

FIG. 5-10 ALIGNMENT LAYOUT

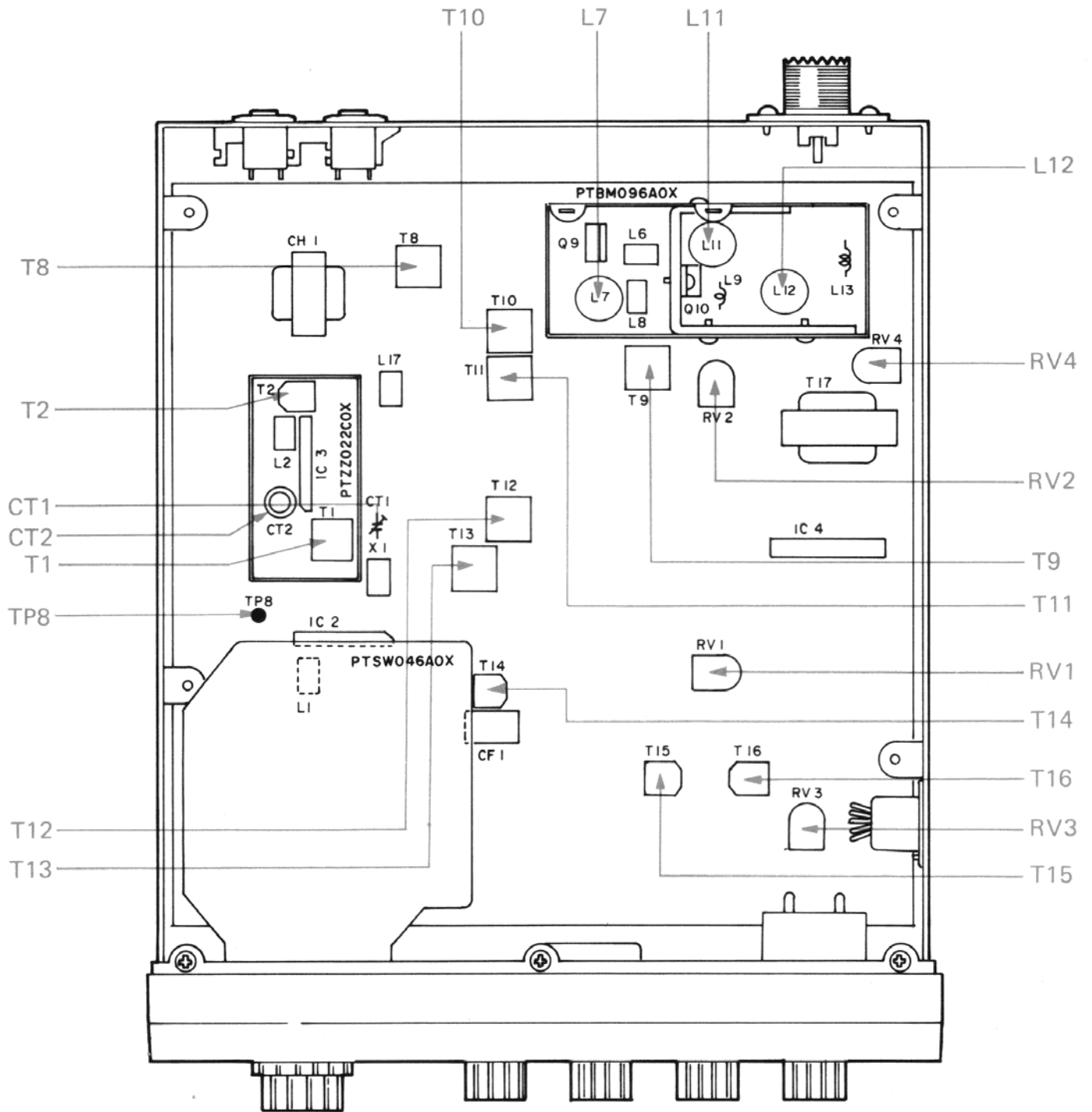


FIG. 5-11 RECEIVER INJECTION VOLTAGES

All injection voltage are 30% – 1 kHz modulation at the specified frequency fed through a .01 μF capacitor, and should produce at least 2V AC audio output measured across the speaker or across an 8 ohm load connected at EXT. SP. jack. Place the Noise Limiter NL switch in OFF position. Set the A-Scan-B switch to A position. Typical audio output voltages are given.

CH 19

INJECTION POINT	INPUT LEVEL	AUDIO VOLTAGE	FREQUENCY
ANT connector	1 μV	5 V	27.185 MHz
RF AMP Q11 Emitter	1 μV	2 V	27.185 MHz
MIXER Q7 & Q12 Base	10 μV	2 V	10.695 MHz
2nd MIXER Q13 Cole.	100 μV	2 V	455 kHz
IF AMP Q14 Base	50 μV	2 V	455 kHz
2nd IF AMP Q15 Base	3000 μV	2 V	455 kHz

FIG. 5-12 TROUBLE SHOOTING GUIDE

PLL CIRCUIT

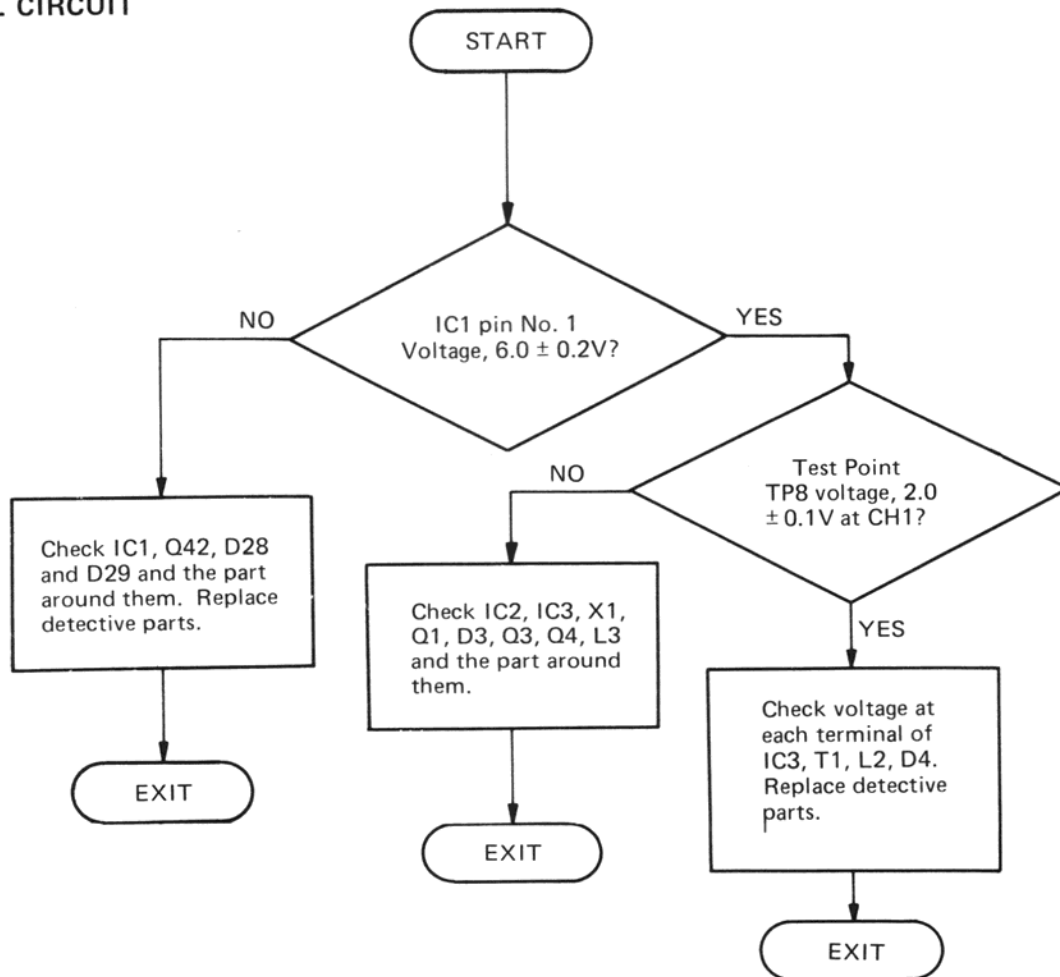
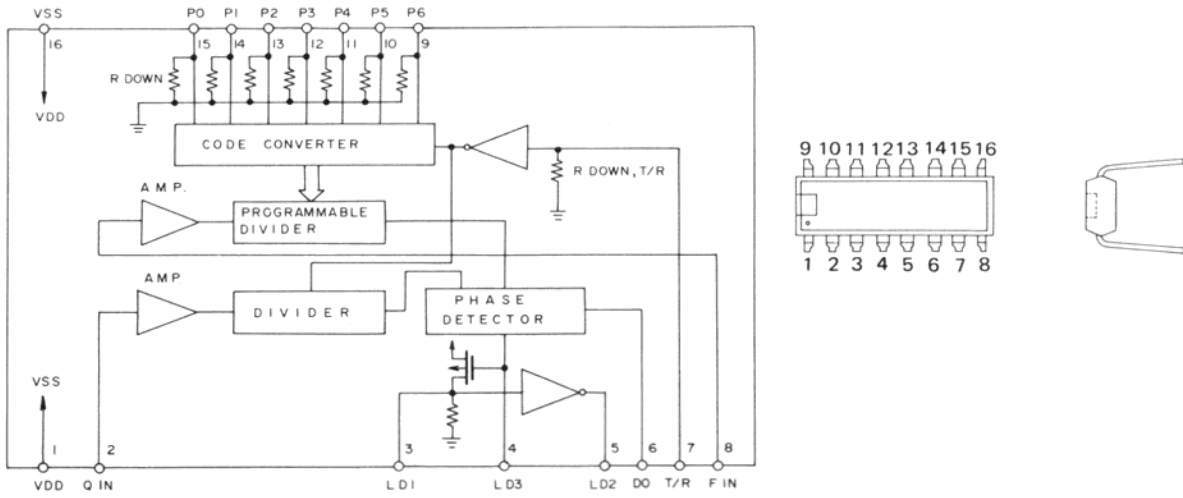
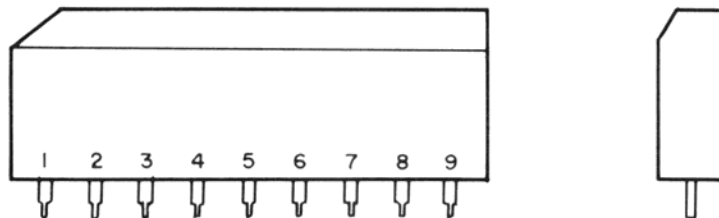
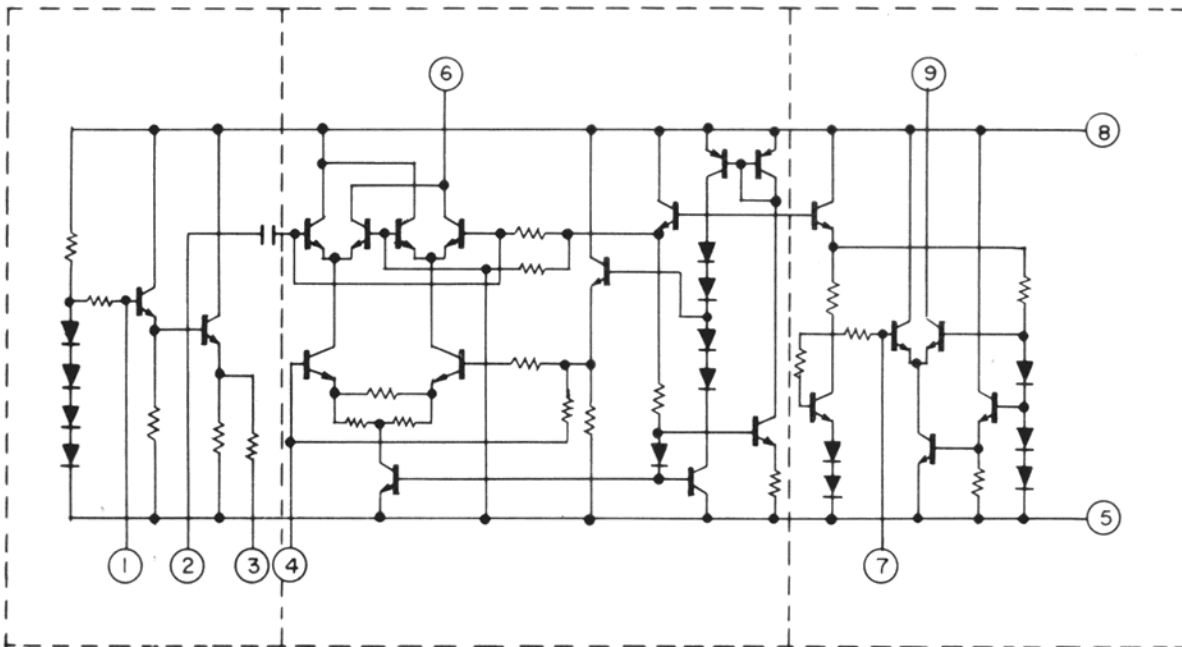


FIG. 5-13 IC EQUIVALENT CIRCUITS

IC1: PLL IC (PLL03A)



IC2 & IC3: IC2; OSC/MIXER, IC3; VCO/MIXER



IC4; AF AMP. (TA7205P)

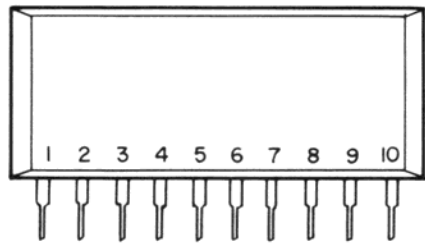
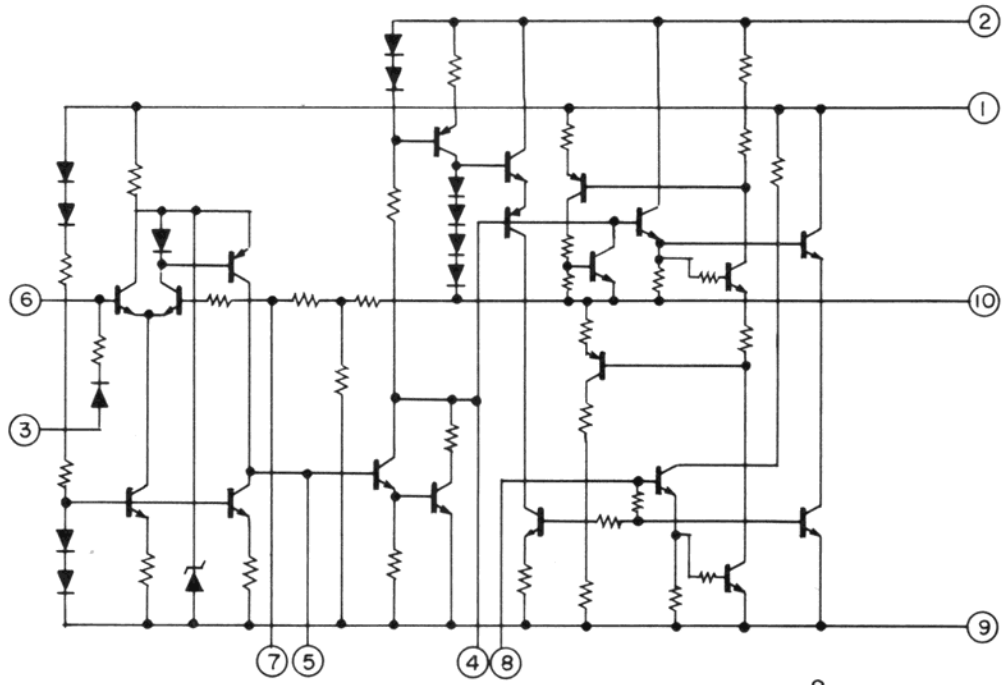


FIG. 5-14 EXPLODED VIEW FOR LCM-8

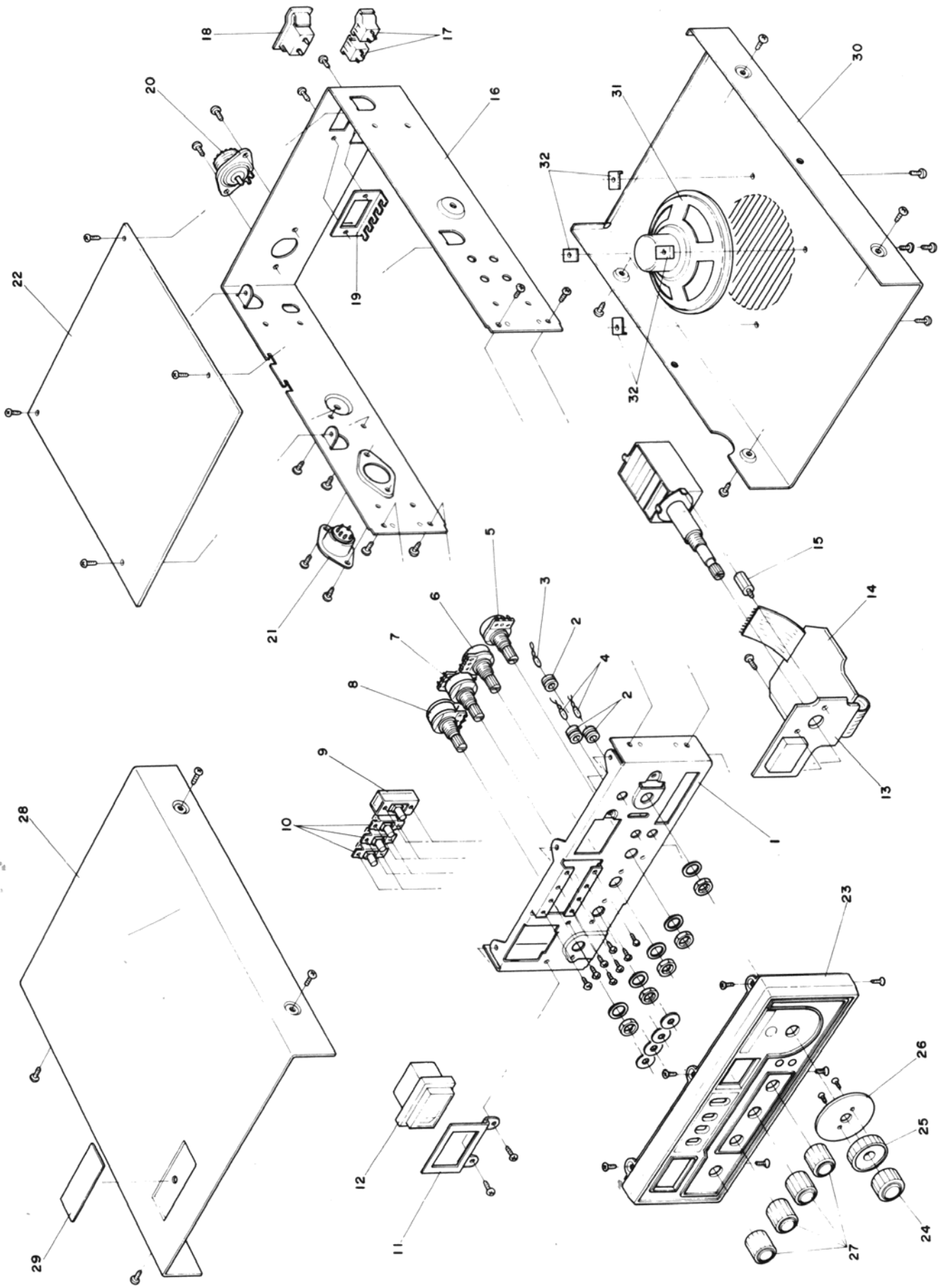
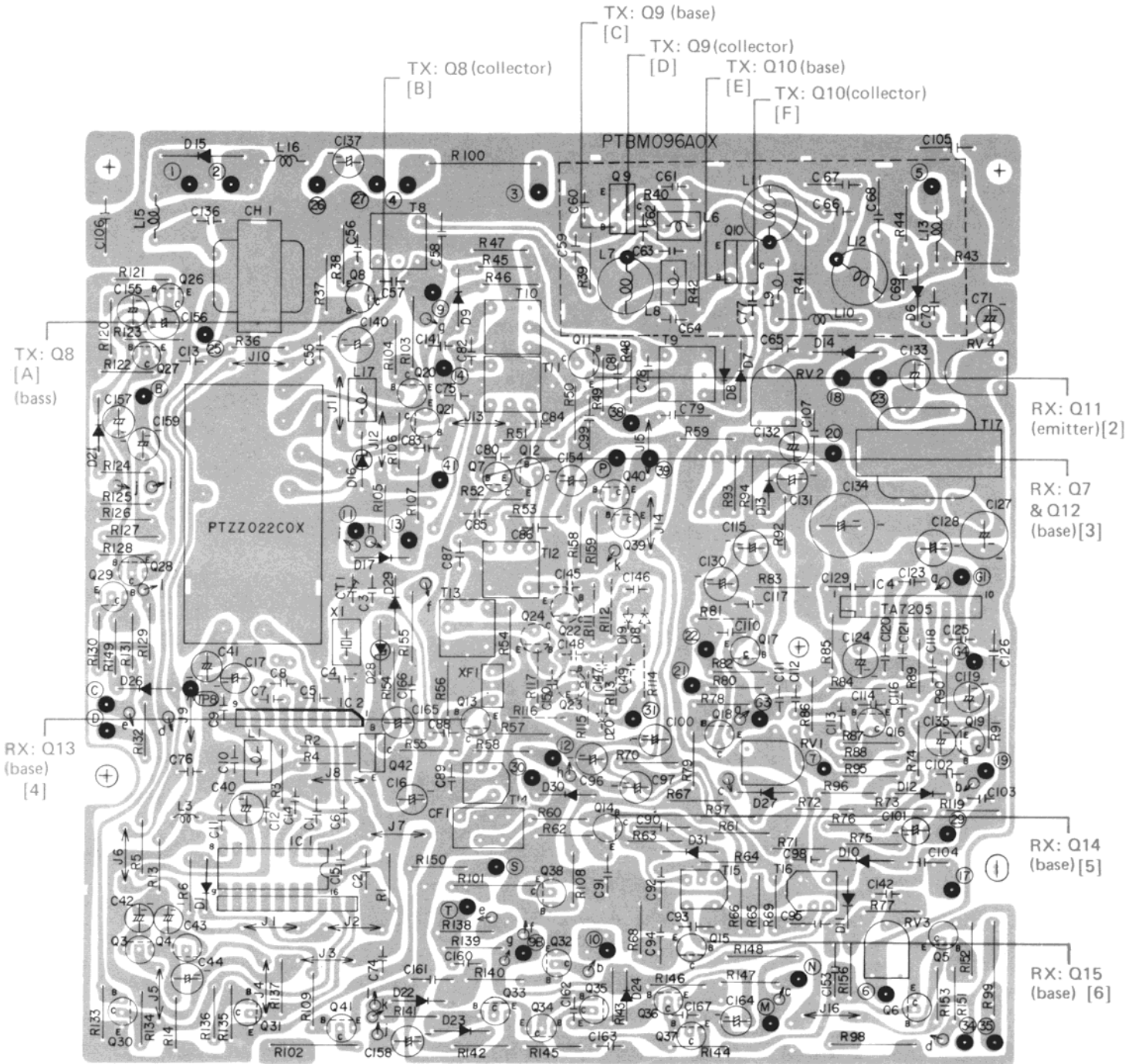
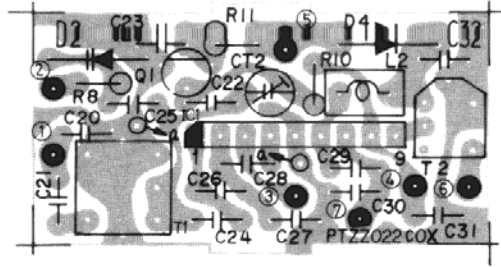


FIG. 5-15 COMPONENT LAYOUT (PC Board)

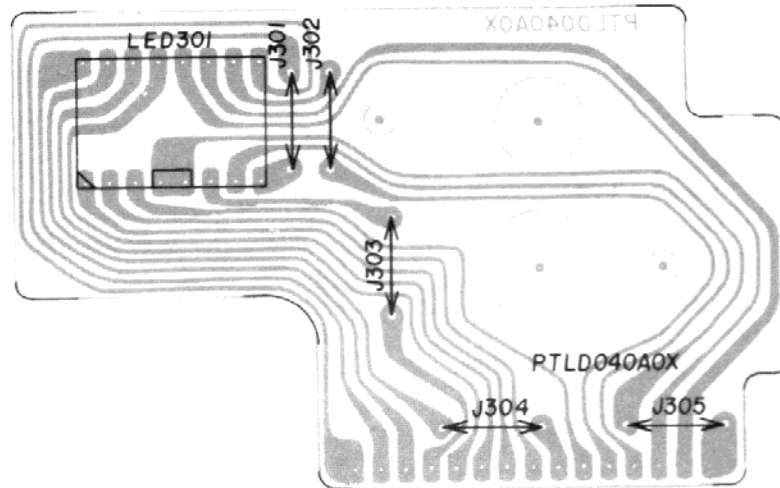


MAIN PC Board PTBM096AOX

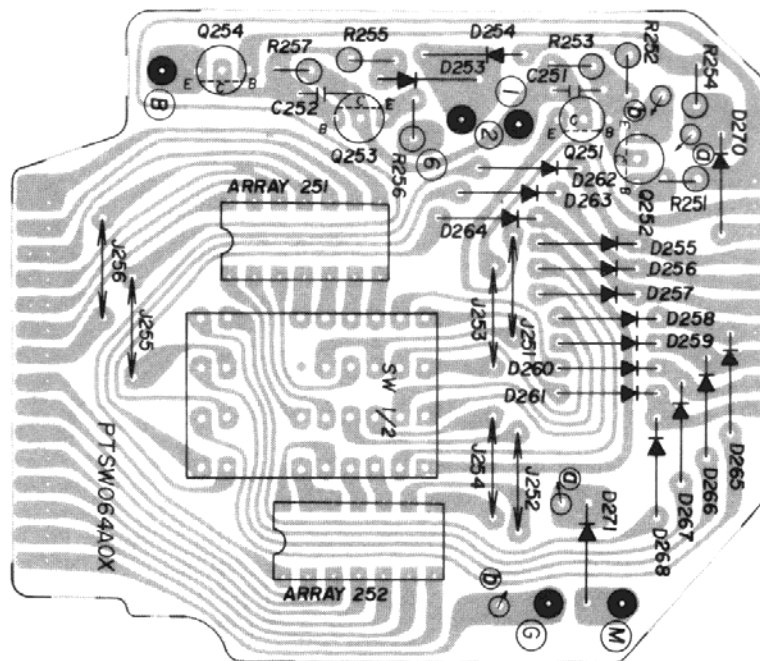
** RX Injection Voltage Points & TX Waveform Check Points.



VCO/DOUBLER PC Board PTZZ022COX



LED PC Board PTLD040AOX



SWITCHING PC Board PTSW064AOX

SECTION 6
REPLACEMENT PARTS LIST FOR MODEL LCM-8

SYMBOL #	PART #	DESCRIPTION
Capacitor (In μF unless otherwise specified as p = pF.)		
C1, 13, 14, 56, 61, 65, 74-76, 78, 81, 86, 117, 136, 141, 166	1-.01M50	0.01, 50V, cer.*
C2, 15	1-.047M50	0.047, 50V, cer.
C8, 88	1-15P50	15p, 50V, cer.
C4	1-330P50	330p, 50V, cer.
C5	1-68P50	68p, 50V, cer.
C6, 7, 11, 114, 160	3-.001M50	0.001, 50V, myl.**
C8, 83, 103	1-100P50	100p, 50V, cer.
C9	1-39P50	39p, 50V, cer.
C10, 55, 120, 121	1-68P50	68p, 50V, cer.
C16, 127	4-220M16	220, 16V, elyt
C17, 71, 100, 101	4-1M50	1, 50V, elyt
C20, 21	1-22P50	22p, 50V, cer.
C22	1-15P50	15p, 50V, cer.
C23, 31, 32	1-.01M50	0.01, 50V, cer.
C24	1-22P50	22p, 50V, cer.
C25	1-82P50	82p, 50V, cer.
C26	1-220P50	220p, 50V, cer.
C27	1-100P50	100p, 50V, cer.
C28	1-15P50	15p, 50V, cer.
C29	1-56P50	56p, 50V, cer.
C30	1-68P50	68p, 50V, cer.
C40, 41	4-.22M50	0.22, 50V, elyt
C42, 43	5-10M16	10, 16V, tant.***
C44	4-100M10	100, 10V, elyt
C57	1-100P50	100p, 50V, cer.
C58, 79, 85, 99, 105-7	1-.047M50	0.047, 50V, cer.
C59, 112, 116, 163	1-.01M50	0.01, 50V, cer.
C60	1-470P50	470p, 50V, cer.
C62, 64, 66	1-120P50	120p, 50V, cer.
C63	1-180P50	180p, 50V, cer.
C67	1-270P500	270p, 500V, cer.
C68	1-390P500	390p, 500V, cer.
C69, 87	1-2P50	2p, 50V, cer.
C70, 111	1-.0047M50	0.0047, 50V, cer.
C77	1-27P50	27p, 50V, cer.
C80, 84	1-150P50	150p, 50V, cer.
C82	1-10P50	10p, 50V, cer.
C89, 142	3-.022M50	0.022, 50V, myl.
C89, 142	3-.022M50	0.022, 50V, myl.
C90		2.2p, 50V, minic*
C91-5, 110	3-.047M50	0.047, 50V, myl.
C96, 155, 156, 159, 165	4-10M16	10, 16V, elyt
C97, 131, 132	4-3.3M25	3.3, 25V, elyt
C98	3-.0068M50	0.0068, 50V, myl.
C113	1-560P50	560p, 50V, cer.
C118, 167	1-.0022M50	0.0022, 50V, cer.

SYMBOL #	PART #	DESCRIPTION
C119	5-3.9M25	3.9, 25V, tant.
C115	4-100M16	100, 16V, elyt
C123, 125	1-220P50	220p, 50V, cer.
C124, 130, 135	4-33M6.3	33, 6.3V, elyt
C126, 129, 161	3-068M50	0.068, 50V, myl.
C128	4-47M16	47, 16V, elyt
C133	4-47M25	47, 25V, elyt
C134	4-.0022M16	0.0022, 16V, elyt
C140	4-220M10	220, 10V, elyt
C154	4-47M6.3	47, 6.3V, elyt
C157	4-.33M50	0.33, 50V, elyt
C158	4-.47M50	0.47, 50V, elyt
C164	4-2.2M50	2.2, 50V, elyt
C162	1-390P50	390p, 50V, cer.
C201	1-150P500	150p, 500V, cer.
C202-6, 211	1-.01M50	0.01, 50V, cer.
C204	1-.047M50	0.047, 50V, cer.
C207, 209, 210, 213	1-.0047M50	0.0047, 50V, cer.
C251, 252	1-.01M50	0.01, 50V, cer.
Note: * = ceramic capacitor, ** = mylar capacitor, *** = tantalum capacitor.		
Trimming Capacitor		
CT1	9-20P-1	20pF
CT2	9-20P-1	20pF
Diodes		
D1, 7-9, 12, 17, 21-4, 26, 27, 29-31	22-1-044	1S1555, sil.*
D2	22-1-130	ITT410, vari-cap.
D4	22-1-044	1S1555, sil.
D6, 13	22-1-129	1K60, ge.**
D10, 11	22-1-005	1N60, ge.
D14	22-1-130	10T200, sil.
D15	22-1-075	1S1885, sil.
D16	22-1-131	UZ9.1B, zenn.***
D28	22-1-132	MZ306, zenn.
D253-268, 270, 271	22-1-044	1S1555, sil.
Note: * = silicon diode, ** = germanium diode, *** = zenner diode.		
Filters		
CF1	55-1-021	455 kHz, mechanical, 6-p
XF1	55-2-016	10.695 MHz, crystal
ICs		
IC1	PLL03	PLL03
IC2	C3001	C3001
IC3	C3001	C3001
IC4	TA7205	TA7205
Jacks, Connectors		
J1	8-4-069	Antenna, SO-239

SYMBOL #	PART #	DESCRIPTION
J2	8-60-001	Mic., 5-p DIN
J3	8-60-002	Ext. Sp, 1/8"
J4	8-60-002	PA. SP, 1/8"
J5	8-60-003	DC 13.8V, 3-p
Coils, Transformers		
L1	33-18	18 μ H
L2	33-.9	0.9 μ H, peaking
L3	33-100M	100 mH
L6	33-2.2	2.2 μ H
L7, 11, 12	44-520	27 MHz RFC
L8, 17	33-68	68 μ H
L9	33-.55	0.55 μ H
L10	33-1	1 μ H
L13	33-.4	0.4 μ H
L15, 16	33-1.15	1.15 μ H
T1	44-527	RFC
T2	44-528	RFC
T8, 10, 11	44-521	27 MHz RFC
T9	44-522	27 MHz RFC
T12, 13	44-523	10 MHz RFC
T14-6	44-524	455 kHz IFT
T17	44-525	AFT
CH1	44-526	AF choke coil
Variable Resistors		
RV1	64-10K-5	10k, semi-fixed
RV2	64-2K-3	2k, semi-fixed
RV3, 4	64-20k-4	20k, semi-fixed
VR1/S1	61-5K-5	Vol, 5k
VR2	60-5K-5	Mic Gain, 5k
VR3/S6	61-10K-7	Sq., 10k
VR4	60-10K-15	Scan Sense, 10k
Crystal		
X1	50-2-60	10.24 MHz
Switches		
SW1-2	88-1-039	40 Ch. Sel.
S2	88-2-031	Slide, ANL
S4	88-2-031	Slide, Lamp-Mon.
S5	88-2-032	Slide, Dim-Bright
Meter, Lamps, LED		
M	8-60-004	Meter, S/RF
PL2	8-60-005	TX
PL3	8-60-005	RX
PL4	8-60-006	Ch. B pilot
LED301	22-2-013	TL320T, Ch. A readout
Speaker		
SP	8-38-036	Speaker, 8 ohms

SYMBOL #	SBE PART #	DESCRIPTION
Transistors, FET		
Q1	2SC710	2SC710
Q3, 4	2SK30A	2SK30A
Q5, 6, 26, 27, 28, 32, 33, 34, 37, 58, 40, 41	2SC945P	2SC945P
Q7, 8, 12, 13	2SC710D	2SC710D
Q9	2SC1760	2SC1760
Q10	2SC1306	2SC1306
Q11	2SC460B	2SC460B
Q14, 15	2SC829C	2SC829C
Q17	2SA564R	2SA564R
Q18, 19	2SC828P	2SC828P
Q16	2SC1327	2SC1327
Q20	2SC1318	2SC1318
Q21	2SA719A	2SA719A
Q29-31, 35	2SA733A	2SA733A
Q29-39		
Q42	2SC1096	2SC1096
Q251, 253	2SC1318	2SC1318
Q252, 254	2SC945P	2SC945P
Metal-oxide Film Resistors		
R98	77-150W1-3	150, 1W
R99	77-47W1-3	47, 1W
R101-2	77-220W1-3	220, 1W
R148	77-270W1/2-3	270, 1/2W
R155	77-22W1/2-3	22, 1/2W
R41, 103	77-10W1/2-3	10, 1/2W
R256	77-150W1-3	150, 1W
R100	77-15W2-3	15, 2W
Mechanical Parts		
	99-2	Fuse 2A
	8-60-007	Chassis
	8-60-008	Front chassis
	8-60-009	Escutcheon panel
	8-60-010	Top cabinet
	8-60-011	Bottom cabinet
	8-60-012	Ch B plate
	8-60-013	Ch B knob
	8-60-014	Knob, Vr. Sq, Mic Gain
	8-60-015	Ch A knob
	8-60-016	DC power cable w/inline fuse hold
	8-60-017	Mounting bracket
	8-60-018	Mic hanger
	8-60-019	Microphone
	8-60-020	PLL shielding

EXPLODED VIEW NO. REFERENCE SHEET

Ref. No.	Description
(1)	Front Panel
(2)	Holder Bracket, Lamp (TX. RX. CH.)
(3) PL4	Lamp Channel
(4) PL2,PL3	Lamps (TX./RX.)
(5) VR4	Volume Scan
(6) VR2	Volume Mic Gain
(7) VR3/S6	Volume Squelch
(8) VR1/S1	Volume
(9) S3	Slide Switch Scan
(10) S2,S4,S5	Slide Switch Lamp/Monitor, Dimmer
(11)	Meter Bracket
(12) M	Meter RF/S
(13)	LED PC Board Assy. PTLD040AOX
(14)	Switch PC Board Assy. PTSW064AOX
(15)	Support Channel PCB Mtg.
(16)	Chassis
(17) J3	Phone Jack 3P
(18) J5	DC Jack DC Power
(19)	Bracket DC Jack
(20) J1	ANT Jack 2P
(21) J2	SP DIN Jack
(22)	Main PC Board Assy. PTBM096AOX
(23)	Frame Assy.
(24)	Channel Knob B
(25)	Channel Knob A
(26)	Channel Plate
(27)	Knob Volume control
(28)	Case A Upper
(29)	Escutcheon C Plate
(30)	Case B Lower
(31) SP	Speaker
(32)	Bracket Speaker



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