



# STALKER V

## SERVICE MANUAL



\$5.00

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## Specifications (Nominal)

Power Source .....	13.8V DC
Size .....	7 <sup>3</sup> / <sub>8</sub> "x8 <sup>3</sup> / <sub>4</sub> "x2 <sup>1</sup> / <sub>4</sub> "

### Receiver Section

Sensitivity .....	0.5 $\mu$ V
Squelch Threshold .....	0.5 $\mu$ V
Squelch Deepest Point .....	1000 $\mu$ V
"S" Meter S-9 .....	.100 $\mu$ V
Delta Tune .....	$\pm$ 1.5KHz
Maximum AF Output Power .....	4.0W
AF Output Power 10% Distortion .....	3.0W
Selectivity BW @6dB Down .....	$\pm$ 6KHz
Adjacent Channel Rejection .....	- 60dB
Image Rejection .....	- 80dB
Speaker Impedance .....	8 Ohm

### Transmitter Section

Modulation (Peak) .....	100%
Power Output .....	4.0W
Emission Type AM .....	6A3
Hum and Noise (Better than) .....	- 60dB
Frequency Tolerance .....	.003%
Antenna Impedance .....	50 Ohm
Frequency Determining Method .....	PLL

### Public Address

Output Power @ 10% Distortion .....	3.0W
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## Alignment of Transmitter Portion

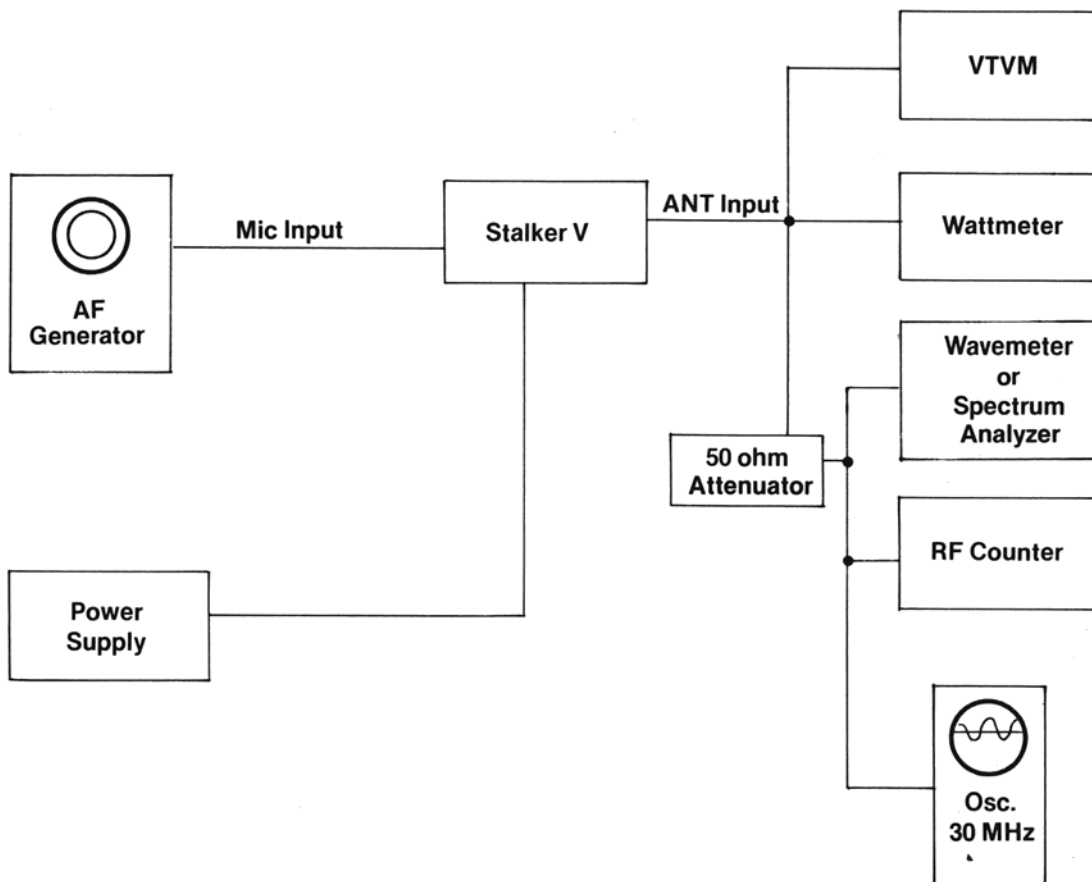
### 1. Equipment Required

- a. VTVM (full scale: 1V 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 – 30MHz)
- 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 J202 VTVM to TP4	L 20, 21, 23	Adjust for a maximum indication on VTVM
2.	Same as step 1.	RF Output Power Meter to ANT. Jack J202	L14, 16, 17	Adjust for a maximum indication on RF Output Power Meter
3.	Same as step 1.	Same as step 2.	L14	Adjust to obtain Nominal 3.8 W of RF Output Power
4.	Same as step 1.	2nd Harmonics Meter to Ant. Jack J202 through a suitable load and attenuator	L11	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 Ch19 1 KHz 30mV applied to Mic. Input.	Audio Generator to Microphone Jack Oscilloscope to ANT. Jack J202 through a suitable load and attenuator	VR4	Adjust for 100% Modulation
7.	Same as step 1.	RF Output Power Meter to Ant. Jack J202	VR5	Check that RF Output Power Meter reads 3.8 W then adjust VR5 so that the Meter pointer of the transceiver just approaches RF mark.
8.	Same as step 1.	Frequency Counter to Ant. Jack J202 through a suitable load and attenuator.	L24	Adjust to obtain 27.185MHz indication. Then check frequencies for all channels.

## Transmitter Test Set Up



## Alignment of Receiver Portion

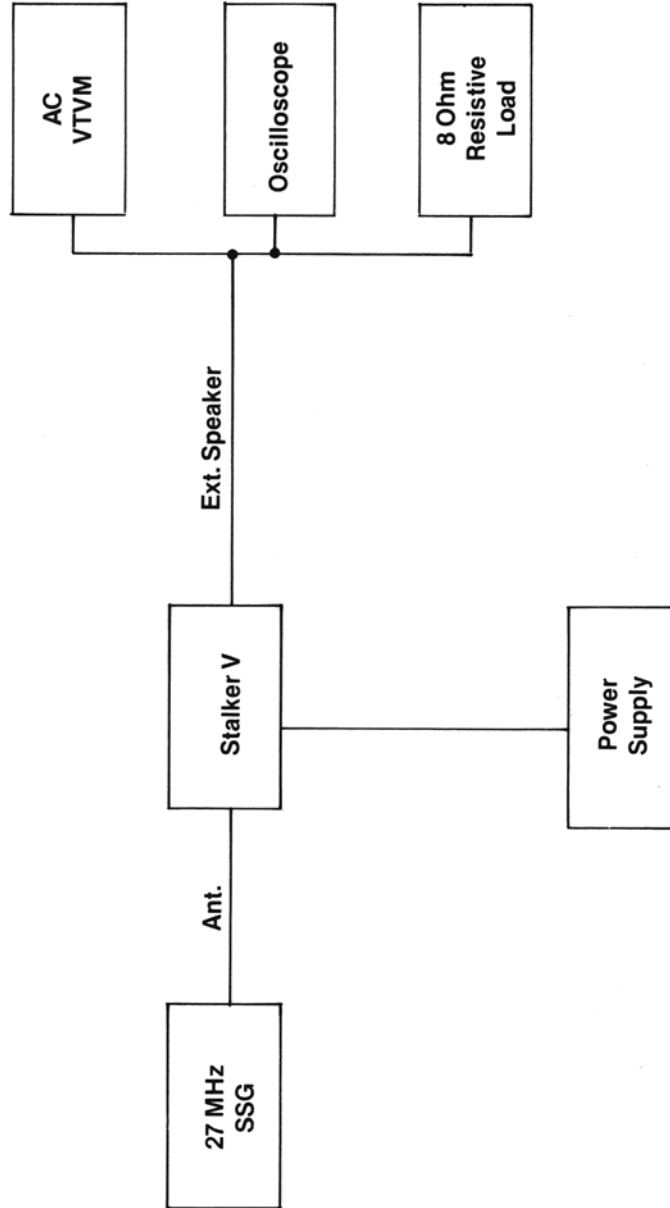
### 1. Equipment Required

- 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 (13.8 V, 2 Amp.)

### 2. Procedure

Step	SG Connection Frequency	Preset to	Audio VTVM	Adjustment	Remarks
1.	To Ant. Connector Freq: 27.185 MHz	RF Gain: Max. Volume: Max. Squelch: Min.	To EXT. SPK. Jack J2	L2, 3, 4, 5, 6 7, 8, 9	Adjust for a max. Audio Output
2.	Same as step 1.	Same as step 1.	Same as step 1.	VR1	Adjust for 2 V output with SG output level of 0.4uV
3.	Same as step 1.	Volume: Max. Squelch: Max. RF Gain: Max.	Same as step 1.	VR3 (Squelch)	Adjust for 2 V output with SG output level of 1000 uV
4.	Same as step 1.	Same as step 1.	Same as step 1.	VR2	Adjust for a reading of S-9 on the S-meter of the Transceiver with SG output level of 100 uV

# Receiver Test Set Up



## Alignment of P.L.L. Portion

1. Test Equipment Required
  - a. Oscilloscope (0 — 50 MHz)  
DC Volt Meter (10 Volts maximum, 100K ohm/Volt)
2. Alignment Procedure

Step	Preset to	Connections	Adjustment	Remarks
1.	Receiver mode channel 19	Oscilloscope to Pin 22 of IC1 (TP3)	L22	Adjust L22 for the maximum indication on Oscilloscope
2.	Same as step 1	DC Volt Meter to Pin No. 1 of IC2 (TP2)	L19	Adjust L19 to obtain approx. 3.50 reading
3.	Same as step 1	Oscilloscope to secondary of L18 (TP5)	L18	Adjust L18 for the maximum indication on Oscilloscope



## Alignment of Noise Blanker Portion

1. Equipment Required
  - a. Pulse Generator (10nsec, 50Hz & Output Impedance 50 ohm)
  - b. Audio VTVM
  - c. Dummy Load (8 ohm, 5 Watts, resistive)
  - d. DC Power Supply (13.8V, 2 Amp)

2. Procedure

Step	Generator Connection	Preset to	Audio VTVM	Adjustment	Remarks
1.	To Ant. Connector J202 Channel 19	VOL: Max SQL: Min. ANL: OFF NB: ON	To EXT. SPK. Jack J2	L1	Adjust for a min. Noise Output with Generator output level of 5VPP

## VOLTAGE CHART

IC

	1	2	3	4	5	6	7	8	9	10	11
IC 1	4.8	0.5	0.5	4.8	4.8	0.5	4.8	—	—	—	4.9
IC 2	2.6	2.0	1.5	—	0	4.3	0	4.9 (4.3)			
IC 3	—	—	—	0 (2.6)	0 (0)	0 (7.5)	0 (2.0)	0 (4.9)	0 (7.6)		
IC 4	13.4	2.9	0	0	1.8	1.8	0	0	6.7	13.1	

	12	13	14	15	16	17	18	19	20	21	22
IC 1	—	—	—	4.8	4.9	1.7	1.7	1.7 (2.6)	0	0	2.4
IC 2											
IC 3											
IC 4											

# VOLTAGE CHART

## TRANSISTOR

	1		2		3		4		5		6		7	
TX or RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX
COLLECTOR	8.7	8.7	13.5	13.5	7.6	7.6	0	0	0	0	-0.1	0.1	0.1	8.3
BASE	.07	.06	8.6	8.7	0.6	0.6	13.5	13.5	0	0	0	0.6	0	1.6
EMITTER	0	0	8.0	8.0	0	0	13.5	13.5	0	0	0	0	0	0.8
REMARK														

	8		9		10		11		12		13		14	
TX or RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX
COLLECTOR	7.7	7.3	0.1	1.6	13.2	13.2	4.1	0 (4.2)	0.1	0.6 (0)	0	0.03 (0.01)	12.3	13.5
BASE	0	1.5	0	0.7	0.1	1.6 (0)	0.1	0.6 (0)	0	0 (0.6)	0.6	0 (0.6)	0.2	0
EMITTER	0	0.8	0	0	0	0.9	0	0 (0)	0	0 (0)	0	0 (0)	0	0
REMARK							( )... SQ Max ( )... SQ Max		( )... SQ Max		( )... SQ Max			

	15		16		17		18		19		20		21	
TX or RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX	TX	RX
COLLECTOR	12.3	13.5	7.6	0	3.8	7.7	0.1	0.1			7.7	7.7	7.6	0
BASE	0	0	0.4	0.5	1.4	1.5	0	0			3.7	3.7	6.9	8.5
EMITTER	0	0	0.9	0	0.8	1.5	0	0			3.1	3.1	7.7	7.7
REMARK														

## FET

	22		23	
TX or RX	TX	RX	TX	RX
COLLECTOR	12.7	13.4	11.3	12.9
BASE	7.7	7.7	8.3	8.4
EMITTER	7.1	7.1	7.7	7.7
REMARK				

	1		2	
TX or RX	TX	RX	TX	RX
DRAIN	0.1	8.4	12.9	13.2
GATE	0	0	0	0
SOURCE	0.1	2.6	0.9	0.8
REMARK				

**Table B Program Input Data**

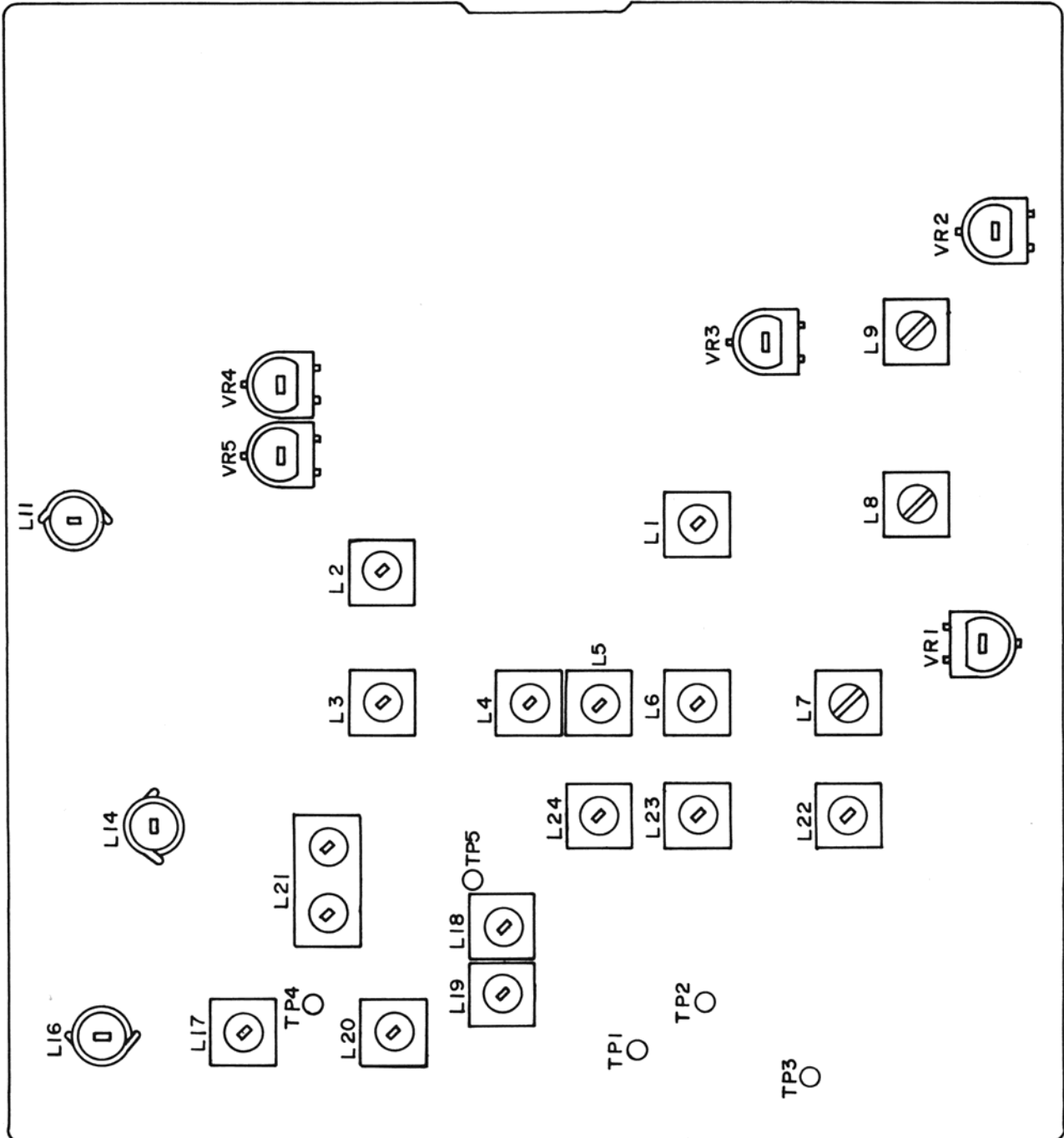
Ref. FCC part 2.983 (d) (10)

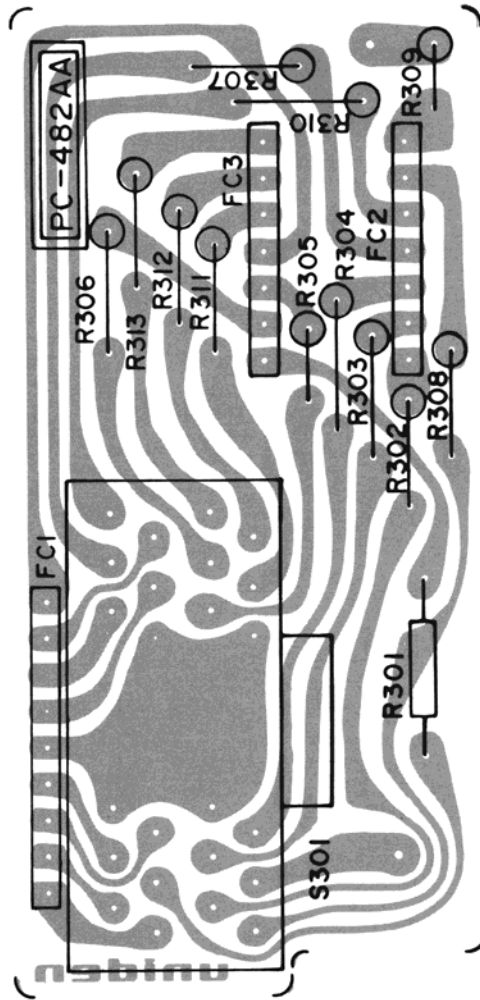
Channel No.	Program Input Data Pins					
	1	2	3	4	5	6
1	H	L	L	L	L	L
2	L	H	L	L	L	L
3	H	H	L	L	L	L
4	L	L	H	L	L	L
5	H	L	H	L	L	L
6	L	H	H	L	L	L
7	H	H	H	L	L	L
8	L	L	L	H	L	L
9	H	L	L	H	L	L
10	L	L	L	L	H	L
11	H	L	L	L	H	L
12	L	H	L	L	H	L
13	H	H	L	L	H	L
14	L	L	H	L	H	L
15	H	L	H	L	H	L
16	L	H	H	L	H	L
17	H	H	H	L	H	L
18	L	L	L	H	H	L
19	H	L	L	H	H	L
20	L	L	L	L	L	H
21	H	L	L	L	L	H
22	L	H	L	L	L	H
23	H	H	L	L	L	H
24	L	L	H	L	L	H
25	H	L	H	L	L	H
26	L	H	H	L	L	H
27	H	H	H	L	L	H
28	L	L	L	H	L	H
29	H	L	L	H	L	H
30	L	L	L	L	L	H
31	H	L	L	L	H	H
32	L	H	L	L	H	H
33	H	H	L	L	H	H
34	L	L	H	L	H	H
35	H	L	H	L	H	H
36	L	H	H	L	H	H
37	H	H	H	L	H	H
38	L	L	L	H	H	H
39	H	L	L	H	H	H
40	L	L	L	L	L	L

## Short Form Troubleshooting

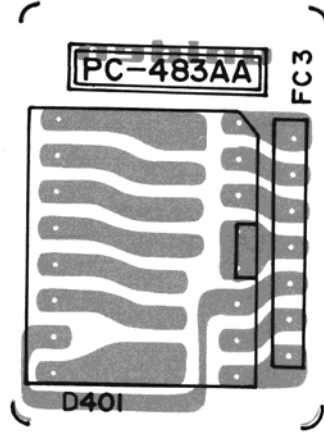
1. No Lights, No Transmit, No Receive.
  - a. Check F201.
  - b. Check Power Source.
  - c. Check S201.
  
2. No Transmit
  - a. Check PLL for proper lock when in transmitting mode.
  - b. Check TR 14, 15, 16.
  - c. Check PA/CB Switch.
  - d. Check Microphone.
  
3. No Receive
  - a. Check PLL for proper lock when in receive mode.
  - b. Check TR 7, 8, 9, 10, FET 1 and FET 2.
  - c. Check PA/CB Switch.
  - d. Check RF Gain control for proper setting.
  - e. Check Microphone.
  
4. Noise Blanker Inoperative.
  - a. Check TR 1, 2, 3, 4, and 5.
  - b. Check LA 181.
  
5. No Modulation
  - a. Check Microphone gain control.
  - b. Check Microphone.
  - c. Check TR 17, 18.

LOCATION OF COMPONENT TO BE TUNED



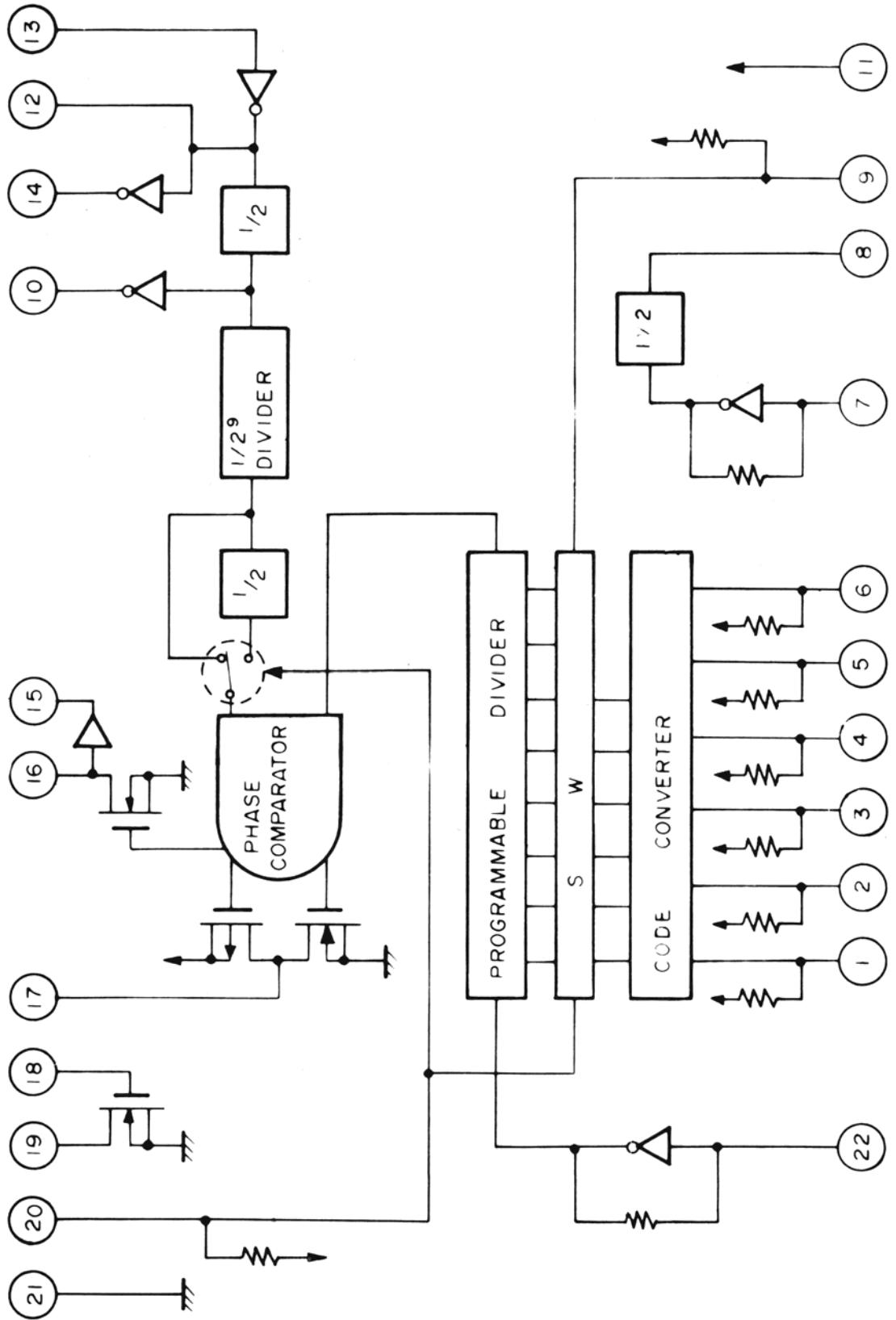


CH. SELECTION PCB PARTS COMPONENT VIEW

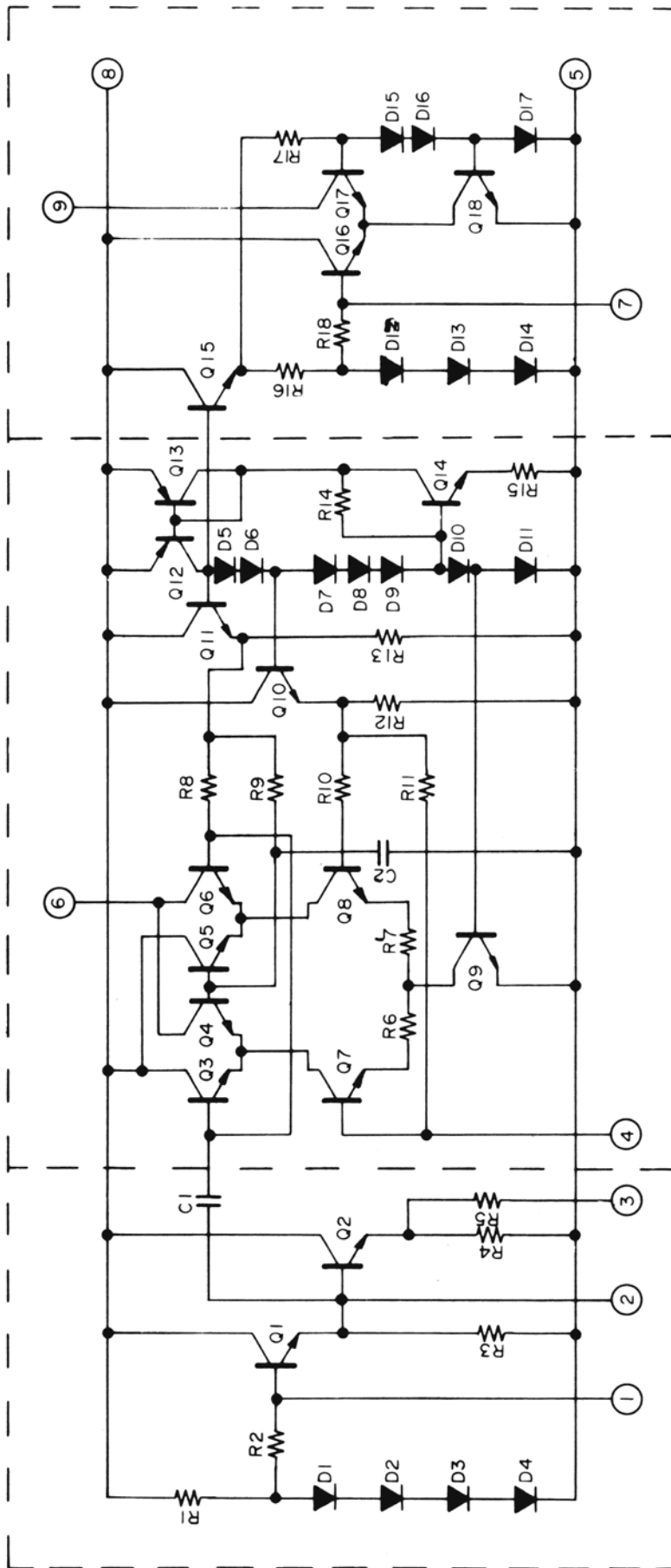


CH. DISPLAY PCB PARTS COMPONENT VIEW

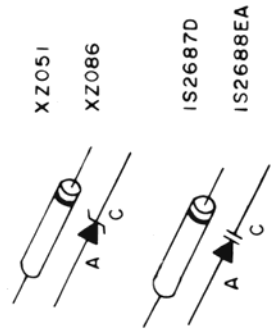
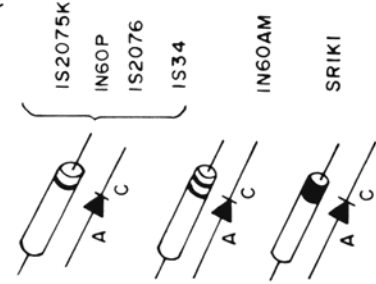
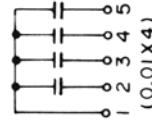
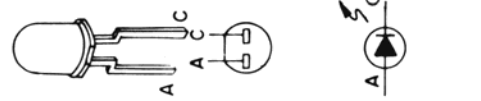
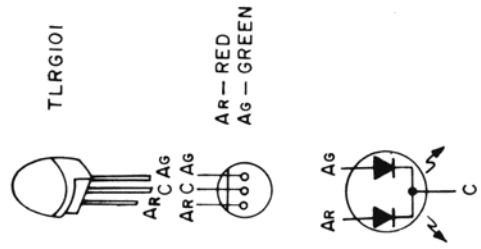
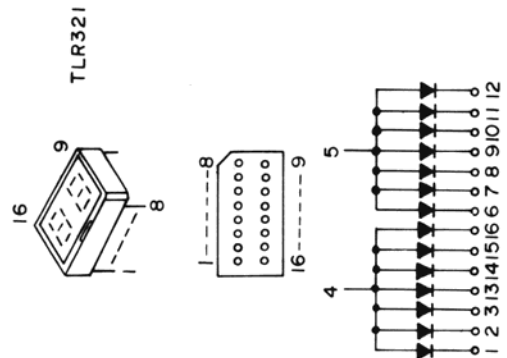
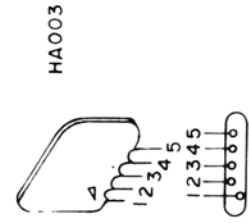
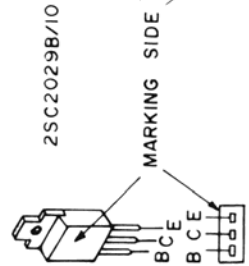
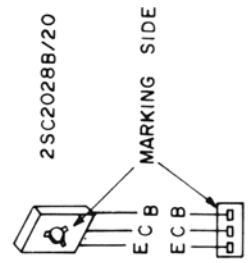
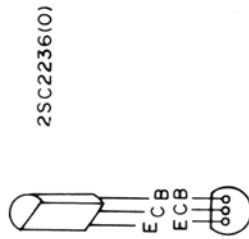
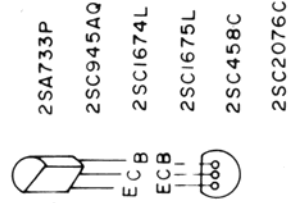
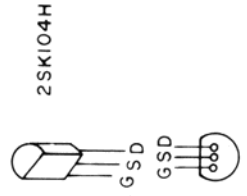
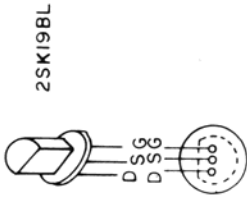
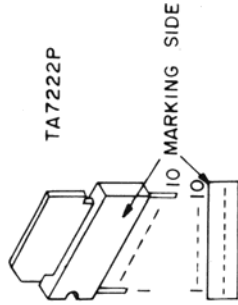
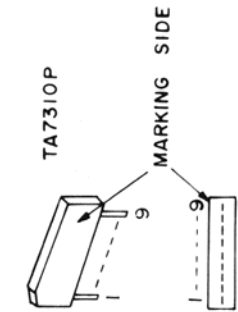
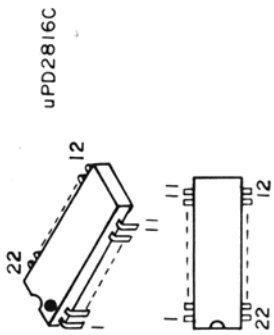
uPD2816C



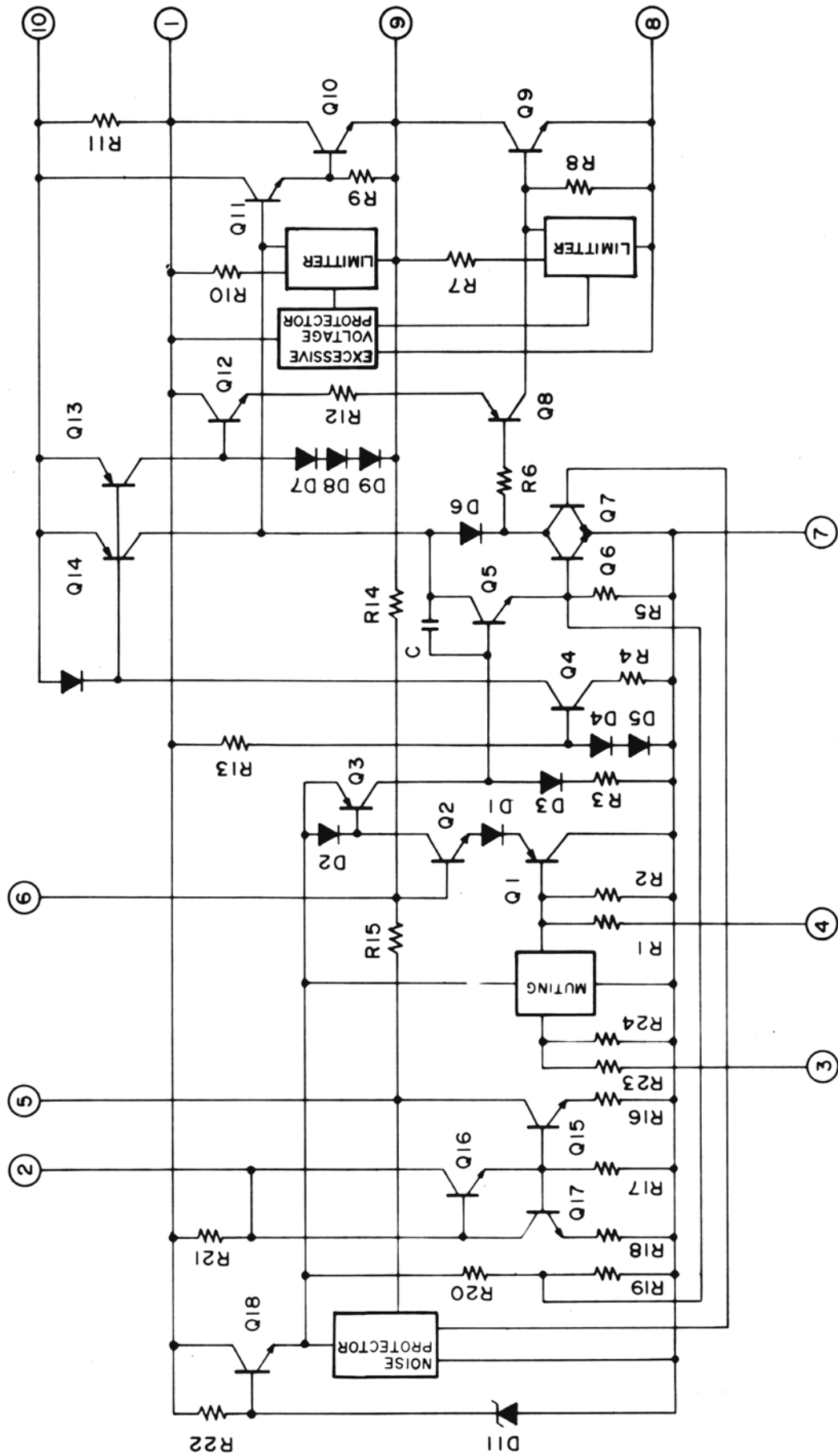
TA7310P



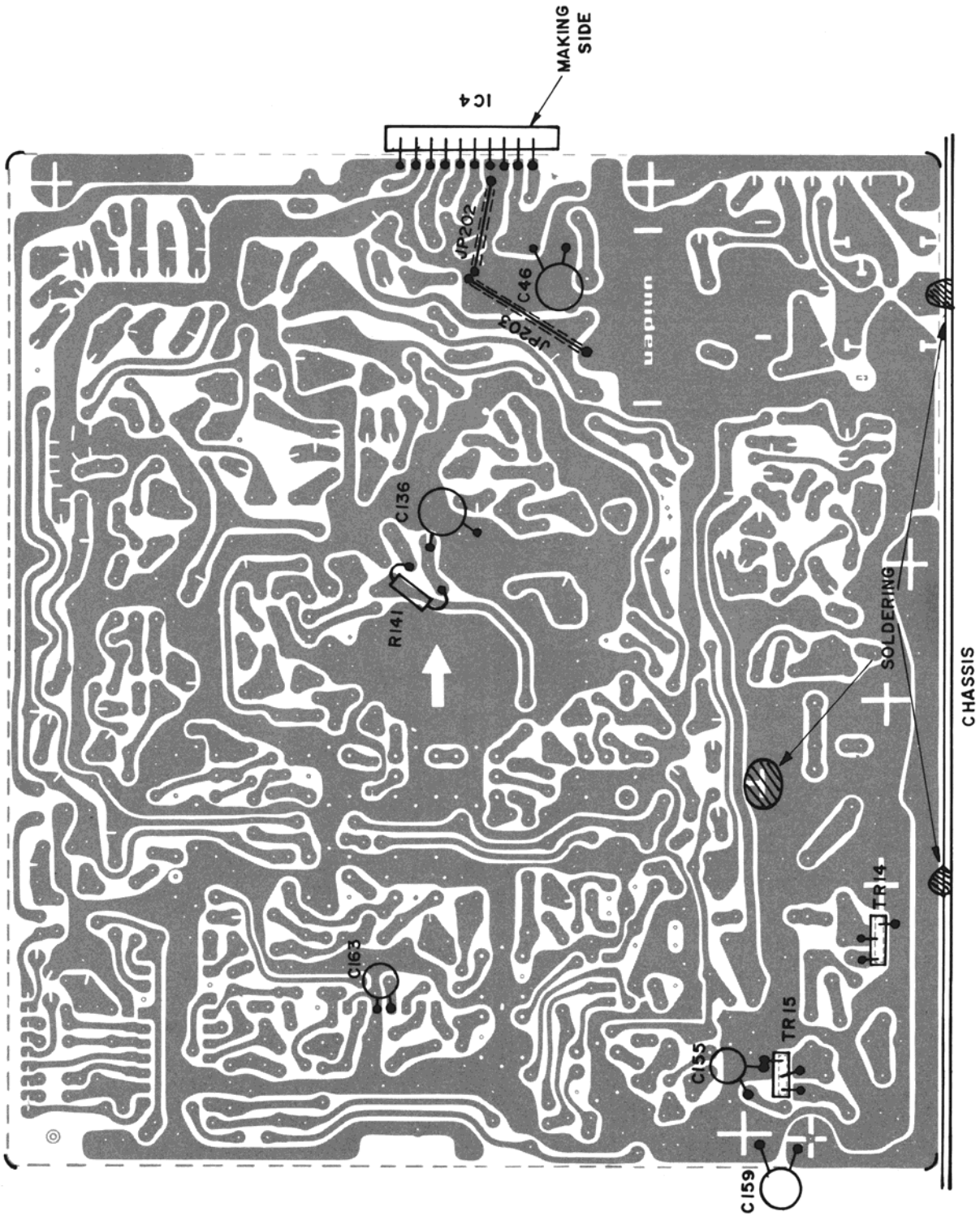


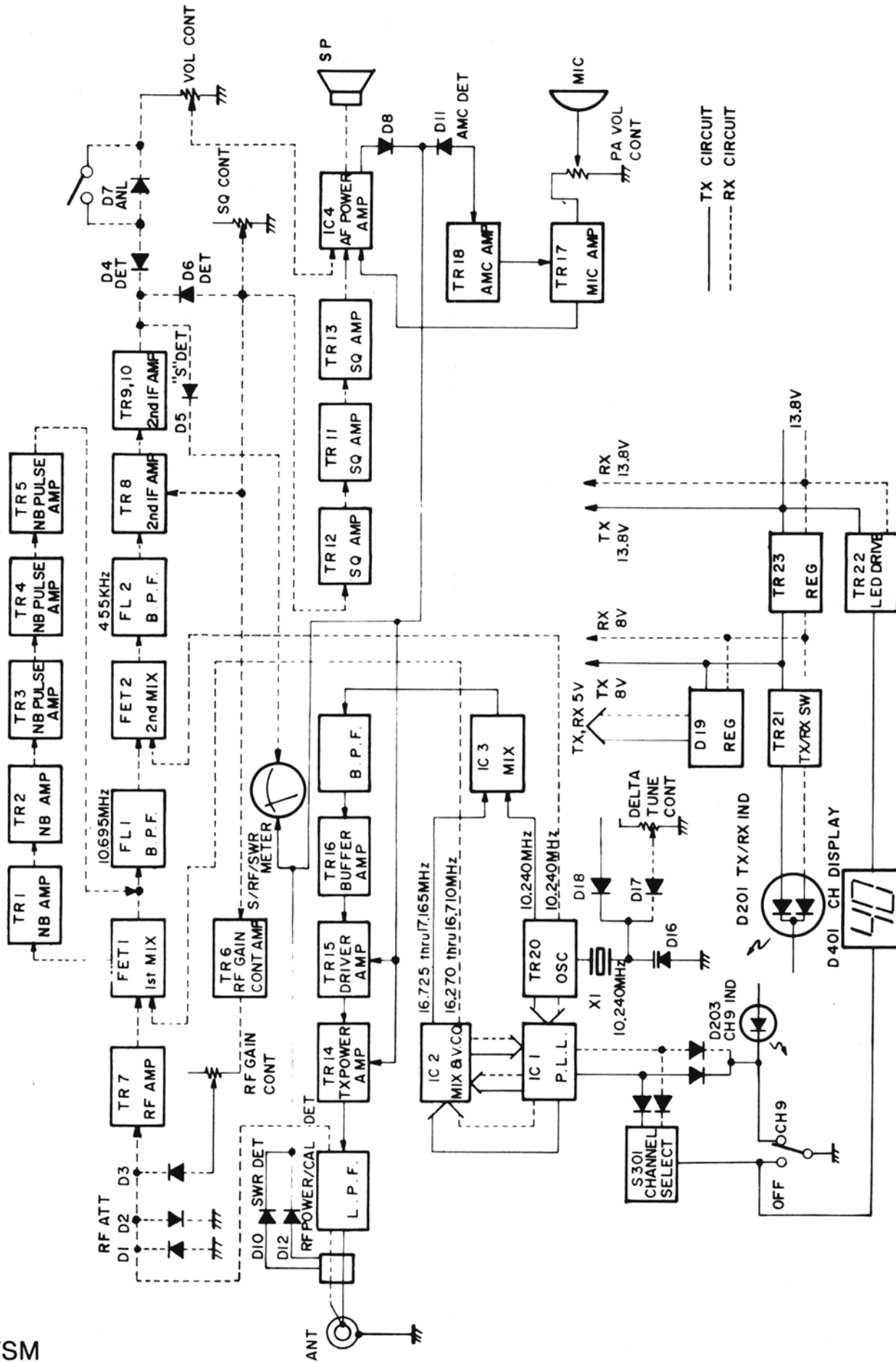


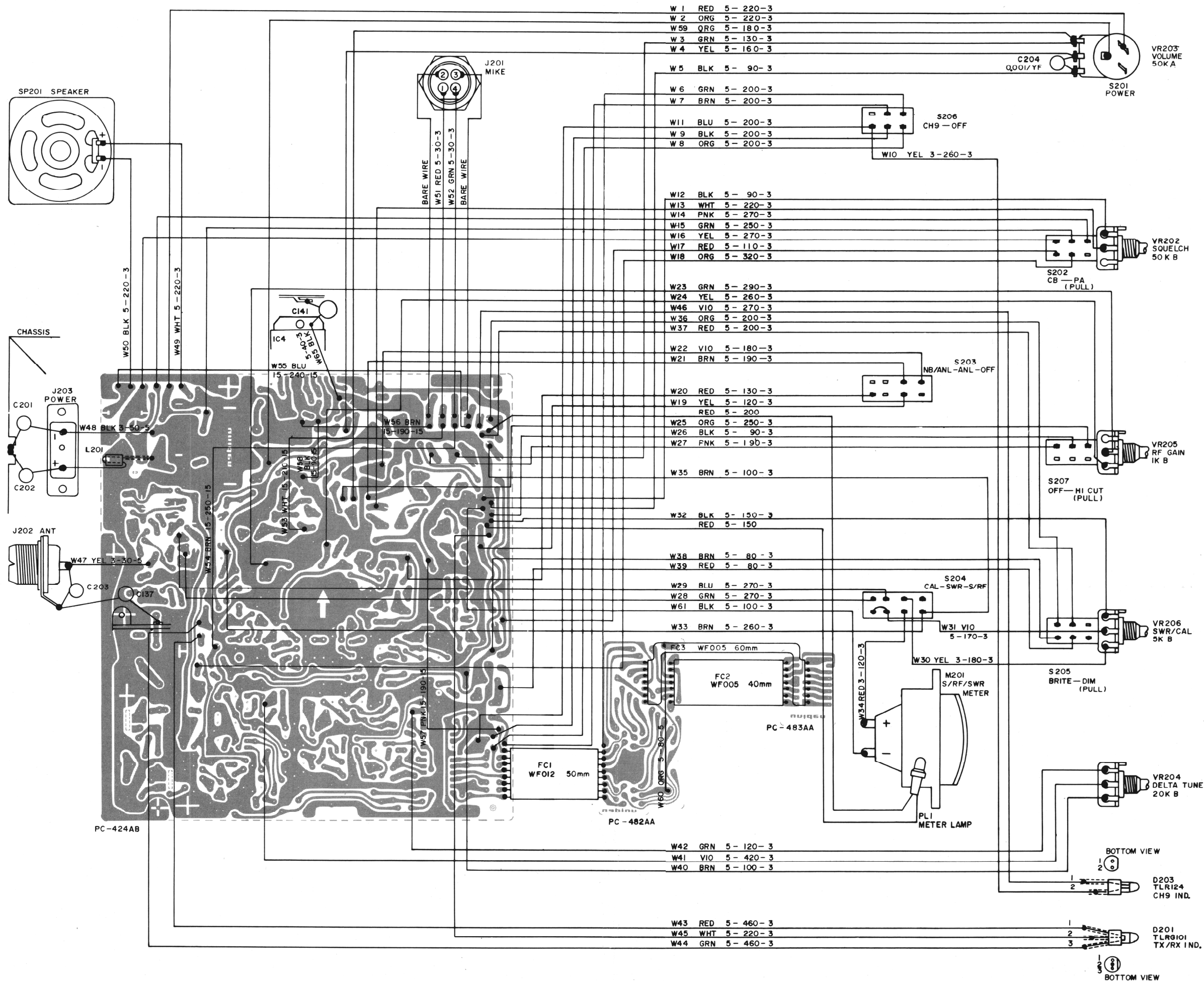
TA7222P

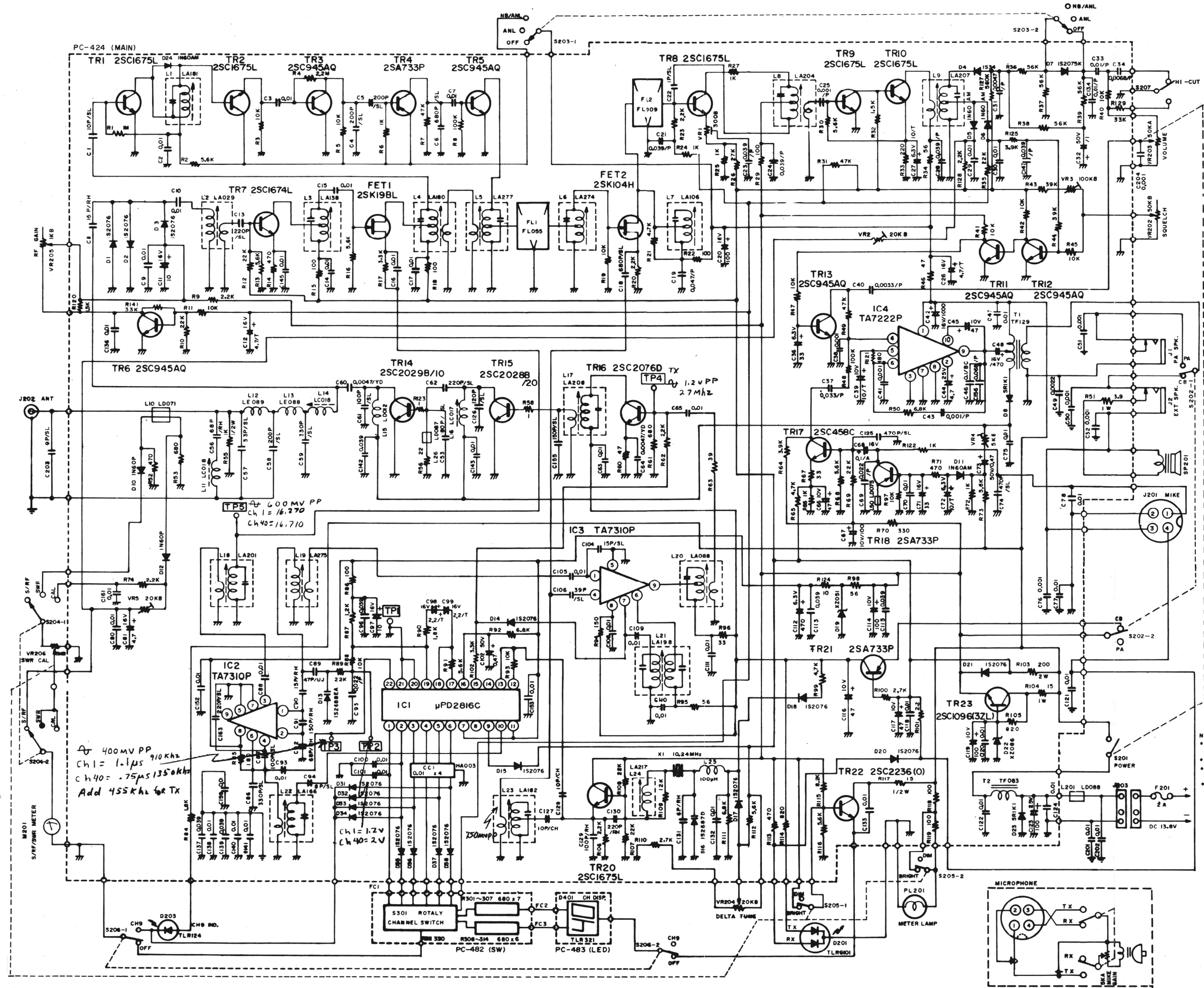


PC-424AB









400mV PP  
 $Ch1 = 1.1\mu s$  910kHz  
 $Ch40 = .75\mu s$  1350kHz  
 Add 455kHz for Tx

150mV PP

- NOTES:
- \*RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED, (K=10<sup>3</sup> OHMS M=10<sup>6</sup> OHMS)
  - \*RESISTOR WATTAGES ARE 1/8W UNLESS OTHERWISE SPECIFIED.
  - \*CAPACITANCE VALUES ARE INDICATED IN MICROFARADS UNLESS OTHERWISE SPECIFIED. (P=PICTO-MICROFARADS)
  - \*ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE YF UNLESS OTHERWISE NOTED.

## STALKER V

Manufacture Number	Symbol	Description
D1757	IC 1	UPD2816C PLL IC
D1568	IC2, 3	TA7310P VCO, TX MIX
D1701	IC 4	TA7222P AFPWR
B1081	FET 1	2SK19 BL
D1758	FET 2	2SK104H
B1011	TR4, 18, 21	2SA733P
B1054	TR3, 5, 6, 11, 12, 13	2SC945A-Q
D1703	TR 7	2SC1674L
B1068	TR 1, 2, 8, 9, 10, 20	2SC1675L
B1024	TR17	2SC458C
L1171	TR15	2SC2028-B/20
L1172	TR 14	2SC2029-B/10
D1759	TR 16	2SC2076-D
D1760	TR 22	2SC2236-O
B1058	TR 23	2SC1096-3ZL
D1807	D 4	IS34
C1050	D 5, 6, 11, 24	IN60AM
C1051	D-10, 12	IN60-P
D1805	D 7	IS2075 K
D1806	D 1, 2, 3, 14, 15, 17, 18, 20, 21, 31, 32, 33, 34, 35, 36, 37, 38	IS2076
E1005	D 8, 23	SR1K1
D1762	D 19	XZ 051
D1577	D 22	XZ 086
D1763	D 201	TLRG 101 TX/RX IND (LED)
D1706	D 203	TLR 124 CH9 IND (LED)
D1210	D 401	TLR 321 CH IND (LED)
B1267	D 16	IS2687D
E1008	D 13	IS2688 EA
E1160	L 2	LA 029
C1200	L 20	LA 088
D1764	L 7	LA 106
D1765	L 3	LA 138
D1583	L 22	LA 166
D1205	L4	LA180
B1213	L 1	LA 181
B1214	L 23	LA 182



Manufacture Number	Symbol	Description
D1864	L 21	LA 198
D1584	L 18	LA 201
D1587	L 8	LA 204
D1766	L 9	LA 207
D1711	L 24	LA 217
D1767	L 6	LA 274
D1768	L 19	LA 275
D1769	L 5	LA 277
D1770	L 17	LA 208
B1208	L 16	LC 017
B1211	L 11, 14	LC 018
V1209	L 15	LD 012
D1375	L 10	LD 071
D1580	L 26	LD 087
	L 201	LD 088
B1221	L 50	LD 075
D1771	L 13	LE 088
D1772	L 12	LE 089
D1330	L 25	LZ 001 (100uH)
D1773	T 2	TF 083
D1774	T 1	TF 129
C1169	VR 1	RV 189 300 ohm B
C1172	VR 4	RV 189 5K ohm B
D1775	VR 2, 5	RV 189 20K ohm B, S Meter RF Power
D1776	VR 3	RV 189 100K ohm B SQ
D1777	VR 203	RV 320 50K ohm A VOL., PWR SW S201
D1779	VR 204	RV 353 1K ohm B RF Gain pull push S207
D1780	VR 206	RV 354 5K ohm B SWR/CAL pull push S205
D1781	VR 202	RV 355 50K ohm B SQ, PA pull push S202
D1782	PC Board PC 482 CH SW PCB	PPCY482001
D1783	PC Board PC 483 LED PCB	PPCY483011
D1784	Filter, Ceramic FL 009 2nd IF	FFLY009001
D1785	Filter, Ceramic FL 005 1st IF	FFLY055001
D1786	Switch, Rotary SR-216	SSRY216001
D1787	Switch, Slide SW 145 (ANL/NB)	SSWY145001



<b>Manufacture Number</b>	<b>Description</b>	<b>Part Number</b>
D1788	Speaker, SP 052	ASPY052001
D1789	Meter, MT 094	ZMTY094001
D1790	Flat Cable WF 005	WWFY005103
D1791	Flat Cable WF 012	WWFY012105
D1792	Flat Cable WF 005	WWFY005107
D1793	Cover, Top	MDBP306018
D1794	Cover, Bottom	MDBP306019
D1795	Panel, Front	MDMP204318
D1749	Knob, Channel	MDMP406425
D1750	Knob	MDMP402181
D1796	Plate	MDMP404314
D1797	Nameplate, Brand	MDNP404315
D1798	Nameplate, Control	MDNP404316
D1799	Optical Filter, Channel Display	MDAP404321
C1227	Knob Spring	MZTT200003
D1800	Display Box	MDPP306427
D1801	Owners Manual	MZPT232201
D1802	Schematic Diagram	MZPT232207