

**REALISTIC<sup>®</sup>**

# Service Manual

**20-148**

**PRO-2026  
100-CHANNEL DIRECT ENTRY  
PROGRAMMABLE SCANNER**

**Catalog Number : 20-148**

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# SPECIFICATIONS

## General

Band Coverage:	12 Bands plus Weather Channel 100 channels (20 ch x 5 Banks)
Frequency Range:	29 to 29.7 MHz (10 Meter Amateur Band) 29.7 to 50 MHz (VHF Low Band) <i>29.0 MHz - 54.0 MHz</i> 50 to 54 MHz (6 Meter Amateur Band) <i>108.0 MHz - 174.0 MHz</i> 108 to 136.975 MHz (Aircraft Band) <i>406.0 MHz - 512.0 MHz</i> 137 to 144 MHz (Military Land Mobile) <i>806.0 MHz - 956.0 MHz</i> 144 to 148 MHz (2 Meter Amateur Band) 148 to 174 MHz (VHF High Band) 406 to 420 MHz (Federal Government Land Mobile) 420 to 450 MHz (70-cm Amateur Band) 450 to 470 MHz (UHF Standard Band) 470 to 512 MHz (UHF "T" Band) 806 to 956 MHz (Public Service Except Cellular Band)
	Weather Service Channel (162.400 to 162.550 MHz)
Display:	LCD (With Back Light) 10 Digits and special Annunciator (Bank 1 ~ 5, Police, FIRE/EMG, AIR, WX, MRN, SCAN, MAN, PGM, MON, L/O, PRI, DLY, SRCH ▲ ▼, P)
Keys (PROGRAM): (OPERATION):	Total 1 set 12 keys ("0" to "9", "ENTER", ".") Total 16 keys (Scan, Manual, L/O Decimal/Delay, Limit, Priority, WX, ▲, ▼, Clear, Marine, Police, Fire, EMG, AIR, Program, Monitor)
Controls/Switches:	Volume Control, with Power ON/OFF Switch Squelch Control
External Jacks:	ANT. Jack (BNC Type) Earphone Jack (3.5 φ)
Internal Speaker:	8 ohm, 3W
Power Requirements:	12VDC ± 10%
Operating Temp. :	- 4°F (-20°C) ~ 140°F (60°C)
Size:	W : 6-1/4" (160 mm) x H : 1-5/8" (41 mm) x D : 7-3/8" (188 mm)
Weight:	2.2 1b (1 kg)

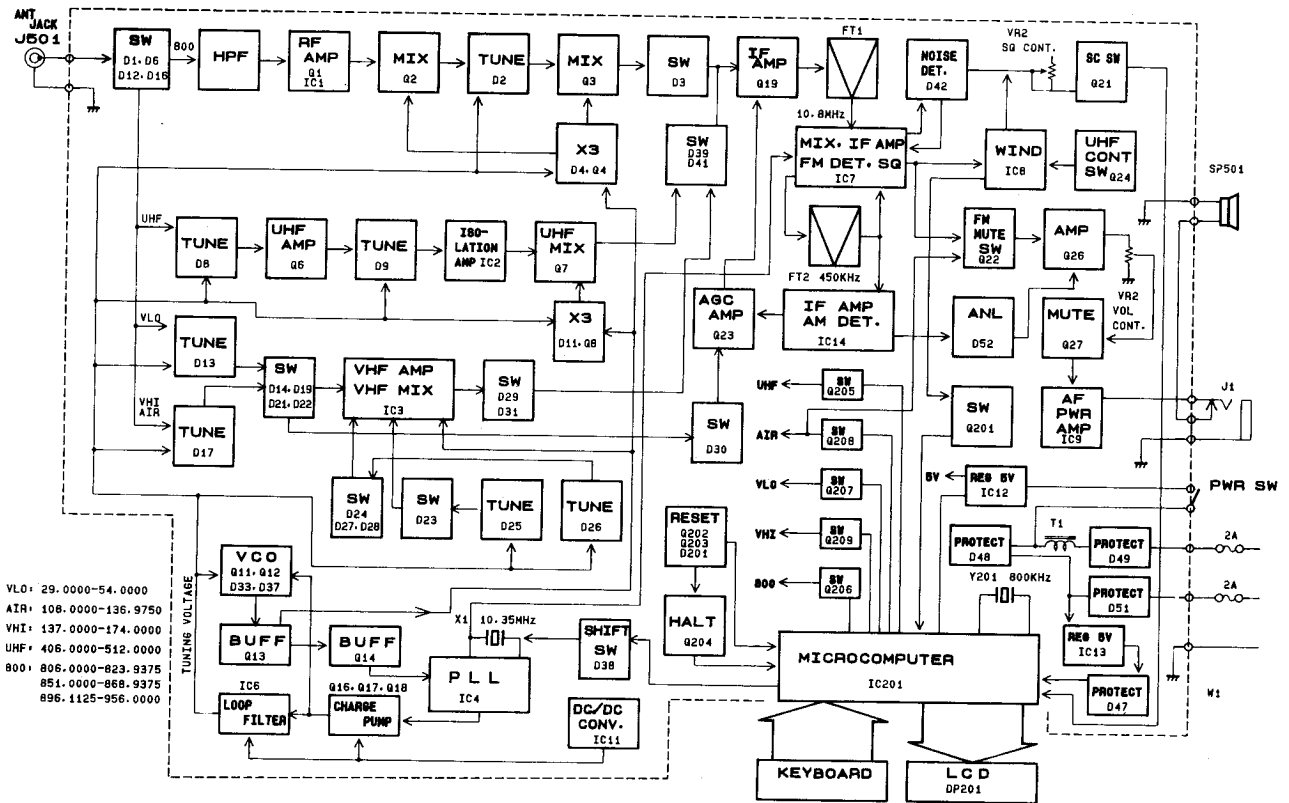
## Measurement Conditions

Power Source:	12VDC
Antenna Impedance:	50 ohm
Test Temperature:	77°F(25°C)
Modulation Frequency:	1 kHz
Deviation:	FM ± 3 kHz Dev. & AM 60% for Aircraft Band
Mean Signal Input Level:	100 μV
Audio Output Load:	8 ohm Resistive Load
Standard Ref, Audio Output:	125 mW (1V)

Item		Unit	Nominal	Limit
<b>Sensitivity (12 dB S/N)</b>				
VHF Low Band	30 ~50.0 MHz	μV	0.5	2.0
VHF High Band	140.0 ~170.0 MHz	μV	0.7	3.0
UHF Band	410.0 ~510.0 MHz	μV	0.7	4.0
Aircraft	118.0 ~135.0 MHz	μV	1.6	8.0
Public Service Band	810.0 ~950.0 MHz	μV	0.8	5.0
<b>Threshold and Tight Squelch (S/N)</b>				
VHF Low Band	at 40.0 MHz	μV / dB	0.4 / 25	1.0 / 20
VHF High Band	at 155.0 MHz	μV / dB	0.5 / 25	1.2 / 20
UHF Band	at 460.0 MHz	μV / dB	0.4 / 25	1.8 / 20
Aircraft	at 127.0 MHz	μV / dB	0.4 / 15	2.0 / 10
Public Service Band	at 860.0 MHz	μV / dB	0.9 / 25	3.0 / 20
<b>Signal to Noise</b>				
VHF Low Band	at 40.0 MHz	dB	50	35
VHF High Band	at 155.0 MHz	dB	45	30
UHF Band	at 460.0 MHz	dB	35	25
Aircraft	at 127.0 MHz	dB	45	30
Public Service Band	at 860.0 MHz	dB	33	25
<b>Audio Frequency Response -6 dB (at 155.0 MHz)</b>				
	Low	Hz	250	150 - 350
	High	Hz	2200	1500 - 3500
<b>Audio Output Power (at 155.0 MHz)</b>				
Max. Output Power		mW	1100	500
10% THD Output Power		mW	970	400
Distortion at 155 MHz, 1 mV Input		%	1.5	6
Modulation Acceptance at EIA RS-204-A		kHz	± 12	± 5
<b>Selectivity (155 MHz)</b>				
-6 dB		kHz	± 11	± 15
-50 dB		kHz	± 15	± 20
IF Rejection at 155 MHz		dB	60	50
Residual Noise (at SQ Open)		mV	0.2	5
Scan Rate		CH / Sec.	14	12
Scan Delay		Sec.	2	1 ~ 3
<b>Current Drain</b>				
(at full output)		mA DC	420	300 - 500
(squelched)		mA DC	230	300
(keep alive)		μA DC	3	50

**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



## ALIGNMENT PROCEDURES

### Preparation for Alignment

Change to Test Mode :

Turn on the power switch while pressing and holding 3 buttons - **[2]**, **[9]**, and **[L/OUT]**.

Confirm that test frequencies (Table 1) have been called to each memory channel.

**Attention:** Incorrect operating sequence or method often results in a display of the error indicator "Error" or an incorrect indication of frequency.

Table 1

CH	FREQUENCY	CH	FREQUENCY
1	30.05 MHz	14	66.450 MHz
2	40.84 MHz	15	76.825 MHz
3	49.90 MHz	16	87.425 MHz
4	138.15 MHz	17	157.800 MHz
5	162.40 MHz	18	482.3625 MHz
6	173.225 MHz	19	29.000 MHz
7	406.875 MHz	20	54.000 MHz
8	453.25 MHz	21	806.000 MHz
9	511.9125 MHz	22	857.200 MHz
10	108.500 MHz	23	888.9600 MHz
11	118.800 MHz	24	911.500 MHz
12	127.175 MHz	25	954.9125 MHz
13	135.500 MHz		

Table 2

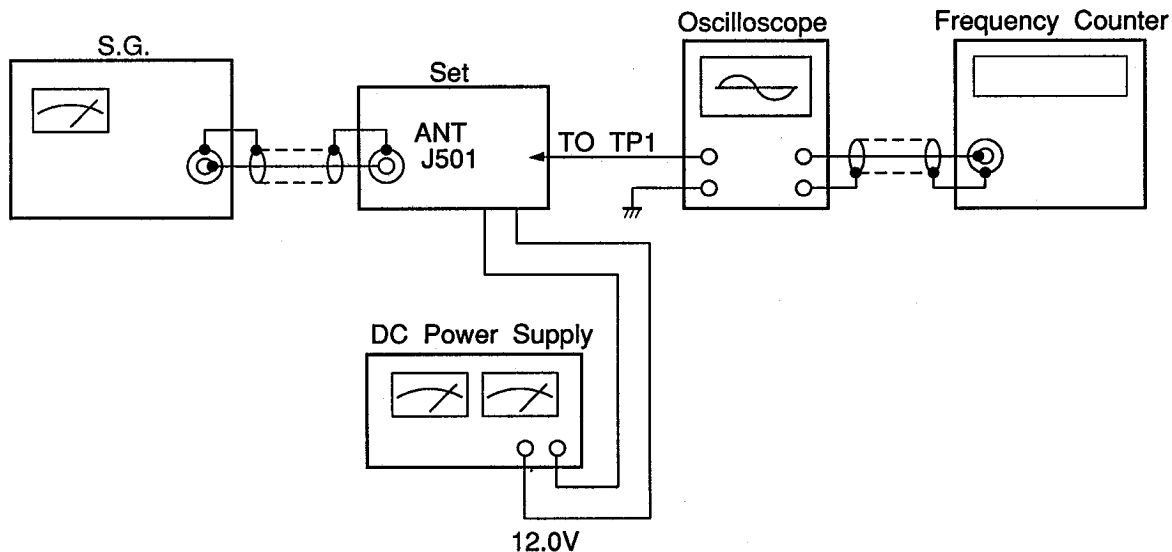
	CH	FREQUENCY	DC VOLTAGE(volts)
VHF(Low) Adjust	1	30.05 MHz	1.2 ± 0.1
Confirm	2	40.84 MHz	5.4 ± 0.5
Confirm	3	49.9 MHz	8.6 ± 0.5
Confirm	4	138.15 MHz	3.6 ± 0.5
Confirm	5	162.4 MHz	9.2 ± 0.5
Confirm	6	173.225 MHz	11.2 ± 0.5
Confirm	7	406.875 MHz	4.9 ± 0.5
Confirm	8	453.25 MHz	8.5 ± 0.5
VHF (High) /UHF Adjust	9	511.9125 MHz	12.5 ± 0.1



## Alignment of PLL

### Test Equipment Required and Connections

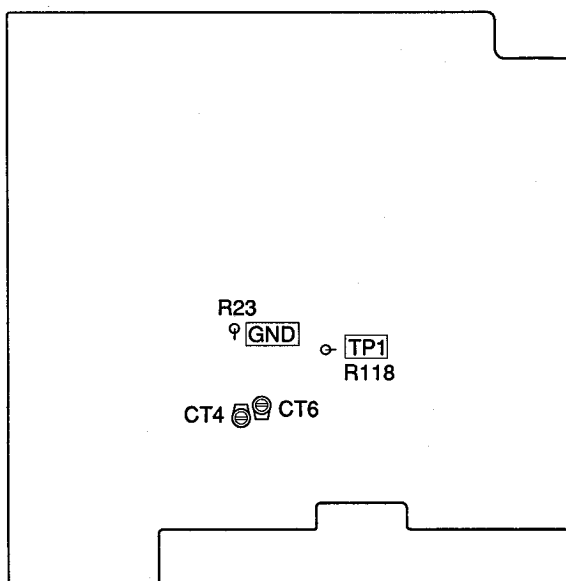
- DC Power Supply : 12.0 V
- Signal Generator : S. G.
- Oscilloscope
- Frequency Counter



### Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	CH : 24	CT4	<ul style="list-style-type: none"> <li>• PLL adjustment.</li> <li>• Connect oscilloscope and frequency counter to TP1 (R118).</li> <li>• Adjust CT4 to <math>10.350000 \pm 0.00001</math> MHz.</li> </ul>
2	CH : 25	CT6	<ul style="list-style-type: none"> <li>• Adjust CT6 to <math>10.349850 \pm 0.00001</math> MHz.</li> </ul>
3	CH : 25	No Alignment	<ul style="list-style-type: none"> <li>• Connect oscilloscope to TP1.</li> <li>Check to see if the waveform makes a sinusoidal wave and the peak to peak voltage is <math>450 \pm 100</math> mV.</li> </ul>

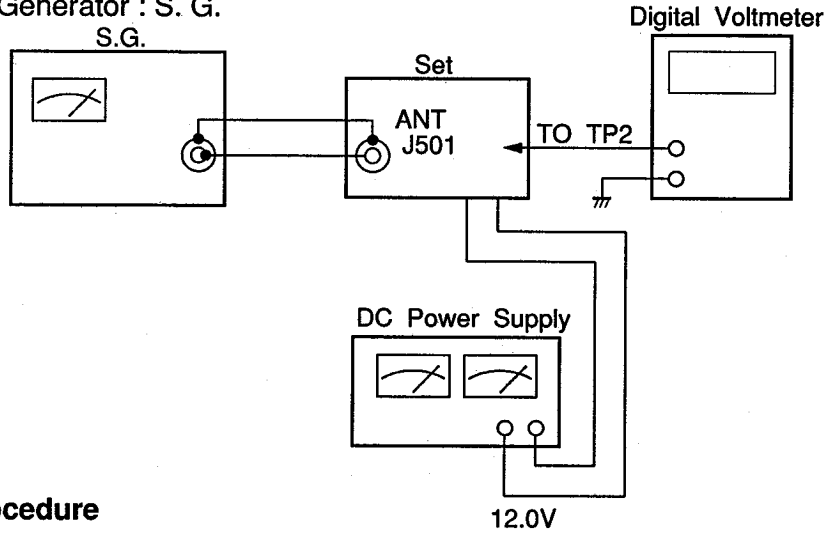
### Alignment Point Locations (PLL and Main PCB)



## Alignment of VCO

### Test Equipment Required and Connections

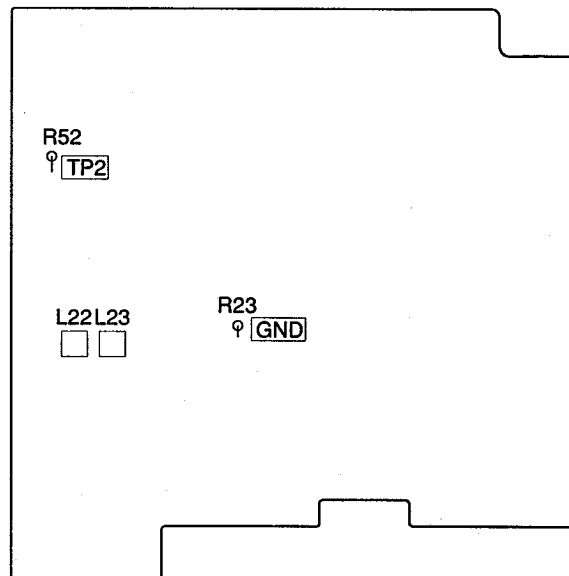
- DC Power Supply : 12.0 V
- Digital Voltmeter
- Signal Generator : S. G.



### Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	CH : 9	L23	<ul style="list-style-type: none"> <li>• Connect SG to ANT terminal.</li> <li>• Connect oscilloscope or DC voltmeter to TP2 (R52).</li> <li>• Adjust L23 to <math>12.5 \pm 0.1V</math>.</li> </ul>
2	CH : 7, 8	No Alignment	<ul style="list-style-type: none"> <li>• Check if VCO is at each channel voltage. (Refer to Table 2.)</li> </ul>
3	CH : 4, 5, 6	No Alignment	<ul style="list-style-type: none"> <li>• Check if VCO is at each channel voltage. (Refer to Table 2.)</li> </ul>
4	CH : 1	L22	<ul style="list-style-type: none"> <li>• Adjust L22 to 1.2V at TP2.</li> </ul>
5	CH : 2, 3	No Alignment	<ul style="list-style-type: none"> <li>• Check if VCO is at each channel voltage. (Refer to Table 2.)</li> </ul>

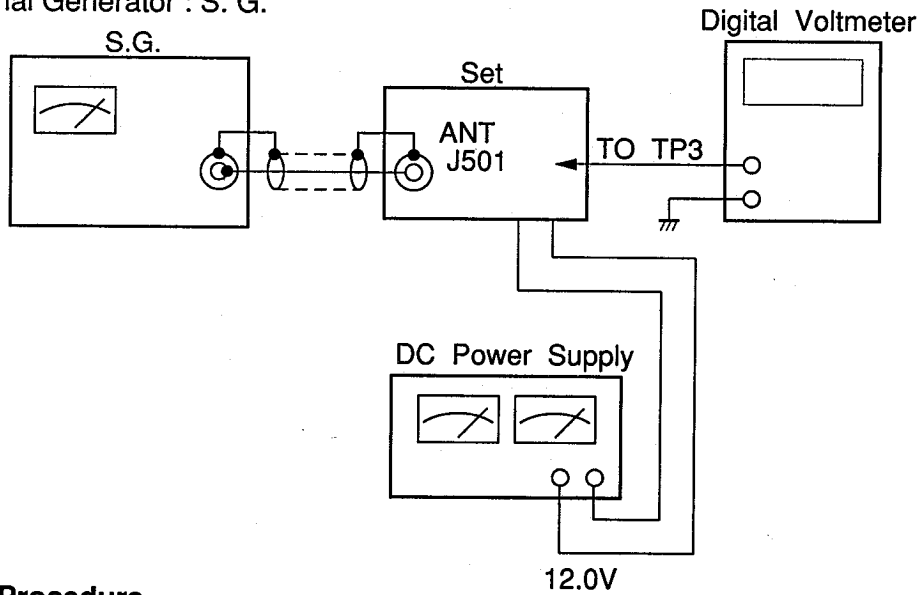
### Alignment Point Locations (PLL and Main PCB)



## Alignment of Discriminator

### Test Equipment Required and Connections

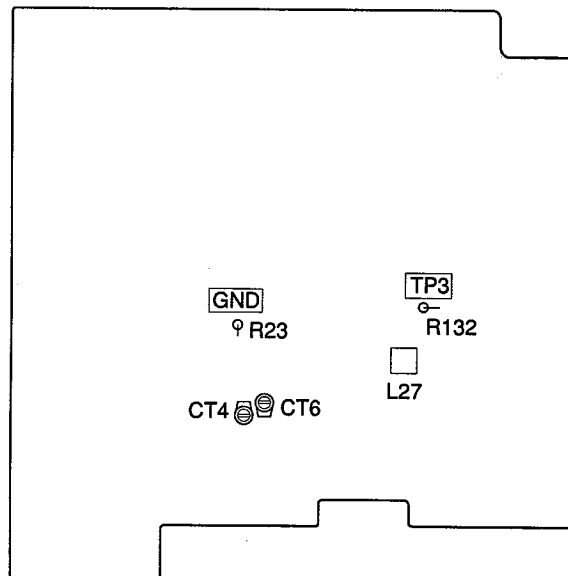
- DC Power Supply : 12.0 V
- Digital Voltmeter
- Signal Generator : S. G.



### Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	CH : 2 SG : 40.84MHz 1mV No Mod.	L27	<ul style="list-style-type: none"> <li>• Connect SSG to ANT. terminal.</li> <li>• Connect digital voltmeter to TP3 (R132).</li> <li>• Adjust L27 to <math>2.0 \pm 0.05V</math> (DC).</li> </ul>
2	CH : 24 SG : 911.5MHz 1mV No Mod.	CT4	<ul style="list-style-type: none"> <li>• Adjust CT4 slightly to <math>2.0 \pm 0.05V</math> (DC) on voltage of TP3.</li> </ul>
3	CH : 25 SG : 954.9125MHz 1mV No Mod.	CT6	<ul style="list-style-type: none"> <li>• Adjust CT6 slightly to <math>2.0 \pm 0.05V</math> (DC) on voltage of TP3.</li> </ul>

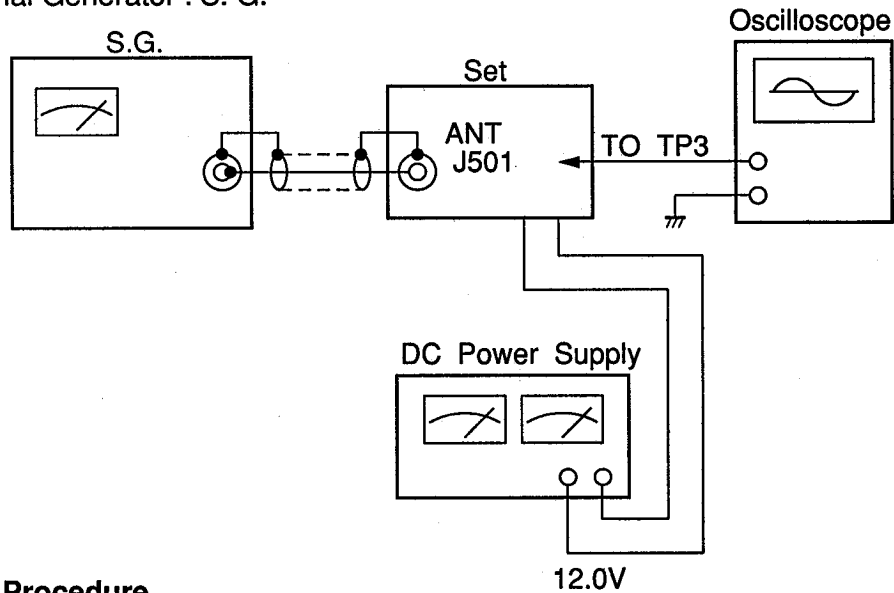
### Alignment Point Locations (Main PCB)



## Alignment of IF

### Test Equipment Required and Connections

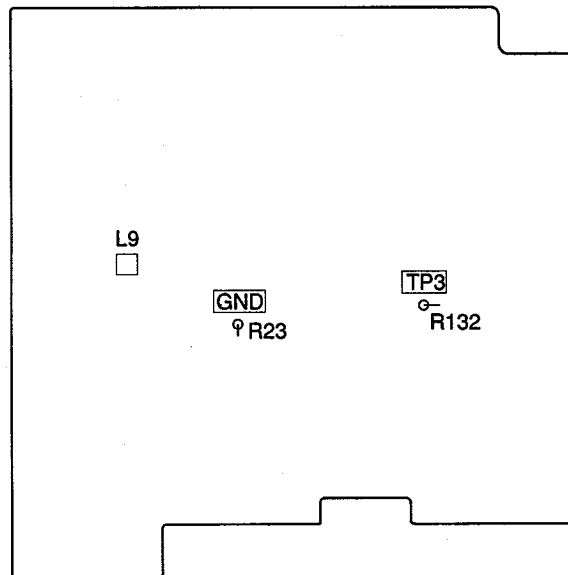
- DC Power Supply : 12.0 V
- Oscilloscope
- Signal Generator : S. G.



### Alignment Procedure

Step	Preset to	Adjustment	Remarks
	CH : 12 SG : 127.175MHz 2uV	L9	• Adjust L9 to AF output maximum reading on oscilloscope.

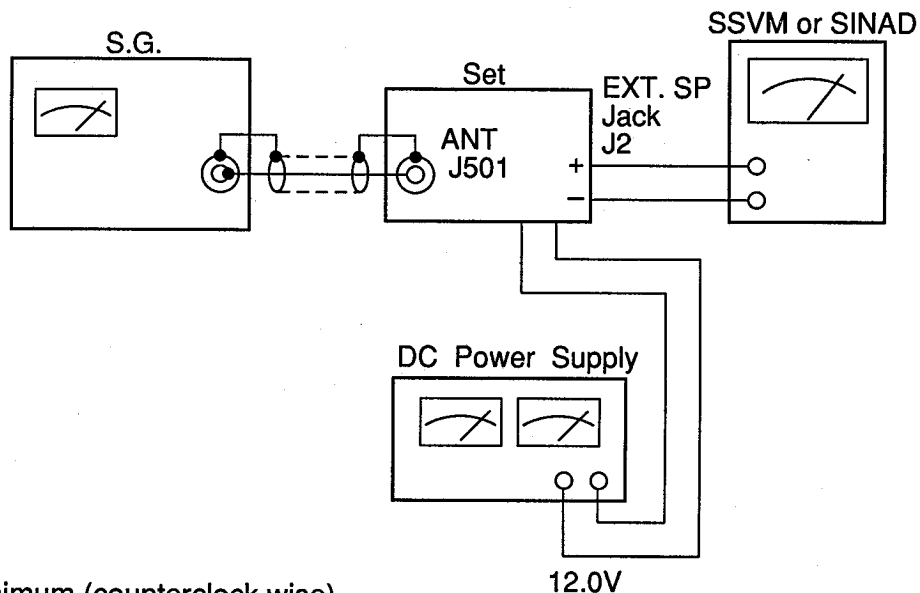
### Alignment Point Locations (Main PCB)



## Alignment of Receiving

### Test Equipment Required and Connections

- DC Power Supply : 12.0 V
- SSVM
- Signal Generator : S. G.
- SINAD



PRESET: SQUELCH ..... Minimum (counterclock wise)  
 SIGNAL ..... FM : 1 kHz,  $\pm 3$  kHz deviation  
                   AM : 1 kHz, 60% modulation  
                   Audio Output Level : 125 mW  
                   (1V across 8 $\Omega$  resistor)

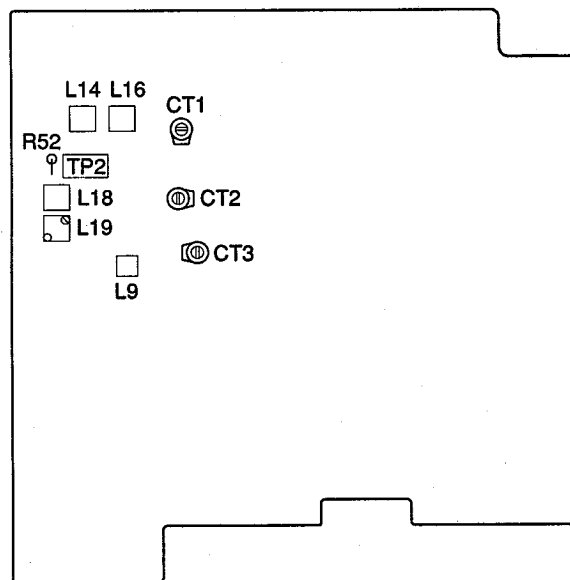
Connect SSG to ANT. terminal.

### Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	CH : 5 SG : 162.4MHz 0.4 $\mu$ V, FM	Volume Control	<ul style="list-style-type: none"> <li>• Connect SSVM to audio output terminal.</li> <li>• Adjust volume control to 125mW (1V across 8<math>\Omega</math> resistor).</li> </ul>
2	CH : 5 SG : 162.4MHz 0.4 $\mu$ V, FM	L16, L19	<ul style="list-style-type: none"> <li>• Connect SINAD meter to audio output terminal.</li> <li>• Adjust coils to the best SINAD.</li> <li>• Then adjust SSG to 12dB SINAD level and check if the output voltage of SSG is less than 0.8<math>\mu</math>V.</li> </ul>
3	CH : 2 SG : 40.84MHz 0.3 $\mu$ V, FM	L14, L18	<ul style="list-style-type: none"> <li>• Connect SINAD meter to audio output terminal.</li> <li>• Adjust coils to the best SINAD.</li> <li>• Then adjust SSG to 12dB SINAD level and check if the output voltage of SSG is less than 0.8<math>\mu</math>V.</li> </ul>
4	CH : 8 SG : 453.25MHz 0.6 $\mu$ V, FM	CT1, CT2, CT3	<ul style="list-style-type: none"> <li>• Same as step 2.</li> <li>• Adjust CT1, CT2, CT3, to the best SINAD.</li> </ul>

Step	Preset to	Adjustment	Remarks
5	CH : 7, 9 SG : 406.875MHz 511.9125MHz 0.6μV, FM	CT3	• Adjust CT3 to equal SINAD for CH7 and CH8.
6	CH : 7, 8, 9 SG : FM	No Alignment	• Confirm that 12dB SINAD sensitivity is less than 1.0μV for each channel.
7	CH : 21, 23, 25 SG : FM	No Alignment	• Confirm that 12dB SINAD sensitivity is less than 1.0μV for each channel.
8	CH : 10, 11, 12, 13 SG : AM	No Alignment	Aircraft • Confirm that 12dB SINAD sensitivity is less than 1.6μV for each channel.

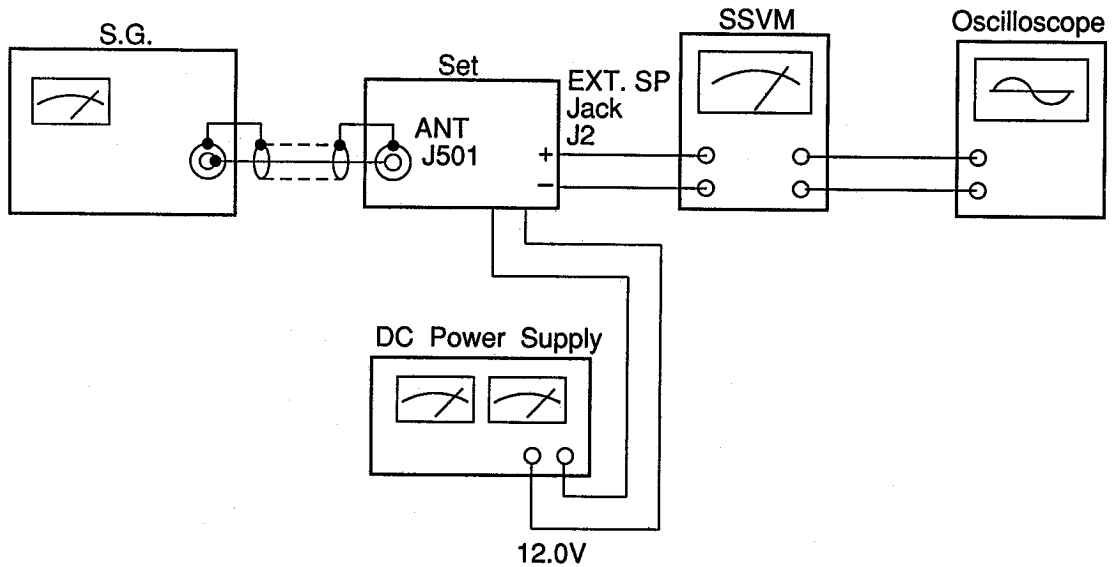
### Alignment Point Locations



## Alignment of Squelch

### Test Equipment Required and Connections

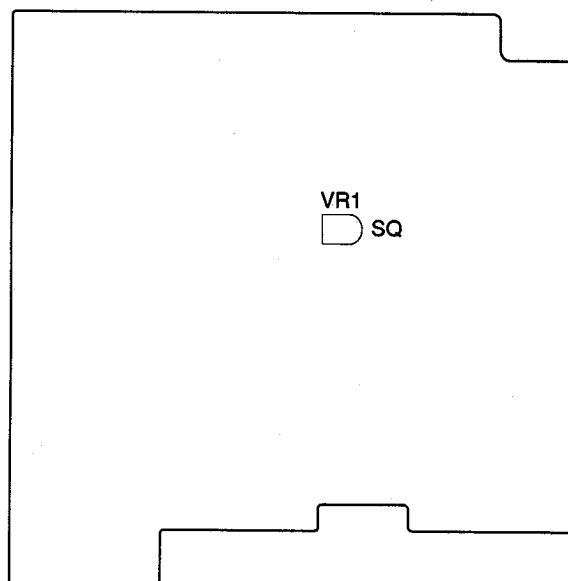
- DC Power Supply : 12.0 V
- Signal Generator : S. G.
- SSVM
- Oscilloscope



### Alignment Procedure

Step	Preset to	Adjustment	Remarks
	CH : 2 SG : 40.84MHz S / N 27~29 dB (TYP 0.8 $\mu$ V) Sq : CW (Max)	VR1	<ul style="list-style-type: none"> <li>• Turn VR1 fully counterclock wise.</li> <li>• Adjust VR1 to the point where audio output voltage will appear.</li> </ul>

### Alignment Point Locations (Main PCB)



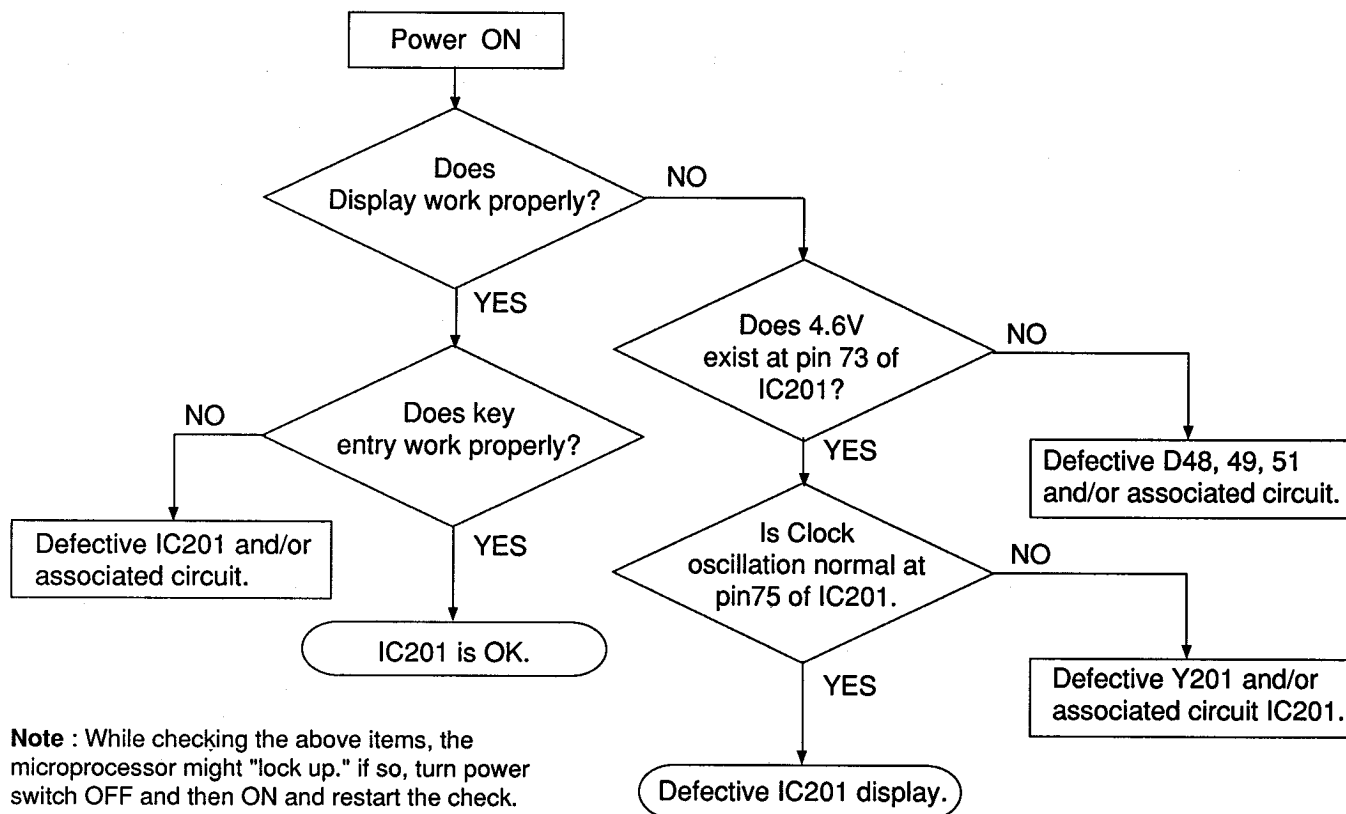
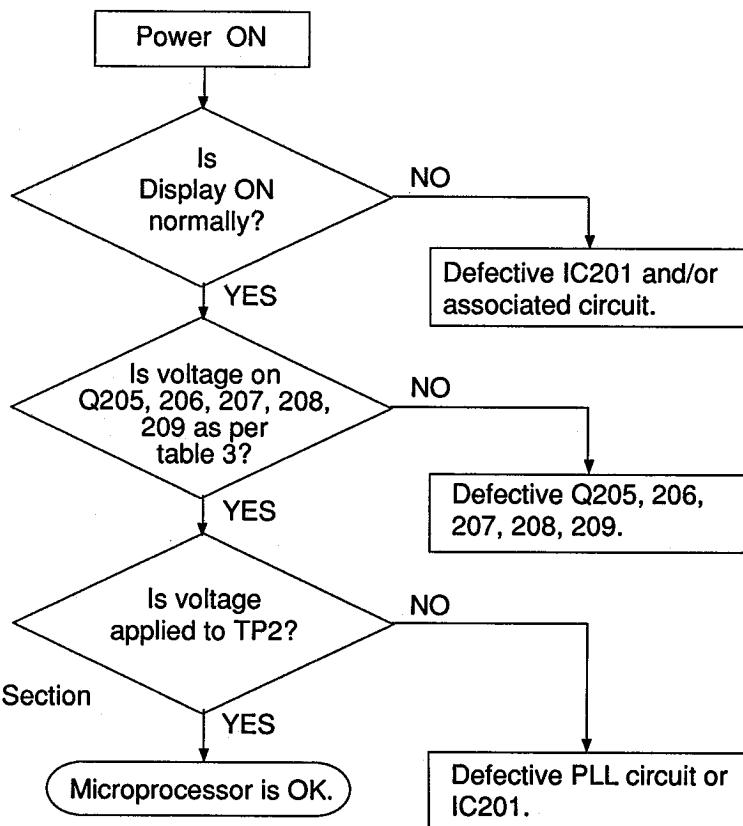
# TROUBLESHOOTING

## Reception Check

Table 3

Collector Freq. voltage BAND	Q207	Q209	Q205	Q208	Q206
VLO	1	0	0	0	0
VHI	0	1	0	0	0
UHF	0	0	1	0	0
AIR	0	0	0	1	0
800	0	0	0	0	1

Note : 1 = 4.8V  
0 = 0V

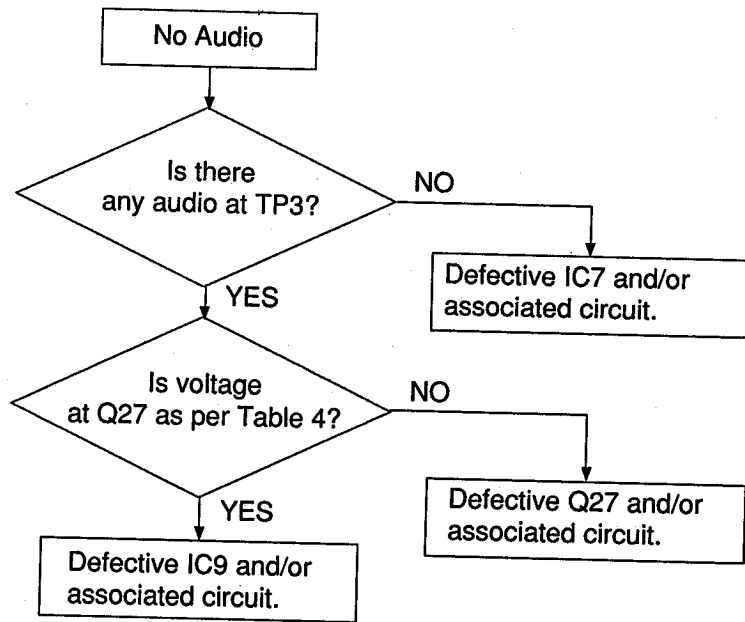




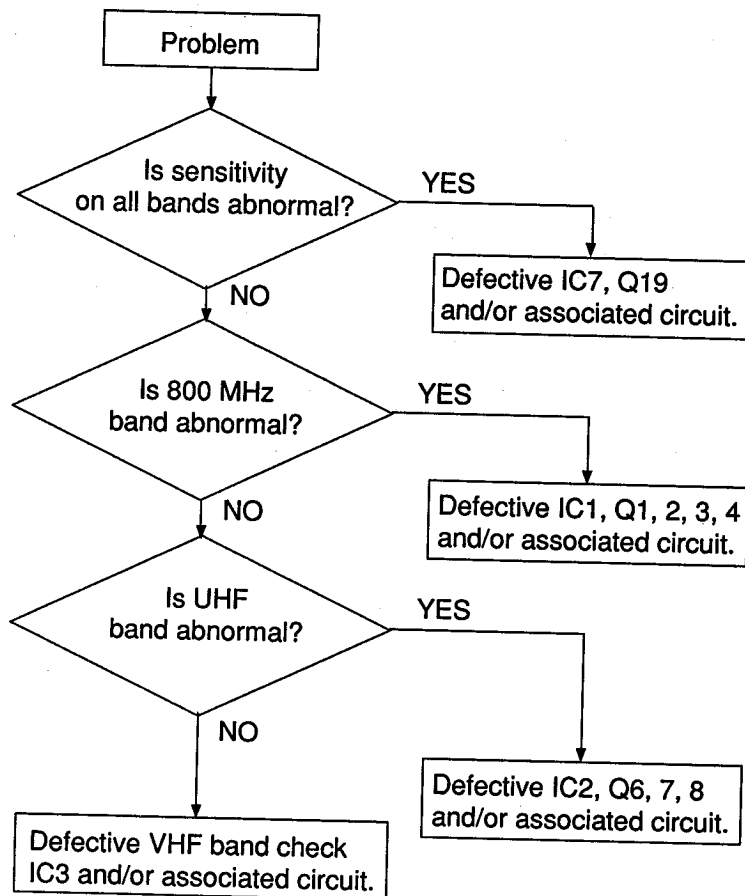
## Audio Section

Table 4

Squelch Condition	Base Voltage
	Q27
Open	0
Close	4.5

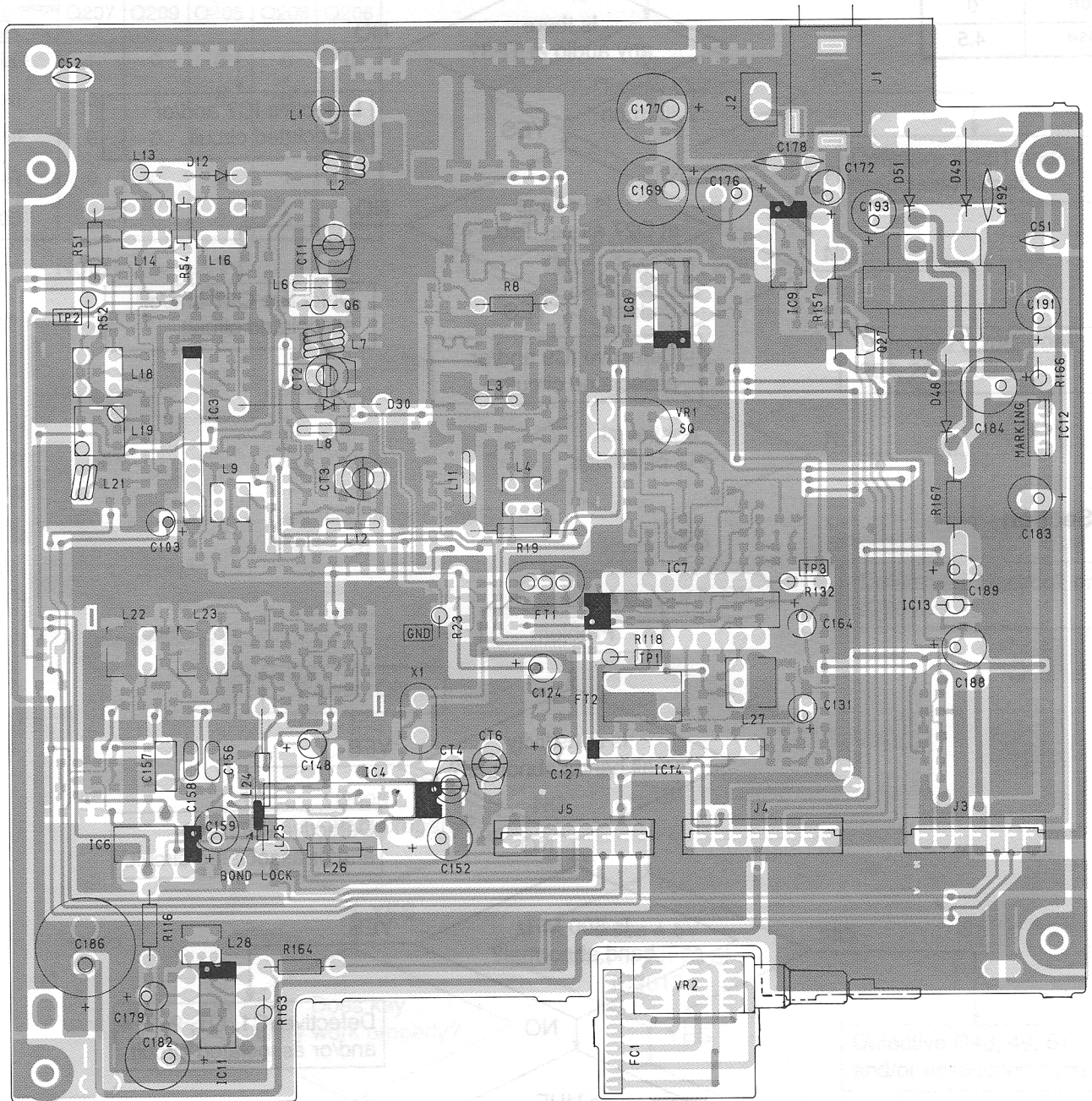


## RF Section

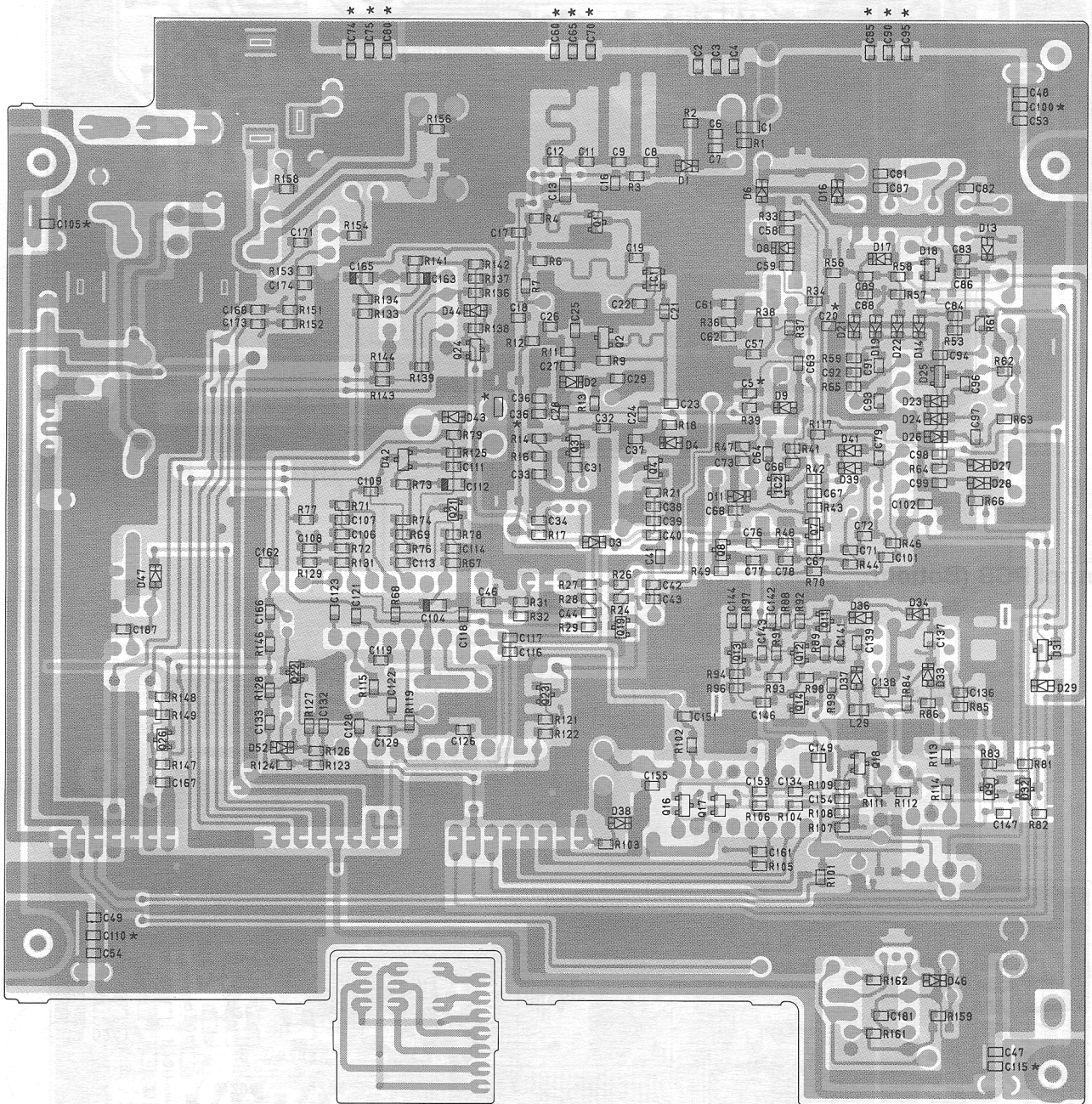


# PRINTED CIRCUIT BOARDS

## Main PCB (Top View)



Main PCB (Bottom View and Chip Parts Locations)



\* : CANADA ONLY







# ELECTRICAL PARTS LIST

**NOTE:** Products marked with a  $\Delta$  have special characteristics important to safety. Watch for this mark before replacing any of the components.

## MAIN PCB ASSEMBLY

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
	<b>ASSEMBLY, PCB, Main</b> Consists of the following:		AB220ZPBEA
<p><b>Capacitors</b>  <b>Note :</b> All capacitors are ceramic M/L * (3216) type unless otherwise specified.</p>			
<p>The following codes indicate variations of capacitors against temperatures:  <b>YA=</b> <math>\pm 5\%</math>, <b>YB=</b> <math>\pm 10\%</math>, <b>YD=</b> <math>+20-30\%</math>, <b>YE=</b> <math>+20-50\%</math> (<math>-25\sim+85^{\circ}\text{C}</math>), <b>ZF=</b> <math>+30-80\%</math> (<math>-10\sim+70^{\circ}\text{C}</math>),  <b>CH=</b> <math>0 \pm 60\text{ppm}/^{\circ}\text{C}</math>, <b>RH=</b> <math>220\text{ppm}/^{\circ}\text{C} \pm 60\text{ppm}/^{\circ}\text{C}</math>, <b>TH=</b> <math>-470\text{ppm}/^{\circ}\text{C} \pm 60\text{ppm}/^{\circ}\text{C}</math>,  <b>SL=</b> <math>+350\text{ppm}/^{\circ}\text{C} \sim 1000\text{ppm}/^{\circ}\text{C}</math>, <b>UJ=</b> <math>-750\text{ppm}/^{\circ}\text{C} \pm 120\text{ppm}/^{\circ}\text{C}</math></p>			
C001	1PF 50V $\pm 0.25\%$ CH(CK)		BCXW811091Z
C002	0.01 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ511035Z
C003	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C004	100PF 50V $\pm 5\%$ CG(CH)		BCXG811014Z
<del>C005</del>	33PF 50V $\pm 5\%$ CG(CH) for CA		BCXG813304Z
C006	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C007	33PF 50V $\pm 5\%$ CG(CH)		BCXG813304Z
C008	3PF 50V $\pm 0.25\%$ CH(CJ)		BCBR813091Z
C009	3PF 50V $\pm 0.25\%$ CH(CJ)		BCBR813091Z
C010	-Not Used-		
C011	3PF 50V $\pm 0.25\%$ CH(CJ)		BCBR813091Z
C012	10PF 50V $\pm 0.5\%$ CG(CH)		BCXG811002Z
C013	4PF 50V $\pm 0.25\%$ CG(CH)		BCXD814091Z
C014	-Not Used-		
C015	-Not Used-		
C016	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C017	33PF 50V $\pm 5\%$ CG(CH)		BCXG813304Z
C018	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C019	4PF 50V $\pm 0.25\%$ CG(CH)		BCXG814091Z
<del>C020</del>	15PF 50V $\pm 0.5\%$ CG(CH) for CA		BCXG811504Z
C021	4PF 50V $\pm 0.25\%$ CG(CH)		BCXG814091Z
C022	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C023	10PF 50V $\pm 0.5\%$ CG(CH)		BCXG811002Z
C024	3PF 50V $\pm 0.25\%$ CH(CJ)		BCBR813091Z
C025	4PF 50V $\pm 0.25\%$ CG(CH)		BCXG814091Z
C026	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C027	22PF 50V $\pm 0.5\%$ CG(CH)		BCXG812204Z
C028	10PF 50V $\pm 0.5\%$ CG(CH)		BCXG811002Z

\* M/L = Multilayer.

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C029	18PF 50V $\pm 5\%$ CG(CH)		BCXG811804Z
C030	-Not Used-		
C031	10PF 50V $\pm 0.5\%$ CG(CH)		BCXG811002Z
C032	1PF 50V $\pm 0.25\%$ CH(CK)		BCXX811091Z
C033	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C034	0.01 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ511035Z
C035	-Not Used-		
C036	0.0047 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ814725Z
	33PF 50V $\pm 5\%$ CG(CH) for CA		BCXG813304Z
C037	5PF 50V $\pm 0.25\%$ CG(CH)		BCXG815091Z
C038	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C039	100PF 50V $\pm 5\%$ CG(CH)		BCXG811014Z
C040	15PF 50V $\pm 5\%$ CG(CH)		BCXG811504Z
C041	2PF 50V $\pm 0.25\%$ CH(CJ)		BCXX812091Z
C042	68PF 50V $\pm 5\%$ CG(CH)		BCXG816804Z
C043	150PF 50V $\pm 5\%$ CG(CH)		BCXG811514Z
C044	0.01 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ511035Z
C045	-Not Used-		
C046	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C047	0.1 $\mu$ F 25V +80%/-20% F		BCXK511040Z
C048	0.047 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ514735Z
C049	0.047 $\mu$ F 25V $\pm 10\%$ C(B)		BCXJ514735Z
C050	-Not Used-		
C051	Semi-Conductor (SR) 0.01 $\mu$ F 25V $\pm 10\%$		BCGC511035Z
C052	Semi-Conductor (SR) 0.01 $\mu$ F 25V $\pm 10\%$		BCGC511035Z
C053	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C054	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C055	-Not Used-		
C056	-Not Used-		
C057	100PF 50V $\pm 5\%$ CG(CH)		BCXG811014Z
C058	4PF 50V $\pm 0.25\%$ CG(CH)		BCXG814091Z
C059	1PF 50V $\pm 0.25\%$ CH(CK)		BCXX811091Z
<del>C060</del>	0.01 $\mu$ F 25V $\pm 10\%$ C(B) for CA		BCXJ511035Z
C061	56PF 50V $\pm 5\%$ UJ		BCXL815604Z
C062	27PF 50V $\pm 5\%$ UJ		BCXL812704Z
C063	10PF 50V $\pm 0.5\%$ CG(CH)		BCXG811002Z
C064	100PF 50V $\pm 5\%$ CG(CH)		BCXG811014Z
<del>C065</del>	0.001 $\mu$ F 50V $\pm 10\%$ C(B) for CA		BCXJ811025Z
C066	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C067	100PF 50V $\pm 5\%$ CG(CH)		BCXG811014Z
C068	2PF 50V $\pm 0.25\%$ CH(CJ)		BCXX812091Z
C069	33PF 50V $\pm 5\%$ CG(CH)		BCXG813304Z
<del>C070</del>	100PF 50V $\pm 5\%$ CG(CH) for CA		BCXG811014Z
C071	0.001 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ811025Z
C072	0.0033 $\mu$ F 50V $\pm 10\%$ C(B)		BCXJ813325Z
C073	2PF 50V $\pm 0.25\%$ CH(CJ)		BCXX812091Z
<del>C074</del>	0.01 $\mu$ F 25V $\pm 10\%$ C(B) for CA		BCXJ511035Z
<del>C075</del>	0.001 $\mu$ F 50V $\pm 10\%$ C(B) for CA		BCXJ811025Z



REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C076	47PF 50V ±5% UJ		BCXL814704Z
C077	10PF 50V ±0.5% CG(CH)		BCXG811002Z
C078	0.001µF 50V ±10% C(B)		BCXJ811025Z
C079	100PF 50V ±5% CG(CH)		BCXG811014Z
<del>C080</del>	100PF 50V ±5% CG(CH) for CA		BCXG811014Z
C081	27PF 50V ±5% CG(CH)		BCXG812704Z
C082	0.001µF 50V ±10% C(B)		BCXJ811025Z
C083	33PF 50V ±5% CG(CH)		BCXG813304Z
C084	0.001µF 50V ±10% C(B)		BCXJ811025Z
<del>C085</del>	0.01µF 25V ±10% C(B) for CA		BCXJ511035Z
C086	0.01µF 25V ±10% C(B)		BCXJ511035Z
C087	0.001µF 50V ±10% C(B)		BCXJ811025Z
C088	9PF 50V ±0.5% CG(CH)		BCXG819092Z
C089	27PF 50V ±5% CG(CH)		BCXG812704Z
<del>C090</del>	0.001µF 50V ±10% C(B) for CA		BCXJ811025Z
C091	0.001µF 50V ±10% C(B)		BCXJ811025Z
C092	15PF 50V ±5% CG(CH)		BCXG811504Z
C093	0.001µF 50V ±10% C(B)		BCXJ811025Z
C094	0.01µF 25V ±10% C(B)		BCXJ511035Z
<del>C095</del>	33PF 50V ±5% CG(CH) for CA		BCXG813304Z
C096	330PF 50V ±5% CG(CH)		BCXG813314Z
C097	39PF 50V ±5% CG(CH)		BCXG813904Z
C098	0.001µF 50V ±10% C(B)		BCXJ811025Z
C099	0.001µF 50V ±10% C(B)		BCXJ811025Z
<del>C100</del>	33PF 50V ±5% CG(CH) for CA		BCXG813304Z
C101	470PF 50V ±5% CG(CH)		BCXG814714Z
	10PF 50V ±0.5% CG(CH) for CA		BCXG811002Z
C102	0.01µF 25V ±10% C(B)		BCXJ511035Z
C103	Electrolytic 4.7µF 50V ±20% C-130		BCAP814796Z
C104	Tantalum Chip Tape 0.22µF 35V ±20% A C-227		BCPP662286Z
<del>C105</del>	33PF 50V ±5% CG(CH) for CA		BCXG813304Z
C106	470PF 50V ±5% CG(CH)		BCXG814714Z
C107	470PF 50V ±5% CG(CH)		BCXG814714Z
C108	0.0047µF 50V ±10% C(B)		BCXJ814725Z
C109	0.0012µF 50V ±10% C(B)		BCXJ811225Z
<del>C110</del>	33PF 50V ±5% CG(CH) for CA		BCXG813304Z
C111	0.022µF 50V ±10% C(B)		BCXJ812235Z
C112	Tantalum Chip Tape 0.1µF 35V ±20% A C-227		BCPP661086Z
C113	0.01µF 25V ±10% C(B)		BCXJ511035Z
C114	0.1µF 25V +80%/-20% F		BCXK511040Z
<del>C115</del>	33PF 50V ±5% CG(CH) for CA		BCXG813304Z
C116	27PF 50V ±5% CG(CH)		BCXG812704Z
C117	220PF 50V ±5% CG(CH)		BCXG812214Z
C118	0.047µF 25V ±10% C(B)		BCXJ514735Z
C119	0.047µF 25V ±10% C(B)		BCXJ514735Z
C120	-Not Used-		
C121	0.047µF 25V ±10% C(B)		BCXJ514735Z
C122	0.0047µF 50V ±10% C(B)		BCXJ814725Z



REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C123	220PF 50V ±5% CG(CH)		BCXG812214Z
C124	Electrolytic 3.3µF 50V ±20% C-130		BCAP813396Z
C125	-Not Used-		
C126	0.047µF 25V ±10% C(B)		BCXJ514735Z
C127	Electrolytic 22µF 50V ±20% C-130		BCAP812206Z
C128	0.047µF 25V ±10% C(B)		BCXJ514735Z
C129	0.01µF 25V ±10% C(B)		BCXJ511035Z
C130	-Not Used-		
C131	Electrolytic 1µF 50V ±20% C-130		BCAP811096Z
C132	0.022µF 50V ±10% C(B)		BCXJ812235Z
C133	0.0047µF 50V ±10% C(B)		BCXJ814725Z
C134	0.001µF 50V ±10% C(B)		BCXJ811025Z
C135	-Not Used-		
C136	0.022µF 50V ±10% C(B)		BCXJ812235Z
C137	0.001µF 50V ±10% C(B)		BCXJ811025Z
C138	0.001µF 50V ±10% C(B)		BCXJ811025Z
C139	33PF 50V ±5% CG(CH)		BCXG813304Z
C140	-Not Used-		
C141	1.5PF 50V ±0.25% UJ		BCXL811591Z
C142	0.001µF 50V ±10% C(B)		BCXJ811025Z
C143	Cylinder-Ceramic Tape 0.001µF 25V ±20% Y C-161		BCWJ511026Z
C144	0.033µF 50V ±10% ±0.25%		BCXJ813335Z
C145	-Not Used-		
C146	47PF 50V ±5% SL		BCXH814704Z
C147	0.0033µF 50V ±10% C(B)		BCXJ813325Z
C148	Electrolytic 100µF 10V ±20% C-130		BCAP111016Z
C149	0.001µF 50V ±10% C(B)		BCXJ811025Z
C150	-Not Used-		
C151	18PF 50V ±5% CG(CH)		BCXG811804Z
C152	Electrolytic 100µF 16V ±20% C-130		BCAP311016Z
C153	10PF 50V ±0.5% SL		BCXH811002Z
C154	10PF 50V ±0.5% SL		BCXH811002Z
C155	39PF 50V ±5% CG(CH)		BCXG813904Z
C156	Mylar ** 0.0047µF 50V ±5% C-114		BCQD814724Z
C157	Mylar(MKT) 0.1µF 63V ±5% C-184		BCQX911044Z
C158	Mylar 0.0047µF 50V ±5% C-114		BCQD814724Z
C159	Electrolytic 22µF 50V ±20% C-130		BCAP812206Z
C160	-Not Used-		
C161	0.001µF 50V ±10% C(B)		BCXJ811025Z
C162	0.015µF 50V ±10% C(B)		BCXJ811535Z
C163	Tantalum Chip Tape 0.1µF 35V ±20% A C-227		BCPP661086Z
C164	Electrolytic 1µF 50V ±20% C-130		BCAP811096Z
C165	Tantalum Chip Tape 3.3µF 7V ±20% A C-228		BCPP903396Z
C166	0.001µF 50V ±10% C(B)		BCXJ811025Z
C167	0.01µF 25V ±10% C(B)		BCXJ511035Z
C168	0.01µF 25V ±10% C(B)		BCXJ511035Z
C169	Electrolytic 470µF 25V ±20% C-130		BCAP514716Z

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

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C170	-Not Used-		
C171	820PF 50V ±5% CG(CH)		BCXG818214Z
C172	Electrolytic 100µF 16V ±20% C-130		BCAP311016Z
C173	3PF 50V ±0.25% CH(CJ)		BCBR813091Z
C174	0.001µF 50V ±10% C(B)		BCXJ811025Z
C175	-Not Used-		
C176	Electrolytic 220µF 25V ±20% C-130		BCAP512216Z
C177	Electrolytic 470µF 25V ±20% C-130		BCAP514716Z
C178	Semi-Conductor (SR) 0.1µF 25V ±10%		BCGC511045Z
C179	Electrolytic 47µF 25V ±20% C-130		BCAP514706Z
C181	220PF 50V ±5% CG(CH)		BCXG812214Z
C180	-Not Used-		
C182	Electrolytic 220µF 25V ±20% C-130		BCAP512216Z
C183	Electrolytic 100µF 25V ±20% C-130		BCAP511016Z
C184	Electrolytic 220µF 16V ±20% C-130		BCAP312216Z
C185	-Not Used-		
C186	Electrolytic 1000µF 25V ±20% C-130		BCAP511026Z
C187	0.001µF 50V ±10% C(B)		BCXJ811025Z
C188	Electrolytic 100µF 25V ±20% C-130		BCAP511016Z
C189	Electrolytic 47µF 25V ±20% C-130		BCAP514706Z
C190	-Not Used-		
C191	Electrolytic 100µF 25V ±20% C-130		BCAP511016Z
C192	Ceramic 0.047µF 25V +80%/-20% YF(F)		BCKG514730Z
C193	Electrolytic 47µF 25V ±20% C-130		BCAP514706Z
<b>Diodes</b>			
D001		HSK110 TR	BDAY0400001
D002	Varicap	1SV188-9 TRP	BDAY0398001
D003		HSK110 TR	BDAY0400001
D004	Varicap	1SV188-9 TRP	BDAY0398001
D005	-Not Used-		
D006		HSK110 TR	BDAY0400001
<del>D006</del>		HSK120TR for CA	BDAY0393001
D007	-Not Used-		
D008	Varicap	1SV201-4 TRP	BDAY0399001
D009	Varicap	1SV201-4 TRP	BDAY0399001
D010	-Not Used-		
D011	Varicap	1SV201-4 TRP	BDAY0399001
D012		1SS85	BDAY0326001
D013	Varicap	1SV201-4 TRP	BDAY0399001
D014		HSK110 TR	BDAY0400001
D015	-Not Used-		
D016		HSK110 TR	BDAY0400001
D017	Varicap	1SV201-4 TRP	BDAY0399001
D018		1SS184 TE85L	BDAY0256001
D019		HSK110 TR	BDAY0400001

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
D020	-Not Used-		
D021	HSK120 TR Taping		BDAY0393001
D022	HSK110 TR		BDAY0400001
D023	HSK110 TR		BDAY0400001
D024	HSK110 TR		BDAY0400001
D025	Varicap KV-1450 TL00		BDAY0543001
D026	Varicap 1SV201-4 TRP		BDAY0399001
D027	HSK110 TR		BDAY0400001
D028	HSK110 TR		BDAY0400001
D029	HSK110 TR		BDAY0400001
D030	1SS97		BDAY0164001
D031	1SS184 TE85L		BDAY0256001
D032	1SS184 TE85L		BDAY0256001
D033	Varicap 1SV201-4 TRP		BDAY0399001
D034	HSK110 TR		BDAY0400001
D035	-Not Used-		
D036	HSK110 TR		BDAY0400001
D037	Varicap 1SV201-4 TRP		BDAY0399001
D038	HSK110 TR		BDAY0400001
D039	HSK110 TR		BDAY0400001
D041	HSK110 TR		BDAY0400001
D042	HSM88AS TL		BDAY0346001
D043	HSK120 TR Taping		BDAY0393001
D044	HSK120 TR Taping		BDAY0393001
D045	-Not Used-		
D046	HSK120 TR Taping		BDAY0393001
D047	HSK120 TR Taping		BDAY0393001
D048	1N4003		BDAY0133001
D049	1N4003		BDAY0133001
D050	-Not Used-		
D051	1N4003		BDAY0133001
D052	HSK120 TR Taping		BDAY0393001
<b>Jacks</b>			
J001	JK-089 HSJ0615		BJKY0089001
J002	JK-276 5267-02A		BJKY0276002
J003	JK-662 7P		BJKY0662007
J004	JK-662 8P		BJKY0662008
J005	JK-662 8P		BJKY0662008
<b>Coils</b>			
L001	LD-033		BLDY0033001
L002	LE-127 D2.5 2 1/2T		BLEY0127001
L003	LE-351 D3.6 1/2T		BLEY0351001
L004	LF-207		BLFY0207001

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
L005	-Not Used-		
L006	LE-366		BLEY0366001
L007	LE-201 D2.4 3 1/2T		BLEY0201001
L008	LE-353 D6.35 1/2T		BLEY0353001
L009	LF-207		BLFY0207001
L010	-Not Used-		
L011	LE-366		BLEY0366001
L012	LE-293 D6.96 1/2T		BLEY0293001
L013	Inductor Molded LZ-041 0.27UH		BLZY0041278
L014	LB-607 291XN-4031X		BLBY0607001
L015	-Not Used-		
L016	LB-704 61M7D3(R22-E651A)		BLBY0704001
L017	-Not Used-		
L018	LB-799 V291XNS-5343Z		BLBY0799001
L019	LC-226		BLCY0226001
L020	-Not Used-		
L021	LE-127 D2.5 2 1/2T		BLEY0127001
L022	LB-644 VB363SN-120IB		BLBY0644001
L023	LB-568 VB363SN-099IB		BLBY0568001
L024	Inductor Molded LZ-041 0.22UH		BLZY0041228
L025	LD-087 BF04-3*5*1		BLDY0087001
L026	Inductor Molded LZ-041 0.56UH		BLZY0041568
L027	LB-538 A7TRCS-10651Z		BLBY0538001
L028	LF-149 5PNR-2736Z		BLFY0149001
L029	Inductor Molded LZ-087 47UH		BLZY0087470
<b>Transistors</b>			
Q001	Silicon NPN DB-711 2SC3356-R24 T1B		BDBC3356646
Q002	Silicon NPN DB-717 2SC3704 Taping		BDBC3704000
Q003	Silicon NPN DB-717 2SC3704 Taping		BDBC3704000
Q004	Silicon NPN DB-717 2SC3704 Taping		BDBC3704000
Q005	-Not Used-		
Q006	Silicon NPN DB-386 2SC3128		BDBC3128000
Q007	Silicon NPN DB-717 2SC3704 Taping		BDBC3704000
Q008	Silicon NPN DB-724 2SC3121 TE85L		BDBC3121000
Q009	Silicon PNP DB-036 2SA1162-Y TE85L		BDBA1162124
Q010	-Not Used-		
Q011	Silicon NPN DB-724 2SC3121 TE85L		BDBC3121000
Q012	Silicon NPN DB-724 2SC3121 TE85L		BDBC3121000
Q013	Silicon NPN DB-724 2SC3121 TE85L		BDBC3121000
Q014	Silicon NPN DB-724 2SC3121 TE85L		BDBC3121000
Q015	-Not Used-		
Q016	Silicon NPN DB-777 2SC3121-T5L TE85L		BDBC3121814
Q017	Silicon NPN DB-777 2SC3121-T5L TE85L		BDBC3121814
Q018	Silicon PNP DB-036 2SA1162-Y TE85L		BDBA1162124
Q019	Silicon NPN DB-381 2SC2712-Y TE85L		BDBC2712124
Q020	-Not Used-		

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
Q021	Silicon NPN DB-381 2SC2712-Y TE85L		BDBC2712124
Q022	Silicon NPN DB-538 DTC114EK T96		BDBZ0538001
Q023	Silicon NPN DB-381 2SC2712-Y TE85L		BDBC2712124
Q024	Silicon NPN DB-538 DTC114EK T96		BDBZ0538001
Q025	-Not Used-		
Q026	Silicon NPN DB-381 2SC2712-Y TE85L		BDBC2712124
Q027	Silicon NPN DB-439 2SD1676		BDBD1676000
<b>Resistors</b>			
<b>Note :</b> All resistors are carbon fixed-chip type, unless otherwise specified.			
R001	1M ohm 1/10W ±5% Taping		BRFC011054Z
R002	560 ohm 1/10W ±5% Taping		BRFC015614Z
R003	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R004	82K ohm 1/10W ±5% Taping		BRFC018234Z
R005	-Not Used-		
R006	5.6 ohm 1/10W ±5% Taping		BRFC015694Z
R007	150 ohm 1/10W ±5% Taping		BRFC011514Z
R008	AX TS 26 33 ohm 1/6W ±5% Taping		BRPA613304Z
R009	220K ohm 1/10W ±5% Taping		BRFC012244Z
R010	-Not Used-		
R011	330 ohm 1/10W ±5% Taping		BRFC013314Z
R012	100 ohm 1/10W ±5% Taping		BRFC011014Z
R013	22K ohm 1/10W ±5% Taping		BRFC012234Z
R014	330K ohm 1/10W ±5% Taping		BRFC013344Z
R015	-Not Used-		
R016	220 ohm 1/10W ±5% Taping		BRFC012214Z
R017	1K ohm 1/10W ±5% Taping		BRFC011024Z
R018	22K ohm 1/10W ±5% Taping		BRFC012234Z
R019	Carbon Axial Lead 220 ohm 1/4W ±5%		BRFT142214Z
R020	-Not Used-		
R021	100K ohm 1/10W ±5% Taping		BRFC011044Z
R022	-Not Used-		
R023	Carbon Axial Lead 3.3K ohm 1/4W ±5%		BRFT143324Z
R024	56K ohm 1/10W ±5% Taping		BRFC015634Z
R025	-Not Used-		
R026	47K ohm 1/10W ±5% Taping		BRFC014734Z
R027	2.2K ohm 1/10W ±5% Taping		BRFC012224Z
R028	1.2K ohm 1/10W ±5% Taping		BRFC011224Z
R029	100 ohm 1/10W ±5% Taping		BRFC011014Z
R030	-Not Used-		
R031	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R032	1K ohm 1/10W ±5% Taping		BRFC011024Z
R033	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R034	33K ohm 1/10W ±5% Taping		BRFC013334Z
R035	-Not Used-		
R036	47K ohm 1/10W ±5% Taping		BRFC014734Z
R037	82 ohm 1/10W ±5% Taping		BRFC018204Z

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
R038	100 ohm 1/10W ±5% Taping		BRFC011014Z
R039	33K ohm 1/10W ±5% Taping		BRFC013334Z
R040	-Not Used-		
R041	33 ohm 1/10W ±5% Taping		BRFC013304Z
R042	1 ohm 1/10W ±5% Taping		BRFC011094Z
R043	390K ohm 1/10W ±5% Taping		BRFC013944Z
R044	1K ohm 1/10W ±5% Taping		BRFC011024Z
R045	-Not Used-		
R046	100 ohm 1/10W ±5% Taping		BRFC011014Z
R047	1.5K ohm 1/10W ±5% Taping		BRFC011524Z
R048	1K ohm 1/10W ±5% Taping		BRFC011024Z
R049	390K ohm 1/10W ±5% Taping		BRFC013944Z
R050	-Not Used-		
R051	AX TS 26 2.7K ohm 1/6W ±5% Taping		BRPA612724Z
R052	Carbon Axial Lead 47K ohm 1/4W ±5%		BRFT144734Z
R053	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R054	AX TS 26 2.7K ohm 1/6W ±5% Taping		BRPA612724Z
R055	-Not Used-		
R056	47K ohm 1/10W Taping		BRFC014734Z
R057	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R058	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R059	1K ohm 1/10W ±5% Taping		BRFC011024Z
R060	-Not Used-		
R061	100 ohm 1/10W ±5% Taping		BRFC011014Z
R062	3.3K ohm 1/10W ±5% Taping		BRFC013324Z
R063	47K ohm 1/10W ±5% Taping		BRFC014734Z
R064	100 ohm 1/10W ±5% Taping		BRFC011014Z
R065	1K ohm 1/10W ±5% Taping		BRFC011024Z
R066	100 ohm 1/10W ±5% Taping		BRFC011014Z
R067	47K ohm 1/10W ±5% Taping		BRFC014734Z
R068	47K ohm 1/10W ±5% Taping		BRFC014734Z
R069	47K ohm 1/10W ±5% Taping		BRFC014734Z
R070	Jumper Chip RZ-035 RMC 1/10 JP Tape $\emptyset$		BRZY0035001
R070	33 ohm 1/10W ±5% Taping for CA		BRFC013304Z
R071	330K ohm 1/10W ±5% Taping		BRFC013344Z
R072	1K ohm 1/10W ±5% Taping		BRFC011024Z
R073	12K ohm 1/10W ±5% Taping		BRFC011234Z
R074	12K ohm 1/10W ±5% Taping		BRFC011234Z
R075	-Not Used-		
R076	470K ohm 1/10W ±5% Taping		BRFC014744Z
R077	10K ohm 1/10W ±5% Taping		BRFC011034Z
R078	10K ohm 1/10W ±5% Taping		BRFC011034Z
R079	4.7K ohm 1/10W ±5% Taping		BRFC014724Z
R080	-Not Used-		
R081	100K ohm 1/10W ±5% Taping		BRFC011044Z
R082	10K ohm 1/10W ±5% Taping		BRFC011034Z
R083	10K ohm 1/10W ±5% Taping		BRFC011034Z
R084	1.8K ohm 1/10W ±5% Taping		BRFC011824Z

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
R085	100 ohm 1/10W ±5% Taping		BRFC011014Z
R086	100 ohm 1/10W ±5% Taping		BRFC011014Z
R087	-Not Used-		
R088	4.7K ohm 1/10W ±5% Taping		BRFC014724Z
R089	4.7K ohm 1/10W ±5% Taping		BRFC014724Z
R090	-Not Used-		
R091	10K ohm 1/10W ±5% Taping		BRFC011034Z
R092	560 ohm 1/10W ±5% Taping		BRFC015614Z
R093	330 ohm 1/10W ±5% Taping		BRFC013314Z
R094	33K ohm 1/10W ±5% Taping		BRFC013334Z
R095	-Not Used-		
R096	100 ohm 1/10W ±5% Taping		BRFC011014Z
R097	470 ohm 1/10W ±5% Taping		BRFC014714Z
R098	100K ohm 1/10W ±5% Taping		BRFC011044Z
R099	100 ohm 1/10W ±5% Taping		BRFC011014Z
R100	-Not Used-		
R101	10 ohm 1/10W ±5% Taping		BRFC011004Z
R102	330 ohm 1/10W ±5% Taping		BRFC013314Z
R103	2.7K ohm 1/10W ±5% Taping		BRFC012724Z
R104	33K ohm 1/10W ±5% Taping		BRFC013334Z
R105	10K ohm 1/10W ±5% Taping		BRFC011034Z
R106	10K ohm 1/10W ±5% Taping		BRFC011034Z
R107	10K ohm 1/10W ±5% Taping		BRFC011034Z
R108	220K ohm 1/10W ±5% Taping		BRFC012244Z
R109	22K ohm 1/10W ±5% Taping		BRFC012234Z
R110	-Not Used-		
R111	15K ohm 1/10W ±5% Taping		BRFC011534Z
R112	18K ohm 1/10W ±5% Taping		BRFC011834Z
R113	18K ohm 1/10W ±5% Taping		BRFC011834Z
R114	2.2M ohm 1/10W ±5% Taping		BRFC012254Z
R115	82K ohm 1/10W ±5% Taping		BRFC018234Z
R116	AX TS 26 10 ohm 1/6W ±5% Taping		BRPA611004Z
R117	3.3K ohm 1/10W ±5% Taping		BRFC013324Z
R118	Carbon Axial Lead 15K ohm 1/4W ±5%		BRFT141534Z
R119	1K ohm 1/10W ±5% Taping		BRFC011024Z
R121	12K ohm 1/10W ±5% Taping		BRFC011234Z
R122	4.7K ohm 1/10W ±5% Taping		BRFC014724Z
R123	56K ohm 1/10W ±5% Taping		BRFC015634Z
R124	56K ohm 1/10W ±5% Taping		BRFC015634Z
R125	Jumper Chip RZ-035 RMC 1/10 JP Tape $\emptyset$		BRZY0035001
R126	56K ohm 1/10W ±5% Taping		BRFC015634Z
R127	12K ohm 1/10W ±5% Taping		BRFC011234Z
R128	18K ohm 1/10W ±5% Taping		BRFC011834Z
R129	1K ohm 1/10W ±5% Taping		BRFC011024Z
R130	-Not Used-		
R131	6.8K ohm 1/10W ±5% Taping		BRFC016824Z
R132	Carbon Axial Lead 8.2K ohm 1/4W ±5%		BRFT148224Z
R133	100K ohm 1/10W ±5% Taping		BRFC011044Z

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
R134	680K ohm 1/10W ±5% Taping		BRFC016844Z
R135	-Not Used-		
R136	18K ohm 1/10W ±2% Taping		BRFC011837Z
R137	18K ohm 1/10W ±2% Taping		BRFC011837Z
R138	10K ohm 1/10W ±2% Taping		BRFC011037Z
R139	33K ohm 1/10W ±2% Taping		BRFC013337Z
R140	-Not Used-		
R141	18K ohm 1/10W ±2% Taping		BRFC011837Z
R142	3.9K ohm 1/10W ±2% Taping		BRFC013927Z
R143	100K ohm 1/10W ±5% Taping		BRFC011044Z
R144	100K ohm 1/10W ±5% Taping		BRFC011044Z
R145	-Not Used-		
R146	330K ohm 1/10W Taping		BRFC013344Z
R147	680K ohm 1/10W ±5% Taping		BRFC016844Z
R148	4.7K ohm 1/10W ±5% Taping		BRFC014724Z
R149	330 ohm 1/10W ±5% Taping		BRFC013314Z
R150	-Not Used-		
R151	270K ohm 1/10W ±5% Taping		BRFC012744Z
R152	470K ohm 1/10W ±5% Taping		BRFC014744Z
R153	47K ohm 1/10W ±5% Taping		BRFC014734Z
R154	33 ohm 1/10W ±5% Taping		BRFC013304Z
R155	-Not Used-		
R156	33K ohm 1/10W ±5% Taping		BRFC013334Z
R157	Carbon Axial Lead 2.2 ohm 1/4W ±5%		BRFT142294Z
R158	1 ohm 1/10W ±5% Taping		BRFC011094Z
R159	39K ohm 1/10W ±5% Taping		BRFC013934Z
R160	-Not Used-		
R161	3.3K ohm 1/10W ±5% Taping		BRFC013324Z
R162	180 ohm 1/10W ±5% Taping		BRFC011814Z
R163	Carbon Formed Vert 0.5 ohm 1/4W ±5%		BRUB145084Z
R164	AX TS 26 22 ohm 1/6W ±5% Taping		BRPA612204Z
R165	-Not Used-		
R166	Metal Oxide 10 ohm 1WS ±5%		BRSJ001004Z
R167	Carbon AX TS 26 47 ohm 1/6W ±5% Taping		BRPA614704Z
<b>Integrated Circuits</b>			
IC001	RF Amp	UPC1675G-T1	BDEY1190001
IC002	RF Amp	UPC1675G-T1	BDEY1190001
IC003	RF Amp Mixer	LA-1186N	BDEY1051001
IC004	PLL	PLL2002A1	BDEY0868001
IC005	-Not Used-		
IC006	Loop Filter	CA3140E	BDEY0604001
IC007	IF Amp & Detector	NJM3359D-A	BDEY0815001
IC008	Window	NJM2904D	BDEY0580001
IC009	AF Power Amp	TBA820M	BDEY0659001
IC010	-Not Used-		
IC011	DC-DC Converter	IR3M03A	BDEY1153001
IC012	Regulator	L78M05CV	BDEY0995001



REF. NO.	DESCRIPTION		RS PART NO.	MFR'S PART NO.
IC013	Regulator	S-81250HG		BDEY0688001
IC014	IF Amp & IF DET	LA1600A		BDEY1000001
<b>Miscellaneous</b>				
T001	Transformer	TF-374 <i>INPUT POWER INDUCTOR</i>		BTFY0374001
X001	Crystal	QX-486 10.35MHZ		BQXY0486001
CT001	Trimmer	CT-064 ECR-GAO35M11		BCTY0064350
CT002	Trimmer	CT-064 ECR-GAO35M11		BCTY0064350
CT003	Trimmer	CT-064 ECR-GAO35M11		BCTY0064350
CT004	Trimmer	CT-082 50PF		BCTY0082500
CT006	Trimmer	CT-064 ECR-GAO35E11		BCTY0064350
FC001	Flat Cable	WF-060 5.5- 35- 3.5		BWFY0600353
FT001	Filter Crystal	FL-177 UMF-208C		BFLY0177001
FT002	Filter Ceramic	FL-142 SFR450D		BFLY0142001
VR001	Semi-Fixed	RT-182 TT24R 30KB <i>SQUELCH TRIM POT.</i>		BRTY0182303
VR002	Variable	RV-766 100KA & 100KC <i>SQUELCH ADJUST</i>		BRVY0766001
WA001	DC Cord <i>5.5MM</i>	WZ-463 1565 <i>VOLUME</i>		BWZY0463001
P001	Pilot Lamp	PL-105 5V		BPLY0105001

### CONTROL PCB ASSEMBLY

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
	<b>ASSEMBLY, PCB, Control</b> Consists of the following:		AB220ZPBEB
<b>Capacitors</b>			
<b>Note :</b> All capacitors are ceramic M/L (2125) type unless otherwise specified.			
The following codes indicate variations of capacitors against temperatures: <b>YA= ±5%, YB= ±10%, YD=+20-30%, YE=+20-50%(-25~+85°C), ZF=+30-80%(-10~+70°C),</b> <b>CH=0 ±60ppm/°C, RH=220ppm/°C ±60ppm/°C, TH=-470ppm/°C ±60ppm/°C,</b> <b>SL=+350ppm/°C ~1000ppm/°C, UJ=-750ppm/°C ±120ppm/°C</b>			
C201	1μF 16V +80%/-20% F		BCXF311050Z
C202	220PF 50V ±5% CG(CH)		BCXG812214Z
C203	220PF 50V ±5% CG(CH)		BCXG812214Z
C204	0.01μF 25V ±10% C(B)		BCXJ511035Z
C205	0.1μF 25V +80%/-20% F		BCXK511080Z
C206	0.001μF 50V ±10% C(B)		BCXJ811025Z
C207	0.001μF 50V ±10% C(B)		BCXJ811025Z
<b>Diode</b>			
D201	HZM3.6NB2		BDAY0673006

## KEYBOARD PCB ASSEMBLY

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
	<b>ASSEMBLY, PCB, Keyboard</b> Consists of the following:		AB220ZPBEC
B301 WA302	PC Board, Keyboard PH-133AA Wires, Assembled WZ-1108 UB-220 (P)(B) Parts		BPHY0133AAZ BWZY1108001 AB220ZPB EY
J501	JK-474 BNC-RB3-8D-01		BJKY0474001
Y501	Keyboard, Rubber YY-1247		BYYY1247001
SP501	Speaker SP-247		BSPY0247001
WA501	Wires, Assembled WZ-1062		BWZY1062001

## SUBSTITUTION

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C101	Electrolytic 4.7 $\mu$ F 50V $\pm$ 20% C-128		BCAM814796Z
C103	Electrolytic 4.7 $\mu$ F 50V $\pm$ 20% C-156		BCAZ814796Z
C104	Tantalum Chip 0.22 $\mu$ F 35V $\pm$ 20% C-122 TAPE		BCSH662286Z
C104	Tantalum Chip 0.22 $\mu$ F 35V $\pm$ 20% AC-222 TAPE		BCSU662286Z
C112	Tantalum Chip 0.1 $\mu$ F 35V $\pm$ 20% C-122 TAPE		BCSH661086Z
C112	Tantalum Chip 0.1 $\mu$ F 35V $\pm$ 20% AC-222 TAPE		BCSU661086Z
C124	Electrolytic 3.3 $\mu$ F 50V $\pm$ 20% C-128		BCAM813396Z
C124	Electrolytic 3.3 $\mu$ F 50V $\pm$ 20% C-156		BCAZ813396Z
C127	Electrolytic 22 $\mu$ F 50V $\pm$ 20% C-128		BCAM812206Z
C127	Electrolytic 22 $\mu$ F 50V $\pm$ 20% C-156		BCAZ812206Z
C131	Electrolytic 1 $\mu$ F 50V $\pm$ 20% C-128		BCAM811096Z
C131	Electrolytic 1 $\mu$ F 50V $\pm$ 20% C-156		BCAZ811096Z
C131	Electrolytic 100 $\mu$ F 10V $\pm$ 20% C-128		BCAM111016Z
C152	Electrolytic 100 $\mu$ F 10V $\pm$ 20% C-128		BCAM111016Z
C152	Electrolytic 100 $\mu$ F 10V $\pm$ 20% C-156		BCAZ111016Z
C159	Electrolytic 22 $\mu$ F 50V $\pm$ 20% C-128		BCAM812206Z
C159	Electrolytic 22 $\mu$ F 50V $\pm$ 20% C-159		BCAZ812206Z
C163	Tantalum Chip 0.1 $\mu$ F 35V $\pm$ 20% C-122 TAPE		BCSH661086Z
C163	Tantalum Chip 0.1 $\mu$ F 35V $\pm$ 20% AC-222 TAPE		BCSU661086Z
C164	Electrolytic 1 $\mu$ F 50V $\pm$ 20% C-128		BCAM811096Z
C164	Electrolytic 1 $\mu$ F 50V $\pm$ 20% C-156		BCAZ811096Z
C165	Tantalum Chip Tape 3.3 $\mu$ F 7V $\pm$ 20% AC-228		BCSH903396Z
C165	Tantalum Chip Tape 3.3 $\mu$ F 6.3V $\pm$ 20% AC-222		BCSU903396Z
C169	Electrolytic 470 $\mu$ F 25V $\pm$ 20% C-128		BCAM514716Z
C169	Electrolytic 470 $\mu$ F 25V $\pm$ 20% C-156		BCAZ514716Z
C172	Electrolytic 100 $\mu$ F 10V $\pm$ 20% C-128		BCAM111016Z
C172	Electrolytic 100 $\mu$ F 10V $\pm$ 20% C-156		BCAZ111016Z
C176	Electrolytic 220 $\mu$ F 25V $\pm$ 20% C-128		BCAM512216Z

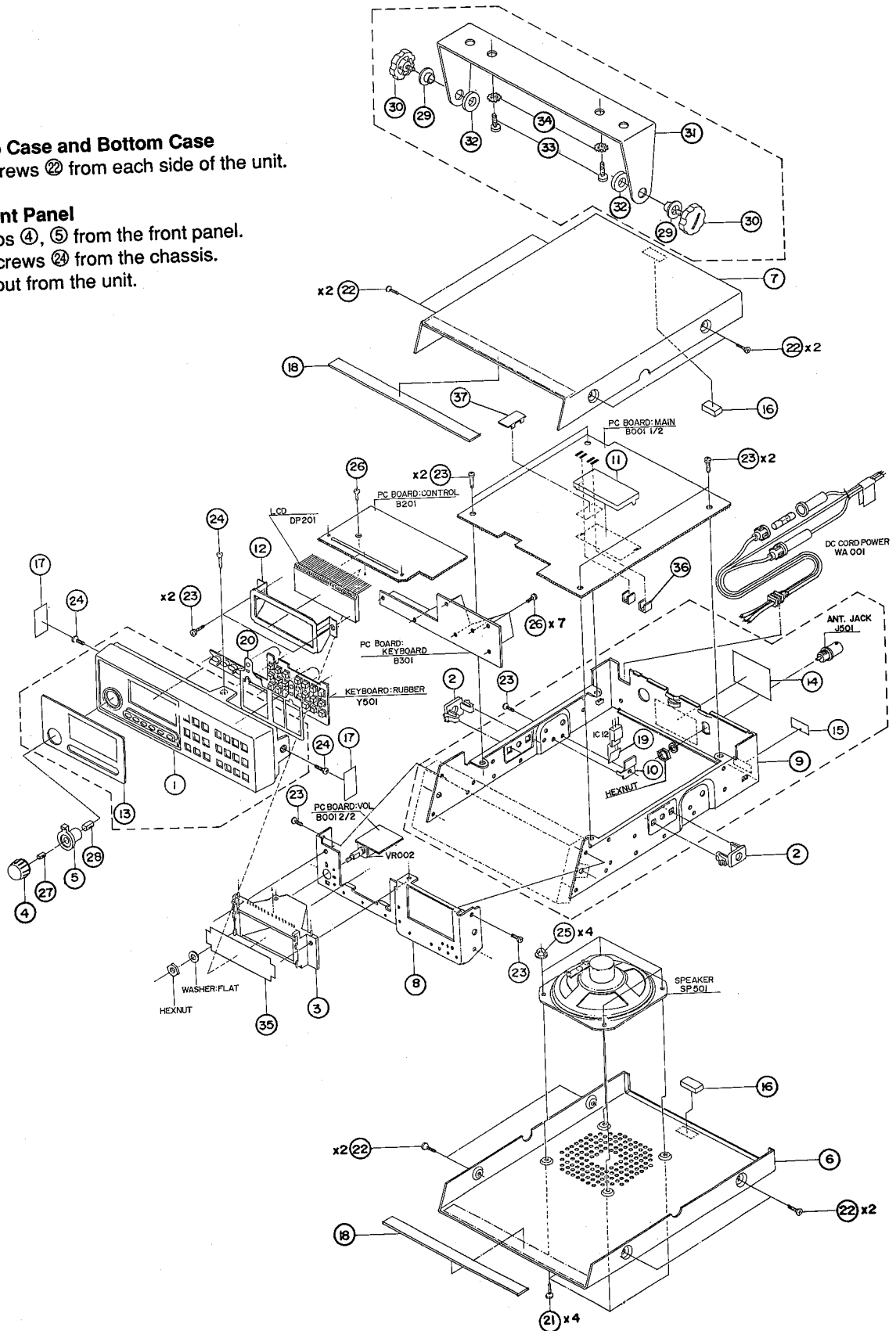
REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
C176	Electrolytic 220 $\mu$ F 25V $\pm$ 20% C-156		BCAZ512216Z
C177	Electrolytic 470 $\mu$ F 25V $\pm$ 20% C-128		BCAM514716Z
C177	Electrolytic 470 $\mu$ F 25V $\pm$ 20% C-156		BCAZ514716Z
C179	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-128		BCAM514706Z
C179	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-156		BCAZ514706Z
C182	Electrolytic 220 $\mu$ F 25V $\pm$ 20% C-128		BCAM512216Z
C182	Electrolytic 220 $\mu$ F 25V $\pm$ 20% C-156		BCAZ512216Z
C183	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-128		BCAM511016Z
C183	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-156		BCAZ511016Z
C186	Electrolytic 1000 $\mu$ F 25V $\pm$ 20% C-128		BCAM511026Z
C186	Electrolytic 1000 $\mu$ F 25V $\pm$ 20% C-156		BCAZ511026Z
C188	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-128		BCAM511016Z
C188	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-156		BCAZ511016Z
C189	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-128		BCAM514706Z
C189	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-156		BCAZ514706Z
C191	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-125		BCAM511016Z
C191	Electrolytic 100 $\mu$ F 25V $\pm$ 20% C-156		BCAZ511016Z
C193	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-128		BCAM514706Z
C193	Electrolytic 47 $\mu$ F 25V $\pm$ 20% C-156		BCAZ514706Z
D018	DCB010 TB		BDAY0423002
D031	DCB010 TB		BDAY0423002
D032	DCB010 TB		BDAY0423002
D048	1N4003		BDAY0060003
D049	1N4003		BDAY0060003
D051	1N4003		BDAY0060003
L019	LC-209		BLCY0209001
Q009	DB-036 2SA1162-G(GR)TE85L		BDBA1162107
Q009	DB-048 2SA1179-M5 TB		BDBA1179666
Q018	DB-036 2SA1162-G(GR)TE85L		BDBA1162107
Q018	DB-048 2SA1179-M5 TB		BDBA1179666
Q019	DB-743 2SC2812-L5 TB		BDBC2812642
Q021	DB-743 2SC2812-L5 TB		BDBC2812642
Q021	DB-381 2SC2712-GR TE85L		BDBC2712303
Q022	DB-573 RT1N141C-T12-1 T1		BDBZ0573001
Q023	DB-743 2SC2812-L5 TB		BDBC2812642
Q024	DB-573 RT1N141C-T12-1 T1		BDBZ0573001
Q026	DB-743 2SC2812-L5 TB		BDBC2812642
Q027	DB-428 2SD1676		BDBY1676000
Q201	DB-743 2SC2812-L6 TB		BDBC2812648
Q201	DB-381 2SC2712-BL TE85L		BDBC2712301
Q202	DB-573 RT1N141C-T12-1 T1		BDBZ0573001
Q203	DB-565 RT1P144C-T12 T1		BDBZ0565001
Q205	DB-565 RT1P144C-T12 T1		BDBZ0565001
Q206	DB-565 RT1P144C-T12 T1		BDBZ0565001
Q207	DB-565 RT1P144C-T12 T1		BDBZ0565001
Q208	DB-565 RT1P144C-T12 T1		BDBZ0565001
Q209	DB-565 RT1P144C-T12 T1		BDBZ0565001
D021	RLS4148 TE11		BDAY0433001

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
D043	RLS4148 TE11		BDAY0433001
D044	RLS4148 TE11		BDAY0433001
D046	RLS4148 TE11		BDAY0433001
D047	RLS4148 TE11		BDAY0433001
D052	RLS4148 TE11		BDAY0433001
D001	RLS135 TE11		BDAY0730001
D003	RLS135 TE11		BDAY0730001
D006	RLS135 TE11		BDAY0730001
D014	RLS135 TE11		BDAY0730001
D016	RLS135 TE11		BDAY0730001
D019	RLS135 TE11		BDAY0730001
D022	RLS135 TE11		BDAY0730001
D023	RLS135 TE11		BDAY0730001
D024	RLS135 TE11		BDAY0730001
D027	RLS135 TE11		BDAY0730001
D028	RLS135 TE11		BDAY0730001
D029	RLS135 TE11		BDAY0730001
D034	RLS135 TE11		BDAY0730001
D036	RLS135 TE11		BDAY0730001
D038	RLS135 TE11		BDAY0730001
D039	RLS135 TE11		BDAY0730001
D041	RLS135 TE11		BDAY0730001

# DISASSEMBLY/EXPLODED VIEW

**To Remove the Top Case and Bottom Case**  
Remove the eight screws 22 from each side of the unit.

**To Remove the Front Panel**  
Pull out the two knobs 4, 5 from the front panel.  
Remove the three screws 24 from the chassis.  
Pull the front panel out from the unit.



**Note:** Parts with reference numbers are listed in the MECHANICAL PARTS LIST.  
Other parts are listed in the ELECTRICAL PARTS LIST.

## MECHANICAL PARTS LIST

REF. NO.	DESCRIPTION	RS PART NO.	MFR'S PART NO.
1	Panel, Front		GCMF128151Z
2	Spacer (C)		GETC416896Z
3	Holder, LCD		GHDZ328152Z
4	Knob, VOL		GNBW419527Z
5	Knob, SQ		GNBW419528Z
6	Cover, Bottom		HCMB325690Z
7	Cover, Top		HCMT319531Z
8	Front Chassis		HCSF328186Z
9	Chassis		HCSY228185Z
10	Holder, IC		HHDE481129Z
11	Shield Case		HSDC425695Z
12	Frame, LCD		HSDP428146Z
13	Plate, Display		KDPT428153Z
14	Label, FCC		PLBF425692Z
	Label, DOC		PLBF425731Z
15	Label, Production Date		PLBS490315A
16	Cushion		RCUN404172A
17	Insulation Tape (C)		RETC420040Z
18	Wool-Coated Paper		
	Wool Tack		
	Wool Paper 10*150*0.T		RUTC403865Z
19	Insulation Plate	PC 0.3T	RZEB420863A
20	ESD Plate	ALP=T=0.1	HSDP325724Z
21	Screw, Bind HD +	M3X8 BNI	SSCW193008B
22	Screw, Taptight Bind HD +	M3X6 BNI	SSCW343006B
23	Screw, Taptight Bind HD +	M3X6 NI	SSCW343006N
24	Screw, Taptight Flat HD +	M3X6 NI	SSCW373006N
25	Nut, Flange	M3 ZMC	SSCW480030Z
26	Screw, P Tight Bind HD+	D2X6 NI	SSCW802006N
27	Spring Plate, Knob	D3.5	TSTD0200001
28	Spring Plate	D6	TSTD0200002
29	Bushing	Polyacetal White	GBSG460079Z
30	Screw, Mounting	ABS INST CLR Black	GMSC405736Z
31	Mounting Bracket	SPCC 1.6T Black	HBCT420028Z
32	Washer, Rubber	Neoprene Black 9*17*2.0T	LWSR420029Z
	Label, Production Date Paper		PLBS490199A
33	Screw, Tapping Round HD +	D5X10 NI	SSCW295010N
34	Washer, Star	D5 NI	SSCW540050N
35	LCD Paper	Yupo Paper 0.15t	RETC425737Z
36	Shield Case	SPTTE 0.3T for CA only	HSDP425744Z
37	Shield Case	SPTTE 0.3T for CA only	HSDP425745Z
	Front Panel Assmby	(Ref. No. 1 and 13)	FRPAAS220ZP
	Chassis Assmby	(Ref. No.2, 9, and 14)	CHAssy220ZP
	Mounting Bracket Assmby	(Ref. No.29, 31, 32, and 34)	MTBRAS220ZP

**NOTE:** Ref. No. in this Mechanical Parts List correspond with the number in the Exploded View.

# IC AND TRANSISTOR VOLTAGE CHART

IC	Pin	VLO	VHI	UHF	800	Remarks
1	1		0		0	
	2		0		3.6	
	3		0		4.3	
	4		0		1.0	
2	1		0		0	
	2		0		3.6	
	3		0		4.3	
	4		0		1.0	
3	1		0.9			
	2		1.6			
	3		3.1			
	4		0			
	5		0			
	6		4.0			
	7		<del>4.9</del>			
	8		3.5			
	9		4.2			
4	1		2.5			
	2		2.5			
	3		<del>4.7</del>			
	4		4.7			
	5		<del>4.7</del>			
	6		0			
	7		4.7			
	8		2.4			
	9		4.6			
	10		<del>4.6</del>			
	11		0			
	12		<del>4.6</del>			
	13		<del>4.6</del>			
	14		4.7			
	15		4.7			
	16		2.4			
	17		0			
	18		2.1			
	19		0			
	20		2.0			
	21		1.0			
	22		0			
	23		2.0			
	24		3.0			
	25		0			
	26		4.7			
	27		4.7			
	28		4.7			
	29		4.7			
	30		4.7			
	31		4.7			
	66		4.9			

IC	Pin	VLO	VHI	UHF	800	Remarks
6	1		0.2			
	2		9.0			
	3		7.4			
	4		0			
	5		<del>9.0</del>			
	6		9.0			
	7		16.2			
	8		<del>16.2</del>			
7	1		4.8			
	2		4.2			
	3		4.7			
	4		4.9			
	5		1.0			
	6		<del>1.0</del>			
	7		<del>1.0</del>			
	8		4.9			
	9		2.8			
	10		2.1			
	11		0			
	12		2.4			
	13		2.5			
	14		0.75			SO OPEN
	15		<del>0.75</del>			SO CLOSE
	16		0			SO OPEN
	17		1.2			SO CLOSE
	18		0			
	19		2.1			
8	1		0			
	2		2.0			
	3		1.0			
	4		0			
	5		2.0			
	6		3.0			
	7		0			
	8		4.9			

IC	Pin	VLO	VHI	UHF	800	Remarks
9	1		0.7			
	2		0.6			
	3		0			
	4		0			
	5		4.9			
	6		10.8			
	7		10.8			
	8		6.4			
11	1		10.7			
	2		0			
	3		0.7			
	4		0			
	5		1.3			
	6		10.8			
	7		<del>10.8</del>			
	8		<del>10.8</del>			
12	1		8.9			
	2		0			
	3		4.9			
13	1		0			
	2		10.5			
	3		5.2			
14	1		<del>5.2</del>			
	2		1.1			
	3		<del>1.1</del>			
	4		<del>1.1</del>			
	5		0			
	6		0.9			
	7		1.1			
	8		4.8			
	9		1.4			

IC	Pin	VLO	VHI	UHF	800	Remarks
201	1		4.9			
	2		0			
	3		4.9			
	4		4.9			
	5		4.9			
	6		0			
	7		0			
	8		0			
	9		4.9			
	10		0			
	11		4.6			
	12		0			
	13		<del>4.6</del>			
	14		0			
	15		4.6			
	16		<del>4.6</del>			
	17		<del>4.6</del>			
	18		4.8			
	19		4.6			
	20		4.6			
	21		4.6			
	22		4.6			
	23		0			
	24		0			
	25		0			
	26		0			
	27		0			
	28		0			
	29		0			
	30		4.9			
	31		2.3			
	66		2.3			

IC	Pin	VLO	VHI	UHF	800	Remarks
201	67		X			
	68		X			
	69		X			
	70		X			
	71		X			
	72		X			
	73		4.6			
	74		2.1			
	75		X			
	76		0			
	77		4.7			
	78		4.6			
	79		0			
	80		4.6			

Q	Pin	VHI	UHF	AIR	800	Remarks
1	E	0			0	
	C	0			4.0	
	B	0			0.7	
2	E	0			0	
	C	0			4.1	
	B	0			0.7	
3	E	0			0	
	C	0			4.4	
	B	0			0.7	
4	E				0	
	C				3.9	
	B				1.7	
6	1	0	0.8			
	2	0	0			
	3	0	3.9			
7	E	0	0			
	C	0	3.2			
	B	0	0.7			
8	E	0	0			
	C	0	3.3			
	B	0	0.7			
9	E	4.7	4.7			
	C	0	4.6			
	B	4.1	4.1			
11	E	0.8				
	C	4.0				
	B	1.5				
12	E	0.8				
	C	4.5				
	B	1.5				
13	E	2.5				
	C	4.2				
	B	3.3				

Q	Pin	VHI	UHF	AIR	800	Remarks
14	E	0				
	C	4.3				
	B	0.7				
16	E	4.7				
	C	16.2				
	B	1.1				
17	E	4.7				
	C	8.9				
	B	1.1				
18	E	16.2				
	C	8.9				
	B	16.2				
19	E	0				
	C	2.2				
	B	0.7				
21	E	0				SO OPEN
	C	4.7				SO CLOSE
	B	0				SO OPEN
		0				SO CLOSE
22	E	0		0		
	C	0.8		0		
	B	0		4.8		
23	E	0				
	C	1.5				
	B	0				
24	E	0	0			
	C	1.0	0			
	B	0	4.7			
26	E	0.2				
	C	2.7				
	B	0.8				
27	1	0				
	2	0				
	3	0				SO OPEN
		4.5				SO CLOSE

Q	Pin	VLO	VHI	UHF	AIR	800	Remarks
201	E	0					
	C	4.5					
	B	0					
202	E	0					
	C	0					
	B	1.7					
203	E	4.9					
	C	0					
	B	4.9					
204	E	4.9					
	C	4.9					
	B	0					
205	E	4.9	4.9				
	C	0	4.7				
	B	4.9	0				
206	E	4.9				4.9	
	C	0				4.7	
	B	4.9				0	
207	E	4.9	4.9				
	C	4.8	0				
	B	0	4.9				
208	E	4.9				4.9	
	C	0				4.8	
	B	4.9				0	
209	E	4.9					
	C	4.8					
	B	0					

TEST CONDITION:  
MEASURING CHANNEL & FREQUENCY


- VHF (LO) 2 40.84MHz
- VHF (HI) 5 162.40MHz
- UHF 8 453.25MHz
- AIR 12 127.175MHz
- 800MHz 23 888.96 MHz

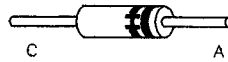
SUPPLY VOLTAGE 12.0V  
VOLUME MINIMUM  
SQUELCH OPEN




# SEMICONDUCTOR LEAD IDENTIFICATION


## DIODES

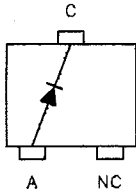
c —  — A IN4003

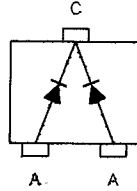
 1SS85

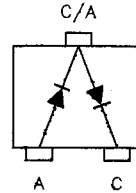
 1SS97

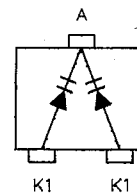
c  A HSK110TR  
HSK120

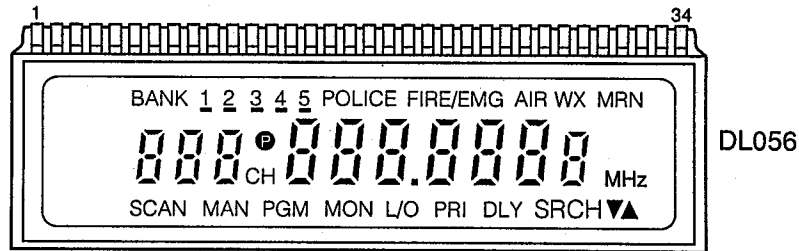
c  A 1SV201-4 TRP  
1SV188-9 TRP

 HZM36NB

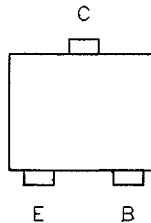
 1SS184  
TE85L

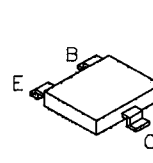
 HSM88AS  
TL

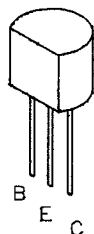
 KV-1450

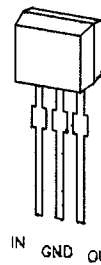


## TRANSISTORS

 2SC3356-R24  
2SC3121  
2SA1162-Y  
2SC3121-T5L

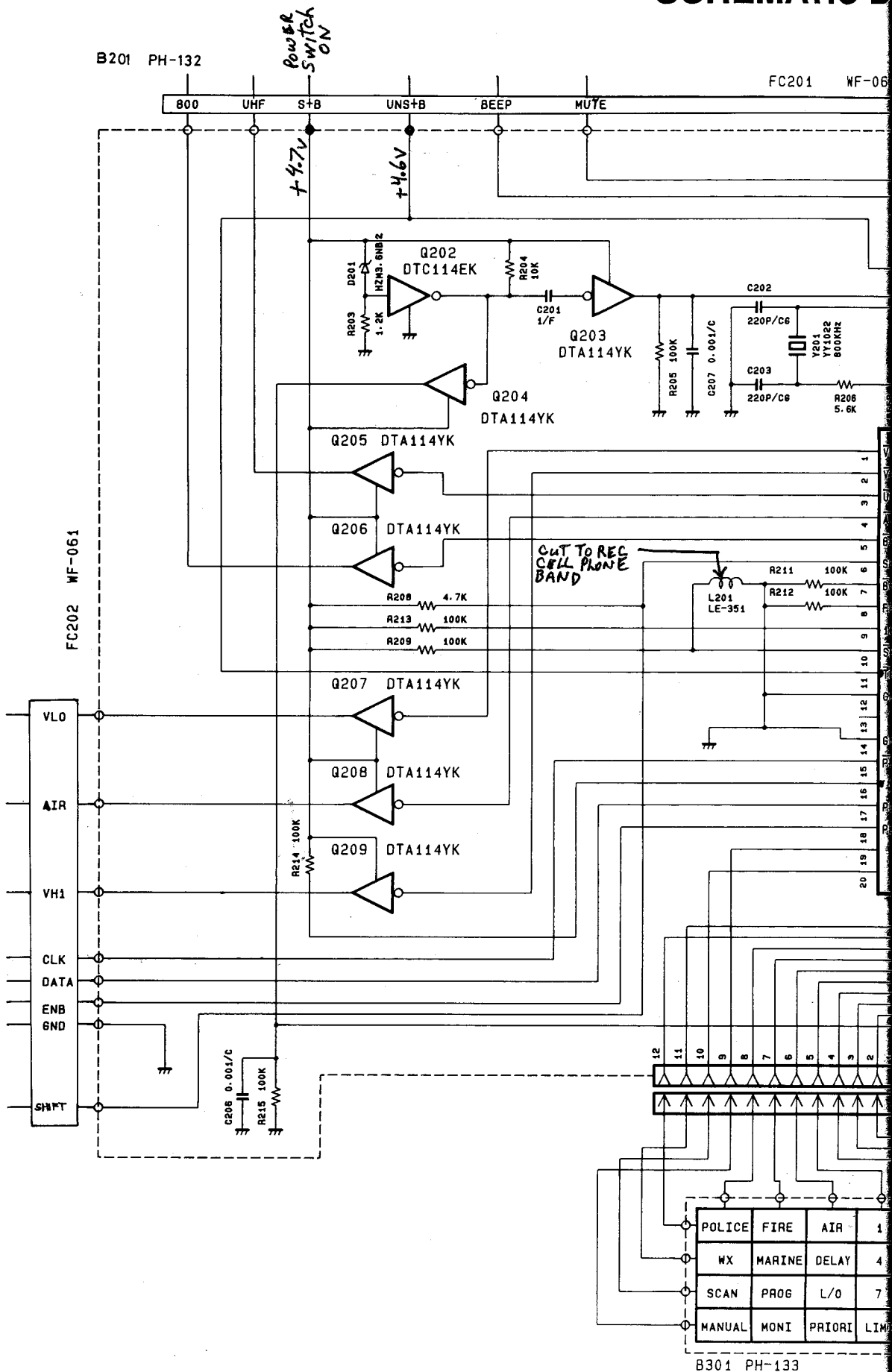
 2SC2812-L5  
2SC3704  
2SC2712-Y  
DTC114 EK  
DTA114 YK

 2SC3128

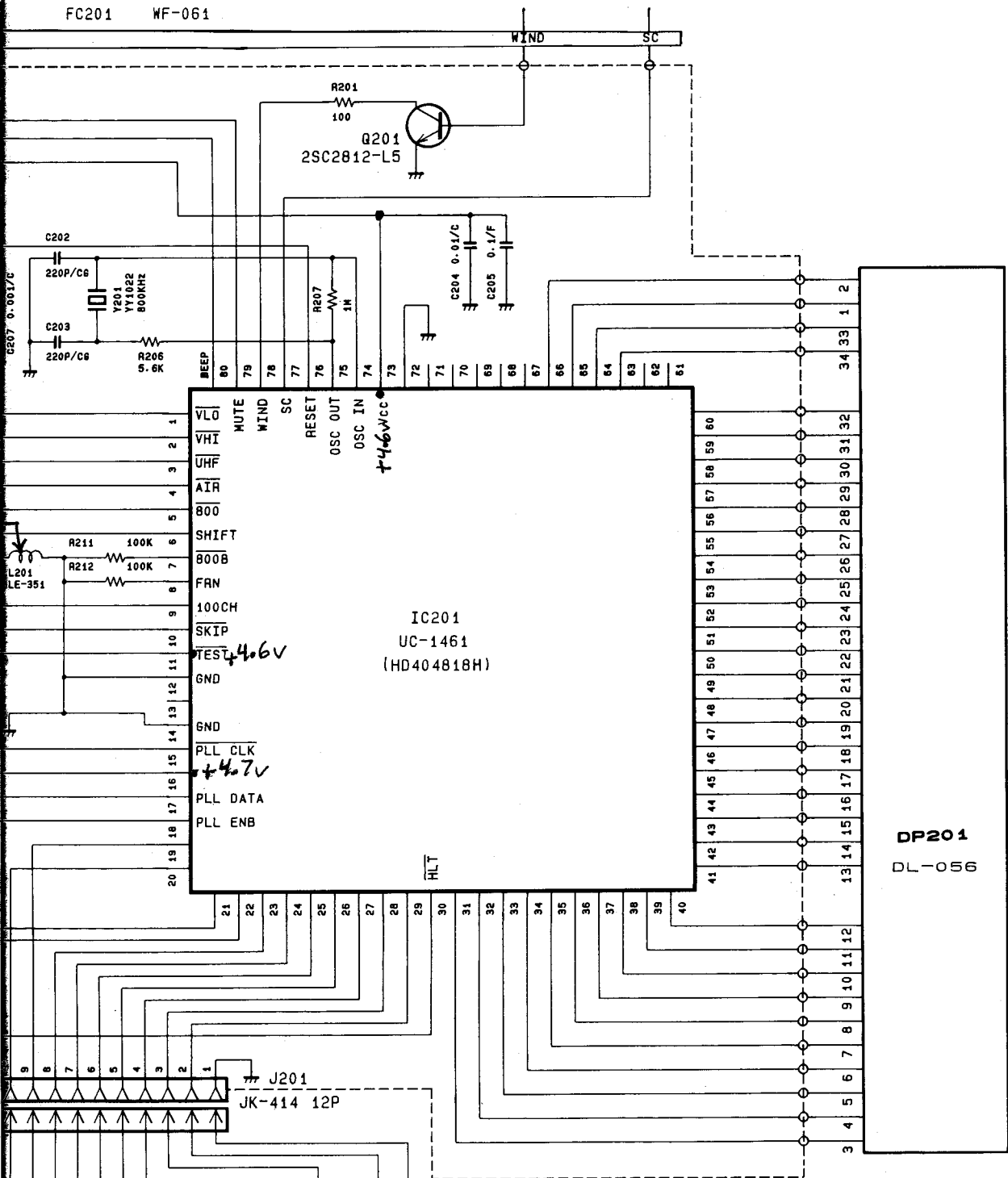
 2SD1676

# SCHEMATIC D

## Control Section



# SCHEMATIC DIAGRAMS

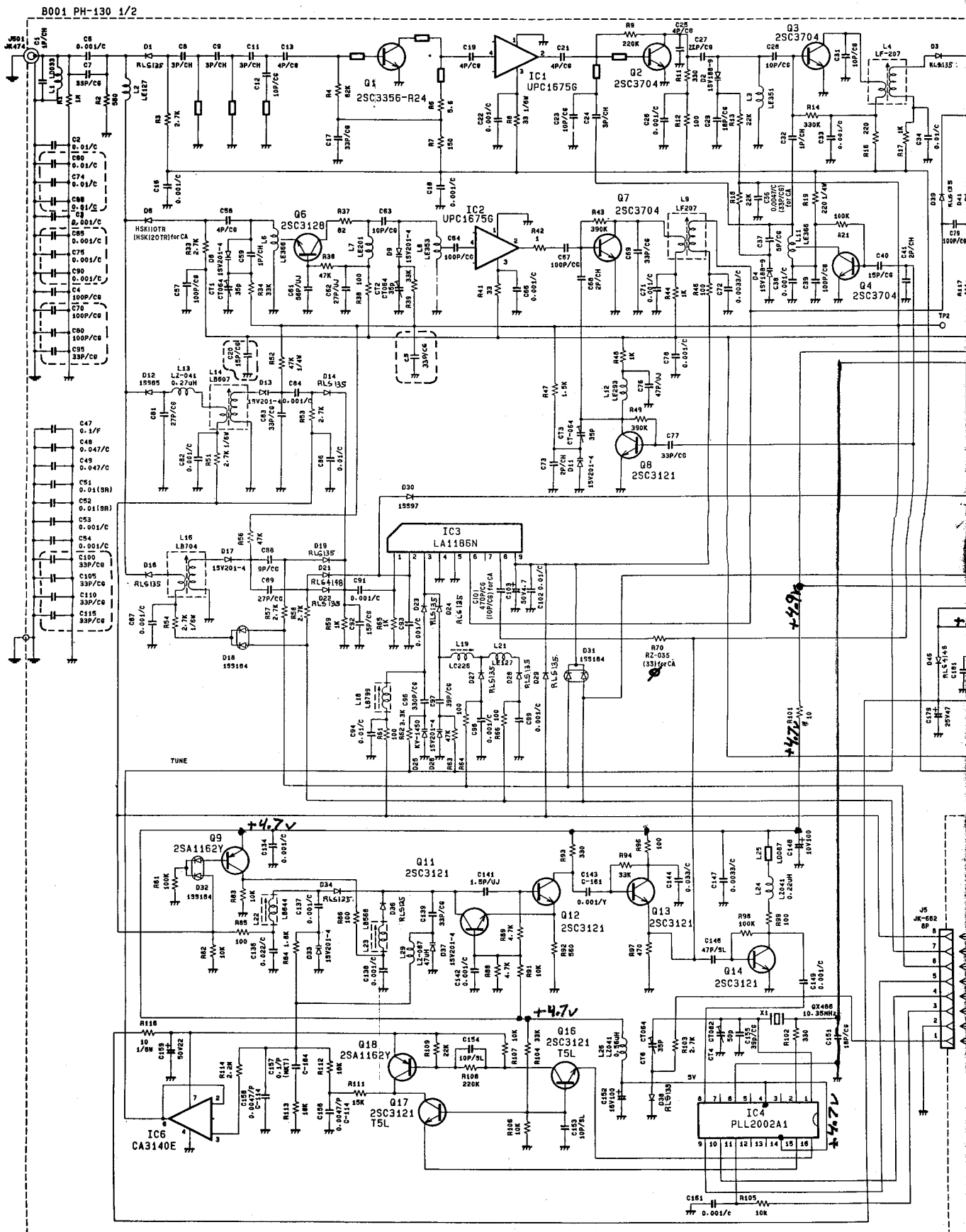


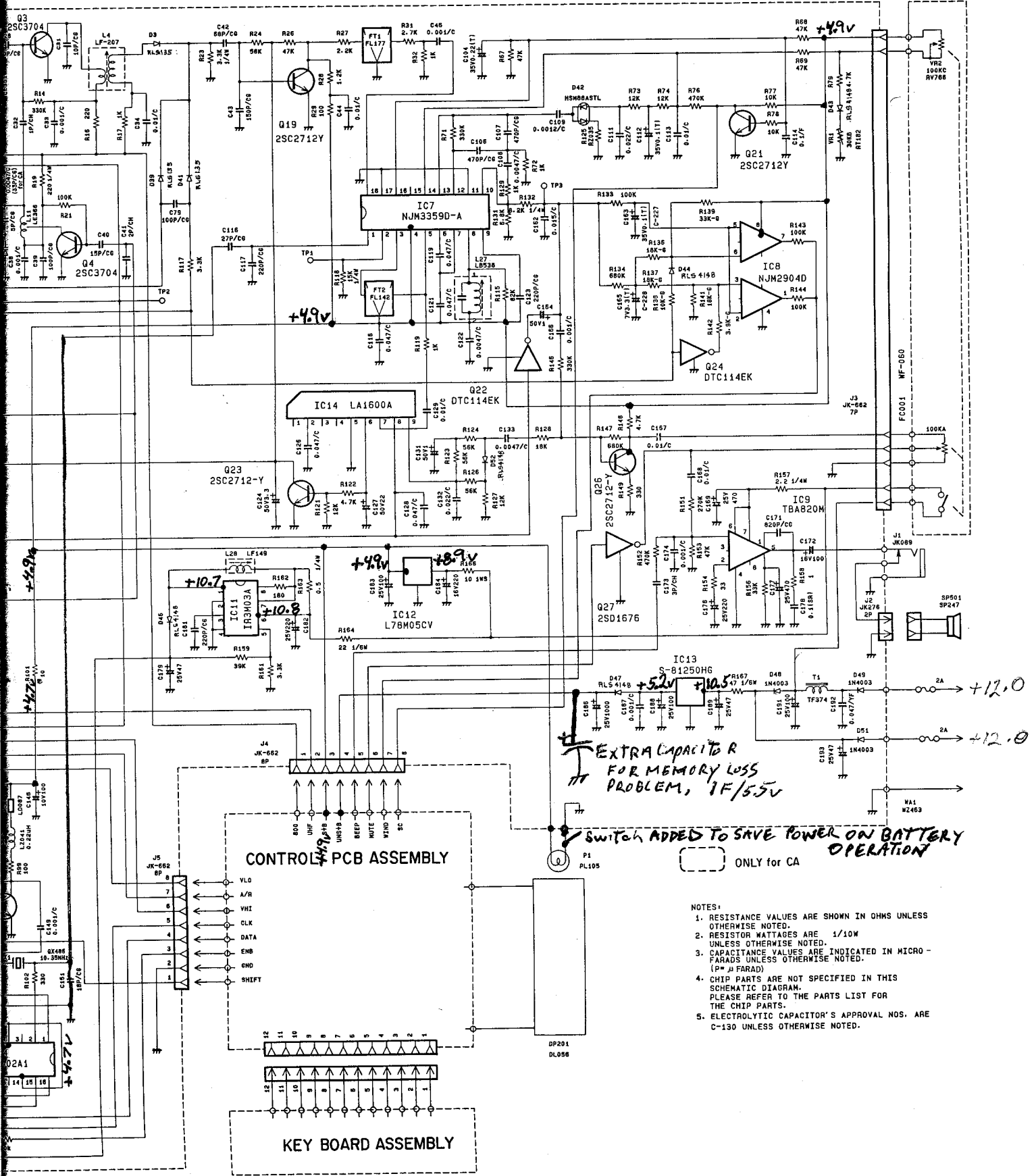
POLICE	FIRE	AIR	1	2	3	ENTER
WX	MARINE	DELAY	4	5	6	CLEAR
SCAN	PROG	L/O	7	8	9	0
MANUAL	MONI	PRIORI	LIMIT	▽	△	

- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED.
  2. RESISTOR WATTAGES ARE 1/10W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO-FARADS UNLESS OTHERWISE NOTED. (P=μ FARAD)
  4. ALL CAPACITORS TEMPERATURE CHARACTERISTICS ARE ZF UNLESS OTHERWISE NOTED.
  5. CHIP PARTS ARE NOT SPECIFIED IN THIS SCHEMATIC DIAGRAM. PLEASE REFER TO THE PARTS LIST FOR THE CHIP PARTS.

301 PH-133 Y501 YY-1247

Main Section





EXTRA CAPACITOR  
FOR MEMORY LOSS  
PROBLEM, 1F/5.5V

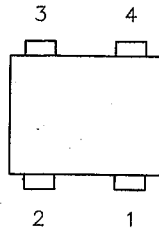
SWITCH ADDED TO SAVE POWER ON BATTERY  
OPERATION

ONLY for CA

- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED.
  2. RESISTOR WATTAGES ARE 1/10W UNLESS OTHERWISE NOTED.
  3. CAPACITANCE VALUES ARE INDICATED IN MICRO-FARADS UNLESS OTHERWISE NOTED. (P = PICO FARAD)
  4. CHIP PARTS ARE NOT SPECIFIED IN THIS SCHEMATIC DIAGRAM. PLEASE REFER TO THE PARTS LIST FOR THE CHIP PARTS.
  5. ELECTROLYTIC CAPACITOR'S APPROVAL NOS. ARE C-130 UNLESS OTHERWISE NOTED.

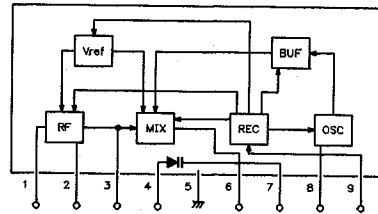
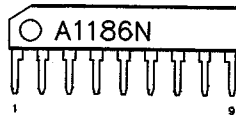
# IC INTERNAL DIAGRAM

IC1,IC2  
UPC1675G-T1

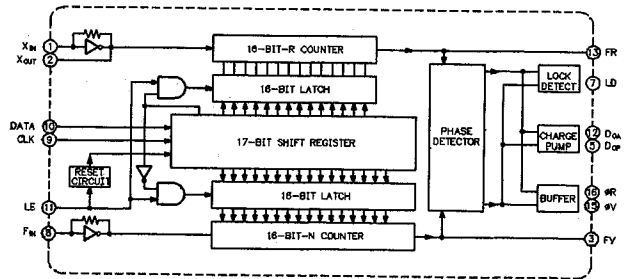
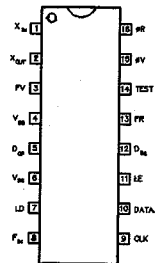


- 1 : GND
- 2 : Output
- 3 : Vcc
- 4 : Input

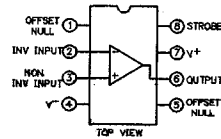
IC3  
LA1186N



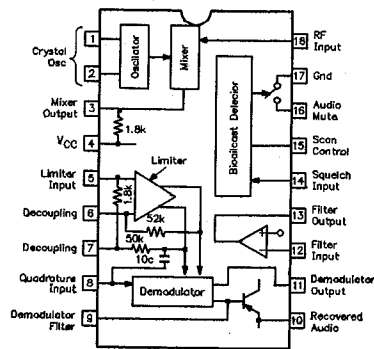
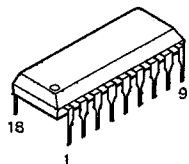
IC4  
PLL2002A1



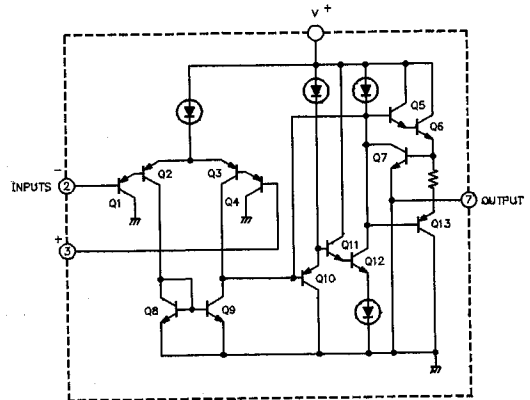
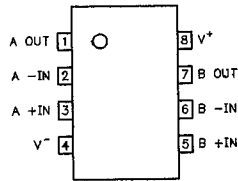
IC6  
CA3140E



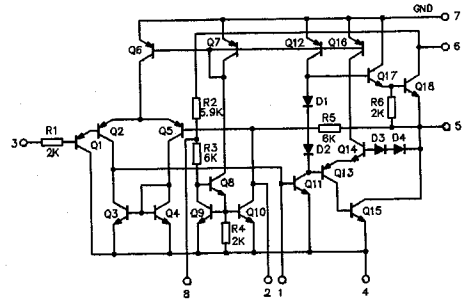
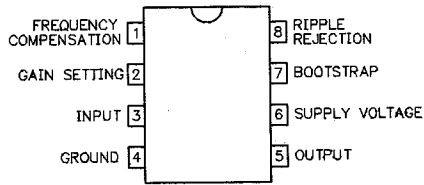
IC7  
NJM3359D



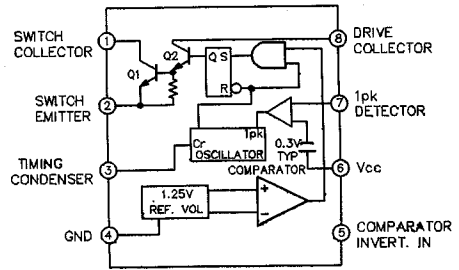
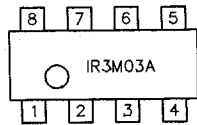
IC8  
NJM2904D



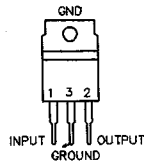
IC9  
TBA820M



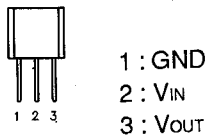
IC11  
IR3M03A



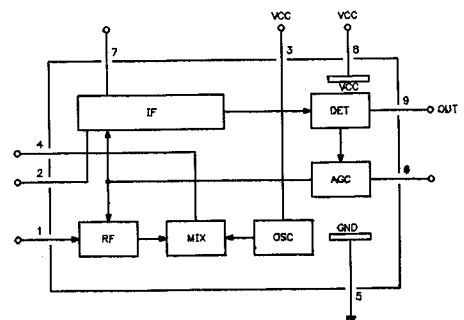
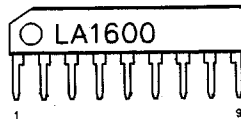
IC12  
L78M05CV



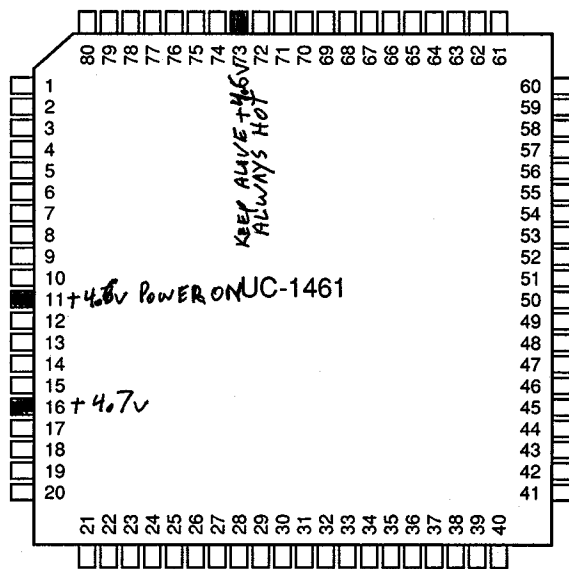
IC13  
S-81250 HG



IC14  
LA1600A



IC201  
UC-1461



PIN NO.	SIGNAL NAME	TERMINAL DESCRIPTION	PIN NO.	SIGNAL NAME	TERMINAL DESCRIPTION	PIN NO.	SIGNAL NAME	TERMINAL DESCRIPTION
1	D4	VL FRN AIR DHI UHF 800 L L H H H H H	28	TIMO/R31	3 6 9 Δ	55	SEG25	27
2	D5	H H H L H H	29	INTO/R32	ENT CLR 0	56	SEG26	28
3	D6	H H H H L H	30	INTI/R33	L : POWER SW OFF	57	SEG27	29
4	D7	H H L H H H	31	SEG1	(DL 056) LCD PIN 3	58	SEG28	LCD PIN 30
5	D8	H H H H H L	32	SEG2	4	59	SEG29	31
6	D9	800MHz SHIFT H : SHIFT DOWN	33	SEG3	5	60	SEG30	32
7	D10	800MHz L : 800M	34	SEG4	6	61	SEG31	(OPEN)
8	VCREF/D11	FRN H : FRN	35	S3G5	7	62	SEG32	(OPEN)
9	COMPO/D12	100CH/50 CH H : 100CH	36	SEG6	8	63	COM1	PIN 34
10	COM1/D13	CELLULAR SKIP L : SKIP (L20)	37	SEG7	9	64	COM2	PIN 33
11	TEST	TO VCC +4.6V	38	SEG8	LCD PIN 10	65	COM3	PIN 1
12	X1	TO GND	39	SEG9	11	66	COM4	PIN 2
13	X2	OPEN	40	SEG10	12	67	V1	OPEN
14	GND	GND	41	SEG11	13	68	V2	OPEN
15	SCK/R00	PLL CLK (PLL IC 9 PIN)	42	SEG12	14	69	V3	OPEN
16	SI/R01	PULL UP +4.7V	43	SEG13	15	70	NUM0	OPEN
17	SO/R02	PLL DATA (PLL IC 10 PIN)	44	SEG14	16	71	NUM0	OPEN
18	R03	PLL LE (PLL IC 11 PIN)	45	SEG15	17	72	NUMG	GND
19	R10		46	SEG16	18	73	VCC	+4.6V
20	R11		47	SEG17	19	74	OSC1	OSC IN 800KHZ CELA LOCK
21	R12		48	SEG18	LCD PIN 20	75	OSC2	OSC OUT
22	R13		49	SEG19	21	76	RESET	H : RESET
23	R20	POL WX SCN MAN	50	SEG20	22	77	D0	H : SCAN STOP
24	R21	FIR MRN PRG MON	51	SEG21	23	78	D1	H : WINDOW CENTER F
25	R22	AIR DLY L/O PRI	52	SEG22	24	79	D2	H : MUTE ON
26	R23	1 4 7 LIM	53	SEG23	25	80	D3	KEY TOUCH TONE
27	R30	2 5 8 ▽	54	SEG24	26			



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**A Division of Tandy Corporation**  
**Fort Worth, Texas 76102**

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6A2

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