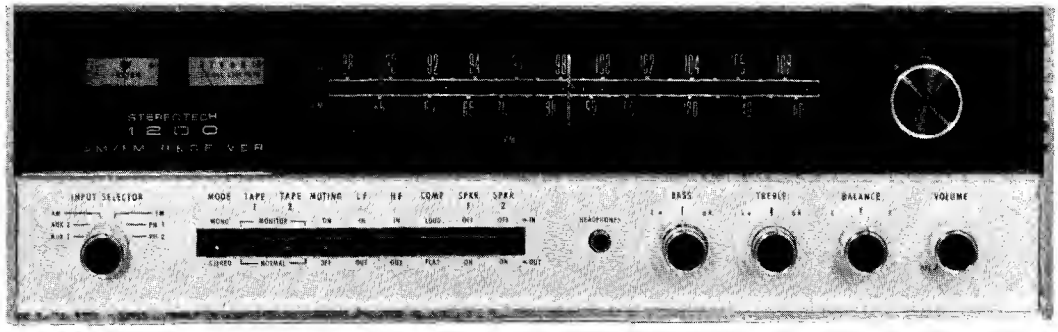
1200

STEREOTECH

AM/FM RECEIVER

SERVICE INFORMATION



SERIAL NUMBER BK1001 AND ABOVE

PERFORMANCE DETAILS

PREAMPLIFIER AND POWER AMPLIFIER

POWER OUTPUT

50 watts minimum sine wave continuous average power output, per channel, both channels operating into 8 ohms load impedance.

30 watts minimum sine wave continuous average power output, per channel, both channels operating into 16 ohms load impedance.

OUTPUT LOAD IMPEDANCE

8 ohms or 16 ohms

RATED POWER BAND

20 Hz to 20,000 Hz

TOTAL HARMONIC DISTORTION

0.2% maximum harmonic distortion at any power level from 250 milliwatts to rated power per channel across 8 ohms or 16 ohms; both channels operating.

INTERMODULATION DISTORTION

0.2% if instantaneous peak power output is twice rated power or less per channel with both channels operating for any combination of frequencies 20 Hz to 20,000 Hz

FREQUENCY RESPONSE

20 Hz to 20,000 ±1 dB

NOISE AND HUM

Power Amplifier: 95 dB below rated output
Tape 1 and Tape 2, Aux 1 and Aux 2: 89 dB below rated output
Phono 1 and Phono 2: 70 dB below 10 mV input

RATINGS

DAMPING FACTOR

48 at 8 ohms output
96 at 16 ohms output

INPUT SENSITIVITY AND IMPEDANCE

Power Amplifier: 1.2 volts, 40,000 ohms
Phono 1 and Phono 2: 3.0 mV, 47,000 ohms
Tape 1 and Tape 2: 350 mV, 100,000 ohms
Aux 1 and Aux 2: 350 mV, 100,000 ohms

TAPE OUTPUT

Preamp: 12 volts with rated input
Tuner: 1.2 volts at 100% FM modulation
Tape: 350 mV with rated input from low level inputs
Phono: 1.2 volts with 10 mV input at 1000 Hz

TONE CONTROLS: Bass ±16 dB at 20 Hz. Treble ±16 dB at 20,000 Hz.

L.F. FILTER: Active filter with 12 dB per octave roll off below 50 Hz, down 18 dB at 20 Hz.

H.F. FILTER: Active filter with 12 dB per octave roll off above 7000 Hz, down 18 dB at 20,000 Hz.

AM TUNER

TUNING RANGE: 535 to 1605 kHz.

SENSITIVITY: 75 μV IHF (external ant.)

SIGNAL TO NOISE RATIO: 50 dB minimum (IHF,) 60 dB at 100% modulation.

HARMONIC DISTORTION: Less than 1% (IHF.)

IMAGE REJECTION: Greater than 60 dB 535 to 1605 kHz.

FM TUNER

TUNING RANGE: 87.5 to 108.5 MHz.

USEABLE SENSITIVITY: 2.5 microvolts at 100% modulation (±75 kHz deviation) for 3% total noise and harmonic distortion (IHF).

SIGNAL TO NOISE RATIO: 70 dB below 100% modulation.

HARMONIC DISTORTION: Less than 0.5% mono and less than 0.7% stereo.

AUDIO FREQUENCY RESPONSE: ±1 dB 50 Hz to 10,000 Hz, ±2 dB 20 Hz to 15,000 Hz.

SELECTIVITY: 55 dB alternate channel minimum (IHF)

SPURIOUS REJECTION: 90 dB minimum (IHF)

IMAGE REJECTION: 70 dB minimum

STEREO SEPARATION: 35 dB minimum at 1,000 Hz.

SCA FILTER: 60 dB minimum

GENERAL INFORMATION

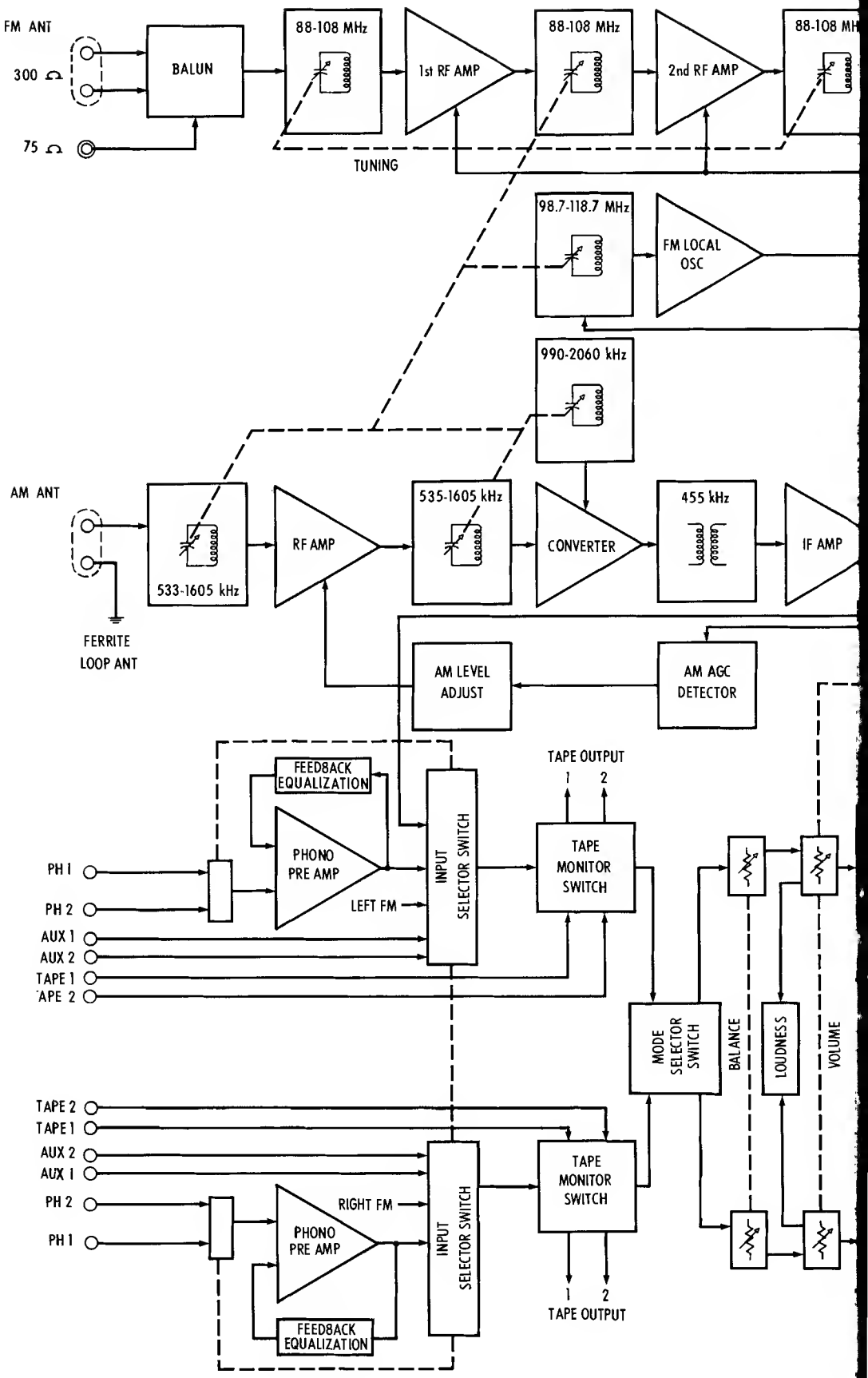
POWER REQUIREMENTS: 120 volts 50-60 Hz 50 watts at zero input, 320 watts rated output.

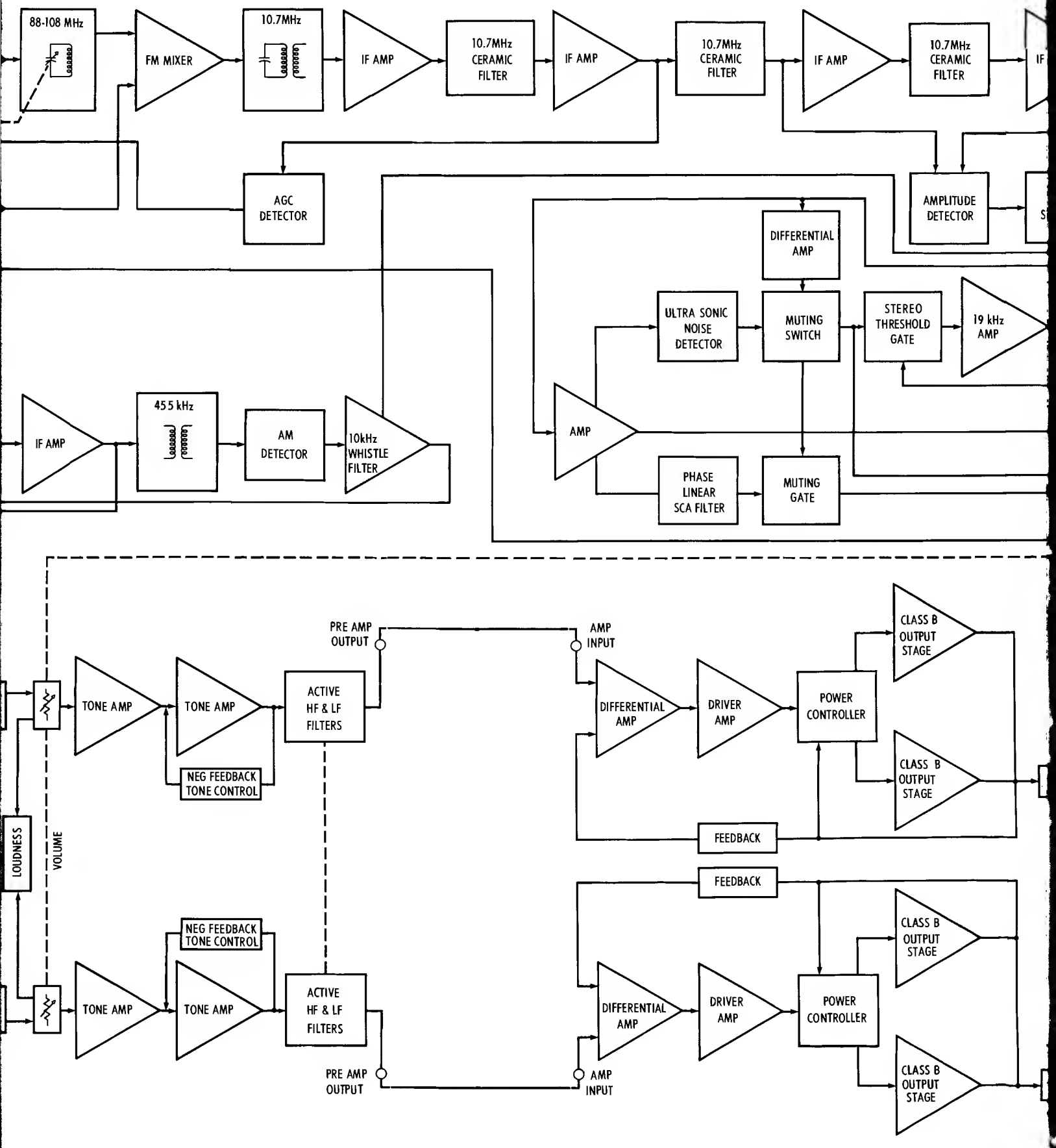
SEMICONDUCTOR COMPLEMENT: 68 Transistors; 4 FETs, 5 ICs, 39 Diodes.

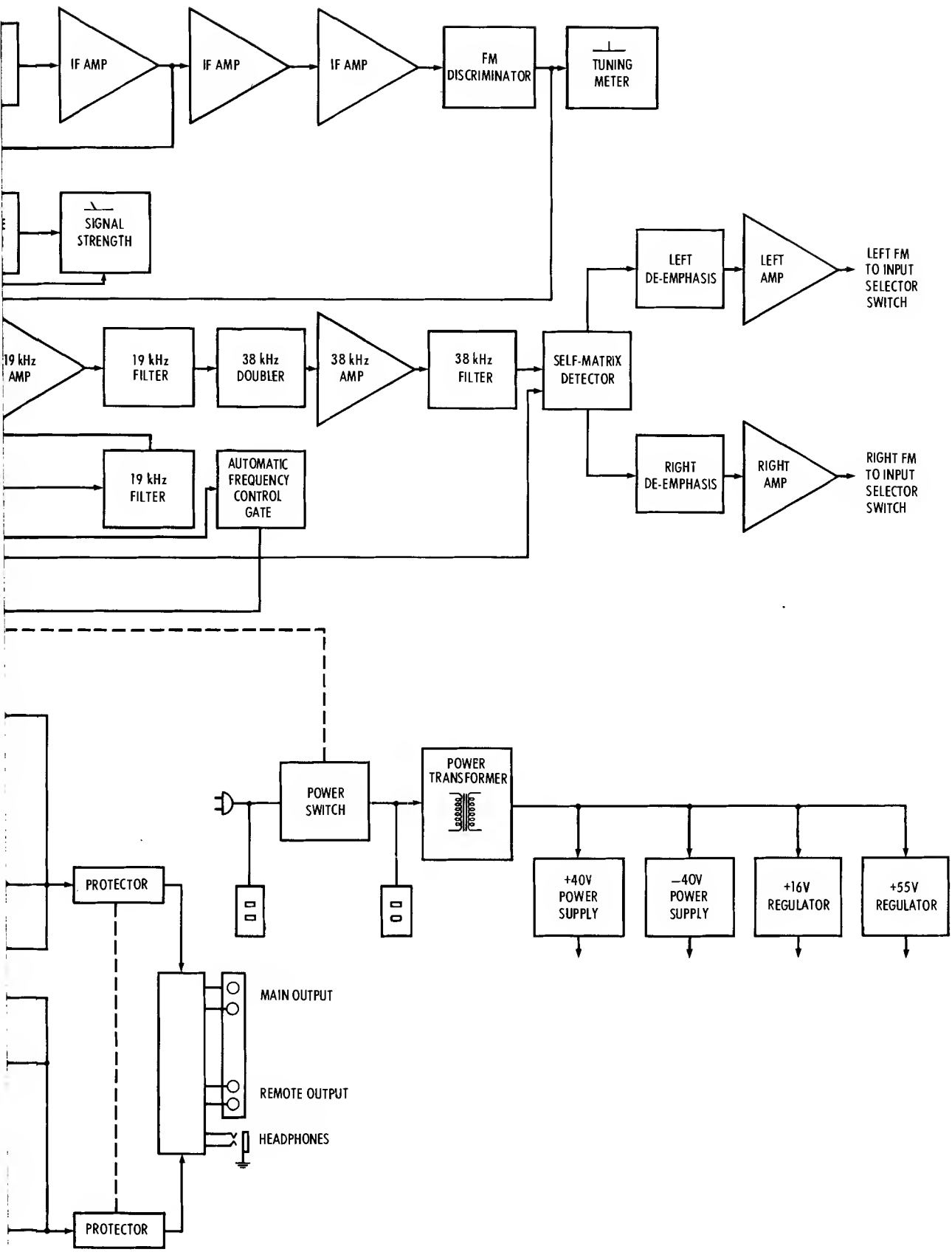
MECHANICAL INFORMATION

SIZE: Front panel measures 17-1/2 inches wide (444 mm), by 5-5/32 inches high (131 mm). Chassis measures 16-15/16 inches wide (430 mm), by 4-5/8 inches high (117 mm), by 15-7/8 inches deep (403 mm) plus antenna. Knob clearance required is 1-1/2 inches (31 mm) in front of the mounting panel.

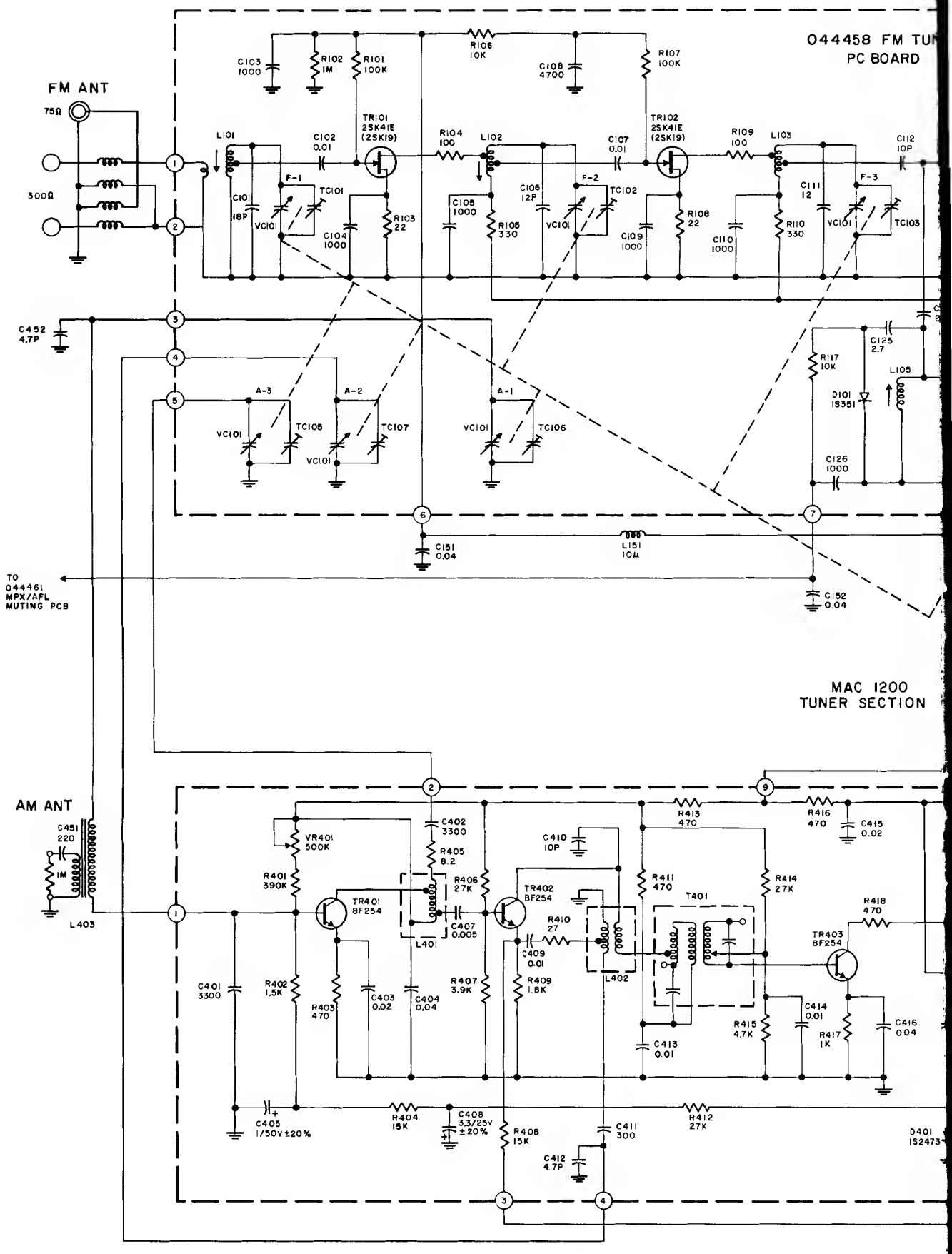
WEIGHT: 33 pounds (14.97 kg) net, 39 pounds (17.69 kg) in shipping cartons.


FM ANT
300 Ω
75 Ω
BALUN
88-108 MHz
1st RF AMP
88-108 MHz
2nd RF AMP
88-108 MH
TUNING
98.7-118.7 MHz
FM LOCAL OSC
990-2060 kHz
AM ANT
533-1605 kHz
RF AMP
535-1605 kHz
CONVERTER
455 kHz
IF AMP
FERRITE LOOP ANT
AM LEVEL ADJUST
AM AGC DETECTOR
TAPE OUTPUT
1 2
FEEDBACK EQUALIZATION
PHONO PRE AMP
LEFT FM
INPUT SELECTOR SWITCH
TAPE MONITOR SWITCH
PH 1
PH 2
AUX 1
AUX 2
TAPE 1
TAPE 2
MODE SELECTOR SWITCH
BALANCE
LOUDNESS
VOLUME
RIGHT FM
1 2
TAPE OUTPUT
FEEDBACK EQUALIZATION

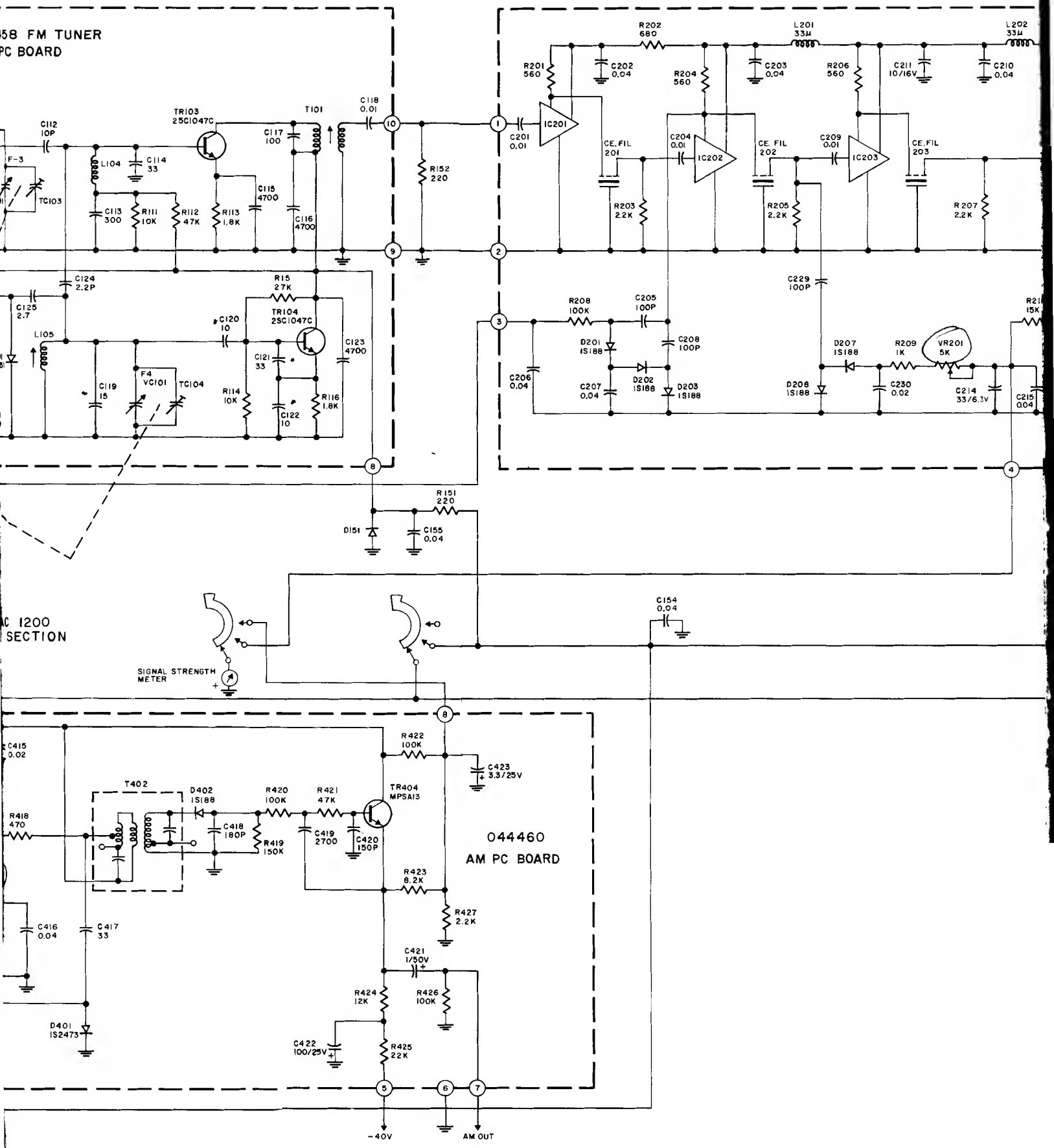

88-108 MHz
FM MIXER
10.7MHz
IF AMP
10.7MHz CERAMIC FILTER
IF AMP
10.7MHz CERAMIC FILTER
IF AMP
10.7MHz CERAMIC FILTER
AGC DETECTOR
AMPLITUDE DETECTOR
DIFFERENTIAL AMP
ULTRA SONIC NOISE DETECTOR
MUTING SWITCH
STEREO THRESHOLD GATE
19 kHz AMP
IF AMP
455 kHz
AM DETECTOR
10kHz WHISTLE FILTER
AMP
PHASE LINEAR SCA FILTER
MUTING GATE
PRE AMP OUTPUT
AMP INPUT
CLASS B OUTPUT STAGE
TONE AMP
TONE AMP
ACTIVE HF & LF FILTERS
DIFFERENTIAL AMP
DRIVER AMP
POWER CONTROLLER
CLASS B OUTPUT STAGE
NEG FEEDBACK TONE CONTROL
LOUDNESS
VOLUME
FEEDBACK
FEEDBACK
NEG FEEDBACK TONE CONTROL
CLASS B OUTPUT STAGE
TONE AMP
TONE AMP
ACTIVE HF & LF FILTERS
DIFFERENTIAL AMP
DRIVER AMP
POWER CONTROLLER
CLASS B OUTPUT STAGE
PRE AMP OUTPUT
AMP INPUT

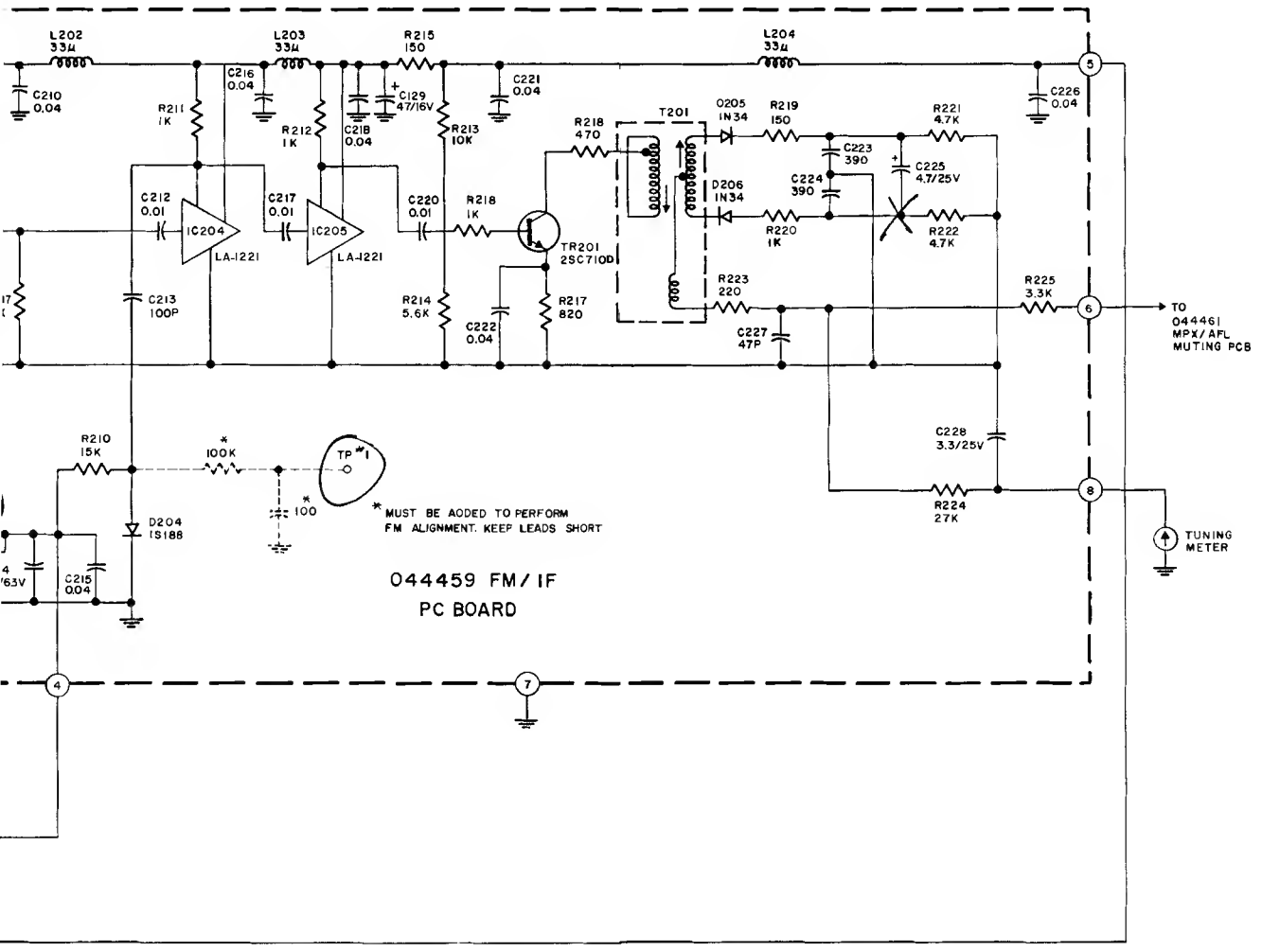


BLOCK DIAGRAM


044458 FM TUN
PC BOARD
FM ANT
75Ω
300Ω
L101
TR101 2SK41E (2SK19)
TR102 2SK41E (2SK19)
L102
L103
F-1
F-2
F-3
TC101
TC102
TC103
VC101
C101 18P
C102 0.01
C103 1000
C104 1000
C105 1000
C106 12P
C107 0.01
C108 4700
C109 1000
C110 1000
C111 12
C112 10P
R101 100K
R102 1M
R103 22
R104 100
R105 330
R106 10K
R107 100K
R108 22
R109 100
R110 330
C452 4.7P
A-3
A-2
A-1
TC105
TC107
TC106
C125 2.7
R117 10K
L105
D101 1S351
C126 1000
C151 0.04
L151 10μ
C152 0.04
TO 044461 MPX/AFL MUTING PCB
MAC 1200
TUNER SECTION
AM ANT
C451 220
1M
L403
VR401 500K
R401 390K
R402 1.5K
R403 470
C401 3300
C402 3300
R405 8.2
R406 27K
C407 0.005
L401
TR401 8F254
C403 0.02
C404 0.04
R407 3.9K
TR402 8F254
C410 10P
R410 27
C409 0.01
L402
R411 470
T401
R413 470
R414 27K
R416 470
C415 0.02
R418 470
TR403 8F254
R415 4.7K
C414 0.01
R417 1K
C416 004
C413 0.01
C405 1/50V±20%
R404 15K
C408 3.3/25V ±20%
R408 15K
C411 300
R412 27K
C412 4.7P
D401 1S2473

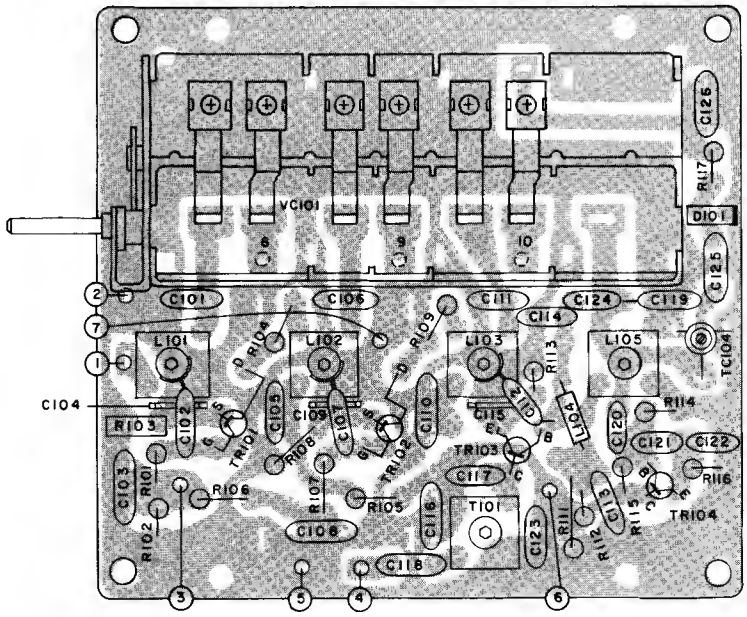
AM—FM TUNER


58 FM TUNER
PC BOARD
C112 10P
F-3
TC103
L104
C114 33
C113 300
R111 10K
R112 47K
TR103 2SC1047C
R113 1.8K
C115 4700
C117 100
C116 4700
T101
C118 0.01
R152 220
C124 2.2P
C125 2.7
L105
C119 15
F4 VC101
TC104
C120 10
R15 27K
TR104 2SC1047C
C121 33
C123 4700
R114 10K
C122 10
R116 1.8K
R202 680
L201 33μ
L202 33μ
R201 560
C202 0.04
R204 560
C203 0.04
R206 560
C211 10/16V
C210 0.04
C201 0.01
IC201
CE.FIL 201
C204 0.01
IC202
CE. FIL 202
C209 0.01
IC203
CE.FIL 203
R203 2.2K
R205 2.2K
R207 2.2K
C229 100P
R208 100K
C205 100P
D201 1S188
C208 100P
C206 0.04
C207 0.04
D202 1S188
D203 1S188
D207 1S188
R209 1K
VR201 5K
D208 1S188
C230 0.02
C214 33/6.3V
C215 0.04
R151 220
D151
C155 0.04
C154 0,04
C 1200
SECTION
SIGNAL STRENGTH METER
C415 0.02
R418 470
T402
D402 1S188
R420 100K
R421 47K
TR404 MPSA13
C418 180P
R419 150K
C419 2700
C420 150P
R422 100K
C423 3.3/25V
044460
AM PC BOARD
R423 8.2K
R427 2.2K
C416 0.04
C417 33
C421 1/50V
R424 12K
R426 100K
D401 1S2473
C422 100/25V
R425 22K
-40V
AM OUT

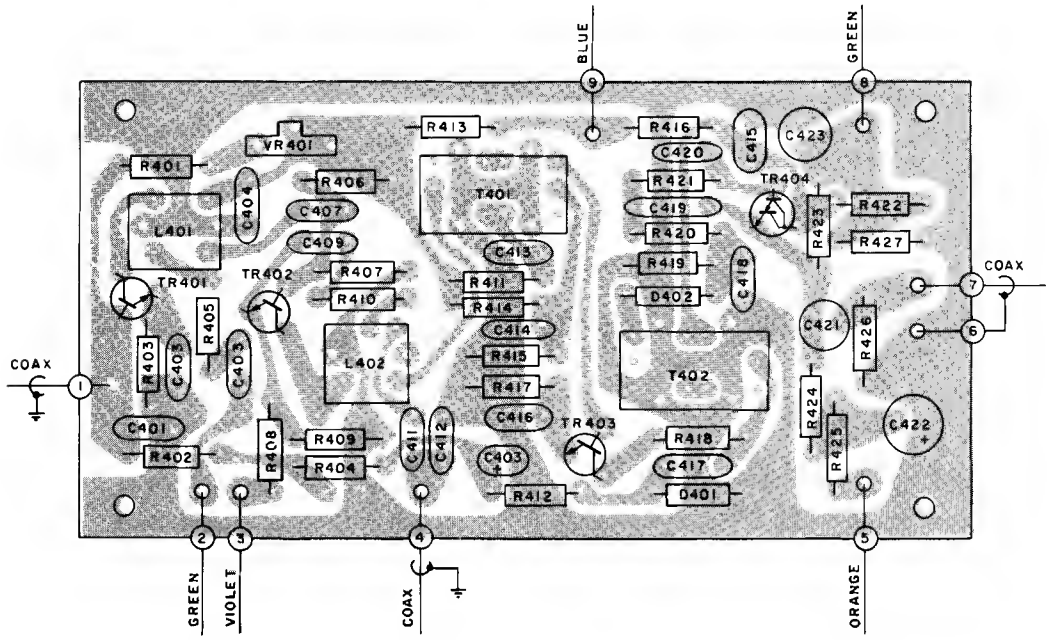

L202 33µ
L203 33µ
R215 150
L204 33µ
C210 0.04
C216 0.04
C221 0.04
C226 0.04
R211 1K
R212 1K
C218 0.04
C129 47/16V
R213 10K
R218 470
T201
0205 IN34
R219 150
R221 4.7K
C223 390
C225 4.7/25V
C224 390
D206 IN34
R220 1K
R222 4.7K
C212 0.01
C217 0.01
C220 0.01
R218 1K
IC204
IC205
LA-1221
LA-1221
TR201 2SC710D
C213 100P
R214 5.6K
C222 0.04
R217 820
R223 220
C227 47P
R225 3.3K
TO 044461 MPX/AFL MUTING PCB
R210 15K
100K
TP #1
100
MUST BE ADDED TO PERFORM FM ALIGNMENT. KEEP LEADS SHORT
C228 3.3/25V
R224 27K
D204 1S188
C215 0.04
TUNING METER
044459 FM/IF
PC BOARD
TO +16V 04461 MPX/AFL MUTING PCB

154-603

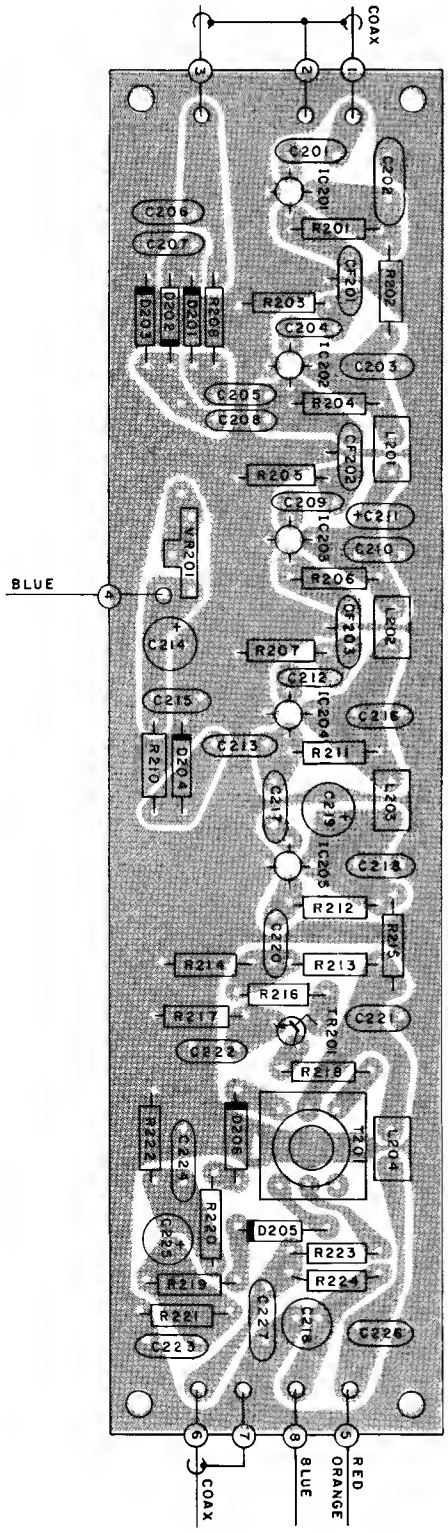
FM TUNER PC BOARD 044-458



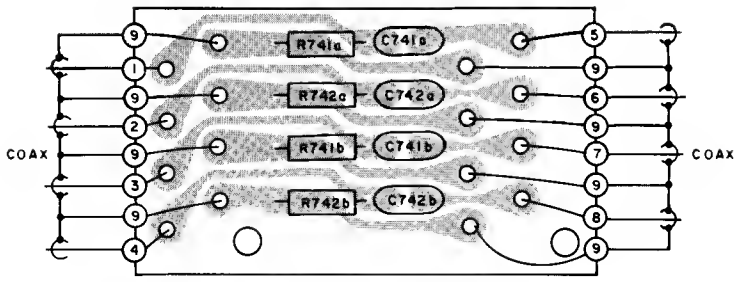
AM PC BOARD 044-460



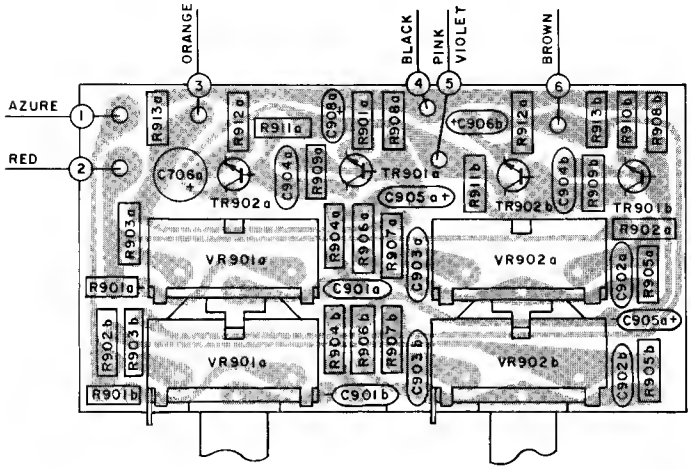
FM IF PC BOARD 044-459



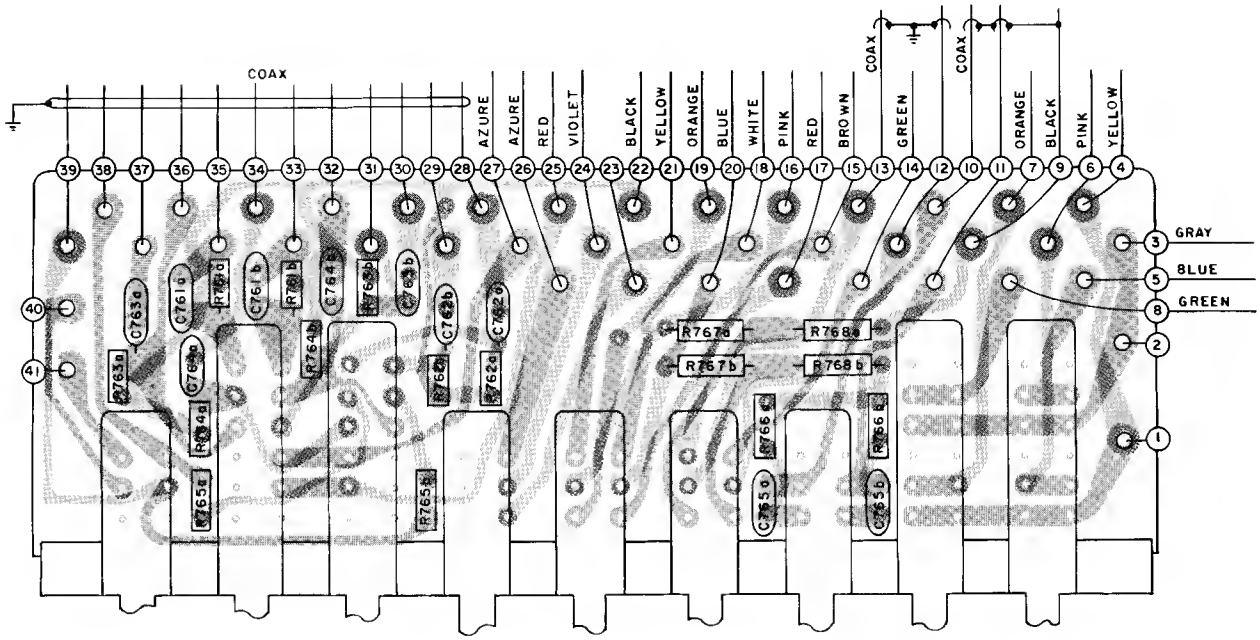
INPUT PC BOARD 044-467



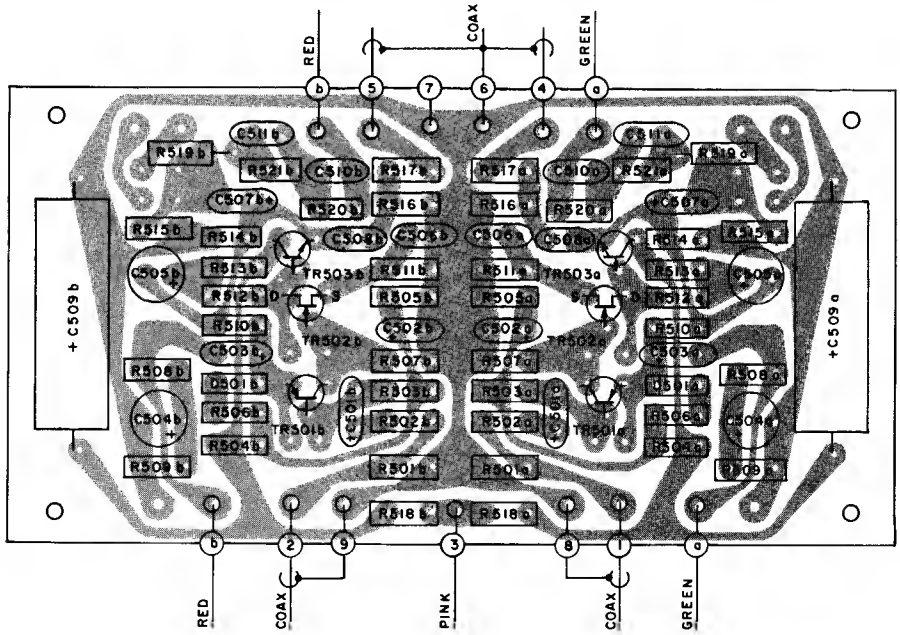
TONE CONTROL PC BOARD 044-476



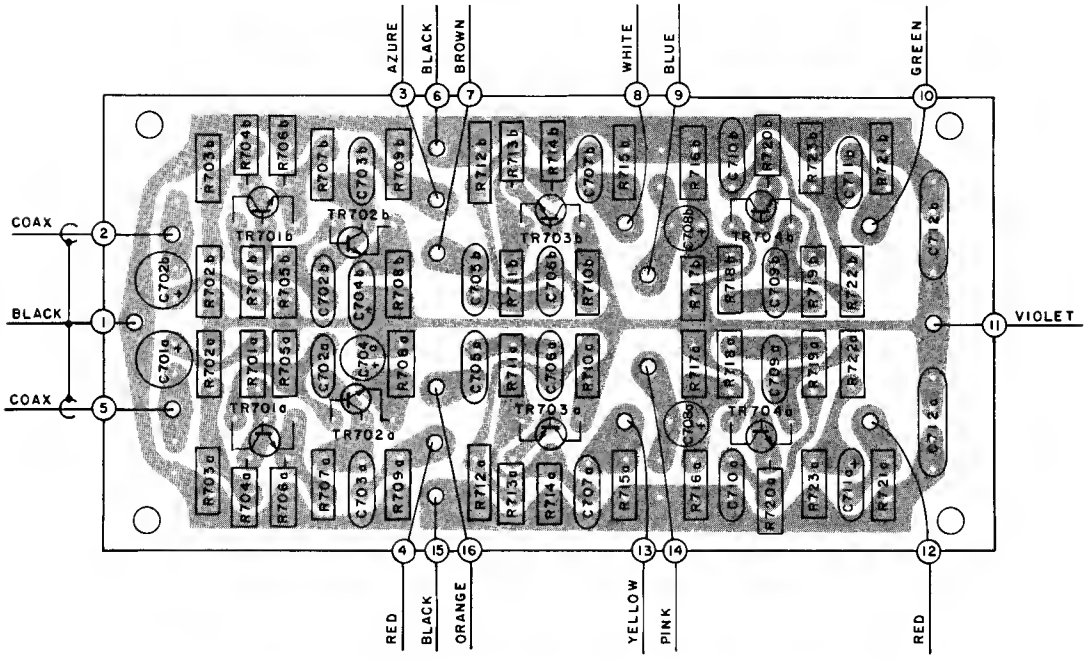
MODE SELECTOR PC BOARD 044-465

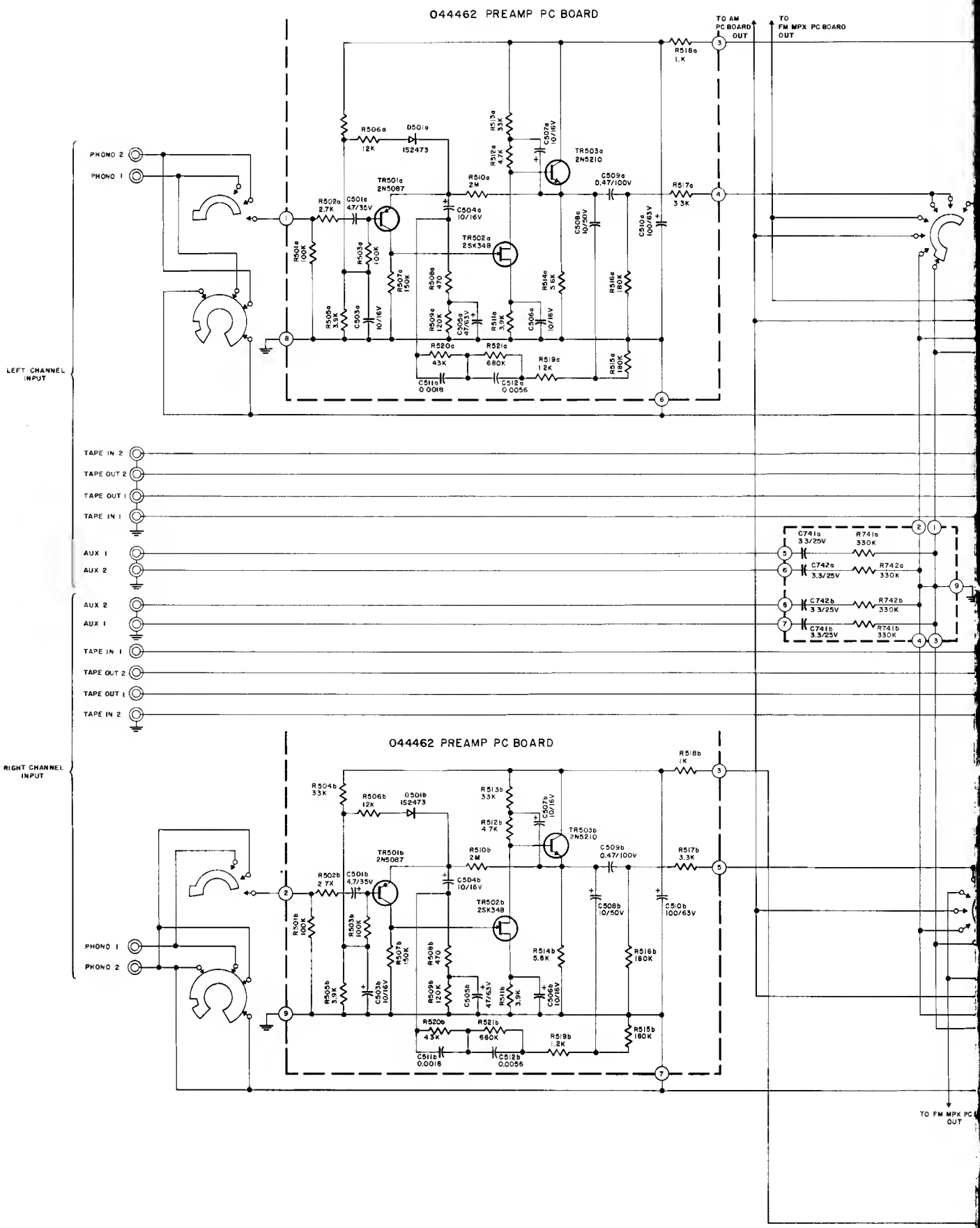


PREAMP PC BOARD 044-462

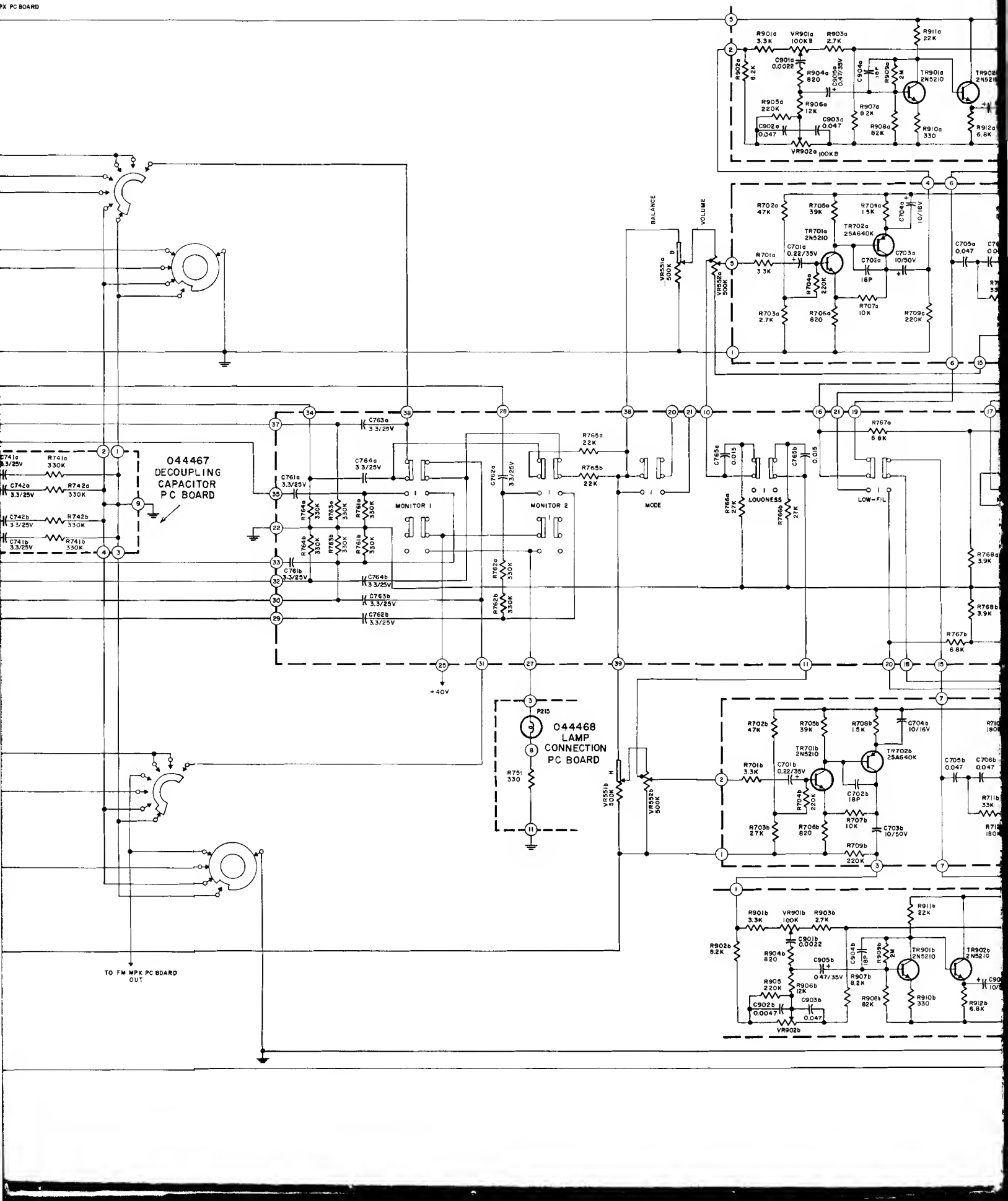


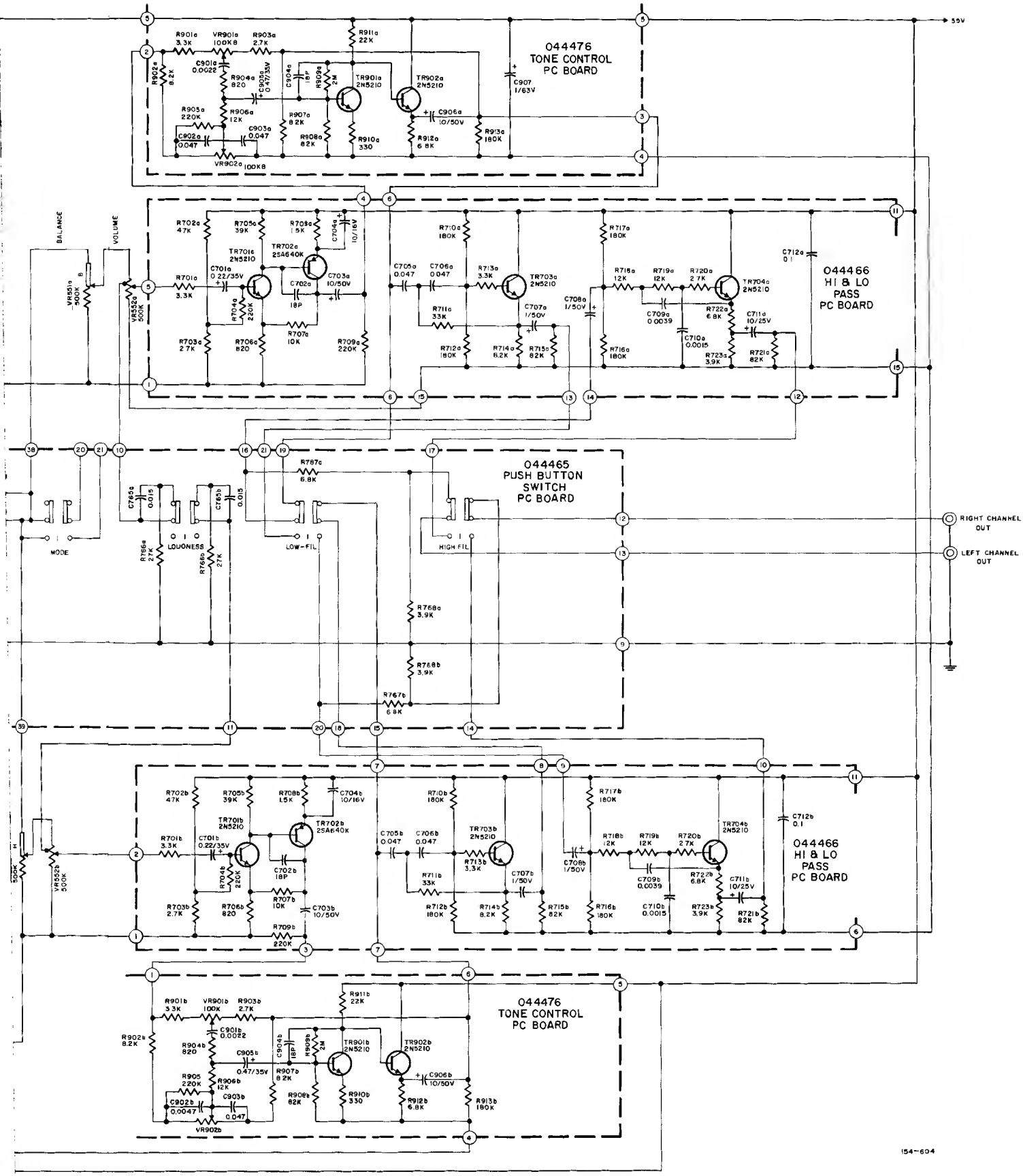
FILTER AMP PC BOARD 044-466



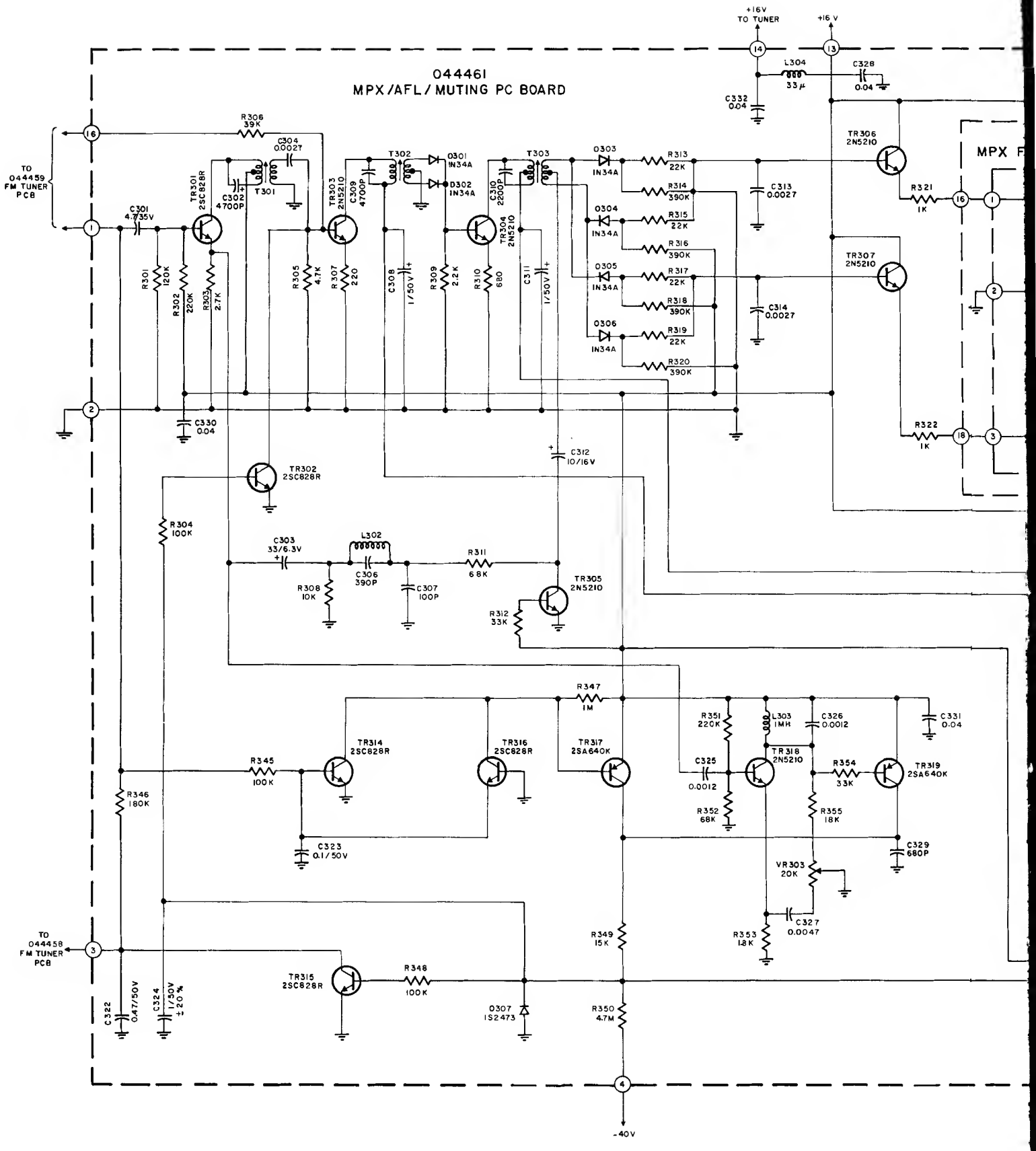

044462 PREAMP PC BOARD
TO AM PC BOARD OUT
TO FM MPX PC BOARD OUT
LEFT CHANNEL INPUT
PHONO 2
PHONO 1
TAPE IN 2
TAPE OUT 2
TAPE OUT 1
TAPE IN 1
AUX 1
AUX 2
R518a 1.K
R506a 12K
D501a IS2473
R513a 33K
C507a 10/16V
R512a 4.7K
TR503a 2N5210
TR501a 2N5087
R510a 2M
C509a 0.47/100V
R517a 3.3K
R502a 2.7K
C501a 4.7/35V
C504a 10/16V
TR502a 2SK34B
C508a 10/50V
C510a 100/63V
R501a 100K
R503a 100K
R507a 150K
R506a 470
R514a 5.6K
R516a 180K
R505a 3.9K
C503a 10/16V
R509a 120K
C505a 47/63V
R511a 3.9K
C506a 10/16V
R520a 43K
R521a 680K
R519a 1.2K
R515a 180K
C511a 0.0018
C512a 0.0056
C741a 3.3/25V
R741a 330K
C742a 3.3/25V
R742a 330K
C742b 3.3/25V
R742b 330K
C741b 3.3/25V
R741b 330K
AUX 2
AUX 1
TAPE IN 1
TAPE OUT 2
TAPE OUT 1
TAPE IN 2
RIGHT CHANNEL INPUT
PHONO 1
PHONO 2
044462 PREAMP PC BOARD
R518b 1K
R504b 33K
R506b 12K
D501b IS2473
R513b 33K
C507b 10/16V
R512b 4.7K
TR503b 2N5210
TR501b 2N5087
R510b 2M
C509b 0.47/100V
R517b 3.3K
R502b 2.7K
C501b 4.7/35V
C504b 10/16V
TR502b 2SK34B
C508b 10/50V
C510b 100/63V
R501b 100K
R503b 100K
R507b 150K
R506b 470
R514b 5.6K
R516b 180K
R505b 3.9K
C503b 10/16V
R509b 120K
C505b 47/63V
R511b 3.9K
C506b 10/16V
R520b 43K
R521b 680K
R519b 1.2K
R515b 180K
C511b 0.0016
C512b 0.0056
TO FM MPX PC OUT

PX PC BOARD

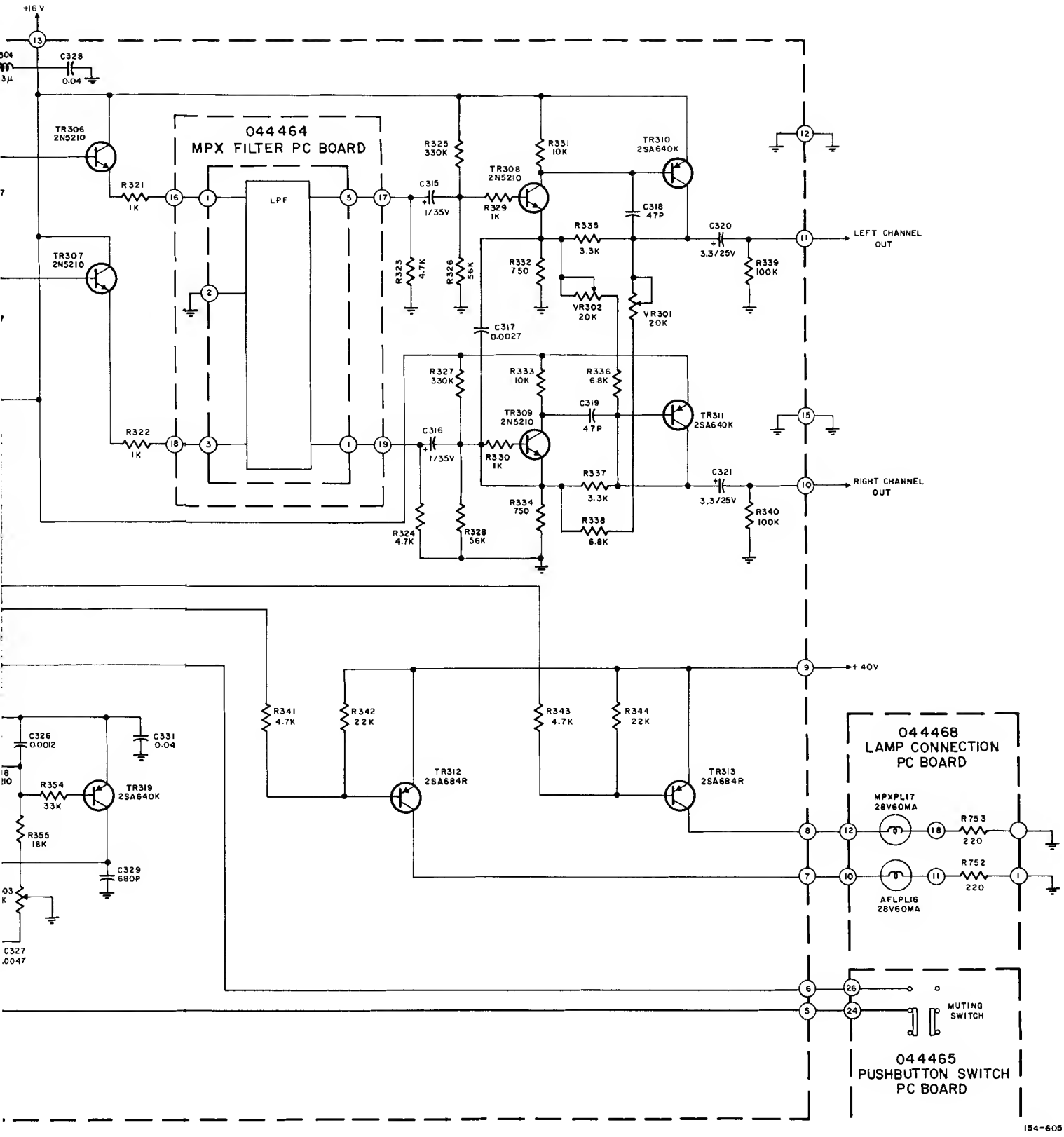

044467
DECOUPLING
CAPACITOR
P.C BOARD
044468
LAMP
CONNECTION
P.C BOARD
P215
MONITOR 1
MONITOR 2
MODE
LOUDNESS
LOW-FIL
BALANCE
VOLUME
+40V
TO FM MPX PC BOARD
OUT

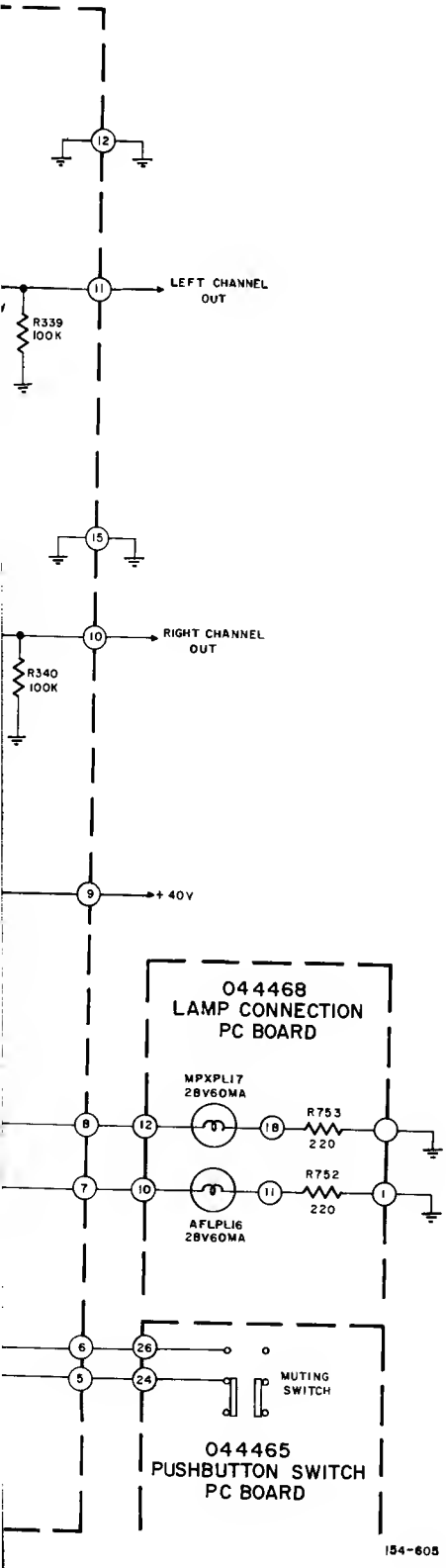

044476
TONE CONTROL
PC BOARD
044466
HI & LO
PASS
PC BOARD
044465
PUSH BUTTON
SWITCH
PC BOARD
044476
TONE CONTROL
PC BOARD
044466
HI & LO
PASS
PC BOARD
BALANCE
VOLUME
MODE
LOUDNESS
LOW-FIL
HIGH FIL
RIGHT CHANNEL OUT
LEFT CHANNEL OUT
55V
154-604

PREAMP

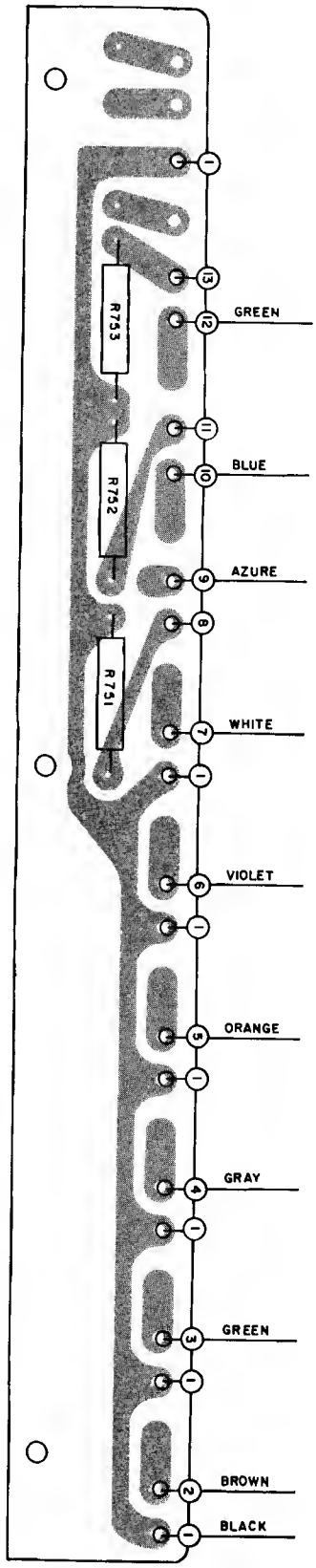

044461
MPX/AFL/MUTING PC BOARD
+16V TO TUNER
+16 V
TO 044459 FM TUNER PCB
TO 044458 FM TUNER PCB
-40V
R306 39K
C304 0.0027
T301
T302
T303
0301 IN34A
0302 IN34A
TR301 2SC828R
TR302 2SC828R
TR303 2N5210
TR304 2N5210
TR305 2N5210
TR306 2N5210
TR307 2N5210
TR314 2SC828R
TR315 2SC828R
TR316 2SC828R
TR317 2SA640K
TR318 2N5210
TR319 2SA640K
C301 4.7/35V
C302 4700P
C303 33/6.3V
C306 390P
C307 100P
C308 1/50V
C309 4700P
C310 2200P
C311 1/50V
C312 10/16V
C313 0.0027
C314 0.0027
C322 0.47/50V
C323 0.1/50V
C324 1/50V ±20%
C325 0.0012
C326 0.0012
C327 0.0047
C328 0.04
C329 680P
C330 0.04
C331 0.04
C332 0.04
L302
L303 1MH
L304 33μ
R301 120K
R302 220K
R303 2.7K
R304 100K
R305 4.7K
R307 220
R308 10K
R309 2.2K
R310 680
R311 6.8K
R312 33K
R313 22K
R314 390K
R315 22K
R316 390K
R317 22K
R318 390K
R319 22K
R320 390K
R321 1K
R322 1K
R345 100K
R346 180K
R347 1M
R348 100K
R349 15K
R350 4.7M
R351 220K
R352 68K
R353 1.8K
R354 33K
R355 18K
VR303 20K
0303 IN34A
0304 IN34A
0305 IN34A
0306 IN34A
0307 1S2473
MPX F

MULTIPLEX

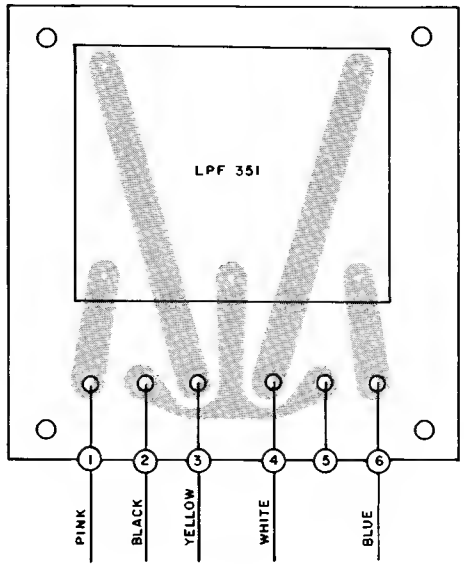

+16 V
C328
0.04
044464
MPX FILTER PC BOARD
LPF
TR306
2N5210
TR307
2N5210
R321
1K
R322
1K
R325
330K
R327
330K
C315
1/35V
C316
1/35V
C317
0.0027
R323
4.7K
R326
56K
R324
4.7K
R328
56K
TR308
2N5210
TR309
2N5210
R329
1K
R330
1K
R331
10K
R333
10K
R332
750
R334
750
TR310
2SA640K
TR311
2SA640K
C318
47P
C319
47P
R335
3.3K
R337
3.3K
R336
6.8K
R338
6.8K
VR302
20K
VR301
20K
C320
3.3/25V
C321
3.3/25V
R339
100K
R340
100K
LEFT CHANNEL
OUT
RIGHT CHANNEL
OUT
+40V
R341
4.7K
R342
22K
R343
4.7K
R344
22K
TR312
2SA684R
TR313
2SA684R
C326
0.0012
C331
0.04
R354
33K
TR319
2SA640K
R355
18K
C329
680P
C327
.0047
044468
LAMP CONNECTION
PC BOARD
MPXPL17
28V60MA
AFLPL16
28V60MA
R753
220
R752
220
MUTING
SWITCH
044465
PUSHBUTTON SWITCH
PC BOARD
154-605



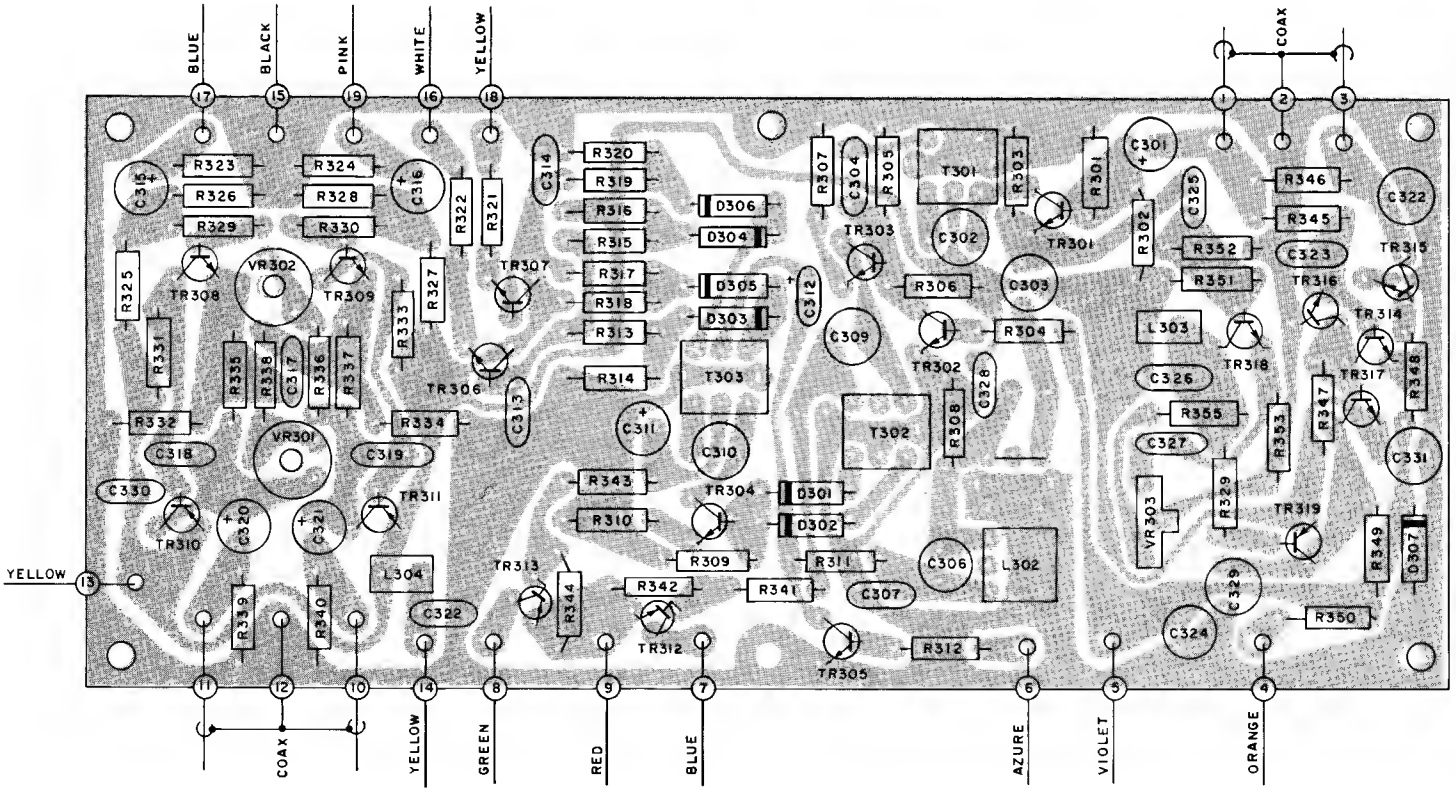
PL PC BOARD 044-468



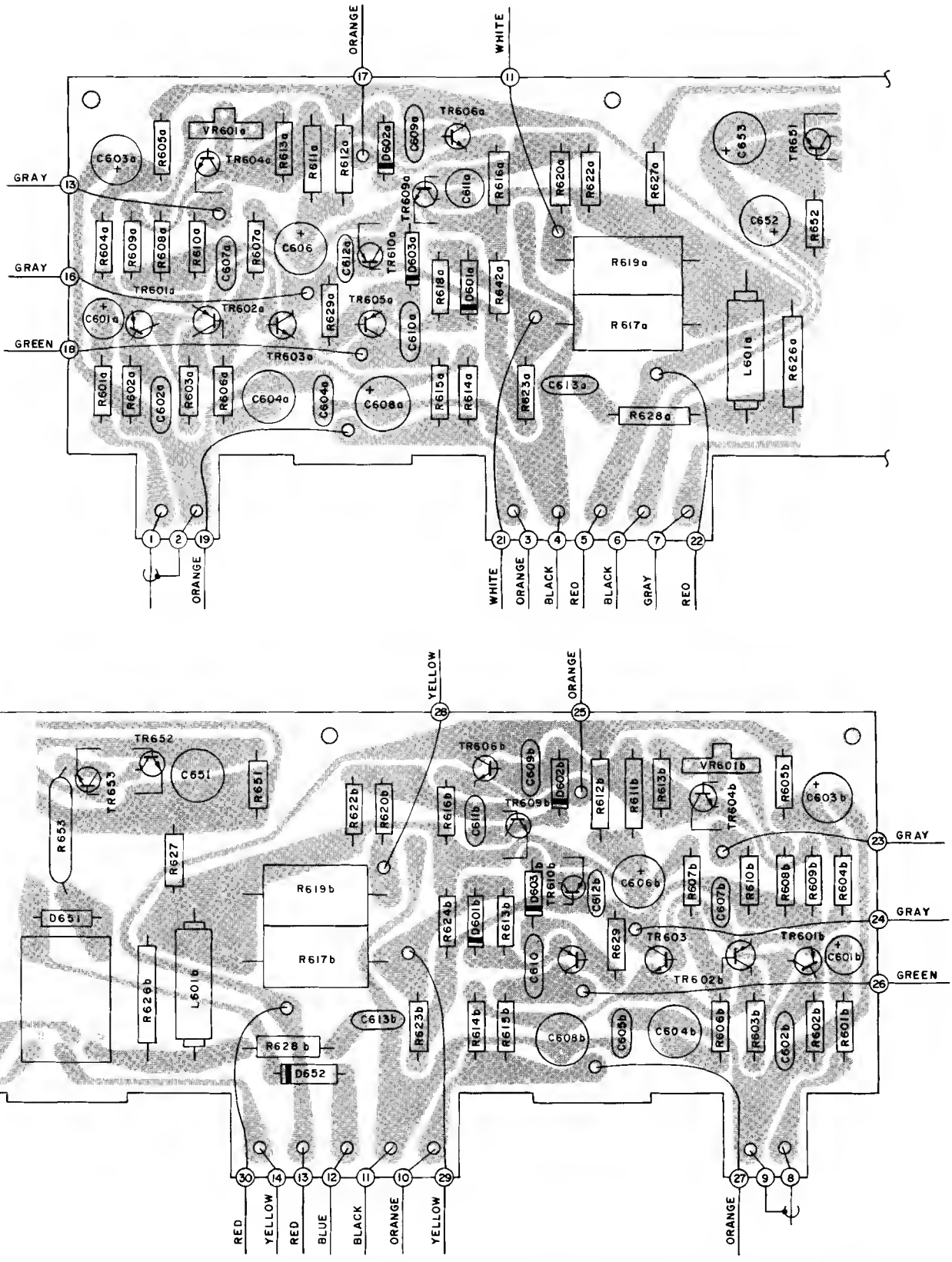
MPX FILTER PC BOARD 044-464

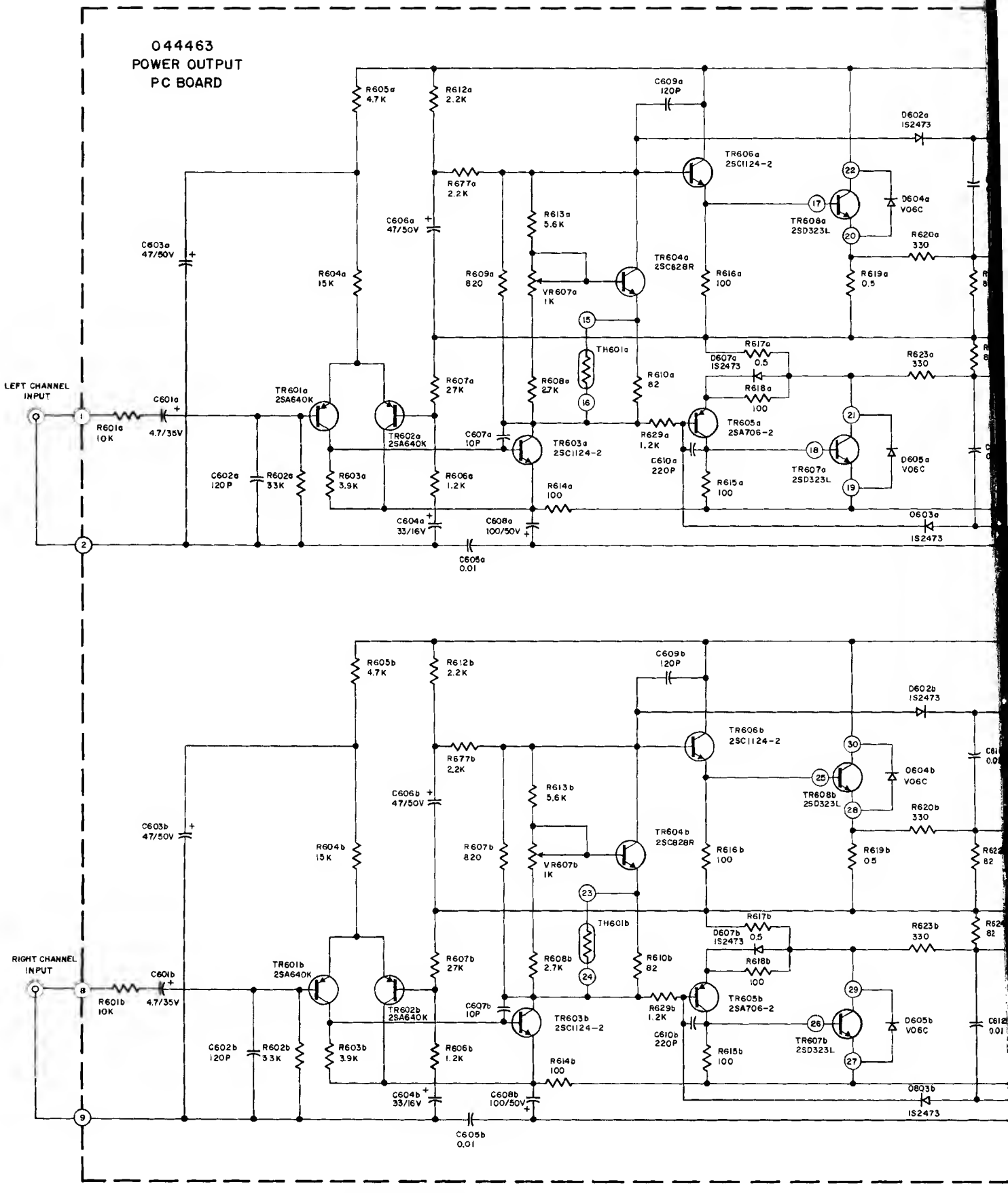


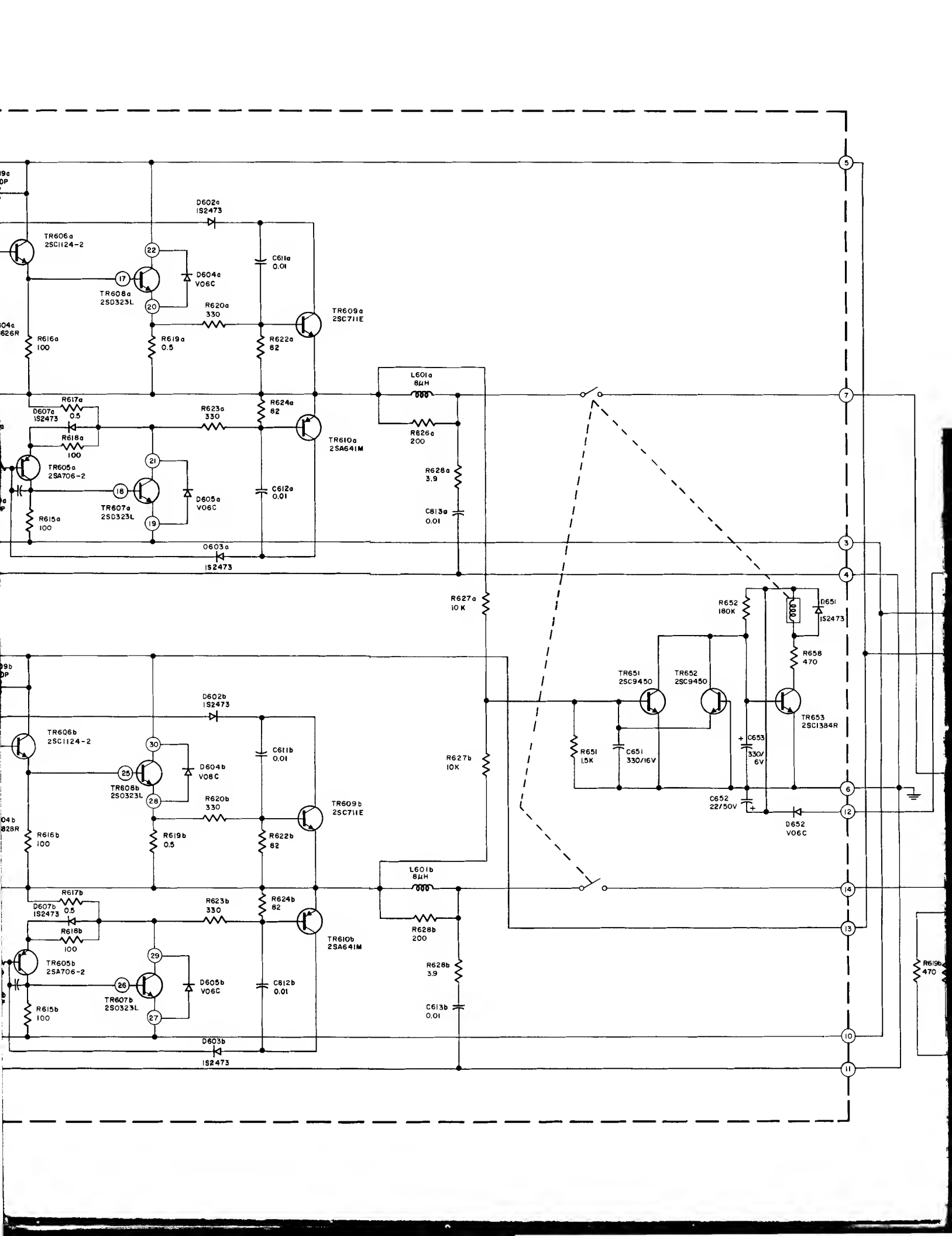
MPX PC BOARD 044-461

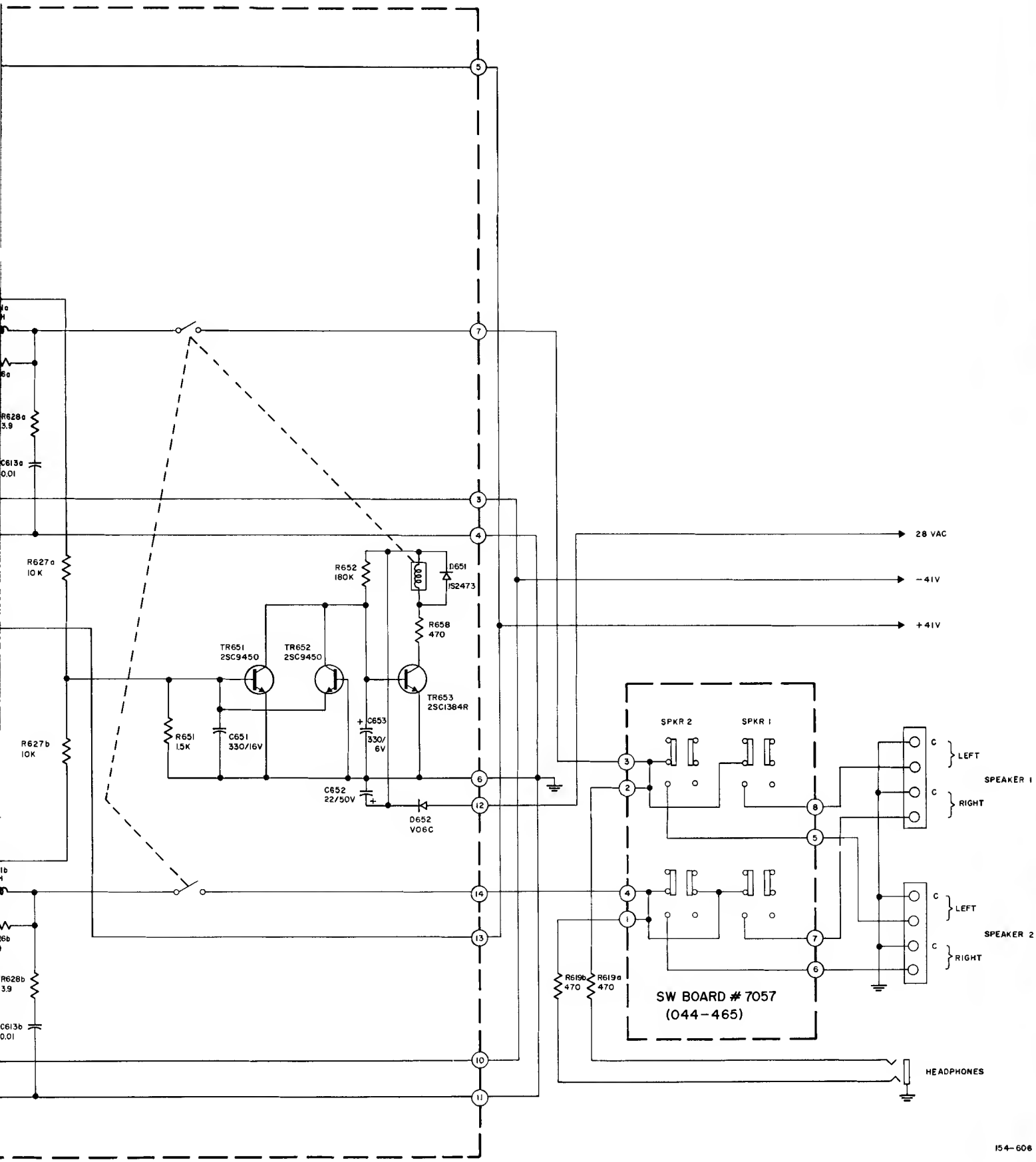


POWER OUTPUT PC BOARD 044-463



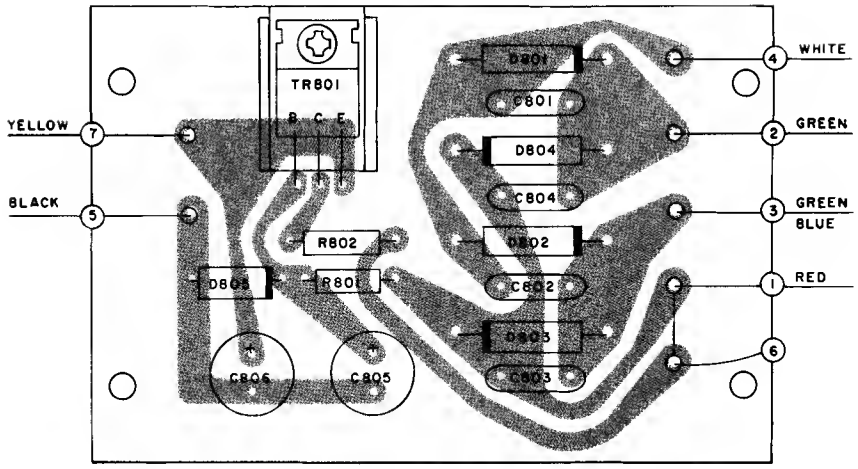

044463
POWER OUTPUT
PC BOARD
LEFT CHANNEL INPUT
RIGHT CHANNEL INPUT
R605a 4.7K
R612a 2.2K
C609a 120P
D602a 1S2473
TR606a 2SC1124-2
R677a 2.2K
C606a 47/50V
R613a 5.6K
C603a 47/50V
R604a 15K
R609a 820
TR604a 2SC828R
VR607a 1K
R616a 100
TR608a 2SD323L
D604a V06C
R620a 330
R619a 0.5
TH601a
R617a 0.5
D607a 1S2473
R618a 100
R623a 330
R607a 27K
R608a 27K
R610a 82
TR601a 2SA640K
TR602a 2SA640K
C607a 10P
TR603a 2SC1124-2
R629a 1.2K
TR605a 2SA706-2
C610a 220P
TR607a 2SD323L
D605a V06C
R601a 10K
C601a 4.7/35V
C602a 120P
R602a 33K
R603a 3.9K
R606a 1.2K
R614a 100
R615a 100
C604a 33/16V
C608a 100/50V
C605a 0.01
D603a 1S2473
R605b 4.7K
R612b 2.2K
C609b 120P
D602b 1S2473
TR606b 2SC1124-2
R677b 2.2K
C606b 47/50V
R613b 5.6K
C603b 47/50V
R604b 15K
R607b 820
TR604b 2SC828R
VR607b 1K
R616b 100
TR608b 2SD323L
D604b V06C
R620b 330
R619b 0.5
TH601b
R617b 0.5
D607b 1S2473
R618b 100
R623b 330
R607b 27K
R608b 2.7K
R610b 82
TR601b 2SA640K
TR602b 2SA640K
C607b 10P
TR603b 2SC1124-2
R629b 1.2K
TR605b 2SA706-2
C610b 220P
TR607b 2SD323L
D605b V06C
R601b 10K
C601b 4.7/35V
C602b 120P
R602b 33K
R603b 3.9K
R606b 1.2K
R614b 100
R615b 100
C604b 33/16V
C608b 100/50V
C605b 0.01
D603b 1S2473


D602a
1S2473
TR606a
2SC1124-2
C611a
0.01
D604a
V06C
TR608a
2SD323L
R620a
330
TR609a
2SC711E
R616a
100
R619a
0.5
R622a
82
L601a
8μH
R617a
0.5
D607a
1S2473
R623a
330
R624a
82
R626a
200
R618a
100
TR610a
2SA641M
TR605a
2SA706-2
R628a
3.9
C612a
0.01
TR607a
2SD323L
D605a
V06C
C613a
0.01
R615a
100
D603a
1S2473
R627a
10K
R652
180K
D651
1S2473
R658
470
TR651
2SC9450
TR652
2SC9450
TR653
2SC1384R
R651
1.5K
C651
330/16V
C653
330V
6V
C652
22/50V
D652
V06C
D602b
1S2473
TR606b
2SC1124-2
C611b
0.01
D604b
V08C
TR608b
2SD323L
R620b
330
TR609b
2SC711E
R616b
100
R619b
0.5
R622b
82
R627b
10K
L601b
8μH
R617b
0.5
D607b
1S2473
R623b
330
R624b
82
R628b
200
R618b
100
TR610b
2SA641M
TR605b
2SA706-2
R628b
3.9
C613b
0.01
TR607b
2SD323L
D605b
V06C
C612b
0.01
R615b
100
D603b
1S2473
R619b
470

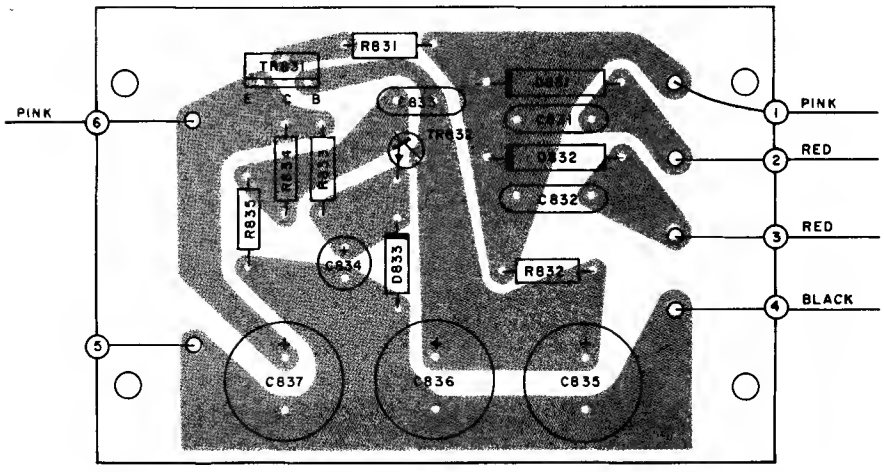


POWER OUTPUT

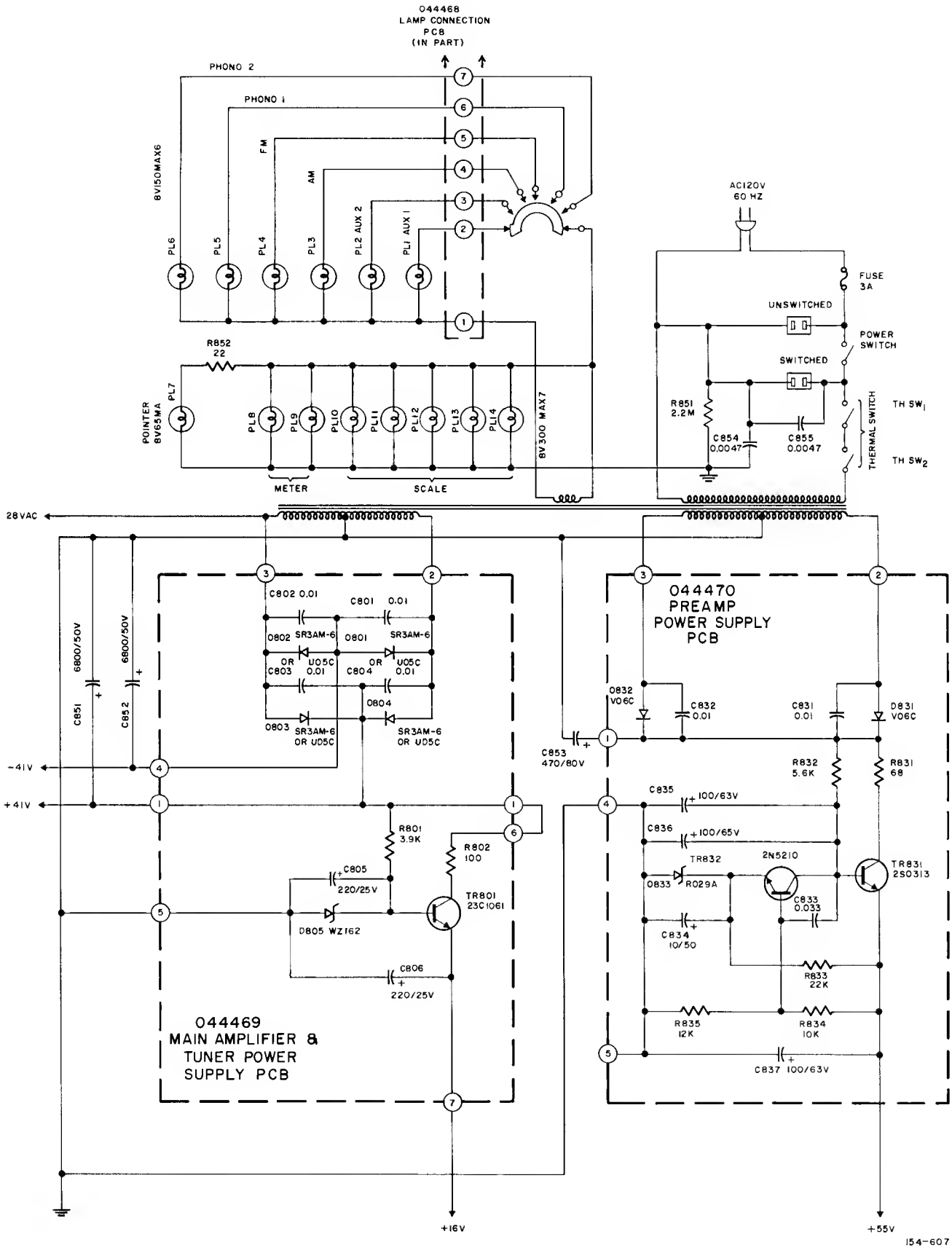
POWER SUPPLY PC BOARD 044-469



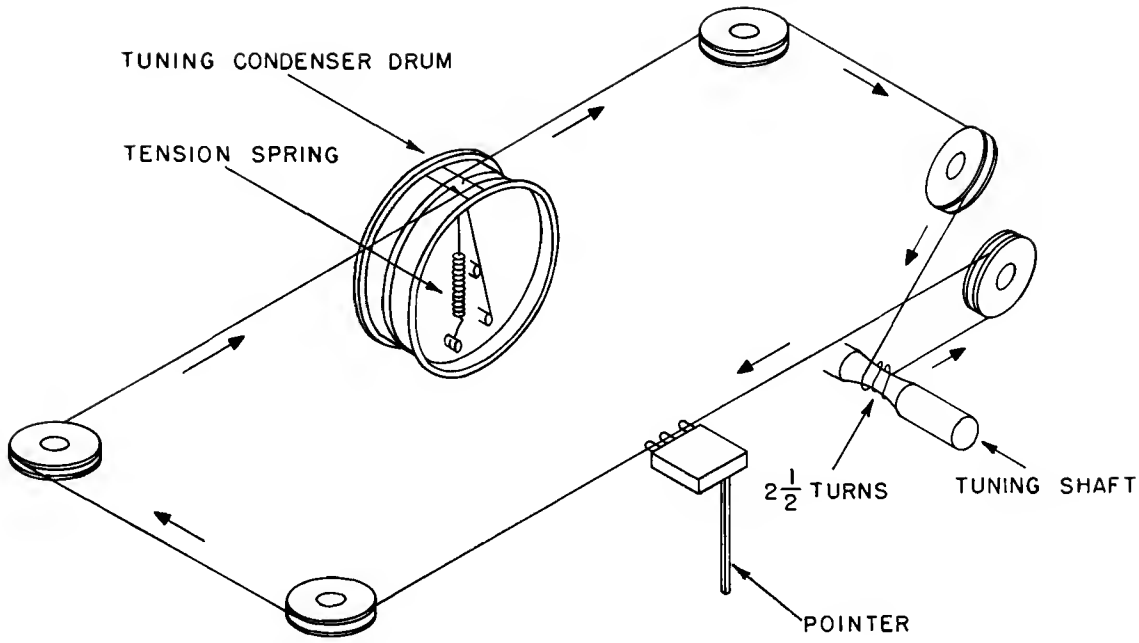
PREAMP POWER SUPPLY PC BOARD 044-470



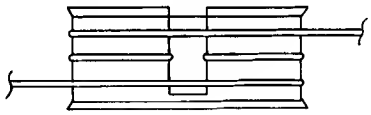
1200



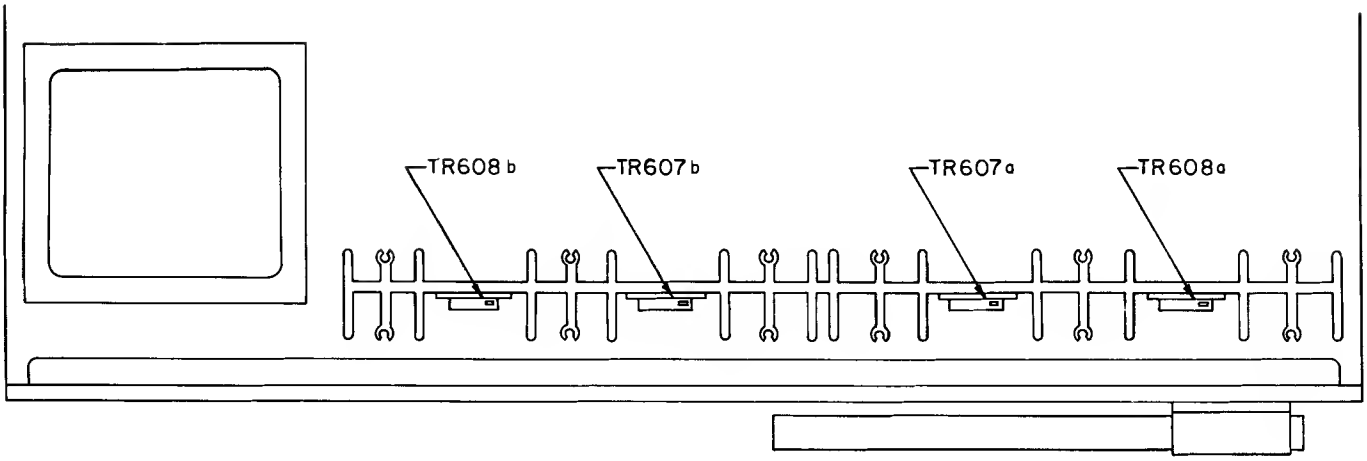
POWER SUPPLY



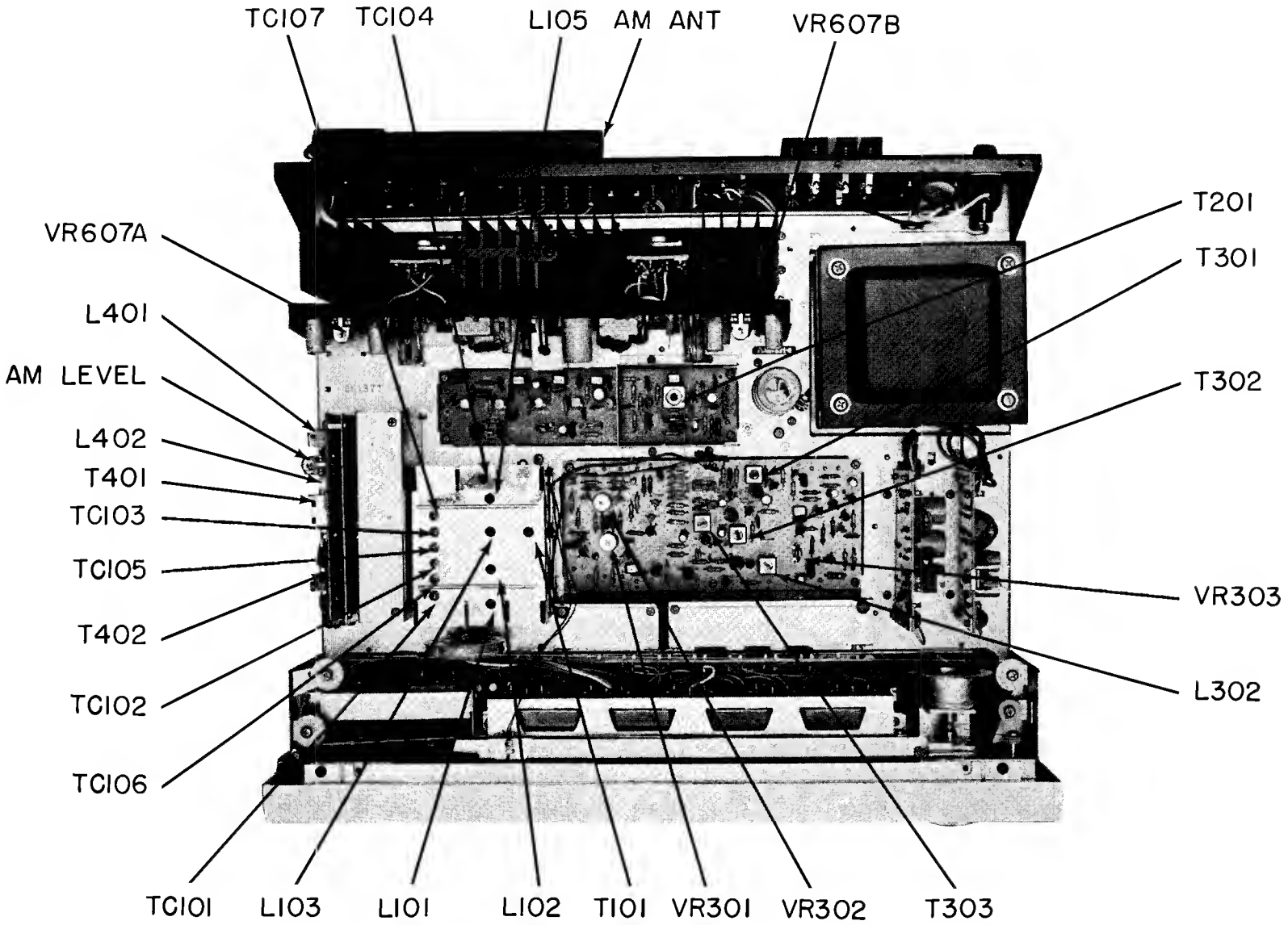
TUNING CONDENSER DRUM



DIAL STRINGING



LOCATION OF TRANSISTORS NOT ON PC BOARD


TC107
TC104
LI05
AM ANT
VR607B
VR607A
L401
AM LEVEL
L402
T401
TC103
TC105
T402
TC102
TC106
T201
T301
T302
VR303
L302
TC101
LI03
LI01
LI02
TI01
VR301
VR302
T303

STEREOTECH 1200 ALIGNMENT INSTRUCTIONS

All Stereotech receivers are carefully aligned and tested at the factory using the finest available test equipment. All Stereotech receivers will meet their published specifications when shipped from the factory.

After extensive operation, or servicing, it may be desirable to realign the receiver circuits for best performance. The charts below give complete information on the circuit realignment procedure for the Stereotech 1200.

The test equipment listed (or its equivalent) is necessary to properly align a 1200. The accuracy of the alignment will be directly related to the accuracy and calibration of the test equipment used.

If the necessary test equipment is not available, alignment should not be attempted.

Alignment should be done in the following order: AM-FM-MPX.

TEST EQUIPMENT REQUIRED

1. FM Signal Generator (Measurement 188 or Sound Technology 1000A).
2. VTVM (RCA WV96C).
3. Multiplex Generator (Radiometer SMG1) or Sound Technology 1000A.
4. Oscilloscope (Hewlett-Packard 120B or equivalent).
5. Harmonic Distortion Analyzer (Hewlett-Packard 333A or equivalent).

WARNING The center frequency of the IF ceramic filters vary from 10.64MHz to 10.76MHz. A 10.7MHz crystal controlled generator should not be used for IF alignment.

AM ALIGNMENT

STEP	TUNER DIAL SETTING	SIGNAL GENERATOR			INDICATOR		ADJUST	TEST LIMITS	REMARKS
		FREQ.	COUPLING	MODULATION	TYPE	CONNECTED TO			
1	Point of no interference or signal	455kHz	Through external .01µF capacitor to Pin 2 on AM circuit board	CW	Signal strength meter.	Normal.	Pri. & Sec. cores of T401 & T402	Maximum possible indication	As the tuner output increases, attenuate generator output to keep meter indication below 4.
2	600kHz	600kHz	Through a 200pF capacitor to ant. terminals.	Same	Same	Same	L402 (oscillator coil.)	Same	Same as Step 1.
3	1400kHz	1400kHz	Same	Same	Same	Same	TC107 (oscillator trimmer)	Same	Repeat Steps 2 & 3 until dial calibration is accurate.
4	600kHz	600kHz	Same	Same	Same	Same	AM antenna rod & L401 (AM-RF)	Same	Same as Step 1 except adjust generator so that output signal is just above the noise level. Position antenna rod away from chassis and nearby objects.
5	1400kHz	1400kHz	Same	Same	Same	Same	TC106 (AM antenna trimmer) & TC105 (AM-RF trimmer).	Same	Repeat Steps 4 & 5 until output is as high as possible.
	1000kHz	1000kHz	Same	30% @ 400Hz	Distortion Analyzer.	L or R output.		With a distortion analyzer, the following measurements can be performed:	

6					tion Analyzer.			be performed: 1. With a 10mV input signal adjust "AM Level" control for 0.3 volts of audio output at tape-outputs. This will correspond to 1.0 volt audio output for a 100% modulated signal. 2. With a 1mV input signal, harmonic distortion, whistle filter attenuation at 10kHz modulating frequency and signal to noise ratio may be measured. 3. IHFM sensitivity of 75 microvolts for 20dB signal to noise ratio. (This measurement is only possible in the absence of man-made interference, as fluorescent lamps, etc.)

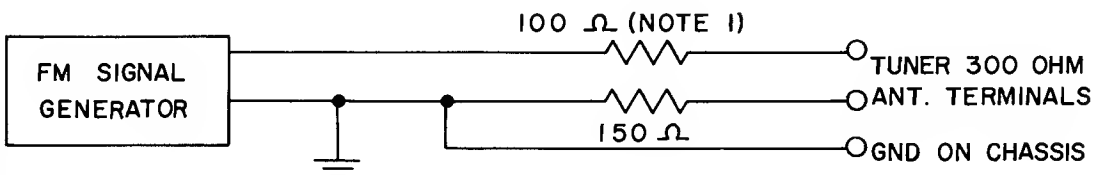
FM ALIGNMENT

STEP	TUNER DIAL SETTING	SIGNAL GENERATOR			INDICATOR		ADJUST	TEST LIMITS	REMARKS
		FREQ.	COUPLING	MODULATION	TYPE	CONNECTED TO			
1	Point of no interference or signal	Noise from mixer.	None	None	VTVM	Terminal 6 on IF	Top (Sec.) Core of T201	Adjust for zero volt.	Turn muting off for alignment tests
2	Same	Same	Same	Same	Same	Junction of R222 & C225	Bottom (Pri.) core of T201	Maximum possible negative voltage.	If a distortion analyzer is available, omit this step. Adjust T102 Primary after Step 5. At that time, use a 1mV signal from an FM generator, modulate 100% @ 400Hz. Adjust primary of T102 for minimum distortion. Should be less than 0.3%.
3	105MHz	105MHz	300Ω antenna terminals w/* matching network.	100% @ 400Hz.	VTVM connected to TP#1 and oscilloscope connected to L or R tape output		Oscillator trimmer TC104	Maximum negative voltage at TP#1	As TP#1 voltage increases, reduce output of signal generator to keep TP#1 voltage at a low level (less than -.75 volt). Add components (100k, 100pF as indicated on Schematic to form TP#1.
4	90MHz	90MHz	Same	Same	Same		Oscillator Coil L105	Same	Repeat Steps 3 and 4 until dial calibration is accurate.
5	Same	Same	Same	FM ±300kHz Sweep at 60Hz rate.	Oscilloscope.	TP#1	Top (Pri.) and Bottom (Sec.) cores of T101.	Optimum symmetry about IF center.	Connect scope for overall response display. Hold the signal generator output to a low level such that the DC voltage at TP #1 is less than -0.5 volt.
6	105MHz	105MHz	Same	100% @ 400Hz.	VTVM connected to TP #1 and scope connected to L or R tape output.		Mixer, RF-2, TC101, RF-1, TC102 trimmers TC103	Maximum negative voltage at TP #1.	Same as Step 3.
7	90MHz	90MHz	Same	Same	Same		Mixer, RF-2, and RF-1; coils L101, 102,103	Same	Same as Step 3. Then repeat Steps 6 and 7 until TP#1 voltage is as high as possible for the least signal input at both alignment frequencies.
8	Same	Same	Same	Same	VTVM connected to TP#1 and a harmonic distortion analyzer to L or				This step is an overall sensitivity check. Reduce input signal to the point where total noise and distortion reads 3% (=30dB)

7	90MHz	90MHz	Same	Same.	Same	Mixer, RF-2, and RF-1; coils L101, 102,103	Same	Same as Step 3. Then repeat Steps 6 and 7 until TP#1 voltage is as high as possible for the least signal input at both alignment frequencies.
8	Same	Same	Same	Same	VTVM connected to TP#1 and a harmonic distortion analyzer to L or R output.			This step is an overall sensitivity check. Reduce input signal to the point where total noise and distortion reads 3% (-30dB). The input signal will then be the usable sensitivity and should be less than 2.5μV.

MULTIPLEX DECODER ALIGNMENT

STEP	TUNER DIAL SETTING	SIGNAL GENERATOR			INDICATOR		ADJUST	TEST LIMITS	REMARKS
		FREQ.	COUPLING	MODULATION	TYPE	CONNECTED TO			
1	100MHz	100MHz	300Ω antenna terminals w/ approx. 1000 microvolts signal w/* matching network.	75kHz deviation @ 67kHz.	AC-VTVM or oscilloscope w/very low cap. probe.	Collector TR305 MPX PC Board.	L302 (SCA adj.)	Minimum output	Adjust for minimum 67kHz output.
2	Same	Same	Same	19kHz stereo pilot.	Same	Collector TR303 MPX PC Board	T301 (19kHz phase adj.) & T302 (19 kHz transformer.)	Adjust for maximum AC voltage.	Decrease pilot level, if necessary, so that 19kHz circuits do not limit or saturate.
3	Same	Same	Same	Same	Same	Collector TR304	T303	Adj. for maximum AC voltage.	Decrease pilot level so that 19kHz and 38kHz circuits do not limit. Mode switch must be in stereo position.
4	Same	Same	Same	1kHz (100% modulation) L or R only, pilot level normal and on.	AC-VTVM	L or R output jack.	First T301 Then VR301 & VR302	35dB separation or more.	Set VR301 & VR302 at maximum resistance. Modualte left channel and measure right channel output. Adjust tuning core (T301) for minimum right channel output (maximum separation). Then, adjust VR301 for maximum separation. Reverse channels then adjust VR302.
5	Same	Same	Input 15μF	Same	Same	Same	VR303		Adjust stereo threshold for auto switchover at 15μV input.



Note 1:
If signal generator has other than 50 ohm internal impedance, use a resistor of 150 ohms less internal generator impedance.

REPLACEMENT PARTS

Replacement parts may be obtained when ordered by PART NUMBER from:

Stereo Technology Division
Box A
Conklin, New York 13748

CAPACITORS

Symbol Number	Description	Part Number
C851,852	Elect 6800μF 50V	066-207

DIODES

D101	Si. Signal diode	070-067
D151	Si. Signal diode	070-068
D201,202	Si. Signal diode	070-068
D203,204	Si. Signal diode	070-068
D205,206	Ge. Signal diode	070-069
D207,208	Si. Signal diode	070-068
D301,302	Ge. Signal diode	070-069
D303,304	Ge. Signal diode	070-069
D305,306	Ge. Signal diode	070-069
D307	Si. Signal diode	070-070
D401	Si. Siganl diode	070-070
D501a,b	Si. Signal diode	070-070
D602a,b	Si. Signal diode	070-070
D603a,b	Si. Signal diode	070-070
D604a,b	Si. Signal diode	070-071
D605a,b	Si. Signal diode	070-071
D607a,b	Si. Signal diode	070-070
D651	Si. Signal diode	070-070
D652	Si. Signal diode	070-071
D801,802	Si. Signal diode	070-072
D803,804	Si. Signal diode	070-072
D805	Zener diode	070-074
D830	Zener diode	070-073
D831,832	Si. Signal diode	070-071

CHOKES & COILS

L302	67kHz Filter coil	122-146
L303	Muting filter coil	122-147
L401	AM RF coil	122-144
L402	AM Osc coil	122-145
L403	AM Antenna	122-143

TRANSISTORS

TR101,102	Transistor	132-107
TR103,104	Transistor	132-108
TR201	Transistor	132-109
TR301,302	Transistor	132-112
TR303,304	Transistor	132-113
TR305,306	Transistor	132-113
TR307,308	Transistor	132-113
TR309	Transistor	132-113
TR310,311	Transistor	132-114
TR312,313	Transistor	132-115
TR314,315	Transistor	132-112
TR316	Transistor	132-112
TR317	Transistor	132-114
TR319	Transistor	132-114
TR401,402	Transistor	132-110
TR403	Transistor	132-110
TR404	Transistor	132-111
TR501a,b	Transistor	132-117
TR502a,b	Transistor	132-118
TR503a,b	Transistor	132-113
TR601a,b	Transistor	132-114
TR602a,b	Transistor	132-114
TR603a,b	Transistor	132-119
TR604a,b	Transistor	132-112
TR605a,b	Transistor	132-120
TR606a,b	Transistor	132-119
TR607a,b	Transistor	132-121
TR608a,b	Transistor	132-121
TR609a,b	Transistor	132-122
TR610a,b	Transistor	132-123
TR651,652	Transistor	132-124
TR653	Transistor	132-125
TR701a,b	Transistor	132-113
TR702a,b	Transistor	132-114
TR703a,b	Transistor	132-113
TR704a,b	Transistor	132-113
TR801	Transistor	132-126
TR831	Transistor	132-127
TR832	Transistor	132-113
TR901a,b	Transistor	132-113
TR902a,b	Transistor	132-113

FUSES

F801	Fuse 3A	089-026

VR551	
VR552	
VR901	
VR902	
TH601	
S	
S	
TH SW	
T101	
T201	
T301	
T302	
T303	
T401,	
T801	
M201	
M401	
IC201	
IC203	
IC205	
CE. F	
CE. F	
CE. F	
LPF	
PL1,2	
PL3,4	
PL5,6	
PL7	
PL8,9	

32-107		
32-108		
32-109		
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32-113		
9-026		

	POTENTIOMETERS	
VR551	Balance control*	134-266
VR552	Volume control	134-267
VR901	Treble control	134-269
VR902	Bass control	134-268
	RESISTORS	
TH601a,b	Thermistor	144-043
	SWITCHES	
S	Input selector	146-164
S	Pushbutton switch	150-014
TH SW1,2	Thermo cut-out	153-016
	TRANSFORMERS	
T101	FM IF transformer	162-063
T201	FM IF transformer	162-064
T301	19kHz transformer	162-066
T302	19kHz transformer	162-067
T303	38kHz transformer	162-068
T401,402	AM IF transformer	162-065
T801	Power transformer	159-107
	METERS	
M201	Tuning meter	124-023
M401	Signal strength meter	124-024
	INTEGRATED CIRCUITS	
IC201,202	Integrated circuit	133-009
IC203,204	Integrated circuit	133-009
IC205	Integrated circuit	133-009
	FILTERS	
CE. FIL201	FM IF Filter	180-013
CE. FIL202	FM IF Filter	180-013
CE. FIL203	FM IF Filter	180-013
LPF	MPX Filter	180-014
	LAMPS	
PL1,2	Pushbutton lamp	058-050
PL3,4	Pushbutton lamp	058-050
PL5,6	Pushbutton lamp	058-050
PL7	Pointer lamp	058-051
PL8,9	Meter lamp	058-049

PL10,11	Panel lamp	058-049
PL12,13	Panel lamp	058-049
PL14	Panel lamp	058-049
PL15	MON lamp	058-048
PL16	AFL lamp	058-048
PL17	MPX lamp	058-048
	FRONT PANEL & TRIM	
	Dial glass	017-195
	Front panel glass	017-196
	Front panel extrusion	018-165
	Left end cap	018-166
	Right end cap	018-167
	Tuning knob	090-132
	Volume knob	090-132
	Balance knob	090-132
	Input Sel. knob	090-132
	Bass knob front	090-134
	Bass knob rear	090-135
	Treble knob front	090-134
	Treble knob rear	090-135
	Pushbutton w/blu dot	090-136
	Pushbutton w/orn dot	090-137
	Pushbutton w/yel dot	090-138
	Pushbutton w/grn dot	090-139
	Pushbutton w/red dot	090-140
	Pushbutton w/wht dot	090-141
	MISCELLANEOUS ITEMS	
	Plastic feet	017-197
	Shipping carton	044-567
	Owners manual	038-718
	Mounting instructions	038-719
	Pointer w/lamp	044-568
	Jumper	015-006
	Top cover	002-573
	Hardware package	044-569

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STEREO TECHNOLOGY DIVISION

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