

REALISTIC[®]

05/10/91 15M
2009145
21509 1
Service

20-145/9145

Service Manual

**PRO-2006
Programmable Scanner**

Catalog Number: 20-145/9145

© 1990 InterTAN Ltd.

CONTENTS

	Page
Specifications	3
Block Diagram	5
Principles of Operation	6
General Operation Outline	7
Alignment	9
Reception Check	19
Memory Check	20
Troubleshooting	21
Linear PCB (Top and Bottom Views)	24
PLL PCB (Top and Bottom Views)	26
Logic & Display PCB (Top and Bottom Views)	28
Keyboard PCB, Headphone Jack PCB (Top and Bottom Views)	30
Wiring Diagram	31
Electrical Parts List	32
Disassembly / Exploded View	58
Exploded View Parts List	59
Semiconductor Lead Identification and IC Circuit Diagram	60
Microprocessor (IC-501) Pin Allocation	71
Appendix	73
Schematic Diagram	75

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

SPECIFICATIONS

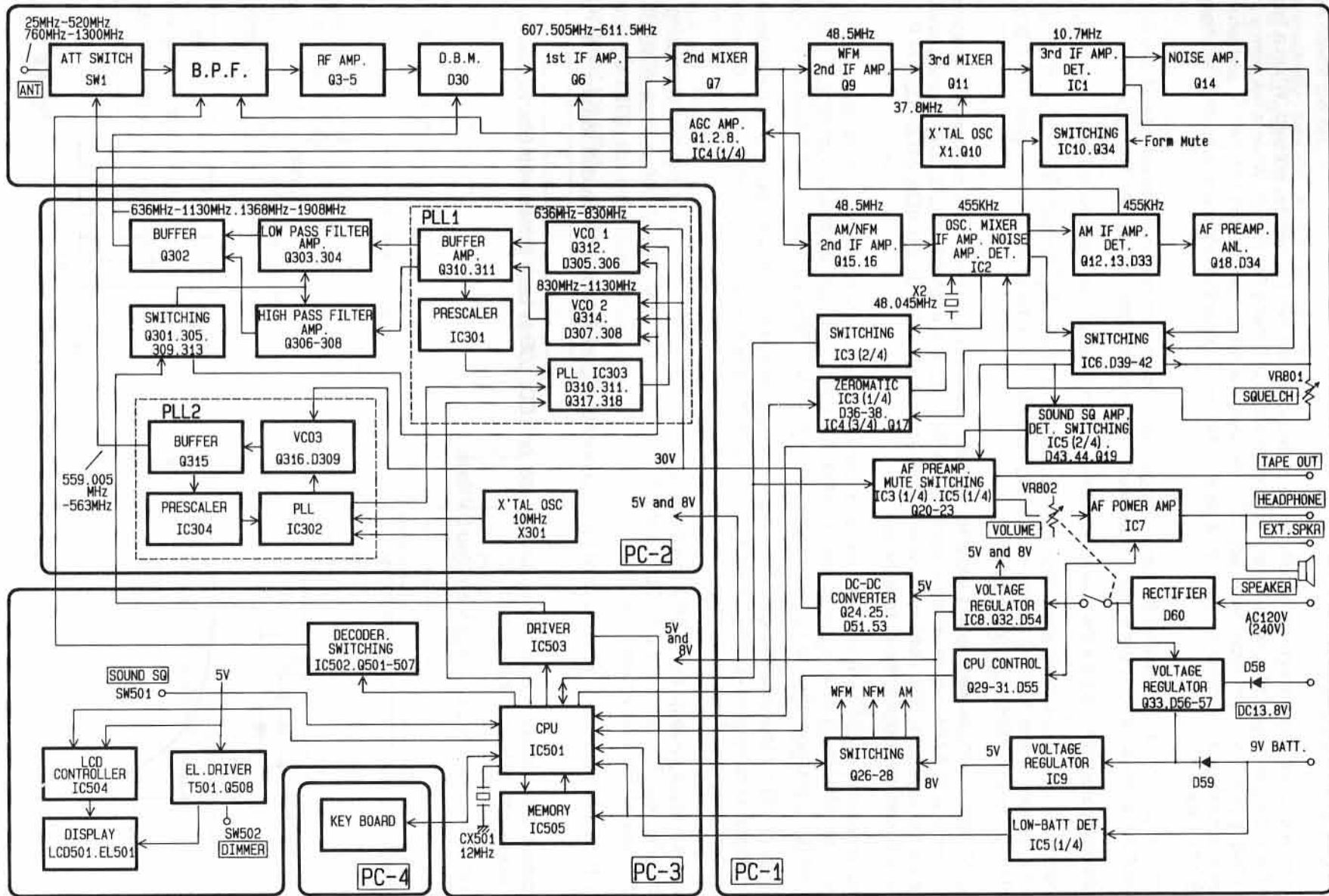
Frequency Range

25.000 MHz – 520.000 MHz
 760.000 MHz – 823.945 MHz
 851.000 MHz – 868.945 MHz
 896.000 MHz – 1300.000 MHz

			UNIT	NOMINAL	LIMIT
Sensitivity	NFM: (S + N)/N = 20 dB DEV.: 3 kHz at 1 kHz	25 MHz – 520 MHz	μ V	0.5	2
		760 MHz – 1100 MHz	μ V	0.5	2
		1100 MHz – 1300 MHz	μ V	3	10
	AM: (S + N)/N = 20 dB MOD.: 60% at 1 kHz	25 MHz – 520 MHz	μ V	2	5
		760 MHz – 1100 MHz	μ V	2	5
		1100 MHz – 1300 MHz	μ V	5	20
	WFM: (S + N)/N = 30 dB DEV.: 22.5 kHz at 1 kHz	25 MHz – 520 MHz	μ V	3	10
		760 MHz – 1100 MHz	μ V	3	10
		1100 MHz – 1300 MHz	μ V	10	25
	Squelch Sensitivity	NFM and AM Threshold	25 MHz – 520 MHz	μ V	0.5
760 MHz – 1100 MHz			μ V	0.5	2
1100 MHz – 1300 MHz			μ V	3	10
Tight: (S + N)/N		25 MHz – 520 MHz	dB	25	15
		760 MHz – 1100 MHz	dB	25	15
		1100 MHz – 1300 MHz	dB	20	10
WFM Threshold		25 MHz – 520 MHz	μ V	3	10
		760 MHz – 1100 MHz	μ V	3	10
		1100 MHz – 1300 MHz	μ V	15	30
Tight: (S + N)/N		25 MHz – 520 MHz	dB	40	30
		760 MHz – 1100 MHz	dB	40	30
		1100 MHz – 1300 MHz	dB	40	30
Selectivity	NFM and AM:	-6 dB	kHz	\pm 9	\pm 12
		-50 dB	kHz	\pm 15	\pm 18
	WFM	-6 dB	kHz	\pm 150	\pm 200
		-50 dB	kHz	\pm 300	\pm 400
Spurious Rejection	at 328 MHz (NFM)		dB	40	35
If Rejection	610 MHz at 70 MHz (NFM)		dB	60	40
	608 MHz at 1000 MHz (NFM)		dB	60	40
Modulation Acceptance	EIA RS204A		kHz	\pm 8	\pm 5

			UNIT	NOMINAL	LIMIT
Signal to Noise Ratio	NFM and AM	25 MHz—520 MHz	dB	40	30
	DEV.: 3 kHz at 1 kHz	760 MHz—1100 MHz	dB	40	30
	MOD.: 60% at 1 kHz	1100 MHz—1300 MHz	dB	35	25
	INPUT: 100 μ V				
	WFM	25 MHz—520 MHz	dB	45	35
	DEV.: 22.5 kHz at 1 kHz	760 MHz—1100 MHz	dB	45	35
	INPUT: 100 μ V	1100 MHz—1300 MHz	dB	45	35
Residual Noise (Vol. Min.)			mV	3	5
Scanning Speed	Slow		channels/sec	13	12-14
	Fast		channels/sec	26	24-28
Scan delay time			sec	2	1.5-2.5
Audio Output Power	T.H.D. 10%		watts	1.3	1.0
Channels of Operation	Any 400 channels in any band combination				
Channels, Frequency and Mode display	Liquid crystal display				
Receiving System	Direct Key entry Digital-Controlled Synthesizer, Superheterodyne				
	1st IF (607.505—611.5 MHz)	Upper side 1st local frequency			
	2nd IF (48.5 MHz)	Lower side 2nd local frequency			
	3rd IF (10.7 MHz) for Wide FM mode	Lower side 3rd local frequency			
	3rd IF (455 MHz) for Narrow FM and AM mode	Lower side 3rd local frequency			
Power Source	AC 120 V, 60 Hz, 18 W				
	DC 13.8 V, 10 W				
Jacks	Headphone, External speaker, Tape output and "BNC" type antenna connector				

Note: Nominal specs represent the design specs. All units should be able to approximate these - some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specs.



BLOCK DIAGRAM

PRINCIPLES OF OPERATION

The PRO-2006 is a Phase Locked Loop (PLL) synthesized VHF/UHF, AM/FM receiver controlled by a Central Processing Unit (CPU) via a keyboard.

Receiving mode and search step are initially set to correspond with the frequencies entered. When a frequency within FM broadcast band is keyed in, receiving mode is set to wideband FM (WFM). When a frequency in active radio band, police, fire, ham radio etc. is keyed in, the mode is set to narrowband FM (NFM), and when a frequency in aircraft and CB band is keyed in, it sets to AM mode. Also the mode and step can be changed by MODE, STEP Keys.

The CPU (IC501) controls receiving frequency range, frequency determination, scanning speed and delay time etc. The CPU is able to do only the assigned functions, and no modification of the CPU is feasible.

The following paragraphs explain the operation of the circuit in terms of the functional blocks:

RF input circuit comprises 10 dB attenuator and bandpass filter. A signal generated by VCO1 or VCO2 is applied to double balanced mixer (D.B.M.) via low-pass or high-pass filter and mixed with the RF signal. The D.B.M. is employed to facilitate 25 MHz to 1300 MHz mixing.

The 1st IF (Q6) is 607.505 MHz to 611.500 MHz, and the signal is mixed with VCO3 frequency at the 2nd mixer (Q7) to produce 48.5 MHz signal, which is applied to WFM IF (Q9) or AM/NFM IF (Q15, Q16). Corresponding with input from the keyboard, CPU determines which of VCO1 or VCO2 WFM IF, AM/NFM, AM IF, Data of PLL circuit to be functioned. and outputs the necessary data.

A signal entered to AM/NFM IF is mixed with X'tal oscillation frequency 48.045 MHz at the 3rd mixer (IC2) and converted to 455 kHz signal. A signal entered to WFM IF is mixed with X'tal oscillation frequency 37.8 MHz at the 3rd mixer (Q11) and converted to 10.7 MHz signal. The signals are further amplified and detected to AF signal.

AF signals of WFM, AM and NFM are CPU controlled and applied to AF power amplifier (IC7) via switching circuit. Squelch signal is comprised of noise product from WFM/NFM detector output, and amplified by IC2 to switching signal, which controls AF mute and CPU.

Any unstable supply voltage to the CPU can produce CPU mal-functions, such as wrong data processing, wrong data transfer, etc. To overcome this, C508 and R517 "initialize" the CPU. Initialization is done when RESTART switch is pushed. Figure A shows initializing waveform.

CX501 (12.0 MHz) is a clock which is used for CPU control. Figure B shows 1/4 divided waveform at Pin 28 of IC501.

CPU output data display frequency and function etc. on LCD. LCD is back lighted with Electro Luminescence, which works with 70 V rms, 300 Hz A.C.

Power supply comprises DC 30 V, 8 V and two 5 V lines.

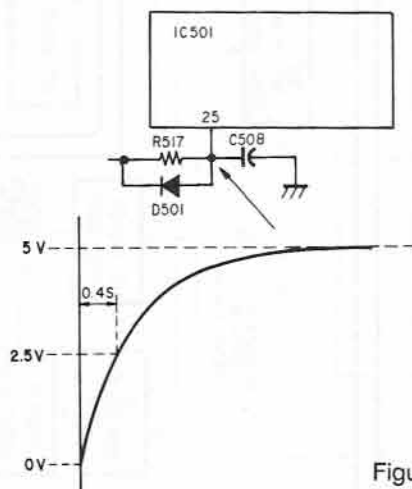


Figure A

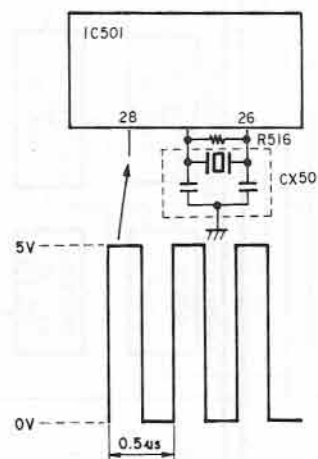
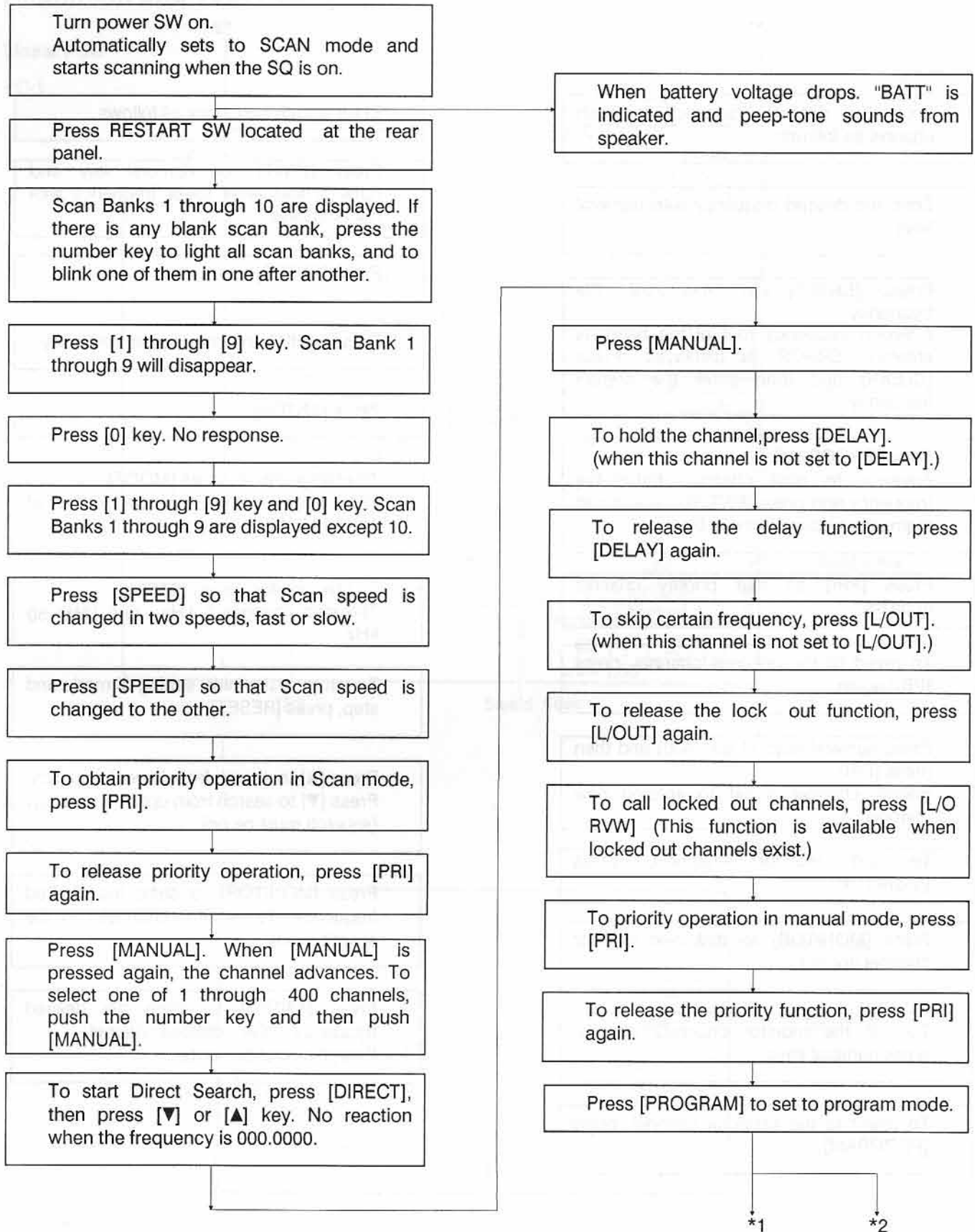
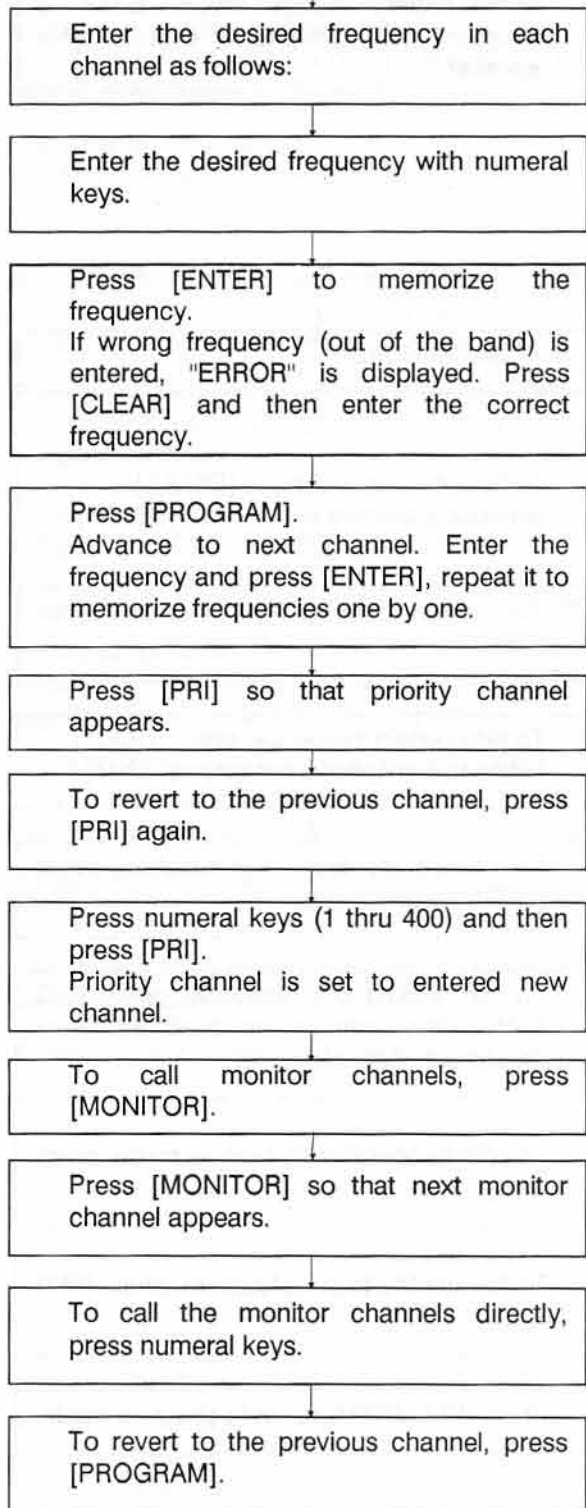


Figure B

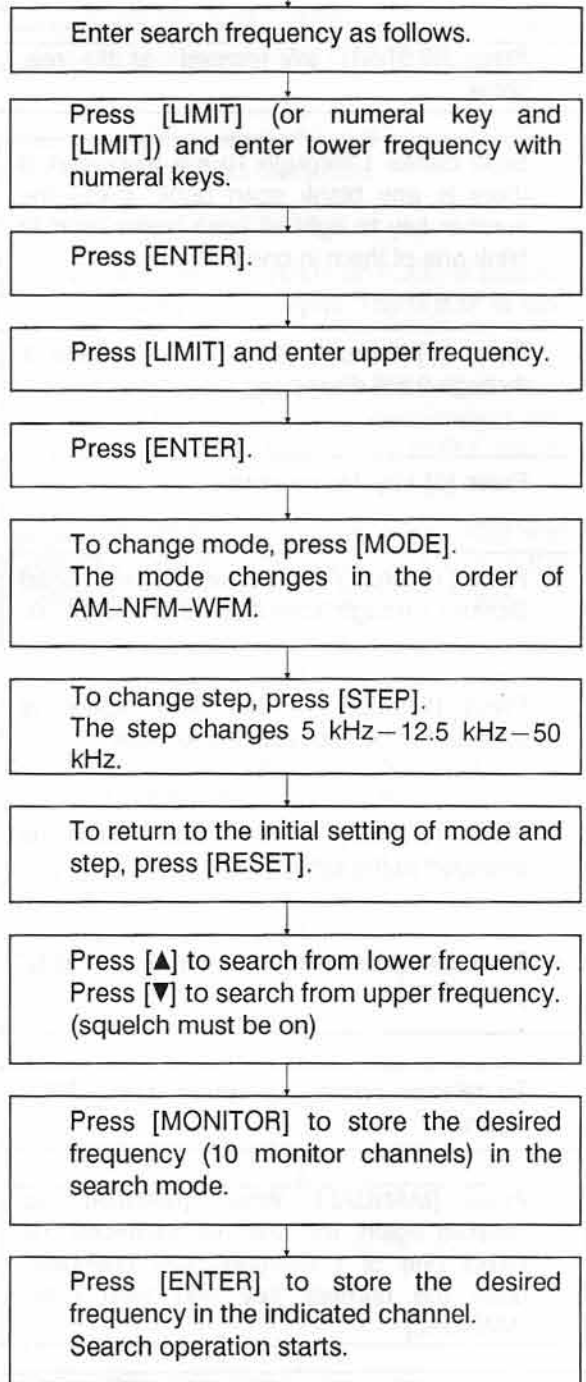
GENERAL OPERATION OUTLINE



*1



*2

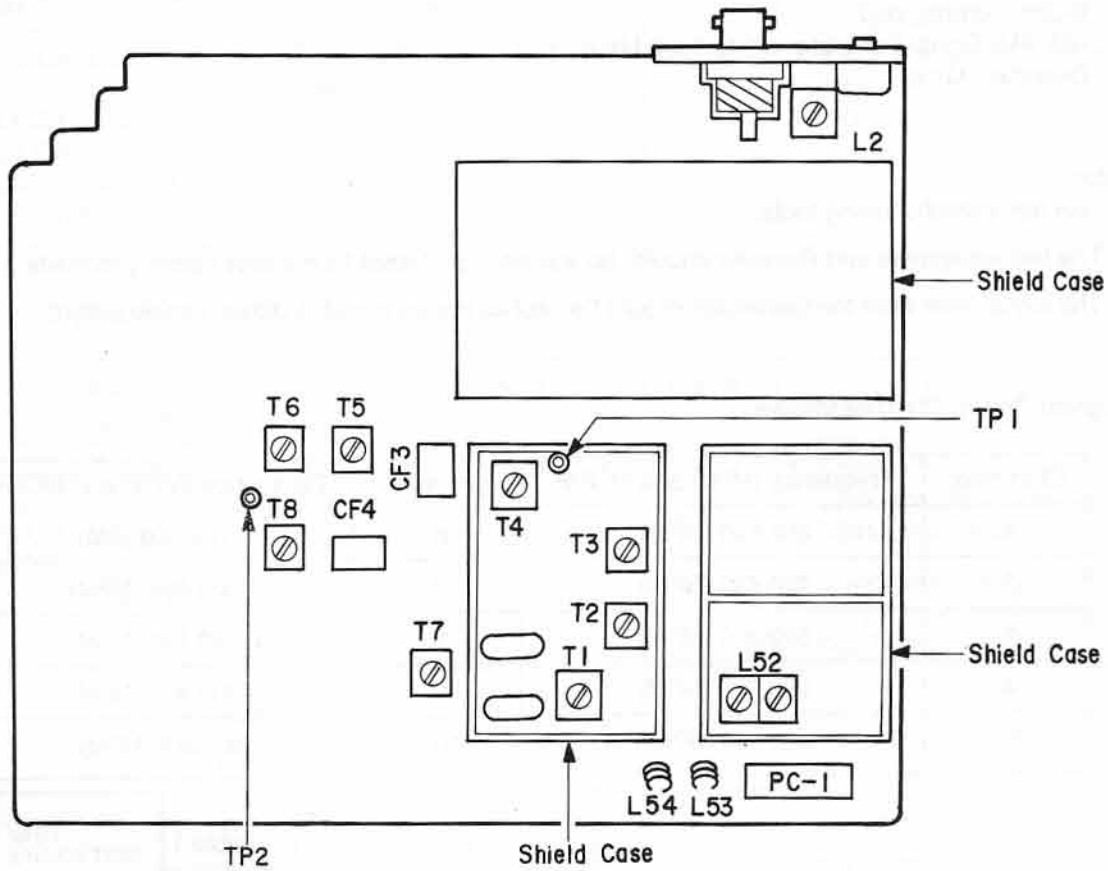


ALIGNMENT

Alignment and Test Points

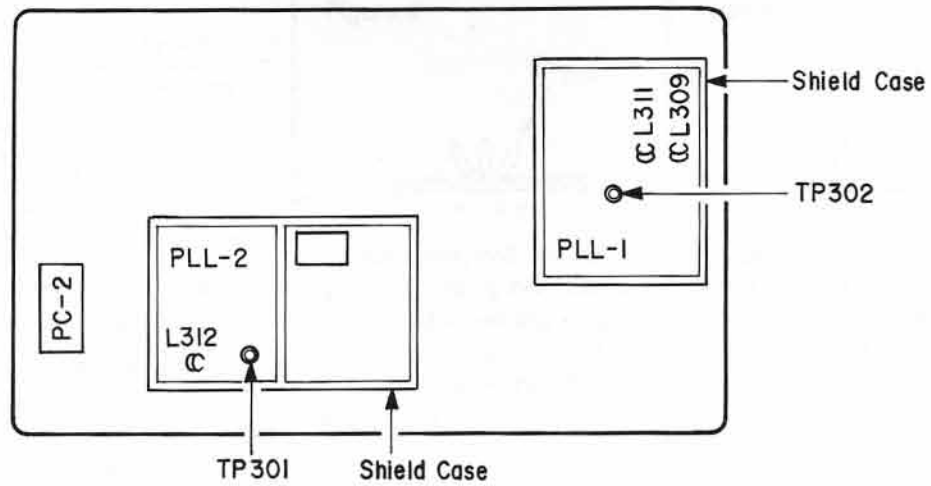
Linear PCB

PC-1



PLL PCB

PC-2



Alignment Preparation

Test equipment required

Oscilloscope
AC SSVM
DC SSVM
8-ohm dummy load
AM, FM, Signal Generator (25 to 1300 MHz)
Distortion Meter

Note:

- Use non-metallic tuning tools.
- The test equipment and Receiver should be warmed up at least 15 minutes before proceeding to alignment.
- The signal level from the Generator should be kept as low as possible obtain usable output.

Program CH1 to CH10 as follows.

Channel	Frequency (MHz) and MODE	Channel	Frequency (MHz) and MODE
1	804.500 (NFM)	6	120.000 (AM)
2	220.495 (NFM)	7	300.495 (NFM)
3	520.000 (NFM)	8	240.495 (NFM)
4	250.000 (NFM)	9	800.495 (NFM)
5	98.000 (WFM)	10	800.500(NFM)

Table 1

Alignment Procedures

Alignment of VCO (PLL 2)

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
1	OFF/VOLUME control: ON SQUELCH control: Fully CCW (counterclockwise) Select channel 1.	Connect DC SSVM to TP301 (Figure 1)	L312	Adjust L312 for 3V on the DC SSVM. See Table2.

Alignment of VCO (PLL 1)

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
2	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 2 and 3.	Connect DC SSVM to TP302 (Figure 2)	L309 L311	1) Select channel 2 and adjust L309 for 20 V on the DC SSVM. See Table 2. 2) Select channel 3 and adjust L311 for 19 V in the DC SSVM See Table 2.

Figure 1

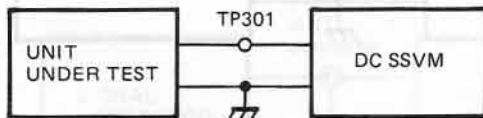


Figure 2

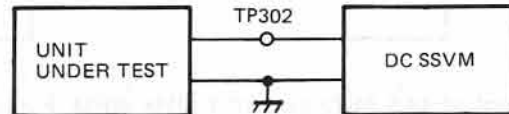


Table 2

Coil L309, L311, L312	Coil alignment (open)	Coil alignment (close)
<p>Figure 3</p> <p>Coil</p> <p>Use non metallic tuning tool</p> <p>PLL P.C.B.</p>	<p>Figure 4</p> <p>Coil</p> <p>PLL P.C.B.</p>	<p>Figure 5</p> <p>Coil</p> <p>PLL P.C.B.</p>
<p>Note:</p> <ul style="list-style-type: none"> • Perform coils interval alignment delicately because it greatly affects the frequency . • Fix the coils with glue after alignment and then repeat the ALIGNMENT PROCEDURES Step 1 and Step 2. After checking the fixation and temperature being normal. 	<p>* Open the coil as shown above by using non metallic tuning tool when the measuring voltage at TP301 or TP302 is higher than the setting voltage.</p>	<p>* Close the coil as shown above by using non metallic tuning tool when the measuring voltage as TP301 or TP302 is lower than the setting voltage.</p>

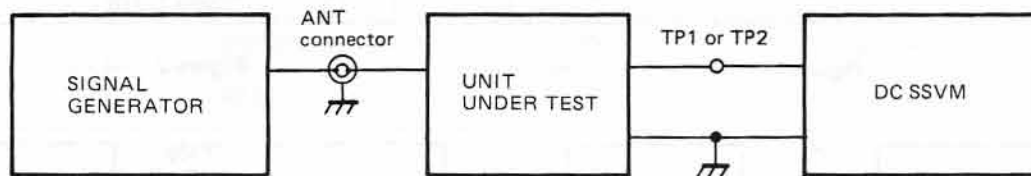
Alignment of 455 kHz NFM Discriminator coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
3	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 4.	Connect Signal Generator to ANT connector and DC SSVM to TP2 (Figure 6).	T8	Set the Signal Generator frequency to 250 MHz, 100 μ V output (NO MOD) and adjust T8 for 3.8 V (\pm 0.1) on the DC SSVM.

Alignment of 10.7 MHz WFM Discriminator coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
4	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 5.	Connect Signal Generator to ANT connector and DC SSVM to TP1 (Figure 6).	T4	Set the Signal Generator frequency to 98 MHz, 100 μ V output (NO MOD) and adjust T4 for 3.9 V (\pm 0.1) on the DC SSVM.

Figure 6



Alignment of 48.5 MHz and 10.7 MHz WFM IF coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
5	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 5.	Connect Signal Generator to ANT connector, and oscilloscope, AC SSVM, distortion meter and 8 ohm load to EXT SPKR jack. (Figure 7)	T2 T3	1) Set the Signal Generator frequency to 98 MHz. FM: 22.5 kHz Dev. at 1 kHz and output at S/N 20 dB point. 2) Adjust T2 and T3 for maximum sensitivity.

Alignment of 48.5 MHz 2nd IF coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
6	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 6.	Same as step 5.	T1 T7	1) Set the Signal Generator frequency to 120 MHz. AM: 60% Mod. at 1 kHz and output at S/N 20 dB point. 2) Adjust T1 and T7 for maximum sensitivity.

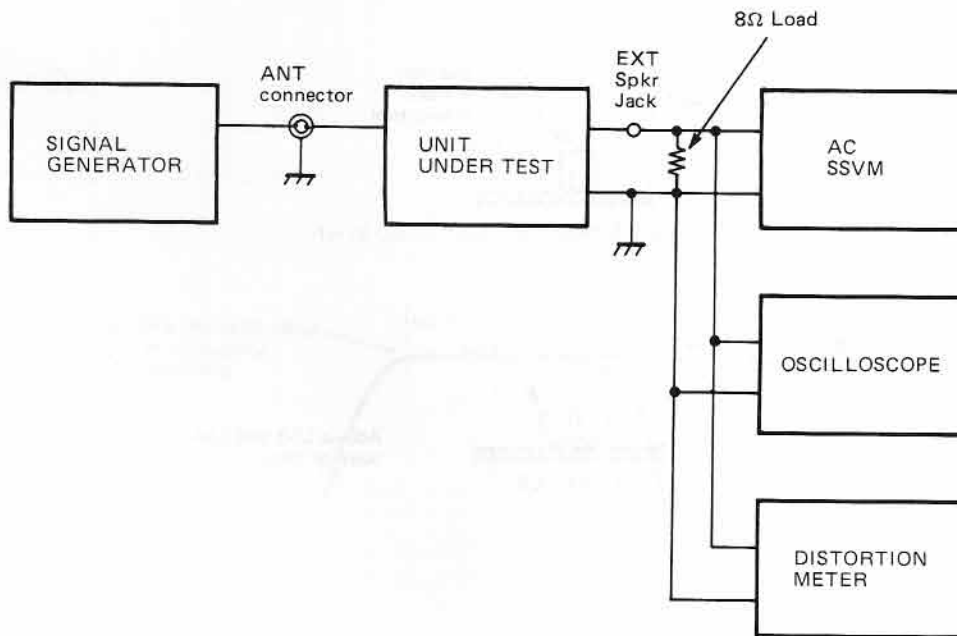
Alignment of 455 kHz IF coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
7	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 6.	Connect Signal Generator to ANT connector and oscilloscope, AC SSVM, Distortion meter and 8 ohm load to EXT SPKR jack.(Figure 7)	T5	1) Set the Signal Generator frequency to 120 MHz. AM: 60% Mod. at 1 kHz and output at S/N 20 dB point. 2) Adjust T5 to maximum sensitivity.

Alignment of 455 kHz AM DET. coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
8	Same as step 7	Same as step 7	T6	1) Set the Signal Generator frequency to 120 MHz. AM: 60% Mod. at 1 kHz and output at 100 μ V. 2) Adjust T6 to minimum T.H.D. point.

Figure 7



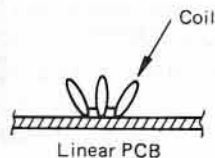
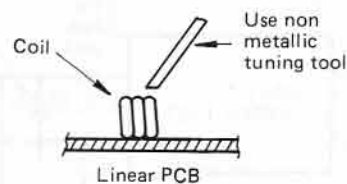
Alignment of IF TRAP coils

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust.	Remarks
9	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 7.	Same as step 5	L2	1) Set the Signal Generator frequency to 609.505 MHz. FM: 3 kHz Dev. 1 kHz Mod. Output approx. 300 μ V. 2) Adjust L2 to maximum sensitivity.

Alignment of 512 MHz TRAP coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
10	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 8.	Same as step 5	L53 L54	1) Set the Signal Generator frequency to 337.495 MHz. FM: 3 kHz Dev. 1 kHz Mod. Output approx. 3 mV. 2) Adjust L53 and L54 to minimum sensitivity. See Figure 8.

Figure 8



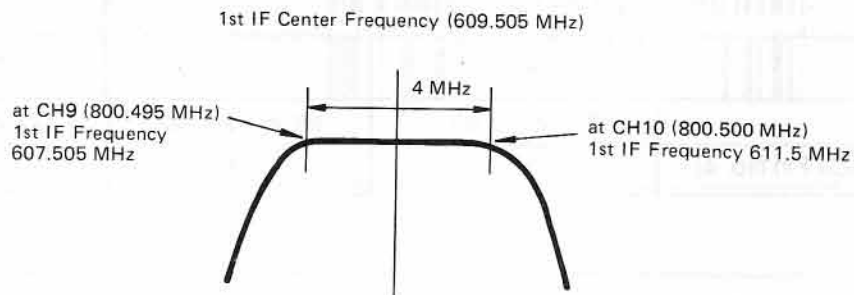
Adjust L53 and L54
open or close

Note: Alignment of L52 (HF-62H14 B.P.F. coil)
 Do not adjust this coil because of L52 is already adjusted at factory.
 If the coil is moved by mistake, adjust it as per below.
 B.P.F. characteristic is Figure 9.

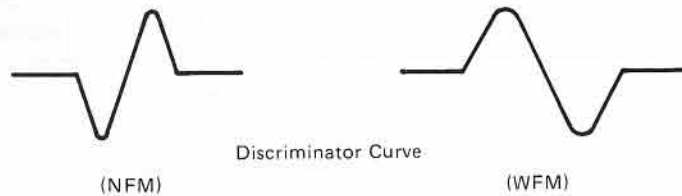
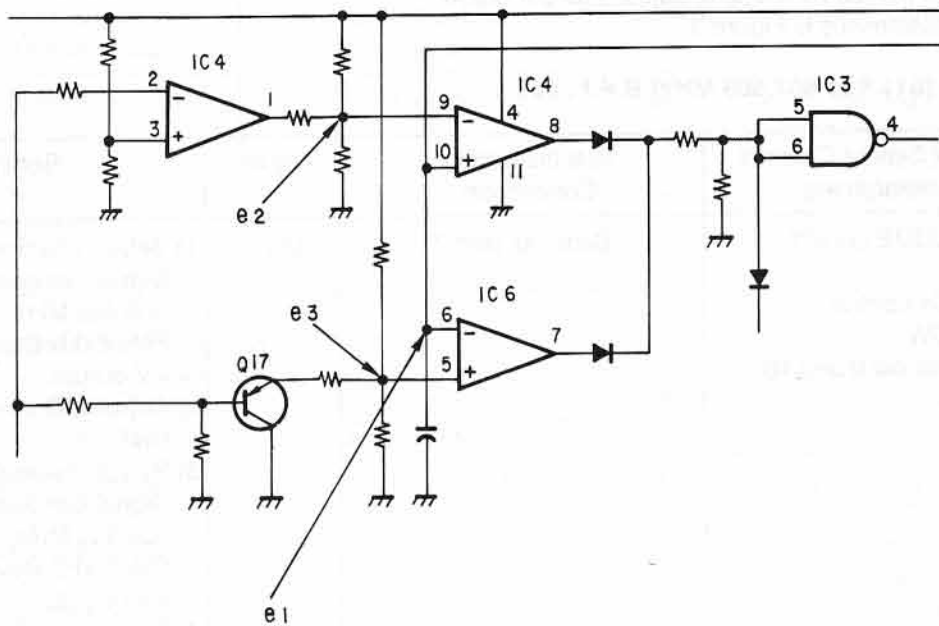
Alignment 1st IF (611.5 to 607.505 MHz) B.P.F. coil

Step	Control Setting Channel Programming	Test Instrument Connection	Adjust	Remarks
11	OFF/VOLUME control: ON SQUELCH control: Fully CCW Select channel 9 and 10.	Same as step 7	L52	1) Select channel 9 and set the Signal Generator frequency to 800.495 MHz. FM: 3 kHz Dev. at 1 kHz and 1 μ V output. 2) Adjust L52 to maximum sensitivity. 3) Select channel 10 and set the Signal Generator frequency to 800.500 MHz. FM: 3 kHz Dev. at 1 kHz and 1 μ V output. 4) Readjust L52 to maximum sensitivity. NOTE: Align the balance of CH 9, CH10 sensitivity to become same.

Figure 9



Zeromatic Function Test Procedure



(Zeromatic functions when OUTPUT is in "H" level.)

	$0 < e1 < e3$	$e3 < e1 < e2$	$e2 < e1 < VCC$
OUTPUT (IC3 Pin No. 4)	L	H	L

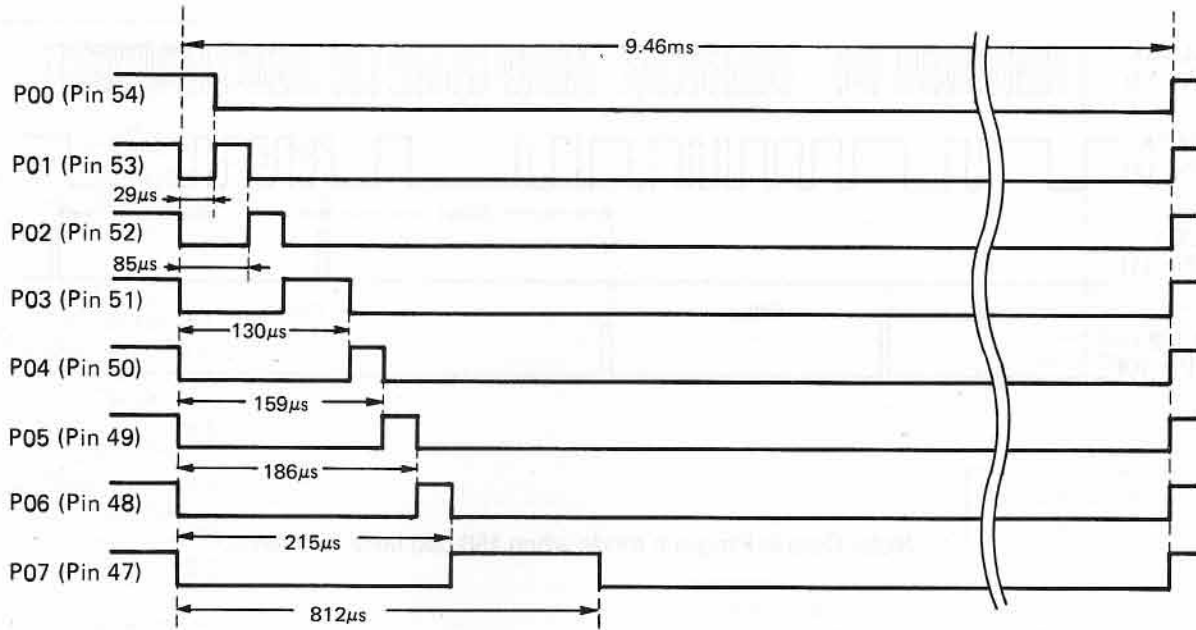
(NFM MOD.)

To adjust e1 voltage, receive signal in Manual mode, and set T8 to obtain 3.8 V (+ 0.1 V) at TP2. It is convenient to use the National Weather Service signal for the adjustment.

(WFM MOD.)

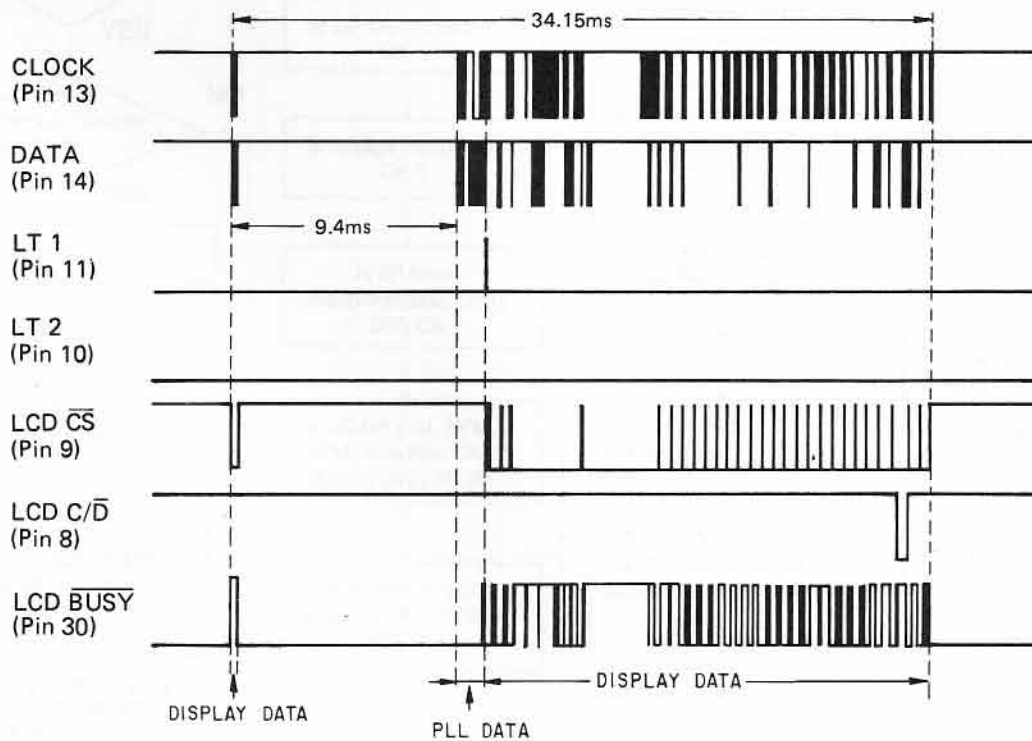
To adjust e1 voltage, receive signal in Manual mode and set T4 to obtain 3.9 V (+ 0.1 V) at TP1. It is convenient to use the FM or TV sound signal for the adjustment.

Key Access Pulse Output (IC501)

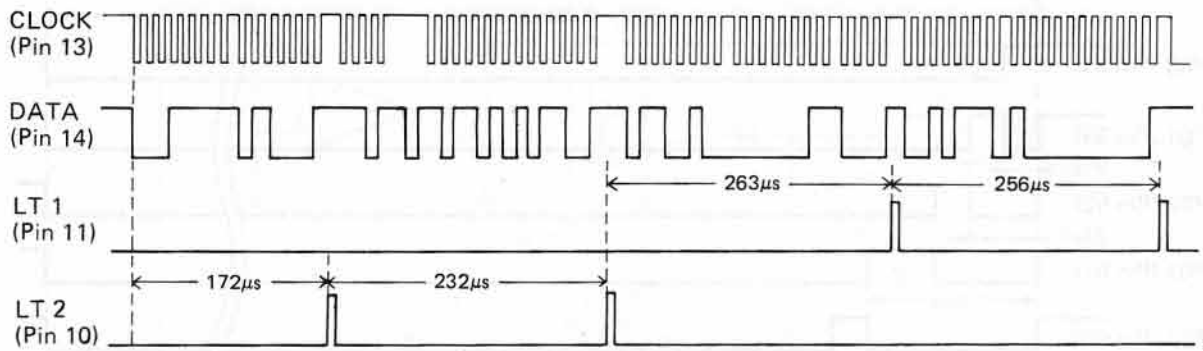


Note: Use a signal at P01 of IC501 as trigger, and then observe the keys access pulse when [PROGRAM] key is pressed.

Data Waveform (IC-501)

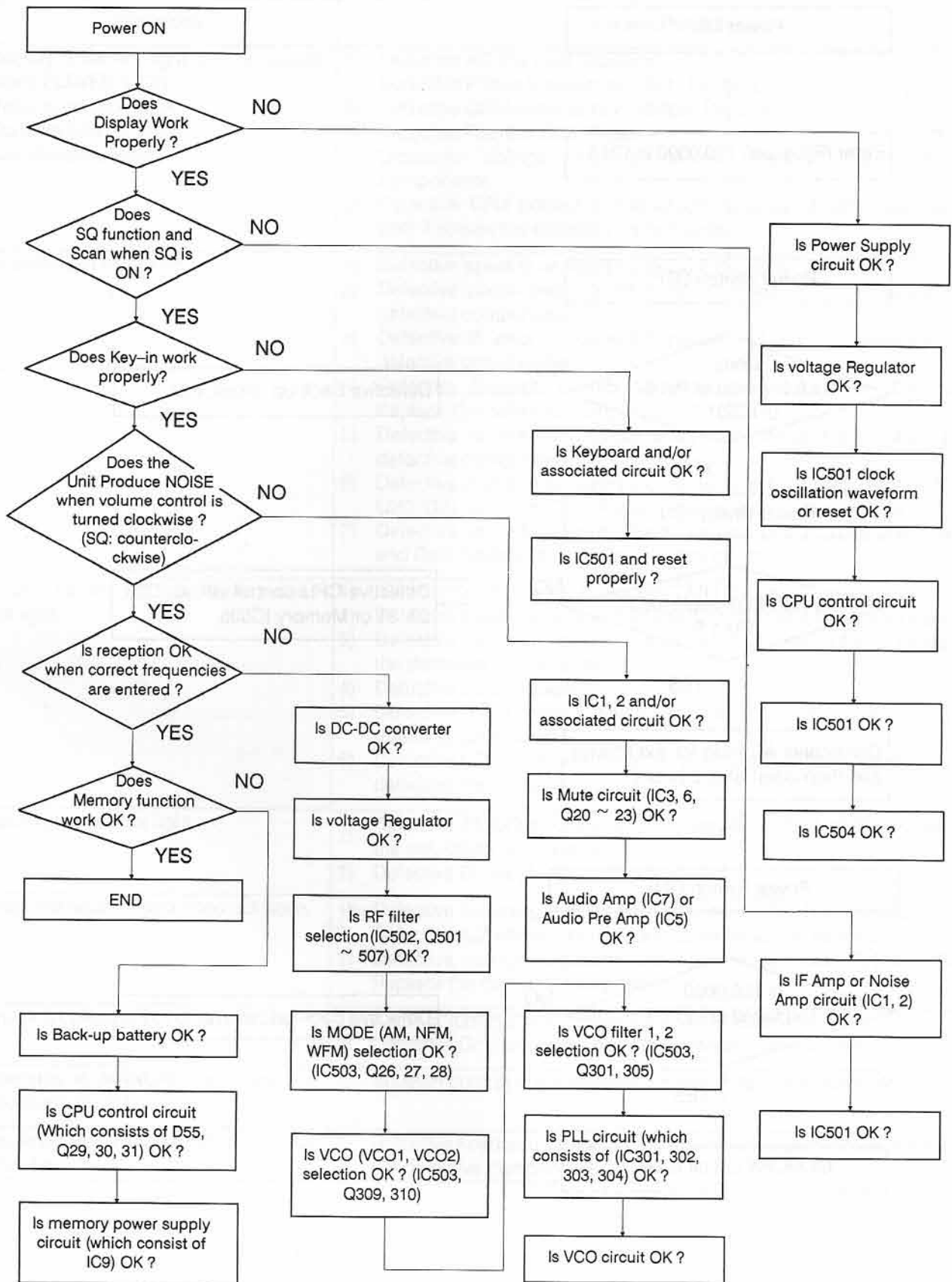


PLL Data Waveform

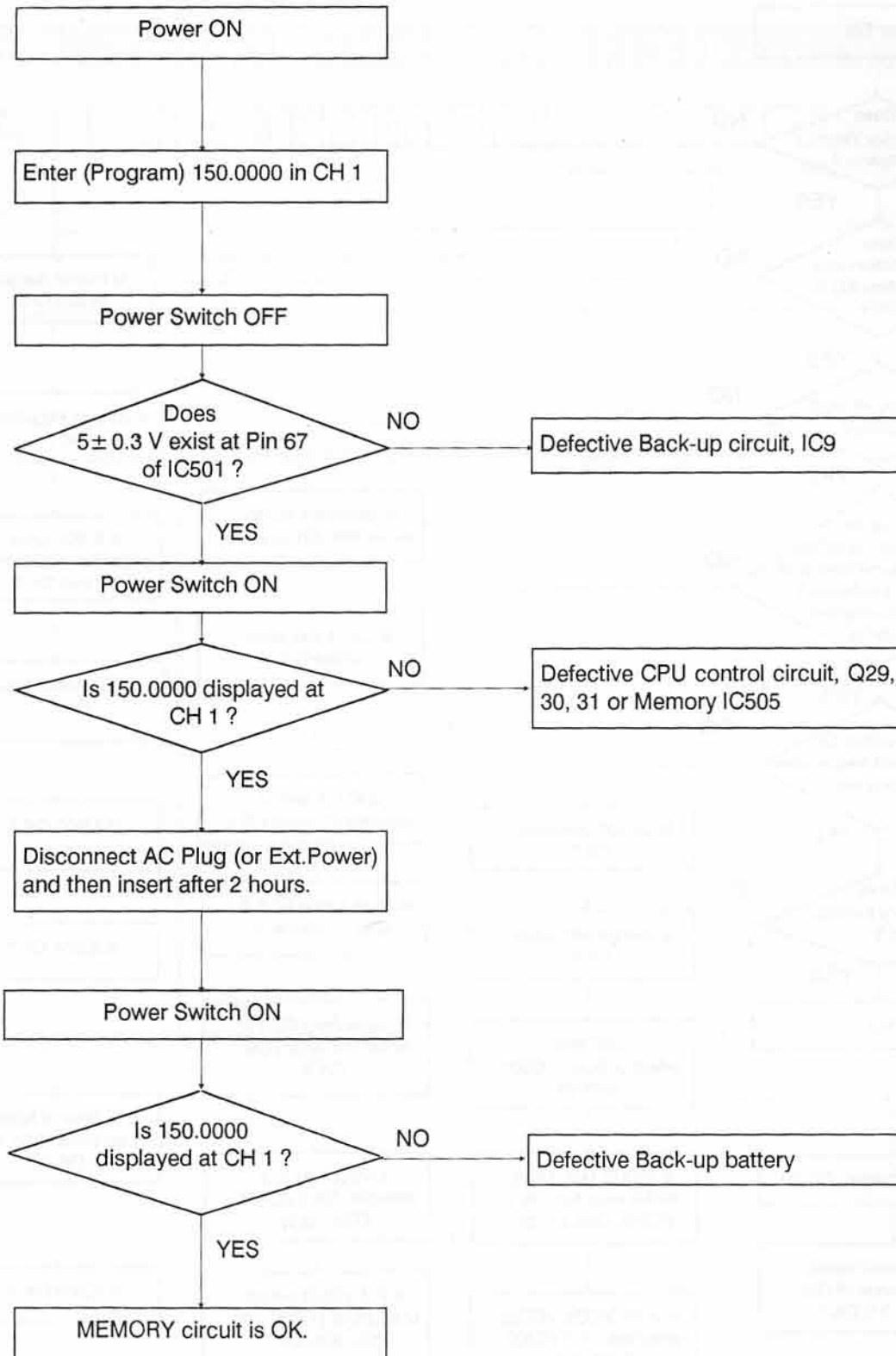


Note: Data in Program mode when 150.000 MHz is entered.

RECEPTION CHECK



MEMORY CHECK



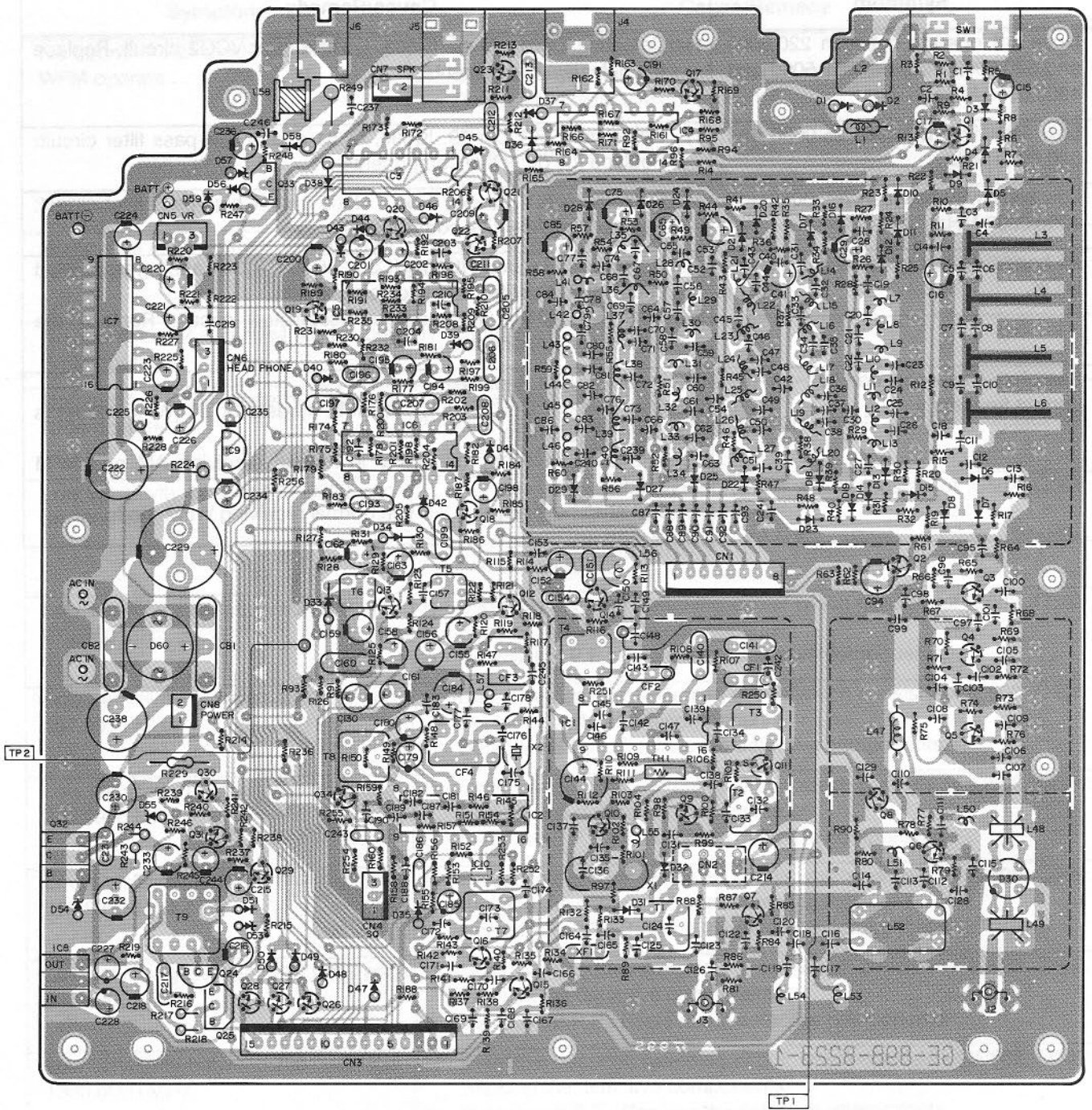
TROUBLESHOOTING

Symptom	Cause/Remedy
Display does not light and no sound when POWER is ON. Volume control: MAX. Squelch control: CCW (counterclockwise)	<ol style="list-style-type: none"> 1) Defective AC line cord: Replace. 2) Defective Power transformer T801: Replace. 3) Defective Off/Volume control VR802: Replace. 4) Defective Rectifier D60: Replace. 5) Defective Voltage regulator circuit: Replace the defective components. 6) Defective CPU control circuit which consists of Q29, Q30, Q31, D55: Replace the defective components.
Displays but no sound.	<ol style="list-style-type: none"> 1) Defective speaker or headphone jack: Replace. 2) Defective audio amp. circuit which consists of IC7: Replace the defective components. 3) Defective IF amp. circuit which consists of IC1, IC2: Replace the defective components. 4) Defective Squelch control circuit which consists of IC3, IC6: Replace the defective components. 5) Defective AF pre amp. circuit which consists of IC5: Replace the defective components. 6) Defective audio mute switching circuit which consists of IC3, IC5, Q20, Q21, Q22 and Q23: Replace the defective components. 7) Defective switching circuit which consists of IC6, D39, D40, D41, and D42: Replace the defective components.
Sound comes out but display does not light.	<ol style="list-style-type: none"> 1) IC501 is running "wild": Press RESTART Switch. 2) Defective initiate control circuit: Replace the defective components. 3) Defective voltage regulator circuit which consists of IC9: Replace the defective components. 4) Defective LCD: Replace. 5) Defective CPU circuit which consists of IC501: Replace the defective components. 6) Defective LCD controller circuit with consists of IC504: Replace the defective components.
Backlight does not light.	<ol style="list-style-type: none"> 1) Defective EL Driver circuit which consists of T501, Q508: Replace the defective components. 2) Defective EL: Replace.
Does not squelch and does not scan.	<ol style="list-style-type: none"> 1) Defective switching circuit which consists of IC3: Replace IC3. 2) Defective IC2 squelch control output terminal: Replace IC2. 3) Defective voltage regulator circuit which consists of Q32, D54: Replace the defective components.
Squelch operates but does not scan.	<ol style="list-style-type: none"> 1) IC501 is running "wild": Press RESTART Switch. 2) Defective CPU circuit: Replace the defective components.
Operates in MANUAL but does not operate in SCAN.	<ol style="list-style-type: none"> 1) Squelch control is not adjusted correctly: Adjust Squelch (VR801).
Displays but PROGRAM does not operate.	<ol style="list-style-type: none"> 1) Defective keyboard or connector and/or associated circuit: Replace the defective components.

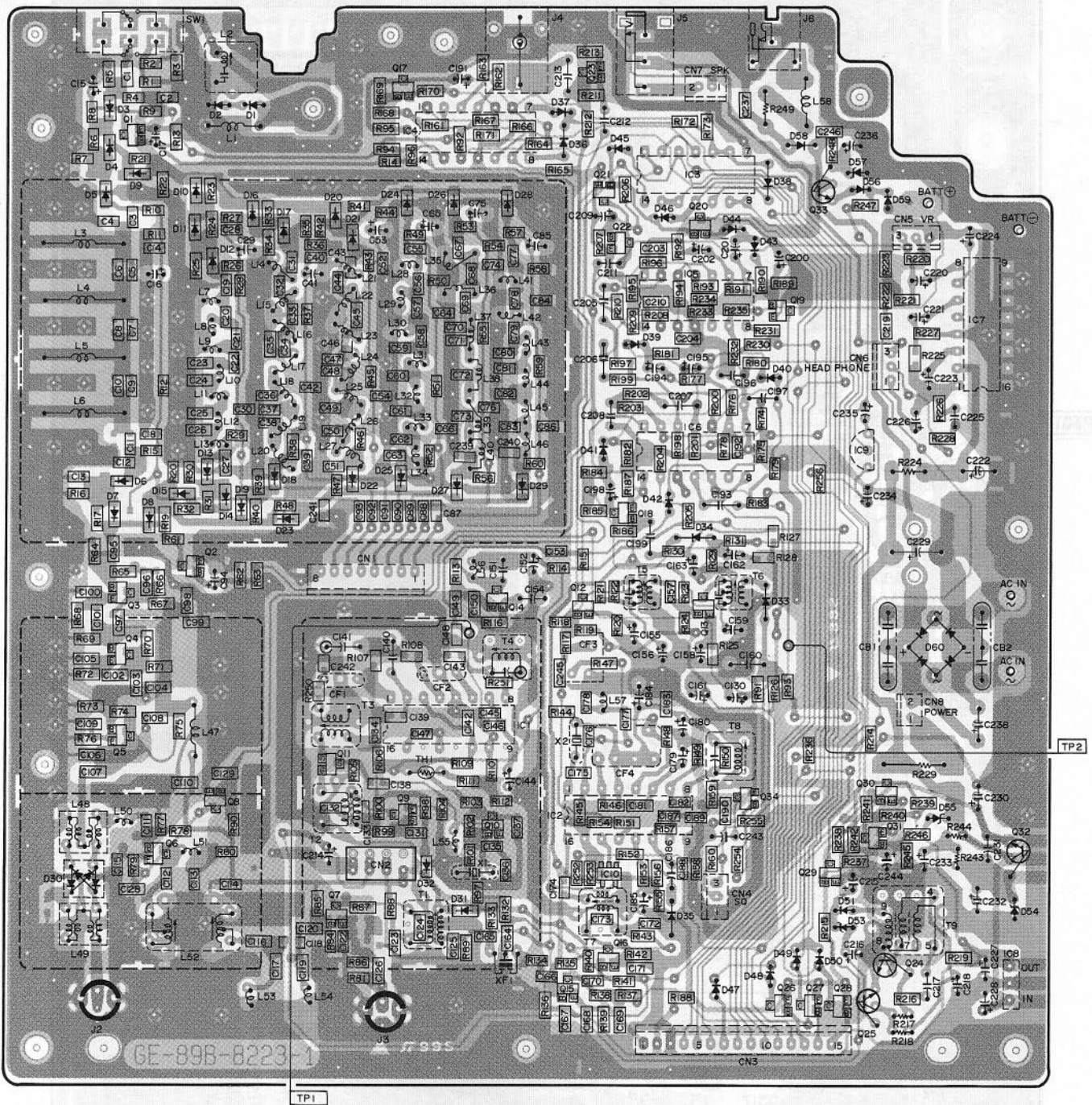
Symptom	Cause/Remedy
No sound in AM mode but NFM and WFM operate.	<ol style="list-style-type: none"> 1) Defective IC501 or IC503: Replace. 2) Defective switching circuit which consists of Q28, D41, D50: Replace the defective components. 3) Defective ANL,AF pre amp. circuit which consists of Q18, D34: Replace the defective components. 4) Defective AM IF DET.circuit which consists of Q12, Q13, D33: Replace the defective components.
No sounds in NFM mode but AM and WFM operate.	<ol style="list-style-type: none"> 1) Defective IC501 or IC503: Replace. 2) Defective switching circuit which consists of Q27, D40, D49: Replace the defective components.
No sound in AM and NFM modes but WFM operates.	<ol style="list-style-type: none"> 1) Defective IC2: Replace.
No sound in WFM mode but AM and NFM operate.	<ol style="list-style-type: none"> 1) Defective IC501,503 or IC1: Replace. 2) Defective switching circuit which consists of Q26, D48: Replace the defective components.
Low sensitivity between 25.0000 and 39.9950 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q501: Replace the defective components. 2) Defective Bandpass filter (B.P.F.): Replace the defective components.
Low sensitivity between 40.0000 and 67.9950 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q502: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Low sensitivity between 68.0000 and 107.9950 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q503: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Low sensitivity between 108.0000 and 173.9950 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q504: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Low sensitivity between 174.0000 and 279.9950 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q505: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Low sensitivity between 280.0000 and 520.0000 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q506: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Low sensitivity between 760.0000 and 1300.0000 MHz.	<ol style="list-style-type: none"> 1) Defective decoder switching circuit which consists of IC502, Q507: Replace the defective components. 2) Defective B.P.F.: Replace the defective components.
Does not operate between 25.0000 and 220.4950 MHz or 760.0000 and 1052.4950 MHz.	<ol style="list-style-type: none"> 1) Defective IC501 Pin 46, IC503, Q309 and/or VCO1 circuit: Replace the defective components.

Symptom	Cause/Remedy
Does not operate between 220.0000 and 520.0000 MHz or 1052.5000 and 1300.0000 MHz.	1) Defective IC501 pin 45, IC503, Q313 and/or VCO2 circuit: Replace the defective components.
Low sensitivity between 25.0000 and 520.0000 MHz.	1) Defective IC501 pin 69, IC503, Q301 and/or low-pass filter circuit: Replace the defective components.
Low sensitivity between 760.0000 and 1300.0000 MHz.	1) Defective IC501 pin 68, IC503, Q305 and/or high-pass filter circuit: Replace the defective components.
All bands do not operate but display is OK.	1) Defective PLL circuit IC301, IC302, IC303, IC304 and/or associated circuit: Replace the defective components. 2) Defective Q317, Q318 and/or associated circuit: Replace the defective components.
Searches but does not halt on the correct frequency.	1) Defective IC4: Replace. 2) Discriminator Coil T8 (AM and NFM modes) or T4 (WFM mode) is out of adjustment: TP2 shall have approx. 3.8 V in normal receiving AM and NFM modes. TP1 shall have approx. 3.9 V in normal receiving WFM mode.

LINEAR PCB (Top View)

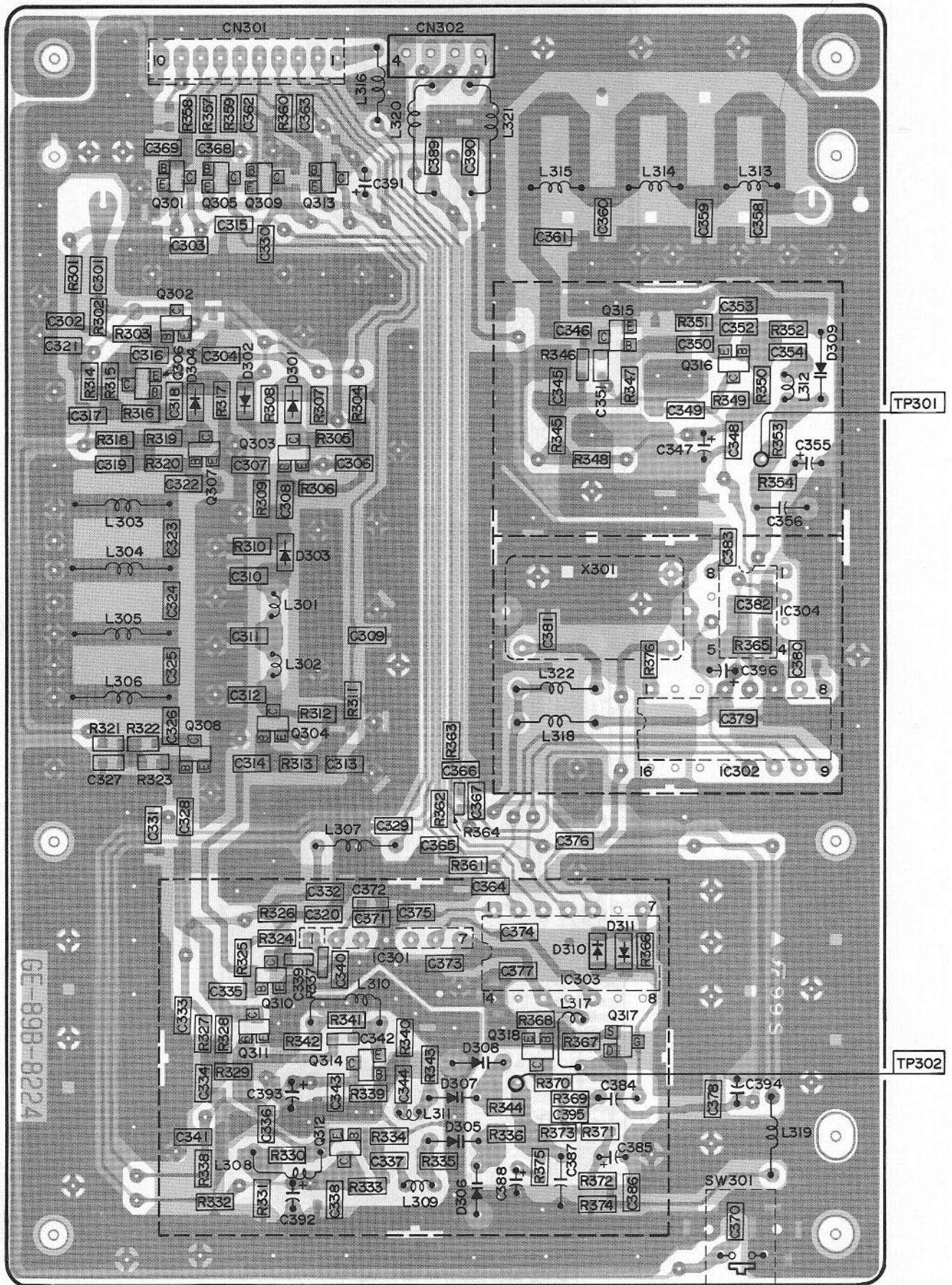


LINEAR PCB (Bottom View)

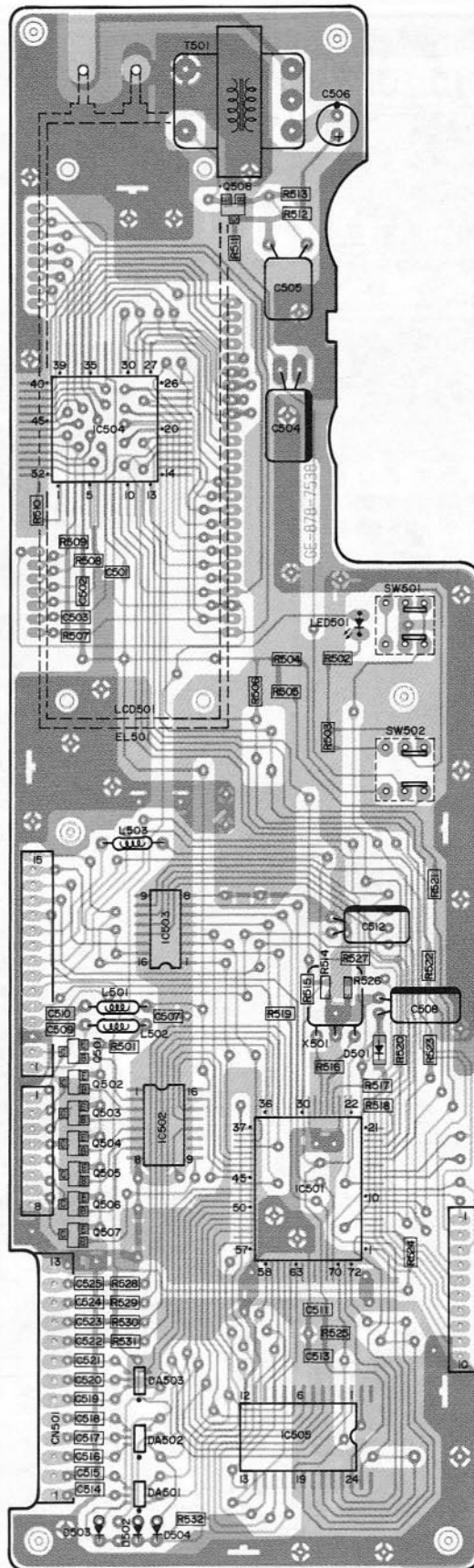


LOGIC & DISPLAY PCB (Bottom View)
(Wei) (100)

PLL PCB (Bottom View)

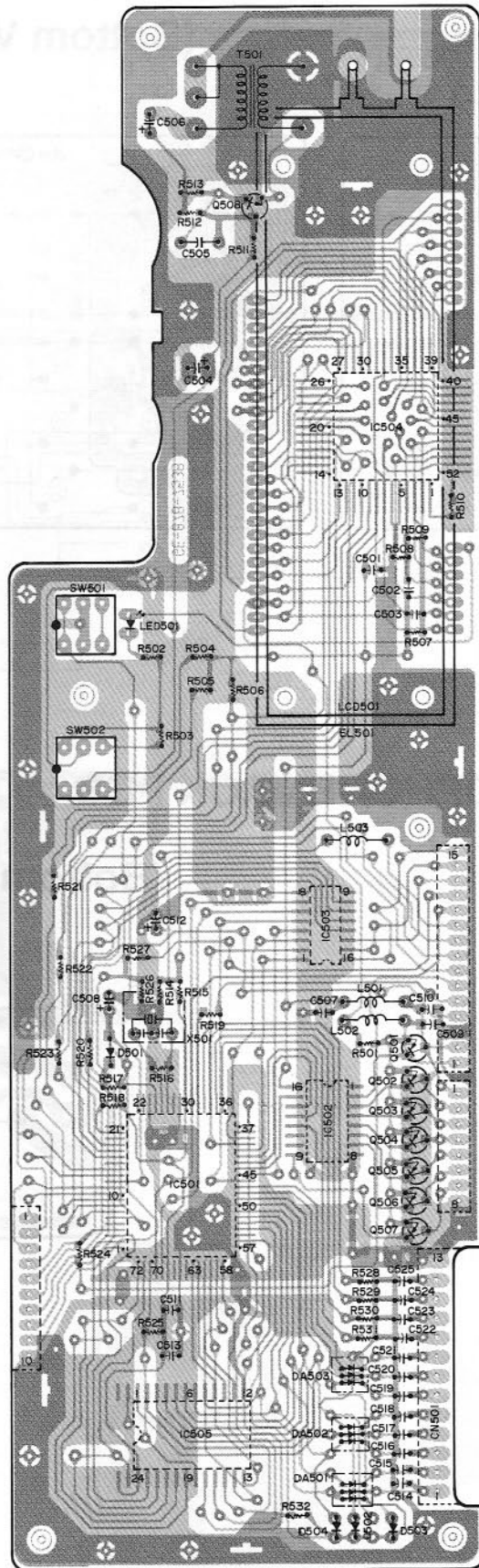


LOGIC & DISPLAY PCB (Top View)



	D502	D504
U.S.A., CANADA MODELS	USE	NOT USE
AUSTRALIA, UK	NOT USE	USE
BELGIUM, FRANCE MODELS	NOT USE	USE

LOGIC & DISPLAY PCB (Bottom View)

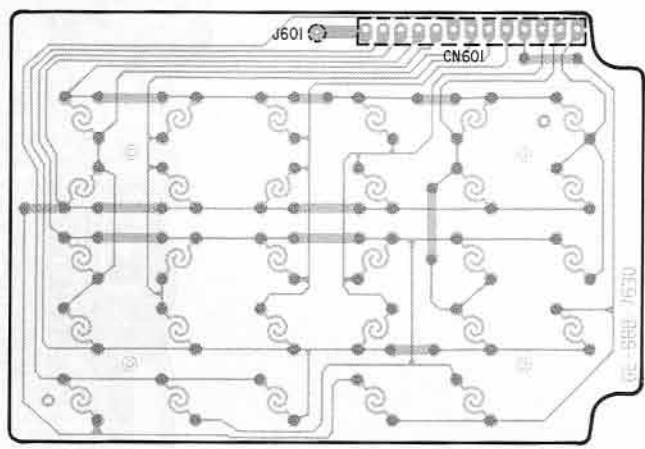
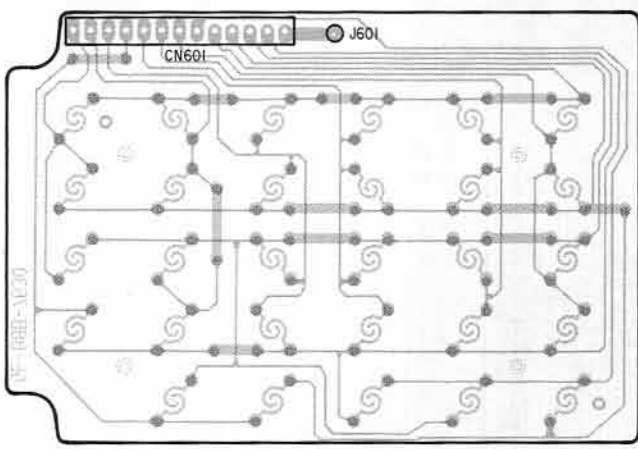


	D502	D504
U.S.A., CANADA MODELS	USE	NOT USE
AUSTRALIA, UK	NOT USE	USE
BELGIUM, FRANCE MODELS	NOT USE	USE

KEY BOARD PCB

(Top View)

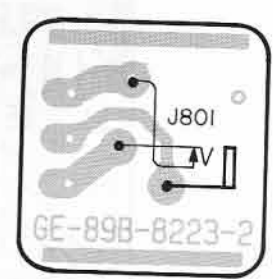
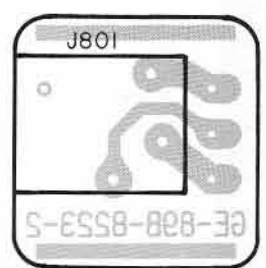
(Bottom View)

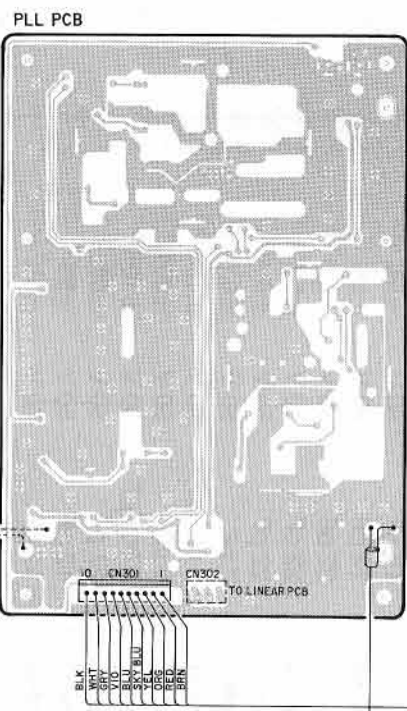
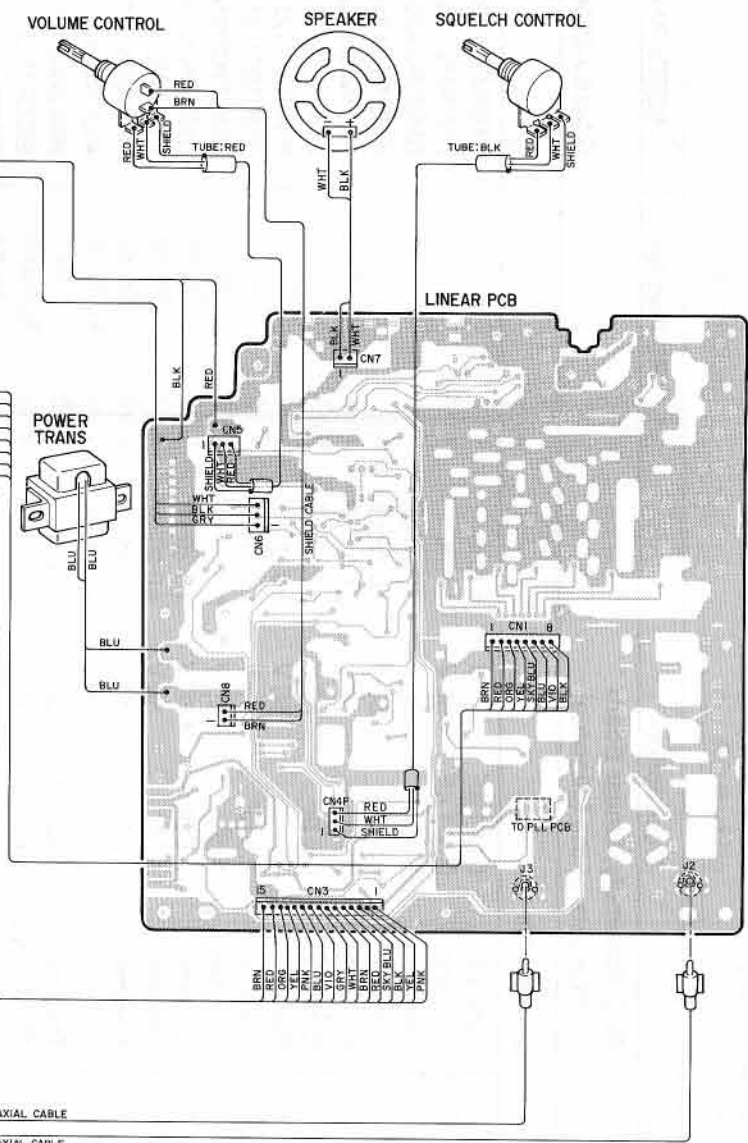
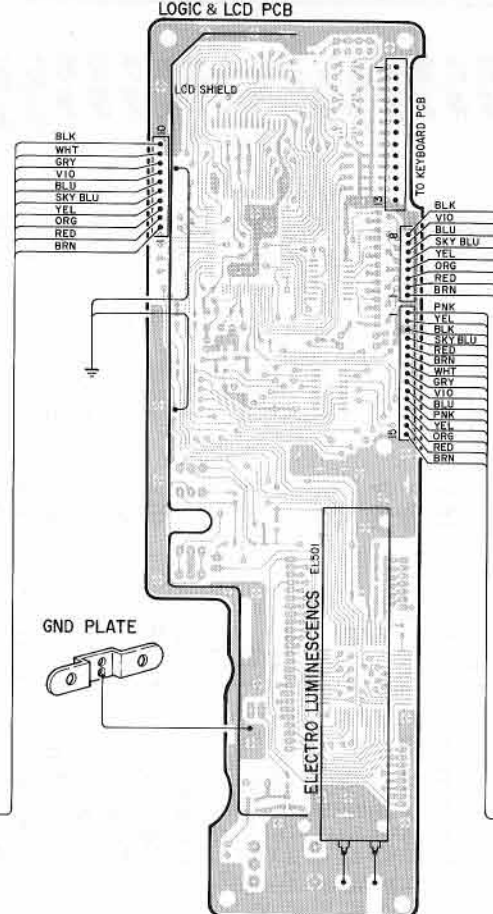
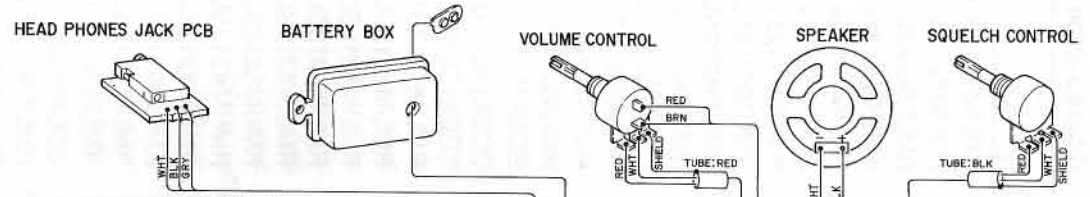


HEADPHONE JACK PCB

(Top view)

(Bottom View)





WIRING DIAGRAM

Electrical Parts List

Linear PCB Assembly

Ref. No.	Description	RS Part No.	MFR's Part No.
⑦	PCB Assembly, Linear Board Consists of the following:		GA-89D-8300
Capacitors			
C1	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C2	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C3	Ceramic 5 pF 50 V \pm 0.25 pF		RMUMK212SL050C
C4	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C5	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C6	Ceramic 0.5 pF 50 V \pm 0.25 pF		RMUMK212SL0R5C
C7	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C8	Ceramic 0.5 pF 50 V \pm 0.25 pF		RMUMK212SL0R5C
C9	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C10	Ceramic 0.5 pF 50 V \pm 0.25 pF		RMUMK212SL0R5C
C11	Ceramic 5 pF 50 V \pm 0.25 pF		RMUMK212SL050C
C12	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C13	Ceramic 2 pF 50 V \pm 0.25 pF		RMUMK212SL020C
C14	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C15	Electrolytic 10 μ F 16 V \pm 20%		ECEA1CU100
C16	Electrolytic 1 μ F 50 V \pm 20%		ECEA1HU010
C17	Electrolytic 33 μ F 16 V \pm 20%		ECEA1CU330
C18	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C19	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C20	Ceramic 6 pF 50 V \pm 0.5 pF		RMUMK212SL060D
C21	Ceramic 6 pF 50 V \pm 0.5 pF		RMUMK212SL060D
C22	Ceramic 15 pF 50 V \pm 5%		RMUMK212SL150J
C23	Ceramic 7 pF 50 V \pm 0.5 pF		RMUMK212SL070D
C24	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C25	Ceramic 15 pF 50 V \pm 5%		RMUMK212SL150J
C26	Ceramic 15 pF 50 V \pm 5%		RMUMK212SL150J
C27	Ceramic 5 pF 50 V \pm 0.25 pF		RMUMK212SL050C
C28	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C29	Electrolytic 1 μ F 50 V \pm 20%		ECEA1HU010
C30	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C31	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C32	Ceramic 7 pF 50 V \pm 0.5 pF		RMUMK212SL070D
C33	Ceramic 7 pF 50 V \pm 0.5 pF		RMUMK212SL070D
C34	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C35	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C36	Ceramic 22 pF 50 V \pm 5%		RMUMK212SL220J
C37	Ceramic 22 pF 50 V \pm 5%		RMUMK212SL220J
C38	Ceramic 22 pF 50 V \pm 5%		RMUMK212SL220J
C39	Ceramic 7 pF 50 V \pm 0.5 pF		RMUMK212SL070D
C40	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C41	Electrolytic 1 μ F 50 V \pm 20%		ECEA1HU010
C42	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C43	Ceramic 27 pF 50 V \pm 5%		RMUMK212SL270J
C44	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J
C45	Ceramic 12 pF 50 V \pm 5%		RMUMK212SL120J

Ref. No.	Description				RS Part No.	MFR's Part No.
C46	Ceramic	27 pF	50 V	±5%		RMUMK212SL270J
C47	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C48	Ceramic	47 pF	50 V	±5%		RMUMK212SL470J
C49	Ceramic	47 pF	50 V	±5%		RMUMK212SL470J
C50	Ceramic	47 pF	50 V	±5%		RMUMK212SL470J
C51	Ceramic	15 pF	50 V	±5%		RMUMK212SL150J
C52	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C53	Electrolytic	1 μ F	50 V	±20%		ECEA1HU010
C54	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C55	Ceramic	56 pF	50 V	±5%		RMUMK212SL560J
C56	Ceramic	22 pF	50 V	±5%		RMUMK212SL220J
C57	Ceramic	22 pF	50 V	±5%		RMUMK212SL220J
C58	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C59	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C60	Ceramic	82 pF	50 V	±5%		RMUMK212SL820J
C61	Ceramic	82 pF	50 V	±5%		RMUMK212SL820J
C62	Ceramic	82 pF	50 V	±5%		RMUMK212SL820J
C63	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C64	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C65	Electrolytic	1 μ F	50 V	±20%		ECEA1HU010
C66	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C67	Ceramic	82 pF	50 V	±5%		RMUMK212SL820J
C68	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C69	Ceramic	56 pF	50 V	±5%		RMUMK212SL560J
C70	Ceramic	68 pF	50 V	±5%		RMUMK212SL680J
C71	Ceramic	150 pF	50 V	±5%		RMUMK212SL151J
C72	Ceramic	150 pF	50 V	±5%		RMUMK212SL151J
C73	Ceramic	150 pF	50 V	±5%		RMUMK212SL151J
C74	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C75	Electrolytic	1 μ F	50 V	±20%		ECEA1HU010
C76	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C77	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C78	Ceramic	47 pF	50 V	±5%		RMUMK212SL470J
C79	Ceramic	68 pF	50 V	±5%		RMUMK212SL680J
C80	Ceramic	56 pF	50 V	±5%		RMUMK212SL560J
C81	Ceramic	150 pF	50 V	±5%		RMUMK212SL151J
C82	Ceramic	180 pF	50 V	±5%		RMUMK212SL181J
C83	Ceramic	150 pF	50 V	±5%		RMUMK212SL151J
C84	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C85	Electrolytic	1 μ F	50 V	±20%		ECEA1HU010
C86	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C87	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C88	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C89	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C90	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C91	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C92	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C93	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C94	Electrolytic	33 μ F	16 V	±20%		ECEA1CU330
C95	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C96	Ceramic	10 pF	50 V	±0.5 pF		RMUMK212SL100D

Ref. No.	Description				RS Part No.	MFR's Part No.
C97	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C98	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C99	Ceramic	0.01 μ F	50 V	±10%		RMUMK212B103K
C100	Ceramic	10 pF	50 V	±0.5 pF		RMUMK212SL100D
C101	Ceramic	3 pF	50 V	±0.25 pF		RMUMK212SL030C
C102	Ceramic	3 pF	50 V	±0.25 pF		RMUMK212SL030C
C103	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C104	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C105	Ceramic	5 pF	50 V	±0.25 pF		RMUMK212SL050C
C106	Ceramic	2 pF	50 V	±0.25 pF		RMUMK212SL020C
C107	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C108	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C109	Ceramic	4 pF	50 V	±0.25 pF		RMUMK212SL040C
C110	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C111	Ceramic	10 pF	50 V	±0.5 pF		RMUMK212SL100D
C112	Ceramic	33 pF	50 V	±5%		RMUMK212SL330J
C113	Ceramic	470 pF	50 V	±5%		RMUMK212SL471J
C114	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C115	Ceramic	100 pF	50 V	±5%		RMUMK212SL101J
C116	Ceramic	4 pF	50 V	±0.25 pF		RMUMK212SL040C
C117	Ceramic	4 pF	50 V	±0.25 pF		RMUMK212SL040C
C118	Ceramic	2 pF	50 V	±0.25 pF		RMUMK212SL020C
C119	Ceramic	4 pF	50 V	±0.25 pF		RMUMK212SL040C
C120	Ceramic	4 pF	50 V	±0.25 pF		RMUMK212SL040C
C121	Not used					
C122	Ceramic	12 pF	50 V	±5%		RMUMK212SL120J
C123	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C124	Ceramic	18 pF	50 V	±5%		RMUMK212SL180J
C125	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C126	Ceramic	22 pF	50 V	±5%		RMUMK212SL220J
C127	Not used					
C128	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C129	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C130	Electrolytic	10 μ F	16 V	±20%		ECEA1CU100
C131	Ceramic	47 pF	50 V	±5%		RMUMK212SL470J
C132	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C133	Ceramic	18 pF	50 V	±5%		RMUMK212SL180J
C134	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C135	Ceramic	22 pF	50 V	±5%		RMUMK212SL220J
C136	Ceramic	56 pF	50 V	±5%		RMUMK212SL560J
C137	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C138	Ceramic	0.001 μ F	50 V	±10%		RMUMK212B102K
C139	Ceramic	0.022 μ F	50 V	±10%		RMUMK212B223K
C140	Mylar *	0.047 μ F	50 V	±10%		AMZ-473K50
C141	Mylar	0.047 μ F	50 V	±10%		AMZ-473K50
C142	Ceramic	0.022 μ F	50 V	±10%		RMUMK212B223K
C143	Ceramic	0.01 μ F	50 V	±10%		RMUMK212B103K
C144	Electrolytic	100 μ F	16 V	±20%		ECEA1CU101
C145	Ceramic	0.022 μ F	50 V	±10%		RMUMK212B223K
C146	Ceramic	0.047 μ F	50 V	+ 80%–20%		RMUMK212F473Z

* Mylar is a registered trademark of E.I. Du pont de Nemours and Company.

Ref. No.	Description					RS Part No.	MFR's Part No.
C147	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C148	Ceramic	100 pF	50 V	\pm 5%			RMUMK212SL101J
C149	Ceramic	100 pF	50 V	\pm 5%			RMUMK212SL101J
C150	Ceramic	47 pF	50 V	\pm 5%			RMUMK212SL470J
C151	Mylar	0.0022 μ F	50 V	\pm 10%			AMZ-222K50
C152	Electrolytic	10 μ F	16 V	\pm 20%			ECEA1CU100
C153	Ceramic	100 pF	50 V	\pm 5%			RMUMK212SL101J
C154	Mylar	0.01 μ F	50 V	\pm 10%			AMZ-103K50
C155	Electrolytic	1 μ F	50 V	\pm 20%			ECEA1HU010
C156	Electrolytic	10 μ F	16 V	\pm 20%			ECEA1CU100
C157	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C158	Electrolytic	1 μ F	50 V	\pm 20%			ECEA1HU010
C159	Electrolytic	10 μ F	16 V	\pm 20%			ECEA1CU100
C160	Mylar	0.056 μ F	50 V	\pm 10%			AMZ-563K50
C161	Electrolytic	22 μ F	16 V	\pm 20%			ECEA1CU220
C162	Electrolytic	1 μ F	50 V	\pm 20%			ECEA1HU010
C163	Electrolytic	1 μ F	50 V	\pm 20%			ECEA1HU010
C164	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C165	Ceramic	5 pF	50 V	\pm 0.25 pF			RMUMK212SL050C
C166	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C167	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C168	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C169	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C170	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C171	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C172	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C173	Ceramic	18 pF	50 V	\pm 5%			RMUMK212SL180J
C174	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C175	Ceramic	33 pF	50 V	\pm 5%			RMUMK212SL330J
C176	Ceramic	10 pF	50 V	\pm 0.5 pF			RMUMK212SL100D
C177	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C178	Ceramic	10 pF	50 V	\pm 0.5 pF			RMUMK212SL100D
C179	Tantalum	0.47 μ F	35 V	\pm 10%			TSD-S-1VR47K
C180	Tantalum	0.47 μ F	35 V	\pm 10%			TSD-S-1VR47K
C181	Ceramic	0.047 μ F	50 V	+80%–20%			RMUMK212F473Z
C182	Ceramic	10 pF	50 V	\pm 0.5 pF			RMUMK212SL100D
C183	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C184	Electrolytic	220 μ F	16 V	\pm 20%			ECEA1CU221
C185	Tantalum	0.22 μ F	35 V	\pm 10%			TSD-S-1VR22K
C186	Mylar	0.01 μ F	50 V	\pm 10%			AMZ-103K50
C187	Ceramic	8 pF	50 V	\pm 0.5 pF			RMUMK212SL080D
C188	Ceramic	0.001 μ F	50 V	\pm 10%			RMUMK212B102K
C189	Ceramic	470 pF	50 V	\pm 5%			RMUMK212SL471J
C190	Ceramic	470 pF	50 V	\pm 5%			RMUMK212SL471J
C191	Tantalum	0.1 μ F	35 V	\pm 10%			TSD-S-1V0R1K
C192	Ceramic	0.01 μ F	50 V	\pm 10%			RMUMK212B103K
C193	Mylar	0.047 μ F	50 V	\pm 10%			AMZ-473K50
C194	Electrolytic	0.1 μ F	50 V	\pm 20%			ECEA1HU0R1
C195	Electrolytic	1 μ F	50 V	\pm 20%			ECEA1HU010
C196	Mylar	0.022 μ F	50 V	\pm 10%			AMZ-223K50

Ref. No.	Description				RS Part No.	MFR's Part No.
C197	Mylar	0.056 μ F	50 V	\pm 10%		AMZ-563K50
C198	Electrolytic	0.1 μ F	50 V	\pm 20%		ECEA1HU0R1
C199	Mylar	0.056 μ F	50 V	\pm 10%		AMZ-563K50
C200	Electrolytic	4.7 μ F	50 V	\pm 20%		ECEA1HU4R7
C201	Tantalum	0.1 μ F	35 V	\pm 10%		TSD-S-1V0R1K
C202	Electrolytic	1 μ F	50 V	\pm 20%		ECEA1HU010
C203	Ceramic	330 pF	50 V	\pm 5%		RMUMK212SL331J
C204	Ceramic	0.01 μ F	50 V	\pm 10%		RMUMK212B103K
C205	Mylar	0.082 μ F	50 V	\pm 10%		AMZ-823K50
C206	Mylar	0.047 μ F	50 V	\pm 10%		AMZ-473K50
C207	Mylar	0.056 μ F	50 V	\pm 10%		AMZ-563K50
C208	Mylar	0.0047 μ F	50 V	\pm 10%		AMZ-472K50
C209	Electrolytic	2.2 μ F	50 V	\pm 20%		ECEA1HU2R2
C210	Ceramic	0.0015 μ F	50 V	\pm 10%		RMUMK212B152K
C211	Mylar	0.0068 μ F	50 V	\pm 10%		AMZ-682K50
C212	Mylar	0.0068 μ F	50 V	\pm 10%		AMZ-682K50
C213	Mylar	0.047 μ F	50 V	\pm 10%		AMZ-473K50
C214	Electrolytic	4.7 μ F	50 V	\pm 20%		ECEA1HU4R7
C215	Electrolytic	1 μ F	50 V	\pm 20%		ECEA1HU010
C216	Electrolytic	47 μ F	16 V	\pm 20%		ECEA1CU470
C217	Mylar	0.001 μ F	50 V	\pm 10%		AMZ-102K50
C218	Electrolytic	100 μ F	16 V	\pm 20%		ECEA1CU101
C219	Ceramic	0.01 μ F	50 V	\pm 10%		RMUMK212B103K
C220	Electrolytic	1 μ F	50 V	\pm 20%		ECEA1HU010
C221	Electrolytic	2.2 μ F	50 V	\pm 20%		ECEA1HU2R2
C222	Electrolytic	1000 μ F	25 V	\pm 20%		ECEA1EU102
C223	Electrolytic	47 μ F	16 V	\pm 20%		ECEA1CU470
C224	Electrolytic	10 μ F	16 V	\pm 20%		ECEA1CU100
C225	Ceramic	0.1 μ F	50 V	+80%–20%		PRE131F104Z or SR295F104Z
C226	Electrolytic	100 μ F	16 V	\pm 20%		ECEA1CU101
C227	Tantalum	0.1 μ F	35 V	\pm 10%		TSD-S-1V0R1K
C228	Tantalum	0.33 μ F	35 V	\pm 10%		TSD-S-1VR33K
△C229	Electrolytic	2200 μ F	25 V	\pm 20%		ECEA1EU222
C230	Electrolytic	220 μ F	16 V	\pm 20%		ECEA1CU221
C231	Mylar	0.033 μ F	50 V	\pm 10%		AMZ-333K50
C232	Electrolytic	220 μ F	16 V	\pm 20%		ECEA1CU221
C233	Electrolytic	100 μ F	16 V	\pm 20%		ECEA1CU101
C234	Electrolytic	0.1 μ F	50 V	\pm 20%		ECEA1HU0R1
C235	Electrolytic	10 μ F	16 V	\pm 20%		ECEA1CU100
C236	Electrolytic	10 μ F	16 V	\pm 20%		ECEA1CU100
C237	Ceramic	0.01 μ F	50 V	\pm 10%		RMUMK212B103K
C238	Electrolytic	470 μ F	25 V	\pm 20%		ECEA1EU471
C239	Ceramic	47 pF	50 V	\pm 5%		RMUMK212SL470J
C240	Ceramic	68 pF	50 V	\pm 5%		RMUMK212SL680J
C241	Ceramic	3 pF	50 V	\pm 0.25 pF		RMUMK212SL030C
C242	Ceramic	33 pF	50 V	\pm 5%		RMUMK212SL330J
C243	Mylar	0.0082 μ F	50 V	\pm 10%		AMZ-822K50
C244	Electrolytic	10 μ F	16 V	\pm 20%		ECEA1CU100

Ref. No.	Description	RS Part No.	MFR's Part No.
C245	Ceramic 220 pF 50 V ±5%		RMUMK212SL221J
C246	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
Capacitor Arrays			
△CB1	0.01 μF x 2 250 V +80%-20%		EXR-FS203ZS
CB2	0.01 μF x 2 250 V +80%-20%		EXR-FS203ZS
Ceramic Filters			
CF1	Ceramic 10.7 MHz		SFE10.7MA5W-A
CF2	Ceramic 10.7 MHz		SFE10.7MA5W-A
CF3	Ceramic 455 kHz		KBF-455M-6A
CF4	Ceramic 455 kHz		KBF-455R-15A
Diodes			
D1	1S1585 (Silicon)		1S1585
D2	1S1585 (Silicon)		1S1585
D3	HSR277 (Silicon)		HSR277
D4	HSR277 (Silicon)		HSR277
D5	HSR277 (Silicon)		HSR277
D6	HSR277 (Silicon)		HSR277
D7	HSR277 (Silicon)		HSR277
D8	HSR277 (Silicon)		HSR277
D9	HSR277 (Silicon)		HSR277
D10	HSR277 (Silicon)		HSR277
D11	HSR277 (Silicon)		HSR277
D12	HSR277 (Silicon)		HSR277
D13	HSR277 (Silicon)		HSR277
D14	HSR277 (Silicon)		HSR277
D15	HSR277 (Silicon)		HSR277
D16	HSR277 (Silicon)		HSR277
D17	HSR277 (Silicon)		HSR277
D18	HSR277 (Silicon)		HSR277
D19	HSR277 (Silicon)		HSR277
D20	HSR277 (Silicon)		HSR277
D21 [†]	HSR277 (Silicon)		HSR277
D22	HSR277 (Silicon)		HSR277
D23	HSR277 (Silicon)		HSR277
D24	HSR277 (Silicon)		HSR277
D25	HSR277 (Silicon)		HSR277
D26	HSR277 (Silicon)		HSR277
D27	HSR277 (Silicon)		HSR277
D28	HSR277 (Silicon)		HSR277

Ref. No.	Description	RS Part No.	MFR's Part No.
D29			HSR277
D30	Quad.		ND487C1-3R
D31			HSR277
D32			HSR277
D33			1K261 or OA90-R
D34			1K261 or OA90-R
D35			1K261 or OA90-R
D36			1S2076A
D37			1S2076A
D38			1S2076A
D39			1S2076A
D40			1S2076A
D41			1S2076A
D42			1S2076A
D43			1S2076A
D44			1S2076A
D45			1S2076A
D46			1S2076A
D47			1S2076A
D48			1S2076A
D49			1S2076A
D50			1S2076A
D51			1SS81
D52	Not used		
D53	Zener		HZ33E B1 or B2
D54	Zener		HZ9B2L
D55	Zener		HZ6B2L
D56			1S2076A
D57	Zener		HZ11B2L
D58			1N4002
D59			1S2076A
D60	Rectifier		RC202

ICs

IC1	KA2243 (IF Amp./Det.) (Bipolar) or HA12413		KA2243 or HA12413
IC2	TK10420 (IF Amp./Noise Amp./Det.) (Bipolar)		TK10420
IC3	μ PD4011BC (Switching) (C-MOS) or HD14011BP		μ PD4011BC or HD14011BP
IC4	μ PC324C (Zeromatic) (Bipolar)		μ PC324C
IC5	μ PC324C (Low-BATT Det.) (Bipolar)		μ PC324C
IC6	μ PD4066BC (Switching) (C-MOS) or HD14066BP		μ PD4066BC or HD14066BP
IC7	TDA1905 (AF Power Amp.) (Bipolar)		TDA1905
IC8	MC7805C (Voltage Regulator) (Bipolar) or TA78005AP		MC7805C or TA78005AP
IC9	S-81250HG (Voltage Regulator) (C-MOS)		S-81250HG
IC10	TC4S66F (Switching) (L-MOS)		TC4S66F

Ref. No.	Description	RS Part No.	MFR's Part No.
Coils			
L1	Coil, Choke 1 μ H		LAL03NA1R0M
L2	Coil, Trap (609.5 MHz)		GR-H761
L3	Stripline on PCB		
L4	Stripline on PCB		
L5	Stripline on PCB		
L6	Stripline on PCB		
L7	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L8	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L9	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L10	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L11	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L12	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L13	Coil, B.P.F. (280 MHz to 520 MHz)		2LNB-253
L14	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L15	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L16	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L17	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L18	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L19	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L20	Coil, B.P.F. (174 MHz to 279.995 MHz)		2LNB-252
L21	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L22	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L23	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L24	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L25	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L26	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L27	Coil, B.P.F. (108 MHz to 173.995 MHz)		3LNB-251
L28	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L29	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L30	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L31	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L32	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L33	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L34	Coil, B.P.F. (68 MHz to 107.995 MHz)		4LNB-250
L35	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L36	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L37	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L38	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L39	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L40	Coil, B.P.F. (40 MHz to 67.995 MHz)		4LNB-249
L41	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L42	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L43	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L44	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L45	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L46	Coil, B.P.F. (25 MHz to 39.995 MHz)		LAL03NAR33M
L47	Coil, Choke 10 μ H		LAL03NA100K
L48	Coil, DBM		2LNM-258
L49	Coil, DBM		2LNM-258

Ref. No.	Description	RS Part No.	MFR's Part No.
L50	Coil, Choke		2LNO-255
L51	Coil, Choke		2LNO-256
L52	Coil, IF (1st)		HF-62H14 or R12-H756X
L53	Coil, Trap 512.5 MHz		2LNO-254
L54	Coil, Trap 512.5 MHz		2LNO-254
L55	Coil, Choke 0.68 μ H		LAL03NAR68M
L56	Coil, Choke 2.2 mH		FL5HS222J
L57	Coil, Choke 1 μ H		LAL03NA1R0M
L58	Coil, Choke		3B-037T
Transistors			
Q1	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q2	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q3	2SC3356 (Marked R22) NPN		2SC3356
Q4	2SC3356 (Marked R22) NPN		2SC3356
Q5	2SC3356 (Marked R22) NPN		2SC3356
Q6	2SC3356 (Marked R22) NPN		2SC3356
Q7	2SC3356 (Marked R22) NPN		2SC3356
Q8	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q9	2SC2714(Y) (Marked QY) NPN		2SC2714(Y)
Q10	2SC2714(Y) (Marked QY) NPN		2SC2714(Y)
Q11	FET 2SK210(GR) (Marked YG) MOS		2SK210(GR)
Q12	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q13	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q14	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q15	2SC2714(Y) (Marked QY) NPN		2SC2714(Y)
Q16	2SC2714(Y) (Marked QY) NPN		2SC2714(Y)
Q17	2SA1162(GR) or (Y) (Marked SG,SY) PNP		2SA1162(GR) or (Y)
Q18	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q19	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q20	RN1408 (Marked XI) NPN		RN1408
Q21	RN1408 (Marked XI) NPN		RN1408
Q22	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q23	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q24	2SC3243 NPN		2SC3243
Q25	2SC2603 (F) NPN		2SC2603(F)
Q26	RN2405 (Marked YE) PNP		RN2405
Q27	RN2405 (Marked YE) PNP		RN2405
Q28	RN2405 (Marked YE) PNP		RN2405
Q29	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q30	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q31	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)
Q32	2SD1406(GR) NPN		2SD1406(GR)
Q33	2SC2458(GR) NPN		2SC2458(GR)
Q34	2SC2712(GR) or (Y) (Marked LG,LY) NPN		2SC2712(GR) or (Y)

Ref. No.	Description	RS Part No.	MFR's Part No.
Resistors			
R1	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R2	Metal Glaze 82 ohm 1/10 W ±5%		RCM820J55
R3	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R4	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R5	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R6	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R7	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R8	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R9	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R10	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R11	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R12	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R13	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R14	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R15	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R16	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R17	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R18	Not used		
R19	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R20	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R21	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R22	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R23	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R24	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R25	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R26	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R27	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R28	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R29	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R30	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R31	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R32	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R33	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R34	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R35	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R36	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R37	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R38	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R39	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R40	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R41	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R42	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R43	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R44	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R45	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R46	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R47	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R48	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R49	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R50	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R51	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R52	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R53	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R54	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R55	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R56	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R57	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R58	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R59	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R60	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R61	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R62	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R63	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R64	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R65	Metal Glaze 270 ohm 1/10 W ±5%		RCM271J55
R66	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R67	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R68	Metal Glaze 22 ohm 1/10 W ±5%		RCM220J55
R69	Metal Glaze 820 ohm 1/10 W ±5%		RCM821J55
R70	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R71	Metal Glaze 330 ohm 1/10 W ±5%		RCM331J55
R72	Metal Glaze 56 ohm 1/10 W ±5%		RCM560J55
R73	Metal Glaze 680 ohm 1/10 W ±5%		RCM681J55
R74	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R75	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R76	Metal Glaze 47 ohm 1/10 W ±5%		RCM470J55
R77	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R78	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R79	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R80	Metal Glaze 330 ohm 1/10 W ±5%		RCM331J55
R81	Metal Glaze 56 ohm 1/10 W ±5%		RCM560J55
R82	Not used		
R83	Not used		
R84	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R85	Metal Glaze 220 kohm 1/10 W ±5%		RCM224J55
R86	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R87	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R88	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R89	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R90	Metal Glaze 120 kohm 1/10 W ±5%		RCM124J55
R91	Metal Glaze 15 kohm 1/10W ±5%		RCM153J55
R92	Metal Glaze 180 kohm 1/10 W ±5%		RCM184J55
R93	Metal Glaze 27 kohm 1/10 W ±5%		RCM273J55
R94	Metal Glaze 56 kohm 1/10 W ±5%		RCM563J55
R95	Metal Glaze 5.6 kohm 1/10 W ±5%		RCM562J55
R96	Metal Glaze 220 kohm 1/10 W ±5%		RCM224J55
R97	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R98	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R99	Metal Glaze 220 kohm 1/10 W ±5%		RCM224J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R100	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R101	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R102	Metal Glaze 6.8 kohm 1/10 W ±5%		RCM682J55
R103	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R104	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R105	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R106	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R107	Metal Glaze 150 ohm 1/10 W ±5%		RCM151J55
R108	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R109	Metal Glaze 10 ohm 1/10 W ±5%		RCM100J55
R110	Metal Glaze 39 kohm 1/10 W ±5%		RCM393J55
R111	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R112	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R113	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R114	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R115	Metal Glaze 22 kohm 1/10 W ±5%		RCM223J55
R116	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R117	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R118	Metal Glaze 270 kohm 1/10 W ±5%		RCM274J55
R119	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R120	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R121	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R122	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R123	Metal Glaze 180 kohm 1/10 W ±5%		RCM184J55
R124	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R125	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R126	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R127	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R128	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R129	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R130	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R131	Metal Glaze 390 kohm 1/10 W ±5%		RCM394J55
R132	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R133	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R134	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R135	Metal Glaze 390 kohm 1/10 W ±5%		RCM394J55
R136	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R137	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R138	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R139	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R140	Metal Glaze 390 kohm 1/10 W ±5%		RCM394J55
R141	Metal Glaze 5.6 kohm 1/10 W ±5%		RCM562J55
R142	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R143	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R144	Metal Glaze 47 ohm 1/10 W ±5%		RCM470J55
R145	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R146	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R147	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R148	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R149	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R150	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R151	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R152	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R153	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R154	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R155	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R156	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R157	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R158	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R159	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R160	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R161	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R162	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R163	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R164	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R165	Metal Glaze 1.5 kohm 1/10 W ±5%		RCM152J55
R166	Metal Glaze 2.7 kohm 1/10 W ±5%		RCM272J55
R167	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R168	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R169	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R170	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R171	Metal Glaze 2.7 kohm 1/10 W ±5%		RCM272J55
R172	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R173	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R174	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R175	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R176	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R177	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R178	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R179	Metal Glaze 5.6 kohm 1/10 W ±5%		RCM562J55
R180	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R181	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R182	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R183	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R184	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R185	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R186	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R187	Metal Glaze 1.2 kohm 1/10 W ±5%		RCM122J55
R188	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R189	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R190	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R191	Metal Glaze 220 kohm 1/10 W ±5%		RCM224J55
R192	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R193	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R194	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R195	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R196	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R197	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R198	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R199	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R200	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R201	Metal Glaze 22 kohm 1/10 W ±5%		RCM223J55
R202	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R203	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R204	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R205	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R206	Metal Glaze 22 kohm 1/10 W ±5%		RCM223J55
R207	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R208	Metal Glaze 82 kohm 1/10 W ±5%		RCM823J55
R209	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R210	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R211	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R212	Metal Glaze 2.7 kohm 1/10 W ±5%		RCM272J55
R213	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R214	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R215	Metal Glaze 47 ohm 1/10 W ±5%		RCM470J55
R216	Metal Glaze 150 ohm 1/10 W ±5%		RCM151J55
R217	Carbon Film 1 kohm 1/6 W ±5%		ERD16EJ102
R218	Carbon Film 1 kohm 1/6 W ±5%		ERD16EJ102
R219	Metal Glaze 10 ohm 1/10 W ±5%		RCM100J55
R220	Metal Glaze 22 kohm 1/10 W ±5%		RCM223J55
R221	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R222	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R223	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R224	Metal Film 3.3 ohm 1/2 W ±5%		RNF1/2S3.3ohmJ
R225	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R226	Metal Glaze 2.2 ohm 1/10 W ±5%		RCM2R2J55
R227	Metal Glaze 47 ohm 1/10 W ±5%		RCM470J55
R228	Metal Glaze 270 ohm 1/10 W ±5%		RCM271J55
R229	Metal Film 2.2 ohm 1 W ±5%		ERQ-1AJ-2R2
R230	Metal Glaze 56 kohm 1/10 W ±5%		RCM563J55
R231	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R232	Metal Glaze 2.2 Mohm 1/10 W ±5%		RCM225J55
R233	Metal Glaze 180 kohm 1/10 W ±5%		RCM184J55
R234	Metal Glaze 470 kohm 1/10 W ±5%		RCM474J55
R235	Metal Glaze 2.2 Mohm 1/10 W ±5%		RCM225J55
R236	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R237	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R238	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R239	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R240	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R241	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R242	Metal Glaze 220 kohm 1/10 W ±5%		RCM224J55
R243	Carbon Film 330 ohm 1/6 W ±5%		ERD16EJ331
R244	Carbon Film 220 ohm 1/6 W ±5%		ERD16EJ221
R245	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R246	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R247	Metal Glaze 10 ohm 1/10 W ±5%		RCM100J55
R248	Metal Glaze 5.6 kohm 1/10 W ±5%		RCM562J55
R249	Metal Film 1 ohm 1/2 W ±5%		RNF1/2S1ohmJ

Ref. No.	Description	RS Part No.	MFR's Part No.
R250	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R251	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R252	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R253	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R254	Metal Glaze 22 kohm 1/10 W ±5%		RCM223J55
R255	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R256	Metal Glaze 10 ohm 1/10 W ±5%		RCM100J55
Transformers			
T1	Coil, IF (2nd)		7SSI-298
T2	Coil, IF (2nd)		7SSI-298
T3	Coil, IF (3rd)		GR-A470033
T4	Coil, Quadrature/Det. (WFM Band) 10.7MHz		GR-A793
T5	Coil, IF (3rd) (AM Band)		5SSI-292
T6	Coil, IF (3rd) (AM Band)		5SSI-293
T7	Coil, IF (2nd)		7SSI-298
T8	Coil, Quadrature/Det. (NFM Band)		GR-P792
T9	Coil, DC-DC Converter		10SSO-297
Thermistor			
TH1	Thermistor 1.7 kohm		TD5-C217D2
Crystals			
X1	37.8 MHz TC-43 Type		37.8 MHz
X2	48.045 MHz TC-43 Type		48.045 MHz
Crystal Filter			
XF1	Filter Crystal 48.5 MHz		MR48R48.5 MHz
Miscellaneous			
CN1	Connector 8 Pin Male		PI22A08M
CN2	Connector 4 Pin Female		5224-04CHPB
CN3	Connector 15 Pin Male		PI22A15M
CN4	Connector 3 Pin Male		PI22A03M
CN5	Connector 3 Pin Male		PI22A03M
CN6	Connector 3 Pin Male		PI22A03M
CN7	Connector 2 Pin Male		PI22A02M
CN8	Connector 2 Pin Male		PI22A02M

Ref. No.	Description	RS Part No.	MFR's Part No.
J1 (46)	Jack Ant		GE-85D-5383
J2	Jack (PLL)		TMP-J01X-V6
J3	Jack (PLL)		TMP-J01X-V6
J4	Jack (Tape Out)		S-Q3097 #01
J5	Jack (Ext. Speaker)		S-G8036
J6	Jack (Power Jack)		MOJ-D14
SW1	Switch, Slide (ATT SW)		SSFZUB22-07
TP1	Pin Test		ERD-25TC0
TP2	Pin Test		ERD-25TC0
(47)	Bracket, Antenna Connector		GE-86D-6362
(48)	Shield, BPF (Case)		GE-79D-0178B
(49)	Shield, BPF (Top)		GE-88D-7570
(50)	Shield, BPF (Bottom)		GE-88D-7730
(51)	Shield, Case (C)		GE-86D-6376
(52)	Shield, Case (B)		GE-86D-6372
(53)	Shield, Top (B)		GE-88D-7571
(54)	Fiber, BPF Shield		GE-88D-7728
	Pipe, Tight		1 x 3 x 15 mm

PLL PCB Assembly

Ref. No.	Description	RS Part No.	MFR's Part No.
⑧	Assembly, PCB PLL Consists of the following:		GA-89D-8301
Capacitors			
C301	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C302	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C303	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C304	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C305	Not used		
C306	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C307	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C308	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C309	Ceramic 0.01 μF 50 V ±10%		RMUMK212B103K
C310	Ceramic 3 pF 50 V ±0.25 pF		RMUMK212SL030C
C311	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C312	Ceramic 3 pF 50 V ±0.25 pF		RMUMK212SL030C
C313	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C314	Ceramic 10 pF 50 V ±0.5 pF		RMUMK212SL100D
C315	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C316	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C317	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C318	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C319	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C320	Ceramic 10 pF 50 V ±0.5 pF		RMUMK212SL100D
C321	Ceramic 0.01 μF 50 V ±10%		RMUMK212B103K
C322	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C323	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C324	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C325	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C326	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C327	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C328	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C329	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C330	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C331	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C332	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C333	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C334	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C335	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C336	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C337	Ceramic 22 pF 50 V ±5%		RMUMK212SL220J
C338	Ceramic 22 pF 50 V ±5%		RMUMK212SL220J
C339	Ceramic 10 pF 50 V ±0.5 pF		RMUMK212SL100D
C340	Ceramic 2 pF 50 V ±0.25 pF		RMUMK212SL020C
C341	Ceramic 5 pF 50 V ±0.25 pF		RMUMK212SL050C
C342	Ceramic 1 pF 50 V ±0.25 pF		RMUMK212SL010C
C343	Ceramic 22 pF 50 V ±5%		RMUMK212SL220J
C344	Ceramic 10 pF 50 V ±0.5 pF		RMUMK212SL100D
C345	Ceramic 0.001 μF 50 V ±10%		RMUMK212B102K
C346	Ceramic 10 pF 50 V ±0.5 pF		RMUMK212SL100D
C347	Electrolytic 220 μF 16 V ±20%		ECEA1CU221

Ref. No.	Description				RS Part No.	MFR's Part No.
C348	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C349	Ceramic	100 pF	50 V	$\pm 5\%$		RMUMK212SL101J
C350	Ceramic	2 pF	50 V	± 0.25 pF		RMUMK212SL020C
C351	Ceramic	5 pF	50 V	± 0.25 pF		RMUMK212SL050C
C352	Ceramic	10 pF	50 V	± 0.5 pF		RMUMK212SL100D
C353	Ceramic	6 pF	50 V	± 0.5 pF		RMUMK212SL060D
C354	Ceramic	12 pF	50 V	$\pm 5\%$		RMUMK212SL120J
C355	Tantalum	0.47 μ F	35 V	$\pm 10\%$		TSD-A-1VR47K
C356	Mylar	0.047 μ F	50 V	$\pm 10\%$		AMZ-473K50
C357	Not used					
C358	Ceramic	8 pF	50 V	± 0.5 pF		RMUMK212SL080D
C359	Ceramic	12 pF	50 V	$\pm 5\%$		RMUMK212SL120J
C360	Ceramic	8 pF	50 V	± 0.5 pF		RMUMK212SL080D
C361	Ceramic	4 pF	50 V	± 0.25 pF		RMUMK212SL040C
C362	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C363	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C364	Ceramic	47 pF	50 V	$\pm 5\%$		RMUMK212SL470J
C365	Ceramic	47 pF	50 V	$\pm 5\%$		RMUMK212SL470J
C366	Ceramic	47 pF	50 V	$\pm 5\%$		RMUMK212SL470J
C367	Ceramic	47 pF	50 V	$\pm 5\%$		RMUMK212SL470J
C368	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C369	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C370	Ceramic	0.1 μ F	25 V	+80%–20%		RMTMK212F104Z
C371	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C372	Ceramic	10 pF	50 V	± 0.5 pF		RMUMK212SL100D
C373	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C374	Ceramic	5 pF	50 V	± 0.25 pF		RMUMK212SL050C
C375	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C376	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C377	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C378	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C379	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C380	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C381	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C382	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C383	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C384	Mylar	0.01 μ F	50 V	$\pm 10\%$		AMZ-103K50
C385	Electrolytic	10 μ F	16 V	$\pm 20\%$		ECEA1CU100
C386	Ceramic	0.001 μ F	50 V	$\pm 10\%$		RMUMK212B102K
C387	Mylar	0.047 μ F	50 V	$\pm 10\%$		AMZ-473K50
C388	Tantalum	0.1 μ F	35 V	$\pm 10\%$		TSD-A-1V0R1K
C389	Ceramic	5 pF	50 V	± 0.25 pF		RMUMK212SL050C
C390	Ceramic	0.01 μ F	50 V	$\pm 10\%$		RMUMK212B103K
C391	Electrolytic	220 μ F	16 V	$\pm 20\%$		ECEA1CU221
C392	Electrolytic	0.47 μ F	50 V	$\pm 20\%$		ECEA1HUR47
C393	Electrolytic	0.47 μ F	50 V	$\pm 20\%$		ECEA1HUR47
C394	Electrolytic	3.3 μ F	50 V	$\pm 20\%$		ECEA1HU3R3
C395	Ceramic	150 pF	50 V	$\pm 5\%$		RMUMK212SL151J
C396	Tantalum	0.47 μ F	35 V	$\pm 10\%$		TSD-A-1VR47K

Ref. No.	Description			RS Part No.	MFR's Part No.
Diodes					
D301		HSR277	(Silicon)		HSR277
D302		HSR277	(Silicon)		HSR277
D303		HSR277	(Silicon)		HSR277
D304		HSR277	(Silicon)		HSR277
D305	Varactor	1T25 or 1T32	(Silicon)		1T25 or 1T32
D306	Varactor	1T25 or 1T32	(Silicon)		1T25 or 1T32
D307	Varactor	1T25 or 1T32	(Silicon)		1T25 or 1T32
D308	Varactor	1T25 or 1T32	(Silicon)		1T25 or 1T32
D309	Varactor	1SV89	(Silicon)		1SV89
D310		HSR277	(Silicon)		HSR277
D311		HSR277	(Silicon)		HSR277
ICs					
IC301	TD6105AP	Pre-Scaler	(Bipolar)		TD6105AP
IC302	MC145158	PLL	(C-MOS)		MC145158
IC303	CX-7925B	PLL/Pre-Scaler	(N-MOS)		CX-7925B
IC304	MB501LP	Pre-Scaler	(C-MOS)		MB501LP
Coils					
L301	Low-Pass Filter				2.5LNB-257
L302	Low-Pass Filter				2.5LNB-257
L303	Stripline on PCB				
L304	Stripline on PCB				
L305	Stripline on PCB				
L306	Stripline on PCB				
L307	Coil, Choke	10 μ H			LAL03NA100K
L308	Coil, Choke	0.47 μ H			LAL03NAR47M
L309	Coil, VCO				2LNO-254
L310	Coil, Choke	0.47 μ H			LAL03NAR47M
L311	Coil, VCO				2LNO-255
L312	Coil, VOC				2LNB-253
L313	Stripline on PCB				
L314	Stripline on PCB				
L315	Stripline on PCB				
L316	Coil, Choke	10 μ H			LAL03NA100K
L317	Coil, Choke	10 μ H			LAL03NA100K
L318	Coil, Choke	10 μ H			LAL03NA100K
L319	Coil, Choke	10 μ H			LAL03NA100K
L320	Coil, Choke	10 μ H			LAL04NA100K
L321	Coil, Choke	10 μ H			LAL04NA100K
L322	Coil, Choke	10 μ H			LAL03NA100K

Ref. No.	Description			RS Part No.	MFR's Part No.
Transistors					
Q301	RN2405	(Marked YE)	PNP		RN2405
Q302	2SC3356	(Marked R22)	NPN		2SC3356
Q303	2SC3356	(Marked R22)	NPN		2SC3356
Q304	2SC3356	(Marked R22)	NPN		2SC3356
Q305	RN2405	(Marked YE)	PNP		RN2405
Q306	2SC3356	(Marked R22)	NPN		2SC3356
Q307	2SC3356	(Marked R22)	NPN		2SC3356
Q308	2SC3356	(Marked R22)	NPN		2SC3356
Q309	RN2405	(Marked YE)	PNP		RN2405
Q310	2SC3356	(Marked R22)	NPN		2SC3356
Q311	2SC3356	(Marked R22)	NPN		2SC3356
Q312	2SC3356	(Marked R22)	NPN		2SC3356
Q313	RN2405	(Marked YE)	PNP		RN2405
Q314	2SC3356	(Marked R22)	NPN		2SC3356
Q315	2SC3356	(Marked R22)	NPN		2SC3356
Q316	2SC3356	(Marked R22)	NPN		2SC3356
Q317	FET 2SK209(GR) (Marked XG)		N-Junction		2SK209(GR)
Q318	2SC2712(GR) (Marked LG)		NPN		2SC2712(GR)
Resistors					
R301	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R302	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R303	Metal Glaze	33 kohm	1/10 W	±5%	RCM333J55
R304	Metal Glaze	220 ohm	1/10 W	±5%	RCM221J55
R305	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R306	Metal Glaze	47 kohm	1/10 W	±5%	RCM473J55
R307	Metal Glaze	1 kohm	1/10 W	±5%	RCM102J55
R308	Metal Glaze	2.2 kohm	1/10 W	±5%	RCM222J55
R309	Metal Glaze	2.2 kohm	1/10 W	±5%	RCM222J55
R310	Metal Glaze	1 kohm	1/10 W	±5%	RCM102J55
R311	Metal Glaze	220 ohm	1/10 W	±5%	RCM221J55
R312	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R313	Metal Glaze	100 kohm	1/10 W	±5%	RCM104J55
R314	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R315	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R316	Metal Glaze	47 kohm	1/10 W	±5%	RCM473J55
R317	Metal Glaze	1 kohm	1/10 W	±5%	RCM102J55
R318	Metal Glaze	220 ohm	1/10 W	±5%	RCM221J55
R319	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R320	Metal Glaze	100 kohm	1/10 W	±5%	RCM104J55
R321	Metal Glaze	220 ohm	1/10 W	±5%	RCM221J55
R322	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R323	Metal Glaze	100 kohm	1/10 W	±5%	RCM104J55
R324	Metal Glaze	100 ohm	1/10 W	±5%	RCM101J55
R325	Metal Glaze	100 kohm	1/10 W	±5%	RCM104J55
R326	Metal Glaze	220 ohm	1/10 W	±5%	RCM221J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R327	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R328	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R329	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R330	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R331	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R332	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R333	Metal Glaze 2.7 kohm 1/10 W ±5%		RCM272J55
R334	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R335	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R336	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R337	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R338	Metal Glaze 220 ohm 1/10 W ±5%		RCM221J55
R339	Metal Glaze 2.7 kohm 1/10 W ±5%		RCM272J55
R340	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R341	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R342	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R343	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R344	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R345	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R346	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R347	Metal Glaze 150 kohm 1/10 W ±5%		RCM154J55
R348	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R349	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R350	Metal Glaze 15 kohm 1/10 W ±5%		RCM153J55
R351	Metal Glaze 470 ohm 1/10 W ±5%		RCM471J55
R352	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R353	Metal Glaze 3.3 kohm 1/10 W ±5%		RCM332J55
R354	Metal Glaze 4.7 kohm 1/10 W ±5%		RCM472J55
R355	Not used		
R356	Not used		
R357	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R358	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R359	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R360	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R361	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R362	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R363	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R364	Metal Glaze 8.2 kohm 1/10 W ±5%		RCM822J55
R365	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R366	Metal Glaze 18 kohm 1/10 W ±5%		RCM183J55
R367	Metal Glaze 2.2 kohm 1/10 W ±5%		RCM222J55
R368	Metal Glaze 820 ohm 1/10 W ±5%		RCM821J55
R369	Metal Glaze 39 kohm 1/10 W ±5%		RCM393J55
R370	Metal Glaze 100 ohm 1/10 W ±5%		RCM101J55
R371	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R372	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R373	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R374	Metal Glaze 33 kohm 1/10 W ±5%		RCM333J55
R375	Metal Glaze 1 kohm 1/10 W ±5%		RCM102J55
R376	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55

Ref. No.	Description	RS Part No.	MFR's Part No.
Crystal			
X301	Crystal 10 MH		TX1824G-3
Miscellaneous			
CN301	Connector 10 Pin Male		PI22A10M
CN302	Connector 4 Pin Male		3022-04A
SW301	Switch		SKHHLP
TP301	Pin, Test		GE-87D-7290
TP302	Pin, Test		GE-87D-7290
55	Shield, Case (C)		GE-86D-6376
56	Shield, Case (B)		GE-86D-6372
57	Shield, Cover Top		GE-88D-7571
58	Shield, Cover Bottom		GE-86D-6510
59	Shield, Plate Bottom		GE-88D-7890
61	Fiber, Cover Shield (Bottom)		GE-86D-6514

Logic & Display PCB Assembly

Ref. No.	Description	RS Part No.	MFR's Part No.
⑨	PCB Assembly, Logic & Display Board Consists of the following:		GA-88D-7817
Capacitors			
C501	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C502	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C503	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C504	Electrolytic 100 μ F 10 V \pm 20%		ECEA1AU101
C505	Mylar 0.047 μ F 50 V \pm 10%		AMZ-473K50
C506	Tantalum 6.8 μ F 10 V \pm 10%		TSD-S-1A6R8K
C507	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C508	Electrolytic 4.7 μ F 50 V \pm 20%		ECEA1HU4R7
C509	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C510	Ceramic 0.001 μ F 50 V \pm 10%		RMUMK212B102K
C511	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C512	Electrolytic 10 μ F 16 V \pm 20%		ECEA1CU100
C513	Ceramic 0.01 μ F 50 V \pm 10%		RMUMK212B103K
C514	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C515	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C516	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C517	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C518	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C519	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C520	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C521	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C522	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C523	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C524	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
C525	Ceramic 100 pF 50 V \pm 5%		RMUMK212SL101J
Ceramic Resonator			
CX501	CST12.0MT		CST12.0MT
Diodes			
D501	Chip HSR277 (Silicon)		HSR277
D502	1S2076A (Silicon)		1S2076A
D503	1S2076A (Silicon)		1S2076A
Diode Arrays			
DA501	Chip IMN10 (Silicon)		IMN10
DA502	Chip IMN10 (Silicon)		IMN10
DA503	Chip IMN10 (Silicon)		IMN10

Ref. No.	Description	RS Part No.	MFR's Part No.
EL			
EL501	Electoro Luminescent		GE-88D-7738
ICs			
IC501	GRE-0918 CPU (C-MOS)		GRE-0918
IC502	SN74LS145NS Decoder (Bipolar)		SN74LS145NS
IC503	TD62504F Driver (Bipolar)		TD62504F
IC504	μ PD-7225G LCD Cont. (C-MOS)		μ PD-7225G
IC505	LC3517BM-10,12,15 Memory (C-MOS) or LC3517BML-10,12, 15 or UM6116M-2D or CXK5816M-10L,12L, 15L		LC3517BM-10,12,15 or LC3517BML-10,12, 15 or UM6116M-2D or CXK5816M-10L,12L, 15L
Inductors			
L501	Coil, Choke 100 μ H		LAL03NA101K
L502	Coil, Choke 100 μ H		LAL03NA101K
L503	Coil, Choke 100 μ H		LAL03NA101K
LCD			
LCD501	LCD		LTP8E3011A
LED			
LED501	TLR226		TLR226
Transistor			
Q501	RN2401 (Marked YA) PNP		RN2401
Q502	RN2401 (Marked YA) PNP		RN2401
Q503	RN2401 (Marked YA) PNP		RN2401
Q504	RN2401 (Marked YA) PNP		RN2401
Q505	RN2401 (Marked YA) PNP		RN2401
Q506	RN2401 (Marked YA) PNP		RN2401
Q507	RN2401 (Marked YA) PNP		RN2401
Q508	2SC1623 (Marked L5) NPN		2SC1623
Resistor			
R501	Metal Glaze 100 ohm 1/10 W \pm 5%		RCM101J55
R502	Metal Glaze 3.3 kohm 1/10 W \pm 5%		RCM332J55
R503	Metal Glaze 5.6 kohm 1/10 W \pm 5%		RCM562J55
R504	Metal Glaze 150 ohm 1/10 W \pm 5%		RCM151J55
R505	Metal Glaze 47 ohm 1/10 W \pm 5%		RCM470J55
R506	Metal Glaze 100 kohm 1/10 W \pm 5%		RCM104J55
R507	Metal Glaze 10 kohm 1/10 W \pm 5%		RCM103J55

Ref. No.	Description	RS Part No.	MFR's Part No.
R508	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R509	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R510	Metal Glaze 180 kohm 1/10 W ±5%		RCM184J55
R511	Metal Glaze 22 ohm 1/10 W ±5%		RCM220J55
R512	Metal Glaze 6.8 kohm 1/10 W ±5%		RCM682J55
R513	Metal Glaze 150 ohm 1/10 W ±5%		RCM151J55
R514	Metal Glaze 560 kohm 1/10 W ±5%		RCM564J55
R515	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R516	Metal Glaze 1 Mohm 1/10 W ±5%		RCM105J55
R517	Metal Glaze 100 kohm 1/10 W ±5%		RCM104J55
R518	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R519	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R520	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R521	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R522	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R523	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R524	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R525	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R526	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R527	Metal Glaze 10 kohm 1/10 W ±5%		RCM103J55
R528	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R529	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R530	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R531	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
R532	Metal Glaze 47 kohm 1/10 W ±5%		RCM473J55
Transformer			
T501	Transformer		5N75TK
Miscellaneous			
CN501	Connector, Socket	13 Pin Female	5124-13BHPB
SW501	Switch, Push		SPF-P220NLB
SW502	Switch Push		SPF-P220NLB
⑥2	Holder, LCD		GE-88D-7609
⑥3	Cushion, LCD		GE-88D-7835
⑥4	Shield, Logic		GE-88D-7569

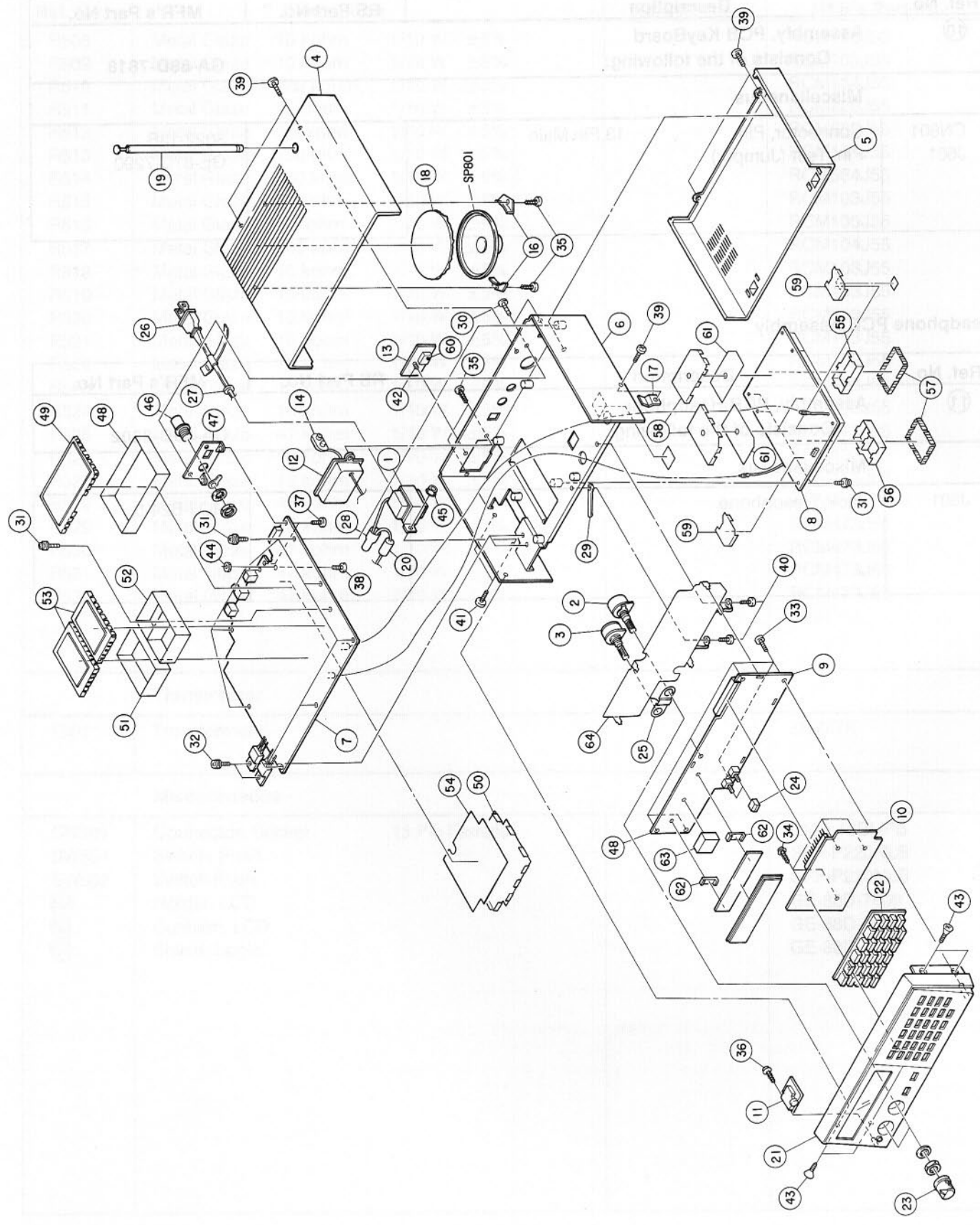
Key Board PCB Assembly

Ref. No.	Description	RS Part No.	MFR's Part No.
⑩	Assembly, PCB KeyBoard Consists of the following:		GA-88D-7818
Miscellaneous			
CN601 J601	Connector, Pin Pin, Test (Jumper)	13 Pin Male	3022-13B GE-87D-7290

Headphone PCB Assembly

Ref. No.	Description	RS Part No.	MFR's Part No.
⑪	Assembly, PCB Headphone Consists of the following:		GA-89D-8302
Miscellaneous			
J801	Jack, Headphone		MOJ-B24-5

DISASSEMBLY/EXPLODED VIEW



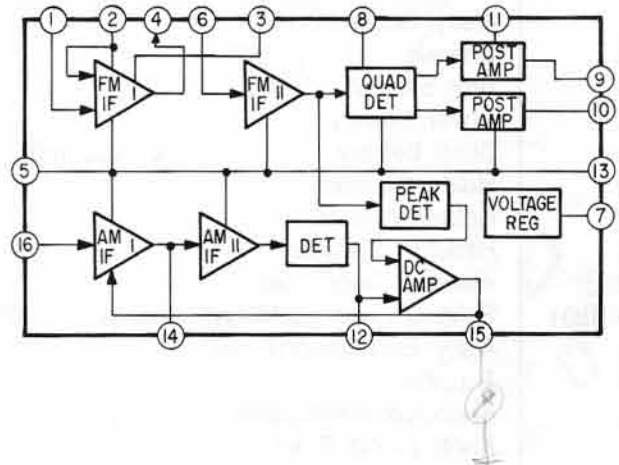
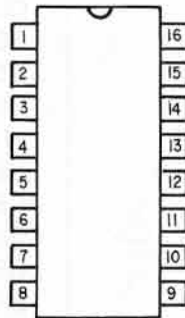
EXPLODED VIEW PARTS LIST (Disassembly/Exploded View)

Ref. No.	Description	RS Part No.	MFR's Part No.
SP801	Speaker 8 ohm 1 W		S08J18
⊠ ① T801	Transformer, Power		GE-84D-5158
② VR801	Pot. Squelch Control 10 kohm (C)		K1611008TE-10KC-20
③ VR802	Pot. Volume Control 50 kohm (A)		VM11A-5M1411 -50KA-20
④	Cabinet, Top		GE-88A-7603
⑤	A'ssy, Cabinet Bottom		GE-88D-7888
⑥	Chassis		GE-88A-7611
⑫	Box, Battery		GE-21D-5728
⑬	Cover, Battery		GE-79D-0113
⑭	Snap, Battery L = 250 mm		I Type
⑯	Holder, Speaker		GE-84D-4580
⑰	Holder, Wire		GE-88D-7892
⑱	Himelon, Speaker		GE-88D-7681
⑲	Antenna, Telescopic		GE-88D-7597
⊠ ⑳ R801	Solid 1.8 Mohm 1/2 W ±10%		ERC-12GK185
㉑	A'ssy, Escutcheon Front		GA-89D-8303
㉒	Top, Key		GE-88D-7610
㉓	Knob, Volume/Squelch		GE-88D-7607
㉔	Knob, Switch Push		GE-88D-7608
㉕	Plate, Ground		GE-88D-7613
㉖	Cord, AC		APC-7W-SPT1 AWG2/18
㉗	Strainrelief, Line Cord		SR-3P-4
㉘	Terminal		1-SD
㉙	Lug, L = 27 mm		3 mm
⑳	Screw, Panhead with SW (Ni)		PM 2.6 x 5
㉑	Screw, Panhead with SW/FW (Ni)		PM 3 x 6
㉒	Screw, Panhead with SW/FW (Ni)		PM 3 x 8
㉓	Screw, Panhead P tight		P tight 2.6 x 6
㉔	Screw, Panhead P tight		P tight 2 x 8
㉕	Screw, Panhead P tight		P tight 3 x 8
㉖	Screw, TP Tapping		TP 2 x 6
㉗	Screw, Panhead Tapping		PT 2.6 x 6
㉘	Screw, Panhead (Ni)		PM 3 x 8
㉙	Screw, Bindinghead (Ni)		BM 3 x 6
㉚	Screw, Bindinghead Tapping		BT 3 x 5
㉛	Screw, Special Bindinghead		BM 4 x 8
㉜	Screw, Bindinghead		GE-79D-0541
㉝	Screw, Countersunkhead		CM 3 x 6
㉞	Nut		3-DIA
㉟	Nut Flange Serrated		4-DIA
①	Cushion, Battery		GE-21D-5795
②	Wire Kit		#918(A)
③	Hardware Kit		#918(B)
④	Wire Binder		PLT1M-M or BK-1

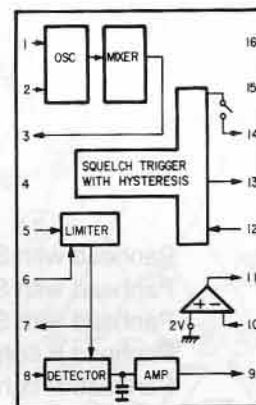
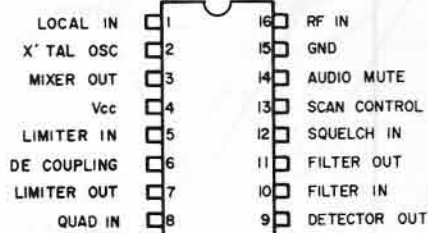
SEMICONDUCTOR LEAD IDENTIFICATION AND IC CIRCUIT DIAGRAM

Integrated Circuit Lead Identification, Liner PCB

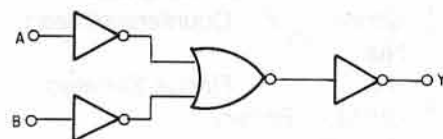
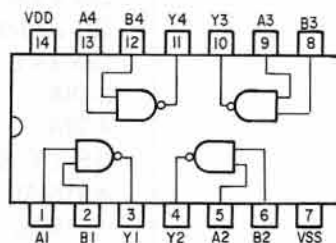
IC1 HA12413 or KA2243N



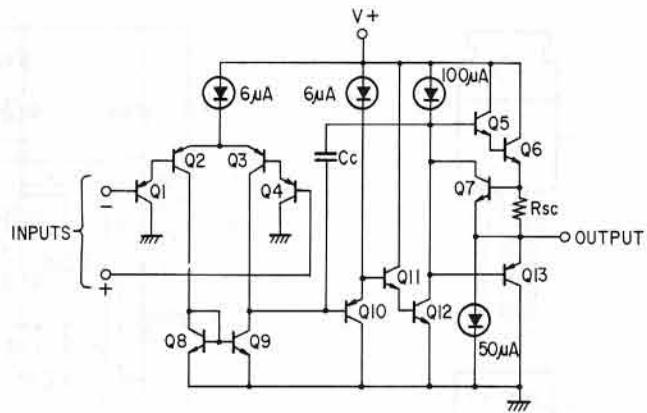
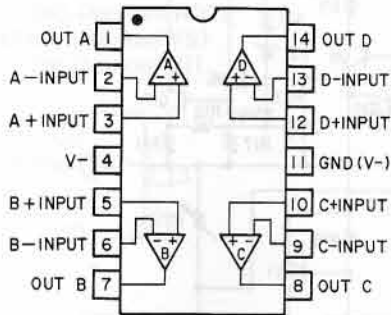
IC2 TK10420



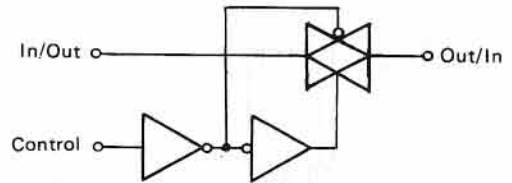
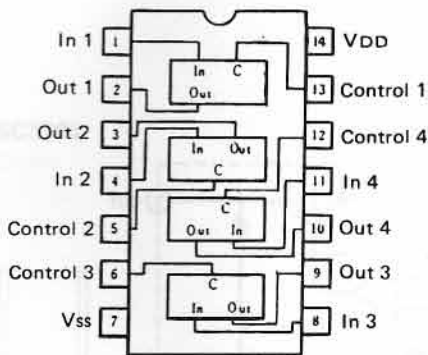
IC3 μ PD4011BC or HD14011BP



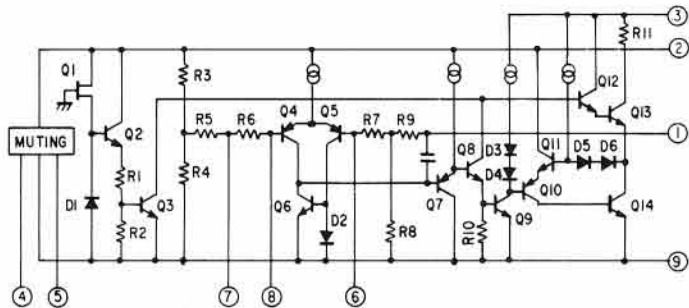
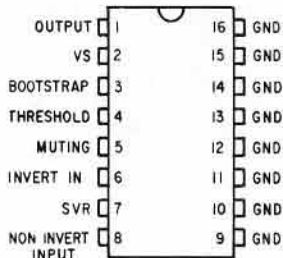
IC4, 5 μ PC324C



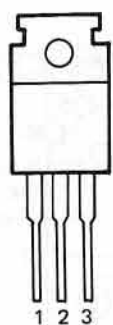
IC6 HD14066BP or μ PD4066BC



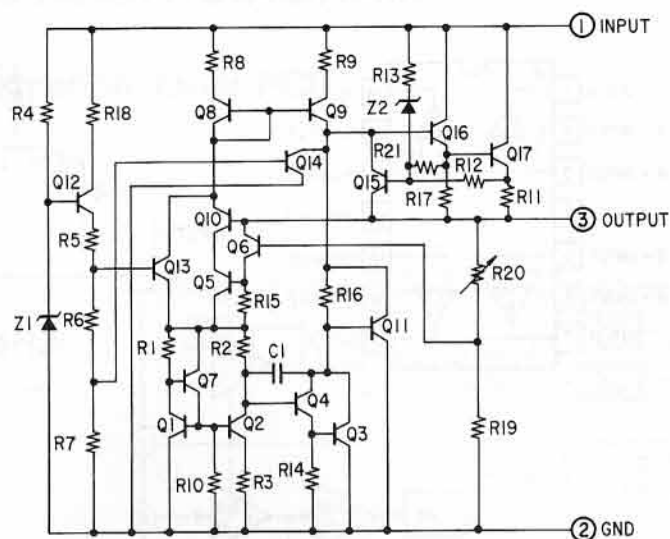
IC7 TDA1905



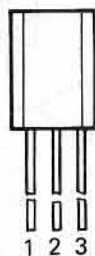
IC8 MC7805C or TA78005AP



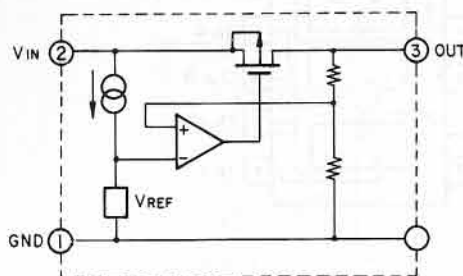
- 1. INPUT
- 2. GND
- 3. OUTPUT



IC9 S-81250HG

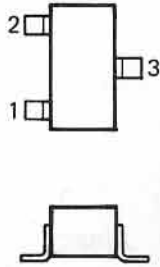


- 1. GND
- 2. INPUT
- 3. OUTPUT



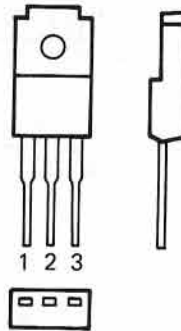
Transistor Lead Identification, Liner PCB

- (A) 2SC2712 (Y,GR)(Marked LY,LG)
 2SC2714 (Y)(Marked QY)
 2SA1162 (Y,GR)(Marked SY,SG)
 2SC3356 (Marked R22)
 RN2405 (Marked YE)
 RN1408 (Marked XI)



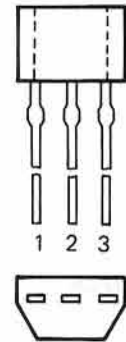
1. EMITTER
2. BASE
3. COLLECTOR

- (B) 2SD1406 (GR)



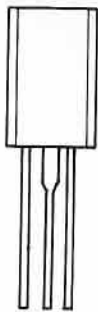
1. BASE
2. COLLECTOR
3. EMITTER

- (C) 2SC2458 (GR)



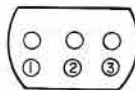
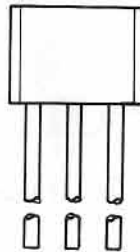
1. EMITTER
2. COLLECTOR
3. BASE

- (D) 2SC3243



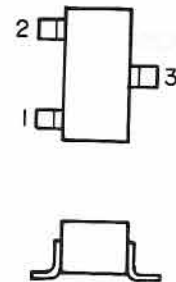
- ① EMITTER
- ② COLLECTOR
- ③ BASE

- (E) 2SC2603(F)



- ① EMITTER
- ② COLLECTOR
- ③ BASE

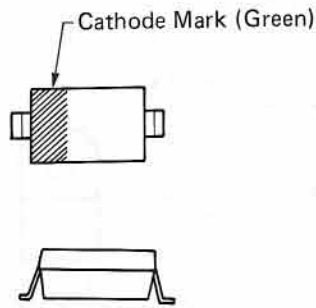
- (F) 2SK210 (GR)
 (Marked YG)



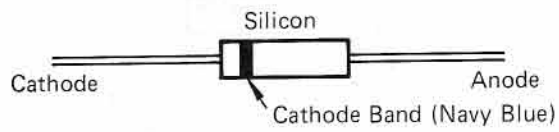
1. GATE
2. DRAIN
3. SOURCE

Diode Identification and Lead Polarity, Liner PCB

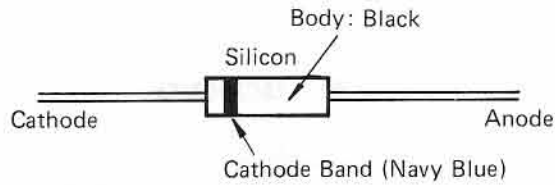
(A) HSR277



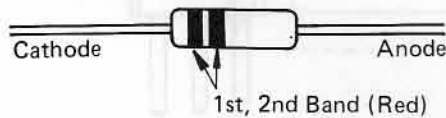
(B) 1S2076A



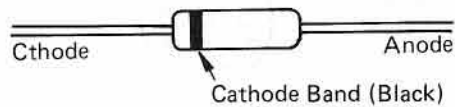
(C) 1S1585



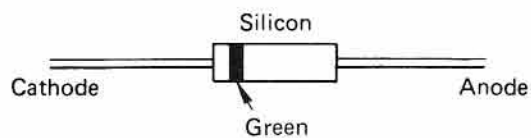
(D) 1K261



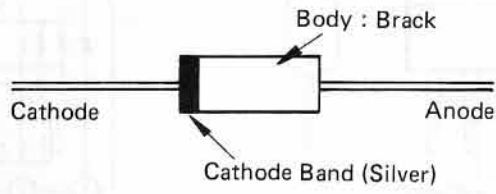
(E) 0A90R



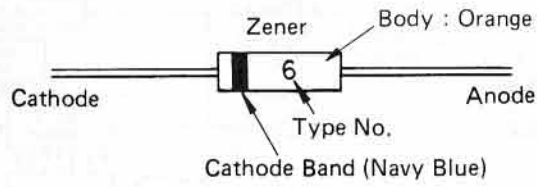
(F) 1SS81



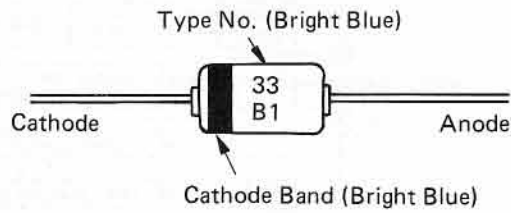
(G) 1N4002



(H) HZ6B2L, HZ9BLL
HZ11BLL

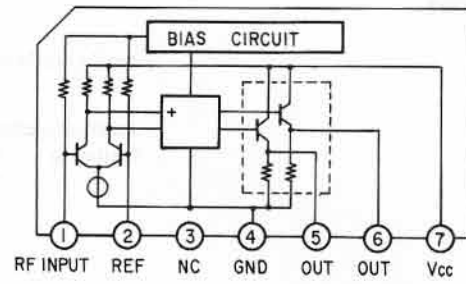
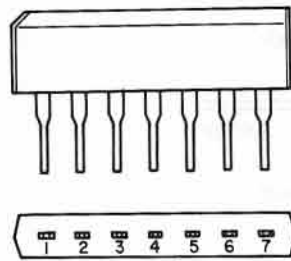


(I) HZ33E

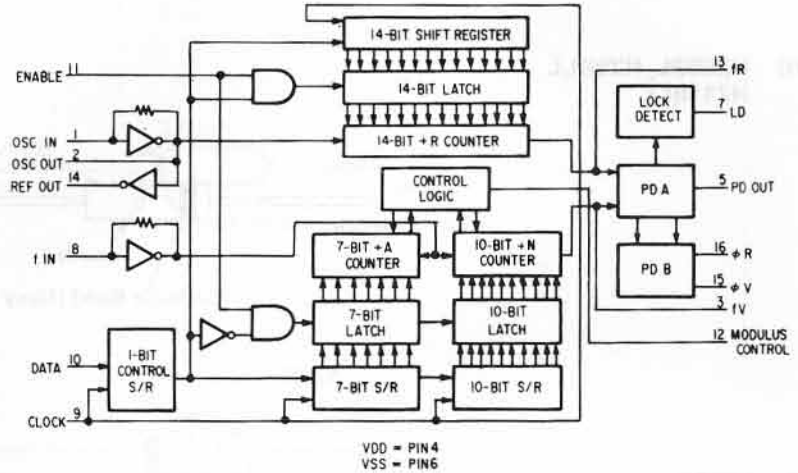
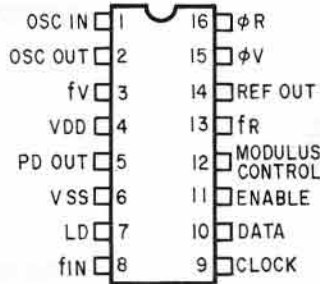


Integrated circuit Lead Identification, PLL PCB

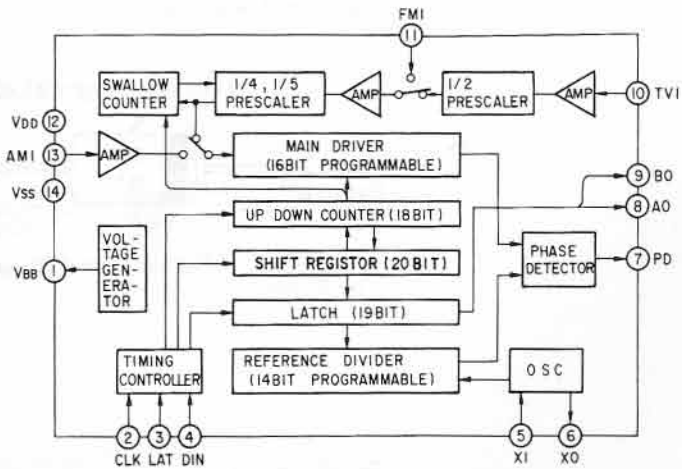
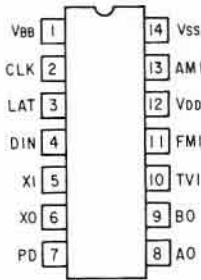
IC301 TD6105AP



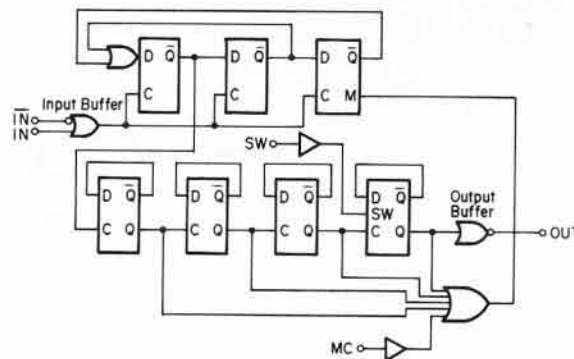
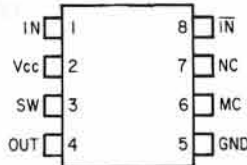
IC302 MC145158



IC303 CX7925B



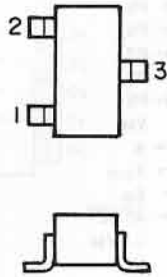
IC304 MB501L



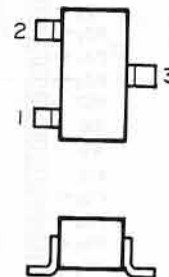
Transistor Lead Identification, Logic & Display

(A) 2SC3356 (Marked R22)
RN2405 (Marked YE)
2SC2712 (GR)(Marked LG)

(B) 2SK209 (Marked XG)



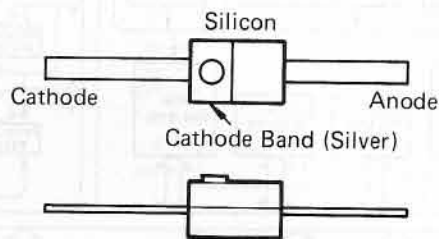
1. EMITTER
2. BASE
3. COLLECTOR



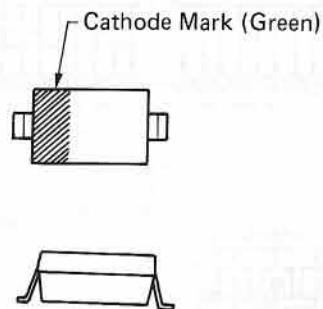
1. DRAIN
2. SOURCE
3. GATE

Diode Identification and Lead Polarity, Logic & Display

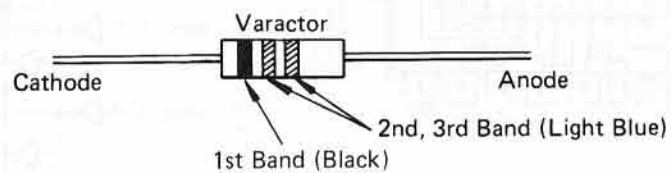
(A) 1T25



(B) HSR277

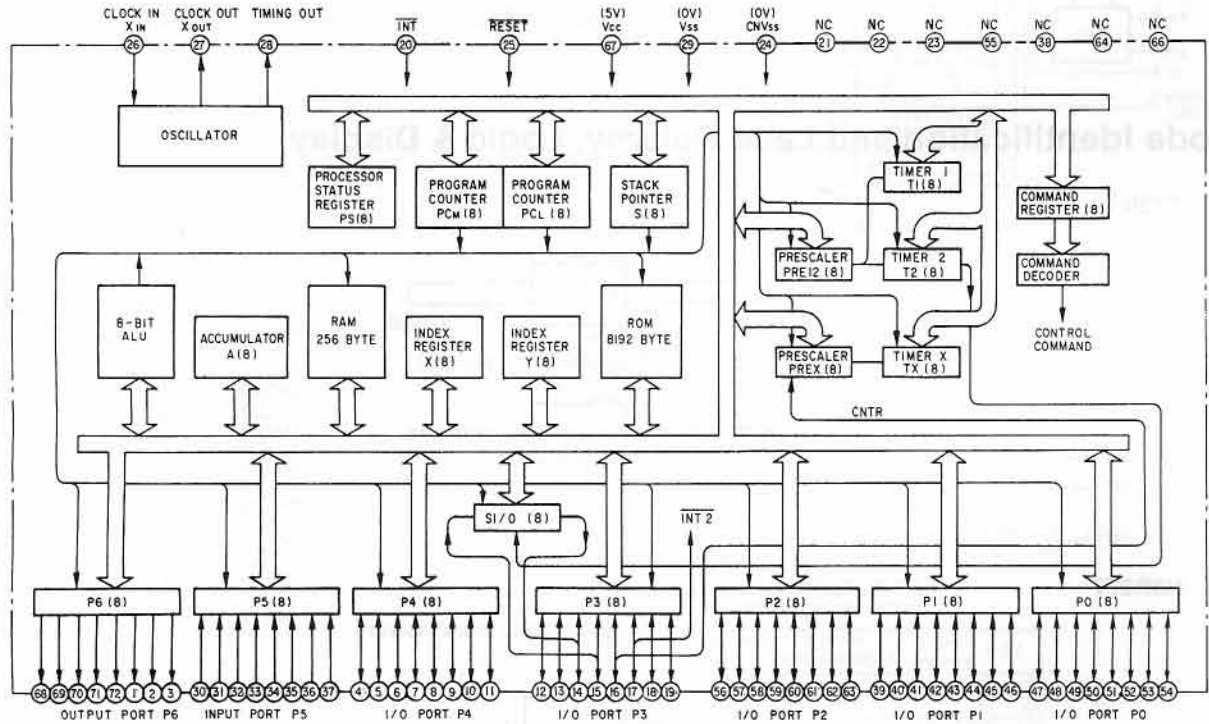
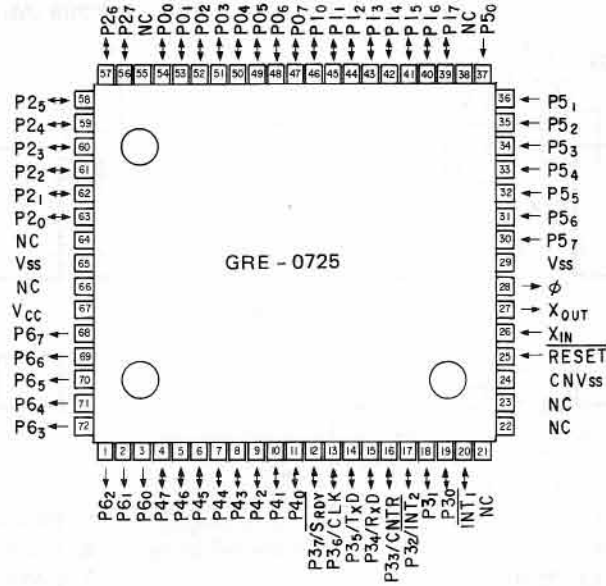


(C) 1SV89

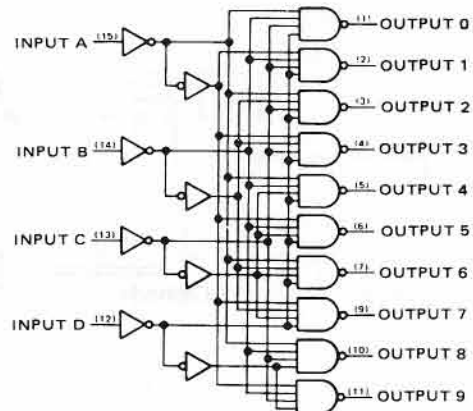
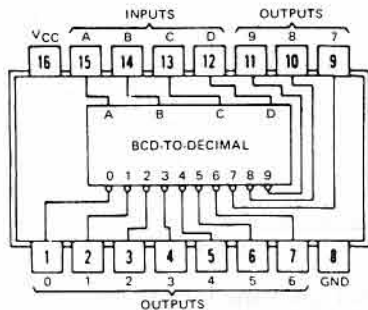


Integrated Circuit Lead Identification, Logic & Display

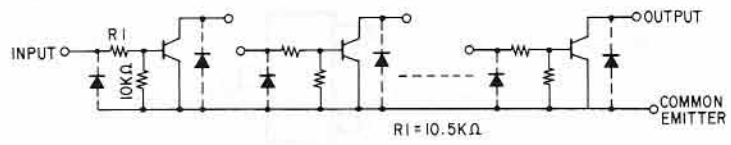
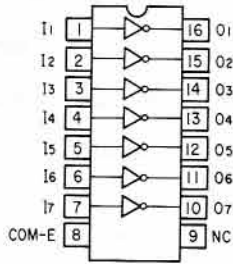
IC501 GRE-0918



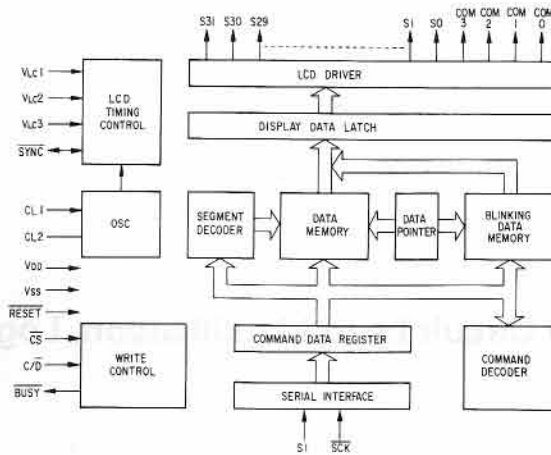
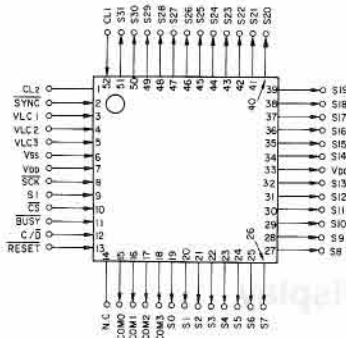
IC502 SN74LS145NS



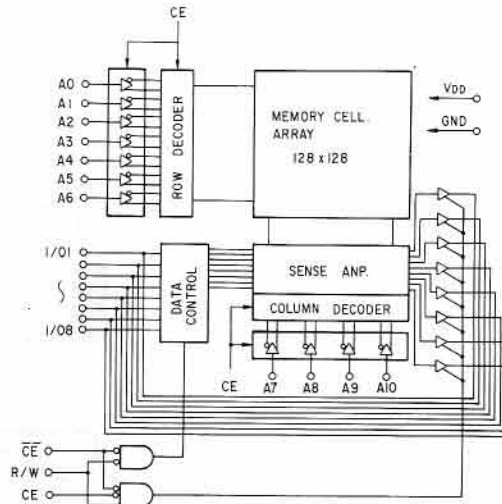
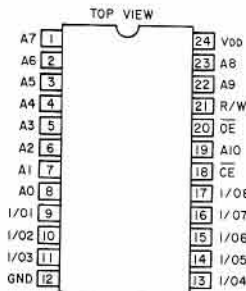
IC503 TD62504F



IC504 μ PD7225G

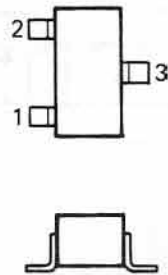


IC505 TC5517CF-20 or LC3517BM-15



Transistor Lead Identification, Logic & Display

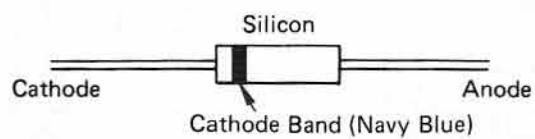
(A) RN2401
2SC1623



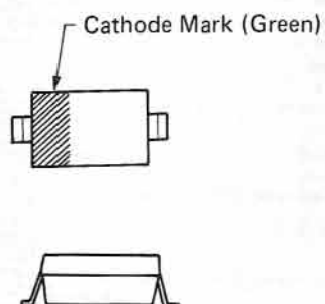
1. EMITTER
2. BASE
3. COLLECTOR

Integrated Circuit Lead Identification, Logic & Display

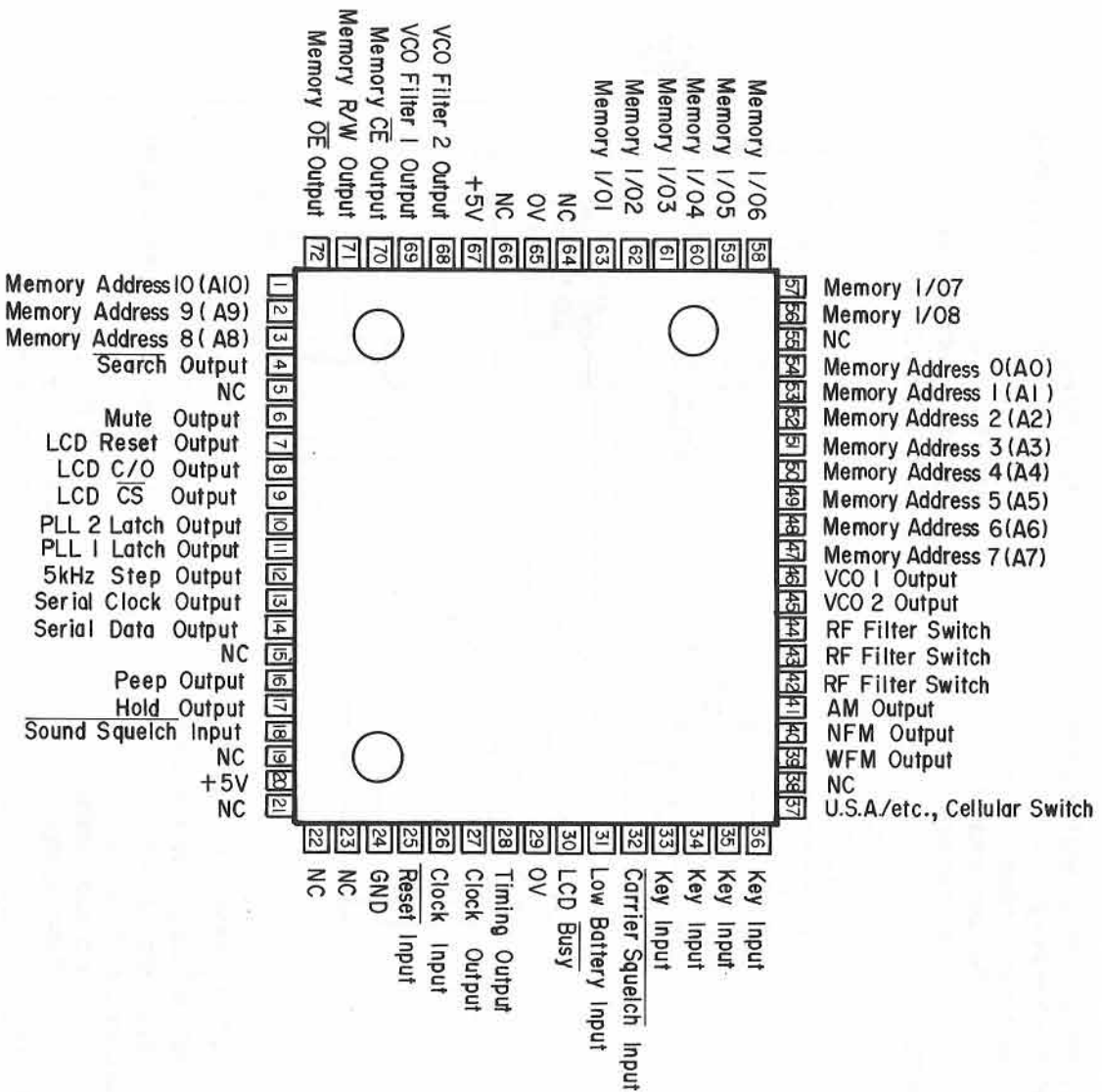
(A) 1S2076A



(B) HSR277



MICROPROCESSOR (IC-501) PIN ALLOCATION



MICROPROCESSOR (IC-501) PIN LOCATION

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	P62	Memory address 10 (A10)	37	P50	USA/etc., Cellular Switch
2	P61	Memory address 9 (A9)	38	NC	NC
3	P60	Memory address 8 (A8)	39	P17	WFM Output
4	P47	Search Output	40	P16	NFM Output
5	P46	NC	41	P15	AM Output
6	P45	Mute Output	42	P14	RF Filter Switch
7	P44	LCD Reset Output	43	P13	RF Filter Switch
8	P43	LCD C/D Output	44	P12	RF Filter Switch
9	P42	LCD CS Output	45	P11	VCO2 Output
10	P41	PLL2 Latch Output	46	P10	VCO1 Output
11	P40	PLL1 Latch Output	47	P07	Memory address 7 (A7)
12	P37/SRDY	5 kHz Step Output	48	P06	Memory address 6 (A6)
13	P36/CLK	Serial Clock Output	49	P05	Memory address 5 (A5)
14	P35/TXD	Serial Data Output	50	P04	Memory address 4 (A4)
15	P34/RXD	NC	51	P03	Memory address 3 (A3)
16	P33/CNTR	Peep Output	52	P02	Memory address 2 (A2)
17	P32/INT2	Hold Output	53	P01	Memory address 1 (A1)
18	P31	Sound Squelch Input	54	P00	Memory address 0 (A0)
19	P30	NC	55	NC	NC
20	INT1	+5 V	56	P27	Memory I/O 8
21	NC	NC	57	P26	Memory I/O 7
22	NC	NC	58	P25	Memory I/O 6
23	NC	NC	59	P24	Memory I/O 5
24	CNVSS	GND	60	P23	Memory I/O 4
25	RESET	RESET Input	61	P22	Memory I/O 3
26	XIN	Clock Input	62	P21	Memory I/O 2
27	XOUT	Clock Output	63	P20	Memory I/O 1
28	∅	Timing Output	64	NC	NC
29	VSS	0 V	65	VSS	0 V
30	P57	LCD Busy	66	NC	NC
31	P56	Low Battery Input	67	VCC	+5 V
32	P55	Carrier Squelch Input	68	P67	VCO Filter 2 Output
33	P54	Key Input	69	P66	VCO Filter 1 Output
34	P53	Key Input	70	P65	Memory CE Output
35	P52	Key Input	71	P64	Memory R/W Output
36	P51	Key Input	72	P63	Memory OE Output

MICROPROCESSOR (IC-501) FUNCTION TABLE

(1) Outputs of VCO (P10, P11) and VCO filter (P66, P67)

Receiving Frequency (MHz)	VCO Output	VCO filter Output
25.0000 to 220.4950	VCO 1 (P10) "H"	VCO filter 1 (P66) "H" Level
	VCO 2 (P11) "H"	
220.5000 to 520.0000	VCO 1 (P10) "H"	VCO filter 2 (P67) "H" Level
	VCO 2 (P11) "H"	

(2) Outputs of RF filter (P12, P13, P14)

Receiving Frequency (MHz)	P12	P13	P14
25.0000 to 39.9950	H	L	L
40.0000 to 67.9950	L	H	L
68.0000 to 107.9950	H	H	L
108.0000 to 173.9950	L	L	H
174.0000 to 279.9950	H	L	H
280.0000 to 520.0000	L	H	H
760.0000 to 1300.0000	H	H	H

(3) Outputs of Search (P47) and 5 kHz Step (P37)

		Search Output (P47)	5 kHz Step Output (P37)	
MANUAL Operation		H	L	
PROGRAM Operation		H	L	
SCAN Operation		H	L	
In SEARCH Operation	Receiving Frequency 25 to 520 MHz	at 5 kHz Step	L	H
		at Other Step	L	L
	Receiving Frequency 760 to 1300 MHz	at 5 kHz Step	L	H
		at Other Step	L	L

APPENDIX

Ref. No	Description	USA	CANADA	AUSTRALIA	U.K.	BELGIUM
D502	1S2076A (Silicon)	1S2076A	1S2076A	Not used	Not used	Not used
D504	1S2076A (Silicon)	Not used	Not used	1S2076A	1S2076A	1S2076A
R801	Resistor Solid 1/2W 1.8Mohm 1/2W	ERC-12GK185	ERC-12GK185	Not used	Not used	Not used
T801	Transformer, Power	GE84D-5158	GE-84D-5158	K6862	K6862	K6862
	Cord, AC	APL-7W-SPT1 AWG 2/18	APL-7W-SPT1 AWG 2/18	P2-VCTF-LD-AS	2-VCTFK-LD-BS 2x0.75mm ²	HARCLASS II BLK 2m
	Strain relief, Line cord	SR-3P-4	SR-3P-4	SR-5N-4	SR-4N-4	SR-4N-4
	Chassis	GE-88A-7611	GE-88A-7611	GE-88A-7611A	GE-88A-7611A	GE-88A-7611A

POWER TRANSFORMER SPECIFICATION

for U.S.A, CANADA

Rated primary voltage and frequency

Open circuit primary current

secondary output voltage

(No load voltage)

(Rated voltage)

Protector

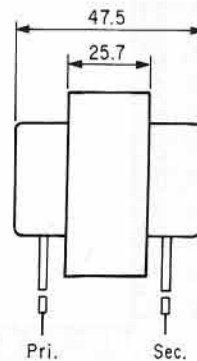
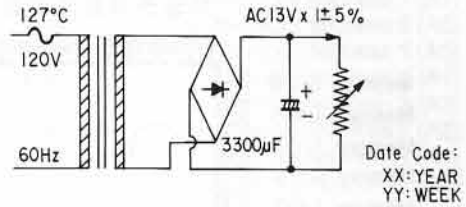
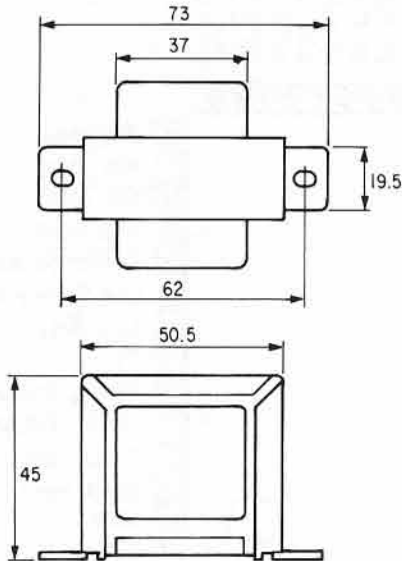
120 V 60 Hz

Less then 100 mA at 120 V 60 Hz

DC 17 V $\pm 5\%$

DC 13 V $\pm 5\%$ at DC 500 mA

127 °C 250 V 2.5 A



for BELGIUM, FRANCE, U.K. and AUSTRALIA

Rated primary voltage and frequency

Open circuit primary current

Secondary output voltage

(No load voltage)

(Rated voltage)

Protector

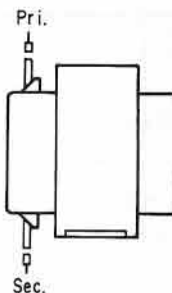
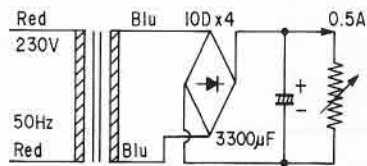
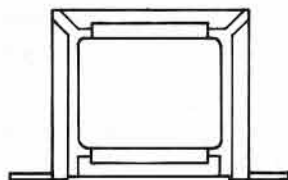
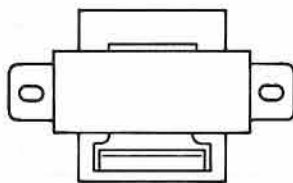
230 V 50 Hz

Less then 50 mA at 230 V 50 Hz

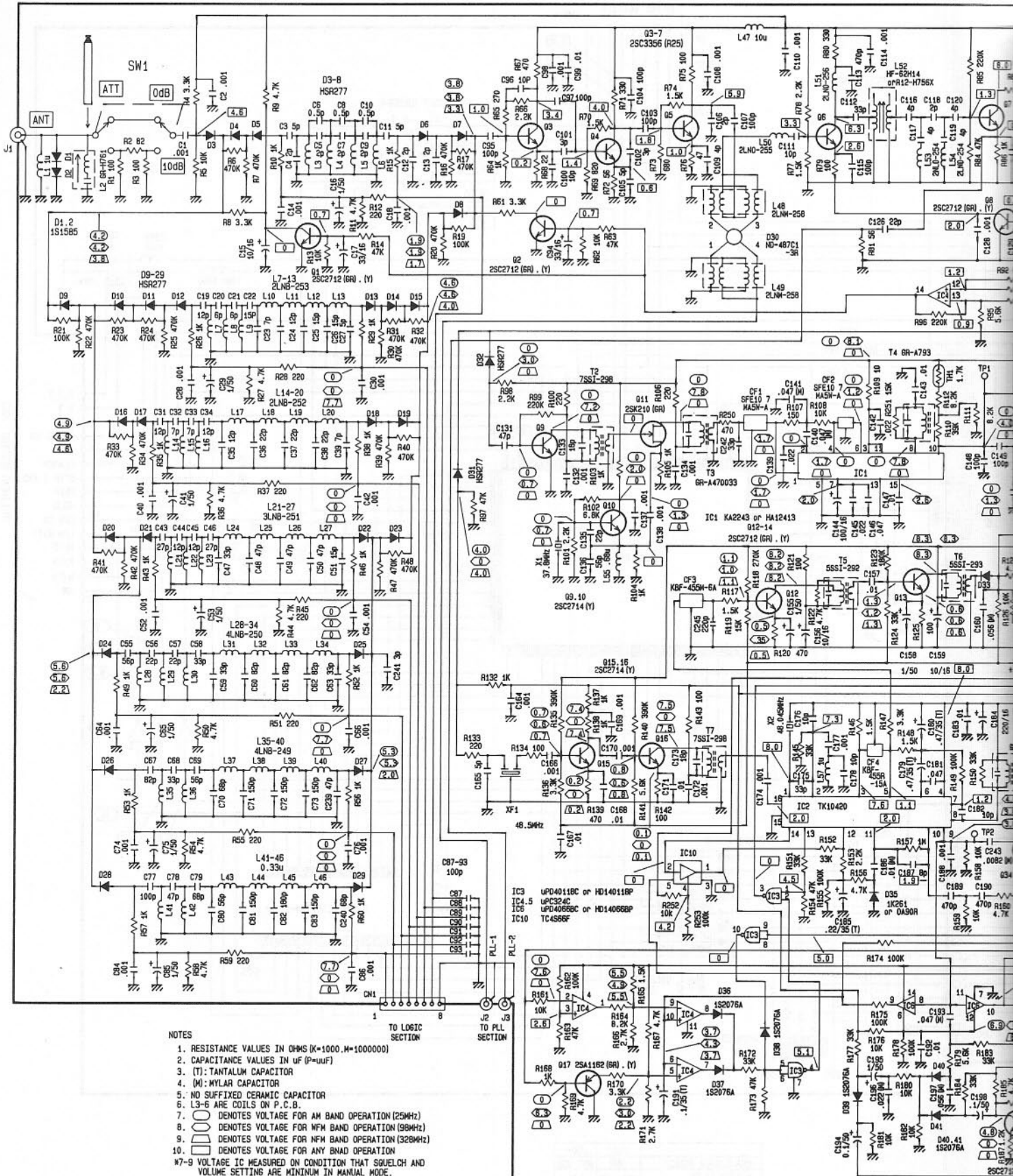
DC 17.3 V $\pm 5\%$

DC 13 V $\pm 5\%$

133 °C 250 V 1.5 A

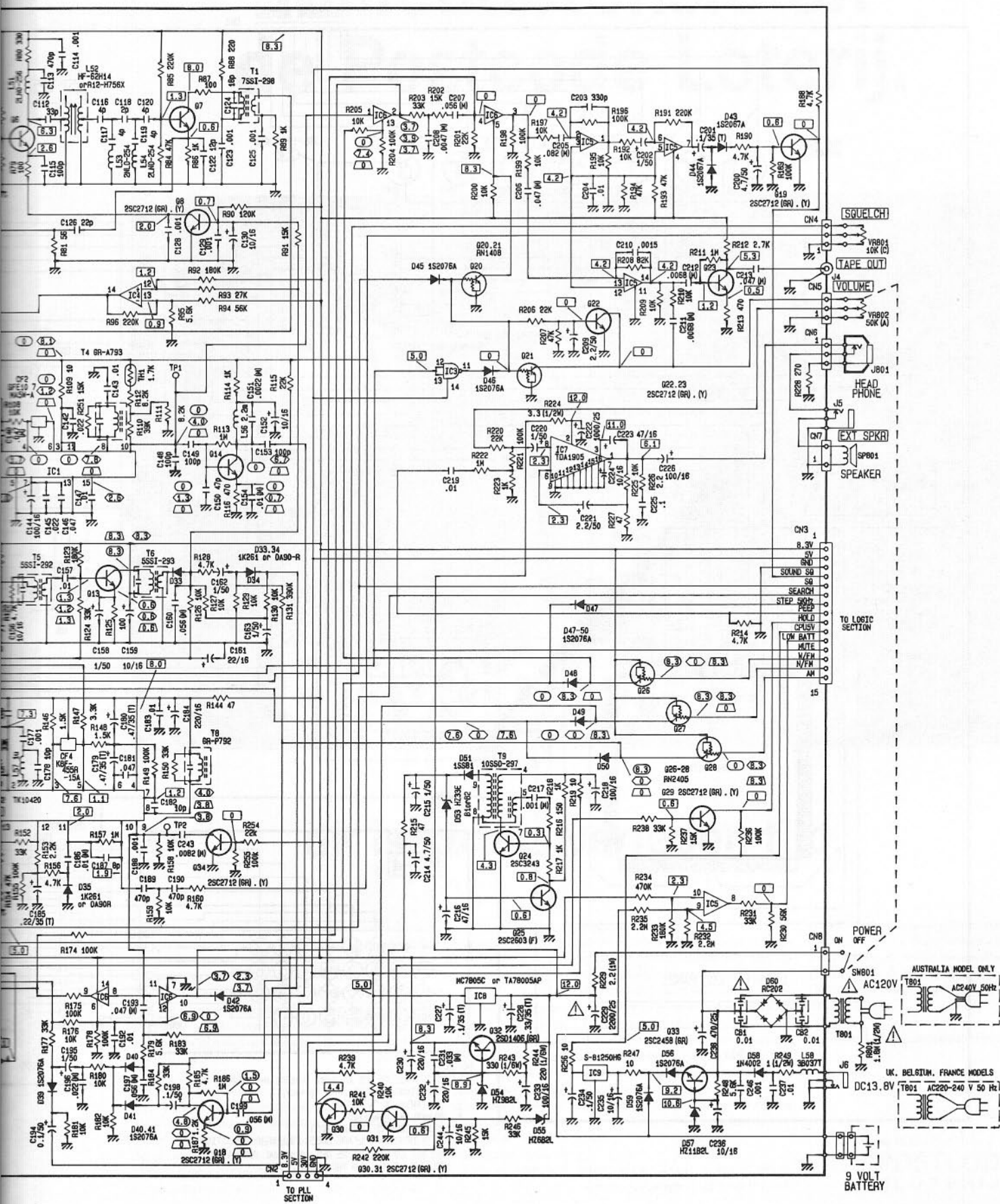


SCHEMATIC DIAGRAM (LINE

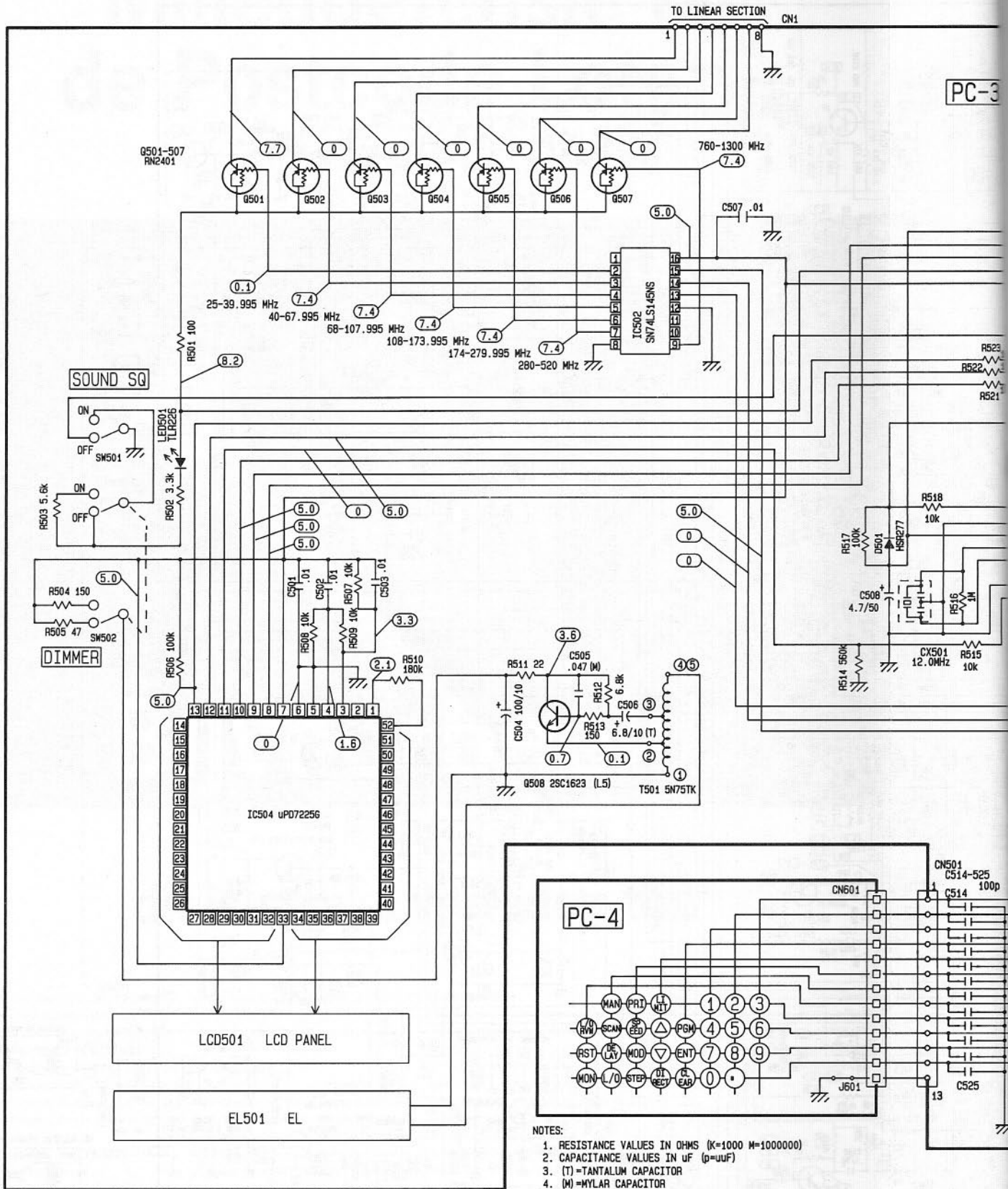


- NOTES**
1. RESISTANCE VALUES IN OHMS (K=1000, M=1000000)
 2. CAPACITANCE VALUES IN UF (P=PF)
 3. (T): TANTALUM CAPACITOR
 4. (M): MYLAR CAPACITOR
 5. NO SUFFIXED CERAMIC CAPACITOR
 6. L3-6 ARE COILS ON P.C.B.
 7. DENOTES VOLTAGE FOR AM BAND OPERATION (250KHZ)
 8. DENOTES VOLTAGE FOR NFM BAND OPERATION (90KHZ)
 9. DENOTES VOLTAGE FOR NFM BAND OPERATION (320KHZ)
 10. DENOTES VOLTAGE FOR ANY BAND OPERATION
 - 11-13 VOLTAGE IC MEASURED ON CONDITION THAT SQUELCH AND VOLUME SETTINGS ARE MINIMUM IN MANUAL MODE.
- CAUTION**
 SINCE THE COMPONENTS MARKED BY Δ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

AGRAM (LINEAR SECTION)



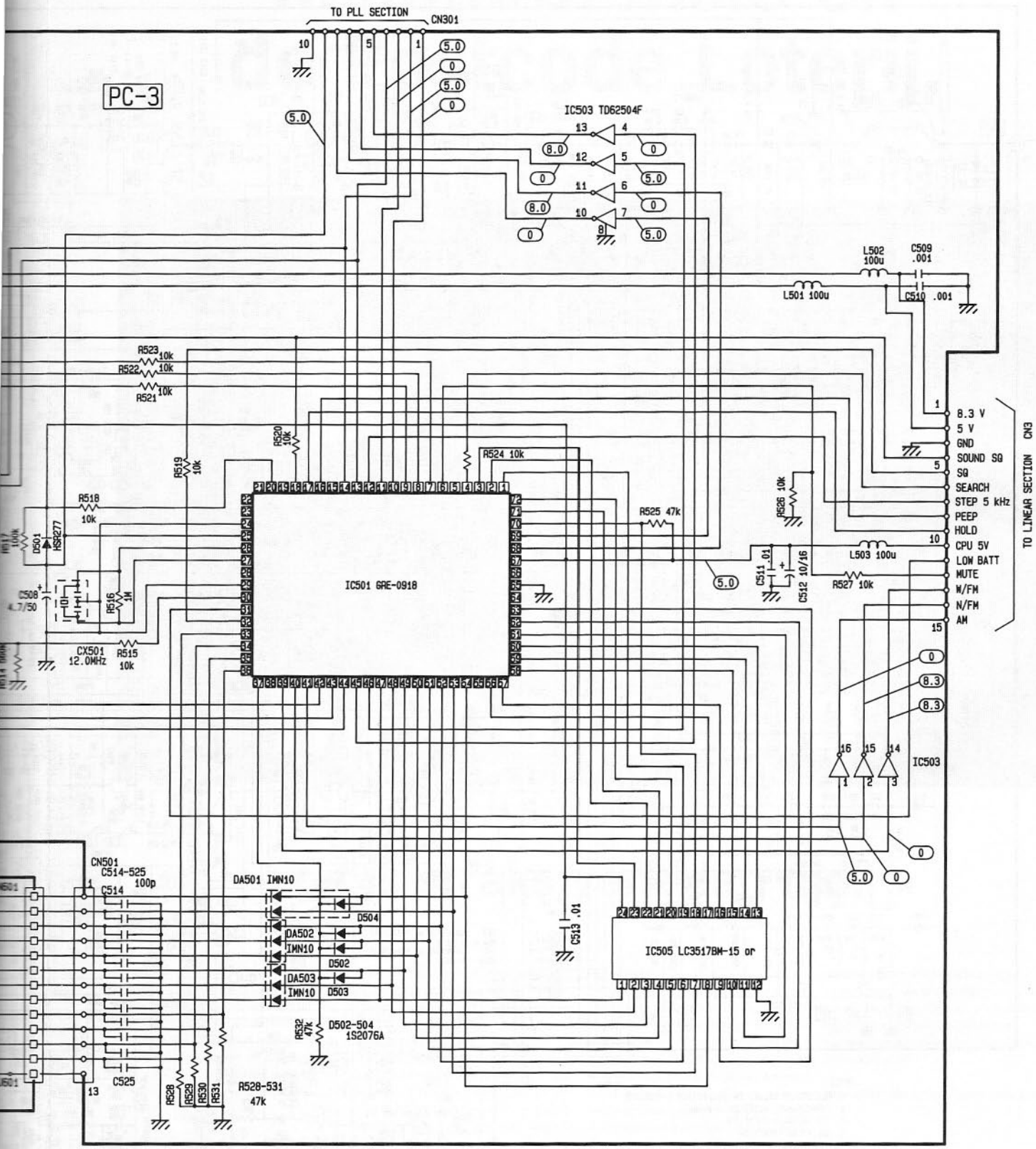
SCHEMATIC DIAGRAM (C



NOTES:

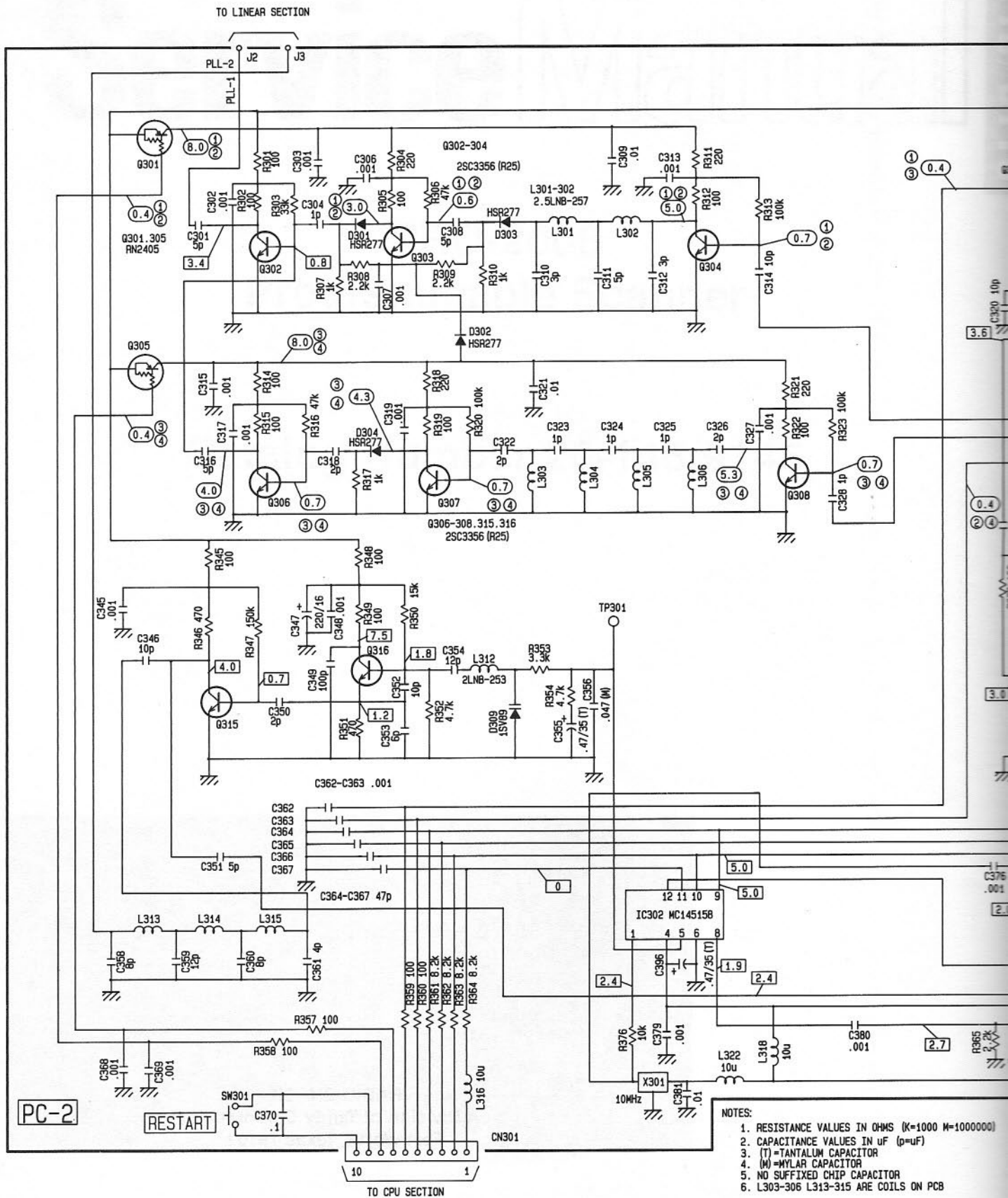
1. RESISTANCE VALUES IN OHMS (K=1000 M=1000000)
2. CAPACITANCE VALUES IN uF (p=puF)
3. (T)=TANTALUM CAPACITOR
4. (M)=MYLAR CAPACITOR
5. NO SUFFIXED CHIP CAPACITOR
6. \bigcirc DENOTES VOLTAGE UNDER FOLLOWING CONDITION
 CH1 VHF LO BAND AT 25 MHz AM MANUAL OPERATION.
 VOLTAGE AT MINIMUM AND SQUELCH CCW.

GRAM (CPU SECTION)



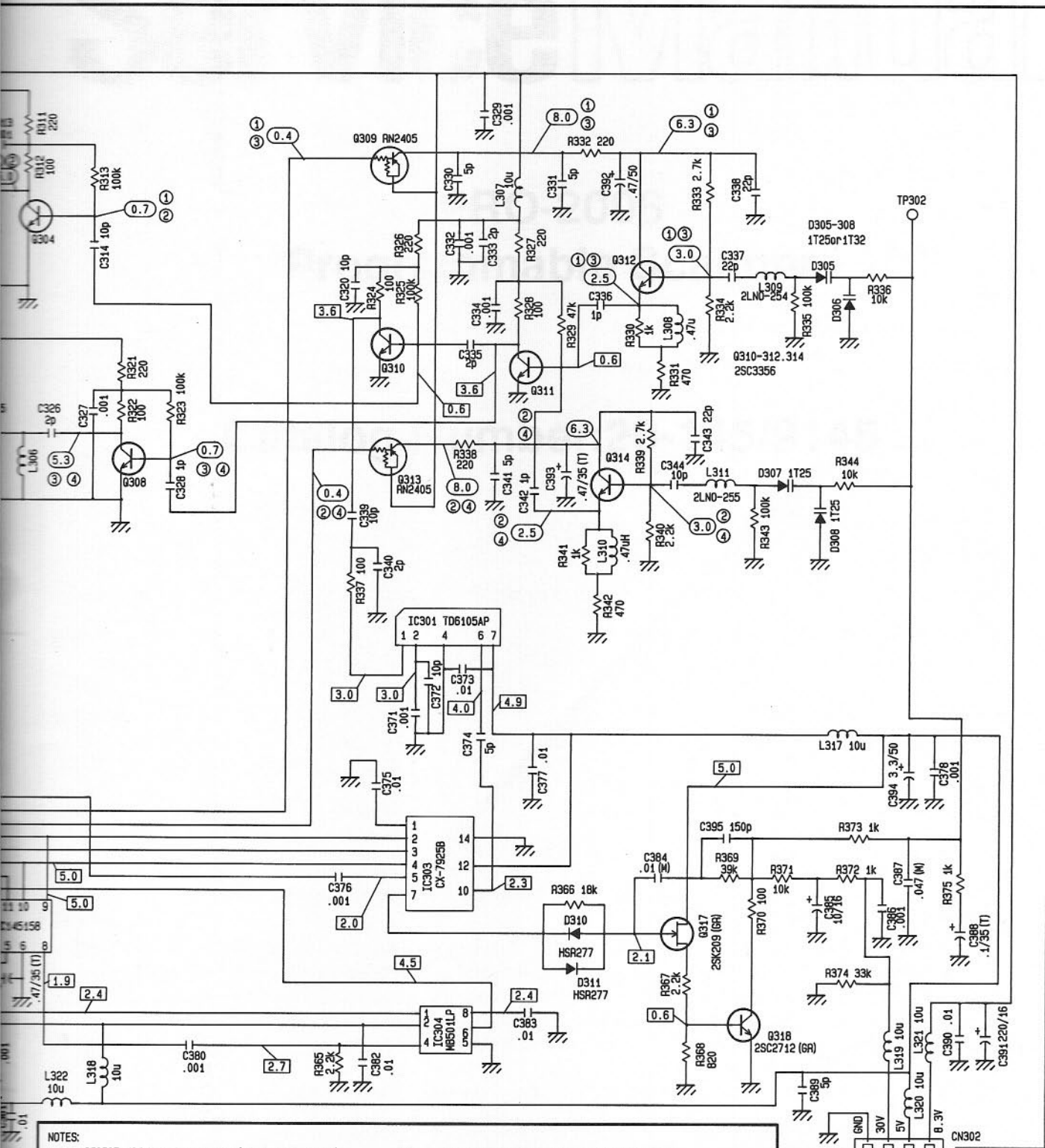
	D502	D504
USA CANADA MODELS	USE	NOT USE
AUSTRALIA UK	NOT USE	USE
BELGIUM FRANCE MODELS	NOT USE	USE

SCHEMATIC DIAGRAM (PLL SECTION)



- NOTES:
1. RESISTANCE VALUES IN OHMS (K=1000 M=1000000)
 2. CAPACITANCE VALUES IN uF (p=uF)
 3. (T)=TANTALUM CAPACITOR
 4. (M)=MYLAR CAPACITOR
 5. NO SUFFIXED CHIP CAPACITOR
 6. L303-306 L313-315 ARE COILS ON PCB

OMATIC DIAGRAM (PLL SECTION)



- NOTES:
1. RESISTANCE VALUES IN OHMS (K=1000 M=1000000)
 2. CAPACITANCE VALUES IN uF (p=pF)
 3. (T)=TANTALUM CAPACITOR
 4. (M)=MYLAR CAPACITOR
 5. NO SUFFIXED CHIP CAPACITOR
 6. L303-306 L313-315 ARE COILS ON PCB
 7. DENOTES VOLTAGE FOR ANY BAND OPERATION
 8. DENOTES VOLTAGE UNDER FOLLOWING OPERATION
- | | |
|--------------------|-------------------|
| ① 25-220.495 MHz | ② 220.5-520 MHz |
| ③ 760-1052.495 MHz | ④ 1052.5-1300 MHz |
- NOT USED
R355 R356
C305 C357

**CUSTOM MANUFACTURED FOR TANDY/INTERTAN
FABRIQUE POUR TANDY/INTERTAN**

CANADA	RADIO SHACK DIVISION, INTERTAN CANADA LTD. BARRIE, ONTARIO. L4M 4W5
AUSTRALIA	INTERTAN AUSTRALIA LIMITED (INC. IN N.S.W.) 91 KURRAJONG AVE., MT. DRUITT, 2770
BELGIUM	RUE DES PIEDS D'ALOUETTE 39, 5140 NANINNE
FRANCE	BP 147-95022 CERGY PONTOISE CEDEX
U.K.	BILSTON ROAD WEDNESBURY, WEST MIDLANDS WS10 7JN