SERVICE MANUAL 4430

marantz

model 4430

Quadradial 4 Receiver

marantz

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INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 4430 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 4430 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 ..... mounted on P. W. Board, P100
2. AM Tuner ..... mounted on P. W. Board, P150
3. FM IF Amplifier ..... mounted on P. W. Board, P200
4. MPX Stereo Decoding Amplifier ..... mounted on P. W. Board, P300
5. Pre, Tone Amplifier ..... mounted on P. W. Board, P400
6. Noise and DC Amplifier ..... mounted on P. W. Board, P470
7. Vari-Matrix ..... mounted on P. W. Board, P500
8. Loudness, Hi-Filter and Speaker Switch Unit ..... mounted on P. W. Board, P550
9. Temparature Compensation ..... mounted on P. W. Board, P580
10. Power Amplifier ..... mounted on P. W. Board, P600
11. Phono Amplifier ..... mounted on P. W. Board, P700
12. Tone Control Unit ..... mounted on P. W. Board, P750
13. Power Supply ..... mounted on P. W. Board, P800
14. AC Rectifier ..... mounted on P. W. Board, P850
15. Balance Control Unit ..... mounted on P. W. Board, P900
16. Indicator Lamps ..... mounted on P. W. Board, P950

2. AM TUNER

All components except tuning capacitor and ferrite bar antenna are mounted on a printed circuit board P150.

The AM signals induced in a ferrite bar antenna are applied to the base of RF amplifier transistor H151 through a capacitor of C151 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 base of converter transistor H152 through a coupling capacitor C156. While the local oscillator voltage is injected to the emitter of H152 through a capacitor C157, both AM signals and oscillating voltage are mixed at the base-emitter junction and converted into 455KHz intermediate frequency. The resulting IF signal is applied to the first IF transformer L153 consisting of one ceramic filter and two tuned circuits.

The output of L153 is led to the transistor H153 which in turn apply its output to the transistor of next stage H154. The fully amplified IF output is then applied to the diode H157 to detect audible signal through the detector transformer L154. The detected audio signal is filtered and amplified and the final audio output is obtained from the collector of H155 and applied to the TAPE OUT jacks and the function switch.

The DC component of the detected IF signal is used as a AGC voltage to control emitter

current of H153 which in turn control the bias current of the RF amplifier through the resistor R179 and R151. A part of IF signal output is also applied to the diode H158 through a capacitor C167 and rectified to obtain DC current for energizing the AM signal strength meter M010.

2.1 Suggestions for AM Tuner Trouble Shooting

Check for broken AM bar antenna, next try to tune station by rotating fly-wheel tuning knob slowly and observe the AM signal strength meter whether it deflects or not. If the signal strength meter gives a deflection at several frequencies received, no failure may exist in the stages at least preceding final IF transformer L154. Next connect a oscilloscope to the pin terminal J162 or J157 and check for audio signals with the tuning meter deflected. If the signal strength meter does not deflect, check the local oscillator circuit. Normal oscillating voltage at the hot end of the oscillator tuning capacitor is about 2 or 3 volts, varying with tuning capacitor position. When measuring oscillating voltage use a RF VTVM, no circuit tester gives correct indication. If the local oscillator voltage is normal, check all voltage distribution in the AM circuits by using a DC VTVM and compare the measured values with those given in the schematic diagram.

3. FM TUNER

The FM Tuner section of Model 4430 is divided into four functional blocks: FM Front End, IF Amplifier and Detector, Muting Control and MPX Stereo Decoding Circuit. FM signals induced by a FM antenna are led to FM antenna coil L101 through ATTENUATOR switch and a balun coil. These signals are then applied to the FET RF amplifier which in turn applies its output to the next FET Mixer H102 through the double tuned high selective circuits. The FET 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 source of the FET Mixer, the injection voltage is about 700mV. 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 and one stage of AGC amplifier. Three pieces of dual elements ceramic filters are also used to obtain high selectivity, four stages of symmetrical diode limiters are also employed for the best limiting characteristics, improved capture ratio and good AM suppression.

A part of FM Front End output is applied to the AGC amplifier H201 and rectified its output is 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 H208 and its buffered output is led to; (a) noise amplifier H471 through resistor R471 and capacitor C471, (b) QUADRADIAL jack on the rear panel through resistor R484, (c) MPX stereo decoding circuit through R483.

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 4430. Three inputs control the muting function. The first is related to singal 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 signal from the H206 is applied to the base of H306 and turns on it, if the IF output is greater than predetermined level (muting threshold level). When the H306 is turned on the H307 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 H308, decreasing the source-drain resistance to near zero ohm and allowing the audio signal applied to the source to flow to the center of 38KHz switching transformer 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 H306, thus the H306 keeps its turn-off stage and this makes H307 turn on, decreasing the collector voltage and turning off H308. 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 C471 and amplified by the noise amplifier transistor H471 and its output is rectified by the 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 H472, decreasing the emitter-collector resistance to zero. This means the collector of H307 is short-circuited to the ground, therefore the H308 is turned off and any audio signals having excessive high frequency noises can not go through the FET's source-drain path.

The transistor H303 connected in series with the 19KHz pilot signal amplifier transistor H302 is also turned off (when the transistor H472 or H307 are turned on.) and no current flows in the H302, 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 H478 through a resistor R273 and dividing network (R485 & R486). 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 H478 makes the transistor H481 turn on, and this makes the H306 turn off, ... H307 turn on, ... H308 turn off, ... H303 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 H479 which in turn makes the H480 turn on and the H306 in 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 H478 is adjusted so that both transistor H480 and H481 are not turned on, giving no effect on the transistor H306.

3.2 MPX Stereo Decoding Circuit

The buffered and non-equalized audio signals are applied to the first amplifier H301 which serve as a tuned amplifier for the pilot signal in the composite signals and as a buffer amplifier for the audio signals. The amplified 19KHz pilot signal is led to the second 19KHz amplifier H302 and further amplified if switching transistor H303 is turned on by the controlling DC signal as described in the preceding chapter. The final 19KHz pilot signal is rectified by the doubler circuit consisting of the H315 and H316 to obtain synchronized 38KHz amplifier driving signal.

The H304 is the 38KHz tuned amplifier and supplies its output to the switching matrix circuit consisting of four diodes. While the composite signals are applied to the center tap of switching transformer 1/2 L302. The right and left stereo signals decoded by the switching circuit are led to the crosstalk cancelling amplifier which utilizes complementary configuration with NPN and PNP transistors through de-emphasis network consisting of C315 and R335, and C316 and R336, L305 is a low-pass filter networks having very sharp cut off characteristics and eliminates undesirable residual switching signals. Transistors H313 and H314 are buffer amplifiers and their outputs are led to the function switch.

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 FM 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 a 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 and compare them with those shown in the circuit diagram. When signal strength meter deflects but no sound is obtained, check audio circuits, using high sensitive oscilloscope.

3.3.2 Symptom: No Stereo Separation

First check the "MONO" switch is in normal out position. Connect a FM RF 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 P700. The amplified and RIAA equalized phono signals and signals from the tuner section and the TAPE, AUX1, AUX2, jacks are applied to the selector switch which, in turn, leads the selected signals to the TAPE OUT jacks and mode switch.

Applied to the other section of the TAPE MON switch are signals from the TAPE IN jacks. The TAPE MON switch selects the signals from the mode switch or those from the TAPE IN jacks and the selected signals go to the pre-amplifier. Signals are then mode processed by the mode switch and its associated circuit and applied to the tone control amplifier through the volume control. The bass and treble controlled signals from the tone control amplifier pass through the balance control section and the hi-filter before they reach the main amplifier.

4.1 Mode Switch

Mode switch S005 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 4430.

4.2 Balance Control

Signals from the tone control 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 drived.

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 balancers on the Model 4430 become ineffective since signals are led to the Model RC-4. The volume level can be adjusted by the volume control either on the Model 4430 or Model RC-4. However, the maximum volume level available by adjustment of the Model RC-4 is determined by the volume control on the Model 4430.

Balance controlled signals are led through the hi filter to the main amplifier section for further power amplification.

5. POWER AMPLIFIER

Differential amplifier consists of the transistors H601 and H603 to provide satisfactory D.C. stability.

The transistor H605 drives the inverter transistors H611 and H613 which, in turn, drive the power stage consisting of H001 and H002. Transistors H607 and H609 are current limiter operating as a power transistor protection circuit.

Excessive current flow in the power output stage is detected by the resistors R642 and R644 and the resultant variation is applied to the transistors H607 and H609 and make them turned on. This decreases the base biasing current for H611 and H613. In this way the current flow in the power output stage (H001 and H002) is restricted within a safe predetermined value.

6. POWER SUPPLY UNIT

The power supply unit consisting of transistors H805 and H806, which operates as an automatic voltage regulator provides +35V DC to all of the audio amplifiers except power amplifiers, and H803 which operates as the voltage regulator provides +14V DC to the tuner section, and H808, H809 and H810 which operates as the speaker protector to relay circuit.

7. AUDIO TROUBLE ANALYSIS

1. Excessive line consumption	a. Check for shorted rectifiers H851 through H854. b. Check for shorted transistors H001 through H008. c. Check L003 for short.
2. No line consumption or zero bias	a. Check line cord, fuse, shorted H581 & H582, H626 & H627. b. Check for open rectifiers H851 through H854, or open L003.
3. Excessive hum and noise level	a. Check filter capacitors C006 through C009, C605 & C606. b. Check for shorted transistor H805.
4. Parastic oscillation	a. Check for defective capacitors, C607, C608, C619, C620, C621 and C622.

5. Improper clipping	a. Check for defective resistor, R662 & R663.

8. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 4430 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 390	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, ±1% 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load (4 ohms, ±1% 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination.

Table 1 Test Equipment Required for Servicing

9. AM ALIGNMENT PROCEDURE

9.1 AM IF Alignment

1. Connect a sweep generator to the J151 and an alignment scope to the J162.
2. Rotate each core of IF transformer L153 and L154 for maximum height and flat top symmetrical response.

9.2 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 L152 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 L151 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.

10. FM ALIGNMENT PROCEDURE

1. Connect a FM signal generator to the FM ANTENNA terminals and a oscilloscope and an audio distortion analyzer to the TAPE OUTPUT jacks on the rear panel.
2. Set the FM SG to 87.5MHz and provide about 3 to 5μV. 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 5μV output. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C106 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 capacitor C102, C104 and C105 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 KμV 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.

10.1 Stereo Separation Alignment

1. Set the FM SG to provide 1KμV 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 L301 for maximum audio output, then, modulate the signal generator with a stereo composite signal consisting of only L channel signal and again adjust the core of L301 for maximum audio output.
3. Adjust the trimming resistor R365 for maximum and same separation in both channels.

10.2 Muting Circuit Alignment

1. Connect a VTVM across the resistor R487 and adjust the resistor R487 until the meter reads 0.75V DC at no signal.
2. Set the FM SG to provide 1 KμV at 98MHz and tune the receiver to the same frequency correctly.

3. Turn on 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 R487 so that the same shifted frequencies mute the undesirable side response.

11. AUDIO ADJUSTMENT

1. Connect a VTVM to J613(+) and J629(−) and adjust the trimming resistor R628 until the VTVM reads 10mV DC. For the other channel connect the VTVM to J614(+) and J630(−) and adjust the R629 for the same reading.
2. Connect a VTVM to J629(+) and J623(−) and adjust the trimming resistor R613 until the VTVM reads 0V DC. For the other channel connect the VTVM to J630(+) and J624(−) and adjust the R614 until the VTVM reads 0V DC.

12. AUTOMATIC VOLTAGE REGULATOR ADJUSTMENT

Connect a VTVM to J802(+) and J820(−) and adjust R809 until the VTVM reads 35 V under no signal condition.

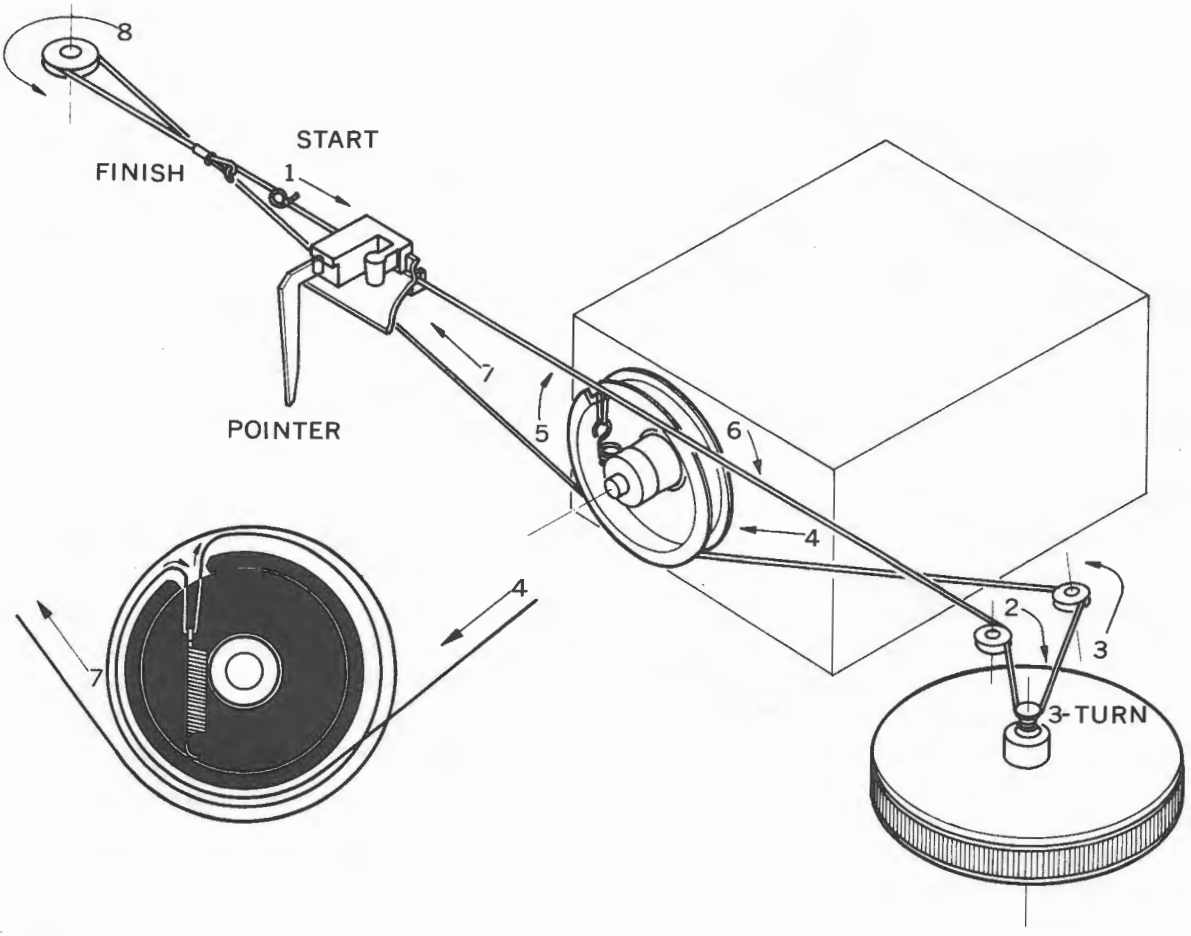


Figure 1. Dial Stringing

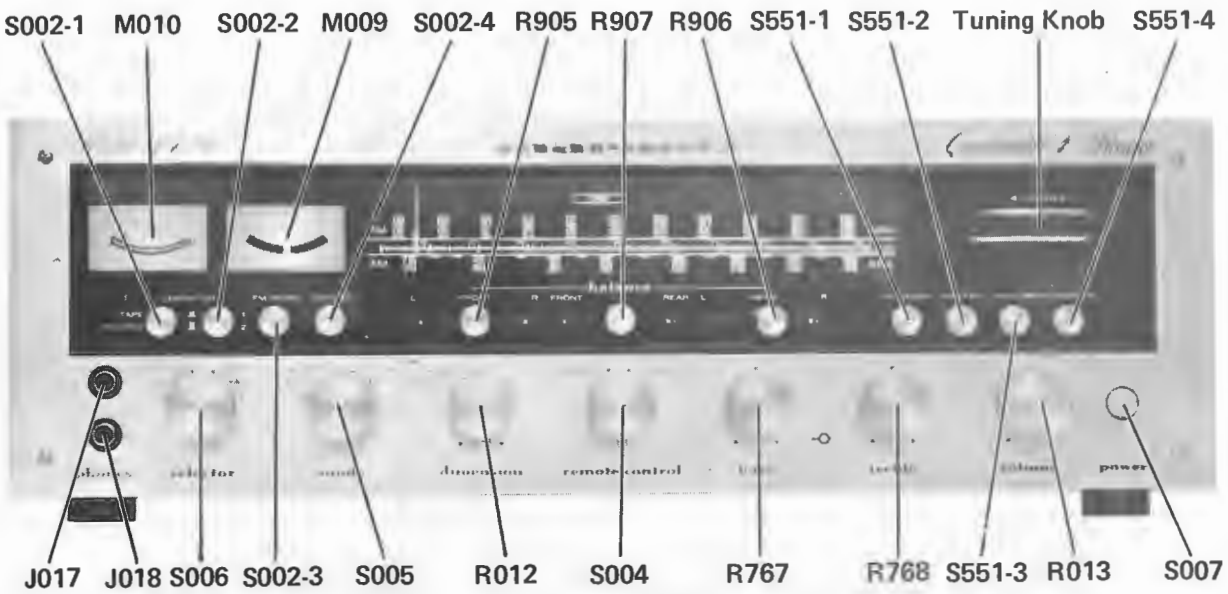


Figure 2. Front Panel Adjustment and Component Locations

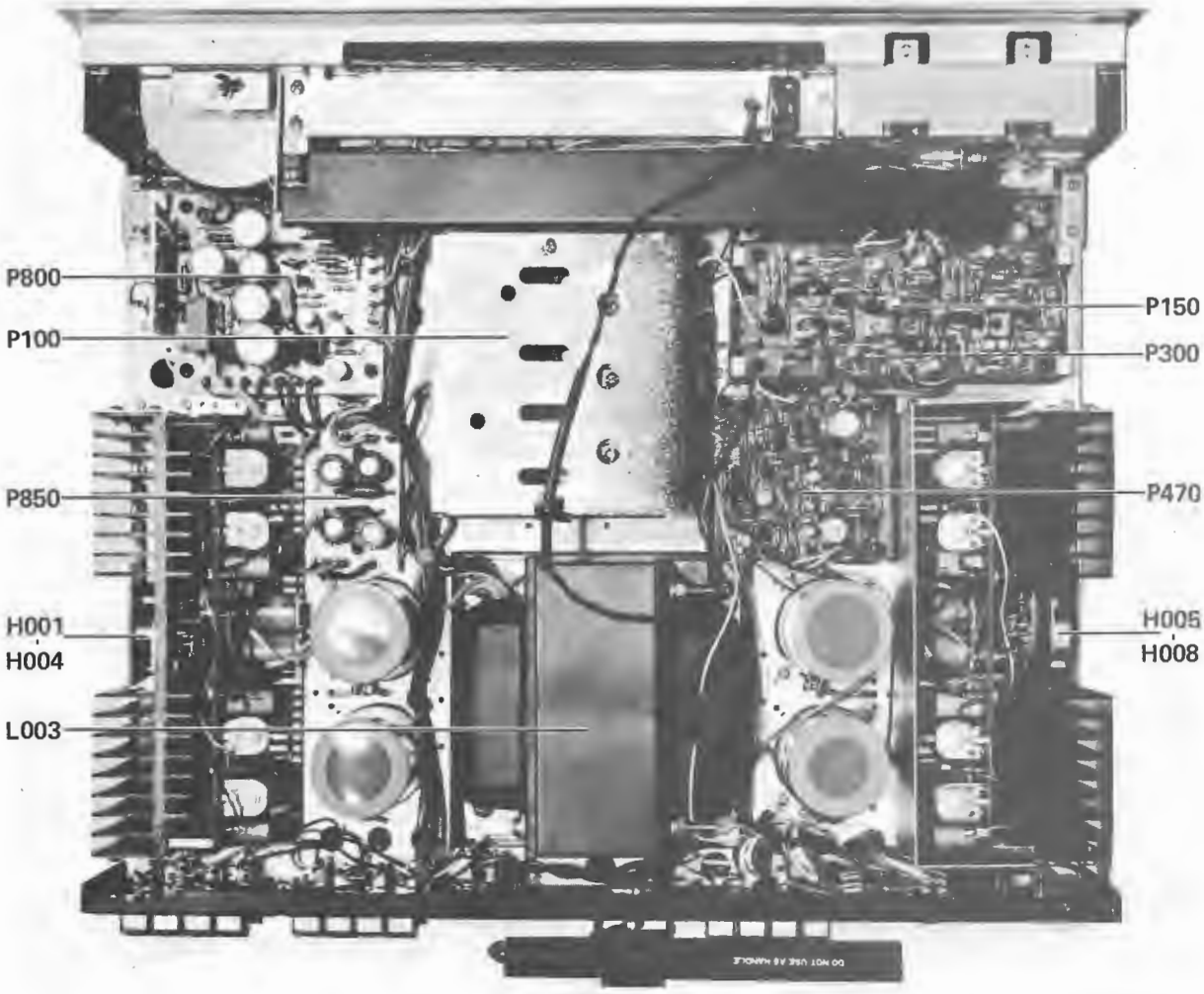


Figure 3. Main Chassis Component Locations (Top View)

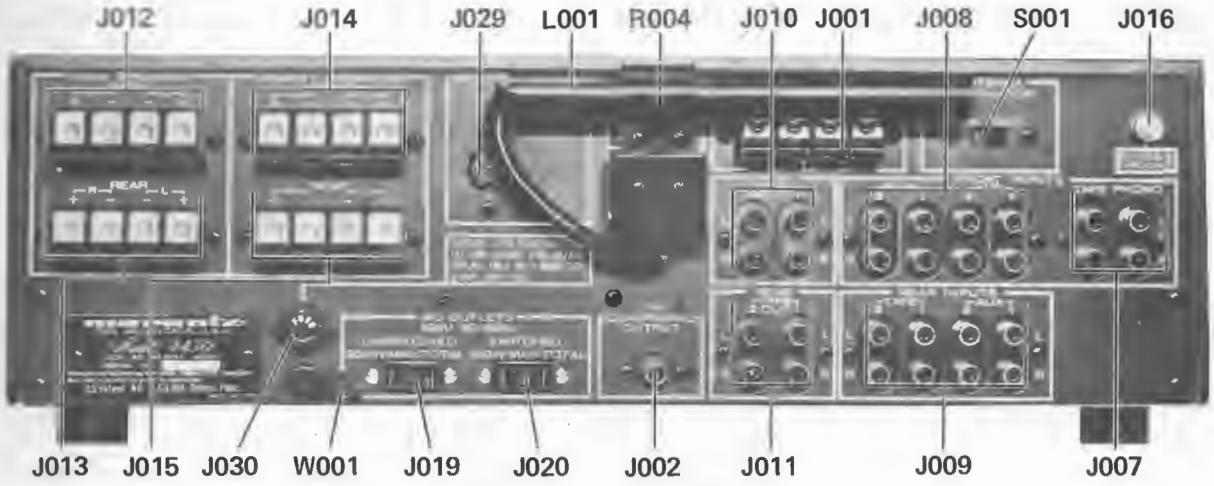


Figure 4. Rear Panel Adjustment and Component Locations

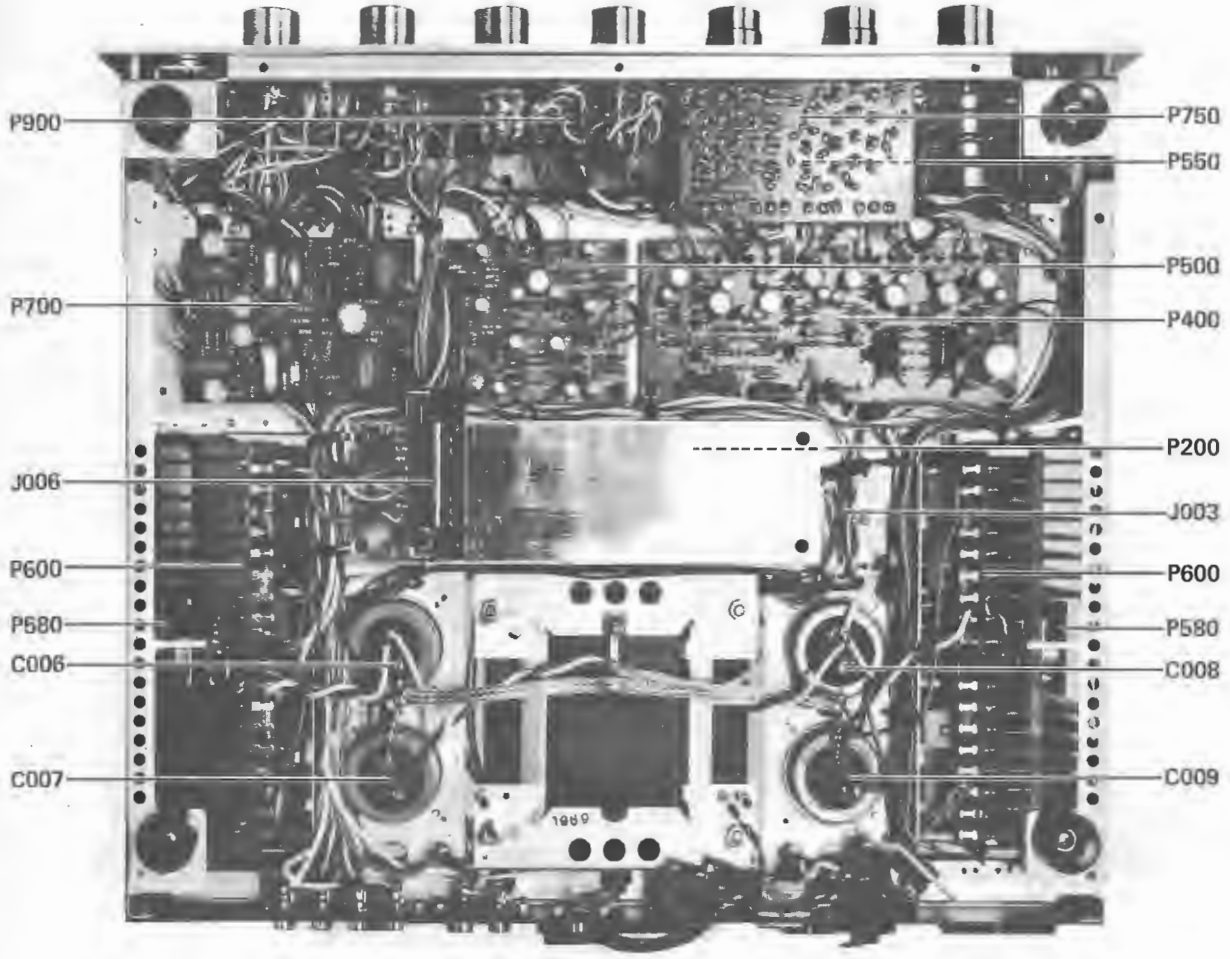


Figure 5. Main Chassis Component Locations (Bottom View)

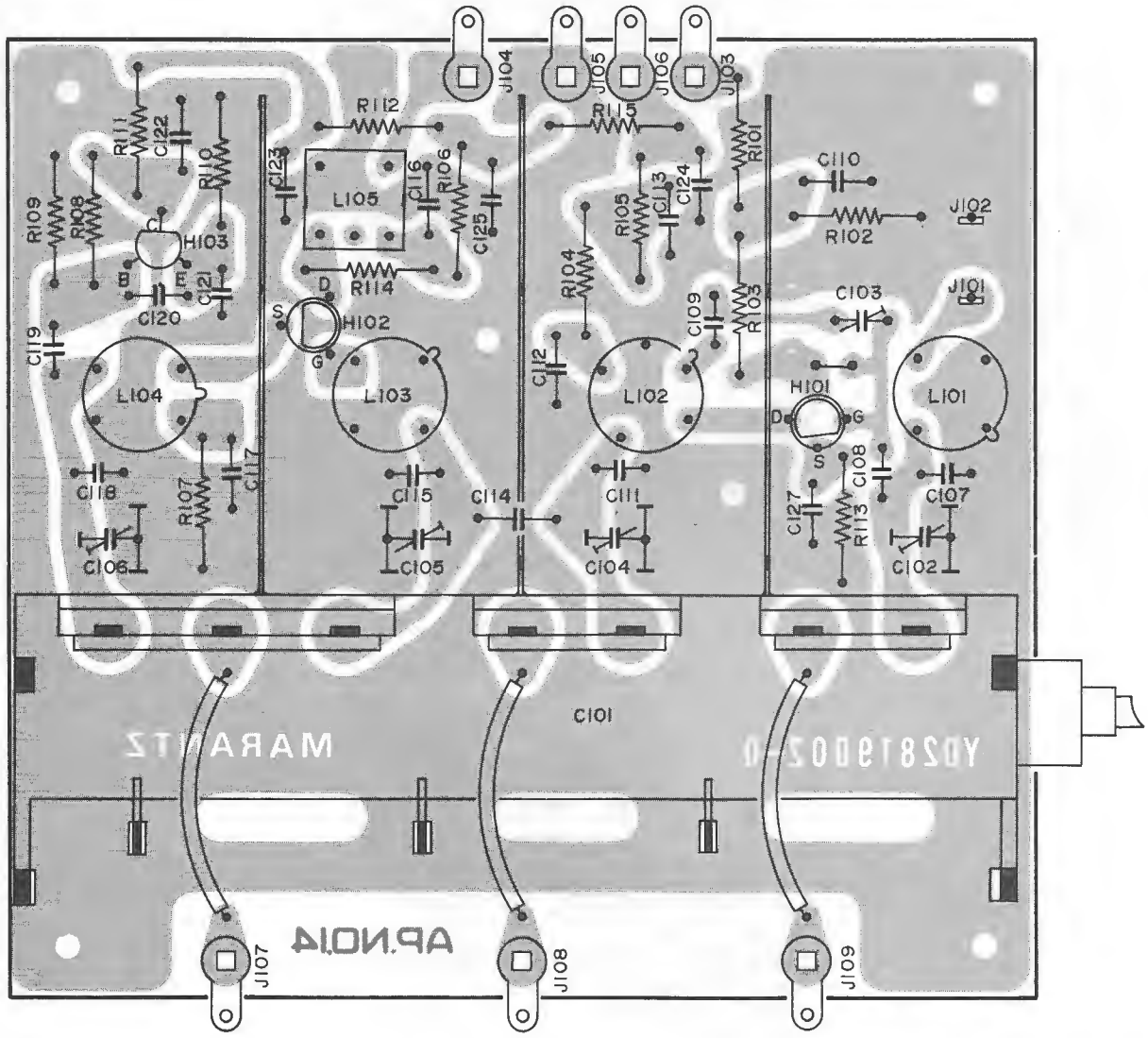


Figure 6. FM Front End Assembly P100 Component Locations

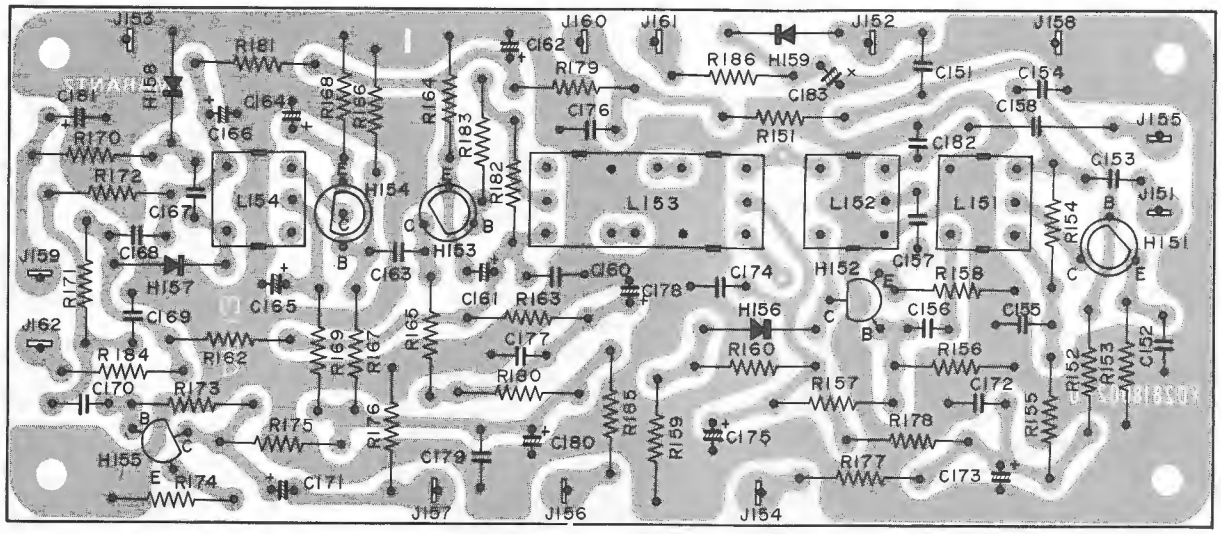


Figure 7. AM Tuner Assembly P150 Component Locations

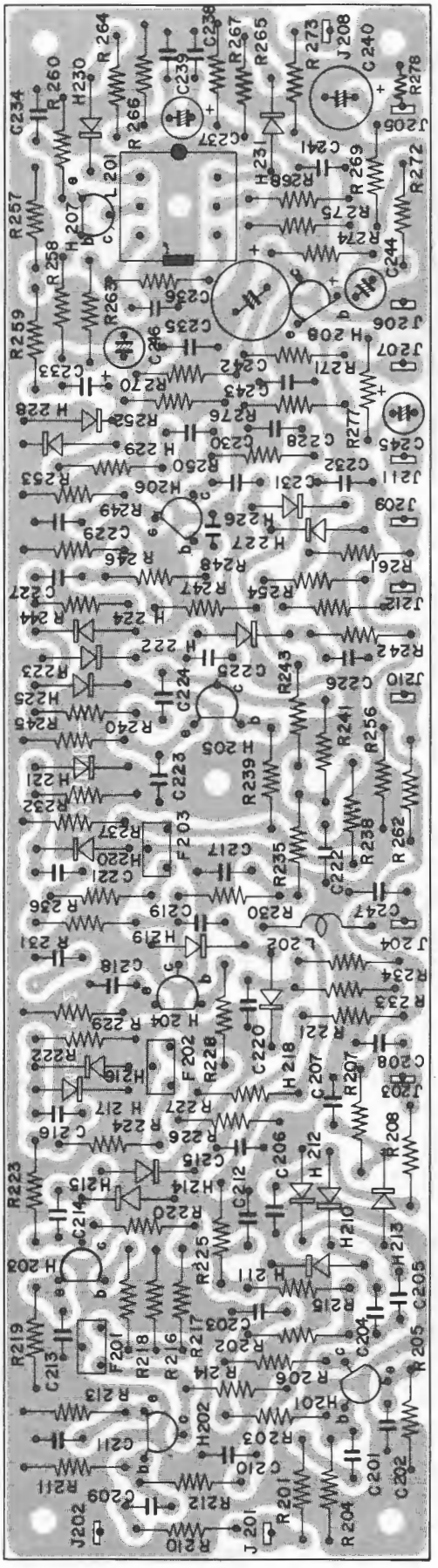


Figure 8. FM IF Amplifier Assembly P200 Component Locations

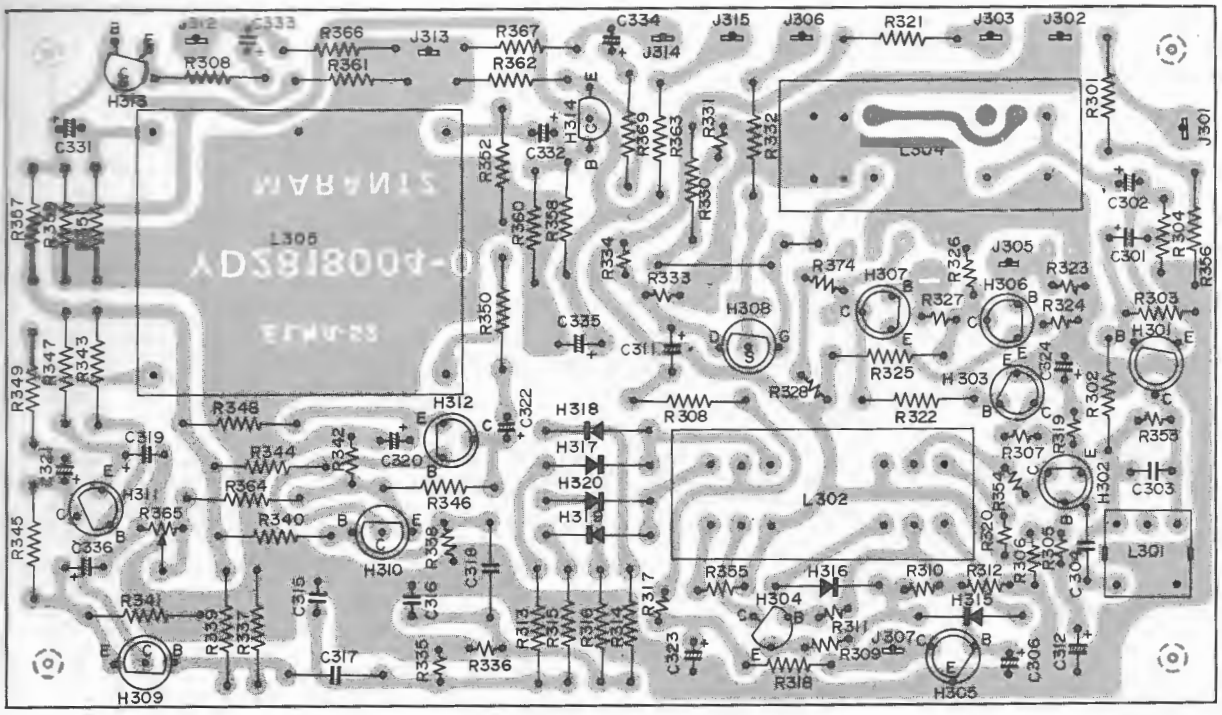


Figure 9. MPX Stereo Decoding Amplifier Assembly P300 Component Locations

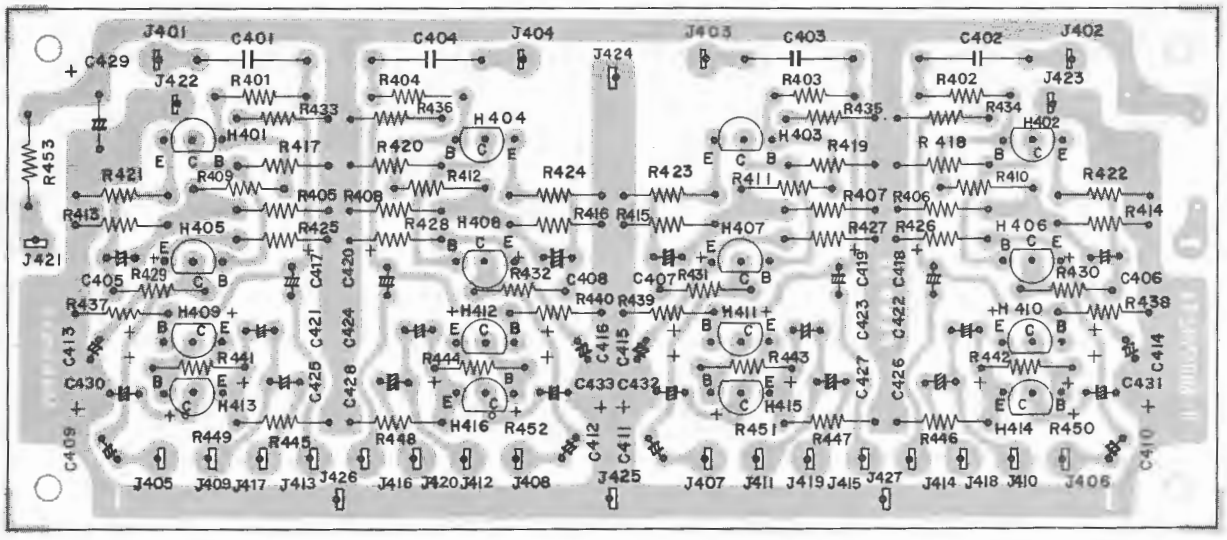


Figure 10. Pre, Tone Amplifier Assembly P400 Component Locations

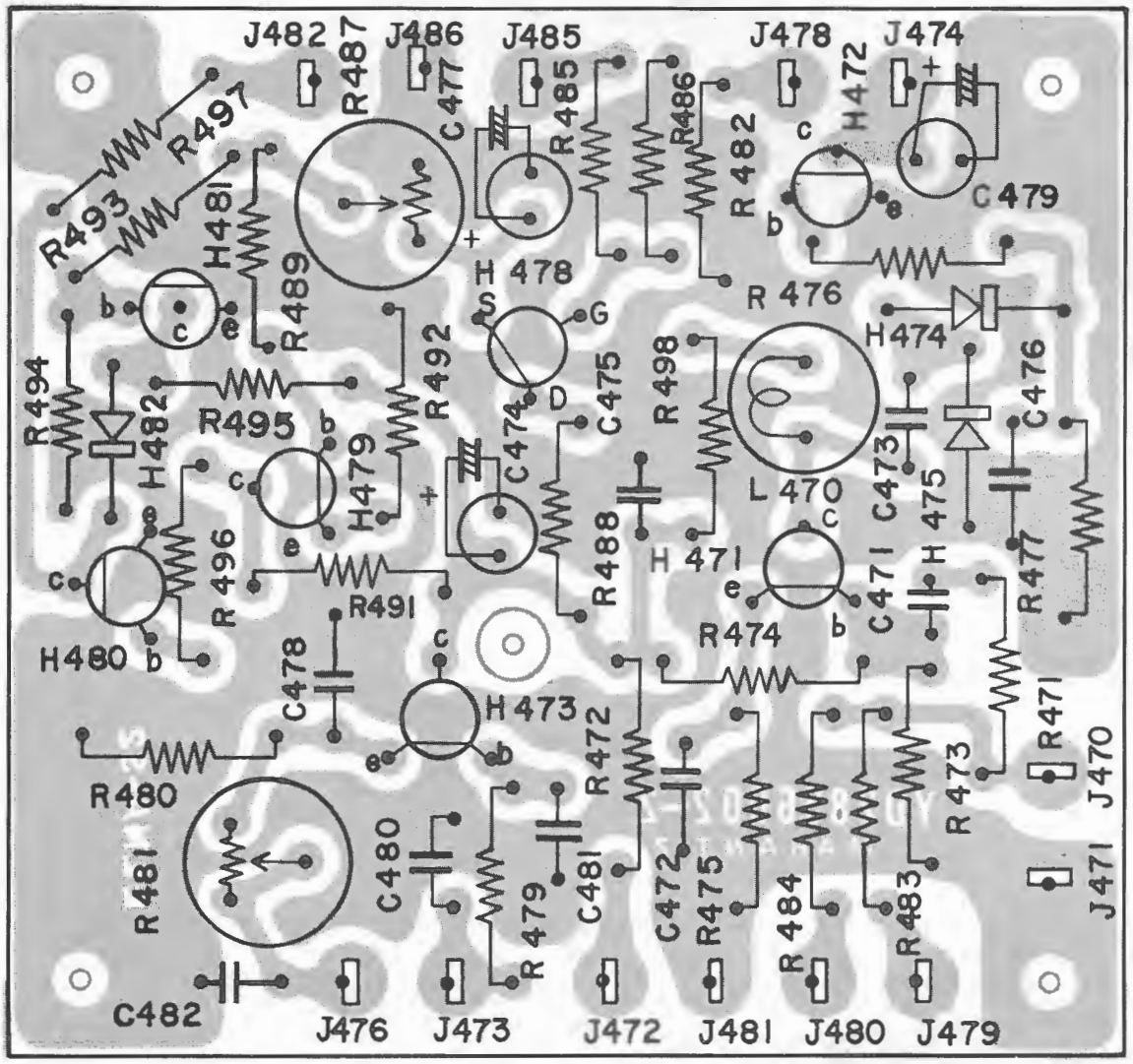


Figure 11. Noise and DC Amplifier P470 Component Locations

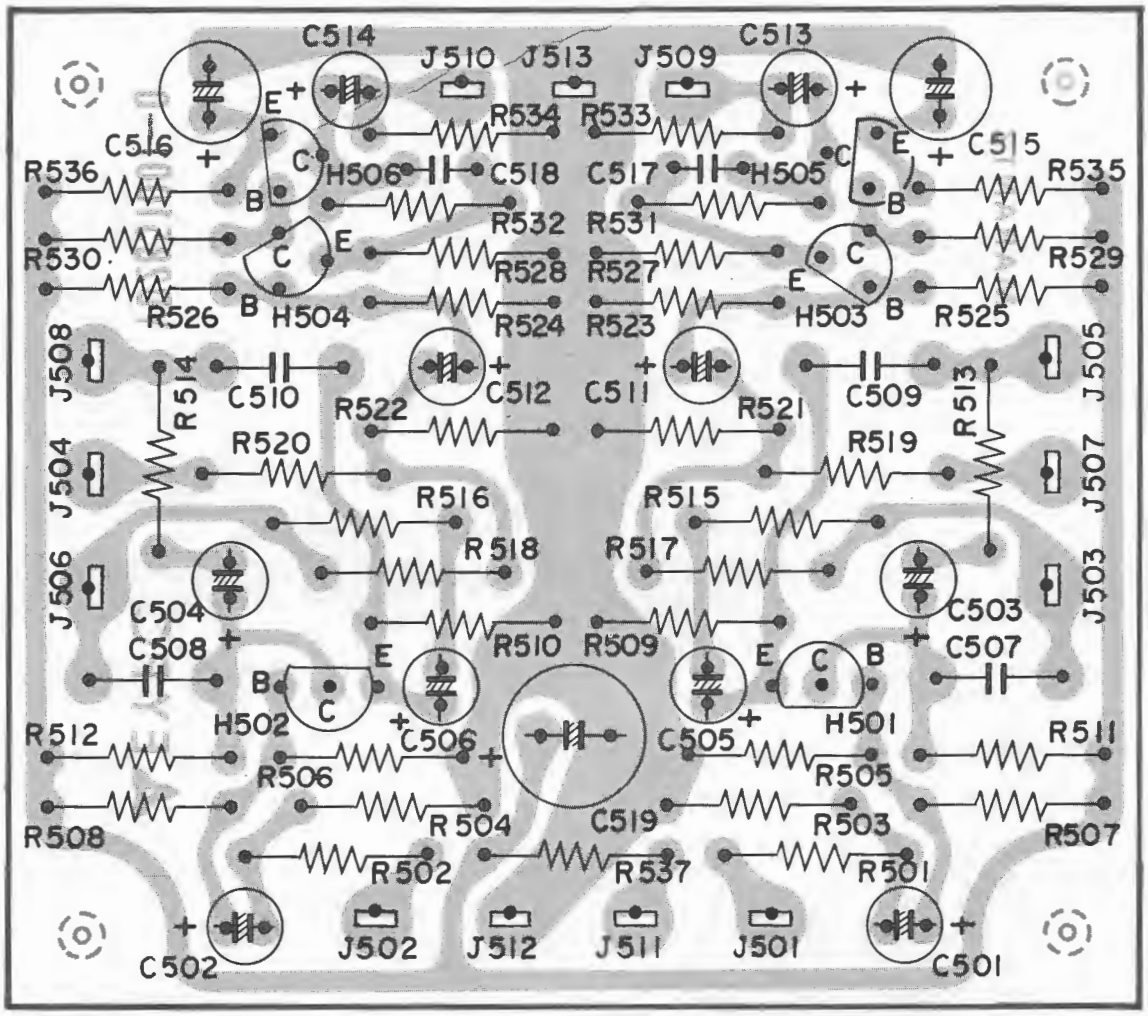


Figure 12. Vari-Matrix Unit Assembly P500 Component Locations

Figure 14. Temperature Compensation Unit Assembly P580 Component Locations

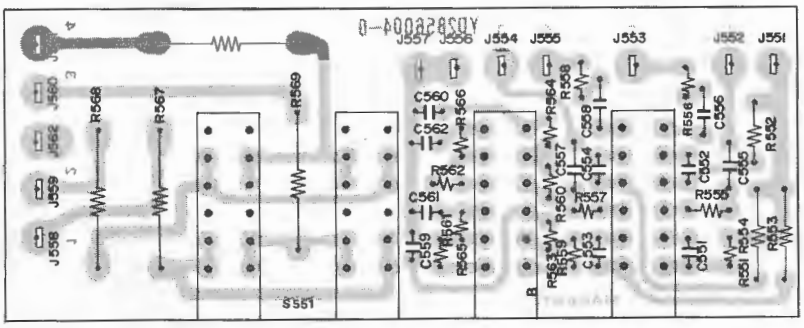
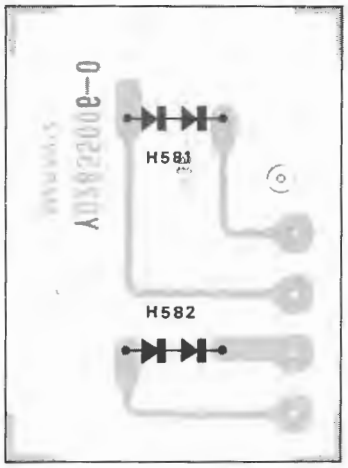


Figure 13. Loudness, Hi-Filter and Speaker Switch Unit Assembly P550 Component Locations



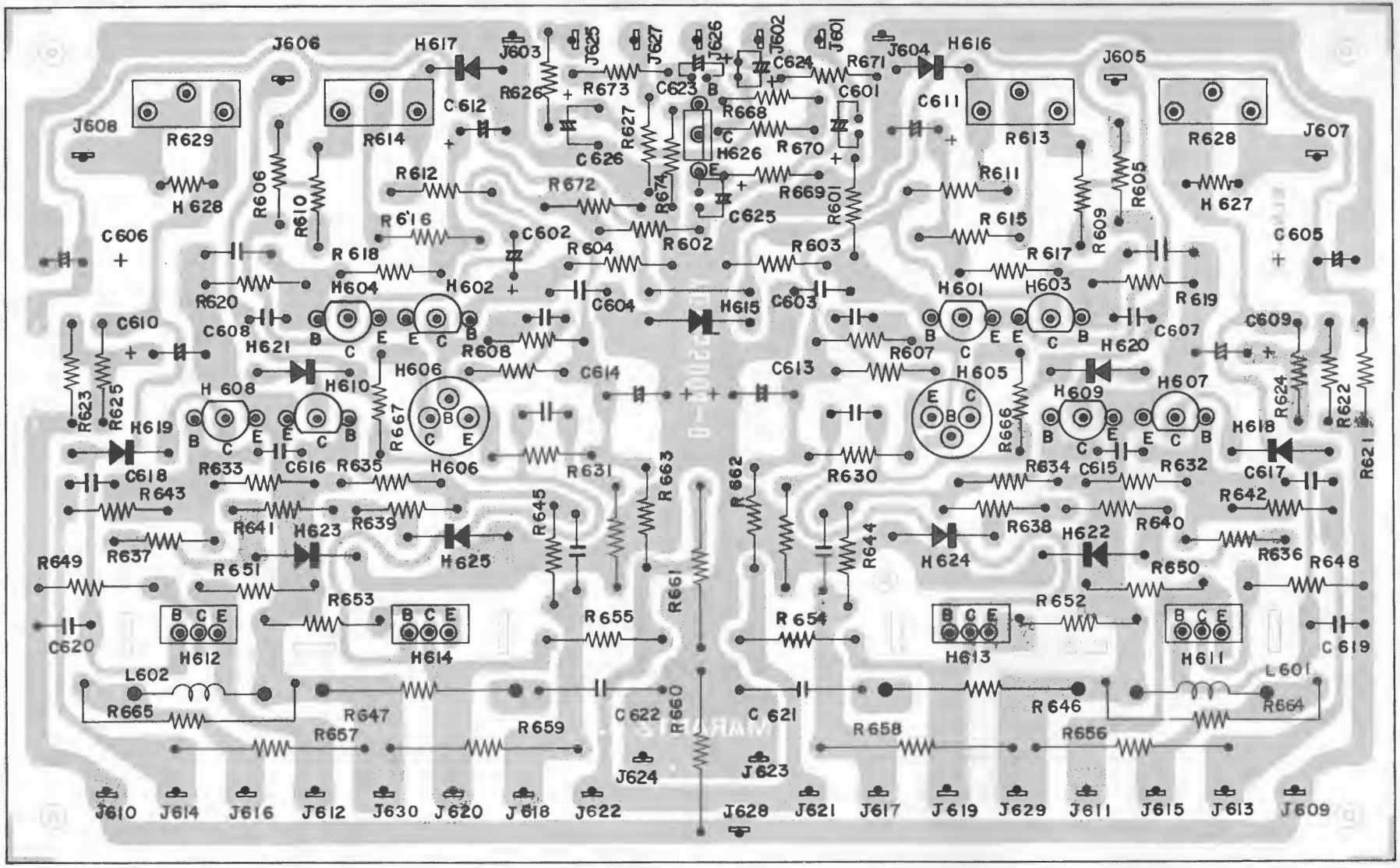


Figure 15. Power Amplifier Assembly P600 Component Locations

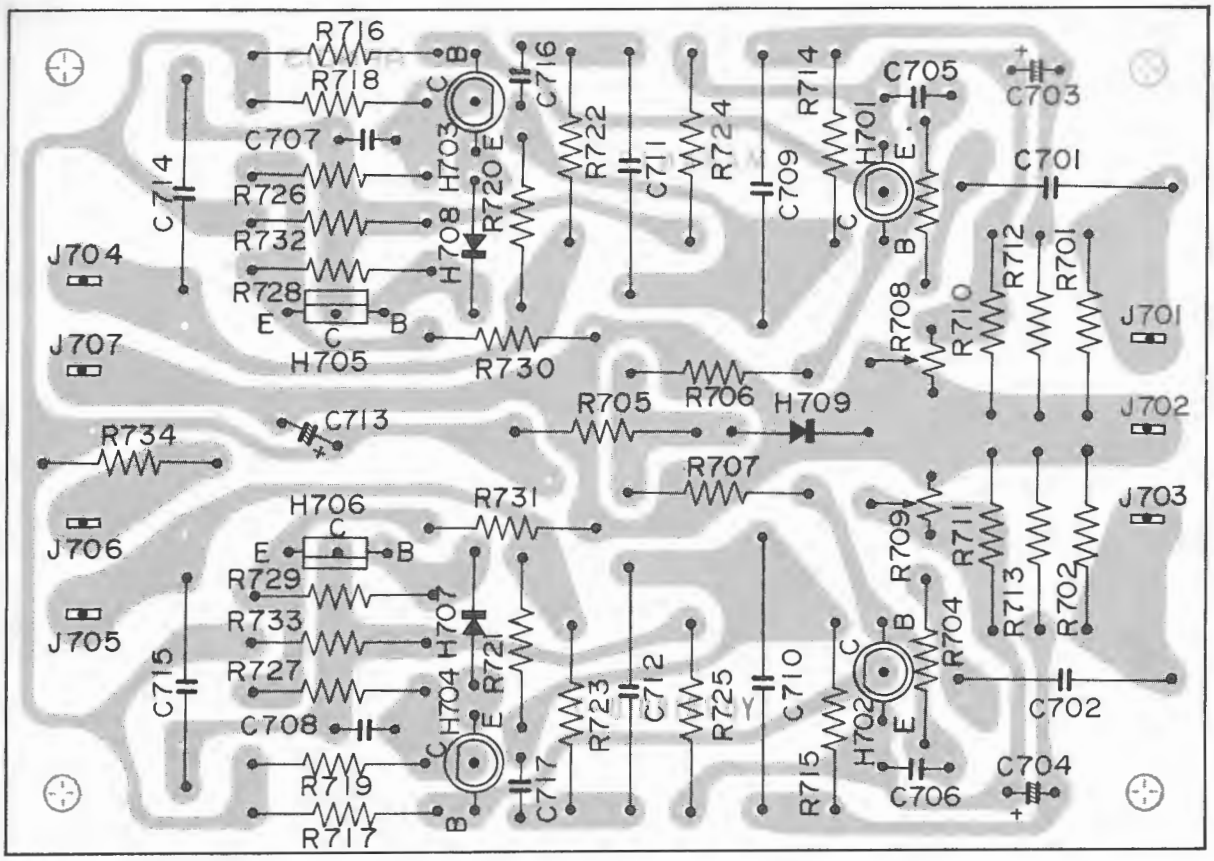


Figure 16. Phono Amplifier Assembly P700 Component Locations

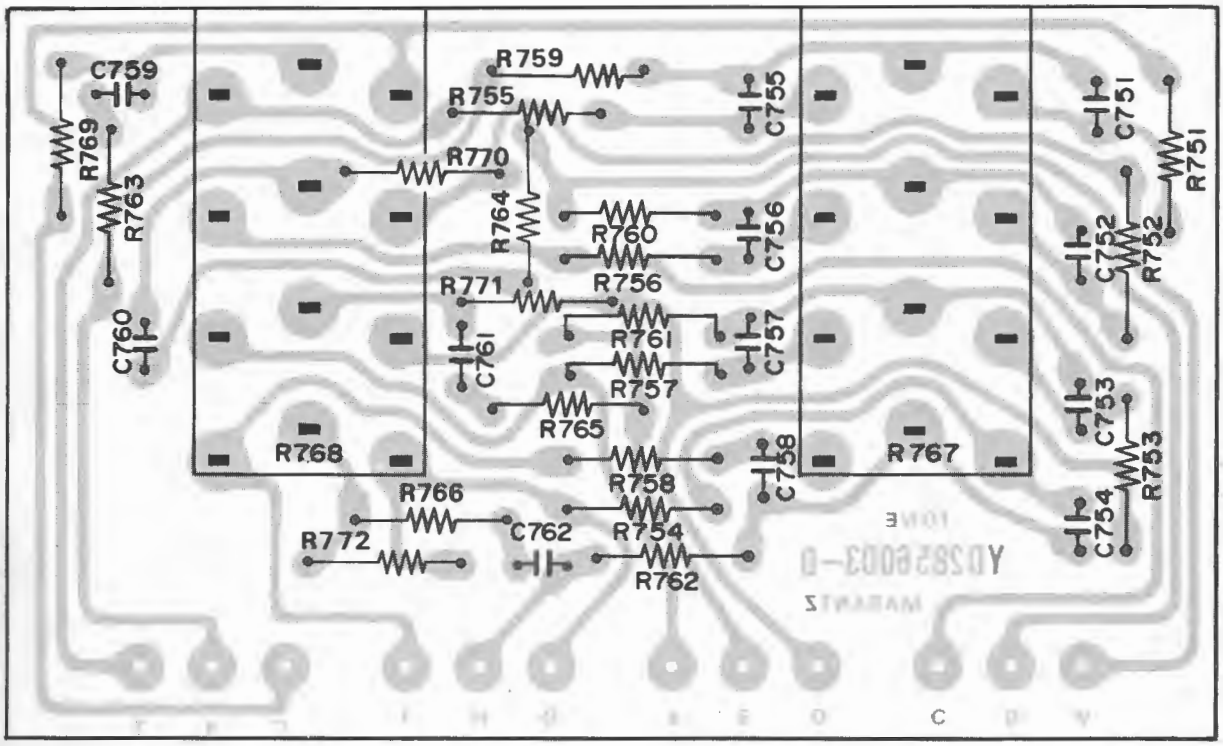


Figure 17. Tone Control Unit Assembly P750 Component Locations

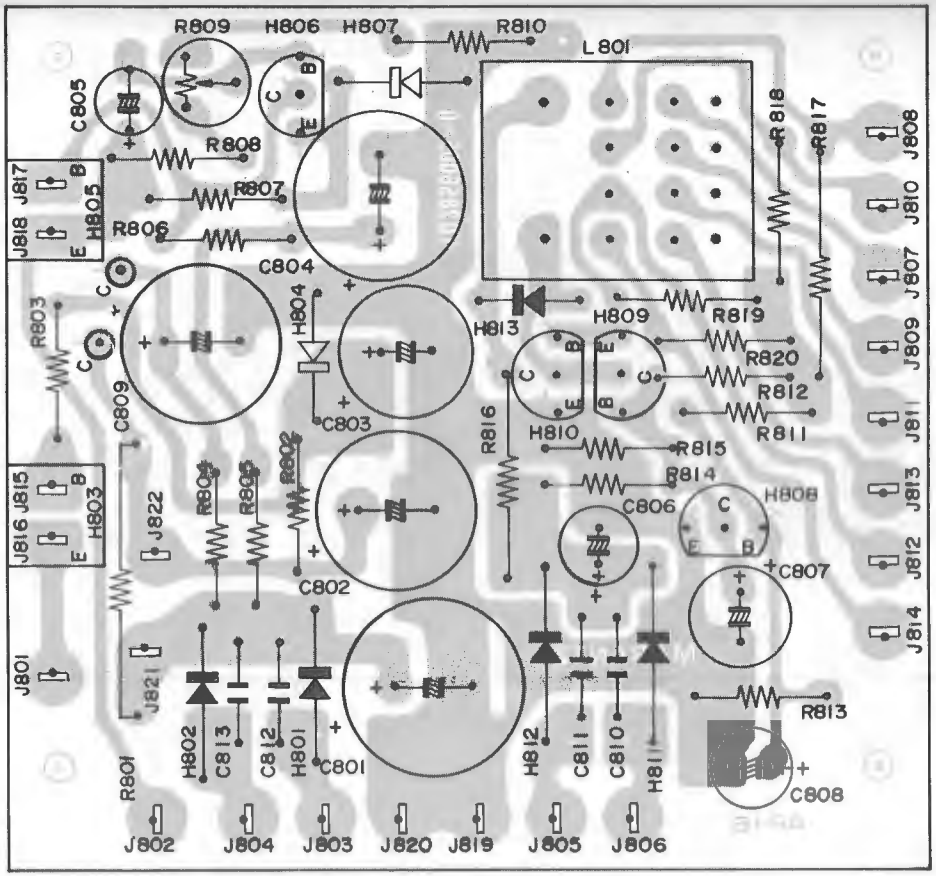


Figure 18. Power Supply Unit Assembly P800 Component Locations

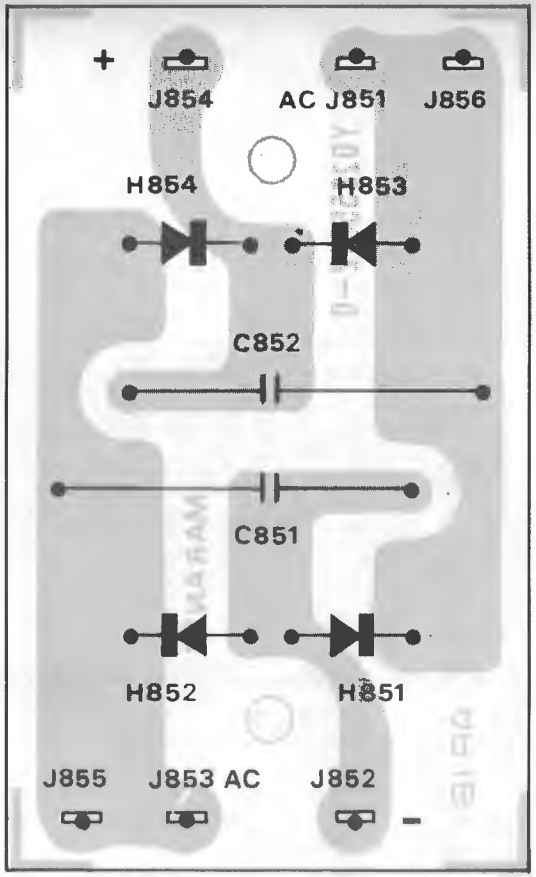


Figure 19. AC Rectifier Assembly P850 Component Locations

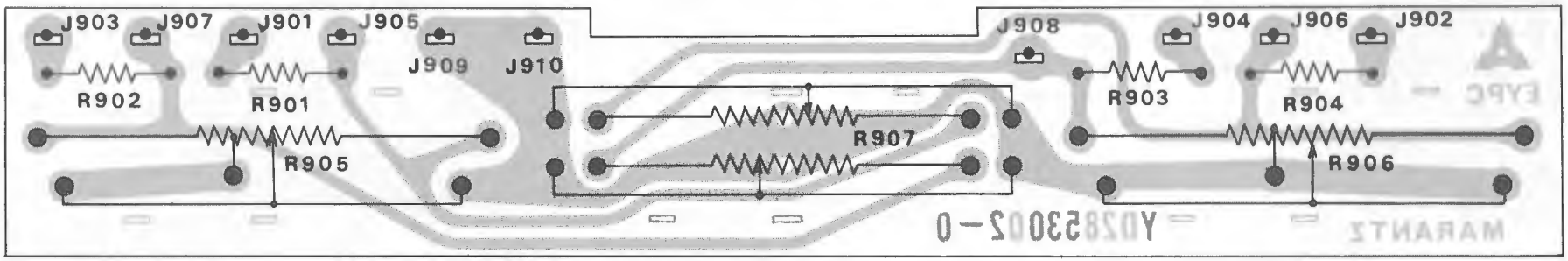
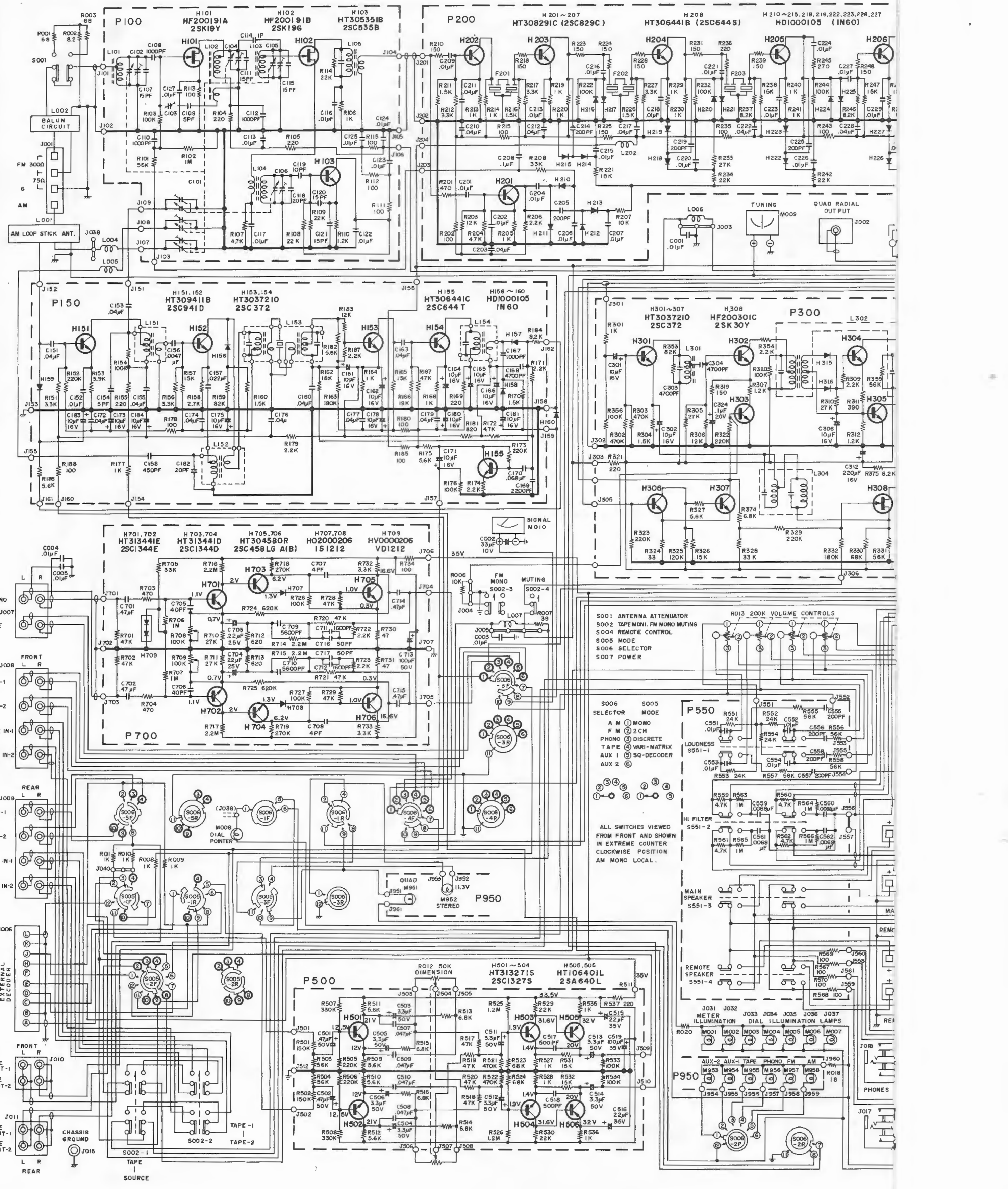


Figure 20. Balance Control Unit Assembly P900 Component Locations


P100
H101 HF200191A 2SK19Y
H102 HF200191B 2SK19G
H103 HT30535IB 2SC535B
P200
H201 ~ 207 HT308291C (2SC829C)
H208 HT306441B (2SC644S)
H210~215, 218, 219, 222, 223, 226, 227 HD1000105 (IN60)
BALUN CIRCUIT
FM 300Ω
75Ω
AM
AM LOOP STICK ANT.
TUNING
QUAD RADIAL OUTPUT
P150
H151, 152 HT309411B 2SC941D
H153, 154 HT3037210 2SC372
H155 HT306441C 2SC644T
H156 ~ 160 HD1000105 IN60
P300
H301~307 HT3037210 2SC372
H308 HF200301C 2SK30Y
SIGNAL M010
H701, 702 HT313441E 2SC1344E
H703, 704 HT313441D 2SC1344D
H705, 706 HT304580R 2SC458LG A(B)
H707, 708 H02000206 1S1212
H709 HV0000206 VD1212
P700
PHONO
TAPE
FRONT
AUX-1
AUX-2
TAPE IN-1
TAPE IN-2
REAR
FM MONO S002-3
MUTING S002-4
S001 ANTENNA ATTENUATOR
S002 TAPE MONI. FM MONO MUTING
S004 REMOTE CONTROL
S005 MODE
S006 SELECTOR
S007 POWER
R013 200K VOLUME CONTROLS
S006 SELECTOR
S005 MODE
AM ① MONO
FM ② 2CH
PHONO ③ DISCRETE
TAPE ④ VARI-MATRIX
AUX 1 ⑤ SQ-DECODER
AUX 2 ⑥
ALL SWITCHES VIEWED FROM FRONT AND SHOWN IN EXTREME COUNTER CLOCKWISE POSITION AM MONO LOCAL.
P550
LOUDNESS S551-1
HI FILTER S551-2
MAIN SPEAKER S551-3
REMOTE SPEAKER S551-4
M008 DIAL POINTER
QUAD M951
M952 STEREO
P950
EXTERNAL DECODER
R012 50K DIMENSION
H501 ~ 504 HT313271S 2SC1327S
H505, 506 HT106401L 2SA640L
P500
METER ILLUMINATION
DIAL ILLUMINATION LAMPS
AUX-2 AUX-1 TAPE PHONO FM AM
PHONES
TAPE OUT-1
TAPE OUT-2
CHASSIS GROUND
S002-1 TAPE SOURCE
S002-2
TAPE-1 TAPE-2

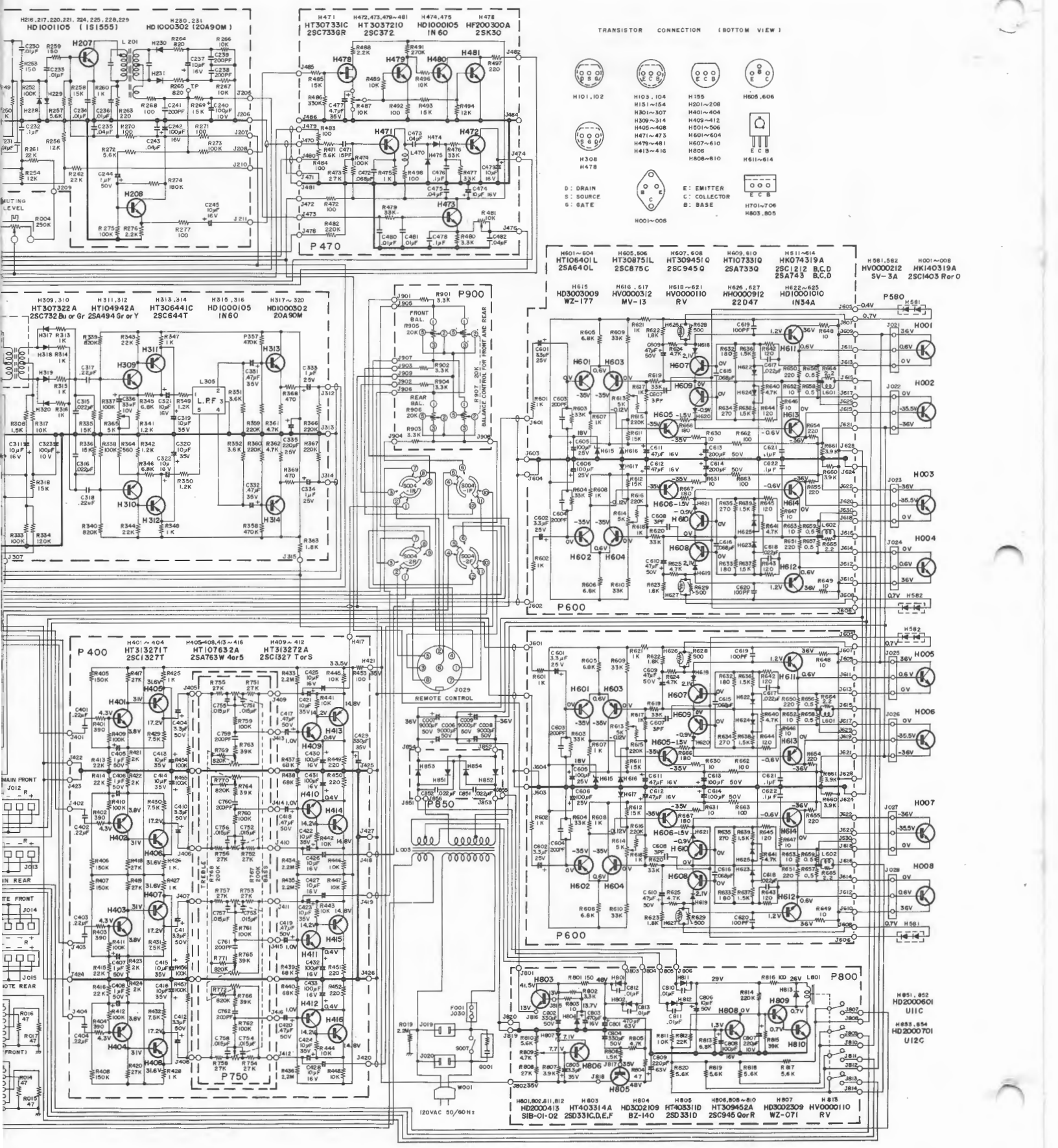


Figure 21. Schematic Diagram

PARTS LIST

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
P100	YD2819002	P. W. B. FM Front End
	ZZ2856102	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W.)
R101	RT0556314	56KΩ
R102	RT0510514	1MΩ
R103	RT0510414	100KΩ
R104	RT0522114	220Ω
R105	RT0522114	220Ω
R106	RT0510214	1KΩ
R107	RT0547214	4.7KΩ
R108	RT0522314	22KΩ
R109	RT0522314	22KΩ
R110	RT0512214	1.2KΩ
R111	RT0510114	100Ω
R112	RT0510114	100Ω
R113	RT0510114	100Ω
R114	RT0522314	22KΩ
R115	RT0510114	100Ω
		CAPACITORS
C102	CT1100001	Trimming 1.5～10PF
C103	CT1100002	Trimming 1.5～10PF
C104	CT1100001	Trimming 1.5～10PF
C105	CT1100001	Trimming 1.5～10PF
C106	CT1100001	Trimming 1.5～10PF
C107	DD1615001	Ceramic 15PF ±10%
C108	DK1710201	Ceramic 1000PF ±20%
C109	DD1105001	Ceramic 5PF ±0.5PF
C110	DK1710201	Ceramic 1000PF ±20%
C111	DD1615001	Ceramic 15PF ±10%
C112	DK1710201	Ceramic 1000PF ±20%
C113	DK1710301	Ceramic 0.01μF ±20%
C114	DD1001001	Ceramic 1.0PF ±0.25PF
C115	DD1615001	Ceramic 15PF ±10%
C116	DK1710301	Ceramic 0.01μF ±20%
C117	DK1710301	Ceramic 0.01μF ±20%
C118	DD1620003	Ceramic 20PF ±10%
C119	DD1210006	Ceramic 10PF ±1PF
C120	DD1615003	Ceramic 15PF ±10%
C121	DD1615003	Ceramic 15PF ±10%
C122	DK1710301	Ceramic 0.01μF ±20%
C123	DK1710301	Ceramic 0.01μF ±20%
C124	DK1710301	Ceramic 0.01μF ±20%
C125	DK1710301	Ceramic 0.01μF ±20%
C127	DK1710301	Ceramic 0.01μF ±20%
		COILS/TRANSFORMER
L101	LA1202603	Ant Coil
L102	LA1202604	RF Coil
L103	LA1202605	RF Coil
L104	LO1202603	OSC Coil
L105	LI1001601	I F T
		SEMICONDUCTORS
H101	HF200191A	Transistor 2SK19Y
H102	HF200191B	Transistor 2SK19G
H103	HT305351B	Transistor 2SC535B
		MISCELLANEOUS
J101	YP1000094	Plug
J102	YP1000094	Plug
J103	57271240W	Lug Eyelet
J104	57271240W	Lug Eyelet

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J105	57271240W	Lug Evelet
J106	57271240W	Lug Evelet
J107	57271240W	Lug Evelet
J108	57271240W	Lug Evelet
J109	57271240W	Lug Evelet
1009	273010903	Shield x 3
L004	LC1332002	Choke Coil
L005	LC1332002	Choke Coil
P150	YD2818002	P. W. B. AM Tuner
	ZZ2856112	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W.)
R151	RT0533214	3.3KΩ
R152	RT0522414	220KΩ
R153	RT0539214	3.9KΩ
R154	RT0510414	100KΩ
R155	RT0522114	220Ω
R156	RT0533214	3.3KΩ
R157	RT0515314	15KΩ
R158	RT0527214	2.7KΩ
R159	RT0582314	82KΩ
R160	RT0515214	1.5KΩ
R162	RT0518314	18KΩ
R163	RT0518414	180KΩ
R164	RT0510214	1KΩ
R165	RT0515214	1.5KΩ
R166	RT0518314	18KΩ
R167	RT0547314	47KΩ
R168	RT0510214	1KΩ
R169	RT0522114	220Ω
R170	RT0515214	1.5KΩ
R171	RT0522214	2.2KΩ
R172	RT0547214	4.7KΩ
R173	RT0522414	220KΩ
R174	RT0522214	2.2KΩ
R175	RT0556214	5.6KΩ
R176	RT0510414	100KΩ
R177	RT0510214	1KΩ
R178	RT0510114	100Ω
R179	RT0522214	2.2KΩ
R180	RT0510114	100Ω
R181	RT0582114	820Ω
R182	RT0556214	5.6KΩ
R183	RT0512314	12KΩ
R184	RT0582214	8.2KΩ
R185	RT0510114	100Ω
R186	RT0556214	5.6KΩ
R187	RT0522214	2.2KΩ
R188	RT0510114	100Ω
		CAPACITORS
C151	DF1740301	Film 0.04μF ±20%
C152	DF1710301	Film 0.01μF ±20%
C153	DF1740301	Film 0.04μF ±20%
C154	DD1105001	Ceramic 5PF ±0.5PF
C155	DF1740301	Film 0.04μF ±20%
C156	DF1747201	Film 0.0047μF ±20%
C157	DF1722301	Film 0.022μF ±20%
C158	DF6545101	Film 450PF ±5%
C160	DF1740301	Film 0.04μF ±20%
C161	EA1060169	Electroly 10μF 16V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION		
C162	EA1060169	Electroly	10μF	16V
C163	DF1740301	Film 0.04μF	±20%	
C164	EA1060169	Electroly	10μF	16V
C165	EA1060169	Electroly	10μF	16V
C166	EA1060169	Electroly	10μF	16V
C167	DK1710201	Ceramic	1000PF	±20%
C168	DF1747201	Film 4700PF	±20%	
C169	DF1722201	Film 2200PF	±20%	
C170	DF1668301	Film 0.068μF	±10%	
C171	EA1060169	Film 10μF	16V	
C172	DF1740301	Film 0.04μF	±20%	
C173	EA1060169	Electroly	10μF	16V
C174	DF1740301	Film 0.04μF	±20%	
C175	EA1060169	Electroly	10μF	16V
C176	DF1740301	Film 0.04μF	±20%	
C177	DF1740301	Film 0.04μF	±20%	
C178	EA1060169	Electroly	10μF	16V
C179	DF1740301	Film 0.04μF	±20%	
C180	EA1060169	Electroly	10μF	16V
C181	EA1060169	Electroly	10μF	16V
C182	DD1620001	Ceramic	20PF	±10%
C183	EA1060169	Electroly	10μF	16V
C184	EA1070169	Electroly	10μF	16V
		COILS/TRANSFORMERS		
L151	LA1001017	RF Coil		
L152	LO1001042	OSC Coil		
L153	LI1028002	I F T		
L154	LI1001048	I F T		
		SEMICONDUCTORS/PLUGS		
H151	HT309411B	Transistor	2SC941-0	
H152	HT309411B	Transistor	2SC941-0	
H153	HT3037210	Transistor	2SC372	
H154	HT3037210	Transistor	2SC372	
H155	HT306441C	Transistor	2SC644T	
H156	HD1000105	Diode	1N60	
H157	HD1000105	Diode	1N60	
H158	HD1000105	Diode	1N60	
H159	HD1000105	Diode	1N60	
H160	HD1000105	Diode	1N60	
J151	YP1000094	Plug		
J152	YP1000094	Plug		
J153	YP1000094	Plug		
J154	YP1000094	Plug		
J155	YP1000094	Plug		
J156	YP1000094	Plug		
J157	YP1000094	Plug		
J158	YP1000094	Plug		
J159	YP1000094	Plug		
J160	YP1000094	Plug		
J161	YP1000094	Plug		
J162	YP1000099	Plug		
P200	YD2856001	P. W. B.	IF	
	ZZ2856001	P. W. B. Ass'y		
		RESISTORS (All resistors are ±5% and ¼W.)		
R201	RT0510114	100Ω		
R202	RT0510114	100Ω		
R203	RT0512314	12KΩ		
R204	RT0547214	4.7KΩ		
R205	RT0510214	1KΩ		

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R206	RT0522214	2.2KΩ
R207	RT0510314	10KΩ
R208	RT0533314	33KΩ
R210	RT0539014	39Ω
R211	RT0515214	1.5KΩ
R212	RT0533214	3.3KΩ
R213	RT0547114	470Ω
R214	RT0510214	1KΩ
R215	RT0510114	100Ω
R216	RT0515214	1.5KΩ
R217	RT0533214	3.3KΩ
R218	RT0515114	150Ω
R219	RT0510214	1KΩ
R220	RT0510214	1KΩ
R221	RT0518314	18KΩ
R222	RT0510414	100KΩ
R223	RT0575014	75Ω
R224	RT0515114	150Ω
R225	RT0510114	150Ω
R226	RT0582114	820Ω
R227	RT0533214	3.3KΩ
R228	RT0515114	150Ω
R229	RT0510214	1KΩ
R230	RT0510214	1KΩ
R231	RT0515114	150Ω
R232	RT0510414	100KΩ
R233	RT0527314	27KΩ
R234	RT0522314	22KΩ
R235	RT0510114	100Ω
R236	RT0522114	220Ω
R237	RT0582214	8.2KΩ
R238	RT0515314	15KΩ
R239	RT0515114	150Ω
R240	RT0510214	1KΩ
R241	RT0510214	1KΩ
R242	RT0568314	68KΩ
R243	RT0510114	100Ω
R244	RT0510414	100KΩ
R245	RT0527114	270Ω
R246	RT0582214	8.2KΩ
R247	RT0515314	15KΩ
R248	RT0515114	150Ω
R249	RT0510214	1KΩ
R250	RT0510214	1KΩ
R252	RT0510414	100KΩ
R253	RT0515114	150Ω
R254	RT0591214	9.1KΩ
R256	RT0512314	12KΩ
R257	RT0556214	5.6KΩ
R258	RT0515314	15KΩ
R259	RT0515114	150Ω
R260	RT0510214	1KΩ
R261	RT0522314	22KΩ
R262	RT0522314	22KΩ
R263	RT0522114	220Ω
R264	RT0582114	820Ω
R265	RT0582114	820Ω
R266	RT0510314	10KΩ
R267	RT0510314	10KΩ
R268	RT0510114	100Ω
R269	RT0515314	15KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION		
R270	RT0510114	100Ω		
R271	RT0510114	100Ω		
R272	RT0556214	5.6KΩ		
R273	RT0510414	100KΩ		
R274	RT0518414	180KΩ		
R275	RT0510414	100KΩ		
R276	RT0522214	2.2KΩ		
R277	RT0510114	100Ω		
		CAPACITORS		
C201	DK1710301	Ceramic	0.1μF	±20%
C202	DK1710301	Ceramic	0.01μF	±20%
C203	DK1840302	Ceramic	0.04μF	+80% -20%
C204	DK1710301	Ceramic	0.01μF	±20%
C205	DD1620101	Ceramic	200PF	±10%
C206	DK1710301	Ceramic	0.01μF	±20%
C207	DK1710301	Ceramic	0.01μF	±20%
C208	DK1810402	Ceramic	0.1μF	+80% -20%
C209	DK1710301	Ceramic	0.01μF	±20%
C210	DK1840302	Ceramic	0.04μF	+80% -20%
C211	DK1840302	Ceramic	0.04μF	+80% -20%
C212	DK1840302	Ceramic	0.04μF	+80% -20%
C213	DK1710301	Ceramic	0.01μF	±20%
C214	DD1620101	Ceramic	200PF	±10%
C215	DK1710301	Ceramic	0.01μF	±20%
C216	DK1710301	Ceramic	0.01μF	±20%
C217	DK1840302	Ceramic	0.04μF	+80% -20%
C218	DK1710301	Ceramic	0.01μF	±20%
C219	DD1620101	Ceramic	200PF	±10%
C220	DK1710301	Ceramic	0.01μF	±20%
C221	DK1710301	Ceramic	0.01μF	±20%
C222	DK1840302	Ceramic	0.04μF	+80% -20%
C223	DK1710301	Ceramic	0.01μF	±20%
C224	DK1710301	Ceramic	0.01μF	±20%
C225	DD1620101	Ceramic	200PF	±10%
C226	DK1710301	Ceramic	0.01μF	±20%
C227	DK1710301	Ceramic	0.01μF	±20%
C228	DK1840301	Ceramic	0.04μF	+80% -20%
C229	DK1710301	Ceramic	0.01μF	±20%
C230	DK1710301	Ceramic	0.01μF	±20%
C231	DK1710201	Ceramic	0.001μF	±20%
C232	DK1810402	Ceramic	0.1μF	+80% -20%
C233	DK1710301	Ceramic	0.01μF	±20%
C234	DK1710301	Ceramic	0.01μF	±20%
C235	DK1840302	Ceramic	0.04μF	+80% -20%
C236	DK1710301	Ceramic	0.01μF	±20%
C237	EA1060169	Electroly	10μF	16V
C238	DD1620101	Ceramic	200PF	±20%
C289	DD1620101	Ceramic	200PF	±20%
C240	EA1070109	Electroly	100μF	10V
C241	DD1620101	Ceramic	200PF	±20%
C242	EA1070169	Electroly	100μF	16V
C243	DK1840302	Ceramic	0.04μF	+80% -20%
C244	EA1050509	Electroly	1μF	50V
C245	EA1060169	Electroly	10μF	16V
C246	EA1060169	Electroly	10μF	16V
C247	DK1710301	Ceramic	0.01μF	±20%
C248	DD1540001	Ceramic	40PF	±5%
		FILTERS		
F201	FF1107004	Ceramic	CFS107M	
F202	FF1107004	Ceramic	CFS107M	
F203	FF1107004	Ceramic	CFS107M	

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION	
		SEMICONDUCTORS	
H201	HT308291C	Transistor	2SC829C
H202	HT308291C	Transistor	2SC829C
H203	HT308291C	Transistor	2SC829C
H204	HT308291C	Transistor	2SC829C
H205	HT308291C	Transistor	2SC829C
H206	HT308291C	Transistor	2SC829C
H207	HT308291C	Transistor	2SC829C
H208	HT306441B	Transistor	2SC644S
H210	HD1000105	Diode	1N60
H211	HD1000105	Diode	1N60
H212	HD1000105	Diode	1N60
H213	HD1000105	Diode	1N60
H214	HD1000105	Diode	1N60
H215	HD1000105	Diode	1N60
H216	HD2001105	Diode	1S1555
H217	HD2001105	Diode	1S1555
H218	HD1000105	Diode	1N60
H219	HD1000105	Diode	1N60
H220	HD2001105	Diode	1S1555
H221	HD2001105	Diode	1S1555
H222	HD1000105	Diode	1N60
H223	HD1000105	Diode	1N60
H224	HD2001105	Diode	1S1555
H225	HD2001105	Diode	1S1555
H226	HD1000105	Diode	1N60
H227	HD1000105	Diode	1N60
H228	HD2001105	Diode	1S1555
H229	HD2001105	Diode	1S1555
H230	HD1000302	Diode	20A90M
H231	HD1000302	Diode	20A90M
		MISCELLANEOUS	
L201	LI1401623	IFT	FM
L202	LC1332002	Choke Coil	3μH
J201	YP1000094	Plug	
J202	YP1000094	Plug	
J203	YP1000094	Plug	
J204	YP1000094	Plug	
J205	YP1000094	Plug	
J206	YP1000094	Plug	
J207	YP1000094	Plug	
J208	YP1000094	Plug	
J209	YP1000094	Plug	
J210	YP1000094	Plug	
J211	YP1000094	Plug	
P300	YD2818004	P. W. B.	MPX Stereo Decoding
	ZZ2856104	P. W. B. Ass'y	
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)	
R301	RT0510214	1KΩ	
R302	RT0547414	470KΩ	
R303	RT0547414	470KΩ	
R304	RT0515214	1.5KΩ	
R305	RT0527314	27KΩ	
R306	RT0512314	12KΩ	
R307	RT0512214	1.2KΩ	
R308	RT0515214	1.5KΩ	
R309	RT0522214	2.2KΩ	
R310	RT0527314	27KΩ	
R311	RT0539114	390Ω	

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R312	RT0512214	1.2KΩ
R313	RT0510214	1KΩ
R314	RT0510214	1KΩ
R315	RT0510214	1KΩ
R316	RT0510214	1KΩ
R317	RT0510314	10KΩ
R318	RT0515314	15KΩ
R319	RT0515114	150Ω
R320	RT0510414	100KΩ
R321	RT0522114	220Ω
R322	RT0522414	220KΩ
R323	RT0522414	220KΩ
R324	RT0533014	33Ω
R325	RT0512414	120KΩ
R326	RT0515314	15KΩ
R327	RT0556214	5.6KΩ
R328	RT0533314	33KΩ
R329	RT0522414	220KΩ
R330	RT0568314	68KΩ
R331	RT0556314	56KΩ
R332	RT0518414	180KΩ
R333	RT0510414	100KΩ
R334	RT0512414	120KΩ
R335	RT0515314	15KΩ
R336	RT0515314	15KΩ
R337	RT0510414	100KΩ
R338	RT0510414	100KΩ
R339	RT0582414	820KΩ
R340	RT0582414	820KΩ
R341	RT0512214	1.2KΩ
R342	RT0512214	1.2KΩ
R343	RT0522314	22KΩ
R344	RT0522314	22KΩ
R345	RT0568214	6.8KΩ
R346	RT0568214	6.8KΩ
R347	RT0510214	1KΩ
R348	RT0510214	1KΩ
R349	RT0512214	1.2KΩ
R350	RT0512214	1.2KΩ
R351	RT0536214	3.6KΩ
R352	RT0536214	3.6KΩ
R353	RT0582314	82KΩ
R354	RT0522214	2.2KΩ
R355	RT0556314	56KΩ
R356	RT0510414	100KΩ
R357	RT0547414	470KΩ
R358	RT0547414	470KΩ
R359	RT0522414	220KΩ
R360	RT0522414	220KΩ
R361	RT0547214	4.7KΩ
R362	RT0547214	4.7KΩ
R363	RT0518214	1.8KΩ
R364	RT0556114	560Ω
R365	RA0502013	Trimming 5KΩ
R366	RT0522414	220KΩ
R367	RT0522414	220KΩ
R368	RT0547114	470Ω
R369	RT0547114	470Ω
R374	RT0568214	6.8KΩ
R375	RT0582214	8.2KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION		
		CAPACITORS		
C301	EA1060169	Electroly	10μF	16V
C302	EA1060169	Electroly	10μF	16V
C303	DF5547203	Film	4700PF	±5%
C304	DF1647201	Film	4700PF	±10%
C306	EA1060169	Electroly	10μF	16V
C311	EA1060169	Electroly	10μF	16V
C312	EA2270169	Electroly	220μF	16V
C315	DF1522301	Film	0.022μF	±5%
C316	DF1522301	Film	0.022μF	±5%
C317	DF1722401	Film	0.22μF	±20%
C318	DF1722401	Film	0.22μF	±20%
C319	EA1060359	Electroly	10μF	35V
C320	EA1060359	Electroly	10μF	35V
C321	EA1060169	Electroly	10μF	16V
C322	EA1060169	Electroly	10μF	16V
C323	EA1070109	Electroly	100μF	10V
C324	EM1040201	Electroly	0.1μF	20V
C331	EA4750359	Electroly	0.47μF	35V
C332	EA4750359	Electroly	0.47μF	35V
C333	EV1050251	Electroly	1μF	25V
C334	EV1050251	Electroly	1μF	25V
C335	EA2270259	Elecctroly	220μF	25V
C336	EA3360109	Electroly	33μF	10V
		COILS		
L301	LS1001007	MPX	19KHz	Amp.
L302	LS1503002	MPX	19.38KHz	Block
L304	LS1503001	MPX	19.67KHz	Trap
L305	LS3501002	MPX	L. P. F.	
		SEMICONDUCTORS/PLUGS		
H301	HT3037210	Transistor	2SC372	
H302	HT3037210	Transistor	2SC372	
H303	HT3037210	Transistor	2SC372	
H304	HT3037210	Transistor	2SC372	
H305	HT3037210	Transistor	2SC372	
H306	HT3037210	Transistor	2SC372	
H307	HT3037210	Transistor	2SC372	
H308	HF200301C	F E T	2SK30Y	
H309	HT307322A	Transistor	2SC732	Bu or Gr
H310	HT307322A	Transistor	2SC732	Bu or Gr
H311	HT104942A	Transistor	2SA494	Gr, Y
H312	HT104942A	Transistor	2SA494	Gr, Y
H313	HT306441C	Transistor	2SC644T	
H314	HT306441C	Transistor	2SC644T	
H315	HD1000105	Diode	1N60	
H316	HD1000105	Diode	1N60	
H317	HD1000302	Diode	20A90M	
H318	HD1000302	Diode	20A90M	
H319	HD1000302	Diode	20A90M	
H320	HD1000302	Diode	20A90M	
J301	YP1000094	Plug		
J302	YP1000094	Plug		
J303	YP1000094	Plug		
J305	YP1000094	Plug		
J306	YP1000094	Plug		
J307	YP1000094	Plug		
J308	YP1000094	Plug		
J312	YP1000094	Plug		
J313	YP1000094	Plug		

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION		
J314	YP1000094	Plug		
J315	YP1000094	Plug		
P400	YD2855009	P. W. B. Pre Tone Amp.		
	ZZ2856109	P. W. B. Ass'y		
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)		
R401	RT0539114	390Ω		
R402	RT0539114	390Ω		
R403	RT0539114	390Ω		
R404	RT0539114	390Ω		
R405	RT0515414	150KΩ		
R406	RT0515414	150KΩ		
R407	RT0515414	150KΩ		
R408	RT0515414	150KΩ		
R409	RT0510414	100KΩ		
R410	RT0510414	100KΩ		
R411	RT0510414	100KΩ		
R412	RT0510414	100KΩ		
R413	RT0522314	22KΩ		
R414	RT0522314	22KΩ		
R415	RT0522314	22KΩ		
R416	RT0522314	22KΩ		
R417	RT0527314	27KΩ		
R418	RT0527314	27KΩ		
R419	RT0527314	27KΩ		
R420	RT0527314	27KΩ		
R421	RT0520214	2KΩ		
R422	RT0520214	2KΩ		
R423	RT0520214	2KΩ		
R424	RT0520214	2KΩ		
R425	RT0510214	1KΩ		
R426	RT0510214	1KΩ		
R427	RT0510214	1KΩ		
R428	RT0510214	1KΩ		
R429	RT0575214	7.5KΩ		
R430	RT0575214	7.5KΩ		
R431	RT0575214	7.5KΩ		
R432	RT0575214	7.5KΩ		
R433	RN1022514	2.2MΩ	±10%	¼W
R434	RN1022514	2.2MΩ	±10%	¼W
R435	RN1022514	2.2MΩ	±10%	¼W
R436	RN1022514	2.2MΩ	±10%	¼W
R437	RT0568314	68KΩ		
R438	RT0568314	68KΩ		
R439	RT0568314	68KΩ		
R440	RT0568314	68KΩ		
R441	RT0510314	10KΩ		
R442	RT0510314	10KΩ		
R443	RT0510314	10KΩ		
R444	RT0510314	10KΩ		
R445	RT0510314	10KΩ		
R446	RT0510314	10KΩ		
R447	RT0510314	10KΩ		
R448	RT0510314	10KΩ		
R449	RT0522114	220Ω		
R450	RT0522114	220Ω		
R451	RT0522114	220Ω		
R452	RT0522114	220Ω		
R453	RT0510114	100Ω		
R454	RT0510414	100KΩ		

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION		
R455	RT0510414	100KΩ		
R456	RT0510414	100KΩ		
R457	RT0510414	100KΩ		
		CAPACITORS		
C401	DF1722405	Film 0.22μF	±20%	50V
C402	DF1722405	Film 0.22μF	±20%	50V
C403	DF1722402	Film 0.22μF	±20%	50V
C404	DF1722402	Film 0.22μF	±20%	50V
C405	EE1050501	Electroly 1μF	±20%	50V
C406	EE1050501	Electroly 1μF	±20%	50V
C407	EE1050501	Electroly 1μF	±20%	50V
C408	EE1050501	Electroly 1μF	±20%	50V
C409	EE3350501	Electroly 3.3μF	±20%	50V
C410	EE3350501	Electroly 3.3μF	±20%	50V
C411	EE3350501	Electroly 3.3μF	±20%	50V
C412	EE3350501	Electroly 3.3μF	±20%	50V
C413	EA1060359	Electroly 10μF	35V	
C414	EA1060359	Electroly 10μF	35V	
C415	EA1060359	Electroly 10μF	35V	
C416	EA1060359	Electroly 10μF	35V	
C417	EE4740501	Electroly 0.47μF	±20%	50V
C418	EE4740501	Electroly 0.47μF	±20%	50V
C419	EE4740501	Electroly 0.47μF	±20%	50V
C420	EE4740501	Electroly 0.47μF	±20%	50V
C421	EE1060351	Electroly 10μF	±20%	35V
C422	EE1060351	Electroly 10μF	±20%	35V
C423	EE1060351	Electroly 10μF	±20%	35V
C424	EE1060351	Electroly 10μF	±20%	35V
C425	EQ1060161	Electroly 10μF	±30%	16V
C426	EQ1060161	Electroly 10μF	±30%	16V
C427	EQ1060161	Electroly 10μF	±30%	16V
C428	EQ1060161	Electroly 10μF	±30%	16V
C429	EA3370359	Electroly 330μF +50% -10% 35V		
C430	EA1070169	Electroly 100μF +50% -10% 16V		
C431	EA1070169	Electroly 100μF +50% -10% 16V		
C432	EA1070169	Electroly 100μF +50% -10% 16V		
C433	EA1070169	Electroly 100μF +50% -10% 16V		
		SEMICONDUCTORS/PLUGS		
H401	HT313271T	Transistor 2SC1327(T)		
H402	HT313271T	Transistor 2SC1327(T)		
H403	HT313271T	Transistor 2SC1327(T)		
H404	HT313271T	Transistor 2SC1327(T)		
H405	HT107632A	Transistor 2SA763W	4 or 5	
H406	HT107632A	Transistor 2SA763W	4 or 5	
H407	HT107632A	Transistor 2SA763W	4 or 5	
H408	HT107632A	Transistor 2SA763W	4 or 5	
H409	HT313272A	Transistor 2SC1327	(S or T)	
H410	HT313272A	Transistor 2SC1327	(S or T)	
H411	HT313272A	Transistor 2SC1327	(S or T)	
H412	HT313272A	Transistor 2SC1327	(S or T)	
H413	HT107632A	Transistor 2SA763W	4 or 5	
H414	HT107632A	Transistor 2SA763W	4 or 5	
H415	HT107632A	Transistor 2SA763W	4 or 5	
H416	HT107632A	Transistor 2SA763W	4 or 5	
J401	YP1000094	Plug		
J402	YP1000094	Plug		
J403	YP1000094	Plug		
J404	YP1000094	Plug		
J405	YP1000094	Plug		

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J406	YP1000094	Plug
J407	YP1000094	Plug
J408	YP1000094	Plug
J409	YP1000094	Plug
J410	YP1000094	Plug
J411	YP1000094	Plug
J412	YP1000094	Plug
J413	YP1000094	Plug
J414	YP1000094	Plug
J415	YP1000094	Plug
J416	YP1000094	Plug
J417	YP1000094	Plug
J418	YP1000094	Plug
J419	YP1000094	Plug
J420	YP1000094	Plug
J421	YP1000094	Plug
J422	YP1000094	Plug
J423	YP1000094	Plug
J424	YP1000094	Plug
J425	YP1000094	Plug
J426	YP1000094	Plug
J427	YP1000094	Plug
P470	YD2856002	P. W. B. Noise, DC Amp.
	ZZ2856002	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)
R471	RT0556214	5.6KΩ
R472	RT0510114	100Ω
R473	RT0527314	27KΩ
R474	RT0510414	100KΩ
R475	RT0510214	1KΩ
R476	RT0533314	33KΩ
R477	RT0533314	33KΩ
R479	RT0533314	33KΩ
R480	RT0533214	3.3KΩ
R481	RA0103020	Trimming 10KΩ ±30%
R482	RT0522414	220KΩ
R483	RT0510114	100Ω
R484	RT0510114	100Ω
R485	RT0515314	15KΩ
R486	RT0533414	330KΩ
R487	RA0103020	Trimming 10KΩ ±30%
R488	RT0522214	2.2KΩ
R489	RT0510314	10KΩ
R491	RT0527414	270KΩ
R492	RT0510114	100Ω
R493	RT0515314	15KΩ
R494	RT0512314	12KΩ
R495	RT0527414	270KΩ
R496	RT0510314	10KΩ
R497	RT0522114	220Ω
R498	RT0510114	100Ω
		CAPACITORS/COIL
C471	DD1615001	Ceramic 15PF ±10%
C472	DF1668301	Film 0.068μF ±10%
C473	DF1740301	Film 0.04μF ±20%
C474	EA1060169	Electroly 10μF 16V
C475	DK1840302	Ceramic 0.04μF +80% -20%
C476	DK1810402	Ceramic 0.1μF +80% -20%

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C477	EA4750359	Electroly 4.7μF 35V
C478	DK1810402	Ceramic 0.1μF +100% -0%
C479	EA1060169	Electroly 10μF 16V
C480	DK1710301	Ceramic 0.01μF ±20%
C481	DK1710301	Ceramic 0.01μF ±20%
C482	DK1840302	Ceramic 0.04μF +80% -20%
L470	LC2105001	Choke Coil 1mH
		SEMICONDUCTORS/PLUGS
H471	HT307331C	Transistor 2SC733 Gr
H472	HT3037210	Transistor 2SC372
H473	HT3037210	Transistor 2SC372
H474	HD1000105	Diode 1N60
H475	HD1000105	Diode 1N60
H478	HF200300A	F E T 2SK30
H479	HT3037210	Transistor 2SC372
H480	HT3037210	Transistor 2SC372
H481	HT3037210	Transistor 2SC372
H482	HD2001105	Diode 1S1555
J470	YP1000094	Plug
J471	YP1000094	Plug
J472	YP1000094	Plug
J473	YP1000094	Plug
J474	YP1000094	Plug
J476	YP1000094	Plug
J478	YP1000094	Plug
J479	YP1000094	Plug
J480	YP1000094	Plug
J481	YP1000094	Plug
J482	YP1000094	Plug
J484	YP1000094	Plug
J485	YP1000094	Plug
P500	YD2851001	P. W. B. Vari-Matrix
	ZZ2856101	P. W. B. Ass'y
		ERSISTORS (All resistors are ±5% and ¼W.)
R501	RT0515414	150KΩ
R502	RT0515414	150KΩ
R503	RT0556314	56KΩ
R504	RT0556314	56KΩ
R505	RT0522414	220KΩ
R506	RT0522414	220KΩ
R507	RT0533414	330KΩ
R508	RT0533414	330KΩ
R509	RT0556214	5.6KΩ
R510	RT0556214	5.6KΩ
R511	RT0556214	5.6KΩ
R512	RT0556214	5.6KΩ
R513	RT0568214	6.8KΩ
R514	RT0568214	6.8KΩ
R515	RT0568214	6.8KΩ
R516	RT0568214	6.8KΩ
R517	RT0547314	47KΩ
R518	RT0547314	47KΩ
R519	RT0547314	47KΩ
R520	RT0547314	47KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R521	RT0547414	470KΩ
R522	RT0547414	470KΩ
R523	RT0568314	68KΩ
R524	RT0568314	68KΩ
R525	RT0512514	1.2MΩ
R526	RT0512514	1.2MΩ
R527	RT0510214	1KΩ
R528	RT0510214	1KΩ
R529	RT0522314	22KΩ
R530	RT0522314	22KΩ
R531	RT0515314	15KΩ
R532	RT0515314	15KΩ
R533	RT0510414	100KΩ
R534	RT0510414	100KΩ
R535	RT0510214	1KΩ
R536	RT0510214	1KΩ
R537	RT0522114	220Ω
		PLUGS
J501	YP1000094	
J502	YP1000094	
J503	YP1000094	
J504	YP1000094	
J505	YP1000094	
J506	YP1000094	
J507	YP1000094	
J508	YP1000094	
J509	YP1000094	
J510	YP1000094	
J511	YP1000094	
J512	YP1000094	
		CAPACITORS
C501	EE4740501	Electroly 0.47μF ±20% 50V
C502	EE4740501	Electroly 0.47μF ±20% 50V
C503	EE3350501	Electroly 3.3μF ±20% 50V
C504	EE3350501	Electroly 3.3μF ±20% 50V
C505	EE3350501	Electroly 3.3μF ±20% 50V
C506	EE3350501	Electroly 3.3μF ±20% 50V
C507	DF1747305	Film 0.047μF ±20% 50V
C508	DF1747305	Film 0.047μF ±20% 50V
C509	DF1747305	Film 0.047μF ±20% 50V
C510	DF1747305	Film 0.04μF ±20% 50V
C511	EE3350501	Electroly 3.3μF ±20% 50V
C512	EE3350501	Electroly 3.3μF ±20% 50V
C513	EE3350501	Electroly 3.3μF ±20% 50V
C514	EE3350501	Electroly 3.3μF ±20% 50V
C515	EA2260359	Electroly 22μF +100% -10% 35V
C516	EA2260359	Electroly 22μF +100% -10% 35V
C517	DD1650101	Ceramic 500PF ±10% 50V
C518	DD1650101	Ceramic 500PF ±10% 50V
C519	EA1070359	Electroly 100μF +100% -10% 35V
		SEMICONDUCTORS
H501	HT313271S	Transistor 2SC1327 S
H502	HT313271S	Transistor 2SC1327 S
H503	HT313271S	Transistor 2SC1327 S
H504	HT313271S	Transistor 2SC1327 S
H505	HT106401L	Transistor 2SA640 L
H506	HT106401L	Transistor 2SA640 L
		MISCELLANEOUS
1114	281910101	Support x 2
1126	51100306S	B. H. M. Screw x 10
1127	511003069	B. H. M. Screw x 4

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
P600	YD2855004	P. W. B. Main Amp. x 2
	ZZ2856114	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)
R601	RT0510214	1KΩ x 2
R602	RT0510214	1KΩ x 2
R603	RT0533314	33KΩ x 2
R604	RT0533314	33KΩ x 2
R605	RT0568214	6.8KΩ x 2
R606	RT0568214	6.8KΩ x 2
R607	RT0510214	1KΩ x 2
R608	RT0510214	1KΩ x 2
R609	RT0533314	33KΩ x 2
R610	RT0533314	33KΩ x 2
R611	RT0515314	15KΩ x 2
R612	RT0515314	15KΩ x 2
R613	RA0502017	Trimming 5KΩ (B) x 2
R614	RA0502017	Trimming 5KΩ (B) x 2
R615	RT0522414	220KΩ x 2
R616	RT0522414	220KΩ x 2
R617	RT0510214	1KΩ x 2
R618	RT0510214	1KΩ x 2
R619	RT0533314	33KΩ x 2
R620	RT0533314	33KΩ x 2
R621	RC1010212	1KΩ ±10% ½W x 2
R622	RC1018212	1.8KΩ ±10% ½W x 2
R623	RC1018212	1.8KΩ ±10% ½W x 2
R624	RC1047212	4.7KΩ ±10% ½W x 2
R625	RC1047212	4.7KΩ ±10% ½W x 2
R628	RA0501010	Trimming 500Ω (B) x 2
R629	RA0501010	Trimming 500Ω (B) x 2
R630	RC1010012	10Ω ±10% ½W x 2
R631	RC1010012	10Ω ±10% ½W x 2
R632	GF0518114	180Ω x 2
R633	GF0518114	180Ω x 2
R634	GF0527114	270Ω x 2
R635	GF0527114	270Ω x 2
R636	GF0515214	1.5KΩ x 2
R637	GF0515214	1.5KΩ x 2
R638	GF0515214	1.5KΩ x 2
R639	GF0515214	1.5KΩ x 2
R640	RT0547214	4.7KΩ x 2
R641	RT0547214	4.7KΩ x 2
R642	GF0512114	120Ω x 2
R643	GF0512114	120Ω x 2
R644	GF0512114	120Ω x 2
R645	GF0512114	120Ω x 2
R646	GT0510002	10Ω ±5% 2W x 2
R647	GT0510002	10Ω ±5% 2W x 2
R648	GF0510012	10Ω ±5% ½W x 2
R649	GF0510012	10Ω ±5% ½W x 2
R650	GF0522112	220Ω ±5% ½W x 2
R651	GF0522112	220Ω ±5% ½W x 2
R652	GF0510012	10Ω ±5% ½W x 2
R653	GF0510012	10Ω ±5% ½W x 2
R654	GF0522112	220Ω ±5% ½W x 2
R655	GF0522112	220Ω ±5% ½W x 2
R656	RW1000503	0.5Ω ±10% 3W x 2
R657	RW1000503	0.5Ω ±10% 3W x 2
R658	RW1000503	0.5Ω ±10% 3W x 2
R659	RW1000503	0.5Ω ±10% 3W x 2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R660	RC1039212	3.9KΩ ±10% ½W x2
R661	RC1039212	3.9KΩ ±10% ½W x2
R662	RC1010112	100Ω ±10% ½W x2
R663	RC1010112	100Ω ±10% ½W x2
R664	RC1002212	2.2Ω ±10% ½W x2
R665	RC1002212	2.2Ω ±10% ½W x2
R666	RT0518114	180Ω x2
R667	RT0518114	180Ω x2
		CAPACITORS/COILS
C601	EE3350251	Electroly 3.3μF ±20% 25V x2
C602	EE3350251	Electroly 3.3μF ±20% 25V x2
C603	DD1620101	Ceramic 200PF ±10% x2
C604	DD1620101	Ceramic 200PF ±10% x2
C605	EA1070259	Electroly 100μF 25V x2
C606	EA1070259	Electroly 100μF 25V x2
C607	DD1103050	Ceramic 3PF ±0.25PF 500V x2
C608	DD1103050	Ceramic 3PF ±0.25PF 500V x2
C609	EA4760509	Electroly 47μF 50V x2
C610	EA4760509	Electroly 47μF 50V x2
C611	EE4760162	Electroly 47μF 16V x2
C612	EE4760162	Electroly 47μF 16V x2
C613	EA2270509	Electroly 100μF 50V x2
C614	EA2270509	Electroly 100μF 50V x2
C615	DF1768301	Film 0.068μF ±20% x2
C616	DF1768301	Film 0.068μF ±20% x2
C617	DF1722301	Film 0.022μF ±20% x2
C618	DF1722301	Film 0.022μF ±20% x2
C619	DK1610150	Ceramic 100PF ±10% x2
C620	DK1610150	Ceramic 100PF ±10% x2
C621	DF1710452	Film 0.1μF 200V x2
C622	DF1710452	Film 0.1μF 200V x2
L601	LL2380612	Choke Coil x2
L602	LL2380612	Choke Coil x2
		SEMICONDUCTORS
H601	HT106401L	Transistor 2SA640 Lx2
H602	HT106401L	Transistor 2SA640 Lx2
H603	HT106401L	Transistor 2SA640 Lx2
H604	HT106401L	Transistor 2SA640 Lx2
H605	HT308751L	Transistor 2SC875 Cx2
H606	HT308751L	Transistor 2SC875 Cx2
H607	HT309451Q	Transistor 2SC945 Qx2
H608	HT309451Q	Transistor 2SC945 Qx2
H609	HT107331Q	Transistor 2SA733 Qx2
H610	HT107331Q	Transistor 2SA733 Qx2
H611	HT106821B	IC 2SA682 O or Y
H612	HT106821B	IC 2SA682 O or Y
H613	HT313821B	IC 2SC1382 O or Y
H614	HT313821B	IC 2SC1382 O or Y
H615	HD3003009	Diode Zenner WZ-177 x2
H616	HV0000312	Varistor 1S1212 x2
H617	HV0000312	Varistor 1S1212 x2
H618	HV0000110	Varisotr RV x2
H619	HV0000110	Varistor RV x2
H620	HV0000110	Varistor RV x2
H621	HV0000110	Varistor RV x2
H622	HD1000101	Diode 1N34A x2
H623	HD1000101	Diode 1N34A x2
H624	HD1000101	Diode 1N34A x2
H625	HD1000101	Diode 1N34A x2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
H627	HH0000912	Thermistor 22D47 (200 Ω) x2
H628	HH0000912	Thermistor 22D47 (200 Ω) x2
		MISCELLANEOUS
J601	YP1000099	Plug x2
J602	YP1000099	Plug x2
J603	YP1000094	Plug x2
J604	YP1000094	Plug x2
J605	YP1000094	Plug x2
J606	YP1000094	Plug x2
J607	YP1000099	Plug x2
J608	YP1000099	Plug x2
J609	YP1000099	Plug x2
J610	YP1000099	Plug x2
J611	YP1000099	Plug x2
J612	YP1000099	Plug x2
J613	YP1000099	Plug x2
J614	YP1000099	Plug x2
J615	YP1000099	Plug x2
J616	YP1000099	Plug x2
J617	YP1000099	Plug x2
J618	YP1000099	Plug x2
J619	YP1000099	Plug x2
J620	YP1000099	Plug x2
J621	YP1000099	Plug x2
J622	YP1000099	Plug x2
J624	YP1000099	Plug x2
J625	YP1000099	Plug x2
J626	YP1000099	Plug x2
J627	YP1000099	Plug x2
J628	YP1000099	Plug x2
J629	YP1000099	Plug x2
J630	YP1000099	Plug x2
1110	285526702	Heat Sink x4
1112	281811806	Spacer x4
1132	54022601E	Flat Washer x8
1131	51102606E	B. H. M. Screw x8
P580	YD2855006	P. W. B. Temp Comp x2
	ZZ2856106	P. W. B. Ass'y
		SEMICONDUCTORS
H581	HV0000212	Varistor SV-3A x2
H582	HV0000212	Varistor SV-3A x2
		MISCELLANEOUS
1118	285605610	Buffer x2
1104	285526701	Heat Sink x2
1106	281810104	Support x8
1108	281816007	Bracket x4
1116	285510101	Support x4
1129	51100314E	B. H. M. Screw x12
1128	51570306B	P. H. Tapt Screw x12
H001	HT314031A	Transistor 2SC1403 R or O
H002	HT314031A	Transistor 2SC1403 R or O
H003	HT314031A	Transistor 2SC1403 R or O
H004	HT314031A	Transistor 2SC1403 R or O
H005	HT314031A	Transistor 2SC1403 R or O
H006	HT314031A	Transistor 2SC1403 R or O

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
H007	HT314031A	Transistor 2SC1403 R or O
H008	HT314031A	Transistor 2SC1403 R or O
J021	YJ0500019	Socket
J022	YJ0500019	Socket
J023	YJ0500019	Socket
J024	YJ0500019	Socket
J025	YJ0500019	Socket
J026	YJ0500019	Socket
J027	YJ0500019	Socket
J028	YJ0500019	Socket
P700	YD2818010	P. W. B. Phono Amp.
	ZZ2856110	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)
R701	RT0547314	47KΩ
R702	RT0547314	47KΩ
R703	RT0547114	470Ω
R704	RT0547114	470Ω
R705	RT0533314	33KΩ
R706	RN1010514	1MΩ ±10% ¼W
R707	RN1010514	1MΩ ±10% ¼W
R708	RA0104012	Trimming 100KΩ (B)
R709	RA0104012	Trimming 100KΩ (B)
R710	RT0527314	27KΩ
R711	RT0527314	27KΩ
R712	RT0562114	620Ω
R713	RT0562114	620Ω
R714	RT0522514	2.2MΩ
R715	RT0522514	2.2MΩ
R716	RN1022514	2.2MΩ ±10% ¼W
R717	RN1022514	2.2MΩ ±10% ¼W
R718	RT0527414	270KΩ
R719	RT0527414	270KΩ
R720	RT0547314	47KΩ
R721	RT0547314	47KΩ
R722	RT0522214	2.2KΩ
R723	RT0522214	2.2KΩ
R724	RN0562414	620KΩ
R725	RN0562414	620KΩ
R726	RT0510414	100KΩ
R727	RT0510414	100KΩ
R728	RT0547314	47KΩ
R729	RT0547314	47KΩ
R730	RT0547014	47Ω
R731	RT0547014	47Ω
R732	RT0533214	3.3KΩ
R733	RT0533214	3.3KΩ
R734	RT0510114	100Ω
		CAPACITORS/PLUGS
C701	DF1747401	Film 0.47μF ±20% 50V
C702	DF1747401	Film 0.47μF ±20% 50V
C703	EE2260251	Electroly 22μF ±20% 25V
C704	EE2260251	Electroly 22μF ±20% 25V
C705	DD1540004	Ceramic 40PF ±5% 50V
C706	DD1540004	Ceramic 40PF ±5% 50V
C707	DD1104001	Ceramic 4PF ±0.5PF 50V
C708	DD1104001	Ceramic 4PF ±0.5PF 50V
C709	DF6556201	Film 5600PF ±5% 50V
C710	DF6556201	Film 5600PF ±5% 50V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C711	DF6516201	Film 1600PF ±5% 50V
C712	DF6516201	Film 1600PF ±5% 50V
C713	EA1070509	Electroly 100μF 50V
C714	DF1747401	Film 0.47μF ±20% 50V
C715	DF1747401	Film 0.47μF ±20% 50V
C716	DD1650001	Ceramic 50PF ±10% 50V
C717	DD1650001	Ceramic 50PF ±10% 50V
J701	YP1000099	Plug
J702	YP1000099	Plug
J703	YP1000099	Plug
J704	YP1000099	Plug
J705	YP1000099	Plug
J706	YP1000099	Plug
J707	YP1000099	Plug
		SEMICONDUCTORS
H701	HT313441E	Transistor 2SC1344E
H702	HT313441E	Transistor 2SC1344E
H703	HT313441D	Transistor 2SC1344D
H704	HT313441D	Transistor 2SC1344D
H705	HT304580R	Transistor 2SC458LG A(B)
H706	HT304580R	Transistor 2SC458LG A(B)
H707	HD2000206	Diode 1S1212
H708	HD2000206	Diode 1S1212
H709	HV0000206	Varistor VD1212
P800	YD2856005	P. W. B. Power Supply/SPK. Protector
	ZZ2856005	P. W. B. Ass'y
		RESISTORS
R801	GS1015105	150Ω ±10% 5W
R802	RC1033212	3.3KΩ ±10% ½W
R803	RC1010012	10Ω ±10% ½W
R804	GF0547012	47Ω ±5% ½W
R805	RT0547214	4.7KΩ ±5% ¼W
R806	RT0515214	1.5KΩ ±5% ¼W
R807	RC1039212	3.9KΩ ±10% ½W
R808	RT0527314	27KΩ ±5% ¼W
R809	RA0502013	Trimming 4.7KΩ (B)
R810	RT0556214	5.6KΩ ±5% ¼W
R811	RT0510314	10KΩ ±5% ¼W
R812	RT0522314	22KΩ ±5% ¼W
R813	RT0568214	6.8KΩ ±5% ¼W
R814	RT0522414	220KΩ ±5% ¼W
R815	RT0539314	39KΩ ±5% ¼W
R816	RJ1010101	100Ω ±10% 1W
R817	RC1056212	5.6KΩ ±10% ½W
R818	RC1056212	5.6KΩ ±10% ½W
R819	RC1056212	5.6KΩ ±10% ½W
R820	RC1056212	5.6KΩ ±10% ½W
		CAPACITORS
C801	EA4770631	Electroly 470μF+100% -10% 63V
C802	EA3370509	Electroly 330μF+100% -10% 50V
C803	EA4770169	Electroly 470μF+100% -10% 16V
C804	EA3370509	Electroly 330μF+100% -10% 50V
C805	EA3350509	Electroly 3.3μF+100% -10% 50V
C806	EA1060509	Electroly 10μF+100% -10% 50V
C807	EA2270109	Electroly 220μF+100% -10% 10V
C808	EA1070109	Electroly 100μF+50% -10% 10V
C809	EA2270631	Electroly 220μF+50% -10% 63V
C810	DK1810351	Ceramic 0.01μF+50% -10% 500V
C811	DK1810351	Ceramic 0.01μF+50% -10% 500V
C812	DK1810351	Ceramic 0.01μF+50% -10% 500V
C813	DK1810351	Ceramic 0.01μF+50% -10% 500V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
		SEMICONDUCTORS
H801	HD2000413	Diode SIB-01-02
H802	HD2000413	Diode SIB-01-02
H804	HD3002109	Diode BZ-140 (14V, 1W)
H806	HT309452A	Transistor 2SC945 Q or R
H807	HD3002309	Diode WZ-071 7.3V±0.4V 0.5W
H808	HT309452A	Transistor 2SC945 Q or R
H809	HT309452A	Transistor 2SC945 Q or R
H810	HT309452A	Transistor 2SC945 Q or R
H811	HD2000413	Diode SIB-01-02
H812	HD2000413	Diode SIB-01-02
H813	HV0000110	Diode RV
		MISCELLANEOUS
L801	LY4024003	Relay 24V DC 4Circuit
J801 I J820	YP1000097	Plug
36	62031650W	Lug
P850	YD2855012	P. W. B. AC Rectifier
	ZZ2856212	P. W. B. Ass'y
		SEMICONDUCTORS/CAPACITORS
H851	HD2000601	Diode UIIC
H852	HD2000601	Diode UIIC
H853	HD2000701	Diode U12C
H854	HD2000701	Diode U12C
C851	DF2722350	Film 0.022μF ±20% 400V
C852	DF2722350	Film 0.022μF ±20% 400V
		MISCELLANEOUS
J851 I J856	YP1000099	Plug
0403	285316050	Bracket K
0409	281816003	Bracket
0410	281816004	Bracket
0628	257710602	Bearing
0629	141511801	Spacer
0631	51040306A	F. H. M. Screw (3φ x 6) x2
36	138200503	Clamper x4
J040	YL0103021	Terminal 3P
0518	285610701	Sheet
0704	51100305A	B. H. M. Screw (3φ x 5) x6
0706	51102605A	B. H. M. Screw (2.6φ x 3) x6
0708	51102605A	B. H. M. Screw (2.6φ x 5) x2
0714	51100406A	B. H. M. Screw (4φ x 6) x4
0726	51570306B	P. H. Tapt Screw (3φ x 6) x2
0728	51042606S	F. H. M. Screw (2.6φ x 6) x6
1407	51570306B	P. H. Tapt Screw (3φ x 6)
S006	SR1406001	Rotary Switch Selector
R008	RT0510214	Resistor 1KΩ ±5% ¼W
R010	RT0510214	Resistor 1KΩ ±5% ¼W
R011	RT0510214	Resistor 1KΩ ±5% ¼W
S004	SR0802002	Rotary Switch Remocon
S005	SR1105001	Rotary Switch Mode
R009	RT0510214	Resistor 1KΩ ±5% ¼W

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J017	YJ0100055	Jack Headphone
R014	RJ1047001	Resistor 47Ω ±10% 1W
R015	RJ1047001	Resistor 47Ω ±10% 1W
J018	YJ0100055	Jack Headphone
R016	RJ1047001	Resistor 47Ω ±10% 1W
R017	RJ1047001	Resistor 47Ω ±10% 1W
M009	IM1104202	DC Meter FM Tuning
M010	IM1104203	Meter Signal (FM/AM)
C002	EA3360109	Capacitor Electroly 33μF 10V
J006	YJ0700006	Jack SQ Decoder
1221	285110450	Retainer K
1322	51100312S	B. H. M. Screw (3φ x 12) x2
0512	285310901	Shield
0513	282112001	Insulator
0429	281805101	Guide
0430	281910701	Sheet
0432	281926251	Pulley K
0731	51100305A	B. H. M. Screw (3φ x 5) x2
P550	YD2856004	P. W. B. Loudness Hi Fil.Main/ Remote Spk. Switch
	ZZ2856004	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)
R551	RT0524314	24KΩ
R552	RT0524314	24KΩ
R553	RT0524314	24KΩ
R554	RT0524314	24KΩ
R555	RT0556314	56KΩ
R556	RT0556314	56KΩ
R557	RT0556314	56KΩ
R558	RT0556314	56KΩ
R559	RT0547214	4.7KΩ
R560	RT0547214	4.7KΩ
R561	RT0547214	4.7KΩ
R562	RT0547214	4.7KΩ
R563	RT0510514	1MΩ
R564	RT0510514	1MΩ
R565	RT0510514	1MΩ
R566	RT0510514	1MΩ
R567	RJ1010102	100Ω ±10% 2W
R568	RJ1010102	100Ω ±10% 2W
R569	RJ1010102	100Ω ±10% 2W
R570	RJ1010102	100Ω ±10% 2W
		CAPACITORS
C551	DF1610301	Film 0.01μF ±10% 50V
C552	DF1610301	Film 0.01μF ±10% 50V
C553	DF1610301	Film 0.01μF ±10% 50V
C554	DF1610301	Film 0.01μF ±10% 50V
C555	DD1620101	Ceramic 200PF ±10% 50V
C556	DD1620101	Ceramic 200PF ±10% 50V
C557	DD1620101	Ceramic 200PF ±10% 50V
C558	DD1620101	Ceramic 200PF ±10% 50V
C559	DF1668201	Film 0.0068μF ±10% 50V
C560	DF1668201	Film 0.0068μF ±10% 50V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C561	DF1668201	Film 0.0068μF ±10% 50V
C562	DF1668201	Film 0.0068μF ±10% 50V
		MISCELLANEOUS
J551	YP1000094	Plug
J552	YP1000094	Plug
J553	YP1000094	Plug
J554	YP1000094	Plug
J555	YP1000094	Plug
J556	YP1000094	Plug
J557	YP1000094	Plug
J558	YP1000094	Plug
J559	YP1000094	Plug
J560	YP1000094	Plug
J561	YP1000094	Plug
S551	SP0404009	Push Switch
R012	RM0503050	Resistor Variable 50KΩ (B)
S007	SP0201010	Push Switch Power
G001	BF1040001	Printed Compo. 120Ω+0.1μF
P900	YD2853002	P. W. B. Balance Control
	ZZ2853122	P. W. B. Ass'y
		RESISTORS
R901	RT0533214	3.3KΩ ±5% ¼W
R902	RT0533214	3.3KΩ ±5% ¼W
R903	RT0533214	3.3KΩ ±5% ¼W
R904	RT0533214	3.3KΩ ±5% ¼W
R905	RX0203012	Variable 20KΩ (G)
R906	RX0203012	Variable 20KΩ (G)
R907	RS0203004	Variable 20KΩ (G)
		MISCELLANEOUS
J901	YP1000099	Plug
J902	YP1000099	Plug
J903	YP1000099	Plug
J904	YP1000099	Plug
J905	YP1000099	Plug
J906	YP1000099	Plug
J907	YP1000099	Plug
J908	YP1000099	Plug
J909	YP1000099	Plug
J910	YP1000099	Plug
R013	RG0204001	Resistor Variable 200KΩ (B)
P750	YD2856003	P. W. B. Tone Control
	ZZ2856003	P. W. B. Ass'y
		RESISTORS (All resistors are ±5% and ¼W, unless otherwise indicated.)
R751	RT0527314	27KΩ
R752	RT0527314	27KΩ
R753	RT0527314	27KΩ
R754	RT0527314	27KΩ
R755	RT0527314	27KΩ
R756	RT0527314	27KΩ
R757	RT0527314	27KΩ
R758	RT0527314	27KΩ
R759	RT0510414	100KΩ
R760	RT0510414	100KΩ
R761	RT0510414	100KΩ
R762	RT0510414	100KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R763	RT0539314	39KΩ
R764	RT0539314	39KΩ
R765	RT0539314	39KΩ
R766	RT0539314	39KΩ
R767	RU0204001	Variable 200KΩ (B)
R768	RU0204001	Variable 200KΩ (B)
R769	GC1082418	820KΩ ±10% 1/8W
R770	GC1082418	820KΩ ±10% 1/8W
R771	GC1082418	820KΩ ±10% 1/8W
R772	GC1082418	820KΩ ±10% 1/8W
		CAPACITORS
C751	DF1615301	Film 0.015μF ±10% 50V
C752	DF1615301	Film 0.015μF ±10% 50V
C753	DF1615301	Film 0.015μF ±10% 50V
C754	DF1615301	Film 0.015μF ±10% 50V
C755	DF1615301	Film 0.015μF ±10% 50V
C756	DF1615301	Film 0.015μF ±10% 50V
C757	DF1615301	Film 0.015μF ±10% 50V
C758	DF1615301	Film 0.015μF ±10% 50V
C759	DD1520101	Ceramic 200PF ±5% 50V
C760	DD1520101	Ceramic 200PF ±5% 50V
C761	DD1520101	Ceramic 200PF ±5% 50V
C762	DD1520101	Ceramic 200PF ±5% 50V
S002	SP0404002	Push Switch Tape Mon
0422	285627401	Reflector
0426	285327101	Holder
0722	51570305B	P. H. Tapt Screw (3φ x 5) x2
0724	51570305B	P. H. Tapt Screw (3φ x 5) x2
0720	51570306B	P. H. Tapt Screw (3φ x 6) x2
0424	281827101	Holder
J031	YJ0800019	Jack Lamp Holder
J032	YJ0800019	Jack Lamp Holder
J033	YJ0800019	Jack Lamp Holder
J034	YJ0800019	Jack Lamp Holder
J035	YJ0800019	Jack Lamp Holder
0716	51570305B	P. H. Tapt Screw (3φ x 5) x5
M001	IN1008007	Lamp
M002	IN1008007	Lamp
M003	IN1008007	Lamp
M004	IN1008007	Lamp
M005	IN1008007	Lamp
R020	RC1002212	Resistor 2.2Ω ±10% ½W
R018	RC1018012	Resistor 18Ω ±10% ½W
P950	YD2856006	P. W. B. Lamp
	ZZ2856006	P. W. B. Ass'y
		MISCELLANEOUS
M951	IN1006302	Lamp 6.3V 180mA
M952	IN1012011	Lamp 12V 40mA
M953	IN1006301	Lamp 6.3V 40mA
M954	IN1006301	Lamp 6.3V 40mA
M955	IN1006301	Lamp 6.3V 40mA
M956	IN1006301	Lamp 6.3V 40mA
M957	IN1006301	Lamp 6.3V 40mA
M958	IN1006301	Lamp 6.3V 40mA

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J951	YP1000094	Plug
J952	YP1000094	Plug
J953	YP1000094	Plug
J954	YP1000094	Plug
J955	YP1000094	Plug
J956	YP1000094	Plug
J957	YP1000094	Plug
J958	YP1000094	Plug
J959	YP1000094	Plug
J960	YP1000094	Plug
J961	YP1000094	Plug
0414	281827103	Holder
J036	YJ0800019	Jack Lamp Holder
J037	YJ0800019	Jack Lamp Holder
0718	51570305B	P. H. Tapt Screw (3φ x 5) x2
M006	IN1008007	Lamp
M007	IN1008007	Lamp
0416	281826250	Pulley K
0731	51100305A	P. H. M. Screw (3φ x 5)
0413	281827402	Reflector
0730	51100305A	B. H. M. Screw x2
J038	YL0103018	Terminal 3P
R006	RT0510314	Resistor 10KΩ ±5% ¼W
J003	YL0103001	Terminal 3P Lug
L006	LC1332002	Choke Coil 3μH
C001	DK1710301	Capacitor Ceramic 0.01μF ±20%
L007	LC1332002	Choke Coil 3μH
R007	RC1039012	Resistor 39KΩ ±10% ½W
C003	DK1710301	Capacitor Ceramic 0.01μF ±20%
J005	YL0104001	Terminal 4P Lug
1236	138200503	Clamper x10
D	281810340	Pointer Ass'y
M008	IN1008018	Lamp
0531	281810301	Pointer
0532	281810302	Pointer
0533	281805301	Cover
F	120200640	String Ass'y
0528	120225801	Hook
0529	72080802A	String x120
1214	285526703	Heat Sink
H803	HT403314A	Transistor 2SD331C, D, E, F
H805	HT403311D	Transistor 2SD331 (D)
G	281915940	Drum Ass'y
1015	281915901	Drum
1016	71101569M	Spring
1030	51650304D	Set Screw x2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
B	281815440	Knob Ass'y x2
0128	281815404	Knob x2
0129	71400149Q	Spring x2
C	281815441	Knob Ass'y x2
0131	281815405	Knob x2
0132	71400159Q	Spring x2
A	285606340	Frame Ass'y
0103	285606301	Escutcheon
0104	285340101	Frame
0105	285615801	Window
0106	281825905	Bush x9
0107	273125901	Bush x2
0108	285025901	Bush x3
0109	285305301	Cover
E	285327340	Fly Wheel Ass'y
0603	257706302	Escutcheon x2
0604	257727301	Fly Wheel
0605	285311201	Shaft
0610	53110603E	Hexagon Nut
0611	54040602N	Spring Washer
0612	54020601E	Flat Washer
H	285616040	Rear Panel Ass'y
0803	285616001	Bracket
0809	281805501	Collar x2
0811	285116007	Bracket
0812	318827102	Holder
0828	53228059E	Nut
0903	51100308S	B. H. M. Screw (3φ x 8) x20
0905	53110303E	Hexagon Nut (3φ) x20
0907	55060307F	T. R. Rivet x4
0909	54050300R	T. L. Washer OR x4
0913	51100306S	B. H. M. Screw x6
0915	53110403E	Hexagon Nut
0916	62041760W	Lug
0917	54020401E	Flat Washer P
0918	54050400R	T. L. Washer OR
0920	51100312S	B. H. M. Screw x2
0921	53110303E	Hexagon Nut x2
0922	51100306S	B. H. M. Screw (3φ x 6) x2
0934	51100306S	B. H. M. Screw (3φ x 6) x2
0936	53110303E	Hexagon Nut (3φ) x2
J001	YT0304003	Terminal FM-AM Ant
J002	YT0201006	Terminal Quadradial
J007	YT0204003	Terminal Phono Tape In
J008	YT0208002	Terminal 8P
J009	YT0208002	Terminal Front In 8P
J010	YT0204003	Terminal Tape Out
J011	YT0204003	Terminal Tape Out
J012	YT0304003	Terminal Spk. 4P
J013	YT0304003	Terminal Spk. 4P
J014	YT0304003	Terminal Spk. 4P
J015	YT0304003	Terminal Spk. 4P
J016	YL0301021	Terminal Ground
J019	YJ0400018	Jack AC Outlet
J020	YJ0400018	Jack AC Outlet
J029	YJ1100012	Jack Din

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
S001	SS0202017	Slide Switch FM Att.
0814	145525903	Bush
0818	145525903	Bush
0820	257816052	Bracket K
0826	281927103	Holder
R004	RK0254002	Resistor Variable 250KΩ (B)
1405	62031650W	Lug
C004	DK1710301	Capacitor Ceramic 0.01μF ±20%
C005	DK1710301	Capacitor Ceramic 0.01μF ±20%
1405	62031650W	Lug
R019	RC1022512	Resistor 2.2MΩ ±10% ½W
1405	62031650W	Lug
R001	RC1068012	Resistor 68Ω ±10% ½W
R002	RC1008212	Resistor 8.2Ω±10% ½W
R003	RC1068012	Resistor 68Ω ±10% ½W
L002	LB3007526	Balun Coil FM 75Ω – 300Ω
0924	51100310S	B. H. M. Screw x2
0925	53110303E	Hexagon Nut x2
0927	51100308S	B. H. M. Screw x2
0928	53110303E	Hexagon Nut x2
0929	54050300R	T. L. Washer OR x2
0931	51100306S	B. H. M. Screw x3
0932	54040302N	Spring Washer x3
1405	62031650W	Lug
W001	YC0240010	AC Cord
J030	YJ0800012	Jack Fuse Holder
L001	LF1120023	AM Ant Coil
W002	YW2856001	Wire Material
W003	YX2856001	Wire Material
1403	54050300R	T. L. Washer OR x10
1405	62031650W	Lug x5
1407	51570306B	P. H. Tapt Screw x4
1009	51570306B	P. H. Tapt Screw x15
1426	285110101	Support x2
1427	53110303E	Hexagon Nut x2
1428	54040302N	Spring Washer x2
1429	51100306S	B. H. M. Screw x2
1431	281805601	Buffer
0905	51100308S	B. H. M. Screw x2
0903	53110303E	Hexagon Nut x2
L003	TS6140301	Transformer
C006	EC9080501	Capacitor Electroly 9000μF 50V
C007	EC9080501	Capacitor Electroly 9000μF 50V
C008	EC9080501	Capacitor Electroly 9000μF 50V
C009	EC9080501	Capacitor Electroly 9000μF 50V
J004	YL0103001	Terminal 3P Lug
C101	CA4330001	Capacitor Variable
1203	285610550	Chassis K

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
1212	285610901	Shield
1216	285610902	Shield
1218	285610102	Support x4
1226	281816009	Bracket x2
1230	138200503	Clamper
1232	273025901	Bush x2
1234	285310102	Support x2
1235	54040402N	Spring Washer x2
0134	275905701	Leg x4
0313	51100410A	B. H. M. Screw x4
0314	54020401A	Flat Washer P x4
0315	54040402A	Spring Washer x4
1303	51570306B	P. H. Tapt Screw x8
1304	51570306B	P. H. Tapt Screw x8
1305	51570306B	P. H. Tapt Screw x10
1306	51570305B	P. H. Tapt Screw x4
1307	51570306B	P. H. Tapt Screw x4
1308	51570306B	P. H. Tapt Screw x2
1309	51570306B	P. H. Tapt Screw x3
1311	51100306S	B. H. M. Screw x4
1312	51100306S	B. H. M. Screw x4
1313	51100306S	B. H. M. Screw x4
1314	51100306S	B. H. M. Screw x4
1315	51100306S	B. H. M. Screw x4
1316	51100306S	B. H. M. Screw x4
1317	51100306S	B. H. M. Screw x4
1318	51100306E	B. H. M. Screw
1323	51100304S	B. H. M. Screw x2
1325	51100512A	B. H. M. Screw x4
1326	53110501A	Hexagon Nut x4
1327	54020501A	Flat Washer P x8
1328	54040502A	Spring Washer x4
1331	51060306E	P. H. M. Screw x4
1003	273010950	Shield K
1007	273010902	Shield
1009	273010903	Shield x3
1011	281916008	Bracket x2
1013	281905102	Guide
1018	138200503	Clamper
1026	51100306S	B. H. M. Screw x5
1027	51100305E	B. H. M. Screw x3
1028	51100305E	B. H. M. Screw x2
1029	51100305A	B. H. M. Screw x4
0202	285626501	Indicator
0911	51100306S	B. H. M. Screw x2
0211	257886101	Label
0212	257886102	Label
0213	257886103	Label
0214	250626506	Indicator
0222	285386101	Label
0112	285325701	Lid
0113	257711803	Spacer x4
I	285325740	Bottom Cover Ass'y
0115	285325750	Lid K
9336	285612001	Insulator
0120	285015401	Knob x3
0122	281815401	Knob x8

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
0124	281815402	Knob
0126	281815403	Knob x5
0535	286726901	Protector
0508	285326901	Protector
0510	285326902	Protector
0523	281912002	Insulator
0515	285630201	Dial
0710	51570306B	P. H. Tapt Screw (3φ x 6) x2
0712	51570306B	P. H. Tapt Screw (3φ x 6) x2
0733	51570306B	P. H. Tapt Screw (3φ x 6) x2
0522	285312001	Insulator
0303	51122608E	T. H. M. Screw x4
0305	51100406S	B. H. M. Screw x9
0309	51100406S	B. H. M. Screw x4
0310	54020401S	Flat Washer P x4
1622	952281501	Serial No Card x4
F001	FS1050003	Fuse 5A (UL) 3AG
0606	285011202	Shaft
0607	54040402N	Spring Washer
0616	285310650	Bearing K

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
0620	51640410D	Set Screw C. P.
0621	54040402N	Spring Washer
0622	53110403E	Hexagon Nut
0624	51100306A	B. H. M. Screw x2
0625	54050300R	T. L. Washer OR x2
1502	285685101	Instructions
1509	285685601	Schematic Diagram
1517	281885104	Instructions
1518	281885108	Instructions
1523	257785450	Guarantee Card K
1602	285680101	Packing Case
1603	285680111	Packing Case
1608	285380301	Partitioner
1609	285380302	Partitioner
1612	901483838	Polyethylen Bag
1614	901302501	Polyethylen Bag x2
1617	102980401	Sleeve
1619	273182101	Silicagel x2
1620	281905601	Buffer
0118	285125703	Lid
0135	512160595	Screw x4
1631	ZA0200007	Ext. Antenna

TECHNICAL SPECIFICATIONS

FM SECTION:

Tuning Frequency Range ..... 88 – 108MHz
IHFM Usable Sensitivity 2.3μV
IHF Selectivity 60dB
Capture Ratio 1.6dB
Image Rejection Ratio at 106MHz 70dB
Signal to Noise Ratio (Mono) 70dB
Signal to Noise Ratio (Stereo) 60dB
Total Harmonic Distortion (Mono) 0.15%
Total Harmonic Distortion (Stereo) 0.3%
Frequency Response (ref. 75μ sec. de-emphasis) ..... 50Hz – 15KHz ± 1dB
Stereo Separation at 1KHz 42dB
Quadradial Output (400Hz 75KHz dev.) 300mV

AM SECTION:

Tuning Frequency Range ..... 540 – 1605KHz
Usable Sensitivity 20μV
Selectivity 26dB
Image Rejection Ratio at 1400KHz 70dB
Signal to Noise Ratio 43dB
Frequency Response (–3dB) ..... 50Hz – 4KHz
Total Harmonic Distortion 1%

AUDIO SECTION:

Input Impedance – Low level input	Phono 47 Kohm
– High level input	100 Kohm
Input Sensitivity – Phono	1.8mV for 30W output
– High level	180mV for 30W output
Frequency Response	1.0dB, 20Hz to 20KHz at 1W output
Intermodulation Distortion	Less than 0.3% at rated power output from 20Hz to 20KHz with all channels driven (S.M.P.T.E.)
Total Harmonic Distortion	Less than 0.3% at rated power output 20Hz to 20KHz with all channel driven
Damping Factor	Greater than 45 into 8 ohms load
Total Noise – From magnetic phono input to power amp output	Less than 2μV equivalent input at rated output into 8 ohms load
Volume Tracking	Within 4dB
Rated Continuous (RMS) Output per channel, all channels operating simultaneously	30W at 4 ohms 30W at 8 ohms 18W at 16 ohms
Comparable Total Music Power	180W at 8 ohms

GENERAL:

Power Requirements	120V AC 50 to 60Hz
Power Consumption – at rated power output, all channels	420 watts
– idling (no signal)	30 watts
Dimensions – Panel Width	17 21/64 inches
– Panel Height	5 25/64 inches
– Depth	14 3/8 inches
Weight – Unit alone	38.5 lbs
– Packed for Shipment	49.5 lbs

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

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