# CONCORD

4 CHANNEL
AM/FM STEREO RECEIVER
## MODEL: CR-400
SERVICE DATA

CONCORD DIVISION
BENJAMIN ELECTRONIC SOUND COMPANY
Farmingdale, New York 11735

SUPPLEMENTAL SERVICE DATA FOR
SERIAL NOS. 0001 THROUGH 3000

## CONTENTS

# PERFORMANCE SPECIFICATIONS

## FM SECTION

| | UNIT | NOMINAL | LIMIT |
|---|---|---|---|
| 1. Range | MHz | 87—108.3 | 88—108 |
| 2. IHF Sensitivity at 90, 98 and 106 MHz | μV | 3.5 | 7 |
| 3. FM Limiting 3dB | μV | 5 | 10 |
| 4. Image Rejection at 106 MHz | dB | 50 | 45 |
| 5. Spurious Response | dB | 70 | 65 |
| 6. Capture Ratio | dB | 3 | 6 |
| 7. ACA ±400kHz 1mV | dB | 35 | 27 |
| 8. Audio THD 400 Hz 75 kHz dev. | % | 1 | 2 |
| 8. Audio THD 400 Hz 75 kHz dev. | | | |
| 9. Calibration accuracy at 92 MHz | kHz | | ±500 |
| at 104 MHz | kHz | | ±500 |
| 10. Maximum signal bandling capacity | μV | 200 K | 100 K |
| 11. Frequancy responce must meet the 75μ sec. deemphasis. | dB | | ±3 |
| 12. FM Tapeout at 75 kHz 1mV | mV | 700 | >700 |
| 13. FM Detector out at 75 kHz 1mV | mV | 800 | >800 |
| 14. Stereo Indicator on (Pilot 10%) | μV | 10 | 20 |
| 15. Separation at 1mV 100 Hz | dB | 31 | 25 |
| 1 kHz | dB | 33 | 27 |
| 10 kHz | dB | 26 | 20 |

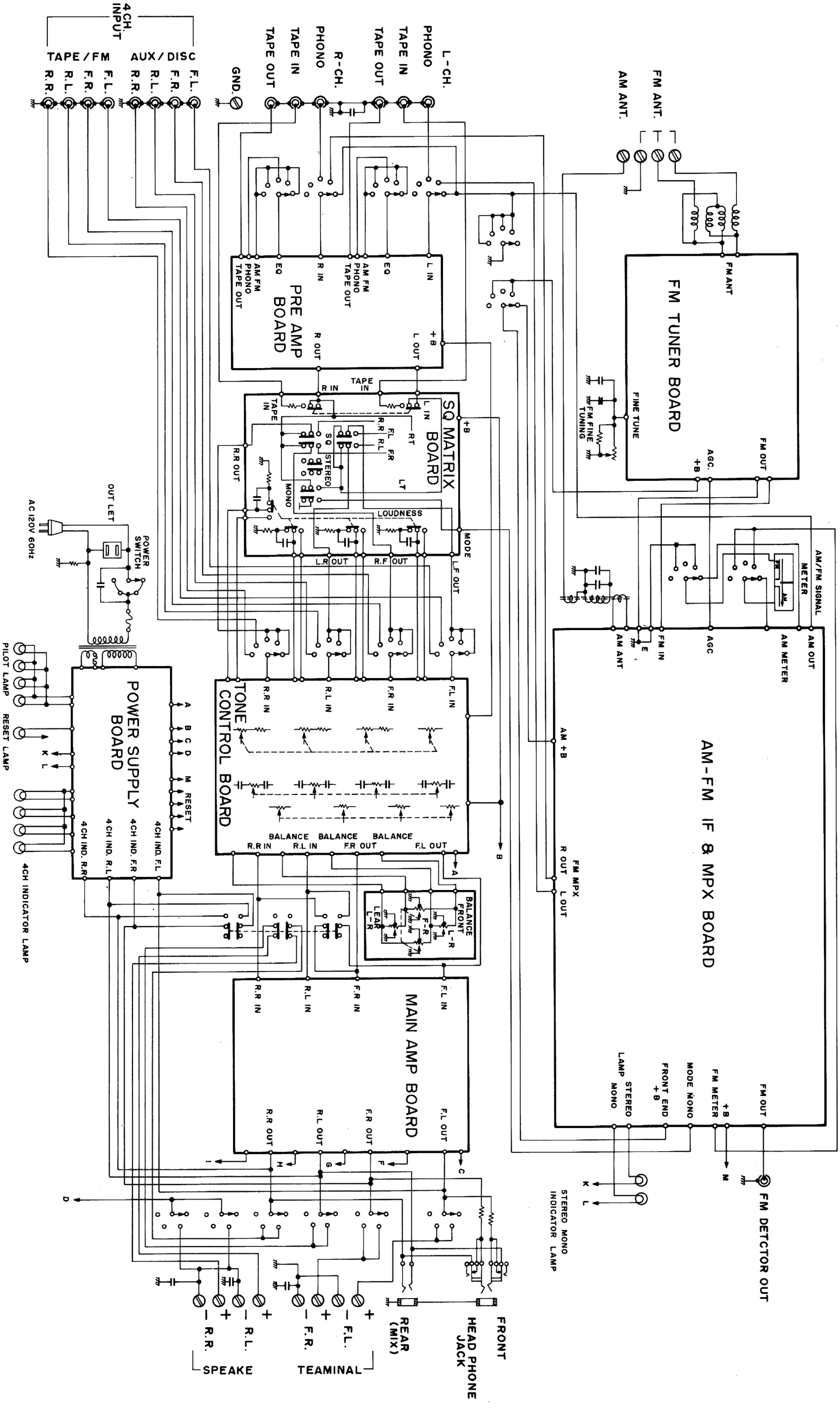
## AM SECTION

| | UNIT | NOMINAL | LIMIT |
|---|---|---|---|
| 1. Range | kHz | 525—1650 | 540—1605 |
| 2. Antenna Sensitivity for S/N 20 dB at 600 kHz | μV/m | 250 | 500 |
| at 1000 kHz | μV/m | 250 | 500 |
| at 1400 kHz | μV/m | 250 | 500 |
| 3. S/N Ratio at 1 mV/m at 1000 kHz | dB | 30 | 26 |
| 4. ACA at S/N 6 dB sensitivity at 1000 kHz | dB | 26 | |
| 5. Image Rejection at 1000 kHz 100 mV/m 80% mod. | % | 4 | 8 |
| 6. Caribration at 600 kHz | kHz | | ±25 |
| at 1400 kHz | kHz | | ±50 |

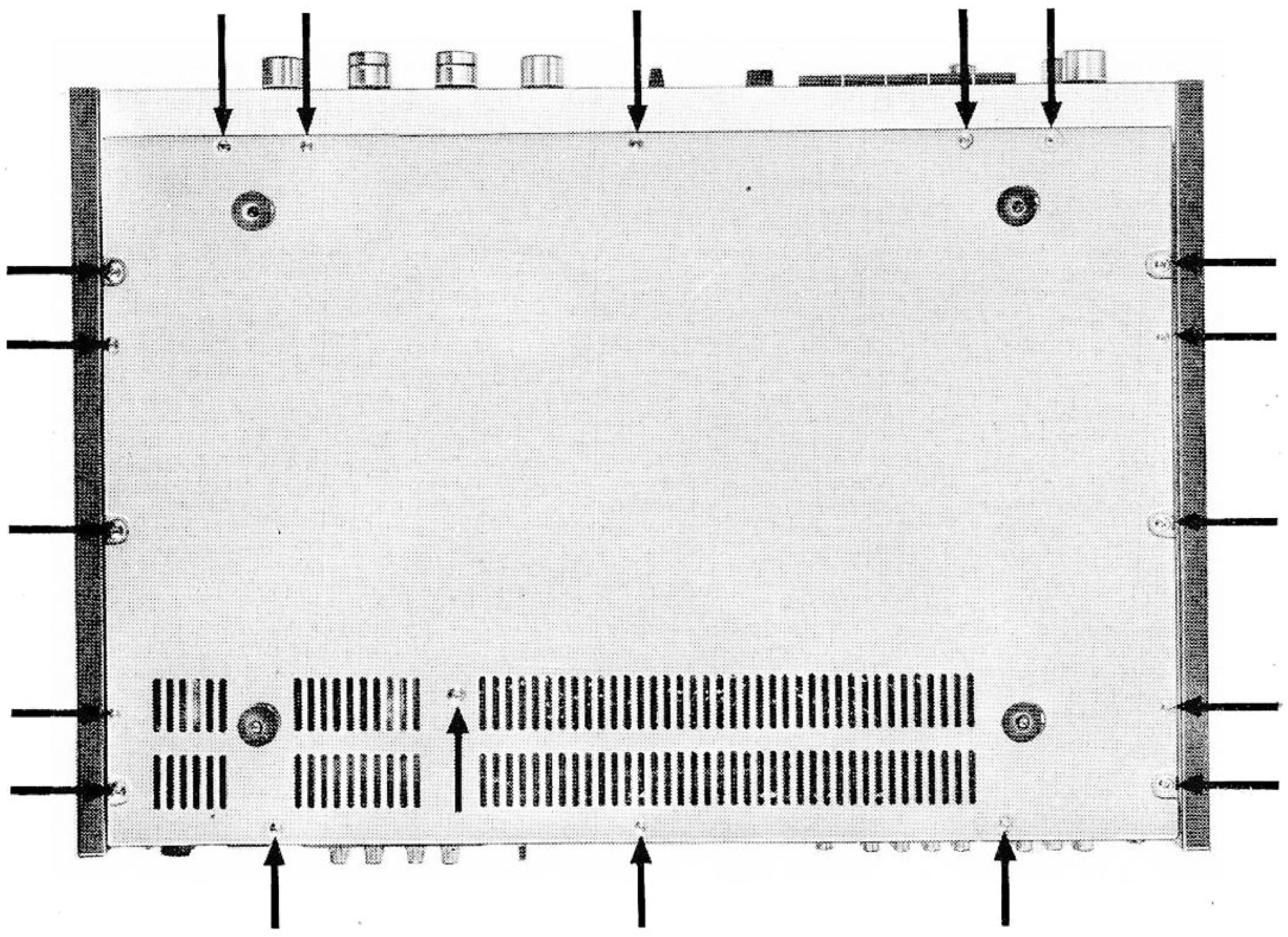
## AUDIO SECTION

| | UNIT | NOMINAL | LIMIT |
|---|---|---|---|
| 1. Input impedance Phono Mag. | Kohm | 50 | |
| Tape monitor. | Kohm | 30 | |
| AUX 4 | Kohm | 30 | |
| Tape 4 | Kohm | 30 | |
| 2. Output Power 1% THD Two channel driven | W | 12 | 10 |
| Four channel driven | W | 10 | 8 |
| 3. Sensitivity for 10W rated power Phono MAG. | mV | 3 | 5 |
| Tape monitor | mV | 150 | 200 |
| AUX 4 | mV | 150 | 200 |
| Tape 4 | mV | 150 | 200 |
| 4. Power Bandwidth 1% −3 dB at AUX 4 | Hz | 25—30 K | 40—20 K |
| 5. Bass Action at 100 Hz at AUX 4 | dB | ±10 | ± 8 |
| 6. Treble Action at 10 kHz at AUX 4 | dB | ±10 | ± 8 |
| 7. Min. Volume Hum & Noise | mV | 1.5 | 3 |
| 8. Signal to Noise Ratio (input short) Phono MAG. 5mV | dB | 56 | 50 |
| Tape 4 200 mV | dB | 60 | 54 |
| 9. Treble Compensation at at 100 Hz | dB | + 8 | + 6 |
| 10. Treble Compensation at 10 kHz | dB | + 5 | + 3 |
| 11. Phono MAG. Equalizer at 100 Hz | dB | | +13±2 |
| at 10 kHz | dB | | +13±2 |

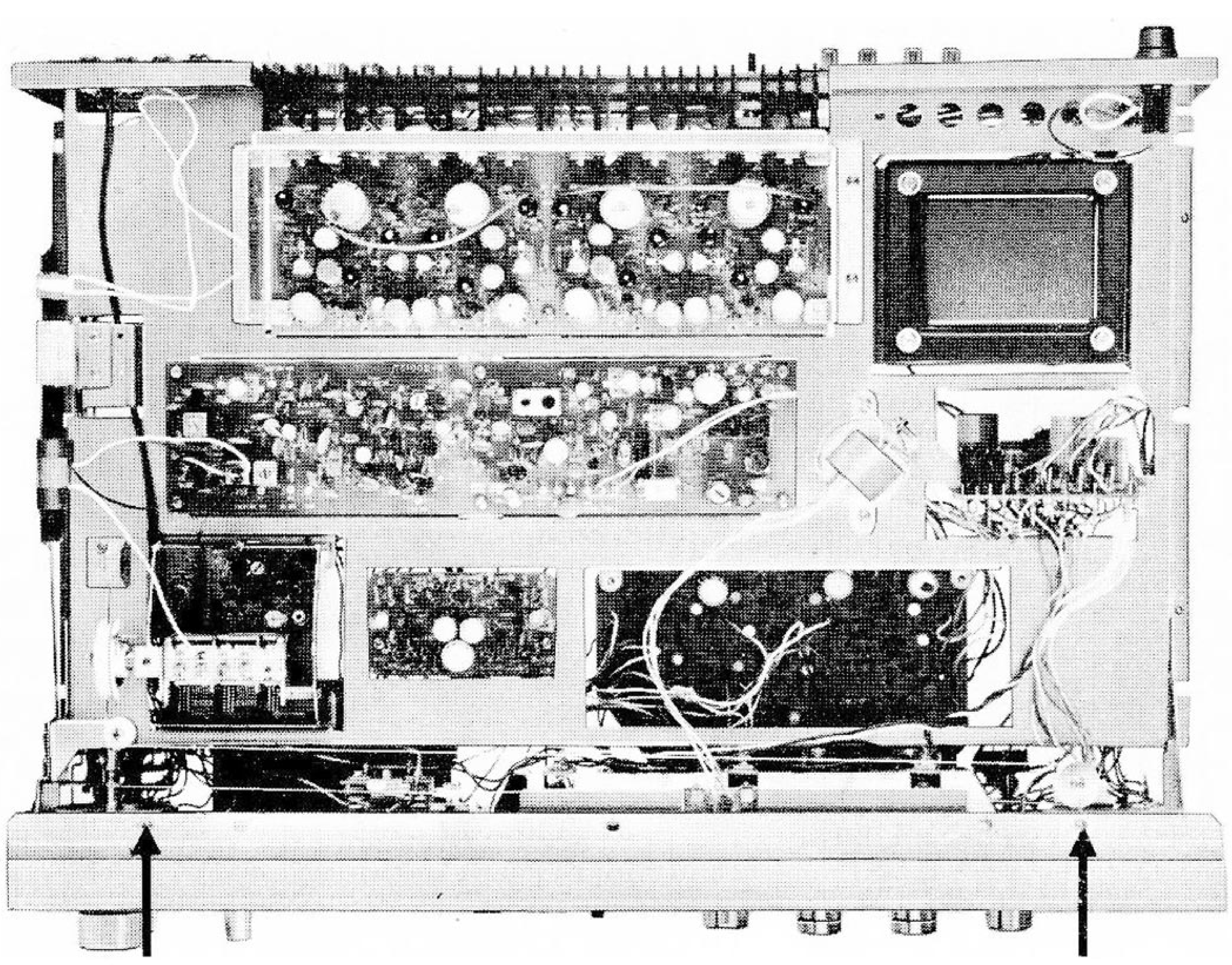
# BLOCK DIAGRAM

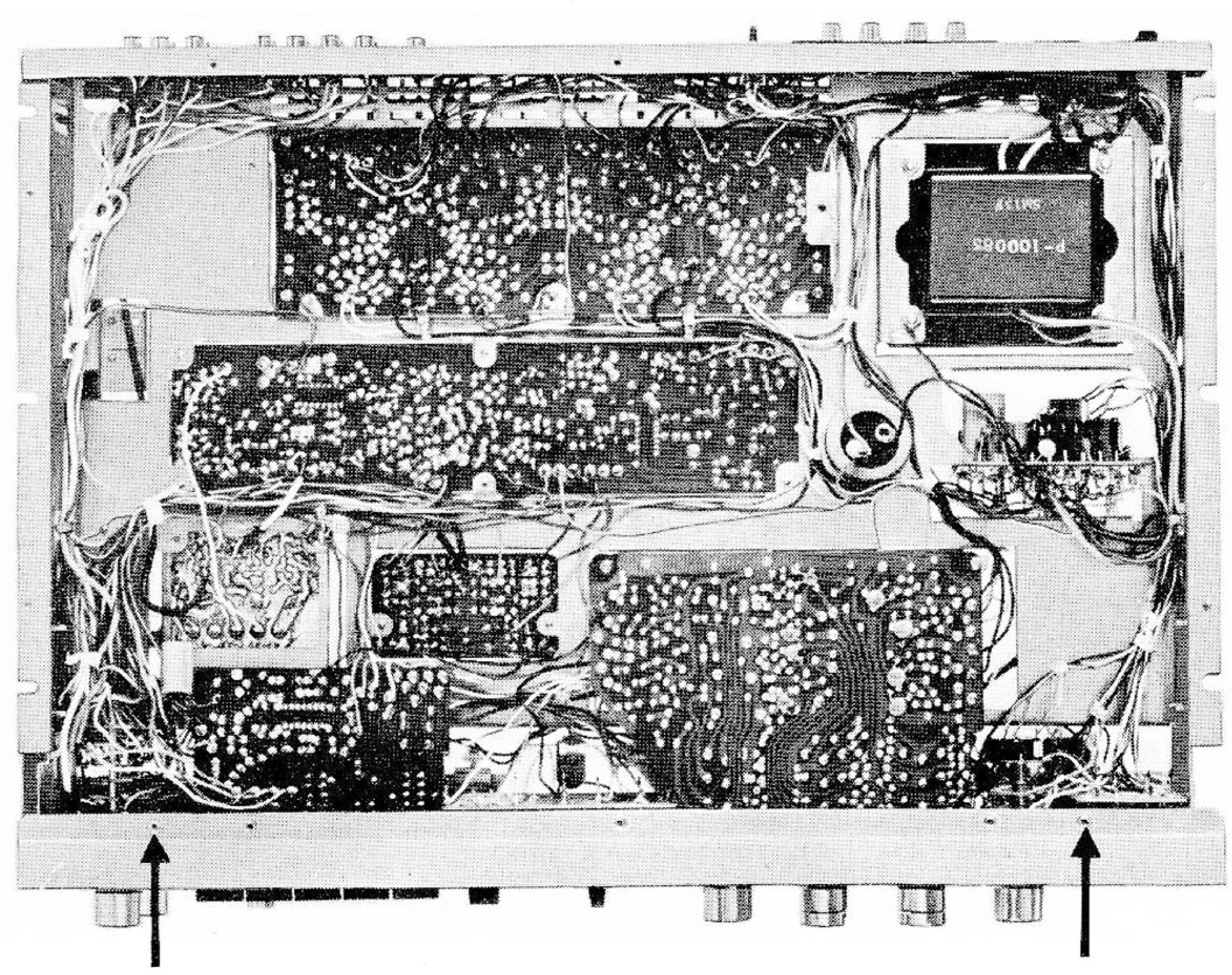


# DISASSEMBLY INSTRUCTIONS

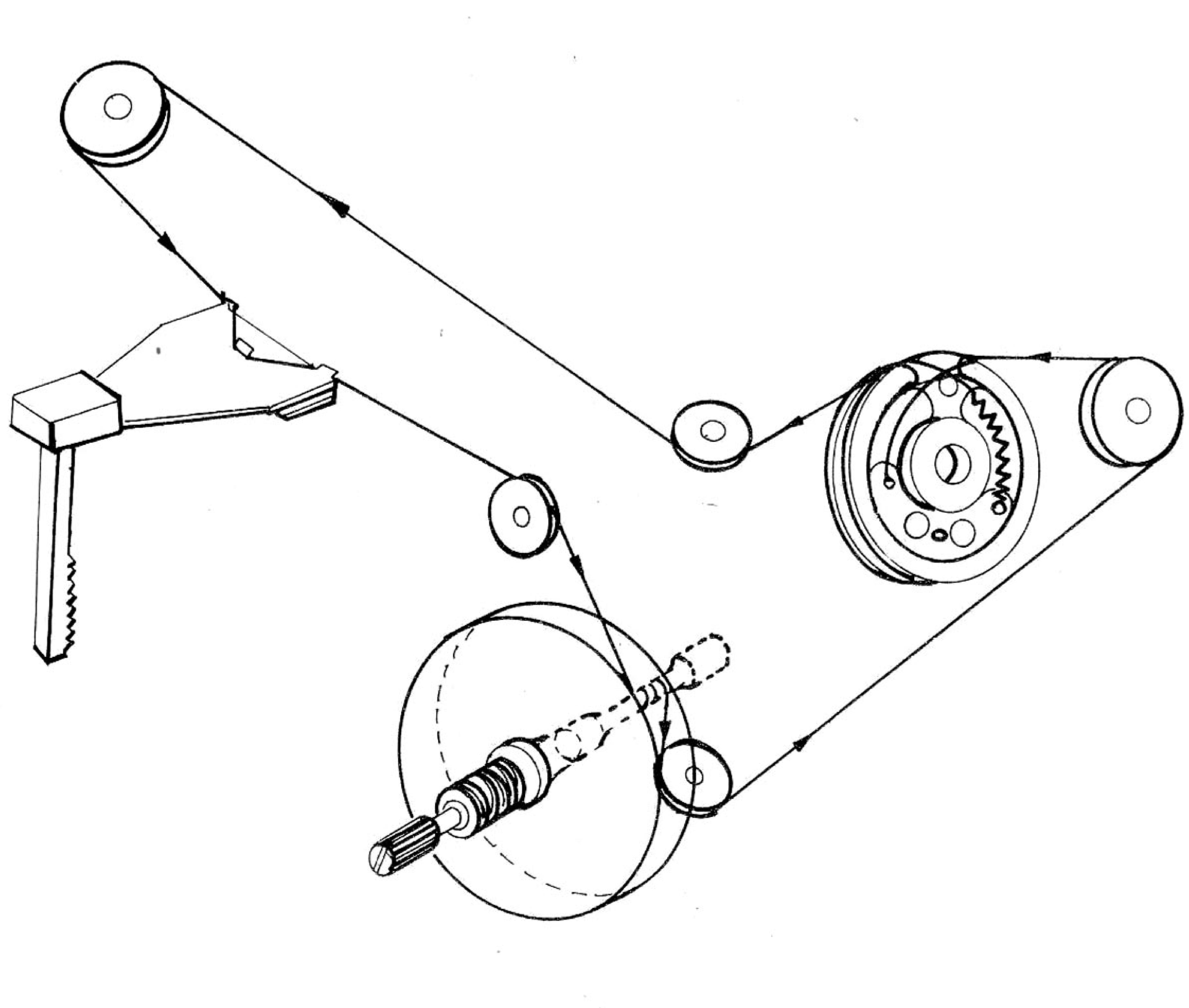


1) To remove chassis from wooden cabinet.
   Turn the cabinet upside down and first remove the thirteen screw (3m/m) on the bottom plate whitch are marked by arrow marks (a) in Fig.1.
   Next, remove the six Pan head screws on the bottom cabinet whitch are marked by arrow marks (b) in Fig.1.
2) Removing the Front Panel (Aluminum Panel)
   a. Pull off the "FUNCTION" "FINE TUNING" "TUNING" "SPEAKER SELECTOR" "BASS" "TREBLE" "VOLUME" and "BALANCE" knoves.
   b. Remove the two Pan head screws whitch are marked by arrow marks. (Fig.2-a)
      Also remove the two Pan head screws from the bottom of this Front Panel.



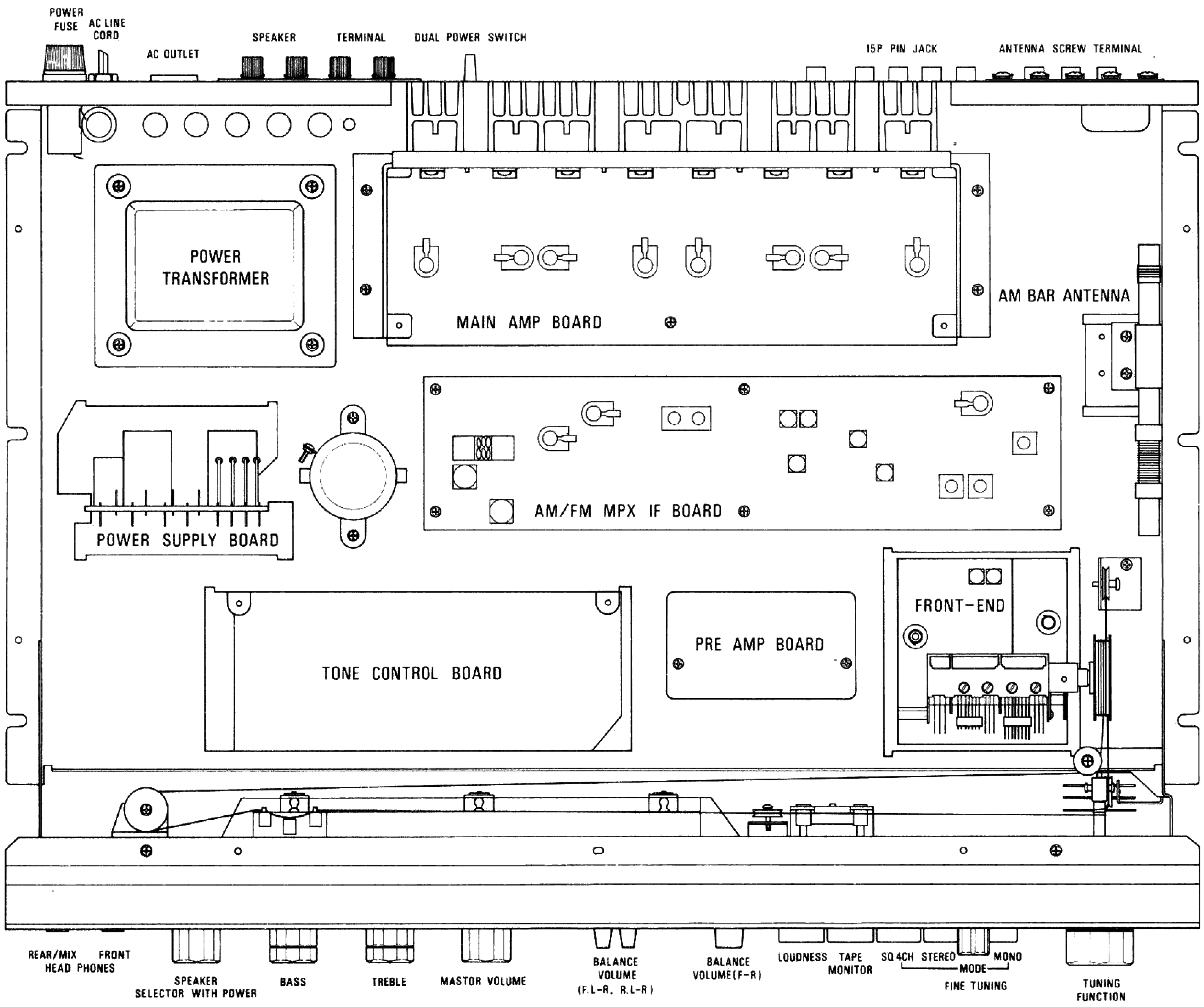


# STRINGING DIAGRAM

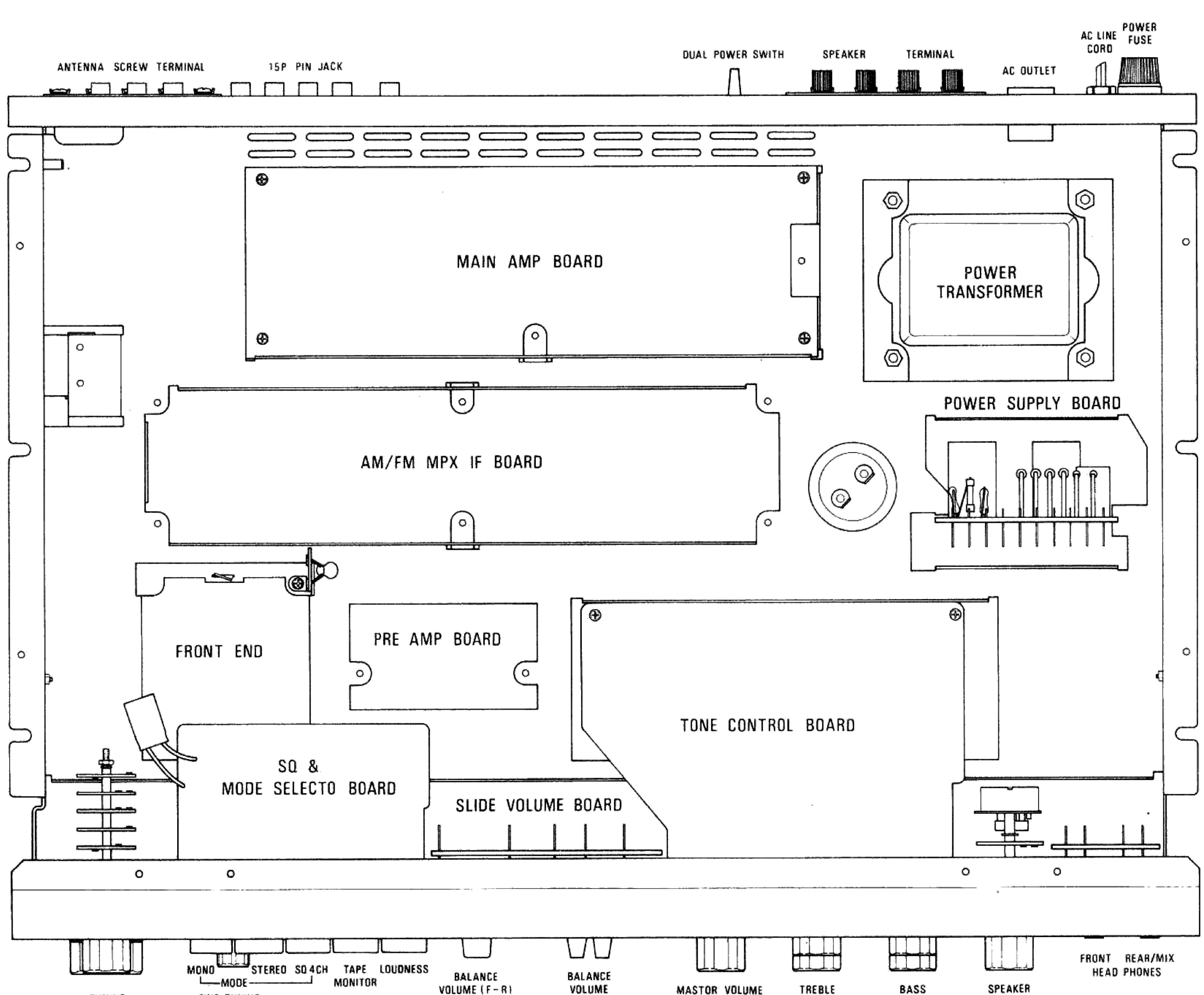


# CHASSIS LAYOUT

## TOP VIEW




## BOTTOM VIEW



# ALIGNMENT PROCEDURES

## EQUIPMENT REQUIRED

1. AM Signal Generator
2. AC Voltmeter
3. Oscilloscope

## TUNER FRONT END COIL & TRIMMER LOCATIONS

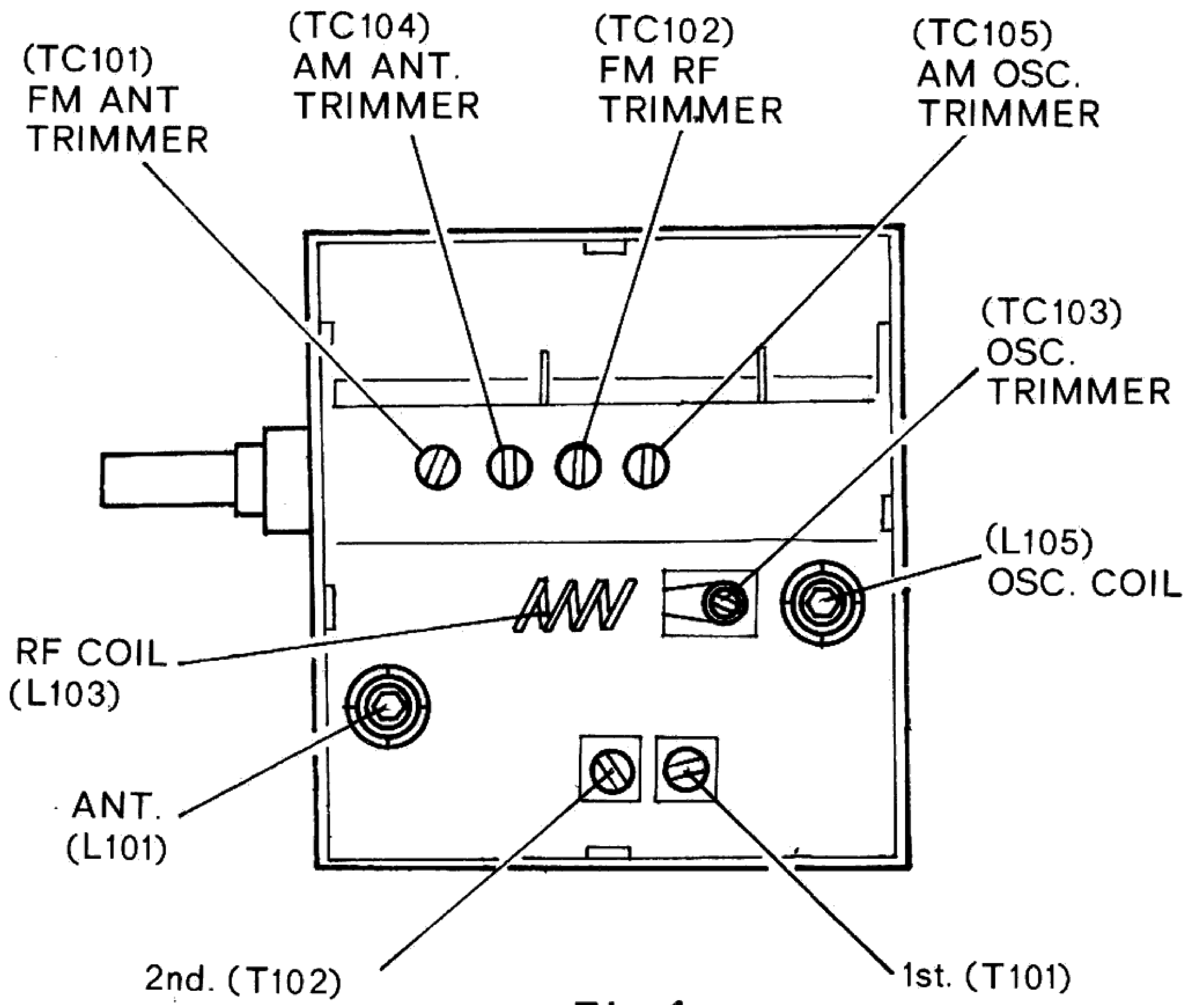



Fig-1

# AM IF & RF ALIGNMENT

NOTES: Signal generator output should be no higher than necessary to obtain an output reading.
Maintain line voltage at 120 volts.
Set SELECTOR Switch to AM.

| STEP | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | DIAL SETTING | INDICATOR | ADJUSTMENT | REMARKS |
|---|---|---|---|---|---|---|
| 1 | Fashion loop several turns of wire and radiate signal into the loop antenna. | 455kHz (400 Hz, 30% MoD) | Point of non-interference (Upper side) | AC Voltmeter to Speaker Terminals | T202 T203 T205 | Adjust for maximum reading |
| 2 | Same as above | 525 kHz (400 Hz, 30% MOD) | Setting pointer to upper end side | Same as above | T201 (OSC Coil) | Adjust for maximum reading. |
| 3 | Same | 1650 kHz (400 Hz, 30% MOD) | Setting pointer to upper end side | Same | TC105 (OSC Trimmer) | Same |
| 4 | Same | 600 kHz (400 Hz, 30% MOD) | 600 kHz | Same | AM Antenna Coil | Same |
| 5 | Same | 1400 kHz (400 Hz, 30% MOD) | 1400 kHz | Same | TC104 | Same |
| 6 | Repeat 2 and 3,4 and 5 until no further improvement is noticed. | | | | | |
| 7 | | | Point of non-interference and no broad casting | AM strength Meter | VR203 (Meter level) | Adjust the Meter Pointer to "Zero" Point on Meter |

# AM ALIGNMENT SET-UP

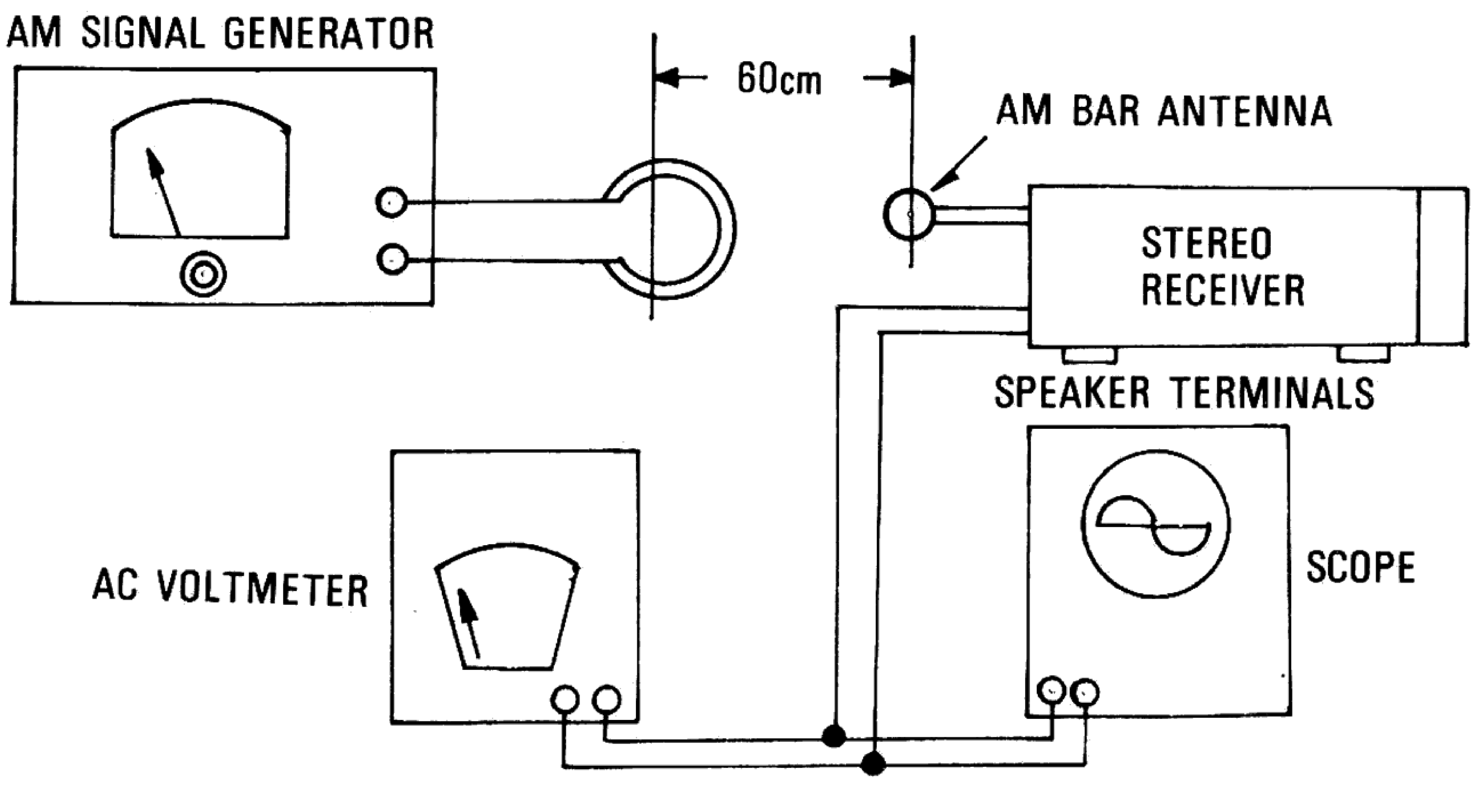



Fig. 2

# ALIGNMENT PROCEDURES

## FM RF & IF ALIGNMENT

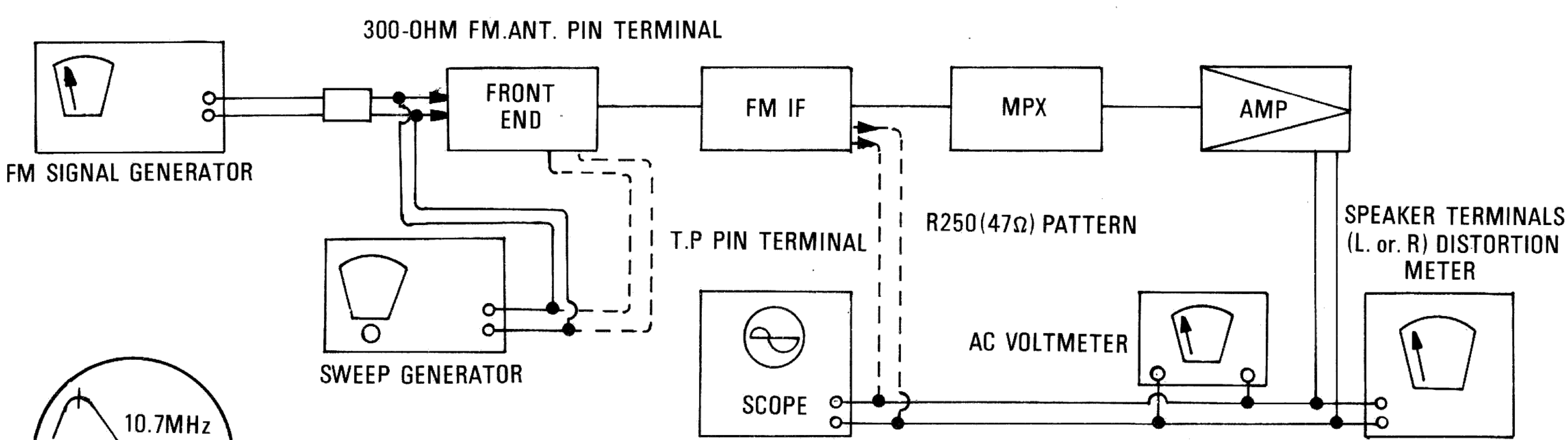
### EQUIPMENT REQUIRED

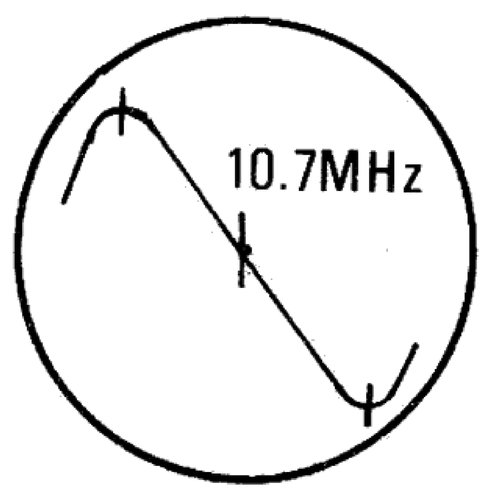
1. FM Signal Generator............Output Level: 60 dB (1 mV)
2. Sweep Generator
3. AC Voltmeter
4. Oscilloscope
5. Distortion Meter

NOTES: Signal generator output should be no higher than necessary to obtain an output reading.
Set SELECTOR Switch to FM.
Maintain line voltage at 120 volts.

| STEP | GENERATOR COUPLING | GENERATOR FREQUENCY | RADIO DIAL SETTING | INDICATOR | ADJUSTMENT | REMARKS |
|---|---|---|---|---|---|---|
| 1 | Sweep Generator to FM ANT terminal on FM Front end board | 10.7 MHz (1400 kHz Sweep) | Any dial setting where no noise or interference exists | Scope to R-250 (MPX input) AM/FM/MPX Board | T204.T206 T207.T209-1st FM.IFT | Adjust for maximum amplitude and proper linearity between ±150 kHz markers Refer to Fig. 3A |
| 2 | Sweep Generator to FM Antenna Terminal thru FM Dummy antenna (300 Ω) | | | | T101.T102 FM.IFT | |
| 3 | | | | | T208 FM.IFT | Adjust for maximum signal meter |
| 4 | Same as above | | | | T209-1st (Pink) T101.102 206.207. VR202 | Adjust for symmetrical "S" curve as shown in Fig. 3A |
| 5 | Signal Generator to FM Antenna Terminal thru FM Dummy Antenna (300 Ω) | 98 MHz (400 Hz, 100 % MOD) | Tune for maximum reading on meter | Distortion Meter to Speaker Terminal | T209-2nd (Black) | Adjust for minimum distortion. |
| 6 | Same as above | 87 MHz (400 Hz, 100 % MOD) | Setting pointer to lower end side | AC Voltmeter and Scope to Speaker Terminals | L103 (FM OSC) Coil | Adjust for maximum reading on meter |
| 7 | Same | 108.3 MHz (400 Hz, 100 % MOD) | Setting pointer to upper end side | | T103 (FM OSC Trimmer) | |
| 8 | Same | 90 MHz (400 Hz, 100 % MOD) | 90 MHz | | (Ant. Coil) (RF. Coil) | Adjust for maximum reading on meter |
| 9 | Same | 106 MHz ( " ) | 106 MHz | | FM. ANT Trimmer FM RF Trimmer | |
| 10 | Repeat step 5 and 6, 7 and 8 until no further improvement is noticed. | | | | | |

## FM ALIGNMENT SET-UP




SCOPE PATTERN
FIG. 3A

Fig. 3

# ALIGNMENT INSTRUCTIONS

## FM STEREO ALIGNMENT

### EQUIPMENT REQUIRED

1. Stereo Modulator........................Connect Stereo Modulator to EXT. Mod. terminal of FM signal generator.
   Modulation Level of 19 kHz Pilot Signal............8 ~ 10%
2. FM Signal Generator...................Output Level..................60 dB (1 mV)
   Frequency......................Approximately 98 MHz.
   Deviation........................75 kHz at 100% modulation of composite signal.
3. Auto Generator
4. AC Voltmeter
5. Oscilloscope
6. Distortion Meter

### PRELIMINARIES

Set SELECTOR Switch to "FM" Dial setting at approximately 98 MHz.
Set Mode Switch to "STEREO"

## MULTIPLEX & SEPARATION ALIGNMENT

| STEP | SIGNAL GENERATOR COUPLING | STEREO MODULATOR | INDICATOR | ADJUSTMENT | REMARKS |
|---|---|---|---|---|---|
| 1 | Connect to FM Antenna Terminal thru FM Dummy antnena (300 Ω) | Composite MPX signal 1 kHz on left channel ONLY. | AC Voltmeter and scope connected to IC2 No. 1 pin | T210 (19 kHz trans) | Adjust for maximum reading. |
| 2 | Same as above | Same as above | Distortion Meter connected to Speaker terminal of Front left channel | T211 (38 kHz trans) | Adjust for minimum distortion reading. |
| 3 | Same | Same | AC Voltmeter connected to Speaker terminal of Front right channel | VR201 (Separation Control) | Adjust for minimum reading-at least 30 dB below the reading obtained in step 1 |
| 4 | Same | Composite MPX signal 1 kHz on right channel ONLY. | AC Voltmeter connected to Speaker terminal of Front left channel | VR201 (Separation Control) | Same as above |

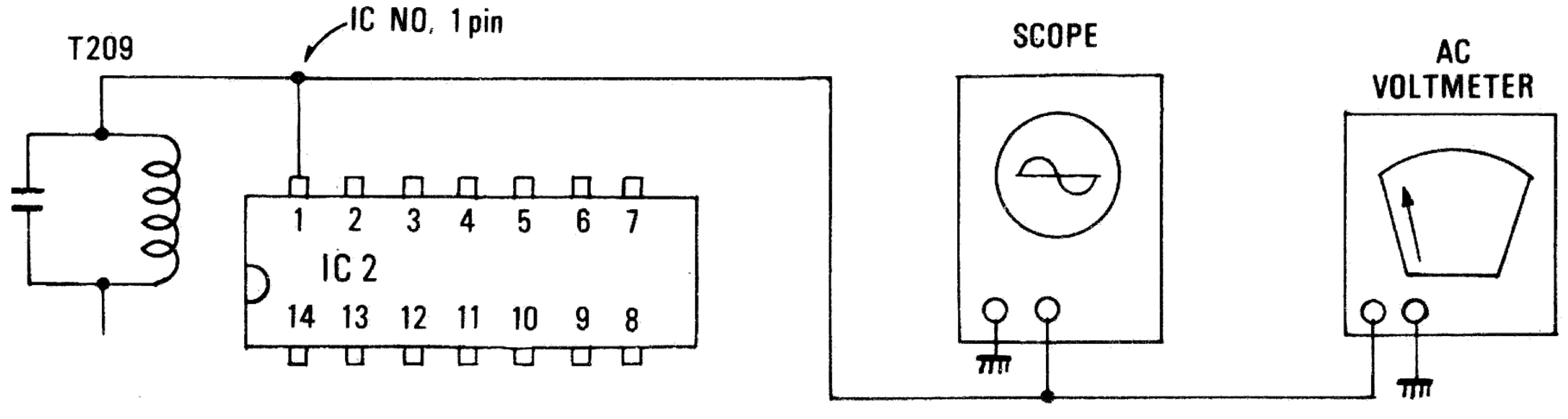



Fig. 4

# ALIGNMENT INSTRUCTIONS

## MULTIPLEX & SEPARATION ALIGNMENT

| STEP | SIGNAL GENERATOR COUPLING | STEREO MODULATOR | INDICATOR | ADJUSTMENT | REMARKS |
|---|---|---|---|---|---|
| 5 | Connect to FM Antenna Terminal thru FM Dummy antenna as shown below. | Composite MPX signal 1 kHz on right channel ONLY. | AC Volmeter connected to Speaker jack of Front right channel | | Same AC Voltmeter reading as obtained in Step 1. The reading may vary 12 dB. |
| 6 | Same as above | Composite MPX signal 1 kHz on left channel ONLY. | Same as above. | | Minimum AC Voltmeter reading — at least 30 dB below the reading obtained in Step 1. |

## MPX ALIGNMENT SET-UP

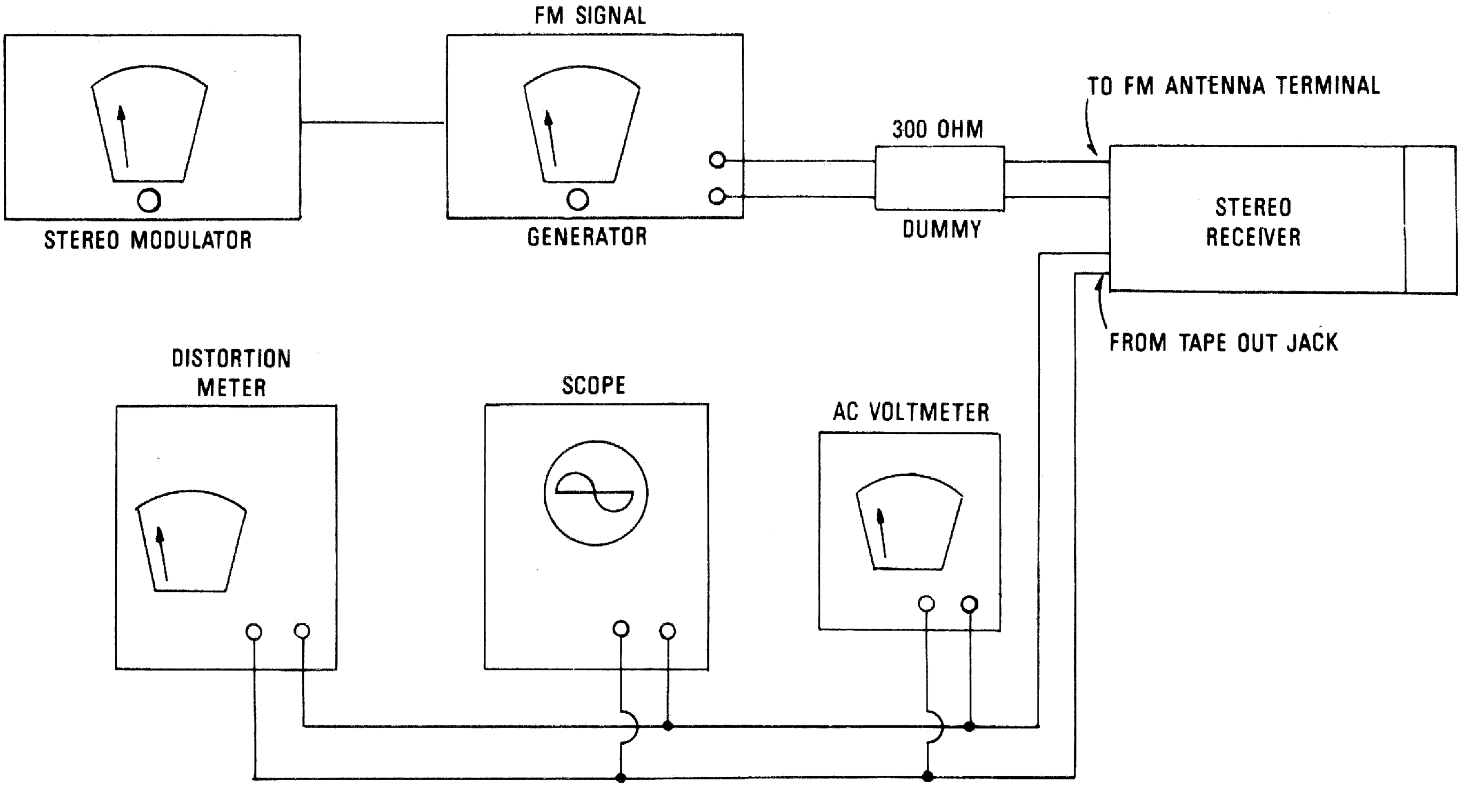
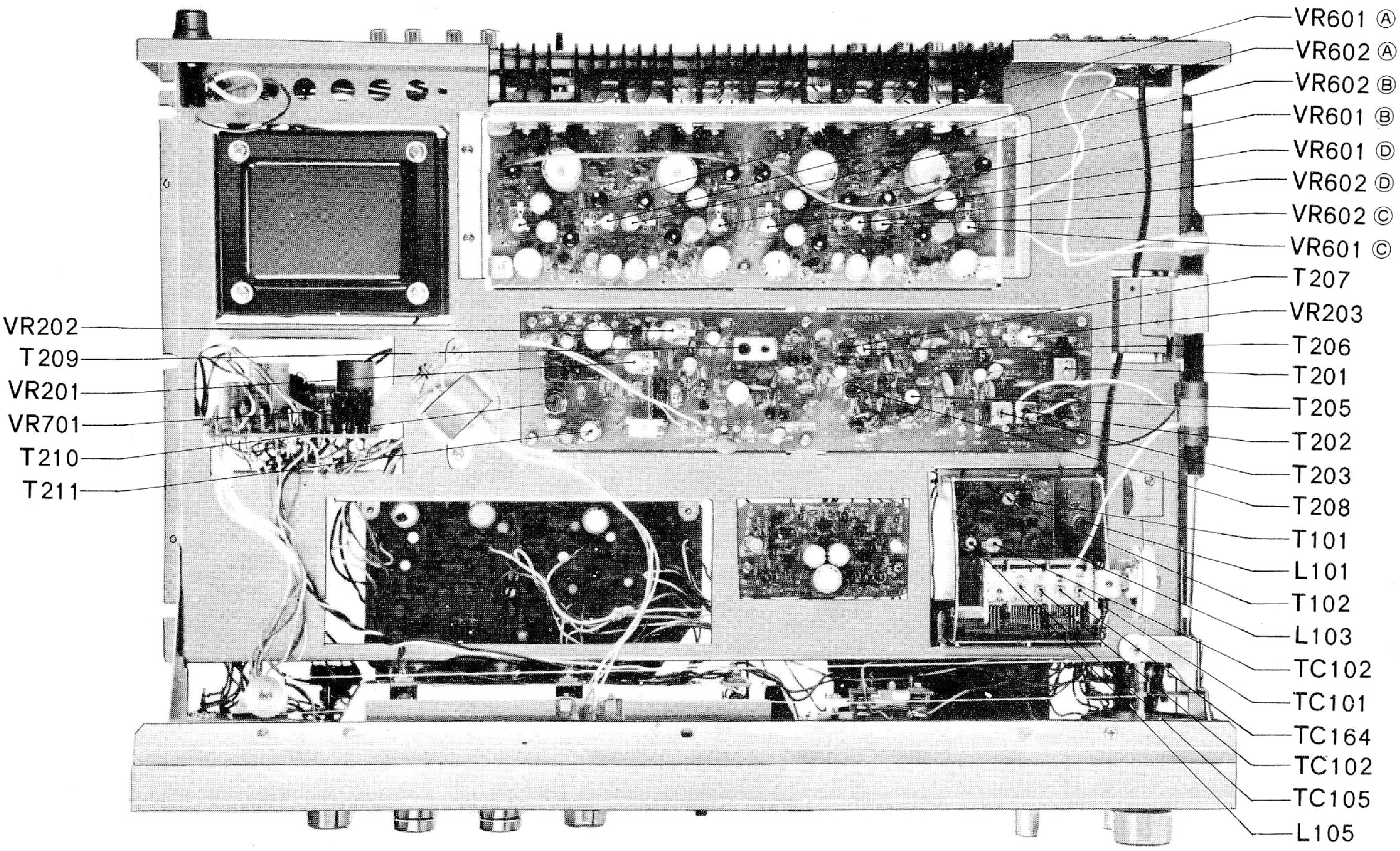
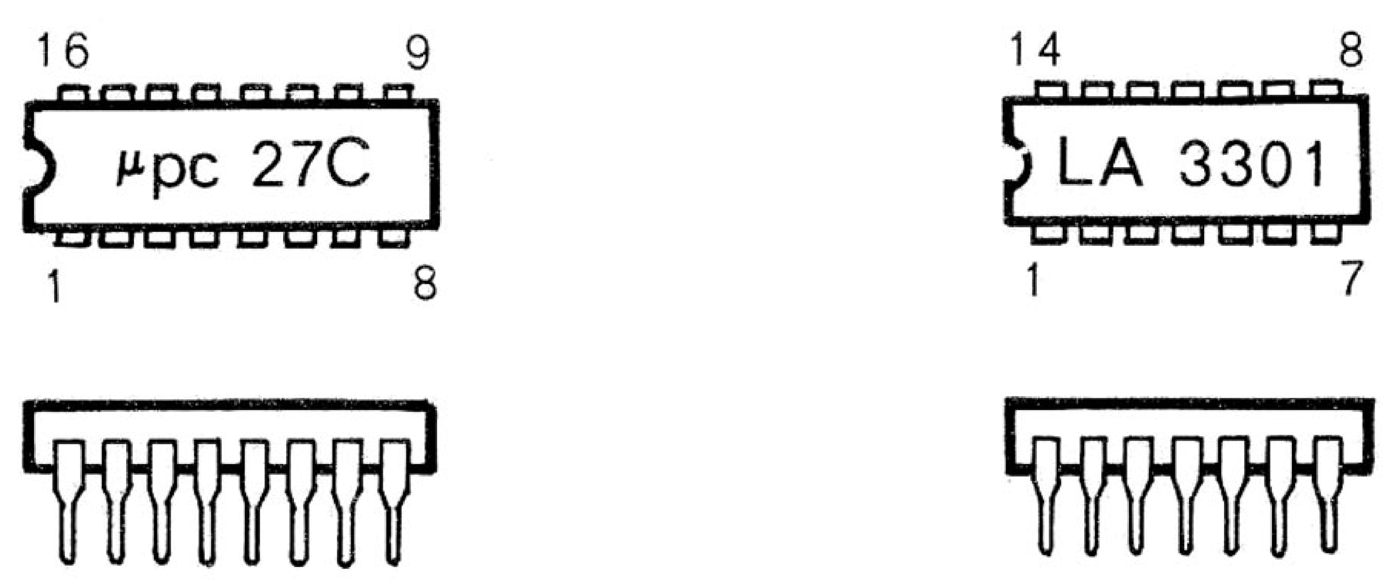


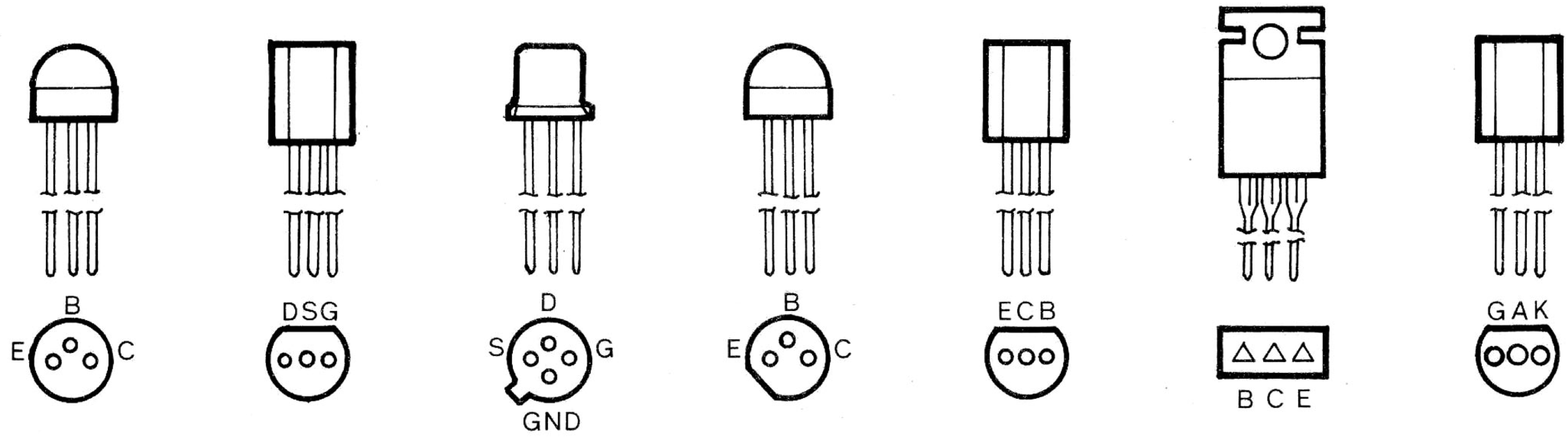

Fig. 5

# ALIGNMENT POINTS




# IC & TRANSISTOR CONNECTIONS




| | | | | | | |
|---|---|---|---|---|---|---|
| LS 4968M | TE 500-2 | SF 8193-1 | NJ 100A | 2SC 900 | 2SD 330 | 2SF 657 |
| CS 704 | | | NJ 100B | 2SC 923 | 2SD 313 | |
| | | | NJ 202B | 2SC 945 | | |
| | | | CS 1676 | 2SC 828 | | |
| | | | CS 1677 | 2SC 644 | | |
| | | | SE 4010 | | | |

# CR-400 TROUBLE SHOOTING

| Symptom | Cause and Remedy |
|---|---|
| 1) Receiver not operative; pilot lamp does not light. | A) Faulty AC power cord. § Replace the cord.<br>B) Defect in the power swicht S8. § Replace the switch.<br>C) Broken the wire in the power transformer. § Replace the transformer.<br>D) Broken power fuse. § Replace the fuse. |
| 2) Fuse blows when power is turned ON. | A) Power transformer defective. § Replace the transformer.<br>B) Short in the primary or secondary of the transformer circuitry.<br>C) Damaged rectifier, D701 ～D705 or 714<br>§ Replace the damaged rectifier.<br>D) Short-circuit in the rectifier circuit. § Repair the short.<br>E) Short-circuit in the power transistor TR605 a, b, c, d or TR606 a, b, c, d.<br>§ Replace the defective transistor and check circuit. |
| 3) Pilot lamp does not light. | A) Defective lamp. § Replace the lamp.<br>B) Disconnection in the transformer tertiary winding.<br>§ Replace the transformer. |
| 4) Pilot lamp lights but no sound from either channel. | A) Resistor R704, R703 or R717 damaged. § Replace the damaged one.<br>B) Capacitor C705, C708 or C703 defective.<br>§ Replace the defective capacitor.<br>C) Diode D701 ～ D704 damaged. § Replace the damaged one.<br>D) Open in secondary winding of the power transformer.<br>§ Replace the transformer. |
| 5) FRONT Speaker do not work. | A) Speaker switch SP1 or SP2 defective. § Replace the switch. |
| 6) REAR Speaker do not work. | A) Speaker switch SP2 or SP3 defective. § Replace the switch. |
| 7) -1 One channel does not work with "VOLUME" at maximum and "BALANCE" at center and a test signal is applied to the center terminal of VOLUME control of the dead channel. | A) Defect in TR501, TR502, TR503 or TR601, TR602 circuitry.<br>§ Locate and correct the defect.<br>B) Defect in TR603, TR604 or TR605, TR606 circuitry.<br>§ Locate and correct the defect.<br>C) Interruption in copper foil of the printed circuit board MAIN AMP or TONE control. § Repair or Replace it.<br>D) Short in speaker output terminal. § Repair it.<br>E) Faulty C610. § Replace it.<br>F) Defective resistor R502, R504, R506, R508, R509, R510, R511, R518, R521, R522, R601, R602, R603, R604, R606, R607, R608, R612, R610, R611. § Repair or Replace Replace the defective one. |
| 7) -2 Same as 7) -1 above but channel operates when test signal is applied as 7)-1. | A) Defective transistor TR301 or TR302. § Replace the defective transistor.<br>B) Faulty resistor R303, R305, R306, R308, R310, R311, R312 or R313.<br>§ Substitute the faulty one.<br>C) Faulty capacitor C301, C302, C306 or C308. |

# CR-400 TROUBLE SHOOTING

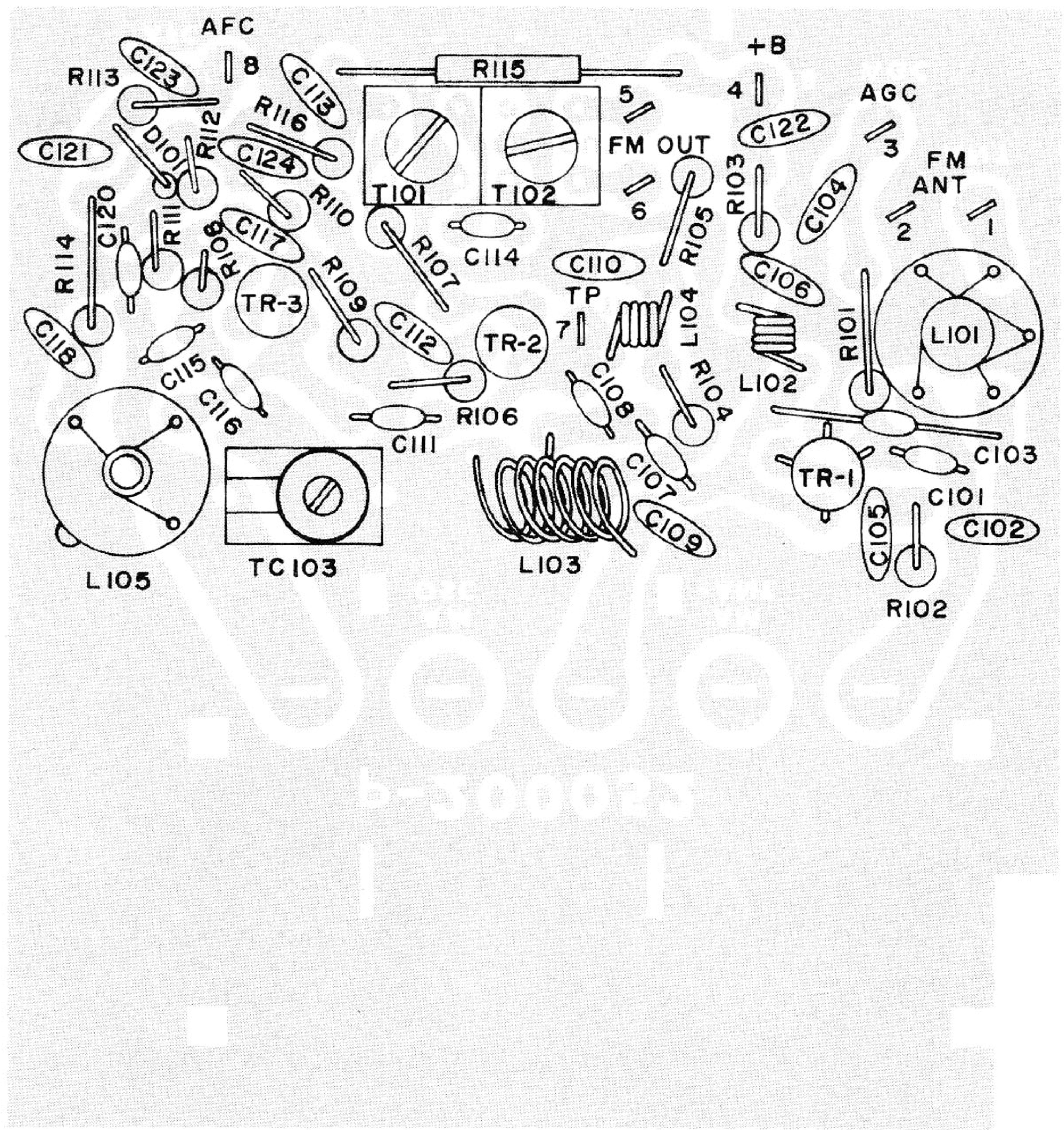
| Symptom | Cause and Remedy |
|---|---|
| | § Substitute the faulty one.<br>D) Defective selector switch Ss. § Repair or replace it. |
| 8) Speaker works normaly but headphones do not work. | A) Headphone plug does not mate with jack. § Replace the plug.<br>B) Interruption in R2 (Front Left), R3 (Front Right), R4 (Rear Left), R5 (Rear Right). § Replace it. |
| 9) All the inputs work normaly except "AUX" input. | A) Poor contact in "AUX" input jack. § Repair or Replace it.<br>B) Poor contact in selector switch Ss.<br>§ Repair or Replace the switch. |
| 10) "PHONO" input not operative. | A) Poor contact in "PHONO" input jack. § Repair or Replace it.<br>B) Faulty selector switch Ss. § Repair or Replace the switch. |
| 11) "TAPE OUT" not operative. | A) Defective contact in "TAPE OUT" output jack.<br>§ Repair or Replace the jack. |
| 12) FM does not operate. | A) Defective resistor R708. § Replace the resistor.<br>B) Zener Diode ZD701 defective. § Change the diode.<br>C) Faulty capacitor C710. § Replace the capacitor.<br>D) Short-circuit in TUNER + B circuit. § Repair the short.<br>E) Poor contact in selector switch Ss. § Repair or change it.<br>F) IC, Transistor, diode, IFT, resistor or capacitor of FM IF Board defective.<br>§ Replace the defective one.<br>G) Front End defective. § Repair or replace it.<br>H) Faulty lead in. § Repair or change the lead in. |
| 13) Multiplex separation not sufficient. | A) Deviation in adjustment. § Readjust it.<br>B) IC LA3301 defective. § Change the defective.<br>C) VR201 defective. § Change it. |
| 14) Stereo indicator lamp does not light. | A) Defective indicator lamp PL6. § Substitute the lamp.<br>B) Deviation in adjustment on T210, T211 and VR201.<br>§ Make readjustment.<br>C) Defective IC LA3301 or R259. § Change the defective one. |
| 15) FM sound not sufficient. | A) If sound both of L and R channels not enough: Front End defective, or faulty transistor, IFT or diode of FM IF & MPX Board.<br>§ Locate and correct the defect.<br>B) If sound of one channel not enough: Defective LPF-201 incase of one channel. § Change the defective one. |
| 16) AM does not operate. | A) Damage transistor either TR201 or TR202 of IF Board.<br>§ Replace the damaged. |

# CR-400 TROUBLE SHOOTING

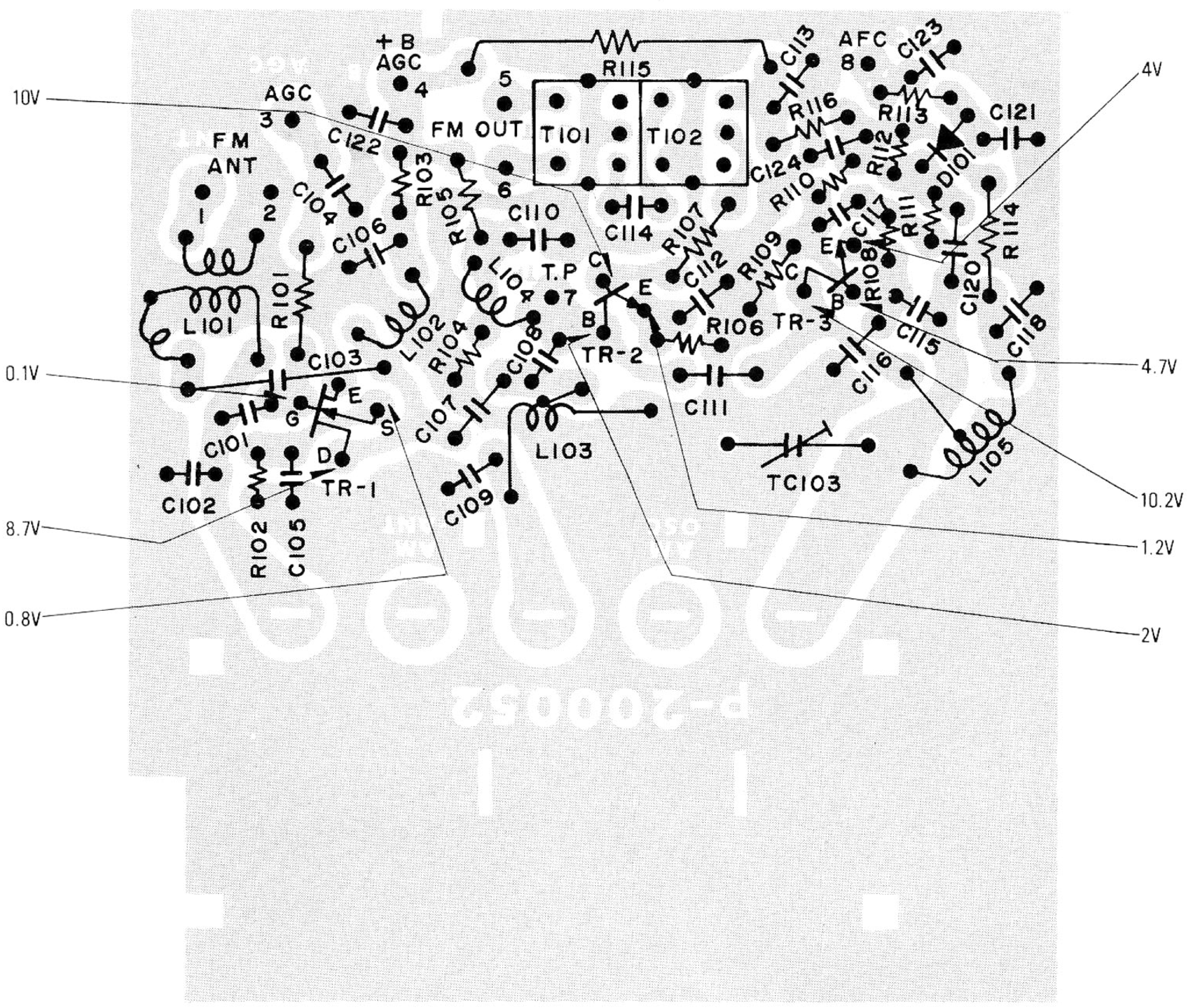
| Symptom | Cause and Remedy |
|---|---|
| | B) Defective T201, T202, T203 or T205 of IF Board.<br>§ Replace the defective one.<br>C) Defective D203 of IF Board. § Replace the defective it.<br>D) One of resistors on IF Board defective.<br>§ Replace the defective one.<br>E) One of capacitors of IF Board defective.<br>§ Replace the defective one.<br>F) Selector switch Ss defective. § Repair or replace it.<br>G) Defective Front End. § Replace the Front End.<br>H) Breakage in the bar-antenna. § Repair or replace it. |
| 17) "LOUDNESS" give no effect. | A) Defective "LOUDNESS" switch. § Substitute the switch.<br>B) Defective C502 or R503. § Change the defective one.<br>C) Defective VOLUME. § Change it. |
| 18) "STEREO-MONO-SQ4" not effective. | A) Defective "STEREO-MONO-SQ4" switch. § Change the switch. |
| 19) "TAPE MONITOR" not effective. | A) Defective "TAPE MONITOR" switch. § Change it.<br>B) Poor contact in "TAPE MON" input jack. § Repair or replace it. |
| 20) "BASS CONTROL" has no effct. | A) Bass control Volume defective. § Change it.<br>B) Defective C512, C513 or C515, R516 or R517 of TONE CONTROL Board.<br>§ Replace the defective one. |
| 21) "TREBLE CONTROL" has no effect. | A) Faulty Tone control Volume. § Change it.<br>B) Defective C510, C511 or R513, R514 of TONE CONTROL Board.<br>§ Replace the defective one. |
| 22) Excessive noise with PHONO input. | A) Faulty TR301 or TR302. § Change the faulty one.<br>B) Faulty R302, R303, R305, R308 or C301. § Change the faulty one. |
| 23) SQ MATRIX DECODER not effective. | A) Defective MODE switch. § Change the switch.<br>B) SQ IC, capacitor or resistor of SQ Matrix Board defective.<br>§ Replace the defective one. |
| 24) Noisy VOLUME control. | A) Defective Master Volume. § Replace it.<br>B) Defective C308, C407, C408, C413, C414, C505 or C506.<br>§ Replace the defective one. |
| 25) SIGNAL STRENGTH meter not functioning. | A) Defective METER. § Replace the METER.<br>B) Faulty operation of IF Board. § Repair it. |
| 26) CENTER TUNING meter not functioning. | A) Defective METER. § Replace the METER.<br>B) Faulty operation of IF Board. § Repair it. |

# TUNER FRONT END MOUNTED BOARD

## TOP VIEW

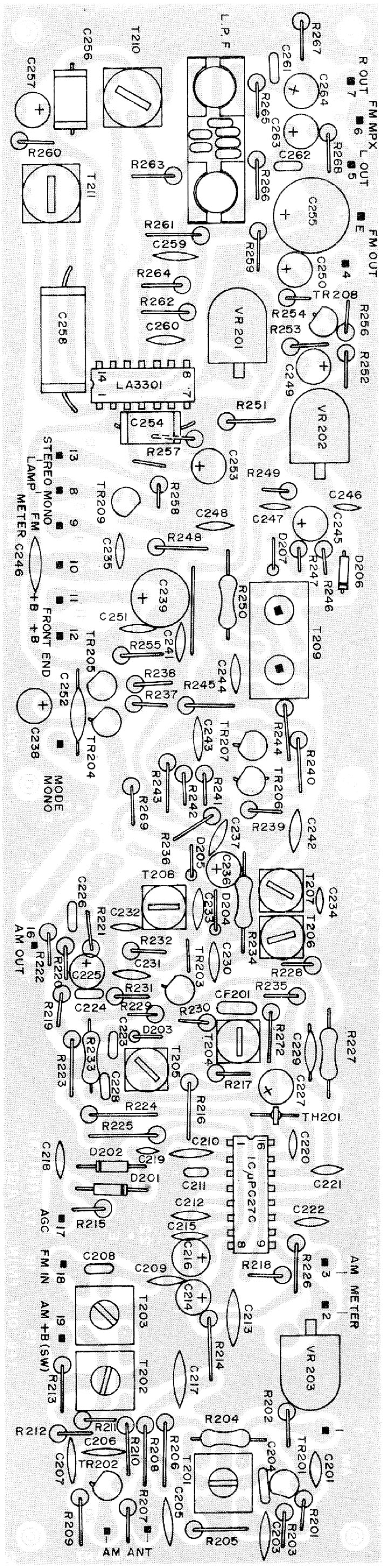



## BOTTOM VIEW

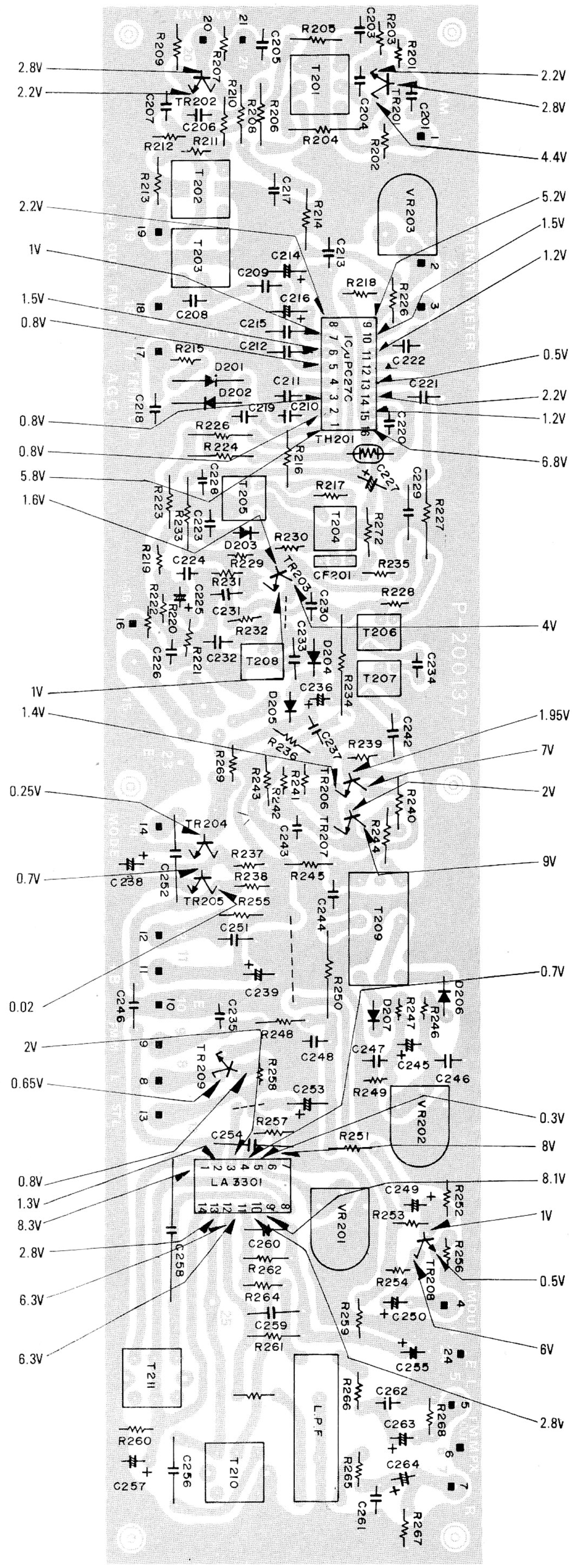


# AM/FM IF & MPX MOUNTED BOARD

## TOP VIEW

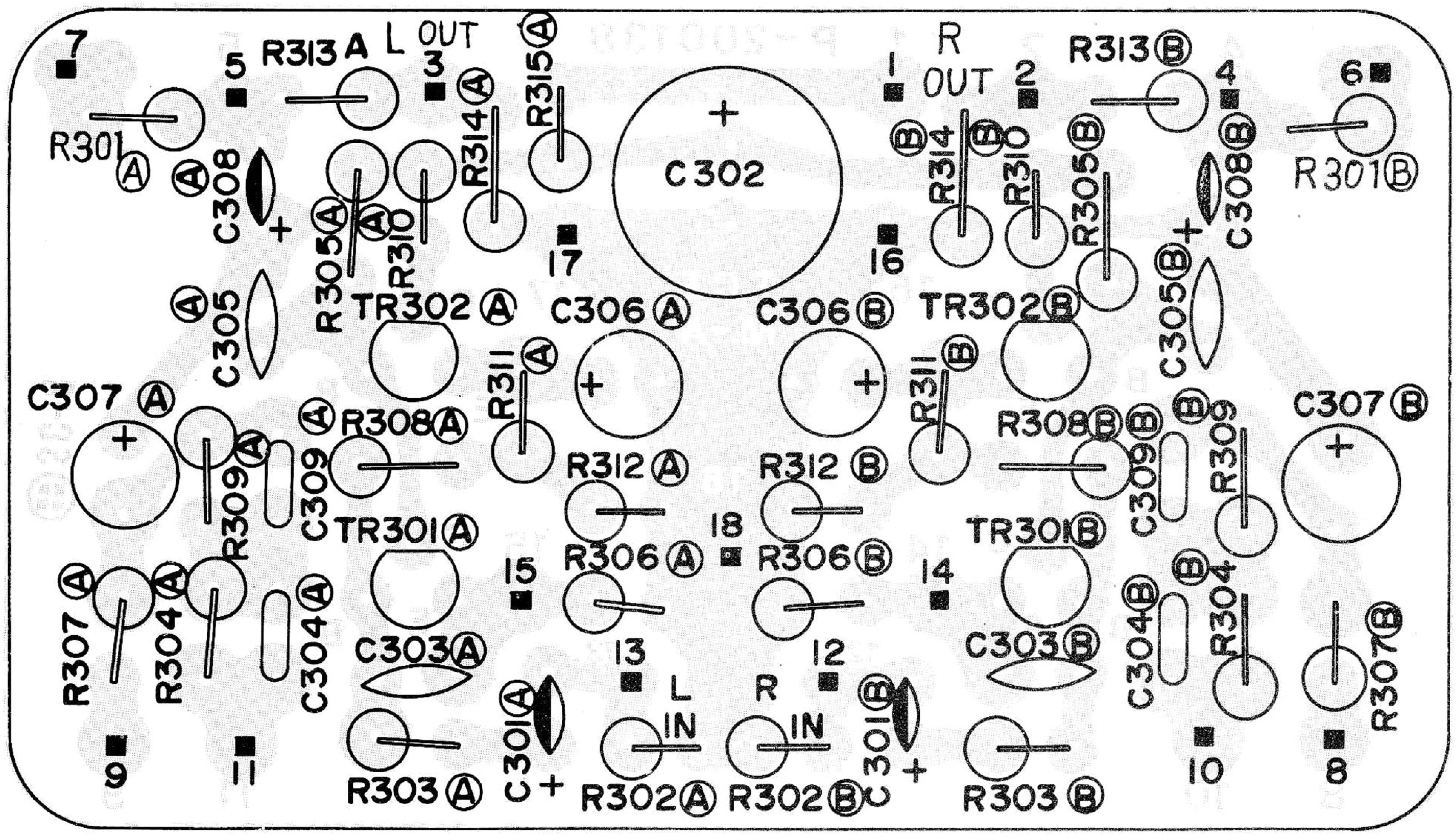


## BOTTOM VIEW

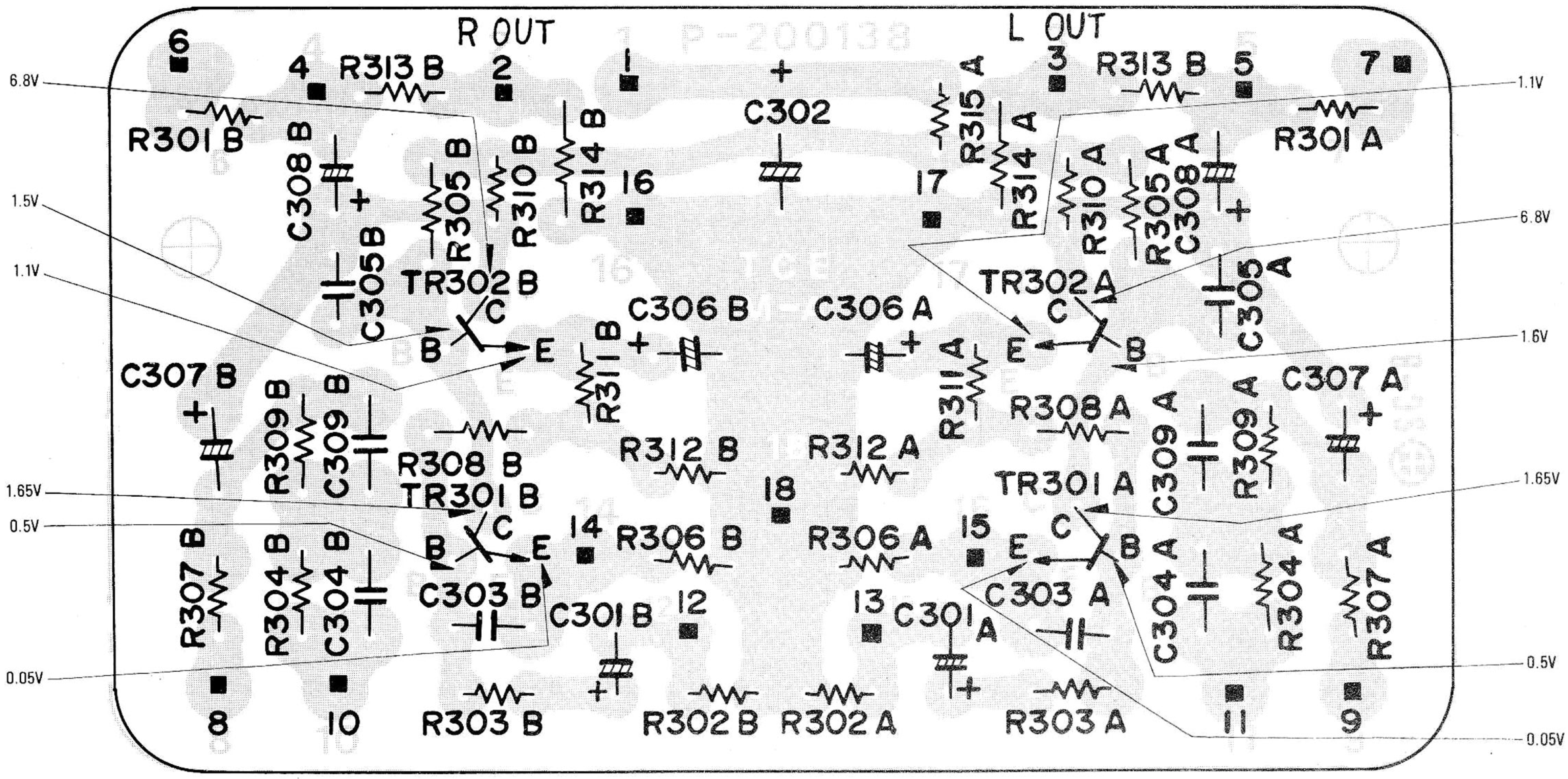


# PRE AMPLIFIER MOUNTED BOARD

## TOP VIEW

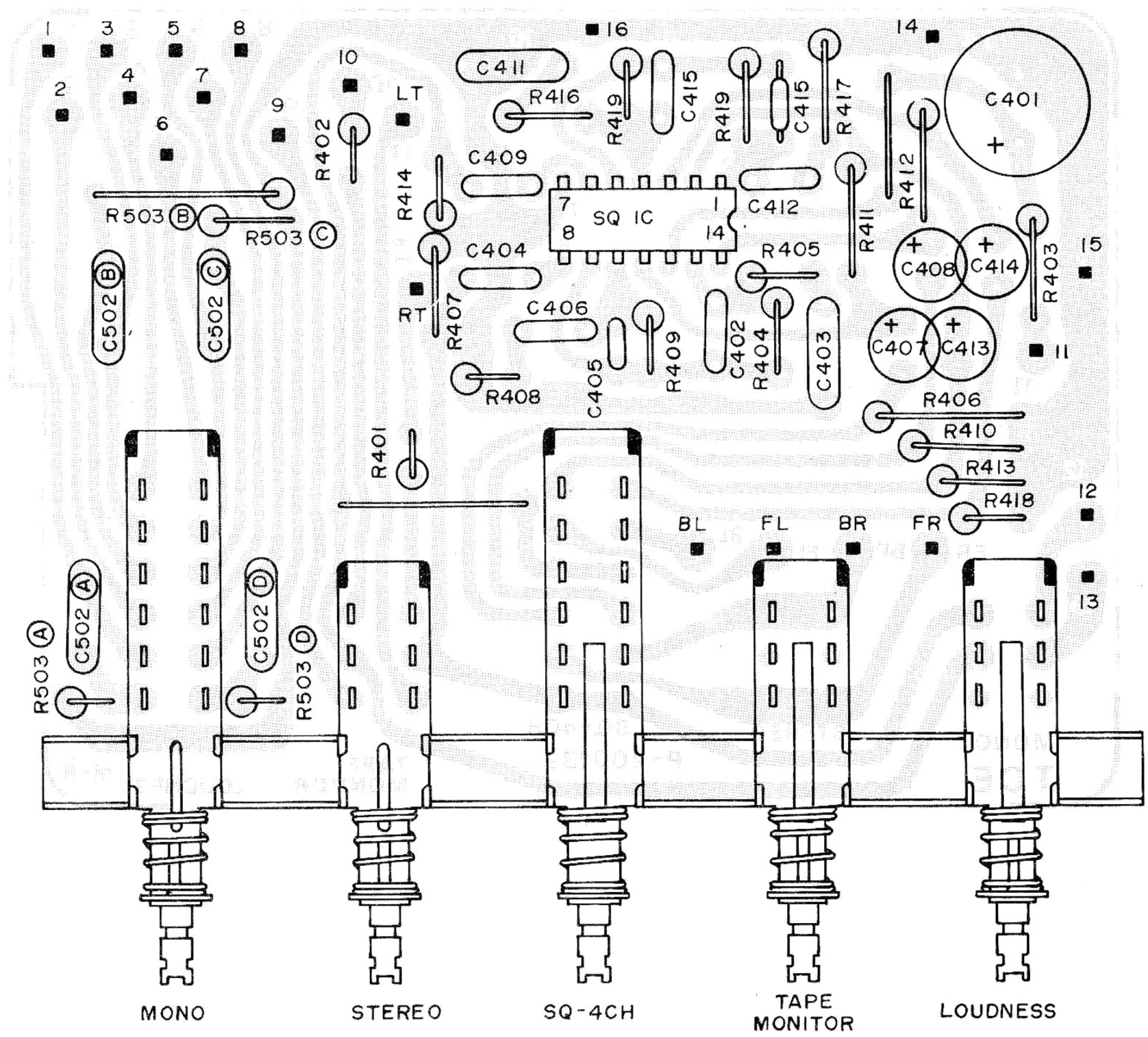



## BOTTOM VIEW

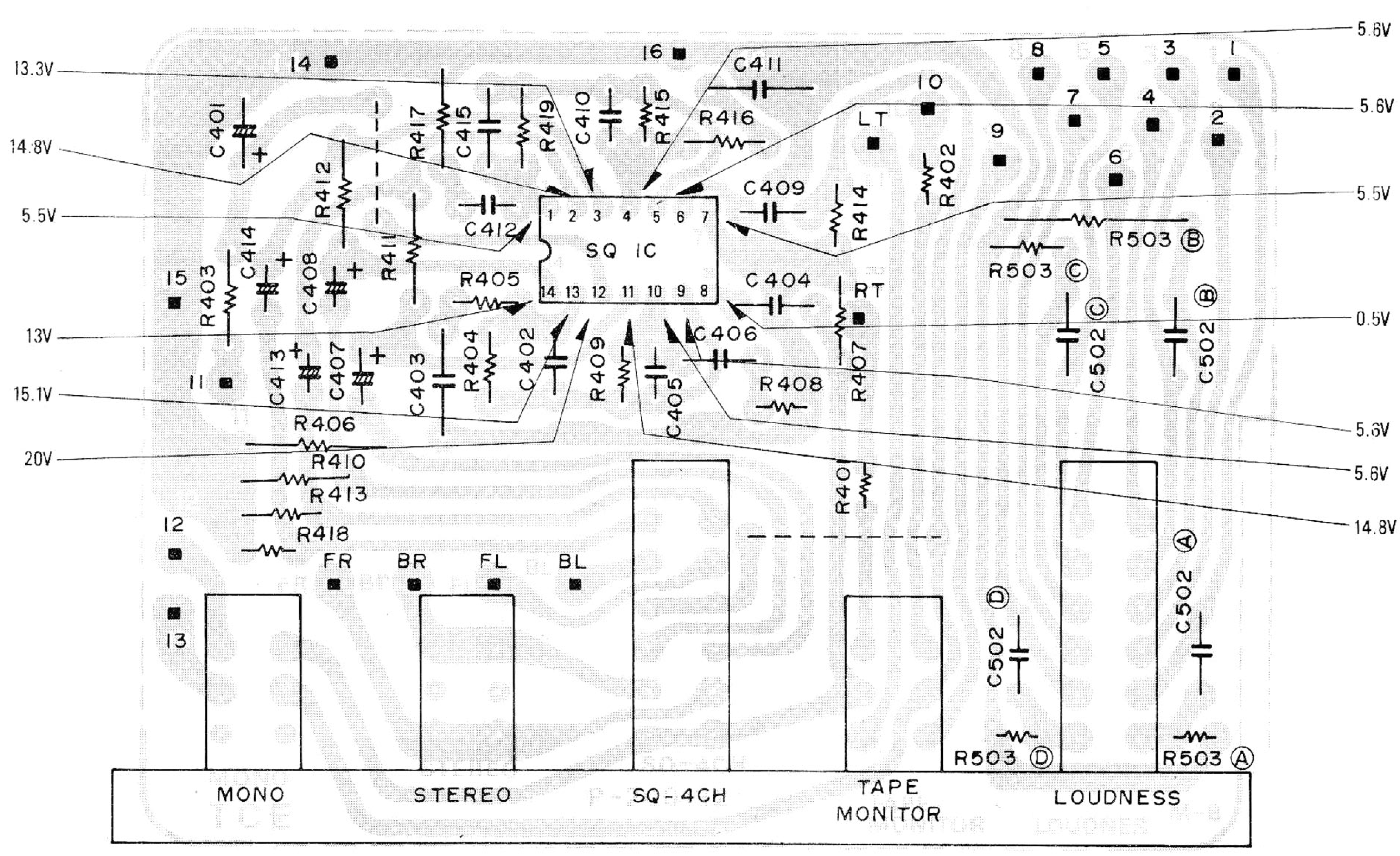


# SQ DECORDER & MODE MOUNTED BOARD

## TOP VIEW

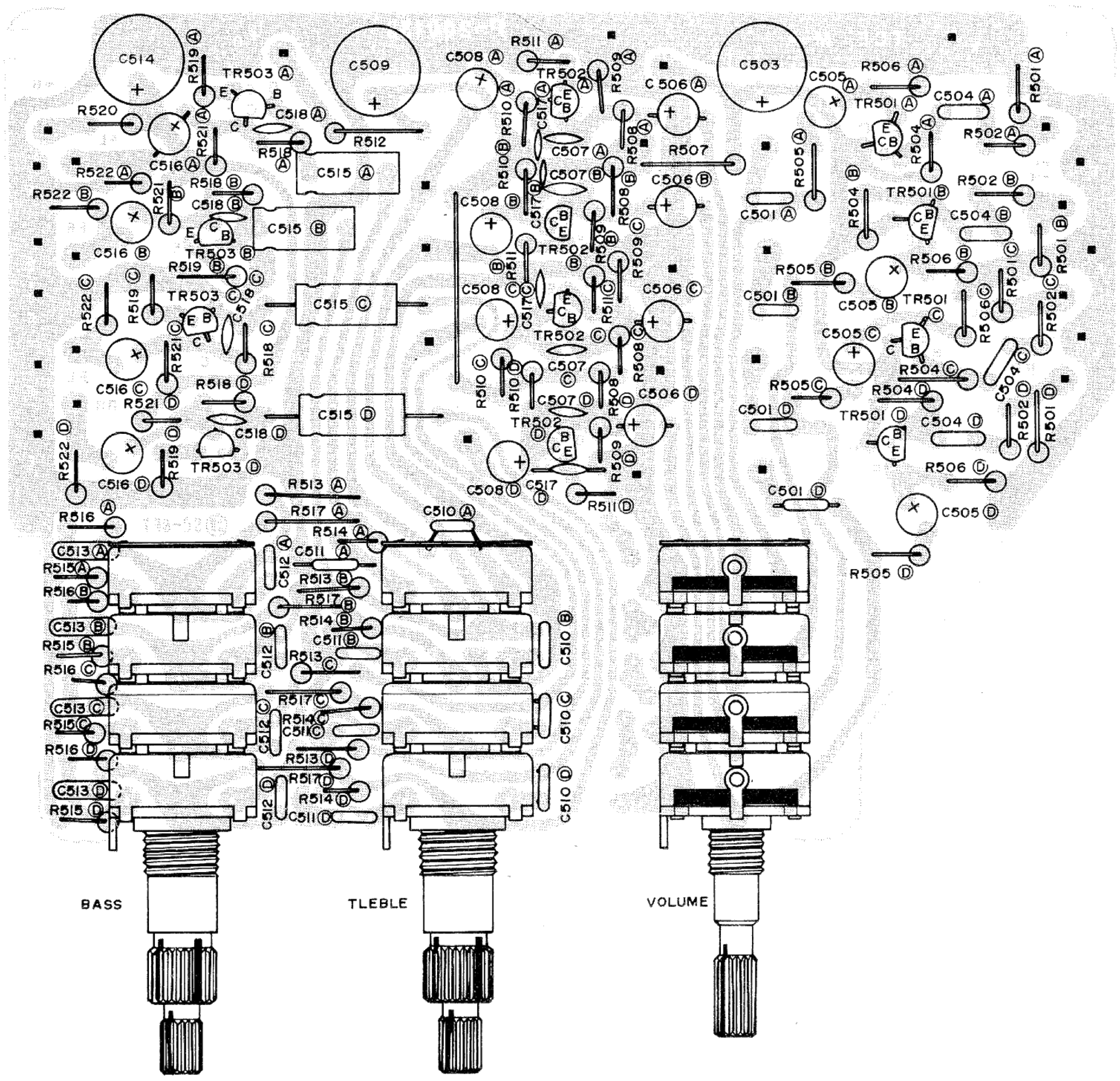



## BOTTOM VIEW

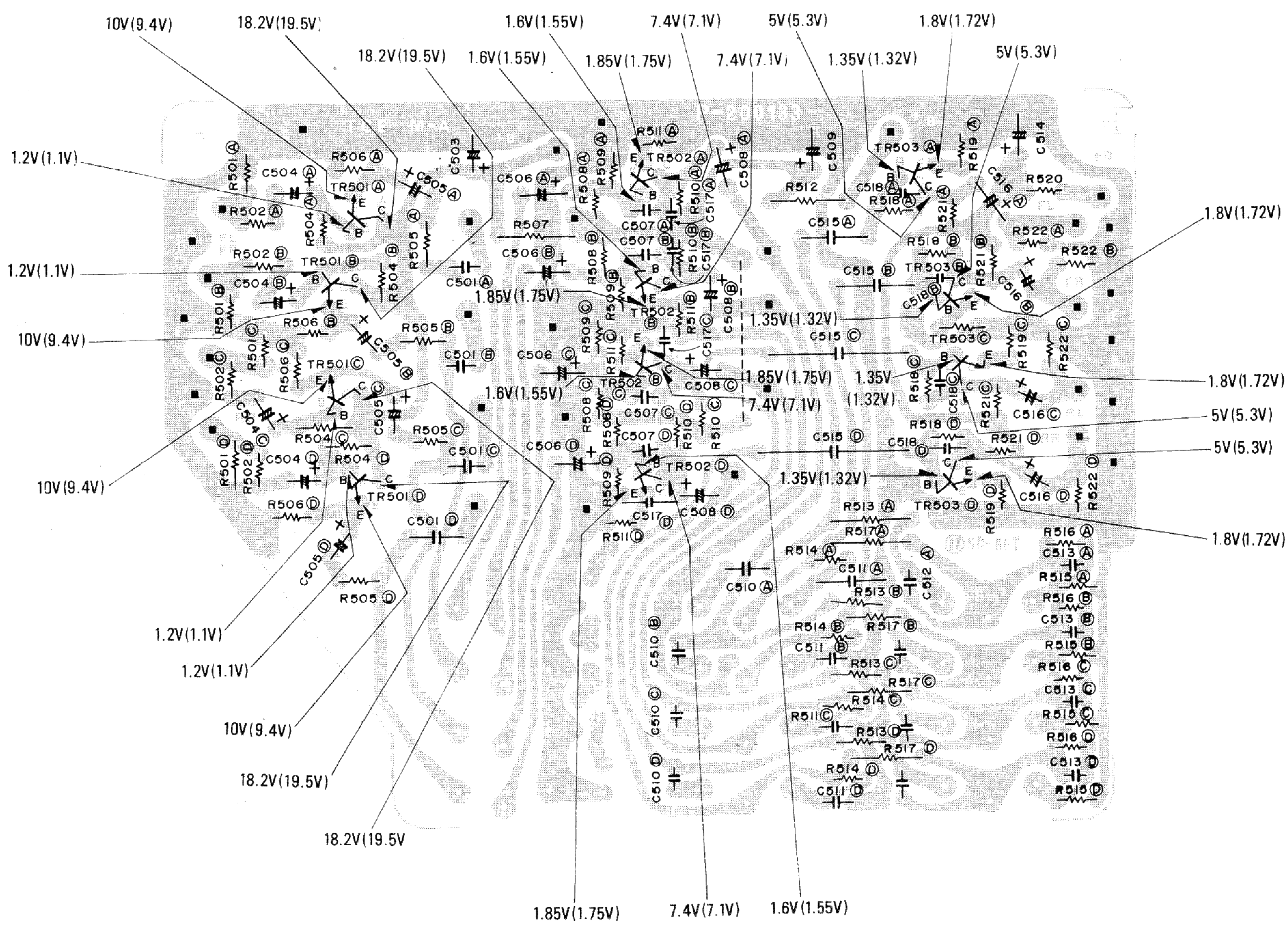


# TONE CONTROL MOUNTED BOARD

## TOP VIEW

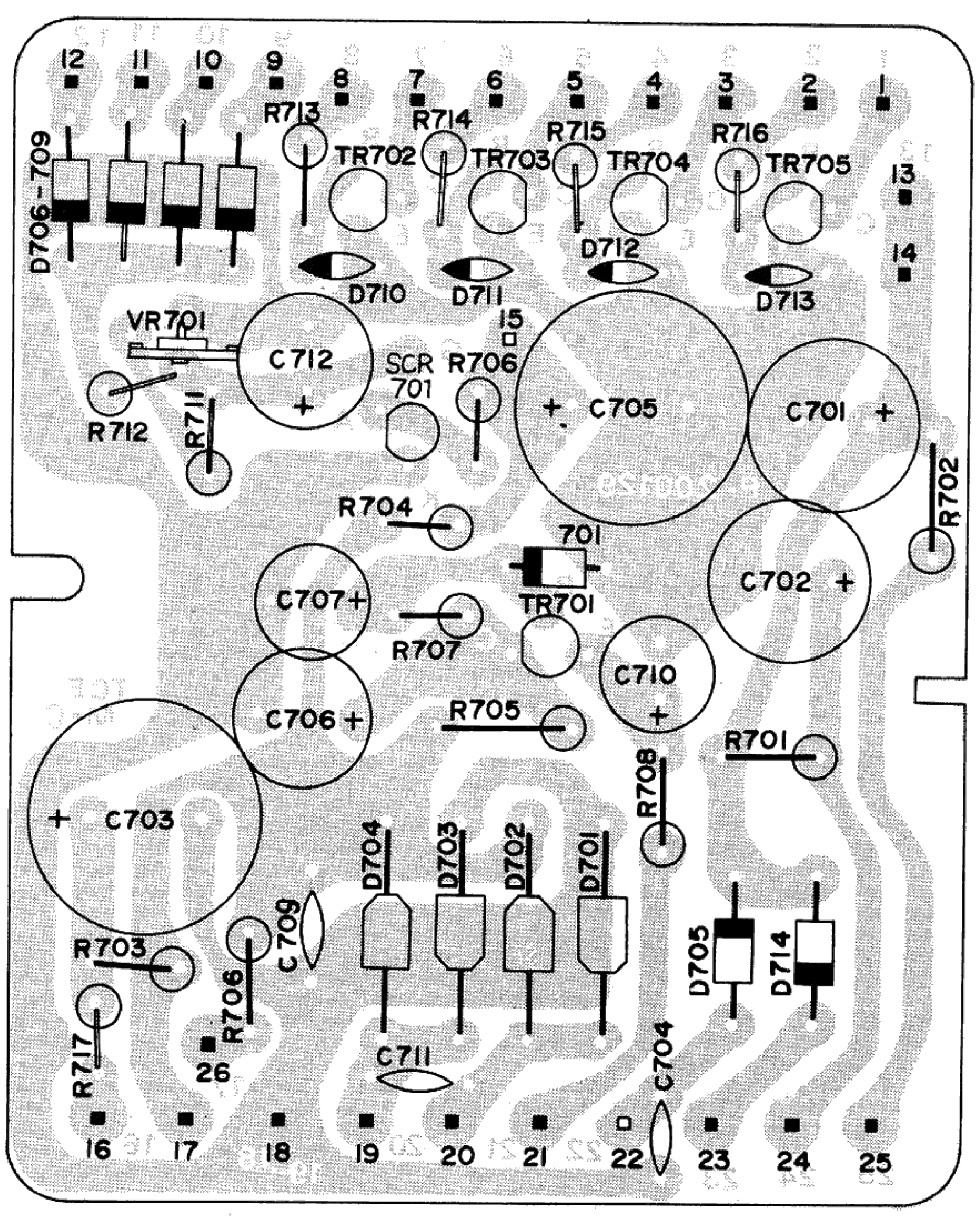



## BOTTOM VIEW

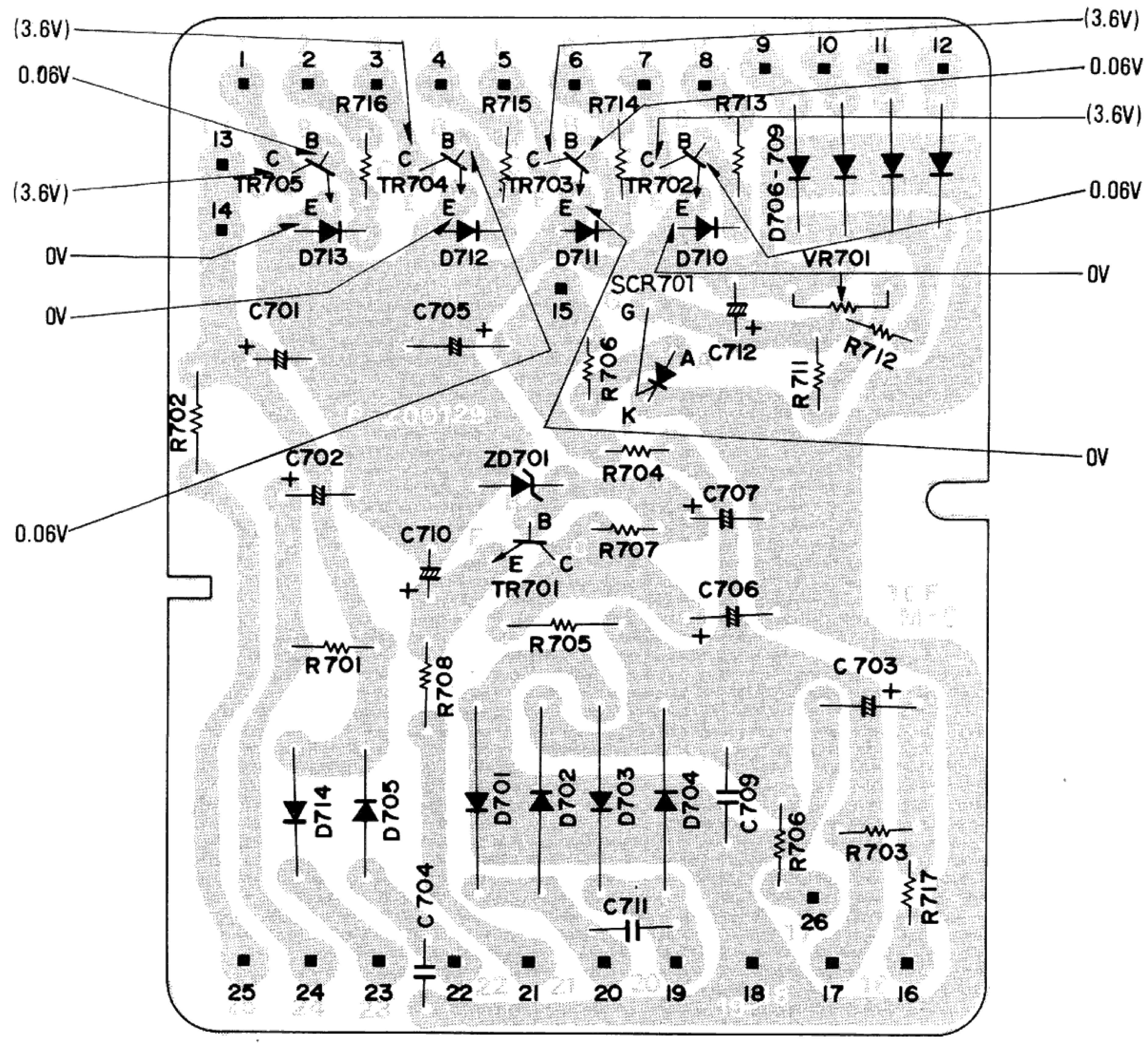


# POWER SUPPLY MOUNTED BOARD

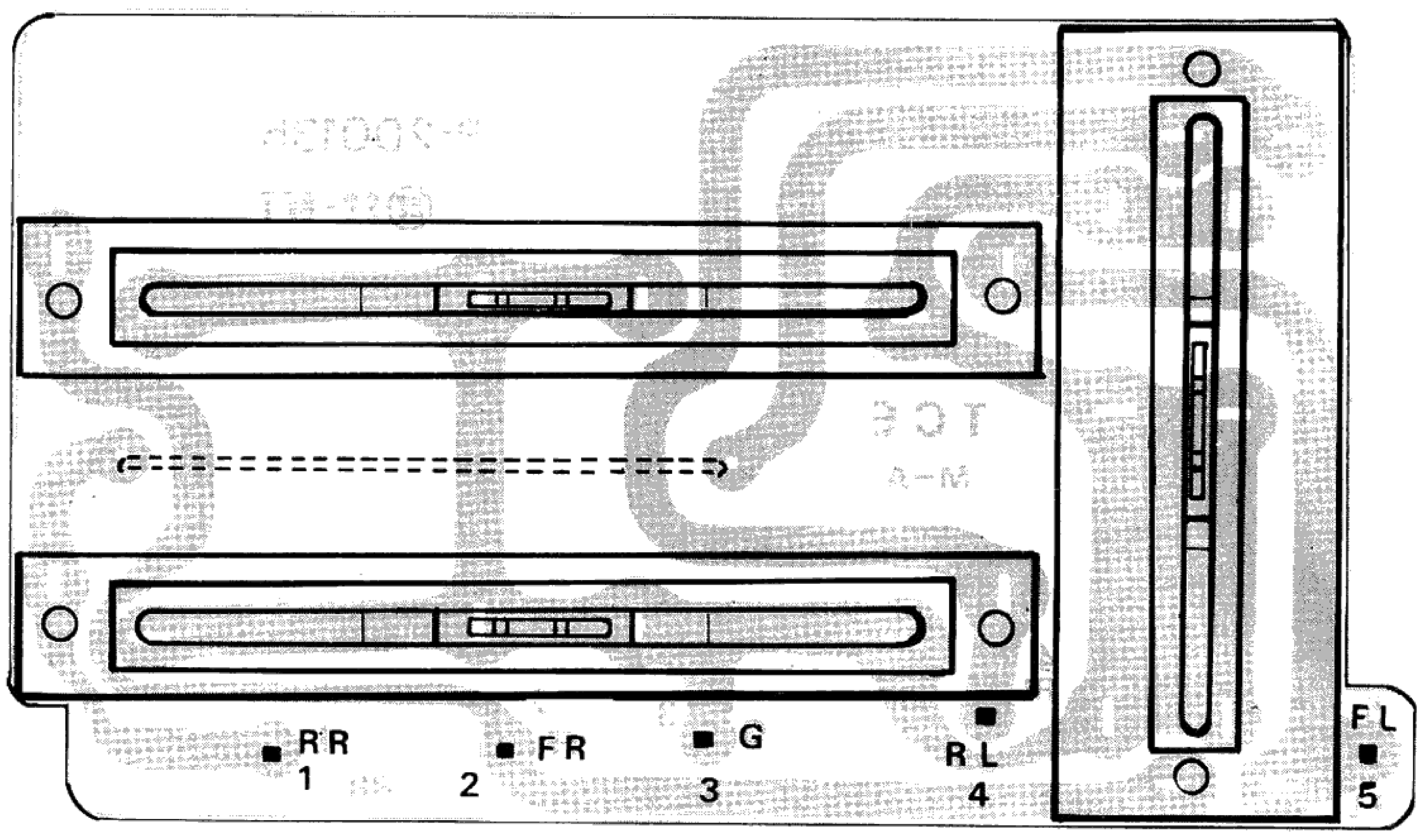
## TOP VIEW



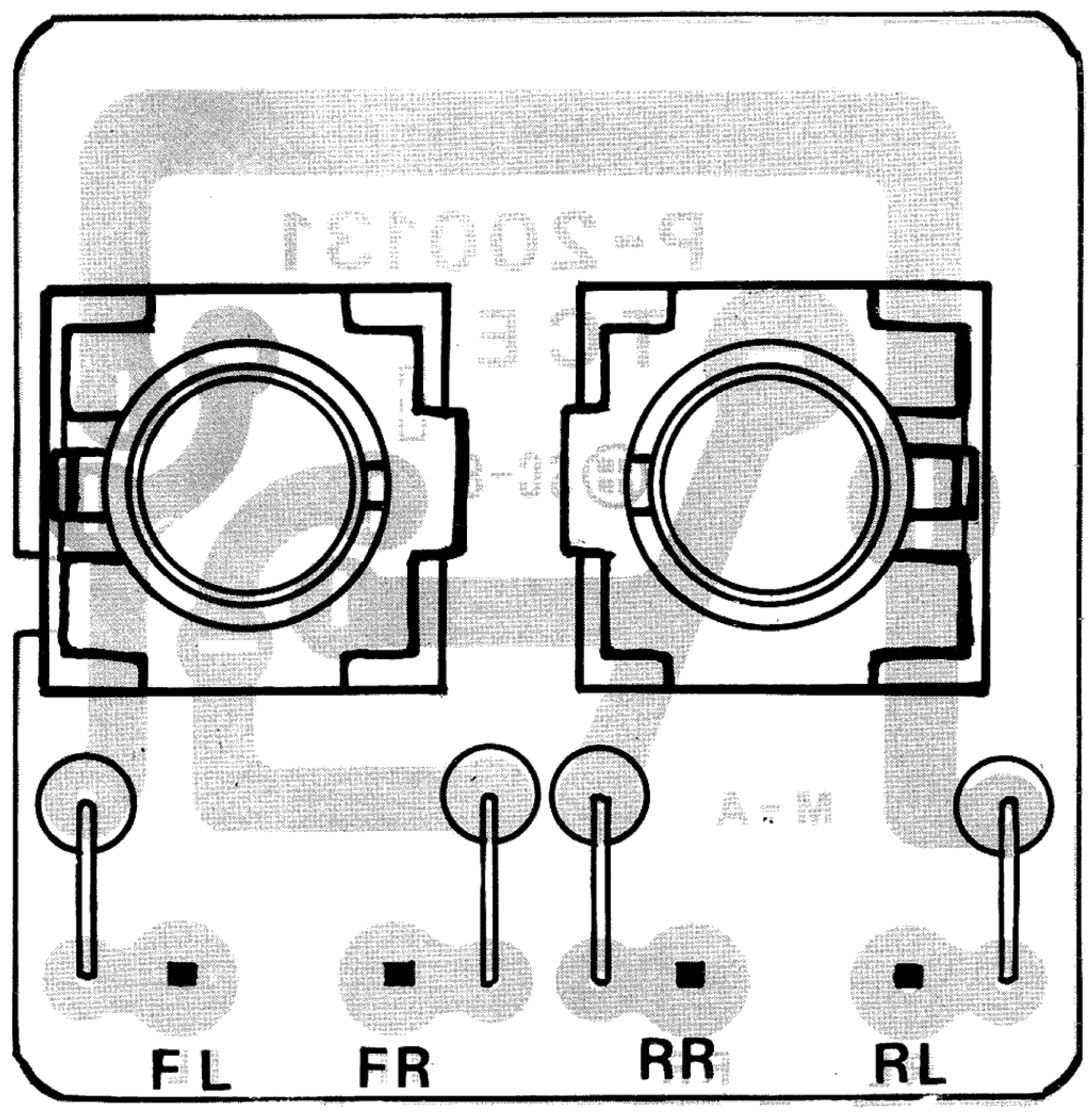
## BOTTOM VIEW



# SLIDE CONTROL MOUNTED BOARD

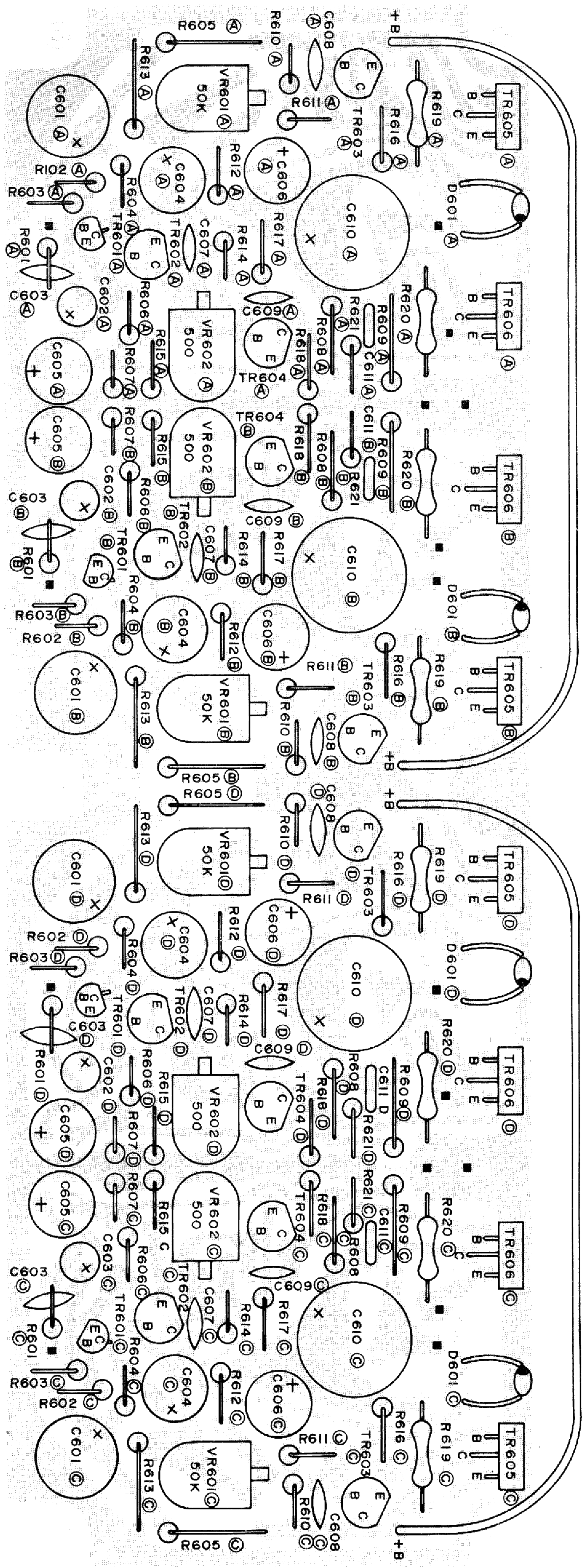


# HEADPHONE JACK MOUNTED BOARD

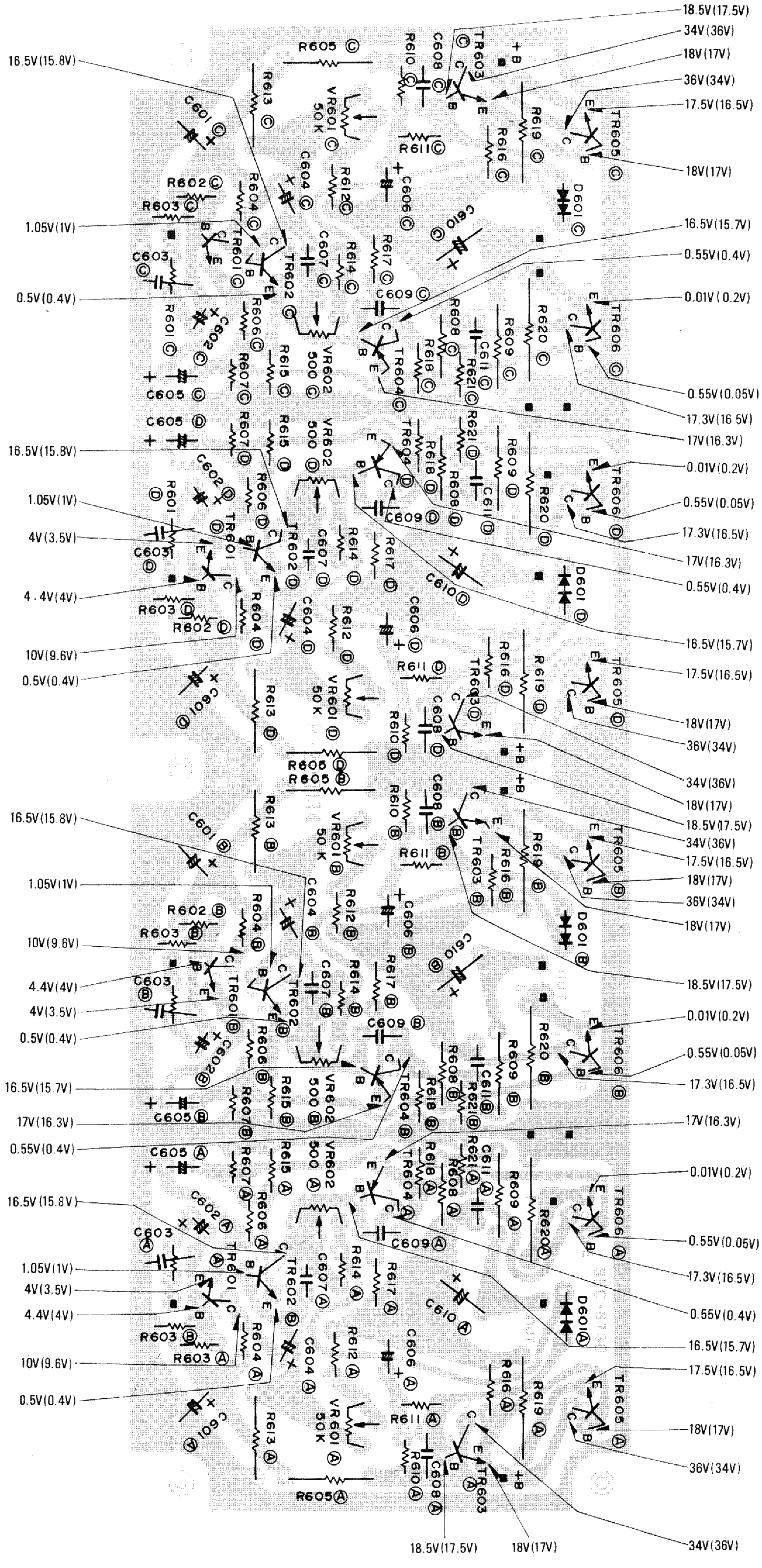


# MAIN AMPLIFIER MOUNTED BOARD

## TOP VIEW




## BOTTOM VIEW



# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| **INTEGRATED CIRCUITS** | | | |
| BC-15404 | IC-201 | IC μPC-27C | 1 |
| BC-15405 | IC-202 | IC LA-3301 | 1 |
| BC-15406 | SQ-1 | IC SC9449P (SQ) | 1 |
| **TRANSISTORS** | | | |
| BC-15391 | TR-2,3 | Transistor NJ-202B | 2 |
| BC-15392 | TR-201,202,203,204,205,206, 207 | Transistor NJ-100B or NJ-100A | 7 |
| BC-15393 | TR-209 | Transistor 2SC945 (P,Q) 2SC828 (R,S,T.) or LS4968M | 1 |
| BC-15394 | TR-208 | Transistor 2SC828R (S) 2SC923P (Q) or LS4968M | 1 |
| BC-15395 | TR-301A,B,501A,B,C,D, 503A,B,C,D | Transistor 2SC900 (E,U) SE4010 CS704 or 2SC644 (R,S,T) | 10 |
| BC-15396 | TR-302A,B,502A,B,C,D, 601A,B,C,D | Transistor 2SC923 (E,U) 2SC828 (R,S,T) or LS4968M | 10 |
| BC-15397 | TR-605A,B,C,D,606A,B,C,D | Transistor 2SD313 (D,E) or 2SD330 | 8 |
| BC-15398 | TR-602A,B,C,D,603A,B,C,D,701 | Transistor CS1676 (LB,LC) | 9 |
| BC-15399 | TR-604A,B,C,D | Transistor CS1677 (LB,LC) | 4 |
| BC-15400 | TR-702,703,704,705 | Transistor 2SC945 (P,Q) 2SC828 (R,S,T) or LS4968M | 4 |
| BC-15403 | TR-1 | Transistor FET SE8193-1 or TE500-2 | 1 |
| **DIODES** | | | |
| BC-15408 | D-201,202,203,204,205,206, 207 | Diode (Ge) 1N60 or 1S-188FM | 7 |
| BC-15409 | D-705,706,707,708,709,714 | Diode (Si) SR-1K-2 | 6 |
| BC-15410 | D-701,702,703,704 | Diode (Si) P-300B | 4 |
| BC-15411 | D-710,711,712,713 | Diode (Si) KB-162C5 | 4 |
| BC-15412 | ZD-701 | Zener Diode ZPD-13 or WZ-130 | 1 |
| BC-15414 | D-1 | Vari-Cap. Diode ITT210 or 410 | 1 |
| BC-15415 | D-601A,B,C,D | Varistor MV-13 | 4 |
| **SILICON CONTROLLED RECTIFIERS** | | | |
| BC-15416 | SCR-701 | S.C.R. 2SF657 or 02AM-1 | 1 |
| **THERMISTOR** | | | |
| BC-15417 | TH-201 | Thermistor D-12S or 5D-100 | 1 |
| **RESISTORS** | | | |
| BC-15201 | R-617A,B,C,D | Carbon Resistor RD¼ UZ 22 ohm J | 4 |
| BC-15202 | R-116,255 | Carbon Resistor RD¼ UZ 22 ohm K | 2 |
| BC-15203 | R-272 | Carbon Resistor RD¼ UZ 33 ohm K | 1 |
| BC-15204 | R-507,607A,B,C,D | Carbon Resistor RD¼ UZ 100 ohm J | 5 |

# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| BC15205 | R-102,114,239 | Carbon Resistor RD¼ UZ 100 ohm K | 3 |
| BC15512 | R-206 | Carbon Resistor RD¼ UZ 68 ohm K | 1 |
| BC15207 | R-615A,B,C,D | Carbon Resistor RD¼ UZ 150 ohm J | 4 |
| BC15208 | R-403,512,520,616A,B,C,D, 618A,B,C,D | Carbon Resistor RD¼ UZ 220 ohm J | 11 |
| BC15209 | R-107 | Carbon Resistor RD¼ UZ 270 ohm K | 1 |
| BC15210 | R-614A,B,C,D | Carbon Resistor RD¼ UZ 330 ohm J | 4 |
| BC15211 | R-103,210,235,245,257,259 | Carbon Resistor RD¼ UZ 330 ohm K | 6 |
| BC15212 | R-306A,B | Carbon Resistor RD¼ UZ 390 ohm J | 2 |
| BC15213 | R-311A,B | Carbon Resistor RD¼ UZ 470 ohm J | 2 |
| BC15214 | R-216,241 | Carbon Resistor RD¼ UZ 470 ohm K | 2 |
| BC15215 | R-312A,B | Carbon Resistor RD¼ UZ 560 ohm J | 2 |
| BC15216 | R-2,3,4,5 | Carbon Resistor RD¼ UZ 680 ohm J | 4 |
| BC15513 | R-256 | Carbon Resistor RD¼ UZ 820 ohm K | 1 |
| BC15217 | R-511A,B,C,D,519A,B,C,D, 601A,B,C,D | Carbon Resistor RD¼ UZ 1K ohm J | 12 |
| BC15218 | R-205,231,244,246,247,263, 264 | Carbon Resistor RD¼ UZ 1K ohm K | 7 |
| BC15219 | R-315 | Carbon Resistor RD¼ UZ 1.5K ohm J | 1 |
| BC15220 | R-106,240 | Carbon Resistor RD¼ UZ 1.5K ohm K | 2 |
| BC15221 | R-209,213 | Carbon Resistor RD¼ UZ 1.8K ohm K | 2 |
| BC15222 | R-303A,B,502A,B,C,D, 505A,B,C,D,515A,B,C,D, 606A,B,C,D,610A,B,C,D | Carbon Resistor RD¼ UZ 2.2K ohm J | 22 |
| BC15224 | R-204,214,219,222,226 | Carbon Resistor RD¼ UZ 2.2K ohm K | 5 |
| BC15225 | R-232 | Carbon Resistor RD¼ UZ 2.7K ohm K | 1 |
| BC15226 | R-503A,B,C,D,611A,B,C,D | Carbon Resistor RD¼ UZ 3.3K ohm J | 8 |
| BC15227 | R-208,230,261,262,265,266, 267,268 | Carbon Resistor RD¼ UZ 3.3K ohm K | 8 |
| BC15228 | R-405,408,416,417 | Carbon Resistor RD¼ UZ 3.6K ohm J | 4 |
| BC15230 | R-404,409,415,419 | Carbon Resistor RD¼ UZ 4.3K ohm J | 4 |
| BC15231 | R-301A,B,613A,B,C,D | Carbon Resistor RD¼ UZ 4.7K ohm J | 6 |
| BC15232 | R-242,260 | Carbon Resistor RD¼ UZ 4.7K ohm K | 2 |
| BC15234 | R-604A,B,C,D,517A,B,C,D | Carbon Resistor RD¼ UZ 5.6K ohm J | 8 |
| BC15235 | R-220 | Carbon Resistor RD¼ UZ 5.6K ohm K | 1 |
| BC15236 | R-510A,B,C,D,521A,B,C,D | Carbon Resistor RD¼ UZ 6.8K ohm J | 8 |
| BC15237 | R-104,108,258,221 | Carbon Resistor RD¼ UZ 6.8K ohm K | 4 |
| BC15238 | R-412 | Carbon Resistor RD¼ UZ 7.5K ohm J | 1 |
| BC15240 | R-310A,B,307A,B | Carbon Resistor RD¼ UZ 8.2K ohm J | 4 |
| BC15241 | R-109 | Carbon Resistor RD¼ UZ 8.2K ohm K | 1 |
| BC15242 | R-313A,B,401,402,506A,B,C,D, 605A,B,C,D | Carbon Resistor RD¼ UZ 10K ohm J | 12 |
| BC15243 | R-110,201,202,212,225,229, 237,238,248,249,251,254, 269 | Carbon Resistor RD¼ UZ 10K ohm K | 13 |
| BC15244 | R-516A,B,C,D,608A,B,C,D, 609A,B,C,D | Carbon Resistor RD¼ UZ 12K ohm J | 12 |
| BC15246 | R-1 | Carbon Resistor RD¼ UZ 15K ohm J | 1 |
| BC15247 | R-217,252 | Carbon Resistor RD¼ UZ 15K ohm K | 2 |
| BC15248 | R-513A,B,C,D,304A,B, 314A,B | Carbon Resistor RD¼ UZ 22K ohm J | 8 |
| BC15249 | R-514A,B,C,D | Carbon Resistor RD¼ UZ 27K ohm J | 4 |

# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| BC-15250 | R-207,211,236 | Carbon Resistor RD¼ UZ 27K ohm K | 3 |
| BC-15252 | R-105,215 | Carbon Resistor RD¼ UZ 33K ohm K | 2 |
| BC-15253 | R-218 | Carbon Resistor RD¼ UZ 39K ohm K | 1 |
| BC-15254 | R-411,603A,B,C,D,612A,B,C,D | Carbon Resistor RD¼ UZ 47K ohm J | 9 |
| BC-15257 | R-112 | Carbon Resistor RD¼ UZ 82K ohm K | 1 |
| BC-15514 | R-309A,B | Carbon Resistor RD¼ UZ 330K ohm J | 2 |
| BC-15258 | R-302A,B,305A,B,308A,B, 509A,B,C,D | Carbon Resistor RD¼ UZ 100K ohm J | 10 |
| BC-15259 | R-101,113,228 | Carbon Resistor RD¼ UZ 100K ohm K | 3 |
| BC-15260 | R-602A,B,C,D | Carbon Resistor RD¼ UZ 150K ohm J | 4 |
| BC-15261 | R-223,253 | Carbon Resistor RD¼ UZ 150K ohm K | 2 |
| BC-15262 | R-406,407,411,413,414,418, 501A,B,C,D,522A,B,C,D, 622A,B,C,D | Carbon Resistor RD¼ UZ 220K ohm J | 18 |
| BC-15263 | R-224 | Carbon Resistor RD¼ UZ 220K ohm K | 1 |
| BC-15264 | R-508A,B,C,D | Carbon Resistor RD¼ UZ 680K ohm J | 4 |
| BC-15265 | R-518A,B,C,D | Carbon Resistor RD¼ UZ 1.2M ohm J | 4 |
| BC-15515 | R-504A,B,C,D | Carbon Resistor RD¼ UZ 2.2M ohm J | 4 |
| BC-15267 | R-233 | Carbon Resistor RD¼ PZ 22 ohm K | 1 |
| BC-15268 | R-250 | Carbon Resistor RD¼ PZ 47 ohm K | 1 |
| BC-15269 | R-115 | Carbon Resistor RD¼ PZ 330 ohm K | 1 |
| BC-15270 | R-227,234 | Carbon Resistor RD¼ PZ 470 ohm K | 2 |
| BC-15271 | R-203 | Carbon Resistor RD¼ PZ 2.2K ohm K | 1 |
| BC-15272 | R-243 | Carbon Resistor RD¼ PZ 10K ohm K | 1 |
| BC-15274 | R-709 | Carbon Resistor RD½ UZ 6.8 ohm J | 1 |
| BC-15275 | R-621A,B,C,D | Carbon Resistor RD½ UZ 10 ohm J | 4 |
| BC-15276 | R-710 | Carbon Resistor RD½ UZ 18 ohm J | 1 |
| BC-15277 | R-708 | Carbon Resistor RD½ UZ 22 ohm J | 1 |
| BC-15278 | R-701 | Carbon Resistor RD½ UZ 27 ohm J | 1 |
| BC-15280 | R-702 | Carbon Resistor RD½ UZ 47 ohm J | 1 |
| BC-15281 | R-706,711,712,713,714,715, 716 | Carbon Resistor RD½ UZ 470 ohm J 560 | 7 |
| BC-15282 | R-717 | Carbon Resistor RD½ UZ 1.5K ohm J | 1 |
| BC-15283 | R-707 | Carbon Resistor RD½ UZ 1.5K ohm J | 1 |
| BC-15284 | R-6 | Carbon Resistor RD½ UZ 2.2M ohm K | 1 |
| BC-15286 | R-619A,B,C,D,620A,B,C,D | Metalized Film Resistor RN1-1 0.5 ohm KW | 8 |
| BC-15287 | R-704 | Metalized Film Resistor RS2B 330 ohm K | 1 |
| BC-15288 | R-705 | Metalized Film Resistor RS3B 390 ohm K | 1 |
| BC-15289 | R-703 | Metalized Film Resistor RS2B 1.8K ohm K | 1 |

## VARIABLE RESISTORS

| PART NO. | REF. NO. | | DESCRIPTION | Q'ty |
|---|---|---|---|---|
| BC-15291 | VR-602A,B,C,D | P-170034 | Semi-Fixed Resistor 500 ohm (H) | 4 |
| BC-15292 | VR-201 | P-170036 | Semi-Fixed Resistor 1K ohm B (H) | 1 |
| BC-15293 | VR-202 | P-170060 | Semi-Fixed Resistor 20K ohm B (H) | 1 |
| BC-15294 | VR-203,601A,B,C,D | P-170037 | Semi-Fixed Resistor 50K ohm B (H) | 5 |
| BC-15295 | VR-701 | P-170003 | Semi-Fixed Resistor 1K ohm B (V) | 1 |
| BC-15297 | 48 | P-170101 | Variable Resistor 50KB × 4 CT | 1 |
| BC-15298 | 47 | P-170102 | Variable Resistor 100KA × 4 CT | 2 |
| BC-15299 | | P-170103 | Variable Resistor (slide) 100KW × 2 CT CC | 1 |
| BC-15300 | | P-170104 | Variable Resistor (slide) 100KW CT CC | 2 |
| BC-15301 | 33 | P-170056 | Variable Resistor 100KA (Fine Tuning) | 1 |

# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| **CAPACITORS** | | | |
| BC-15311 | C-510A,B,C,D | Mylar Capacitor CQ92MIH102M | 4 |
| BC-15312 | C-501A,B,C,D | Mylar Capacitor CQ92MIH122M | 4 |
| BC-15313 | C-511A,B,C,D | Mylar Capacitor CQ92MIH123M | 4 |
| BC-15314 | C-512A,B,C,D,309A,B | Mylar Capacitor CQ92MIH153M | 6 |
| BC-15315 | C-502A,B,C,D,513A,B,C,D | Mylar Capacitor CQ92MIH154M | 8 |
| BC-15317 | C-304A,B | Mylar Capacitor CQ92MIH332K | 2 |
| BC-15318 | C-208,211 | Mylar Capacitor CQ92MIH472M | 2 |
| BC-15319 | C-405,415 | Mylar Capacitor CQ92MIH682K | 2 |
| BC-15320 | C-261,262 | Mylar Capacitor CQ92MIH682M | 2 |
| BC-15321 | C-223,224 | Mylar Capacitor CQ92MIH103M | 2 |
| BC-15324 | C-204,226,611A,B,C,D | Mylar Capacitor CQ92MIH223M | 6 |
| BC-15325 | C-402,406,410,412 | Mylar Capacitor CQ92MIH393K | 4 |
| BC-15326 | C-404,409 | Mylar Capacitor CQ92MIH503K | 2 |
| BC-15327 | C-403,411 | Mylar Capacitor CQ92MIH224K | 2 |
| BC-15330 | C-254 | Polystyren Capacitor CQSIH 152J | 1 |
| BC-15331 | C-256 | Polystyren Capacitor CQSIH 252J | 1 |
| BC-15332 | C-258 | Polystyren Capacitor CQSIH 103J | 1 |
| BC-15334 | C-301A,B | Tantalum Capacitor CS15E1C2R2M 2.2/16 | 2 |
| BC-15335 | C-308A,B | Tantalum Capacitor CS15E1E010M 1/25 | 2 |
| BC-15336 | C-103 | Ceramic Capacitor CC4525VF 010 D | 1 |
| BC-15337 | C-111 | Ceramic Capacitor CC4525VF 020 D | 1 |
| BC-15338 | C-233 | Ceramic Capacitor CC4525VF 050 J | 1 |
| BC-15339 | C-108,219,229 | Ceramic Capacitor CC4525VF 100 J | 3 |
| BC-15340 | C-101,107,114,234 | Ceramic Capacitor CC4525VF 300 J | 4 |
| BC-15341 | C-246,247 | Ceramic Capacitor CC4525VF 101 J | 2 |
| BC-15342 | C-110,248 | Ceramic Capacitor CC4525VF 151 J | 2 |
| BC-15343 | C-120 | Ceramic Capacitor CH4525V 050 D NPO | 1 |
| BC-15344 | C-115,116 | Ceramic Capacitor CH4525V 100 J NPO | 2 |
| BC-15345 | C-102,109 | Ceramic Capacitor CH4525V 140 J NPO | 2 |
| BC-15346 | C-119 | Ceramic Capacitor CH4525V 150 J NPO | 1 |
| BC-15347 | C-117,118 | Ceramic Capacitor CK4525V 472 Z YP | 2 |
| BC-15348 | C-104,105,106,113,121,123, 124,218,221,222,231,232, 235 | Ceramic Capacitor CK4525V 103 Z | 13 |
| BC-15349 | C-112,209,212,215,220,230, 237,242,243,244,251,259, 260 | Ceramic Capacitor CK4525V 203 Z | 13 |
| BC-15350 | C-201,203,205,206,207,210, 213,217,240,241,252, 504A,B,C,D | Ceramic Capacitor CK4525V 403 Z | 15 |
| BC-15352 | C-1,5,704,709,711 | Ceramic Capacitor CK451H 103 Z | 5 |
| BC-15353 | C-3,4,6 | Ceramic Capacitor CK451H 203 Z | 3 |
| BC-15516 | C-517A,B,C,D | Ceramic Capacitor CC451H 821 K | 4 |
| BC-15355 | C-303A,B,309A,B,507A,B,C,D, 305A,B | Ceramic Capacitor CC451H 101 K | 10<br>4 |
| BC-15517 | C-518A,B,C,D | Ceramic Capacitor CC451H 151 K | 4 |
| BC-15356 | C-607A,B,C,D | Ceramic Capacitor CH451H 101 K | 4 |
| BC-15357 | C-603A,B,C,D | Ceramic Capacitor CH451H 201 K | 4 |
| BC-15358 | C-608A,B,C,D,609A,B,C,D | Ceramic Capacitor CH451H 301 K | 8 |
| BC-15361 | C-263,264 | Electrolytic Capacitor CE04W .47/10V | 2 |
| BC-15362 | C-245,249,250 | Electrolytic Capacitor CE04W 10/10V | 3 |

# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | | | |
|---|---|---|---|---|---|
| BC-15363 | C-306A,B | Electrolytic Capacitor | CE04W | 100/10V | 2 |
| BC-15364 | C-605A,B,C,D,712 | Electrolytic Capacitor | CE04W | 220/10V | 5 |
| BC-15365 | C-255 | Electrolytic Capacitor | CE04W | 470/10V | 1 |
| BC-15367 | C-236,C-2 | Electrolytic Capacitor | CE04W | 1/16V | 2 |
| BC-15368 | C-214,216,238 | Electrolytic Capacitor | CE04W | 3.3/16V | 3 |
| BC-15369 | C-253,257 | Electrolytic Capacitor | CE04W | 4.7/16V | 2 |
| BC-15370 | C-227 | Electrolytic Capacitor | CE04W | 10/16V | 1 |
| BC-15371 | C-707,710 | Electrolytic Capacitor | CE04W | 47/16V | 2 |
| BC-15373 | C-239 | Electrolytic Capacitor | CE04W | 220/16V | 1 |
| BC-15374 | C-701,702 | Electrolytic Capacitor | CE04W | 470/16V | 2 |
| BC-15375 | C-602A,B,C,D | Electrolytic Capacitor | CE04W | 1/25V | 4 |
| BC-15376 | C-505A,B,C,D,506A,B,C,D,<br>508A,B,C,D,516A,B,C,D,<br>407,408,413,414 | Electrolytic Capacitor | CE04W | 3.3/25V | 20 |
| BC-15377 | C-307A,B | Electrolytic Capacitor | CE04W | 4.7/25V | 2 |
| BC-15379 | C-604A,B,C,D,706 | Electrolytic Capacitor | CE04W | 100/25V | 5 |
| BC-15380 | C-302,401,503,509,514,<br>601A,B,C,D | Electrolytic Capacitor | CE04W | 220/25V | 9<br>4 |
| BC-15381 | C-606A,B,C,D | Electrolytic Capacitor | CE04W | 47/35V | 6 |
| BC-15382 | C-703,705,610A,B,C,D | Electrolytic Capacitor | CE04W | 1000/35V | 4 |
| BC-15383 | C-515A,B,C,D | Electrolytic Capacitor | CE02W | 3.3/25V | 4 |
| BC-15384 | C-708 | Electrolytic Capacitor | | 3300/50V | 1 |
| BC-15386 | C-225,228 | Solid Aluminum Capacitor | | .22/15V | 22 |
| | | **VARIABLE CAPACITORS** | | | |
| BC-15387 | | Variable Capacitor | | C751J116 | 1 |
| BC-15388 | | Trimmer Capacitor | | 1T-B | 1 |
| | | **TRANSFORMERS AND COILS** | | | |
| BC-15421 | | FM Antenna Coil | | | 1 |
| BC-15422 | | FM RF Coil | | | 1 |
| BC-15423 | | FM OSC Coil | | | 1 |
| BC-15424 | | FM Choke Coil | | | 2 |
| BC-15425 | T-101,206 | FM IFT | 7F-007 | | 2 |
| BC-15426 | T-102,207,208 | FM IFT | 7F-008 | | 3 |
| BC-15427 | T-204 | FM IFT | 7F-020 | | 1 |
| BC-15428 | T-209 | FM IFT | 10F-014 | | 1 |
| BC-15429 | T-211 | MPX Coil | OM-008 | 19kHz | 1 |
| BC-15430 | T-210 | MPX Coil | OM-009 | 38kHz | 1 |
| BC-15431 | T-201 | AM OSC Coil | CC-012 | | 1 |
| BC-15432 | T-203 | AM IFT | OA-010 | | 1 |
| BC-15433 | T-202 | AM IFT | OA-011 | | 1 |
| BC-15434 | T-205 | AM IFT | 7A-014 | | 1 |
| BC-15079 | 2 | Power Supply Transformer | | | 1 |
| | | **SWITCHES** | | | |
| BC-15058 | 46 | Rotary Switch for Speaker and Power | | | 1 |

# CR-400
# ELECTRICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| BC-15059 | 41 | Rotary Switch for Selector | 1 |
| BC-15060 | 13 | Slide Switch for Dual Power | 1 |
| BC-15061 | 58 | Push Switch 5FS-14U-544-1 | 1 |
| | | **PILOT LAMPS** | |
| BC-15026 | 30 | Lamp (Fuse type) 8V 300 mA | 4 |
| BC-15027 | | Lamp for Reset 6V 30 mA with Leadwire | 1 |
| BC-15028 | 25 | Lamp for Display 4CH 6V 30 mA | 4 |
| | | **METERS** | |
| BC-15029 | 32 | Tuning Meter | 1 |
| BC-15030 | | Seat for Tuning Meter | 1 |
| | | **MOUNTED CIRCUIT BOARDS** | |
| BC-15063 | 22 | FM Tuner Mounted Board | 1 |
| BC-15064 | 18 | IF and MPX Mounted Board | 1 |
| BC-15065 | 21 | Pre-Amp. Mounted Board | 1 |
| BC-15066 | 40 | Mode Selector Mounted Board | 1 |
| BC-15067 | 37 | Tone Control Mounted Board | 1 |
| BC-15068 | 6 | Main Amp. Mounted Board | 1 |
| BC-15069 | 16 | Power Supply Mounted Board | 1 |
| | | **PRINTED CIRCUIT BOARDS** | |
| BC-15070 | | FM Tuner P.C.B. | 1 |
| BC-15071 | | IF MPX P.C.B. | 1 |
| BC-15072 | | Pre-Amp. P.C.B. | 1 |
| BC-15073 | | Headphone Jack P.C.B. | 1 |
| BC-15074 | | Balance Control P.C.B. | 1 |
| BC-15075 | | Tone Control P.C.B. | 1 |
| BC-15076 | | Mode Selector P.C.B. | 1 |
| BC-15077 | | Main Amp. P.C.B. | 1 |
| BC-15078 | | Power Supply P.C.B. | 1 |
| | | **COMBINATION COMPONENTS** | |
| BC-15435 | CF-201 | Ceramic Filter SFE-10.7MA | 2 |
| BC-15436 | LPF-201 | L.C Filter | 2 |

# CR-400
# MECHANICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | | | | Q'ty |
|---|---|---|---|---|---|---|
| BC-15001 | 1 | Cabinet Ass'y | | | | 1 |
| BC-15002 | 1 | Ventilation Board | | | | 1 |
| BC-15003 | 61 | Bottom Plate | | | | 1 |
| BC-15004 | 24 | Foot | | | | 4 |
| BC-15005 | 45 | Front Panel Ass'y | | | | 1 |
| BC-15006 | 45 | Front Panel | | | | 1 |
| BC-15007 | | Dial Window Panel | | | | 1 |
| BC-15008 | | Push Button Guide | | | | 1 |
| BC-15009 | 49 | Tuning Knob | | | | 1 |
| BC-15010 | 50 | Fine Tuning Knob | | | | 1 |
| BC-15011 | 51 | Control Knob | | | | 3 |
| BC-15012 | 54 | Slide Control Knob | | | | 3 |
| BC-15013 | 53 | Push Switch Knob | | | | 5 |
| BC-15014 | 52 | Dual Concentric Knob — A | | | | 2 |
| BC-15015 | 52 | Dual Concentric Knob — B | | | | 2 |
| BC-15016 | 38 | Front Chassis Ass'y | | | | 1 |
| BC-15017 | 62 | Bracket for Roller A | | | | 1 |
| BC-15018 | 62 | Bracket for Roller B | | | | 1 |
| BC-15019 | 59 | Sub-pulley A | | | | 2 |
| BC-15500 | 60 | Sub-pulley B | | | | 3 |
| BC-15020 | 31 | Lamp Cover A | | | | 1 |
| BC-15021 | 28 | Lamp Holder | | | | 4 |
| BC-15022 | 35 | Dial Lamp Cover | | | | 1 |
| BC-15023 | (36) | Lamp Cover B | | | | 1 |
| BC-15024 | 43 | Dial Scale Plate | | | | 1 |
| BC-15025 | 55 | Dial Strings | | | | 1 |
| BC-15032 | 26 | Display 4CH Lens | | | | 1 |
| BC-15033 | 26 | Display 4CH Lamp Cover | | | | 1 |
| BC-15034 | 26 | Display 4CH Lens Holder | | | | 1 |
| BC-15035 | 26 | Display 4CH Lamp Holder | | | | 1 |
| BC-15036 | 29 | Dial Pointer Ass'y | | | | 1 |
| BC-15039 | 19 | Main Chassis | | | | 1 |
| BC-15040 | 56 | Dial Pulley | | | | 1 |
| BC-15041 | (55) | Dial Spring | | | | 1 |
| BC-15042 | 3 | Radiator A2S5 | | | | 1 |
| BC-15043 | 10 | Back Panel | | | | 1 |
| BC-15044 | 42 | AC Cord | SPT-1 | | | 1 |
| BC-15045 | 57 | Cord Stopper | HEYCO | 3P-4 | | 1 |
| BC-15046 | 11 | AC Outlet | S2-707B-00 | | | 1 |
| BC-15047 | 7 | Fuse Holder | FH002 | 250V | 10A | 1 |
| BC-15048 | | Fuse | 2.5A | 250V | UL | 1 |
| BC-15049 | 8 | Speaker Terminal | 8P | | | 1 |
| BC-15501 | 12 | AC Outlet Holder | | | | 1 |

# CR-400
# MECHANICAL PARTS LIST

| PART NO. | REF. NO. | DESCRIPTION | | Q'ty |
|---|---|---|---|---|
| BC-15502 | 44 | Soft Tape | | 1 |
| BC-15051 | 14 | RCA Pin-Jack Board | 15P | 1 |
| BC-15052 | 9 | Antenna Terminal Board | | 1 |
| BC-15053 | 20 | AM Antenna | | 1 |
| BC-15054 | 20 | AM Antenna Holder | | 1 |
| BC-15055 | | FM Dipole Antenna | | 1 |
| BC-15056 | | Headphone Jack A | | 1 |
| BC-15057 | | Headphone Jack B | | 1 |
| BC-15062 | 34 | Tuning Shaft Ass'y | | 1 |
| BC-15081 | | Shield Plate | | 1 |
| BC-15083 | | Ground Plate | | 1 |
| BC-15084 | 4 | Radiator Holder | | 1 |
| BC-15518 | 15 | Balun Coil Ass'y | | 1 |
| BC-15086 | 23 | Lug Terminal 1L1P | | 1 |
| BC-15087 | | Lug Terminal 1L2P | | 1 |
| BC-15101 | F15 | Ground Terminal (Screw) | | 1 |

# CR-400
# MECHANICAL HARDWARE

| PART NO. | REF. NO. | DESCRIPTION | | Q'ty |
|---|---|---|---|---|
| BC-15503 | F5 | Pan Screw | 2.6 × 4P | 2 |
| BC-15102 | F4 | Pan Screw | 2.6 × 3P | 2 |
| BC-15103 | F6 | Pan Screw | 3 × 4P | 6 |
| BC-15104 | F7 | Pan Screw | 3 × 6P | 11 |
| BC-15106 | F8 | Pan Screw | 3 × 8P | 13 |
| BC-15504 | F20 | Washer | 9m/m | 1 |
| BC-15108 | F9 | Washer | 4 × 8P | 6 |
| BC-15109 | F1 | Tapping Screw | 3 × 6PTII | 35 |
| BC-15110 | F2 | Tapping Screw | 3 × 8PTII | 12 |
| BC-15111 | F3 | Tapping Screw | 3 × 10PTII | 4 |
| BC-15505 | F19 | Nut | 9m/m | 1 |
| BC-15114 | F16 | Nut | 4N | 4 |
| BC-15116 | F17 | Spring Washer | 4SW | 4 |
| BC-15506 | F18 | E-ring | | 2 |
| BC-15507 | F10 | Trass Self Tap Screw | 3 × 8 | 4 |
| BC-15508 | F11 | Rivet | YB429 | 15 |
| BC-15509 | F12 | Rivet | YB329 | 2 |
| BC-15510 | F13 | Nylon Rivet | 3 × 6.5 | 10 |
| BC-15511 | F14 | | × 9 × 3 | 5 |

# CR-400
# EXPLODED VIEW PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | |
|---|---|---|---|
| 1 | BC-15001 | Cabinet Ass'y | 1 |
| 2 | BC-15079 | Power Transformer | 1 |
| 3 | BC-15042 | Radiatior | 1 |
| 4 | BC-15084 | Radiator Holder (Heat Sink) | 1 |
| 5 | BC-15397 | Power Transistor | 8 |
| 6 | BC-15068 | Main Amp. Mounted Board | 1 |
| 7 | BC-15047 | Fuse Holder | 1 |
| 8 | BC-15049 | 8P Speaker Terminal | 1 |
| 9 | BC-15052 | 4P Antenna Terminal Board | 1 |
| 10 | BC-15043 | Back Panel | 1 |
| 11 | BC-15046 | AC Outlet | 1 |
| 12 | BC-15501 | AC Outlet Holder | 1 |
| 13 | BC-15060 | Slide Switch for Dual Power | 1 |
| 14 | BC-15051 | RCA 15P Pin Jack Board | 1 |
| 15 | BC-15518 | Balun Coil Ass'y | 1 |
| 16 | BC-15069 | Power Supply Mounted Board | 1 |
| 17 | BC-15384 | Lug Type Block Capacitor | 1 |
| 18 | BC-15064 | AM/FM IF & MPX Mounted Board | 1 |
| 19 | BC-15039 | Main Chassis | 1 |
| 20 | BC-15053 | AM. Bar Antenna Ass'y | 1 |
| 21 | BC-15065 | PRE-Amp. Mounted Board | 1 |
| 22 | BC-15063 | Tuner Mounted Board | 1 |
| 23 | BC-15086 | 1L1P Lug Terminal | 1 |
| 24 | BC-15004 | Foot | 4 |
| 25 | BC-15028 | Lamp for Display 4CH (6V 30mA) | 4 |
| 26 | BC-15032～5 | Display 4CH Holder Ass'y | 1 |
| 27 | BC-15073 | Head Phone Jack Mounted Board | 1 |
| 28 | BC-15021 | Lamp Holder | 4 |
| 29 | BC-15036 | Dial Pointer Ass'y | 1 |
| 30 | BC-15026 | Fuse Lamp 8V 300mA | 4 |
| 31 | BC-15020 | Lamp Cover A | 1 |
| 32 | BC-15029～30 | Tuning Meter Ass'y | 1 |
| 33 | BC-15301 | Fine Tuning Volume | 1 |
| 34 | BC-15062 | Tuning Shaft Ass'y | 1 |
| 35 | BC-15022 | Dial Lamp Cover | 1 |
| 36 | BC-15027 | Reset Lamp Ass'y | 1 |
| 37 | BC-15067 | Tone Control Mounted Board | 1 |
| 38 | BC-15016 | Front Chassis Ass'y | 1 |
| 39 | BC-15074 | Balance Control Mounted Board | 1 |
| 40 | BC-15066 | Mode Selector Mounted Board | 1 |
| 41 | BC-15059 | Rotary Switch for Selector | 1 |
| 42 | BC-15044 | AC Cord | 1 |
| 43 | BC-15024 | Dial Scale Plate | 1 |
| 44 | BC-15502 | Soft Tape | 1 |
| 45 | BC-15005 | Front Panel Ass'y | 1 |

# CR-400
# EXPLODED VIEW PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| 46 | BC-15058 | Rotary Switch for Speaker and Power | 1 |
| 47 | BC-15298 | Tone Control Volume | 2 |
| 48 | BC-15297 | Master Volume | 1 |
| 49 | BC-15009 | Tuning Knob | 1 |
| 50 | BC-15010 | Fine Tuning Knob | 1 |
| 51 | BC-15011 | Control Knob | 3 |
| 52 | BC-15014～5 | Dual Concentric Knob | 2 |
| 53 | BC-15013 | Push Switch Knob | 5 |
| 54 | BC-15012 | Slide Control Knob | 3 |
| 55 | BC-15041 | Dial Strings Ass'y | 1 |
| 56 | BC-15040 | Dial Pulley | 1 |
| 57 | BC-15045 | Cord Stopper | 1 |
| 58 | BC-15061 | Push Switch | 1 |
| 59 | BC-15019 | Sub Pulley A | 2 |
| 60 | BC-15500 | Sub Pulley B | 3 |
| 61 | BC-15003 | Bottom Plate | 1 |
| 62 | BC-15017～8 | Bracket for Roller | 2 |

# CR-400 EXPLODED VIEW MECHANICAL HARDWARE PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION | Q'ty |
|---|---|---|---|
| F1 | BC-15109 | Self Tap Pan Screw 3 × 6 | 35 |
| F2 | BC-15110 | Self Tap Pan Screw 3 × 8 | 12 |
| F3 | BC-15111 | Self Tap Pan Screw 3 × 10 | 4 |
| F4 | BC-15102 | Pan Screw 2.6 × 3 | 2 |
| F5 | BC-15503 | Pan Screw 2.6 × 4 | 2 |
| F6 | BC-15103 | Pan Screw 3 × 4 | 6 |
| F7 | BC-15104 | Pan Screw 3 × 6 | 11 |
| F8 | BC-15106 | Pan Screw 3 × 8 | 13 |
| F9 | BC-15108 | Pan Screw 4 × 8 | 6 |
| F10 | BC-15507 | Trass Self Tap Screw 3 × 8 | 4 |
| F11 | BC-15508 | Rivet YB429 | 15 |
| F12 | BC-15509 | Rivet YB329 | 2 |
| F13 | BC-15510 | Nylon Rivet 3 × 6.5 | 10 |
| F14 | BC-15511 | Screw with Spacer 3 × 9 × 3 | 5 |
| F15 | BC-15101 | GND Screw | 1 |
| F16 | BC-15114 | Nut 4m/m | 4 |
| F17 | BC-15116 | Spring Washer 4m/m | 4 |
| F18 | BC-15506 | E ring | 2 |
| F19 | BC-15505 | Nut 9m/m | 1 |
| F20 | BC-15504 | Washer 9m/m | 1 |

# EXPLODED VIEW

# SCHEMATIC DIAGRAM


NOTE:-

1) SELECTOR SWITCH: Ss1 ~ Ss12 (1. AM, 2. FM, 3. PHONO, 4. TAPE/FM/4CH., 5. AUX/DISC/4CH.)
2) LOUDNESS (SL1 ~ SL4) TAPE MONITOR. SQ. STEREO. MONO.
3) MODE SW.
4) SPEAKER SELECTOR SWITCH: SP1 ~ SP7 POWER SWITCH (1. POWER OFF, 2. SPEAKERS ON, 3. SYNTHETIC, 4. SPEAKERS OFF)
5) DUAL POWER SWITCH: SD1 ~ SD6
6) ALL RESISTANCE VALUES ARE INDICATED IN OHM ($K\Omega = 10^3 \Omega$)
7) ALL CAPACITANCE VALUES ARE INDICATED IN $\mu F$ ($P = 10^{-6} \mu F$)
8) F.L. (FRONT LEFT CH.) F.R. (FRONT RIGHT CH.) R.L. (REAR LEFT CH.) R.R. (REAR RIGHT CH.)
9) ALL VOLTAGE VALUES ARE INDICATED IN VOLT AT NO SIGNAL, AND VALUES IN THE BRACKET ARE AT 8 WATT (4 CH DRIVEN) OUTPUT, MEASURED WITH $10K\Omega/V$ METER.

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