



# Service Manual



\$5.00

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## Specifications

Power Source .....	13.8V DC
Size .....	5½" x 8" x 1½"

## Receiver Section

Sensitivity .....	0.5 uV
Squelch Threshold .....	0.5 uV
Squelch Deepest Point .....	1000 uV
"S" Meter S-9 .....	100 uV
Maximum AF Output Power .....	5.0 W
AF Output Power/10% Distortion .....	4.0 W
Selectivity BW @ 6 dB Down .....	± 6 KHz
Adjacent Channel Rejection .....	- 60 dB
Image Rejection .....	- 70 dB
Speaker Impedance .....	8 Ohm

## Transmitter Section

Modulation (Peak) .....	100%
Power Output .....	4.0 W
Emission Type AM .....	6A3
Hum and Noise (Better than) .....	- 60 dB
Frequency Tolerance .....	0.003%
Antenna Impedance .....	50 Ohm
Frequency Determining Method .....	PLL

## Public Address

Output Power @ 10% Distortion .....	4.0 W
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## Alignment of P.L.L. Portion

### 1. Test Equipment Required

- a. Oscilloscope (0-50MHz)
- b. Frequency Counter (0-50MHz)
- c. DC Volt Meter (10 Volts maximum, 100K ohm/Volt)

### 2. Alignment Procedure

Step	Preset To	Connections	Adjustment	Remarks
1.	Receiver mode Channel 19	DC Volt Meter to Pin No. 7 of IC3 (TP1)	L19	Adjust L9 to obtain approx. 3.0V reading
2.	same as step 1	Oscilloscope to secondary of L3	L3	Adjust L3 to obtain 15.360MHz indication.

## Alignment of Transmitter Portion

1. Equipment Required
  - a. VTVM (full scale: 5V DC with RF Probe)
  - b. RF Output Power Meter
  - c. Tunable Field Intensity Meter (Wave Meter)
  - d. Frequency Counter (0-30 MHz)
  - e. DC Power Supply (13.8V/2-Amp.)
  - f. 50 ohm load and Attenuator
  - g. Oscilloscope (0-30 MHz)
  - h. AF Oscillator

### 2. Procedure

Step	Preset To	Conditions	Alignment	Remarks
1.	TX Mode No Modulation Channel 19	RF Output Power Meter to ANT. Jack J1. VTVM to TP2	L10, L11	Adjust for a maximum indication on VTVM
2.	same as step 1	RF Output Power Meter to ANT. Jack J1.	L12, L15	Adjust for a maximum indication on RF Output Power Meter
3.	same as step 1	same as step 2	L15	Adjust to obtain Nominal 3.8W of RF Output Power
4.	same as step 1	2nd Harmonics Meter to Ant. Jack J1 through a suitable load and attenuator	L18	Adjust for a minimum 2nd Harmonics Output
5.	Repeat the above adjustments, in order to confirm if the adjustments were made correctly.			
6.	TX Mode, Ch 19 1 KHz, 30 mV applied to Mic Input for MOD.	Audio Generator to Microphone Jack J2 Oscilloscope to ANT. Jack J1 through a suitable load and attenuator	VR 6	Adjust for 95% Modulation
7.	same as step 1	RF Output Power Meter to Ant. Jack J1	VR 5	Check that RF Output Power Meter reads 3.8W then adjust VR4 so that the Meter pointer of the transceiver just approaches – 3 to 4 mark.
8.	TX Mode No Modulation All channels	Frequency Counter to Ant. Jack J1 through a suitable load and attenuator		Check Frequency of all channels

## Alignment of Receiver Portion

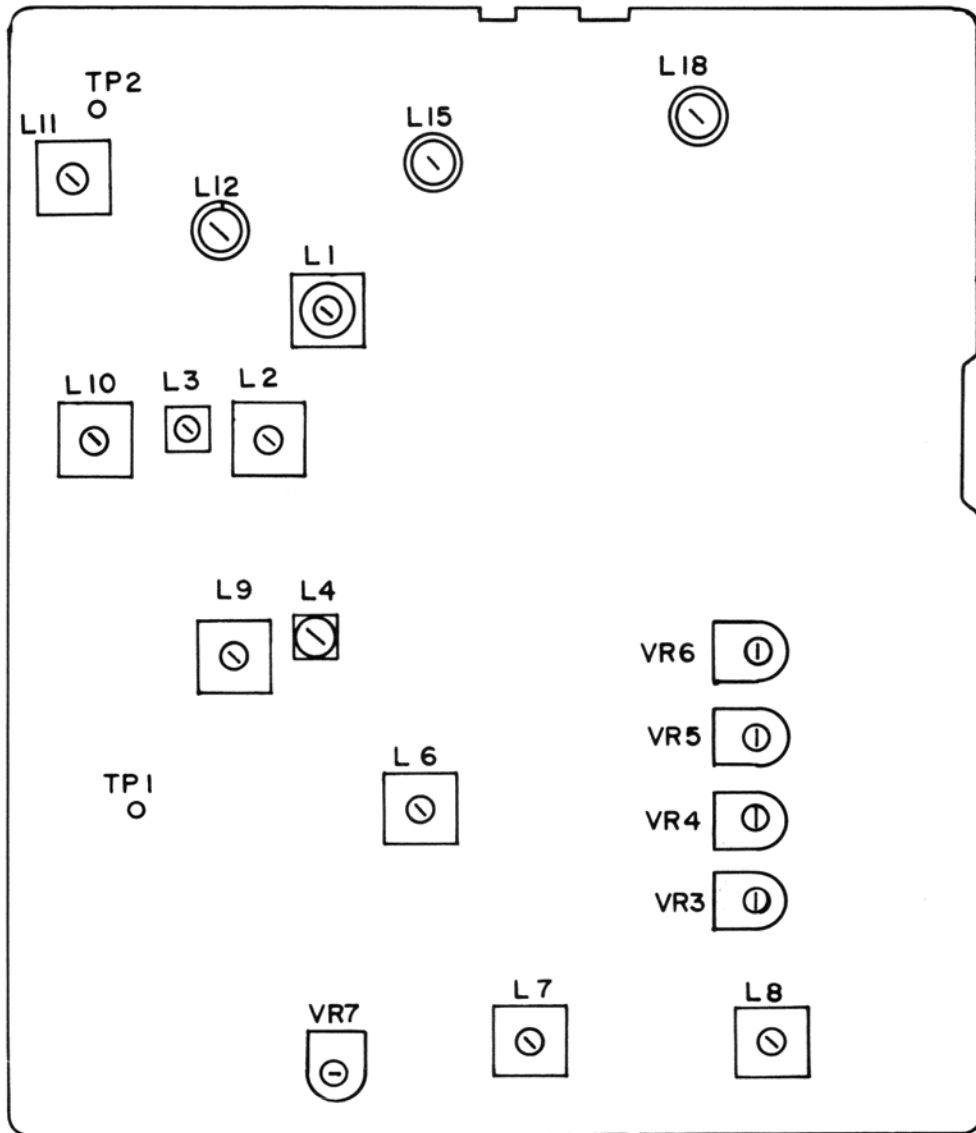
### 1. Test Equipment Required

- a. Signal Generator (27 MHz Band, 1000 Hz, 30% AM Modulation & Output Impedance 50 ohm)
- b. Audio VTVM
- c. Oscilloscope
- d. Dummy Load (8 ohm, 5 watts, resistive)
- e. DC Power Supply (13.8V, 2 Amp.)

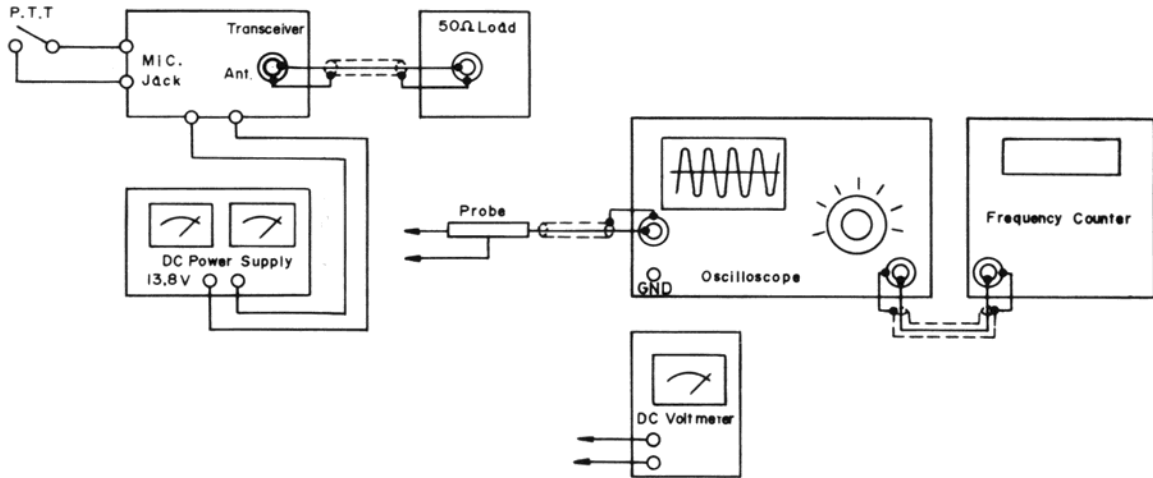
### 2. Alignment Procedure

Step	SG Connection Frequency	Preset To	Audio VTVM	Adjustment	Remarks
1.	To Ant. Connector J1. Freq: 27.185 MHz	Volume: Max. Squelch: Min. RF Gain: Max.	To EXT. SPK. Jack J4	L1, 2, 4, 6, 7, 8	Adjust for a max. Audio Output
2.	same as step 1	same as step 1	same as step 1	VR 7	Adjust for 2V output with SG output level of 700 $\mu$ V
3.	same as step 1	Volume: Max. Squelch: Max. RF Gain: Max.	same as step 1	VR 3 (Squelch)	Adjust for 2V output with SG output level of 1000 $\mu$ V
4.	same as step 1	same as step 1	same as step 1	VR 4	Adjust for a reading of S-9 on the S-meter of the Transceiver with SG output level of 100 $\mu$ V

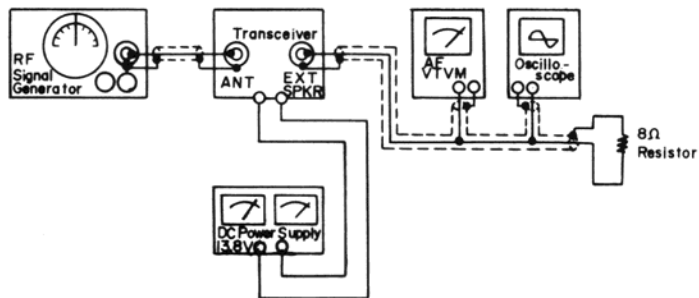
# Alignment Points



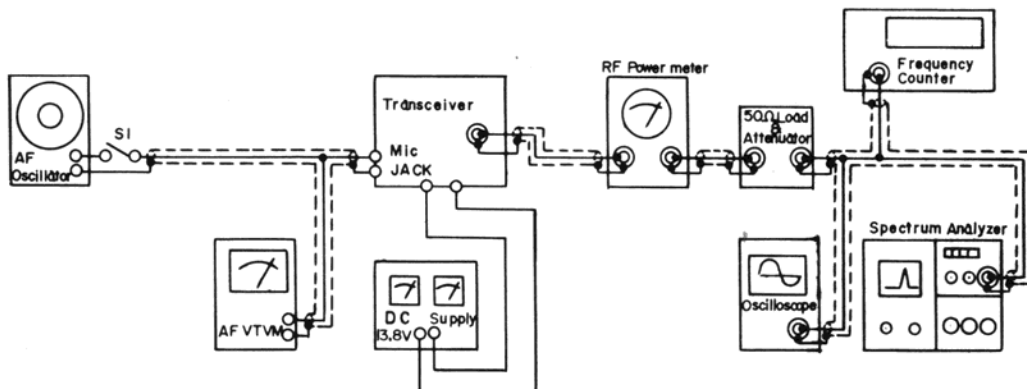
### PLL Test Setup



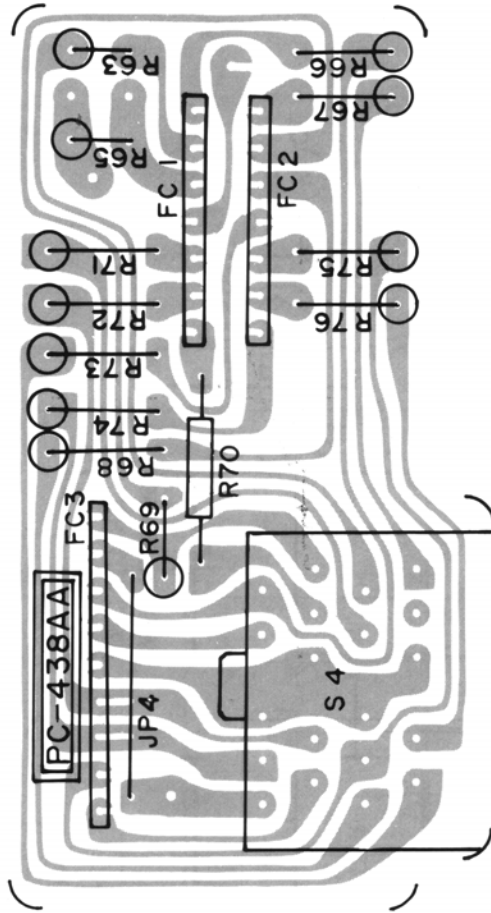
### Receiver Test Setup



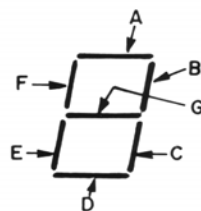
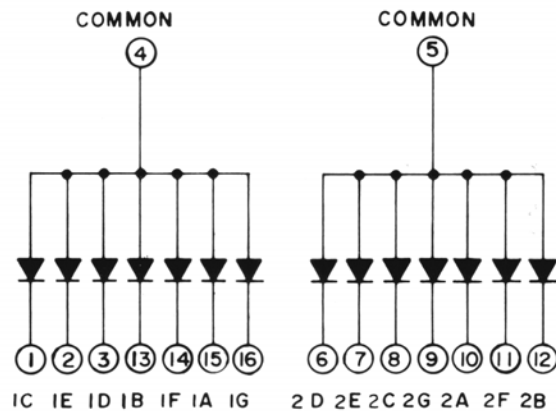
### Transmitter Test Setup



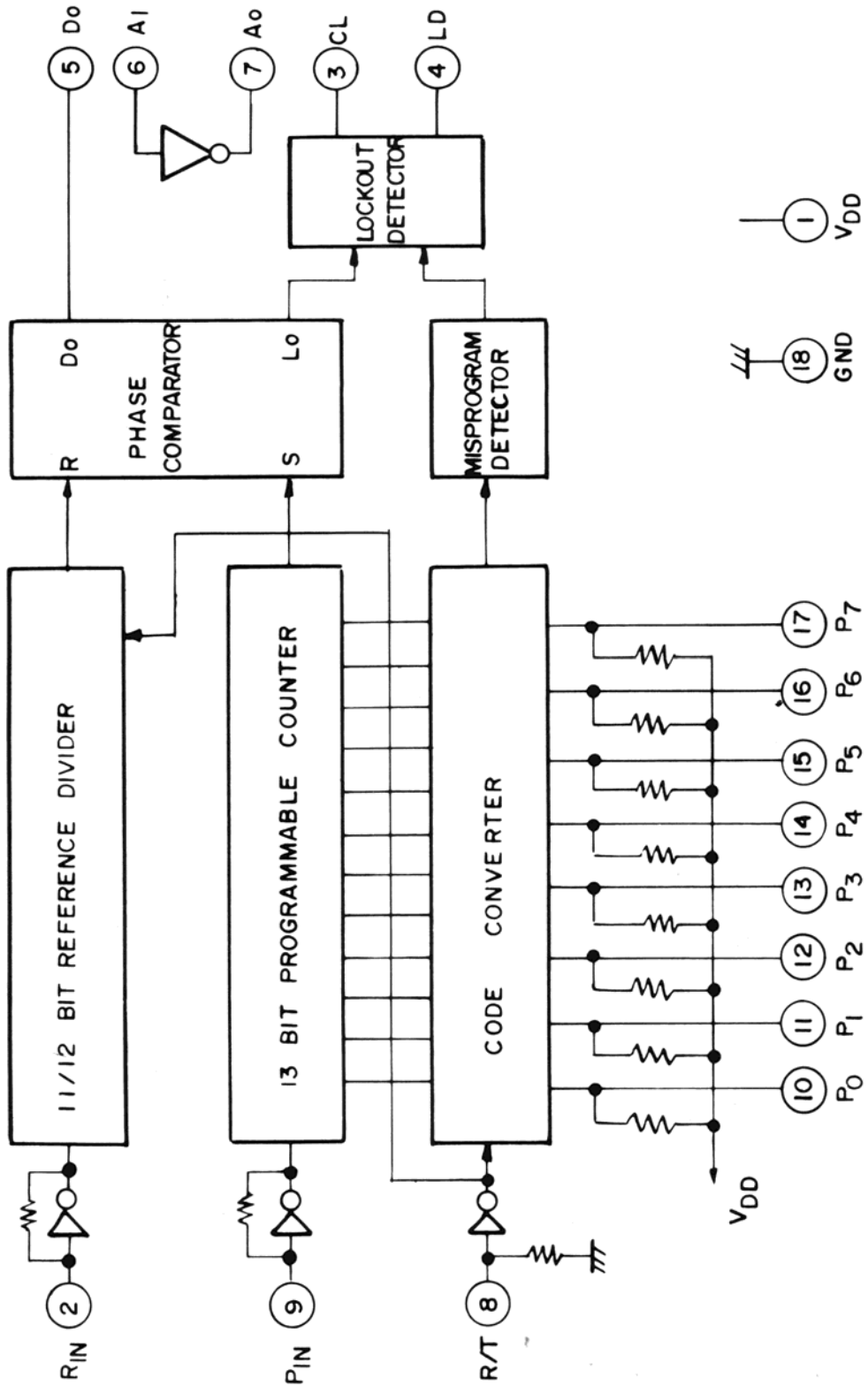




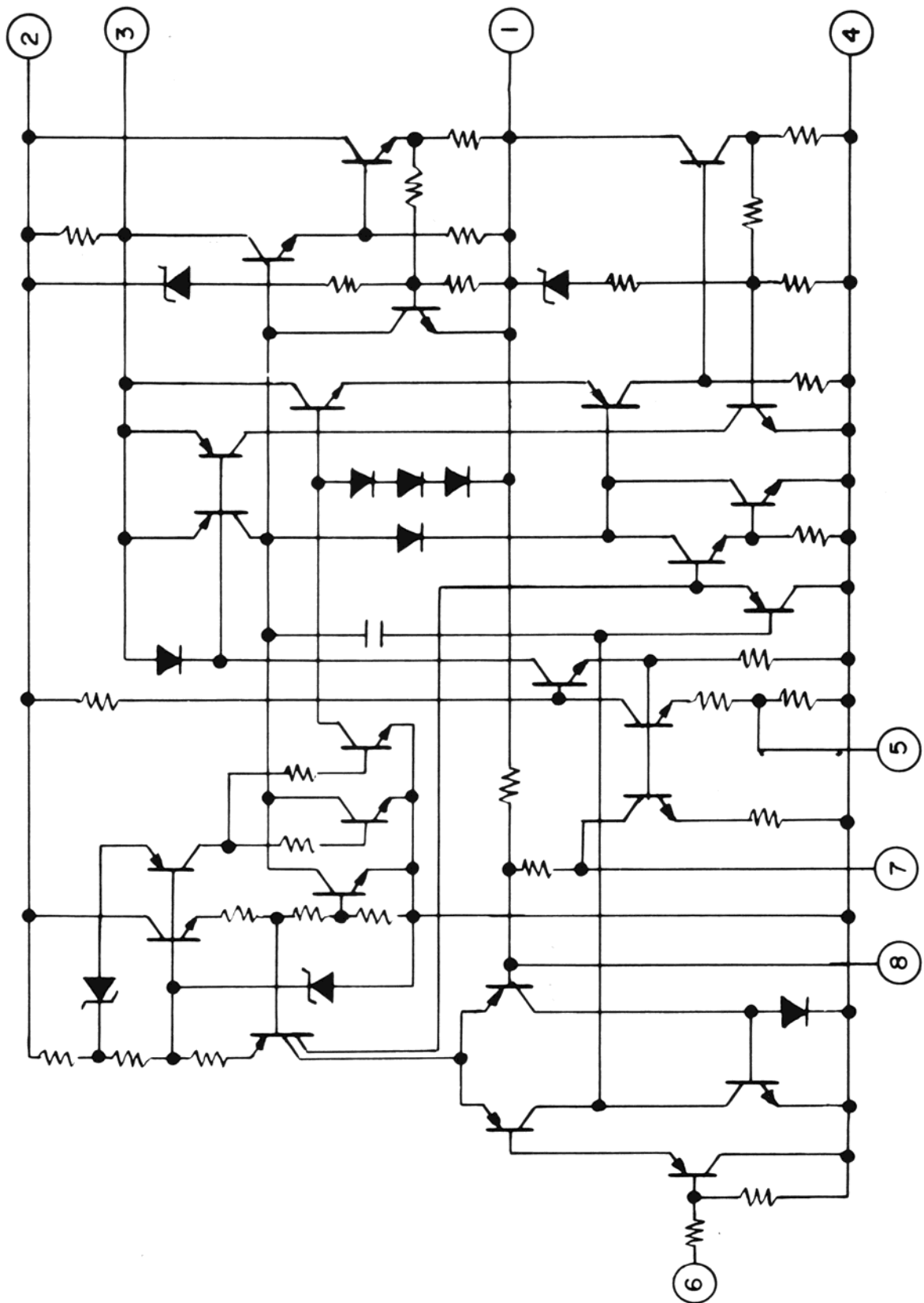
TLR 321



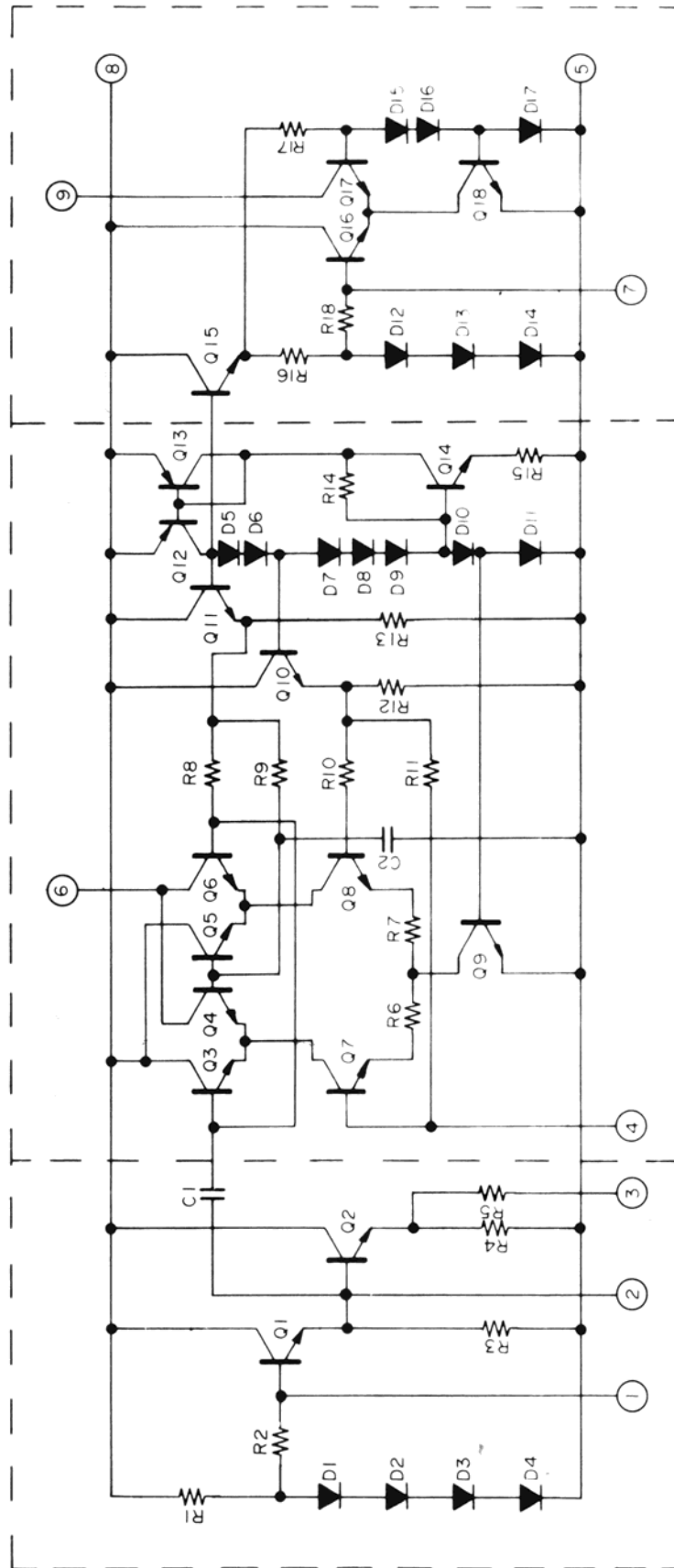
TC9109P

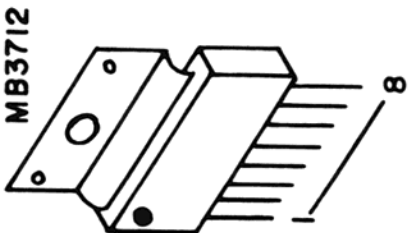


MB3712



TA7310P

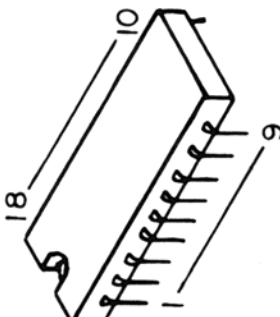




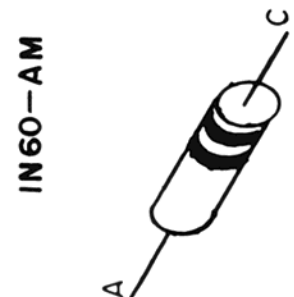
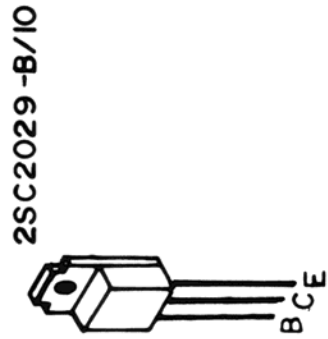
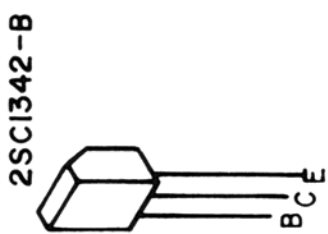
MB3712



TA7310P



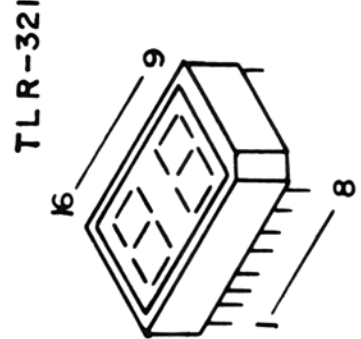
- 2SA733-P
- 2SC945A-Q
- 2SC1675-M
- 2SC2076-C



- IS2075-K
- IS2076
- SRIK-1
- IS34



- CZ-094
- WZ-071
- O5Z7.5-UNI
- IS2688-EA



TLR-321

TLR-124

VOLTAGE CHART

TRANSISTOR

TRNO	1		2		3		4		5		6		7		8	
	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X
COLLECTOR	0	7.2	9.2	11.0	9.2	11.0	0	1.7	9.2	10.8	0	0.7 (0)	0	0	0	0 (3.2)
BASE	0	1.3	0	1.5	0	1.5	0	0.7	0	1.7	0	0	0	0	0	0.7 (0)
EMITTER	0	0.8	0	0.8	0	0.8	0	0	0	0.9	0	0	0	0	0	0 (0)
REMARKS												*1				*1

TRNO	9		10		11		12		13		14		15		16	
	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X	T X	R X
	4.7	10.5	7.4	0	2.5	2.5	0.8	9.0	13.0	13.8	12.9	13.5	12.9	13.5	13.6	13.6
	1.0	3.3	6.8	7.3	3.1	0.8	7.4	2.0	2.0	2.4	0	0	0	0	6.5	6.5
	0.4	7.3	7.4	7.4	4.9	0	7.3	1.6	9.0	0	0	0	0	0	5.8	5.8

IC

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC 1	7.0	13.8	13.1	0	0	0	0.6	0.6	—	—	—	—	—	—	—	—
IC 2	2.6	2.8	2.9	2.5	0	7.4	2.0	7.4	5.8	—	—	—	—	—	—	—
IC 3	7.4	3.2	0	7.4 (7.0)	3.5	3.5	3.2 (2.8)	6.3 (0)	3.2	0	0	0	7.3	7.3	0	7.3

17	18	REMARKS
—	—	
—	—	
7.3	0	* 2

— REMARKS—

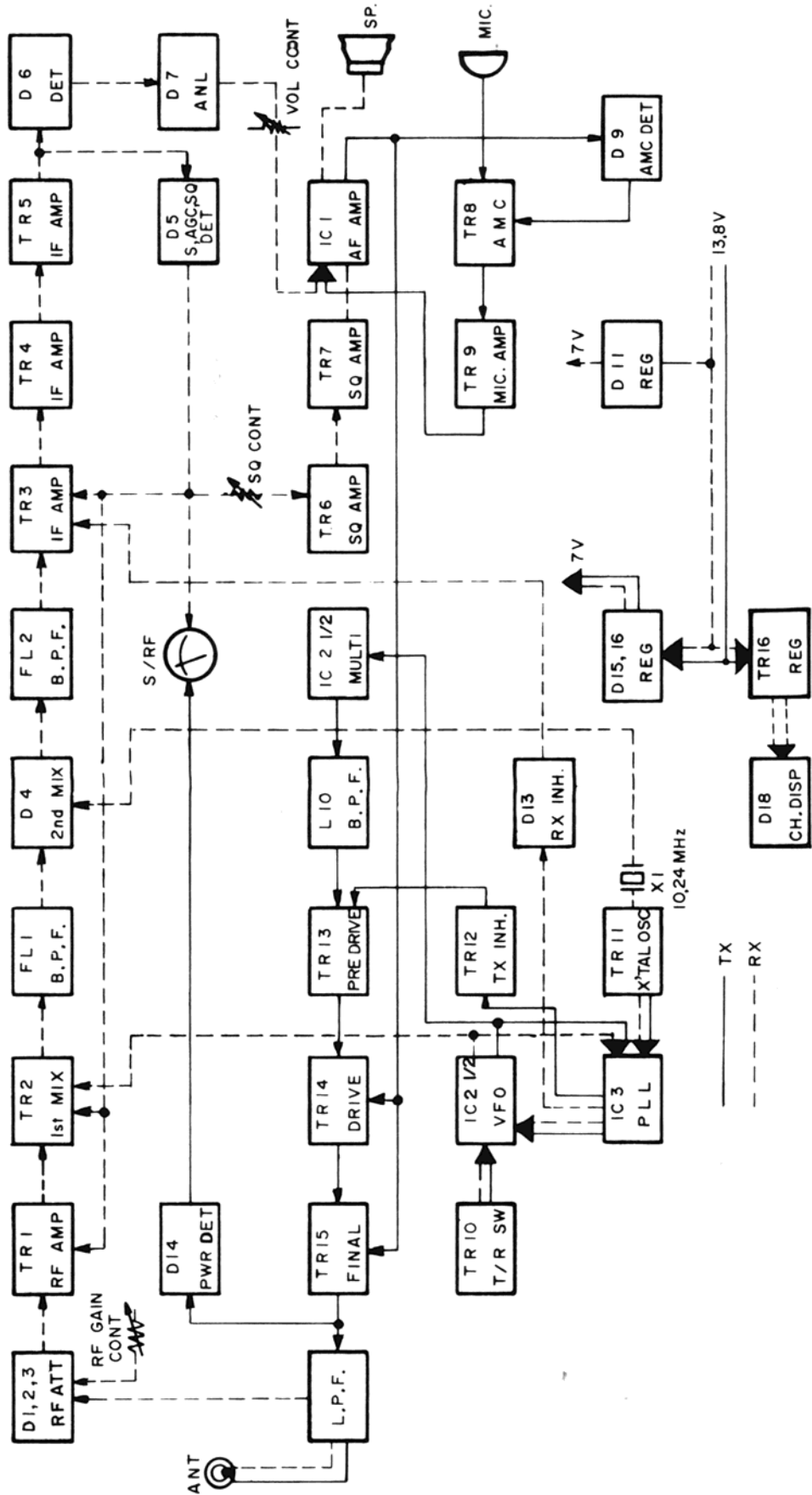
VOLTAGE VALUES ARE SHOWN IN VOLTS WHICH IS MEASURED BY DC VOLT METER ON CHANNEL 19 AT NO SIGNAL, RECEIVE AND AT NO MODULATION, TRANSMIT.

IC VOLTAGES ARE MEASURED AT RECEIVE.

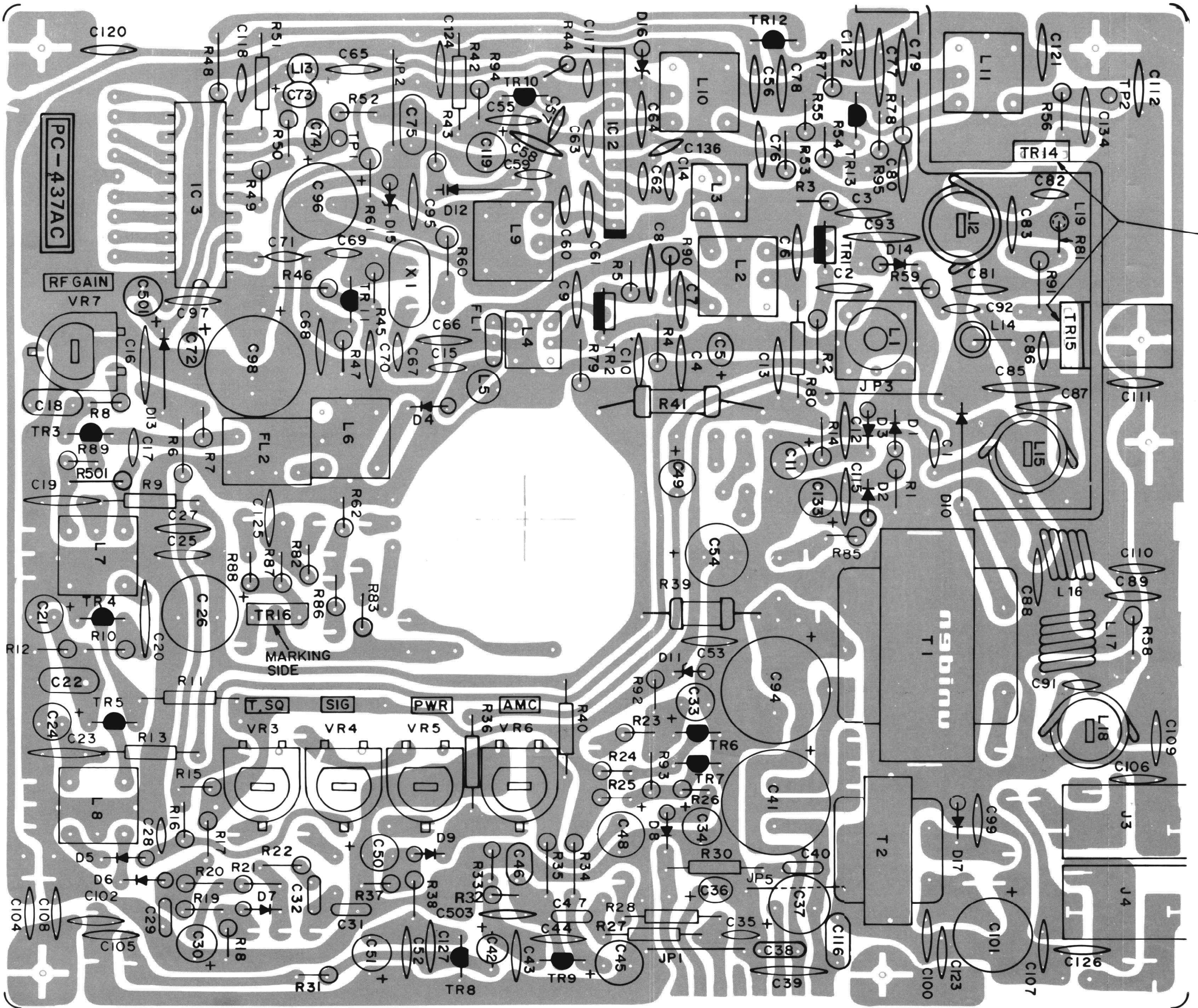
\*1 WITHOUT ( ): SQ CONTROL CCW

WITH ( ): SQ CONTROL CW

\*2 WITH ( ): TX

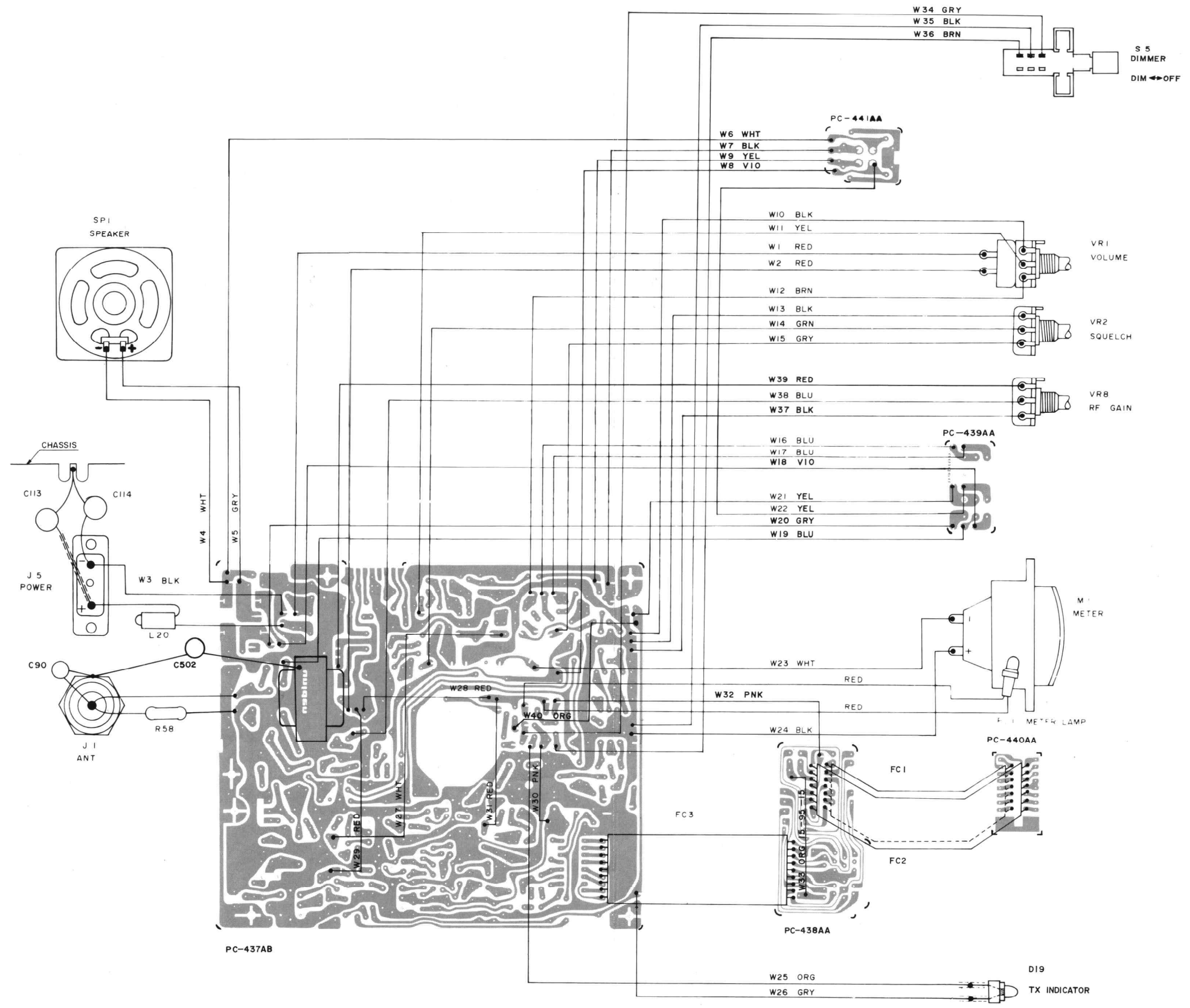




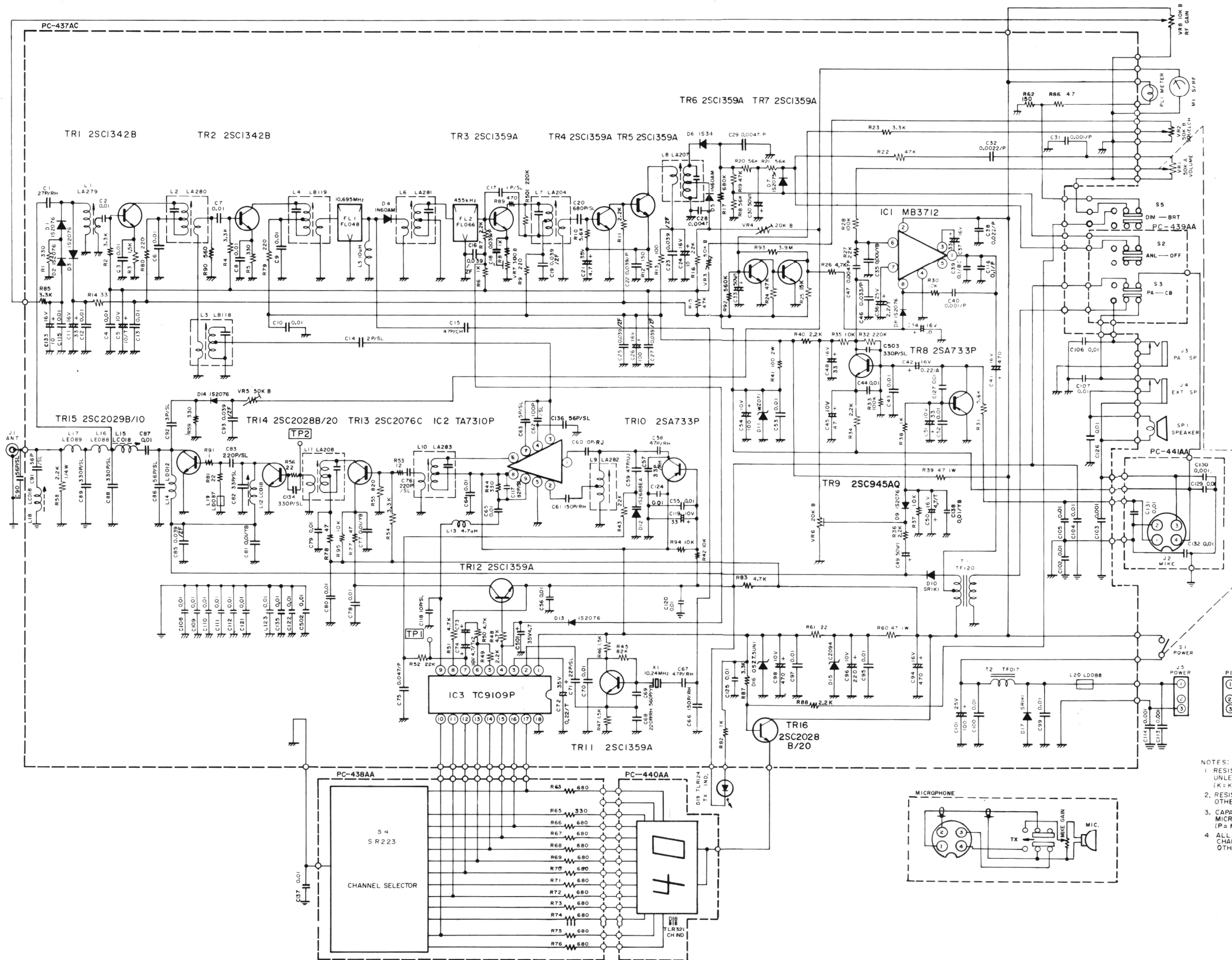


MARKING SIDE

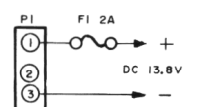
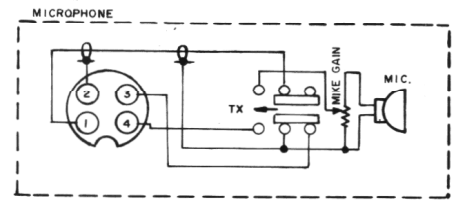
MARKING SIDE



W 25 (+) 0  
 W 26 (+) 0  
 (BOTTOM VIEW)



- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K=KILO OHM M = MEG OHM)
  2. RESISTOR WATTAGES ARE 1/4W UNLESS OTHERWISE SPECIFIED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICROFARADS UNLESS OTHERWISE SPECIFIED (P = MICRO-MICROFARAD)
  4. ALL CAPACITORS' TEMPERATURE CHARACTERISTICS ARE YF UNLESS OTHERWISE NOTED.



TR6 25CI359A TR7 25CI359A

TR1 25CI342B TR2 25CI342B

TR3 25CI359A TR4 25CI359A TR5 25CI359A

TR15 25C2029B/10

TR14 25C2028B/20 TR13 25C2076C IC2 TA7310P

TR10 2SA733P

TR12 25CI359A

TR11 25CI359A

TR16 25C2028 B/20

TR9 25C945A0

TR8 2SA733P

IC1 MB3712

PC-438AA

PC-440AA

PC-439AA

PC-441AA

CHANNEL SELECTOR

40

MICROPHONE

TX

MIKE GAIN

MIKE

MI

SP1

SPEAKER

J2 MIKE

J3 PA SP

J4 EXT SP

S1 POWER

S2 PA CB

S3 ANL OFF

DM BRT

PC-439AA

PLI METER

VR1 50K A

VR2 50K A

VR3 50K A

VR4 50K B

VR5 50K B

VR6 50K B

VR7 50K B

VR8 50K B

VR9 50K B

VR10 50K B

VR11 50K B

VR12 50K B

VR13 50K B

VR14 50K B

VR15 50K B

VR16 50K B

VR17 50K B

VR18 50K B

VR19 50K B

VR20 50K B

VR21 50K B

VR22 50K B

VR23 50K B

VR24 50K B

VR25 50K B

VR26 50K B

VR27 50K B

VR28 50K B

VR29 50K B

VR30 50K B

VR31 50K B

VR32 50K B

VR33 50K B

VR34 50K B

VR35 50K B

VR36 50K B

VR37 50K B

VR38 50K B

VR39 50K B

VR40 50K B

VR41 50K B

VR42 50K B

VR43 50K B

VR44 50K B

VR45 50K B

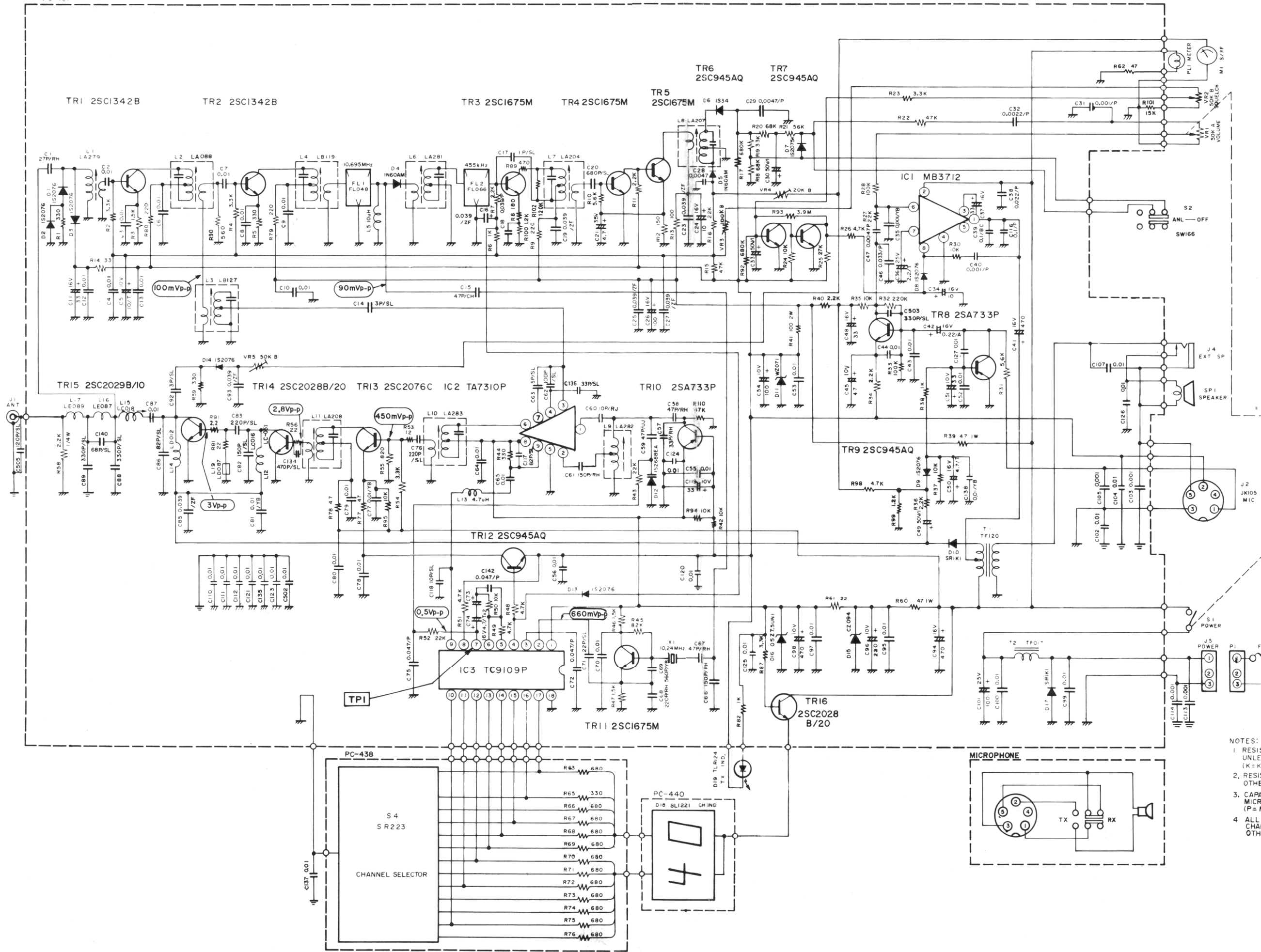
VR46 50K B

VR47 50K B

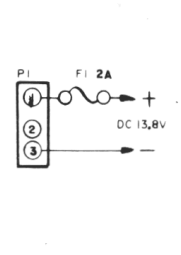
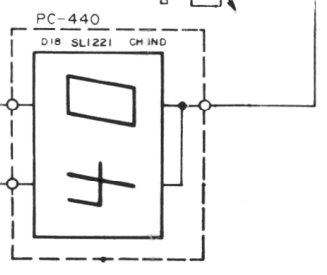
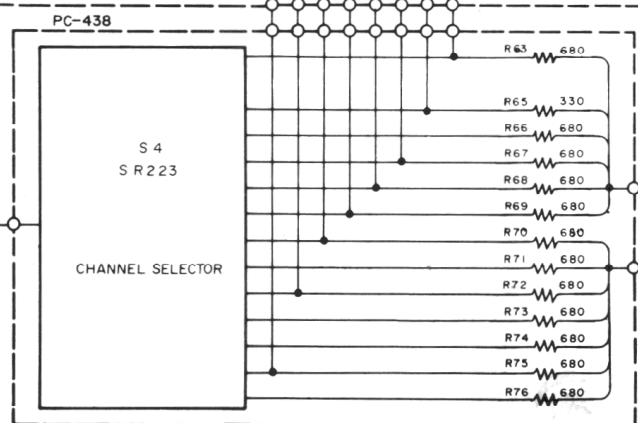
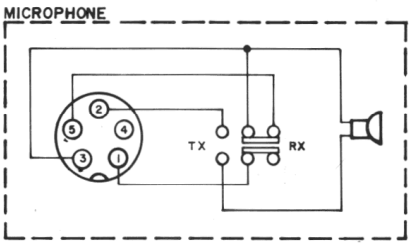
VR48 50K B

VR49 50K B

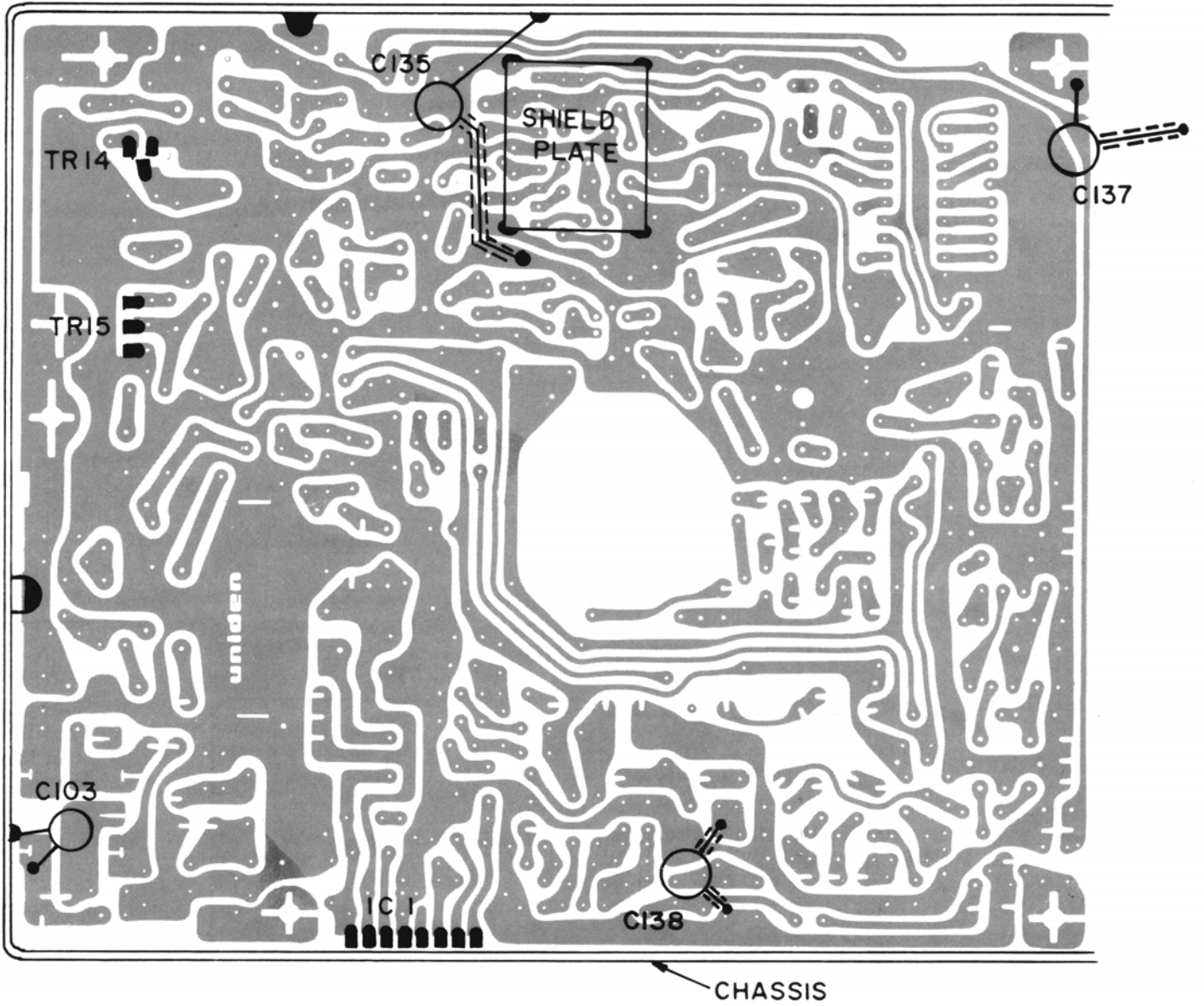
VR50 50K B

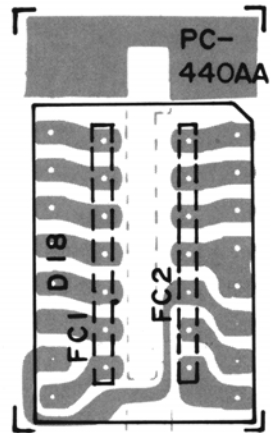
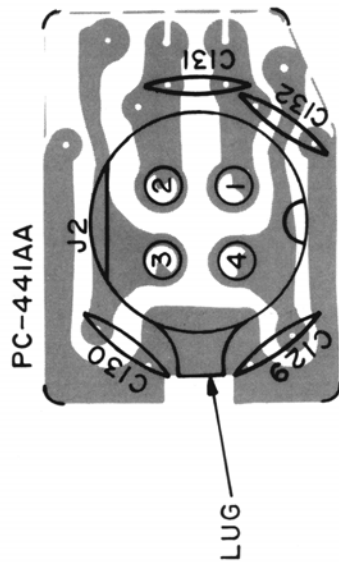
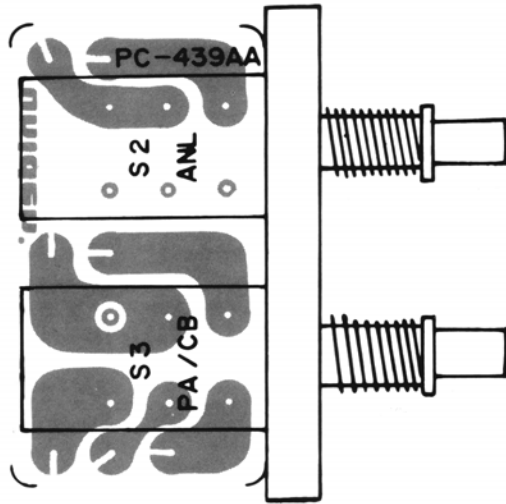


- NOTES:
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  2. RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE SPECIFIED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICROFARADS UNLESS OTHERWISE SPECIFIED. (P= MICRO-MICROFARAD)
  4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE YF, UNLESS OTHERWISE NOTED.



PC-437AC





## Parts List STALKER IV and STALKER VIII

Computer No.	Symbol No.	Part No.	Description
D1803	IC 1	DDEY157001	Integrated Circuit MB 3712
D1568	IC 2	DDEY109001	Integrated Circuit TA 7310 P
D1804	IC 3	DDEY155001	Integrated Circuit TC 9109 P
B1011	TR 8, 10	DDBY003001	Transistor 2SA 733 P
B1237	TR 1, 2	DDBY287001	Transistor 2 SC 1342 B
D1219	TR 3, 4, 5, 6, 7, 9, 11, 12	DDBY281001	Transistor 2 SC 1359 A
L1171	TR 14, 16	DDBY256002	Transistor 2SC2028
L1172	TR 15	DDBY257001	Transistor 2SC2029
B1229	TR 13	DDBY270001	Transistor 2SC2076 C
C1053	D 7	DDAY063001	Diode 1S2075K
D1806	D 1, 2, 3, 8, 9, 13, 14	DDAY069001	Diode 1S2076
C1050	D 4, 5	DDAY001001	Diode IN 60-AM
D1807	D 6	DDAY051001	Diode 1S34
E1005	D 10, 17	DDAY002001	Diode, SR1K1
D1808	D 15	DDAY010002	Diode, Zenor CZ 094
C1044	D 11	DDAY008002	Diode, Zenor WZ 071
D1809	D 16	DDAY108001	Diode, Zenor 05Z7.5
E1008	D 12	DDAY006003	Diode, Vari-Cap. 1S2688 EA
D1706	D 19	DDAY100001	Diode, LED TLR 124
D1210	D 18	DDAY078001	Diode, LED TLR 321
D1587	L 7	LLAY204001	Coil, LA 204
D1766	L 8	LLAY207001	Coil, LA 207
D1810	L 11	LLAY208001	Coil, LA 208
D1811	L 1	LLAY279001	Coil, LA 279
D1812	L 2	LLAY280001	Coil, LA 280
D1813	L 6	LLAY281001	Coil, LA 281
D1814	L 9	LLAY282001	Coil, LA 282
D1815	L10	LLAY283001	Coil, LA 283
D1816	L 3	LLBY118001	Coil, LB 118
D1817	L 4	LLBY119001	Coil, LB 119
D1111	L 12, 15, 18	LLCY018001	Coil, LC 018
E1156	L 14	LLDY012001	Coil, LD 012
D1580	L 19	LLDY087001	Ferrite Bead Core LD 087
D1581	L 20	LLDY088001	Ferrite Bead Core LD 088
D1771	L 16	LLEY088001	Coil, LE088
D1772	L 17	LLEY089001	Coil, LE089
D1818	L 13	LLZY002009	Inductor, Molded LZ002 (4.7 uH)
D1819	L 5	LLZY002013	Inductor, Molded LZ002 (10 uH)
D1579	T 1	TTFY120001	Transformer, Output TF120
D1209	T 2	TTFY017001	Coil, AF Choke TF 017
D1731	VR 1	RRVY342001	Resistor, Variable RV342 50K Ohm A
E1240	VR 2	RRVY241001	Resistor, Variable RV241 50K Ohm B
	VR 8	RRVY195001	Resistor, Variable 10K Ohm B
E1258	VR 7	RRVY189001	Resistor, Variable 300K Ohm B

<b>Computer No.</b>	<b>Symbol No.</b>	<b>Part No.</b>	<b>Description</b>
D1775	VR 4, 6	RRVY189006	Resistor, Variable 20K Ohm B
E1239	VR 3, 5	RRVY189007	Resistor, Variable 50K Ohm B
B1273	X1	QQXY074001	Crystal, QX 074 10.240 MHz
D1820		PPCY438011	PC Board PC 438AA (Ch/SW)
D1821		PPCY440011	PC Board PC 440AA (LED)
D1822		FFLY048001	FL 048 Filter, Ceramic
D1823		FFLY066001	FL 066 Filter, Ceramic
D1824		SSRY223001	SR 233, Rotary Switch
D1825		SSWY124001	SW 124 Switch, Push
D1826		SSWY166001	SW 166 Switch, Push
D1827		ASPY055001	SP 055, Speaker
D1863		AMKY105001	MK 105 Microphone
D1741		ZMTY097001	MT 097 Meter
D1828		WWFY101001	WF 101 Flat Cable
D1829		WWFY102001	WF 102 Flat Cable
D1830		WWFY104001	WF 104 Flat Cable
D1831		MDBP305255	SB-K08 Cover, Top
D1832		MDBP305256	SB-K08 Cover, Bottom
D1833		MDBP405257	Mounting Bracket
D1834		MDMP305273	Panel, Front
D1835		MDMP406415	Knob, Channel
D1836		MDMP406416	Knob
D1837		MDMP404046	Knob, Push
D1838		MDNP405278	Nameplate, Brand
D1839		MDNP405277	Control Plate
D1840		MDAP405265	Filter Optical, Ch. Window
D1841		MDPP306418	Display Box
D1842		MZPT234201	Owners Manual
D1843		MZPT234207	Schematic/Parts List
E1235		DDAY082001	SL 1221
C1200		LLAY088001	LA088, Coil
E1236		LLBY127001	LB 127, Coil
E1237		LLCY051001	LC 051, Coil
E1238		LLEY087001	LE 087, Coil
E1242		AMKY114001	MK 114 Microphone
E1243		WZDZ070088	W-070088
E1244		MDBP307225	Cover Top
E1245		MDBP307226	Cover Bottom
E1246		MDMP407254	Knob, Channel
E1247		MDMP407255	Knob
E1248		MCMP400080	Knob, Push Button
E1249		MDMP405995	LED Holder
E1250		MDNP407227	Nameplate Control
E1251		MDNP406228	Nameplate Brand
E1252		MZSZ595008	Wing Bolts
E1253		MDPP307230	Display Box (Stalker VIII)
E1254		MZPT248001	Owners Manual (Stalker VIII)