

4240  
69

SERVICE  
MANUAL 4240

**marantz**

model 4240

*Stereo 2 + Quadradial 4 Receiver*

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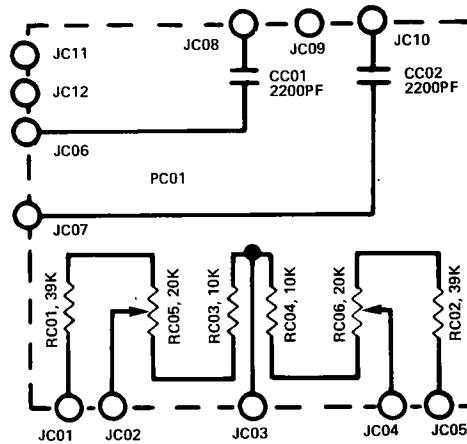
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|   |   |                                    |
|---|---|------------------------------------|
| <b>marantz®</b><br><br><b>SERVICE BULLETIN</b><br><small>SS-MAR0234</small> | model number<br>4240                              | bulletin number<br><b>M-4240-3</b> |
|   | for serial numbers<br>SEE BELOW                   |                                    |
|   | subject<br>DELETION OF FM DE-EMPHASIS SWITCH      |                                    |
|   | engineering approval<br><i>D. Williams</i> 7-3-76 | date<br>5/19/76                    |

The rear panel FM de-emphasis switch (SC01), part number SS0-2020-170, will no longer be incorporated in the Marantz Model 4240. A bracket, part number 288-6160-130, has been added to replace the deleted switch.

The schematic below reflects the changes in PC01:



The FM equalization turnover will now change from 75 u sec to 25 u sec when the front panel Dolby switch (S003) is in the FM Dolby mode.

The effective serial numbers showing a deleted FM de-emphasis switch are shown below:

|              |        |
|--------------|--------|
| USA          | 12701  |
| CANADA       | 61001  |
| EUROPE       | 54901  |
| AUSTRALIA    | 500001 |
| DEMKO, SEMKO | 200001 |
| PX           | 80901  |
| HONG KONG    | 500001 |

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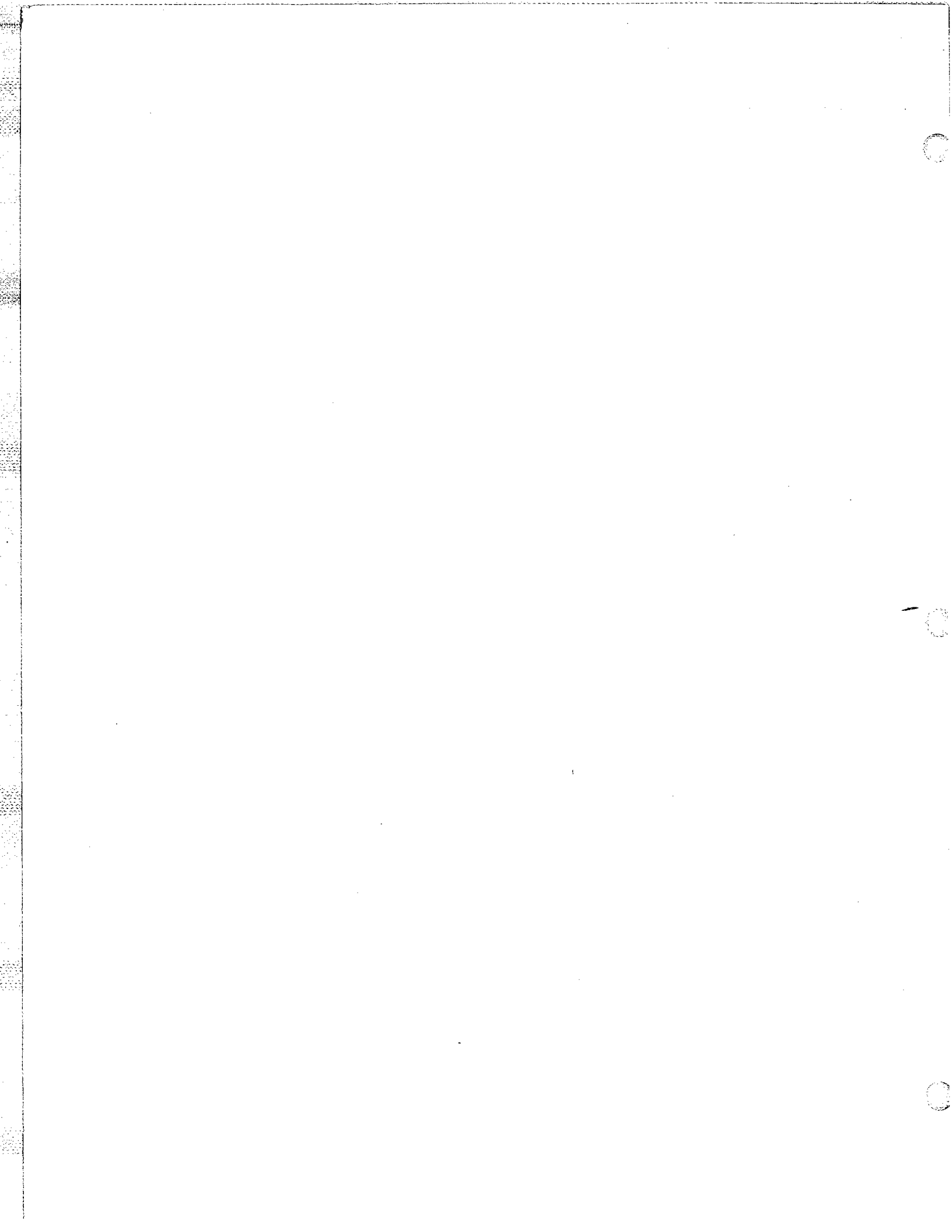
|  |   |                             |
|--|---|-----------------------------|
| <b>marantz®</b><br><br><b>SERVICE BULLETIN</b><br>SS-MAR0234 | model number<br>4240                                  | bulletin number<br>M-4240-4 |
|  | for serial numbers<br>WHERE APPLICABLE                |                             |
|  | subject<br>UPDATE OF P300<br>CIRCUIT BOARD ASSEMBLY   |                             |
|  | engineering approval<br><i>12-14-76</i><br><i>DVL</i> | date<br>11-15-76            |

Should you receive a Marantz Model 4240 requiring repair of the multiplex/muting circuit, it should be noted that there have been production changes in the MPX Decoder PCB Assembly (P300) for improved reliability.

Incorporate the following changes in the service manual to ensure proper reference information.

1. Resistor R334 has been removed.
2. Resistor R336 has been relocated to the foil side of the circuit board.
3. Diode H314 has been replaced by a jumper wire.
4. Resistor R343 has been changed to 100 ohms.

*Albert Almeida*  
 Albert Almeida, Manager  
 Technical Services



|   |                    |                          |                 |
|---|--------------------|--------------------------|-----------------|
| <b>marantz</b><br><br><b>SERVICE BULLETIN</b> | model number       | 4240 (USA)               | bulletin number |
|   | for serial numbers | 1001 to 5600             | <b>M-4240-1</b> |
|   | subject            | DOLBY FREQUENCY RESPONSE |                 |
| engineering approval                          | <i>[Signature]</i> |                          | date            |
|   |                    |                          | 11-6-73         |

You may receive customer complaints regarding loss of high frequencies in the overall response of the Dolby circuits for intermediary settings of the DOLBY RECORD LEVEL and PLAY CAL controls.

Perform the following modification in the Dolby unit PCB (P600):

Remove capacitors C615 and C616.

Replace resistors R607 and R608 with resistors of 1K ohms,  $\pm 10\%$ ,  $\frac{1}{4}W$ .

Perform the following modification in the FM de-emphasis switch PCB (PC01):

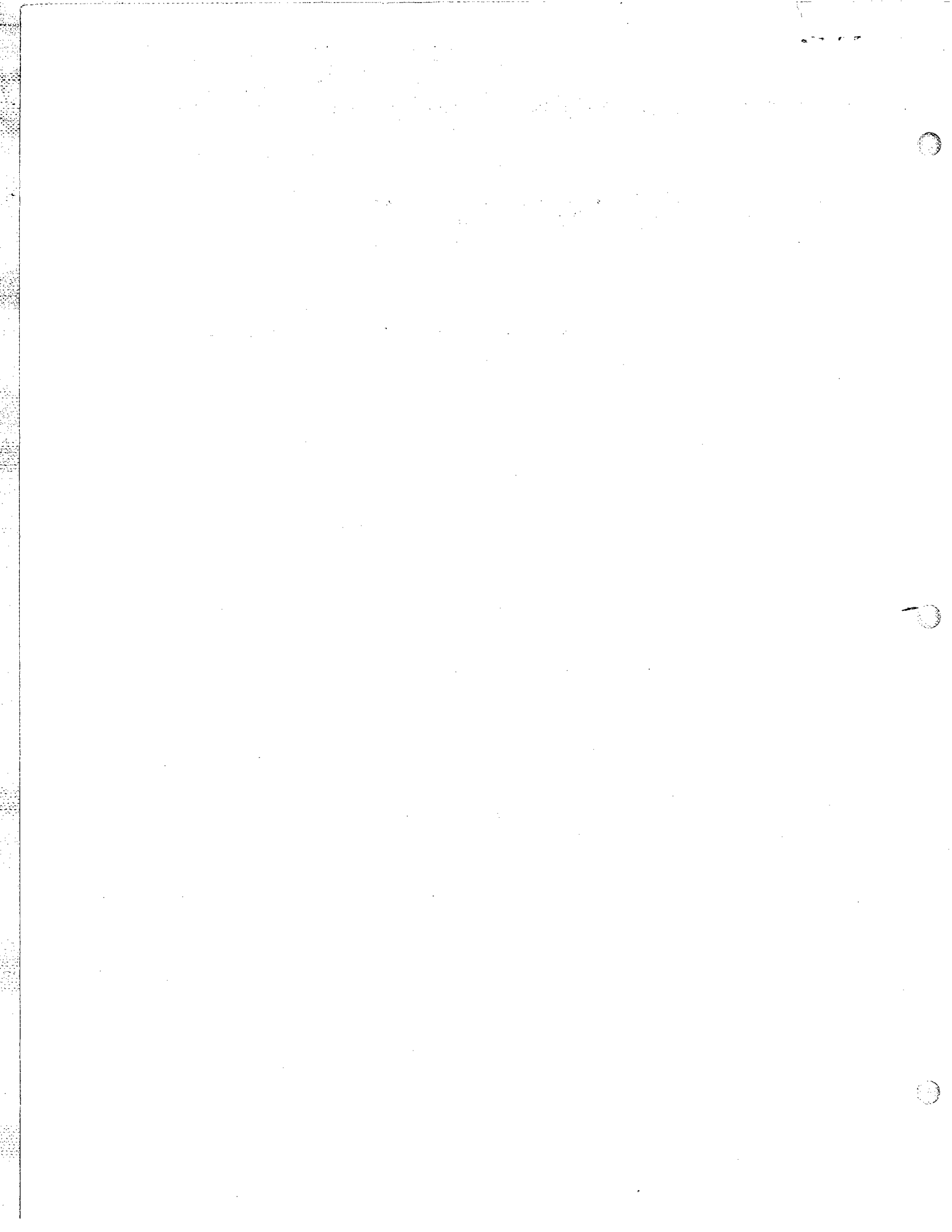
Replace resistors RC01 and RC02 with resistors of 68K ohms,  $\pm 5\%$ ,  $\frac{1}{4}W$ .

NOTE: In some units resistors RC01 and RC02 use combined resistors for specific value. These resistors may be located in both sides of the PCB. All such resistors must be removed when performing the above modification.

After the above modification is completed perform the following test in the numbered sequence listed below:

1. Set Dolby switch to REC 1 and depress the 400Hz TONE push-button on the front panel.
2. Adjust RL11 located on the 400Hz oscillator and meter PCB (PL01) to obtain 580mV RMS at the FRONT TAPE OUTPUT jacks.

cont ...



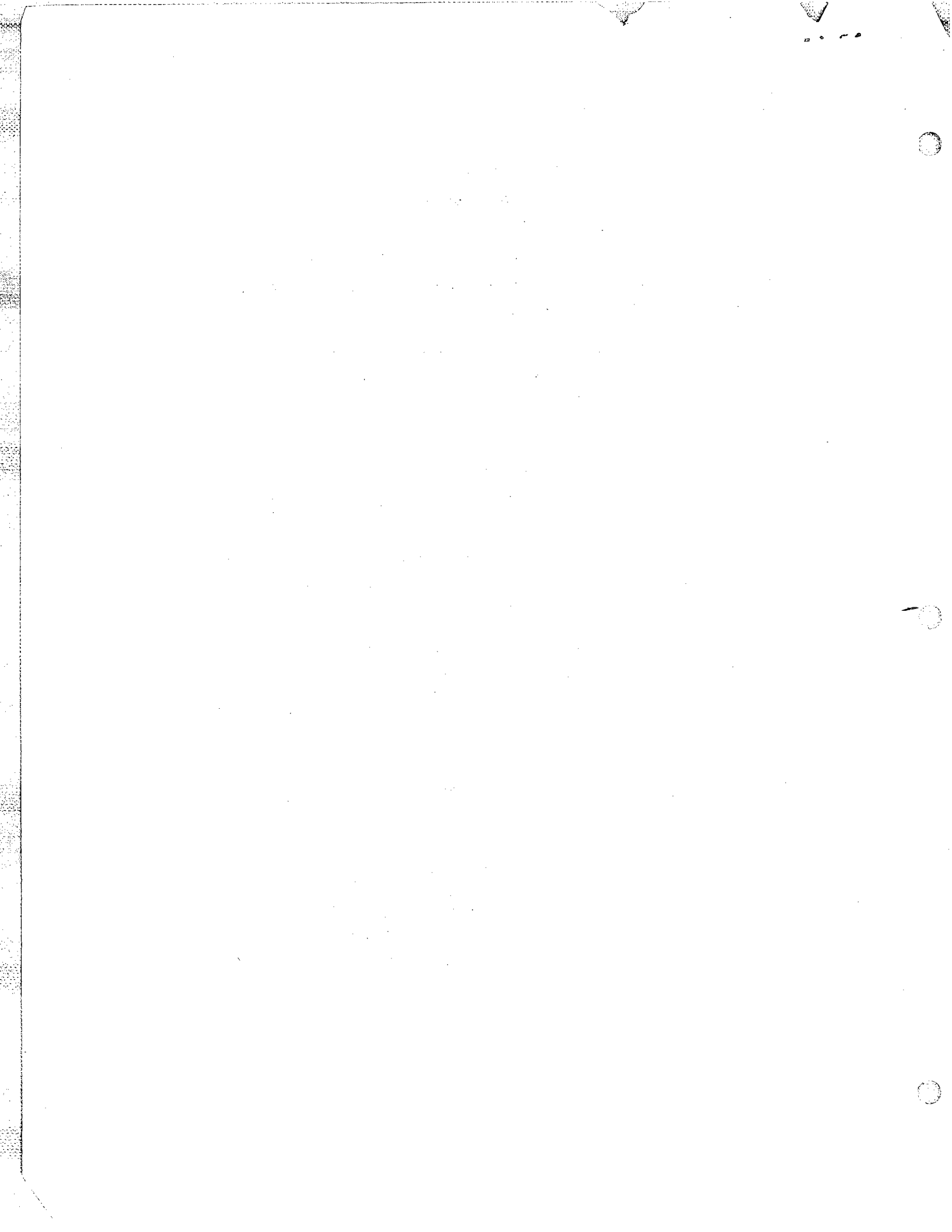


3. Set selector switch to FM mode.  
Set Dolby switch to FM Dolby mode.  
Release 400Hz TONE SWITCH.  
Feed an FM RF signal modulated 50% (37.5 kHz deviation) with 400Hz audio to the antenna terminals and tune the receiver to this frequency.
4. Adjust FM PRESET Dolby level controls (R005 and R006) located on the rear panel, to obtain 580mV (RMS) output at the FRONT TAPE OUTPUT jacks.
5. Set Dolby switch to REC 1 mode.  
Set SELECTOR switch to CD4/Aux. mode.  
Feed 1kHz audio signal 580mV RMS to the FRONT RIGHT and FRONT LEFT AUX input jacks.  
Adjust DOLBY REC LEVEL controls (located on the front panel) to obtain 580mV RMS output at the FRONT RIGHT and FRONT LEFT TAPE OUTPUT jacks.
6. Switch the input audio signal generator to 10kHz, verify the output at TAPE OUT. It should be within  $\pm .5$ dB of 580mV, that is, TAPE OUT level at 10kHz should be from 545 to 614mV.

This modification has been incorporated in units, S/N 5601 and later.



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## INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 4240 Stereo 2+Quadradial 4 Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instruction should be read carefully. No attempt should be made to proceed without a good understanding of the operation in the receiver.

The parts list furnish information by which replacement part may be ordered from the Marantz Company. A simple description is included for parts which can be usually be obtained through local suppliers.

### 1. SERVICE NOTES

As can be seen from the circuit diagram, the chassis of Model 4240 consists of following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

- |   |                             |
|---|-----------------------------|
| 1. FM Front End and AM Tuner                            | mounted on P.W. Board, P100 |
| 2. FM IF Amplifier                                      | mounted on P.W. Board, P200 |
| 3. MPX Stereo Decoder, Noise and DC Amplifier           | mounted on P.W. Board, P300 |
| 4. Phono Amplifier                                      | mounted on P.W. Board, P400 |
| 5. Vari-Matrix Unit                                     | mounted on P.W. Board, P500 |
| 6. Dolby Unit   | mounted on P.W. Board, P600 |
| 7. Power Amplifier                                      | mounted on P.W. Board, P700 |
| 8. Power Supply   | mounted on P.W. Board, P800 |
| 9. FM De-emphasis Switch Unit                           | mounted on P.W. Board, PC01 |
| 10. Buffer Amplifier                                    | mounted on P.W. Board, PD01 |
| 11. Tone Amplifier                                      | mounted on P.W. Board, PE01 |
| 12. Tone Control Unit                                   | mounted on P.W. Board, PF01 |
| 13. Balance Control Unit                                | mounted on P.W. Board, PG01 |
| 14. 400Hz Oscillator and Meter Driver                   | mounted on P.W. Board, PL01 |
| 15. Loudness, Hi Filter, Speaker, and Power Switch Unit | mounted on P.W. Board, PS01 |
| 16. Tape Monitor Switch Unit                            | mounted on P.W. Board, PT01 |
| 17. Indicator Lamps                                     | mounted on P.W. Board, PY01 |
| 18. Dial Lamps  | mounted on P.W. Board, PZ01 |

### 2. AM TUNER

All components except ferrite bar antenna are mounted on a printed circuit board P100.

The AM signals induced in a ferrite bar antenna are applied to the RF amplifier section of the AM tuner IC H104 through a capacitor of C129 and amplified to the level required for overcoming the conversion noises, thus giving good S/N performance. The tuned circuits inserted in both out and input circuit of the RF amplifier assure very high image and spurious rejection performance. Thus amplified and selected AM signals are then applied to the converter section through a coupling capacitor C132. While the local oscillator voltage is injected through a capacitor C131, both AM signals and oscillating voltage are mixed and converted into 455KHz intermediate frequency. The resulting IF signal is applied to the first IF transformer L110 consisting of one ceramic filter and two tuned circuits.

The output of L110 is led to the IF amplifier/detector section of H104. The detected audio signal is obtained from PIN ⑪ of H104 and applied to the function switch through the emitter follower by H105.

#### 2.1 Suggestions for AM Tuner Trouble Shooting

Check for broken AM bar antenna, next connect an oscilloscope to the pin ⑪ of H104 or J112 and check for audio signals with the tuning meter deflected. If detected audio signal is

obtained at pin ⑪ of H104, no failure may exist in the AM tuner IC H104 and its associated circuit. If no audio signal is obtained at pin ⑪ of H104, check all voltage distribution in the AM circuits by using a DC VTVM.

### 3. FM TUNER

The FM Tuner section of Model 4240 is divided into four functional blocks: FM Front End, IF Amplifier and Detector, Muting Control and MPX Stereo Decoding Circuit. FM signals induced by an FM antenna are led to FM antenna coil L101 through a balun coil. These signals are then applied to the FET RF amplifier which in turn applies its output to the mixer transistor H102 through the double tuned high selective circuits. The Mixer convert its input signal into 10.7MHz intermediate frequency and amplifies it at the same time. The H103 is a local oscillator and its output is injected into the base of H102. The 10.7MHz front end output is led to the next IF amplifier unit through a coaxial cable.

The IF amplifier unit consists of five stages of IF amplifier. Three pieces of dual elements ceramic filters are used to obtain high selectivity and four stages of symmetrical diode limiters are also employed for the best limiting characteristics, improved capture ratio and good AM suppression.

A part of H201 output is rectified into DC and fed back to the gate of FET RF amplifier to decrease the gain with increased signal strength.

The IF signal sufficiently amplified through every stage of IF amplifier is finally applied to the transistor limiter. The detected audio output is led to the buffer amplifier H207 and its buffered output is led to; (a) noise amplifier H301 through resistor R301 and capacitor C301, (b) QUADRADIAL jack on the rear panel through resistor R322, (c) MPX stereo decoding circuit through R324.

#### 3.1 Audio Muting and Stereo Mode Auto-Selecting Circuit

The muting circuit consisting of all solid-state electrical switching has been incorporated in the Model 4240. Three inputs control the muting function. The first is related to signal strength, the second to the noise condition at the detector and the third is derived from the DC component of the detector output. These inputs are properly matrixed and gated to provide muting free from noise and transients.

The first input of DC voltage obtained by rectifying a part of IF output signals from H204 and H205 is applied to the base of H308 and turns on it, if the IF output is greater than predetermined level (muting threshold level). When the H308 is turned on the H309 is turned off, allowing the emitter-collector resistance increasing and the collector voltage rises about 9V. The increased collector voltage increases the gate bias voltage and turns on the switching FET H311, decreasing the source-drain resistance to near zero ohm and allowing the audio signal applied to the source to flow to pin ① of the MPX decoding IC H303 through the source-drain path.

When the input signal is lower than predetermined level, the DC output obtained is small and can not turn on the H308, thus the H308 keeps its turn-off state and this makes H309 turn on, decreasing the collector voltage and turning off H311. Thus no audio signals can pass through the FET. This is the fundamental principle of the muting operation but for more elaborate muting operation the second and the third inputs are necessary.

The second input is used to protect the muting operation and MPX stereo beacon lamps from misoperation due to undesirable noises. The high frequency noises included in the detected audio signals are separated by a small capacitor C301 and amplified by the noise amplifier transistor H301 and its output is rectified by two diodes. The rectified DC output is proportional to the noise components in the audio signals.

When there are excessive noises in the audio signals such as obtained with a station incorrectly tuned in, the rectified DC output turns on the transistor H302, decreasing the emitter-collector resistance to zero. This means the collector of H309 is short-circuited to the ground, therefore the H311 is turned off and any audio signals having excessive high frequency noises can not go through the FET's source-drain path.

The transistor H310 connected between pin ⑮ of H303 and the ground is also turned off (when the transistor H302 or H309 is turned on.) and no current flows from pin ⑮ of H303, resulting in turning off the stereo beacon lamps. Thus misoperation due to undesirable noises is also avoided.

The third input is obtained from the FM discriminator circuit. The DC output so called "S" curve is applied to the gate of H304 through a resistor R249 and dividing network (R325 & R326). The DC output is zero with a station correctly tuned in, but will vary from negative to positive values or vice versa when the tuning point is deviated toward either plus or minus frequency from the correct tuning frequency.

When the DC output is increased to a greater level than that of predetermined, the increased source potential of H304 makes the transistor H307 turn on, and this makes the H308 turn off, ... H309 turn on, ... H311 turn off, ... H310 turn off (this means no 19KHz pilot signal is amplified and no stereo beacon is turned on.). When the DC output is increased to the negative predetermined level, the decreased source potential turns off the H305 which in turn makes the H306 turn on and the H308 turned off. The subsequent changes are exactly the same as that just described above.

Thus when the tuning is shifted-or-deviated to the certain frequencies in which undesirable noisy side-audio signals are produced, both muting and 19KHz switching transistors are operated automatically and open the circuits.

With the station correctly tuned in, the bias current of the FET H304 is adjusted so that both transistor H306 and H307 are not turned on, giving no effect on the transistor H308.

### 3.2 MPX Stereo Decoding Circuit

A Non-equalized audio signal from the FM detector is applied through the phase adjuster network of C330 and R351 to input terminal pin ① on the MPX decoder IC H303. The MPX decoder IC consists of a stereo decoder and postamplifier for the output. The right and left channel signals decoded by the stereo decoder H303, appear at pin ⑩ (right channel) and pin ⑪ (left channel), respectively. These signals are passed through the low-pass filters and de-emphasis networks to eliminate undesirable residual switching signals and are then delivered to postamplifier input pin ⑤ (right channel) and pin ⑦ (left channel), respectively. The signals amplified in the postamplifiers to the required level (approximately 10dB) are delivered to pin ⑥ (right channel) and pin ⑧ (left channel), and are then passed through C324 and C325 to pin terminals J308 and J309, hence, through the SELECTOR switch to the audio amplifier section. Pin ⑮ on the MPX IC H303 is connected through R309 to the collector of the autostereo switch transistor H310, which turns on or off according to the incoming FM signal strength, thereby automatically switching between the stereophonic and monaural operations. The H310 turns on or off in accordance with whether the FM signal strength is more or less than approximately 25 $\mu$ V.

### 3.3 Suggestion for Trouble Shooting of FM Tuner

#### 3.3.1 Symptom: No FM Reception

First turn on the POWER switch and try to tune FM stations. Rotate the fly-wheel tuning knob slowly and observe the SIGNAL STRENGTH meter. If the SIGNAL STRENGTH meter deflect at several frequencies received, the tuner circuits preceding the discriminator circuit may have no failure. When no reading is obtained in the meter, check FM local oscillator circuit, using an RF VTVM. The normal local oscillator voltage is one or two volts (rms) at the tuning capacitor, depending on the tuning capacitor position. If the local oscillator voltage is normal, next check all voltage distribution in the FM Front End and IF amplifier unit. When SIGNAL STRENGTH meter deflects but no sound is obtained, check audio circuits, using high sensitive oscilloscope.

#### 3.3.2 Symptom: No Stereo Separation

Connect an FM signal generator output modulated by a stereo modulator to the rear FM

ANTENNA terminals, and check the stereo beacon is turned on or not. If not turned on, check for 19KHz pilot signal and 38KHz switching signal, using an oscilloscope.

**4. PHONO AND PRE-AMPLIFIER**

Signals from the PHONO jacks are applied to the phono-amplifier mounted on P400. The amplified and RIAA equalized phono signals and signals from the tuner section, CD-4/AUX and TAPE MONITOR IN jacks are applied to the SELECTOR switch which, in turn, leads the selected signals to the TAPE MON switch and TAPE MONITOR OUT jacks. Applied to the other section of the TAPE MON. switch are signals from the TAPE MONITOR IN jacks. The TAPE MON. switch selects the signals from the SELECTOR switch or those from the TAPE MONITOR IN jacks and the selected signals go to the DOLBY and MODE switches. Signals are then mode processed by the MODE switch and its associated circuit and applied to the tone control amplifier through the buffer amplifier and BALANCE and VOLUME controls. The bass and treble controlled signals from the tone control amplifier pass through the hi filter before they reach the main amplifier.

**4.1 Mode Switch**

MODE switch S002 has positions of MONO, 2 CH, DISCRETE, VARI-MATRIX, and SQ DECODER.

In the MONO position, all input signals are mixed together and delivered to all four channels.

In the 2 CH position, each pair of input signals right-front (RF) and right-rear (RR), and left-front (LF) and left-rear (LR) are mixed together. The resultant signals (RF + RR) and (LF + LR) are delivered to the pairs of RF and RR, and LF and LR channels, respectively.

In the DISCRETE position, each channel signal is separately routed to the corresponding channel.

In the VARI-MATRIX position, 2-channel stereo input signals are converted into quadraphonic signals through the vari-matrix circuit; the input right and left channel signals are fed directly to the LF and RF channels, while the signals to the LR and RR channels are synthesized from the 2-channel input signals under the control of the DIMENSION control. The LR and RR channel signal components are controlled by the DIMENSION control as shown below.

| DIMENSION Control Setting | LR Output | RR Output |
|---------------------------|-----------|-----------|
| Minimum (FCCW)            | LF + RF   | RF + LF   |
| Center                    | LF        | RF        |
| Maximum (FCW)             | LF - RF   | RF - LF   |

When the DIMENSION control is set to the minimum position the LR and RR channel signals become monophonic, to the center are stereophonic, and to the maximum are out of phase, thus providing vanished sound image positioning.

In the SQ DECODER position, signal sources encoded by the CBS SQ system are ideally decoded into 4-channel signals. Required for this operation is incorporation of the SQ Adaptor, Model SQA-1, into the Model 4240.

**4.2 Balance Control**

Signals from the buffer amplifiers are fed into the balance control circuit, in which the signals are controlled by three balancers: FRONT L-R, REAR L-R, and FRONT-REAR. By setting the FRONT-REAR balancer to the "FRONT" side and the FRONT L-R balancer to the "L" side, for example, only the front left channel is driven.

The balance control circuit is provided with the REMOTE CONTROL switch which makes the Model RC-4 Remote Control Box operative when set to the "REMOTE" position. In the "REMOTE" position the BALANCE and VOLUME controls on the Model 4240 become

ineffective since signals are led to the Model RC-4. Balance and volume can be adjusted by the Model RC-4.

Balance and volume controlled signals are led to the tone control amplifier.

## 5. DOLBY UNIT

The Dolby unit built in Model 4240, which is a switchable processor, is inserted in each of both FRONT R and L channels. The attached "DOLBY PROCESSING CHART" will facilitate you to well understand the operation of the Dolby circuit.

An input signal coming to J601 is amplified by H601, and its output signal is led to the filter which cuts off the tape bias. The signal passed through the filter is further amplified and comes to the mixing circuit of resistors R623 and R625 and to the phase inverting circuit of H607 and H609. The output signal is fed out from J607. In the recode mode of operation, the signal is applied from J605 preceding the mixing circuit. The signal is then discriminated in the frequency and level by the dynamic filter consisting of H611, H613, H615 and H617, and is fed back to the mixing circuit. In the playback mode of operation, a part of the output signal (at J607) comes to J611 and is discriminated in the frequency and level by the dynamic filter consisting of H611, H613, H615 and H617 and fed back to the mixing circuit.

## 6. 400Hz TONE

The 400Hz tone signal is a 580mV, 400Hz sine wave led to the FRONT and REAR TAPE MONITOR OUT jacks at any position of the DOLBY switch (with exception of the RECORD II position) and the SELECTOR switch.

The output signal of the 400Hz oscillator consisting of HL01 and HL02 is fed to JL02 and JL03, respectively, through the emitter follower HL03. The output levels at JL02 and JL03 are adjusted to 580mV and approximately 25mV, respectively.

The signal fed from the Dolby P.W. Board comes to JL04 and is rectified through HL06. The rectified output at JL06 is led to the meter M004.

## 7. DOLBY SWITCH

This switch sets the Dolby noise-reduction circuit for record or playback and also switches the Meter Mode from AM or FM SIGNAL STRENGTH to DOLBY CAL LEVEL, or vice-versa. With the DOLBY switch placed in "OFF" position, the Meter will be used as a SIGNAL-STRENGTH meter; in all other positions as a DOLBY CAL LEVEL meter.

### 7.1 Dolby FM

This position is used for listening to Dolbyized FM broadcasts. The Dolby FM level has been pre-adjusted at the factory.

### 7.2 Play

This position is used to play back a Dolbyized source (except FM).

### 7.3 Off

With this position, the Dolby circuit is by-passed and the input signals are directly applied to both TAPE MONITOR OUT jacks and amplifiers.

### 7.4 Record I

For making a Dolbyized recording from an in-coming "flat" (non-Dolbyized) signal. When the MONITOR switch is in the SOURCE (out) position, the "flat" signal will be heard. When the MONITOR switch is in the TAPE (in) position, the Dolbyized signal from the tape will be heard.

### 7.5 Record II

For making a "flat" (non-Dolbyized) recording from an in-coming Dolbyized signal.

Regardless of the position of the MONITOR switch, a "flat" signal will be heard.

#### **8. RECORD LEVEL (L) (R)**

These knobs control the record level of the signals to be recorded through the Dolby unit. Adjust the knobs so that the Level Meter pointers of the tape recorder do not exceed the 0VU level.

#### **9. PLAY CAL. (L) (R)**

These knobs adjust the playback outputs from a tape deck to the proper Dolby level.

#### **10. DOLBY FM PRESET LEVEL CONTROLS**

These factory-adjusted controls govern FM output level to the Dolby circuit. These controls are for the use of a qualified technician only.

#### **11. 400Hz TONE SWITCH**

This is used for calibration of the record input level of the tape deck. When the switch is depressed, the built-in oscillator operates and a sine wave signal output of 580mV will be applied to the four TAPE MONITOR OUT jacks.

#### **12. FM DE-EMPHASIS SWITCH**

At present both normal and Dolbyized FM broadcast programs are being transmitted with pre-emphasis time constant of 75 microsecond.

However if the Dolbyized FM broadcasting is approved by F.C.C., this pre-emphasis time constant for Dolbyized FM broadcast will be changed to 25 microsecond. The FM DE-EMPHASIS switch provided on the rear of Model 4240 is used for switching the time constants. After the permission of Dolbyized FM broadcasting, set the switch to 25 $\mu$ S position. This automatically change the time constant to 75 $\mu$ S while the DOLBY switch is placed in other than DOLBY FM positions (namely normal FM broadcast position), thus, the de-emphasis time constant for each normal and Dolbyized FM reception will be correctly set.

#### **13. POWER AMPLIFIER**

A differential amplifier consisting of the transistors H701 and H703 is used to provide satisfactory D.C. stability. The transistor H705 drives the inverter transistors H711 and H713 which, in turn, drive the power stage consisting of H001 and H003. Transistors H707 and H709 are current limiter, operating as a power transistor protection circuit.

Excessive current flow in the power output stage is detected by the resistors R759 and R761 and the resultant variation is applied to the transistors H707 and H709 and make them turned on. This decreases the base biasing current for H711 and H713. In this way the current flow in the power output stage (H001 and H003) is restricted within a safe predetermined value.

#### **14. BTL (Balanced Transformerless) CONNECTION**

This power amplifier is designed to operate in either 2-channel or 4-channel modes, depending on the setting of the POWER MODE switch that incorporates phase-conversion and power switch for BTL connection.

With this switch placed in the 17Wx4 position, this unit operates as a 17W 4 channel amplifier. With the switch placed in the 40Wx2 position, the unit operate as a 40W 2 channel amplifier, in this case, the power output is obtained only from FRONT SPK terminals.

#### **15. POWER SUPPLY UNIT**

The power supply unit consisting of transistors H801, H802 and H803, which operates as an automatic voltage regulator provides +35V DC to all of the amplifiers except main amplifiers and +14V DC to the tuner section.



## 16. AUDIO TROUBLE ANALYSIS

1. Excessive line consumption
  - a. Check for shorted rectifiers H007.
  - b. Check for shorted transistors H001 through H004.
  - c. Check L001 for short.
2. No line consumption or zero bias
  - a. Check line cord, fuse, shorted H005 & H006, H718 & H719.
  - b. Check for open rectifiers H007 or open L001.
3. Excessive hum and noise level
  - a. Check filter capacitors C002, C003, C709 & C710.
  - b. Check for shorted transistor H801 and H802.
4. Parasitic oscillation
  - a. Check for defective capacitors, C005, C006, C711, C712, C713, C714, C721, C722, C723 and C724.
5. Improper clipping
  - a. Check for proper adjustment of R715 and R716.

## 17. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 4240 Receiver.

| Item  | Manufacturer and Model No.  | Use   |
|---|---|---|
| AM Signal Generator                           |   | Signal source for AM alignment.                           |
| Test Loop                                     |   | Used with AM Signal generator.                            |
| FM Signal Generator                           | Less than 0.3% distortion   | Signal source for FM alignment.                           |
| Stereo Modulator                              | Less than 0.3% distortion   | Stereo separation alignment and trouble shooting.         |
| Audio Oscillator                              | Weston Model CVO-100P, less than 0.02% residual distortion is required. | Sinewave and squarewave signal source.                    |
| Oscilloscope                                  | High sensitivity with DC horizontal and vertical amplifiers.            | Waveform analysis and trouble shooting and ASO alignment. |
| VTVM  | With AC, DC, RF range   | Voltage measurements.                                     |
| Circuit Tester                                |   | Trouble shooting.   |
| AC Wattmeter                                  | Simpson, Model 380  | Monitors primary power to Amplifier.                      |
| AC Ammeter                                    | Commercial Grade (1-10A)  | Monitors amplifier output under short circuit condition.  |
| Line Voltmeter                                | Commercial Grade (0-150V AC)  | Monitors potential of primary power to amplifier.         |
| Variable Autotransformer (0-140V AC, 10 amps) | Powerstat, Model 116B   | Adjusts level of primary power to amplifier.              |
| Shorting Plug                                 | Use phono plug with 600 ohm across center pin and shell.                | Shorts amplifier input to eliminate noise pickup.         |
| Output Load (8 ohms, $\pm 1\%$ 100W)          | Commercial Grade  | Provides 8-ohm load for amplifier output termination.     |
| Output Load (4 ohms, $\pm 1\%$ 100W)          | Commercial Grade  | Provides 4-ohm load for amplifier output termination.     |

Table 1. Test Equipment Required for Servicing

## 18. AM ALIGNMENT PROCEDURE

### 18.1 AM IF Alignment

1. Connect a sweep generator to the J106 and an alignment scope to the J112.
2. Rotate each core of IF transformer L110 and L111 for maximum height and flat top symmetrical response.

### 18.2 AM Frequency Range and Tracking Alignment

1. Set AM signal generator to 525KHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end.) and adjust the oscillator coil L109 for maximum audio output.
2. Set the signal generator to 1650KHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor for maximum audio output.
3. Repeat the step 1 and 2 until no further adjustment is necessary.
4. Set the generator to 600KHz and tune the receiver to the same frequency and adjust a slug core of AM ferrite rod antenna and RF coil L108 for maximum output.
5. Set the generator to 1400KHz and tune the receiver to the same frequency and adjust both trimming capacitors of antenna and RF tuned circuit for maximum output.
6. Repeat the step 4 and 5 until no further adjustment is necessary.

Note: During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

## 19. FM ALIGNMENT PROCEDURE

1. Connect an FM signal generator to the FM ANTENNA terminals and an oscilloscope and an audio distortion analyzer to the TAPE MONITOR OUT jacks on the rear panel.
2. Set the FM SG to 87.5MHz and provide about 3 to  $5\mu\text{V}$ . Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the core of oscillator coil L104 to obtain maximum audio output.
3. Set the FM SG to 108.5MHz and provide about 3 to  $5\mu\text{V}$  output. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C118 for maximum output.
4. Repeat the step 2 and 3 until no further adjustment is necessary.
5. Set the FM SG to 90MHz and tune the receiver to the same frequency. Decrease signal generator output until the audio output level decreases with the decreasing generator output. Adjust the antenna coil L101, RF coil L102 and L103 and IF transformer L105 for minimum audio distortion.
6. Set the FM SG to 106MHz and tune the receiver to the same frequency. Adjust the trimming capacitors of antenna and RF tuning circuits for minimum distortion.
7. Adjust the secondary core (upper) of discriminator transformer L201 so that the center tuning meter pointer indicates its center at no signal applied. Set the FM SG to 98MHz and increase its output level to  $1\text{K}\mu\text{V}$  and tune the receiver to the same frequency so that the center tuning meter pointer indicates its center. Adjust the primary core (lower) of L201 for minimum distortion.

### 19.1 Stereo Separation Alignment

1. Set the FM SG to provide  $1\text{K}\mu\text{V}$  at 98MHz. Tune the receiver to the same frequency so that the center tuning meter pointer indicates its center.
2. Modulate the FM SG with stereo composite signal consisting of only subchannel signal (of course a pilot signal must be included). Adjust the core of L303 for maximum audio output, then, modulate the signal generator with a stereo composite signal consisting of only L channel signal and adjust the trimming resistor R351 for maximum and same separation in both channels.

## 19.2 Muting Circuit Alignment

1. Connect a VTVM across the resistor R327 and adjust the resistor R327 until the meter reads 0.75V DC at no signal.
2. Set the FM SG to provide  $1\text{K}\mu\text{V}$  at 98MHz and tune the receiver to the same frequency correctly.
3. Turn on FM MUTING pushswitch. Shift the FM signal generator frequency to plus and minus and note both plus and minus shifted frequencies at which undesirable audio side responses are muted out. Adjust the R327 so that the same shifted frequencies mute the undesirable side response.

## 20. AUDIO ADJUSTMENT

1. Connect a VTVM to J713(+) and J719(-) and adjust the trimming resistor R735 until the VTVM reads 20mV DC. For the other channel connect the VTVM to J714(+) and J720(-) and adjust the R736 for the same reading.
2. Connect a VTVM to J715(+) and J706(-) and adjust the trimming resistor R715 until the VTVM reads 0V DC. For the other channel connect the VTVM to J716(+) and J706(-) and adjust the R716 until the VTVM reads 0V DC.

## 21. AUTOMATIC VOLTAGE REGULATOR ADJUSTMENT

Connect a VTVM to J801(+) and J811(-) and adjust R801 until the VTVM reads 35V under no signal condition.

## 22. DOLBY ALIGNMENT PROCEDURES

Prior to the adjustment, turn the variable resistors PLAY CAL and REC LEVEL all the way to the right and the SELECTOR switch to the CD-4/AUX position. Use the CD-4/AUX and TAPE MONITOR OUT jacks for the input and output signals.

1.
  - 1) Set the DOLBY switch to the RECORD I position.
  - 2) Adjust the semi-fixed resistor R653 for maximum source voltage of the FET H611.
  - 3) Connect J620 and J613 to the ground.
  - 4) Apply a 5KHz sine wave so as to obtain 17.5mV at J605.
  - 5) Record the output level at the TAPE MONITOR OUT jack with the above signal input.
  - 6) Adjust the semi-fixed resistor R659 so that the output level at the TAPE MONITOR OUT jack may increase  $10\pm 0.25\text{dB}$  when J620 is disconnected from the ground.
  - 7) Record the above output level.
  - 8) Adjust the semi-fixed resistor R653 so that the output level may decrease  $2\pm 0.25\text{dB}$  when J613 is disconnected from the ground.
  - 9) Connect J613 to the ground again, and assure the level increase in the step (6) above. Disconnect J613.
2.
  - 1) Set the DOLBY switch to the RECORD II position.
  - 2) Connect J620 and J613 to the ground.
  - 3) Apply a 5KHz sine wave so as to obtain a 44mV voltage at J605.
  - 4) Check to insure that the level at the TAPE MONITOR OUT jack decreases  $10\pm 0.5\text{dB}$  when J620 is disconnected from the ground.
  - 5) Disconnect J620 and J613 from the ground.
  - 6) Check to insure that the output voltage at the TAPE MONITOR OUT jack is 17.5mV ( $\pm 0.5\text{dB}$ ).
3. For the level adjustment, set the DOLBY switch and SELECTOR switch to the RECORD I

and CD-4/AUX positions, respectively, and use the TAPE MONITOR OUT jack for the output signal. By setting the 400Hz TONE pushswitch "in", the 400Hz sine wave is fed out. Adjust the semi-fixed resistor RL11 for 580mV of the sine wave output voltage in both R and L channels. Then, set the DOLBY switch to the RECORD II position, and apply the 400Hz signal for 580mV of the output voltage. Adjust the semi-fixed resistors RL28 and RL29 so that the DOLBY LEVEL meter may point the Dolby level. Change over the METER switch, and perform this adjustment for both R and L channels.

Next adjust the semi-fixed resistor RL12 for 580mV output level when the DOLBY switch is set to the OFF position. Check this output level after the adjustment of the level setting semifixed resistors RL11 and RL12. The output level must be precisely 580mV since it is a reference voltage level in the Dolby circuit.

**23. ALIGNMENT PROCEDURES OF DOLBY FM RESET LEVEL CONTROLS**

Connect an FM signal generator to the FM antenna. Set the modulation frequency and degree of modulation of the FM signal generator to 400Hz and 50%.

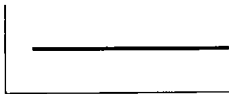
Set the FM signal generator to 98MHz and the DOLBY switch to the OFF position. Turn the Tuning knob on Model 4230 until it tunes to the 98MHz signal from the FM signal generator.

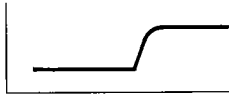
Then, set the DOLBY switch to the DOLBY FM position, and adjust the FM preset level controls RC05 and RC06 so that the DOLBY LEVEL meter may point the Dolby FM level. Change over the METER switch, and perform this adjustment for both R and L channels.

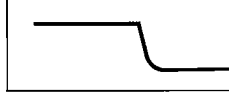
**24. EXPLANATION OF THE DOLBY PROCESSING CHART**

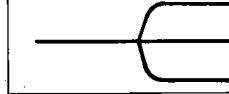
This chart shows the condition of the signals available at the speakers (SPKRS) and at the TAPE MONITOR OUT terminals as a function of different control settings.

To understand the chart refer to the symbols below:

- 

— Represents a signal which has not been applied to either Record or Playback Dolby circuits. The relative amplitudes of all audio frequencies remain unaltered at all levels.
- 

— Represents a signal which has been processed by the Dolby Record circuit. The relative amplitude of the high frequencies is increased at low signal levels.
- 

— Represents a signal which has been processed by the Dolby Playback circuit. The relative amplitude of the high frequencies is decreased at low signal levels.
- 

— Represents a signal which has been processed by both the Record and the Playback Dolby circuits.

These circuits are complementary. Therefore, relative amplitudes of all audio frequencies are restored to their original values.

| SIGNAL                   | DOLBY SW<br>↑ | RECORD         |        |      |       |          |        |       |          |        |       |          |  |
|--------------------------|---------------|----------------|--------|------|-------|----------|--------|-------|----------|--------|-------|----------|--|
|                          |               | OFF            |        |      | I     |          |        | II    |          |        |       |          |  |
|                          |               | DOLBY FM       |        | PLAY |       | SOURCE   |        | TAPE  |          | SOURCE |       | TAPE     |  |
| FM TRANSMISSION          | TAPE MON<br>↑ | SIGNAL AT<br>↑ | SOURCE | TAPE | SPKRS | TAPE OUT | SOURCE | SPKRS | TAPE OUT | SOURCE | SPKRS | TAPE OUT |  |
| NORMAL FM                |               |                |        |      |       |          |        |       |          |        |       |          |  |
| 75 μS FM WITH DOLBY      |               |                |        |      |       |          |        |       |          |        |       |          |  |
| DOLBY FM (25 μS W/DOLBY) |               |                |        |      |       |          |        |       |          |        |       |          |  |
| OTHER SOURCE             |               |                |        |      |       |          |        |       |          |        |       |          |  |

NOTE: \* DE-EMPHASIS SWITCH IN THE 75 μS POSITION.  
 \*\* DE-EMPHASIS SWITCH IN THE 25 μS POSITION.

Table 2. Dolby Processing Chart

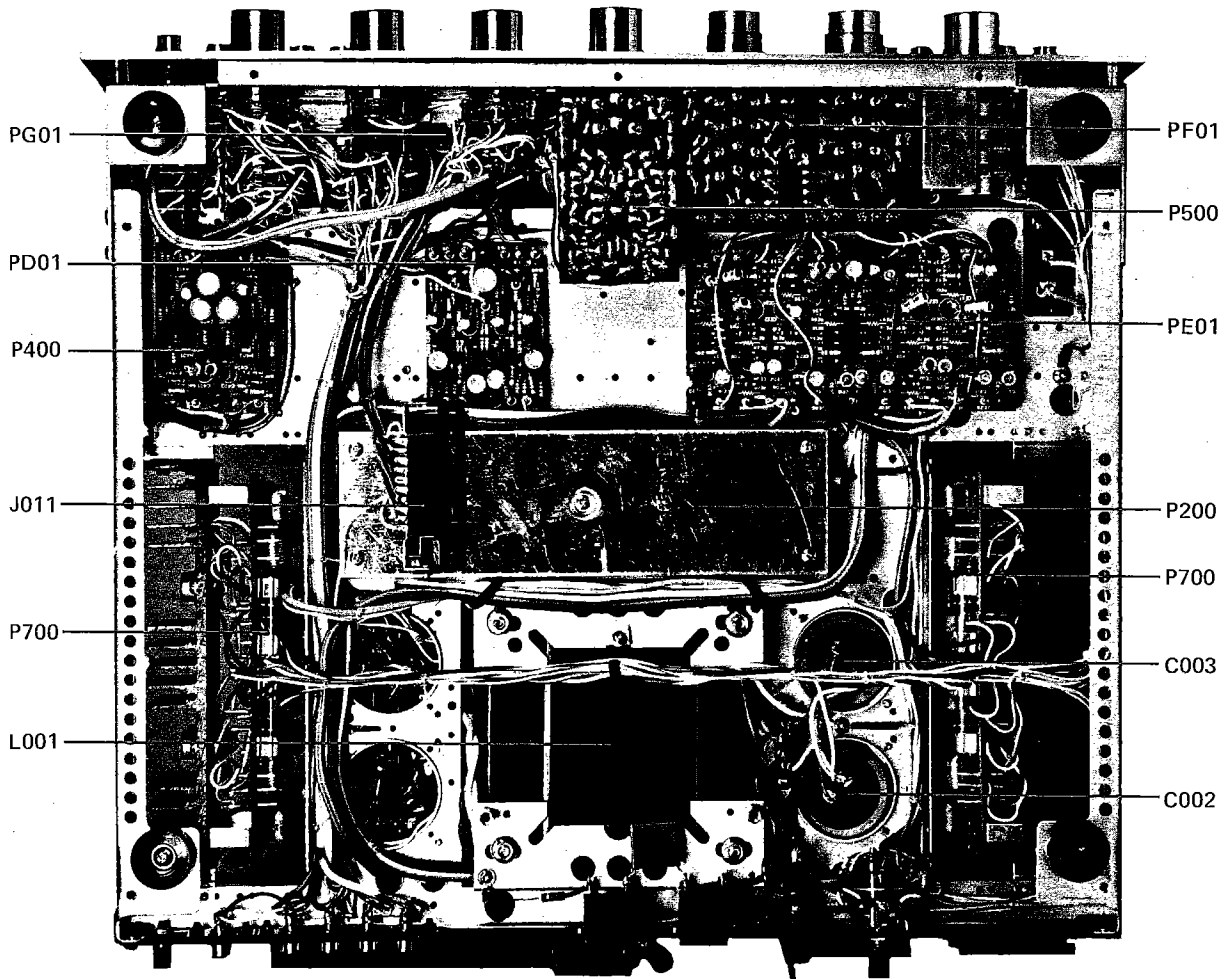


Figure 1. Main Chassis Component Locations (Bottom View)

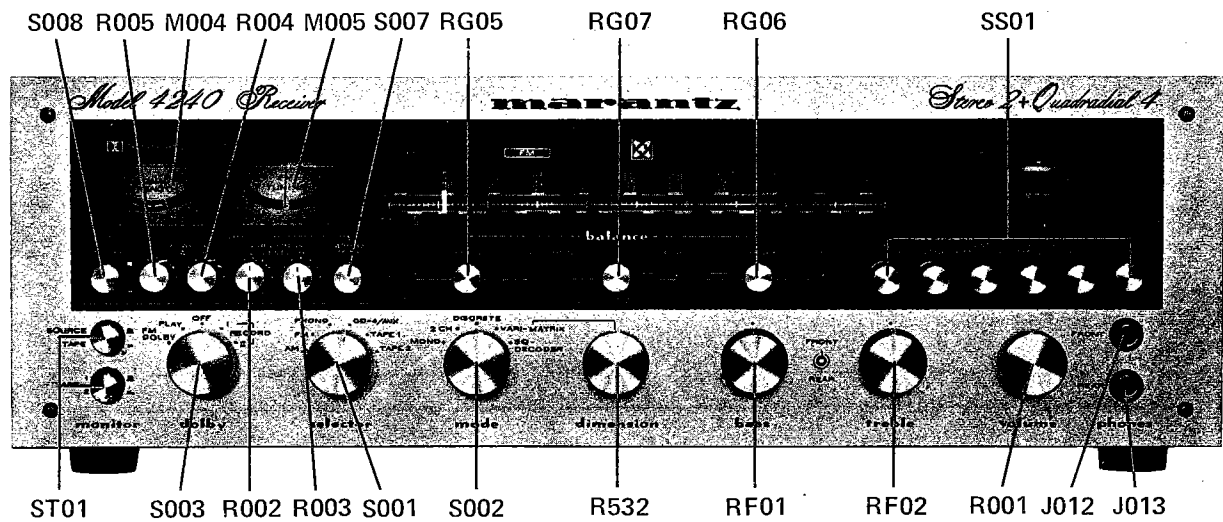


Figure 2. Front Panel Adjustment and Component Locations

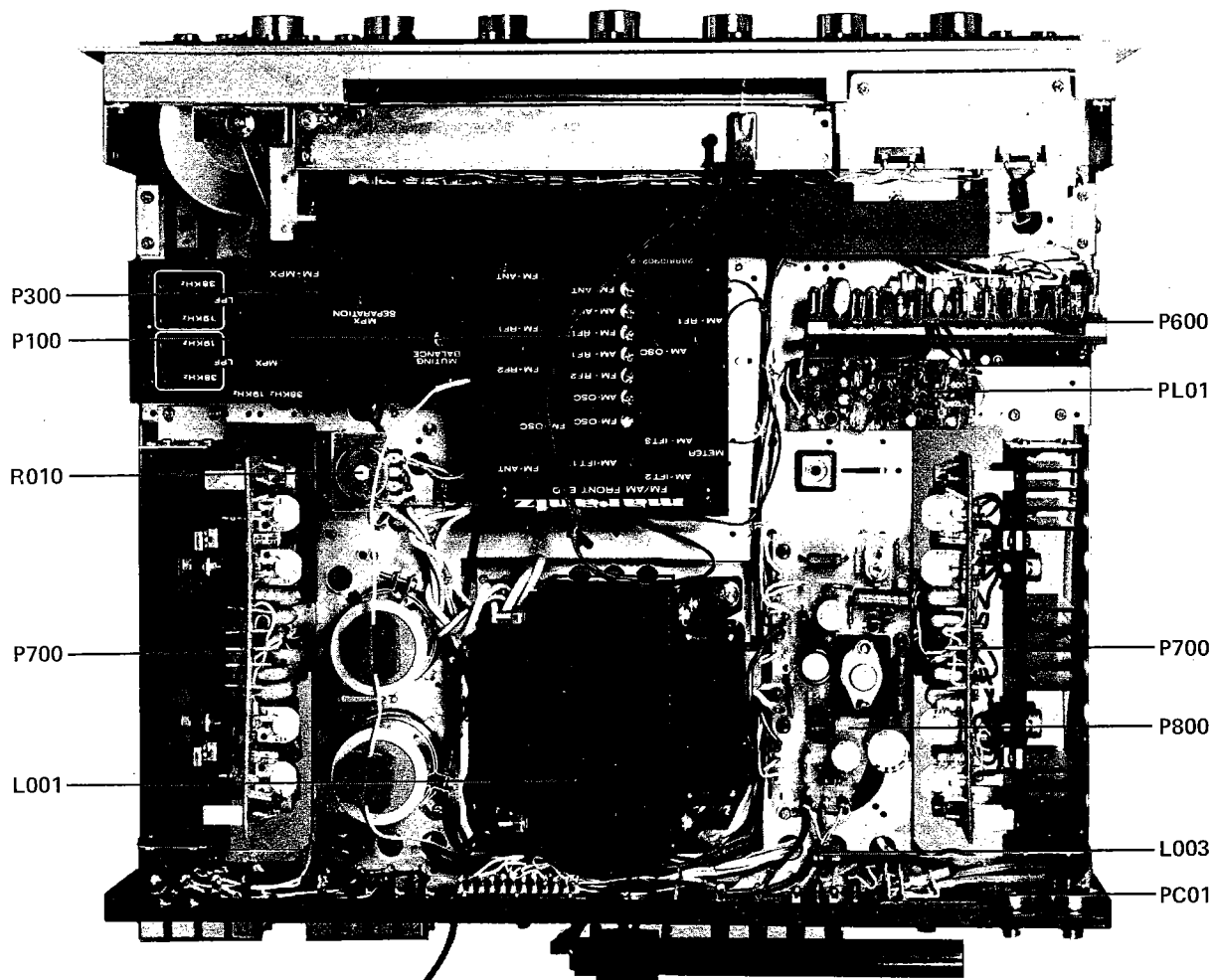


Figure 3. Main Chassis Component Locations (Top View)

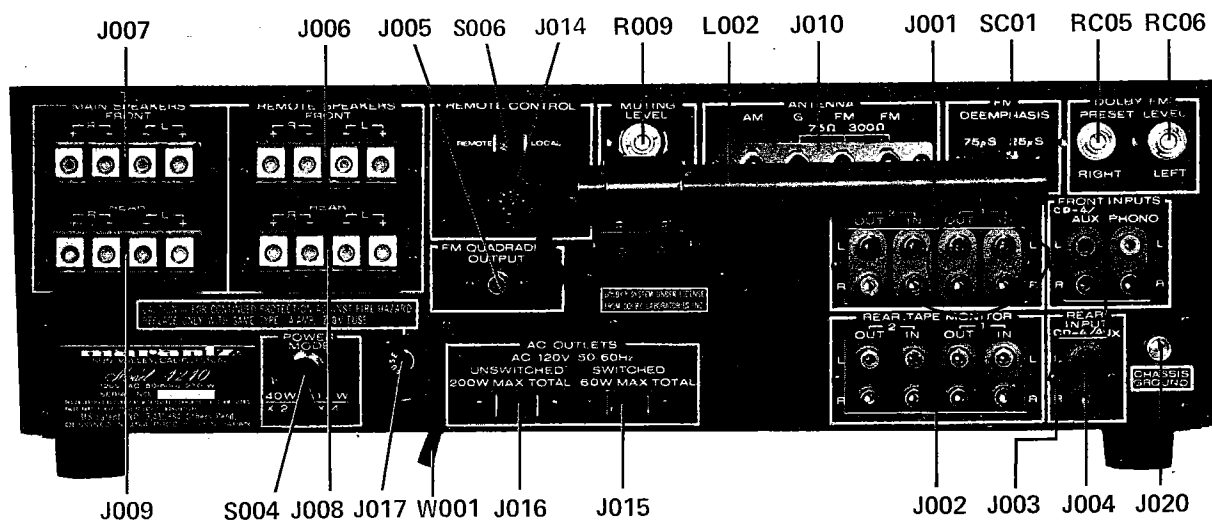


Figure 4. Rear Panel Adjustment and Component Locations

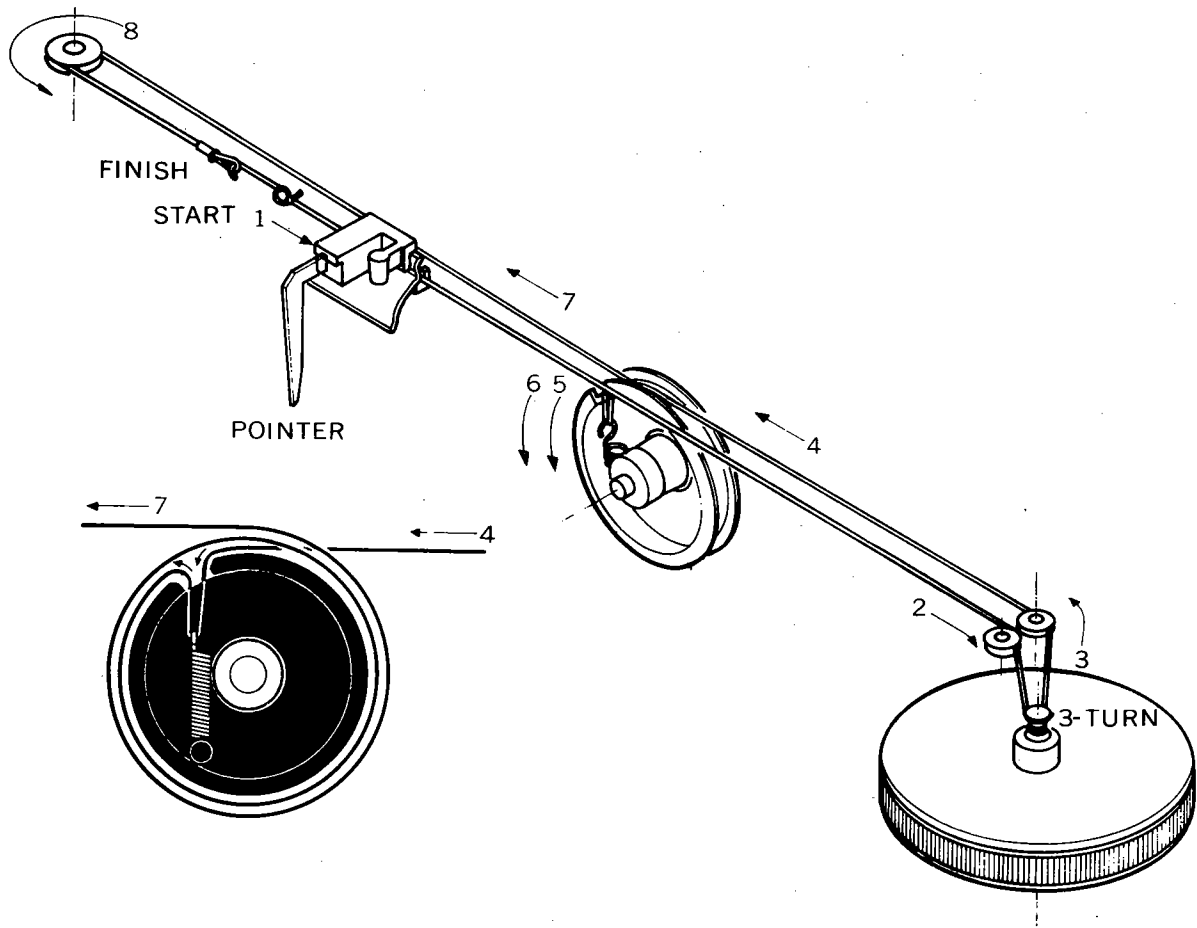


Figure 5. Dial Stringing



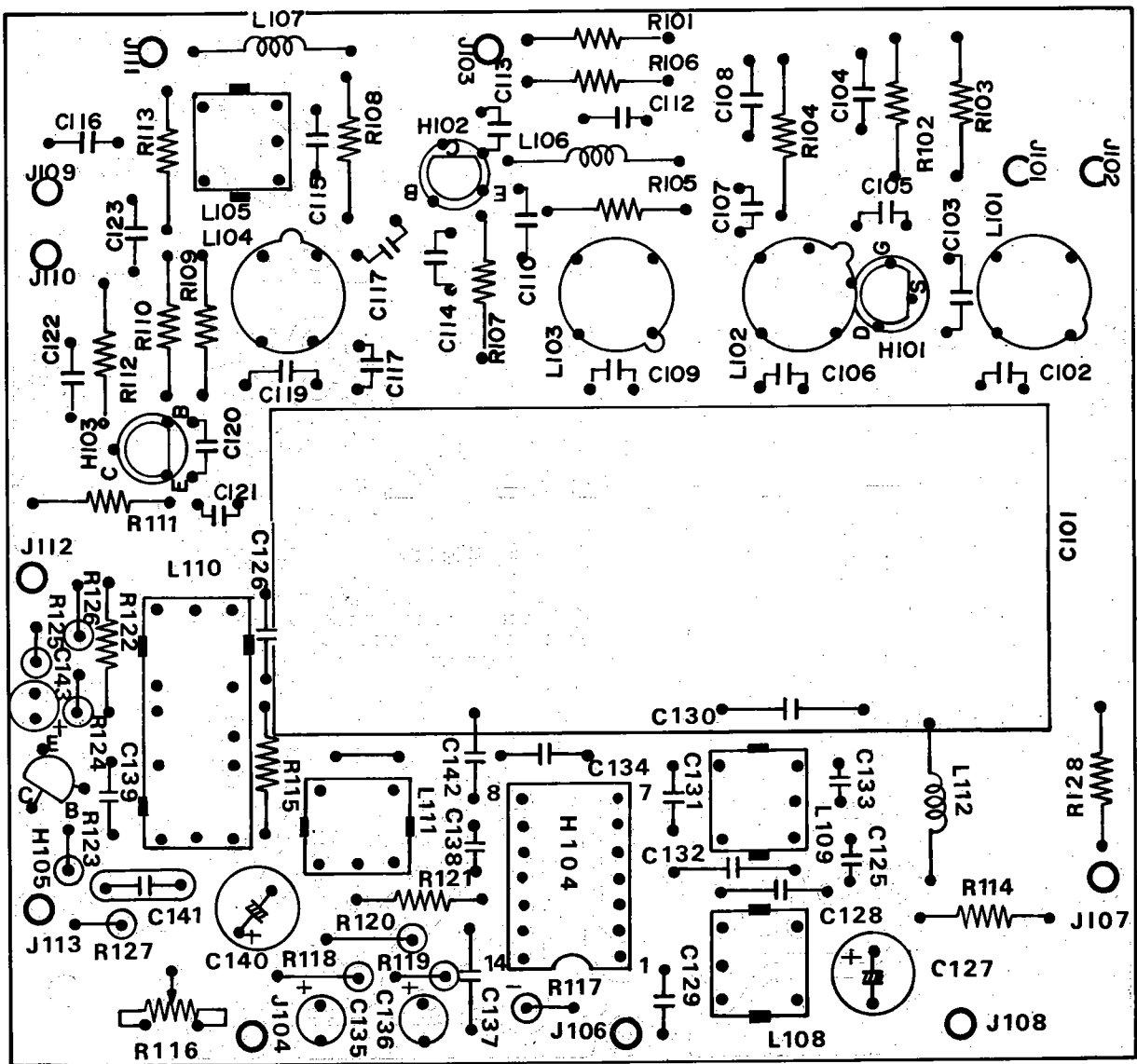


Figure 6. FM Front End and AM Tuner Assembly P100 Component Locations

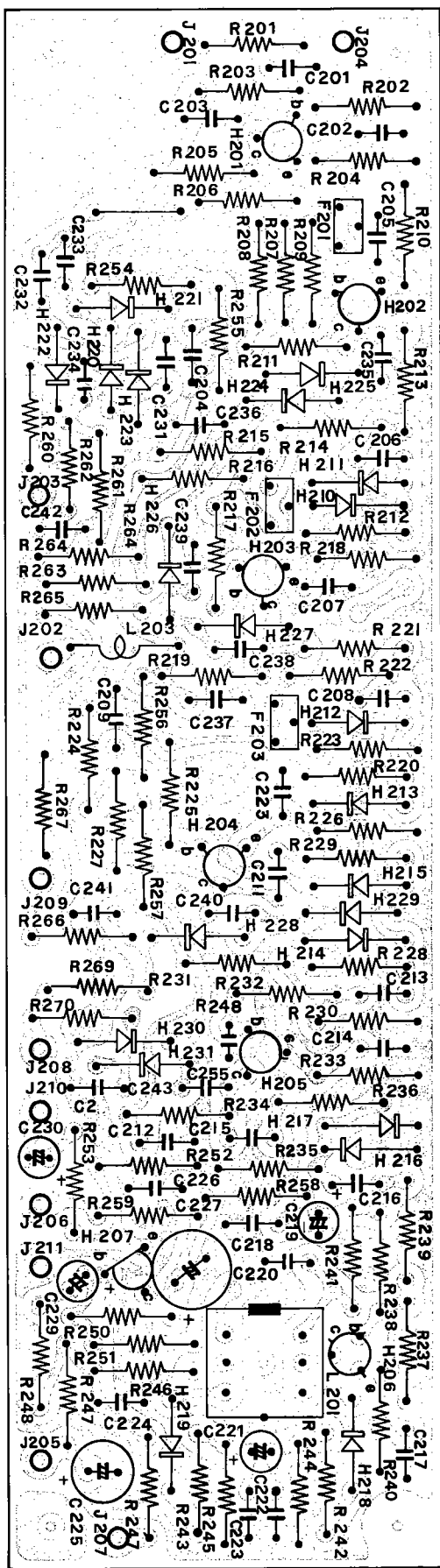


Figure 7. FM IF Amplifier Assembly P200 Component Locations

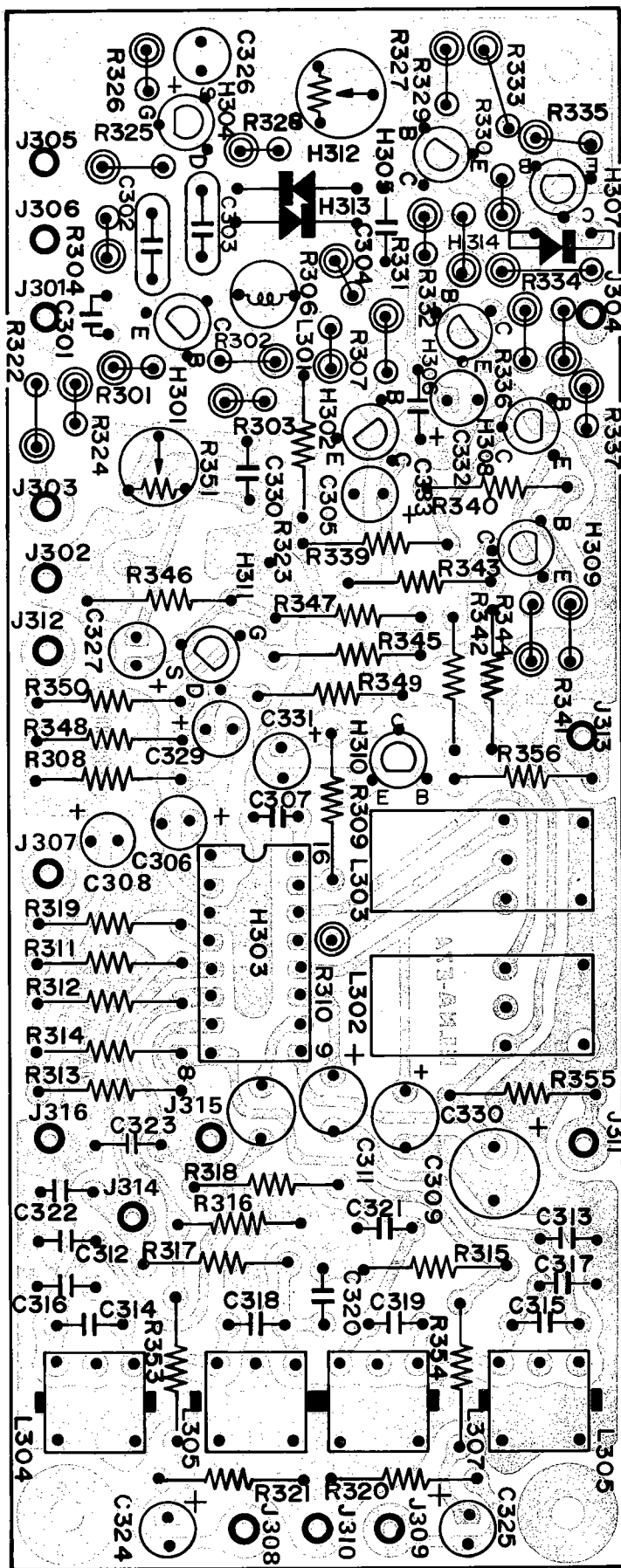


Figure 8. MPX Stereo Decoder, Noise and DC Amplifier Assembly P300 Component Locations

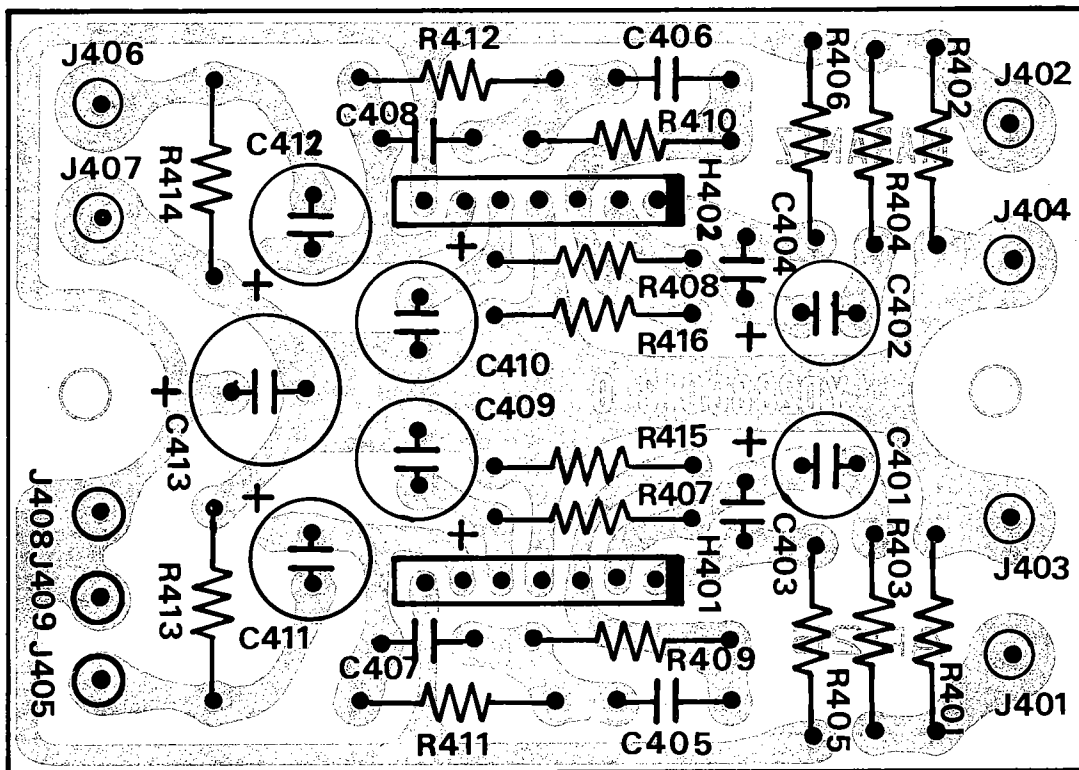


Figure 9. Phono Amplifier Assembly P400 Component Locations

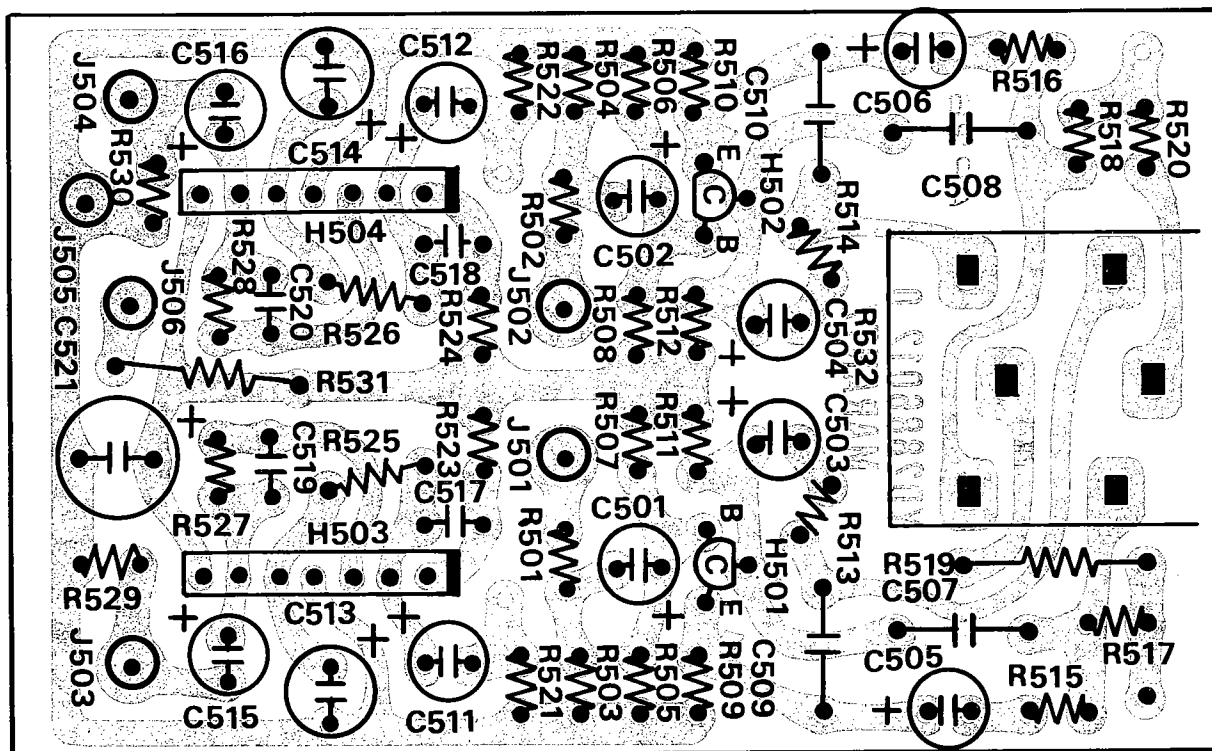


Figure 10. Vari-Matrix Unit Assembly P500 Component Locations

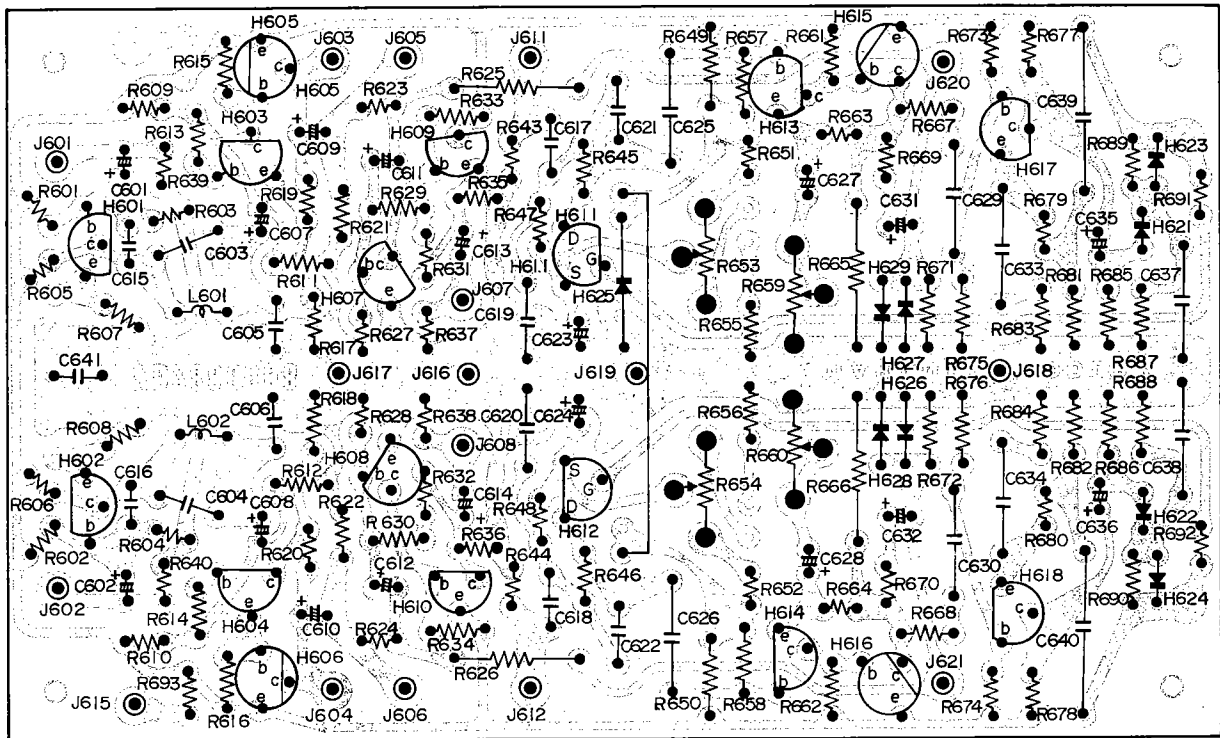


Figure 11. Dolby Unit Assembly P600 Component Locations

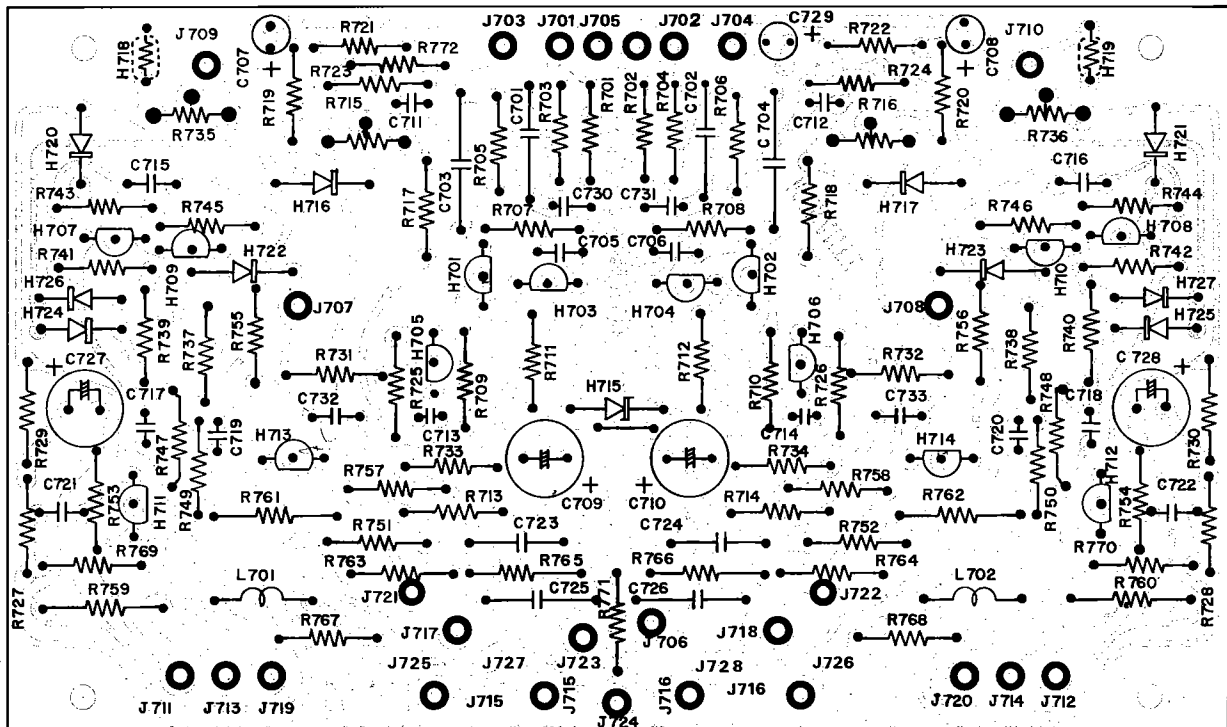


Figure 12. Power Amplifier Assembly P700 Component Locations

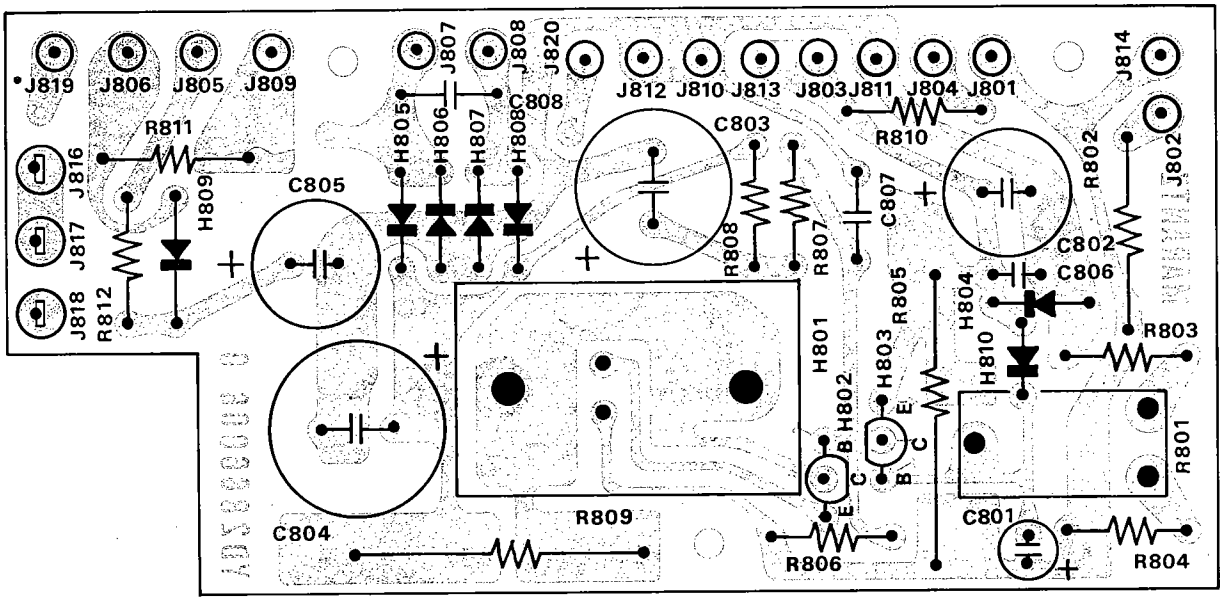


Figure 13. Power Supply Assembly P800 Component Locations

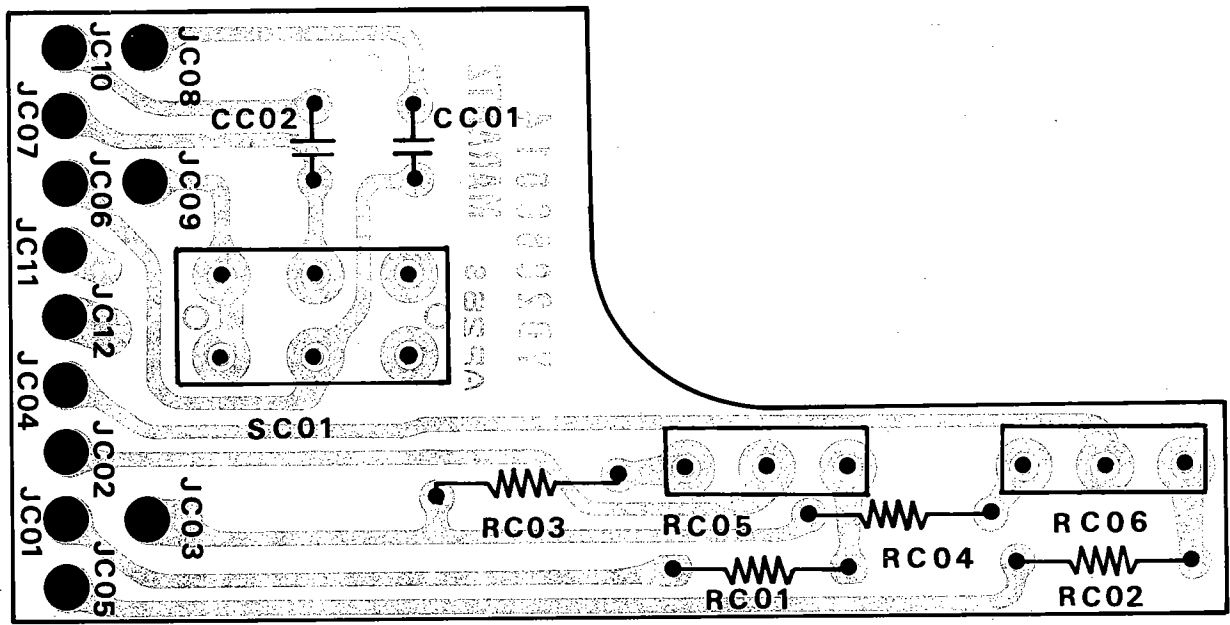


Figure 14. FM De-emphasis Switch Unit Assembly PC01 Component Locations

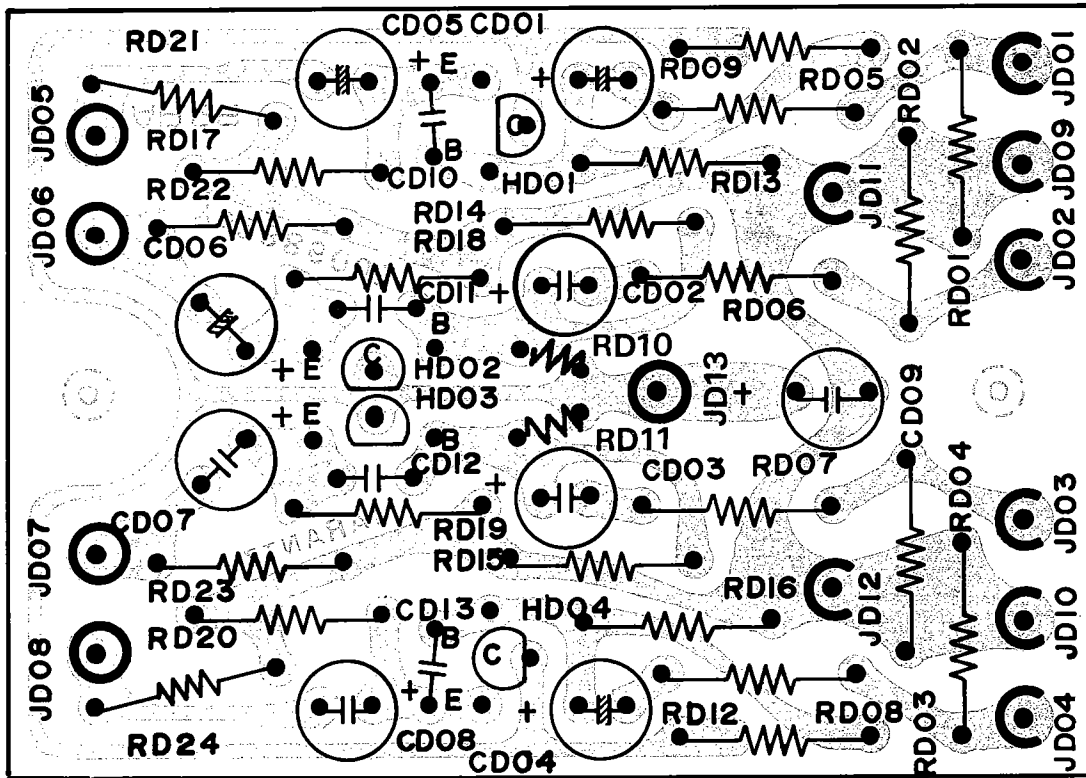


Figure 15. Buffer Amplifier Assembly PD01 Component Locations

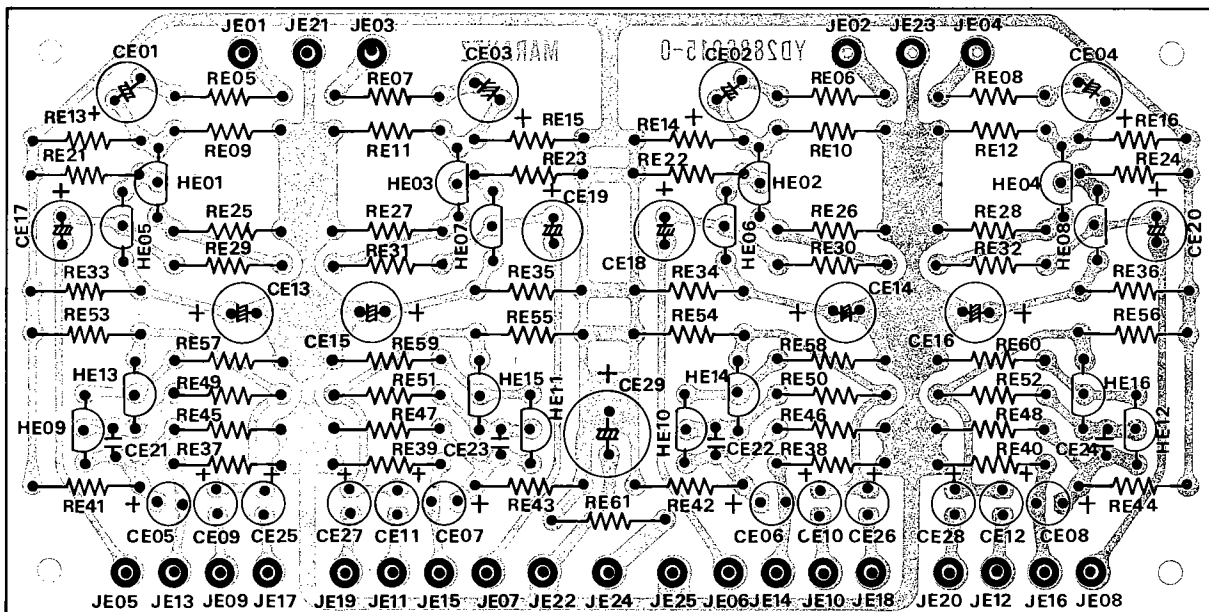


Figure 16. Tone Amplifier Assembly PE01 Component Locations

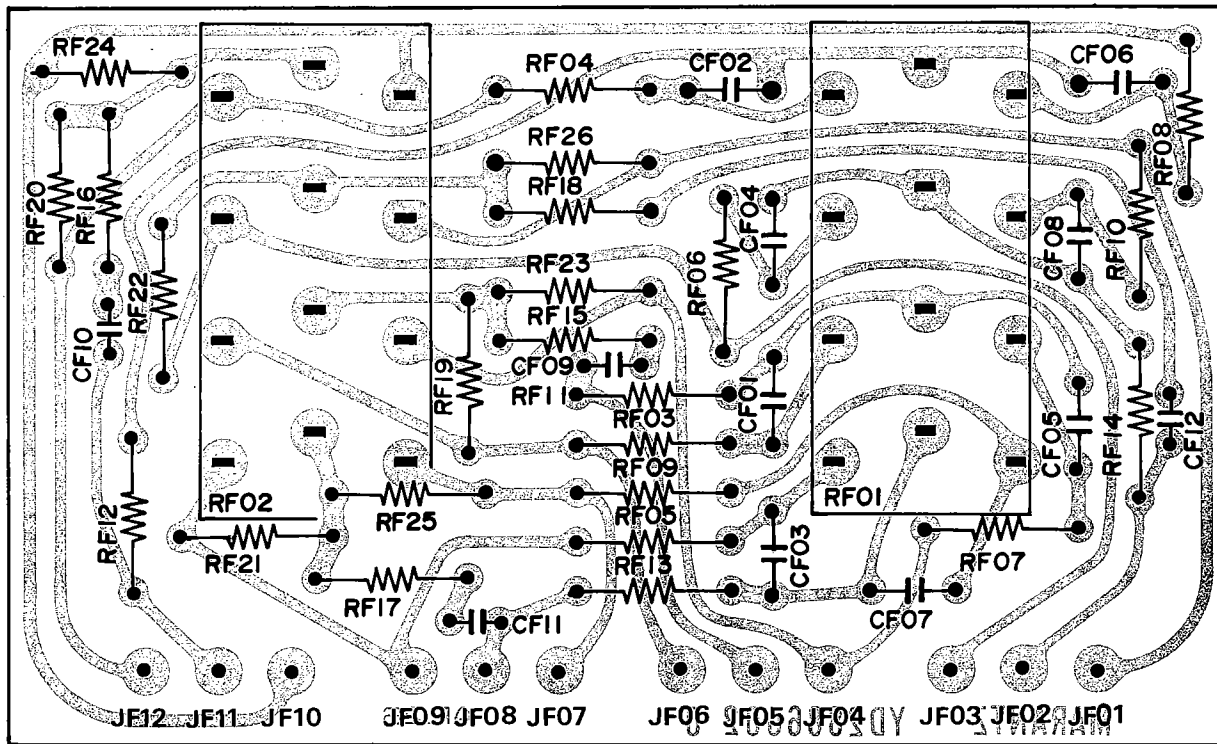


Figure 17. Tone Control Unit Assembly PF01 Component Locations

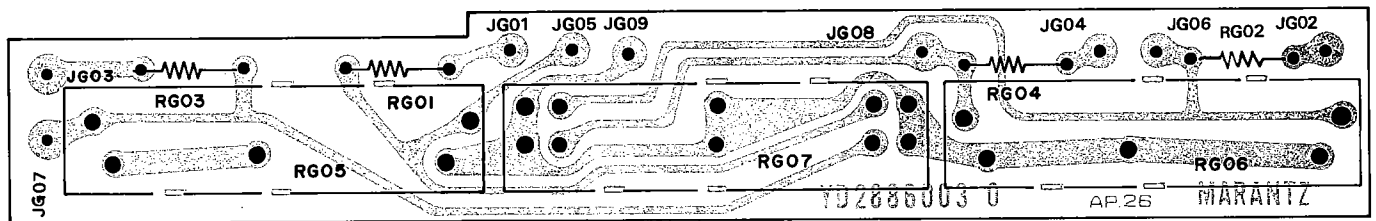


Figure 18. Balance Control Unit Assembly PG01 Component Locations

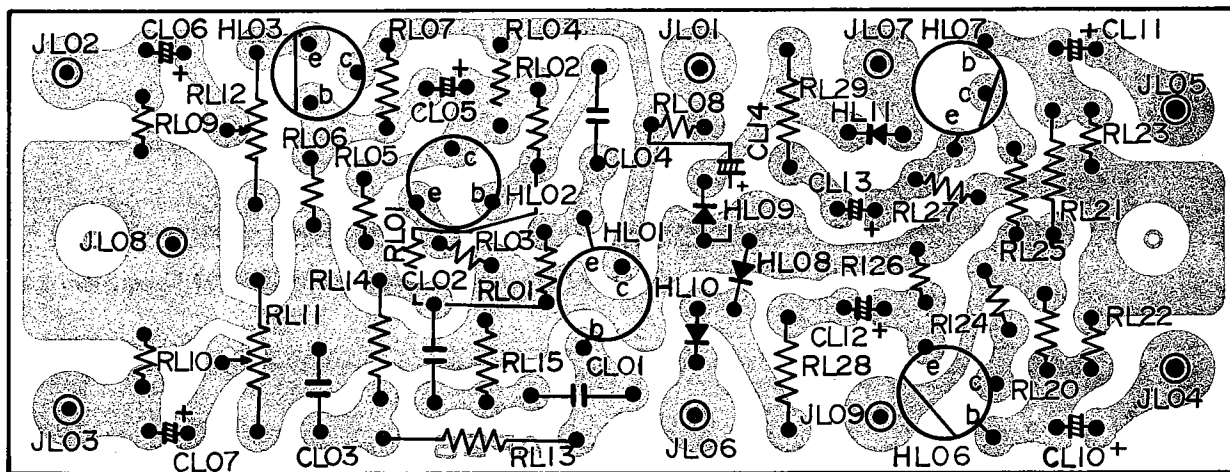


Figure 19. 400Hz Oscillator and Meter Driver Assembly PL01 Component Locations

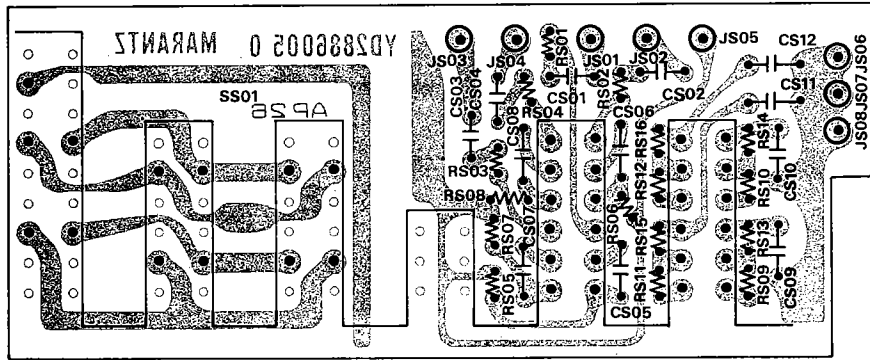


Figure 20. Loudness, Hi Filter, Speaker and Power Switch Unit Assembly, PS01 Component Locations

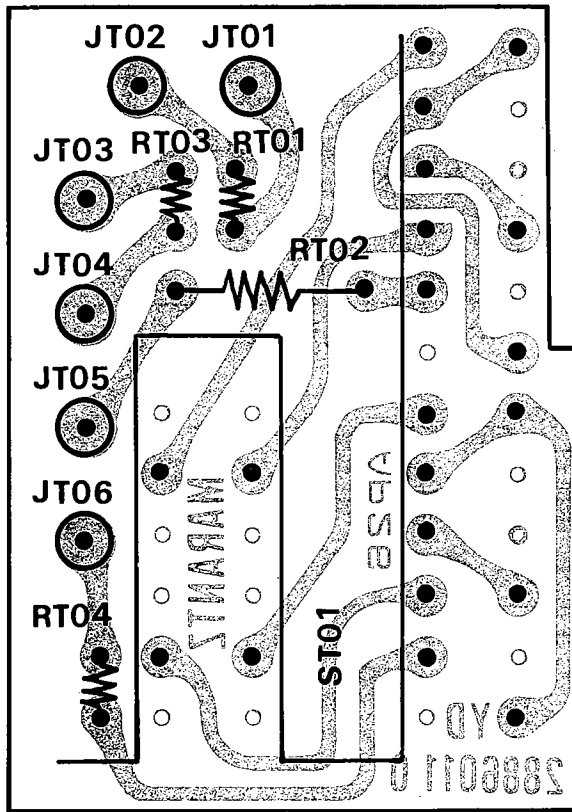


Figure 21. Tape Monitor Switch Unit Assembly PT01 Component Locations

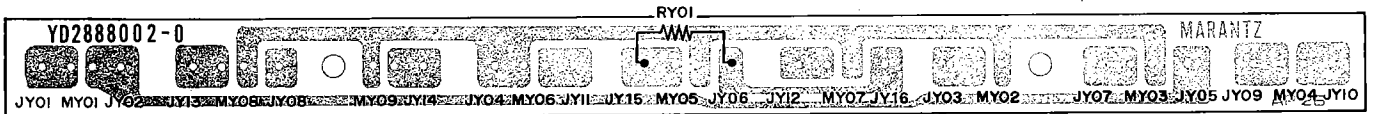


Figure 22. Indicator Lamps Assembly PY01 Component Locations

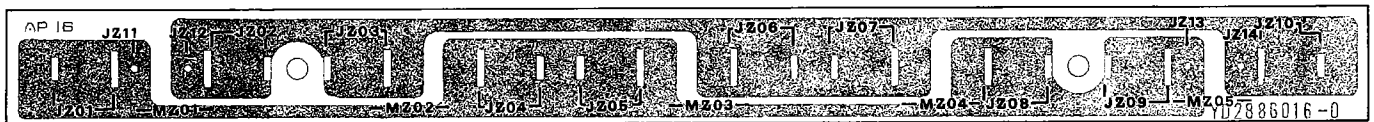


Figure 23. Dial Lamps Assembly PZ01 Component Locations



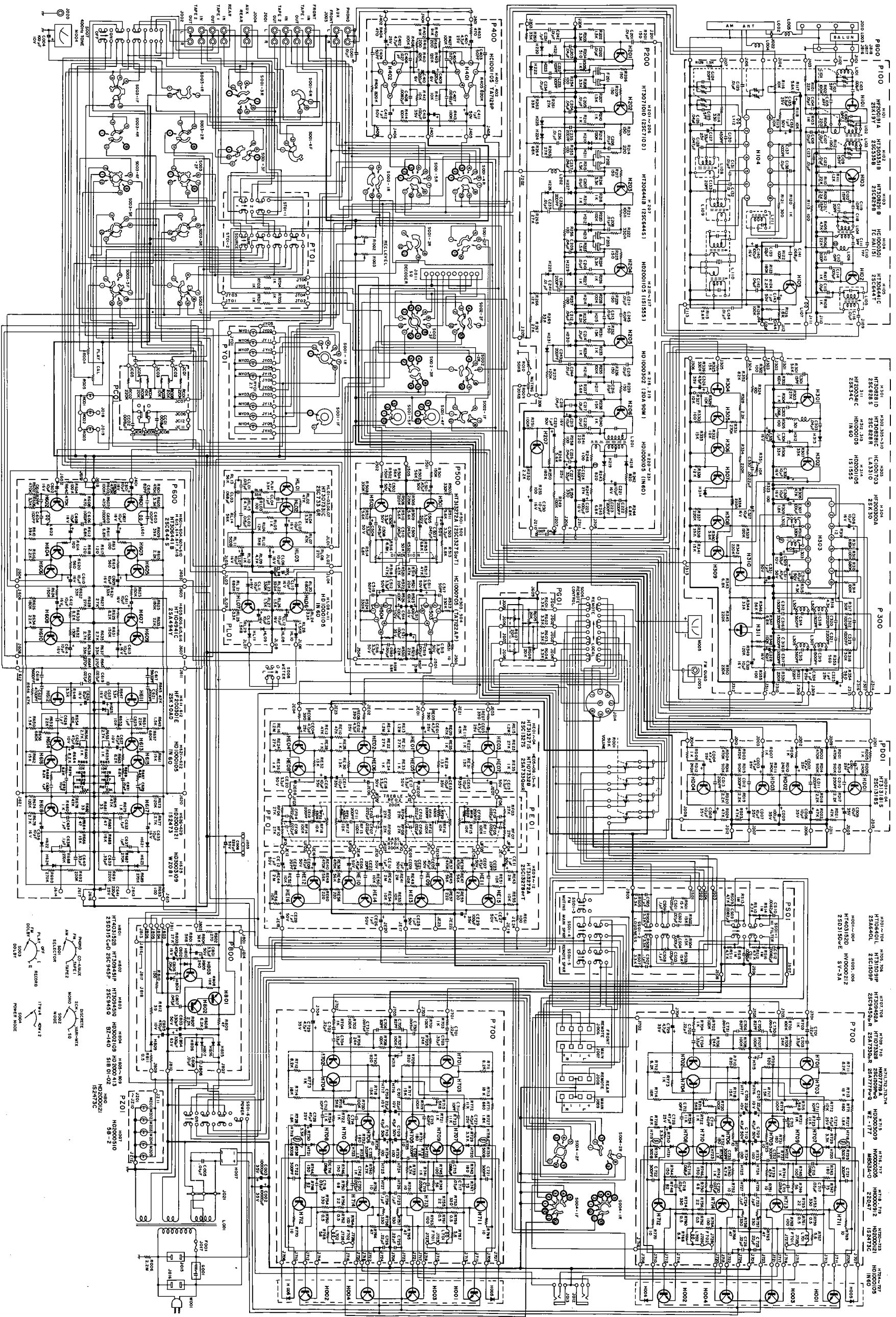


Figure 24. Schematic Diagram

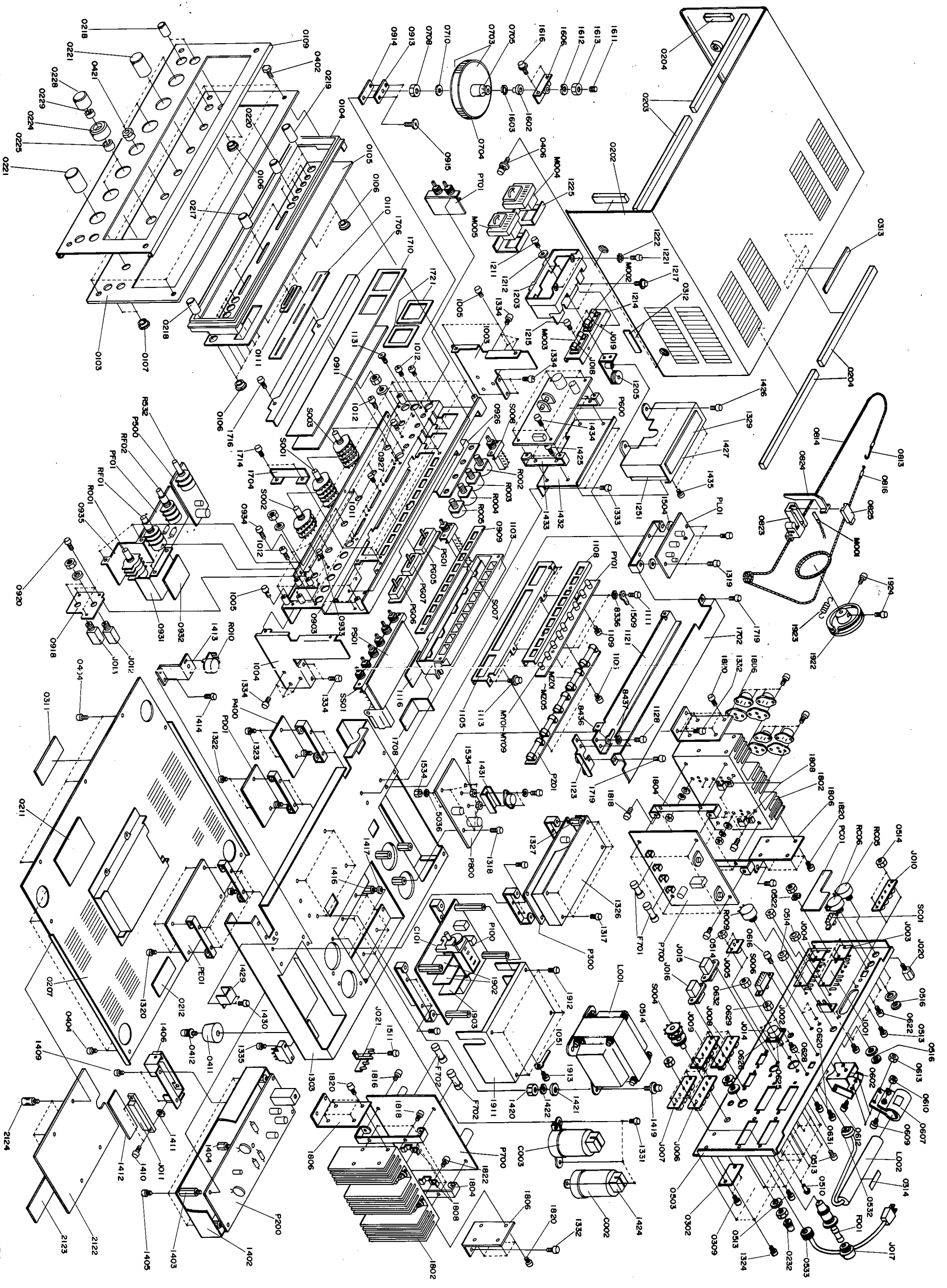


Figure 25. Exploded Mechanical Diagram

## PARTS LIST

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                                     | REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                                |
|-------------|------------------|---|-------------|------------------|--|
| A           | 288806340        | Front Panel Assembly                            | R103        | RT0510514        | 1M $\Omega$                                |
| 0103        | 288806301        | Escutcheon                                      | R104        | RT0522114        | 220 $\Omega$                               |
| 0104        | 285340101        | Frame   | R105        | RT0547214        | 4.7K $\Omega$                              |
| 0105        | 288615801        | Window  | R106        | RT0522314        | 22K $\Omega$                               |
| 0106        | 288625901        | Bush x 10                                       | R107        | RT0510214        | 1K $\Omega$                                |
| 0107        | 273125901        | Bush x 2  | R108        | RT0510214        | 1K $\Omega$                                |
| 0109        | 288605302        | Cover   | R109        | RT0522314        | 22K $\Omega$                               |
| 0110        | 289010701        | Sheet   | R110        | RT0522314        | 22K $\Omega$                               |
| 0111        | 285025901        | Bush x 3  | R111        | RT0512214        | 1.2K $\Omega$                              |
| B           | 288825740        | Lid Assembly                                    | R112        | RT0510114        | 100 $\Omega$                               |
| 0207        | 285325750        | Lid K   | R113        | RT0510114        | 100 $\Omega$                               |
| 0211        | 288812001        | Insulator                                       | R114        | RT0533114        | 330 $\Omega$                               |
| 0212        | 288612005        | Insulator                                       | R115        | RT0556214        | 5.6K $\Omega$                              |
| C           | 281815440        | Knob Assembly                                   | R116        | RA0103020        | Trimming, 10K $\Omega$                     |
| 0224        | 281815404        | Knob  | R117        | RT0556214        | 5.6K $\Omega$                              |
| 0225        | 71400149Q        | Spring  | R118        | RT0510314        | 10K $\Omega$                               |
| D           | 281815441        | Knob Assembly                                   | R119        | RT0510314        | 10K $\Omega$                               |
| 0228        | 281815405        | Knob  | R120        | RT0510214        | 1K $\Omega$                                |
| 0229        | 71400159Q        | Spring  | R121        | RT0530114        | 300 $\Omega$                               |
| E           | 288816040        | Rear Panel Assembly                             | R122        | RT0510414        | 100K $\Omega$                              |
| 0503        | 288816001        | Bracket   | R123        | RT0518414        | 180K $\Omega$                              |
| 0510        | 55060365S        | T.R. Rivet x 4                                  | R124        | RT0522214        | 2.2K $\Omega$                              |
| J015        | YJ0400018        | Jack  | R125        | RT0518214        | 1.8K $\Omega$                              |
| J016        | YJ0400018        | Jack  | R126        | RT0510414        | 100K $\Omega$                              |
| F           | 285327340        | Fly Wheel Assembly                              | R127        | RT0510114        | 100 $\Omega$                               |
| 0703        | 257706302        | Escutcheon x 2                                  | R128        | RC1015212        | 1.5K $\Omega$ $\pm$ 10%, $\frac{1}{2}$ W   |
| 0704        | 257727301        | Fly Wheel                                       | C101        | CA4330002        | <b>CAPACITORS</b><br>Variable, AM, FM Gang |
| 0705        | 285311201        | Shaft   | C102        | DD1205001        | Ceramic, 5PF $\pm$ 10%                     |
| 0708        | 53110603E        | Hexagon Nut                                     | C103        | DK1710201        | Ceramic, 0.001 $\mu$ F $\pm$ 20%           |
| 0710        | 54020601E        | Flat Washer                                     | C104        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
| G           | 120200640        | String Assembly                                 | C105        | DD1001001        | Ceramic, 1PF $\pm$ 0.25PF                  |
| 0813        | 120225701        | Hook  | C106        | DD1615001        | Ceramic, 15PF $\pm$ 10%                    |
| 0814        | 72080802A        | String  | C107        | DK1710201        | Ceramic, 0.001 $\mu$ F $\pm$ 20%           |
| H           | 281810341        | Pointer Assembly                                | C108        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
| 0823        | 281810301        | Pointer   | C109        | DD1615001        | Ceramic, 15PF $\pm$ 10%                    |
| 0824        | 281810302        | Pointer   | C110        | DD1203001        | Ceramic, 3PF $\pm$ 1PF                     |
| 0825        | 281805301        | Cover   | C111        | DD1103001        | Ceramic, 3PF $\pm$ 0.5PF                   |
| M001        | IN1008030        | Lamp  | C112        | DD1530101        | Ceramic, 300PF $\pm$ 5%                    |
| I           | 281915941        | Drum Assembly                                   | C113        | DD1615001        | Ceramic, 15PF $\pm$ 10%                    |
| 1922        | 281915901        | Drum  | C114        | DK1710201        | Ceramic, 0.001 $\mu$ F $\pm$ 20%           |
| 1923        | 71101569M        | Spring  | C115        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
| 1924        | 51064019A        | Screw   | C116        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
| P100        | YD2888003        | P.W. Board, FM-AM Front                         | C117        | DD1620004        | Ceramic, 20PF $\pm$ 10%                    |
|             | ZZ2888003        | P.W. Board Ass'y                                | C118        | CT1100008        | Trimming, 1.5PF $\sim$ 10PF                |
|             |                  | <b>RESISTORS</b>                                | C119        | DD1210006        | Ceramic, 10PF $\pm$ 1PF                    |
|             |                  | All resistors are $\pm$ 5% and $\frac{1}{4}$ W, | C120        | DD1615003        | Ceramic, 15PF $\pm$ 10%                    |
|             |                  | unless otherwise indicated.                     | C121        | DD1615003        | Ceramic, 15PF $\pm$ 10%                    |
| R101        | RT0522314        | 22K $\Omega$                                    | C122        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
| R102        | RT0510414        | 100K $\Omega$                                   | C123        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
|             |                  |   | C126        | DK1840302        | Ceramic, 0.04 $\mu$ F +80%, -20%           |
|             |                  |   | C127        | EA4760259        | Electroly, 47 $\mu$ F, 25V                 |
|             |                  |   | C128        | DF1747301        | Film, 0.047 $\mu$ F $\pm$ 20%              |
|             |                  |   | C129        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
|             |                  |   | C130        | DF6539101        | Film, 390PF $\pm$ 5%                       |
|             |                  |   | C131        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
|             |                  |   | C132        | DF1710301        | Film, 0.01 $\mu$ F $\pm$ 20%               |
|             |                  |   | C133        | DD1620001        | Ceramic, 20PF $\pm$ 10%                    |
|             |                  |   | C134        | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20%            |
|             |                  |   | C135        | EA3350259        | Electroly, 3.3 $\mu$ F, 25V                |
|             |                  |   | C136        | EA1050509        | Electroly, 1 $\mu$ F, 50V                  |
|             |                  |   | C137        | DK1710201        | Ceramic, 1000PF $\pm$ 20%                  |
|             |                  |   | C138        | DF1710301        | Film, 0.01 $\mu$ F $\pm$ 20%               |

| REF. DESIG.                                     | MARANTZ PART NO.       | DESCRIPTION                            |
|---|------------------------|--|
| C139  | DK1820302              | Ceramic, 0.02 $\mu$ F +100%, -0%       |
| C140  | EA1070169              | Electroly, 100 $\mu$ F, 16V            |
| C141  | DF1668301              | Film, 0.068 $\mu$ F $\pm$ 10%          |
| C142  | DK1840302              | Ceramic, 0.04 $\mu$ F +80%, -20%       |
| C143  | EA1050509              | Electroly, 1 $\mu$ F, 50V              |
| C144  | DK1820302              | Ceramic, 0.02 $\mu$ F +100%, -0%       |
| <b>SEMICONDUCTORS</b>                           |                        |  |
| H101  | HF200191A              | FET, 2SK19 (Y)                         |
| H102  | HT305351B              | Transistor, 2SC535 (B)                 |
| H103  | HT308291B              | Transistor, 2SC829 (B)                 |
| H104  | HC1000301              | IC, HA1151                             |
| H105  | HT306441C              | Transistor, 2SC644T                    |
| <b>COILS &amp; TRANSFORMERS</b>                 |                        |  |
| L101  | LA1202603              | Ant. Coil, FM                          |
| L102  | LA1202604              | RF, Coil, FM                           |
| L103  | LA1202611              | RF, Coil, FM                           |
| L104  | LO1202608              | OSC, Coil, FM                          |
| L105  | LI1015602              | FM IFT                                 |
| L106  | LC1751001              | Choke Coil, 0.75 $\mu$ H               |
| L107  | LC1332002              | Choke Coil, 3.3 $\mu$ H                |
| L108  | LA1001017              | AM RF Coil                             |
| L109  | LO1001048              | AM OSC Coil                            |
| L110  | LI1028002              | AM IFT                                 |
| L111  | LI1001064              | AM IFT                                 |
| L112  | LC1332002              | Choke Coil, 3.3 $\mu$ H                |
| <b>MISCELLANEOUS</b>                            |                        |  |
| J101  | YP1000113              | Plug                                   |
| J102  | YP1000113              | Plug                                   |
| J103  | YP1000113              | Plug                                   |
| J104  | YP1000113              | Plug                                   |
| J106  | YP1000113              | Plug                                   |
| J107  | YP1000113              | Plug                                   |
| J108  | YP1000113              | Plug                                   |
| J109  | YP1000113              | Plug                                   |
| J110  | YP1000113              | Plug                                   |
| J111  | YP1000113              | Plug                                   |
| J112  | YP1000113              | Plug                                   |
| J113  | YP1000113              | Plug                                   |
| J114  | YP1000113              | Plug                                   |
| 1902  | 282110901              | Shield x 2                             |
| 1903  | 288810901              | Shield                                 |
| P200  | YD2888004<br>ZZ2888004 | P.W. Board, FM IFT<br>P.W. Board Ass'y |
| <b>RESISTORS</b>                                |                        |  |
| All resistors are $\pm$ 5% and $\frac{1}{4}$ W. |                        |  |
| R201  | RT0515114              | 150 $\Omega$                           |
| R202  | RT0515214              | 1.5K $\Omega$                          |
| R203  | RT0533214              | 3.3K $\Omega$                          |
| R204  | RT0551114              | 510 $\Omega$                           |
| R205  | RT0510214              | 1K $\Omega$                            |
| R206  | RT0515114              | 150 $\Omega$                           |
| R207  | RT0515214              | 1.5K $\Omega$                          |
| R208  | RT0533214              | 3.3K $\Omega$                          |
| R209  | RT0515114              | 150 $\Omega$                           |
| R210  | RT0510214              | 1K $\Omega$                            |

| REF. DESIG.       | MARANTZ PART NO. | DESCRIPTION                     |
|-------------------|------------------|---------------------------------|
| R211              | RT0510214        | 1K $\Omega$                     |
| R212              | RT0510414        | 100K $\Omega$                   |
| R213              | RT0515114        | 150 $\Omega$                    |
| R214              | RT0522114        | 220 $\Omega$                    |
| R215              | RT0515214        | 1.5K $\Omega$                   |
| R216              | RT0533214        | 3.3K $\Omega$                   |
| R217              | RT0515114        | 150 $\Omega$                    |
| R218              | RT0510214        | 1K $\Omega$                     |
| R219              | RT0510214        | 1K $\Omega$                     |
| R220              | RT0510414        | 100K $\Omega$                   |
| R221              | RT0510114        | 100 $\Omega$                    |
| R222              | RT0533114        | 330 $\Omega$                    |
| R223              | RT0515214        | 1.5K $\Omega$                   |
| R224              | RT0533214        | 3.3K $\Omega$                   |
| R225              | RT0515114        | 150 $\Omega$                    |
| R226              | RT0510214        | 1K $\Omega$                     |
| R227              | RT0510214        | 1K $\Omega$                     |
| R228              | RT0510414        | 100K $\Omega$                   |
| R229              | RT0515114        | 150 $\Omega$                    |
| R230              | RT0582214        | 8.2K $\Omega$                   |
| R231              | RT0515314        | 15K $\Omega$                    |
| R232              | RT0515114        | 150 $\Omega$                    |
| R233              | RT0510214        | 1K $\Omega$                     |
| R234              | RT0510214        | 1K $\Omega$                     |
| R235              | RT0510414        | 100K $\Omega$                   |
| R236              | RT0515114        | 150 $\Omega$                    |
| R237              | RT0556214        | 5.6K $\Omega$                   |
| R238              | RT0515314        | 15K $\Omega$                    |
| R239              | RT0515114        | 150 $\Omega$                    |
| R240              | RT0510214        | 1K $\Omega$                     |
| R241              | RT0522114        | 220 $\Omega$                    |
| R242              | RT0582114        | 820 $\Omega$                    |
| R243              | RT0582114        | 820 $\Omega$                    |
| R244              | RT0568214        | 6.8K $\Omega$                   |
| R245              | RT0568214        | 6.8K $\Omega$                   |
| R246              | RT0510114        | 100 $\Omega$                    |
| R247              | RT0527314        | 27K $\Omega$                    |
| R248              | RT0556214        | 5.6K $\Omega$                   |
| R249              | RT0510414        | 100K $\Omega$                   |
| R250              | RT0518414        | 180K $\Omega$                   |
| R251              | RT0510414        | 100K $\Omega$                   |
| R252              | RT0522214        | 2.2K $\Omega$                   |
| R253              | RT0510114        | 100 $\Omega$                    |
| R254              | RT0510114        | 100 $\Omega$                    |
| R255              | RT0510114        | 100 $\Omega$                    |
| R256              | RT0510114        | 100 $\Omega$                    |
| R257              | RT0510114        | 100 $\Omega$                    |
| R258              | RT0510114        | 100 $\Omega$                    |
| R259              | RT0533114        | 330 $\Omega$                    |
| R260              | RT0533314        | 33K $\Omega$                    |
| R261              | RT0527314        | 27K $\Omega$                    |
| R262              | RT0524314        | 24K $\Omega$                    |
| R263              | RT0527314        | 27K $\Omega$                    |
| R264              | RT0568314        | 68K $\Omega$                    |
| R265              | RT0527314        | 27K $\Omega$                    |
| R266              | RT0512314        | 12K $\Omega$                    |
| R267              | RT0527314        | 27K $\Omega$                    |
| R269              | RT0533314        | 33K $\Omega$                    |
| R270              | RT0512414        | 120K $\Omega$                   |
| <b>CAPACITORS</b> |                  |                                 |
| C201              | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20% |
| C202              | DK1710301        | Ceramic, 0.01 $\mu$ F $\pm$ 20% |
| C203              | DK1840302        | Ceramic, 0.04 $\mu$ F $\pm$ 20% |

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION           |                        | REF. DESIG. | MARANTZ PART NO. | DESCRIPTION   |          |
|-------------|------------------|-----------------------|------------------------|-------------|------------------|---|----------|
| C204        | DK1840302        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% | H223        | HD1000105        | Diode,  | 1N60     |
| C205        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H224        | HD1000105        | Diode,  | 1N60     |
| C206        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H225        | HD1000105        | Diode,  | 1N60     |
| C207        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H226        | HD1000105        | Diode,  | 1N60     |
| C208        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H227        | HD1000105        | Diode,  | 1N60     |
| C209        | DK1840302        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% | H228        | HD1000105        | Diode,  | 1N60     |
| C210        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H229        | HD1000105        | Diode,  | 1N60     |
| C211        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | H230        | HD1000105        | Diode,  | 1N60     |
| C212        | DK1840302        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% | H231        | HD1000105        | Diode,  | 1N60     |
| C213        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% |             |                  | <b>COIL &amp; TRANSFORMER</b>   |          |
| C214        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | L201        | LI1401623        | FM IFT  |          |
| C215        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | L202        | LC1332002        | Choke Coil, 3.3 $\mu$ H   |          |
| C216        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% |             |                  | <b>MISCELLANEOUS</b>  |          |
| C217        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | F201        | FF1107004        | Ceramic Filter,   | CFS10.7M |
| C218        | DK1840301        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% | F202        | FF1107004        | Ceramic Filter,   | CFS10.7M |
| C219        | EA1060169        | Electroly,            | 10 $\mu$ F, 16V        | F203        | FF1107004        | Ceramic Filter,   | CFS10.7M |
| C220        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | J201        |                  |   |          |
| C221        | EA1060169        | Electroly,            | 10 $\mu$ F, 16V        | J211        | YP1000113        | Plug  |          |
| C222        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        |             |                  |   |          |
| C223        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        | P300        | YD2888005        | P.W. Board, MPX.  |          |
| C224        | DD1650101        | Ceramic,              | 500PF $\pm$ 10%        |             | ZZ2888005        | P.W. Board Ass'y  |          |
| C225        | EA1070109        | Electroly,            | 100 $\mu$ F, 10V       |             |                  | <b>RESISTORS</b>  |          |
| C226        | DK1840301        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% |             |                  | All resistors are $\pm$ 5% and $\frac{1}{4}$ W, unless otherwise indicated. |          |
| C227        | EA4760259        | Electroly,            | 47 $\mu$ F, 25V        | R301        | RT0556214        | 5.6K $\Omega$   |          |
| C229        | EA1050509        | Electroly,            | 1 $\mu$ F, 50V         | R302        | RT0510414        | 100K $\Omega$   |          |
| C230        | EA1060169        | Electroly,            | 10 $\mu$ F, 16V        | R303        | RT0527314        | 27K $\Omega$  |          |
| C231        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R304        | RT0510214        | 1K $\Omega$   |          |
| C232        | DD1610101        | Ceramic,              | 100PF $\pm$ 10%        | R305        | RT0510114        | 100 $\Omega$  |          |
| C233        | DD1610101        | Ceramic,              | 100PF $\pm$ 10%        | R306        | RT0533314        | 33K $\Omega$  |          |
| C234        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R307        | RT0533314        | 33K $\Omega$  |          |
| C235        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        | R308        | RT0547214        | 4.7K $\Omega$   |          |
| C236        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R309        | RT0527214        | 2.7K $\Omega$   |          |
| C237        | DK1840302        | Ceramic,              | 0.04 $\mu$ F $\pm$ 20% | R310        | RT0533414        | 330K $\Omega$   |          |
| C238        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        | R311        | RT0568414        | 680K $\Omega$   |          |
| C239        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R312        | RT0510414        | 100K $\Omega$   |          |
| C240        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        | R313        | RT0568414        | 680K $\Omega$   |          |
| C241        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R314        | RT0510414        | 100K $\Omega$   |          |
| C242        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R315        | RT0543214        | 4.3K $\Omega$   |          |
| C243        | DD1620101        | Ceramic,              | 200PF $\pm$ 10%        | R316        | RT0543214        | 4.3K $\Omega$   |          |
| C244        | DK1710301        | Ceramic,              | 0.01 $\mu$ F $\pm$ 20% | R317        | RT0530314        | 30K $\Omega$  |          |
| C245        | DD1540001        | Ceramic,              | 40PF $\pm$ 5%          | R318        | RT0530314        | 30K $\Omega$  |          |
|             |                  | <b>SEMICONDUCTORS</b> |                        | R320        | RT0522414        | 220K $\Omega$   |          |
| H201        | HT307101D        | Transistor,           | 2SC710 (D)             | R321        | RT0522414        | 220K $\Omega$   |          |
| H202        | HT307101D        | Transistor,           | 2SC710 (D)             | R322        | RT0510114        | 100 $\Omega$  |          |
| H203        | HT307101D        | Transistor,           | 2SC710 (D)             | R323        | RT0510114        | 100 $\Omega$  |          |
| H204        | HT307101D        | Transistor,           | 2SC710 (D)             | R324        | RT0510114        | 100 $\Omega$  |          |
| H205        | HT307101D        | Transistor,           | 2SC710 (D)             | R325        | RT0515314        | 15K $\Omega$  |          |
| H206        | HT307101D        | Transistor,           | 2SC710 (D)             | R326        | RT0533414        | 330K $\Omega$   |          |
| H207        | HT306441B        | Transistor,           | 2SC644 (S)             | R327        | RA0103020        | Trimming, 10K $\Omega$  |          |
| H210        | HD2001105        | Diode,                | 1S1555                 | R328        | RT0522214        | 2.2K $\Omega$   |          |
| H211        | HD2001105        | Diode,                | 1S1555                 | R329        | RT0510314        | 10K $\Omega$  |          |
| H212        | HD2001105        | Diode,                | 1S1555                 | R330        | RT0510114        | 100 $\Omega$  |          |
| H213        | HD2001105        | Diode,                | 1S1555                 | R331        | RT0527414        | 270K $\Omega$   |          |
| H214        | HD2001105        | Diode,                | 1S1555                 | R332        | RT0510314        | 10K $\Omega$  |          |
| H215        | HD2001105        | Diode,                | 1S1555                 | R333        | RT0515314        | 15K $\Omega$  |          |
| H216        | HD2001105        | Diode,                | 1S1555                 | R334        | RT0522414        | 220K $\Omega$   |          |
| H217        | HD2001105        | Diode,                | 1S1555                 | R335        | RT0512314        | 12K $\Omega$  |          |
| H218        | HD1000302        | Diode,                | 20A90M                 | R336        | RT0522114        | 220 $\Omega$  |          |
| H219        | HD1000302        | Diode,                | 20A90M                 |             |                  |   |          |
| H220        | HD1000105        | Diode,                | 1N60                   |             |                  |   |          |
| H221        | HD1000105        | Diode,                | 1N60                   |             |                  |   |          |
| H222        | HD1000105        | Diode,                | 1N60                   |             |                  |   |          |

| REF. DESIG.           | MARANTZ PART NO. | DESCRIPTION                      |
|-----------------------|------------------|----------------------------------|
| R337                  | RT0522414        | 220K $\Omega$                    |
| R338                  | RT0533014        | 33 $\Omega$                      |
| R339                  | RT0512414        | 120K $\Omega$                    |
| R340                  | RT0556214        | 5.6K $\Omega$                    |
| R341                  | RT0515314        | 15K $\Omega$                     |
| R342                  | RT0522414        | 220K $\Omega$                    |
| R343                  | RT0568214        | 6.8K $\Omega$                    |
| R344                  | RT0533314        | 33K $\Omega$                     |
| R345                  | RT0522414        | 220K $\Omega$                    |
| R346                  | RT0556314        | 56K $\Omega$                     |
| R347                  | RT0568314        | 68K $\Omega$                     |
| R348                  | RT0510414        | 100K $\Omega$                    |
| R349                  | RT0512414        | 120K $\Omega$                    |
| R350                  | RT0522414        | 220K $\Omega$                    |
| R351                  | RA0103020        | Trimming, 10K $\Omega$           |
| R352                  | RT0520314        | 20K $\Omega$                     |
| R353                  | RT0556114        | 560 $\Omega$                     |
| R354                  | RT0556114        | 560 $\Omega$                     |
| R355                  | RT0510114        | 100 $\Omega$                     |
| <b>CAPACITORS</b>     |                  |                                  |
| C301                  | DD1615001        | Ceramic, 15PF $\pm$ 10%          |
| C302                  | DF1668301        | Film, 0.068 $\mu$ F $\pm$ 10%    |
| C303                  | DF1740301        | Film, 0.04 $\mu$ F $\pm$ 20%     |
| C304                  | DK1810402        | Ceramic, 0.1 $\mu$ F +80%, -20%  |
| C305                  | EA1060169        | Electroly, 10 $\mu$ F, 16V       |
| C306                  | EA1060169        | Electroly, 10 $\mu$ F, 16V       |
| C307                  | DF1610201        | Film, 0.001 $\mu$ F $\pm$ 10%    |
| C308                  | EA1060169        | Electroly, 10 $\mu$ F, 16V       |
| C309                  | EA3360109        | Electroly, 33 $\mu$ F, 10V       |
| C310                  | EA4740501        | Electroly, 0.47 $\mu$ F, 50V     |
| C311                  | EA4740501        | Electroly, 0.47 $\mu$ F, 50V     |
| C312                  | DF1615205        | Film, 1500PF $\pm$ 10%           |
| C313                  | DF1615205        | Film, 1500PF $\pm$ 10%           |
| C314                  | DD1536101        | Ceramic, 360PF $\pm$ 5%          |
| C315                  | DD1536101        | Ceramic, 360PF $\pm$ 5%          |
| C316                  | DF1633205        | Film, 3300PF $\pm$ 10%           |
| C317                  | DF1633205        | Film, 3300PF $\pm$ 10%           |
| C318                  | DF1515205        | Film, 1500PF $\pm$ 5%            |
| C319                  | DF1515205        | Film, 1500PF $\pm$ 5%            |
| C320                  | DF1622205        | Film, 2200PF $\pm$ 10%           |
| C321                  | DF1622205        | Film, 2200PF $\pm$ 10%           |
| C322                  | DF1510205        | Film, 1000PF $\pm$ 5%            |
| C323                  | DF1510205        | Film, 1000PF $\pm$ 5%            |
| C324                  | EV1050251        | Electroly, 1 $\mu$ F, 25V        |
| C325                  | EV1050251        | Electroly, 1 $\mu$ F, 25V        |
| C326                  | EA4750359        | Electroly, 4.7 $\mu$ F, 35V      |
| C327                  | EA1060169        | Electroly, 10 $\mu$ F, 16V       |
| C328                  | EA2270169        | Electroly, 220 $\mu$ F, 16V      |
| C329                  | EA1060169        | Electroly, 10 $\mu$ F, 16V       |
| C330                  | DF1722201        | Film, 0.0022 $\mu$ F $\pm$ 20%   |
| C331                  | EA1050509        | Electroly, 50V, 1 $\mu$ F        |
| C332                  | EA1060169        | Electroly, 16V, 10 $\mu$ F       |
| C333                  | DK1840301        | Ceramic, 0.04 $\mu$ F +80%, -20% |
| <b>SEMICONDUCTORS</b> |                  |                                  |
| H301                  | HT308281D        | Transistor, 2SC828 (S)           |
| H302                  | HT308281C        | Transistor, 2SC828 (R)           |
| H303                  | HC1001703        | IC, LA3310                       |
| H304                  | HF200300A        | FET, 2SK30                       |
| H305                  | HT308281C        | Transistor, 2SC828 (R)           |
| H306                  | HT308281C        | Transistor, 2SC828 (R)           |
| H307                  | HT308281C        | Transistor, 2SC828 (R)           |
| H308                  | HT308281C        | Transistor, 2SC828 (R)           |

| REF. DESIG.   | MARANTZ PART NO.       | DESCRIPTION                              |
|---|------------------------|--|
| H309  | HT308281C              | Transistor, 2SC828 (R)                   |
| H310  | HT308281C              | Transistor, 2SC828 (R)                   |
| H311  | HF200341C              | FET, 2SK34 (C)                           |
| H312  | HD1000105              | Diode, 1N60                              |
| H313  | HD1000105              | Diode, 1N60                              |
| H314  | HD2001105              | Diode, 1S1555                            |
| <b>COIL</b>   |                        |  |
| L301  | LC2105001              | Choke Coil, 1mH                          |
| L302  | LS1031001              | MPX Coil, 19KHz                          |
| L303  | LS1031004              | MPX Coil, 38KHz                          |
| L304  | LS1029004              | MPX Coil, 56mH                           |
| L305  | LS1029004              | MPX Coil, 56mH                           |
| L306  | LS1029005              | MPX Coil, 43mH                           |
| L307  | LS1029005              | MPX Coil, 43mH                           |
| <b>MISCELLANEOUS</b>  |                        |  |
| J301  | YP1000113              | Plug                                     |
| J316  |                        |  |
| C007  | DK1840302              | Ceramic, 0.04 $\mu$ F +80%, -20%         |
| P400  | YD2886013<br>ZZ2886013 | P.W. Board, Phono EQ<br>P.W. Board Ass'y |
| <b>RESISTORS</b><br>All resistors are $\pm$ 5% and $\frac{1}{4}$ W. |                        |  |
| R401  | RT0591314              | 91K $\Omega$                             |
| R402  | RT0591314              | 91K $\Omega$                             |
| R403  | RT0547114              | 470 $\Omega$                             |
| R404  | RT0547114              | 470 $\Omega$                             |
| R405  | RN1082414              | 820K $\Omega$ $\pm$ 10%, $\frac{1}{4}$ W |
| R406  | RN1082414              | 820K $\Omega$ $\pm$ 10%, $\frac{1}{4}$ W |
| R407  | RN1010414              | 100K $\Omega$ $\pm$ 10%, $\frac{1}{4}$ W |
| R408  | RN1010414              | 100K $\Omega$ $\pm$ 10%, $\frac{1}{4}$ W |
| R409  | RT0512414              | 120K $\Omega$                            |
| R410  | RT0512414              | 120K $\Omega$                            |
| R411  | RT0510314              | 10K $\Omega$                             |
| R412  | RT0510314              | 10K $\Omega$                             |
| R413  | RT0510414              | 100K $\Omega$                            |
| R414  | RT0510414              | 100K $\Omega$                            |
| R415  | RT0520114              | 200 $\Omega$                             |
| R416  | RT0520114              | 200 $\Omega$                             |
| <b>CAPACITORS</b>   |                        |  |
| C401  | EE4750251              | Electroly, 4.7 $\mu$ F, 25V              |
| C402  | EE4750251              | Electroly, 4.7 $\mu$ F, 25V              |
| C403  | DD1650001              | Ceramic, 50PF $\pm$ 10%                  |
| C404  | DD1650001              | Ceramic, 50PF $\pm$ 10%                  |
| C405  | DF1527305              | Film, 0.027 $\mu$ F $\pm$ 5%             |
| C406  | DF1527305              | Film, 0.27 $\mu$ F $\pm$ 5%              |
| C407  | DF1582205              | Film, 0.0082 $\mu$ F $\pm$ 5%            |
| C408  | DF1582205              | Film, 0.0082 $\mu$ F $\pm$ 5%            |
| C409  | EA2270069              | Electroly, 220 $\mu$ F, 6V               |
| C410  | EA2270069              | Electroly, 220 $\mu$ F, 6V               |
| C411  | EE1050501              | Electroly, 1 $\mu$ F, 50V                |
| C412  | EE1050501              | Electroly, 1 $\mu$ F, 50V                |
| C413  | EA1070359              | Electroly, 100 $\mu$ F, 35V              |
| <b>SEMICONDUCTORS</b>   |                        |  |
| H401  | HC1001105              | IC, TA7129P                              |

| REF. DESIG.  | MARANTZ PART NO.       | DESCRIPTION   |
|--------------|------------------------|---|
| H402         | HC1001105              | IC, TA7129P   |
| J401<br>J409 | YP1000113              | MISCELLANEOUS<br>Plug   |
| P600         | YD2886008<br>ZZ2886008 | P.W. Board, Dolby<br>P.W. Board Ass'y   |
|              |                        | <b>RESISTORS</b><br>All resistors are $\pm 5\%$ and $\frac{1}{4}W$ ,<br>unless otherwise indicated. |
| R601         | RT0547414              | 470K $\Omega$   |
| R602         | RT0547414              | 470K $\Omega$   |
| R603         | RT0510414              | 100K $\Omega$   |
| R604         | RT0510414              | 100K $\Omega$   |
| R605         | RT0533214              | 3.3K $\Omega$   |
| R606         | RT0533214              | 3.3K $\Omega$   |
| R607         | RT0547114              | 470 $\Omega$  |
| R608         | RT0547114              | 470 $\Omega$  |
| R609         | RT0539314              | 39K $\Omega$  |
| R610         | RT0539314              | 39K $\Omega$  |
| R611         | RT0568214              | 6.8K $\Omega$   |
| R612         | RT0568214              | 6.8K $\Omega$   |
| R613         | RT0510114              | 100 $\Omega$  |
| R614         | RT0510114              | 100 $\Omega$  |
| R615         | RT0522214              | 2.2K $\Omega$   |
| R616         | RT0522214              | 2.2K $\Omega$   |
| R617         | RT0512114              | 120 $\Omega$  |
| R618         | RT0512114              | 120 $\Omega$  |
| R619         | RT0556114              | 560 $\Omega$  |
| R620         | RT0556114              | 560 $\Omega$  |
| R621         | RT0533314              | 33K $\Omega$  |
| R622         | RT0533314              | 33K $\Omega$  |
| R623         | RT0515414              | 150K $\Omega$   |
| R624         | RT0515414              | 150K $\Omega$   |
| R625         | RT0518414              | 180K $\Omega$   |
| R626         | RT0518414              | 180K $\Omega$   |
| R627         | RT0527314              | 27K $\Omega$  |
| R628         | RT0527314              | 27K $\Omega$  |
| R629         | RT0582214              | 8.2K $\Omega$   |
| R630         | RT0582214              | 8.2K $\Omega$   |
| R631         | RT0515414              | 150K $\Omega$   |
| R632         | RT0515414              | 150K $\Omega$   |
| R633         | RT0522314              | 22K $\Omega$  |
| R634         | RT0522314              | 22K $\Omega$  |
| R635         | RT0527214              | 2.7K $\Omega$   |
| R636         | RT0527214              | 2.7K $\Omega$   |
| R637         | RT0533314              | 33K $\Omega$  |
| R638         | RT0533314              | 33K $\Omega$  |
| R639         | RT0547414              | 470K $\Omega$   |
| R640         | RT0547414              | 470K $\Omega$   |
| R643         | RT0527414              | 270K $\Omega$   |
| R644         | RT0527414              | 270K $\Omega$   |
| R645         | RT0547314              | 47K $\Omega$  |
| R646         | RT0547314              | 47K $\Omega$  |
| R647         | RT0533214              | 3.3K $\Omega$   |
| R648         | RT0533214              | 3.3K $\Omega$   |
| R649         | RT0515214              | 1.5K $\Omega$   |
| R650         | RT0515214              | 1.5K $\Omega$   |
| R651         | RT0522314              | 22K $\Omega$  |
| R652         | RT0522314              | 22K $\Omega$  |

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                            |
|-------------|------------------|--|
| R653        | RA0103022        | Trimming, 10K $\Omega$ (B)             |
| R654        | RA0103022        | Trimming, 10K $\Omega$ (B)             |
| R655        | RT0527214        | 2.7K $\Omega$                          |
| R656        | RT0527214        | 2.7K $\Omega$                          |
| R657        | RT0568414        | 680K $\Omega$                          |
| R658        | RT0568414        | 680K $\Omega$                          |
| R659        | RA0102020        | Trimming, 1K $\Omega$ (B)              |
| R660        | RA0102020        | Trimming, 1K $\Omega$ (B)              |
| R661        | RT0515314        | 15K $\Omega$                           |
| R662        | RT0515314        | 15K $\Omega$                           |
| R663        | RT0582214        | 8.2K $\Omega$                          |
| R664        | RT0582214        | 8.2K $\Omega$                          |
| R665        | RT0510314        | 10K $\Omega$                           |
| R666        | RT0510314        | 10K $\Omega$                           |
| R667        | RT0582214        | 8.2K $\Omega$                          |
| R668        | RT0582214        | 8.2K $\Omega$                          |
| R669        | RT0582214        | 8.2K $\Omega$                          |
| R670        | RT0582214        | 8.2K $\Omega$                          |
| R671        | RT0533314        | 33K $\Omega$                           |
| R672        | RT0533314        | 33K $\Omega$                           |
| R673        | RT0512414        | 120K $\Omega$                          |
| R674        | RT0512414        | 120K $\Omega$                          |
| R675        | RT0547314        | 47K $\Omega$                           |
| R676        | RT0547314        | 47K $\Omega$                           |
| R677        | RT0527214        | 2.7K $\Omega$                          |
| R678        | RT0527214        | 2.7K $\Omega$                          |
| R679        | RT0510214        | 1K $\Omega$                            |
| R680        | RT0510214        | 1K $\Omega$                            |
| R681        | RT0533014        | 33 $\Omega$                            |
| R682        | RT0533014        | 33 $\Omega$                            |
| R683        | RT0547014        | 47 $\Omega$                            |
| R684        | RT0547014        | 47 $\Omega$                            |
| R685        | RT0515314        | 15K $\Omega$                           |
| R686        | RT0515314        | 15K $\Omega$                           |
| R687        | RT0527414        | 270K $\Omega$                          |
| R688        | RT0527414        | 270K $\Omega$                          |
| R689        | RT0527414        | 270K $\Omega$                          |
| R690        | RT0527414        | 270K $\Omega$                          |
| R691        | RT0522414        | 220K $\Omega$                          |
| R692        | RT0522414        | 220K $\Omega$                          |
| R693        | RC1010112        | 100 $\Omega$ $\pm$ 10%, $\frac{1}{4}W$ |
|             |                  | <b>CAPACITORS</b>                      |
| C601        | EE3350251        | Electroly, 3.3 $\mu F$ , 25V           |
| C602        | EE3350251        | Electroly, 3.3 $\mu F$ , 25V           |
| C603        | DF6610101        | Film, 100PF $\pm$ 10%                  |
| C604        | DF6610101        | Film, 100PF $\pm$ 10%                  |
| C605        | DF1510205        | Film, 1000PF $\pm$ 5%                  |
| C606        | DF1510205        | Film, 1000PF $\pm$ 5%                  |
| C607        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C608        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C609        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C610        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C611        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C612        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C613        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C614        | EA1060169        | Electroly, 10 $\mu F$ , 16V            |
| C615        | DD1582001        | Ceramic, 82PF $\pm$ 5%                 |
| C616        | DD1582001        | Ceramic, 82PF $\pm$ 5%                 |
| C617        | DF1556205        | Film, 5600PF $\pm$ 5%                  |
| C618        | DF1556205        | Film, 5600PF $\pm$ 5%                  |
| C619        | DF1527305        | Film, 0.027 $\mu F$ $\pm$ 5%           |
| C620        | DF1527305        | Film, 0.027 $\mu F$ $\pm$ 5%           |

| REF. DESIG.           | MARANTZ PART NO. | DESCRIPTION |              |
|-----------------------|------------------|-------------|--------------|
| C621                  | DF1547205        | Film,       | 4700PF ± 5%  |
| C622                  | DF1547205        | Film,       | 4700PF ± 5%  |
| C623                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C624                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C625                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C626                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C627                  | EA4760109        | Electroly,  | 47μF, 10V    |
| C628                  | EA4760109        | Electroly,  | 47μF, 10V    |
| C629                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C630                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C631                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C632                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C633                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C634                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C635                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C636                  | EA1060169        | Electroly,  | 10μF, 16V    |
| C637                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C638                  | DF1610405        | Film,       | 0.1μF ± 10%  |
| C639                  | DF1633405        | Film,       | 0.33μF ± 10% |
| C640                  | DF1633405        | Film,       | 0.33μF ± 10% |
| C641                  | EA2270259        | Electroly,  | 220μF, 25V   |
| L601                  | LC2226004        | Choke Coil, | 22mH         |
| L602                  | LC2226004        | Choke Coil, | 22mH         |
| <b>MISCELLANEOUS</b>  |                  |             |              |
| J601                  | YP1000109        | Plug        |              |
| J608                  |                  |             |              |
| J611                  | YP1000109        | Plug        |              |
| J612                  |                  |             |              |
| J615                  | YP1000109        | Plug        |              |
| J621                  |                  |             |              |
| <b>SEMICONDUCTORS</b> |                  |             |              |
| H601                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H602                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H603                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H604                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H605                  | HT104941C        | Transistor, | 2SA494 (Y)   |
| H606                  | HT104941C        | Transistor, | 2SA494 (Y)   |
| H607                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H608                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H609                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H610                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H611                  | HF200301E        | Transistor, | 2SK30 (D)    |
| H612                  | HF200301E        | Transistor, | 2SK30 (D)    |
| H613                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H614                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H615                  | HT104941C        | Transistor, | 2SA494 (Y)   |
| H616                  | HT104941C        | Transistor, | 2SA494 (Y)   |
| H617                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H618                  | HT306441B        | Transistor, | 2SC644 (S)   |
| H621                  | HD1000105        | Diode,      | 1N60         |
| H622                  | HD1000105        | Diode,      | 1N60         |
| H623                  | HD2000121        | Diode,      | 1S2473       |
| H624                  | HD2000121        | Diode,      | 1S2473       |
| H625                  | HD3003109        | Diode,      | WZ-081       |

| REF. DESIG.   | MARANTZ PART NO.       | DESCRIPTION  |        |
|---|------------------------|--|--------|
| H626  | HD2000121              | Diode,   | 1S2473 |
| H627  | HD2000121              | Diode,   | 1S2473 |
| H628  | HD2000121              | Diode,   | 1S2473 |
| H629  | HD2000121              | Diode,   | 1S2473 |
| 1425  | 51570305B              | P.H. Tapt Screw x 4                                |        |
| 1432  | 288616003              | Bracket  |        |
| 1433  | 288616004              | Bracket x 2  |        |
| 1434  | 51100305S              | B.H.M. Screw x 4                                   |        |
| 1507  | 54050300R              | T.L. Washer OR x 2                                 |        |
| PL01  | YD2886009<br>ZZ2886009 | P.W. Board, Dolby Tone & Meter<br>P.W. Board Ass'y |        |
| <b>RESISTORS</b>  |                        |  |        |
| All resistors are ±5% and ¼W, unless otherwise indicated. |                        |  |        |
| RL01  | RT0533214              | 3.3KΩ  |        |
| RL02  | RT0547314              | 47KΩ   |        |
| RL03  | RT0510114              | 100Ω   |        |
| RL04  | RT0533214              | 3.3KΩ  |        |
| RL05  | RT0510214              | 1KΩ  |        |
| RL06  | RT0512314              | 12KΩ   |        |
| RL07  | RT0547314              | 47KΩ   |        |
| RL08  | RC1010212              | 1KΩ ± 10%, ½W                                      |        |
| RL09  | RT0547214              | 4.7KΩ  |        |
| RL10  | RT0510214              | 1KΩ  |        |
| RL11  | RA0501012              | Trimming, 500Ω (B)                                 |        |
| RL12  | RA0502019              | Trimming, 5KΩ (B)                                  |        |
| RL13  | RT0556314              | 56KΩ   |        |
| RL14  | RT0556314              | 56KΩ   |        |
| RL15  | RT0547214              | 4.7KΩ  |        |
| RL16  | RT0533314              | 33KΩ   |        |
| RL20  | RT0568414              | 680KΩ  |        |
| RL21  | RT0568414              | 680KΩ  |        |
| RL22  | RT0533414              | 330KΩ  |        |
| RL23  | RT0533414              | 330KΩ  |        |
| RL24  | RT0533214              | 3.3KΩ  |        |
| RL25  | RT0533214              | 3.3KΩ  |        |
| RL26  | RT0515214              | 1.5KΩ  |        |
| RL27  | RT0515214              | 1.5KΩ  |        |
| RL28  | RA0152004              | Trimming, 1.5KΩ (B)                                |        |
| RL29  | RA0152004              | Trimming, 1.5KΩ (B)                                |        |
| <b>CAPACITORS</b>   |                        |  |        |
| CL01  | DF1515305              | Film, 0.015μF ± 5%                                 |        |
| CL02  | DF1515305              | Film, 0.015μF ± 5%                                 |        |
| CL03  | DF1668301              | Film, 0.068μF ± 10%                                |        |
| CL04  | DF1710402              | Film, 0.1μF ± 20%                                  |        |
| CL05  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL06  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL07  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL10  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL11  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL12  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL13  | EA1060169              | Electroly, 10μF, 16V                               |        |
| CL14  | EA3360359              | Electroly, 33μF, 35V                               |        |
| <b>SEMICONDUCTORS</b>                                     |                        |  |        |
| HL01  | HT307331C              | Transistor, 2SC733 (GR)                            |        |



| REF. DESIG.   | MARANTZ PART NO.       | DESCRIPTION                              |
|---|------------------------|--|
| HL02  | HT307331C              | Transistor, 2SC733 (GR)                  |
| HL03  | HT307331C              | Transistor, 2SC733 (GR)                  |
| HL06  | HT307331C              | Transistor, 2SC733 (GR)                  |
| HL07  | HT307331C              | Transistor, 2SC733 (GR)                  |
| HL08  | HD1000105              | Diode, 1N60                              |
| HL09  | HD1000105              | Diode, 1N60                              |
| HL10  | HD1000105              | Diode, 1N60                              |
| HL11  | HD1000105              | Diode, 1N60                              |
| <b>MISCELLANEOUS</b>  |                        |  |
| JL01<br>?<br>JL09   | YP1000113              | Plug                                     |
| PD01  | YD2886007<br>ZZ2886007 | P.W. Board, Buffer<br>P.W. Board Ass'y   |
| <b>RESISTORS</b><br>All resistors are $\pm 5\%$ and $\frac{1}{4}W$ ,<br>unless otherwise indicated. |                        |  |
| RD01  | RT0547414              | 470K $\Omega$                            |
| RD02  | RT0547414              | 470K $\Omega$                            |
| RD03  | RT0547414              | 470K $\Omega$                            |
| RD04  | RT0547414              | 470K $\Omega$                            |
| RD05  | RT0510214              | 1K $\Omega$                              |
| RD06  | RT0510214              | 1K $\Omega$                              |
| RD07  | RT0510214              | 1K $\Omega$                              |
| RD08  | RT0510214              | 1K $\Omega$                              |
| RD09  | RT0524414              | 240K $\Omega$                            |
| RD10  | RT0524414              | 240K $\Omega$                            |
| RD11  | RT0524414              | 240K $\Omega$                            |
| RD12  | RT0524414              | 240K $\Omega$                            |
| RD13  | RT0591414              | 910K $\Omega$                            |
| RD14  | RT0591414              | 910K $\Omega$                            |
| RD15  | RT0591414              | 910K $\Omega$                            |
| RD16  | RT0591414              | 910K $\Omega$                            |
| RD17  | GU0522212              | 2.2K $\Omega$ $\pm 5\%$ , $\frac{1}{2}W$ |
| RD18  | GU0522212              | 2.2K $\Omega$ $\pm 5\%$ , $\frac{1}{2}W$ |
| RD19  | GU0522212              | 2.2K $\Omega$ $\pm 5\%$ , $\frac{1}{2}W$ |
| RD20  | GU0522212              | 2.2K $\Omega$ $\pm 5\%$ , $\frac{1}{2}W$ |
| RD21  | RT0547314              | 47K $\Omega$                             |
| RD22  | RT0547314              | 47K $\Omega$                             |
| RD23  | RT0547314              | 47K $\Omega$                             |
| RD24  | RT0547314              | 47K $\Omega$                             |
| <b>CAPACITORS</b>   |                        |  |
| CD01  | EE1050501              | Electroly, 1 $\mu F$ , 50V               |
| CD02  | EE1050501              | Electroly, 1 $\mu F$ , 50V               |
| CD03  | EE1050501              | Electroly, 1 $\mu F$ , 50V               |
| CD04  | EE1050501              | Electroly, 1 $\mu F$ , 50V               |
| CD05  | EE1060351              | Electroly, 10 $\mu F$ , 35V              |
| CD06  | EE1060351              | Electroly, 10 $\mu F$ , 35V              |
| CD07  | EE1060351              | Electroly, 10 $\mu F$ , 35V              |
| CD08  | EE1060351              | Electroly, 10 $\mu F$ , 35V              |
| CD09  | EA1070359              | Electroly, 100 $\mu F$ , 35V             |
| CD10  | DD1620101              | Ceramic, 200PF $\pm 10\%$                |
| CD11  | DD1620101              | Ceramic, 200PF $\pm 10\%$                |
| CD12  | DD1620101              | Ceramic, 200PF $\pm 10\%$                |
| CD13  | DD1620101              | Ceramic, 200PF $\pm 10\%$                |
| <b>SEMICONDUCTORS</b>   |                        |  |
| HD01  | HT313181S              | Transistor, 2SC1318 (S)                  |
| HD02  | HT313181S              | Transistor, 2SC1318 (S)                  |
| HD03  | HT313181S              | Transistor, 2SC1318 (S)                  |

| REF. DESIG.  | MARANTZ PART NO.       | DESCRIPTION                              |
|--|------------------------|--|
| HD04   | HT313181S              | Transistor, 2SC1318 (S)                  |
| <b>MISCELLANEOUS</b>   |                        |  |
| JD01<br>?<br>JD13  | YP1000113              | Plug                                     |
| PE01   | YD2886015<br>ZZ2888115 | P.W. Board, Tone AMP<br>P.W. Board Ass'y |
| <b>RESISTORS</b><br>All resistors are $\pm 5\%$ and $\frac{1}{4}W$ . |                        |  |
| RE05   | RT0539114              | 390 $\Omega$                             |
| RE06   | RT0539114              | 390 $\Omega$                             |
| RE07   | RT0539114              | 390 $\Omega$                             |
| RE08   | RT0539114              | 390 $\Omega$                             |
| RE09   | RT0547314              | 47K $\Omega$                             |
| RE10   | RT0547314              | 47K $\Omega$                             |
| RE11   | RT0547314              | 47K $\Omega$                             |
| RE12   | RT0547314              | 47K $\Omega$                             |
| RE13   | RT0512514              | 1.2M $\Omega$                            |
| RE14   | RT0512514              | 1.2M $\Omega$                            |
| RE15   | RT0512514              | 1.2M $\Omega$                            |
| RE16   | RT0512514              | 1.2M $\Omega$                            |
| RE21   | RT0527314              | 27K $\Omega$                             |
| RE22   | RT0527314              | 27K $\Omega$                             |
| RE23   | RT0527314              | 27K $\Omega$                             |
| RE24   | RT0527314              | 27K $\Omega$                             |
| RE25   | RT0510214              | 1K $\Omega$                              |
| RE26   | RT0510214              | 1K $\Omega$                              |
| RE27   | RT0510214              | 1K $\Omega$                              |
| RE28   | RT0510214              | 1K $\Omega$                              |
| RE29   | RT0513314              | 13K $\Omega$                             |
| RE30   | RT0513314              | 13K $\Omega$                             |
| RE31   | RT0513314              | 13K $\Omega$                             |
| RE32   | RT0513314              | 13K $\Omega$                             |
| RE33   | RT0510214              | 1K $\Omega$                              |
| RE34   | RT0510214              | 1K $\Omega$                              |
| RE35   | RT0510214              | 1K $\Omega$                              |
| RE36   | RT0510214              | 1K $\Omega$                              |
| RE37   | RT0547414              | 470K $\Omega$                            |
| RE38   | RT0547414              | 470K $\Omega$                            |
| RE39   | RT0547414              | 470K $\Omega$                            |
| RE40   | RT0547414              | 470K $\Omega$                            |
| RE41   | RT0520514              | 2M $\Omega$                              |
| RE42   | RT0520514              | 2M $\Omega$                              |
| RE43   | RT0520514              | 2M $\Omega$                              |
| RE44   | RT0520514              | 2M $\Omega$                              |
| RE45   | RT0556314              | 56K $\Omega$                             |
| RE46   | RT0556314              | 56K $\Omega$                             |
| RE47   | RT0556314              | 56K $\Omega$                             |
| RE48   | RT0556314              | 56K $\Omega$                             |
| RE49   | RT0510314              | 10K $\Omega$                             |
| RE50   | RT0510314              | 10K $\Omega$                             |
| RE51   | RT0510314              | 10K $\Omega$                             |
| RE52   | RT0510314              | 10K $\Omega$                             |
| RE53   | RT0510314              | 10K $\Omega$                             |
| RE54   | RT0510314              | 10K $\Omega$                             |
| RE55   | RT0510314              | 10K $\Omega$                             |
| RE56   | RT0510314              | 10K $\Omega$                             |
| RE57   | RT0522114              | 220 $\Omega$                             |
| RE58   | RT0522114              | 220 $\Omega$                             |

| REF. DESIG.           | MARANTZ PART NO. | DESCRIPTION             |
|-----------------------|------------------|-------------------------|
| RE59                  | RT0522114        | 220Ω                    |
| RE60                  | RT0522114        | 220Ω                    |
| RE61                  | RT0510114        | 100Ω                    |
| <b>CAPACITORS</b>     |                  |                         |
| CE01                  | EE4750251        | Electroly, 4.7μF, 25V   |
| CE02                  | EE4750251        | Electroly, 4.7μF, 25V   |
| CE03                  | EE4750251        | Electroly, 4.7μF, 25V   |
| CE04                  | EE4750251        | Electroly, 4.7μF, 25V   |
| CE05                  | EE4740501        | Electroly, 0.47μF, 50V  |
| CE06                  | EE4740501        | Electroly, 0.47μF, 50V  |
| CE07                  | EE4740501        | Electroly, 0.47μF, 50V  |
| CE08                  | EE4740501        | Electroly, 0.47μF, 50V  |
| CE09                  | EE1050501        | Electroly, 1μF, 50V     |
| CE10                  | EE1050501        | Electroly, 1μF, 50V     |
| CE11                  | EE1050501        | Electroly, 1μF, 50V     |
| CE12                  | EE1050501        | Electroly, 1μF, 50V     |
| CE13                  | EA1060359        | Electroly, 10μF, 35V    |
| CE14                  | EA1060359        | Electroly, 10μF, 35V    |
| CE15                  | EA1060359        | Electroly, 10μF, 35V    |
| CE16                  | EA1060359        | Electroly, 10μF, 35V    |
| CE17                  | EE3350501        | Electroly, 3.3μF, 50V   |
| CE18                  | EE3350501        | Electroly, 3.3μF, 50V   |
| CE19                  | EE3350501        | Electroly, 3.3μF, 50V   |
| CE20                  | EE3350501        | Electroly, 3.5μF, 50V   |
| CE21                  | DD1620001        | Ceramic, 20PF ± 10%     |
| CE22                  | DD1620001        | Ceramic, 20PF ± 10%     |
| CE23                  | DD1620001        | Ceramic, 20PF ± 10%     |
| CE24                  | DD1620001        | Ceramic, 20PF ± 10%     |
| CE25                  | EE1050501        | Electroly, 1μF, 50V     |
| CE26                  | EE1050501        | Electroly, 1μF, 50V     |
| CE27                  | EE1050501        | Electroly, 1μF, 50V     |
| CE28                  | EE1050501        | Electroly, 1μF, 50V     |
| CE29                  | EA1070359        | Electroly, 100μF, 35V   |
| <b>MISCELLANEOUS</b>  |                  |                         |
| JE01<br>}<br>JE25     | YP1000113        | Plug                    |
| <b>SEMICONDUCTORS</b> |                  |                         |
| HE01                  | HT313271S        | Transistor, 2SC1327 (S) |
| HE02                  | HT313271S        | Transistor, 2SC1327 (S) |
| HE03                  | HT313271S        | Transistor, 2SC1327 (S) |
| HE04                  | HT313271S        | Transistor, 2SC1327 (S) |
| HE05                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE06                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE07                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE08                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE09                  | HT309451Q        | Transistor, 2SC945 (Q)  |
| HE10                  | HT309451Q        | Transistor, 2SC945 (Q)  |
| HE11                  | HT309451Q        | Transistor, 2SC945 (Q)  |
| HE12                  | HT309451Q        | Transistor, 2SC945 (Q)  |
| HE13                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE14                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE15                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| HE16                  | HT107331Q        | Transistor, 2SA733 (Q)  |
| 1808                  | 282026702        | Heat Sink x 4           |
| 1816                  | 51100306S        | B.H.M. Screw x 8        |
| 1822                  | 51100308S        | B.H.M. Screw x 4        |

| REF. DESIG.   | MARANTZ PART NO.       | DESCRIPTION                                    |
|---|------------------------|--|
| <b>SEMICONDUCTORS</b>                                     |                        |  |
| H005  | HV0000212              | Diode x 2                                      |
| H006  | HV0000212              | Diode x 2                                      |
| 1824  | 51570408B              | P.H. Tapt Screw x 2                            |
| 1826  | 53110501A              | Hexagon Nut x 2                                |
| 1802  | 282126701              | Heat Sink x 2                                  |
| 1804  | 288816003              | Bracket x 4                                    |
| 1806  | 282016007              | Bracket x 4                                    |
| 1818  | 51380306P              | P.H. Tap Screw x 8                             |
| 1820  | 51380306P              | P.H. Tap Screw x 16                            |
| H001  | HT403152D              | Transistor, 2SD315D or E x2                    |
| H002  | HT403152D              | Transistor, 2SD315D or E x2                    |
| H003  | HT403152D              | Transistor, 2SD315D or E x2                    |
| H004  | HT403152D              | Transistor, 2SD315D or E x2                    |
| P700  | YD2888006<br>ZZ2888006 | P.W. Board, Main AMP x2<br>P.W. Board Ass'y x2 |
| <b>RESISTORS</b>  |                        |  |
| All resistors are ±5% and ¼W, unless otherwise indicated. |                        |  |
| R701  | RT0510414              | 100KΩ x 2                                      |
| R702  | RT0510414              | 100KΩ x 2                                      |
| R703  | RT0510214              | 1KΩ x 2  |
| R704  | RT0510214              | 1KΩ x 2  |
| R705  | RT0524314              | 24KΩ x 2                                       |
| R706  | RT0524314              | 24KΩ x 2                                       |
| R707  | RT0510414              | 100KΩ x 2                                      |
| R708  | RT0510414              | 100KΩ x 2                                      |
| R709  | RT0582114              | 820Ω x 2                                       |
| R710  | RT0582114              | 820Ω x 2                                       |
| R711  | RT0582214              | 8.2KΩ x 2                                      |
| R712  | RT0582214              | 8.2KΩ x 2                                      |
| R713  | RT0518314              | 18KΩ x 2                                       |
| R714  | RT0518314              | 18KΩ x 2                                       |
| R715  | RA0502017              | Trimming, 5KΩ (B) x 2                          |
| R716  | RA0502017              | Trimming, 5KΩ (B) x 2                          |
| R717  | RT0515314              | 15KΩ x 2                                       |
| R718  | RT0515314              | 15KΩ x 2                                       |
| R719  | RT0510414              | 100KΩ x 2                                      |
| R720  | RT0510414              | 100KΩ x 2                                      |
| R721  | RT0510214              | 1KΩ x 2  |
| R722  | RT0510214              | 1KΩ x 2  |
| R723  | RT0511314              | 11KΩ x 2                                       |
| R724  | RT0511314              | 11KΩ x 2                                       |
| R725  | RT0510014              | 10Ω x 2  |
| R726  | RT0510014              | 10Ω x 2  |
| R727  | RT0518214              | 1.8KΩ x 2                                      |
| R728  | RT0518214              | 1.8KΩ x 2                                      |
| R729  | RT0533214              | 3.3KΩ x 2                                      |
| R730  | RT0533214              | 3.3KΩ x 2                                      |
| R731  | RT0518114              | 180Ω x 2                                       |
| R732  | RT0518114              | 180Ω x 2                                       |
| R733  | RT0510114              | 100Ω x 2                                       |
| R734  | RT0510114              | 100Ω x 2                                       |

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                          |
|-------------|------------------|--------------------------------------|
| R735        | RA0501010        | Trimming, 500Ω (B) x 2               |
| R736        | RA0501010        | Trimming, 500Ω (B) x 2               |
| R737        | GF0510214        | 1KΩ x 2                              |
| R738        | GF0510214        | 1KΩ x 2                              |
| R739        | RT0547214        | 4.7KΩ x 2                            |
| R740        | RT0547214        | 4.7KΩ x 2                            |
| R741        | GF0510214        | 1KΩ x 2                              |
| R742        | GF0510214        | 1KΩ x 2                              |
| R743        | GF0518114        | 180Ω x 2                             |
| R744        | GF0515114        | 150Ω x 2                             |
| R745        | GF0510114        | 100Ω x 2                             |
| R746        | GF0515114        | 150Ω x 2                             |
| R747        | GF0575014        | 75Ω x 2                              |
| R748        | GF0582014        | 82Ω x 2                              |
| R749        | GF0556014        | 56Ω x 2                              |
| R750        | GF0568014        | 68Ω x 2                              |
| R751        | RC1010012        | 10Ω ± 10%, ½W x 2                    |
| R752        | RC1010012        | 10Ω ± 10%, ½W x 2                    |
| R753        | GF0533114        | 330Ω x 2                             |
| R754        | GF0533114        | 330Ω x 2                             |
| R755        | GF0522014        | 22Ω x 2                              |
| R756        | GF0522014        | 22Ω x 2                              |
| R757        | GF0533114        | 330Ω x 2                             |
| R758        | GF0533114        | 330Ω x 2                             |
| R759        | RW1000503        | 0.5Ω ± 10%, 3W x 2                   |
| R760        | RW1000503        | 0.5Ω ± 10%, 3W x 2                   |
| R761        | RW1000503        | 0.5Ω ± 10%, 3W x 2                   |
| R762        | RW1000503        | 0.5Ω ± 10%, 3W x 2                   |
| R763        | RJ1010101        | 100Ω ± 10%, 1W x 2                   |
| R764        | RJ1010101        | 100Ω ± 10%, 1W x 2                   |
| R765        | RC1047012        | 47Ω ± 10%, ½W x 2                    |
| R766        | RC1047012        | 47Ω ± 10%, ½W x 2                    |
| R767        | RC1005612        | 5.6Ω ± 10%, ½W x 2                   |
| R768        | RC1005612        | 5.6Ω ± 10%, ½W x 2                   |
| R769        | GF0510014        | 10Ω x 2                              |
| R770        | GF0510014        | 10Ω x 2                              |
| R771        | RC1068112        | 680Ω ± 5%, ½W x 2                    |
| R772        | RT0510314        | 10KΩ x 2                             |
| R773        | RT0510214        | 1KΩ x 2                              |
| L701        | LC2272001        | COILS<br>Choke Coil x 2              |
| L702        | LC2272001        | Choke Coil x 2                       |
| F701        | FS1030006        | MISCELLANEOUS<br>Fuse, 3A x 2        |
| F702        | FS1030006        | Fuse, 3A x 2                         |
| C701        | DF1722405        | CAPACITORS<br>Film, 0.22μF ± 20% x 2 |
| C702        | DF1722405        | Film, 0.22μF ± 20% x 2               |
| C703        | DF1733405        | Film, 0.33μF ± 20% x 2               |
| C704        | DF1733405        | Film, 0.33μF ± 20% x 2               |
| C705        | DD1582001        | Ceramic, 82PF ± 5% x 2               |
| C706        | DD1582001        | Ceramic, 82PF ± 5% x 2               |
| C707        | EA2260109        | Electroly, 22μF, 10V x 2             |
| C708        | EA2260109        | Electroly, 22μF, 10V x 2             |
| C709        | EA4760509        | Electroly, 47μF, 50V x 2             |
| C710        | EA4760509        | Electroly, 47μF, 50V x 2             |
| C711        | DD1210001        | Ceramic, 10PF ± 1PF x 2              |
| C712        | DD1210001        | Ceramic, 10PF ± 1PF x 2              |
| C713        | DD1540001        | Ceramic, 40PF ± 5% x 2               |
| C714        | DD1540001        | Ceramic, 40PF ± 5% x 2               |
| C715        | DF1768301        | Film, 0.068μF ± 20% x 2              |

| REF. DESIG. | MARANTZ PART NO.       | DESCRIPTION                                  |
|-------------|------------------------|--|
| C716        | DF1768301              | Film, 0.068μF ± 20% x 2                      |
| C717        | DF1730301              | Film, 0.03μF ± 20% x 2                       |
| C718        | DF1730301              | Film, 0.03μF ± 20% x 2                       |
| C719        | DF1739305              | Film, 0.039μF ± 20% x 2                      |
| C720        | DF1727305              | Film, 0.027μF ± 20% x 2                      |
| C721        | DD1530101              | Ceramic, 300PF ± 10% x 2                     |
| C722        | DD1530101              | Ceramic, 300PF ± 10% x 2                     |
| C723        | DF1710405              | Film, 0.1μF ± 20% x 2                        |
| C724        | DF1710405              | Film, 0.1μF ± 20% x 2                        |
| C725        | DF1722405              | Film, 0.22μF ± 20% x 2                       |
| C726        | DF1722405              | Film, 0.22μF ± 20% x 2                       |
| C727        | EA4760259              | Electroly, 47μF, 25V x 2                     |
| C728        | EA4760259              | Electroly, 47μF, 25V x 2                     |
| C729        | EA4750359              | Electroly, 4.7μF, 35V x 2                    |
| C730        | DK1615201              | Ceramic, 0.0015μF ± 10% x 2                  |
| C731        | DK1615201              | Ceramic, 0.0015μF ± 10% x 2                  |
| C732        | DD1530101              | Ceramic, 300PF ± 10% x 2                     |
| C733        | DD1530101              | Ceramic, 300PF ± 10% x 2                     |
| H701        | HT106401L              | SEMICONDUCTORS<br>Transistor, 2SA640 (L) x 2 |
| H702        | HT106401L              | Transistor, 2SA640 (L) x 2                   |
| H703        | HT106401L              | Transistor, 2SA640 (L) x 2                   |
| H704        | HT106401L              | Transistor, 2SA640 (L) x 2                   |
| H705        | HT315091P              | Transistor, 2SC1509 (P) x 2                  |
| H706        | HT315091P              | Transistor, 2SC1509 (P) x 2                  |
| H707        | HT309451Q              | Transistor, 2SC945 (Q) x 2                   |
| H708        | HT309451Q              | Transistor, 2SC945 (Q) x 2                   |
| H709        | HT107331Q              | Transistor, 2SA733 (Q) x 2                   |
| H710        | HT107331Q              | Transistor, 2SA733 (Q) x 2                   |
| H711        | HT315091P              | Transistor, 2SC1509 (P) x 2                  |
| H712        | HT315091P              | Transistor, 2SC1509 (P) x 2                  |
| H713        | HT107771P              | Transistor, 2SA777 (P) x 2                   |
| H714        | HT107771P              | Transistor, 2SA777 (P) x 2                   |
| H715        | HD3003009              | Diode, WZ-177 x 2                            |
| H716        | HV0000205              | Varistor, M8513A-0 x 2                       |
| H717        | HV0000205              | Varistor, M8513A-0 x 2                       |
| H718        | HH0000912              | Thermistor, 22D47 x 2                        |
| H719        | HH0000912              | Thermistor, 22D47 x 2                        |
| H720        | HD2000121              | Diode, 1S2473 (C) x 2                        |
| H721        | HD2000121              | Diode, 1S2473 (C) x 2                        |
| H722        | HD2000121              | Diode, 1S2473 (C) x 2                        |
| H723        | HD2000121              | Diode, 1S2473 (C) x 2                        |
| H724        | HD1000105              | Diode, 1N60 x 2                              |
| H725        | HD1000105              | Diode, 1N60 x 2                              |
| H726        | HD1000105              | Diode, 1N60 x 2                              |
| H727        | HD1000105              | Diode, 1N60 x 2                              |
| J701        | YP1000114              | MISCELLANEOUS<br>Plug x 2                    |
| J724        | YP1000114              | Plug x 2                                     |
| J725        | YJ0800017              | Socket x 2                                   |
| J728        | YJ0800017              | Socket x 2                                   |
| J729        | YP1000114              | Plug x 2                                     |
| P800        | YD2886006<br>ZZ2888106 | P.W. Board, Power Supply<br>P.W. Board Ass'y |

| REF. DESIG.           | MARANTZ PART NO. | DESCRIPTION                      |
|-----------------------|------------------|----------------------------------|
| <b>RESISTORS</b>      |                  |                                  |
| R801                  | RA0502010        | Trimming, 5K $\Omega$ (B)        |
| R802                  | GJ0527102        | 270 $\Omega$ $\pm$ 5%, 2W        |
| R803                  | RT0527314        | 27K $\Omega$ $\pm$ 5%, 1/4W      |
| R804                  | RT0536314        | 36K $\Omega$ $\pm$ 5%, 1/4W      |
| R805                  | GJ0524103        | 240 $\Omega$ $\pm$ 5%, 3W        |
| R806                  | RT0510314        | 10K $\Omega$ $\pm$ 5%, 1/4W      |
| R807                  | RT0522214        | 2.2K $\Omega$ $\pm$ 5%, 1/4W     |
| R808                  | RT0562214        | 6.2K $\Omega$ $\pm$ 5%, 1/4W     |
| R809                  | GJ0547003        | 47 $\Omega$ $\pm$ 5%, 3W         |
| R810                  | RC1010112        | 100 $\Omega$ $\pm$ 10%, 1/2W     |
| R811                  | RW1000503        | 0.5 $\Omega$ $\pm$ 10%, 3W       |
| R812                  | RC1039012        | 39 $\Omega$ $\pm$ 10%, 1/2W      |
| <b>CAPACITORS</b>     |                  |                                  |
| C801                  | EA3350509        | Electroly, 3.3 $\mu$ F, 50V      |
| C802                  | EA4770169        | Electroly, 470 $\mu$ F, 16V      |
| C803                  | EA3370509        | Electroly, 330 $\mu$ F, 50V      |
| C804                  | EA3370631        | Electroly, 330 $\mu$ F, 63V      |
| C805                  | EA4770109        | Electroly, 470 $\mu$ F, 10V      |
| C806                  | DK1840302        | Ceramic, 0.04 $\mu$ F +100%, -0% |
| C807                  | DF1747305        | Film, 0.047 $\mu$ F $\pm$ 20%    |
| C808                  | DK1810351        | Ceramic, 0.01 $\mu$ F +100%, -0% |
| <b>SEMICONDUCTORS</b> |                  |                                  |
| H801                  | HT403152B        | Transistor, 2SD315 (C or D)      |
| H802                  | HT309451P        | Transistor, 2SC945 (P)           |
| H803                  | HT309451Q        | Transistor, 2SC945 (Q)           |
| H804                  | HD3002109        | Diode, BZ-140                    |
| H805                  | HD2000413        | Diode, S1B01-O2                  |
| H806                  | HD2000413        | Diode, S1B01-O2                  |
| H807                  | HD2000413        | Diode, S1B01-O2                  |
| H808                  | HD2000413        | Diode, S1B01-O2                  |
| H809                  | HD2000413        | Diode, S1B01-O2                  |
| H810                  | HD2000121        | Diode, 1S2473                    |
| <b>MISCELLANEOUS</b>  |                  |                                  |
| J801                  | YP1000113        | Plug                             |
| J814                  |                  |                                  |
| J816                  | YP1000099        | Plug                             |
| J818                  |                  |                                  |
| 1431                  | 273026702        | Heat Sink                        |
| 1534                  | 53110303E        | Nut x 2                          |
| 5036                  | 54050300R        | T.L. Washer OR x 2               |
| 0903                  | 288616050        | Bracket K                        |
| 0909                  | 288612201        | Sticker                          |
| 0913                  | 257710602        | Bearing                          |
| 0914                  | 141511801        | Spacer                           |
| 0915                  | 51040306A        | F.H.M. Screw x 2                 |
| 0920                  | 51100306S        | B.H.M. Screw x 3                 |
| 0927                  | 51100305A        | B.H.M. Screw x 2                 |
| 0933                  | 51102604A        | B.H.M. Screw x 2                 |
| 0934                  | 51102604A        | B.H.M. Screw x 2                 |
| 0935                  | 288610903        | Shield                           |

| REF. DESIG.                          | MARANTZ PART NO.       | DESCRIPTION                                   |
|--------------------------------------|------------------------|---|
| 1003                                 | 281816003              | Bracket                                       |
| 1004                                 | 281816004              | Bracket                                       |
| 1005                                 | 51100406A              | B.H.M. Screw x 4                              |
| 1011                                 | 51102605A              | B.H.M. Screw x 6                              |
| 1012                                 | 51060305A              | P.H.M. Screw x 8                              |
| 1131                                 | 51042608A              | F.H.M. Screw x 2                              |
| 1221                                 | 51570306B              | P.H. Tape Screw x 2                           |
| 1222                                 | 54050300R              | T.L. Washer OR x 2                            |
| 1616                                 | 51470306A              | B.H.M. Screw S x 2                            |
| 1704                                 | 285326901              | Protector                                     |
| 1708                                 | 281912004              | Insulator                                     |
| 1714                                 | 51570305B              | P.H. Tapt Screw x 2                           |
| M004                                 | IM1104209              | DC Meter                                      |
| M005                                 | IM1104202              | DC Meter                                      |
| 1225                                 | 288610701              | Sheet x 2                                     |
| C004                                 | EA1070109              | Electroly Cap., 100 $\mu$ F, 10V              |
| 1721                                 | 287105302              | Cover x 2                                     |
| PT01                                 | YD2886011<br>ZZ2886011 | P.W. Board, Tape Mon. SW<br>P.W. Board Ass'y  |
| ST01                                 | SP0802001              | Push Switch, Tape Mon.                        |
| <b>RESISTORS</b>                     |                        |   |
| All resistors are $\pm$ 5% and 1/4W. |                        |   |
| RT01                                 | RT0510214              | 1K $\Omega$                                   |
| RT02                                 | RT0510214              | 1K $\Omega$                                   |
| RT03                                 | RT0510214              | 1K $\Omega$                                   |
| RT04                                 | RT0510214              | 1K $\Omega$                                   |
| <b>MISCELLANEOUS</b>                 |                        |   |
| JT01                                 | YP1000113              | Plug  |
| JT06                                 |                        |   |
| S001                                 | SR1506002              | Rotary Switch, Selector                       |
| S002                                 | SR1205002              | Rotary Switch, Mode                           |
| S003                                 | SR2505001              | Rotary Switch, Dolby                          |
| J011                                 | YJ0700006              | Jack, SQ                                      |
| 1406                                 | 285110450              | Retainer K                                    |
| 1410                                 | 51100310S              | B.H.M. Screw x 2                              |
| 1411                                 | 59030805P              | Fiber Washer x 2                              |
| 1412                                 | 203912001              | Insulator                                     |
| P500                                 | YD2886012<br>ZZ2886012 | P.W. Board, Vari. Matrix.<br>P.W. Board Ass'y |

| REF. DESIG.       | MARANTZ PART NO. | DESCRIPTION  |
|-------------------|------------------|--|
|                   |                  | <b>RESISTORS</b><br>All resistors are $\pm 5\%$ and $\frac{1}{4}W$ , unless otherwise indicated. |
| R501              | RT0515414        | 150K $\Omega$  |
| R502              | RT0515414        | 150K $\Omega$  |
| R503              | RT0556314        | 56K $\Omega$   |
| R504              | RT0556314        | 56K $\Omega$   |
| R505              | RT0522414        | 220K $\Omega$  |
| R506              | RT0522414        | 220K $\Omega$  |
| R507              | RT0533414        | 330K $\Omega$  |
| R508              | RT0533414        | 330K $\Omega$  |
| R509              | RT0556214        | 5.6K $\Omega$  |
| R510              | RT0556214        | 5.6K $\Omega$  |
| R511              | RT0556214        | 5.6K $\Omega$  |
| R512              | RT0556214        | 5.6K $\Omega$  |
| R513              | RT0568214        | 6.8K $\Omega$  |
| R514              | RT0568214        | 6.8K $\Omega$  |
| R515              | RT0568214        | 6.8K $\Omega$  |
| R516              | RT0568214        | 6.8K $\Omega$  |
| R517              | RT0547314        | 47K $\Omega$   |
| R518              | RT0547314        | 47K $\Omega$   |
| R519              | RT0547314        | 47K $\Omega$   |
| R520              | RT0547314        | 47K $\Omega$   |
| R521              | RT0520314        | 20K $\Omega$   |
| R522              | RT0520314        | 20K $\Omega$   |
| R523              | RT0533414        | 330K $\Omega$  |
| R524              | RT0533414        | 330K $\Omega$  |
| R525              | RT0510414        | 100K $\Omega$  |
| R526              | RT0510414        | 100K $\Omega$  |
| R527              | RT0556214        | 5.6K $\Omega$  |
| R528              | RT0556214        | 5.6K $\Omega$  |
| R529              | RT0522314        | 22K $\Omega$   |
| R530              | RT0522314        | 22K $\Omega$   |
| R531              | RT0522114        | 220 $\Omega$   |
| R532              | RM0503054        | Variable, 50K $\Omega$ (B)   |
|                   |                  | <b>MISCELLANEOUS</b>   |
| J501<br>{<br>J506 | YP1000113        | Plug   |
|                   |                  | <b>CAPACITORS</b>  |
| C501              | EE4740501        | Electroly, 0.47 $\mu F$ , 50V  |
| C502              | EE4740501        | Electroly, 0.47 $\mu F$ , 50V  |
| C503              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C504              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C505              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C506              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C507              | DF1647305        | Film, 0.047 $\mu F \pm 10\%$   |
| C508              | DF1647305        | Film, 0.047 $\mu F \pm 10\%$   |
| C509              | DF1647305        | Film, 0.047 $\mu F \pm 10\%$   |
| C510              | DF1647305        | Film, 0.047 $\mu F \pm 10\%$   |
| C511              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C512              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C513              | EA1070109        | Electroly, 100 $\mu F$ , 10V   |
| C514              | EA1070109        | Electroly, 100 $\mu F$ , 10V   |
| C515              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C516              | EE3350501        | Electroly, 3.3 $\mu F$ , 50V   |
| C517              | DD1650001        | Ceramic, 50PF $\pm 10\%$   |
| C518              | DD1650001        | Ceramic, 50PF $\pm 10\%$   |
| C519              | DF1610205        | Film, 0.001 $\mu F \pm 20\%$   |
| C520              | DF1610205        | Film, 0.001 $\mu F \pm 20\%$   |
| C521              | EA1070359        | Electroly, 100 $\mu F$ , 35V   |

| REF. DESIG.       | MARANTZ PART NO.       | DESCRIPTION  |
|-------------------|------------------------|--|
|                   |                        | <b>SEMICONDUCTORS</b>  |
| H501              | HT313272A              | Transistor, 2SC1327 (S or T)   |
| H502              | HT313272A              | Transistor, 2SC1327 (S or T)   |
| H503              | HC1000705              | IC, TA7122 AP, B or C  |
| H504              | HC1000705              | IC, TA7122 AP, B or C  |
| PF01              | YD2886002<br>ZZ2886102 | P.W. Board Tone<br>P.W. Board Ass'y  |
|                   |                        | <b>RESISTORS</b><br>All resistors are $\pm 5\%$ and $\frac{1}{4}W$ , unless otherwise indicated. |
| RF01              | RU0204001              | Variable, 200K $\Omega$ (B)  |
| RF02              | RU0204001              | Variable, 200K $\Omega$ (B)  |
| RF03              | RT0527314              | 27K $\Omega$   |
| RF04              | RT0527314              | 27K $\Omega$   |
| RF05              | RT0527314              | 27K $\Omega$   |
| RF06              | RT0527314              | 27K $\Omega$   |
| RF07              | RT0527314              | 27K $\Omega$   |
| RF08              | RT0527314              | 27K $\Omega$   |
| RF09              | RT0527314              | 27K $\Omega$   |
| RF10              | RT0527314              | 27K $\Omega$   |
| RF11              | RT0510414              | 100K $\Omega$  |
| RF12              | RT0510414              | 100K $\Omega$  |
| RF13              | RT0510414              | 100K $\Omega$  |
| RF14              | RT0510414              | 100K $\Omega$  |
| RF15              | RT0510314              | 10K $\Omega$   |
| RF16              | RT0510314              | 10K $\Omega$   |
| RF17              | RT0510314              | 10K $\Omega$   |
| RF18              | RT0510314              | 10K $\Omega$   |
| RF19              | RT0543414              | 43K $\Omega$   |
| RF20              | RT0543414              | 43K $\Omega$   |
| RF21              | RT0543414              | 43K $\Omega$   |
| RF22              | RT0543414              | 43K $\Omega$   |
|                   |                        | <b>CAPACITORS</b>  |
| CF01              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF02              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF03              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF04              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF05              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF06              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF07              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF08              | DF1622305              | Film, 0.022 $\mu F \pm 10\%$   |
| CF09              | DD1520101              | Ceramic, 200PF $\pm 5\%$   |
| CF10              | DD1520101              | Ceramic, 200PF $\pm 5\%$   |
| CF11              | DD1520101              | Ceramic, 200PF $\pm 5\%$   |
| CF12              | DD1520101              | Ceramic, 200PF $\pm 5\%$   |
|                   |                        | <b>MISCELLANEOUS</b>   |
| JF01<br>{<br>JF12 | YP1000113              | Plug   |
| J012              | YJ0100065              | Jack, Head Phone   |
| J013              | YJ0100065              | Jack, Head Phone   |
| 0918              | 288612003              | Insulator  |
| S008              | SP0201009              | Push Switch, Meter L-R   |
| R001              | RG0503002              | Variable Resistor, 50K $\Omega$ (B) VR   |

| REF. DESIG.                          | MARANTZ PART NO.       | DESCRIPTION                             |
|--------------------------------------|------------------------|---|
| R002                                 | RK0504010              | Variable Resistor, Dolby Play Cal.      |
| R003                                 | RK0504010              | Variable Resistor, Dolby Play Cal.      |
| R004                                 | RK0504010              | Variable Resistor, Dolby Rec. Cal.      |
| R005                                 | RK0504010              | Variable Resistor, Dolby Rec. Cal.      |
| 0926                                 | 288616010              | Bracket                                 |
| R013                                 | RT0539214              | Resistor, 3.9K $\Omega$ $\pm$ 5%, 1/4W  |
| 7436                                 | 62031650W              | Lug                                     |
| S007                                 | SP0801001              | Push Switch, 400Hz Tone                 |
| PG01                                 | YD2886003<br>ZZ2886003 | P.W. Board, Balance<br>P.W. Board Ass'y |
| <b>RESISTORS</b>                     |                        |   |
| RG01                                 | RT0533214              | 3.3K $\Omega$ $\pm$ 5%, 1/4W            |
| RG02                                 | RT0533214              | 3.3K $\Omega$ $\pm$ 5%, 1/4W            |
| RG03                                 | RT0533214              | 3.3K $\Omega$ $\pm$ 5%, 1/4W            |
| RG04                                 | RT0533214              | 3.3K $\Omega$ $\pm$ 5%, 1/4W            |
| RG05                                 | RX0503006              | Variable, 20K $\Omega$ (G)              |
| RG06                                 | RX0503006              | Variable, 20K $\Omega$ (G)              |
| RG07                                 | RS0503017              | Variable, 20K $\Omega$ (G)              |
| <b>MISCELLANEOUS</b>                 |                        |   |
| JG01<br>}<br>JG09                    | YP1000113              | Plug                                    |
| PS01                                 | YD2886005<br>ZZ2886005 | P.W. Board, Switch<br>P.W. Board Ass'y  |
| SS01                                 | SP0706001              | Push Switch                             |
| <b>RESISTORS</b>                     |                        |   |
| All resistors are $\pm$ 5% and 1/4W. |                        |   |
| RS01                                 | RT0515314              | 15K $\Omega$                            |
| RS02                                 | RT0515314              | 15K $\Omega$                            |
| RS03                                 | RT0515314              | 15K $\Omega$                            |
| RS04                                 | RT0515314              | 15K $\Omega$                            |
| RS05                                 | RT0533214              | 3.3K $\Omega$                           |
| RS06                                 | RT0533214              | 3.3K $\Omega$                           |
| RS07                                 | RT0533214              | 3.3K $\Omega$                           |
| RS08                                 | RT0533214              | 3.3K $\Omega$                           |
| RS09                                 | RT0547214              | 4.7K $\Omega$                           |
| RS10                                 | RT0547214              | 4.7K $\Omega$                           |
| RS11                                 | RT0547214              | 4.7K $\Omega$                           |
| RS12                                 | RT0547214              | 4.7K $\Omega$                           |
| RS13                                 | RT0510514              | 1M $\Omega$                             |
| RS14                                 | RT0510514              | 1M $\Omega$                             |
| RS15                                 | RT0510514              | 1M $\Omega$                             |
| RS16                                 | RT0510514              | 1M $\Omega$                             |
| <b>CAPACITORS</b>                    |                        |   |
| CS01                                 | DF1610205              | Film, 0.001 $\mu$ F $\pm$ 10%           |
| CS02                                 | DF1610205              | Film, 0.001 $\mu$ F $\pm$ 10%           |
| CS03                                 | DF1610205              | Film, 0.001 $\mu$ F $\pm$ 10%           |
| CS04                                 | DF1610205              | Film, 0.001 $\mu$ F $\pm$ 10%           |
| CS05                                 | EM1040251              | Electroly, 0.1 $\mu$ F, 25V             |
| CS06                                 | EM1040251              | Electroly, 0.1 $\mu$ F, 25V             |
| CS07                                 | EM1040251              | Electroly, 0.1 $\mu$ F, 25V             |
| CS08                                 | EM1040251              | Electroly, 0.1 $\mu$ F, 25V             |
| CS09                                 | DF1682205              | Film, 0.0083 $\mu$ F $\pm$ 10%          |

| REF. DESIG.          | MARANTZ PART NO.       | DESCRIPTION                                  |
|----------------------|------------------------|--|
| CS10                 | DF1682205              | Film, 0.0083 $\mu$ F $\pm$ 10%               |
| CS11                 | DF1682205              | Film, 0.0083 $\mu$ F $\pm$ 10%               |
| CS12                 | DF1682205              | Film, 0.0083 $\mu$ F $\pm$ 10%               |
| <b>MISCELLANEOUS</b> |                        |  |
| JS01<br>}<br>JS08    | YP1000113              | Plug   |
| 1203                 | 288627401              | Reflector                                    |
| 1205                 | 288626251              | Pulley K                                     |
| 1211                 | 51100305A              | B.H.M. Screw x 2                             |
| 1212                 | 54050300R              | T.L. Washer OR x 2                           |
| 1214                 | 288627102              | Holder                                       |
| 1215                 | 51570305B              | P.H. Tapt Screw x 2                          |
| 1217                 | 51480306A              | B.H.M. Screw F x 2                           |
| J018                 | YJ0800019              | Socket, Lamp                                 |
| J019                 | YJ0800019              | Socket, Lamp                                 |
| M002                 | IN1008007              | Lamp, Meter                                  |
| M003                 | IN1008007              | Lamp, Meter                                  |
| PY01                 | YD2888002<br>ZZ2888002 | P.W. Board Function Lamp<br>P.W. Board Ass'y |
| RY01                 | RC1002712              | Resistor 2.7 $\Omega$ $\pm$ 10%, 1/2W        |
| <b>MISCELLANEOUS</b> |                        |  |
| MY01                 | IN1006301              | Lamp, Dolby                                  |
| MY02                 | IN1006301              | Lamp, FM                                     |
| MY03                 | IN1006301              | Lamp, AM                                     |
| MY04                 | IN1006301              | Lamp, Stereo                                 |
| MY05                 | IN1006302              | Lamp, Quad                                   |
| MY06                 | IN1006301              | Lamp, Tape 1                                 |
| MY07                 | IN1006301              | Lamp, Phone                                  |
| MY08                 | IN1006301              | Lamp, Aux                                    |
| MY09                 | IN1006301              | Lamp, Tape 2                                 |
| JY01<br>}<br>JY15    | YP1000113              | Plug   |
| PZ01                 | YD2886016<br>ZZ2886016 | P.W. Board, Dial Lamp<br>P.W. Board Ass'y    |
| <b>MISCELLANEOUS</b> |                        |  |
| MZ01                 | IN1008007              | Lamp, Dial                                   |
| MZ02                 | IN1008007              | Lamp, Dial                                   |
| MZ03                 | IN1008007              | Lamp, Dial                                   |
| MZ04                 | IN1008007              | Lamp, Dial                                   |
| MZ05                 | IN1008007              | Lamp, Dial                                   |
| JZ01<br>}<br>JZ10    | YJ0800017              | Socket                                       |

| REF. DESIG.       | MARANTZ PART NO. | DESCRIPTION         |
|-------------------|------------------|---------------------|
| JZ11<br>?<br>JZ12 | YP1000113        | Plug                |
| 1103              | 287127401        | Reflector           |
| 1105              | 287127101        | Holder              |
| 1106              | 51570305B        | P.H. Tapt Screw x 2 |
| 1108              | 288627101        | Holder              |
| 1109              | 51570305B        | P.H. Tapt Screw x 2 |
| 1111              | 51100305A        | B.H.M. Screw x 2    |
| 1113              | 51480306A        | B.H.M. Screw F x 2  |
| 1116              | 203912001        | Insulator           |
| 8336              | 54050300R        | T.L. Washer OR x 2  |
| 1121              | 287105102        | Guide               |
| 1123              | 288626252        | Pulley K            |
| 1128              | 51100305A        | B.H.M. Screw x 2    |
| 8436              | 62031650W        | Lug                 |
| 8437              | 54050300R        | T.L. Washer OR      |
| 1606              | 285310650        | Bearing K           |
| 1611              | 51640410D        | Set Screw C.P.      |
| 1612              | 54040402N        | Spring Washer       |
| 1613              | 53110403E        | Hexagon Nut         |
| 0931              | 285310901        | Shield              |
| 0932              | 282112001        | Insulator           |
| 8636              | 62031650W        | Lug                 |
| 8637              | 62031650W        | Lug                 |
| 8638              | 62031650W        | Lug                 |
| 0513              | 51100308S        | B.H.M. Screw x 20   |
| 0514              | 53110303E        | Hexagon Nut x 20    |
| 0516              | 53228059E        | Nut x 3             |
| 0522              | 54050400R        | T.L. Washer OR      |
| 0532              | 145525903        | Bush                |
| 0533              | 145525903        | Bush                |
| 0616              | 51100306S        | B.H.M. Screw x 3    |
| 0620              | 51100304S        | B.H.M. Screw x 2    |
| 0622              | 51100304S        | B.H.M. Screw x 2    |
| 0625              | 281805501        | Collar x 2          |
| 0631              | 51100312S        | B.H.M. Screw x 2    |
| 0632              | 53110303E        | Hexagon Nut x 2     |
| J001              | YT0208002        | Terminal, 8P        |
| J002              | YT0208002        | Terminal, 8P        |
| J003              | YT0204003        | Terminal, 4P        |

| REF. DESIG.       | MARANTZ PART NO.       | DESCRIPTION                                  |
|-------------------|------------------------|--|
| J004              | YT0202007              | Terminal, 2P                                 |
| J005              | YT0201006              | Terminal, 1P                                 |
| J006              | YT0304005              | Terminal, SPK                                |
| J007              | YT0304005              | Terminal, SPK                                |
| J008              | YT0304005              | Terminal, SPK                                |
| J009              | YT0304005              | Terminal, SPK                                |
| J010              | YT0104004              | Terminal, ANT                                |
| J017              | YJ0800012              | Socket, Fuse Holder                          |
| J020              | YT0101003              | Terminal, Ground                             |
| J022              | YL0102003              | Terminal, 2P                                 |
| W001              | YC0240010              | AC Cord                                      |
| F001              | FS1040005              | Fuse, 4A                                     |
| G001              | BF1040001              | Printed Compo.                               |
| L003              | LB3007526              | Balun Coil, FM                               |
| L004              | LC1332002              | Choke Coil, AM                               |
| C008              | DF1722380              | Film Cap. 0.022 $\mu$ F $\pm$ 20%            |
| R009              | RK0203016              | Variable Resistor, 20K $\Omega$ (B) Muting   |
| RC05              | RK0203030              | Variable Resistor, 20K $\Omega$              |
| RC06              | RK0203030              | Variable, 20K $\Omega$ VR FM PRE-SET         |
| S006              | SS0802007              | Slide Switch, Remote Control                 |
| PC01              | YD2886014<br>ZZ2888114 | P.W. Board, Dolby Remote<br>P.W. Board Ass'y |
| SC01              | SS0202017              | Slide Switch                                 |
| RC01              | RT0522414              | 220K $\Omega$ $\pm$ 5%, $\frac{1}{4}$ W      |
| RC02              | RT0522414              | 220K $\Omega$ $\pm$ 5%, $\frac{1}{4}$ W      |
| RC03              | RT0510314              | 10K $\Omega$ $\pm$ 5%, $\frac{1}{4}$ W       |
| RC04              | RT0510314              | 10K $\Omega$ $\pm$ 5%, $\frac{1}{4}$ W       |
| CC01              | DF1518205              | Film, 0.0018 $\mu$ F $\pm$ 5%                |
| CC02              | DF1518205              | Film, 0.0018 $\mu$ F $\pm$ 5%                |
| JC01<br>?<br>JC12 | YP1000113              | Plug   |
| L002              | LF1120024              | Ant Coil, AM                                 |
| 0602              | 257816052              | Bracket K                                    |
| 0607              | 281927103              | Holder                                       |
| 0609              | 51100310S              | B.H.M. Screw x 2                             |
| 0610              | 53110301E              | Hexagon Nut x 2                              |
| 0612              | 51100308S              | B.H.M. Screw x 2                             |
| 0613              | 53110301E              | Hexagon Nut x 2                              |

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                           |
|-------------|------------------|---------------------------------------|
| L005        | LC1154002        | Choke Coil                            |
| J014        | YJ1100012        | Jack                                  |
| 0626        | 285116007        | Bracket                               |
| 0628        | 51100306S        | B.H.M. Screw x 2                      |
| 0629        | 53110303E        | Hexagon Nut x 2                       |
| R006        | RC1022512        | Resistor, 2.2MΩ ± 10%, ½W             |
| 9436        | 62031650W        | Lug                                   |
| C001        | DK1710301        | Ceramic Cap. 0.01μF ± 20%             |
| 9437        | 62031650W        | Lug                                   |
| S004        | SR0702001        | Rotary Switch, BTL                    |
| R010        | RK0503009        | Variable Resistor, 50KΩ (B) Mut. Adj. |
| 1413        | 288816004        | Bracket                               |
| H007        | HD2000510        | Diode, 5B2                            |
| C005        | DK1810351        | Ceramic Cap. 0.01μF +100%, -0%        |
| J021        | YL0104014        | Terminal                              |
| J023        | YL0103019        | Terminal, 3P                          |
| C006        | EA2270509        | Electroly Cap., 220μF, 50V            |
| 1710        | 288830201        | Dial                                  |
| 0911        | 285610701        | Sheet                                 |
| 0451        | 62031650W        | Lug                                   |
| 1503        | 138200503        | Clamper x 4                           |
| 1515        | 282100501        | Clamper x 2                           |
| W002        | YW2888001        | Wire Material                         |
| W003        | YX2888001        | Wire Material                         |
| W004        | YW2886002        | Wire Material                         |
| W005        | YX2888101        | Wire Material                         |
| W006        | YW2888101        | Wire Material                         |
| 0411        | 275905701        | Leg x 4                               |
| 0412        | 51490410S        | B.H.M. Screw FS x 4                   |
| 1303        | 288810550        | Chassis K                             |
| 1313        | 288810101        | Support x 4                           |
| 1317        | 51100304S        | B.H.M. Screw x 4                      |
| 1318        | 51100306S        | B.H.M. Screw x 3                      |
| 1319        | 51100306S        | B.H.M. Screw x 2                      |
| 1320        | 51100306S        | B.H.M. Screw x 4                      |
| 1322        | 51100306S        | B.H.M. Screw x 2                      |
| 1323        | 51100306S        | B.H.M. Screw x 2                      |
| 1324        | 51100306S        | B.H.M. Screw x 6                      |
| 1326        | 288810903        | Shield                                |
| 1327        | 288810102        | Support x 4                           |

| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                  |
|-------------|------------------|------------------------------|
| 1331        | 51570306B        | P.H. Tapt Screw x 4          |
| 1332        | 51570306B        | P.H. Tapt Screw x 8          |
| 1333        | 51570306B        | P.H. Tapt Screw x 2          |
| 1334        | 51570306B        | P.H. Tapt Screw x 10         |
| 1335        | 51570310B        | P.H. Tapt Screw x 2          |
| 1402        | 285610902        | Shield                       |
| 1403        | 285610102        | Support x 4                  |
| 1404        | 281810107        | Support                      |
| 1405        | 51060304E        | P.H.M. Screw x 5             |
| 1409        | 51100303S        | B.H.M. Screw x 2             |
| 1414        | 51570305B        | P.H. Tapt Screw x 2          |
| 1416        | 285310102        | Support x 2                  |
| 1417        | 54040402N        | Spring Washer x 2            |
| 1419        | 51470512A        | B.H.M. Screw FS x 4          |
| 1420        | 53110501A        | Hexagon Nut x 4              |
| 1421        | 54020501A        | Flat Washer P x 4            |
| 1422        | 54040502A        | Spring Washer x 4            |
| 1424        | 281805601        | Buffer x 2                   |
| 1435        | 51100304S        | B.H.M. Screw x 2             |
| 1426        | 51570305B        | P.H. Tapt Screw x 2          |
| 1427        | 288610902        | Shield                       |
| 1429        | 288612004        | Insulator                    |
| 1430        | 51570305B        | P.H. Tapt Screw x 2          |
| 1051        | 138200503        | Clamper x 6                  |
| 1504        | 59030805P        | Fiber Washer x 2             |
| 1052        | 54050300R        | T.L. Washer OR x 6           |
| 1509        | 62031650W        | Lug x 2                      |
| 1511        | 51570306B        | P.H. Tapt Screw x 10         |
| 1513        | 51570306B        | P.H. Tapt Screw x 10         |
| 1906        | 138200503        | Clamper x 2                  |
| C002        | EC1090351        | Electroly Cap., 10000μF, 35V |
| C003        | EC1090351        | Electroly Cap., 10000μF, 35V |
| L001        | TS6050302        | Power Transformer            |
| 0202        | 285325701        | Lid                          |
| 0203        | 257711803        | Spacer x 4                   |
| 0204        | 285605601        | Buffer x 4                   |
| 0217        | 285015401        | Knob x 3                     |
| 0218        | 288615403        | Knob x 8                     |
| 0219        | 281815401        | Knob x 2                     |
| 0220        | 288615401        | Knob x 4                     |
| 0221        | 281815403        | Knob x 5                     |
| 0232        | 288615402        | Knob                         |
| 1602        | 285011202        | Shaft                        |
| 1603        | 54040402N        | Spring Washer                |
| 0302        | 288826501        | Indicator                    |
| 0309        | 51100305S        | B.H.M. Screw x 2             |



| REF. DESIG. | MARANTZ PART NO. | DESCRIPTION                    |
|-------------|------------------|--------------------------------|
| 0311        | 257886101        | Label, UL Caution              |
| 0312        | 257886102        | Label, Do not Remove .....     |
| 0313        | 257886103        | Label, See Marking .....       |
| 0314        | 250626506        | Indicator, Do not use as ..... |
| 0323        | 951110102        | Label, UL                      |
| 0329        | 951091102        | Label, Factory Cord            |
| 0402        | 51122608B        | T.H.M. Screw x 4               |
| 0404        | 51100406S        | B.H.M. Screw x 9               |
| 0406        | 51480406S        | B.H.M. Screw F x 4             |
| 0421        | 289205502        | Collar                         |
| 0816        | 56382540G        | Eyelet                         |
| 1702        | 286726901        | Protector                      |
| 1706        | 51570305B        | P.H. Tapt Screw x 2            |
| 1719        | 51100305S        | B.H.M. Screw x 2               |
| 1329        | 288611801        | Spacer                         |
| 1911        | 288810902        | Shield                         |
| 1912        | 51100305S        | B.H.M. Screw x 4               |
| 1913        | 51570305B        | P.H. Tapt Screw x 2            |
| 2002        | 288885101        | Instructions                   |
| 2009        | 28885601         | Schematic Diagram              |
| 2016        | 281885104        | Instructions                   |
| 2017        | 281885108        | Instructions                   |
| 2021        | 257785450        | Guarantee Card K               |
| 2104        | 288880105        | Packing Case                   |
| 2105        | 288880106        | Packing Case                   |
| 2107        | 288680302        | Partitioner                    |
| 2108        | 288680303        | Partitioner                    |
| 2112        | 901483838        | Polyethylen Bag                |
| 2114        | 901302501        | Polyethylen Bag x 2            |
| 2117        | 102980401        | Sleeve                         |
| 2119        | 273182101        | Siicagel x 2                   |
| 2120        | 281905601        | Buffer                         |
| 2122        | 285125703        | Lid                            |
| 2123        | 285386101        | Label                          |
| 2124        | 51216059E        | Screw x 4                      |
| 2131        | ZA0200007        | Ext. Antenna                   |
| 2202        | 952281501        | Serial NO Card x 4             |

**TECHNICAL SPECIFICATIONS**

**FM SECTION:**

|   |                                  |
|---|----------------------------------|
| Tuning Frequency Range.....                               | 88 – 108 MHz                     |
| IHF M Usable Sensitivity .....                            | 2.2 $\mu$ V at 30 dB             |
|   | 50 $\mu$ V at 70 dB              |
| IHF Selectivity.....                                      | more than 60 dB                  |
| Capture Ratio .....                                       | 1.5 dB                           |
| Image Rejection Ratio at 106 MHz .....                    | more than 60 dB                  |
| Total Harmonic Distortion (Mono) .....                    | 0.3%                             |
| Total Harmonic Distortion (Stereo).....                   | 0.4%                             |
| Frequency Response (ref. 75 $\mu$ sec. de-emphasis) ..... | $\pm$ 1 dB, from 30 Hz to 15 KHz |
| Stereo Separation at 1 KHz .....                          | 40 dB, 30 dB at 15 KHz           |
| Quadradial Output (400 Hz 75 KHz dev.) .....              | 300 mV, 15 Kohms                 |

**AM SECTION:**

|   |                 |
|---|-----------------|
| Tuning Frequency Range.....             | 540 to 1605 KHz |
| Usable Sensitivity .....                | 25 $\mu$ V      |
| Selectivity .....                       | 1000 KHz, 26 dB |
| Image Rejection Ratio at 1400 KHz ..... | 70 dB           |
| Bandwidth (–6 dB) .....                 | 7 KHz           |

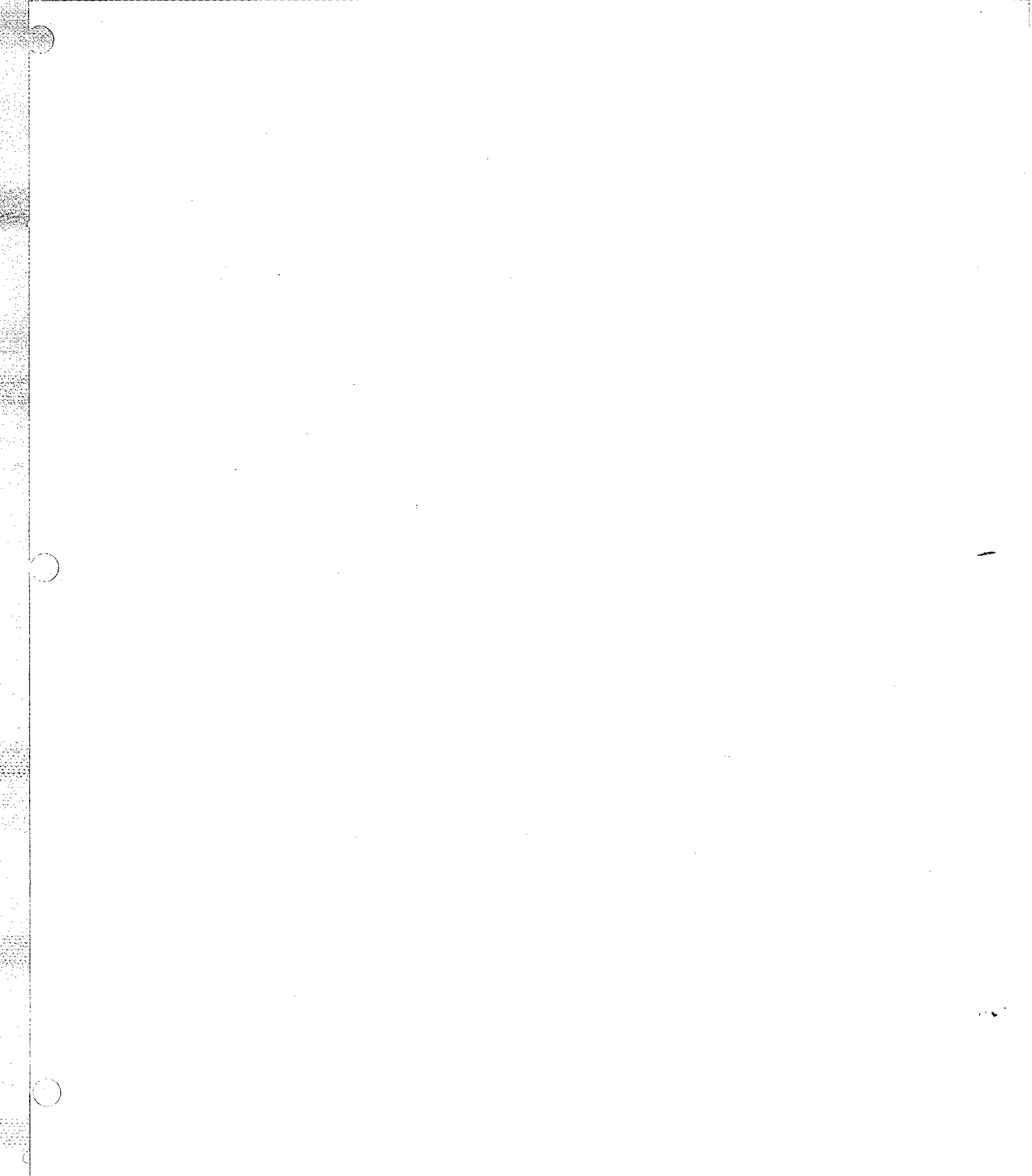
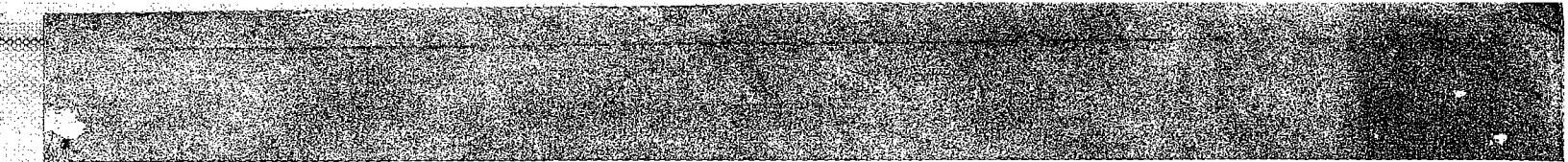
**AUDIO SECTION:**

|   |                         |
|---|-------------------------|
| Input Sensitivity and Impedance – Phono .....                     | 2.2 mV, 47 Kohms        |
| – High level.....   | 150 mV                  |
| Intermodulation Distortion below rated power output (SMPTE) ..... | Less than 0.5%          |
|   | Nominal 0.3%            |
| Damping Factor .....  | 2 channel : 20 at 20 Hz |
|   | 4 channel : 40 at 20 Hz |
| Rated Continuous (RMS) Output .....                               | 80W at 8 ohms (40W x 2) |
| all channels operating simultaneously at 20 Hz .....              | 68W at 8 ohms (17W x 4) |
| to 20 KHz for nominal harmonic distortion                         |                         |

**GENERAL:**

|  |                 |
|--|-----------------|
| Power Requirements .....                         | 120V, AC        |
|  | 50/60 Hz        |
| Power Consumption— at maximum power output ..... | 270 watts       |
| — idling (no signal) .....                       | 40 watts        |
| Dimensions – Panel Width .....                   | 17 21/64 Inches |
| — Panel Height .....                             | 5 25/64 Inches  |
| — Depth .....                                    | 14 3/8 Inches   |
| — Width (Packed for Shipment).....               | 22 1/4 Inches   |
| — Height (Packed for Shipment) .....             | 10 1/2 Inches   |
| — Depth (Packed for Shipment).....               | 19 1/2 Inches   |
| Weight – Unit alone .....                        | 34.1 lbs        |
| — Packed for Shipment .....                      | 43 lbs          |

\* These specifications and exterior designs may be changed for improvement without advance notice.





**marantz**

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