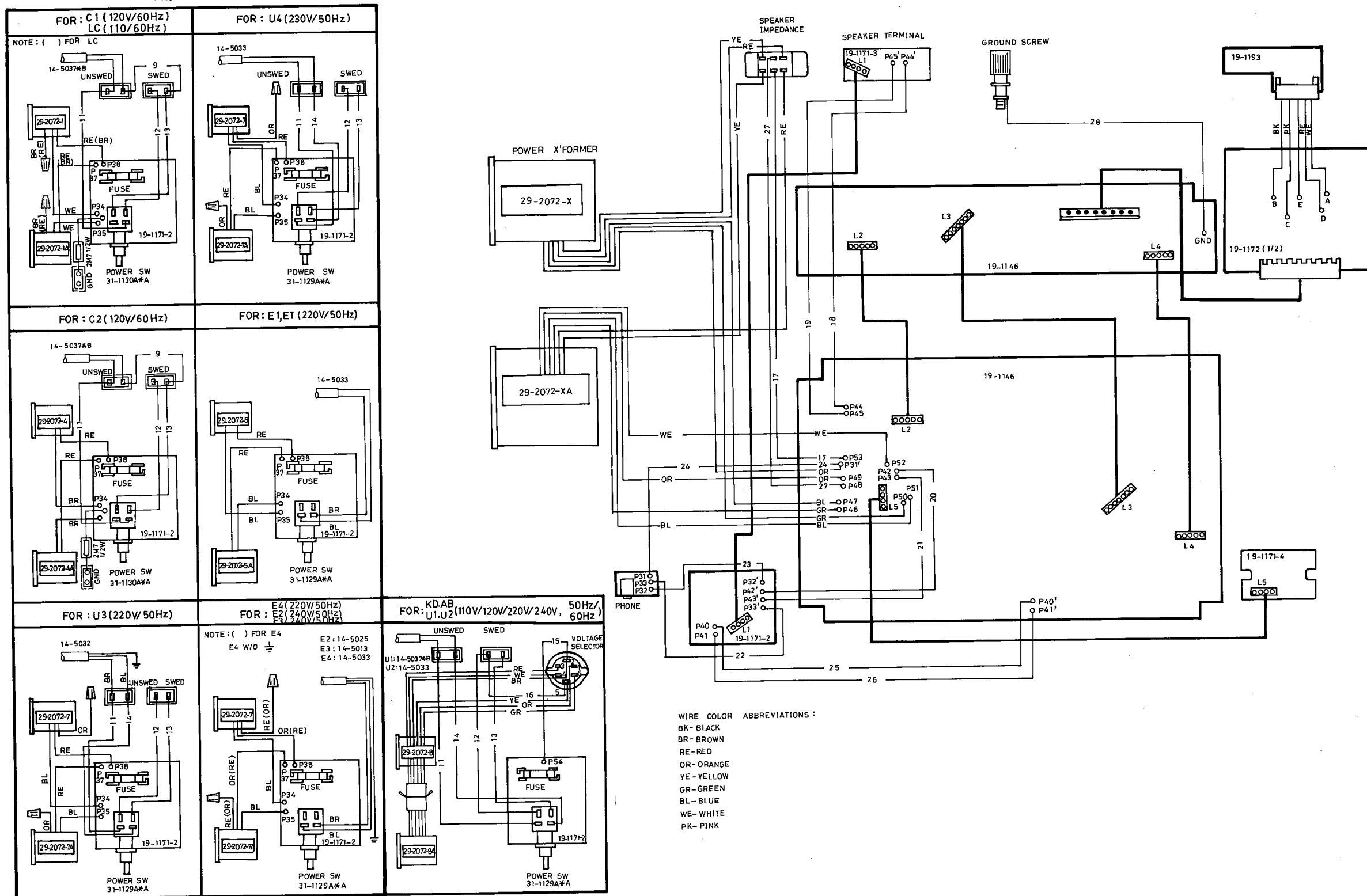


450 WIRING DIAGRAM



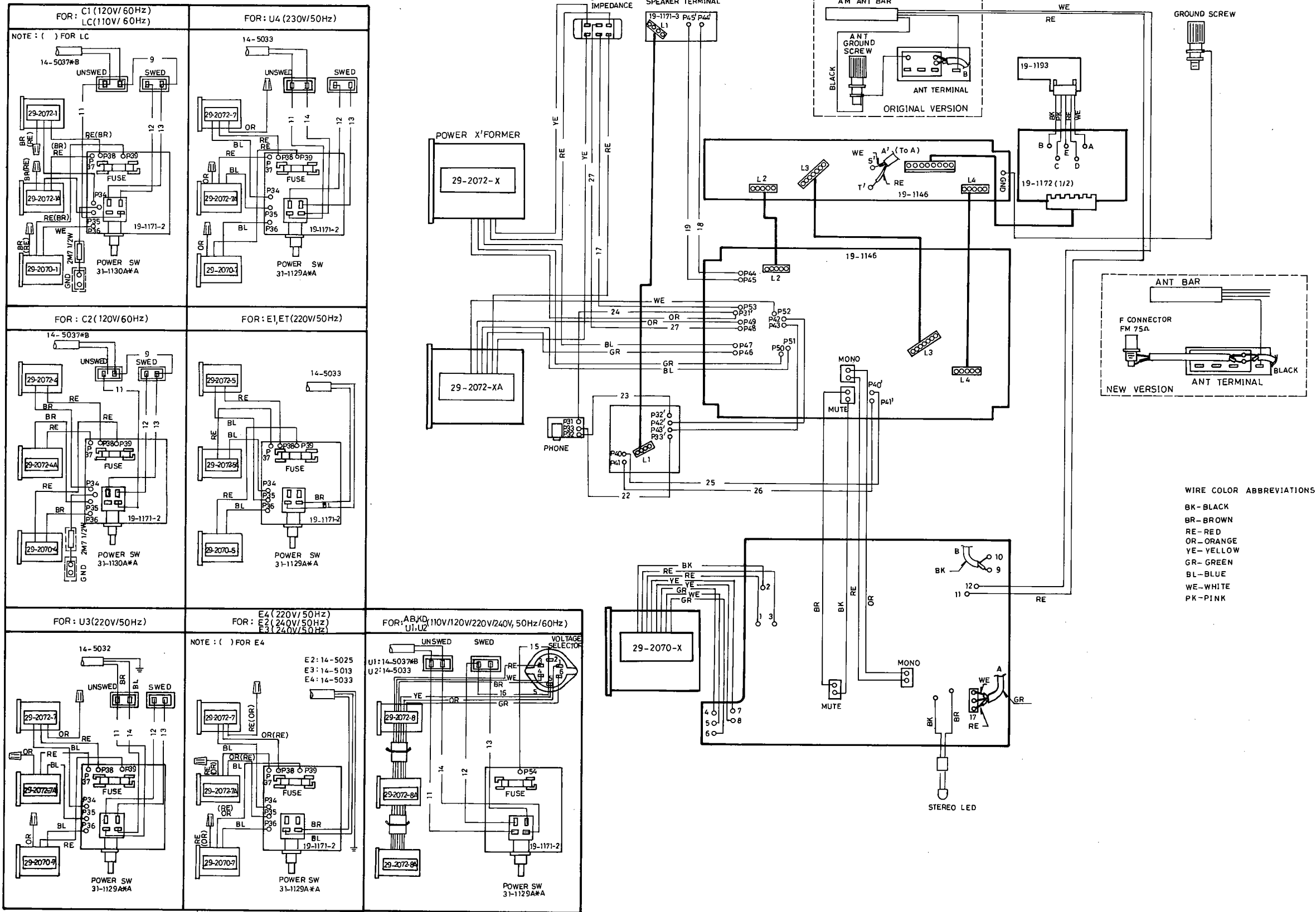
50 WIRING DIAGRAM

PRIMARY SECTION



950 WIRING DIAGRAM

PRIMARY SECTION



ELECTRICAL PARTS LIST

ELECTRICAL PARTS LIST

NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
-R007	16-1/4CA563J	56K OHM
	16-1/8TY104J	100K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY121J	120 OHM CHIP 1/8W
	16-1/4CA563J	56K OHM
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY121J	120 OHM CHIP 1/8W
	16-1/4CA563J	56K OHM
	16-1/8TY103J	10K OHM CHIP 1/8W
-R011	16-1/8TY183J	18K OHM CHIP 1/8W
	16-1/8TY222J	2K2 OHM CHIP 1/8W
	16-1/8TY332J	3K3 OHM CHIP 1/8W
	16-1/8TY471J	470 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY682J	6K8 OHM CHIP 1/8W
	16-1/8TY154J	150K OHM CHIP 1/8W
	16-1/8TY222J	2K2 OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY104J	100K OHM CHIP 1/8W
-R020	16-1/4CA221J	220 OHM
	16-1/8TY392J	3K9 OHM CHIP 1/8W
	16-1/8TY152J	1K5 OHM CHIP 1/8W
	16-1/8TY471J	470 OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY391J	390 OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY391J	390 OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY330J	33 OHM CHIP 1/8W
-R022	16-1/8TY102J	1K OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY102J	1K OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY102J	1K OHM CHIP 1/8W
-R025	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY102J	1K OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY102J	1K OHM CHIP 1/8W
-R102	16-1/8TY391J	390 OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
	16-1/8TY102J	1K OHM CHIP 1/8W
	16-1/8TY331J	330 OHM CHIP 1/8W
	16-1/8TY103J	10K OHM CHIP 1/8W
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/8TY101J	100 OHM CHIP 1/8W
-R130	16-1/4CA683J	68K OHM
	16-1/8TY563J	56K OHM CHIP 1/8W
	16-1/4CA333J	33K OHM
	16-1/8TY823J	82K OHM CHIP 1/8W
	16-1/4CR100J	10 OHM
	16-1/8TY154J	150K OHM CHIP 1/8W
	16-1/4CR473J	47K OHM
	16-1/4CR224J	220K OHM
	16-1/4CR222J	2K2 OHM
	16-1/4CR472J	4K7 OHM
-R137	16-1/4CA472J	4K7 OHM
	16-1/4CR103J	10K OHM
	16-1/4CR271J	270 OHM
	16-1/4CR333J	33K OHM
	16-1/4CA564J	560K OHM
	16-1/4CA102J	1K OHM
	16-1/4CA221J	220 OHM
	16-1/4CR102J	1K OHM
	16-1/4CR222J	2K2 OHM
	16-1/4CR472J	4K7 OHM
-R137	16-1/4CA472J	4K7 OHM
	16-1/4CR103J	10K OHM
	16-1/4CR271J	270 OHM
	16-1/4CR333J	33K OHM
	16-1/4CA564J	560K OHM
	16-1/4CA102J	1K OHM
	16-1/4CA221J	220 OHM
	16-1/4CR102J	1K OHM
	16-1/4CR222J	2K2 OHM
	16-1/4CR472J	4K7 OHM

REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
R150	16-1/4CA103J	10K OHM
R151	16-1/4CR103J	10K OHM
R152	16-1/4CR472J	4K7 OHM
R153-R154	16-1/4CR471J	470 OHM
R156	16-1/8TY122J	1K2 OHM CHIP 1/8W
R157	16-1/4CR391J	390 OHM
R158	16-1/8TY470J	47 OHM CHIP 1/8W
R159	16-1/4CR473J	47K OHM
R160	16-1/4CR223J	22K OHM
R161	16-1/4CA223J	22K OHM
R162	16-1/4CR272J	2K7 OHM
R163	16-1/4CR221J	220 OHM
R164-R165	16-1/4CR103J	10K OHM
R168	16-1/4CR103J	10K OHM
R169	16-1/4CR563J	56K OHM
R170	16-1/4CA101J	100 OHM
R171	16-1/4CR223J	22K OHM
R175	16-1/4CA824J	820K OHM
R176	16-1/4CA334J	330K OHM
R177	16-1/4CA104J	100K OHM
R178	16-1/4CR104J	100K OHM
R179	16-1/4CA103J	10K OHM
R180	16-1/4CA123J	12K OHM
R181-R182	16-1/4CA104J	100K OHM
R183	16-1/4CR104J	100K OHM
R184-R185	16-1/4CA222J	2K2 OHM
R186	16-1/4CA473J	47K OHM
R187	16-1/4CA103J	10K OHM
R189	16-1/4CA473J	47K OHM
R190	16-1/8TY101J	100 OHM CHIP 1/8W
R201	16-1/4CA122J	1K2 OHM
R202	16-1/4CR102J	1K OHM
R203	16-1/4CA121J	120 OHM
R204	16-1/4CR562J	5K6 OHM
R205	16-1/4CR104J	100K OHM
R206	16-1/4CA103J	10K OHM
R207	16-1/4CR222J	2K2 OHM
R208	16-1/4CR222J	2K2 OHM
R209	16-1/4CA183J	18K OHM
R210	16-1/4CR183J	18K OHM
R211-R212	16-1/4CR333J	33K OHM
R213	16-1/4CA332J	3K3 OHM
R214-R216	16-1/4CR332J	3K3 OHM
R217	16-1/4CR333J	33K OHM
R218	16-1/4CR103J	10K OHM
R219-R220	16-1/4CA823J	82K OHM
R221-R222	16-1/4CA155J	1M5 OHM
R223	16-1/4CA103J	10K OHM
R224	16-1/4CR102J	1K OHM
R225	16-1/4CA104J	100K OHM
R226	16-1/4CR103J	10K OHM
R227	16-1/4CR102J	1K OHM
R239	16-1/4CA473J	47K OHM
R240-R241	16-1/4CR103J	10K OHM
R242	16-1/4CR223J	22K OHM
R243	16-1/4CR473J	47K OHM
R244-R245	16-1/4CA103J	10K OHM
R246	16-1/4CR223J	22K OHM
R247	16-1/4CR153J	15K OHM
R248	16-1/4CA223J	22K OHM
R249	16-1/4CR473J	47K OHM
R250	16-1/4CR153J	15K OHM
R251	16-1/4CR101J	100 OHM

REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
R252	16-1/4CR472J	4K7 OHM
R253	16-1/4CR333J	33K OHM
R254	16-1/4CR103J	10K OHM
R255	16-1/4CR223J	22K OHM
R256	16-1/4CR101J	100 OHM
R261	16-1/4CA221J	220 OHM
R262	16-1/4CR223J	22K OHM
R263	16-1/4CA223J	22K OHM
R279	16-1/4CR334J	330K OHM
R280	16-1/4CR105J	1M OHM
R259-R260	16-1/4CR104J	100K OHM
R264-R265	16-1/4CA471J	470 OHM
R266-R267	16-1/4CR474J	470K OHM
R268-R269	16-1/4CA185J	1M8 OHM
R270-R271	16-1/4CR562J	5K6 OHM
R272-R273	16-1/4CA472J	4K7 OHM
R274-R275	16-1/4CA472J	4K7 OHM
R276-R277	16-1/4CA332J	3K3 OHM
R278	16-1/4CR104J	100K OHM
R281-R282	16-1/4CR224J	220K OHM
R283-R284	16-1/4CA104J	100K OHM
R285-R286	16-1/4CR224J	220K OHM
R287-R288	16-1/4CA472J	4K7 OHM
R290	16-1/8TY102J	1K OHM CHIP 1/8W
R291	16-1/4CR333J	33K OHM
R292	16-1/4CR333J	33K OHM
R289	16-1/4CR682J	6K8 OHM
R301	16-1/8TY103J	10K OHM CHIP 1/8W
R303	16-1/8TY822J	8K2 OHM CHIP 1/8W
R304	16-1/8TY271J	270 OHM CHIP 1/8W
R305	16-1/8TY472J	4K7 OHM CHIP 1/8W
R310	16-1/8TY223J	22K OHM CHIP 1/8W
R311	16-1/8TY103J	10K OHM CHIP 1/8W
R312	16-1/8TY104J	100K OHM CHIP 1/8W
R313	16-1/8TY104J	100K OHM CHIP 1/8W
R314	16-1/4CA103J	10K OHM
R315	16-1/4CS223J	22K OHM
R316	16-1/4CS104J	100K OHM
R317	16-1/4CS822J	8K2 OHM
R318	16-1/4CS224J	220K OHM
R319	16-1/4CS103J	10K OHM
R320	16-1/4CS472J	4K7 OHM
R321-R344	16-1/4CS103J	10K OHM
R345	16-1/8TY154J	150K OHM CHIP 1/8W
R348	16-1/4CA103J	10K OHM
R350	16-1/8TY103J	10K OHM CHIP 1/8W
R352	16-1/4CA103J	10K OHM
R354	16-1/4CA221J	220 OHM
R355	16-1/8TY152J	1K5 OHM CHIP 1/8W
R357	16-1/8TY102J	1K OHM CHIP 1/8W
R358	16-1/8TY471J	470 OHM CHIP 1/8W
R359	16-1/8TY102J	1K OHM CHIP 1/8W
R701-R702	16-1/4CA104J	100K OHM
R704	16-1/4CR221J	220 OHM
R705	16-1/4CR103J	10K OHM
R706	16-1/4CA820J	82 OHM
R707	16-1/4CA103J	10K OHM
R708	16-1/4CR152J	1K5 OHM
R709	16-1/4CA221J	220 OHM
R710	16-1/4CR102J	1K OHM
R711	16-1/4CR332J	3K3 OHM
R712	16-1/4CR273J	27K OHM
R713	16-1/4CR121J	120 OHM

REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
R714	16-1/4CR471J	470 OHM
R715	16-1/4CR473J	47K OHM
R716-R717	16-1/4CA103J	10K OHM
R718	16-1/4CR223J	22K OHM
R719	16-1/4CA103J	10K OHM
R720	16-1/4CR101J	100 OHM
R721	16-1/4CR103J	10K OHM
R722	16-1/4CA223J	22K OHM
R723	16-1/4CR154J	150K OHM
R724	16-1/4CR122J	1K2 OHM
R725	16-1/4CR561J	560 OHM
R726	16-1/4CR104J	100K OHM
R901	16-1/2CN101J	100 OHM
R902	16-1/4CR561J	560 OHM
R903	16-1/4CA561J	560 OHM
R904	16-1/2CN101J	100 OHM
R905	16-1/4CR102J	1K OHM
R906	16-1/4CN391J	390 OHM
R907	16-1/4CR472J	4K7 OHM
R908	16-1/2CN271J	270 OHM
R909	16-1/4CA152J	1K5 OHM
R917	16-1/4CR472J	4K7 OHM
CAPACITORS		
C001	17-5DR331M	CER 330pF 50V +-20%
C002	17-5DR473Z	CER .047uF 50V +80-20%
C003	17-5DR102M	CER .001uF 50V +-20%
C004-C005	17-5DR223Z	CER .022uF 50V +80-20%
C006	17-5DR6R0DPH	CER 6pF 50V +-0.5pF PH
C007	17-5DR2R0DPH	CER 2pF 50V +-0.5pF PH
C008-C009	17-5DR102M	CER .001uF 50V +-20%
C010	17-5DR2R0DPH	CER 2pF 50V +-0.5pF PH
C011-C012	17-5DR473Z	CER .047uF 50V +80-20%
C013	17-5DR2R0DPH	CER 2pF 50V +-0.5pF PH
C014	17-5DR102M	CER .001uF 50V +-20%
C015	17-5DR6R0DPH	CER 6pF 50V +-0.5pF PH
C016-C017	17-5DR2R0DPH	CER 2pF 50V +-0.5pF PH
C018	17-5DR100FSH	CER 10pF 50V +-1pF SH
C019	17-5DR150JCH	CER 15pF 50V +-5% CH
C020	17-5DR100FFH	CER 10pF 50V +-1pF PH
C021	17-5DR5R0DCH	CER 5pF 50V +-0.5pF CH
C022	17-5DR223Z	CER .022uF 50V +80-20%
C023	17-5DR223Z	CER .022uF 50V +80-20%
C025	17-5DR473Z	CER .047uF 50V +80-20%
C026	17-5DR223Z	CER .022uF 50V +80-20%
C027	17-5DR102M	CER .001uF 50V +-20%
C028	17-5DR330YCH	CER 33pF 50V +50-10% CH
C029	17-5DR121KSL	CER 120pF 50V +-10% SL
C030	17-5DR3R0DPH	CER 3pF 50V +-0.5pF PH
C031	17-5DR203Z	CER .02uF 50V +80-20%
C032	17-5DR102M	CER .001uF 50V +-20%
C033	17-5DR473Z	CER .047uF 50V +80-20%
C034	17-5DR203Z	CER .02uF 50V +80-20%
C305	17-5DR4R0DPH	CER 4pF 50V +-0.5pF PH
C036-C045	17-5DR203Z	CER .02uF 50V +80-20%
C101	17-5DR473Z	CER .047uF 50V +80-20%
C103	17-5DR473Z	CER .047uF 50V +80-20%
C104	17-5DR473Z	CER .047uF 50V +80-20%
C105	17-5DR223Z	CER .022uF 50V +80-20%
C106	17-5DR473Z	CER .047uF 50V +80-20%
C107	17-5DR473Z	CER .047uF 50V +80-20%
C110	17-5DR223Z	CER .022uF 50V +80-20%
C111	17-5DR473Z	CER .047uF 50V +80-20%
C112-C118	17-5DR223Z	CER .022uF 50V +80-20%

REF. NO.	PART NO.	DESCRIPTION				
CAPACITORS						
C119	17-1.6ER107Y	EL	100µF	16V	+50-10%	
C120	17-5DR223Z	CER	.022µF	50V	+80-20%	
C121	17-5ER105Y	EL	1µF	50V	+50-10%	
C122-C123	17-5DR223Z	CER	.022µF	50V	+80-20%	
C124	17-1.6ER476Y	EL	47µF	16V	+50-10%	
C125	17-5DR223Z	CER	.022µF	50V	+80-20%	
C126	17-1.6ER476Y	EL	47µF	16V	+50-10%	
C127	17-5DR223Z	CER	.022µF	50V	+80-20%	
C128	17-5DR181KCH	CER	180pF	50V	+10%	CH
C129-C130	17-5DR5R0DUJ	CER	5pF	50V	+0.5pF	UJ
C131-C133	17-5DR223Z	CER	.022µF	50V	+80-20%	
C134	17-5ER105Y	EL	1µF	50V	+50-10%	
C135	17-5DR391M	CER	390pF	50V	+20%	
C137-C138	17-1.6ER106Y	EL	10µF	16V	+50-10%	
C169	17-5FR473Z	MY	.047µF	50V	+80-20%	
C140	17-5ER225M	EL	2.2µF	50V	+20%	
C141	17-5FR102M	MY	.001µF	50V	+20%	
C142	17-5FR223Z	MY	.022µF	50V	+80-20%	
C143	17-5FR224J	MY	.22µF	50V	+5%	
C144	17-5DR223Z	CER	.022µF	50V	+80-20%	
C146	17-5DR3R0DUJ	CER	3pF	50V	+0.5pF	UJ
C147	17-5FR103M	MY	.01µF	50V	+20%	
C152	17-5ER335Y	EL	3.3µF	50V	+50-10%	
C150	17-5DR223Z	CER	.022µF	50V	+80-20%	
C151	17-5FR223Z	MY	.022µF	50V	+80-20%	
C181	17-1.6SR227Y	ELBP	220µF	16V	+50-10%	
C182	17-5DR223Z	CER	.022µF	50V	+80-20%	
C183	17-1.6ER476Y	EL	47µF	16V	+50-10%	
C201	17-5ER105Y	EL	1µF	50V	+50-10%	
C202	17-5FR473J	MY	.047µF	50V	+5%	
C204	17-1.6OF335M	TAN	3.3µF	16V	+20%	
C205	17-1.6OF105M	TAN	1µF	16V	+20%	
C206	17-5PU102M	PP	.001µF	50V	+20%	
C207	17-1.6OF335M	TAN	3.3µF	16V	+20%	
C208	17-1.6EF227Y	EL	220µF	16V	+50-10%	
C209	17-1.6ER226Y	EL	22µF	16V	+50-10%	
C210	17-1.6ER226Y	EL	22µF	16V	+50-10%	
C211-C212	17-1.6FR152M	MY	.0015µF	16V	+20%	
C213-C214	17-5PU751M	PP	750pF	50V	+20%	
C215-C216	17-5ER475Y	EL	4.7µF	50V	+50-10%	
C217	17-5ER105M	EL	1µF	50V	+20%	
C218-C219	17-5FR103Z	MY	.01µF	50V	+80-20%	
C220	17-5ER474Y	EL	.47µF	50V	+50-10%	
C221	17-1.6ER226Y	EL	22µF	16V	+50-10%	
C222	17-1.6ER476Y	EL	47µF	16V	+50-10%	
C223-C224	17-5ER475Y	EL	4.7µF	50V	+50-10%	
C225	17-1.6ER476Y	EL	47µF	16V	+50-10%	
C226	17-1.6ER106Y	EL	10µF	16V	+50-10%	
C227	17-5DR101K	CER	100pF	50V	+10%	
C228	17-5ER105Y	EL	1µF	50V	+50-10%	
C229	17-5ER105Y	EL	1µF	50V	+50-10%	
C230-C231	17-1.6ER106Y	EL	10µF	16V	+50-10%	
C232-C233	17-5ER475Y	EL	4.7µF	50V	+50-10%	
C234	17-5ER476Y	EL	47µF	50V	+50-10%	
C235	17-5FR223Z	MY	.022µF	50V	+80-20%	
C236	17-5FR223Z	MY	.022µF	50V	+80-20%	
C237	17-5FR472M	MY	.0047µF	50V	+20%	
C301	17-5DR473Z	CER	.047µF	50V	+80-20%	
C302-C304	17-5DR103Z	CER	.01µF	50V	+80-20%	
C305	17-5DR473Z	CER	.047µF	50V	+80-20%	
C306	17-5DR223Z	CER	.022µF	50V	+80-20%	
C307	17-1.6OR224J	TAN	.22µF	16V	+5%	
C310	17-5DR223Z	CER	.022µF	50V	+80-20%	

REF. NO.	PART NO.	DESCRIPTION				
CAPACITORS						
C311	17-.63EG478J	EL	4700µF	6.3V	+5%	
C312	17-5DR330KCH	CER	33pF	50V	+10%	CH
C313	17-5DR390K	CER	39pF	50V	+10%	
C314	17-5DR223Z	CER	.022µF	50V	+80-20%	
C315	17-1.60684K	TAN	.68µF	16V	+10%	
C316	17-5ER474Y	EL	.47µF	50V	+50-10%	
C317	17-5DR470K	CER	47pF	50V	+10%	
C318	17-5DR473Z	CER	.047µF	50V	+80-20%	
C701	17-5DR223Z	CER	.022µF	50V	+80-20%	
C702	17-5DR150KCH	CER	15pF	50V	+10%	CH
C703	17-5DR223Z	CER	.022µF	50V	+80-20%	
C704	17-5PU391J	PP	390pF	50V	+5%	
C705	17-5DR473Z	CER	.047µF	50V	+80-20%	
C706	17-5DR102Z	CER	.001µF	50V	+80-20%	
C707	17-5DR473Z	CER	.047µF	50V	+80-20%	
C708	17-5DR223Z	CER	.022µF	50V	+80-20%	
C709	17-5ER475Y	EL	4.7µF	50V	+50-10%	
C710	17-5DR473Z	CER	.047µF	50V	+80-20%	
C711	17-5ER474Y	EL	.47µF	50V	+50-10%	
C712	17-5ER335Y	EL	3.3µF	50V	+50-10%	
C713	17-5DR103Z	CER	.01µF	50V	+80-20%	
C714	17-5DR223Z	CER	.022µF	50V	+80-20%	
C715	17-1.6ER107Y	EL	100µF	16V	+50-10%	
C716	17-5FR333Z	MY	.033µF	50V	+80-20%	
C717	17-5FR222Z	MY	.0022µF	50V	+80-20%	
C718	17-1.6EF227Y	EL	220µF	16V	+50-10%	
C719	17-5DR102M	CER	.001µF	50V	+20%	
C720	17-5DR223Z	CER	.022µF	50V	+80-20%	
C721	17-5FF104J	MY	.1µF	50V	+5%	
C722	17-5ER475Y	EL	4.7µF	50V	+50-10%	
C901	17-3.5EG228Y	EL	2200µF	35V	+50-10%	
C902	17-2.5ER107Y	EL	100µF	25V	+50-10%	
C903-C904	17-1.6ER107Y	EL	100µF	16V	+50-10%	
C905	17-3.5ER477Y	EL	470µF	35V	+50-10%	
C906-C907	17-1.6ER107Y	EL	100µF	16V	+50-10%	
C908	17-5EF227Y	EL	220µF	50V	+50-10%	
C909	17-3.5ER107Y	EL	100µF	35V	+50-10%	
C910	17-3.5ER106Y	EL	10µF	35V	+50-10%	
C911	17-5DR223Z	CER	.022µF	50V	+80-20%	
C912-C913	17-.63ER107Y	EL	100µF	6.3V	+50-10%	
C914-C915	17-5DH104J	CER	.1µF	50V	+5%	
C916-C917	17-3.5ER107Y	EL	100µF	35V	+50-10%	
VARIABLE RESISTOR						
VR101	29-4184	SEMI 8Ω 20KB FLAT				
VR102	29-4156	SEMI 8Ω 100KB FLAT				
VR103	29-4163	SEMI 8Ω 50KB FLAT				
VR201	29-4165	SEMI 8Ω 5KB FLAT				
VR202	29-4156	SEMI 8Ω 100KB FLAT				
VR203	29-4181	GM80R00434-FL(50KB*2)				
VR701	29-4184	SEMI 8Ω 20KB FLAT				
VC001-						
VC006	17-1040					
VC101	17-1051					
VC701-						
VC702	17-1040					
DIODE						
D001-D006	30-1082*A	BB204B				
D101-D102	30-1010	1N60				
D103	30-1127	VARI CAP BB109G				
D104-D105	30-1152TA	1N4148				
D106	30-1010	1N60				
D107-D108	30-1152TA	1N4148				

REF. NO.	PART NO.	DESCRIPTION			
DIODE					
D109	30-1152TA	1N4148			
D201-D208	30-1152TA	1N4148			
D209	30-1010	1N60			
D210	30-1077-1	ZENER HZ5A-3			
D211-D215	30-1152TA	1N4148			
D217-D218	30-1152TA	1N4148			
D219	30-1152TA	1N4148			
D301-D305	30-1152TA	1N4148			
D701-D702	30-1146	VARIABLE CAPACITOR SVC333B			
D703-D705	30-1152TA	1N4148			
D901-D908	30-1002	RECTIFIER 100V1A 1N4002/10D1			
D909-D910	30-1044-1	ZENER HZ15-2			
D911	30-1147-1	ZENER HZ30-2			
D912	30-1136-1	ZENER HZ7A-2			
INTEGRATED CIRCUIT					
IC101	30-3155	FM-IF UPC1163H			
IC102	30-3206	FM-IF LA1235N			
IC103	30-3118	DUAL OP MC34002P			
IC104	30-3069	DUAL OP RC4558/UPC4558N			
IC105	30-3205	DUAL OP NE5517N/LM13600N			
IC201	30-3079	MPX HA12016			
IC202	30-3069	DUAL OP RC4558/UPC4558N			
IC203	30-3051	METER DRIVER BA656			
IC301	30-3148	PLL CONTRLLER TC9137P			
IC302	30-3149	PRECALLER TD6104P			
IC303	30-3050	DISPLAY DRIVER TD6301P			
IC701	30-3195	AM IF LA1245			
TRANSISTOR					
Q001-Q003	30-2201*A	FET J310			
Q004-Q005	30-2019	2SC930			
Q006-Q007	30-2201*A	FET J310			
Q101-Q102	30-2201*A	FET J310			
Q103	30-2019	2SC930			
Q104	30-2156	2SC1815GR			
Q105-Q106	30-2019	2SC930			
Q201-Q208	30-2156	2SC1815GR			
Q209	30-2171	2SA733A			
Q210-Q211	30-2265	FET J111			
Q212-Q213	30-2084-3	BC549C			
Q214-Q215	30-2096	BC556B			
Q216	30-2267*A	FET 2N5486			
Q301	30-2156	2SC1815GR			
Q302	30-2161	FET K40			
Q303	30-2156	2SC1815GR			
Q304	30-2161	FET K40			
Q305	30-2156	2SC1815GR			
Q306-Q308	30-2255	2SC2785			
Q701-Q702	30-2156	2SC1815GR			
Q703	30-2084-3	BC549C			
Q901	30-2078	2SD330E			
Q902	30-2171	2SA33A			
Q903-Q904	30-2090-2	BC546B			
Q181	30-2171	2SA733P			
Q182	30-2367	2SK246			
Q183	30-2161	2SK40			
MISCELLANEOUS					
LT001	29-1098*A	COIL	VARI	23pF	+6% 100MHz
LT002	29-1099*A	COIL	VARI	22pF	+6% 100MHz
LT003	29-1098*A	COIL	VARI	23pF	+6% 100MHz
LT004-					
LT005	29-1099*A	COIL	VARI	22pF	+6% 100MHz

AUDIO/550 ELETRICAL PARTS LIST

NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
-R402	16-1/4CA473J	47K OHM
-R404	16-1/4CA220J	22 OHM
-R406	16-1/4CR271J	270 OHM
-R408	16-1/4CR392J	3K9 OHM
	16-1/4CA181J	180 OHM
	16-1/4CR181J	180 OHM
	16-1/4CA181J	180 OHM
	16-1/4CU181J	180 OHM
-R414	16-1/4CR201J	200 OHM
-R416	16-1/4CR103J	10K OHM
	16-1/4CA121J	120 OHM
	16-1/4CR121J	120 OHM
	16-1/4CA151J	150 OHM
	16-1/4CU151J	150 OHM
-R422	16-1/4CA121J	120 OHM
-R424	16-1/4CA221J	220 OHM
	16-1/4CA153J	15K OHM
	16-1/4CR153J	15K OHM
	16-1/4CN680J	68 OHM
-R430	16-1/4CR680J	68 OHM
-R432	16-1/4CR681J	680 OHM
-R434	16-1/4CA104J	100K OHM
	16-1/4CA103J	10K OHM
	16-1/4CR103J	10K OHM
-R438	16-1/4CR151J	150 OHM
-R440	16-1/4CR124J	120K OHM
	16-1/4CR102J	1K OHM
-R446	16-1/4CA102J	1K OHM
-R502	16-1/4CA151J	150 OHM
-R504	16-1/4CA334J	330K OHM
-R506	16-1/4CA823J	82K OHM
-R508	16-1/4CR184J	180K OHM
-R510	16-1/4CR151J	150 OHM
-R512	16-1/4CA562J	5K6 OHM
	16-1/4CR332J	3K3 OHM
	16-1/4CA332J	3K3 OHM
-R518	16-1/4CA222J	2K2 OHM
-R520	16-1/4CR154J	150K OHM
-R522	16-1/4CR105J	1M OHM
-R524	16-1/4CA101J	100 OHM
-R526	16-1/4CA822J	8K2 OHM
-R528	16-1/4CA562J	5K6 OHM
-R530	16-1/4CA181J	180 OHM
-R534	16-1/4CA102J	1K OHM
-R536	16-1/4CA473J	47K OHM
-R538	16-1/4CA332J	3K3 OHM
-R542	16-1/4CA561J	560 OHM
-R544	16-1/4CA682J	6K8 OHM
	16-1/4CA681J	680 OHM
	16-1/4CR681J	680 OHM
	16-1/4CR102J	1K OHM
	16-1/4CA102J	1K OHM
	16-1/4CA223J	22K OHM
	16-1/4CA273J	27K OHM
	16-1/4CA123J	12K OHM
	16-1/4CA104J	100K OHM
	16-1/4CR561J	560 OHM
	16-1/4CA561J	560 OHM
-R557	16-1/4CR332J	3K3 OHM
-R560	16-1/4CA272J	2K7 OHM
	16-1/4CR334J	330K OHM
	16-1/4CA334J	330K OHM
-R602	16-1/4CA224J	220K OHM

REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
R603-R604	16-1/4CA822J	8K2 OHM
R605-R608	16-1/4CA222J	2K2 OHM
R609-R610	16-1/4CA391J	390 OHM
R611-R614	16-1/4CA222J	22K OHM
R615-R616	16-1/4CA183J	18K OHM
R617-R618	16-1/4CA391J	390 OHM
R619-R620	16-1/4CA152J	1K5 OHM
R621-R622	16-1/4CA331J	330 OHM
R623-R624	16-1/4CA390J	39 OHM
R625-R628	16-2AS821J	Metal oxide 2W 820 OHM +-5%
R629-R630	16-2AS152J	Metal oxide 2W 1K5 OHM +-5%
R631-R632	16-1/4CN561J	560 OHM
R633-R634	16-1/4CN101J	100 OHM
R635-R636	16-1/4CN330J	33 OHM
R637-R638	16-1/4CN122J	1K2 OHM
R639-R640	16-1/4CA331J	330 OHM
R641-R642	16-2AS122J	Metal oxide 2W 1K2 OHM +-5%
R643-R644	16-1/2CN181J	1W 180 OHM
R645-R648	16-1033	WIREWOUND 5W+5W 0.22 OHM
R649-R650	16-1/4CA152J	1K5 OHM
R651-R652	16-1AS100J	Metal oxide 1W 10 OHM +-5%
R653-R654	16-1/4CA103J	10K OHM
R655	16-1/4CA330J	33 OHM
R656	16-1/4CR682J	6K8 OHM
R657	16-1/4CR333J	33K OHM
R659-R660	16-1AS3R3J	Metal oxide 1W 3.3 OHM +-5%
R661-R662	16-1AS471J	Metal oxide 1W 470 OHM +-5%
R663	16-1/4CA473J	47K OHM
R664-R665	16-1/4CA563J	56K OHM
R666	16-1/4CA562J	5K6 OHM
R667	16-1/4CA563J	56K OHM
R668	16-1/4CA183J	18K OHM
R669	16-1/4CA473J	47K OHM
R670	16-1/4CA183J	18K OHM
R671	16-1/4CA224J	220K OHM
R672	16-1/4CA333J	33K OHM
R673	16-1/4CA563J	56K OHM
R674	16-1/4CA562J	5K6 OHM
*R675	16-1/4CA153J	15K OHM
R676	16-2AS681J	Metal oxide 2W 680 OHM +-5%
R677	16-1/4CA151J	150 OHM
R678-R679	16-1/4CA102J	1K OHM
R680	16-1/4CA151J	150 OHM
R681-R682	16-1/4CA332J	3K3 OHM
*R683	16-1/2CS123J	1W 12K OHM
ΔR683	16-1AS682J	Metal oxide 1W 6K8 OHM +-5%
R801-R802	16-1/4CA473J	47K OHM
R803	16-1/4CR473J	47K OHM
R804	16-1/4CA473J	47K OHM
R805	16-1/4CR824J	820K OHM
R806	16-1/4CA332J	3K3 OHM
R807	16-1/4CA823J	82K OHM
R808-R809	16-1/4CA152J	1K5 OHM
R810-R811	16-1/4CA122J	1K2 OHM
R812	16-1AS100J	Metal oxide 1W 10 OHM +-5%
R813-R814	16-1/4CA122J	1K2 OHM
R815	16-1/4CA153J	15K OHM
R829	16-3AN471J	Metal oxide 3W 470 OHM +-5%
R831	16-3AN561J	Metal oxide 3W 560 OHM +-5%
R833	16-1AS100J	Metal oxide 1W 10 OHM +-5%
*R834	16-1/2CS123J	1W 12K OHM
R835	16-1/4CA332J	3K3 OHM
R836	16-1/4CR824J	820K OHM

Note: 1)Asterisk * denotes for 550 only 2)Delta Δ denotes for 950 only

REF. NO.	PART NO.	DESCRIPTION
RESISTORS (All are carbon film 1/4W +-5% unless noted otherwise)		
R840	16-1/2CP275J	1W 2M7 OHM
R850-R851	16-1/2AN3R3J	Metal oxide 1W 3.3 OHM +-5%
CAPACITORS		
C401-C402	17-5DR101M	Ceramic 100pF 50V +-20%
C403-C404	17-5DR221M	Ceramic 220pF 50V +-20%
C405-C406	17-5DR101M	Ceramic 100pF 50V +-20%
C407-C408	17-3.5ER106Y	Electrolytic 10uF 35V +-50-10%
C409-C410	17-0.63EF108Y	Electrolytic 1000uF 6.3V +-50-10%
C411-C412	17-5DR150M	Ceramic 15pF 50V +-20%
C413-C414	17-5DR221M	Ceramic 220pF 50V +-20%
C415-C416	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C417-C418	17-5FF222J	Mylar 0.0022uF 50V +-5%
C419-C420	17-1.6ER106Y	Electrolytic 10uF 16V +-50-10%
C421-C422	17-5FF752J	Mylar 0.0075uF 50V +-5%
C423-C424	17-5FF273J	Mylar 0.027uF 50V +-5%
C425	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C501-C502	17-5FF122J	Mylar 0.0012uF 50V +-5%
C503-C504	17-5FH224J	Mylar 0.22uF 50V +-5%
C505-C506	17-5ER105Y	Electrolytic 1uF 50V +-50-10%
C507-C510	17-5FF124J	Mylar 0.12uF 50V +-5%
C511-C512	17-5DR221M	Ceramic 220pF 50V +-20%
C513	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C515-C516	17-5DR150M	Ceramic 15pF 50V +-20%
C517-C518	17-5ER105Y	Electrolytic 1uF 50V +-50-10%
C519-C522	17-5PH334J	Mylar 0.33uF 50V +-5%
C523-C524	17-5DR221M	Ceramic 220pF 50V +-20%
C525-C526	17-2.5ER476Y	Electrolytic 47uF 25V +-50-10%
C527-C528	17-5DR470M	Ceramic 47pF 50V +-20%
C529-C534	17-1ER476Y	Electrolytic 47uF 10V +-50-10%
C535-C536	17-5FF183J	Mylar 0.018uF 50V +-5%
C537-C538	17-5FF104J	Mylar 0.1uF 50V +-5%
C539-C540	17-1ER107Y	Mylar 100uF 10V +-50-10%
C541-C542	17-5FF124J	Mylar 0.12uF 50V +-5%
C543-C544	17-1.6R684K	Electrolytic solid 0.68uF 16V +-10%
C545	17-1ER107Y	Electrolytic 100uF 10V +-50-10%
C601-C604	17-1.6R105K	Electrolytic solid 1uF 16V +-10%
C605-C606	17-5FF122J	Mylar 0.0012uF 50V +-5%
C607-C608	17-5DF821K	Ceramic 820pF 50V +-10%
C609-C610	17-5FF102J	Mylar 0.001uF 50V +-5%
C611-C612	17-5DR470M	Ceramic 47pF 50V +-20%
C613-C614	17-0.63EF108Y	Electrolytic 1000uF 6.3V +-50-10%
C615-C616	17-5FF102J	Mylar 0.001uF 50V +-5%
C617-C618	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C619	17-6.3EF476Y	Electrolytic 47uF 63V +-50-10%
C621-C622	17-5DR101M	Ceramic 100pF 50V +-20%
C623-C624	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C625-C626	17-5ER476Y	Electrolytic 47uF 50V +-50-10%
C627-C630	17-5DR470M	Ceramic 47pF 50V +-20%
C631-C640	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C641	17-5ER106Y	Electrolytic 10uF 50V +-50-10%
C642-C643	17-1ER476Y	Electrolytic 47uF 10V +-50-10%
C644-C645	17-5ER476Y	Electrolytic 47uF 50V +-50-10%
C646	17-5ER474Y	Electrolytic 0.47uF 50V +-50-10%
C647	17-1ER226Y	Electrolytic 22uF 10V +-50-10%
C648-C649	17-5DR223Z	Ceramic 0.022uF 50V +-80-20%
C650-C651	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C652-C654	17-5DR101M	Ceramic 100pF 50V +-20%
C801-C802	17-2.5ER476Y	Electrolytic 47uF 25V +-50-10%
C803-C804	17-5ER476Y	Electrolytic 47uF 50V +-50-10%
C805	17-5ER106Y	Electrolytic 10uF 50V +-50-10%
C806	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
C807-C808	17-5ER106Y	Electrolytic 10uF 50V +-50-10%

REF. NO.	PART NO.	DESCRIPTION
CAPACITORS		
C809-C810	17-5DR220M	Ceramic 22pF 50V +-20%
C811-C814	17-5ER476Y	Electrolytic 47uF 50V +-50-10%
C815-C816	17-6.3EG477Y	Electrolytic 470uF 63V +-50-10%
C817-C820	17-5P478Y	Electrolytic 4700uF 50V +-50-10%
C821	17-5ER105Y	Electrolytic 1uF 50V +-50-10%
C822	17-2014	Ceramic 4700pF 400V AC KC
C823	17-2011	Ceramic 4700pF 125V AC MY
ΔC824-C831	17-5FF103K	Mylar 0.01uF 50V +-10%
C832	17-5DH104Z	Ceramic 0.1uF 50V +-80-20%
COILS		
L601-L602	29-1147	AIR 1.2x6.9(12.6)Dx30T
VARIABLE RESISTORS		
VR501	29-4103A	16Ω 20Kx2/50KHMx2 P2KF25
VR502-VR503	29-4075F	16Ω 10Kx2 PIK25
VR601-VR602	29-4168	Semi 8Ω 500B Flat
VR603-VR604	29-4170	Semi 8Ω 100B Flat
DIODES		
D401-D412	30-1019-1	BAW62/BAW76
D501-D502	30-1019-1	BAW62/BAW76
D601-D612	30-1019-1	BAW62/BAW76
D613-D614	30-1038	Zener 18V 1W RD18EB3
D615	30-1002	Rectifier 100V 1A IN4002/10D1
D801-D804	30-1002	Rectifier 100V 1A IN4002/10D1
D805-D808	30-1017-1	Rectifier 100V 3A G3B
D809	30-1002	Rectifier 100V 1A IN4002/10D1
LEDS		
LD601	30-1085	Green LT3231G/X-253FG
*LD602	30-1075	RED LT3211R/X-253FPR
*LD801	30-1075	RED LT3211R/X-253FPR
TRANSISTORS		
Q401-Q402	30-2096	BC556B
Q403-Q406	30-2264	FET 2SK163L
Q407-Q408	30-2085-2	BC559B
Q409-Q410	30-2096	BC556B
Q411-Q414	30-2090-2	BC546B
Q415-Q416	30-2096	BC556B
Q501-Q502	30-2090-2	BC546B
Q503-Q504	30-2096	BC556B
Q505	30-2090-2	BC546B
Q506-Q507	30-2096	BC556B
Q508	30-2090-2	BC546B
Q509-Q510	30-2265	FET J111
Q601-Q602	30-2096	BC556B
Q603-Q604	30-2090-2	BC546B
Q605-Q606	30-2238	BF423
Q607-Q610	30-2260	2SD669C/2SD669D
Q611-Q612	30-2259	2SB649C/2SB649D
Q613-Q614	30-2260	2SD669C/2SD669D
Q615-Q616	30-2305	2SC2921
Q617-Q618	30-2304	2SA1215
Q619-Q620	30-2090-2	BC546B
Q621	30-2096	BC556B
Q801	30-2260	2SD669C/2SD669D
Q802	30-2096	BC556B
Q803	30-2259	2SB649C/2SB649D
Q804	30-2096	BC556B
Q806	30-2259	2SB649C/2SB649D
INTEGRATED CIRCUITS		
IC501	30-3179	Dual OP RC5532/NE5532

Note: 1)Asterisk * denotes for 550 only 2)Delta Δ denotes for 950 only

950 AUDIO/550 CRITICAL COMPONENT PARTS LIST

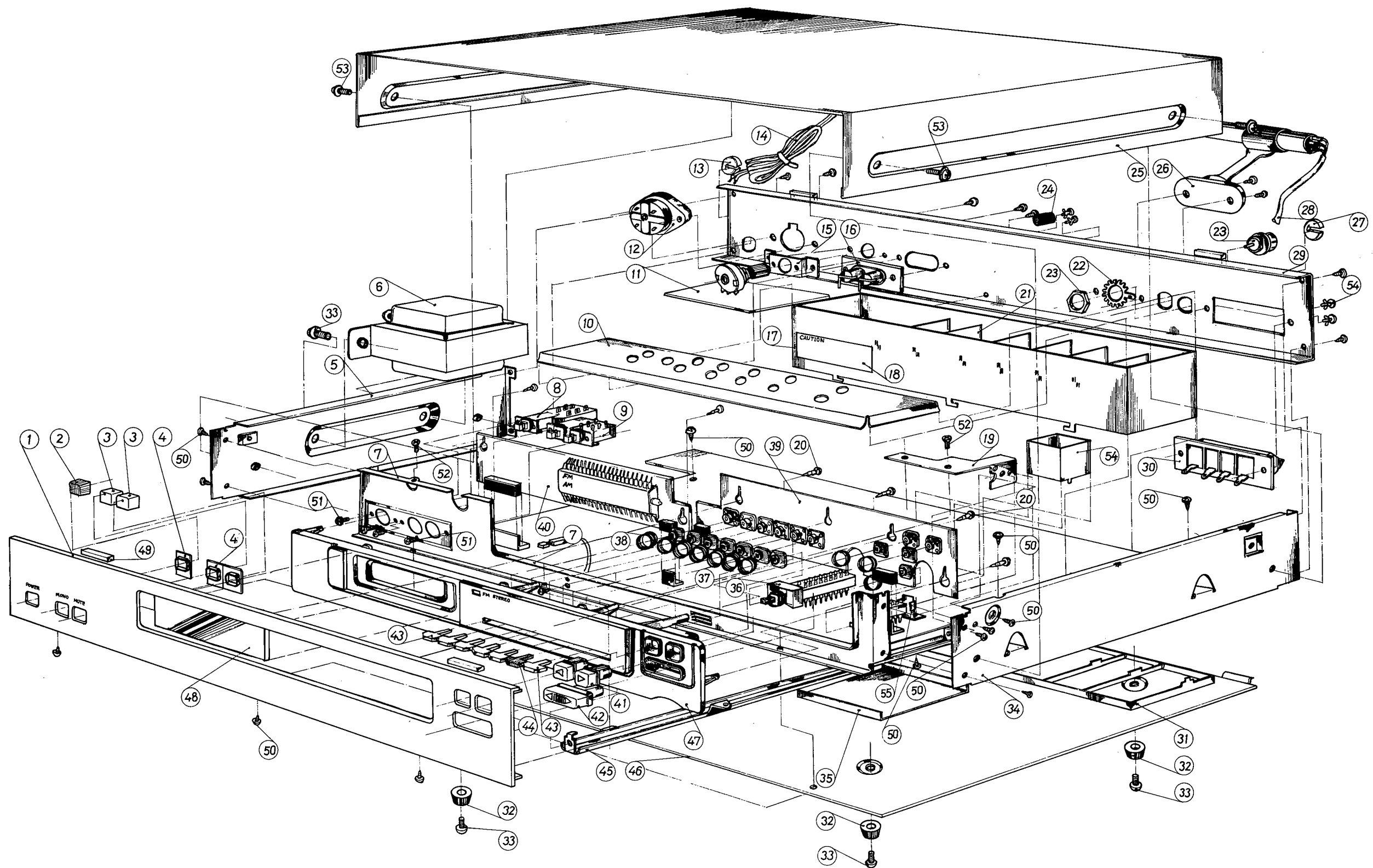
IC701	30-3187	Protector	TA7317P
IC801	30-3178	Regulator	M5231L
IC802	30-3213	Regulator	MC78M24CT/AN7824
SWITCHES			
SW401	31-1228	Slide	SSB23FL313
SW402	31-1204	Rotary	RZL45FL504
SW403	31-1253	Switching Part	ESA-26132
	31-1261	Operating Part	ESA-33446B
SW404	31-1260	Slide	SSB022NA01-FL
SW501	31-1247	Push	SUF32AE023-FL
SW503-			
SW504	31-1247	Push	SUF32AE023-FL
SW502-			
SW505	31-1235	Push	SUF22AA012-FL
SW601-			
SW602	31-1226	Slide	SSP22FL080
SW603	31-1024F	Rotary	SRZV044N37-FL

REF. NO.	PART NO.	DESCRIPTION
Switched Unswitched	12-2121	AC Outlet AB/C1/C2/LC/U1-U4 Version
	14-5013	Power Cord E3 Version
	14-5025	Power Cord E2 Version
	14-5032	Power Cord U3 Version
	14-5033	Power Cord E1/ET/E4/U2/U4
C822-C823 C823	14-5037*B	Power Cord C1/C2/LC/U1/AB
	17-2011	Capacitor AB/E1-E4/ET/U1-U4 Version
	17-2014	Capacitor C1/C2/LC Version
	29-2072-1	Transformer C1/LC Version
	29-2072-1A	Transformer C1/LC Version
	29-2072-4	Transformer C2 Version
	29-2072-4A	Transformer C2 Version
	29-2072-5	Transformer E1/ET Version
	29-2072-5A	Transformer E1/ET Version
	29-2072-7	Transformer E2/E3/E4/U3/U4 Version
	29-2072-7A	Transformer E2/E3/E4/U3/U4 Version
	29-2072-8	Transformer AB/U1/U2 Version
	29-2072-8A	Transformer AB/U1/U2 Version
	SW802a-	
	SW802b	31-1129A*A Switch AB/E1-E4/ET/U1-U4 Version
	SW802a	31-1130A*A Switch C1/C2/LC Version
F6	32-14001W	Fuse 4A 250V Nomal AB/C1/C2/LC/U1 Version
F6	32-12001S	Fuse aA 250V Time-lag E1-E4/ET/U2-U4 Version

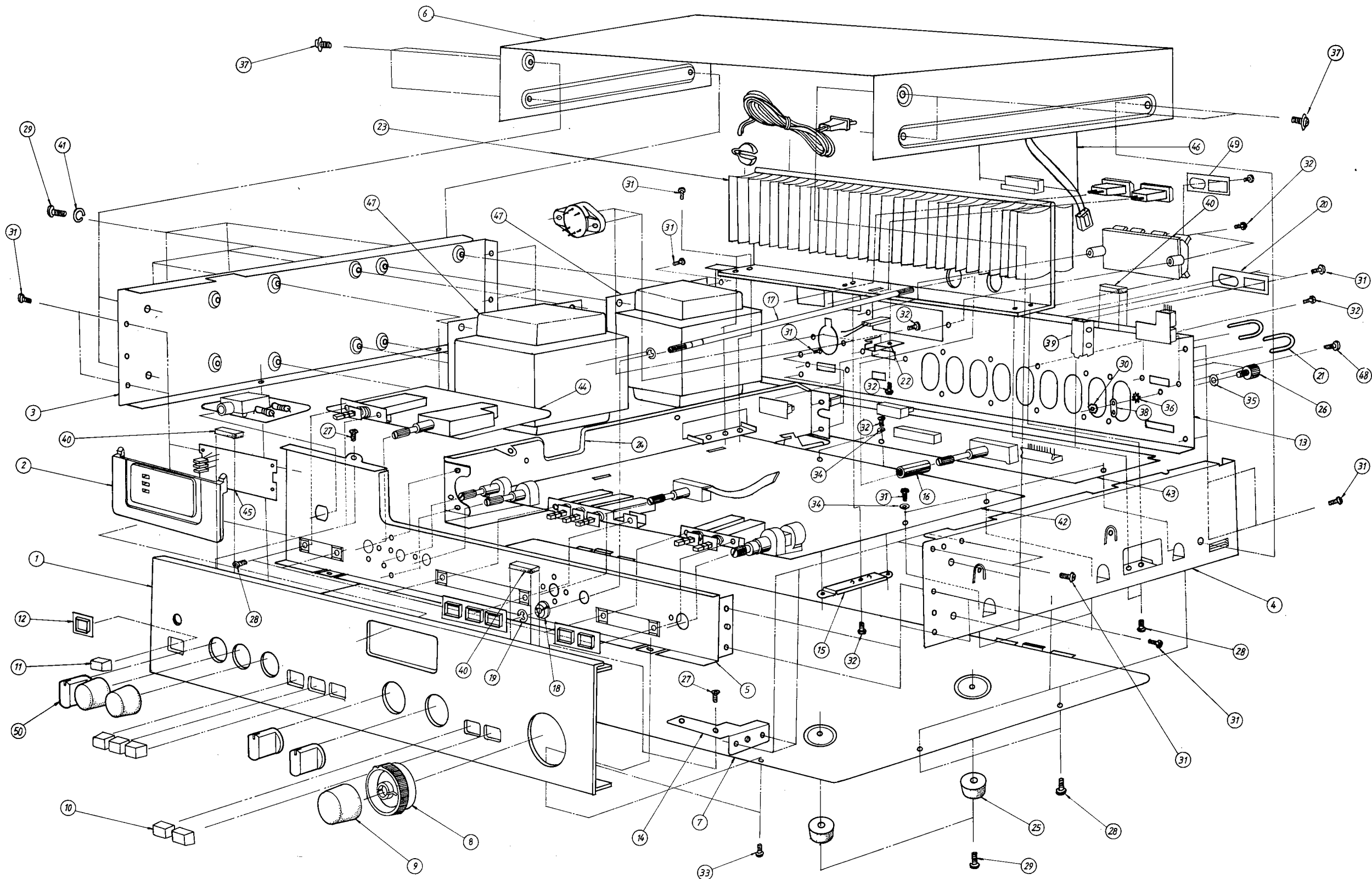
450/950 TUNER CRITICAL COMPONENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
	14-5013	Power Cord E3 Version
	14-5025	Power Cord E2 Version
	14-5032	Power Cord U3 Version
	14-5033	Power Cord E1/ET/E4/U2/U4 Version
	14-5037*B	Power Cord C1/C2/LC/U1/AB
	17-2011	Capacitor AB/E1-E4/ET/U1-U4 Version
	17-2014	Capacitor C1/C2/LC Version
	29-2070-1	Transformer C1/LC Version
	29-2070-4	Transformer C2 Version
	29-2070-5	Transformer E1/ET Version
	29-2070-7	Transformer E2/E3/E4/U3/U4 Version
	29-2070-8	Transformer AB/U1/U2 Version
	31-1129A*A	Switch AB/E1-E4/ET/U1-U4 Version
	31-1130A*A	Swich C1/C2/LC Version
	32-15000U	Fuse 500mA 250V Normal AB/C1/C2/LC/U1 Version
F1-F2-F3	32-15000S	Fuse 500mA 250V Time-lag E1-E4/ET/U2-U4 Version

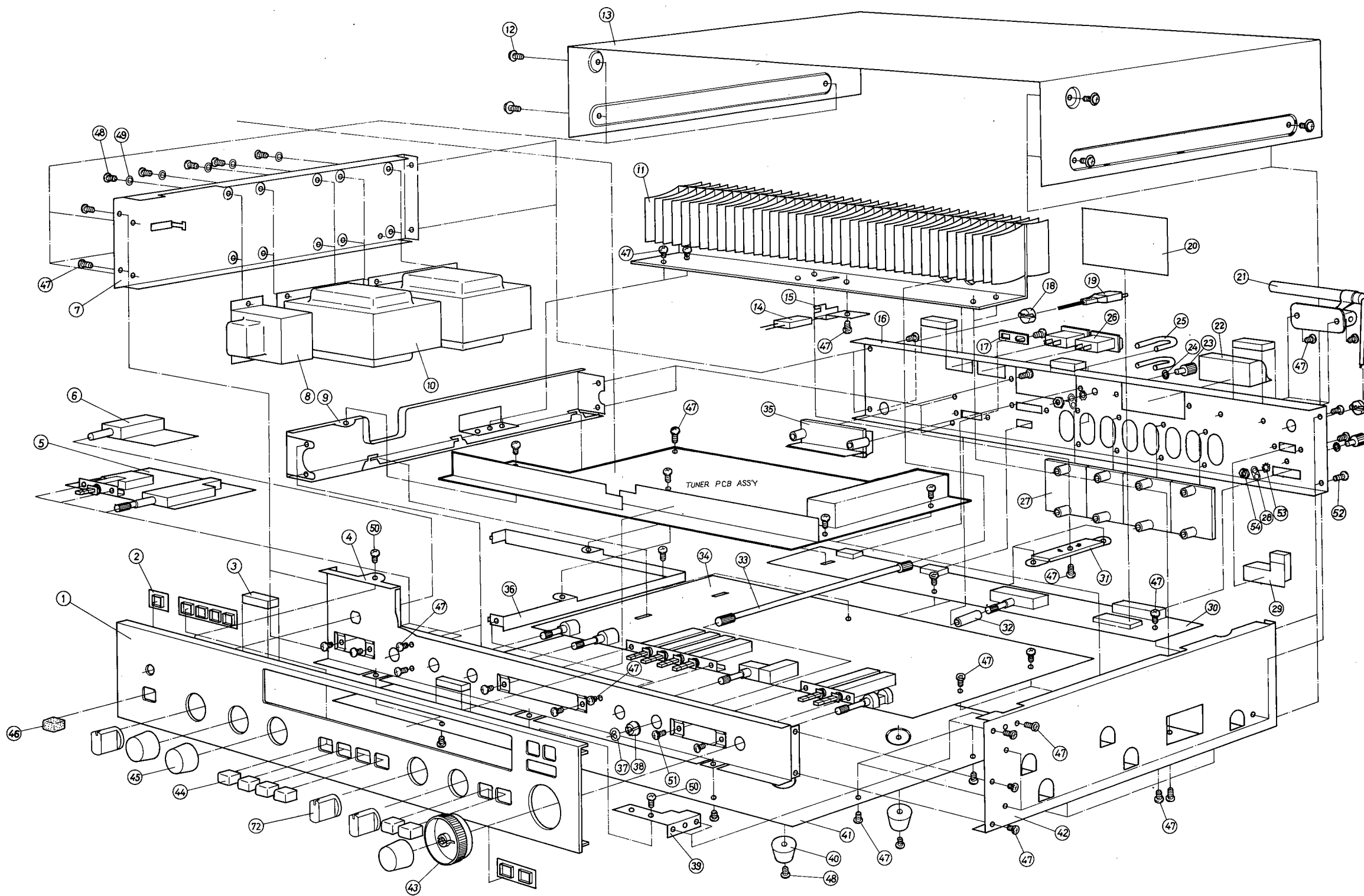
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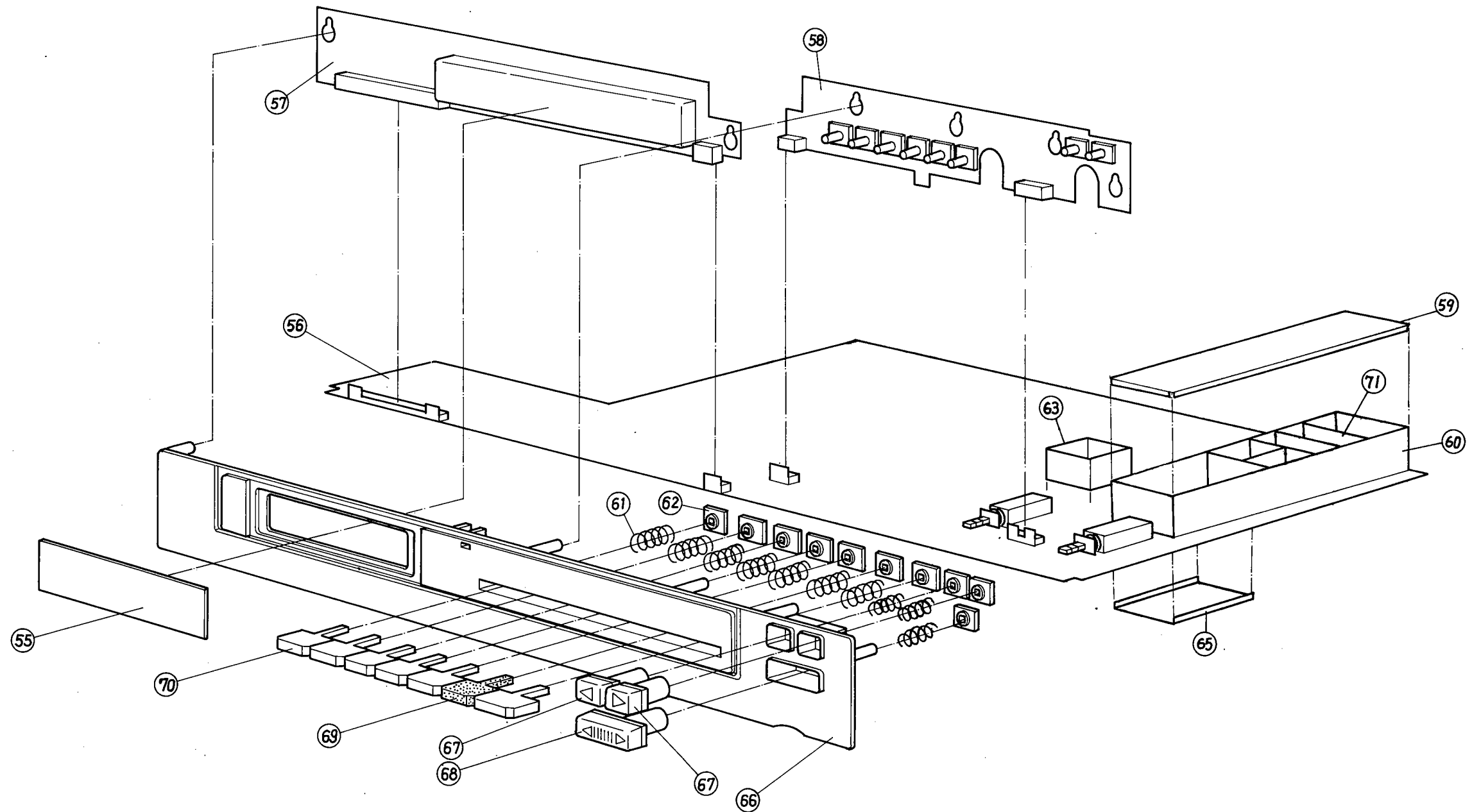
550 ASSEMBLY DIAGRAM



ASSEMBLY DIAGRAM



950 SUB-ASSEMBLY DIAGRAM (TUNER PCB)



MECHANICLA PARTS LIST

MECHANICAL PARTS LIST

NO.	DESCRIPTION	RS PART NO.	Q'ty
1	FRONT PANEL	11-8327	1
2	POWER KNOB GREEN	12-3175-2	1
3	PUSH KNOB BLACK	12-3175	2
4	BUSHING FOR PUSH KNOB	28-1067	3
5	LEFT CHASSIS	11-6128	1
6	TRANSFORMER	29-2070	1
7	FRONT CHASSIS	11-6125	1
8	POWER SWITCH	31-1129A	1
9	PUSH SWITCH 2P	31-1236	1
10	METAL COVER	11-1011	1
11	BUFFER PCB ASS'Y	90-1192	1
12	VOLTAGE SELECTOR SWITCH	31-1121	1
13	BUSHING 4N4	14-5003	1
14	POWER CORD	14-5037	1
15	BRACKET FOR O/P	11-2295	1
16	RCA JACK 2P	12-2110	1
17	SHIELD CASE	11-9101	1
18	CAUTION LABEL	21-2T15	1
19	BRACKET FOR FRONT PANEL	11-2287	1
20	RIVET 2.5x14L	15-2061	6
21	INNER SHIELD PLATE	11-9100	6
22	LUG	11-3033	1
23	CONNECTOR & NUT	12-1032	1
24	KNOB FOR O/P	12-3147	1
25	CABINET	50-1035	1
26	AM ANT	29-5010	1
27	BUSHING 5N4	14-5005	1
28	TUBING 6.5x PVC	W8-0A65	1
29	BACK PANEL	11-8328	1
30	ANT TERMINAL	12-2012	1
31	BOTTOM SHIELD	11-9102	1
32	RUBBER FOOT	28-1029	4
33	MACHINE SCREW M4x8	S1B04+I08SL-2	6
34	RIGHT CHASSIS	11-6126	1
35	SHIELD FOR OSC	11-9105	1
36	BAND SWITCH	31-1237	1
37	BUSHING FOR KNOB	28-1065	10
38	SPRING FOR KNOB	12-5036	10
39	SWITCH PCB ASS'Y	90-1157	1
40	DISPLAY PCB ASS'Y	90-1155	1
41	UP/DOWN KNOB	12-3177	2
42	SEARCH KNOB	12-3176	1
43	PUSH KNOB BLACK	12-3127	6
44	PUSH KNOB GREEN	12-3127-1	1
45	CENTER CHASSIS	11-6129	1
46	BOTTOM CHASSIS	11-6127	1
47	AUX PANEL	11-8204-4	1
48	ACRY WINDOW	11-8203	1
49	RETAINER	28-2090	4
50	TAPPING SCREW T3x8	S2B03+I08SL-2	29
51	MACHINE SCREW M3x6	S1B03+I06SL-2	6
52	FLAT SCREW M3x6	S1E03+I06SZ-2	2
53	SPECIAL SCREW M4x8	15-2051	4
54	SHIELD PLATE FOR IF	11-9098	1
55	BRACKET FOR SEARCH SW.	11-2290	1

550 MECHANICAL PARTS LIST

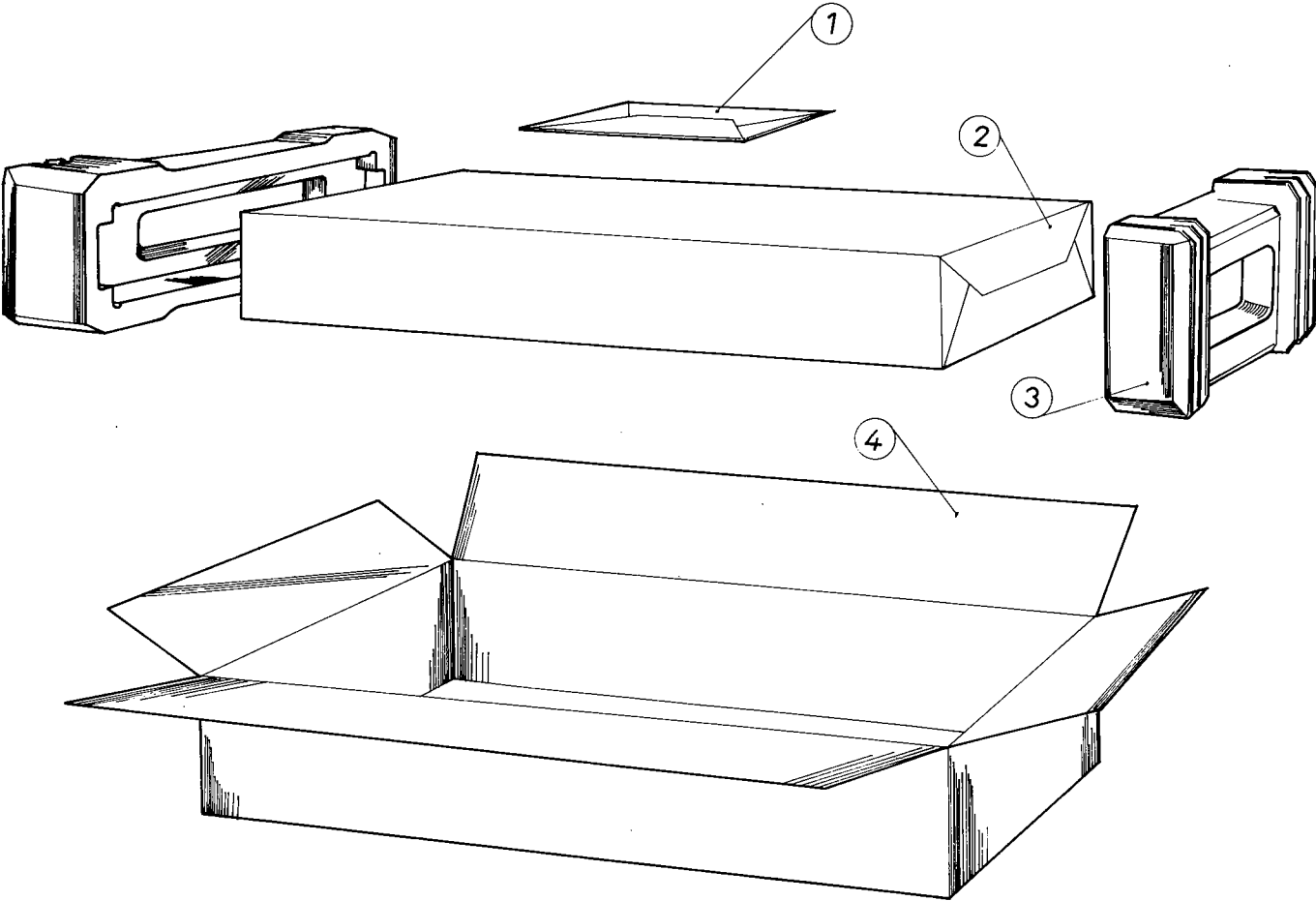
REF. NO.	DESCRIPTION	RS PART NO.	Q'ty
1	FRONT PANEL	11-8235-2	1
2	AUX. PANEL	11-8233-2	1
3	AUX. CHASSIS L	11-6119	1
4	AUX. CHASSIS R	11-6112-1	1
5	FRONT CHASSIS	11-6110	1
6	CABINET	50-1033	1
7	BOTTOM CHASSIS	11-6111	1
8	BALANCE KNOB	12-3071-1	1
9	CONTROL KNOB	12-3178	3
10	PUSH KNOB BLACK	12-3175	5
11	PUSH KNOB GREEN	12-3175-2	1
12	BUSHING	28-1067	6
13	BACK PANEL	11-8236	1
14	BKT. FOR FRONT PNL.	11-2293	1
15	BKT. FOR PCB	11-2208	1
16	TUBE FOR SHAFT	13-7003	1
17	SHAFT	11-7047	1
18	TUBE	12-4027	1
19	E-RING	15-5014	2
20	STOPPER SW.	11-9106	1
21	JUMPER	11-4011	2
22	RELAY HOLDER	11-3064	1
23	HEAT SINK	11-5064	1
24	CHASSIS CENTER	11-6113	1
25	RUBBER FOOT	28-1029	4
26	GROUND SCREW	15-2037	1
27	MACHINE SCREW F. 3x6	S1E03+I06SL-2	2
28	MACHINE SCREW 3x6	S1B03+I06SL-2	16
29	MACHINE SCREW 4x10	S1B04+I10SL-2	12
30	NUT	N3.5B06I2.8SZ	1
31	TAPPINE SCREW 3x6	S2B03+I06SL-2	22
32	TAPPINE SCREW 3x8	S2B03+I08SL-2	16
33	MACHINE SCREW 3x10	S1B03+I10SL-2	13
34	FIBER WASHER	A03A08F0.5	5
35	GROUND WASHER	A3.5A09SN01	1
36	GEAR WASHER	A3.5I07SZ01	1
37	SPECIAL SCREW	15-2062	6
38	LUG	11-3026	1
39	SHIELD PLATE	11-9104	1
40	RETAINER	28-2025	5
41	SPRING WASHER	A04G07SL01	8
42	PCB MAIN	19-1146	1
43	PCB CUB	19-1146	1
44	PCB POWER	19-1171	1
45	PCB LED	19-1171	1
46	PCB PHONO	19-1172	1
47	TRANSFORMER	29-2072	2
48	MACHINE SCREW 2.6x4	S1B2.6+I04SL-2	2
49	STOPPER SW.	11-9107	1
50	SELECTOR KNOB	12-3179	3

950 MECHANICAL PARTS LIST

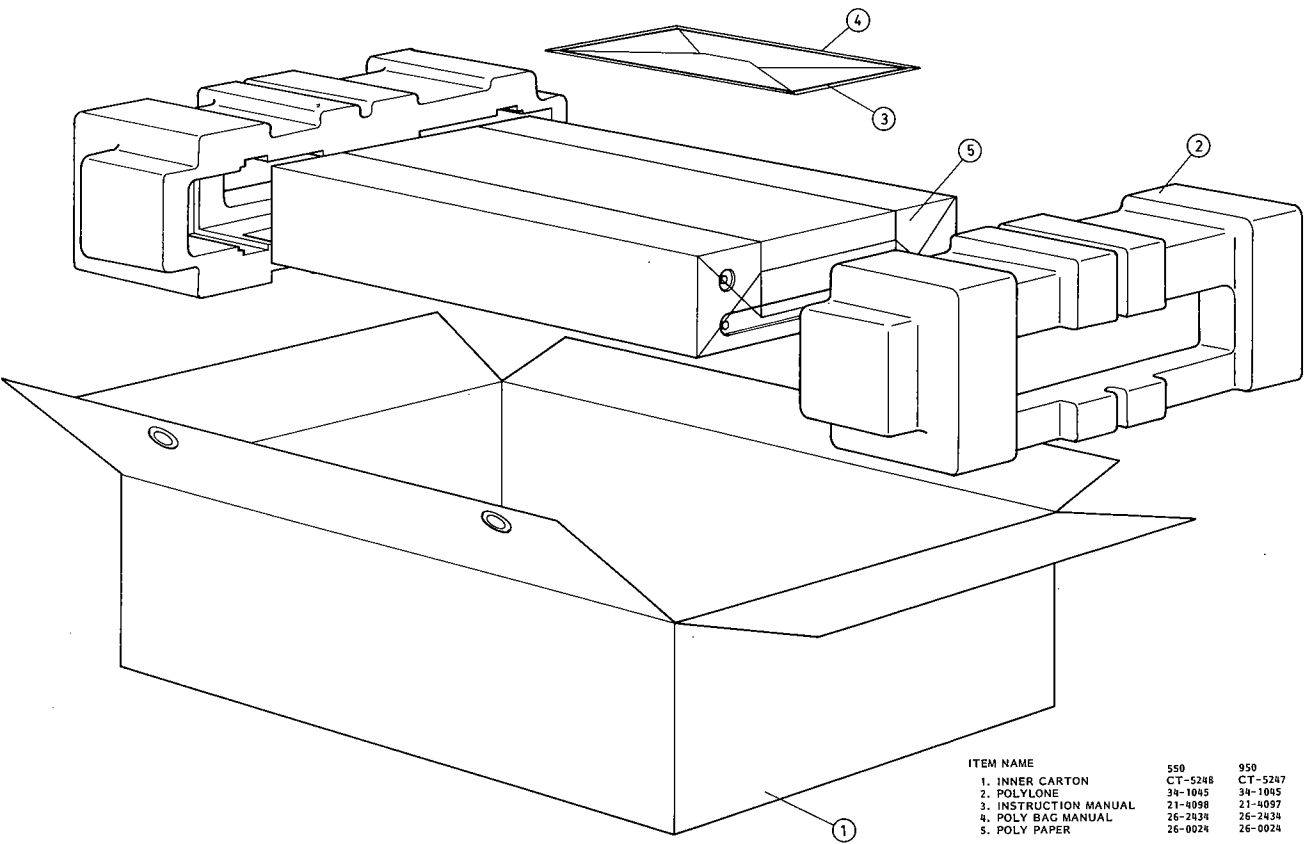
REF. NO.	DESCRIPTION	RS PART NO.	Q'ty
1	FRONT PANEL	11-8205-1	1
2	BUSHING	28-1067	7
3	RETAINER	28-2090	4
4	FRONT CHASSIS	11-6110	1
5	POWER SW. PCB ASS'Y	90-1171	2/3
6	HEADPHONES JACK PCB ASS'Y	90-1171	1/3
7	LEFT CHASSIS	11-6119	1
8	TUNER'S POWER TRANSFORMER	29-6070	1
9	CENTER CHASSIS	11-6113	1
10	POWER TRANSFORMER	29-2072	2
11	HEAT SINK	11-5064	1
12	SPECIAL SCREW	15-2062	6
13	CABINET	50-1033	1
14	THERMAL PROTECTOR RELAY	16-2002	1
15	HOLDER FOR THERMAL RELAY	11-3064	1
16	BACK PANEL	11-8324	1
17	STOPPER FOR SW.	11-9107	1
18	BUSHING 4N-4	14-5003	1
19	PCWER CORD	14-5037	1
20	PEONO PCB ASS'Y	90-1172	1
21	AM. ANT	29-5010	1
22	ANT. TERMINAL	12-2012	1
23	GROUND SCREW	15-2037	1
24	WASHER 3.5x9x1T	A3.5A09SN01	6
25	JUMPER	11-4011	2
26	RECEPTACLE UL/CSA IR19-1	12-2121	2
27	RCA JACK (4P)	12-2092	4
28	LUG	11-3026	2
29	MC/MM PCB ASS'Y	90-1193	1
30	MAIN PCB ASS'Y	90-1146	1/3
31	HOLD FOR PCB	11-2208	1
32	TUBE	12-7003	1
33	SHAFT	11-7047	1
34	MAIN PCB ASS'Y	90-1146	2/3
35	SPEAKERS TERMINAL (8P)	12-2109	1
36	BRACKET FOR PCB	11-2234	1
37	E-RING 5x	15-5014	2
38	TUBE FOR SHAFT	13-4027	1
39	BRACKET FOR FRONT PANEL	11-2293	1
40	RUBBER FOOT	28-1029	4
41	BOTTOM CHASSIS	11-6111	1
42	RIGHT CHASSIS	11-6112	1
43	BALANCE KNOB	12-3071-1	1
44	PUSH KNOB BLACK	12-3175	6
45	CONTROL KNOB (INCL. VOLUME)	12-3178	3
46	PUSH KNOB GREEN	12-3175-2	1
47	TAPPING SCREW T3x6	S2B03+I06SL-2	28
48	MACHINE SCREW M4x8	S1B04+I08SL-2	14
49	S./WASHER 64x8x1	A04G08SL01	10
50	FLAT SCREW M3x6	S1E03+I06SZ-2	2
51	MACHINE SCREW M3x6	S1B03+I06SL-2	28
52	TAPPING SCREW T3x6	S2B03+I08SL-2	10
53	GEAR WASHER	A3.5I07SZ01	2
54	NUT 3.5x7	N3.5B06I2.8SZ	2
55	ACRY WINDOW	11-8203	1
56	TUNER PCB ASS'Y	90-1156	1
57	DISPLAY PCB ASS'Y	90-1155	1
58	TOUCH SW. PCB ASS'Y	90-1157	1
59	METAL COVER	11-1101	1
60	SHIELD CASE	11-9011	1
61	SPRING FOR KNOB	19-5036	10
62	BUSHING FOR KNOB	28-1065	3
63	SHIELD PLATE FOR IF.	11-9098	1
64	BOTTOM SHIELD	11-9102	1

REF. NO.	DESCRIPTION	RS PART NO.	Q'ty
65	SHIELD FOR OSC	11-9105	1
66	AUXILIARY PANEL	11-8204	1
67	UP/DOWN KNOB	12-3177	2
68	SEARCH KNOB	12-3176	1
69	PUSH KNOB BROWN	12-3127-1	1
70	PUSH KNOB BLACK	12-3127	1
71	INNER SHIELD PLATE	11-9100	6
72	SELECTOR KNOB	12-3179	3

PACKING DIAGRAM



ITEM NUMBER	NAME	Q'ty
1. 26-2434	MANUAL'S POLY BAG	1
2. 26-0005	POLY PAPER	1
3. 34-1044	POLYBAG	2
4. CT-5161	INNER CARTON	1



ITEM NAME	550	950	Q'ty
1. INNER CARTON	CT-5248	CT-5247	1
2. POLYBAG	34-1045	34-1045	2
3. INSTRUCTION MANUAL	21-4098	21-4097	1
4. POLY BAG MANUAL	26-2434	26-2434	1
5. POLY PAPER	26-0024	26-0024	1

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