service manual 18

marantz

model eighteen

Stereophonic Receiver

marantz

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LIST OF ILLUSTRATIONS

INTRODUCTION

This service manual was prepared for use by Authroized Warranty Stations and contains service data for the Marantz Model 18 Stereophonic Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Receiver. A brief functional description and associated block diagram, furnished in the Operating Instruction Manual for the Model 18 Receiver, provides functional data about the Receiver as an aid in this understanding.

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

SERVICE NOTES

The Service Notes that follow identify some of the servicing problems that have been encountered in the field and their remedies. In most cases, the remedies consist of a modification to the Model 18 Receiver which has already been implemented in the normal production of the receiver. As a normal routine, all Model 18 Receivers requiring service should be inspected to determine if the modifications have been implemented and if not, the receiver should be modified in accordance with the Service Note.

PROLONGING CRT LIFE

Maintaining the display on the screen of the cathode ray tube for prolonged or excessive periods or with excessive brightness will eventually cause the phosphor coating on the face of the CRT to develop burned areas. To extend the life of the CRT it is recommended that the trace is removed from the screen when not actually being viewed. This may be accomplished easily by offsetting the trace with vertical centering control.

LOOSE SUBASSEMBLY CONNECTING PLUGS

The phono plugs which are used to make the input and output signal connections to the Antenna Strip, FM Front End, IF, Limiter, and Detector subassemblies have been found to come loose occasionally during shipment of the receiver. This will cause a loss of FM operation. Check these phono plugs when unpacking the receiver. To prevent their coming loose, apply a small spot of solder to the plug shield to hold it securely in its socket while still permitting easy removal.

LOCATION OF PHONO INPUT GROUND WIRE

Inspect the underside of the main chassis at the PHONO jacks to determine if the black phono ground wire runs inside the lip of the back panel near the ac cord and fuseholder. If it does, cut the wire at the ground bus and re-dress the lead close to the chassis and away from the ac cord. Re-solder the ground wire to the ground bus.

REPLACEMENT OF 12-VOLT ZENER REGULATORS

In early units Zener diodes CR10 and CR11 were prone to an internal breakdown. For improved reliability and performance they should be replaced. Failure of these diodes will result in loss of FM operation, scope display, or if the failure is in the +12-volt supply (CR10), a loss of output on both channels.

The old type Zener diodes are identified by a blue band, and are wired to a terminal strip adjacent to the power transformer on the top of the main chassis. Replace these diodes with the new type (identified by a grey band) and re-locate them to the terminal strip adjacent to the limiter assembly and on bottom of the main chassis. (This is electrically the same point.)

REPLACEMENT OF POWER AMPLIFIER REFERENCE DIODES

For improved reliability reference diodes CR17 and CR18 should be replaced with a new type. The new diodes are identified by the manufacturer's name (B & T) printed on them and by their larger size 5/32 X 1/2 X 1/2 inch). These diodes are located in the power amplifier section adjacent to Bias adj pots R26 and R27. (Refer to figure 3.) After installing the new diodes. Readjust the power amplifier bias as described in the adjustment procedures.

LOW FILTER 'POPS'

Some receivers develop a loud 'Pop' in the loudspeakers when the LO FILTER button is operated. This 'Pop' is not affected by the VOLUME control setting. To correct this, install two (2) 100K, 10%, 1/4 watt resistors (Marantz Part No. 26-1055), one between pins 9H and 9L, the other between pins 9C and 9W on the Hi-Lo Filter board (figure 20).

The above procedure should reduce the 'Pop' to a tolerable level. If it does not, replace capacitors C810 and C814 located on the Tone Amplifier board (figure 18) in addition to the installation of the above resistors.

Note

Inspect the Tone Amplifier board for cracked solder connections at the BASS and TREBLE control terminals. These can result in intermittent operation of the receiver.

When re-assembling the Tone Amplifier board on the main chassis, do not reinstall the screw removed from the rear of the board.

CORRECTION OF POINTER SPRING-BACK

Problems of pointer spring-back or mechanical calibration shift may be evidenced in some receivers. This can be corrected by providing a solid reference for mechanical zero in the dial assembly. Restring the dial assembly as shown in figure 1. Eliminate the START spring and anchor the dial cord directly to the hub using a noose. This provide the reference that is required.

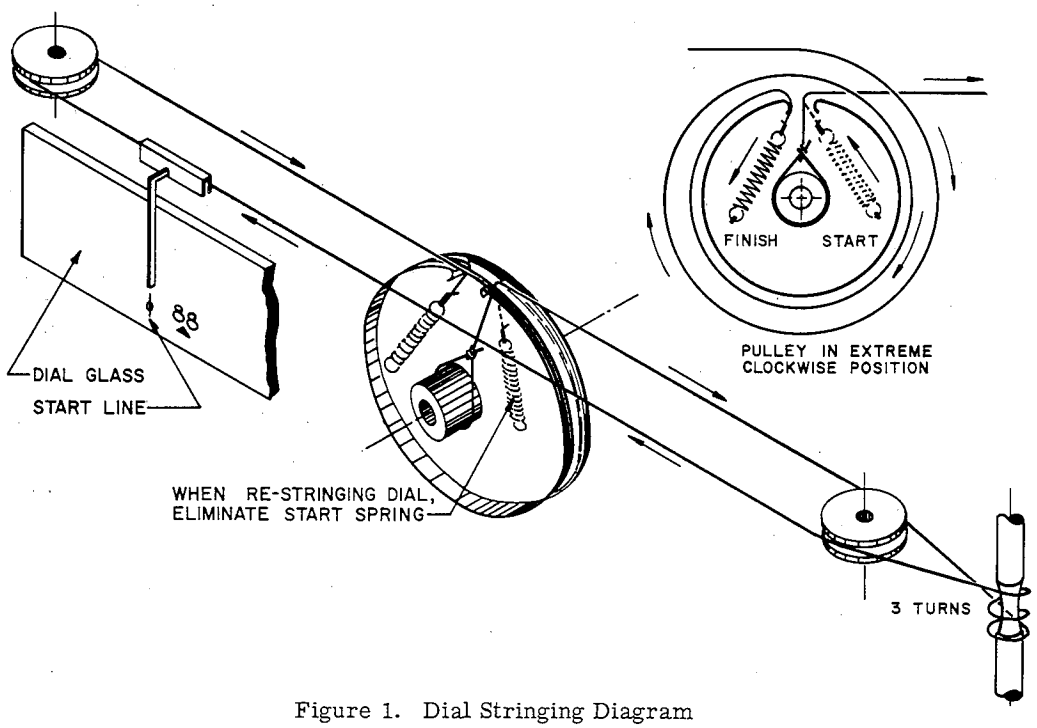


Figure 1. Dial Stringing Diagram

ULTRASONIC OSCILLATION

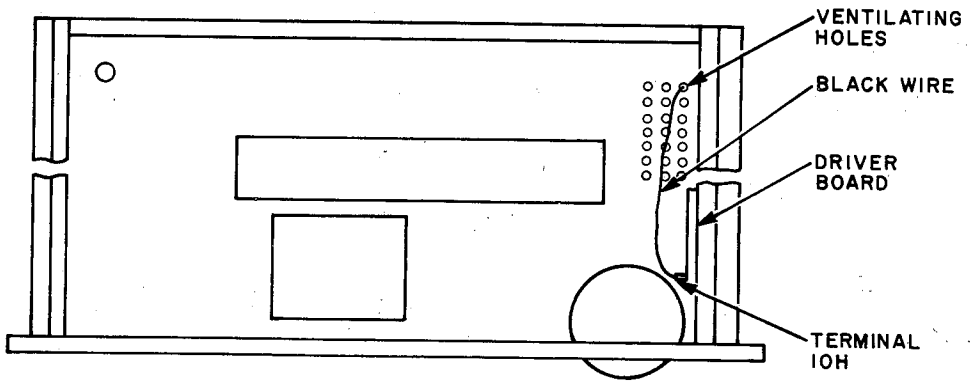
Problems of ultrasonic oscillation in the audio section may be evidenced in some receivers. A modification to correct this condition can be identified by inspecting the black ground wire connected to terminal 10H of the right-hand side driver board. The modification has been implemented if this wire runs along the right-hand side of the main chassis (looking at the top of the chassis with the front panel facing you). If the black ground wire runs toward the left and along the front of the main chassis, the modification is required.

1. Locate the grounded end of the black wire at the bottom of the main chassis. The grounding point will be near the signal input jacks on the left rear of the chassis.

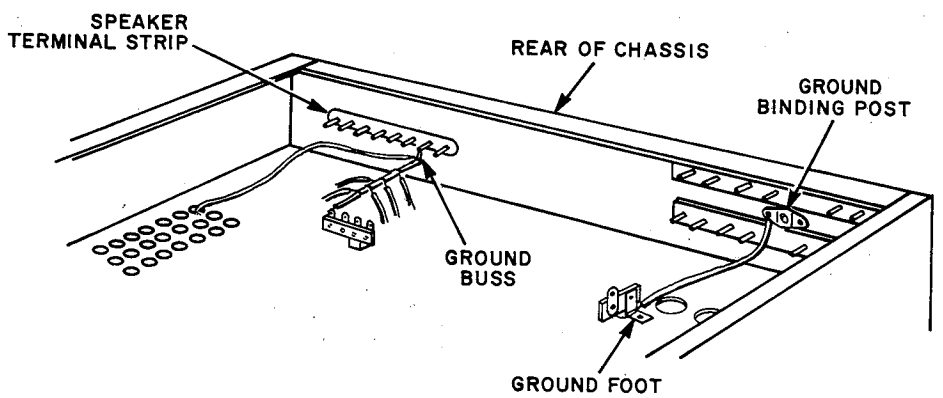
2. Disconnect this wire from ground and pull it out back to terminal 10H at the driver board.

3. Run this wire along the right side of the chassis to the rear and pass it through one of the ventilating holes to the bottom of the main chassis. (See A, figure 2.) Cut off the excess wire and solder it to the ground bus at the ground wire connection to the speaker terminal strip. (See B, figure 2.)

4. Connect a wire from the lug underneath the ground binding post (B, figure 2) to the grounded foot of the terminal strip just in front. This completes the modification. Install the covers.



A. Main Chassis Top View



B. Main Chassis Bottom View

Figure 2. Ultrasonic Oscillation Modification Wiring

ADJUSTMENTS

Note

Before proceeding with the following adjustments:

1. Make sure the dial pointer coincides with the index mark below 88 MHz on the dial.

2. The scope display should be calibrated. To do so, depress the TAPE MONITOR and AUDIO DISPLAY push button switches. Note that the scope trace will be reduced to a dot. Adjust the centering controls to bring the dot to the center of the small circle. Release the TAPE MONITOR and AUDIO DISPLAY push button switches. The oscilloscope is now properly calibrated for use as an accurate tuning indicator.

FM FRONT END LOCAL OSCILLATOR ADJUSTMENTS. (See figure 3.)

1. Set FM signal generator to 106 MHz. Tune receiver to the same frequency and adjust high end adj trimmer C114 until the dial pointer coincides with the 106 marking on the dial.

2. Set FM signal generator to 90 MHz. Tune receiver to the same frequency and adjust low end adj coil L108 until the dial pointer coincides with the 90 MHz marking on the dial.

3. Repeat procedure until no further improvement can be made between the low end and the high end.

IF ALIGNMENT

Alignment of the IF Assembly should not be attempted in the field. If improper alignment is suspected, replace the assembly and return the defective assembly to the factory.

NOISE LEVEL DISPLAY ADJUSTMENT. (See figure 3.)

The scope should display the interstation noise just above and almost touching the bottom horizontal indicator line. If not, adjust the noise level adj R327. Note that the noise level control when rotated will move the interstation noise vertically up or down.

VERTICAL GAIN ADJUSTMENT. (See figure 3.)

Connect the FM generator to the FM ANTENNA terminal strip. Set the generator to 106 MHz. Tune the receiver to the same frequency. Adjust the output of the generator to provide 100,000 microvolts. The tuning trace should reach the top horizontal line of the scope tuning indicator. If the trace is too high or too low, adjust the vertical gain adj R325. Alternately repeat the noise level display and vertical gain adjustments until no further adjustment is required (both fall into their proper place).

MUTING CONTROL ADJUSTMENT. (See figure 3.)

Set the FM signal generator to 106 MHz. Tune the receiver to the same frequency. Reduce the output of the generator to provide 10 microvolts at the receiver, using a 400 Hz modulation. Adjust muting control R328 until muting is achieved at the 10-microvolt level. This may also be monitored on the oscilloscope of the receiver by depressing the AUDIO DISPLAY button. When muting occurs the audio display will be reduced on the oscilloscope.

DETECTOR ALIGNMENT

Alignment of the Detector Assembly should not be attempted in the field. If improper alignment is suspected, replace the assembly and return the defective assembly to the factory.

MPX OSC AND MATRIX ADJUSTMENTS. (See figures 3 and 12.)

Note

A proper stereo multiplex and RF FM signal generator is required to make the separation adjustments on the MPX Oscillator and Matrix boards. Perform the following adjustments in the sequence given.

1. Adjust STEREO SEP control R517 on MPX oscillator board at 500 Hz for maximum separation.
2. Adjust coil L503 on the MPX oscillator board at 15 KHz for maximum separation.
3. Adjust STEREO SEP control R621 on multiplex matrix board at 15 KHz for maximum separation.
4. Repeat all three (3) adjustments until no further improvement in separation can be made.

HORIZONTAL GAIN ADJUSTMENT. (See figures 3 and 12.)

Tune the receiver off station until only interstation noise is heard. The noise trace should just barely be touching the top of the base line of the scope. Adjust the horizontal gain control R505 until the trace is approximately a half inch wide.

STEREO THRESHOLD ADJUSTMENT. (See figures 3 and 12.)

If a stereo Multiplex generator is available, STEREO THRESHOLD control R512 is adjusted so that the stereo switch is triggered at 6% pilot level. To adjust the STEREO THRESHOLD control without special test equipment, adjust STEREO THRESHOLD control R512 until the stereo indicator light on the front panel turns on. When tuning off a stereo station the stereo indicator light should go off.

SCOPE DISPLAY ADJUSTMENTS. (See figures 3 and 24.)

The only adjustments that may be required on the scope display board are the FOCUS and INTENSITY controls. To adjust focus, depress the TAPE MONITOR and AUDIO DISPLAY push buttons and adjust focus adj control R1216 until the dot is at its sharpest point. With the TAPE MONITOR and AUDIO DISPLAY push buttons depressed, adjust intensity adj control R1223 until the dot is barely visible in a normally lit room.

PHONO AMPLIFIER BIAS ADJUSTMENTS. (See figures 3 and 16.)

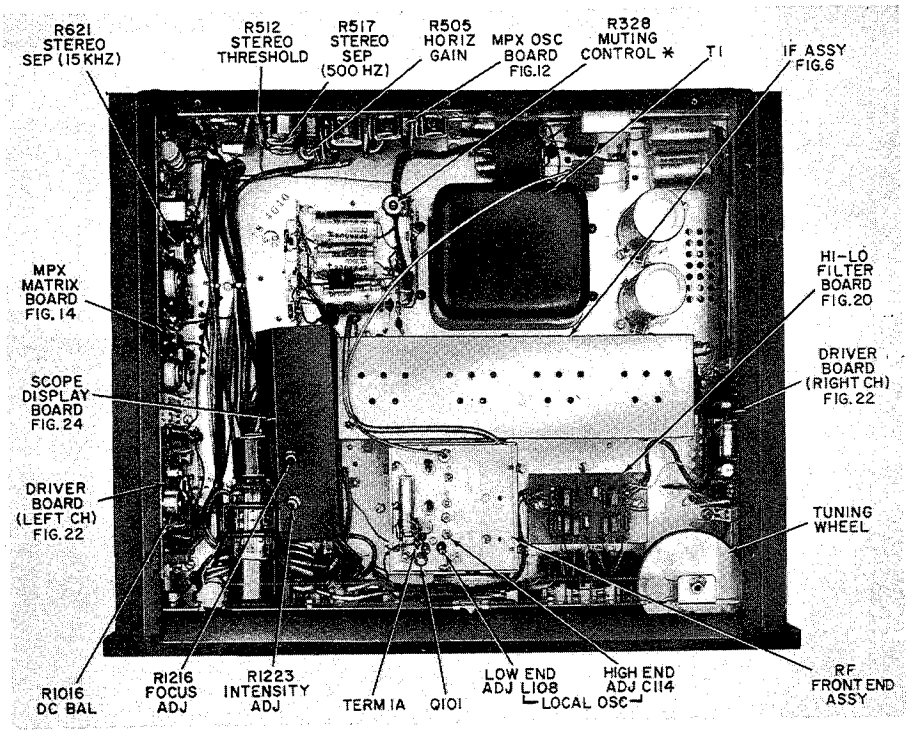
To adjust BIAS control R702, connect a VTVM across resistor R716. Adjust the bias control until the meter reads between 17 and 19 volts dc. To adjust BIAS CONTROL R724 repeat the above procedure but connect the VTVM across resistor R721. The reading across R721 should be between 17 and 19 volts dc.

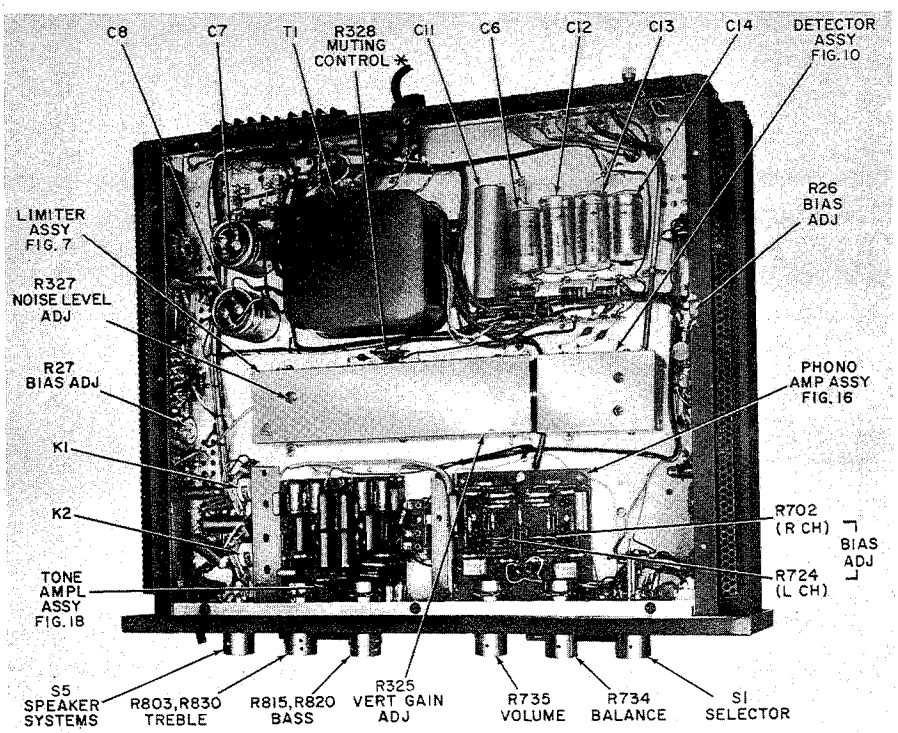
DRIVER DC BALANCE ADJUSTMENT. (See figures 3 and 22.)

Connect a VTVM across the SPEAKER SYSTEMS terminal output for the channel being tested. Set the voltage range on VTVM to the lowest scale possible, preferably 1.5v full scale deflection. Adjust the DC BALANCE control R1016 until there is zero dc voltage at the speaker terminal strip. Repeat the procedure for the alternate channel.

POWER AMPLIFIER BIAS ADJUSTMENT. (See figure 3.)

To adjust the left channel BIAS adj control R26 connect a volt meter across resistor R28. Adjust the BIAS until the meter reads 80 millivolts (.08v). To adjust the right channel BIAS control, connect the meter across R43 and adjust BIAS adj control R27. The reading here should be the same as for the left channel





*on early units R328 on Limiter Assy; on later units R328 on top of chassis.

Figure 3. Main Chassis Adjustment and Component Locations

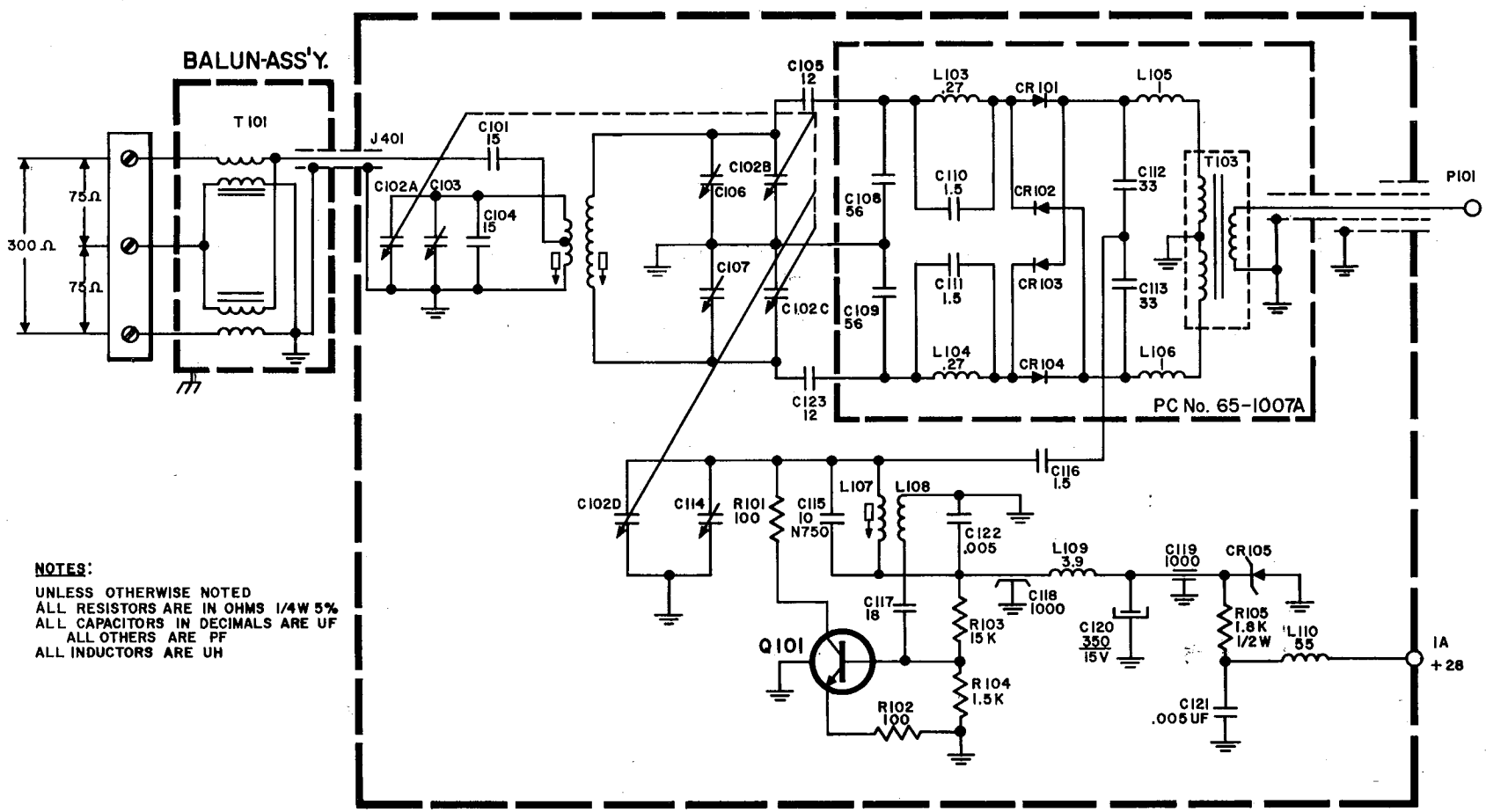


Figure 4. FM Front End Assembly 11-1020, Schematic Diagram

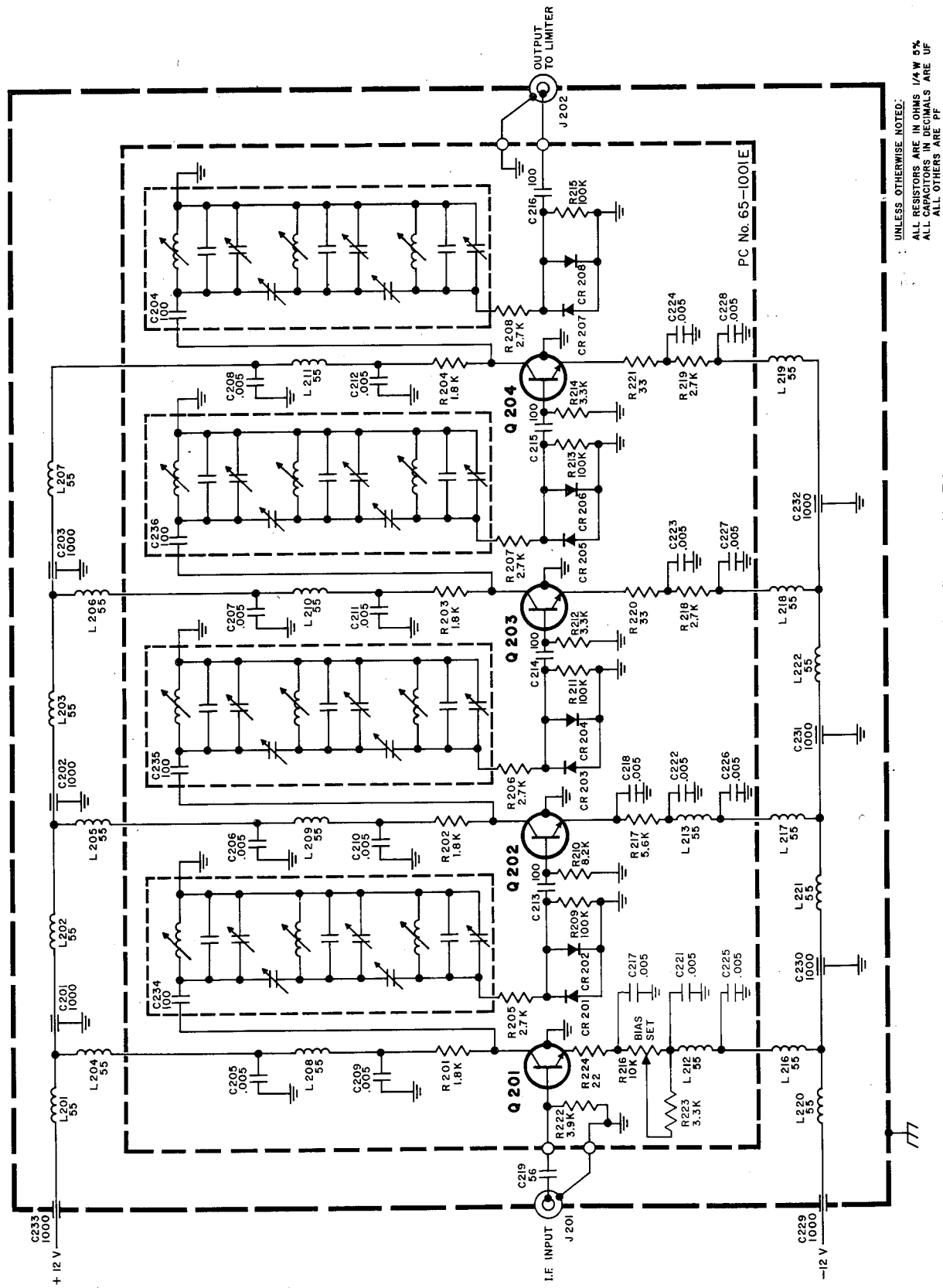
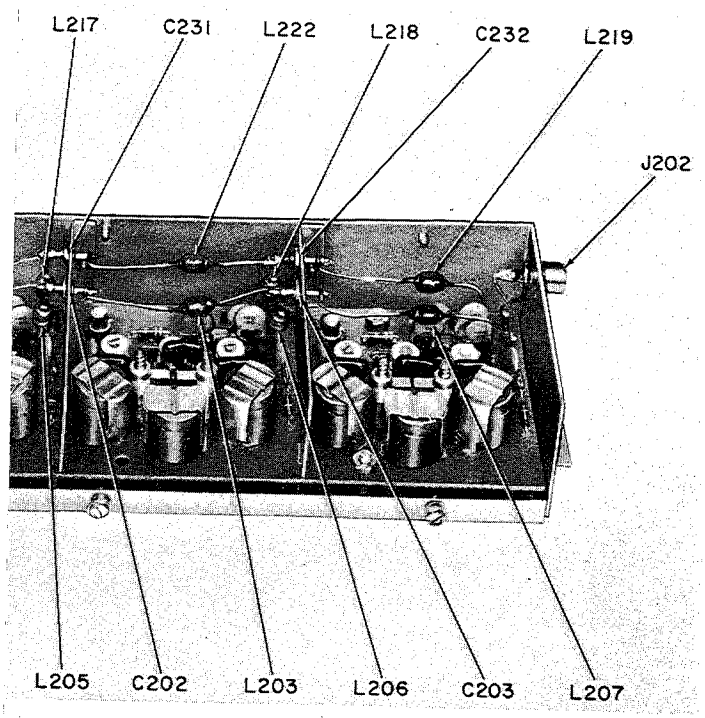


Figure 5. IF Assembly 11-1021, Schematic Diagram



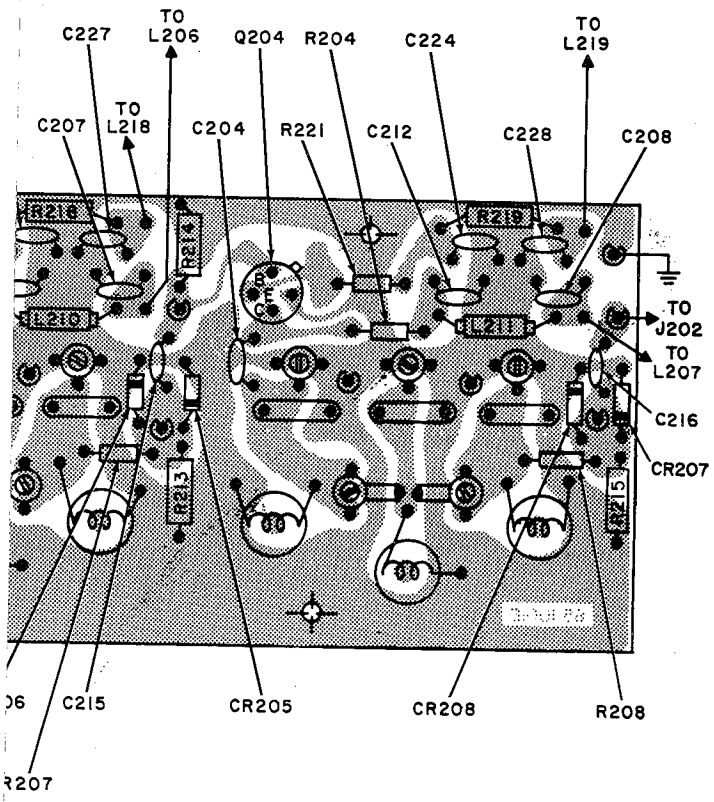
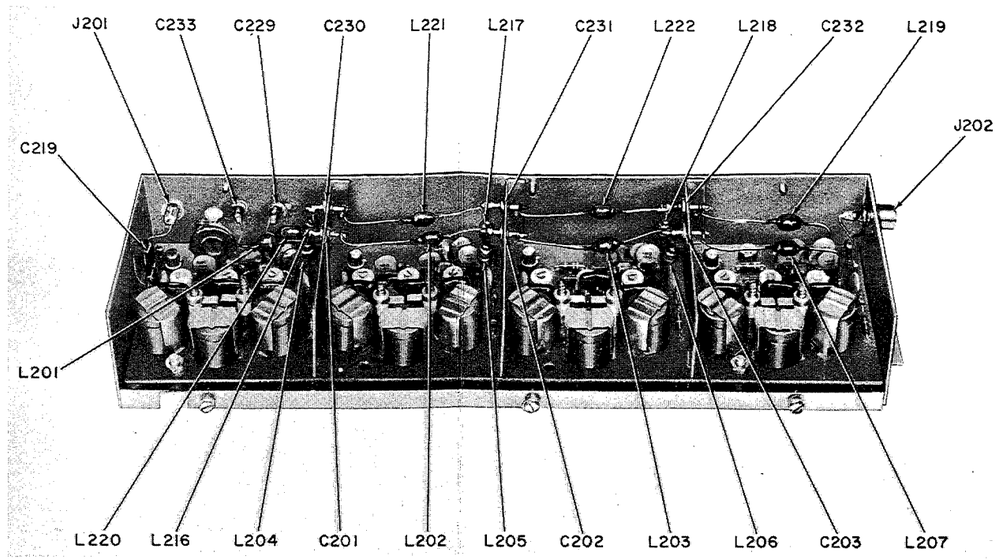


Figure 6. IF Assembly 11-1021, Component Locations

	B	E	C
Q201	-0.2	-1	5.5
Q202	-0.7	-1	9
Q203	-0.2	-1.2	4.5
Q204	-0.4	-1.3	5

Voltages are:

1. Dc ±10 %
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.



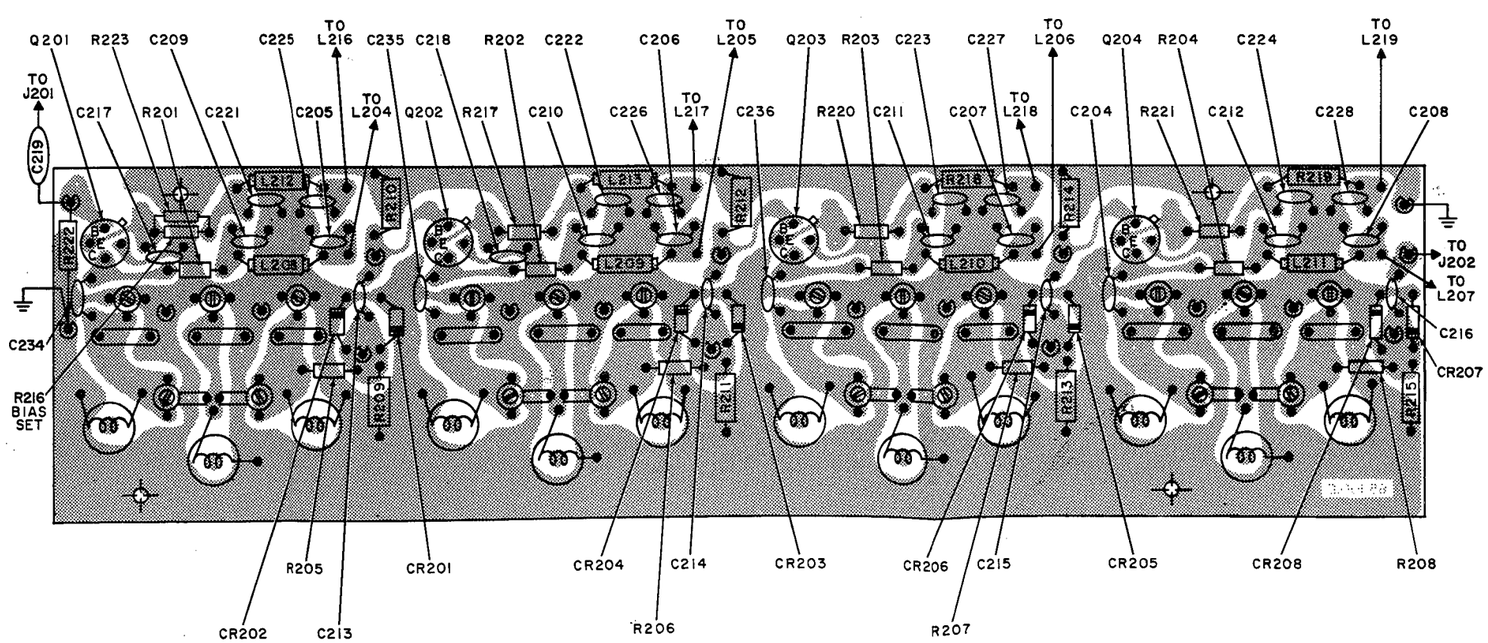
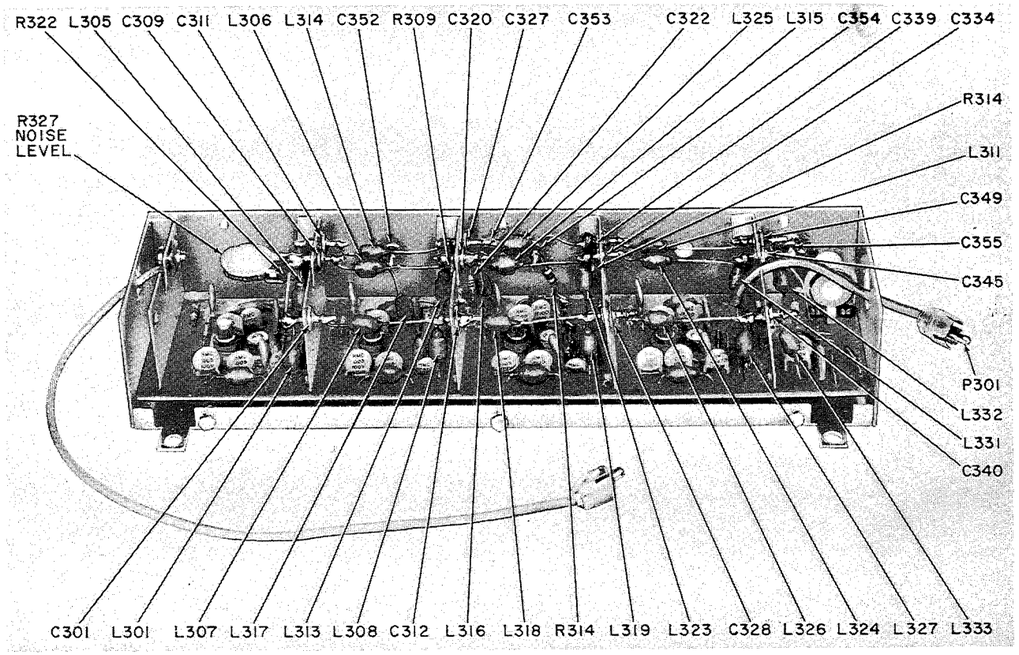


Figure 6. IF Assembly 11-1021, Component Locations

	B	E	C
Q301	-3	-4	12
Q302	-0.45	-1.1	12
Q303	-0.45	-1.2	12
Q304	-0.2	-0.3	12
Q305	-0.5	12	-12

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.



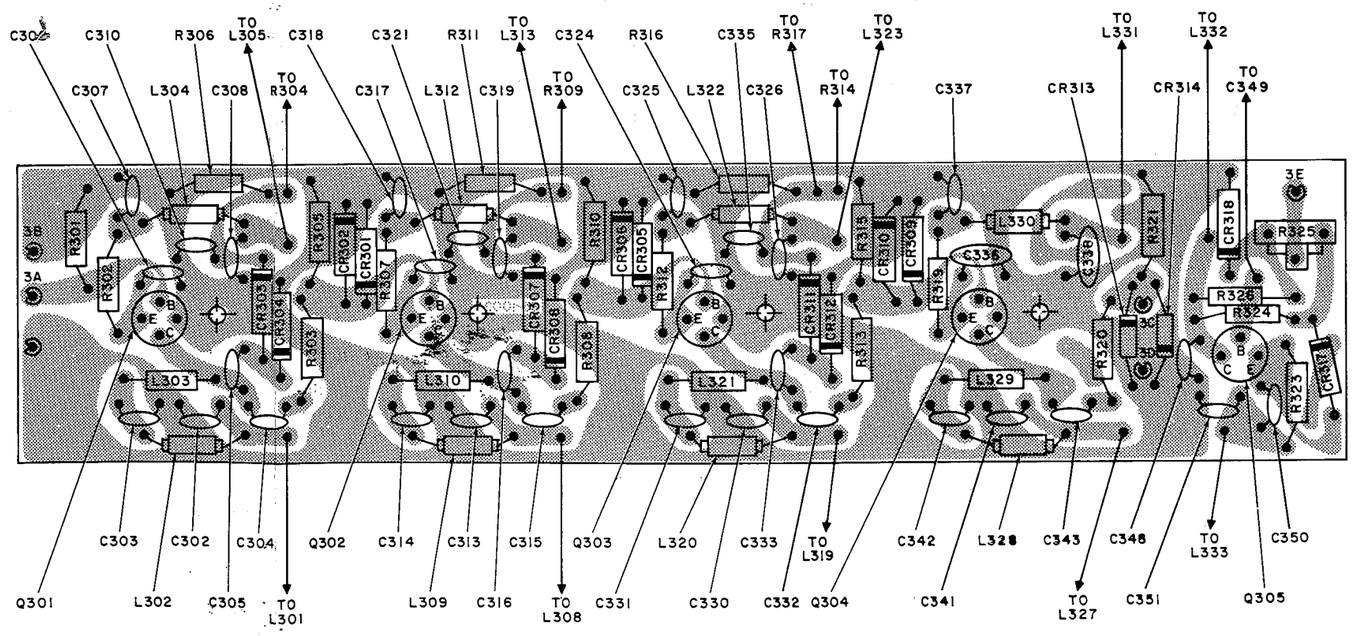


Figure 7. Limiter Assembly 11-1022, Component Locations

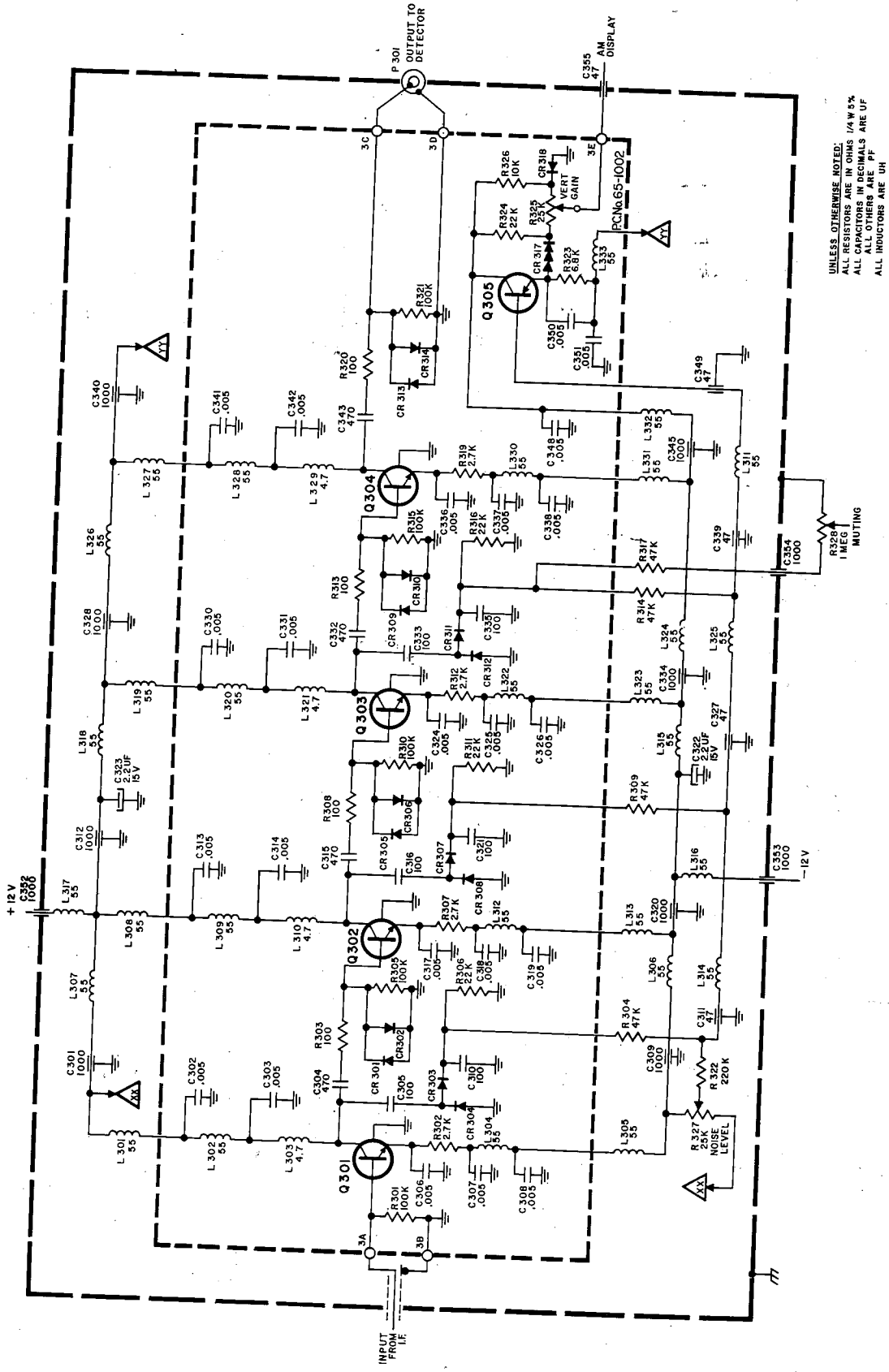
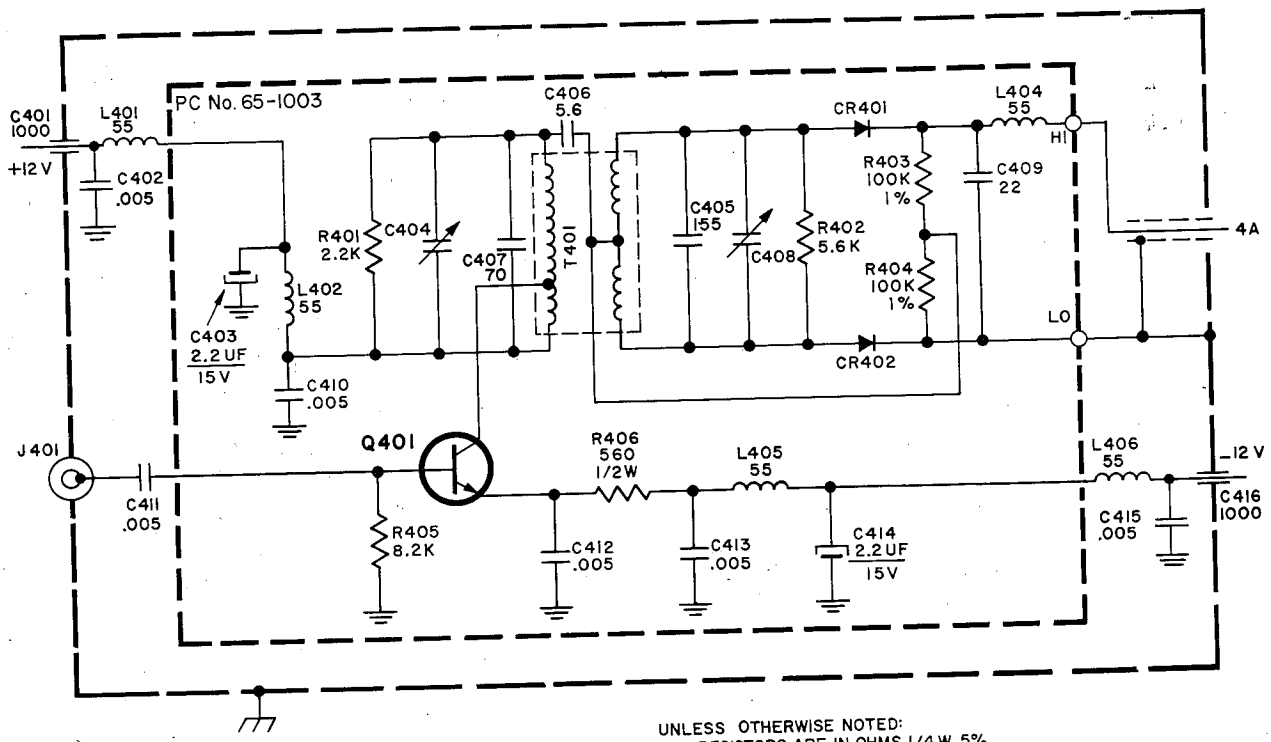


Figure 8. Limiter Assembly 11-1022, Schematic Diagram



UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4 W 5%
ALL CAPACITORS IN DECIMALS ARE UF
ALL OTHERS ARE PF
ALL INDUCTORS ARE UH

	B	E	C
Q401	-1.5	-1.4	12

Voltage is:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 9. Detector Assembly 11-1023, Schematic Diagram

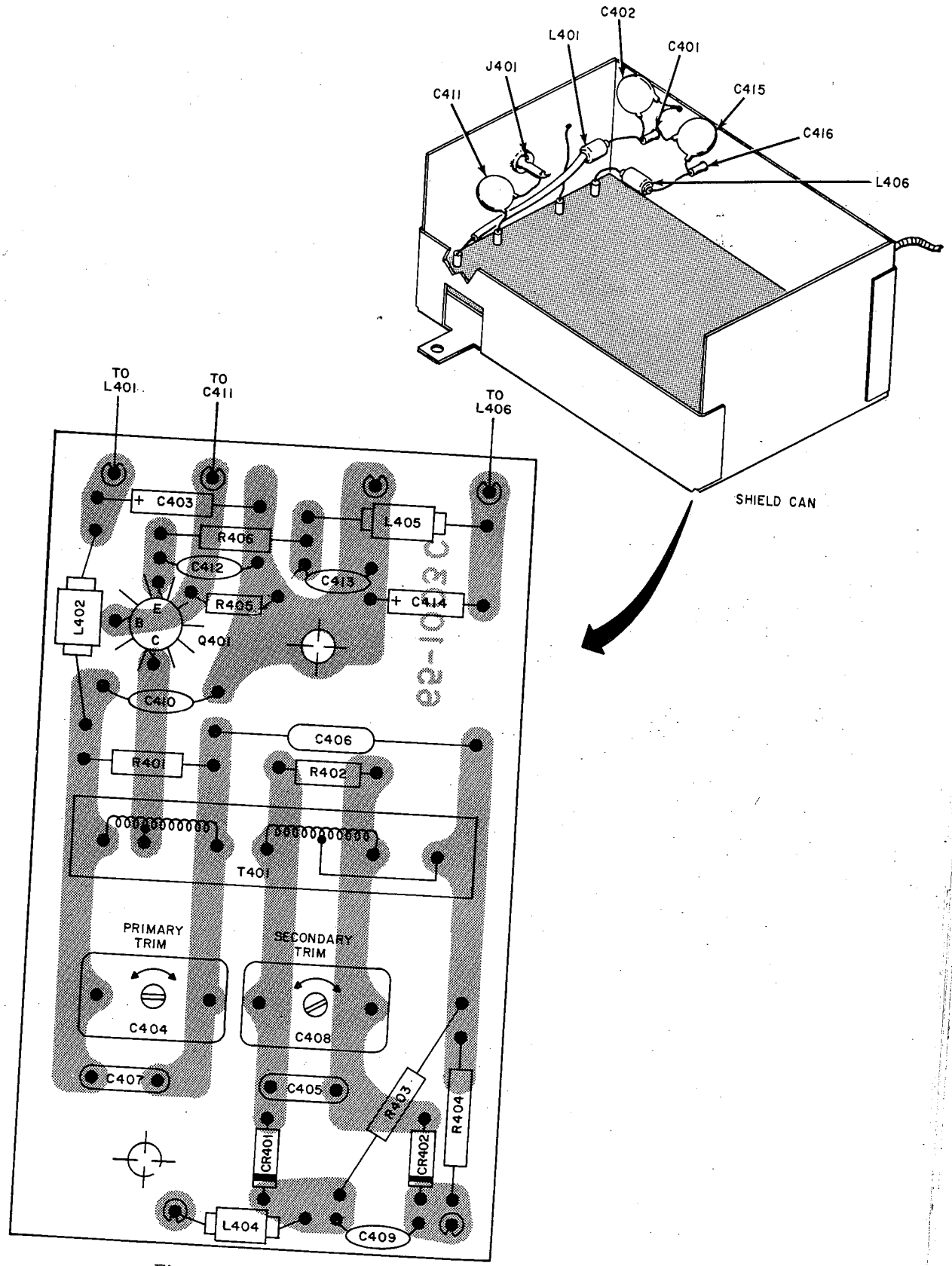


Figure 10. Detector Assembly 11-1023, Component Locations

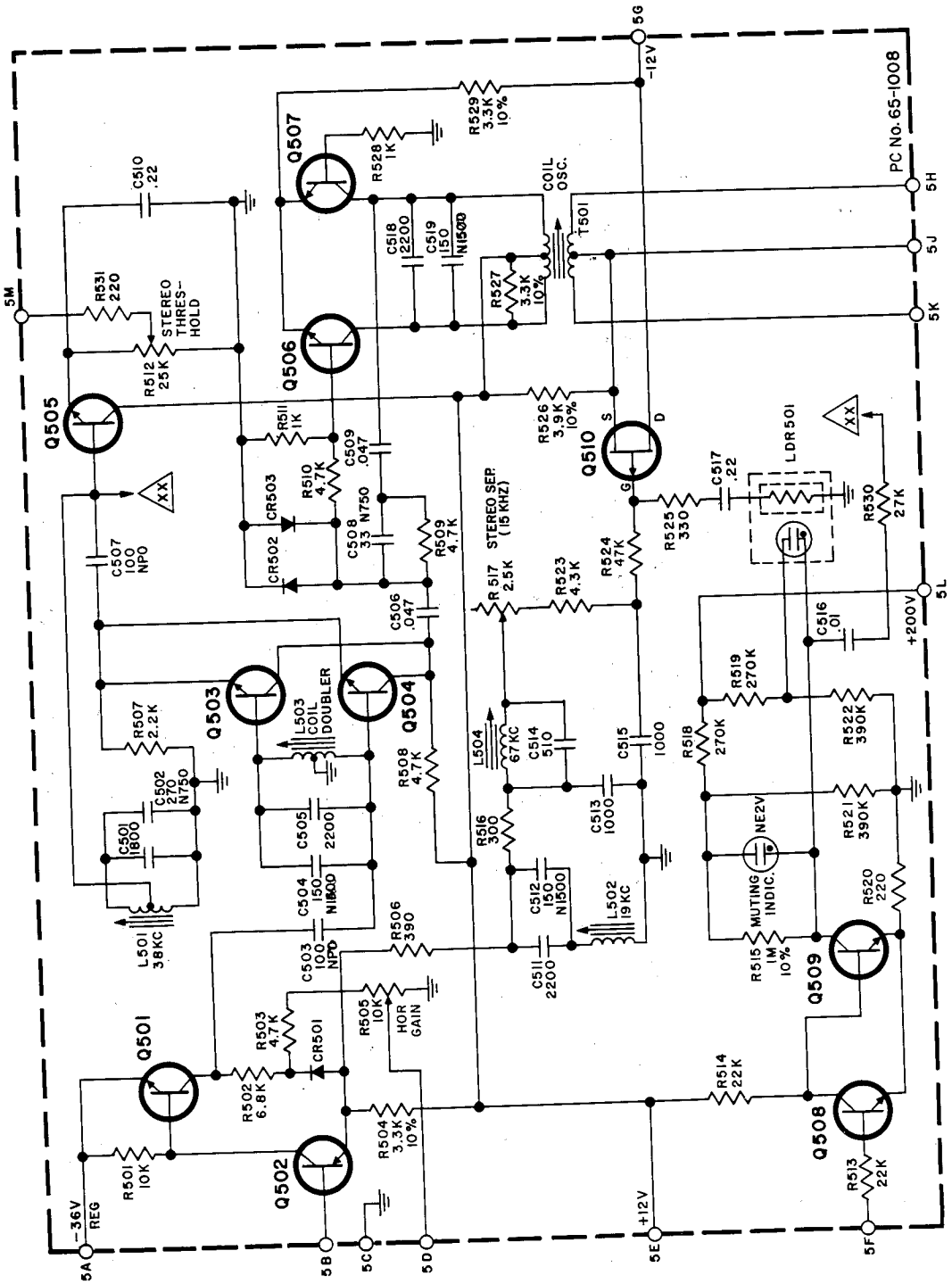
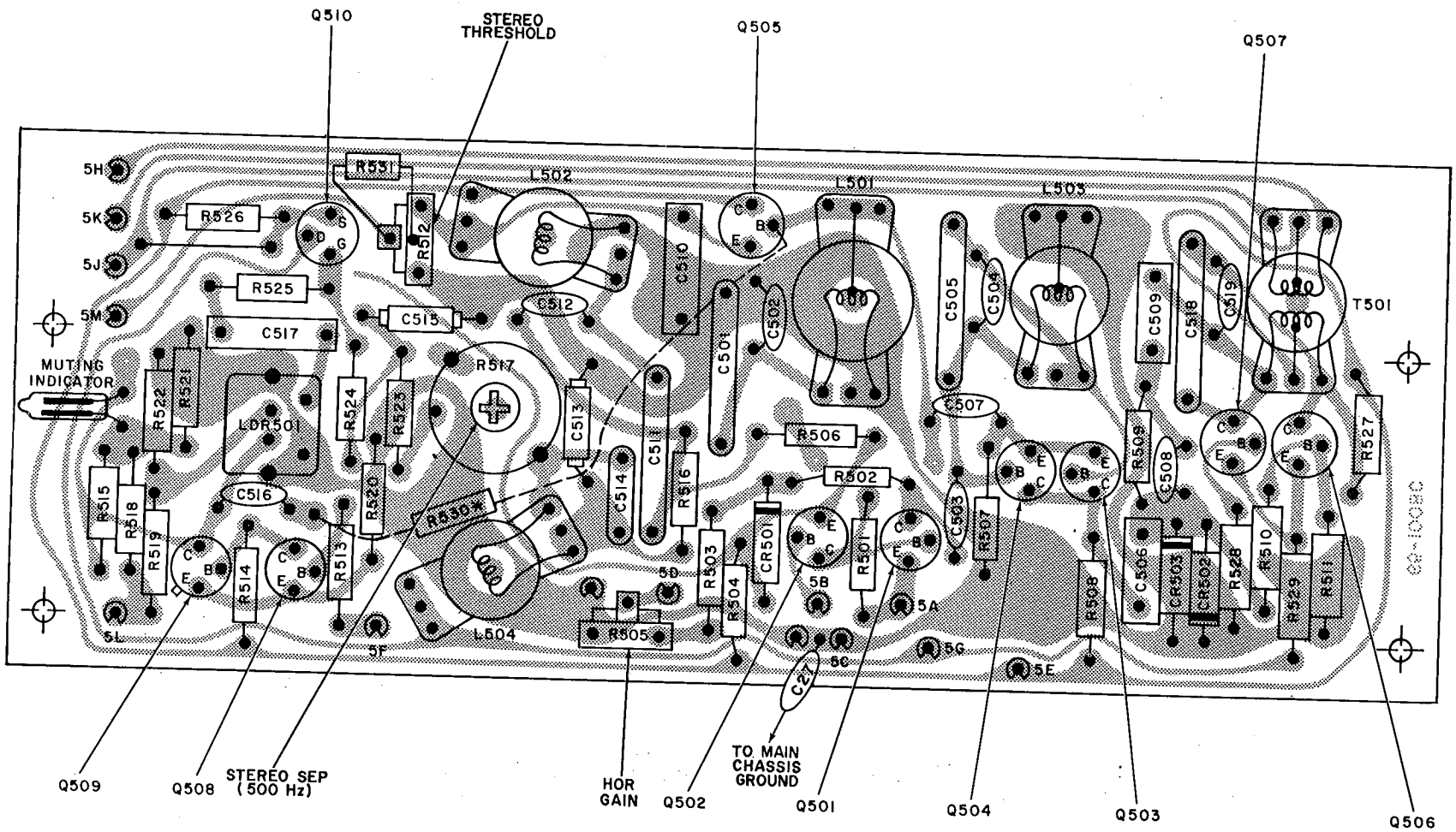


Figure 11. MPX Oscillator Board 11-1004, Schematic Diagram



	B	E	C
Q501	-36	-36	-23
Q502	0	0.4	-36
Q503,Q504	0	0.8	10
Q505	0	1.1	12
Q506,Q507	0	-0.6	12
Q508	0.8	0.3	0.9
Q509	0.9	0.3	0.4
Q510	(D)-12	(G) 0.4	(S)-0.7

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

* ON EARLY UNITS, R530 MOUNTED ON FOIL SIDE OF BOARD

Figure 12. MPX Oscillator Board 11-1004, Component Locations

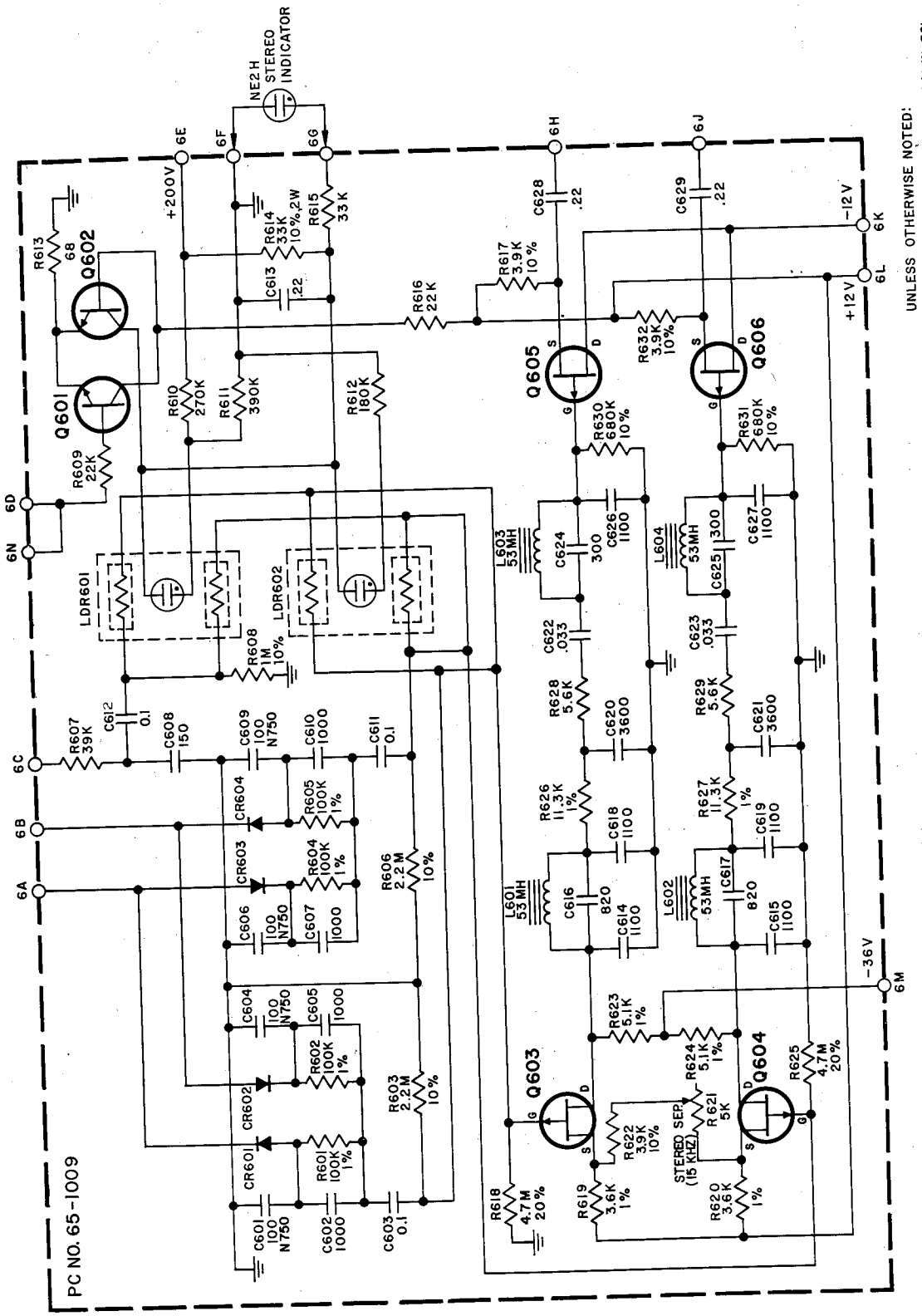
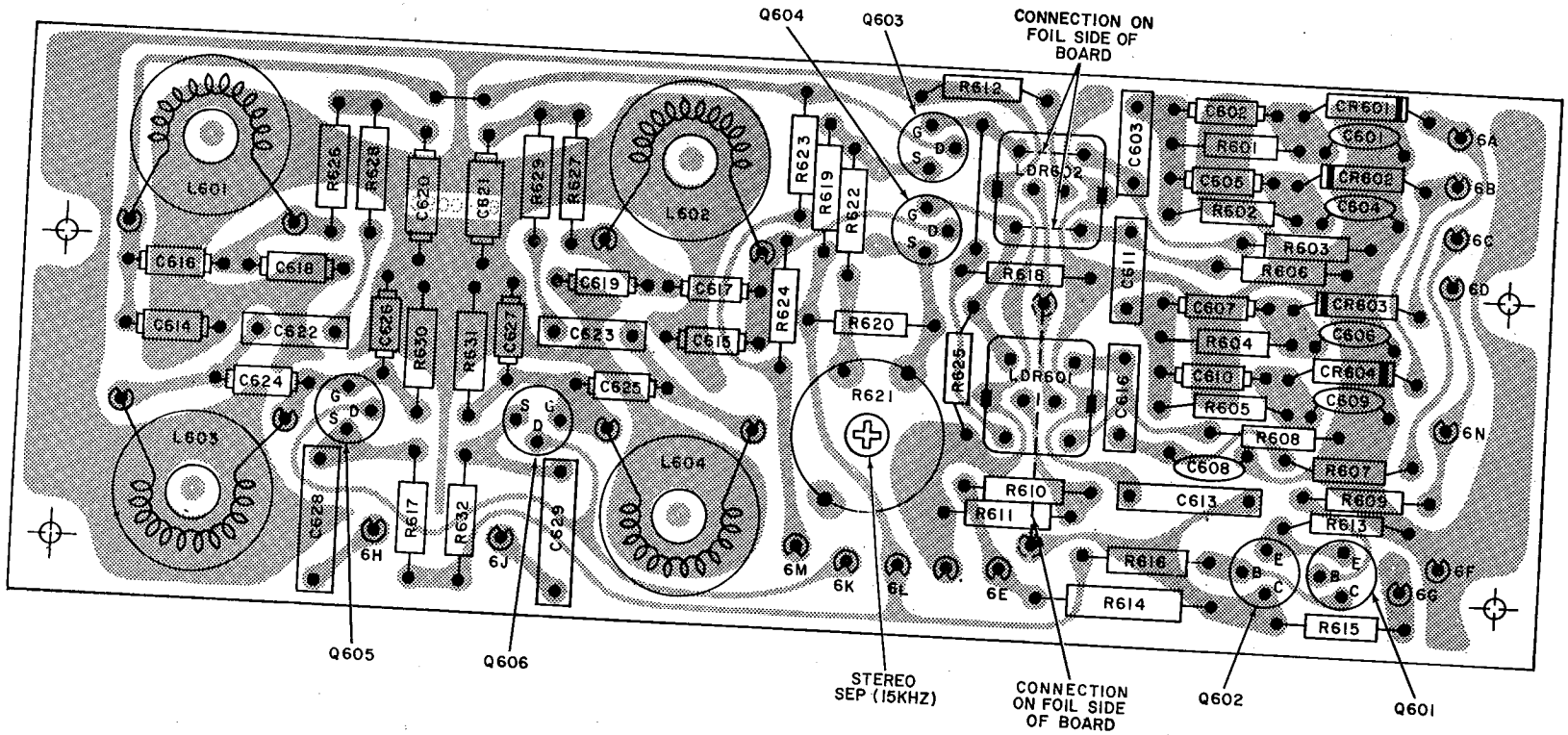


Figure 13. MPX Matrix 11-1003, Schematic Diagram

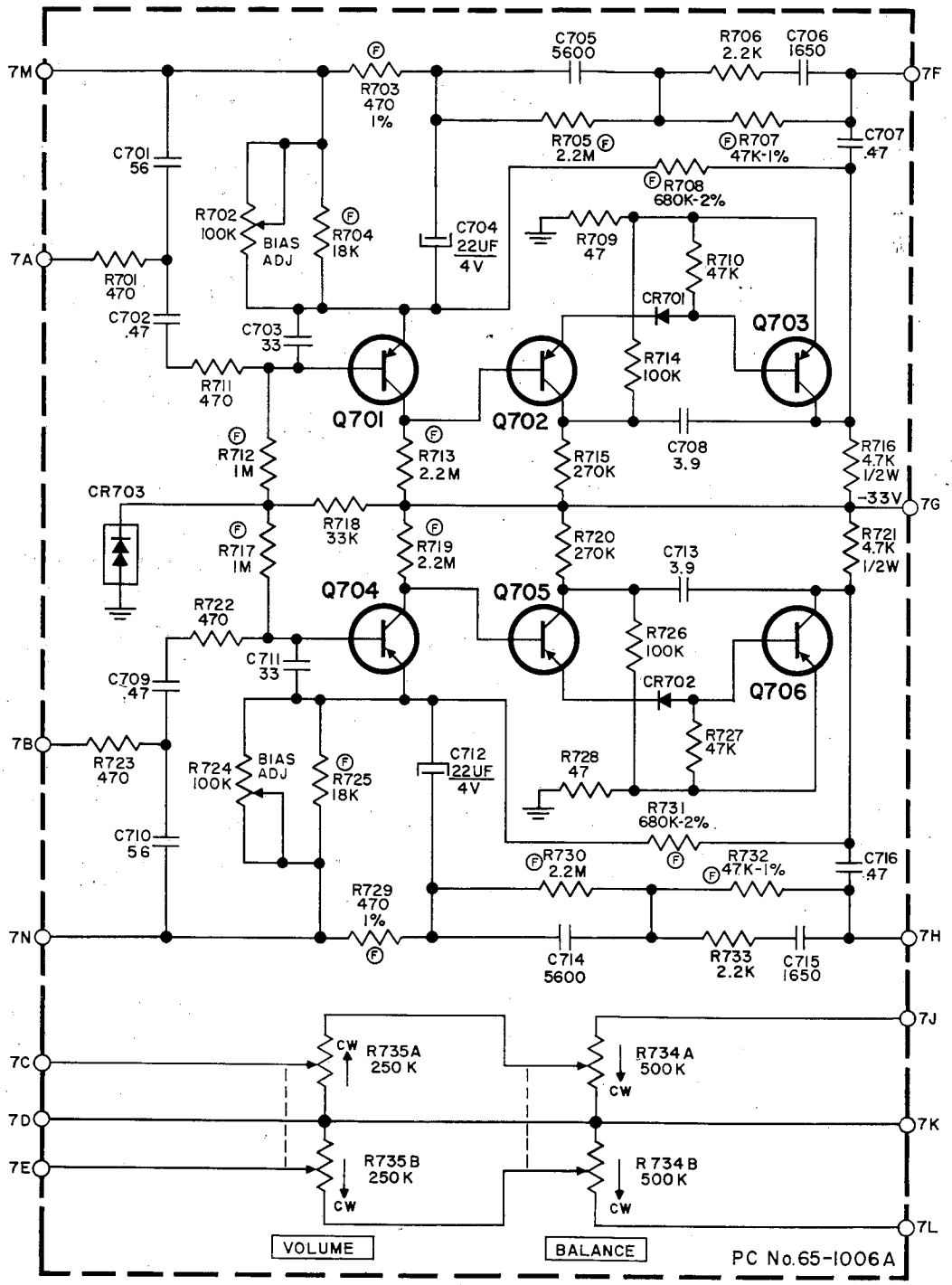


	B	E	C
Q601	0.15	0.4	1.1
Q602	1.1	0.4	0.7
Q603	(D)-19	(G) 0	(S)-1.2
Q604	(D)-19	(G) 0	(S)-1.3
Q605	(D)-12	(G) 0	(S)-1.4
Q606	(D)-12	(G) 0	(S)-1.6

Voltages are:

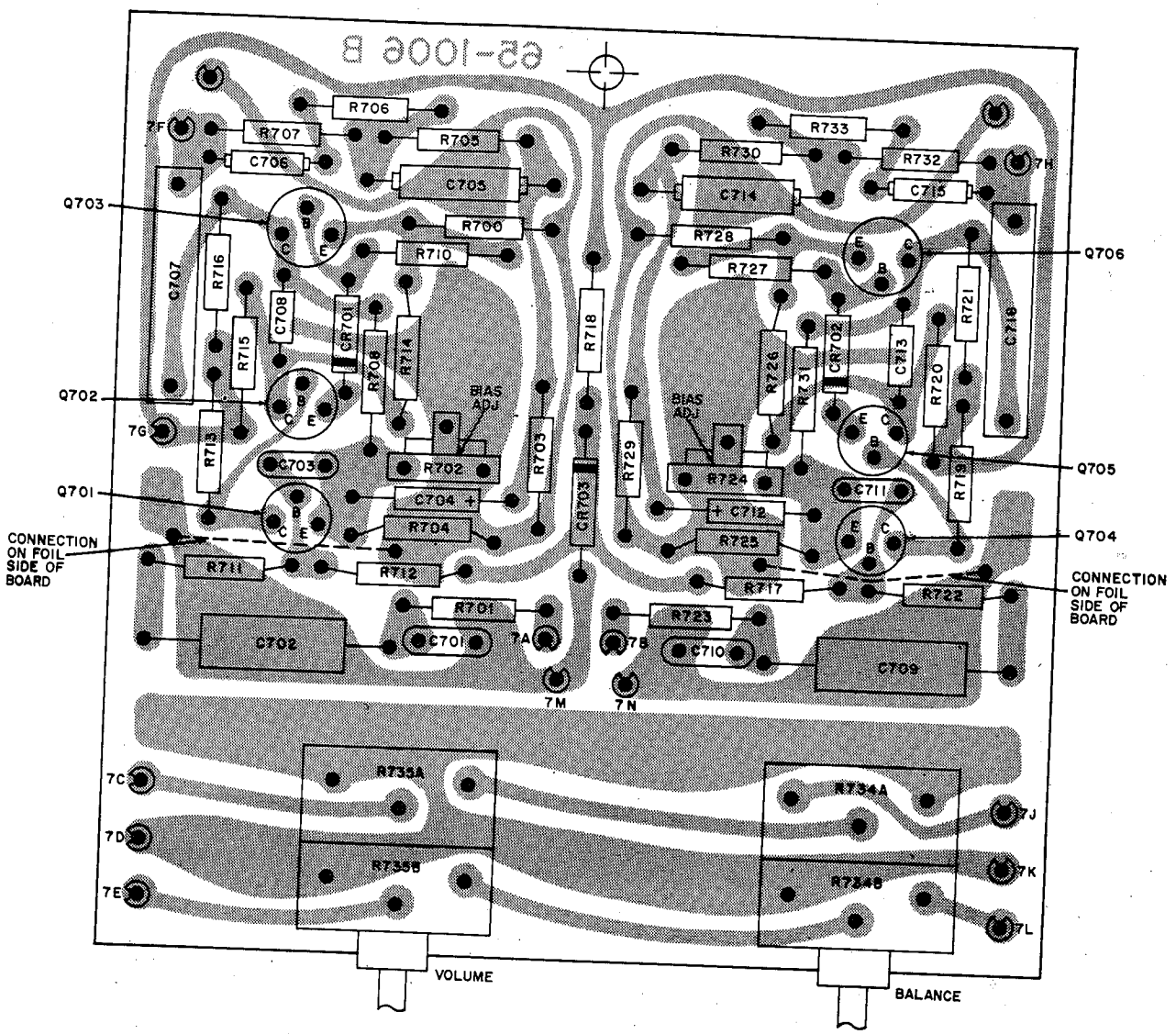
1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 14. MPX Matrix 11-1003, Component Locations



UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4W 5%
ALL CAPACITORS IN DECIMALS ARE UF
ALL OTHERS ARE PF
Ⓕ DENOTES PRECISION FILM RESISTOR

Figure 15. Phono Amplifier Board 11-1006, Schematic Diagram

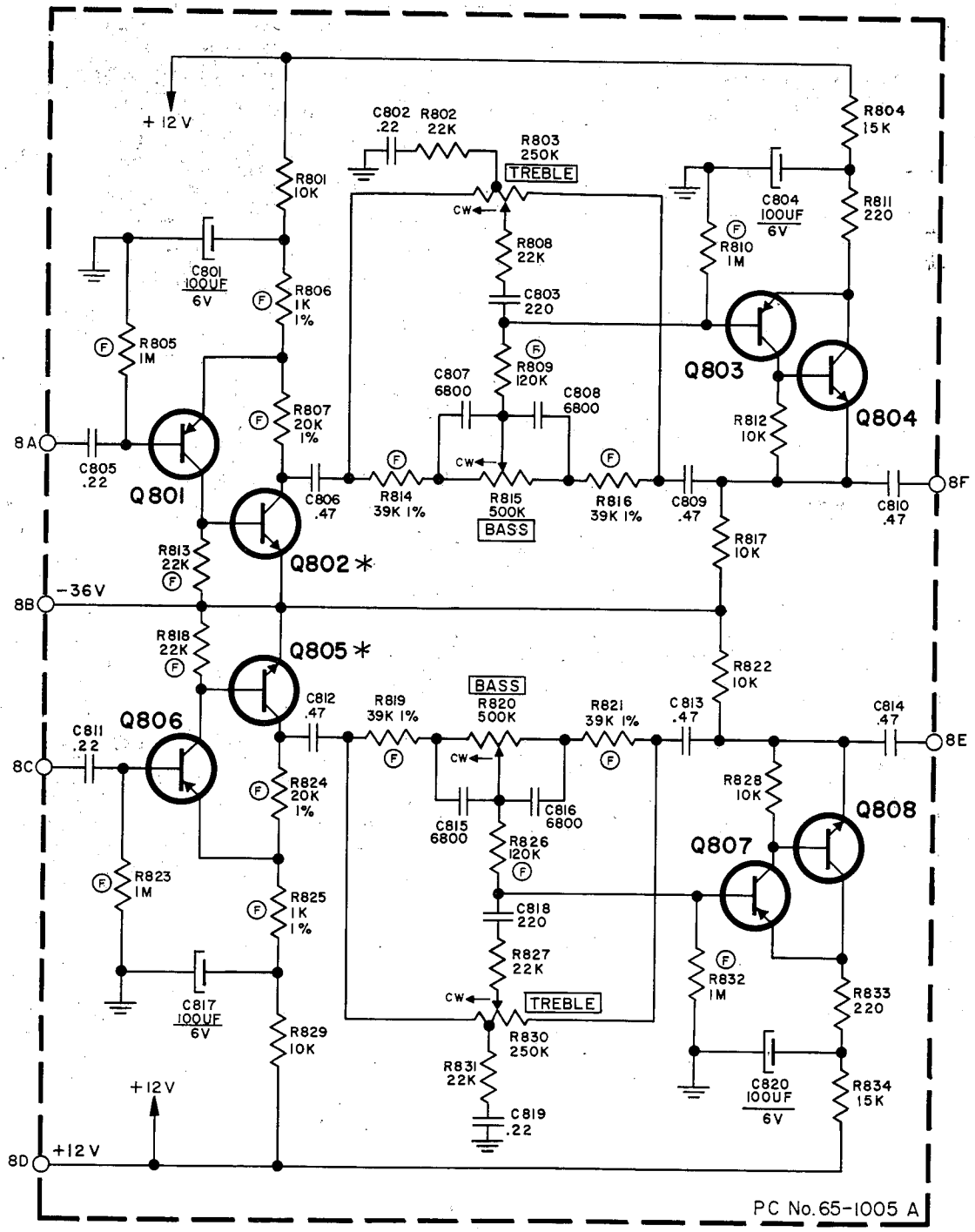


	B	E	C
Q701,Q704	0	-0.6	-2
Q702,Q705	-2	-1.4	-7
Q703,Q706	-0.9	-0.2	-20

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 16. Phono Amplifier Board 11-1006, Component Locations

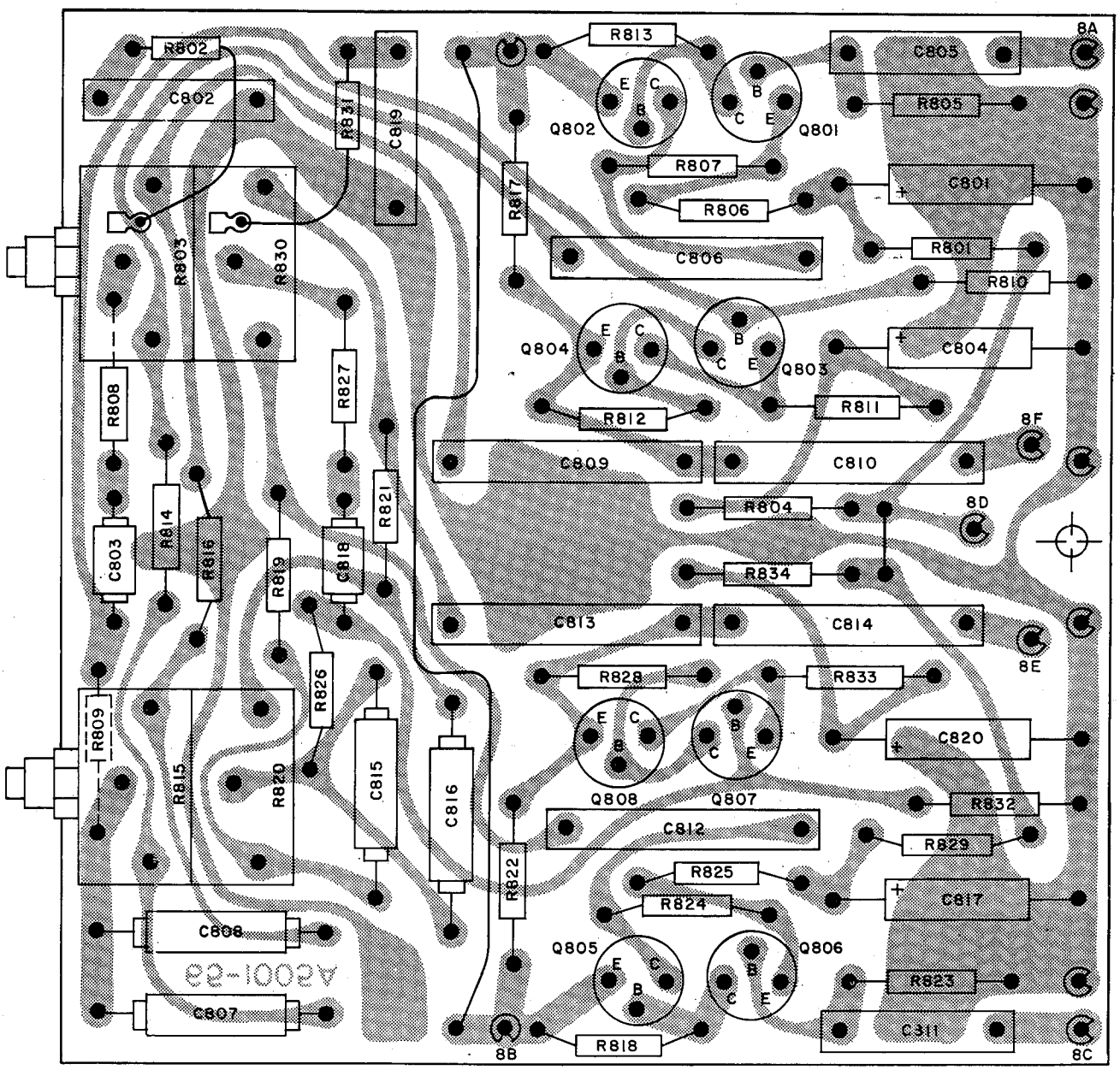


UNLESS OTHERWISE NOTED:

ALL RESISTORS ARE IN OHMS 1/4W 5%
ALL CAPACITORS IN DECIMALS ARE UF
ALL OTHERS ARE PF
Ⓕ DENOTES PRECISION FILM RESISTORS

* Q802, Q805 TYPE 34-1031
(FORMERLY 34-1010 or 34-1011)

Figure 17. Tone Amplfier Board 11-1007, Schematic Diagram

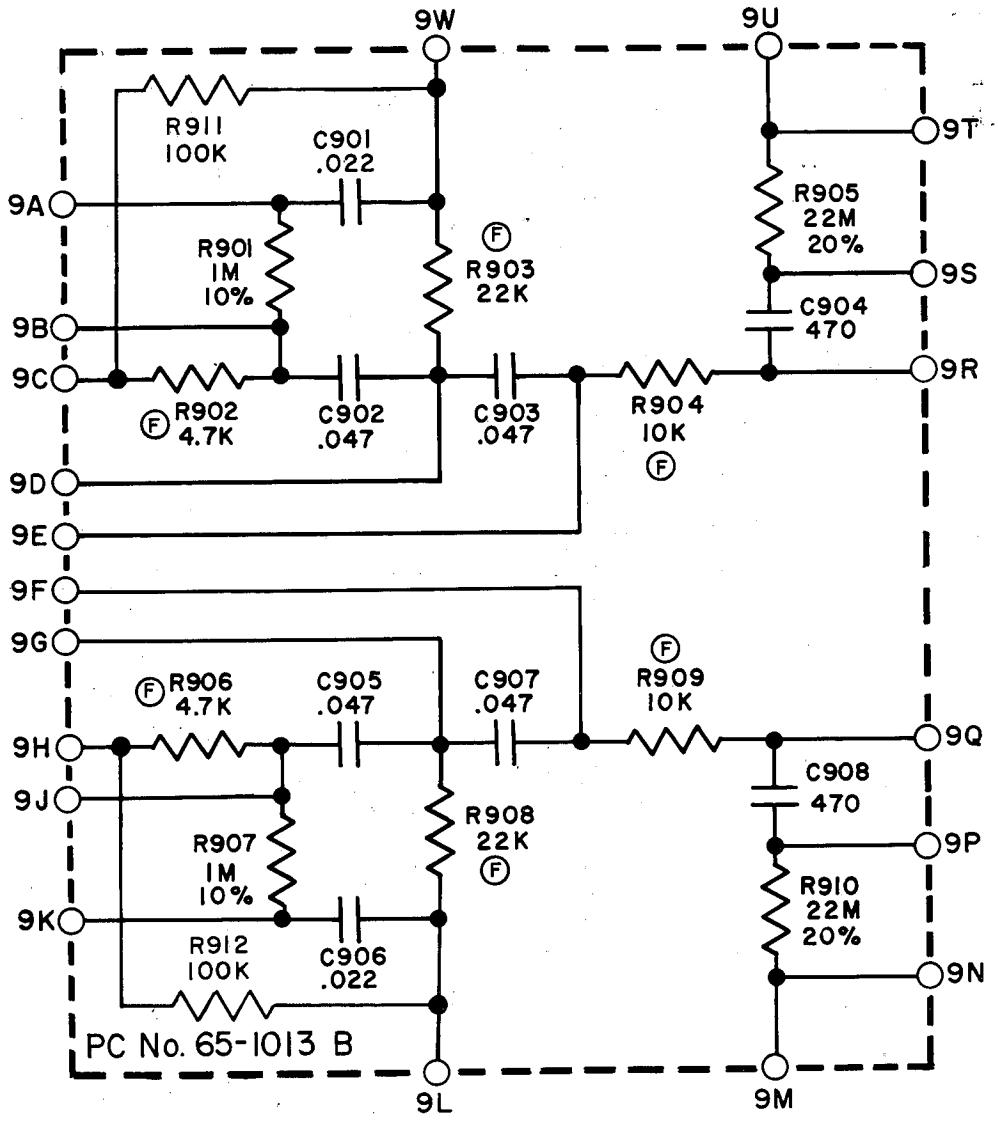


	B	E	C
Q801,Q806	0.2	0.6	-39
Q802,Q805	-39	-36	-21
Q803,Q807	1	12	-31
Q804,Q808	-31	0.7	12

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 18. Tone Amplifier Board 11-1007, Component Locations



UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4 W 1%
ALL CAPACITORS IN DECIMALS ARE UF
ALL OTHERS ARE PF
Ⓕ DENOTES PRECISION FILM RESISTOR

Figure 19. Hi-Lo Filter Board 11-1008, Schematic Diagram

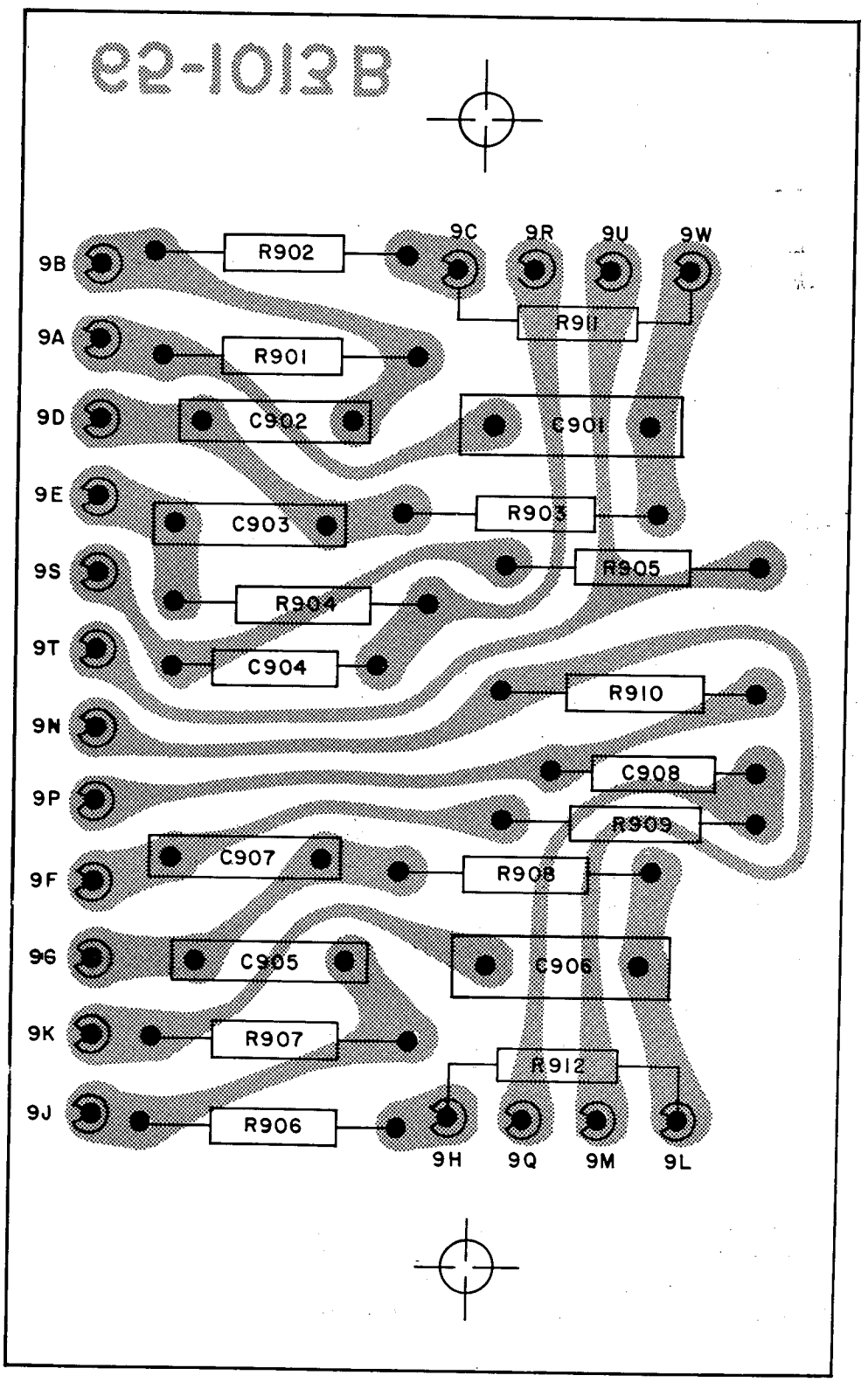
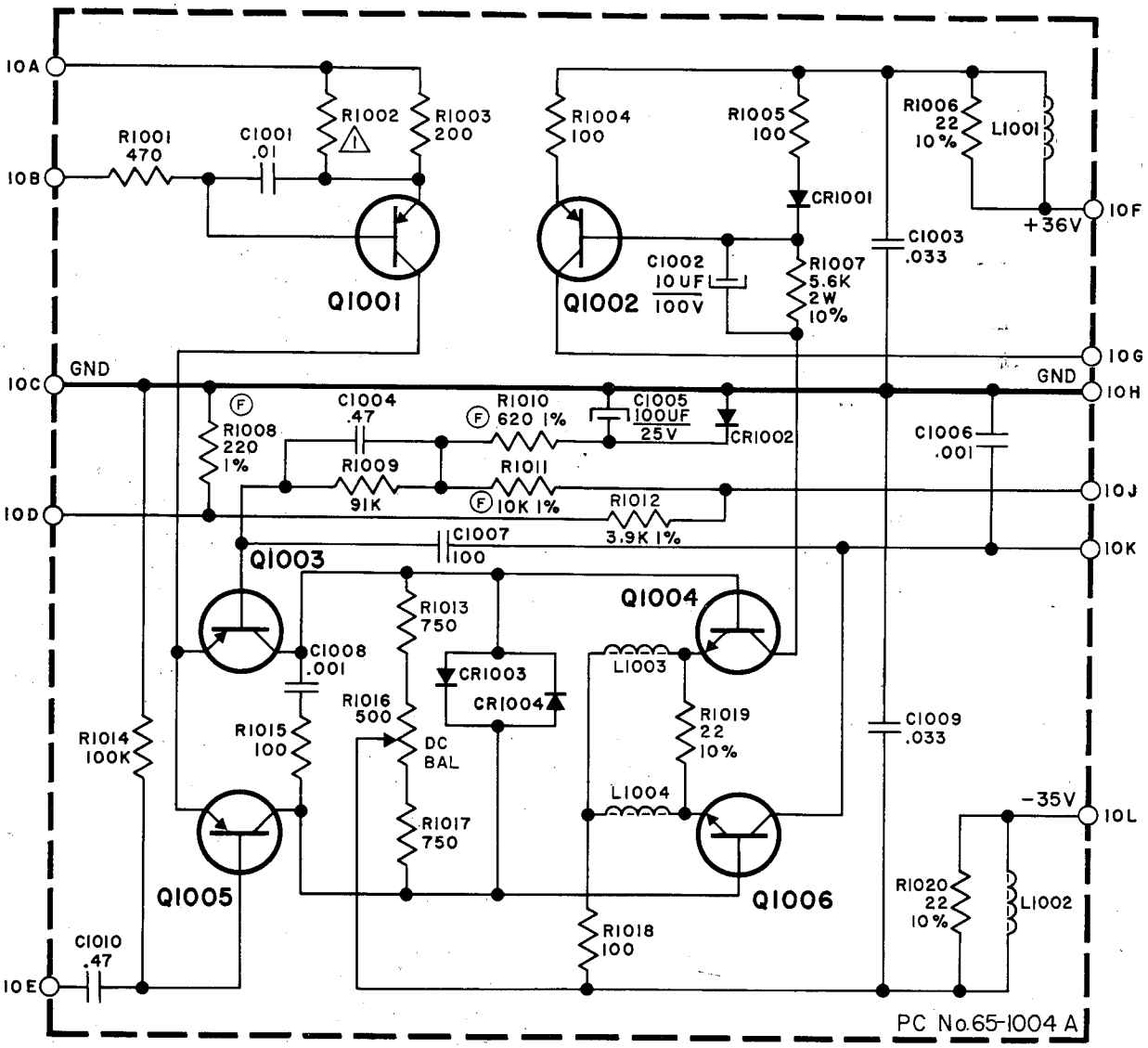


Figure 20. Hi Lo Filter Board 11-1008, Component Locations



UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4 W 5%
ALL CAPACITORS IN DECIMALS ARE UF
ALL OTHERS ARE PF
Ⓕ DENOTES PRECISION FILM RESISTORS
⚠ SELECTED FOR OPTIMUM VALUE

	B	E	C
Q1001	28	29	1.1
Q1002	39	40	1.3
Q1003	0.45	1.1	-40
Q1004	-40	-38	4
Q1005	0.55	1.1	-37
Q1006	-37	-38	-1.3

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 21. Driver Board 11-1002, Schematic Diagram

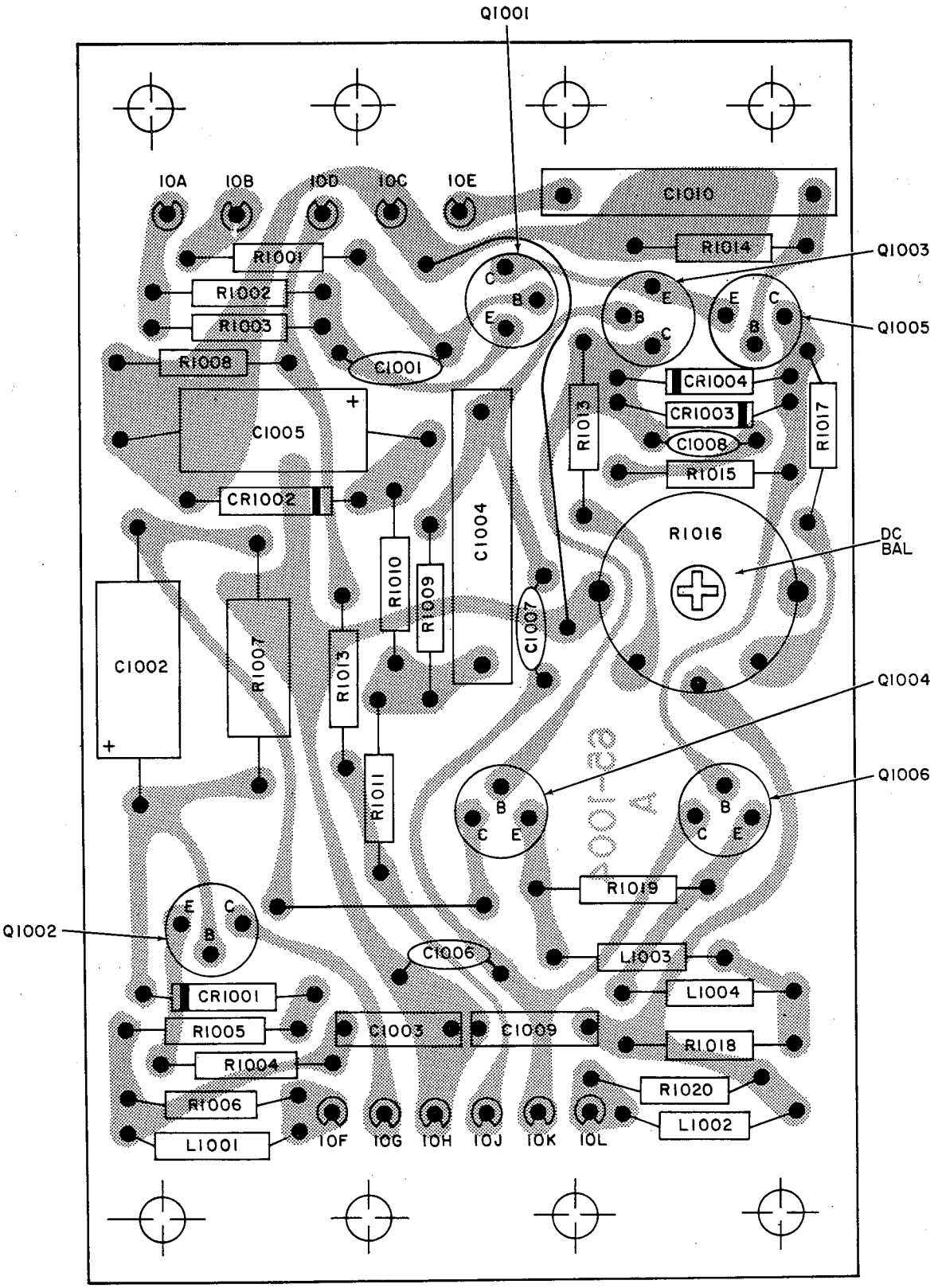
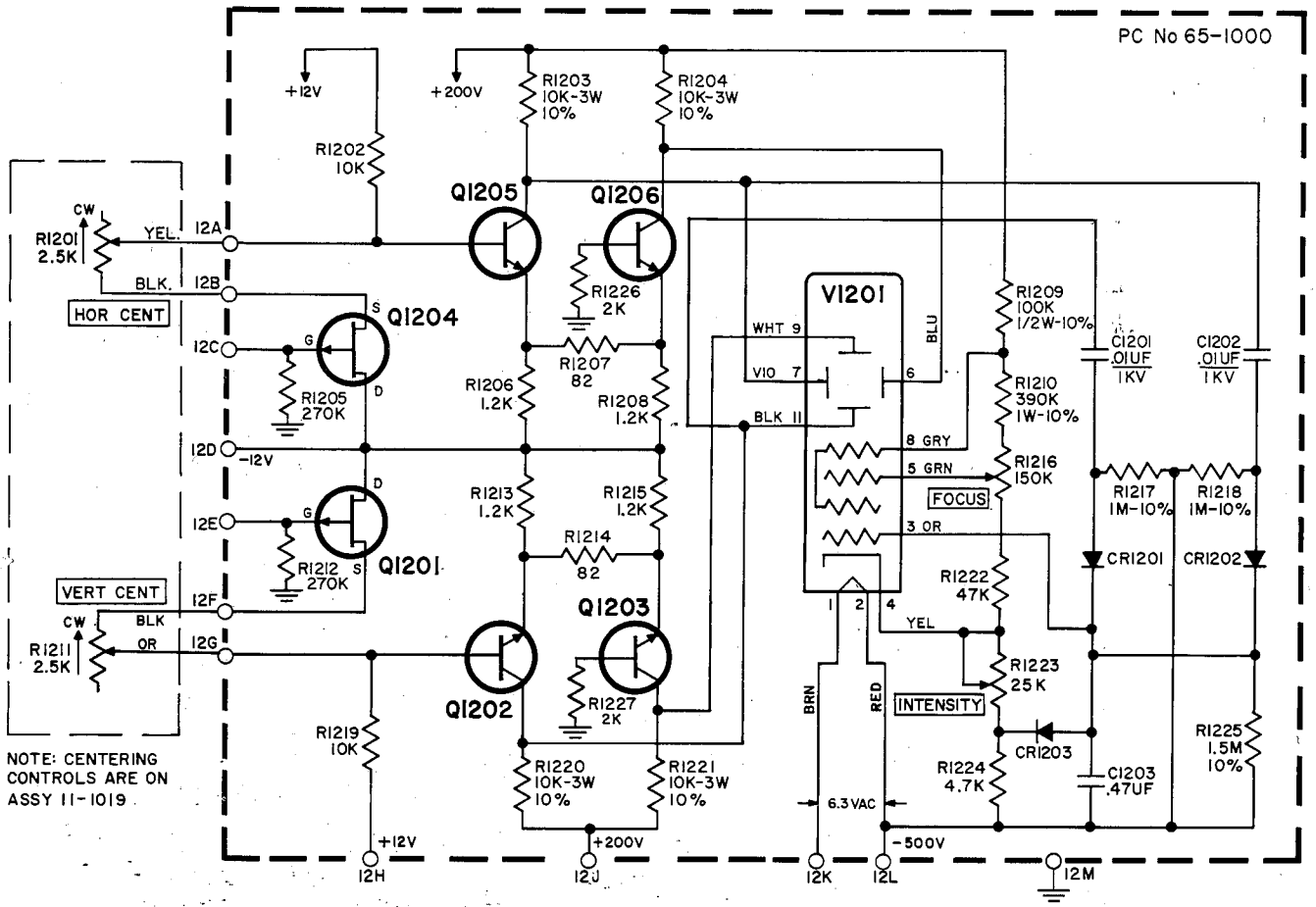


Figure 22. Driver Board 11-1002, Component Locations



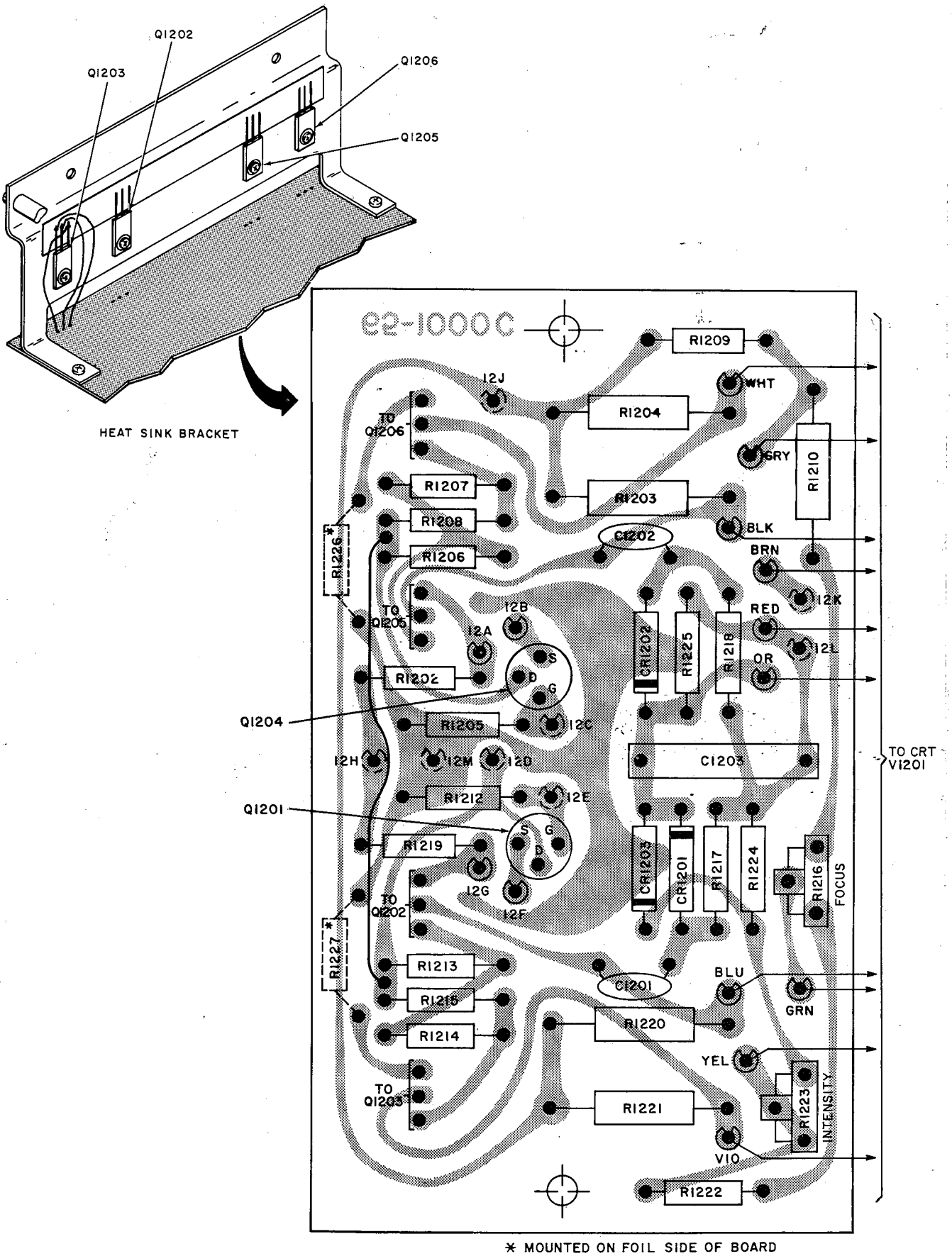
UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4W 5%

	B	E	C
Q1201	(D)-12	(G) 0	(S)-1.6
Q1202	-0.6	-1.1	150
Q1203	-0.5	-1.1	130
Q1204	(D)-12	(G) 0	(S)-1.7
Q1205	-0.3	-0.85	120
Q1206	-0.4	0.95	135

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

Figure 23. Scope Display Board 11-1005, Schematic Diagram



* MOUNTED ON FOIL SIDE OF BOARD

Figure 24. Scope Display Board 11-1005, Component Locations

PARTS LIST

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
--		BOARD SUBASSEMBLIES
--	11-1002	Amplifier Driver Board Assy
--	11-1003	Multiplex Matrix Board Assy
--	11-1004	Multiplex Oscillator Board Assy
--	11-1005	Scope Display Board Assy
--	11-1006	Phono Amplifier Board Assy
--	11-1007	Tone Amplifier Board Assy
--	11-1008	Hi-Lo Filter Board Assy
--	11-1020	Front End Assy
--	11-1021	IF Assy
--	11-1022	Limiter Board Assy
--	11-1023	Detector Board Assy
		COMPONENT PARTS
C1	14-1012	4700 pf, 20%, Ceramic
C2, C3	14-1014	.005 uf, +80 -20 pf, Ceramic
C4, C5	14-1016	.002 uf, 20%, 150 VAC/1.4K VDC, Ceramic
C6	19-1007	20-20 uf, 250V, Elect (pigtail)
C7, C8	18-1000	5450 uf, 50V, Elect (terminal)
C9, C10	19-1001	350 uf, 50V, Elect (pigtail)
C11	19-1006	10 uf, 575V, Elect (pigtail)
C12, C13	19-1000	250 uf, 80V, Elect (pigtail)
C14	19-1001	350 uf, 50V, Elect (pigtail)
C15, C16	19-1002	350 uf, 15V, Elect (pigtail)
C17	19-1001	350 uf, 50V, Elect (pigtail)
C18, C19	14-1014	.005 uf, +80 -20 pf, Ceramic
C20 thru C22	19-1001	350 uf, 50V, Elect (pigtail)
C23	13-1007	.22 uf, 10%, 250V, Mylar
C24	14-1012	4700 pf, 20%, Ceramic
C25	13-1007	.22 uf, 10%, 250V, Mylar
C26	14-1012	4700 pf, 20%, Ceramic
C27	14-1014	.005 uf, +80 -20 pf, Ceramic
C28, C29	14-1013	47 pf, 10%, Ceramic
C30 thru C32	13-1007	.22 uf, 10%, 250V, Mylar
C33	19-1010	200 uf, 15V, Elect (pigtail)
C34	13-1007	.22 uf, 10%, 250V, Mylar
C35	19-1010	200 uf, 15V, Elect (pigtail)
*C36 thru C39	13-1007	.22 uf, 10%, 250V, Mylar
C201 thru C203	22-1000	1000 pf, 20%, Feed-thru
C204	14-1021	100 pf, 10%, Ceramic
C205, C206	14-1014	.005 uf, +80 -20 pf, Ceramic
C212	14-1014	.005 uf, +80 -20 pf, Ceramic
C213 thru C216	14-1021	100 pf, 10%, Ceramic
C217, C218	14-1014	.005 uf, +80 -20 pf, Ceramic
C219	14-1039	56 pf, 5%, Ceramic
C220		Not Used
C221 thru C228	14-1014	.005 uf, +80 -20 pf, Ceramic
C229 thru C233	22-1000	1000 pf, 20%, Feed-thru
C234 thru C236	14-1021	100 pf, 10%, Ceramic
C301	22-1000	1000 pf, 20%, Feed-thru
C302, C303	14-1014	.005 uf, +80 -20 pf, Ceramic
C304	14-1013	47 pf, 10%, Ceramic
C305	14-1021	100 pf, 10%, Ceramic
C306 thru C308	14-1014	.005 uf, +80 -20 pf, Ceramic
C309	22-1000	1000 pf, 20%, Feed-thru
C310	14-1021	100 pf, 10%, Ceramic
C311	22-1001	47 pf, 20%, Feed-thru
C312	22-1000	1000 pf, 20%, Feed-thru
C313, C314	14-1014	.005 uf, +80 -20 pf, Ceramic
C315	14-1013	47 pf, 10%, Ceramic
C316	14-1021	100 pf, 10%, Ceramic
C317 thru C319	14-1014	.005 uf, +80 -20 pf, Ceramic
C320	22-1000	1000 pf, 20%, Feed-thru
C321	14-1021	100 pf, 10%, Ceramic
C322, C323	16-1001	2.2 uf, 15V, Tant
C324 thru C326	14-1014	.005 uf, +80 -20 pf, Ceramic
C327	22-1001	47 pf, 20%, Feed-thru
C328	22-1000	1000 pf, 20%, Feed-thru
C330, C331	14-1014	.005 uf, +80 -20 pf, Ceramic
C332	14-1013	47 pf, 10%, Ceramic
C333	14-1021	100 pf, 10%, Ceramic
C334	22-1000	1000 pf, 20%, Feed-thru
C335	14-1021	100 pf, 10%, Ceramic
C336 thru C338	14-1014	.005 uf, +80 -20 pf, Ceramic

*C36 thru C39 installed during test, if required.

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C339	22-1001	47 pf, 20%, Feed-thru
C340	22-1000	1000 pf, 20%, Feed-thru
C341, C342	14-1014	.005 uf, +80 -20 pf, Ceramic
C343	14-1013	47 pf, 10%, Cer Disc
C344	14-1021	100 pf, 10%, Ceramic
C345	22-1000	1000 pf, 20%, Feed-thru
C346	14-1021	100 pf, 10%, Ceramic
C347		Not Used
C348	14-1014	.005 uf, +80 -20 pf, Ceramic
C349	22-1001	47 pf, 20%, Feed-thru
C350, C351	14-1014	.005 uf, +80 -20 pf, Ceramic
C352 thru C354	22-1000	1000 pf, 20%, Feed-thru
C355	22-1001	47 pf, 20%, Feed-thru
C401	22-1000	1000 pf, 20%, Feed-thru
C402	14-1014	.005 uf, +80 -20 pf, Ceramic
C403	16-1001	2.2 uf, 15V, Tant
C404	21-1000	1-18 pf, Trimmer
C405	17-1005	155 pf, 2%, Mica
C406	17-1003	5.6 pf, 5%, Mica
C407	17-1004	70 pf, 1%, Mica
C408	21-1000	1-18 pf, Trimmer
C409	14-1015	22 pf, 10%, Ceramic
C410 thru C413	14-1014	.005 uf, +80 -20 pf, Ceramic
C414	16-1001	2.2 uf, 15V, Tant
C415	14-1014	.005 uf, +80 -20 pf, Ceramic
C416	22-1000	1000 pf, 20%, Feed-thru
C501	17-1018	1800 pf, 1%, Mica
C502	14-1022	270 pf, 5%, Ceramic
C503	14-1006	100 pf, 5%, Ceramic
C504	14-1005	150 pf, 5%, Ceramic
C505	17-1017	2200 pf, 1%, Mica
C506	13-1004	.047 uf, 5%, 250V, Mylar
C507	14-1006	100 pf, 5%, Ceramic
C508	14-1009	33 pf, 5%, Ceramic
C509	13-1004	.047 uf, 5%, 250V, Mylar
C510	13-1001	.22 uf, 10%, 25V, Mylar
C511	17-1017	2200 pf, 1%, Mica
C512	14-1005	150 pf, 5%, Ceramic
C513	15-1005	1000 pf, 2 1/2%, 125V, Poly
C514	17-1002	510 pf, 2%, Mica
C515	15-1005	1000 pf, 2 1/2%, 125V, Poly
C516	14-1003	.01 uf, 20%, Ceramic
C517	13-1001	.22 uf, 10%, 25V, Mylar
C518	17-1017	2200 pf, 1%, Mica
C519	14-1005	150 pf, 5%, Ceramic
C601	14-1007	100 pf, 5%, N750, Ceramic
C602	15-1005	1000 pf, 2 1/2%, 125V, Poly
C603	13-1002	.1 uf, 10%, 250V, Mylar
C604	14-1007	100 pf, 5%, Ceramic
C605	15-1005	1000 pf, 2 1/2%, 125V, Poly
C606	14-1007	100 pf, 5%, Ceramic
C607	15-1005	1000 pf, 2 1/2%, 125V, Poly
C608	14-1005	150 pf, 5%, Ceramic
C609	14-1007	100 pf, 5%, Ceramic
C610	15-1005	1000 pf, 2 1/2%, 125V, Poly
C611	13-1002	.1 uf, 10%, 250V, Mylar

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C612		Not Used
C613	13-1001	.22 uf, 10%, 25V, Mylar
C614, C615	15-1004	1100 pf, 2 1/2%, 125V, Poly
C616	13-1002	.1 uf, 10%, 250V, Mylar
C617	15-1006	820 pf, 2 1/2%, 125V, Poly
C618, C619	15-1004	1100 pf, 2 1/2%, 125V, Poly
C620, C621	15-1002	3600 pf, 2 1/2%, 125V, Poly
C622, C623	13-1005	.033 uf, 10%, 250V, Mylar
C624, C625	15-1008	300 pf, 2 1/2%, 125V, Poly
C626, C627	15-1004	1100 pf, 2 1/2%, 125V, Poly
C628, C629	13-1001	.22 uf, 10%, 25V, Mylar
C701	17-1001	56 pf, 10%, Mica
C702	13-1006	.47 uf, 10%, 250V, Mylar
C703	17-1000	33 pf, 5%, Mica
C704	16-1000	22 uf, 4V, Tant
C705	15-1001	5600 pf, 2 1/2%, 125V, Poly
C706	15-1003	1650 pf, 2 1/2%, 125V, Poly
C707	13-1000	.47 uf, 10%, 25V, Mylar
C708	14-1011	3.9 pf, Gimmick
C709	13-1006	.47 uf, 10%, 250V, Mylar
C710	17-1001	56 pf, 10%, Mica
C711	17-1000	33 pf, 5%, Mica
C712	16-1000	22 uf, 4V, Tant
C713	14-1011	3.9 pf, Gimmick
C714	15-1001	5600 pf, 2 1/2%, 125V, Poly
C715	15-1003	1650 pf, 2 1/2%, 125V, Poly
C716	13-1000	.47 uf, 10%, 25V, Mylar
C801	19-1005	100 uf, 6V, Elect (pigtail)
C802	13-1001	.22 uf, 10%, 25V, Mylar
C803	15-1009	220 pf, 2 1/2%, 125V, Poly
C804	19-1005	100 uf, 6V, Elect (pigtail)
C805	13-1001	.22 uf, 10%, 25V, Mylar
C806	13-1000	.47 uf, 10%, 25V, Mylar
C807, C808	15-1000	6800 pf, 2 1/2%, 125V, Poly
C809, C810	13-1000	.47 uf, 10%, 25V, Mylar
C811	13-1001	.22 uf, 10%, 25V, Mylar
C812 thru C814	13-1000	.47 uf, 10%, 25V, Mylar
C815, C816	15-1000	6800 pf, 2 1/2%, 125V, Poly
C817	19-1005	100 uf, 6V, Elect (pigtail)
C818	15-1009	220 pf, 2 1/2%, 125V, Poly
C819	13-1001	.22 uf, 10%, 25V, Mylar
C820	19-1005	100 uf, 6V, Elect (pigtail)
C901	13-1008	.022 uf, 10%, 250V, Mylar
C902, C903	13-1004	.047 uf, 5%, 250V, Mylar
C904	15-1010	470 pf, 2 1/2%, 125V, Poly
C905	13-1004	.047 uf, 5%, 250V, Mylar
C906	13-1008	.022 uf, 10%, 250V, Mylar
C907	13-1004	.047 uf, 5%, 250V, Mylar

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C908	15-1010	470 pf, 2 1/2%, 125V, Poly
C1001	14-1003	.01 uf, 20%, Ceramic
C1002	19-1003	10 uf, 100V, Elect (pigtail)
C1003	13-1005	.033 uf, 10%, 250V, Mylar
C1004	13-1000	.47 uf, 10%, 25V, Mylar
C1005	19-1004	100 uf, 25V, Elect (pigtail)
C1006	14-1010	.001 uf, 5%, Ceramic
C1007	14-1007	100 pf, 5%, N750, Ceramic
C1008	14-1010	.001 uf, 5%, Ceramic
C1009	13-1005	.033 uf, 10%, 250V, Mylar
C1010	13-1000	.47 uf, 10%, 25V, Mylar
C1201, C1202	14-1002	.01 uf, 10%, 2KV, Ceramic
C1203	13-1000	.47 uf, 10%, 25V, Mylar
CR1,	35-1003	Diode, Rectifier
CR2	~~35-1004~~	~~Diode, Rectifier~~
CR3, CR4	35-1004	Diode, Rectifier
CR5	35-1015	Diode, Rectifier
CR6	35-1009	Diode, Rectifier
CR7	35-1008	Diode, Rectifier
CR8	35-1009	Diode, Rectifier
CR9	35-1008	Diode, Rectifier
CR10, CR11	35-1012	Diode, Zener
CR12	35-1013	Diode, Zener
CR13	35-1010	Diode
CR14	35-1000	Diode, Reference
CR15	35-1014	Diode, Reference
CR16	35-1005	Diode
CR17, CR18	35-1002	Diode, Reference
CR19	35-1006	Diode, Rectifier
CR20	35-1007	Diode, Rectifier
CR21		
CR22	35-1006	Diode, Rectifier
CR201 thru CR208	35-1019	Diode
CR301, CR302	35-1033A	Diode, Limiting
CR303, CR304	35-1017	Diode
CR305, CR306	35-1033A	Diode, Limiting
CR307, CR308	35-1017	Diode
CR309, CR310	35-1033A	Diode, Limiting
CR311, CR312	35-1017	Diode
CR313, CR314	35-1033A	Diode, Limiting
CR315, CR316	35-1017	Diode
CR317	35-1029	Diode, Reference
CR401, CR402	35-1017	Diode
CR501	35-1000	Diode, Reference
CR502, CR503	35-1016	Diode, Signal
CR701, CR702	35-1014	Diode, Reference
CR703	35-1001	Diode, Reference
CR1001	35-1000	Diode, Reference
CR1002 thru CR1004	35-1014	Diode, Reference
CR1201, CR1202	35-1004	Diode
CR1203	35-1014	Diode, Reference
J1	69-1003	Jack, Phono (Dubbing Out)
J2	69-1002	Jack, Phono (Dubbing In)
J3	69-1004	Jack, Phono (Stereophones)
K1, K2	56-1000	Relay
L1 thru L6	55-1009	Coil, Choke, 55 uh
L7, L8	55-1007	Coil, Toroid
L201 thru L222	55-1009	Coil, Choke, 55 uh
L301, L302	55-1009	Coil, Choke, 55 uh
L303	55-1019	Coil, Choke, 4.7 uh
L304 thru L309	55-1009	Coil, Choke, 55 uh
L310	55-1019	Coil, Choke, 4.7 uh
L311 thru L320	55-1009	Coil, Choke, 55 uh
L321	55-1019	Coil, Choke, 4.7 uh
L322 thru L328	55-1009	Coil, Choke, 55 uh
L329	55-1019	Coil, Choke, 4.7 uh
L330 thru L333	55-1009	Coil, Choke, 55 uh
L401, L402	55-1009	Coil, Choke, 55 uh
L404 thru L406	55-1009	Coil, Choke, 55 uh
L501	11-1014	Coil Assy, 38KC
L502	11-1015	Coil Assy, 19KC
L503	11-1013	Coil Assy, Doubler
L504	11-1016	Coil Assy, 67KC
L601 thru L604	11-1017	Coil Assy, Low Pass Filter, 53 mh
L1001 thru L1004	55-1008	Rod, Inductor
LDR 501	11-1010	Light Cell Assy, Single (Muting)
LDR 601, 602	11-1011	Light Cell Assy, Double (Mono Stereo)
Q1, Q2	34-1014	Transistor
Q3	34-1013	Transistor
Q4, Q5	34-1014	Transistor

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
Q6	34-1013	Transistor
Q8, Q9	34-1002	Transistor
Q11	34-1000	Transistor
Q12, Q13	34-1001	Transistor
Q14	34-1000	Transistor
Q201 thru Q204	34-1018	Transistor
Q301 thru Q304	34-1018	Transistor
Q305	34-1008	Transistor
Q501	34-1010	Transistor
Q502	34-1008	Transistor
Q503 thru Q505	34-1009	Transistor
Q506, Q507	34-1010	Transistor
Q508	34-1009	Transistor
Q509	34-1017	Transistor
Q510	34-1012	FET
Q601	34-1009	Transistor
Q602	34-1017	Transistor
Q603 thru Q606	34-1012	FET
Q701, Q702	34-1008	Transistor
Q703	34-1011	Transistor
Q704, Q705	34-1008	Transistor
Q706	34-1011	Transistor
Q801	34-1008	Transistor
**Q802	34-1031	Transistor
Q803	34-1008	Transistor
Q804	34-1010	Transistor
**Q805	34-1031	Transistor
Q806, Q807	34-1008	Transistor
Q808	34-1010	Transistor
Q1001	34-1007	Transistor
Q1002	34-1005	Transistor
Q1003	34-1007	Transistor
Q1004	34-1004	Transistor
Q1005	34-1007	Transistor
Q1006	34-1004	Transistor
Q1201	34-1030	FET
Q1202, Q1203	34-1006	Transistor
Q1204	34-1030	FET
Q1205, Q1206	34-1006	Transistor
R1 thru R4	27-1022	47K, 5%, 1/4W, Dep Carb
R5 thru R9	27-1049	4.7K, 5%, 1/4W, Dep Carb
R9, R10	270K, 5%, 1/4W, Dep Carb	
R11	26-1014	220 ohm, 10%, 2W, Carb Comp
R12, R13	29-1010	80 ohm, 5%, 5W, WW
R14	26-1015	430 ohm, 5%, 2W, Carb Comp
R15, R16	29-1010	80 ohm, 5%, 5W, WW
R17	26-1015	430 ohm, 5%, 2W, Carb Comp
R18	27-1055	220 ohm, 5%, 1/4W, Dep Carb
R19	26-1016	1.5K, 10%, 2W, Carb Comp
R20	27-1063	18K, 5%, 1/4W, Dep Carb
R21	27-1062	15K, 5%, 1/4W, Dep Carb
R22	26-1018	120 ohm, 10%, 1/2W, Carb Comp
R23	27-1023	39K, 5%, 1/4W, Dep Carb
R24, R25	26-1017	68 ohm, 10%, 1/2W, Carb Comp
R25		Not Used
R26, R27	33-1012	2.5K, WW (Bias)
R28	29-1000	.47 ohm, 5%, 5W, WW
R29	27-1034	100 ohm, 10%, 1/4W, Dep Carb
R30	27-1036	1K, 5%, 1/4W, Dep Carb
R31, R32	27-1035	33 ohm, 10%, 1/4W, Dep Carb
R33	27-1036	1K, 5%, 1/4W, Dep Carb
R34	27-1034	100 ohm, 10%, 1/4W, Dep Carb
R35, R36	29-1000	.47 ohm, 5%, 5W, WW
R37	27-1034	100 ohm, 10%, 1/4W, Dep Carb
R38	27-1036	1K, 5%, 1/4W, Dep Carb
R39, R40	27-1035	33 ohm, 10%, 1/4W, Dep Carb
R41	27-1036	1K, 5%, 1/4W, Dep Carb
R42	27-1034	100 ohm, 10%, 1/4W, Dep Carb
R43	29-1000	.47 ohm, 5%, 5W, WW
R44	29-1001	.13 ohm, 5%, 5W, WW
R45	26-1005	2.2 ohm, 10%, 1W Carb Comp
R46	29-1001	.13 ohm, 5%, 5W, WW
R47	26-1005	2.2 ohm, 10%, 1W, Carb Comp
R48	29-1005	400 ohm, 5%, 5W, WW
R49, R50	29-1004	330 ohm, 5%, 5W, WW
R51	29-1005	400 ohm, 5%, 5W, WW
R52, R53	26-1019	33 ohm, 5%, 1/2W, Carb Comp
*R54, R55		1 to 10 ohm, 10%, 1W Carb Comp
R201 thru R204	26-1025	1.8K, 5%, 1/4W, Carb Comp
R205 thru R208	26-1026	2.7K, 5%, 1/4W, Carb Comp
R209	26-1029	100K, 5%, 1/4W, Carb Comp
R210	26-1028	8.2K, 5%, 1/4W, Carb Comp
R211	26-1029	100K, 5%, 1/4W, Carb Comp
R212	26-1027	3.3K, 5%, 1/4W, Carb Comp
R213	26-1029	100K, 5%, 1/4W, Carb Comp
R214	26-1027	3.3K, 5%, 1/4W, Carb Comp
R215	26-1029	100K, 5%, 1/4W, Carb Comp
R216	33-1005	10K Pot (Bias Set)
R217	26-1036	5.6K, 5%, 1/4W, Carb Comp

*Value selected for optimum performance
** 34-1010 or 34-1011 may have been used in production

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R218, R219	26-1026	2.7K, 5%, 1/4W, Carb Comp
R220, R221	26-1004	33 ohm, 5%, 1/4W, Carb Comp
R222	26-1113	3.9K, 5%, 1/4W, Carb Comp
R223	26-1027	3.3K, 5%, 1/4W, Carb Comp
R224	26-1111	22 ohm, 5%, 1/4W, Carb Comp
R301	26-1029	100K, 5%, 1/4W, Carb Comp
R302	26-1026	2.7K, 5%, 1/4W, Carb Comp
R303	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R304	26-1037	47K, 5%, 1/4W, Carb Comp
R305	26-1029	100K, 5%, 1/4W, Carb Comp
R306	26-1030	22K, 5%, 1/4W, Carb Comp
R307	26-1026	2.7K, 5%, 1/4W, Carb Comp
R308	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R309	26-1037	47K, 5%, 1/4W, Carb Comp
R310	26-1029	100K, 5%, 1/4W, Carb Comp
R311	26-1030	22K, 5%, 1/4W, Carb Comp
R312	26-1026	2.7K, 5%, 1/4W, Carb Comp
R313	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R314	26-1037	47K, 5%, 1/4W, Carb Comp
R315	26-1029	100K, 5%, 1/4W, Carb Comp
R316	26-1030	22K, 5%, 1/4W, Carb Comp
R317	26-1037	47K, 5%, 1/4W, Carb Comp
R318		Not Used
R319	26-1026	2.7K, 5%, 1/4W, Carb Comp
R320	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R321	26-1029	100K, 5%, 1/4W, Carb Comp
R322	26-1109	220K, 5%, 1/4W, Carb Comp
R323	26-1041	6.8K, 5%, 1/4W, Carb Comp
R324	26-1030	22K, 5%, 1/4W, Carb Comp
R325	33-1006	25K Pot (Vert Gain)
R326	26-1042	10K, 5%, 1/4W, Carb Comp
R327	33-1006	25K Pot (Noise Level)
R328	33-1026	1M Pot (Muting)
R401	26-1104	2.2K, 5%, 1/4W, Carb Comp
R402	26-1036	5.6K, 5%, 1/4W, Carb Comp
R403, R404	30-1023	100K, 1%, 1/4W
R405	26-1028	8.2K, 5%, 1/4W, Carb Comp
R406	26-1098	560 ohm, 5%, 1/2W, Carb Comp
R501	27-1024	10K, 5%, 1/4W, Dep Carb
R502	27-1003	6.8K, 5%, 1/4W, Dep Carb
R503	27-1049	4.7K, 5%, 1/4W, Dep Carb
R504	27-1006	3.3K, 10%, 1/4W, Dep Carb
R505	33-1005	10K Pot
R506	27-1052	390 ohm, 5%, 1/4W, Dep Carb
R507	27-1051	2.2K, 5%, 1/4W, Dep Carb
R508 thru R510	27-1049	4.7K, 5%, 1/4W, Dep Carb
R511	27-1036	1K, 5%, 1/4W, Dep Carb
R512	33-1006	25K Pot
R513, R514	27-1027	22K, 5%, 1/4W, Dep Carb
R515	27-1001	1M, 10%, 1/4W, Dep Carb
R516	27-1054	300 ohm, 5%, 1/4W, Dep Carb
R517	33-1010	2.5K, Pot, WW
R518, R519	27-1041	270K, 5%, 1/4W, Dep Carb
R520	27-1055	220 ohm, 5%, 1/4W, Dep Carb
R521, R522	27-1040	390K, 5%, 1/4W, Dep Carb
R523	27-1050	4.3K, 5%, 1/4W, Dep Carb
R524	27-1022	47K, 5%, 1/4W, Dep Carb
R525	27-1053	330 ohm, 5%, 1/4W, Dep Carb
R526	27-1047	3.9K, 10%, 1/4W, Dep Carb
R527	27-1006	3.3K, 10%, 1/4W, Dep Carb
R528	27-1036	1K, 5%, 1/4W, Dep Carb
R529	27-1006	3.3K, 10%, 1/4W, Dep Carb
R530	26-1108	27K, 10%, 1/4W, Carb Comp
R531	27-1055	220 ohm, 5%, 1/4W, Carb Comp
R601, R602	30-1023	100K, 1%, 1/4W
R603	27-1048	2.2M, 10%, 1/4W, Dep Carb
R604, R605	30-1023	100K, 1%, 1/4W
R606	27-1048	2.2M, 10%, 1/4W, Dep Carb
R607	27-1023	39K, 5%, 1/4W, Dep Carb
R608	27-1001	1M, 10%, 1/4W, Dep Carb
R609	27-1027	22K, 5%, 1/4W, Dep Carb
R610	27-1041	270K, 5%, 1/4W, Dep Carb
R611	27-1040	390K, 5%, 1/4W, Dep Carb
R612	27-1042	180K, 5%, 1/4W, Dep Carb
R613	27-1045	68 ohm, 5%, 1/4W, Dep Carb
R614	26-1009	33K, 10%, 2W, Carb Comp
R615	27-1043	33K, 5%, 1/4W, Dep Carb
R616	27-1027	22K, 5%, 1/4W, Dep Carb
R617	27-1047	3.9K, 10%, 1/4W, Dep Carb
R618	26-1010	4.7M, 20%, 1/4W, Dep Comp
R619, R620	30-1026	3.6K, 1%, 1/4W
R621	33-1009	5K, Pot, WW
R622	27-1047	3.9K, 10%, 1/4W, Dep Carb
R623, R624	30-1025	5.1K, 1%, 1/4W
R625	26-1010	4.7M, 20%, 1/4W, Carb Comp
R626, R627	30-1024	11.3K, 1%, 1/4W
R628, R629	27-1044	5.6K, 5%, 1/4W, Dep Carb
R630, R631	27-1046	680K, 10%, 1/4W, Dep Carb
R632	27-1047	3.9K, 10%, 1/4W, Dep Carb
R701	27-1026	470 ohm, 5%, 1/4W, Dep Carb
R702	33-1007	100K Pot (Bias)
R703	30-1017	470 ohm, 1%, 1/4W
R704	27-1060	18K, 5%, 1/4W
R705	27-1029	2.2M, 5%, 1/4W
R706	27-1051	2.2K, 5%, 1/4W, Dep Carb
R707	30-1016	47K, 1%, 1/4W
R708	30-1002	680K, 2%, 1/4W
R709	27-1059	47 ohm, 5%, 1/4W, Dep Carb
R710	27-1022	47K, 5%, 1/4W, Dep Carb
R711	27-1026	470 ohm, 5%, 1/4W, Dep Carb
R712	27-1030	1M, 5%, 1/4W
R713	27-1029	2.2M, 5%, 1/4W
R714	27-1021	100K, 5%, 1/4W, Dep Carb
R715	27-1041	270K, 5%, 1/4W, Dep Carb
R716	26-1002	4.7K, 5%, 1/2W, Carb Comp
R717	27-1030	1M, 5%, 1/4W
R718	27-1043	33K, 5%, 1/4W, Dep Carb

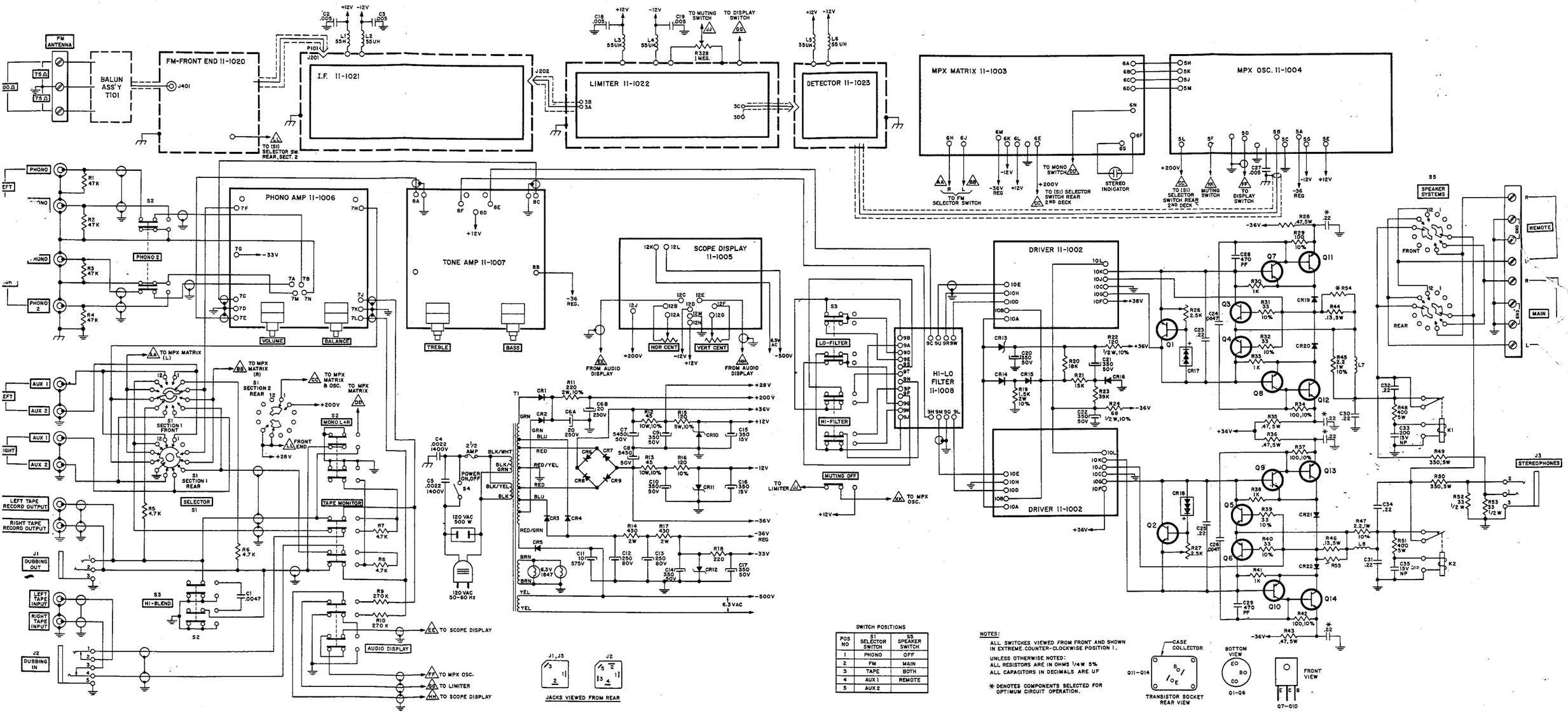
REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R719	27-1029	2.2M, 5%, 1/4W
R720	27-1041	270K, 5%, 1/4W, Dep Carb
R721	26-1002	4.7K, 5%, 1/2W, Carb Comp
R722, R723	27-1026	470 ohm, 5%, 1/4W, Dep Carb
R724	33-1007	100K, Pot (Bias)
R725	27-1060	18K, 5%, 1/4W
R726	27-1021	100K, 5%, 1/4W, Dep Carb
R727	27-1022	47K, 5%, 1/4W, Dep Carb
R728	27-1059	47 ohm, 5%, 1/4W, Dep Carb
R729	30-1017	470 ohm, 1%, 1/4W
R730	27-1029	2.2M, 5%, 1/4W
R731	30-1002	680K, 2%, 1/4W
R732	30-1016	47K, 1%, 1/4W
R733	27-1051	2.2K, 5%, 1/4W, Dep Carb
R734	33-1001	500K, Pot (Balance)
R735	33-1000	250K, Pot (Volume)
R801	27-1024	10K, 5%, 1/4W, Dep Carb
R802	27-1027	22K, 5%, 1/4W, Dep Carb
R803	33-1003	250K, Pot (Treble)
R804	27-1062	15K, 5%, 1/4W, Dep Carb
R805	27-1030	1M, 5%, 1/4W, Dep Carb
R806	30-1029	1K, 1%, 1/4W
R807	30-1028	20K, 1%, 1/4W
R808	27-1027	22K, 5%, 1/4W, Dep Carb
R809	27-1061	120K, 5%, 1/4W, Dep Carb
R810	27-1030	1M, 5%, 1/4W, Dep Carb
R811	27-1055	220 ohm, 5%, 1/4W, Dep Carb
R812	27-1024	10K, 5%, 1/4W, Dep Carb
R813	27-1033	22K, 5%, 1/4W, Dep Carb
R814	30-1027	39K, 1%, 1/4W
R815	33-1002	500K, Pot (Bass)
R816	30-1027	39K, 1%, 1/4W
R817	27-1024	10K, 5%, 1/4W, Dep Carb
R818	27-1033	22K, 5%, 1/4W, Dep Carb
R819	30-1027	39K, 1%, 1/4W
R820	33-1002	500K, Pot (Bass)
R821	30-1027	39K, 1%, 1/4W
R822	27-1024	10K, 5%, 1/4W, Dep Carb
R823	27-1030	1M, 5%, 1/4W, Dep Carb
R824	30-1028	20K, 1%, 1/4W
R825	30-1029	1K, 1%, 1/4W
R826	27-1061	120K, 5%, 1/4W, Dep Carb
R827	27-1027	22K, 5%, 1/4W, Dep Carb
R828, R829	27-1024	10K, 5%, 1/4W, Dep Carb
R830	33-1003	250K, Pot (Treble)
R831	27-1027	22K, 5%, 1/4W, Dep Carb
R832	27-1030	1M, 5%, 1/4W, Dep Carb
R833	27-1055	220 ohm, 5%, 1/4W, Dep Carb
R834	27-1062	15K, 5%, 1/4W, Dep Carb
R901	27-1001	1M, 10%, 1/4W, Dep Carb
R902	30-1032	4.7K, 1%, 1/4W
R903	30-1030	22K, 1%, 1/4W
R904	30-1019	10K, 1%, 1/4W
R905	26-1004	22M, 20%, 1/4W, Carb Comp
R906	30-1032	4.7K, 1%, 1/4W
R907	27-1001	1M, 10%, 1/4W, Dep Carb
R908	30-1030	22K, 1%, 1/4W
R909	30-1019	10K, 1%, 1/4W
R910	26-1004	22M, 20%, 1/4W, Carb Comp
R911, R912	26-1055	100K, 10%, 1/4W, Carb Comp
R1001	27-1026	470 ohm, 5%, 1/4W, Dep Carb
*R1002		820 ohm to 3.9K, 10%, 1/4W
R1003	27-1039	200 ohm, 5%, 1/4W, Dep Carb
R1004, R1005	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R1006	26-1008	22 ohm, 10%, 1/4W, Carb Comp
R1007	26-1006	5.6K, 10%, 2W, Carb Comp
R1008	30-1022	220 ohm, 1%, 1/4W
R1009	27-1037	91K, 5%, 1/4W, Dep Carb
R1010	30-1021	620 ohm, 1%, 1/4W
R1011	30-1019	10K, 1%, 1/4W
R1012	30-1020	3.9K, 1%, 1/4W
R1013	27-1038	750 ohm, 5%, 1/4W, Dep Carb
R1014	27-1021	100K, 5%, 1/4W, Dep Carb
R1015	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R1016	33-1011	500 ohm, Pot (DC Balance)
R1017	27-1038	750 ohm, 5%, 1/4W, Dep Carb
R1018	26-1007	100 ohm, 5%, 1/4W, Carb Comp
R1019	26-1008	22 ohm, 10%, 1/4W, Carb Comp
R1020	26-1008	22 ohm, 10%, 1/4W, Carb Comp
R1201	33-1004	2.5K, Pot (Horiz Centering)
R1202	27-1024	10K, 5%, 1/4W, Dep Carb
R1203, R1204	27-1076	10K, 10%, 3W, Dep Carb
R1205	27-1041	270K, 5%, 1/4W, Dep Carb
R1206	27-1057	1.2K, 5%, 1/4W, Dep Carb
R1207	27-1058	82 ohm, 5%, 1/4W, Dep Carb
R1208	27-1057	1.2K, 5%, 1/4W, Dep Carb
R1209	26-1013	100K, 10%, 1/2W, Carb Comp
R1210	26-1012	390K, 10%, 1W, Carb Comp
R1211	33-1004	2.5K, Pot (Vert Centering)
R1212	27-1041	270K, 5%, 1/4W, Dep Carb
R1213	27-1057	1.2K, 5%, 1/4W, Dep Carb
R1214	27-1058	82 ohm, 5%, 1/4W, Dep Carb
R1215	27-1057	1.2K, 5%, 1/4W, Dep Carb
R1216	33-1008	150K, Pot (Focus)
R1217, R1218	27-1001	1M, 10%, 1/4W, Dep Carb
R1219	27-1024	10K, 5%, 1/4W, Dep Carb
R1220, R1221	27-1076	10K, 10%, 3W, Dep Carb
R1222	27-1022	47K, 5%, 1/4W, Dep Carb
R1223	33-1006	25K, Pot (Intensity)
R1224	27-1049	4.7K, 5%, 1/4W, Dep Carb
R1225	27-1056	1.5M, 10%, 1/4W, Dep Carb
R1226, R1227	27-1081	2K, 5%, 1/4W, Dep Carb
S1	46-1000	Switch, Rotary (SELECTOR)
S2	48-1000	Switch-Assy, 4-section, pushbutton (PHONO 2, MONO L & R, TAPE MONITOR, AUDIO DISPLAY)
S3	48-1000	Switch Assy, Pushbutton, 4-section (HI-BLEND, HI FILTER, LOW FILTER, MUTING OFF)
S4	48-1004	Switch, Power
S5	46-1001	Switch, Rotary (SPEAKER SYSTEMS)

*Value selected for optimum performance.

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
T1	52-1000	Transformer, Power
T101	55-1020	Transformer, Balun Assy (Input)
T401	55-1001	Coil, Detector
T501	11-1012	Coil Assy, Oscillator
V1201	37-1000	CRT
	87-1002	Binding Post (Ground)
	90-1018	Foot, Rubber
	61-1000	Glass, Dial
	60-1028	Knob (Centering)
	60-1005	Knob (Volume, Balance, Speaker Systems, Selector)
	11-1000	Knob Assy (Tuning)
	60-1007	Knob, Front (Bass, Treble)
	60-1078	Knob, Pushbutton (for S2, S3)
	60-1006	Knob, Rear (Bass, Treble)
	40-1003	Lamp, Panel, Type 1847
	40-1007	Lamp, Stereo, Type NE2H
	40-1000	Lamp, Muting, Type NE2V
	62-1000	Pointer, Dial
	87-1000	Terminal Block (Speaker)
	87-1001	Terminal Block (Antenna)

NOTES:

Elect = Electrolytic
Tant = Tantalum
Poly = Polystyrene
Carb Comp = Carbon Composition
Dep Carb = Deposited Carbon
WW = Wire Wound



SWITCH POSITIONS

POS NO	S1 SELECTOR SWITCH	S5 SPEAKER SWITCH
1	PHONO	OFF
2	FM	MAIN
3	TAPE	BOTH
4	AUX 1	REMOTE
5	AUX 2	

NOTES:

ALL SWITCHES VIEWED FROM FRONT AND SHOWN IN EXTREME COUNTER-CLOCKWISE POSITION 1.

UNLESS OTHERWISE NOTED:
ALL RESISTORS ARE IN OHMS 1/4W 5%
ALL CAPACITORS IN DECIMALS ARE UF

* DENOTES COMPONENTS SELECTED FOR OPTIMUM CIRCUIT OPERATION.

Figure 25. Model 18 Stereophonic Receiver Schematic Diagram

	B	E	C
Q1,Q2	0.6	-1.3	1.3
Q3,Q6	0	0	-1.3
Q4,Q5	0	0	1.3
Q7,Q10	-1.3	-0.75	-36
Q8,Q9	1.3	0.7	36
Q11,Q14	-36	-36	-0.75
Q12,Q13	36	36	0.7

Voltages are:

1. Dc ±10%
2. Measured using VTVM
3. Measured with 117-volt line
4. Measured with respect to chassis
5. Measured with no signal (ant terminals shorted), volume at zero, Muting out, Bass and Treble flat, Dot on scope centered, Audio display out.

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
T1	52-1000	Transformer, Power
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T401	55-1001	Coil, Detector
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	40-1007	Lamp, Stereo, Type NE2H
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	62-1000	Pointer, Dial
	87-1000	Terminal Block (Speaker)
	87-1001	Terminal Block (Antenna)

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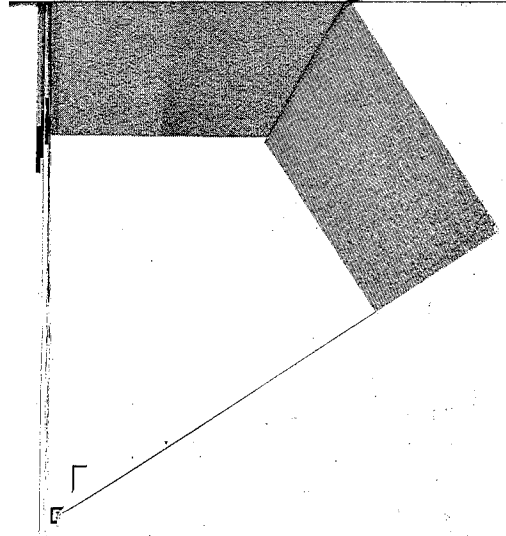

marantz

37-04 57th STREET, WOODSIDE, NEW YORK, 11377

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