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Uniden AX144 Service Manual

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AX 144 Service Manual

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Specifications

Receiver:

Sens. For $N = \frac{S+N}{10dB}$.5uv
Sens. For 500mw	.3uv
Squelch Threshold	.5uv
Squelch Deep	60-70dB
S-9	50uv
Frequency Range	26.965mhz to 27.450mhz
Type Of Emission	AM-SSB
AF Power At 10% Distortion	3 Watts
IF Band Width	4khz
AF Output Impedance	8ohm
Adjacent Channel Rejection	60db Or Better

Transmitter:

Power Output	4 Watts AM- 12 Watts PEP- SSB
Spurious Suppression Better Than-	60db
Percentage Of Modulation	85 - 100 %
Frequency Tolerance	\pm 1350hz
Frequency Range	26.965 mhz to 27.405 mhz
Type Of Emission	AM - SSB
Output Impedance	50 ohm
Frequency Method	PLL
Power Required	13.8vdc @ .5 amps RX 2.5 amps TX Peak

Note:

All Transmitter Adjustments Must Be Performed By A FCC 1st Or 2nd Class Radiotelephone License Holder.

Alignment of Receiver Portion

1. Test Equipment Required

- a. Signal Generator (27MHz band. 1,000Hz 30% amplitude modulation must be available and 50 ohm out put impedance)
- b. DC, Volt Meter
- c. AF V. T. V. M. (5V Full Scale)
- d. 8-ohm DUMMY Load

2. Alignment Procedure

Connect the AF V. T. V. M. & 8-ohm DUMMY Load to EXT SP Jack during the the alignment of receiver portion.

STEP	PRESET CONDITION	CONDITION OF SIGNAL GENERATOR	ADJUSTMENT	REMARKS
1	Channel 19 NB OFF ANL OFF SQL MIN RF GAIN MAX VDL MAX MODE USB PA-CB CB	27.185 MHz No modulation Output level 0.25uV	Frequency of Signal Gener- ator	Adjust frequen of Signal Gene ator to obtain AF output signal of 1,000 at CLARIFIER control in mid position.
2	same as Step 1	same as Step 1	L3, L4, L5, L6, L7, L8, L9, L10	Adjust L3, L4, L5, L6, L7, L8 L9, L10, for th maximum AF output power.
3	same as step 1, except mode AM	1KHz 30% mod. 27.185 MHz Output level 1uV	L 3	Adjust L 3 for the maximum indication on AF V. T. V. M.
4	same as Step 1	27.185 MHz No modulation Output Level 100uV	VR 1	Adjust VR 1 to obtain "S-9" indication of S-meter

STEP	PRESET CONDITION	CONDITION OF SIGNAL GENERATOR	ADJUSTMENT	REMARKS
5	same as Step 1 except SQL Max	27.185 MHz No modulation output Level; 1,000uV	VR 2	Adjust VR ill AF signal observed. Aft adjustment set SQL at minima
6	Channel 18 NB ON SQL MIN RF Gain Max Vol Max Mode AM	same as step 5	L1, L2	Adjust L1, L2, to obtain the maximum DC voltage at TPI.

NB ADJUSTMENT

ALIGNMENT OF P. L. L. PORTION

1. Test equipment required
 - a. RF V. T. V. M. or Oscilloscope (0-50MHz)
 - b. DC Voltmeter (10V full scale)
 - c. Frequency Counter (-50MHz)
 - d. 50 ohm Load

2. Alignment Procedure

STEP	PRE-SET CONDITION	CONNECTION	ADJUSTMENT	REMARKS
1	Channel 40 AM, RX mode Clarifier Control in middle position	RF V. T. V. M. to TR 4	L 13	Adjust L 13 for the maximum indication on RF V. T. V. M.
2	same as Step 1	DC Voltmeter to TP 2	L 14	Adjust L 14 to obtain approx 4.5 on the DC Voltmeter
3	Channel 19 USB, RX mode	RF V. T. V. M. to secondary of L 15 (TR3) LOCAL OUT	L 15	Adjust L 15 for the maximum indication on RF V. T. V. M.
4	same as Step 3	Frequency Counter to secondary of L15 (TP 3)	L 17	Adjust L 17 to obtain 16.4925 MHz \pm 20Hz indication
5	Channel 19 AM, RX mode	same as above	L 16	Adjust L16 to obtain 16.4900MHz \pm 20Hz indication.
6	Channel 19 LSB, RX mode	same as above	L 18	Adjust to L18 to obtain 16.4875MHz \pm 20Hz indication.
7	Channel 19 LSB, TX mode	same as above	VR 3	Adjust VR 3 to obtain 16.4875MHz \pm 20Hz indication.

ALIGNMENT OF CARRIER OSCILLATOR

1. Test equipment required

- a. RF V. T. V. M. or Oscilloscope (0-10MHz)
- b. Frequency Counter (0-10MHz)
- c. 50 ohm Load

2. Alignment Procedure

STEP	PRESET CONDITION	CONNECTIONS	ADJUSTMENT	REMARKS
1	Channel 19 USB, RX mode	Frequency Counter to TP 5	L 20	Adjust L 20 to obtain 10.6925MHz + 0Hz, -5Hz
2	Change over to LSB mode	same as Step 1	L 21	Adjust L 21 to obtain 10.6975MHz \pm 5 Hz, -0Hz indication.
3	Channel 19 AM, TX mode. Disconnect TP6, TP7, TP8	Frequency Counter to TP 9	L 19	Adjust L 19 to obtain 10.6950 MHz \pm 5Hz indication.

ALIGNMENT OF TRANSMITTER PORTION

1. Test Equipment required

- a. AF Signal Generator (1) for 500Hz & 1,000Hz
- b. AF Signal Generator (2) for 2,400Hz
- c. AF Attenuator, 600-ohm, attebuation range 0-80dB, 0.1dB step
- d. AF V. T. V. M. (150mV Full scale)
- e. RF V.T.V.M. (50 V Full scale)
- f. RF Output Power Meter (10W Max, Thruline type)
- g. 50-ohm Dummy Load
- h. RF Attenuator (0-80dB)
- i. Oscilloscope (DC-50NHZ)
- j. Spectrum Analyzer
- k. DC Voltmeter
- l. DC Current Meter (150mA Full scale)

2. Alignment Procedure

Connect the test equipments according to the test set-up shown in Fig. 2

STEP	PRESET CONDITION	CONNECTIONS	ADJUSTMENT	REMARKS
1	Channel 19 USB. TX mode No modulation	DC Current Meter TP8 (+) . TP7 (-)	VR 9	Adjust VR 9 to obtain the current approx. 10mA after adjustment connect TP 8
2	same as step 1	DC Current Meter TP8 (+), TP6 (-)	VR 8	Adjust VR 8 to obtain the Current approx. 100mA after adjust- ment connect TP 7
3		DC Current Meter to disconnection		Shortening Boald to connect 6. 7. 8.
4	same as step 1		VR 4	Adjust VR 4 to obtain the minimum carrier leakage.
5	same as step 1 except LSP		VR 4	same as above

STEP	PRESET CONDITION	CONNECTIONS	ADJUSTMENT	REMARKS
6	Repeat Steps 4 and 5 to obtain approximately the same amount of carrier leakage on USB and LSB modes, and the same time to make the leakage minimum.			
7	Channel 19, USB, TX mode AF input of 2-tone about 500 mV Mike Jack.	Set VR 6 at C.W. Position	L40, L39, L38 L37, L27	Adjust L 40, L39, L38 L37, and L27 to Max. indication on RF V. T. V
8	Channel 19 USB, TX mode AF input of 2-tone, RF output of about 4W PEP.	same as above	L40, L39, L38, L37	Adjust L40, L39, L38 L37 to obtain the max. indication on the RF V. T. V. M.
9	Channel 19, AM, TX mode AF input 500mV to Mike Jack.	same as above	L 27	Adjust L 27 to obtain the maximum indication on the RF V. T. V. M
10	same as step 7	<i>ALC</i>	VR 6	Adjust VR 6 to obtain RF output power of approx. 11.0W PEP.
11	Channel 19 AM, TX mode No. modulation		VR 10	Adjust VR 10 to obtain RF carrier power of 3.8W
12	same as step 11	<i>TX MTR ADJUST</i>	VR 7	Adjust VR 7 to obtain an indication of marked position on built-in meter.
13	Check spurious emissions of AM and SSB using Spectrum Analyzer.			

Step 13 is required for a model employing modulation meter.

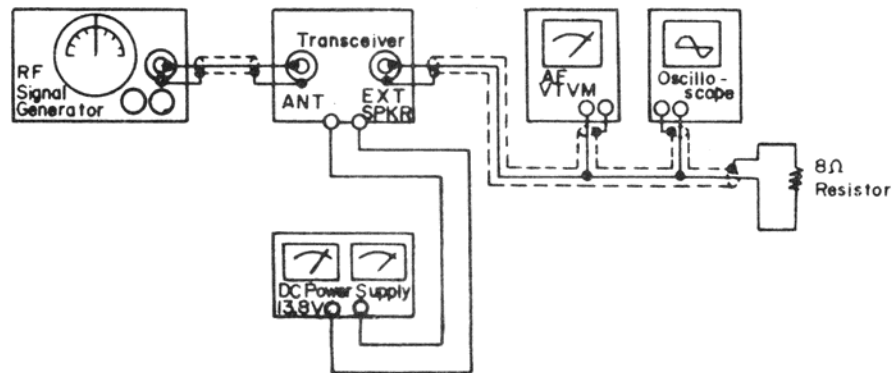
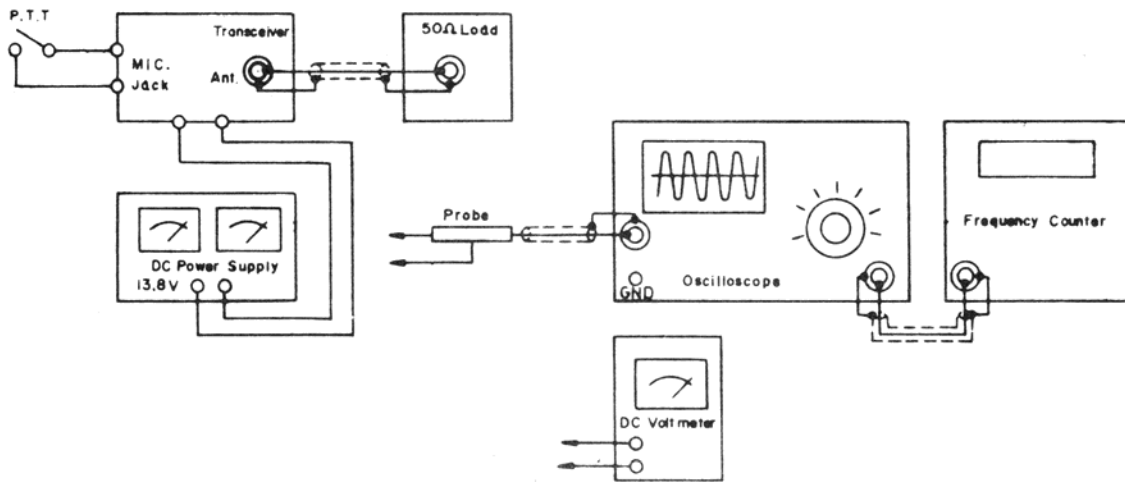
SPARKING MOTOR Voltage Chart. AX 144

ALL VOLTAGE MEASUREMENTS TO BE MADE AT 27,000 OHMS

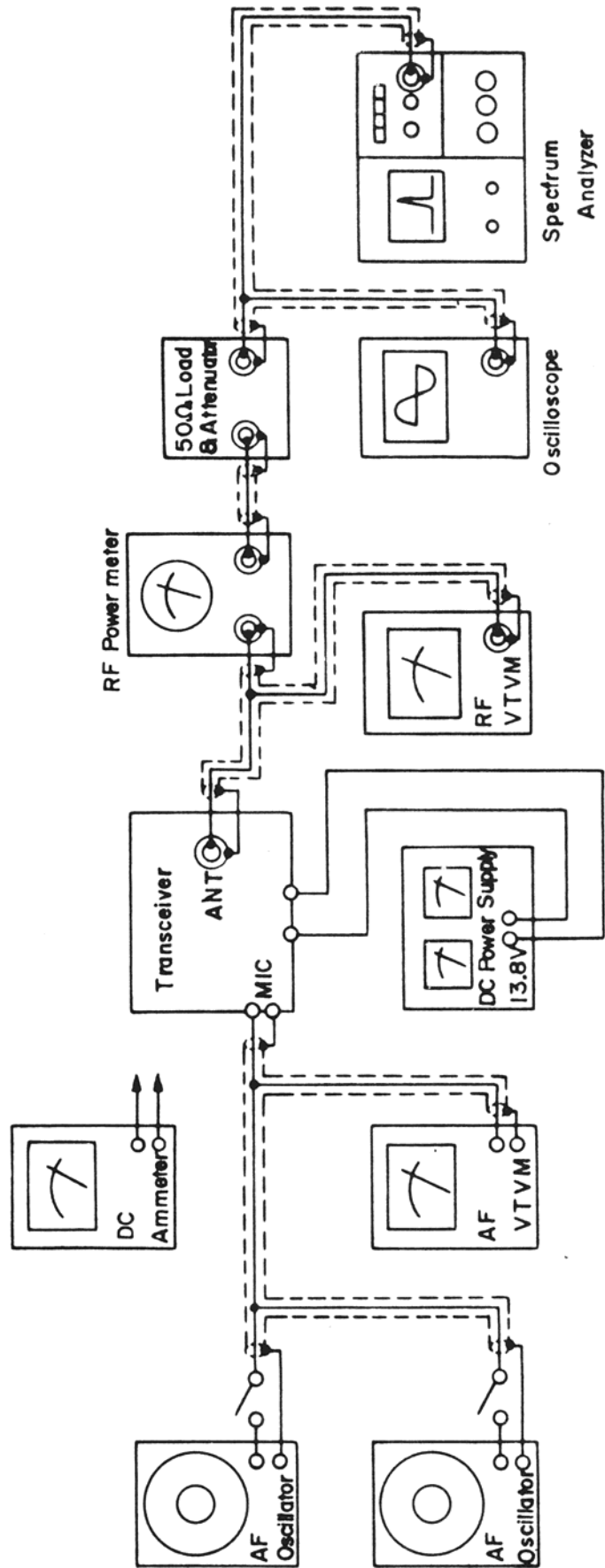
Per Volt VTVM Or VOM *SSB #Bright TX-Transmit

	RX			TX			RX			TX			RX			TX				
	TR	B	C	E	B	C	E	TR	B	C	E	TR	B	C	E	TR	B	C	E	
1	1.6	7.6	1.0		15	.6	3.4	0		28	7.5	.6	8.1	7.5	0	7.9				
2	.7	2.4	0		16	3.4	7.0	2.7		29	.8	7.5	1.5	.8	7.5	1.5				
3	2.5	7.6	1.8		17	2.7	7.1	2.0		30	2.4	7.6	8.0	2.4	7.6	8.0				
4	0	8.0	1.0		18	1.2	5.0	.6		31	8	8	7.2	7.9	0	7.4				
5	0	7.3	0		19	1.4	4.9	.8	1.4	4.9	.8	32	5.0	7.5	5.0	.7	0	0		
6	7.4	0	8.0		20	2.4	7.7	1.8	2.4	7.5	1.8	33	7.5	0	8.0	7.2	8.0	8.0		
7	0	0	0		21	2.4	7.6	1.8	2.4	7.6	1.8	34	1.4	13.0	.9	1.4	13.0	1.4		
8	.6	0	0		22	2.7	6.4	2.1	2.7	6.4	2.1	35	13.0	8.0	13.7	13.0	8.0	13.7		
9	0	.6	0		23	0	0	0	3.1	6.6	2.4	36	.8	2.9	.2					
10	1.2	5.0	.6		23*	3.2	6.6	2.6	3.2	6.6	2.6	37	0	7.4	4.2	0	7.4	4.2		
11	0	0	0		24	.6	0	0	.6	0	0	37*	0	7.4	.8	0	7.4	.8		
11	(.6)	(0)	(0)		24*	0	2.8	0	0	2.8	0	38			.4	5.2	0			
12	1.8	7.8	1.1		25				1.6	3.8	1.0	38*			.4	12.6	0			
13	.6	7.8	.2		26				.8	1.4	.2	39			.6	5.2	0			
14	1.4	7.9	.8		27	.6	0	0	0	0	0	39*			.6	12.6	0			
IC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	6.8	.4	.3	8.0	.1	.1	.1	0	0	1.2	0	0	.2	.5						
1	(6.8)	(.4)	(.3)	(8.0)	(.1)	(.1)	(.1)	(6.8)	0	1.9	0	0	.2	.5						
2	4.9	.4	.4	4.9	4.9	.4	4.9	0	0	2.2	4.9	2.5	2.5	2.4	4.9	4.9	3.3	3.3	3.1	0
3	0	3.0	3.0	0	5.6	7.0	3.0													
3*	2.8	3.1	3.1	0	5.6	7.2	3.7													
4	0	1.8	1.0	0	6.6	12.6	13.7													
4 TX	0	1.8	.7	0	11.6	12.6	13.7													
5 TX	0	7.6	7.6	0	7.6	0	2.8	2.8	0	.8	1.4	.8	1.4	0						
40					1.2	7.9	.6													
41					1.3	7.9	.6													
42					5.8	12.0	5.2													
42*					12.7	12.8	12.1													
43					12.0	5.2	12.6													
43*					12.6	13.2	12.5													
44					12.6	5.2	13.2													
44*					12.6	13.4	13.4													
45					0	12.6	0													
45*					7.8	12.6	7.2													
46					.6	0	0													
46*					0	7.8	0													
401	3.4	8.0	2.8	3.4	8.0	2.8														
IC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Fig. 2 PLL and Receiver Test Setup



Transmitter Test Setup



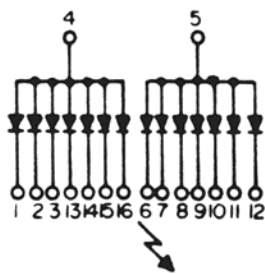
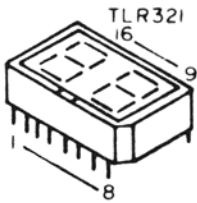
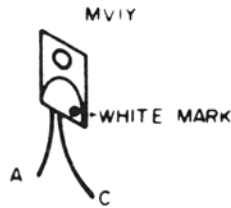
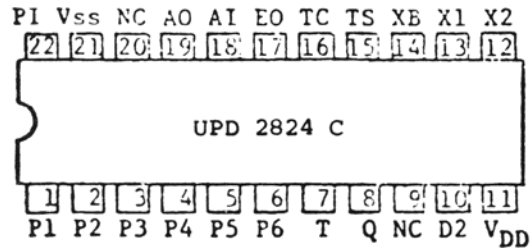
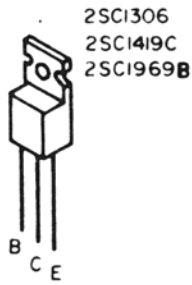
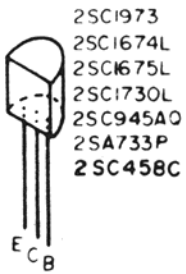
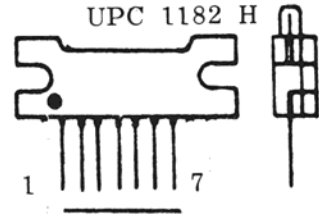
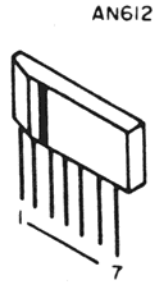
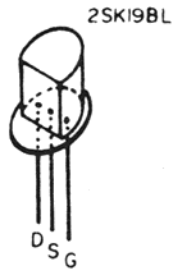
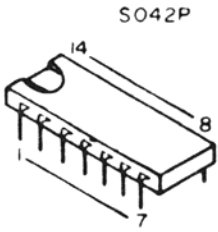


Table A FREQUENCIES OF LOCAL OSCILLATORS AND IF STAGE
IN TRANSMITTING STATE

Channel transmission divide local oscillator frequencies Carrier osci ator frequencies.

No.	frequencies allocated(MHz)	ratio (N)	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)
			AM mode	USB mode	LSB mode	AM mode	USB mode	LSB mode
1	26.965	91	16.270	16.2725	16.2675	10.695	10.6925	10.6975
2	.975	92	16.280	16.2825	16.775	"	"	"
3	.985	93	16.290	16.2925	16.2875	"	"	"
4	27.005	95	16.310	16.3125	16.3075	"	"	"
5	.015	96	16.320	16.3225	16.3175	"	"	"
6	.025	97	16.330	16.3325	16.3275	"	"	"
7	.035	98	16.340	16.3425	16.3375	"	"	"
8	.055	100	16.360	16.3625	16.3575	"	"	"
9	.065	101	16.370	16.3725	16.3675	"	"	"
10	.075	102	16.380	16.3825	16.3375	"	"	"
11	.085	103	16.390	16.3925	16.3875	"	"	"
12	.105	105	16.410	16.4125	16.4075	"	"	"
13	.115	106	16.420	16.4225	16.4175	"	"	"
14	.125	107	16.430	16.4325	16.4275	"	"	"
15	.135	108	16.440	16.4425	16.4375	"	"	"
16	.155	110	16.460	16.4625	16.4575	"	"	"
17	.165	111	16.470	16.4725	16.4675	"	"	"
18	.175	112	16.480	16.4825	16.4775	"	"	"
19	.185	113	16.490	16.4925	16.4875	"	"	"
20	.205	115	16.510	16.5125	16.5075	"	"	"
21	.215	116	16.520	16.5225	16.5175	"	"	"
22	.225	117	16.530	16.5325	16.5275	"	"	"
23	.255	120	16.560	16.5625	16.5575	"	"	"
24	.235	118	16.540	16.5425	16.5375	"	"	"
25	.245	119	16.550	16.5525	16.5475	"	"	"
26	.265	121	16.570	16.5725	16.5675	"	"	"
27	.275	122	16.580	16.5825	16.5775	"	"	"
28	.285	123	16.590	16.5925	16.5875	"	"	"
29	.295	124	16.600	16.6025	16.5975	"	"	"
30	.305	125	16.610	16.6125	16.6075	"	"	"
31	.315	126	16.620	16.6225	16.6175	"	"	"
32	.325	127	16.630	16.6325	16.6275	"	"	"
33	.335	128	16.640	16.6425	16.6375	"	"	"
34	.345	129	16.650	16.6525	16.6475	"	"	"
35	.355	130	16.660	16.6625	16.6575	"	"	"
36	.365	131	16.670	16.6725	16.6675	"	"	"
37	.375	132	16.680	16.6825	16.6675	"	"	"
38	.385	133	16.690	16.6925	16.6875	"	"	"
39	.395	134	16.700	16.7025	16.6975	"	"	"
40	.405	135	16.710	16.7125	16.7075	"	"	"

CHANNEL CODES

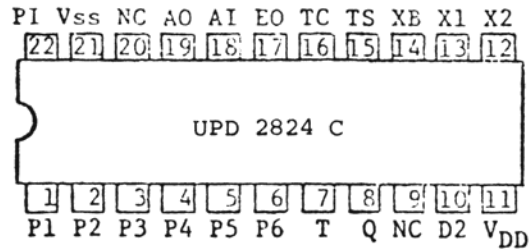
CH	PROGRAM INPUT						N	IS
	P1	P2	P3	P4	P5	P6		
1	1	0	0	0	0	0	91	1
2	0	1	0	0	0	0	92	1
3	1	1	0	0	0	0	93	1
4	0	0	1	0	0	0	95	1
5	1	0	1	0	0	0	96	1
6	0	1	1	0	0	0	97	1
7	1	1	1	0	0	0	98	1
8	0	0	0	1	0	0	100	1
9	1	0	0	1	0	0	101	1
10	0	0	0	0	1	0	102	1
11	1	0	0	0	1	0	103	1
12	0	0	0	0	1	0	105	1
13	1	0	0	0	1	0	106	1
14	0	1	1	0	1	0	107	1
15	1	1	1	0	1	0	108	1
16	0	1	1	0	1	0	110	1
17	1	1	1	0	1	0	111	1
18	0	0	0	1	1	0	112	1
19	1	0	0	1	1	0	113	1
20	0	0	0	0	0	1	115	1
21	1	0	0	0	0	1	116	1
22	0	0	0	0	0	1	117	1
23	1	0	0	0	0	1	120	1
24	0	1	1	0	0	1	118	1
25	1	1	1	0	0	1	119	1
26	0	1	1	0	0	1	121	1
27	1	1	1	0	0	1	122	1
28	0	0	0	1	0	1	123	1
29	1	0	0	1	0	1	124	1
30	0	0	0	0	1	1	125	1
31	1	0	0	0	1	1	126	1
32	0	0	0	0	1	1	127	1
33	1	0	0	0	1	1	128	1
34	0	1	1	0	1	1	129	1
35	1	1	1	0	1	1	130	1
36	0	1	1	0	1	1	131	1
37	1	1	1	0	1	1	132	1
38	0	0	0	1	1	1	133	1
39	1	0	0	1	1	1	134	1
40	0	0	0	0	0	0	135	1
	0	0	0	1				0
	1	0	0	1			PROGRAM	0
	0	1	1	1			INHIBIT	0
	1	1	1	1				0
	0	1	1	1				0
	1	1	1	1				0

0 = Low Level

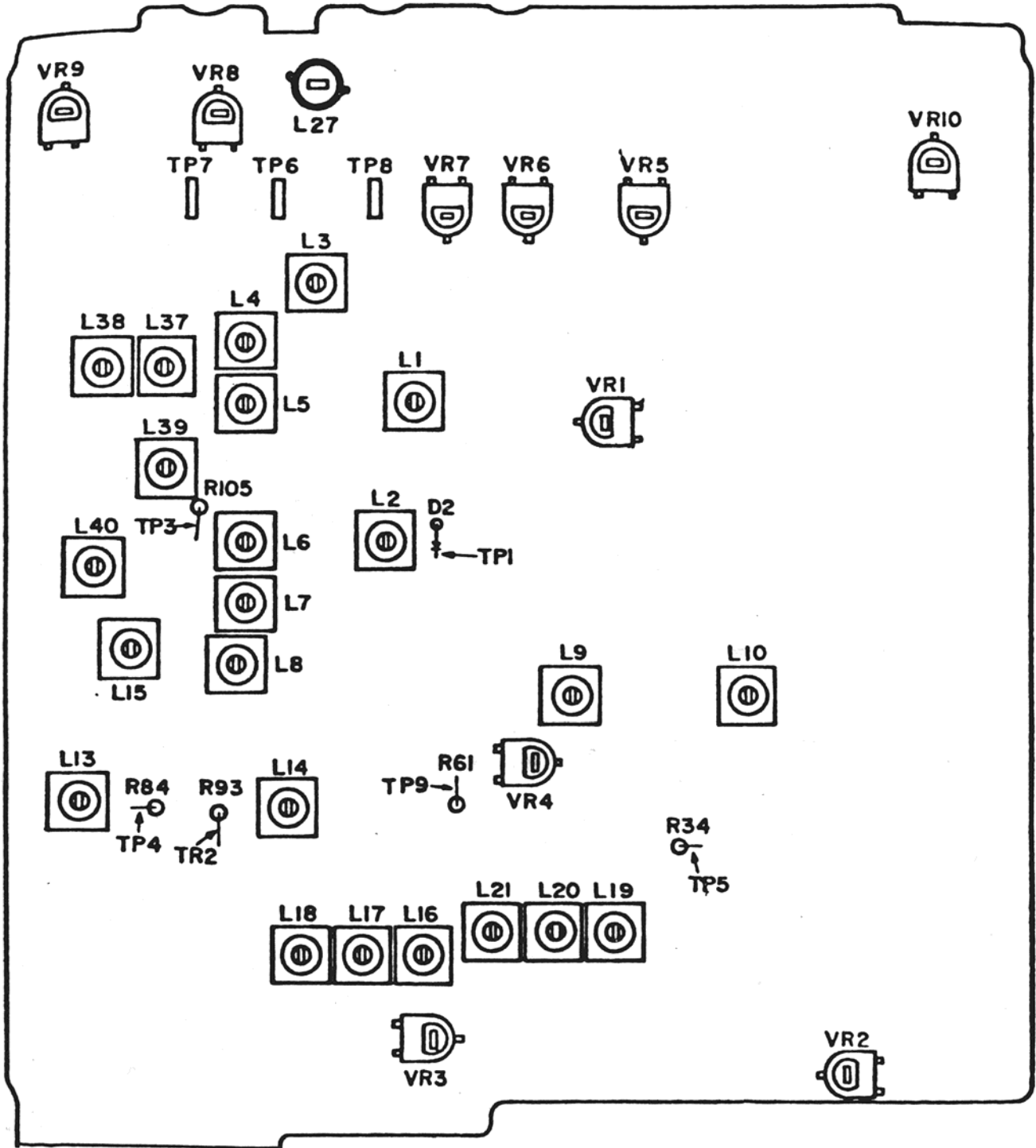
1 = High Level

IS Output = "O" output except ICH to 40CH

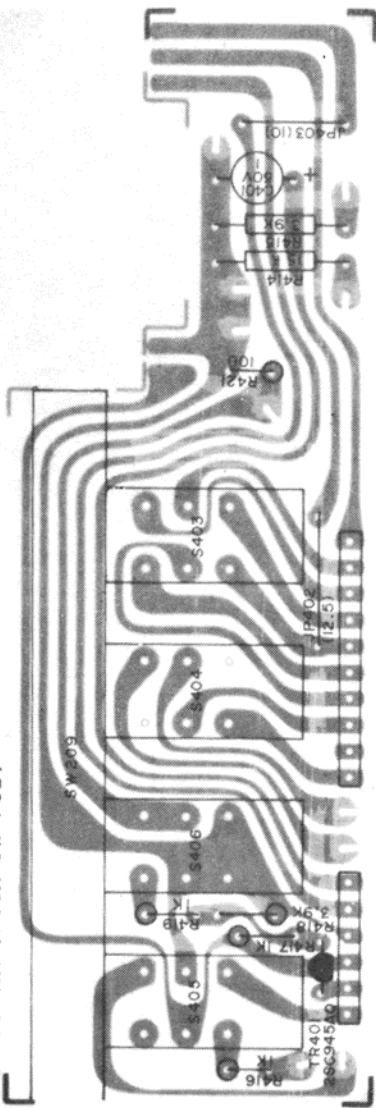
CONNECTION DIAGRAM (Top View)



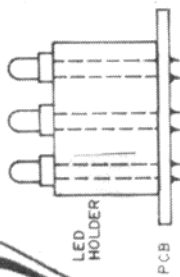
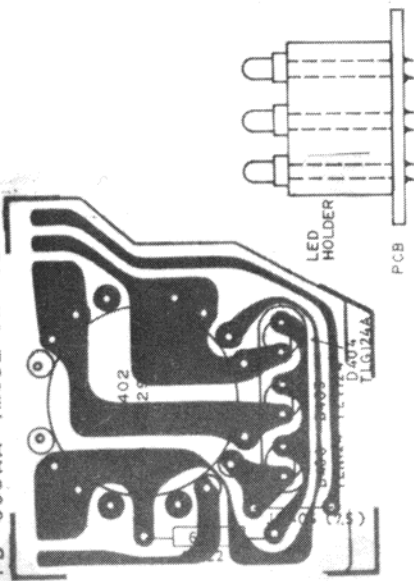
- PIN #1 to PIN #6 ---PROGRAM INPUT
 - P1:LSB
 - P2:MSB pull-up resistors installed
- PIN #7 ----- T-F/F INPUT
- PIN #8 ----- T-F/F OUTPUT
- PIN #9 ----- NO CONNECTION
- PIN #10 ----- 5.12MHz OUTPUT
- PIN #11 ----- POWER SUPPLY
- PIN #12 ----- CRYSTAL OSCILLATOR OUTPUT
- PIN #13 ----- CRYSTAL OSCILLATOR INPUT
- } 10.24MHz
- PIN #14 ----- BUFFERED 10.24MHz OUTPUT
- PIN #15 ----- LOCK DETECT OUTPUT
- PIN #16 ----- LOCK DETECT INTEGRATOR
- PIN #17 ----- ERROR SIGNAL OUTPUT
- PIN #18 ----- FILTER AMPLIFIER INPUT
- PIN #19 ----- FILTER AMPLIFIER OUTPUT (OPEN DRAIN)
- PIN #20 ----- NO CONNECTION
- PIN #21 ----- GROUND
- PIN #22 ----- PROGRAMMABLE DIVIDER INPUT



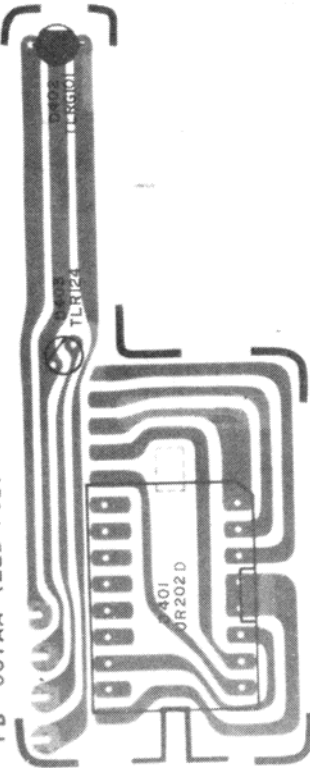
PB-009AA (PUSH SW PCB)



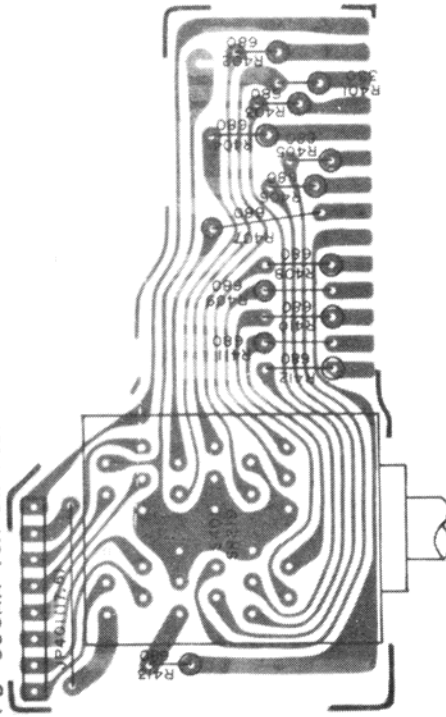
PB-006AA (MODE SW PCB)



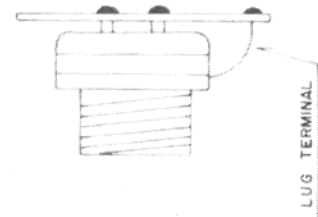
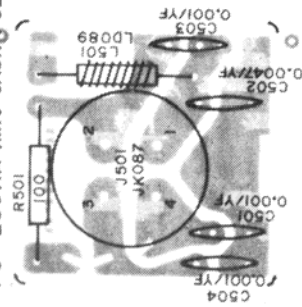
PB-007AA (LED PCB)



PB-008AA (CH SW PCB)



PC-266AA (MIC JACK PCB)



注) 指示時の抵抗は 1/8W である

Part No.	Generic No.	Symbol	Description
3500-074	PC - 834 AD	--	PC Board Main
3500-104	PB - 008 AA	--	PC Board CH SW
3500-105	PB - 007 AA	--	PC Board LED
3500-106	PB - 009 AA	--	PC Board SW
3500-107	PB - 066 AA	Mode SW	PC Board SW
2000-055	TA 75902 P	1 C 1	Integrated Circuit
2000-056	MPD 2824 C	1 C 2	Integrated Circuit
2000-031	AN 612	1 C 3	Integrated Circuit
2000-057	MRC 1182 H	1 C 4	Integrated Circuit
2000-034	SO 42 P	1 C 5	Integrated Circuit
2000-258	2 SC 945 A - Q	TR 4, 5, 7, 8, 9, 10, 11, 18, 24, 25, 401, 27, 29, 30, 32, 34, 36, 42, 45, 46,	Transistor
2000-240	2 SC 1674 - L	TR 12, 14	Transistor
2000-213	2 SC 1675 - L	TR 1, 2, 13, 15, 16 19, 20, 21, 22, 23, 37	Transistor
2000-215	2 SC 1973	TR 40	Transistor
2000-277	2 SC 2166 - C	TR 39	Transistor
2000-289	2 SC 2312 - C	TR 38	Transistor
2000-278	2 SB 525 - C	TR 31, 33, 43	Transistor
2000-290	2 SC 1312 - F	TR 26	Transistor
2000-279	2 SA 473 - O	TR 35	Transistor
2000-280	2 SA 1012 - O	TR 44	Transistor
2000-218	2 SA 733 - P	TR 6, 28	Transistor
2000-341	MC 301	D 13, 14	Diode
2000-320	IN 4003	D 501	Diode
2000-301	IN 60	D 1, 2, 10, 11	Diode
2000-303	IS 2075 K	D 3, 4, 6, 7, 8, 9, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 51, 52, 53, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 70, 5, 73	Diode
2000-344	IS 2688 EB	D 25, 30	Diode Van-Cap
2000-306	UR - 202 D	D 401	Diode LED
2000-343	TLRG - 101	D 402	Diode LED
2000-347	TLR - 124	D 403 406	Diode LED
2000-368	TLY - 124	D 405	Diode LED
2000-355	TLG - 124 A	D 404	Diode LED
2000-321	RD 5.1 EB 2	D 33	Diode Zener
2000-311	RD 7.5 EB 2	D 50	Diode Zener
2000-335	KB - 262	D 49	Varistor
2000-339	MV - 1 Y	D 54, 55	Varistor
2000-032	PC 266 AA	--	PC Board Mic Jack
2200-549	LA - 120	L 1	Coil
2200-083	LA - 165	L 14	Coil
2200-044	LA - 166	L 13, 15, 39	Coil
2200-075	LA - 217	L 16, 21	Coil
2200-078	LA - 220	L 38	Coil
2200-069	LA - 259	L 5	Coil
2200-070	LA - 260	L 4	Coil
2200-095	LA - 265	L 18	Coil
2200-096	LA - 266	L 19, 20	Coil

Part No.	Generic No.	Symbol	Description
2200-093	LA - 273	L 17	Coil
2200-089	LA - 277	L 2, 9	Coil
2200-504	LA - 279	L 3	Coil
2200-550	LA - 350	L 6, 7, 8, 40	Coil
2200-551	LA - 351	L 10	Coil
2200-552	LA - 352	L 37	Coil
2200-018	LC - 072	L 27	Coil
2200-017	LD - 033	L 31	Coil
2200-103	LD - 077	L 11	Coil
2200-052	LS - 087	L 29, 32, 33, 35, 36 41, 42	Coil
2200-059	LD - 089	L 501	Coil
2200-088	LE - 088	L 24, 26	Coil
2200-087	LE - 089	L 25	Coil
2200-553	LE - 151	L 34	Coil
2200-554	LE - 187	L 28	Coil
2200-555	LE - 188	L 30	Coil
2200-040	LZ - 012	L 12, 22, 23	Coil
2300-001	TF - 083	T 1	Transformer AF choke
1900-228	RV 182 100 B	VR 8	R Semi-fixed
1900-220	RV 182 1 KB	VR 5	R Semi-fixed
1900-205	RV 182 500 B	VR 9	R Semi-fixed
1900-230	RV 182 5 KB	VR 10	R Semi-fixed
1900-154	RV 182 10 KB	VR 4, 6	R Semi-fixed
1900-153	RV 182 50 KB	VR 3	R Semi-fixed
1900-202	RV 182 100 KB	VR 7	R Semi-fixed
1900-204	RV 182 20 KB	VR 1	R Semi-fixed
2200-317	FL - 090	FL 1	Filter Crystal
3000-119	SR - 219	S 401 Channel	Switch Rotary
3000-147	SR - 298	5402 Mode	Switch Rotary
3000-042	SW - 209	S 403, 404, 405 406	Switch Rotary
1900-133	RV - 329	VR 501, 502, S 501	R Variable
1900-151	RV - 485	VR 504, 505	R Variable
1900-152	RV - 222	VR 503 (clarifier)	R Variable
2100-021	QX - 122	X 1	Crystal
2100-022	QX - 122	X 2	Crystal
3100-009	SP- 057	Sp 501	Speaker
2900-012	MT - 206	M 501	Meter
3200-005	MK - 221	--	Microphone
1100-003	JK - 052	J 504	Receptacle DC Power
1100-002	JK - 035	J 505	Jack Antenna
1100-021	JK - 089	J 1, 2	Jack Speaker
1100-104	TP - 044	TP 6, 7, 8	Terminal Check Point
3400-236	YD - 047	IC 4	Insulation Sheet
3400-212	YD - 041	TR 35, 44	Insulation Sheet
3400-401	YY - 027	TR 38, 39	Insulation Sheet Almina
2700-007	W - 070234	--	DC Power Cord

A X 144

Part No.	Generic No.	Symbol	Description
3300-209		ABS CR-1	Mounting Bracket
3300-401		SPCC T-1.0	Hanger Microphone
3300-559		ABS CR-1	Panel Front
1300-001		ABS CR -1	Knob Channel
1300-002		ABS CR-1	Knob
1300-005		ABS CR-1	Knob
1300-011		ABS CR-1	Knob
1300-012		ABS CR-1	Knob
1300-003		ABS CR-1	Knob Core Push Button
1100-202		ABS CR-1	Screw Mounting
3400-617			Nameplate Control
3400-108			Optical Filter Display
3400-162			Nameplate Brand
1100-315			Washer Rubber
1700-201			Label Serial No.
1600-004			Label Warning DC Cord
1100-702			Screw Pan Hd Plastic
1100-703			Screw Bind Hd
1100-704			Screw Bind Hd
1100-705			Screw Bind Hd
1100-707			Tapping Screw Bind
1100-725			Tap Tight Screw Bind Hd
1100-778			Tap Tight Screw Bind Hd
1100-708			Tapping Screw Round Hd
1100-709			Tapping Screw Round Hd
1100-710			Nut Flange
1100-711			Washer Lock
1100-712			Washer Star
1100-309			Spring Plate Knob
1100-310			Spring Plate Knob
1100-305			Spring Plate Knob
1100-308			Rivet AL ID Plate
1500-008			Styrofoam Pad
1500-108			Styrofoam Pad
1500-253			Display Box
1600-194			Owners Instruction Manual
1600-195			Schematic Diagram
1600-201			Warranty Card
1600-501			FCC Rules Part 95 FCC