

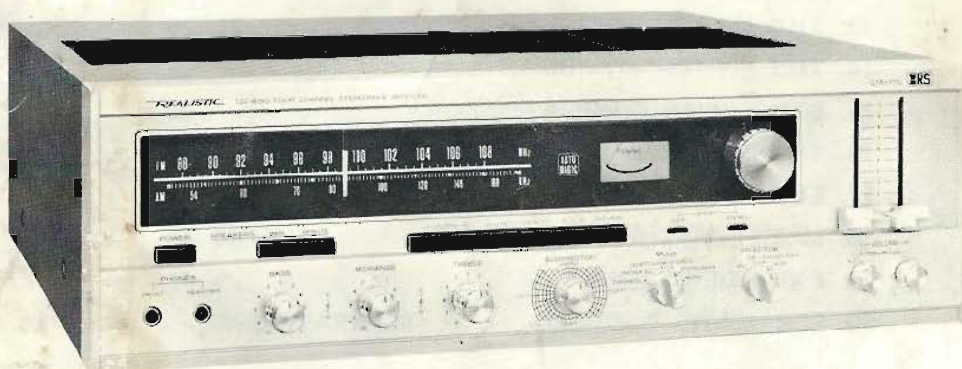
# *REALISTIC*<sup>®</sup> Service Manual

31-4016

QTA-770

CD-4-SQ FOUR CHANNEL STEREOMAX RECEIVER

Catalog Number : 31-4016



CUSTOM MANUFACTURED FOR RADIO SHACK  A TANDY CORPORATION COMPANY

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## SPECIFICATIONS

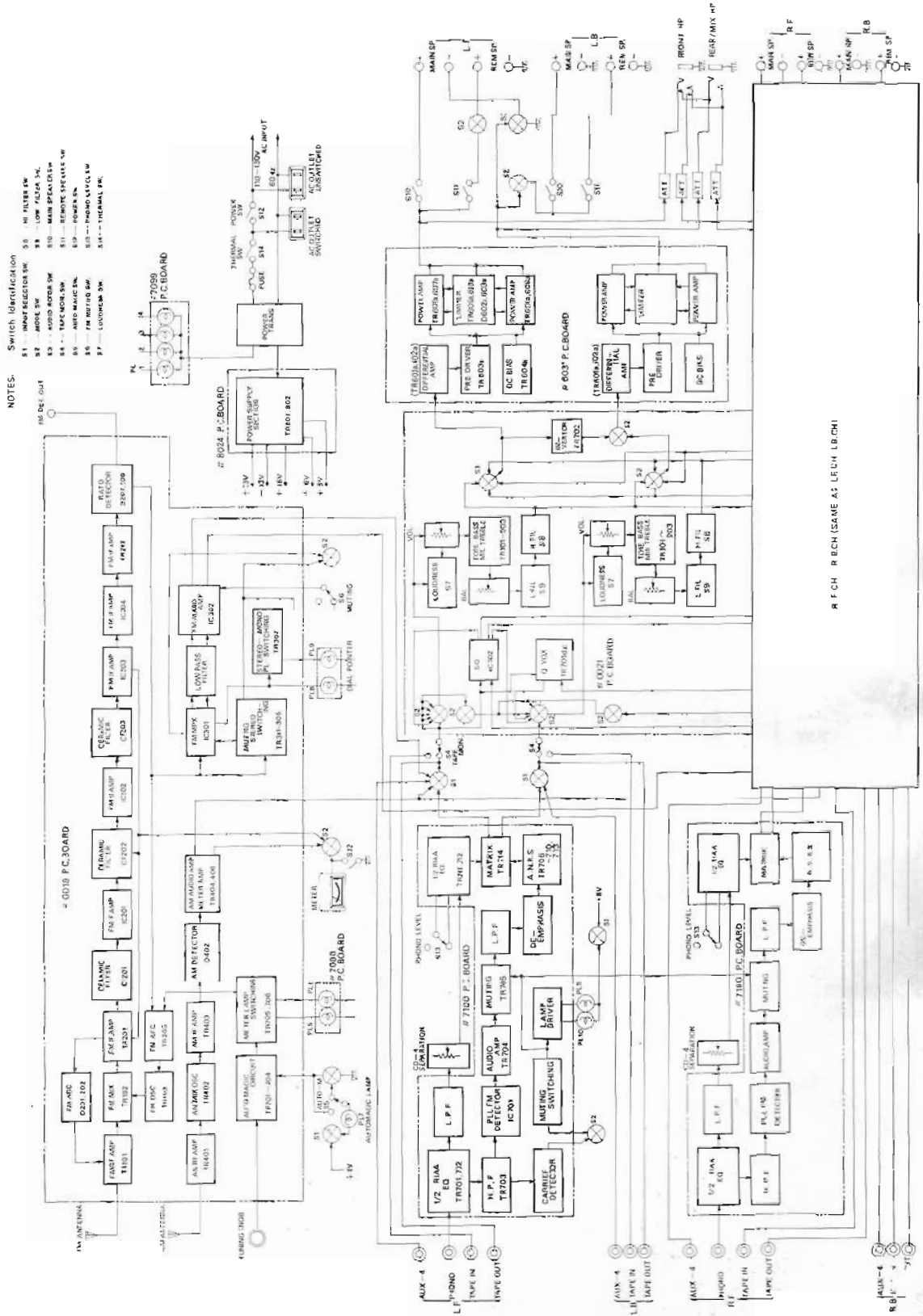
|                                                                                                          | NOMINAL     | LIMIT    | UNIT |
|----------------------------------------------------------------------------------------------------------|-------------|----------|------|
| <b>FM SECTION</b>                                                                                        |             |          |      |
| 1. TUNING RANGE<br>*European models must not be able to tune below 87.5 MHz                              | *87.5-108.5 | 88-108   | MHz  |
| 2. DIAL CALIBRATION ACCURACY<br>90 & 106 MHz                                                             |             | ±260     | kHz  |
| 98 MHz                                                                                                   |             | ±350     | kHz  |
| 3. USABLE SENSITIVITY (Noise & Distortion -30 dB)                                                        | 1.9         | 3.0      | μV   |
| 4. IMAGE REJECTION (at 106 MHz)                                                                          | 75          | 60       | dB   |
| 5. IF REJECTION (at 90 MHz)                                                                              | 100         | 80       | dB   |
| 6. LIMITER SENSITIVITY<br>(at -3 dB below maximum audio)                                                 | 1.5         | 2.0      | μV   |
| 7. THD at 98 MHz<br>1 mV at 400 Hz, 100% MOD                                                             | 0.5         | 1        | %    |
| 8. IF BANDWIDTH 6 dB down                                                                                |             | ±150     | kHz  |
| 9. SIGNAL-TO-NOISE RATIO<br>(100% MOD, 1 mV Input)                                                       | 65          | 60       | dB   |
| 10. CAPTURE RATIO (1 mV Input)                                                                           | 1.5         | 3.5      | dB   |
| 11. ALTERNATE CHANNEL SELECTIVITY<br>(100 μV Input)                                                      | 75          | 60       | dB   |
| 12. DE-EMPHASIS (at 50-10000 Hz)                                                                         | ±1.5        | ±2       | dB   |
| 13. DISCRIMINATOR BANDWIDTH<br>(Peak-to-Peak)                                                            | 400         | 300      | kHz  |
| 14. OUTPUT VOLTAGE Mono                                                                                  | 1.4         | 1.4±2 dB | V    |
| (400 Hz, 100% MOD) Stereo                                                                                | 1.3         | 1.3±2 dB | V    |
| 15. MUTING THRESHOLD                                                                                     | 5           | 3-16     | μV   |
| 16. OVERLOAD (THD at 98 MHz 100% MOD)<br>(100 mV Input)                                                  | 1           | 1.5      | %    |
| 17. SPURIOUS RESPONSE at 98 MHz<br>(Antenna Input 3 μV, ½IF, 103.35 MHz,<br>at 300 ohm ANTENNA TERMINAL) | 80          | 70       | dB   |
| 18. SIGNAL STRENGTH METER SENSITIVITY<br>SCALE 2 – SCALE 3                                               | 20          | 12-50    | μV   |
| 19. AFC HOLDING RANGE (With 1 mV Signal)                                                                 | ±1000       | ±800     | kHz  |
| <b>FM MPX SECTION</b>                                                                                    |             |          |      |
| 1. STEREO SEPARATION 100 Hz                                                                              | 30          | 22       | dB   |
| (L+R: 45%, L-R: 45% mod., 1 kHz                                                                          | 35          | 26       | dB   |
| 1 mV Input) 10 kHz                                                                                       | 20          | 15       | dB   |
| 2. THD at 98 MHz<br>(1 mV at 1 kHz 100% MOD)                                                             | 0.8         | 1.5      | %    |
| 3. AUTOMATIC STEREO THRESHOLD                                                                            | 10          | 3-16     | μV   |
| 4. RESIDUAL 19 kHz & 38 kHz<br>(at 98 MHz 1 mV Input)                                                    | 50          | 40       | dB   |
| 5. SUPPRESSION OF SCA INTERFERENCE<br>(at 98 MHz 1 mV Input)                                             |             | 40       | dB   |

|                                              |                | NOMINAL   | LIMIT     | UNIT      |
|----------------------------------------------|----------------|-----------|-----------|-----------|
| <b>AM SECTION</b>                            |                |           |           |           |
| 1. TUNING RANGE                              |                | 525-1650  | 535-1605  | kHz       |
| 2. DIAL CALIBRATION ACCURACY                 | 600 kHz        |           | ±15       | kHz       |
|                                              | 1000 kHz       |           | ±30       | kHz       |
|                                              | 1400 kHz       |           | ±40       | kHz       |
| 3. USABLE SENSITIVITY 400 Hz 30% MOD.        |                |           |           |           |
| (Noise & Distortion: -20 dB)                 | Radiated       | 250       | 500       | μV/in     |
|                                              | Direct         | 25        | 50        | μV        |
| 4. IMAGE REJECTION (at 1400 kHz)             |                | 65        | 50        | dB        |
| 5. IF REJECTION (at 600 kHz)                 |                | 60        | 50        | dB        |
| 6. AGC FIGURE OF MERIT FROM                  |                | 45        | 40        | dB        |
| 100 mV/m at 1000 kHz                         |                |           |           |           |
| 7. THD 400 Hz 30% MOD at 1000 kHz            |                | 1.5       | 2.5       | %         |
| (5 mV/m input)                               |                |           |           |           |
| 8. BANDWIDTH 6 dB DOWN                       |                |           | 4-8       | kHz       |
| (at 1000 kHz with antenna input of 5 mV/m)   |                |           |           |           |
| 9. OUTPUT VOLTAGE                            |                |           |           |           |
| (400 Hz 30% MOD 5 mV/m input)                |                | 300       | 200       | mV        |
| 10. AUDIO RESPONSE at 2 kHz                  |                |           |           |           |
| (at 1000 kHz)                                |                |           | -3        | dB        |
| 11. SELECTIVITY                              | 200 μV/m       | 25        | 20        | dB        |
| 12. AM Beat                                  | 5 mV/m         | 3         | 10        | %         |
| <b>AUDIO SECTION</b>                         |                |           |           |           |
| 1. RMS OUTPUT POWER (1% THD, 20 Hz - 20 kHz) |                |           |           |           |
| BTL (STEREO MAX)                             | 8 ohm          | 70        | 60        | W/Channel |
| 4 CHANNEL DRIVEN                             | 8 ohm          | 28        | 25        | W/Channel |
| "                                            | 4 ohm          | 30        | 26        | W/Channel |
| "                                            | 4 ohm 1 kHz    | 33        | 30        | W/Channel |
| 2. IM DISTORTION at 20 W                     | (70/7 kHz 4/1) | 0.3       | 1         | %         |
| 3. FREQUENCY RESPONSE                        |                |           |           |           |
| (AUX 1 W 8 ohm load)                         | +1.5 dB - 4 dB | 20-50,000 | 20-20,000 | Hz        |
| 4. INPUT SENSITIVITY (for 25 W)              |                |           |           |           |
| PHONO (MAG):                                 | LOW =          | 0.8       | 0.8±0.2   | mV        |
| (Max BALANCE)                                | HIGH =         | 1.6       | 1.6±0.3   | mV        |
| AUX:                                         |                | 230       | 230±30    | mV        |
| TAPE MONITOR:                                |                | 230       | 230±30    | mV        |
| 5. INPUT IMPEDANCE                           |                |           |           |           |
| PHONO (MAG):                                 |                | 100K      |           | ohms      |
| AUX:                                         |                | 70K       |           | ohms      |
| TAPE MONITOR:                                |                | 70K       |           | ohms      |
| 6. PHONO INPUT EQUALIZATION 30 - 15,000 Hz   |                |           | RIAA ±2   | dB        |
| 7. PHONO AMP OVER LOAD CAPABILITY            |                |           |           |           |
| (at 1% THD)                                  |                | 15 mV     | 12 mV     | mV        |
| (PHONO level at LOW and max BALANCE)         |                |           |           |           |
| 8. TONE CONTROL                              |                |           |           |           |
| BASS                                         | 100 Hz         | ±8        | ±8±2      | dB        |
| TREBLE                                       | 10 kHz         | ±10       | ±10±2     | dB        |
| MIDRANGE                                     | 1.5 kHz        | ±6        | ±6±2      | dB        |
| 9. HIGH FILTER                               | 10 kHz         | -6        | -6±2      | dB        |
| 10. LOW FILTER                               | 70 Hz          | 12        | 12±2      | dB        |



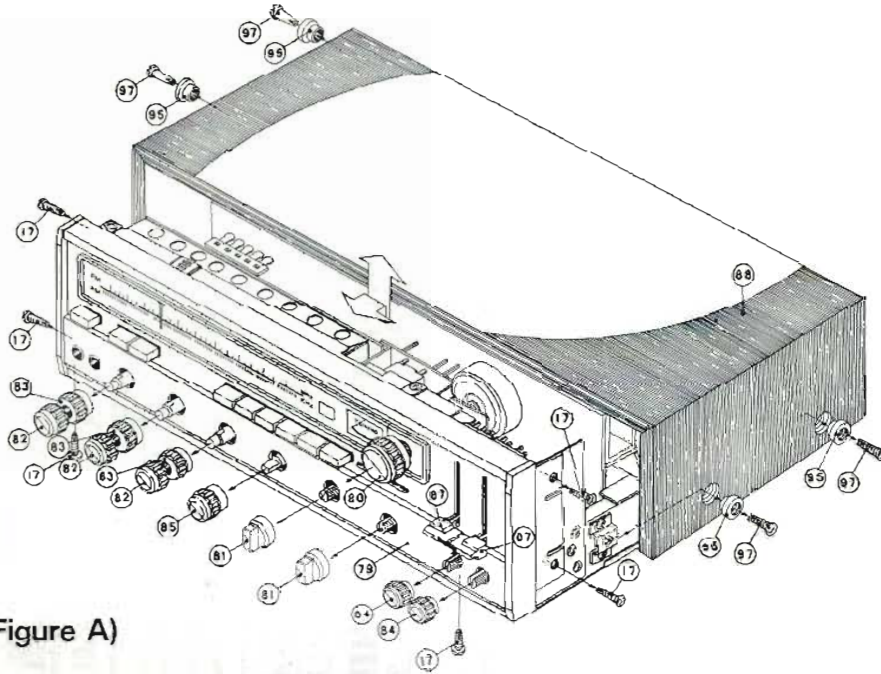
|                                      | NOMINAL | LIMIT   | UNIT |
|--------------------------------------|---------|---------|------|
| 11. LOUDNESS COMPENSATION (~30 dB)   |         |         |      |
| 50 Hz                                | 12      | 12 ±2   | dB   |
| 100 Hz                               | 9       | 9 ± 2   | dB   |
| 10 kHz                               | 5       | 5 ± 2   | dB   |
| 12. CHANNEL SEPARATION               |         |         |      |
| (AUX input, 8 ohm 10 V Out) 1,000.Hz | 45      | 40      | dB   |
| 13. SIGNAL TO NOISE RATIO            |         |         |      |
| (PHONO level at LOW and max BALANCE) |         |         |      |
| PHONO INPUT:                         | 60      | 40      | dB   |
| AUX INPUT:                           | 75      | 60      | dB   |
| 14. RESIDUAL NOISE                   | 0.8     | 2       | mV   |
| 15. LOAD IMPEDANCE                   |         | 4-16    | ohms |
| 16. POWER SOURCE                     |         | 110-130 | V    |
| 17. HARMONIC DISTORTION (at 20 W)    |         |         |      |
| 60 Hz AC                             |         |         |      |
| 100 Hz                               | 0.06    | 0.3     | %    |
| 1 kHz                                | 0.06    | 0.3     | %    |
| 10 kHz                               | 0.1     | 0.5     | %    |
| 18. CD-4 SEPARATION F-R              | 21      | 17      | dB   |

# BLOCK DIAGRAM



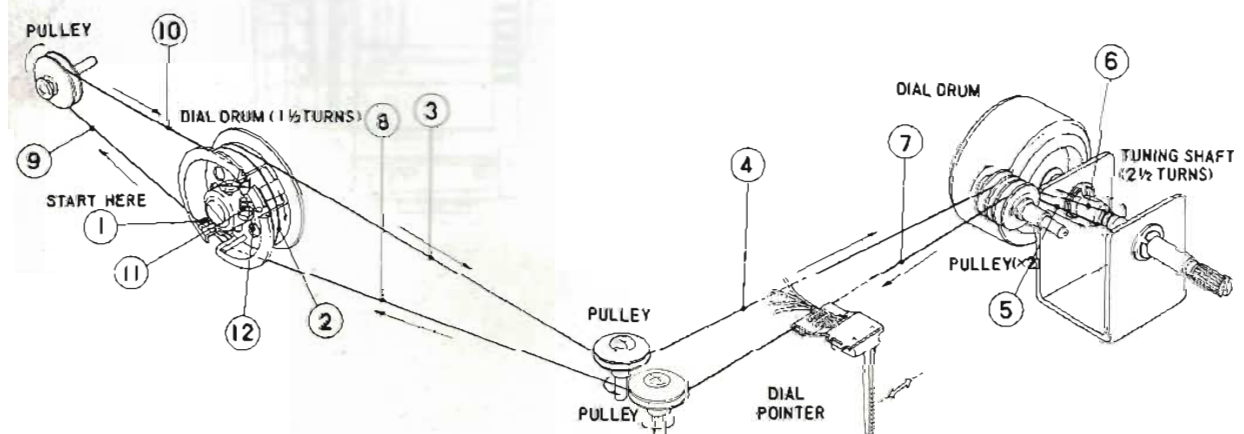
## DISASSEMBLY INSTRUCTIONS

- 1) Removing the chassis from Wooden Cabinet (Figure A).  
Remove the six screws (#97 & #91) from the both sides of Wooden Cabinet and Cabinet bottom,
- 2) Removing the Front Panel.
  - a) Remove the knobs from BASS, MIDRANGE, TREBLE, AUDIOROTOR, MODE, SELECTOR, BALANCE, VOLUME and TUNING controls.
  - b) Remove six screws (#17) from both sides and bottom of Front Panel and remove panel.

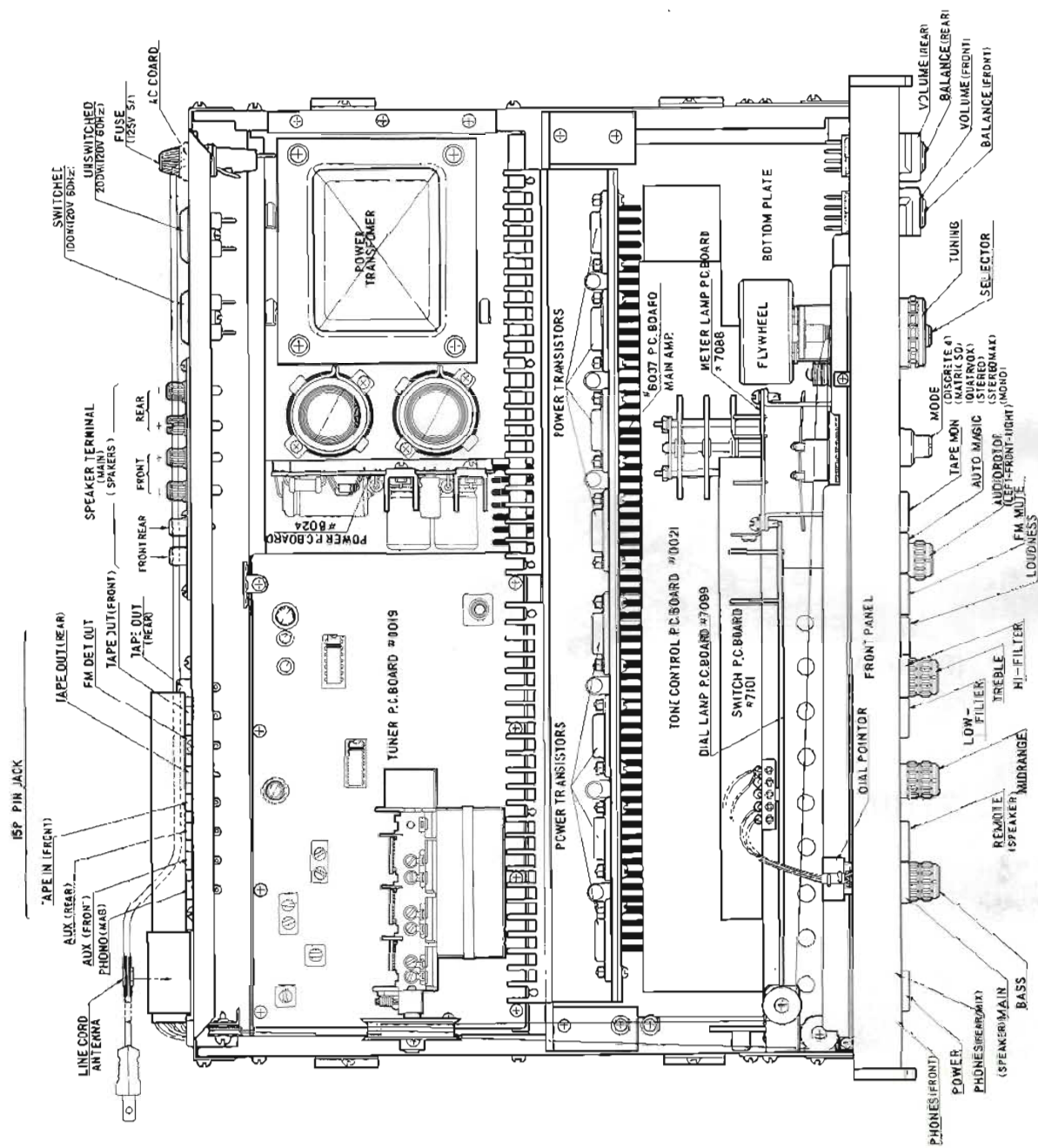


## DIAL STRINGING DIAGRAM

Note: Tuning Capacitor should be fully closed.

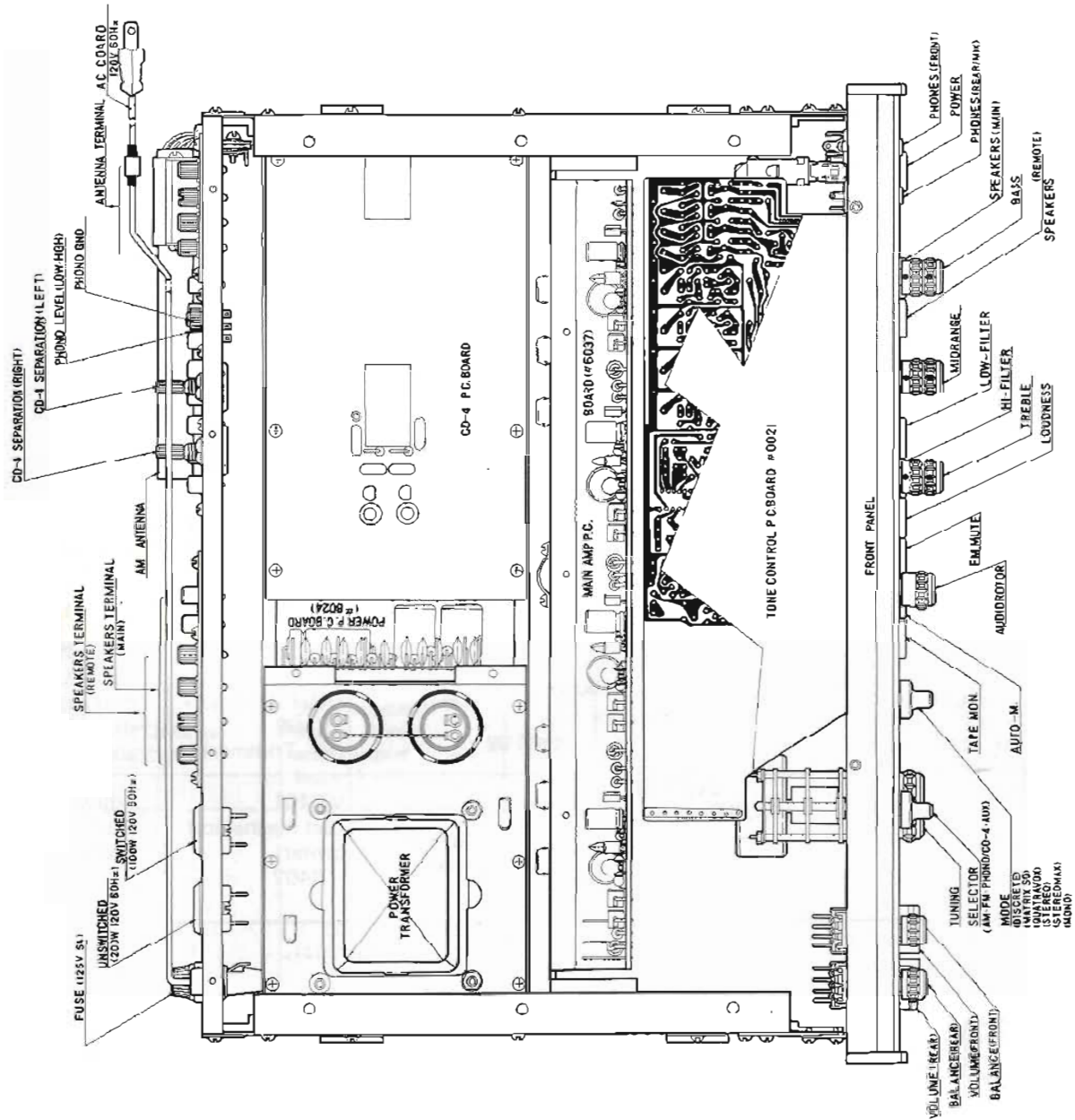


## 8





# CHASSIS LAYOUT (BOTTOM VIEW)



## ALIGNMENT PROCEDURE

Do not attempt alignment unless the following equipment is available.

- |                        |                           |                                         |
|------------------------|---------------------------|-----------------------------------------|
| 1. AM Signal Generator | 5. Stereo Modulator       | 9. DC Voltmeter                         |
| 2. Oscilloscope        | 6. Distortion Meter       | 10. Frequency Counter                   |
| 3. AC Voltmeter        | 7. Audio Signal Generator | 11. Turntable with CD-4 PHONO cartridge |
| 4. FM Signal Generator | 8. CD-4 Signal Generator  |                                         |

### AM IF & RF ALIGNMENT

Note: Remove line cord antenna from FM external antenna terminal during alignment.

Output level of signal generator should be no higher than necessary to obtain an output reading.  
Set SELECTOR switch S1 to AM. Signal Generator: 30% Mod.

| STEP | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY                         | RECEIVER DIAL SETTING                        | INDICATOR                                 | ADJUSTMENT (Refer to Fig.5)                                        | REMARK                                              |
|------|---------------------------|----------------------------------------------------|----------------------------------------------|-------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------|
| 1    | Refer Fig. 1              | 455 kHz<br>(400 Hz Mod.)                           | Point of interference.<br>(on/about 600 kHz) | AC Volt-meter to<br>TAPE OUT jack.(FRONT) | T401 (1st IFT)<br>Both Sections<br>T402 (2nd IFT)<br>Both Sections | Adjust for maximum reading                          |
| 2    | Same as step 1            | 600 kHz<br>(400 Hz Mod.)                           | 600 kHz                                      | Same as step 1                            | L401 (RF Coil)<br>L402 (OSC Coil)<br>L451 (Ant. Coil)              | Adjust for maximum reading                          |
| 3    | Same as step 1            | 1400 kHz<br>(400 Hz Mod.)                          | 1400 kHz                                     | Same as step 1                            | TC107 (OSC Trimmer)<br>TC105 (ANT Trimmer)<br>TC106 (RF Trimmer)   | Adjust for maximum reading.<br>Repeat steps 2 and 3 |
| 4    | Same as step 1            | 1000 kHz<br>(400 Hz Mod)<br>Output level:<br>5mV/m | 100 kHz                                      | Same as step 1                            | VR401 (Set mechanical center)<br>VR402                             | Adjust for 220 mV reading on AC Volt-meter          |

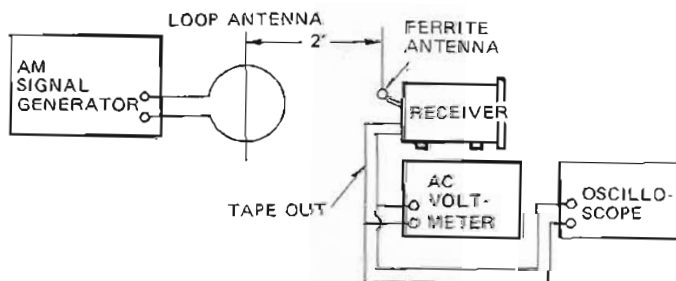
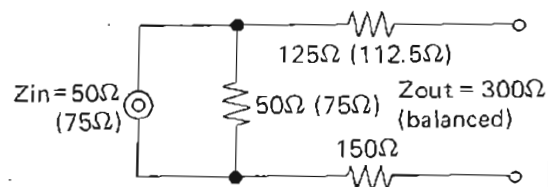


Fig. 1 AM ALIGNMENT CONNECTION



Connect FM Dummy Antenna to 300Ω antenna terminal of Receiver.

Fig. 2 FM DUMMY ANTENNA

## FM RF AND IF ALIGNMENT

Note: Be sure to disconnect FM line cord antenna during alignment.

| Signal generator output level should be no higher than necessary to obtain an output reading.<br>Set Selector switch to FM.<br>Signal Generator deviation: 75 kHz |                                                                  |                                                       |                       |                                                         |                                                                                  |                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------|-----------------------|---------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| STEP                                                                                                                                                              | SIGNAL GENERATOR COUPLING                                        | SIGNAL GENERATOR FREQUENCY                            | RECEIVER DIAL SETTING | INDICATOR                                               | ADJUSTMENT (Refer to Fig.5)                                                      | REMARKS                                                                                                                      |
| 1                                                                                                                                                                 | Connect to FM Antenna Terminal through FM Dummy antenna (Fig. 2) | 90 MHz<br>(400 Hz, Mod)                               | 90 MHz                | AC Voltmeter connected to TAPE OUT jack (FRONT L or R)  | L105 (FM OSC Coil)<br>L101 (FM ANT Coil)<br>L102, L103 (FM RF Coil)              | Adjust for maximum reading on AC Volt meter                                                                                  |
| 2                                                                                                                                                                 | Same as step 1                                                   | 106 MHz<br>(400 Hz, Mod)                              | 106 MHz               | Same as step 1                                          | TC104 (FM OSC Trimmer)<br>TC101 (FM ANT Trimmer)<br>TC102, TC103 (FM RF Trimmer) | Adjust for maximum reading                                                                                                   |
| Repeat steps 1 & 2 until no further improvement is possible.                                                                                                      |                                                                  |                                                       |                       |                                                         |                                                                                  |                                                                                                                              |
| 3                                                                                                                                                                 | Same as step 1                                                   | 90 MHz<br>(400 Hz, Mod)                               | 90 MHz                | Same as step 1                                          | T101 (FM IFT)                                                                    | Adjust for maximum reading                                                                                                   |
| 4                                                                                                                                                                 | Same as step 1                                                   | Same as step 3                                        | 90 MHz                | DC Voltmeter connected between BASE of TR301 and ground | T201 TOP (Discriminator)                                                         | Adjust for OV on DC Voltmeter                                                                                                |
| 5                                                                                                                                                                 | Same as step 1                                                   | Same as step 1<br>Signal Generator output level: 1 mV | 90 MHz                | Distortion Meter connected to TAPE OUT jack             | T201 Bottom                                                                      | Adjust for minimum distortion                                                                                                |
| 6                                                                                                                                                                 | Same as step 1                                                   | 98 MHz<br>(400 Hz, Mod)                               | 98 MHz                | DC Voltmeter connected to IC302 #5 PIN (Muting Level)   | VR302                                                                            | Adjust to the point where this voltage drops from about 9 volts down to 0.5V with SG output level of $3 \sim 16 \mu\text{V}$ |
| 7                                                                                                                                                                 | Same as step 1                                                   | Same as step 6<br>Signal Generator output level: 1.0V | 98 MHz                | TUNING Meter                                            | VR201                                                                            | Adjust for full scale (not out of scale) on TUNING Meter                                                                     |

Note: European models must not be able to tune below 87.5 MHz.

## MPX ALIGNMENT CONNECTION

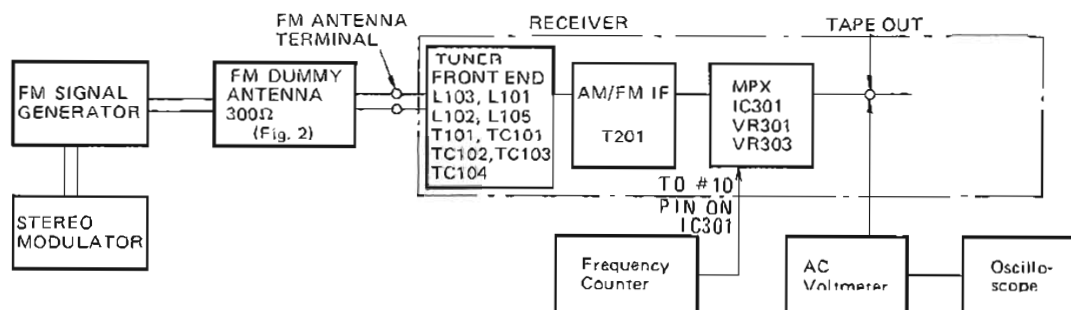


Fig. 3 MPX ALIGNMENT CONNECTION

Set SELECTOR Switch to FM tune for 98 MHz on band.

Connect test equipment (Fig. 3).

Signal Generator output level: 1000μV Deviation: 75 kHz at 100% modulation of composite signal.

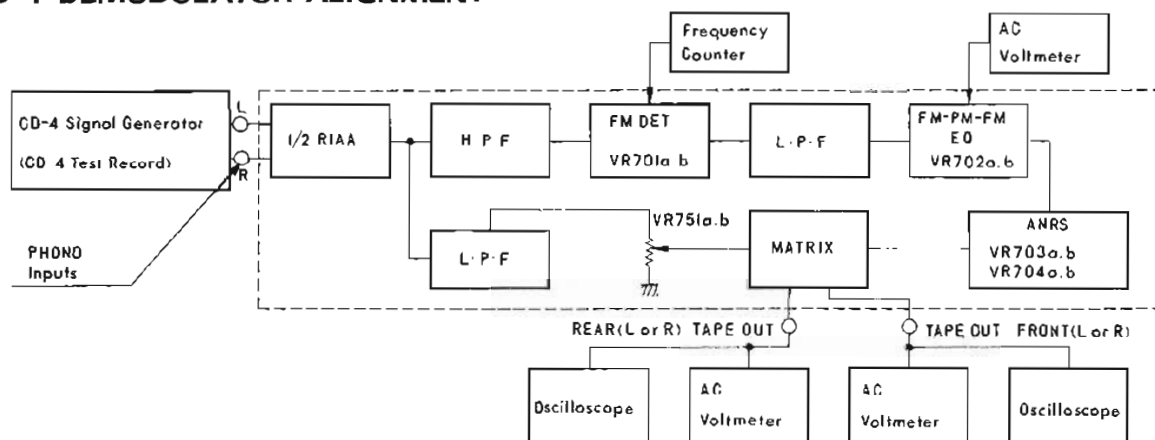
Connect FM Signal Generator to FM Antenna Terminal through FM Dummy Antenna (300 Ω).

| STEP                                                                                                                                   | 19 kHz<br>(PILOT SIGNAL)<br>MODULATION<br>Level | SIGNAL<br>GENERATOR                 | OUTPUT<br>INDICATOR                                       | ADJUST-<br>MENT<br>(Refer to<br>Fig. 5) | ADJUST<br>FOR                  | NOTE                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------|-----------------------------------------------------------|-----------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|
|                                                                                                                                        |                                                 | Freq. Set to                        | Connected to                                              |                                         |                                |                                                                                      |
| 1                                                                                                                                      | 3 ~ 4%                                          | Stereo<br>Modulator<br>(Sub Signal) | Frequency<br>counter con-<br>nect to #10<br>PIN on IC301  | VR303                                   | 19 kHz                         |                                                                                      |
| 2                                                                                                                                      | 8%                                              | Composite<br>1 kHz<br>L channel     | AC Voltmeter<br>to TAPE OUT<br>jack of R and<br>L channel | VR301                                   | R channel<br>OUTPUT<br>Minimum | AC Voltmeter<br>reading should be<br>at least 30 dB<br>below reading<br>at L channel |
| 3                                                                                                                                      | 8%                                              | Composite<br>1 kHz<br>R channel     | AC Voltmeter<br>to TAPE OUT<br>jack of L and<br>R channel | VR301                                   | L channel<br>OUTPUT<br>Minimum | Same as step 2.<br>(See note)                                                        |
| NOTE: If you did not obtain 30 dB separation reading in step 3, readjust VR301 until you obtain 30 dB readings for both steps 2 and 3. |                                                 |                                     |                                                           |                                         |                                |                                                                                      |

## MAIN AMPLIFIER ALIGNMENT

| INDICATOR    | ADJUSTMENT      | REMARKS                                                               |
|--------------|-----------------|-----------------------------------------------------------------------|
| DC Voltmeter | VR601a, b, c, d | Adjust for 0.005V – 0.015V<br>across R620a, b, c, d with<br>NO SIGNAL |

## CD-4 DEMODULATOR ALIGNMENT



**Fig. 4 DEMODULATOR ALIGNMENT CONNECTION**

Set SELECTOR switch to PHONO/CD-4 and MODE switch to DISCRETE 4.  
 Signal Generator output should be connected to both L and R channels (Fig. 4).  
 Sub-channel output of CD-4 Signal Generator should be -52 dB (2.5 mV).  
 Main channel : OFF

| STEP | SIGNAL GENERATOR<br>Freq. Set to                                                                            | OUTPUT INDICATOR                                                                                                | ADJUST-<br>MENT<br>(Refer to<br>Fig. 5) | ADJUST<br>for                           | NOTE                                                                                                              |
|------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1    | Short Phono Inputs<br>(L and R channels)                                                                    | Frequency Counter<br>connect to # 4<br>PIN on IC701a (b)                                                        | VR701a (b)                              | 30 kHz                                  |                                                                                                                   |
| 2    | 1 kHz Mod.,<br>1.3 kHz Deviation                                                                            | Connect AC Volt-<br>meter to center<br>terminal of<br>VR702a (b)                                                | VR702a (b)                              | -12 dB<br>(240 mV)                      |                                                                                                                   |
| 3    | 400 Hz Mod.,<br>0.3 kHz Deviation                                                                           | Connect AC Volt-<br>meter to TAPE<br>OUT jacks<br>(LEFT or RIGHT)                                               | VR703a (b)                              | -31 dB<br>(27.5 mV)                     |                                                                                                                   |
| 4    | 10 kHz Mod.,<br>1.68 kHz Deviation                                                                          | "                                                                                                               | VR704a (b)                              | -36 dB<br>(15.5 mV)                     |                                                                                                                   |
| 5    | 1 kHz Mod.,<br>1.3 kHz Deviation<br>Main channel: ON,<br>ANRS Encoder: ON,<br>FM-PM-FM PRE-<br>EMPHASIS: ON | AC Voltmeter:<br>connect to TAPE<br>OUT jacks LEFT<br>FRONT and LEFT<br>REAR (RIGHT<br>FRONT and<br>RIGHT REAR) | VR751a (b)                              | Minimum<br>LEFT REAR<br>(RIGHT<br>REAR) | AC Voltmeter<br>reading should be<br>at least 17 dB<br>below reading at<br>LEFT FRONT<br>(RIGHT FRONT)<br>channel |

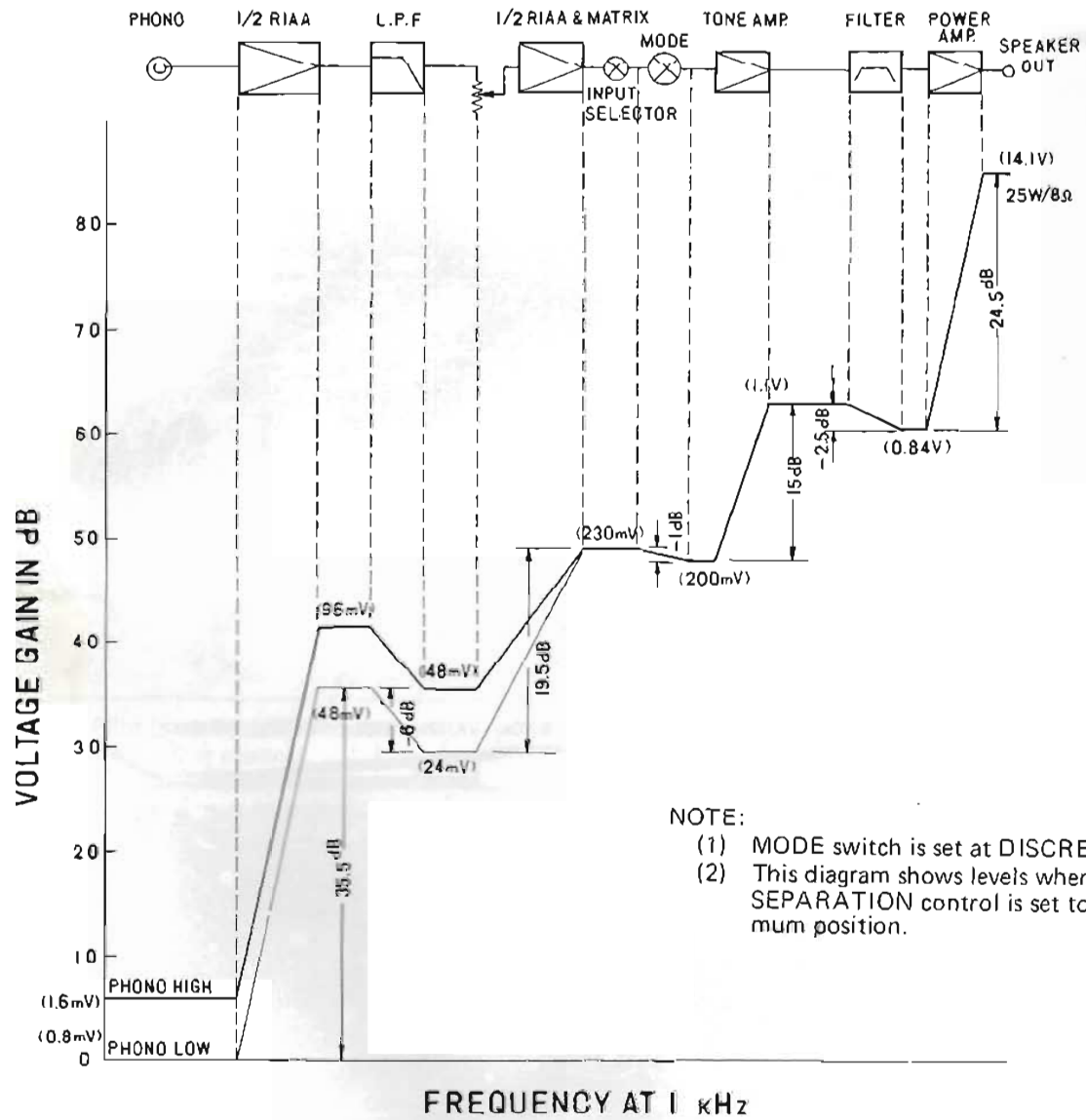


## ALTERNATE ALIGNMENT PROCEDURE (Using CD-4 Test/Alignment Record)

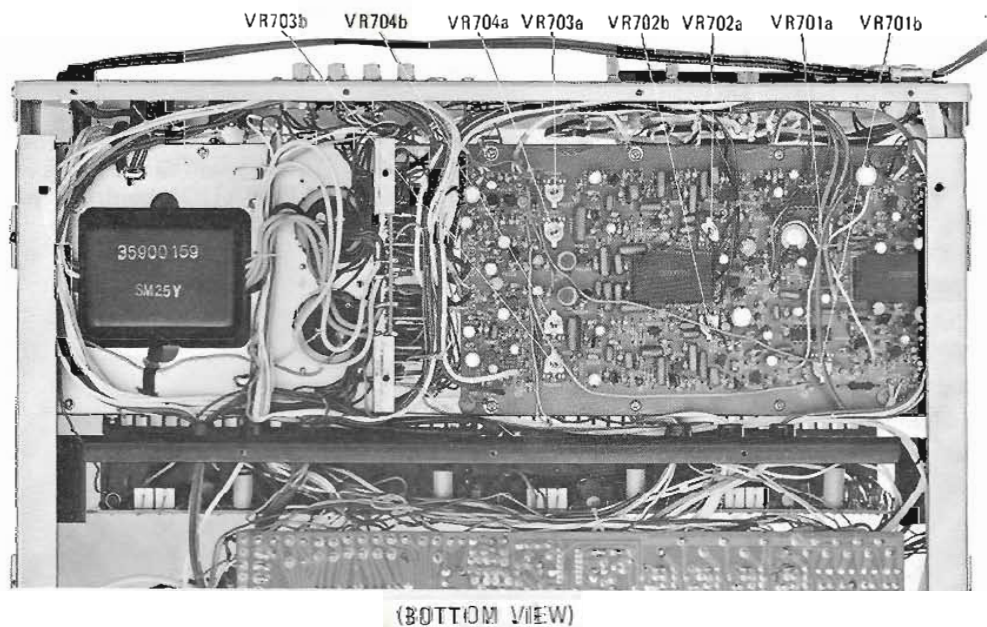
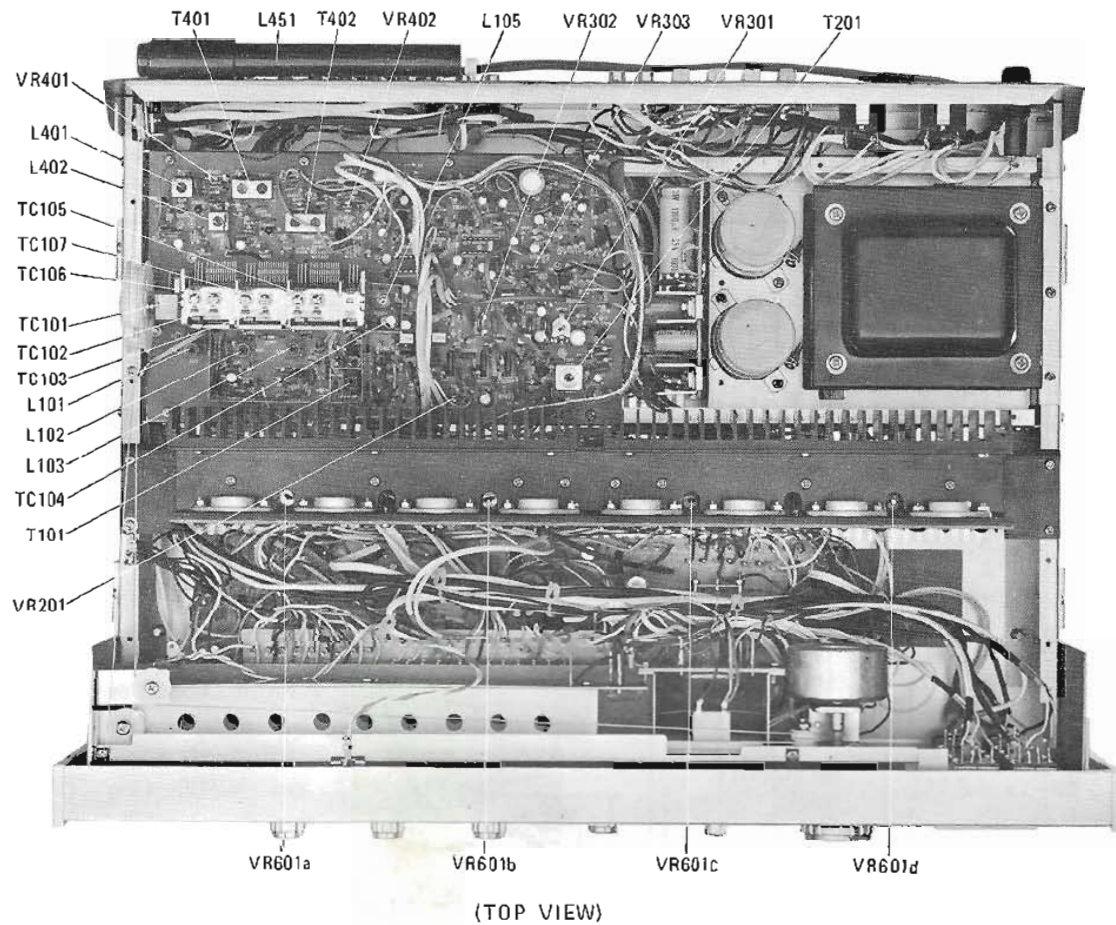
Set SELECTOR switch to PHONO/CD-4 and MODE switch to DISCRETE 4.  
PHONO Input should be connected to both L and R channels (Refer to Fig. 4).

| STEP | INPUT SIGNAL                                                                                                                                             | OUTPUT INDICATOR                                                | ADJUSTMENT<br>(Refer to Fig. 5) | ADJUST FOR                                                                                                                           |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Shorted PHONO inputs                                                                                                                                     | Connect Frequency Counter to #4 Pin on IC701a (b)               | VR701a (b)                      | 30 kHz                                                                                                                               |
| 2    | CD-4 Test Record RG1256 Band 8                                                                                                                           | Connect AC Voltmeter to Emitter on TR706a (b)                   | VR702a (b)                      | -17 dB<br>(140 mV)                                                                                                                   |
| 3    | Connect Audio Signal Generator to Center terminal of VR702a,b. Signal Generator set to 600 Hz and adjust output level of -27 dB (44 mV) at TR706 emitter | Connect AC Voltmeter to TAPE OUT jacks (Left or Right)          | VR703a (b)                      | -31 dB<br>(27.5 mV)                                                                                                                  |
| 4    | Same as Step 3 except for the frequency set to 10 kHz                                                                                                    | Same as Step 3                                                  | VR704a (b)                      | -32 dB<br>(24.5 mV)                                                                                                                  |
| 5    | CD-4 Test Record RG1256 Band 1 (or Band 3)                                                                                                               | Connect AC Voltmeter to TAPE OUT jacks LF and LR (or RF and RR) | VR751a (b)                      | Minimum reading on AC Voltmeter at LEFT REAR (RIGHT REAR)<br>Note: AC Voltmeter reading should be at least about 15 dB below reading |

# LEVEL DIAGRAM



# FIG. 5 ALIGNMENT POINTS



## TROUBLE SHOOTING

| Symptom                                                  | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Receiver not operative:<br>Pilot lamp does not light. | A) Faulty AC power cord.<br>* Replace the cord.<br>B) Defect in the power switch S12.<br>* Replace the switch.<br>C) Open winding in the power transformer.<br>* Replace the transformer.<br>D) Blown Power fuse.<br>* Replace the fuse.<br>E) Defective thermal protector S14.<br>* Replace the thermal protector.                                                                                                                                                              |
| 2) Fuse blows when power is turned ON.                   | A) Power transformer defective.<br>* Replace the transformer.<br>B) Short in the primary or secondary circuitry of the transformer circuitry.<br>* Repair or replace the transformer.<br>C) Shorted rectifier diode D806-D809.<br>* Replace the diode.<br>D) Short circuit in the rectifier circuit.<br>* Repair the short.<br>E) Shorted power transistor TR607a, b, c, d or TR608a, b, c, d or circuitry.<br>* Replace the defective transistor and check circuit.             |
| 3) Pilot lamp does not light.                            | A) Defective lamp.<br>* Replace the lamp.<br>B) Disconnection in the transformer tertiary winding.<br>* Replace the transformer.<br>C) Shorted diode D810-D813.<br>* Replace the diode.                                                                                                                                                                                                                                                                                          |
| 4) Pilot lamp lights but no sound from either channel.   | A) Resistor R805, R808 or R920 open.<br>* Replace resistor.<br>B) Capacitor C801, C802, C803, C804, C805 or C914 shorted/defective.<br>* Replace the defective capacitor.<br>C) Diode D801, D802, C803, D804 or D805 shorted.<br>* Replace the diode.<br>D) Open in secondary winding of the power transformer.<br>* Replace the transformer.<br>E) Transistor TR801, TR802 open.<br>* Replace the transistor.<br>F) Transistor TR801 shorted/open.<br>* Replace the transistor. |
| 5) MAIN speakers do not work.                            | A) Speaker switch S10 defective.<br>* Replace the switch.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 6) REMOTE speakers do not work.                          | A) Speaker switch S11 defective.<br>* Replace the switch.                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Symptom                                                                                                                                                                         | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7) One channel does not work with "VOLUME" at maximum and "BALANCE" at center when a test signal is applied to the center terminal of VOLUME control VR951 of the dead channel. | <p>A) Defect in TR901, TR902 or TR903 circuitry.<br/>*Locate and correct the defect.</p> <p>B) Defect in TR603, TR604, TR605, TR601, TR602, TR606, TR607 or TR608 circuitry.<br/>*Locate and correct the defect.</p> <p>C) Interruption in copper foil of the printed circuit board 6037 or 0021.<br/>*Repair or replace it.</p> <p>D) Short in speaker output terminal.<br/>*Repair it.</p> <p>E) Open resistor R601, R605—R607, R609—R611, R613—R621, R901—R907, R917 or R918.<br/>*Replace the defective resistor.</p> |
| 8) Same as 7 above but channel operates when test signal is applied as 7.                                                                                                       | <p>A) Open resistor R701.<br/>*Replace the resistor.</p> <p>B) Defective selector switch S1.<br/>*Repair or replace it.</p> <p>C) Defective VOLUME VR951.<br/>*Replace the control.</p>                                                                                                                                                                                                                                                                                                                                   |
| 9) Speaker works normally but headphones do not work.                                                                                                                           | <p>A) Headphone jack defective.<br/>*Replace the jack.</p> <p>B) Open R651a (Front Left), R651d (Front Right), R651c (Rear Left), R651b (Rear Right).<br/>*Replace the resistor.</p>                                                                                                                                                                                                                                                                                                                                      |
| 10) All the inputs work normally except "AUX4" input.                                                                                                                           | <p>A) Poor contact in "AUX4" input jack.<br/>*Repair or replace the jack.</p> <p>B) Poor contact in selector switch S1.<br/>*Repair or replace the switch.</p>                                                                                                                                                                                                                                                                                                                                                            |
| 11) PHONO input does not function.                                                                                                                                              | <p>A) Poor contact in PHONO input jack.<br/>*Repair or replace the jack.</p> <p>B) Faulty selector switch S1.<br/>*Repair or replace the switch.</p> <p>C) Defective transistor TR701, TR702, TR711 or TR712.<br/>*Replace the transistor.</p>                                                                                                                                                                                                                                                                            |
| 12) TAPE OUT does not function.                                                                                                                                                 | <p>A) Defective contact in TAPE OUT output jack.<br/>*Repair or replace the jack.</p> <p>B) Resistor R701, R703—R711, R754—R756, R759—R765 open.</p> <p>C) Capacitor C701—C707, C737—C742 open/shorted.<br/>*Replace the defective capacitor.</p>                                                                                                                                                                                                                                                                         |
| 13) FM does not operate.                                                                                                                                                        | <p>A) Defective diode D801.<br/>*Replace the diode.</p> <p>B) Transistor TR802 damaged (OPEN).<br/>*Replace the transistor.</p> <p>C) Defective resistor R805, R808.<br/>*Replace the resistor.</p> <p>D) Short — circuit in TUNER B + circuit.<br/>*Repair the short.</p>                                                                                                                                                                                                                                                |



| Symptom                                   | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | <p>E) Poor contact in selector switch S1.<br/>*Repair or replace the switch.</p> <p>F) Resistor R303 defective.<br/>*Replace the resistor.</p> <p>G) Capacitor C301 defective.<br/>*Replace the capacitor.</p> <p>H) Defective transistor TR201, TR202 or IC IC201, IC202, IC203, IC204.<br/>*Replace the defective transistor or IC.</p> <p>I) Defective IFT T201.<br/>*Replace the IFT.</p> <p>J) Defective resistor R204, R205, R208, R210, R212, R215, R219, R220 or R301.<br/>*Replace the defective resistor.</p> <p>K) Defective capacitor C201, C212, C215.<br/>*Replace the defective capacitor.</p> <p>L) Defective transistor TR101, TR102, TR103 or coil L101, L105 of tuner board 0019.<br/>*Replace the defective component.</p> <p>M) Faulty lead-in.<br/>*Repair or replace the lead in.</p> |
| 14) Multiplex separation not sufficient.  | <p>A) Improper adjustment.<br/>*Readjust T201, VR301 and VR303.<br/>(Refer to MPX ALIGNMENT on page 11)</p> <p>B) TR301, TR302, TR303, TR304, TR305, TR306, IC301 or IC302 of TUNER Board 0019 defective.<br/>*Replace the defective component.</p> <p>C) Variable resistor VR301, VR302 or VR303 defective.<br/>*Replace the defective variable resistor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 15) Stereo indicator lamp does not light. | <p>A) Defective indicator lamp PL8.<br/>*Replace the lamp.</p> <p>B) Improper adjustment of VR302 and VR303 or TUNER Board 0019.<br/>*Make readjustment.<br/>(Refer to MPX ALIGNMENT on Page 11)</p> <p>C) Defective IC IC301 or transistor TR308.<br/>*Replace the defective component.</p> <p>D) Defective diode D810, D811, D812 or D813.<br/>*Replace the defective diode.</p> <p>E) Capacitor C804 or C805 defective.<br/>*Replace the defective capacitor.</p>                                                                                                                                                                                                                                                                                                                                         |
| 16) FM volume not sufficient.             | <p>A) If volume of both L and R channels not enough: Front End defective, or faulty transistor TR202, IFT T201 or diode D207, D208 of TUNER B Board 0019 or faulty C303, IC301 or IC302 of TUNER Board 0019.<br/>*Locate and replace the defective component.</p> <p>B) If sound of one channel not enough: Defective L302 (Board 0019) in case of R Channel, or defective L301 (Board 0019) in case of L channel.<br/>*Replace the defective coil.</p>                                                                                                                                                                                                                                                                                                                                                      |

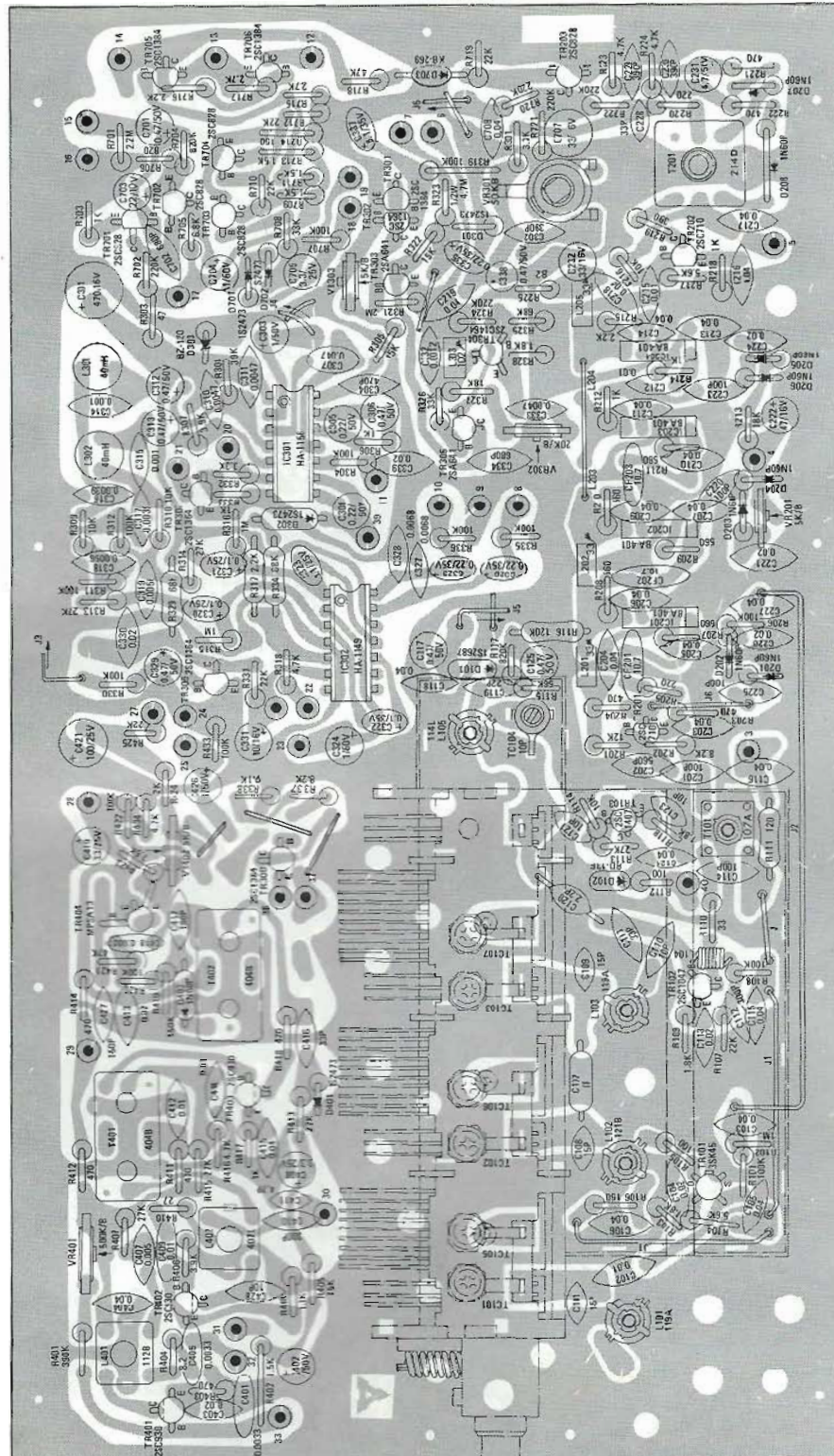
| Symptom                              | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17) AM does not operate.             | <p>A) Damaged transistor either TR401, TR402, TR403 or TR404 on TUNER Board 0019.<br/>*Replace the damaged transistor.</p> <p>B) Defective L401, L402, T401 or T402 of TUNER Board 0019.<br/>*Replace the defective component.</p> <p>C) Defective diode D401 or D402 of TUNER Board 0019.<br/>*Replace the defective diode.</p> <p>D) One of resistors of TUNER Board 0019 defective.<br/>*Replace the defective resistor.</p> <p>E) One of capacitors of TUNER Board 0019 defective.<br/>*Replace the defective capacitor.</p> <p>F) Selector switch S1 defective.<br/>*Repair or replace the switch.</p> <p>G) Defective Tuning Gang.<br/>*Replace Tuning Gang.</p> <p>H) Damaged AM bar antenna.<br/>*Repair or replace bar antenna.</p> |
| 18) LOUDNESS has no effect.          | <p>A) Defective LOUDNESS switch S7.<br/>*Replace the switch.</p> <p>B) Defective C701, C702, R702.<br/>*Replace defective component.</p> <p>C) Defective VOLUME control VR951.<br/>*Replace.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 19) STEREO-MONO not effective.       | <p>A) Defective MODE switch S2.<br/>*Replace the switch.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 20) TAPE MON not effective.          | <p>A) Defective TAPE MONITOR switch S4.<br/>*Replace the switch.</p> <p>B) Poor contact in TAPE MON input jacks.<br/>*Repair or replace jack.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 21) BASS Control has no effect.      | <p>A) VR903 defective.<br/>*Replace.</p> <p>B) Defective C909, C910, R914, R915, R916 on TONE AMP Board 0021.<br/>*Replace the defective component.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 22) TREBLE Control has no effect.    | <p>A) VR901 defective.<br/>*Replace.</p> <p>B) Defective C906, R908, R909 or R910 on TONE AMP Board 0021.<br/>*Replace the defective component.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 23) MID RANGE Control has no effect. | <p>A) VR902 defective.<br/>*Replace.</p> <p>B) Defective C907, C908, R911, R912 or R913 on TONE AMP Board 0021.<br/>*Replace the defective component.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Symptom                                                                                                                                              | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24) Excessive noise with PHONO (MAG) input.                                                                                                          | A) Faulty TR701, TR702, TR706, TR711–TR714.<br>* Replace the faulty transistor.<br>B) Faulty R701–R706, C701–C705, C707 or C737.<br>* Replace the faulty component.                                                                                                                                                                                                                                                                            |
| 25) Noisy VOLUME control.                                                                                                                            | A) Defective VR951.<br>* Replace.<br>B) Defective capacitor C901, C742, C747 or C748.<br>* Replace the defective capacitor.                                                                                                                                                                                                                                                                                                                    |
| 26) SIGNAL STRENGTH meter not functioning.                                                                                                           | A) Defective meter.<br>* Replace the meter.<br>B) In case of FM reception, R213, VR201, C220 or C223 defective.<br>* Replace the defective component.<br>C) In case of AM reception, resistor R422, R423 or TR404 defective.<br>* Replace the defective component.                                                                                                                                                                             |
| 27) AUTO-MAGIC AFC has no effect when AUTO-M switch is ON. (Green light behind the tuning meter does not go out when the tuning control is touched.) | A) Transistor TR701, TR702, TR703 TR704, TR705 or TR706 defective.<br>* Replace the defective transistor.<br>B) Resistor R701–R717 defective.<br>* Replace the defective resistor.<br>C) Diode D701 or D702 defective.<br>* Replace the defective diode.<br>D) Capacitor C701–C705 defective.<br>* Replace the defective capacitor.<br>E) Defective switch S5.<br>* Replace the switch.<br>F) Defective meter lamp PL6.<br>* Replace the lamp. |
| 28) Green light does not light when the tuning control is released.                                                                                  | A) Defective transistor TR703 (short) TR704 (open), TR705 (open).<br>* Replace the defective transistor.<br>B) Defective resistor R708–R717.<br>* Replace the defective resistor.<br>C) Defective meter lamp PL6.<br>* Replace the lamp.                                                                                                                                                                                                       |
| 29) QUATRAVOX not effective.                                                                                                                         | A) Defective transistor TR701c, d.<br>* Replace the defective transistor.<br>B) Defective resistor R709c–R716c.<br>* Replace the defective resistor.<br>C) Defective capacitor C709c–C712c, C709d, C710d.<br>* Replace the defective capacitor.<br>D) Defective MODE switch S2.<br>* Replace the switch.                                                                                                                                       |
| 30) LOW FILTER has no effect.                                                                                                                        | A) Defective switch S8.<br>* Replace the switch.<br>B) Defective capacitor C703e, f, g, h.<br>* Replace the capacitor.                                                                                                                                                                                                                                                                                                                         |

| Symptom                                                                | Cause and Remedy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 31) HIGH FILTER has no effect.                                         | A) Defective switch S9.<br>*Replace the switch.<br>B) Defective resistor R704e, f, g, h or capacitor C904e, f, g, h.<br>*Replace the defective component.                                                                                                                                                                                                                                                                                                                                          |
| 32) AUDIOROTOR has no effect.                                          | A) Defective switch S3.<br>*Replace the switch.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 33) STEREO MAX does not work.                                          | A) Defective MODE switch S2.<br>*Replace the switch.<br>B) Defective transistor TR702c, d.<br>*Replace the defective transistor.<br>C) Defective resistor R718c—R722c, R718d—R722d.<br>*Replace the defective resistor.<br>D) Defective capacitor C713c, d or C714c, d.<br>*Replace the defective capacitor.                                                                                                                                                                                       |
| 34) SQ MATRIX DECODER does not work.                                   | A) Defective MODE switch S2.<br>*Replace the switch.<br>B) Defective IC, capacitor or resistor on P.C. Board 0021.<br>*Replace defective component.                                                                                                                                                                                                                                                                                                                                                |
| 35) CD-4 Indicator Lamp does not light.                                | A) Defective switch S1 or S2.<br>*Replace the defective switch.<br>B) Defective transistor TR703a, TR706, TR715, TR717—TR721.<br>*Replace the defective transistor.<br>C) Defective diode D701, D702, D703.<br>*Replace the defective diode.<br>D) Resistor R712a—R716a, R782—R798 or R753 open.<br>*Replace the defective resistor.<br>E) Capacitor C708a, C709a, C752—C757 short.<br>*Replace the defective capacitor.                                                                           |
| 36) CD-4 DEMODULATOR does not work. (Poor separation of Front to Back) | A) Defective IC701a, b, TR703a, b—TR710a, b, TR713a, b, TR714a, b.<br>*Replace the defective component.<br>B) Defective diode D704a, b—D707a, b.<br>*Replace the defective diode.<br>C) Defective Low Pass Filter LP702.<br>*Replace.<br>D) One of resistors or capacitors on CD-4 DEMODULATOR BOARD 7100 defective.<br>*Replace the defective component.<br>E) VR701a, b—VR704a, b defective.<br>*Replace the defective one.<br>F) Defective choke coil L701a, b.<br>*Replace the defective coil. |

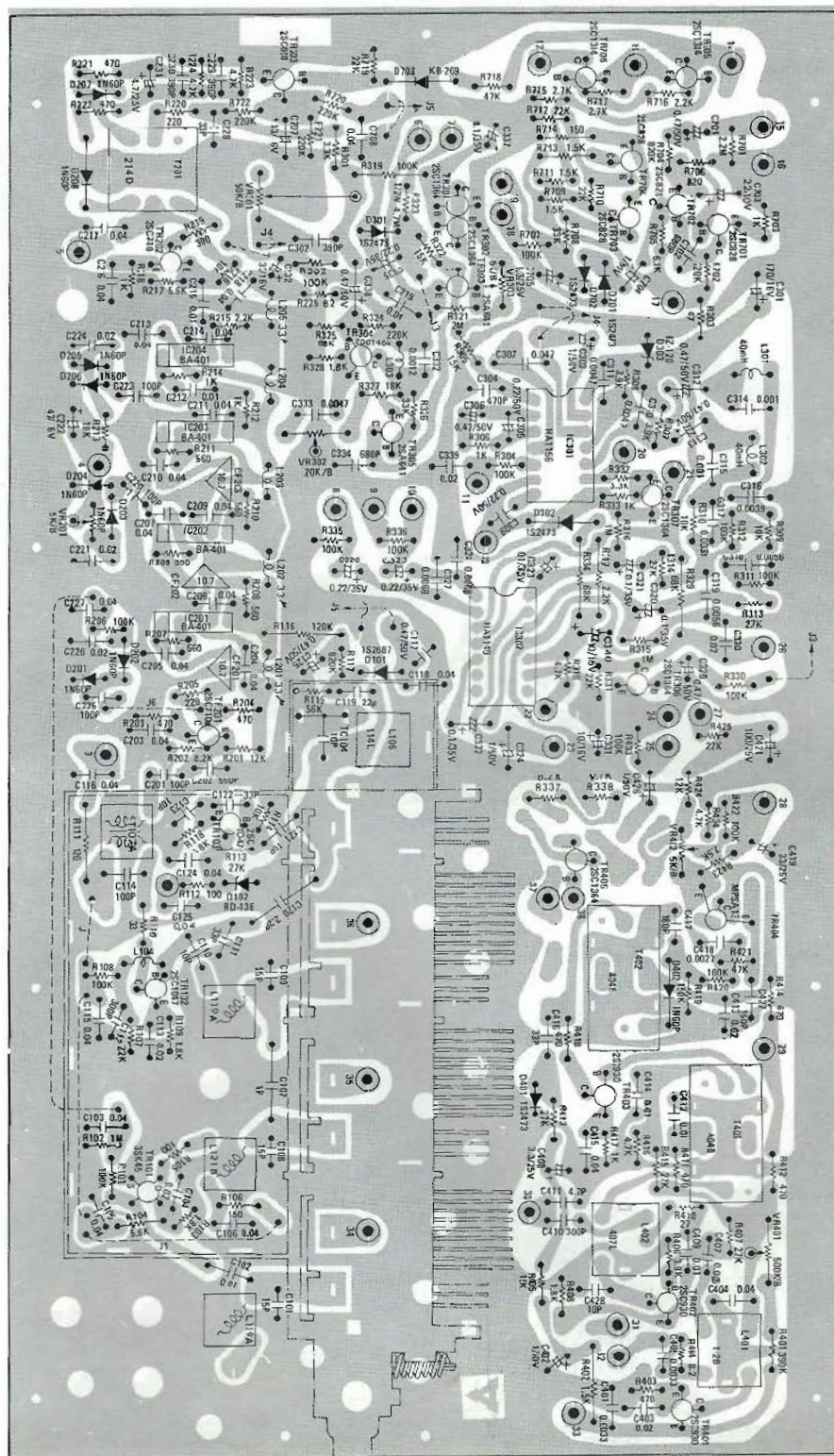


# 0019 TUNER BOARD (TOP VIEW)

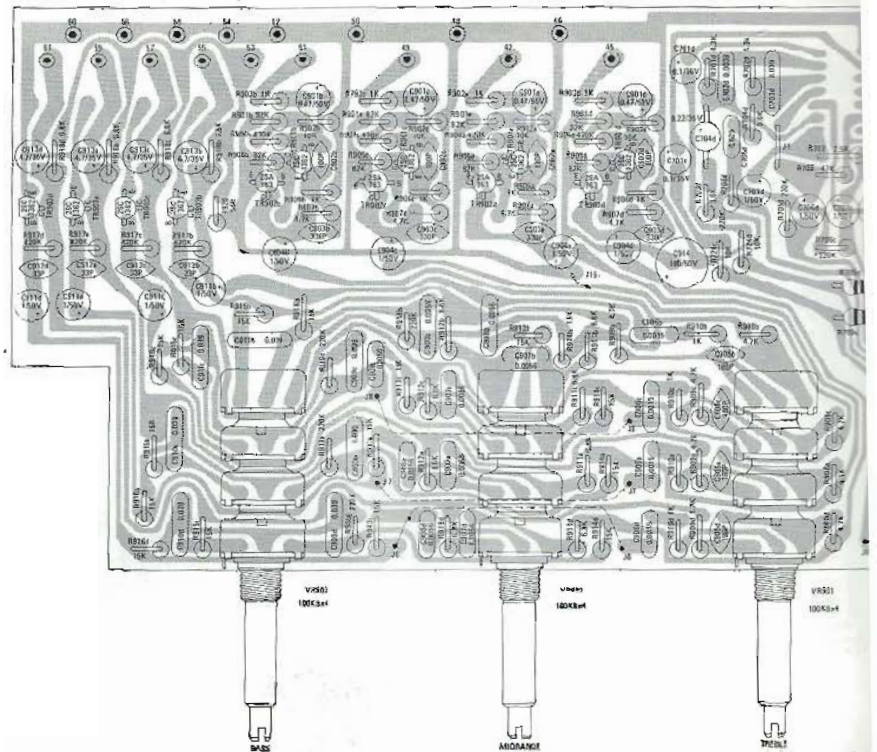




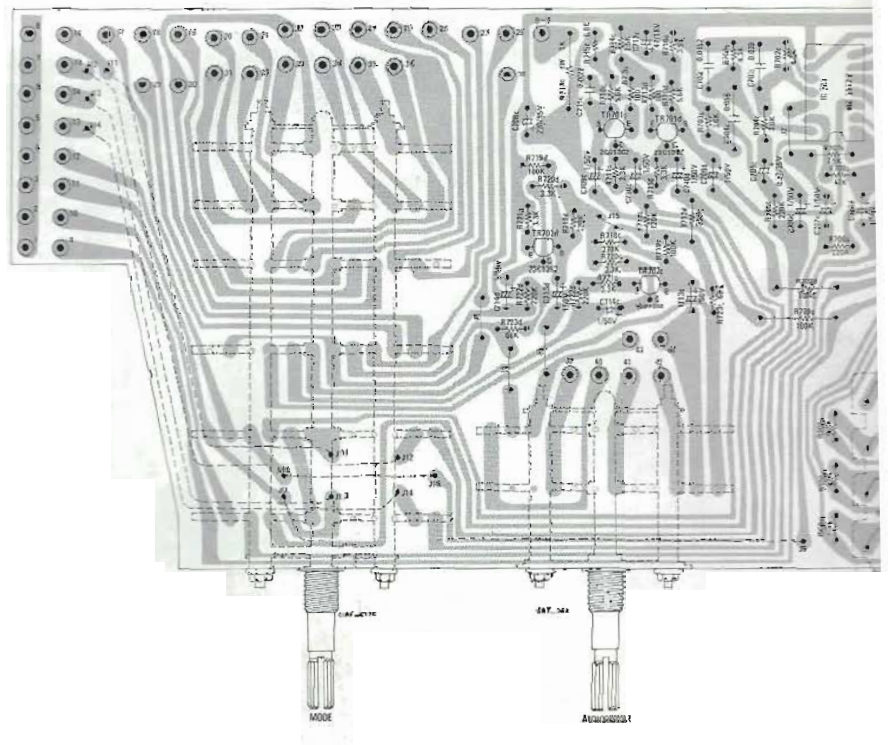
### 0019 TUNER BOARD (BOTTOM VIEW)



# 0021 TONE AMP B

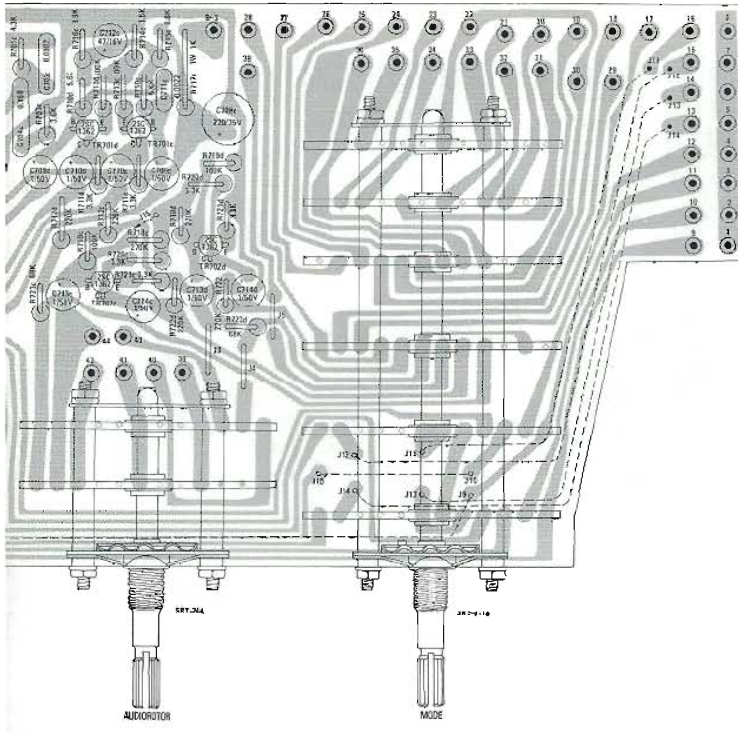


# 0021 TONE AMP B

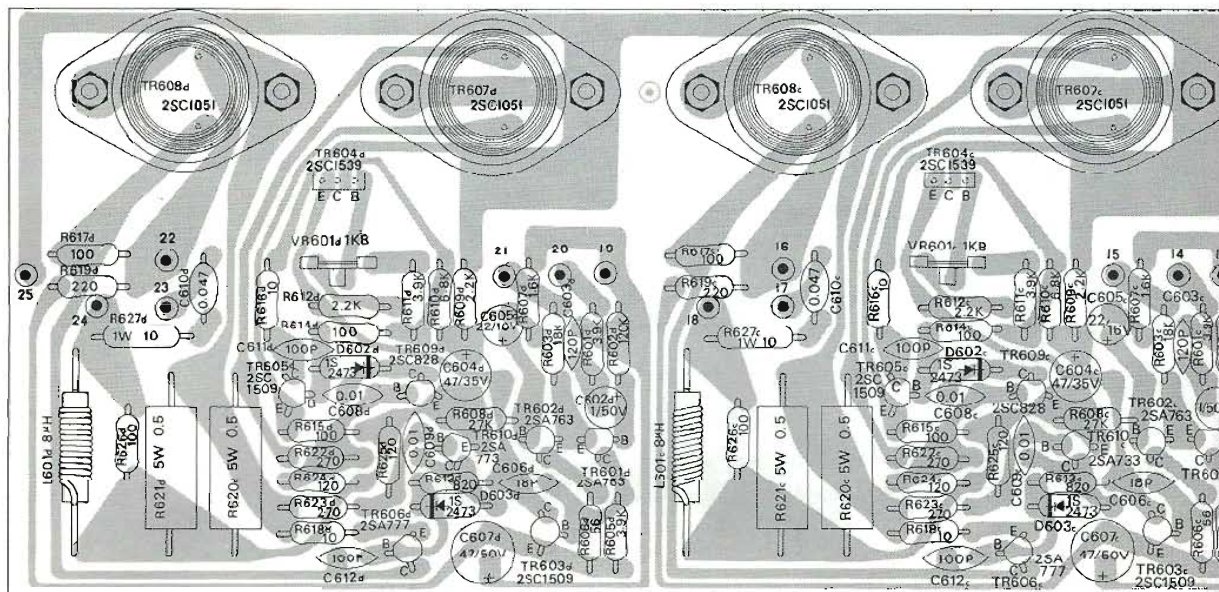




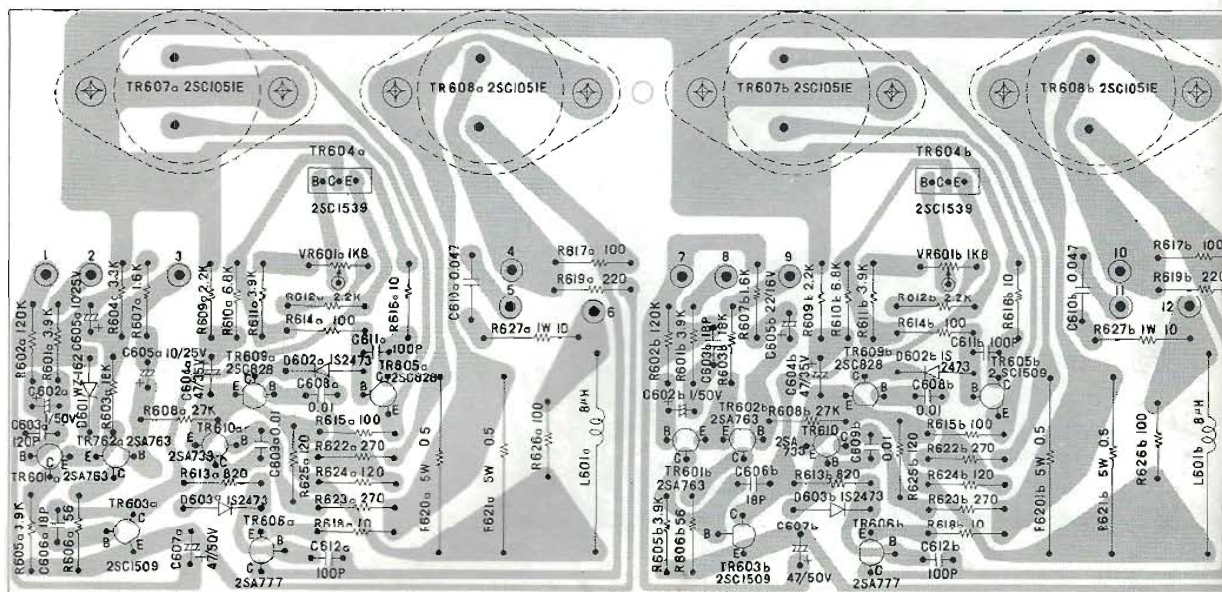
**RD (TOP VIEW)**



## 6037 MAIN AMP

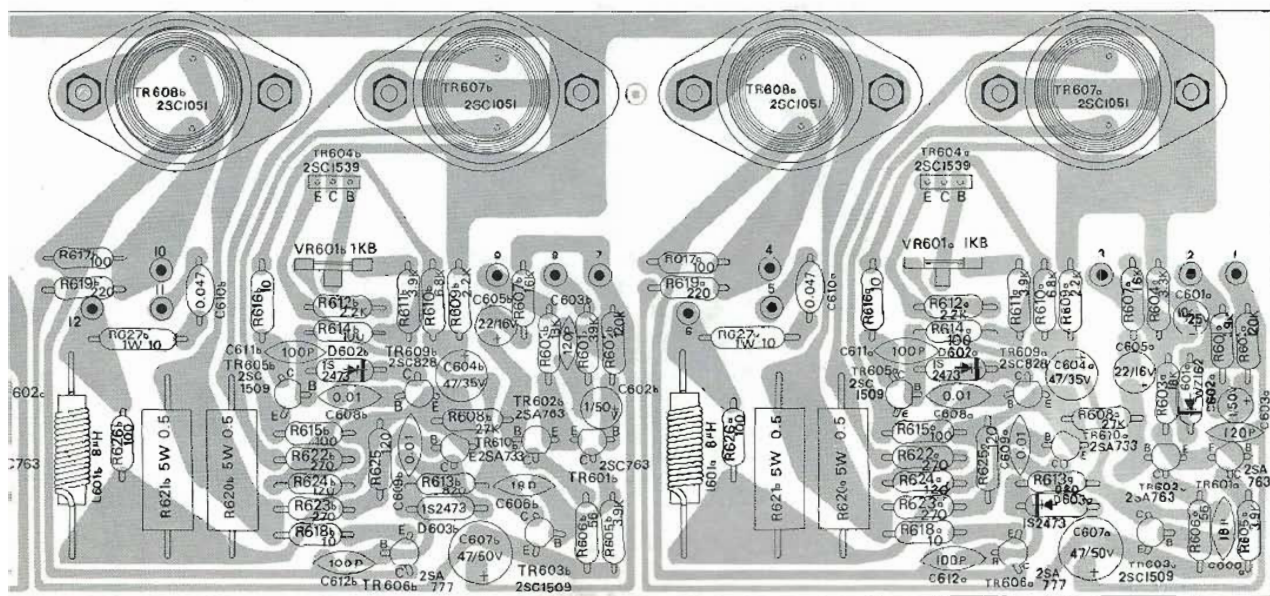


## 6037 MAIN AMP BO

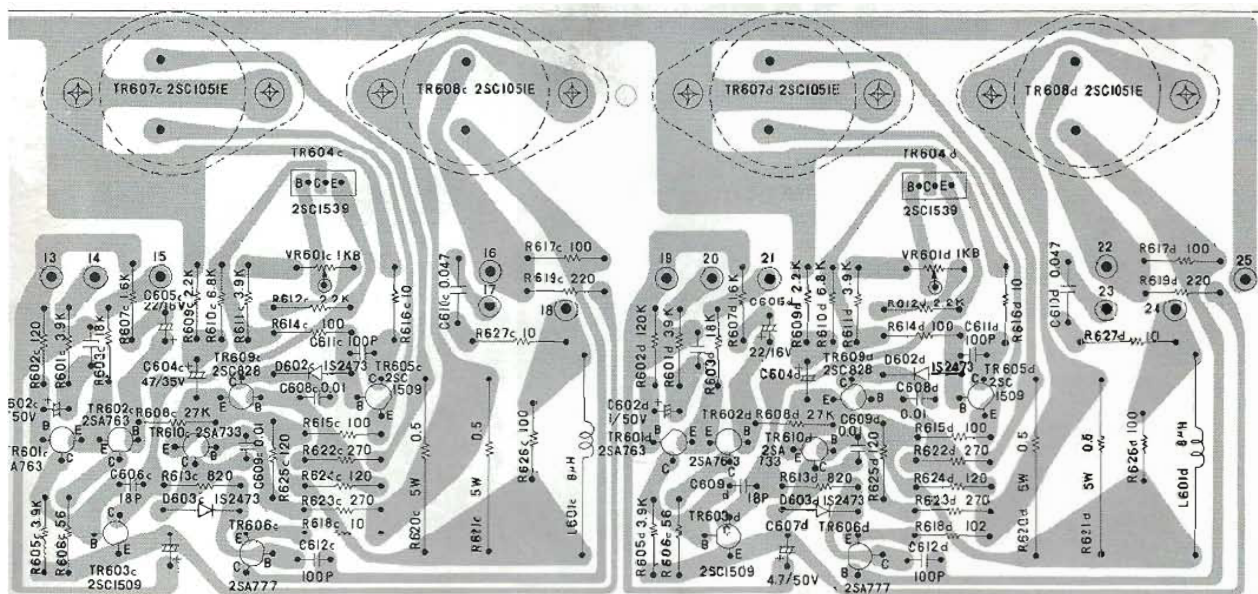




### BOARD (TOP VIEW)



### ARD (BOTTOM VIEW)





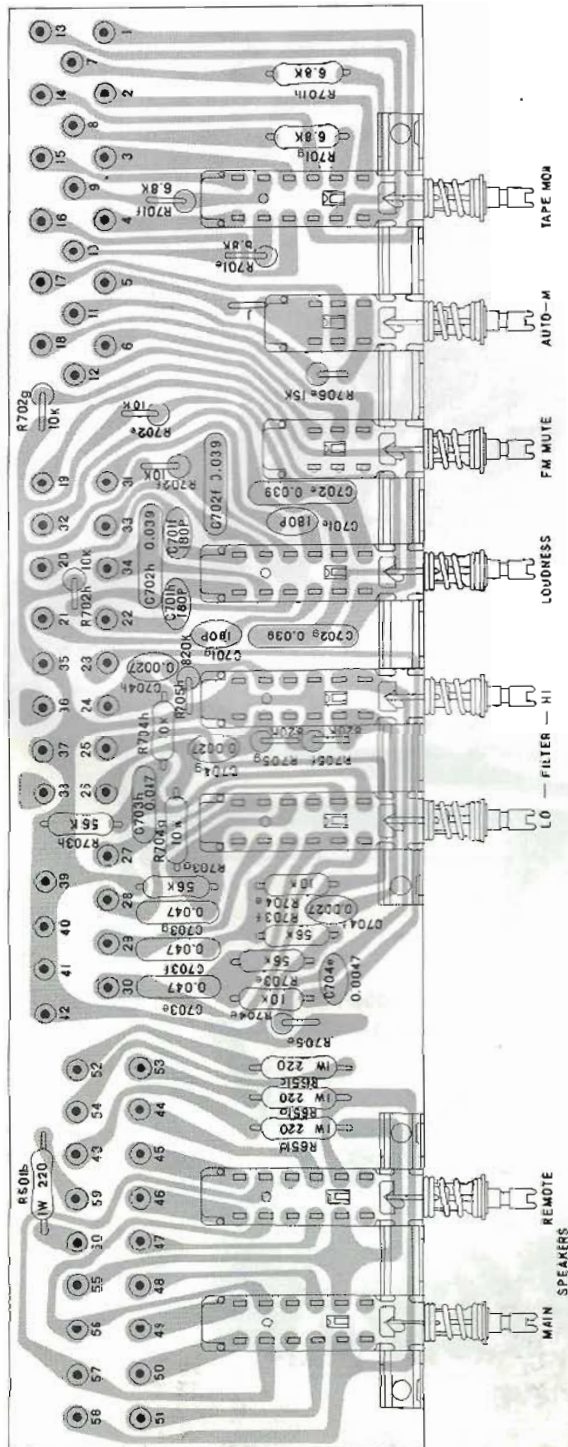


This image shows a detailed view of a printed circuit board (PCB) layout. The board is populated with numerous electronic components, including integrated circuits, resistors, capacitors, and diodes. The layout is organized into several functional blocks, with labels such as "LFP", "LFP", and "LFP" indicating different sections. The components are densely packed, and the board is surrounded by a white border.

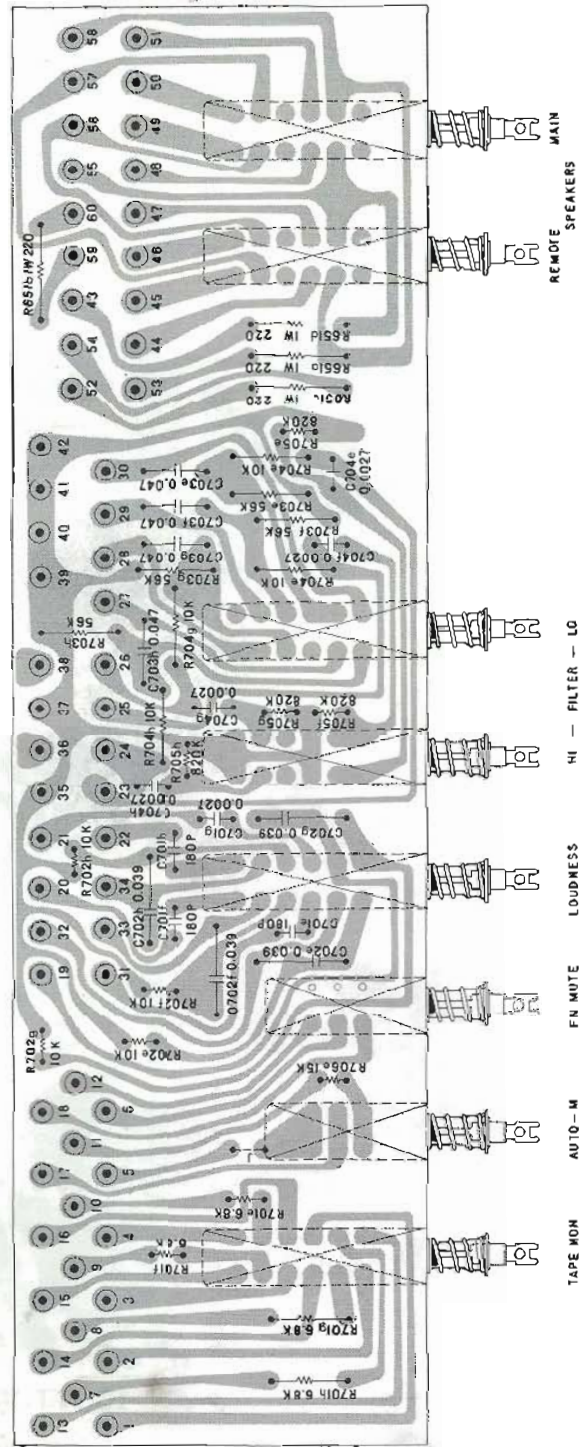


## 7101 SWITCH BOARD

(TOP VIEW)

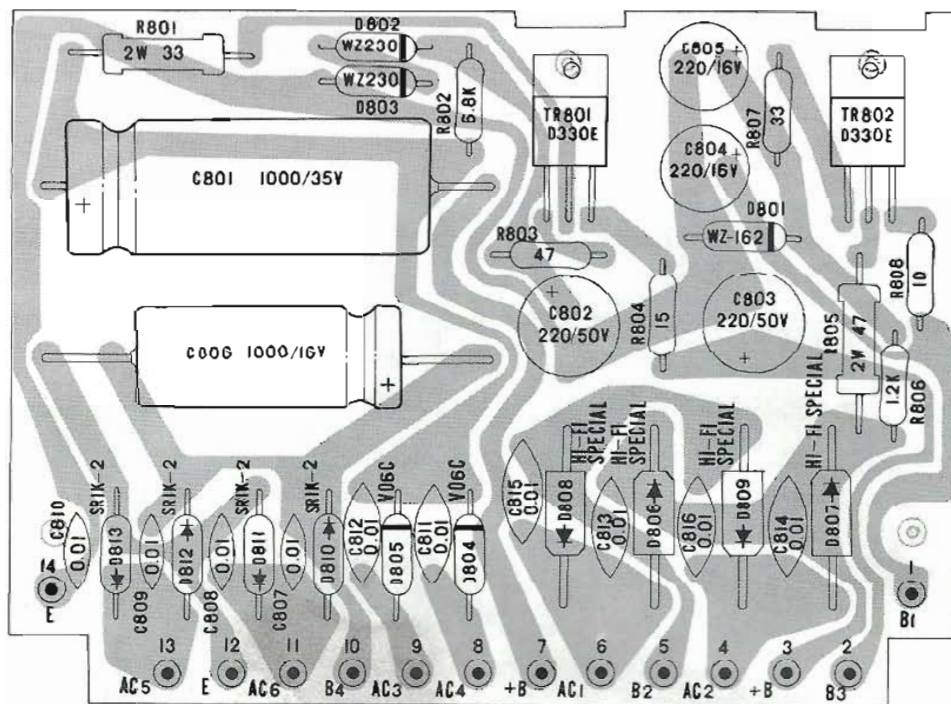


(BOTTOM VIEW)

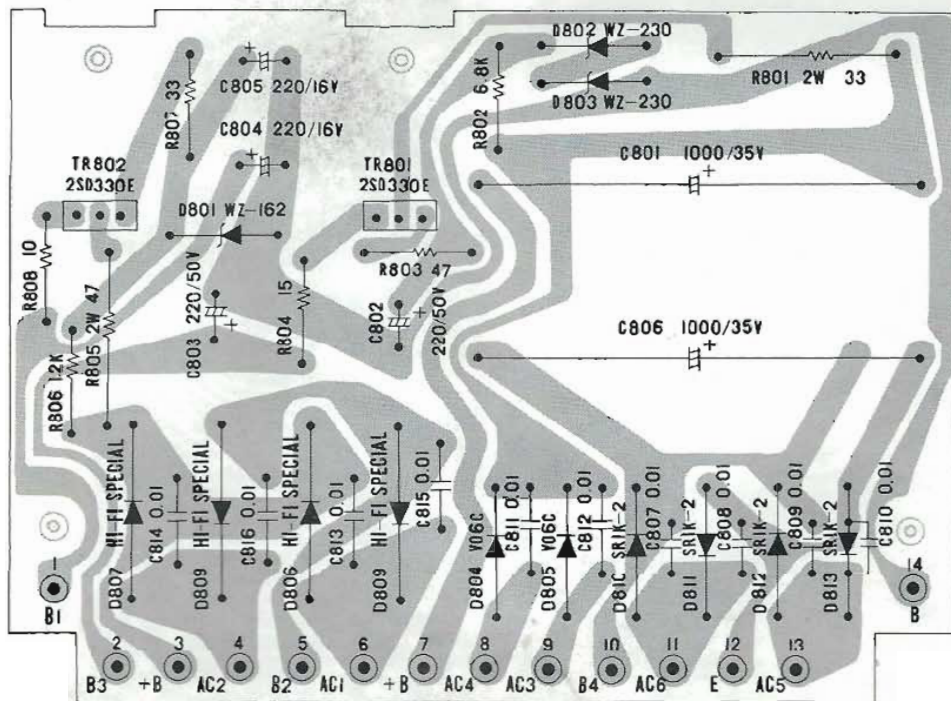




# 8024 POWER SUPPLY BOARD

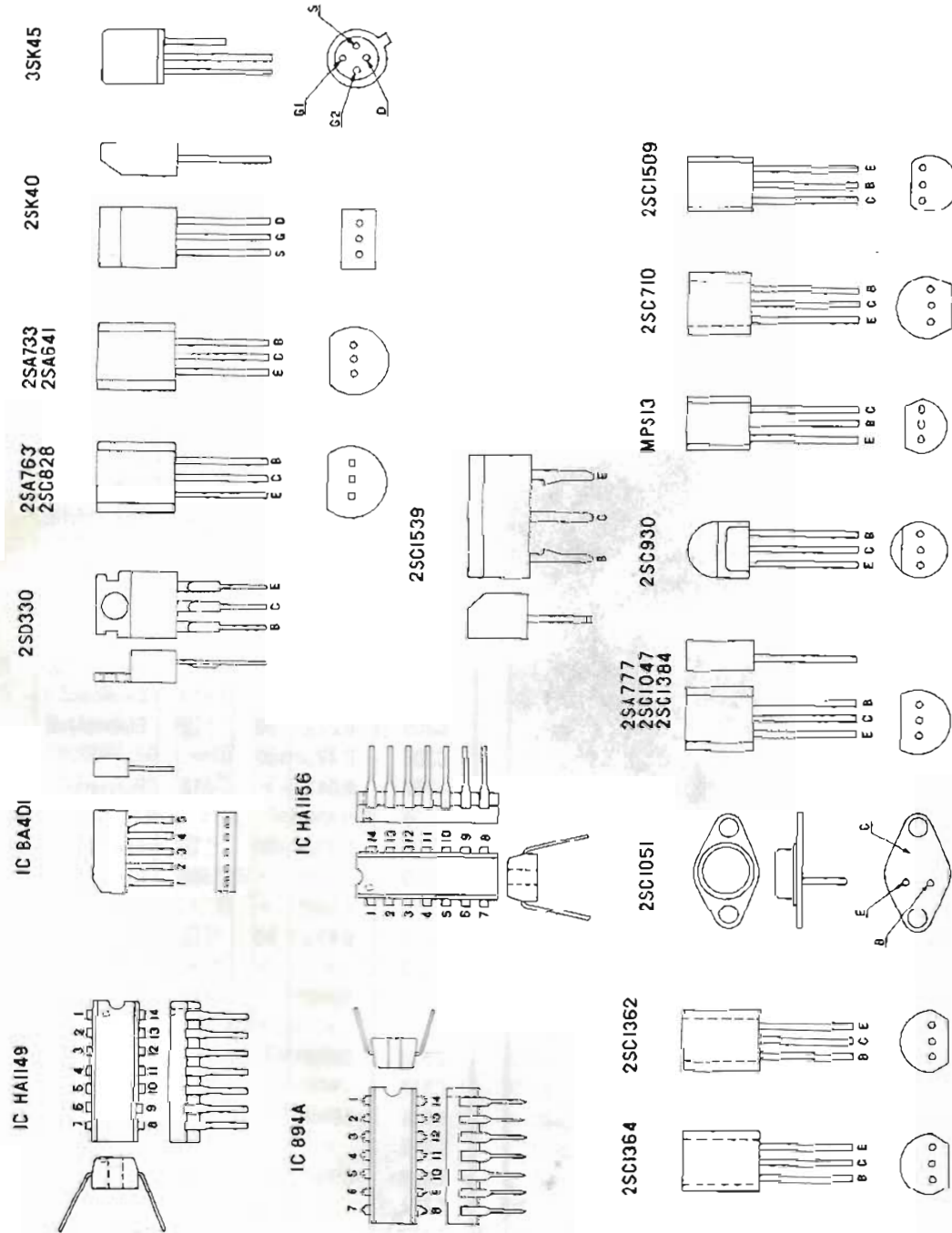


(TOP VIEW)



(BOTTOM VIEW)

# TRANSISTOR & IC LEAD IDENTIFICATION



# ELECTRICAL PARTS LIST

| CAPACITORS |             |         |               |              |              |
|------------|-------------|---------|---------------|--------------|--------------|
| Ref. No.   | Description |         |               |              | R/S Part No. |
|            | Value (F)   | Voltage | Tolerance (%) | Material     |              |
| C101       | 15P         | 50      | ±10           | Ceramic      |              |
| C102       | 0.01μ       | 25      | +80<br>-30    | "            |              |
| C103       | 0.04μ       | "       | "             | "            |              |
| C104       | 0.02μ       | "       | "             | "            |              |
| C105       | 0.04μ       | "       | "             | "            |              |
| C106       | 0.04μ       | "       | "             | "            |              |
| C107       | 1P          | 50      | ±10           | "            |              |
| C108       | 15P         | "       | "             | "            |              |
| C109       | "           | "       | "             | "            |              |
| C110       | 10P         | "       | ±1PF          | "            |              |
| C111       | 33P         | "       | "             | "            |              |
| C112       | 300P        | "       | ±10           | "            |              |
| C113       | 0.02μ       | 25      | +80<br>-30    | "            |              |
| C114       | 100P        | 50      | ±10           | "            |              |
| C115       | 0.04μ       | 25      | +80<br>-30    | "            |              |
| C116       | "           | "       | "             | "            |              |
| C117       | 0.47μ       | 50      | +100<br>-10   | Electrolytic |              |
| C118       | 0.04μ       | 25      | +80<br>-30    | Ceramic      |              |
| C119       | 22P         | 50      | ±10           | "            |              |
| C120       | 2.2P        | 50      | ±1PF          | "            |              |
| C121       | 10P         | 50      | ±1PF          | "            |              |
| C122       | 33P         | "       | ±10           | "            |              |
| C123       | 10P         | "       | ±1PF          | "            |              |
| C124       | 0.04μ       | 25      | +80<br>-30    | "            |              |
| C125       | 0.47μ       | 50      | +75<br>-10    | Electrolytic |              |
| C126       | 0.04μ       | 25      | +80<br>-30    | Ceramic      |              |
| C127       | "           | "       | "             | "            |              |
| C201       | 100P        | 50      | ±10           | "            |              |
| C202       | 560P        | "       | "             | "            |              |
| C203       | 0.04μ       | 25      | +80<br>-30    | "            |              |
| C204       | 0.04μ       | 25      | "             | "            |              |
| C205       | "           | "       | "             | "            |              |
| C206       | "           | "       | "             | "            |              |
| C207       | "           | "       | "             | "            |              |
| C208       | Not Used    |         |               |              |              |
| C209       | 0.04μ       | 25      | +80<br>-30    | Ceramic      |              |
| C210       | "           | "       | "             | "            |              |
| C211       | "           | "       | "             | "            |              |
| C212       | 0.01μ       | "       | "             | "            |              |
| C213       | 0.04μ       | "       | "             | "            |              |
| C214       | 0.04μ       | 25      | +80<br>-30    | "            |              |

| Ref. No. | Description |         |               |              | R/S Part No. |
|----------|-------------|---------|---------------|--------------|--------------|
|          | Value (F)   | Voltage | Tolerance (%) | Material     |              |
| C215     | 0.01μ       | 25      | +80<br>-30    | Ceramic      |              |
| C216     | 0.04μ       | "       | "             | "            |              |
| C217     | "           | "       | "             | "            |              |
| C218     | "           | "       | "             | "            |              |
| C219     | "           | "       | "             | "            |              |
| C220     | 100P        | 50      | ±10           | "            |              |
| C221     | 0.02μ       | 25      | +80<br>-30    | "            |              |
| C222     | 47μ         | 6       | +100<br>-10   | Electrolytic |              |
| C223     | 100P        | 50      | ±10           | Ceramic      |              |
| C224     | 0.02μ       | 25      | +80<br>-30    | "            |              |
| C225     | 100P        | 50      | ±10           | "            |              |
| C226     | 0.02μ       | 25      | +80<br>-30    | "            |              |
| C227     | 0.04μ       | "       | "             | "            |              |
| C228     | 33P         | 50      | ±10           | "            |              |
| C229     | 390P        | 50      | ±10           | "            |              |
| C230     | "           | "       | "             | "            |              |
| C231     | 4.7μ        | 25      | +75<br>-10    | Electrolytic |              |
| C232     | 33μ         | 16      | +100<br>-10   | "            |              |
| C233     | 0.04μ       | 25      | +80<br>-30    | Ceramic      |              |
| C301     | 470μ        | 16      | +100<br>-10   | Electrolytic |              |
| C302     | 390P        | 50      | ±10           | Ceramic      |              |
| C303     | 1μ          | "       | +75<br>-10    | Electrolytic |              |
| C304     | 470P        | "       | ±10           | Ceramic      |              |
| C305     | 0.22μ       | 50      | +100<br>-10   | Electrolytic |              |
| C306     | 0.47μ       | 50      | "             | "            |              |
| C307     | 0.047μ      | "       | ±10           | Polyester    |              |
| C308     | Not Used    |         |               |              |              |
| C309     | 0.22μ       | 50      | +100<br>-10   | Electrolytic |              |
| C310     | 4700P       | "       | ±10           | Ceramic      |              |
| C311     | 4700P       | "       | "             | "            |              |
| C312     | 0.47μ       | 50      | +75<br>-10    | Electrolytic |              |
| C313     | "           | "       | "             | "            |              |
| C314     | 1000P       | "       | ±10           | Ceramic      |              |
| C315     | "           | "       | "             | "            |              |
| C316     | 3900P       | "       | "             | "            |              |
| C317     | "           | "       | "             | "            |              |
| C318     | 5600P       | "       | "             | "            |              |
| C319     | "           | "       | "             | "            |              |
| C320     | 0.1μ        | 35      | ±20           | Tantalum     |              |
| C321     | "           | "       | "             | "            |              |
| C322     | "           | "       | "             | "            |              |



| Ref. No. | Description |         |                   |              | R/S Part No. |
|----------|-------------|---------|-------------------|--------------|--------------|
|          | Value (F)   | Voltage | Tolerance (%)     | Material     |              |
| C323     | 0.1 $\mu$   | 35      | $\pm 20$          | Tantalum     |              |
| C324     | 1 $\mu$     | 50      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C325     | 0.22 $\mu$  | 35      | $\pm 20$          | Tantalum     |              |
| C326     | "           | "       | "                 | "            |              |
| C327     | 6800P       | 50      | $\pm 10$          | Ceramic      |              |
| C328     | "           | "       | "                 | "            |              |
| C329     | 0.47 $\mu$  | 50      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C330     | 0.02 $\mu$  | 25      | $\pm 80$<br>$-30$ | Ceramic      |              |
| C331     | 10 $\mu$    | 16      | $\pm 50$<br>$-10$ | Electrolytic |              |
| C332     | 1000P       | 50      | $\pm 10$          | Ceramic      |              |
| C333     | 4700P       | "       | "                 | "            |              |
| C334     | 680P        | "       | "                 | "            |              |
| C335     | 0.22 $\mu$  | 35      | $\pm 20$          | Tantalum     |              |
| C336     | Not Used    |         |                   |              |              |
| C337     | 0.1 $\mu$   | 35      | $\pm 20$          | Tantalum     |              |
| C338     | 0.17 $\mu$  | 50      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C339     | 0.02 $\mu$  | 25      | $\pm 80$<br>$-30$ | Ceramic      |              |
| C340     | 10 $\mu$    | 16      | $\pm 50$<br>$-10$ | Electrolytic |              |
| C341     | 1 $\mu$     | 50      | $\pm 75$<br>$-10$ | "            |              |
| C351     | 0.01 $\mu$  | 25      | $\pm 80$<br>$-30$ | Ceramic      |              |
| C410     | 3300P       | 50      | $\pm 10$          | Polyester    |              |
| C402     | 1 $\mu$     | "       | $\pm 75$<br>$-10$ | Electrolytic |              |
| C403     | 0.02 $\mu$  | 25      | $\pm 80$<br>$-30$ | Ceramic      |              |
| C404     | 0.04 $\mu$  | "       | "                 | "            |              |
| C405     | 3300P       | 50      | $\pm 10$          | Polyester    |              |
| C406     | Not Used    |         |                   |              |              |
| C407     | 5000P       | 50      | $\pm 10$          | Ceramic      |              |
| C408     | 3.3 $\mu$   | 25      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C409     | 0.01 $\mu$  | 50      | $\pm 10$          | Polyester    |              |
| C410     | 300P        | "       | "                 | Ceramic      |              |
| C411     | 4.7P        | "       | $\pm 0.5PF$       | "            |              |
| C412     | 0.01 $\mu$  | 25      | $\pm 80$<br>$-30$ | "            |              |
| C413     | 0.02 $\mu$  | "       | "                 | "            |              |
| C414     | 0.01 $\mu$  | "       | "                 | "            |              |
| C415     | 0.04 $\mu$  | "       | "                 | "            |              |
| C416     | 33P         | 50      | $\pm 10$          | "            |              |
| C417     | 180P        | 50      | $\pm 10$          | Ceramic      |              |
| C418     | 2700P       | "       | "                 | Polyester    |              |
| C419     | 3.3 $\mu$   | 25      | "                 | Electrolytic |              |
| C420     | Not Used    |         |                   |              |              |
| C421     | 100 $\mu$   | 25      | $\pm 50$<br>$-10$ | Electrolytic |              |

| Ref. No.    | Description |         |                   |              | R/S Part No. |
|-------------|-------------|---------|-------------------|--------------|--------------|
|             | Value (F)   | Voltage | Tolerance (%)     | Material     |              |
| C422        | Not Used    |         |                   |              |              |
| C423        | "           |         |                   |              |              |
| C424        | "           |         |                   |              |              |
| C425        | "           |         |                   |              |              |
| C426        | 1 $\mu$     | 50      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C427        | 150P        | "       | $\pm 10$          | Ceramic      |              |
| C428        | 10P         | "       | "                 | "            |              |
| C551a,b     | 2200P       | "       | "                 | "            |              |
| C601        | 10 $\mu$    | 25      | $\pm 50$<br>$-10$ | Electrolytic |              |
| C602a,b,c,d | 1 $\mu$     | 50      | $\pm 75$<br>$-10$ | "            |              |
| C603a,b,c,d | 120P        | "       | $\pm 10$          | Ceramic      |              |
| C604a,b,c,d | 47 $\mu$    | 35      | $\pm 50$<br>$-10$ | Electrolytic |              |
| C605a,b,c,d | 22 $\mu$    | 16      | "                 | "            |              |
| C606a,b,c,d | 18P         | 50      | $\pm 10$          | Ceramic      |              |
| C607a,b,c,d | 47 $\mu$    | "       | $\pm 50$<br>$-10$ | Electrolytic |              |
| C608a,b,c,d | 0.01 $\mu$  | "       | $\pm 10$          | Ceramic      |              |
| C609a,b,c,d | "           | "       | "                 | "            |              |
| C610a,b,c,d | 0.047 $\mu$ | "       | "                 | Polyester    |              |
| C611a,b,c,d | 100P        | "       | "                 | Ceramic      |              |
| C612a,b,c,d | "           | "       | "                 | "            |              |
| C651        | 0.04 $\mu$  | "       | "                 | "            |              |
| C701        | 0.47 $\mu$  | 50      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C701a,b     | 4.7 $\mu$   | 35      | $\pm 20$          | Tantalum     |              |
| C701c,d     | 0.1 $\mu$   | "       | "                 | "            |              |
| C701e,f,g,h | 180P        | 50      | $\pm 10$          | Ceramic      |              |
| C702        | 680P        | "       | "                 | "            |              |
| C702a,b     | 330P        | "       | "                 | "            |              |
| C702c,d     | 8200P       | 50      | $\pm 10$          | Polyester    |              |
| C702e,f,g,h | 0.039 $\mu$ | "       | "                 | "            |              |
| C703        | 10 $\mu$    | 16      | $\pm 50$<br>$-10$ | Electrolytic |              |
| C703a,b     | 22 $\mu$    | 10      | "                 | "            |              |
| C703c,d     | 0.039 $\mu$ | 50      | $\pm 10$          | Polyester    |              |
| C703e,f,g,h | 0.047 $\mu$ | "       | "                 | "            |              |
| C704        | 1 $\mu$     | "       | $\pm 75$<br>$-10$ | Electrolytic |              |
| C704a,b     | 100 $\mu$   | 6       | $\pm 50$<br>$-10$ | "            |              |
| C704c,d     | 0.056 $\mu$ | 50      | $\pm 10$          | Polyester    |              |
| C704e,f,g,h | 2700P       | "       | "                 | "            |              |
| C705        | 3.3 $\mu$   | 25      | $\pm 75$<br>$-10$ | Electrolytic |              |
| C705a,b     | 27P         | 50      | $\pm 10$          | Ceramic      |              |
| C705c,d     | 0.22 $\mu$  | 35      | $\pm 20$          | Tantalum     |              |
| C706a,b     | 0.012 $\mu$ | 50      | $\pm 10$          | Polyester    |              |

| Ref. No. | Description           |              |                       |              | R/S<br>Part No. |
|----------|-----------------------|--------------|-----------------------|--------------|-----------------|
|          | Value<br>( $\Gamma$ ) | Volt-<br>age | Tol-<br>erance<br>(%) | Material     |                 |
| C706c,d  | 1 $\mu$               | 50           | +75<br>-10            | Electrolytic |                 |
| C707     | 33 $\mu$              | 6            | +50<br>-10            | "            |                 |
| C707a,b  | 4.7 $\mu$             | 50           | "                     | "            |                 |
| C707c,d  | 1 $\mu$               | "            | "                     | "            |                 |
| C708     | 0.04 $\mu$            | "            | +80<br>-30            | "            |                 |
| C708a,b  | 470P                  | "            | $\pm 10$              | Ceramic      |                 |
| C708c    | 220 $\mu$             | 35           | +50<br>-10            | Electrolytic |                 |
| C709a,b  | 470P                  | 50           | $\pm 10$              | Ceramic      |                 |
| C709c,d  | 1 $\mu$               | "            | +75<br>-10            | Electrolytic |                 |
| C710a,b  | 4700P                 | "            | $\pm 10$              | Polyester    |                 |
| C710c,d  | "                     | "            | +75<br>-10            | Electrolytic |                 |
| C711a,b  | 10 $\mu$              | 16           | +50<br>-10            | "            |                 |
| C711c    | 2200P                 | 50           | $\pm 10$              | Polyester    |                 |
| C712a,b  | 2700P                 | "            | "                     | "            |                 |
| C712c    | 47 $\mu$              | 16           | +50<br>-10            | Electrolytic |                 |
| C713a,b  | 1000P                 | 50           | $\pm 10$              | Polyester    |                 |
| C713c,d  | 1 $\mu$               | "            | +75<br>-10            | Electrolytic |                 |
| C714a,b  | 2700P                 | "            | $\pm 10$              | Polyester    |                 |
| C714c,d  | 1 $\mu$               | "            | +75<br>-10            | Electrolytic |                 |
| C715a,b  | 3.3 $\mu$             | 25           | "                     | "            |                 |
| C716a,b  | 3.3 $\mu$             | 35           | "                     | "            |                 |
| C717a,b  | 1 $\mu$               | 50           | "                     | "            |                 |
| C718a,b  | 3900P                 | "            | $\pm 10$              | Polyester    |                 |
| C719a,b  | Not Used              |              |                       |              |                 |
| C720a,b  | 0.022 $\mu$           | 50           | +10                   | Polyester    |                 |
| C721a,b  | 0.068 $\mu$           | "            | "                     | "            |                 |
| C722a,b  | "                     | "            | "                     | "            |                 |
| C723a,b  | "                     | "            | "                     | "            |                 |
| C724a,b  | 0.012 $\mu$           | "            | "                     | "            |                 |
| C725a,b  | 0.22 $\mu$            | 35           | $\pm 20$              | Tantalum     |                 |
| C726a,b  | 0.022 $\mu$           | 50           | $\pm 10$              | Polyester    |                 |
| C727a,b  | 33 $\mu$              | 6            | +50<br>-10            | Electrolytic |                 |
| C728a,b  | 10 $\mu$              | 16           | "                     | "            |                 |
| C729a,b  | 0.68 $\mu$            | 35           | $\pm 20$              | Tantalum     |                 |
| C730a,b  | 0.018 $\mu$           | 50           | $\pm 10$              | Polyester    |                 |
| C731a,b  | 4700P                 | "            | "                     | "            |                 |
| C732a,b  | 0.039 $\mu$           | "            | "                     | "            |                 |
| C733a,b  | 0.082 $\mu$           | "            | "                     | "            |                 |
| C734a,h  | 4700P                 | "            | "                     | "            |                 |
| C735a,b  | 4.7 $\mu$             | 25           | +75<br>-10            | Electrolytic |                 |
| C736a,b  | 0.15 $\mu$            | 50           | $\pm 10$              | Polyester    |                 |

| Ref. No. | Description  |              |                       |              | R/S<br>Part No. |
|----------|--------------|--------------|-----------------------|--------------|-----------------|
|          | Value<br>(F) | Volt-<br>age | Tol-<br>erance<br>(%) | Material     |                 |
| C737a,b  | 0.47 $\mu$   | 50           | +75<br>-10            | Electrolytic |                 |
| C738a,b  | 10 $\mu$     | 16           | +50<br>-10            | "            |                 |
| C739a,b  | 100 $\mu$    | 6            | "                     | "            |                 |
| C740a,b  | 10P          | 50           | $\pm 10$              | Ceramic      |                 |
| C741a,b  | 1500P        | "            | "                     | Polyester    |                 |
| C742a,b  | 4.7 $\mu$    | 35           | +75<br>-10            | Electrolytic |                 |
| C743a,b  | 0.1 $\mu$    | 50           | $\pm 10$              | Polyester    |                 |
| C744a,b  | 0.033 $\mu$  | "            | "                     | "            |                 |
| C745a,b  | 4700P        | "            | "                     | "            |                 |
| C746a,b  | 1 $\mu$      | "            | +75<br>-10            | Electrolytic |                 |
| C747a,b  | 4.7 $\mu$    | 35           | "                     | "            |                 |
| C748a,b  | "            | "            | "                     | "            |                 |
| C749     | 47 $\mu$     | 50           | +50<br>-10            | "            |                 |
| C750     | 330 $\mu$    | 16           | "                     | Electrolytic |                 |
| C751     | 47 $\mu$     | 50           | "                     | "            |                 |
| C752     | 4700P        | "            | $\pm 10$              | Polyester    |                 |
| C753     | 0.47 $\mu$   | "            | +75<br>-10            | Electrolytic |                 |
| C754     | 0.033 $\mu$  | "            | $\pm 10$              | Polyester    |                 |
| C755     | 100 $\mu$    | 6            | +50<br>-10            | Electrolytic |                 |
| C756     | 0.47 $\mu$   | 50           | +75<br>-10            | "            |                 |
| C757     | 10 $\mu$     | 16           | +50<br>-10            | "            |                 |
| C758     | 0.01 $\mu$   | 25           | +80<br>-30            | Ceramic      |                 |
| C759a,b  | "            | "            | "                     | "            |                 |
| C760a,b  | "            | "            | "                     | "            |                 |
| C761a,b  | "            | "            | "                     | "            |                 |
| C762     | 41 $\mu$     | 50           | +50<br>-10            | Electrolytic |                 |
| C763     | 1000 $\mu$   | 16           | "                     | "            |                 |
| C764a,b  | 0.47 $\mu$   | 50           | +75<br>-10            | "            |                 |
| C765a,b  | "            | "            | "                     | "            |                 |
| C766     | 0.01 $\mu$   | 50           | $\pm 10$              | Ceramic      |                 |
| C801     | 1000 $\mu$   | 35           | "                     | "            |                 |
| C802     | 220 $\mu$    | 50           | "                     | "            |                 |
| C803     | "            | "            | "                     | "            |                 |
| C804     | 16 $\mu$     | "            | "                     | "            |                 |
| C805     | "            | "            | "                     | "            |                 |
| C806     | 2,200 $\mu$  | 10           | "                     | "            |                 |
| C807     | 0.01 $\mu$   | 50           | $\pm 10$              | Ceramic      |                 |
| C808     | "            | "            | "                     | "            |                 |
| C809     | "            | "            | "                     | "            |                 |
| C810     | "            | "            | "                     | "            |                 |
| C811     | "            | 500          | "                     | "            |                 |

| Ref. No.    | Description  |              |                       |              | /RS<br>Part No. |
|-------------|--------------|--------------|-----------------------|--------------|-----------------|
|             | Value<br>(F) | Volt-<br>age | Tole-<br>rance<br>(%) | Material     |                 |
| C812        | 0.01 $\mu$   | 500          | $\pm 10$              | Ceramic      |                 |
| C813        | "            | "            | "                     | "            |                 |
| C814        | "            | "            | "                     | "            |                 |
| C815        | "            | "            | "                     | "            |                 |
| C816        | "            | "            | "                     | "            |                 |
| C851        | 8000 $\mu$   | 50           | $\pm 50$<br>$-10$     | Electrolytic |                 |
| C852        | "            | "            | "                     | "            |                 |
| C853        | 4700P        | 250 AC       | $\pm 20$              | Polyester    |                 |
| C854        | "            | "            | "                     | "            |                 |
| C901a,b,c,d | 0.47 $\mu$   | 50           | $\pm 75$<br>$-10$     | Electrolytic |                 |
| C902a,b,c,d | 100P         | "            | $\pm 10$              | Ceramic      |                 |
| C903a,b,c,d | 330P         | "            | "                     | "            |                 |
| C904a,b,c,d | 1 $\mu$      | "            | $\pm 75$<br>$-10$     | Electrolytic |                 |
| C905a,b,c,d | 180P         | "            | $\pm 10$              | Ceramic      |                 |
| C906a,b,c,d | 1500P        | 50           | "                     | Polyester    |                 |
| C907a,b,c,d | 5600P        | "            | "                     | "            |                 |
| C908a,b,c,d | "            | "            | "                     | "            |                 |
| C909a,b,c,d | 0.039 $\mu$  | "            | "                     | "            |                 |
| C910a,b,c,d | "            | "            | "                     | "            |                 |
| C911a,b,c,d | 1 $\mu$      | "            | $\pm 75$<br>$-10$     | Electrolytic |                 |
| C912a,b,c,d | 33P          | "            | $\pm 10$              | Ceramic      |                 |
| C913a,b,c,d | 4.7 $\mu$    | 35           | $\pm 75$<br>$-10$     | Electrolytic |                 |
| C914        | 100 $\mu$    | 50           | $\pm 50$<br>$-10$     | "            |                 |

### CERAMIC FILTERS

| Ref. No. | Description  | R/S<br>Part No. | Part No. |
|----------|--------------|-----------------|----------|
| CF-201   | SFE 10.7MA-8 | C-0546          | 35300012 |
| CF-202   | "            | "               | "        |
| CF-203   | "            | "               | "        |



| DIODES      |              |              |          |                              |
|-------------|--------------|--------------|----------|------------------------------|
| Ref. No.    | Type No.     | R/S Part No. | Part No. | Manufacturer                 |
| D101        | 1S2687       |              | 30600560 | JRC                          |
| D102        | RD-13        |              | 30600331 | NEC                          |
| D201        | 1N60P        |              | 30600011 | UNISON                       |
| D202        | "            |              | "        | "                            |
| D203        | "            |              | "        | "                            |
| D204        | "            |              | "        | "                            |
| D205        | "            |              | "        | "                            |
| D206        | "            |              | "        | "                            |
| D207        | "            |              | "        | "                            |
| D208        | "            |              | "        | "                            |
| D209        | "            |              | "        | "                            |
| D301        | 1S2473       |              | 30600410 | Toyo Electronics             |
| D302        | "            |              | "        | "                            |
| D303        | BZ-120       |              | 30600440 | JRC                          |
| D401        | 1S2473       |              | 30600410 | Toyo Electronics             |
| D402        | 1N60P        |              | 30600011 | UNISON                       |
| D601        | WZ-162       |              | 30600320 | JRC                          |
| D602a,b,c,d | 1S2473       |              | 30600410 | Toyo Electronics             |
| D603a,b,c,d | "            |              | "        | "                            |
| D701        | 1S2473       |              | 30600410 | Toyo Electronic              |
| D703        | KB-269       |              | 30600490 | UNISON                       |
| D701a       | 1S2473       |              | 30600410 | Toyo Electronics             |
| D702a       | "            |              | "        | "                            |
| D703a       | BZ-120       |              | 30600440 | JRC                          |
| D704a,b     | 1N60         |              | 30600010 | UNISON                       |
| D705a,b     | "            |              | "        | "                            |
| D706a,b     | "            |              | "        | "                            |
| D707a,b     | "            |              | "        | "                            |
| D801        | WZ-162       |              | 30600320 | JRC                          |
| D802        | WZ-230       |              | 30600600 | "                            |
| D803        | "            |              | "        | "                            |
| D804        | VO6C         |              | 30600030 | Hitachi                      |
| D805        | VO6C         |              | 30600030 | Hitachi                      |
| D806        | HIFI SPECIAL |              | 30600520 | General Instrument of Taiwan |
| D807        | "            |              | "        | "                            |
| D808        | "            |              | "        | "                            |
| D809        | "            |              | "        | "                            |
| D810        | SR1K-2       |              | 30600540 | "                            |
| D811        | "            |              | "        | "                            |
| D812        | "            |              | "        | "                            |
| D813        | "            |              | "        | "                            |

| INTEGRATED CIRCUITS |          |              |          |                  |          |              |
|---------------------|----------|--------------|----------|------------------|----------|--------------|
| Ref. No.            | Type No. | R/S Part No. | Part No. | Manufacturer     | Type No. | Manufacturer |
| IC201               | BA-401   |              | 30900230 | Toyo Electronics | TA7060   | Toshiba      |
| IC202               | "        |              | "        | "                | "        | "            |
| IC203               | "        |              | "        | "                | "        | "            |
| IC204               | "        |              | "        | "                | "        | "            |
| IC301               | HA-1156  |              | 30900260 | Hitachi          | SN76115  | Texas        |
| IC302               | HA-1149  |              | 30900270 | "                | "        | "            |
| IC701               | MC1312P  |              | 30900190 | Motorola         | "        | "            |
| IC701a,b            | CD894A   |              | 30900280 | Signetics        | "        | "            |

## LAMPS

| Ref. No. | Description                | R/S Part No. | Mfr's Part No. |
|----------|----------------------------|--------------|----------------|
| PL1      | 8V, 250mA                  | L-0503       | 37008019       |
| PL2      | "                          | "            | "              |
| PL3      | "                          | "            | "              |
| PL4      | "                          | "            | "              |
| PL5      | "                          | "            | "              |
| PL6      | "                          | "            | "              |
| PL7      | "                          | "            | "              |
| PL8      | 6V, 65mA<br>(Dial Pointer) | D-1141       | 25034001       |
| PL9      | 6V, 65mA<br>(Dial Pointer) | "            | "              |
| PL10     | 8V, 30mA                   | L-0349       | 37008001       |
| PL11     | 8V, 30mA                   | "            | 37008001       |

## PRINTED CIRCUIT BOARDS

| Ref. No. | Description       | R/S Part No. | Mfr's Part No. |
|----------|-------------------|--------------|----------------|
| 0019     | TUNER             | X-4867       | 96001920       |
| 0021     | SQ & TONE CONTROL | X-4869       | 96002120       |
| 6037     | MAIN AMP          | X-2128       | 96603710       |
| 7088     | AUTOMATIC LAMP    |              | 96708820       |
| 7099     | DIAL LAMP         |              | 96709910       |
| 7100     | CD-4 DEMODULATOR  | X-4868       | 96710010       |
| 7101     | SWITCH            | X-5010       | 96710120       |
| 8024     | POWER SUPPLY      | X-4870       | 96802410       |

## RESISTORS

| Ref. No. | Description |          |               |          | R/S Part No. |
|----------|-------------|----------|---------------|----------|--------------|
|          | Value (ohm) | Watt-age | Tolerance (%) | Material |              |
| R101     | 100K        | 1/4      | ±5            | Carbon   |              |
| R102     | 1M          | "        | "             | "        |              |
| R103     | 1.8K        | "        | "             | "        |              |
| R104     | 5.6K        | "        | "             | "        |              |
| R105     | 100         | "        | "             | "        |              |
| R106     | 150         | "        | "             | "        |              |
| R107     | 22K         | "        | "             | "        |              |
| R108     | 100K        | "        | "             | "        |              |
| R109     | 1.8K        | "        | "             | "        |              |
| R110     | 33          | "        | "             | "        |              |
| R111     | 120         | "        | "             | "        |              |
| R112     | 100         | "        | "             | "        |              |
| R113     | 27K         | "        | "             | "        |              |
| R114     | 10K         | "        | "             | "        |              |
| R115     | 56K         | "        | "             | "        |              |
| R116     | 120K        | "        | "             | "        |              |
| R117     | 820K        | "        | "             | "        |              |
| R118     | 1.8K        | "        | "             | "        |              |
| R201     | 12K         | "        | "             | "        |              |
| R202     | 8.2K        | "        | "             | "        |              |
| R203     | 470         | "        | "             | "        |              |
| R204     | "           | "        | "             | "        |              |
| R205     | 220         | "        | "             | "        |              |
| R206     | 100K        | "        | "             | "        |              |
| R207     | 500         | "        | "             | "        |              |
| R208     | "           | "        | "             | "        |              |
| R209     | "           | "        | "             | "        |              |
| R210     | "           | "        | "             | "        |              |
| R211     | "           | "        | "             | "        |              |
| R212     | 1K          | "        | "             | "        |              |
| R213     | 18K         | "        | "             | "        |              |
| R214     | 1K          | "        | "             | "        |              |
| R215     | 2.2K        | "        | "             | "        |              |
| R216     | 10K         | "        | "             | "        |              |
| R217     | 5.6K        | "        | "             | "        |              |
| R218     | 1K          | "        | "             | "        |              |
| R219     | 390         | "        | "             | "        |              |
| R220     | 220         | "        | "             | "        |              |
| R221     | 470         | "        | "             | "        |              |
| R222     | "           | "        | "             | "        |              |
| R223     | 4.7K        | "        | "             | "        |              |
| R224     | "           | "        | "             | "        |              |
| R225     | 82          | "        | "             | "        |              |

| Ref. No. | Description |          |               |          | R/S Part No. |
|----------|-------------|----------|---------------|----------|--------------|
|          | Value (ohm) | Watt-age | Tolerance (%) | Material |              |
| R226     | 22K         | 1/4      | ±5            | Carbon   |              |
| R227     | 1K          | "        | "             | "        |              |
| R228     | 470         | "        | "             | "        |              |
| R301     | 3.3K        | "        | "             | "        |              |
| R302     | 100K        | "        | "             | "        |              |
| R303     | 47          | "        | "             | "        |              |
| R304     | 100K        | "        | "             | "        |              |
| R305     | 15K         | "        | "             | "        |              |
| R306     | 1K          | "        | "             | "        |              |
| R307     | 3.9K        | "        | "             | "        |              |
| R308     | "           | "        | "             | "        |              |
| R309     | 10K         | "        | "             | "        |              |
| R310     | "           | "        | "             | "        |              |
| R311     | 100K        | "        | "             | "        |              |
| R312     | "           | "        | "             | "        |              |
| R313     | 27K         | "        | "             | "        |              |
| R314     | "           | "        | "             | "        |              |
| R315     | 1M          | "        | "             | "        |              |
| R316     | "           | "        | "             | "        |              |
| R317     | 2.2K        | "        | "             | "        |              |
| R318     | 4.7K        | "        | "             | "        |              |
| R319     | 100K        | "        | "             | "        |              |
| R320     | "           | "        | "             | "        |              |
| R321     | 2M          | "        | "             | "        |              |
| R322     | 15K         | "        | "             | "        |              |
| R323     | 4.7M        | 1/2      | ±10           | Solid    |              |
| R324     | 220K        | 1/4      | ±5            | Carbon   |              |
| R325     | 68K         | "        | "             | "        |              |
| R326     | 33K         | "        | "             | "        |              |
| R327     | 18K         | "        | "             | "        |              |
| R328     | 1.8K        | "        | "             | "        |              |
| R329     | 68K         | "        | "             | "        |              |
| R330     | 100K        | "        | "             | "        |              |
| R331     | 22K         | "        | "             | "        |              |
| R332     | 3.3K        | "        | "             | "        |              |
| R333     | 1K          | "        | "             | "        |              |
| R334     | 68K         | "        | "             | "        |              |
| R335     | 100K        | "        | "             | "        |              |
| R336     | "           | "        | "             | "        |              |
| R337     | 8.2K        | "        | "             | "        |              |
| R338     | 9.1K        | "        | "             | "        |              |
| R351     | 1.8K        | "        | "             | "        |              |
| R352     | 100K        | "        | "             | "        |              |

| Ref. No.    | Description |          |               |          | R/S Part No. |
|-------------|-------------|----------|---------------|----------|--------------|
|             | Value (ohm) | Watt-age | Tolerance (%) | Material |              |
| R353        | 2.2M        | 1/4      | ±5            | Carbon   |              |
| R401        | 390K        | "        | "             | "        |              |
| R402        | 1.5K        | "        | "             | "        |              |
| R403        | 470         | "        | "             | "        |              |
| R404        | 8.2         | "        | "             | "        |              |
| R405        | 15K         | "        | "             | "        |              |
| R406        | 3.9K        | "        | "             | "        |              |
| R407        | 27K         | "        | "             | "        |              |
| R408        | 1.8K        | "        | "             | "        |              |
| R409        | Not Used    |          |               |          |              |
| R410        | 27          | 1/4      | ±5            | Carbon   |              |
| R411        | 470         | "        | "             | "        |              |
| R412        | "           | "        | "             | "        |              |
| R413        | 27K         | "        | "             | "        |              |
| R414        | 470         | "        | "             | "        |              |
| R415        | 27K         | "        | "             | "        |              |
| R416        | 4.7K        | "        | "             | "        |              |
| R417        | 1K          | "        | "             | "        |              |
| R418        | 470         | "        | "             | "        |              |
| R419        | 150K        | "        | "             | "        |              |
| R420        | 100K        | "        | "             | "        |              |
| R421        | 47K         | "        | "             | "        |              |
| R422        | 100K        | "        | "             | "        |              |
| R423        | 7.5K        | "        | "             | "        |              |
| R424        | 12K         | "        | "             | "        |              |
| R425        | 22K         | "        | "             | "        |              |
| R426        | Not Used    |          |               |          |              |
| R427        | "           |          |               |          |              |
| R428        | "           |          |               |          |              |
| R429        | "           |          |               |          |              |
| R430        | "           |          |               |          |              |
| R431        | "           |          |               |          |              |
| R432        | "           |          |               |          |              |
| R433        | 100K        | 1/4      | ±5            | Carbon   |              |
| R434        | 4.7K        | "        | "             | "        |              |
| R551a,b     | 22K         | "        | "             | "        |              |
| R552a,b     | "           | "        | "             | "        |              |
| R601a,b,c,d | 3.9K        | "        | "             | "        |              |
| R602a,b,c,d | 120K        | "        | "             | "        |              |
| R603a,b,c,d | 18K         | "        | "             | "        |              |
| R604        | 3.3K        | "        | "             | "        |              |
| R605a,b,c,d | 3.9K        | "        | "             | "        |              |
| R606a,b,c,d | 56          | "        | "             | "        |              |
| R607a,b,c,d | 1.6K        | "        | "             | "        |              |
| R608a,b,c,d | 27K         | "        | "             | "        |              |



| Ref. No.    | Description |          |               |                  | R/S Part No. |
|-------------|-------------|----------|---------------|------------------|--------------|
|             | Value (ohm) | Watt-age | Tolerance (%) | Material         |              |
| R609a,b,c,d | 2.2K        | 1/4      | ±5            | Carbon           |              |
| R610a,b,c,d | 6.8K        | "        | "             | "                |              |
| R611a,b,c,d | 3.9K        | "        | "             | "                |              |
| R612a,b,c,d | 2.2K        | "        | "             | "                |              |
| R613a,b,c,d | 820         | "        | "             | "                |              |
| R614a,b,c,d | 100         | "        | "             | "                |              |
| R615a,b,c,d | "           | "        | "             | Non Flame Carbon |              |
| R616a,b,c,d | 10          | "        | "             | "                |              |
| R617a,b,c,d | 100         | "        | "             | "                |              |
| R618a,b,c,d | 10          | "        | "             | "                |              |
| R619a,b,c,d | 220         | "        | "             | Carbon           |              |
| R620a,b,c,d | 0.5         | 5        | ±10           | Wire Wound       |              |
| R621a,b,c,d | "           | "        | "             | "                |              |
| R622a,b,c,d | 270         | 1/4      | ±5            | Carbon           |              |
| R623a,b,c,d | "           | "        | "             | "                |              |
| R624a,b,c,d | 120         | "        | "             | "                |              |
| R625a,b,c,d | "           | "        | "             | "                |              |
| R626a,b,c,d | 100         | "        | "             | Non Flame Carbon |              |
| R627a,b,c,d | 10          | 1        | ±10           | Metal Fixed      |              |
| R651a,b,c,d | 220         | "        | "             | Metal-Oxide      |              |
| R701        | 2.2M        | 1/4      | ±5            | Carbon           |              |
| R701-1a,b   | 180K        | "        | "             | "                |              |
| R701a,b     | 2.2K        | "        | "             | "                |              |
| R701c,d     | 4.3K        | "        | "             | "                |              |
| R701e,f,g,h | 6.8K        | "        | "             | "                |              |
| R702        | 220K        | "        | "             | "                |              |
| R702-1      | 12K         | "        | "             | "                |              |
| R702a,b     | "           | "        | "             | "                |              |
| R702c,d     | 4.3K        | "        | "             | "                |              |
| R702e,f,g,h | 10K         | "        | "             | "                |              |
| R703        | 1K          | "        | "             | "                |              |
| R703-1      | 47K         | "        | "             | "                |              |
| R703a,b     | 680K        | "        | "             | "                |              |
| R703c,d     | 3.6K        | "        | "             | "                |              |
| R703e,f,g,h | 56K         | "        | "             | "                |              |
| R704        | 820K        | "        | "             | "                |              |
| R704a,b     | 15K         | "        | "             | "                |              |
| R704c,d     | 3.6K        | "        | "             | "                |              |
| R704e,f,g,h | 10K         | "        | "             | "                |              |
| R705        | 6.8K        | "        | "             | "                |              |
| R705a,b     | 470         | "        | "             | "                |              |

| Ref. No.    | Description |          |               |             | R/S Part No. |
|-------------|-------------|----------|---------------|-------------|--------------|
|             | Value (ohm) | Watt-age | Tolerance (%) | Material    |              |
| R705c,d     | 220K        | 1/4      | ±5            | Carbon      |              |
| R705e,f,g,h | 820K        | "        | "             | "           |              |
| R706        | 820         | "        | "             | "           |              |
| R706a,b     | 270K        | "        | "             | "           |              |
| R706c,d     | 220K        | "        | "             | "           |              |
| R707        | 100K        | "        | "             | "           |              |
| R707a,b     | 8.2K        | "        | "             | "           |              |
| R707c       | 7.5K        | "        | "             | "           |              |
| R708        | 33K         | "        | "             | "           |              |
| R708a,b     | 1K          | "        | "             | "           |              |
| R708c       | 47K         | "        | "             | "           |              |
| R709        | 1.5K        | "        | "             | "           |              |
| R709a,b     | 330K        | "        | "             | "           |              |
| R709c,d     | 100K        | "        | "             | "           |              |
| R710        | 22K         | "        | "             | "           |              |
| R710a,b     | 27K         | "        | "             | "           |              |
| R710c,d     | 5.6K        | "        | "             | "           |              |
| R711        | 1.5K        | "        | "             | "           |              |
| R711a,b     | 4.7K        | "        | "             | "           |              |
| R711c,d     | 3.3K        | "        | "             | "           |              |
| R712        | 22K         | "        | "             | "           |              |
| R712a,b     | 10K         | "        | "             | "           |              |
| R712c,d     | 220K        | "        | "             | "           |              |
| R713        | 1.5K        | "        | "             | "           |              |
| R713a,b     | 430K        | "        | "             | "           |              |
| R713c,d     | 100         | "        | "             | "           |              |
| R714        | 150         | "        | "             | "           |              |
| R714a,b     | 27K         | "        | "             | "           |              |
| R714c       | 1.5K        | "        | "             | "           |              |
| R715        | 2.7K        | "        | "             | "           |              |
| R715a,b     | 10K         | "        | "             | "           |              |
| R715c       | 6.8K        | "        | "             | "           |              |
| R716        | 2.2K        | "        | "             | "           |              |
| R716a,b     | 150         | "        | "             | "           |              |
| R716c       | 3.9K        | "        | "             | "           |              |
| R717        | 2.7K        | "        | "             | "           |              |
| R717a,b     | 5.6K        | "        | "             | "           |              |
| R717c       | 1K          | 1        | ±10           | Metal Fixed |              |
| R718        | 47K         | 1/4      | ±5            | Carbon      |              |
| R718a,b     | 10K         | "        | "             | "           |              |
| R718c,d     | 270K        | "        | "             | "           |              |
| R719        | 22K         | "        | "             | "           |              |
| R719a,b     | 10K         | "        | "             | "           |              |

| Ref. No. | Description |          |               |          | R/S Part No. |
|----------|-------------|----------|---------------|----------|--------------|
|          | Value (ohm) | Watt-age | Tolerance (%) | Material |              |
| R719c,d  | 100K        | 1/4      | ±5            | Carbon   |              |
| R720     | 220K        | "        | "             | "        |              |
| R720a,b  | 2.2K        | "        | "             | "        |              |
| R720c,d  | 3.3K        | "        | "             | "        |              |
| R721     | 220K        | "        | "             | "        |              |
| R721a,b  | 2.2K        | "        | "             | "        |              |
| R721c,d  | 3.3K        | "        | "             | "        |              |
| R722     | 220K        | "        | "             | "        |              |
| R722a,b  | 2.7K        | "        | "             | "        |              |
| R722c,d  | 220K        | "        | "             | "        |              |
| R723a,b  | 330         | "        | "             | "        |              |
| R723c,d  | 68K         | "        | "             | "        |              |
| R724a,b  | 150K        | "        | "             | "        |              |
| R724c,d  | 10K         | "        | "             | "        |              |
| R725a,b  | 6.8K        | "        | "             | "        |              |
| R726a,h  | 4.7K        | "        | "             | "        |              |
| R727a,b  | 220         | "        | "             | "        |              |
| R728a,b  | 18K         | "        | "             | "        |              |
| R729a,b  | 270K        | "        | "             | "        |              |
| R730a,b  | 56K         | "        | "             | "        |              |
| R731a,b  | 47K         | "        | "             | "        |              |
| R732a,b  | 6.8K        | "        | "             | "        |              |
| R733a,b  | 4.7K        | "        | "             | "        |              |
| R734a,b  | 6.8K        | "        | "             | "        |              |
| R735a,b  | 18K         | "        | "             | "        |              |
| R736a,b  | 47K         | "        | "             | "        |              |
| R737a,b  | 390K        | "        | "             | "        |              |
| R738a,b  | 100         | "        | "             | "        |              |
| R739a,b  | 8.2K        | "        | "             | "        |              |
| R740a,b  | 150K        | "        | "             | "        |              |
| R741a,b  | 470K        | "        | "             | "        |              |
| R742a,b  | 100K        | "        | "             | "        |              |
| R743a,b  | 27K         | "        | "             | "        |              |
| R744a,b  | 8.2K        | "        | "             | "        |              |
| R745a,b  | 39K         | "        | "             | "        |              |
| R746a,b  | 270K        | "        | "             | "        |              |
| R747a,b  | 4.7K        | "        | "             | "        |              |
| R748a,b  | 120         | "        | "             | "        |              |
| R749a,b  | 68K         | "        | "             | "        |              |
| R750a,b  | 33K         | "        | "             | "        |              |
| R751a,b  | Not Used    |          |               |          |              |
| R752a,b  | 100K        | 1/4      | ±5            | Carbon   |              |
| R753     | Not Used    |          |               |          |              |
| R754a,b  | 27K         | 1/4      | ±5            | Carbon   |              |
| R755a,b  | 2.2K        | "        | "             | "        |              |
| R756a,b  | 220K        | "        | "             | "        |              |
| R757a,b  | 68K         | "        | "             | "        |              |
| R758a,b  | 3K          | "        | "             | "        |              |
| R759a,b  | 6.8K        | "        | "             | "        |              |
| R760a,b  | 8.2K        | "        | "             | "        |              |
| R761a,b  | 3.9K        | "        | "             | "        |              |
| R762a,b  | 1K          | "        | "             | "        |              |
| R763a,b  | "           | "        | "             | "        |              |
| R764a,b  | 47K         | "        | "             | "        |              |
| R765a,b  | 180K        | "        | "             | "        |              |
| R766a,h  | 22K         | "        | "             | "        |              |
| R767a,b  | 5.6K        | "        | "             | "        |              |
| R768a,b  | 12K         | "        | "             | "        |              |
| R769a,b  | 8.2K        | "        | "             | "        |              |
| R770a,b  | 3.3K        | "        | "             | "        |              |
| R771a,b  | 220K        | "        | "             | "        |              |
| R772a,b  | 470K        | "        | "             | "        |              |
| R773a,b  | 1.8K        | "        | "             | "        |              |
| R774a,b  | "           | "        | "             | "        |              |
| R775a,b  | 10K         | "        | "             | "        |              |
| R776a,b  | "           | "        | "             | "        |              |
| R777a,b  | 8.2K        | "        | "             | "        |              |
| R778a,b  | 10K         | "        | "             | "        |              |
| R779a,b  | 2.7K        | "        | "             | "        |              |
| R780a,b  | 330         | "        | "             | "        |              |
| R781a,b  | 150         | "        | "             | "        |              |
| R782     | 82K         | "        | "             | "        |              |
| R783     | 2.7K        | "        | "             | "        |              |
| R784     | 100K        | "        | "             | "        |              |
| R785     | 4.7K        | "        | "             | "        |              |
| R786     | 8.2K        | "        | "             | "        |              |
| R787     | 68          | "        | "             | "        |              |
| R788     | 18K         | "        | "             | "        |              |
| R789     | 1.8K        | "        | "             | "        |              |
| R790     | 33K         | "        | "             | "        |              |
| R791     | "           | "        | "             | "        |              |
| R792     | 8.2K        | "        | "             | "        |              |
| R793     | 15K         | "        | "             | "        |              |
| R794     | "           | "        | "             | "        |              |
| R795     | Not Used    |          |               |          |              |
| R796     | 100K        | 1/4      | ±5            | Carbon   |              |
| R797     | Not Used    |          |               |          |              |

| Ref. No. | Description |          |               |          | R/S Part No. |
|----------|-------------|----------|---------------|----------|--------------|
|          | Value (ohm) | Watt-age | Tolerance (%) | Material |              |
| R752a,b  | 100K        | 1/4      | ±5            | Carbon   |              |
| R753     | Not Used    |          |               |          |              |
| R753a,b  | 27K         | 1/4      | ±5            | Carbon   |              |
| R754a,b  | 2.2K        | "        | "             | "        |              |
| R755a,b  | 220K        | "        | "             | "        |              |
| R756a,b  | 68K         | "        | "             | "        |              |
| R757a,b  | 3K          | "        | "             | "        |              |
| R758a,b  | 6.8K        | "        | "             | "        |              |
| R759a,b  | 8.2K        | "        | "             | "        |              |
| R760a,b  | 3.9K        | "        | "             | "        |              |
| R761a,b  | 1K          | "        | "             | "        |              |
| R762a,b  | "           | "        | "             | "        |              |
| R763a,b  | 47K         | "        | "             | "        |              |
| R764a,b  | 180K        | "        | "             | "        |              |
| R765a,b  | 22K         | "        | "             | "        |              |
| R766a,h  | 5.6K        | "        | "             | "        |              |
| R767a,b  | 12K         | "        | "             | "        |              |
| R768a,b  | 8.2K        | "        | "             | "        |              |
| R769a,b  | 3.3K        | "        | "             | "        |              |
| R770a,b  | 220K        | "        | "             | "        |              |
| R771a,b  | 470K        | "        | "             | "        |              |
| R772a,b  | 1.8K        | "        | "             | "        |              |
| R773a,b  | "           | "        | "             | "        |              |
| R774a,b  | 10K         | "        | "             | "        |              |
| R775a,b  | "           | "        | "             | "        |              |
| R776a,b  | 8.2K        | "        | "             | "        |              |
| R777a,b  | 10K         | "        | "             | "        |              |
| R778a,b  | 2.7K        | "        | "             | "        |              |
| R779a,b  | 330         | "        | "             | "        |              |
| R780a,b  | 150         | "        | "             | "        |              |
| R781a,b  | 82K         | "        | "             | "        |              |
| R782     | 2.7K        | "        | "             | "        |              |
| R783     | 100K        | "        | "             | "        |              |
| R784     | 4.7K        | "        | "             | "        |              |
| R785     | 8.2K        | "        | "             | "        |              |
| R786     | 68          | "        | "             | "        |              |
| R787     | 18K         | "        | "             | "        |              |
| R788     | 1.8K        | "        | "             | "        |              |
| R789     | 33K         | "        | "             | "        |              |
| R790     | "           | "        | "             | "        |              |
| R791     | 8.2K        | "        | "             | "        |              |
| R792     | 15K         | "        | "             | "        |              |
| R793     | "           | "        | "             | "        |              |
| R794     | Not Used    |          |               |          |              |
| R795     | 100K        | 1/4      | ±5            | Carbon   |              |
| R796     | Not Used    |          |               |          |              |

| Ref. No.    | Description |         |               |                       | R/S Part No. |
|-------------|-------------|---------|---------------|-----------------------|--------------|
|             | Value (ohm) | Wattage | Tolerance (%) | Material              |              |
| R794        | 10K         | 1/4     | ±5            | Carbon                |              |
| R795        | 100         | "       | "             | Non Flame Carbon      |              |
| R796        | "           | "       | "             | Carbon                |              |
| R797        | 1K          | 1       | ±10           | Metal Fixed           |              |
| R798        | 1.8K        | 1/4     | ±5            | Carbon                |              |
| R799        | 18K         | "       | "             | "                     |              |
| R801        | 33          | 2       | ±10           | Non Flame Metal Fixed |              |
| R802        | 6.8K        | 1/4     | ±5            | Carbon                |              |
| R803        | 47          | "       | "             | "                     |              |
| R804        | 15          | "       | "             | Non Flame Carbon      |              |
| R805        | 47          | 2       | ±10           | Non Flame Metal Fixed |              |
| R806        | 1.2K        | 1/4     | ±5            | Carbon                |              |
| R807        | 33          | "       | "             | "                     |              |
| R808        | 10          | "       | "             | Non Flame Carbon      |              |
| R851        | 2.2M        | 1/2     | "             | "                     |              |
| R901a,b,c,d | 82K         | 1/4     | ±5            | Carbon                |              |
| R902a,b,c,d | 10K         | "       | "             | "                     |              |
| R903a,b,c,d | 1K          | "       | "             | "                     |              |
| R904a,b,c,d | 470K        | "       | "             | "                     |              |
| R905a,b,c,d | 82K         | "       | "             | "                     |              |
| R906a,b,c,d | 1K          | "       | "             | "                     |              |
| R907a,b,c,d | 4.7K        | "       | "             | "                     |              |
| R908a,b,c,d | "           | "       | "             | "                     |              |
| R909a,b,c,d | "           | "       | "             | "                     |              |
| R910a,b,c,d | 1K          | "       | "             | "                     |              |
| R911a,b,c,d | 6.8K        | "       | "             | "                     |              |
| R912a,b,c,d | "           | "       | "             | "                     |              |
| R913a,b,c,d | 15K         | "       | "             | "                     |              |
| R914a,b,c,d | "           | "       | "             | "                     |              |
| R915a,b,c,d | "           | "       | "             | "                     |              |
| R916a,b,c,d | "           | "       | "             | "                     |              |
| R917a,b,c,d | 820K        | "       | "             | "                     |              |
| R918a,b,c,d | 6.8K        | "       | "             | "                     |              |
| R919a,b,c,d | 20K         | "       | "             | "                     |              |
| R920        | 560         | "       | "             | "                     |              |

| SWITCHES |                     |              |                |
|----------|---------------------|--------------|----------------|
| Ref. No. | Description         | R/S Part No. | Mfr's Part No. |
| S1a~k    | Selector            | S-1181       | 27100101       |
| S2a~n    | Mode                | S-1183       | 27100102       |
| S3       | Audiotor            | S-1182       | 27100100       |
| S4~S9    | Function (6 keys)   | S-7213       | 27200063       |
| S10, S11 | Speakers            | S-7212       | 27200062       |
| S12      | Power (UL)          |              | 27200064       |
| S13      | Phono Level         |              | 27300008       |
| S14      | Thermal Switch (UL) | S-0647       | 30700130       |

| TRANSFORMERS & COILS |                         |              |                |
|----------------------|-------------------------|--------------|----------------|
| Ref. No.             | Description             | R/S Part No. | Mfr's Part No. |
| L101                 | FM Antenna Coil 119A    |              | 35501191       |
| L102                 | FM RF Coil 121B         | CA-4587      | 35501212       |
| L103                 | " 119A                  | CA-0229      | 35501191       |
| L104                 | FM Choke Coil           | CB-2121      | 35500070       |
| L105                 | FM OSC Coil 114L        | C-4517       | 35501146       |
| L151                 | FM Balun Transformer    | CA-0435      | 35500060       |
| L201                 | Inductor 144LY-330K     |              | 35500160       |
| L202                 | "                       |              | "              |
| L203                 | Not Used                |              |                |
| L204                 | "                       |              |                |
| L205                 | Inductor 144LY-330K     | CA-3100      | 35500160       |
| L206                 | Inductor LT-B33         |              | 35500090       |
| L301                 | Choke Coil 40mH         | CA-3253      | 35500250       |
| L302                 | "                       | "            | "              |
| L303                 | Inductor 144LY 102K     | CA-2936      | 35500150       |
| L401                 | AM RF Coil 112B         | CA-4586      | 35501122       |
| L402                 | AM OSC Coil 407L        | CA-4588      | 35504076       |
| L451                 | AM Bar Antenna          | CA-0230      | 35400381       |
| L601a,b,c,d          | Choke Coil 8μH          | CB-2244      | 35500170       |
| L701a,b              | Choke Coil 92mH         | CB-2245      | 35500260       |
| LP701a,b             | Low Pass Filter BL-12NN |              | 35000030       |
| LP702a,b             | "                       |              | "              |
| T101                 | FM IFT 107A             |              | 35701071       |
| T201                 | FM IFT 214D             | CA-7358      | 35702144       |
| T401                 | AM IFT 404B             | CA-7459      | 35704042       |
| T402                 | "                       |              | "              |
| T851                 | Power Transformer (UL)  | TA-0477      | 35900159       |
|                      | " (CSA)                 |              | 35900158       |
| T851                 | " (EP)                  |              | 35900159       |



# TRANSISTORS

| Ref. No.     | Type No. | R/S Part No. | Part No. | Manufacturer     | Substitute |              |
|--------------|----------|--------------|----------|------------------|------------|--------------|
|              |          |              |          |                  | Type No.   | Manufacturer |
| TR101        | 3SK45    |              | 30400071 | Hitachi          | 3SK41      | NEC          |
| TR102        | 2SC1047  |              | 30200461 | Matsushita       | 2SC839     | "            |
| TR103        | "        |              | "        | "                | "          | "            |
| TR201        | 2SC710   |              | 30200382 | Mitsubishi       | 2SC930     | Sanyo        |
| TR202        | "        |              | "        | "                | "          | "            |
| TR203        | 2SC828   |              | 30200242 | Matsushita       | 2SC1364    | Sony         |
| TR301        | 2SC1364  |              | 30200862 | Sony             | 2SC828     | Matsushita   |
| TR302        | "        |              | "        | "                | "          | "            |
| TR303        | 2SA641   |              | 30000111 | NEC              | 2SA678     | Sony         |
| TR304        | 2SC1364  |              | 30200862 | Sony             | 2SC828     | Matsushita   |
| TR305        | 2SA641   |              | 30000111 | NEC              | 2SA678     | Sony         |
| TR306        | 2SC1364  |              | 30200862 | Sony             | 2SC828     | Matsushita   |
| TR307        | "        |              | "        | "                | "          | "            |
| TR401        | 2SC930   |              | 30200271 | Sony             | BF254      | Siemens      |
| TR402        | "        |              | "        | "                | "          | "            |
| TR403        | "        |              | "        | "                | "          | "            |
| TR404        | MP5A-13  |              | 30200750 | Motorola         |            |              |
| TR601a,b,c,d | 2SA763   |              | 30000331 | JRC              | 2SA640     | NEC          |
| TR602a,b,c,d | "        |              | "        | "                | "          | "            |
| TR603a,b,c,d | 2SC1509  |              | 30200963 | Matsushita       | 2SC1670    | Sony         |
| TR604a,b,c,d | 2SC1539  |              | 30200921 | Toyo Electronics |            |              |
| TR605a,b,c,d | 2SC1509  |              | 30200963 | Matsushita       | 2SC1670    | Sony         |
| TR606a,b,c,d | 2SA777   |              | 30000373 |                  | 2SA840     | Sony         |
| TR607a,b,c,d | 2SC1051  |              | 30200982 | Sanyo            | 2SC1402    | Sanken       |
| TR608a,b,c,d | 2SC1051  |              | "        | "                | "          | "            |
| TR609a,b,c,d | 2SC828   |              | 30200241 | Matsushita       | 2SC711     | Mitsubishi   |
| TR610a,b,c,d | 2SA733   |              | 30000423 | NEC              | 2SA678     | Sony         |
| TR701        | 2SC828   |              | 30200242 | Matsushita       | 2SC711     | Mitsubishi   |
| TR702        | "        |              | "        | "                | "          | "            |
| TR703        | "        |              | "        | "                | "          | "            |
| TR704        | "        |              | "        | "                | "          | "            |
| TR705        | 2SC1384  |              | 30200603 | Matsushita       | 2SC1175    | Sony         |
| TR706        | "        |              | "        | "                | "          | "            |
| TR701a,b,c,d | 2SC1362  |              | 30200851 | Sony             | 2SC1000    | Toshiba      |
| TR702a,b,c,d | "        |              | "        | "                | "          | "            |
| TR703a,b     | 2SC1362  |              | 30200851 | Sony             | 2SC1000    | Toshiba      |
| TR704a,b     | "        |              | "        | "                | "          | "            |
| TR705a,b     | 2SA763   |              | 30000331 | JRC              | 2SA640     | NEC          |
| TR706a,b     | 2SC1362  |              | 30200851 | Sony             | 2SC1000    | Toshiba      |
| TR707a,b     | 2SC828   |              | 30200241 | Matsushita       | 2SC711     | Mitsubishi   |
| TR708a,b     | 2SK40    |              | 30400082 | Hitachi          |            |              |
| TR709a,b     | 2SC828   |              | 30200241 | Matsushita       | 2SC711     | Mitsubishi   |
| TR710a,b     | 2SK40    |              | 30400081 | Hitachi          |            |              |
| TR711a,b     | 2SC1362  |              | 30200851 | Sony             | 2SC1000    | Toshiba      |
| TR712a,b     | "        |              | "        | "                | "          | "            |
| TR713a,b     | "        |              | "        | "                | "          | "            |
| TR714a,b     | "        |              | "        | "                | "          | "            |
| TR715        | 2SC1636  |              | 30201071 | Sony             |            |              |

| Ref. No.     | Type No. | R/S Part No. | Part No. | Manufacturer | Substitute |              |
|--------------|----------|--------------|----------|--------------|------------|--------------|
|              |          |              |          |              | Type No.   | Manufacturer |
| TR716        | 2SC828   |              | 30200241 | Matsushita   | 2SC711     | Mitsubishi   |
| TR717        | "        |              | "        | "            | "          | "            |
| TR718        | 2SC1364  |              | 30200861 | Sony         | 2SC945     | NEC          |
| TR719        | "        |              | "        | "            | "          | "            |
| TR720        | "        |              | "        | "            | "          | "            |
| TR721        | 2SC828   |              | 30200241 | Matsushita   | 2SC711     | Mitsubishi   |
| TR722        | 2SC1364  |              | 30200861 | Sony         | 2SC945     | NEC          |
| TR801        | 2SD330   |              | 30300192 | Sanyo        | 2SC1419    | Hitachi      |
| TR802        | "        |              | "        | "            | "          | "            |
| TR901a,b,c,d | 2SC1362  |              | 30200851 | Sony         | 2SC1000    | Toshiba      |
| TR902a,b,c,d | 2SA763   |              | 30000331 | JRE          | 2SA640     | NEC          |
| TR903a,b,c,d | 2SC1362  |              | 30200851 | Sony         | 2SC1000    | Toshiba      |

| VARIABLE CAPACITORS |                                          |              |                | VARIABLE RESISTORS |                                              |              |                |
|---------------------|------------------------------------------|--------------|----------------|--------------------|----------------------------------------------|--------------|----------------|
| Ref. No.            | Description                              | R/S Part No. | Mfr's Part No. | Ref. No.           | Description                                  | R/S Part No. | Mfr's Part No. |
| VC101               | Tuning gang (Include TC101-103, 105-107) | C-4516       | 26370081       | VR201              | Meter Setting 5K $\Omega$ /B                 | P-6271       | 28100055       |
| TC104               | Trimmer                                  | C-0447       | 26010093       | VR301              | MPX. Separation Control 50K $\Omega$ /B      | P-6272       | 28100082       |
|                     |                                          |              |                | VR302              | Muting & Auto Stereo Setting 20K $\Omega$ /B | P-1164       | 28100008       |
|                     |                                          |              |                | VR303              | PLL MPX. Phase Lock Control 5K $\Omega$ /B   | P-6273       | 28100083       |
|                     |                                          |              |                | VR401              | AM AGC Control 500K $\Omega$ /B              | P-6270       | 28100040       |
|                     |                                          |              |                | VR402              | AM Output Level Control 5K $\Omega$ /B       |              | 28100083       |
|                     |                                          |              |                | VR601a,b,c,d       | Idling Current Control 1K $\Omega$ /B        | P-6274       | 28100037       |
|                     |                                          |              |                | VR701a,b           | CD-4 OSC Freq. Control 2K $\Omega$ /B        | P-6275       | 28100084       |
|                     |                                          |              |                | VR702a,b           | CD-4 SUB CH. Level Control 5K $\Omega$ /B    | P-6276       | 28100085       |
|                     |                                          |              |                | VR703a,b           | CD-4 LOW Freq. ANRS Control 20K $\Omega$ /B  | P-6277       | 28100086       |
|                     |                                          |              |                | VR704a,b           | CD-4 HIGH FREQ. ANRS Control 20K $\Omega$ /B |              | 28100086       |
|                     |                                          |              |                | VR751a,b           | CD-4 Separation Control 5K $\Omega$ /B       | P-1528       | 28000096       |
|                     |                                          |              |                | VR901a,b,c,d       | Treble Control 100K $\Omega$ /Bx4            | P-1531       | 28000094       |
|                     |                                          |              |                | VR902a,b,c,d       | Midrange Control 100K $\Omega$ /Bx4          | "            | "              |
|                     |                                          |              |                | VR903a,b,c,d       | Bass Control 100K $\Omega$ /Bx4              | "            | "              |
|                     |                                          |              |                | VR951a,b,c,d       | Volume Control 200K $\Omega$ /Bx2            | P-1530       | 28200021       |
|                     |                                          |              |                | VR952a,b,c,d       | Balance Control 20K $\Omega$ /MIV            |              | 28000095       |

## MISCELLANEOUS PARTS LIST

| Ref. No. | Description                 | R/S<br>Part No. | Mfr's<br>Part No. | Ref. No. | Description                     | R/S<br>Part No. | Mfr's<br>Part No. |
|----------|-----------------------------|-----------------|-------------------|----------|---------------------------------|-----------------|-------------------|
| 1        | Back Panel                  |                 | 11123003          | 44       | Spring for Meter                |                 | 19041002          |
| 2        | AC Outlet IR02 (UL)         | J-0650          | 34048001          | 45       | Meter 250μA                     | M-0257          | 60250003          |
| 3        | Fuseholder FH-002 (UL)      |                 | 34032001          | 46       | Fiber for Meter                 |                 | 08038002          |
| 4        | Fuse 5A 125V (UL)           | HF-1090         | 38100050          | 47       | Wrapping Pin 19                 |                 | 19043001          |
| 5        | 4P Screw Terminal           |                 | 53041600          | 48       | Spring Washer M3                |                 | 42250341          |
| 6        | 15P Pin Jack terminal       | J-0649          | 33150100          | 49       | Tapping Screw M3x6              |                 | 40130061          |
| 7        | 12P Screw Terminal          |                 | 53120130          | 50       | Pilot Lamp Grommet              |                 | 74001002          |
| 8        | 8P Screw Terminal           |                 | 53082330          | 51       | Lug Terminal 2P1L2P             |                 | 51024002          |
| 9        | Cord Strain relief (UL)     |                 | 74089001          | 52       | Light Shielding Foam            |                 | 73185001          |
| 10       | Cord Stopper                |                 | 74035001          | 53       | Light Shielding Fiber A         |                 | 73188002          |
| 11       | AM Bar Antenna L451         | CA-0230         | 35400381          | 54       | Light Shielding Fiber B         |                 | 73189001          |
| 12       | Bar Ant. Holder             |                 | 63030001          | 55       | Light Shielding Foam            |                 | 73187001          |
| 13       | Bracket for Bar Ant. Holder |                 | 63026002          | 56       | Plane Washer M3                 |                 | 74210001          |
| 14       | Nut M4                      |                 | 40000030          | 57       | Power SW Insulating Fiber       |                 | 73191001          |
| 15       | Screw M4x45                 |                 | 40340451          | 58       | Light Shielding Fiber           |                 | 73161001          |
| 16       | Flat Plane Washer M4        |                 | 42120421          | 59       | Insulating Fiber                |                 | 75055001          |
| 17       | Tapping Screw M3x8          |                 | 40140081          | 60       | Side Chassis                    |                 | 01070001          |
| 18       | Screw M3x8                  |                 | 40330081          | 61       | Center Chassis                  |                 | 01071001          |
| 19       | Screw M3x6                  |                 | 40330061          | 62       | Power Transformer Bracket       |                 | 63990002          |
| 20       | Line Cord Ant. Clamper      |                 | 63101001          | 63       | Dial Drum                       |                 | 21009001          |
| 21       | Line Cord Ant. Fiber        |                 | 75017002          | 64       | Spring for Dial Drum            | RB-5314         | 19045001          |
| 22       | Pulley Shaft E              |                 | 24003001          | 65       | Dial String                     |                 | 84156001          |
| 23       | Bracket for Pulley Shaft    |                 | 63268001          | 66       | Polyethylene Spacer             |                 | 55046001          |
| 24       | Plastic Pulley              | D-0250          | 84085001          | 67       | Tapping Screw M3x15             |                 | 40130151          |
| 25       | Line Cord with Plug (UL)    |                 | 62110004          | 68       | Dial Pointer                    | D-1141          | 25034001          |
| 26       | Ground Terminal             |                 | 53012300          | 69       | Wiring Bracket                  |                 | 63075001          |
| 27       | Solder Lug M3               |                 | 51036001          | 70       | Bracket for Wooden Cabinet      |                 | 63287001          |
| 28       | Nut M3                      |                 | 41113070          | 71       | Lug Terminal 1P1L1P             |                 | 51041002          |
| 29       | Flat Washer M3              |                 | 42110321          | 72       | Heat Sink                       |                 | 15059002          |
| 30       | Lockwasher                  |                 | 42380331          | 73       | Snap Bushing                    |                 | 74037001          |
| 31       | Front Chassis               |                 | 03053005          | 74       | Bracket for Thermal SW          |                 | 63255001          |
| 32       | Headphone Jack              | J-0431          | 33030400          | 75       | Insulating Fiber for Thermal SW |                 | 84159001          |
| 33       | Headphone Jack              | J-0651          | 33030100          | 76       | Sub Heat Sink                   |                 | 15061002          |
| 34       | Lamp Diffuser               |                 | 84177002          | 77       | Heat Sink C                     |                 | 15062001          |
| 35       | Dial Scale                  | G-0194          | 20080001          | 78       | Tapping Screw M3x12             |                 | 40130121          |
| 36       | Label for Dial Scale        |                 | 63280001          | 79       | Front Panel                     | Z-2269          | 10172001          |
| 37       | Rub. for Dial Scale         |                 | 74098001          | 80       | Tuning Knob                     |                 | 29161001          |
| 38       | Dial Switch                 | D-3149          | 23041003          | 81       | Selector Knob                   |                 | 29162002          |
| 39       | Dial Switch                 |                 | 75047001          | 82       | Knob A                          | K-1829          | 29163001          |
| 40       | Insulating V                |                 | 75048001          | 83       | Knob B                          | K-1830          | 29164001          |
| 41       | Pulley Shaft                |                 | 24011002          | 84       | Knob C                          | K-1832          | 29170001          |
| 42       | Dial Lamp House             |                 | 08010001          | 85       | Audiotape Knob                  | K-1833          | 29171001          |
| 43       | Meter Lamp Diffuser         |                 | 6420              |          |                                 |                 |                   |



| Ref. No. | Description                | R/S<br>Part No. | Mfr's<br>Part No. |
|----------|----------------------------|-----------------|-------------------|
| 86       | Push SW Knob               | K-1834          | 19172001          |
| 87       | Slide Volume Knob          | K-1831          | 29166001          |
| 88       | Wooden Cabinet             |                 | 85055009          |
| 89       | Bottom Chassis             |                 | 05041004          |
| 90       | Screw M5x20                |                 | 40350201          |
| 91       | Screw M5x12                |                 | 40350121          |
| 92       | Tapping Screw M4x6         |                 | 40640061          |
| 93       | Plastic Foot               |                 | 74074001          |
| 94       | Insulating Fiber           |                 | 75061001          |
| 95       | Plastic Washer for Cabinet |                 | 84092001          |
| 96       | Volume Cap                 |                 | 74103001          |
| 97       | M4x15 Bronze Screw         |                 | 40640155          |
| 98       | Acryl for Indicator        |                 | 71036001          |