FT-212RH

TECHNICAL SUPPLEMENT

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This manual is intended to serve as a supplement to the FT-212RH Operating Manual. Detailed information regarding functions, specifications, options and operation has been provided in the Operating Manual, and is not reprinted herein. Therefore, this supplement is not intended to serve as an independent reference, but to be used in conjunction with the information provided in the Operating Manual.

Because of the compactness and complexity of the double-sided glass-epoxy circuit boards used in the FT-212RH, four layout diagrams are provided for each board. Each side of the board is identified by the type of the majority of components installed on that side. In most cases one side has only chip components, and the other has either a mixture of both chip and lead components (trimmers, coils, electrolytic capacitors, packaged ICs, etc.), or lead components only. The two "obverse" views depict the board as it is seen when viewed directly with the eye, while the two "reverse" views depict the unseen side of the board as it would appear if one were to peer through the board from the other side without seeing the components and tracks on the near side.

While we believe the technical information in this manual is correct, Yaesu assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

Yaesu Musen reserves the right to make changes in the circuitry of this transceiver, in the interest of technological improvement, without notification of the owners.

CONTENTS

CIRCUIT BOARD ACCESS

BOTTOM COVER REMOVAL

The following circuit boards are accessed by removing the bottom cover:

Main Unit* (component side)
IF Unit*
Mic Unit*
APC Unit
VCO Unit
PA Unit (lower edge only)

To remove the bottom cover, remove the four screws marked " ★ " in Figure 1, plus the four marked " ※ " if the top cover has not already been removed. Then lift the cover away.

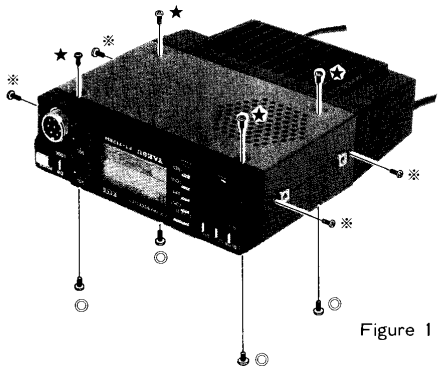


Figure 1

* To access these boards it may be necessary to remove th loudspeaker and holder:

(1) Referring to Figure 2, unplug the speaker wire connector from J1005 on the Main Unit, and lift the loudspeaker out of its bracket.

(2) Remove the three screws in the arms of the speaker bracket and remove the bracket.

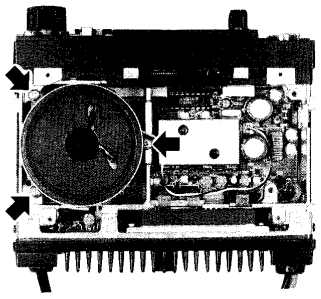


Figure 2

TOP COVER REMOVAL

Removing the top cover exposes the Solder Side of the Main Unit circuit board and the top edge of the PA Unit board.

To remove the top cover, remove the four screws marked " ◎ " in Figure 1, plus the four marked " ※ " if the bottom cover has not already been removed. Then lift the cover away.

FRONT PANEL REMOVAL

Removing the front panel allows access to the Control Unit and LCD Unit circuit boards.

(1) After the top and bottom covers have been removed, pull off the Selector, VOL and SQL knobs.

(2) Remove the nut from the microphone jack using a slotted ring wrench as shown in Figure 3.

The front panel can now be slid forward.

CIRCUIT BOARD ACCESS

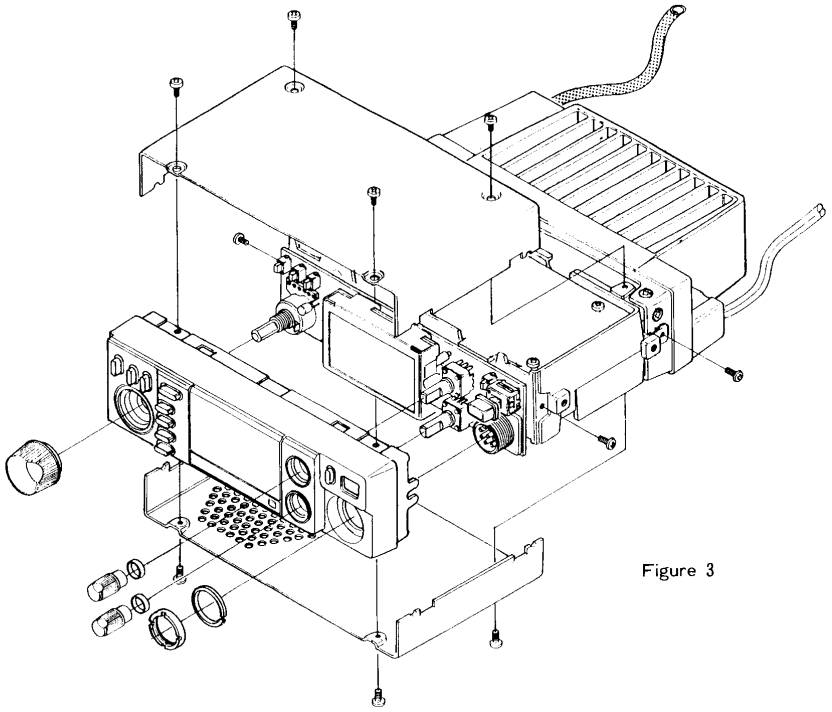
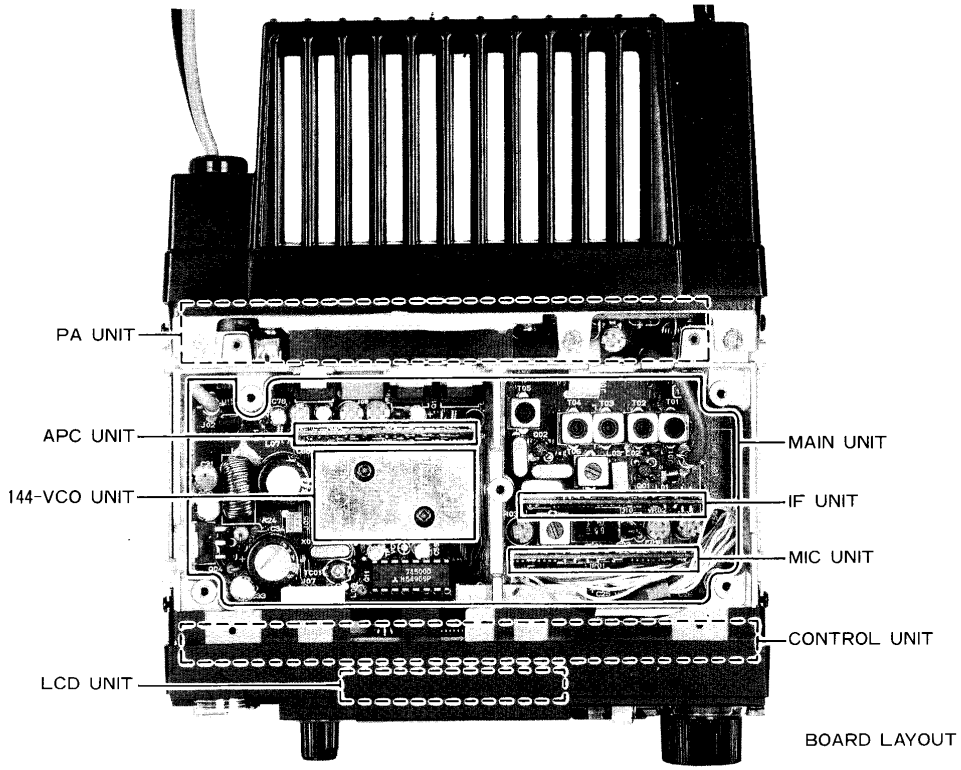


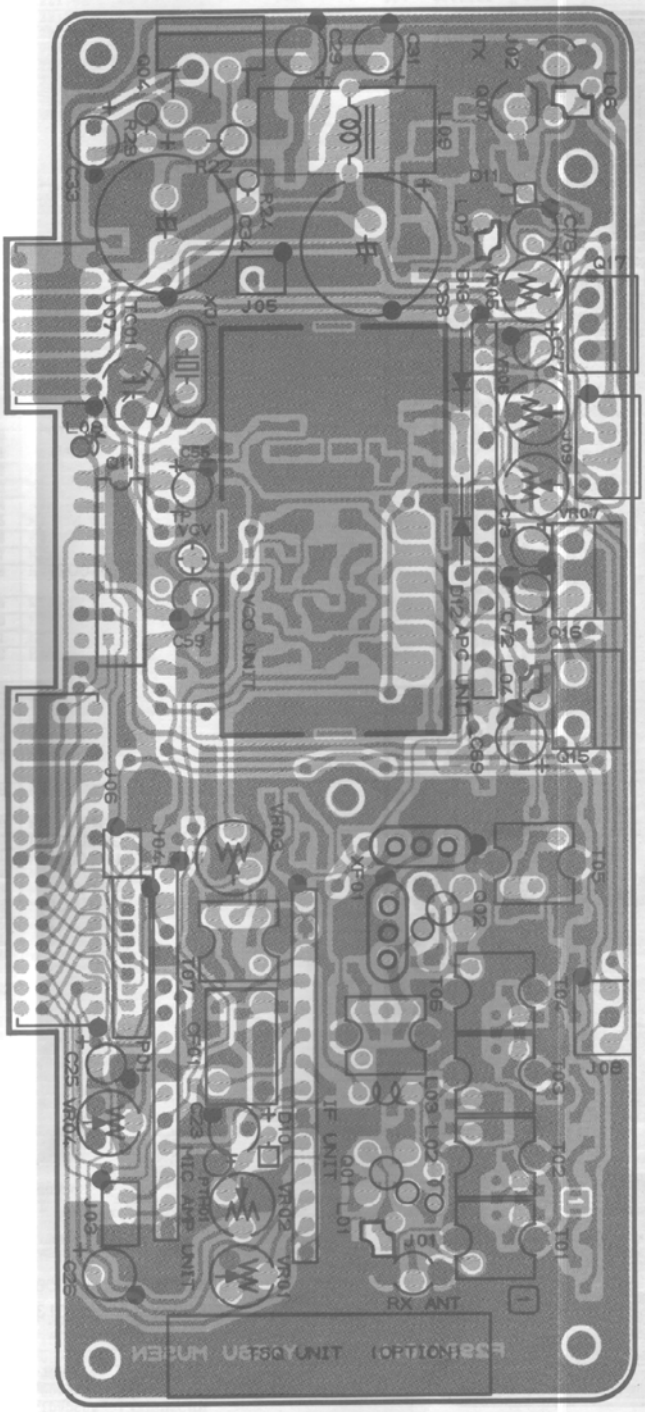
Figure 3



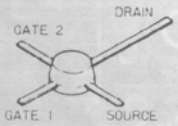
BOARD LAYOUT

MAIN UNIT PARTS LAYOUT

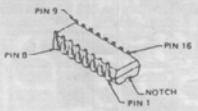
MAIN UNIT (No. 1 ×××)



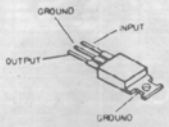
obverse view of "component" side



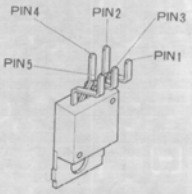
3SK81 (Q1002)
3SK122L (Q1001)



M54959P(Q1011)

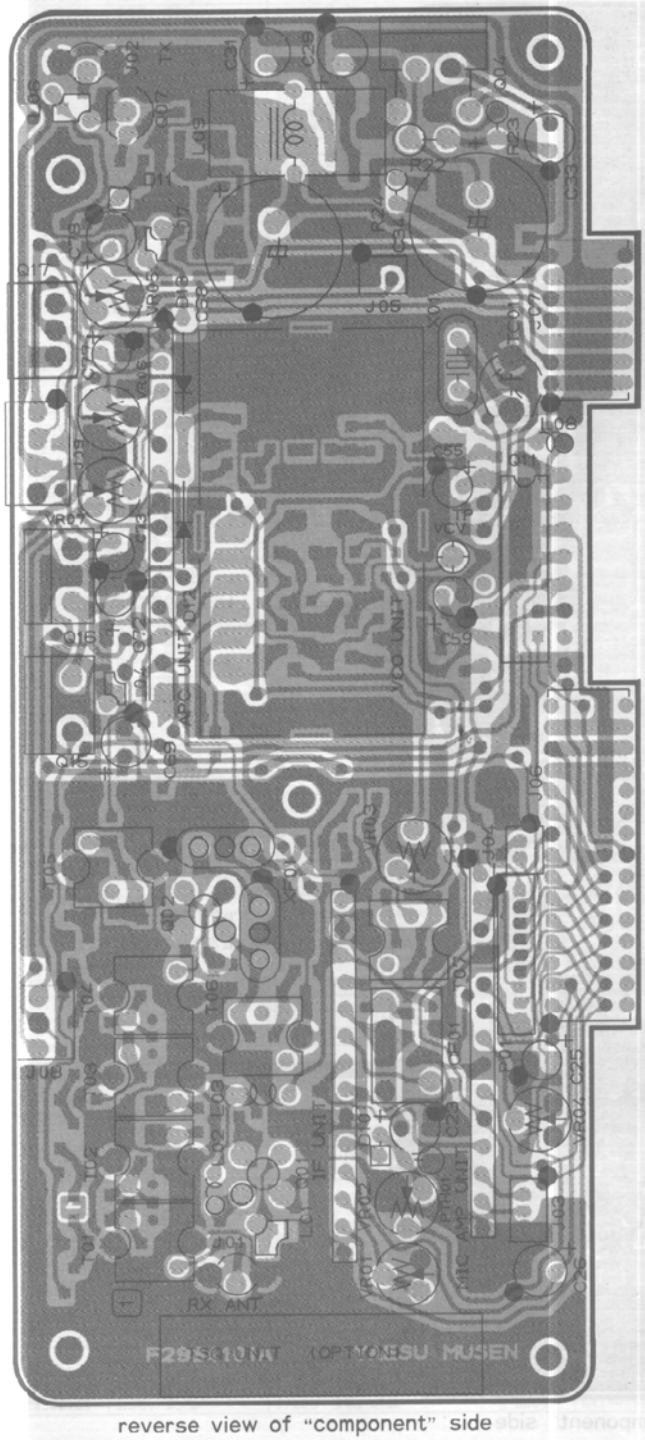


μPC7805H (Q1015)
L7809 (Q1016)

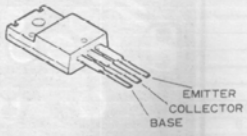


TDA2003 (Q1004)

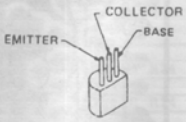
MAIN UNIT PARTS LAYOUT



reverse view of "component" side

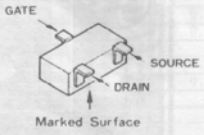


2SB1134R (Q1017)



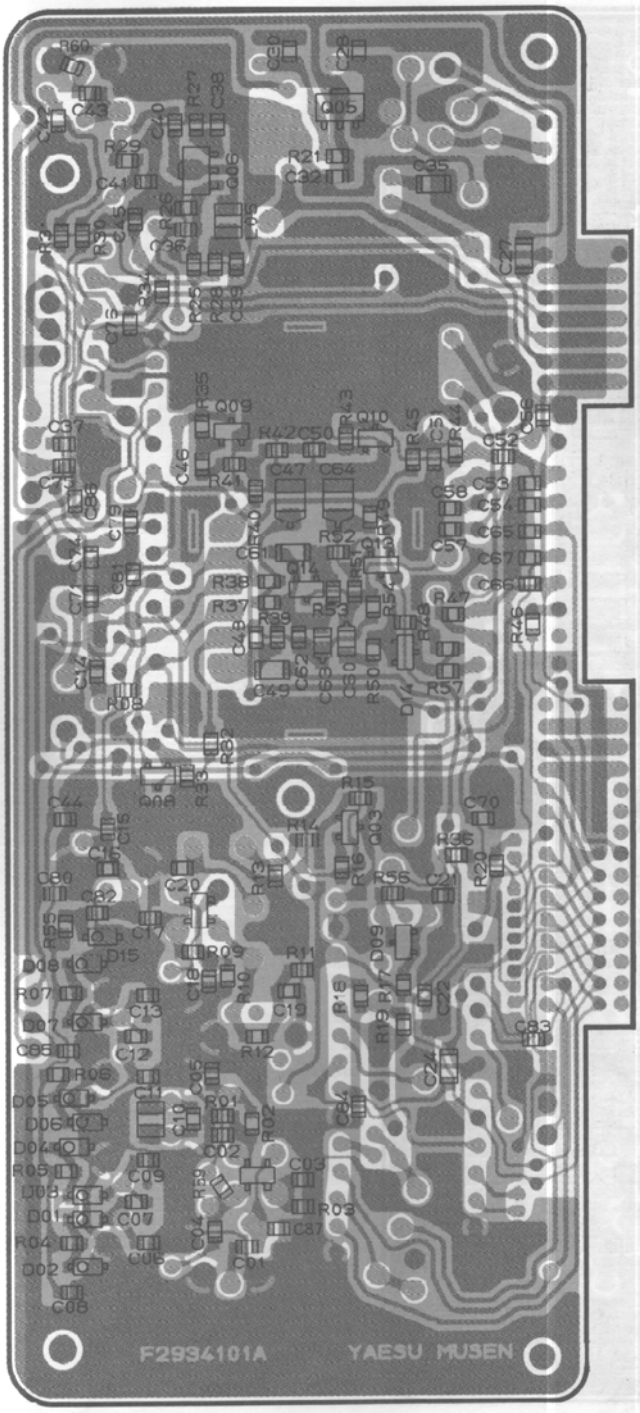
2SC2538 (Q1007)

2SD1000(LL) (Q1005)
2SC3357(RK) (Q1006)

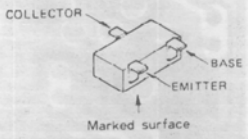


2SK209GR(XG) (Q1008)
2SK208Y (JY) (Q1013)

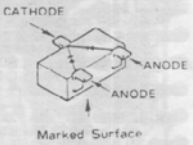
MAIN UNIT PARTS LAYOUT



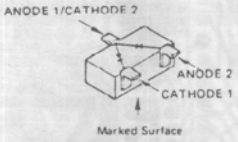
obverse view of "chip-only" side



2SC2620(QB)
(Q1003,1009,1010)
2SC1623(L7) (Q1014)

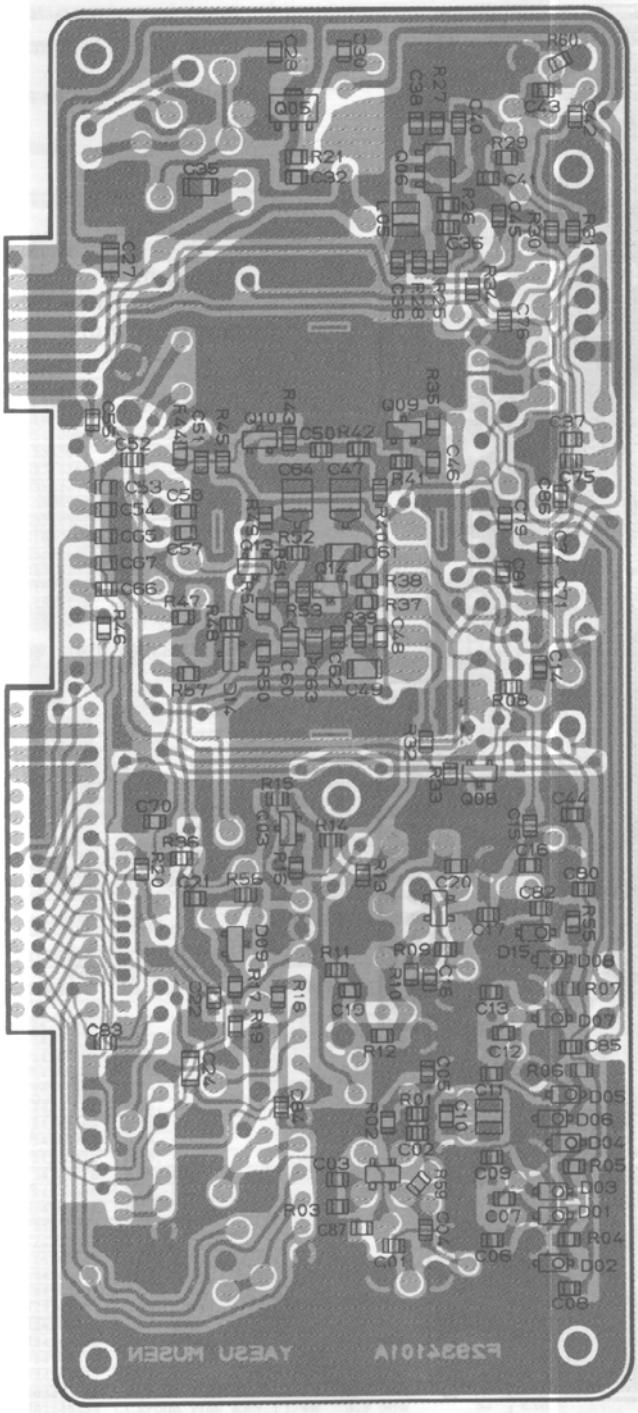


1SS184(B3) (D1014)



1SS226(C3) (D1009)

MAIN UNIT PARTS LAYOUT



reverse view of "chip-only" side

MAIN UNIT PARTS LAYOUT

MAIN UNIT VOLTAGE CHART

(DC VOLTS)

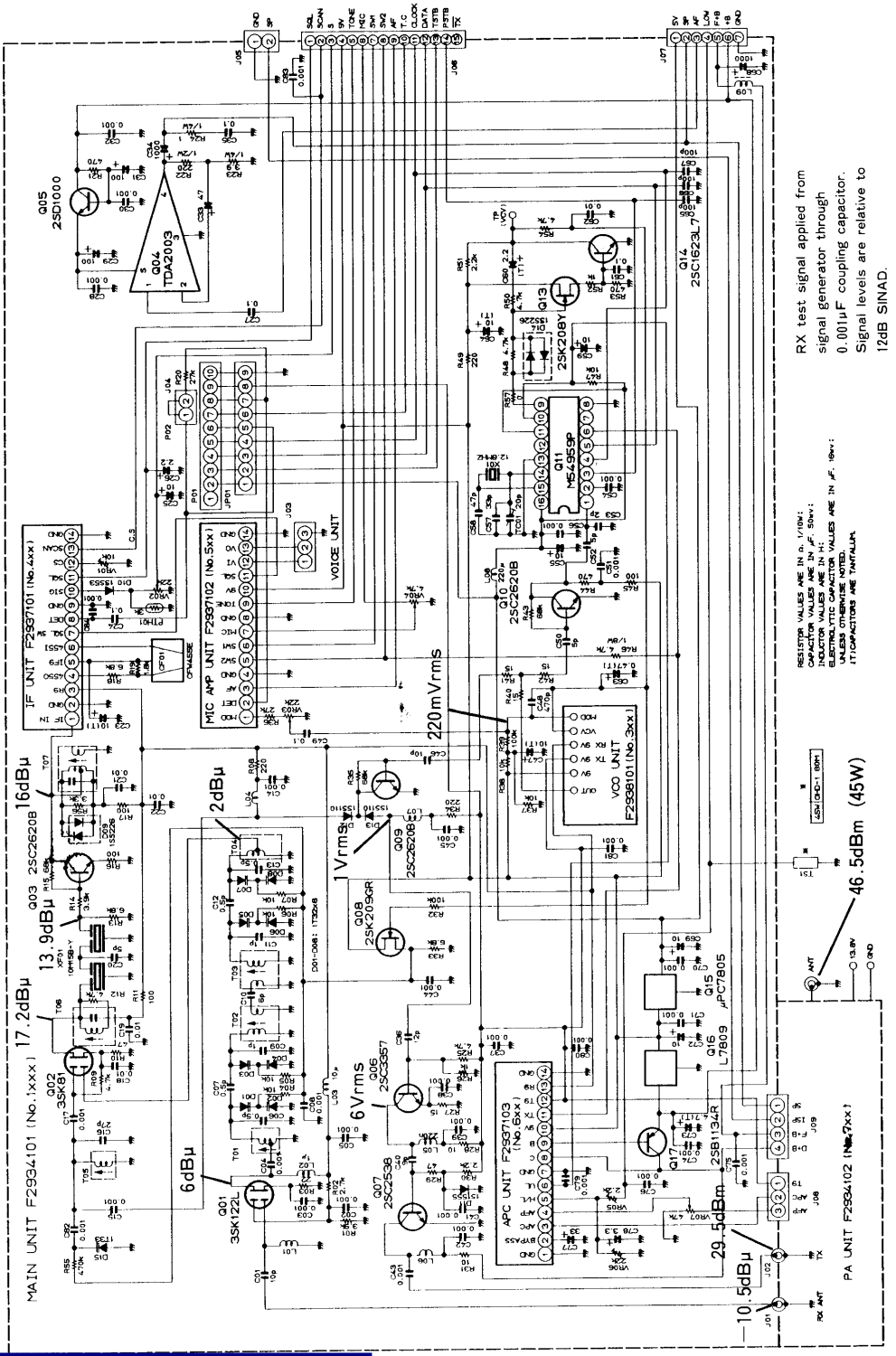
Symbol No.	E(S)	C(D)	B(G1)	G2	REMARKS
Q1001	0.2	9.0	0	5.2	
Q1002	0.18	8.60	0	0.15	
Q1003	0.2	8.8	0.8		
Q1005	12.8	13.6	13.6		
Q1006	0.6	8.5	1.0		
Q1007	0	11.80/3.50	0.55/0.55		RF POWER HIGH/LOW
Q1008	13.8	9.0	13.8		
Q1009	0	6.5	0.7		
Q1010	0	5.4	0.7		
Q1013	13.8	8.0	13.8		
Q1014	0	13.8	0.6		
Q1017	12.4/13.6	12.4/0	11.2/13.2		RX/TX

MAIN UNIT IC VOLTAGE CHART

(DC VOLTS)

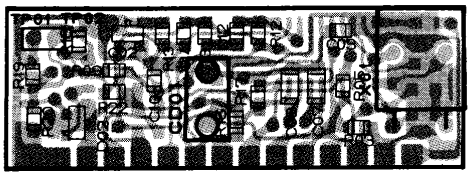
PIN No. / Symbol No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	REMARKS
Q1004	0.7	0.7	0	6.4	13.6												
Q1011	2.3	2.6	4.4	0	0	0/3.6	0	0	1.5	0	4.6	0	0	2.0	2.0	4.6	RX/TX
Q1015	13.6	0	9.0														
Q1016	9.0	0	5.0														

MAIN UNIT CIRCUIT DIAGRAM

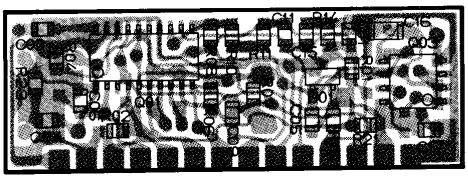


IF UNIT PARTS LAYOUT/CIRCUIT DIAGRAM

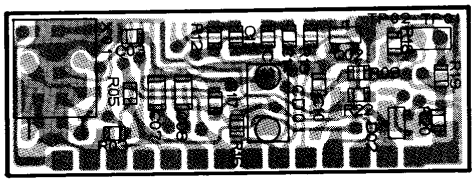
IF UNIT (No. 4 ××)



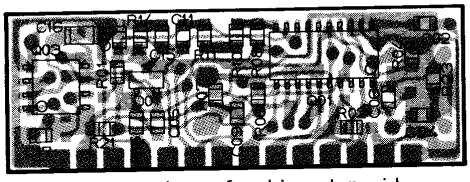
obverse view of "mixed-component" side



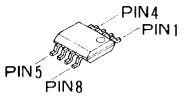
obverse view of "chip-only" side



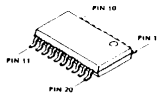
reverse view of "mixed-component" side



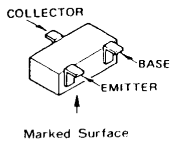
reverse view of "chip-only" side



M5223FP (Q403)



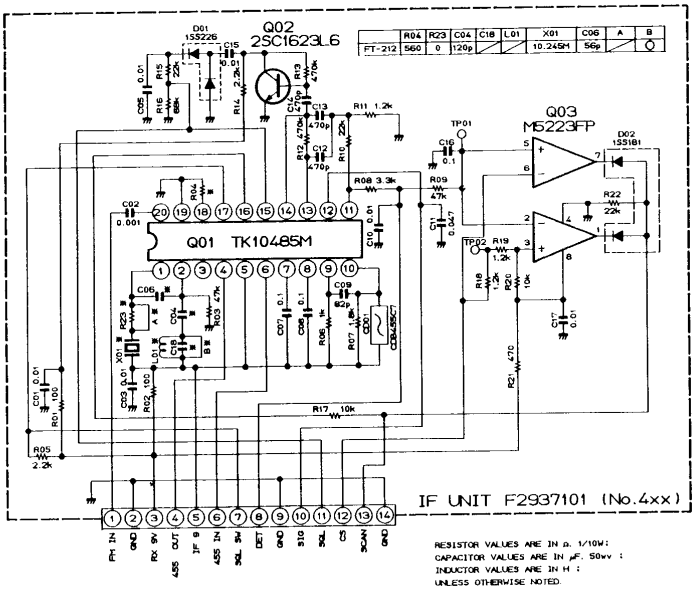
TK10487M (Q401)



2SC1623(L6) (Q402)

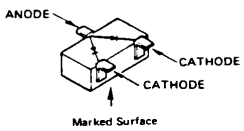
IF UNIT VOLTAGE CHART (DC VOLTS)

1 FM IN	2 GND	3 RX 9V	4 455 OUT	5 IF 9	6 455 IN	7 SQL SW	8 DET	9 GND	10 SIG	11 SQL	12 CS	13 SCAN	14 GND	REMARKS
8.7/0	0	9.0/0	8.0/0	8.4/0	6.6/0	SQ OFF 0/0 SQ ON 7.4/0	3.2/0	0		0.2~1.6/1.0	2.7/0	SQ OFF 3.0/0.1 SQ ON 0/0.1	0	RX/TX

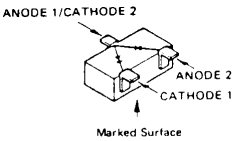


	R04	R23	C04	C18	L01	X01	C06	A	B
FT-212	560	0	120p			10.245M	56p		

RESISTOR VALUES ARE IN Ω, 1/10W;
CAPACITOR VALUES ARE IN μF, 50WV ;
INDUCTOR VALUES ARE IN H ;
UNLESS OTHERWISE NOTED.



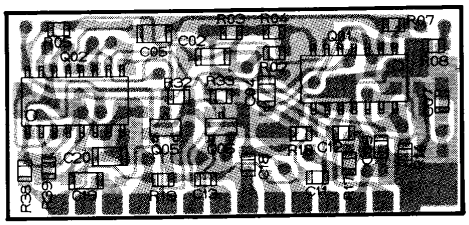
1SS181(A3) (D402)



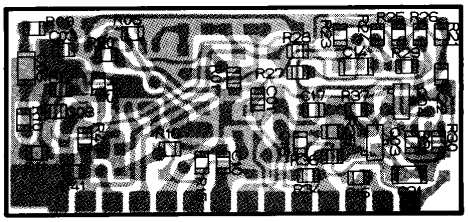
1SS226(C3) (D401)

MIC UNIT PARTS LAYOUT/CIRCUIT DIAGRAM

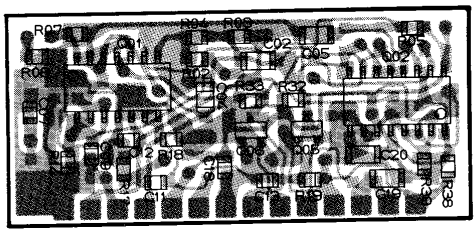
MIC UNIT (No. 5 ××)



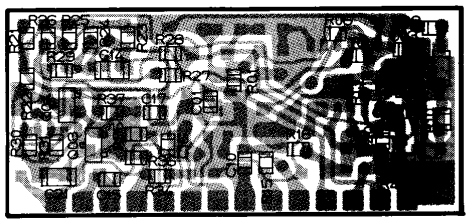
obverse view of "IC" side



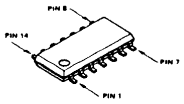
obverse view of "chip-only" side



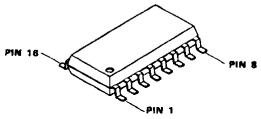
reverse view of "IC" side



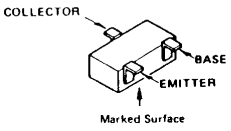
reverse view of "chip-only" side



LA6324M (Q501)



μPD4052BG (Q502)

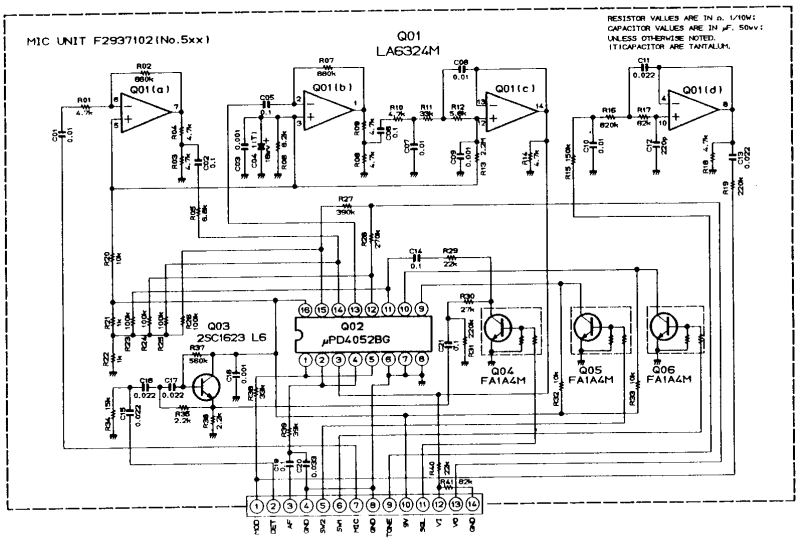


2SC1623(L6) (Q503)
FA1A4M-T2B (L33)
(Q504-506)

MIC UNIT VOLTAGE CHART

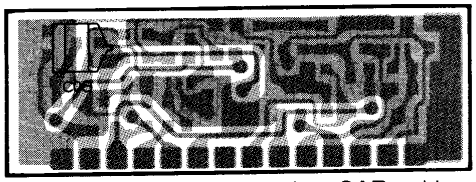
(DC VOLTS)

1 MOD	2 DET	3 AF	4 GND	5 SW2	6 SW1	7 MIC	8 GND	9 TONE	10 9V	11 SQL	12 VI	13 VO	14 GND	REMARKS
0/2.1			0	0/4.3	0	0	0	1.6/1.6	9.0/9.0	0	3.0/3.0	3.0/9.0	0	RX/TX

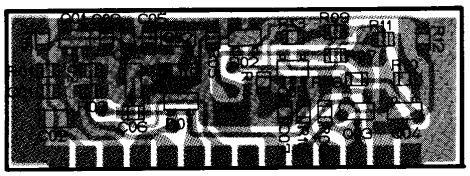


APC UNIT PARTS LAYOUT/CIRCUIT DIAGRAM

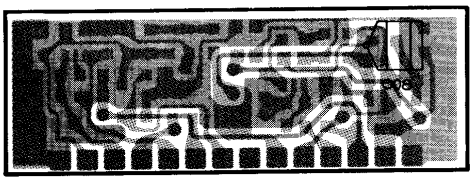
APC UNIT (No. 6 ××)



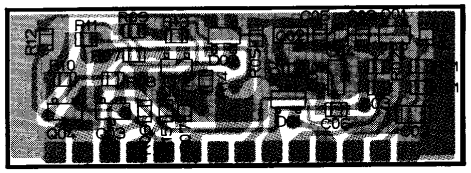
obverse view of "Tantalum CAP" side



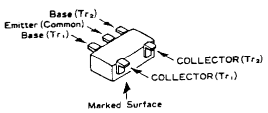
obverse view of "chip-only" side



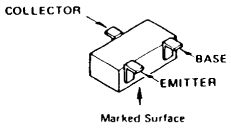
reverse view of "Tantalum CAP" side



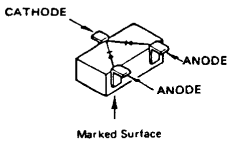
reverse view of "chip-only" side



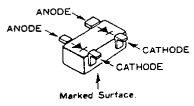
FMS1(S1) (Q601)
FMW1(W1) (Q605)



2SB624(BV4) (Q603,604)
2SC1623(L6) (Q602)
FA1A4M-T2B(L33) (Q606)



1SS184(B3) (D601)

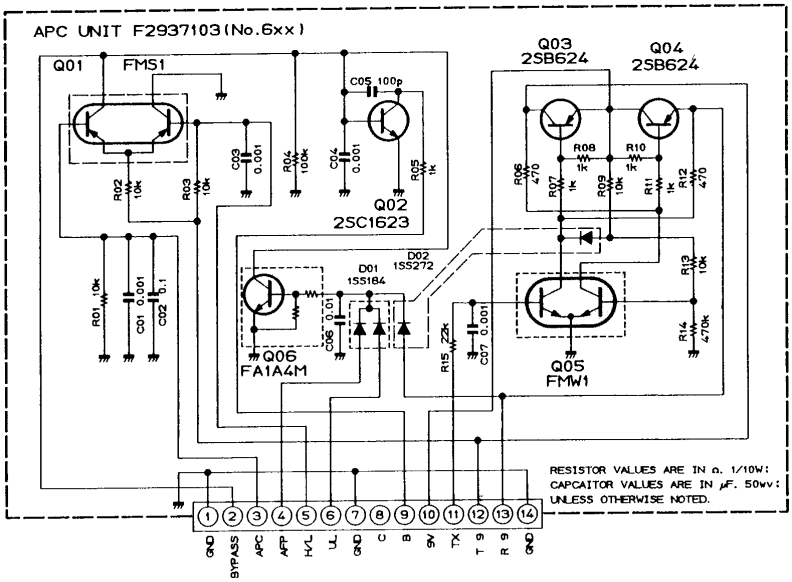


1SS272(A1) (D602)

APC UNIT VOLTAGE CHART

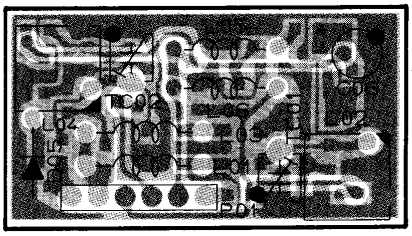
(DC VOLTS)

1 GND	2 BYPASS	3 APC	4 AFP	5 H/L	6 UL	7 GND	8 C	9 B	10 9V	11 TX	12 T9	13 R9	14 GND	REMARKS
0	0/0.6	0/5.7	0	RF HIGH 0/5.1 RF LOW 0/1.2	0.1/0.1	0	0/3.7	13.6/13.2	9.0/9.0	0/3.6	0/9.0	9.0/0	0	RX/TX

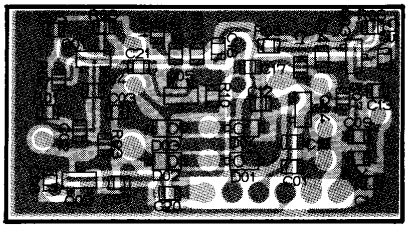


144-VCO UNIT PARTS LAYOUT/CIRCUIT DIAGRAM

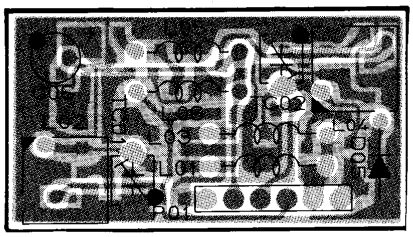
144-VCO UNIT (No. 3 ××)



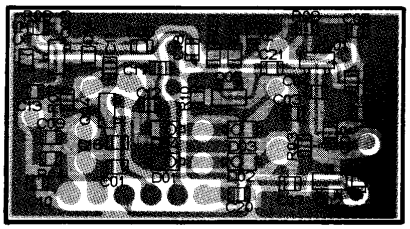
obverse view of "component" side



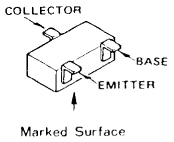
obverse view of "chip-only" side



reverse view of "component" side



reverse view of "chip-only" side



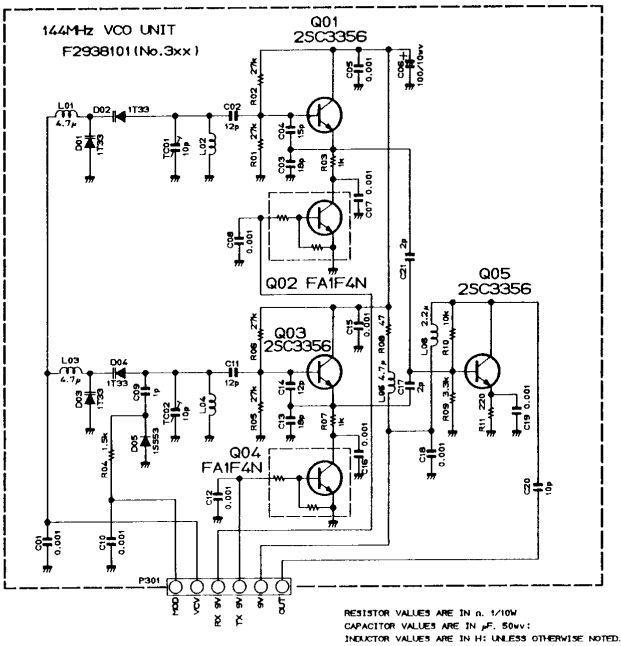
Marked Surface

2SC3356(R24)
(Q301,303,305)
FA1F4N-T2B(R24)
(Q302,304)

VCO UNIT VOLTAGE CHART

(DC VOLTS)

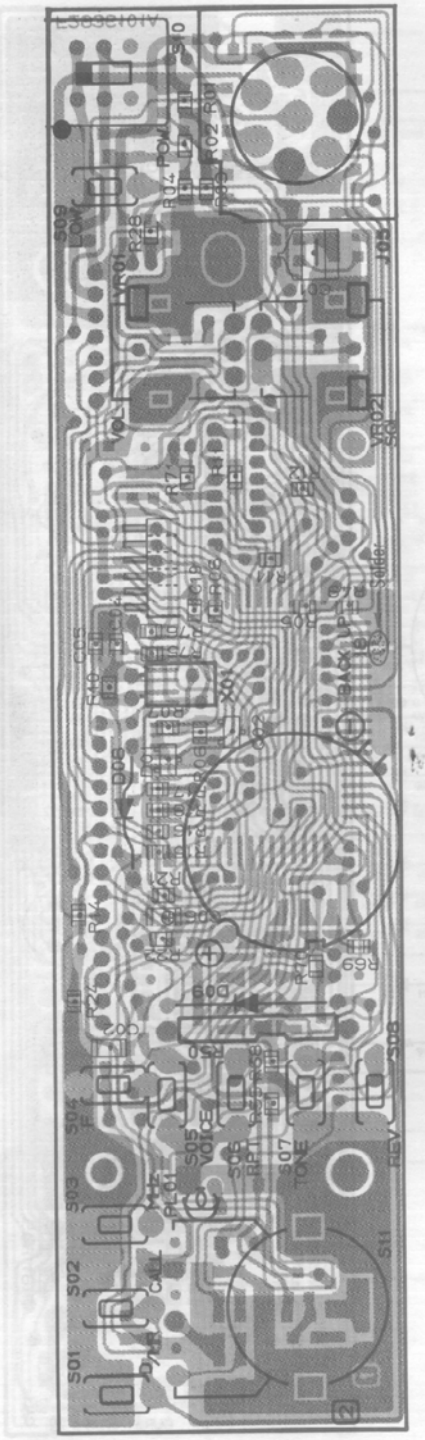
MOD	VCV	R9	T9	9	OUT	REMARKS
3.6		9.0/0	0/9.0	9.0	0	RX/TX



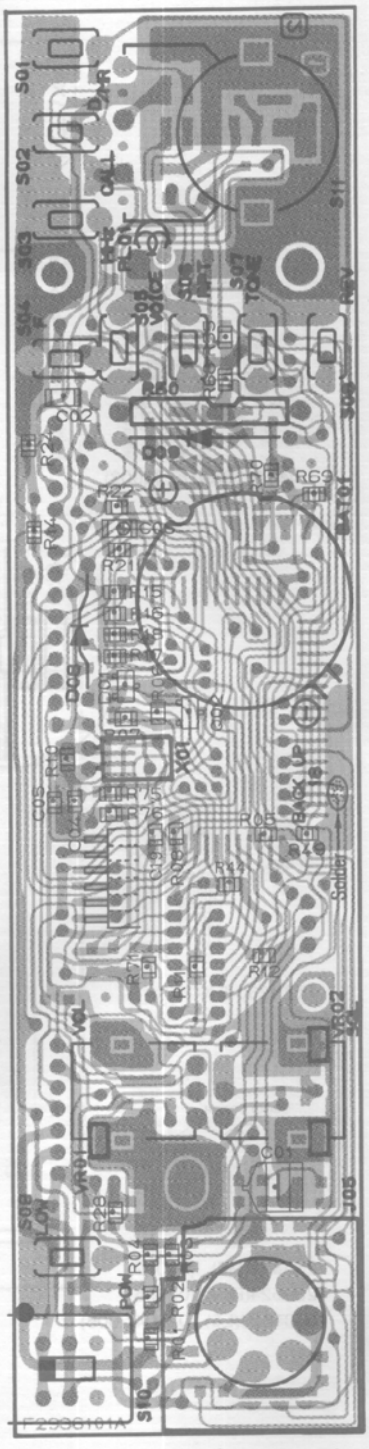
RESISTOR VALUES ARE IN Ω, 1/10W
CAPACITOR VALUES ARE IN μF, 50WV:
INDUCTOR VALUES ARE IN H: UNLESS OTHERWISE NOTED.

CONTROL UNIT PARTS LAYOUT

CONTROL UNIT (No. 2×××)

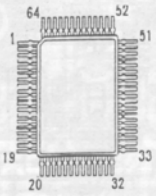


obverse view of "mixed-component" side

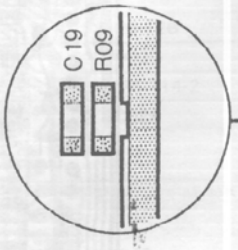


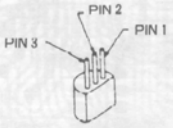
reverse view of "mixed-component" side

CONTROL UNIT PARTS LAYOUT

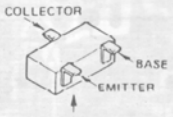


HD404418A01F (02003)



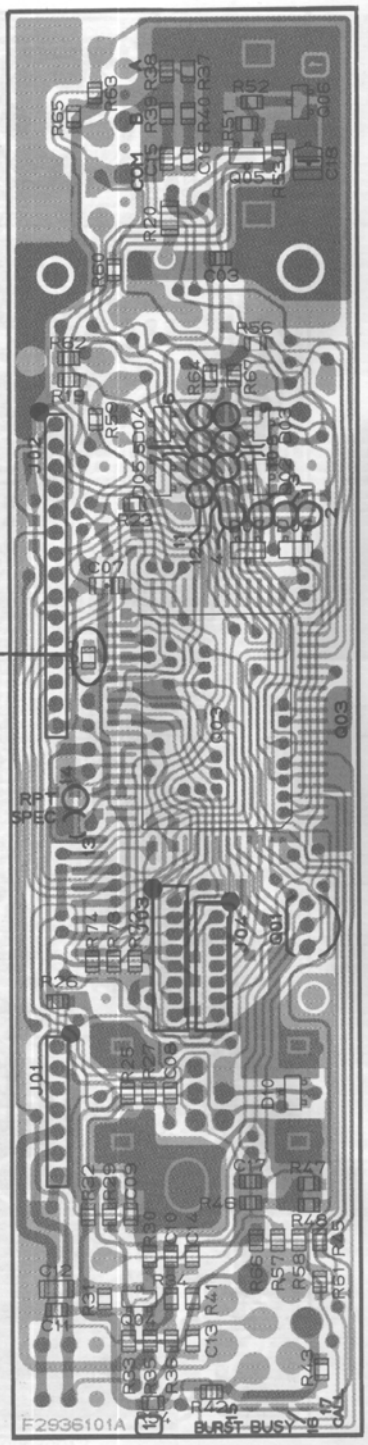


PST5230-2 (02001)



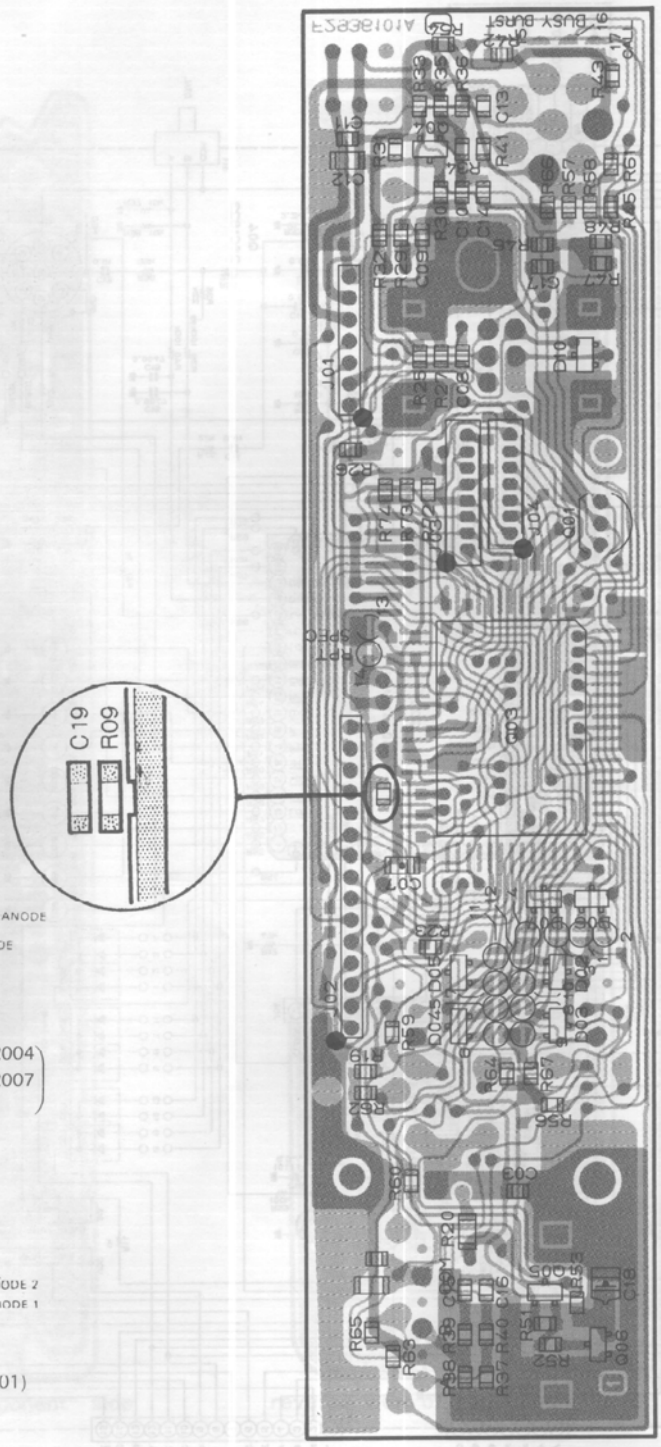
Marked Surface

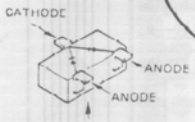
2SA812(M6) (Q2002)
2SB624(BV4) (Q2005)
2SC1623(L6) (Q2004,2006)



obverse view of "IC" side

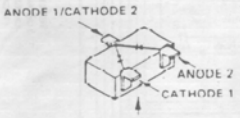
CONTROL UNIT PARTS LAYOUT





Marked Surface

1SS184(B3)
(D2002,2003,2004
2005,2006,2007
2010)

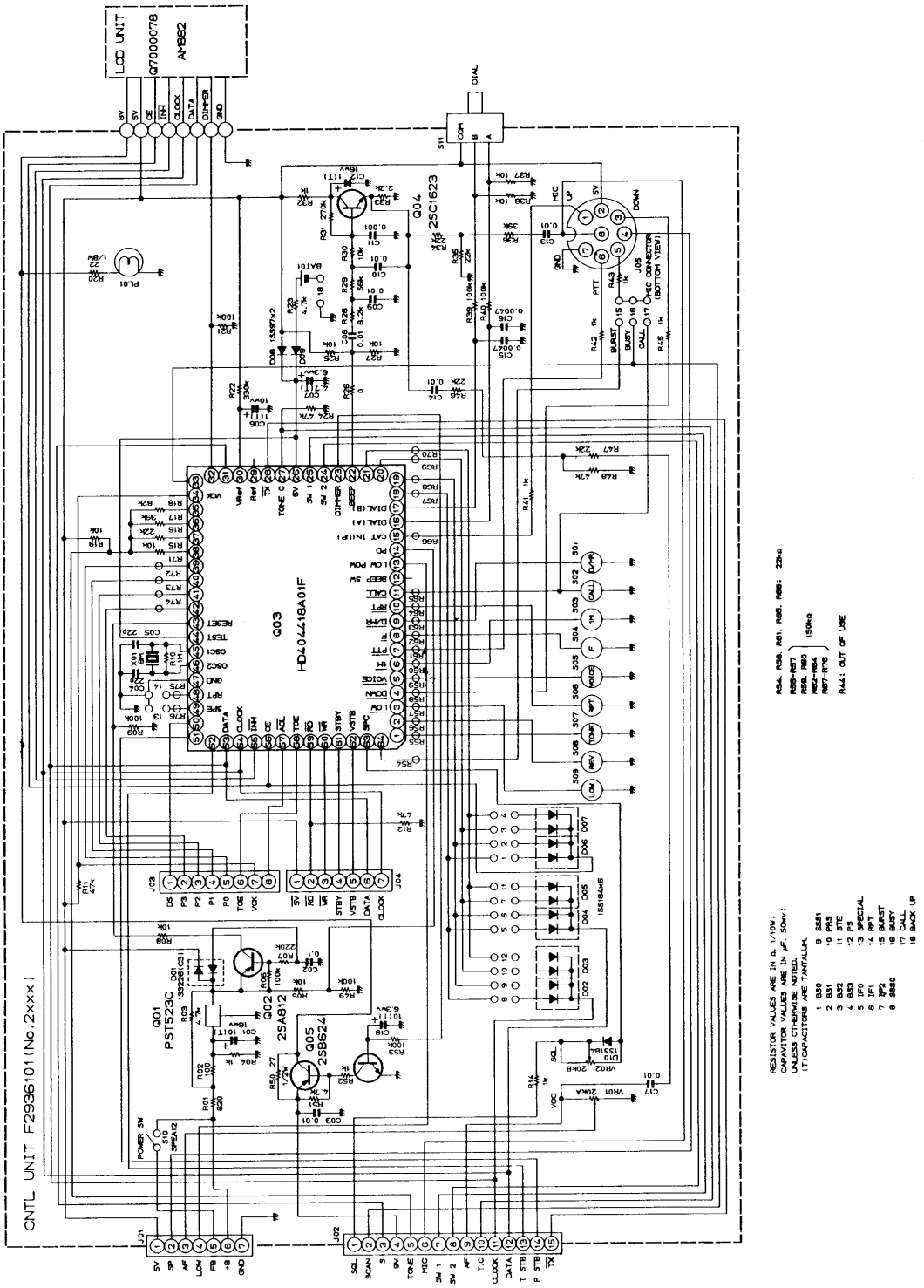


Marked Surface

1SS226(C3) (D2001)

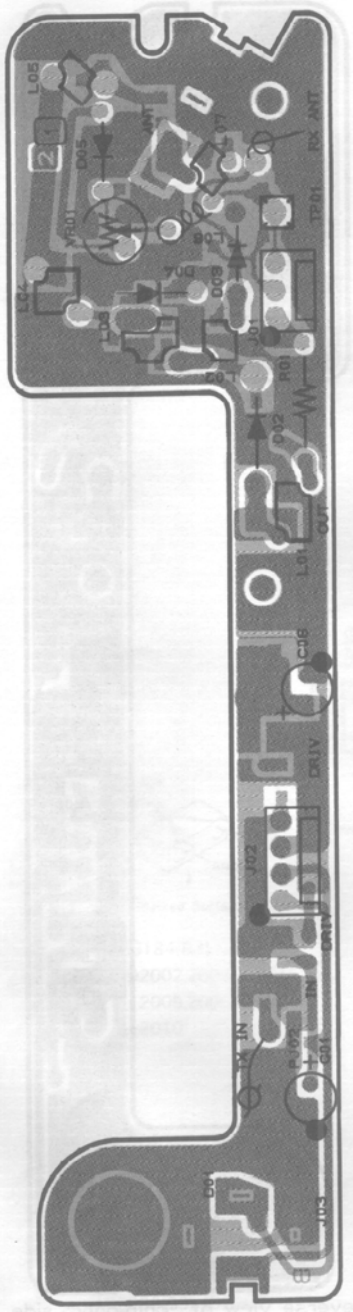
obverse view of "IC" side

CONTROL UNIT CIRCUIT DIAGRAM

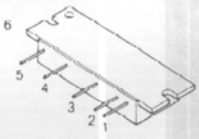


PA UNIT PARTS LAYOUT

PA UNIT (No. 7 ××)

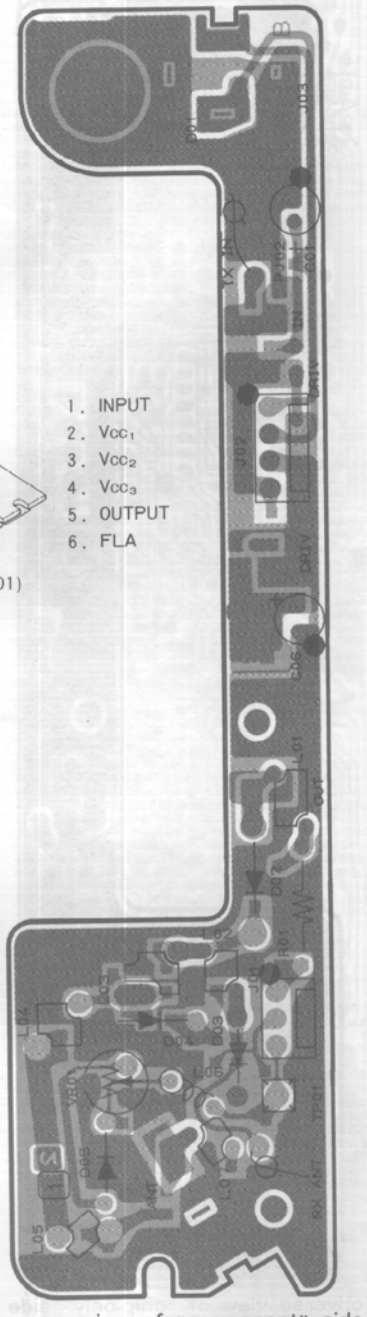


obverse view of "component" side



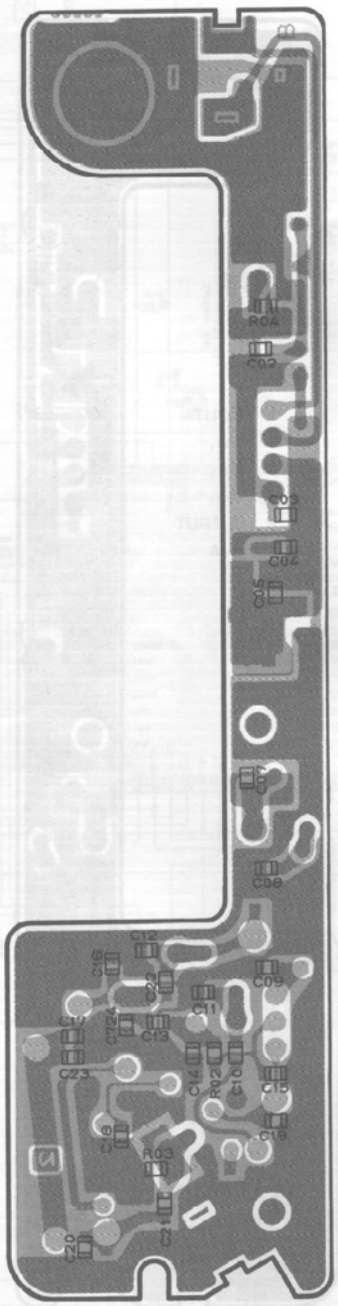
1. INPUT
2. Vcc_1
3. Vcc_2
4. Vcc_3
5. OUTPUT
6. FLA

M57726 (Q701)

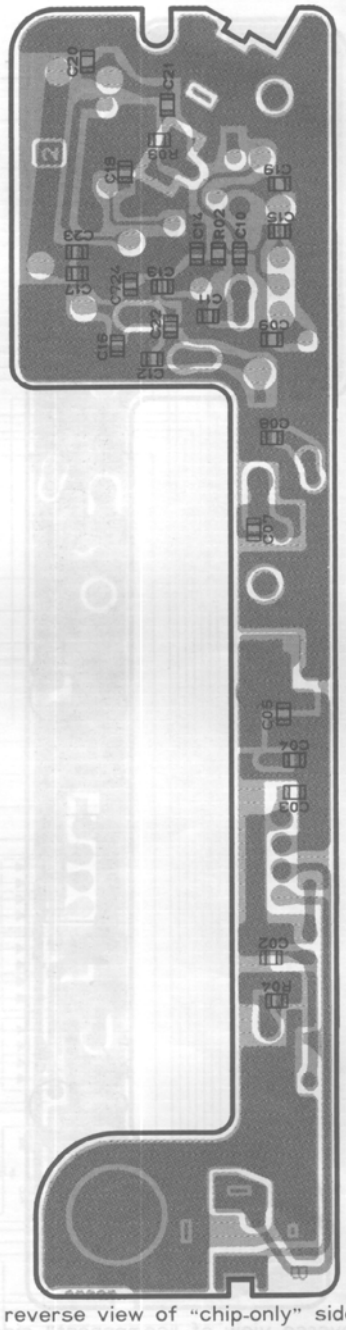


reverse view of "component" side

PA UNIT PARTS LAYOUT

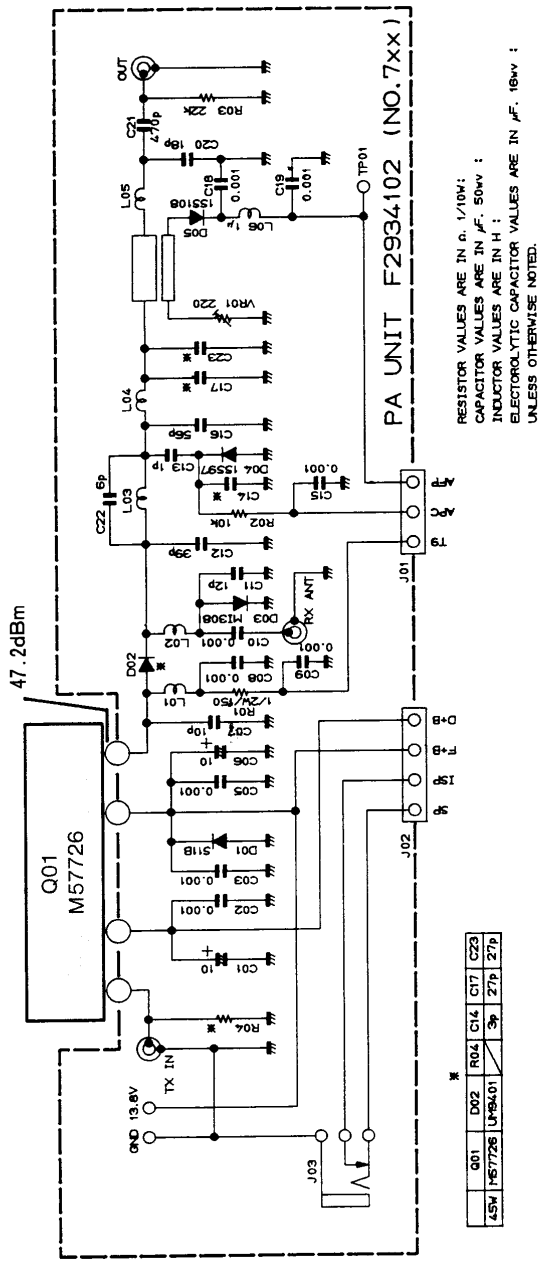


obverse view of "chip-only" side



reverse view of "chip-only" side

PA UNIT CIRCUIT DIAGRAM



SEMICONDUCTOR CROSS-REFERENCE

◎ MAIN UNIT

Symbol No.	ORIGINAL	REPLACEMENT	REPLACEMENT	REPLACEMENT
	Part No.	Part No.	Part No.	Part No.
Q1004	TDA2003	μPC2002V		
	G1090769	G1090284		
Q1014	2SC1623-T2BL7	2SC2712BL TE85R	2SC2462 LDTR	2SC2812 L7TR
	G3316237G	G3327127B	G3324627D	G3328127G
Q1015	μPC7805H	L7805		
	G1090299	G1090776		
D1009	1SS226 TE85R	1SS123-T2B		
	G2070003	G2070020		
D1014	1SS184 TE85R	MC2838-T14-2	DCB015-TA	
	G2070009	G2070018	G2070012	

◎ IF UNIT

Symbol No.	ORIGINAL	REPLACEMENT	REPLACEMENT	REPLACEMENT
	Part No.	Part No.	Part No.	Part No.
Q402	2SC1623-T2BL6	2SC2712GR TE85R	2SC2462 LCTR	2SC2812 L6TR
	G3316237F	G3327127G	G334627C	G3328127F
Q401	1SS226 TE85R	1SS123-T2B		
	G2070003	G2070020		
D402	1SS181 TE85R	MC2836-T14-2	DCA015-TA	
	G2070001	G2070024	G2070014	

◎ MIC UNIT

Symbol No.	ORIGINAL	REPLACEMENT	REPLACEMENT	REPLACEMENT
	Part No.	Part No.	Part No.	Part No.
Q501	LA6324M	μPC324G		
	G1090559	G1090603		
Q503	2SC1623-T2BL6	2SC2712GR TE85R	2SC2462 LCTR	2SC2812 L6TR
	G3316237F	G3327127G	G3324627C	G3328127F

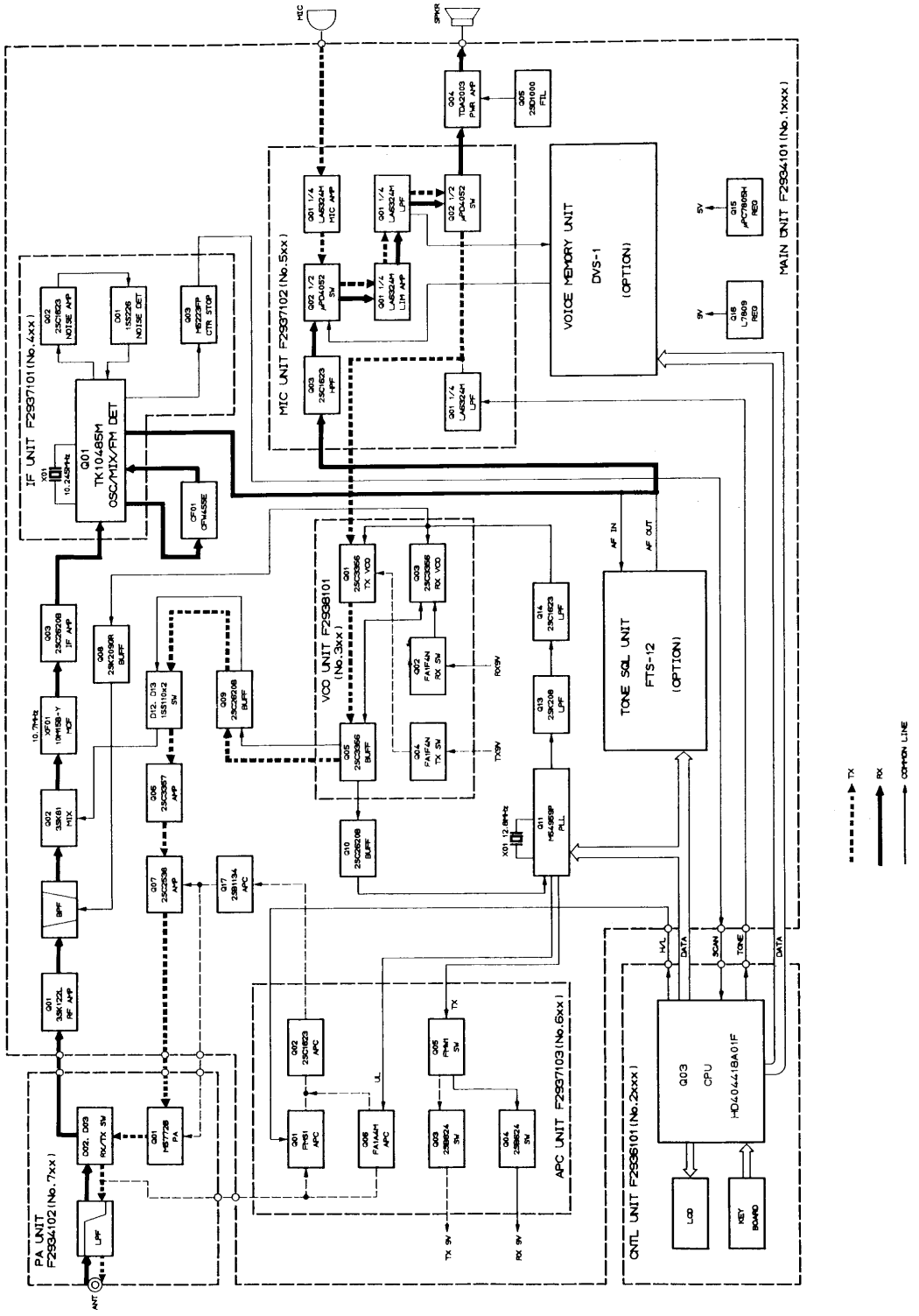
◎ APC UNIT

Symbol No.	ORIGINAL	REPLACEMENT	REPLACEMENT	REPLACEMENT
	Part No.	Part No.	Part No.	Part No.
Q602	2SC1623-T2BL6	2SC2712GR TE85R	2SC2462 LCTR	2SC2812 L6TR
	G3316237F	G332712G	G3324627C	G3328127F
D601	1SS184 TE85R	MC2838-T14-2	DCB015-TA	
	G2070009	G2070018	G2070012	

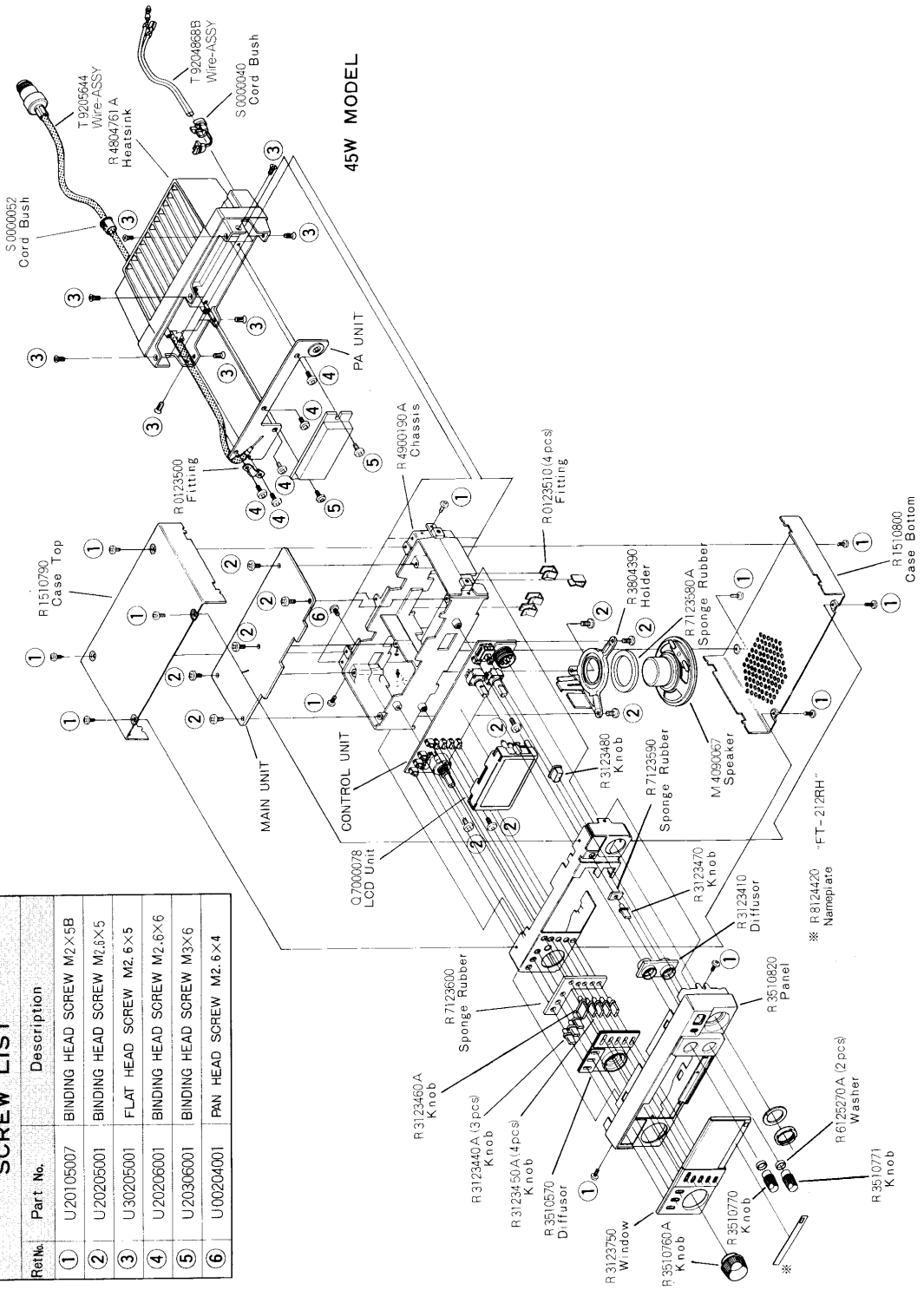
◎ CONTROL UNIT

Symbol No.	ORIGINAL	REPLACEMENT	REPLACEMENT	REPLACEMENT
	Part No.	Part No.	Part No.	Part No.
Q2002	2SA812-T2BM6B	2SA1162GR TE85R	2SA1052 MCTR	2SA1179 M6TR
	G3108127F	G3111627G	G3110527C	G3111797E
Q2004,2006	2SC1623-T2BL6	2SC2712GR TE85R	2SC2462 LCTR	2SC2812 L6TR
	G3316237F	G3327127G	G3324627C	G3328127F
D2001	1SS226 TE85R	1SS123-T2B		
	G2070003	G2070020		
D2002,2003,2004 2005,2006,2007 2010	1SS184 TE85R	MC2838-T14-2	DCB015-TA	
	G2070009	G2070018	G2070012	

BLOCK DIAGRAM



EXPLODED VIEW



SCREW LIST

Ref.No.	Part No.	Description
①	U20105007	BINDING HEAD SCREW M2×5B
②	U20205001	BINDING HEAD SCREW M2.6×5
③	U30205001	FLAT HEAD SCREW M2.6×5
④	U20206001	BINDING HEAD SCREW M2.6×6
⑤	U20306001	BINDING HEAD SCREW M3×6
⑥	U00204001	PAN HEAD SCREW M2.6×4

ALIGNMENT

The high reliability of the chip components in the FT-212RH minimize the possibility that repair or realignment should be needed after leaving the factory. However, if damage occurs and some parts subsequently be replaced, realignment may be required. If a sudden problem occurs during normal operation, it is likely due to component failure; realignment should not be done until after the faulty component has been replaced.

Because of the compact circuitry of this transceiver, we recommend that servicing be performed only by authorized Yaesu service technicians who are experienced with the circuitry and fully equipped for repair and alignment. Therefore, if a fault is suspected, contact the dealer from whom the transceiver was purchased for instructions regarding repair. Authorized Yaesu service technicians realign all circuits and make complete performance checks to ensure compliance with factory specifications after replacing any faulty components.

Those who do undertake any of the following alignments are cautioned to proceed at their own risk. Yaesu must reserve the right to change circuits and alignment procedures in the interest of improved performance, without notifying owners.

No alignment should be attempted unless the normal function and operation of the transceiver are clearly understood, the cause of the malfunction has been clearly pinpointed and any faulty components replaced, and the need for realignment determined to be absolutely necessary.

The following test equipment (and thorough familiarity with its correct use) is necessary for complete realignment. Correction of problems caused by misalignment resulting from use of improper test equipment is not covered under the warranty policy.

A 50-ohm dummy load that is non-reactive up to 150 MHz is required. Correct alignment is not possible with an antenna.

Alignment Equipment

DC voltmeter (at least 20-kilohms/volt)
150 MHz standard signal generator (SSG) with calibrated level and modulation (see note below)
AF signal generator
SINAD meter (SINADDER)
FM linear detector (deviation meter)
CM coupler (directional coupler)
RF wattmeter (50W, ±5% @ 150MHz)
50-ohm non-reactive (@150 MHz) dummy load
Frequency counter (100Hz resolution at 150MHz)
Oscilloscope (recommended, not required)

Note: SSG levels referred to in the alignment procedure are based on 0dBu=0.5uV.

Alignment Precautions

Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 20 and 30 °C (68 to 86 °F). When the transceiver is brought into the shop it should be allowed at least 2 hours for thermal equalization before alignment.

Alignments must not be made unless the oscillator shields and circuit boards are firmly affixed in place. Also, the frequency counter must be thoroughly warmed up before beginning.

Supply voltage during alignment must be held constant at 13.8V DC. Use a well regulated, adjustable power supply capable of at least 10A continuous load.

ALIGNMENT (PLL)

A. PLL Unit

1) VCV (Varactor Control Voltage)

a) With the dummy load connected to the ANT jack, connect the DC voltmeter (3V scale) to the VCV terminal on the VCO Unit.

b) Tune the transceiver to the top edge of the band for the model being aligned, and while receiving, adjust TC301 on the VCO Unit for the voltage indicated below (±0.1V) for Receive at that frequency:

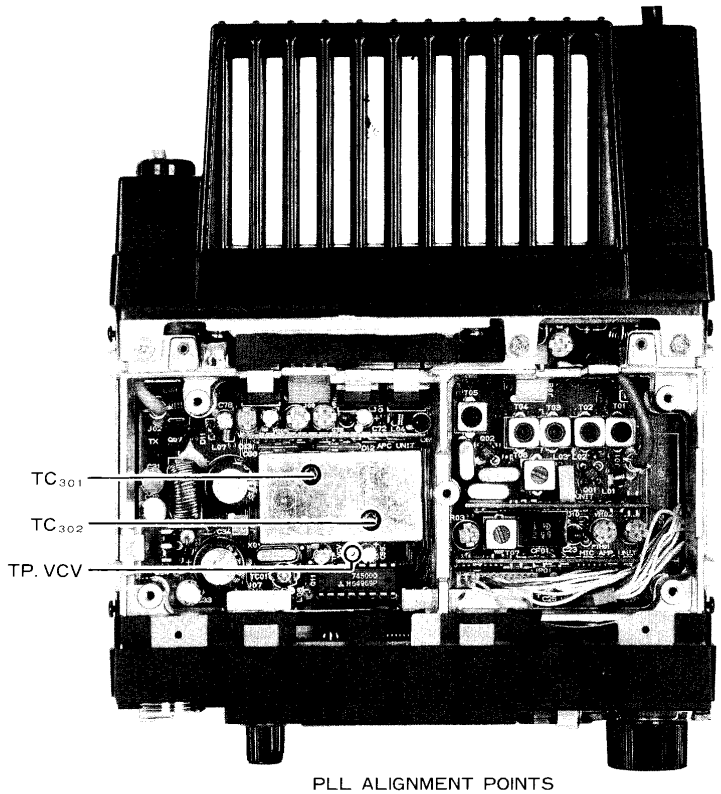
	Receive	Transmit
146 MHz	1.5V	1.4V
148 MHz	1.7V	1.6V

c) Retune the transceiver to 144 MHz and confirm at least 1.3V.

d) Retune to the top edge of the band, close the PTT line, and adjust TC302 for the voltage indicated above for Transmit.

e) Again retune to 144 MHz and confirm at least 1.2V on the meter while transmitting.

f) Repeat steps b - e several times, and then remove the voltmeter.



PLL ALIGNMENT POINTS

B. Transmitter

Set up the test equipment as shown in Figure 1. Close the PTT line when making adjustments. All adjustment points are on the Main Unit.

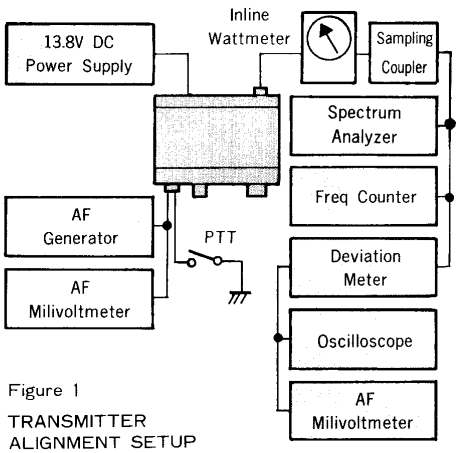


Figure 1
TRANSMITTER
ALIGNMENT SETUP

1) Early Stage Coupling

a) Tune the transceiver to the center of the band, and set the LOW button to the high power position.

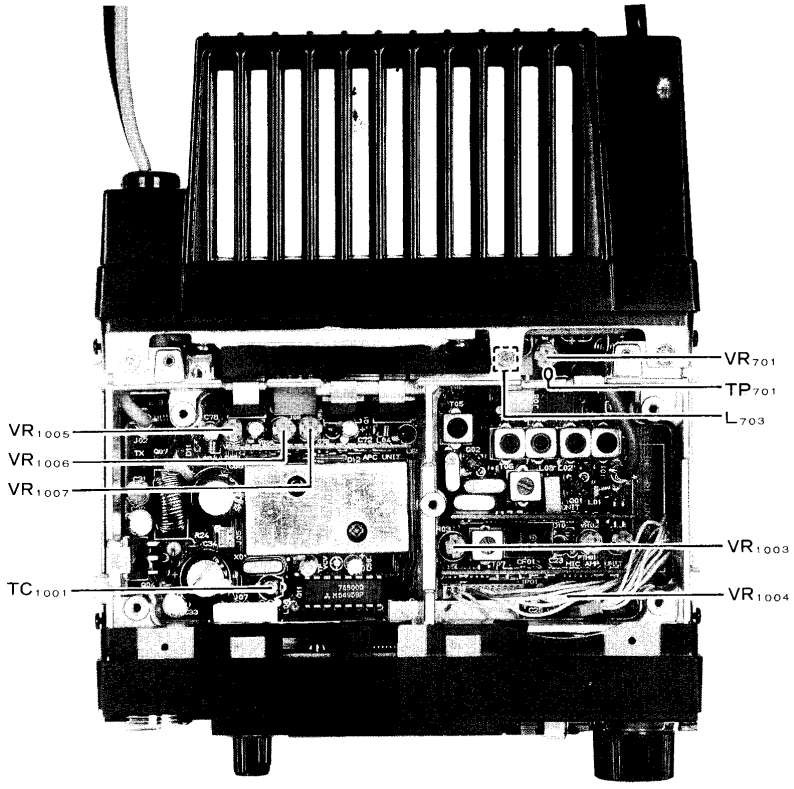
b) Adjust L703 for maximum power output (at least 46 watts).

2) Power Output

a) With the transceiver tuned to the center of the band, set the LOW button to the high power position.

b) Connect the DC voltmeter to TP701 on the PA Unit.

c) Press the PTT switch and adjust VR701 for minimum on the voltmeter.



TRANSMITTER ALIGNMENT POINTS

d) Adjust VR1006 for 46 watts output.

e) Press the LOW switch and adjust VR1005 for 5W output.

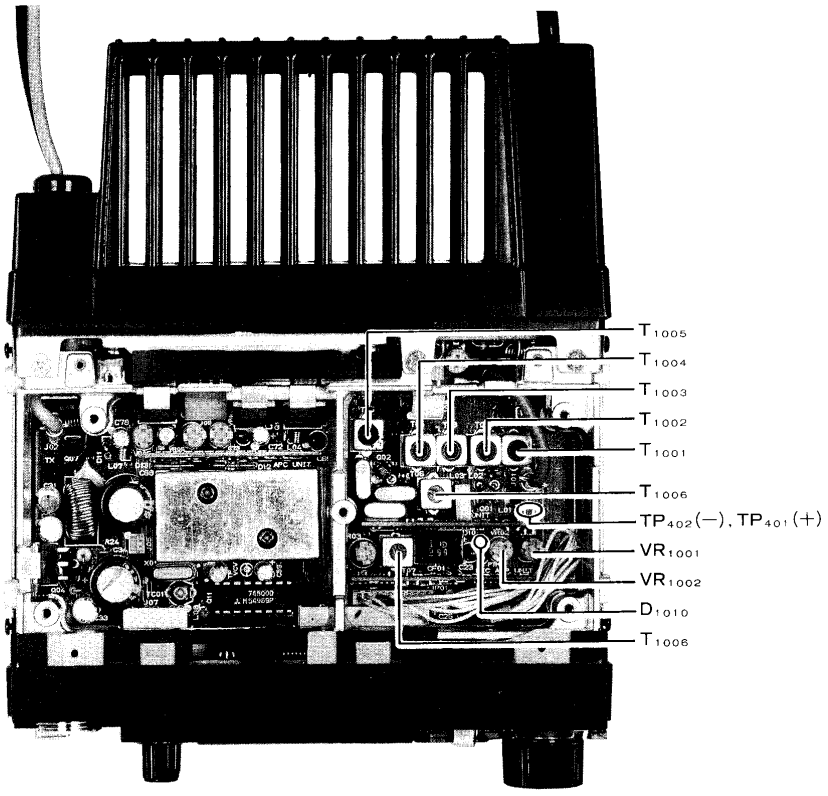
3) Frequency Calibration

a) Adjust TC1001 to match the counter indication with the transceiver frequency.

4) Deviation

a) Set the AF generator for 25mV output at 1 kHz. Adjust VR1003 for ±4.5 kHz deviation on the Deviation Meter.

b) Reduce the AF generator level to 5mV and adjust VR1004 for ±3.5 kHz deviation.



RECEIVER ALIGNMENT POINTS

C. Receiver

Set up the test equipment as shown in Figure 2. All adjustment points are on the Main Unit.

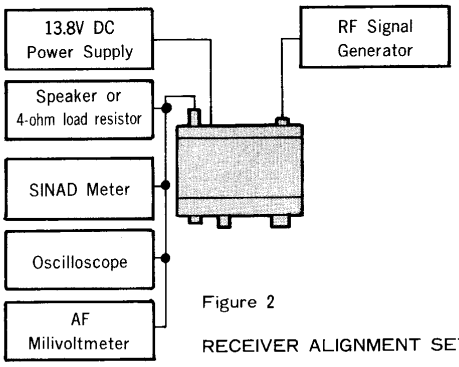


Figure 2

RECEIVER ALIGNMENT SETUP

1) Interstage Transformers

a) Connect the DC voltmeter between the cathode of D1010 and chassis ground.

b) Modulate the RF signal generator for ±3.5 kHz deviation of a 1 kHz tone.

c) Tune the transceiver and signal generator to the same frequency at the center of the band, and set the injection level to produce midrange S-meter indication.

d) Adjust T1001 through T1007 for maximum S-meter indication. Reduce the injection level, if necessary, to keep the S-meter near midrange.

e) Confirm 12dB SINAD sensitivity of -7.5dBu (0.21uV) or better on the SINADDER.

2) S-Meter Calibration

a) At the center of the band, set the signal generator for 30dBu (50uV) injection with ±3.5 kHz deviation of a 1 kHz tone.

b) Adjust VR1002 so that all S-meter segments are just on.

3) Scanner Center-Stop

a) Connect the DC voltmeter (3V range) between TP401 (+) and TP402 (-) on the IF Unit.

b) Tune the transceiver to 146.000 MHz, and set the SQL fully counterclockwise (the BUSY lamp should be lit).

c) Tune the signal generator also to 146.000 MHz, and inject 20dBu (5uV) with ±3.5 kHz deviation of a 1 kHz tone.

d) Adjust VR1001 for 0V on the voltmeter.

PARTS LIST

MAIN UNIT

Symbol No.	Part No.	Description	Device
	F2934101A	Printed Circuit Board	
	C029341AA	without IF, MIC, APC, 144-VCO UNIT	
	C029341AB	with IF, MIC, APC, 144-VCO UNIT	
	C029341AC	without IF, MIC, APC, 144-VCO UNIT	
	C029341AD	with IF, MIC, APC, 144-VCO UNIT	
	C029341AG	without IF, MIC, APC, 144-VCO UNIT	
	C029341AH	with IF, MIC, APC, 144-VCO UNIT	
Q1001	G4801220L	FET	3SK122L
Q1002	G4800810	FET	3SK81
Q1003	G3326207B	Transistor	2SC2620QBTR
Q1004	G1090769	IC	TDA2003
Q1005	G3410007L	Transistor	2SD1000-T2LL
Q1006	G3333577	Transistor	2SC3357-T2
Q1007	G3325380	Transistor	2SC2538
Q1008	G3802097G	FET	2SK209GRTE85R
Q1009	G3326207B	Transistor	2SC2620QBTR
Q1010	G3326207B	Transistor	2SC2620QBTR
Q1011	G1090845	IC	M54959P
Q1013	G3802087G	FET	2SK208YTE85R
Q1014	G3316237G	Transistor	2SC1623-T2BL7
Q1015	G1090299	IC	uPC7805H
Q1016	G1090778	IC	L7809
Q1017	G3211340R	Transistor	2SB1134R
D1001	G2070035	Diode	1T32-T8
D1002	G2070035	Diode	1T32-T8
D1003	G2070035	Diode	1T32-T8
D1004	G2070035	Diode	1T32-T8
D1005	G2070035	Diode	1T32-T8
D1006	G2070035	Diode	1T32-T8
D1007	G2070035	Diode	1T32-T8
D1008	G2070035	Diode	1T32-T8
D1009	G2070003	Diode	1SS226TE85R
D1010	G2090027	Diode	1SS53
D1011	G2015550	Diode	1SS1555
D1012	G2090297	Diode	1SS110
D1013	G2090297	Diode	1SS110
D1014	G2070009	Diode	1SS184TE85R
D1015	G2070040	Diode	1T33-T7
X1001	H0102857	XTAL	HC-43/U 12.8MHz
XF1001	H1102096	XTAL Filter	10M15B-Y
CF1001	H3900200	Ceramic Filter	CFW455E
R1001	J24205392	RES. Chip	1/10W 3.9k ohm
R1002	J24205272	RES. Chip	1/10W 2.7k ohm
R1003	J24205220	RES. Chip	1/10W 22 ohm
R1004	J24205103	RES. Chip	1/10W 10k ohm
R1005	J24205103	RES. Chip	1/10W 10k ohm
R1006	J24205103	RES. Chip	1/10W 10k ohm
R1007	J24205103	RES. Chip	1/10W 10k ohm
R1008	J24205221	RES. Chip	1/10W 220 ohm
R1009	J24205472	RES. Chip	1/10W 4.7k ohm
R1010	J24205470	RES. Chip ●	1/10W 47 ohm
R1010	J24205000	RES. Chip ▲	1/10W 0 ohm
R1011	J24205101	RES. Chip	1/10W 100 ohm
R1012	J24205472	RES. Chip	1/10W 4.7k ohm
R1013	J24205682	RES. Chip	1/10W 6.8k ohm
R1014	J24205392	RES. Chip	1/10W 3.9k ohm
R1015	J24205683	RES. Chip	1/10W 68k ohm
R1016	J24205101	RES. Chip	1/10W 100 ohm
R1017	J24205101	RES. Chip	1/10W 100 ohm
R1018	J24205332	RES. Chip	1/10W 3.3k ohm
R1019	J24205222	RES. Chip	1/10W 2.2k ohm
R1020	J24205273	RES. Chip	1/10W 27k ohm
R1021	J24205471	RES. Chip	1/10W 470 ohm
R1022	J02275221	Carbon Film RES.	1/2W 220 ohm SJ
R1023	J02245399	Carbon Film RES.	1/4W 3.9 ohm SJ
R1024	J02245010	Carbon Film RES.	1/4W 1 ohm SJ
R1025	J24205472	RES. Chip	1/10W 4.7k ohm
R1026	J24205102	RES. Chip	1/10W 1k ohm
R1027	J24205150	RES. Chip	1/10W 15 ohm
R1028	J24205100	RES. Chip	1/10W 10 ohm
R1029	J24205470	RES. Chip	1/10W 47 ohm
R1030	J24205472	RES. Chip ◎	1/10W 4.7k ohm
R1030	J24205222	RES. Chip △	1/10W 2.2k ohm
R1031	J24205100	RES. Chip	1/10W 10 ohm
R1032	J24205104	RES. Chip	1/10W 100k ohm
R1033	J24205682	RES. Chip	1/10W 6.8k ohm
R1034	J24205221	RES. Chip	1/10W 220 ohm
R1035	J24205683	RES. Chip	1/10W 68k ohm
R1036	J24205273	RES. Chip	1/10W 27k ohm
R1037	J24205103	RES. Chip	1/10W 10k ohm
R1038	J24205103	RES. Chip	1/10W 10k ohm
R1039	J24205104	RES. Chip	1/10W 100k ohm
R1040	J24205150	RES. Chip	1/10W 15 ohm
R1041	J24205150	RES. Chip	1/10W 15 ohm
R1042	J24205150	RES. Chip	1/10W 15 ohm
R1043	J24205683	RES. Chip	1/10W 68k ohm
R1044	J24205471	RES. Chip	1/10W 470 ohm
R1045	J24205101	RES. Chip	1/10W 100 ohm
R1046	J24205472	RES. Chip	1/10W 4.7k ohm
R1047	J24205103	RES. Chip	1/10W 10k ohm
R1048	J24205472	RES. Chip	1/10W 4.7k ohm
R1049	J24205221	RES. Chip	1/10W 220 ohm
R1050	J24205472	RES. Chip	1/10W 4.7k ohm
R1051	J24205222	RES. Chip	1/10W 2.2k ohm
R1052	J24205821	RES. Chip	1/10W 820 ohm
R1053	J24205471	RES. Chip	1/10W 470 ohm
R1054	J24205472	RES. Chip	1/10W 4.7k ohm
R1055	J24205474	RES. Chip	1/10W 470k ohm
R1056	J24205332	RES. Chip	1/10W 3.3k ohm
R1057	J24205000	RES. Chip	1/10W 0 ohm
R1059	J24205331	RES. Chip ▲	1/10W 330 ohm
R1060	J24205101	RES. Chip ◎	1/10W 100 ohm
PTH1001	G9090036	Posistor	3k ohm
VR1001	J51745103	POT.	B 10k ohm
VR1002	J51745223	POT.	B 22k ohm
VR1003	J51745223	POT.	B 22k ohm
VR1004	J51745472	POT.	B 4.7k ohm
VR1005	J51745222	POT.	B 2.2k ohm
VR1006	J51745223	POT.	B 22k ohm
VR1007	J51745473	POT.	B 47k ohm
C1001	K22170211	CAP. Chip ●	CH 50V 10pF
C1001	K22170204	CAP. Chip ▲	CH 50V 3pF
C1002	K22170805	CAP. Chip	B 50V 0.001uF
C1003	K22170805	CAP. Chip	B 50V 0.001uF
C1004	K22170805	CAP. Chip	B 50V 0.001uF
C1005	K22170805	CAP. Chip	B 50V 0.001uF
C1006	K22170201	CAP. Chip	CH 50V 0.5pF
C1007	K22170201	CAP. Chip	CH 50V 0.5pF
C1008	K22170805	CAP. Chip	B 50V 0.001uF
C1009	K22170202	CAP. Chip	CH 50V 1pF
C1010	K22170207	CAP. Chip	CH 50V 6pF
C1011	K22170202	CAP. Chip	CH 50V 1pF
C1012	K22170201	CAP. Chip	CH 50V 0.5pF
C1013	K22170201	CAP. Chip	CH 50V 0.5pF
C1014	K22170805	CAP. Chip	B 50V 0.001uF
C1015	K22170805	CAP. Chip	B 50V 0.001uF
C1016	K22170221	CAP. Chip	CH 50V 27pF
C1017	K22170805	CAP. Chip	B 50V 0.001uF
C1018	K22170817	CAP. Chip ●	B 50V 0.01uF
C1019	K22170817	CAP. Chip	B 50V 0.01uF
C1020	K22170206	CAP. Chip	CH 50V 5pF
C1021	K22170817	CAP. Chip	B 50V 0.01uF
C1022	K22170817	CAP. Chip	B 50V 0.01uF
C1023	K70127106	Tantalum CAP.	50V 10uF
C1024	K22141809	CAP. Chip	B 25V 0.1uF
C1025	K40129012	AL. Electro. CAP.	16V 10uF
C1026	K70137225	Tantalum CAP.	20V 2.2uF
C1027	K22141809	CAP. Chip	B 25V 0.1uF
C1028	K22170805	CAP. Chip	B 50V 0.001uF
C1029	K40129038	AL. Electro. CAP.	16V 100uF
C1030	K22170805	CAP. Chip	B 50V 0.001uF
C1031	K40129038	AL. Electro. CAP.	16V 100uF
C1032	K22170805	CAP. Chip	B 50V 0.001uF
C1033	K40129028	AL. Electro. CAP.	16V 47uF
C1034	K40129021	AL. Electro. CAP.	16V 1000uF

● : Version F ◎ : 10W Model
▲ : Version A1, A2, A3, A4, B △ : 45W Model

C1035	K22141809	CAP. Chip	B	25V	0.1uF
C1036	K22170213	CAP. Chip	CH	50V	12pF
C1037	K22170805	CAP. Chip	B	50V	0.001uF
C1038	K22170805	CAP. Chip	B	50V	0.001uF
C1039	K22170805	CAP. Chip	B	50V	0.001uF
C1040	K22170210	CAP. Chip	CH	50V	9pF
C1041	K22170805	CAP. Chip	B	50V	0.001uF
C1042	K22170805	CAP. Chip	B	50V	0.001uF
C1043	K22170209	CAP. Chip	CH	50V	8pF
C1043	K22170805	CAP. Chip	B	50V	0.001uF
C1044	K22170805	CAP. Chip	B	50V	0.001uF
C1045	K22170805	CAP. Chip	B	50V	0.001uF
C1046	K22170211	CAP. Chip	CH	50V	10pF
C1047	K78100004	Tantalum Chip		10V	10uF
C1048	K22170801	CAP. Chip	B	50V	470pF
C1049	K22141809	CAP. Chip	B	25V	0.1uF
C1050	K22170206	CAP. Chip	CH	50V	5pF
C1051	K22170805	CAP. Chip	B	50V	0.001uF
C1052	K22170206	CAP. Chip	CH	50V	5pF
C1053	K22170203	CAP. Chip	CH	50V	2pF
C1054	K22170805	CAP. Chip	B	50V	0.001uF
C1055	K40129012	AL. Electro. CAP.		16V	10uF
C1056	K22170805	CAP. Chip	B	50V	0.001uF
C1057	K22170223	CAP. Chip	CH	50V	33pF
C1058	K22170227	CAP. Chip	CH	50V	47pF
C1059	K40129012	AL. Electro. CAP.		16V	10uF
C1060	K78100002	Tantalum Chip		16V	2.2uF
C1061	K22141809	CAP. Chip	B	25V	0.1uF
C1062	K22170817	CAP. Chip	B	50V	0.01uF
C1063	K78160005	Tantalum Chip		35V	0.47uF
C1064	K78100004	Tantalum Chip		10V	10uF
C1065	K22170235	CAP. Chip	CH	50V	100pF
C1066	K22170235	CAP. Chip	CH	50V	100pF
C1067	K22170235	CAP. Chip	CH	50V	100pF
C1068	K40129021	AL. Electro. CAP.		16V	1000uF
C1069	K70127106	Tantalum CAP.		16V	10uF
C1070	K22170805	CAP. Chip	B	50V	0.001uF
C1071	K22170805	CAP. Chip	B	50V	0.001uF
C1072	K40129012	AL. Electro. CAP.		16V	10uF
C1073	K70147475	Tantalum CAP.		25V	4.7uF
C1074	K22170805	CAP. Chip	B	50V	0.001uF
C1075	K22170805	CAP. Chip	B	50V	0.001uF
C1076	K22170805	CAP. Chip	B	50V	0.001uF
C1077	K40129008	AL. Electro. CAP.		16V	33uF
C1078	K40179007	AL. Electro. CAP.		50V	3.3uF
C1079	K22170805	CAP. Chip	B	50V	0.001uF
C1080	K22170805	CAP. Chip	B	50V	0.001uF
C1081	K22170805	CAP. Chip	B	50V	0.001uF
C1082	K22170805	CAP. Chip	B	50V	0.001uF
C1083	K22170805	CAP. Chip	B	50V	0.001uF
C1084	K22170805	CAP. Chip	B	50V	0.001uF
C1085	K22170805	CAP. Chip	B	50V	0.001uF
C1086	K22170805	CAP. Chip	B	50V	0.001uF
C1087	K22170211	CAP. Chip	B	50V	0.001uF
TC1001	K91000168	Trimmer CAP.			20pF
L1001	L0020744	Coil			
L1002	L1190149	M. RFC			1uH
L1003	L1190295	M. RFC			10uH
L1004	L0020743	Coil			
L1005	L1690003	Coil. Chip			220nH
L1006	L0020679	Coil			
L1007	L0020743	Coil			
L1008	L1190222	M. RFC			220uH
L1009	L2190001	AFC.			72uH
T1001	L0021702	Coil			
T1002	L0021703	Coil			
T1003	L0021703	Coil			
T1004	L0021704	Coil			
T1005	L0021738	Coil			140MHz
T1006	L0021162	Coil			10.7MHz
T1007	L0021162	Coil			10.7MHz
J1001	P1090210	Connector			
J1002	P1090210	Connector			
J1003	P0090648	Connector			
J1004	P0090647	Connector			
J1005	P0090647	Connector			
J1006	P1090602	Connector			
J1007	P1090601	Connector			
J1008	P0090640	Connector			
J1009	P0090641	Connector			
P1002	T9205638A	Wire-ASSY			
JP1001	T9205642A	Wire-ASSY	P1001		

IF UNIT

Symbol No.	Part No.	Description	Device
	F2937101A	Printed Circuit Board	
	C029371AA	PCB with Component	
Q401	G1090859	IC	TK10487M
Q402	G3316237F	Transistor	2SC1623-T2BL6
Q403	G1090846	IC	M5223FP
D401	G2070003	Diode	1SS226TE85R
D402	G2070001	Diode	1SS181TE85R
X401	H0100720A	XTAL	HC-18/U 10.245MHz
CD401	H7900180	Ceramic DISC	CDB455C7
R401	J24205101	RES. Chip	1/10W 100 ohm
R402	J24205101	RES. Chip	1/10W 100 ohm
R403	J24205473	RES. Chip	1/10W 47k ohm
R404	J24205561	RES. Chip	1/10W 560 ohm
R405	J24205222	RES. Chip	1/10W 22k ohm
R406	J24205102	RES. Chip	1/10W 1k ohm
R407	J24205182	RES. Chip	1/10W 1.8k ohm
R408	J24205332	RES. Chip	1/10W 3.3k ohm
R409	J24205473	RES. Chip	1/10W 47k ohm
R410	J24205223	RES. Chip	1/10W 22k ohm
R411	J24205122	RES. Chip	1/10W 1.2k ohm
R412	J24205474	RES. Chip	1/10W 470k ohm
R413	J24205474	RES. Chip	1/10W 470k ohm
R414	J24205222	RES. Chip	1/10W 2.2k ohm
R415	J24205223	RES. Chip	1/10W 22k ohm
R416	J24205683	RES. Chip	1/10W 68k ohm
R417	J24205103	RES. Chip	1/10W 10k ohm
R418	J24205122	RES. Chip	1/10W 1.2k ohm
R419	J24205122	RES. Chip	1/10W 1.2k ohm
R420	J24205103	RES. Chip	1/10W 10k ohm
R421	J24205471	RES. Chip	1/10W 470 ohm
R422	J24205223	RES. Chip	1/10W 22k ohm
R423	J24205000	RES. Chip	1/10W 0 ohm
C401	K22170817	CAP. Chip	B 50V 0.01uF
C402	K22170805	CAP. Chip	B 50V 0.001uF
C403	K22170817	CAP. Chip	B 50V 0.01uF
C404	K22170237	CAP. Chip	CH 50V 120pF
C405	K22170817	CAP. Chip	B 50V 0.01uF
C406	K22170229	CAP. Chip	CH 50V 56pF
C407	K22141809	CAP. Chip	B 25V 0.1uF
C408	K22141809	CAP. Chip	B 25V 0.1uF
C409	K22170233	CAP. Chip	CH 50V 82pF
C410	K22170817	CAP. Chip	B 50V 0.01uF
C411	K22141003	CAP. Chip	F 25V 0.047uF
C412	K22170801	CAP. Chip	B 50V 470pF
C413	K22170801	CAP. Chip	B 50V 470pF
C414	K22170801	CAP. Chip	B 50V 470pF
C415	K22170817	CAP. Chip	B 50V 0.01uF
C416	K22141809	CAP. Chip	B 25V 0.1uF
C417	K22170817	CAP. Chip	B 50V 0.01uF
TP401	Q5000096	Terminal	

MIC UNIT

Symbol No.	Part No.	Description	Device
	F2937102	Printed Circuit Board	
	C029372AA	PCB with Component	
Q501	G1090559	IC	LA6324M
Q502	G1090831	IC	uPD4052BG
Q503	G3316237F	Transistor	2SC1623-T2BL6
Q504	G3070001	Transistor	FA1A4M-T2B
Q505	G3070001	Transistor	FA1A4M-T2B
Q506	G3070001	Transistor	FA1A4M-T2B

R501	J24205472	RES. Chip	1/10W 4.7k ohm
R502	J24205684	RES. Chip	1/10W 680k ohm
R503	J24205472	RES. Chip	1/10W 4.7k ohm
R504	J24205472	RES. Chip	1/10W 4.7k ohm
R505	J24205682	RES. Chip	1/10W 6.8k ohm
R506	J24205822	RES. Chip	1/10W 8.2k ohm
R507	J24205684	RES. Chip	1/10W 680k ohm
R508	J24205472	RES. Chip	1/10W 4.7k ohm
R509	J24205472	RES. Chip	1/10W 4.7k ohm
R510	J24205472	RES. Chip	1/10W 4.7k ohm
R511	J24205333	RES. Chip	1/10W 33k ohm
R512	J24205562	RES. Chip	1/10W 5.6k ohm
R513	J24205225	RES. Chip	1/10W 2.2M ohm
R514	J24205472	RES. Chip	1/10W 4.7k ohm
R515	J24205154	RES. Chip	1/10W 150k ohm
R516	J24205824	RES. Chip	1/10W 820k ohm
R517	J24205823	RES. Chip	1/10W 82k ohm
R518	J24205472	RES. Chip	1/10W 4.7k ohm
R519	J24205224	RES. Chip	1/10W 220k ohm
R520	J24205103	RES. Chip	1/10W 10k ohm
R521	J24205102	RES. Chip	1/10W 1k ohm
R522	J24205102	RES. Chip	1/10W 1k ohm
R523	J24205104	RES. Chip	1/10W 100k ohm
R524	J24205104	RES. Chip	1/10W 100k ohm
R525	J24205104	RES. Chip	1/10W 100k ohm
R526	J24205104	RES. Chip	1/10W 100k ohm
R527	J24205394	RES. Chip	1/10W 390k ohm
R528	J24205274	RES. Chip	1/10W 270k ohm
R529	J24205223	RES. Chip	1/10W 22k ohm
R530	J24205273	RES. Chip	1/10W 27k ohm
R531	J24205224	RES. Chip	1/10W 220k ohm
R532	J24205103	RES. Chip	1/10W 10k ohm
R533	J24205103	RES. Chip	1/10W 10k ohm
R534	J24205153	RES. Chip	1/10W 15k ohm
R535	J24205222	RES. Chip	1/10W 2.2k ohm
R536	J24205222	RES. Chip	1/10W 2.2k ohm
R537	J24205564	RES. Chip	1/10W 560k ohm
R538	J24205333	RES. Chip	1/10W 33k ohm
R539	J24205393	RES. Chip	1/10W 39k ohm
R540	J24205223	RES. Chip	1/10W 22k ohm
R541	J24205823	RES. Chip	1/10W 82k ohm
C501	K22170817	CAP. Chip	B 50V 0.01uF
C502	K22141809	CAP. Chip	B 25V 0.1uF
C503	K22170805	CAP. Chip	B 50V 0.001uF
C504	K78120009	Tantalum Chip	16V 1uF
C505	K22141809	CAP. Chip	B 25V 0.1uF
C506	K22141809	CAP. Chip	B 25V 0.1uF
C507	K22170817	CAP. Chip	B 50V 0.01uF
C508	K22170817	CAP. Chip	B 50V 0.01uF
C509	K22170805	CAP. Chip	B 50V 0.001uF
C510	K22170817	CAP. Chip	B 50V 0.01uF
C511	K22140807	CAP. Chip	B 25V 0.022uF
C512	K22170243	CAP. Chip	CH 50V 220pF
C513	K22140807	CAP. Chip	B 25V 0.022uF
C514	K22141809	CAP. Chip	B 25V 0.1uF
C515	K22140807	CAP. Chip	B 25V 0.022uF
C516	K22140807	CAP. Chip	B 25V 0.022uF
C517	K22140807	CAP. Chip	B 25V 0.022uF
C518	K22170805	CAP. Chip	B 50V 0.001uF
C519	K22141809	CAP. Chip	B 25V 0.1uF
C520	K22141806	CAP. Chip	B 25V 0.033uF
C521	K22141809	CAP. Chip	B 25V 0.1uF

APC UNIT

Symbol No.	Part No.	Description	Device
	F2937103A	Printed Circuit Board	
	C029373AA	PCB with Component	
Q601	G3070008	Transistor	FMS1 T98
Q602	G3316237F	Transistor	2SC1623-T2B L6
Q603	G3206247D	Transistor	2SB624-T2B BV4
Q604	G3206247D	Transistor	2SB624-T2B BV4
Q605	G3070009	Transistor	FMW1T98
Q606	G3070001	Transistor	FA1A4M-T2B
D601	G2070009	Diode	1SS184TE85R
D602	G2070048	Diode	1SS272TE85R
R601	J24205103	RES. Chip	1/10W 10k ohm
R602	J24205103	RES. Chip	1/10W 10k ohm
R603	J24205103	RES. Chip	1/10W 10k ohm
R604	J24205104	RES. Chip	1/10W 100k ohm
R605	J24205102	RES. Chip	1/10W 1k ohm
R606	J24205471	RES. Chip	1/10W 470 ohm
R607	J24205102	RES. Chip	1/10W 1k ohm
R608	J24205102	RES. Chip	1/10W 1k ohm
R609	J24205103	RES. Chip	1/10W 10k ohm
R610	J24205102	RES. Chip	1/10W 1k ohm
R611	J24205102	RES. Chip	1/10W 1k ohm
R612	J24205471	RES. Chip	1/10W 470 ohm
R613	J24205103	RES. Chip	1/10W 10k ohm
R614	J24205472	RES. Chip	1/10W 4.7k ohm
R615	J24205103	RES. Chip	1/10W 10k ohm
R616	J24205101	RES. Chip	1/10W 100 ohm
C601	K22170805	CAP. Chip	B 50V 0.001uF
C602	K22170809	CAP. Chip	B 50V 0.1uF
C603	K22170805	CAP. Chip	B 50V 0.001uF
C604	K22170805	CAP. Chip	B 50V 0.001uF
C605	K22170235	CAP. Chip	CH 50V 100pF
C606	K22170805	CAP. Chip	B 50V 0.001uF
C607	K22170805	CAP. Chip	B 50V 0.001uF

144-VCO UNIT

Symbol No.	Part No.	Description	Device
	F2938101	Printed Circuit Board	
	C029381AA	PCB with Component	
Q301	G3333567D	Transistor	2SC3356-T2B R24
Q302	G3070007	Transistor	FA1F4N-T2B
Q303	G3333567D	Transistor	2SC3356-T2B R24
Q304	G3070007	Transistor	FA1F4N-T2B
Q305	G3333567D	Transistor	2SC3356-T2B R24
D301	G2070040	Diode	1T33-T7
D302	G2070040	Diode	1T33-T7
D303	G2070040	Diode	1T33-T7
D304	G2070040	Diode	1T33-T7
D305	G2090027	Diode	1SS53
R301	J24205273	RES. Chip	1/10W 27k ohm
R302	J24205273	RES. Chip	1/10W 27k ohm
R303	J24205102	RES. Chip	1/10W 1k ohm
R304	J24205152	RES. Chip	1/10W 1.5k ohm
R305	J24205273	RES. Chip	1/10W 27k ohm
R306	J24205273	RES. Chip	1/10W 27k ohm
R307	J24205102	RES. Chip	1/10W 1k ohm
R308	J24205470	RES. Chip	1/10W 47 ohm
R309	J24205332	RES. Chip	1/10W 3.3k ohm
R310	J24205103	RES. Chip	1/10W 10k ohm
R311	J24205221	RES. Chip	1/10W 220 ohm
C301	K22170805	CAP. Chip	B 50V 0.001uF
C302	K22170213	CAP. Chip	CH 50V 12pF
C303	K22170217	CAP. Chip	CH 50V 18pF
C304	K22170215	CAP. Chip	CH 50V 15pF
C305	K22170805	CAP. Chip	B 50V 0.001uF
C306	K40129038	AL. Electro. CAP.	16V 100uF
C307	K22170805	CAP. Chip	B 50V 0.001uF
C308	K22170805	CAP. Chip	B 50V 0.001uF
C309	K22170202	CAP. Chip	CH 50V 1pF
C310	K22170805	CAP. Chip	B 50V 0.001uF
C311	K22170213	CAP. Chip	CH 50V 12pF
C312	K22170805	CAP. Chip	B 50V 0.001uF
C313	K22170217	CAP. Chip	CH 50V 18pF
C314	K22170213	CAP. Chip	CH 50V 12pF
C315	K22170805	CAP. Chip	B 50V 0.001uF
C316	K22170805	CAP. Chip	B 50V 0.001uF
C317	K22170203	CAP. Chip	CH 50V 2pF
C318	K22170805	CAP. Chip	B 50V 0.001uF
C319	K22170805	CAP. Chip	B 50V 0.001uF
C320	K22170211	CAP. Chip	CH 50V 10pF
C321	K22170203	CAP. Chip	CH 50V 2pF
TC301	K91000157	Trimmer CAP.	10pF
TC302	K91000157	Trimmer CAP.	10pF
L301	L1190203	M. RFC	4.7uH
L302	L0190135	Coil	
L303	L1190203	M. RFC	4.7uH
L304	L0190136	Coil	
L305	L1190203	M. RFC	4.7uH
L306	L1190199	M. RFC	2.2uH

P301	P0090473	Connector	
	R0123490	Shield Case	
	R0113730	Sprint Board	

CONTROL UNIT

Symbol No.	Part No.	Description	Device
	F2936101A	Printed Circuit Board	
	C029361AA	PCB with Component (Version A2)	
	C029361AB	PCB with Component (Version A1)	
	C029361AC	PCB with Component (Version A3,A4)	
	C029361AD	PCB with Component (Version B)	
	C029361AE	PCB with Component (Version F)	
Q2001	G1090812	IC	PST523C-2
Q2002	G3108127F	Transistor	2SA812-T2BM6B
Q2003	G1090847	IC	HD404418A01F
Q2004	G3316237F	Transistor	2SC1623-T2B L6
Q2005	G3206247D	Transistor	2SB624-T2B BV4
Q2006	G3316237F	Transistor	2SC1623-T2B L6
D2001	G2070003	Diode	1SS226 TE85R
D2002	G2070009	Diode	1SS184 TE85R
D2003	G2070009	Diode	1SS184 TE85R
D2004	G2070009	Diode	1SS184 TE85R
D2005	G2070009	Diode	1SS184 TE85R
D2006	G2070009	Diode	1SS184 TE85R
D2007	G2070009	Diode	1SS184 TE85R
D2008	G2090118	Diode	1SS97
D2009	G2090118	Diode	1SS97
D2010	G2070009	Diode	1SS184 TE85R
H2001	H0102859	XTAL	HT38 8.0MHz
R2001	J24205821	RES. Chip	1/10W 820 ohm
R2002	J24205101	RES. Chip	1/10W 100 ohm
R2003	J24205472	RES. Chip	1/10W 4.7k ohm
R2004	J24205102	RES. Chip	1/10W 1k ohm
R2005	J24205103	RES. Chip	1/10W 10k ohm
R2006	J24205104	RES. Chip	1/10W 100k ohm
R2007	J24205224	RES. Chip	1/10W 220k ohm
R2008	J24205103	RES. Chip	1/10W 10k ohm
R2009	J24205104	RES. Chip	1/10W 100k ohm
R2010	J24205105	RES. Chip	1/10W 1M ohm
R2011	J24205473	RES. Chip	1/10W 47k ohm
R2012	J24205473	RES. Chip	1/10W 47k ohm
R2014	J24205102	RES. Chip	1/10W 1k ohm
R2015	J24205103	RES. Chip	1/10W 10k ohm
R2016	J24205223	RES. Chip	1/10W 22k ohm
R2017	J24205393	RES. Chip	1/10W 39k ohm
R2018	J24205823	RES. Chip	1/10W 82k ohm
R2019	J24205103	RES. Chip	1/10W 10k ohm
R2020	J24215220	RES. Chip	1/8W 22 ohm
R2021	J24205683	RES. Chip	1/10W 68k ohm
R2022	J24205474	RES. Chip	1/10W 470k ohm
R2023	J24205472	RES. Chip	1/10W 4.7k ohm
R2024	J24205473	RES. Chip	1/10W 47k ohm
R2025	J24205103	RES. Chip	1/10W 10k ohm
R2026	J24205000	RES. Chip	1/10W 0 ohm
R2027	J24205103	RES. Chip	1/10W 10k ohm
R2028	J24205822	RES. Chip	1/10W 8.2k ohm
R2029	J24205563	RES. Chip	1/10W 56k ohm
R2030	J24205103	RES. Chip	1/10W 10k ohm
R2031	J24205274	RES. Chip	1/10W 270k ohm
R2032	J24205102	RES. Chip	1/10W 1k ohm
R2033	J24205222	RES. Chip	1/10W 2.2k ohm
R2034	J24205223	RES. Chip	1/10W 22k ohm
R2035	J24205223	RES. Chip	1/10W 22k ohm
R2036	J24205393	RES. Chip	1/10W 39k ohm
R2037	J24205103	RES. Chip	1/10W 10k ohm
R2038	J24205103	RES. Chip	1/10W 10k ohm
R2039	J24205104	RES. Chip	1/10W 100k ohm
R2040	J24205104	RES. Chip	1/10W 100k ohm
R2041	J24205102	RES. Chip	1/10W 1k ohm
R2042	J24205102	RES. Chip	1/10W 1k ohm
R2043	J24205102	RES. Chip	1/10W 1k ohm
R2044	J24205473	RES. Chip	1/10W 47k ohm
R2045	J24205102	RES. Chip	1/10W 1k ohm
R2046	J24205223	RES. Chip	1/10W 22k ohm
R2047	J24205223	RES. Chip	1/10W 22k ohm
R2048	J24205473	RES. Chip	1/10W 47k ohm
R2049	J24205104	RES. Chip	1/10W 100k ohm
R2050	J01275270	Carbon Film RES.	1/2W 27 ohm
R2051	J24205472	RES. Chip	1/10W 4.7k ohm
R2052	J24205102	RES. Chip	1/10W 1k ohm
R2053	J24205104	RES. Chip	1/10W 100k ohm
R2054	J24205223	RES. Chip	1/10W 22k ohm
R2055	J24205154	RES. Chip	1/10W 150k ohm
R2056	J24205154	RES. Chip	1/10W 150k ohm
R2057	J24205154	RES. Chip	1/10W 150k ohm
R2058	J24205223	RES. Chip	1/10W 22k ohm
R2059	J24205154	RES. Chip	1/10W 150k ohm
R2060	J24205154	RES. Chip	1/10W 150k ohm
R2061	J24205223	RES. Chip	1/10W 22k ohm
R2062	J24205154	RES. Chip	1/10W 150k ohm
R2063	J24205154	RES. Chip	1/10W 150k ohm
R2064	J24205154	RES. Chip	1/10W 150k ohm
R2065	J24205223	RES. Chip	1/10W 22k ohm
R2066	J24205223	RES. Chip	1/10W 22k ohm
R2067	J24205154	RES. Chip	1/10W 150k ohm
R2068	J24205154	RES. Chip	1/10W 150k ohm
R2069	J24205154	RES. Chip	1/10W 150k ohm
R2070	J24205154	RES. Chip	1/10W 150k ohm
R2071	J24205154	RES. Chip	1/10W 150k ohm
R2072	J24205154	RES. Chip	1/10W 150k ohm
R2073	J24205154	RES. Chip	1/10W 150k ohm
R2074	J24205154	RES. Chip	1/10W 150k ohm
R2075	J01215154	Carbon Film RES.	1/8W 150k ohm
R2076	J24205154	RES. Chip	1/10W 150k ohm
VR2001	J60800142	POT.	A 20k ohm
VR2002	J60800143	POT.	B 20k ohm
C2001	K78130010	Tantalum. Chip	20V 2.2uF
C2002	K22141809	CAP. Chip	B 25V 0.1uF
C2003	K22170817	CAP. Chip	B 50V 0.01uF
C2004	K22170219	CAP. Chip	CH 50V 22pF
C2005	K22170219	CAP. Chip	CH 50V 22pF
C2006	K78120009	Tantalum. Chip	10V 1uF
C2007	K78080002	Tantalum. Chip	6.3V 4.7uF
C2008	K22170817	CAP. Chip	B 50V 0.01uF
C2009	K22170817	CAP. Chip	B 50V 0.01uF
C2010	K22170817	CAP. Chip	B 50V 0.01uF
C2011	K22170805	CAP. Chip	B 50V 0.01uF
C2012	K78120013	Tantalum. Chip	16V 1uF
C2013	K22170817	CAP. Chip	B 50V 0.01uF
C2014	K22170817	CAP. Chip	B 50V 0.01uF
C2015	K22170813	CAP. Chip	B 50V 0.047uF
C2016	K22170813	CAP. Chip	B 50V 0.047uF
C2017	K22170817	CAP. Chip	B 50V 0.01uF
C2018	K78080003	Tantalum. Chip	6.3V 10uF
C2019	K22170817	CAP. Chip	B 50V 0.01uF
S2001	N5090027	Tact Switch	SKHLAB
S2002	N5090027	Tact Switch	SKHLAB
S2003	N5090027	Tact Switch	SKHLAB
S2004	N5090027	Tact Switch	SKHLAB
S2005	N5090027	Tact Switch	SKHLAB
S2006	N5090027	Tact Switch	SKHLAB
S2007	N5090027	Tact Switch	SKHLAB
S2008	N5090027	Tact Switch	SKHLAB
S2009	N5090027	Tact Switch	SKHLAB
S2010	N4090111	Push Switch	SPEAIZ
S2011	Q9000395	Rotary Encoder	EVQ-WWNF1524B
J2001	P0090642	Connector	
J2002	P0090643	Connector	
J2003	P0090650	Connector	
J2004	P0090649	Connector	
J2005	P0090158	Connector	MIC)
	Q7000078	LCD UNIT	AM882
BAT2001		Q9000366	Lithium Battery
	R7124300	Press Board	
	R8118690	Seal	
	T9205637	Wire-ASSY	

PARTS LIST

	Q1000065	Lamp	9V 60mA

PA UNIT

Symbol No.	Part No.	Description	Device
	F2934120B	Printed Circuit Board	
	C029342AA	PCB with Component (45W Model)	
	C029342AB	PCB with Component (10W Model)	
Q701	G1090251	IC ◎	M57715
	G1090625	IC △	M57726
D701	G2090232	Diode	S11B
D702	G2090345	Diode ◎	MI407
	G2090425	Diode △	UM9415
D703	G2090337	Diode	MI308
D704	G2090118	Diode	1SS97
D705	G2090377	Diode	1SS108
R701	J01275151	CAP. Chip	1/10W 150 ohm
R702	J24205103	CAP. Chip	1/10W 10k ohm
R703	J24205223	CAP. Chip	1/10W 22k ohm
R704	J24205101	CAP. Chip	1/10W 100 ohm
VR701	J50770221	POT.	220 ohm
C701	K40129012	AL. Electro. CAP.	16V 10uF
C702	K22170805	CAP. Chip	B 50V 0.001uF
C703	K22170805	CAP. Chip	B 50V 0.001uF
C705	K22170805	CAP. Chip	B 50V 0.001uF
C706	K40129012	AL. Electro. CAP.	16V 10uF
C707	K22170211	CAP. Chip	CH 50V 10pF
C708	K22170805	CAP. Chip	B 50V 0.001uF
C709	K22170805	CAP. Chip	B 50V 0.001uF
C710	K22170805	CAP. Chip	B 50V 0.001uF
C711	K22170213	CAP. Chip	CH 50V 12pF
C712	K22170225	CAP. Chip	CH 50V 39pF
C713	K22170202	CAP. Chip	CH 50V 1pF
C714	K22170204	CAP. Chip	CH 50V 3pF
C715	K22170805	CAP. Chip	B 50V 0.001uF
C716	K22170221	CAP. Chip	CH 50V 27pF
C717	K22170229	CAP. Chip ◎	CH 50V 56pF
	K22170221	CAP. Chip △	CH 50V 27pF
C718	K22170805	CAP. Chip	B 50V 0.001uF
C719	K22170805	CAP. Chip	B 50V 0.001uF
C720	K22170217	CAP. Chip	CH 50V 18pF
C721	K22170801	CAP. Chip	B 50V 470pF
C722	K22170207	CAP. Chip	CH 50V 6pF
C723	K22170221	CAP. Chip	CH 50V 27pF
C724	K22170221	CAP. Chip	CH 50V 27pF
J701	P1090599	Connector	
J702	P1090600	Connector	
J703	P1090603	Connector	

ACCESSORIES

Symbol No.	Part No.	Description	Device
	T9015605	DC Cord ◎	
	T9015615	DC Cord △	
	Q0000005	Fuse ◇	5A 2 pcs
	Q0000008	Fuse △	15A 2 pcs
	D1000067	MIC ●	MH-14D8
	D1000051	MIC ▲	MH-14A8
	D1000052	MIC ▲	MH-14B8
	D1000067	MIC ▲	MH-14D8
	D1000060	MIC ▲	MH-15C8
	D1000061	MIC ▲	MH-15D8
	D6000055	Mobile Bracket	MMB-36
	D6000056	Mobile Bracket ▲	MMB-37

◎ : 10W Model
△ : 45W Model
● : Version F
▲ : Version A1, A2, A3, A4, B : One of these MICROPHONE will be supplied is per local requirement.

E2540900(811i-AK)