

PARTS LIST

× New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
R15 R16 R17 VR1			RK73FB2A151J RK73FB2A333J RK73FB2A473J R12-1439-05	CHIP R 150 J 1/10W CHIP R 33K J 1/10W CHIP R 47K J 1/10W TRIMMING PNT. (4.7K)	E	
IC1 TH1			NJM4560M 159-101-83052	IC(OP AMP X2) THERMISTER 100		
AF AMP UNIT (X58-3380-00)						
C1 C2 C3 C5 C6			CC73FSL1H221J CK73FB1E393K CK73FB1E223K CK73FB1E223K CK73FB1E473M	CHIP C 220PF J CHIP C 0.039UF K CHIP C 0.022UF K CHIP C 0.022UF K CHIP C 0.047UF M		
C7 C8 C9 C10 C11			C92-0005-05 CC73FSL1H101J C92-0501-05 CC73FSL1H101J CK73FB1E473M	CHIP TAN 2.2UF 6.3WV CHIP C 100PF J CHIP TAN 1.5UF 6.3WV CHIP C 100PF J CHIP C 0.047UF M		
C12 C13 C14 C15			CC73FSL1H101J C90-2053-05 CK73FB1H102K C92-0004-05	CHIP C 100PF J CHIP TAN 47UF 6.3WV CHIP C 1000PF K CHIP TAN 1UF 16WV		
			E23-0610-05	TERMINAL		
R1 R2 R3 R4 R5			RK73FB2A102J RK73FB2A334J RK73FB2A392J RK73FB2A154J RK73FB2A152J	CHIP R 1.0K J 1/10W CHIP R 330K J 1/10W CHIP R 3.9K J 1/10W CHIP R 150K J 1/10W CHIP R 1.5K J 1/10W		
R6 R7 R8 R9 R10			RK73FB2A472J RK73FB2A153J RK73FB2A471J RK73FB2A273J RK73FB2A100J	CHIP R 4.7K J 1/10W CHIP R 15K J 1/10W CHIP R 470 J 1/10W CHIP R 27K J 1/10W CHIP R 10 J 1/10W		
R11			RK73FB2A103J	CHIP R 10K J 1/10W		
D1 IC1 Q1 Q2 Q3 Q4			02CZ6.8X -NJM386BM 2SB1182F5(Q) 2SC40B1(BR) DTC144EU * 2SC40B1(BR)	CHIP ZENER DIODE IC(OP AMP) CHIP TRANSISTOR CHIP TRANSISTOR DIGITAL TRANSISTOR CHIP TRANSISTOR		
APC UNIT (X59-3420-00)						
C1 -13 C14 C15 C16 C17 -21			CC73FSL1H101J CK73FB1E223K CC73FSL1H101J C92-0005-05 CC73FSL1H101J	CHIP C 100PF J CHIP C 0.022UF K CHIP C 100PF J CHIP TAN 2.2UF 6.3WV CHIP C 100PF J		
			E23-0610-05	TERMINAL		
R1 R2 R3 R4 R5			RK73FB2A152J RK73FB2A182J RK73FB2A561J RK73FB2A153J RK73FB2A332J	CHIP R 1.5K J 1/10W CHIP R 1.8K J 1/10W CHIP R 560 J 1/10W CHIP R 15K J 1/10W CHIP R 3.3K J 1/10W		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

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R6			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R7			RK73FB2A272J	CHIP R 2.7K J 1/10W		
R8			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R9			RK73FB2A123J	CHIP R 12K J 1/10W		
VR1		*	R12-3463-05	TRIMMING PØT. (22K)HI		
VR2		*	R12-1441-05	TRIMMING PØT. (1K)LOW		
D1		*	DA204U	CHIP DIØDE		
D2			MA110	CHIP DIØDE		
Q1			2SB1182F5(Q)	CHIP TRANSISTØR		
Q2			IMX1	DIGITAL TRANSISTØR		
Q3			FMW1	DIGITAL TRANSISTØR		
Q4			2SB1182F5(Q)	CHIP TRANSISTØR		
BPF UNIT (X59-3430-00)						
C1			CC73FCH1H030C	CHIP C 3.0PF C		
C2			CC73FCH1HR75C	CHIP C 0.75PF C		
C3			CC73FCH1H040C	CHIP C 4.0PF C		
C4			CC73FCH1H020C	CHIP C 2.0PF C		
C5	.6		CC73FCH1H030C	CHIP C 3.0PF C		
C7			CC73FCH1H220J	CHIP C 22PF J		
C8	.9		CC73FCH1H030C	CHIP C 3.0PF C		
C10			CC73FCH1H080D	CHIP C 8.0PF D		
C11	.12		CC73FCH1H040C	CHIP C 4.0PF C		
			E23-0610-05	TERMINAL		
VCO UNIT (X59-3470-00)						
C1			CK73FB1E103K	CHIP C 0.010UF K		
C2			CC73GSL1H101J	CHIP C 100PF J		
C3			CC73GCH1H040C	CHIP C 4.0PF C		
C4			CC73GCH1H020C	CHIP C 2.0PF C		
C5			C92-0509-05	TANTAL 10UF 6.3WV		
C6			CC73GSL1H101J	CHIP C 100PF J		
C7			CC73FCH1HOR5C	CHIP C 0.5PF C		
C8			CC73FCH1H040C	CHIP C 4.0PF C		
C9			CC73GCH1H040C	CHIP C 4.0PF C		
C10			CC73GCH1HOR5C	CHIP C 0.5PF C		
C11	.12		CC73GCH1H030C	CHIP C 3.0PF C		
C13			CC73GCH1H020C	CHIP C 2.0PF C		
C14			CK73GB1H102K	CHIP C 1000PF K		
C15			CC73GSL1H101J	CHIP C 100PF J		
C16			CK73GB1H471K	CHIP C 470PF K		
C17			CK73EB1E104K	CHIP C 0.10UF K		
C18			CC73GSL1H101J	CHIP C 100PF K		
C19			CK73FB1E103K	CHIP C 0.010UF K		
C20			CC73GSL1H101J	CHIP C 100PF K		
C21			CK73GB1H102K	CHIP C 1000PF K		
TC1			C05-0357-05	CERAMIC TRIMMER (3PF)		
TC2			C05-0345-05	CERAMIC TRIMMER (10PF)		
L1			L40-1072-80	SMALL FXED INDUCTØR(10NH)		
L2			L40-1092-81	SMALL FXED INDUCTØR(1UF)		
L3			L40-1081-80	SMALL FXED INDUCTØR(100NH)		
L4			L40-4792-81	SMALL FXED INDUCTØR(4.7UF)		
R1			RK73GB1J123J	CHIP R 12K J 1/16W		
R2			RK73GB1J100J	CHIP R 10 J 1/16W		

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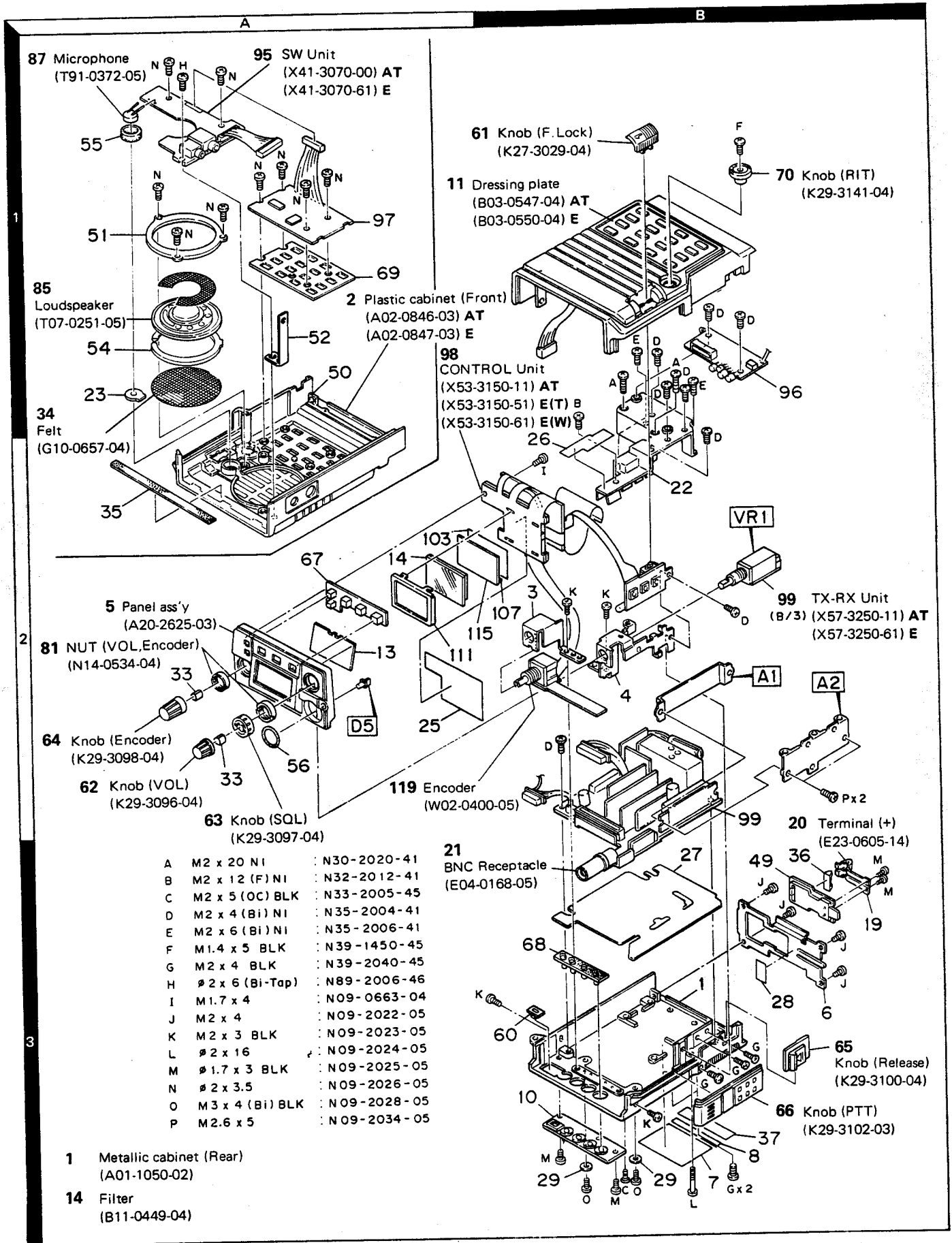
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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R3			RK73GB1J101J	CHIP R 100 J 1/16W		
R4			RK73GB1J470J	CHIP R 47 J 1/16W		
R5			RK73GB1J100J	CHIP R 10 J 1/16W		
R6			RK73GB1J682J	CHIP R 6.8K J 1/16W		
R7			RK73GB1J101J	CHIP R 100 J 1/16W		
R9			RK73GB1J391J	CHIP R 390 J 1/16W		
R10			RK73GB1J562J	CHIP R 5.6K J 1/16W		
D1			MA77	CHIP DIODE		
D2	.3		MA360	CHIP DIODE		
Q1			2SK508(K51)	CHIP FET		
Q2			2SC4093(R26,27)	CHIP TRANSISTOR		
Q3	.4	*	DTC114YU	DIGITAL TRANSISTOR		
R8			RK73GB1J104J	CHIP R 100K J 1/16W		

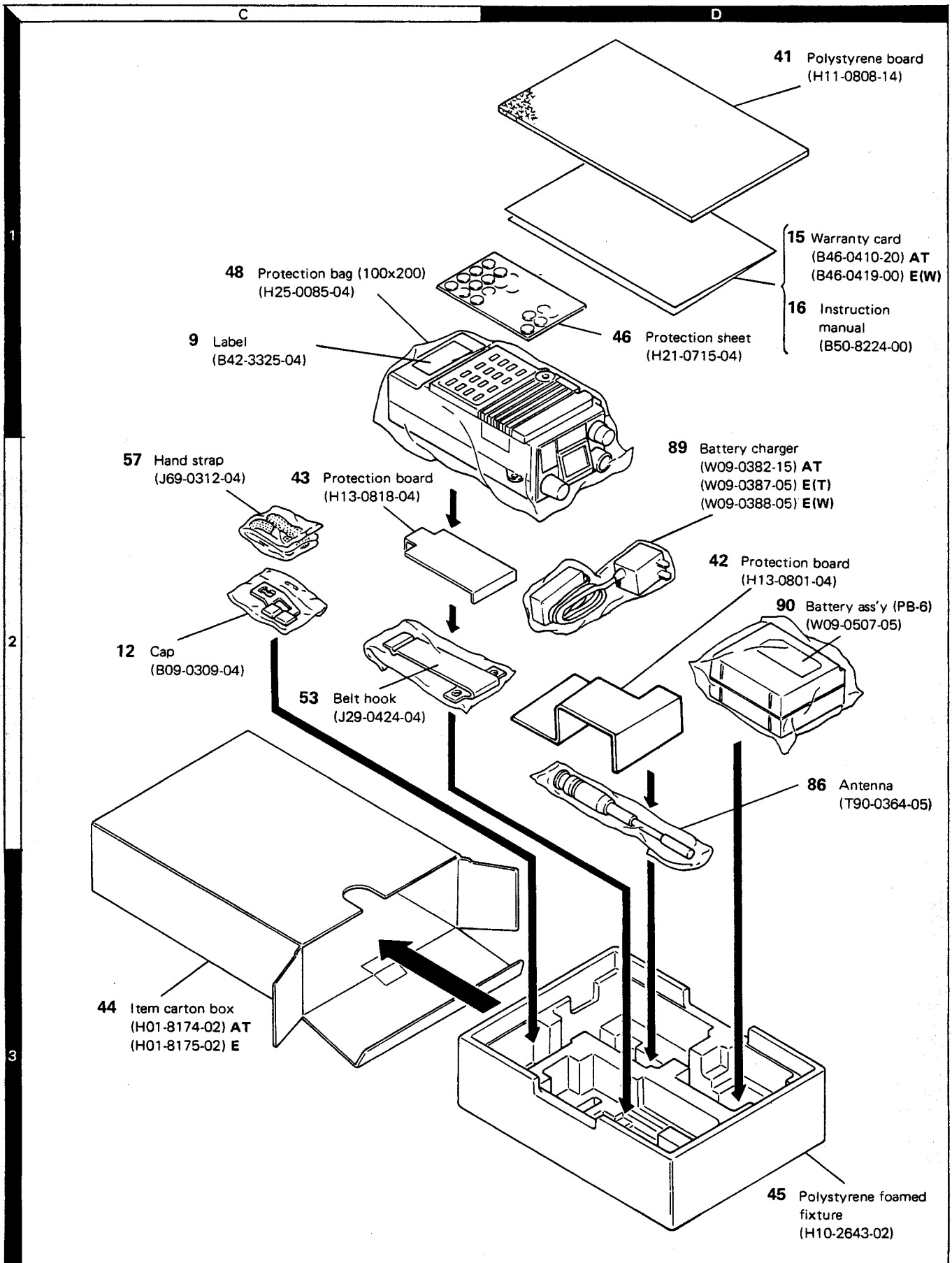
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DISASSEMBLY



PACKING



ADJUSTMENT

REQUIRED TEST EQUIPMENT

1. **Stabilized Power Supply**
 - 1) The supply voltage can be changed between 5V and 18V, and the current is 3A or more.
 - 2) The standard voltage is 9.0V.
2. **DC Ammeter**
 - 1) Class 1 ammeter (17 ranges and other features).
 - 2) The full scale can be set to either 300mA or 1A.
 - 3) A cable of less internal loss must be used.
3. **Frequency Counter (f. counter)**
 - 1) Frequencies of up to 1300MHz or so can be measured.
 - 2) The sensitivity can be changed to 250MHz or below, and measurements are highly stable and accurate (0.2ppm or so).
4. **Power Meter**
 - 1) Measurable frequency : 1300MHz or more.
 - 2) Impedance : 50Ω, unbalanced.
 - 3) Measuring range : Full scal of 10W or so.
 - 4) A standard cable (5D2W 1m) must be used.
5. **Linear Detector**
 - 1) Measurable frequency : Up to 1300MHz.
 - 2) Characteristics are flat, and CN is 60dB or more.
6. **Digital Voltmeter**
 - 1) Voltage range : FS = 18V or so.
 - 2) Input resistance : 1MΩ or more.
7. **Oscilloscope**
 - 1) Measuring range : DC to 30MHz.
 - 2) Provides highly accurate measurments for 5 to 25MHz.
8. **AF Voltmeter (AF VTVM)**
 - 1) Measurable frequency : 50Hz to 1MHz.
 - 2) Maximum sensitivity : 1mV or more.
9. **Spectrum Analyzer**
 - 1) Measuring range : DC to 1300MHz or more.

10. Standard Signal Generator (SSG)

- 1) Maximum frequency : 1300MHz or more.
- 2) Output : -20dB/0.1μV to 120dB/1V.
- 3) Output impedance : 50Ω.

11. Tracking Generator

- 1) Center frequency : 50kHz to 1500MHz.
- 2) Frequency deviation : ±35MHz.
- 3) Output voltage : 100mV or more.

12. Dummy Load

- 1) 8Ω, 3W or more.

PREPARATION

- Set the unit in the receiving mode and set the controls as follows, unless otherwise specified.

POWER/VOL	ON
SQL VR	MIN
F. LOCK	OFF
HI/LOW	HI

- Use a non-conductive rod such as a Bakelite rod for adjustment (especially of trimmers and coils).
- To protect the SSG, do not send out signals while adjusting the receiving unit.
- The indicated SSG output levels are for maximum output.

ADJUSTMENT

TX-RX COMMON ADJUSTMENT

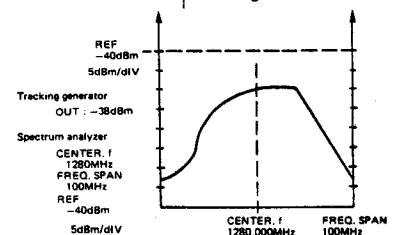
Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Reset	1) Hold down [M] key POWER SW : ON							Display 1260.000
2. DC voltage check	1) DC power : 9V	DC V.M					Check	9V
	2) 5C							5V
	3) 5R							
	4) 5M							
	5) 5T PTT : ON							

PLL ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. VCV	1) FREQ. : 1299.975MHz	DC V.M Power meter	MIC AMP	TP1	VCO	TC1	3.7V	±0.2V
	2) PTT : ON					TC2	3.7V	±0.2V
	3) FREQ. : 1258.000MHz						Check	1.5V ± 0.3V
2. Reference frequency	1) FREQ. : 1280.100MHz HI/LOW SW : LOW RIT : Center PTT : ON	f. counter Power meter		ANT	SW	VR1	1280.100MHz	±100Hz
	2) FREQ. : 1280.100MHz RIT : Center SSG output : -98dBm/2.82μV	SSG AF V.M Oscillo- scope Distortion meter		EXT.SP	PLL	TC1	SINAD MAX.	

RX ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Helical	1) Tracking generator output : -40dBm	T.G.		ANT	TX-RX	L12, L13		MAX. gain and bandwidth
	2) Spectrum analyzer reference level : -40dBm RF ATT : 10dB	Spectrum analyzer	TX-RX	TP2				
2. IF	1) FREQ. : 1285.000MHz Adjust the output level of SSG to flicker the 3rd segment of S-meter.	SSG S-meter		S-meter	TX-RX	L14	Turn the L14 to the point at which 3rd segment of S-meter appear.	
3. Sensitivity	1) FREQ. : 1280.100MHz SSG output : -107dBm/1μV	Oscillo- scope AF V.M Distortion meter		EXT.SP				SINAD 12dB or more.
	2) FREQ. : 1258.100MHz SSG output : -104dBm/1.41μV							
	3) FREQ. : 1299.900MHz SSG output : -107dBm/1μV							
4. S-meter	1) FREQ. : 1285.000MHz SSG output : -93dBm/5μV	SSG		S-meter	IF	VR1	Adjust the VR1 to all segments light on.	
	2) SSG output : -103dBm/1.58μV						Check	All segments light off.



TH-55AT/E

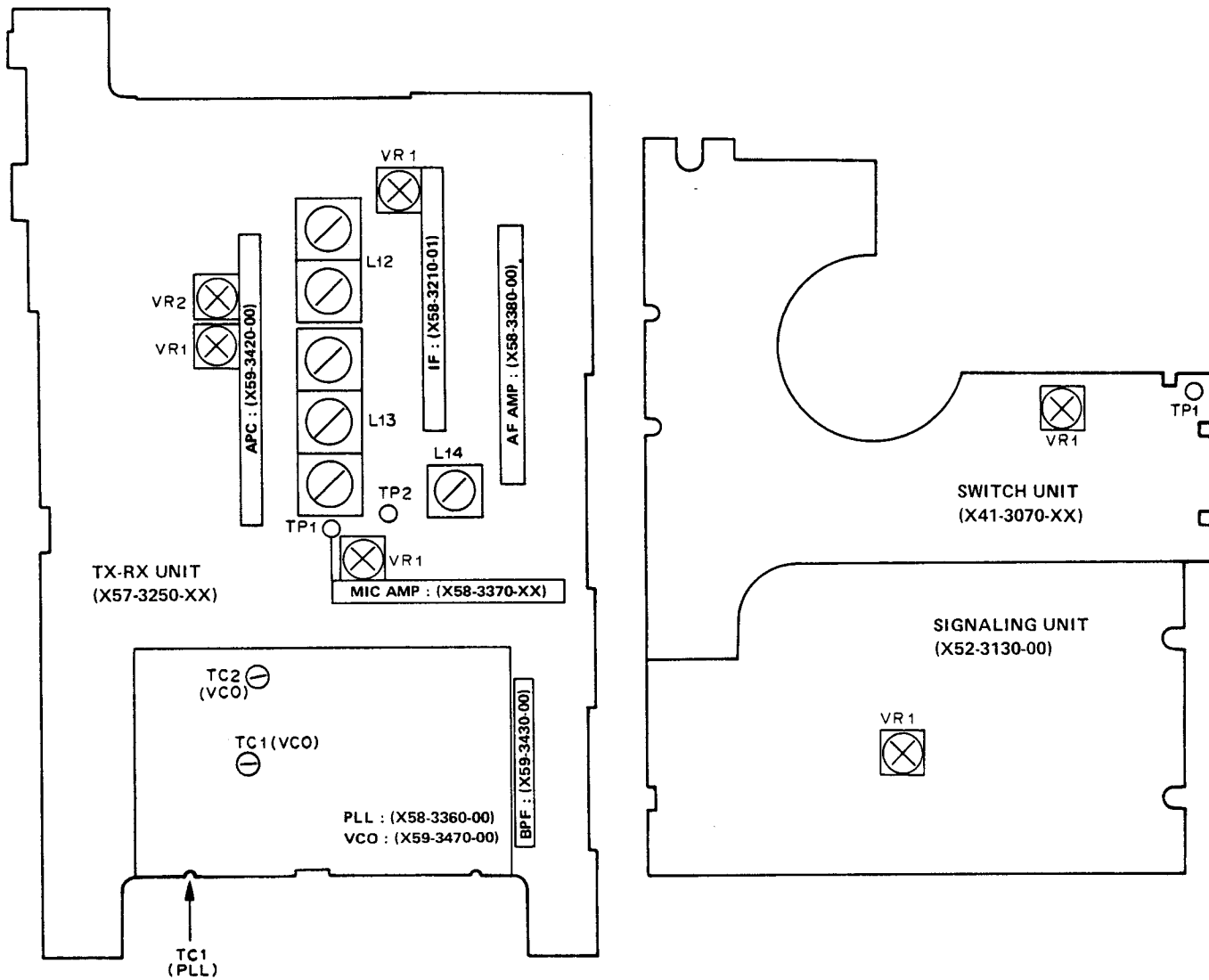
ADJUSTMENT

TX ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specifications/Remarks
		Test-equipment	Unit	Terminal	Unit	Parts	Method	
1. Output power	1) DC power 9V FREQ. : 1258.000MHz HI/LOW SW : LOW PTT : ON	Power meter		ANT	APC	VR1	100mW	±20mW Power consumption : 600mA or less.
	VR2					1.1W	Power consumption : 1A or less.	
	3) Repeat 2 or 3 times to adjusting VR1 and VR2.							
2. DEV	1) FREQ. : 1280.000MHz AG : 1kHz, 80mV TH-55AT AG : 1kHz, 40mV TH-55E	Power meter AG		ANT	MIC AMP	VR1	±4.2kHz	±200Hz (CTCSS terminal is terminated with 33kΩ.)
	2) AG : 1kHz, 8mV TH-55AT AG : 1kHz, 4mV TH-55E	Linear detector f. counter					Check	±2.3 ~ 3.7kHz
7. DTMF TH-55AT only	1) FREQ. : 1280.000MHz Push [A] and [B] key.			ANT	Signal- ing	VR1	DEV : ±3kHz f : 1633Hz	±200Hz +20Hz, -10Hz

ADJUSTMENT

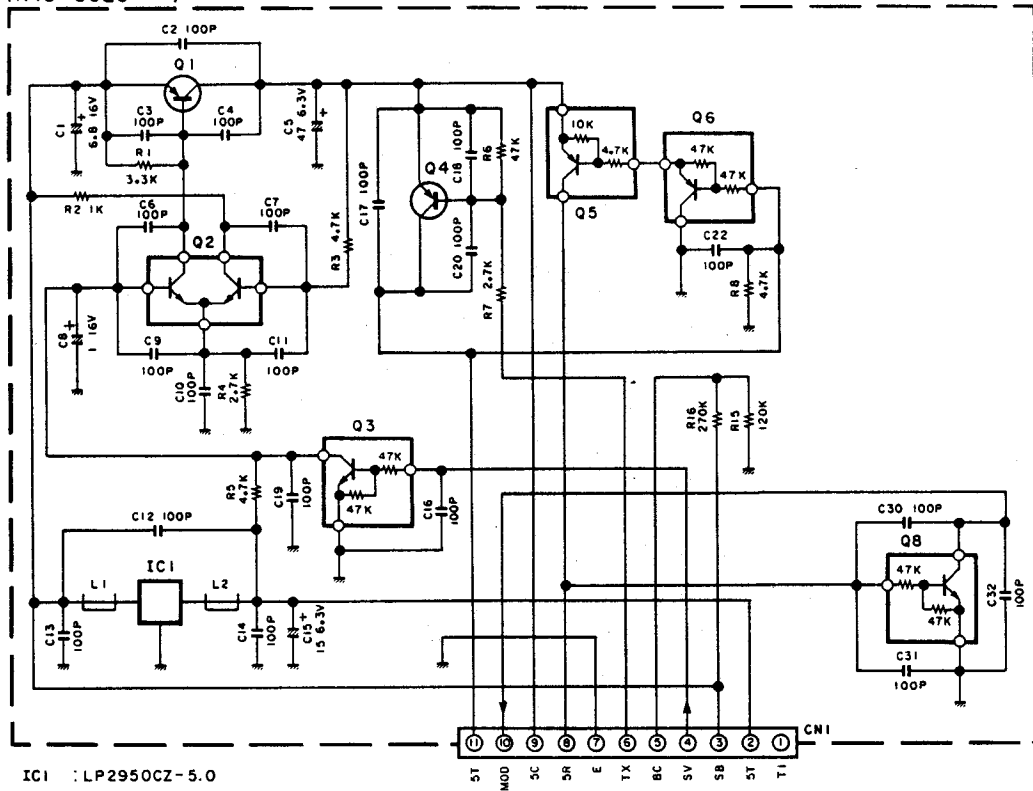
ADJUSTMENT POINTS



TH-55AT/E PC BOARD VIEWS/CIRCUIT DIAGRAM

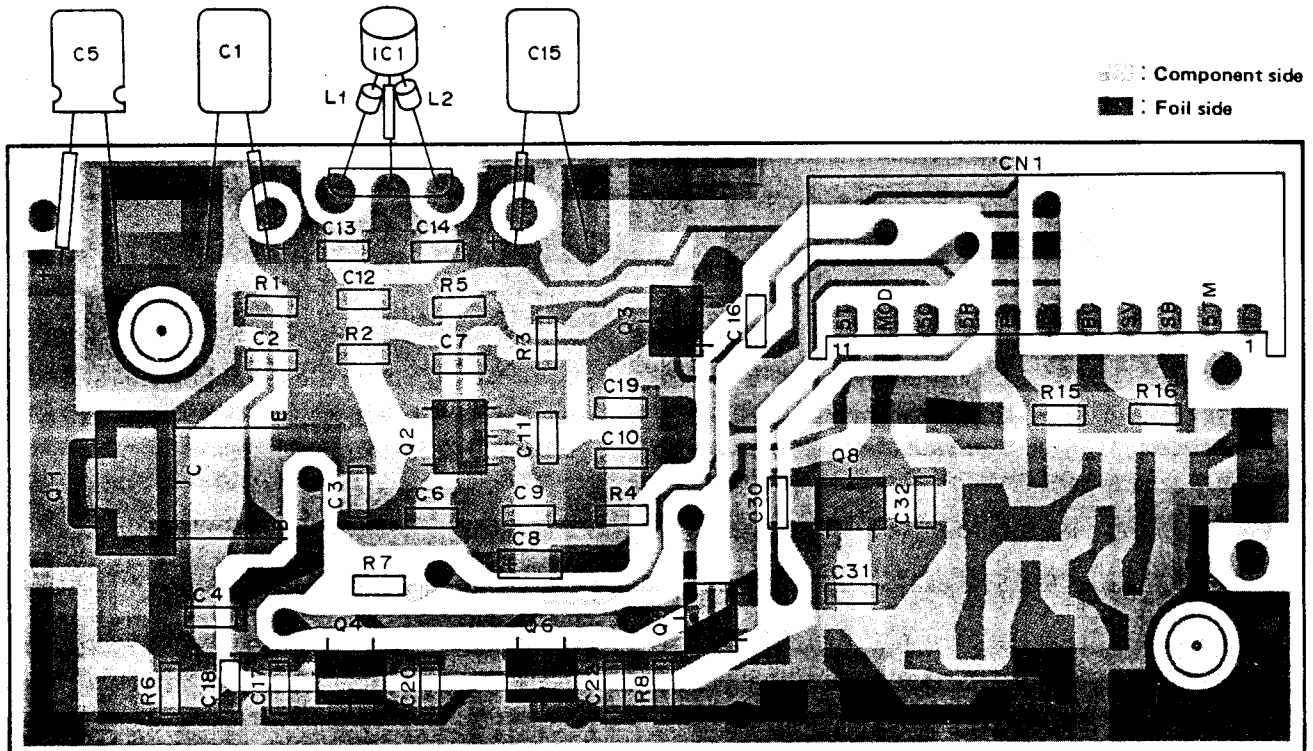
AVR UNIT (X43-3020-11)

(X43-3020-11)



- IC1 : LP2950CZ-5.0
- Q1 : 2SB1182F5(Q)
- Q2 : FMW1
- Q3,8 : DTC144EK
- Q4 : 2SA1313(Y)
- Q5 : DTA143XK
- Q6 : DTA144EK

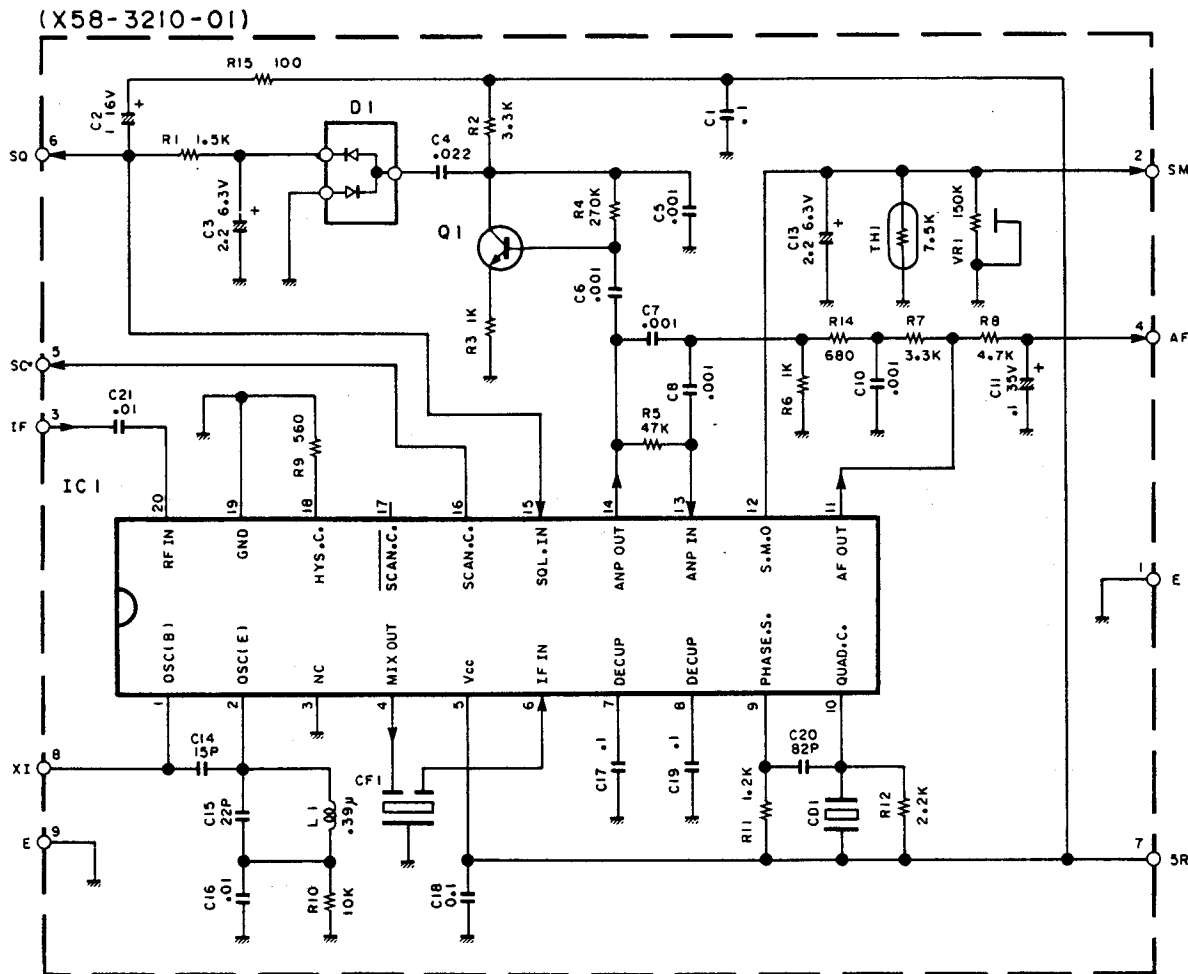
Component side view



□ : Component side
 □ : Foil side

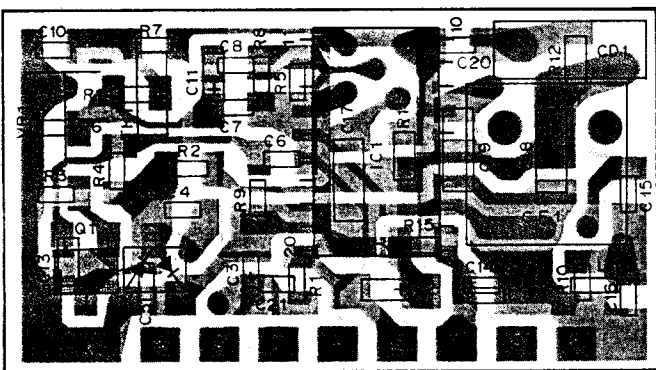
PC BOARD VIEWS/CIRCUIT DIAGRAM TH-55AT/E

IF UNIT (X58-3210-01)

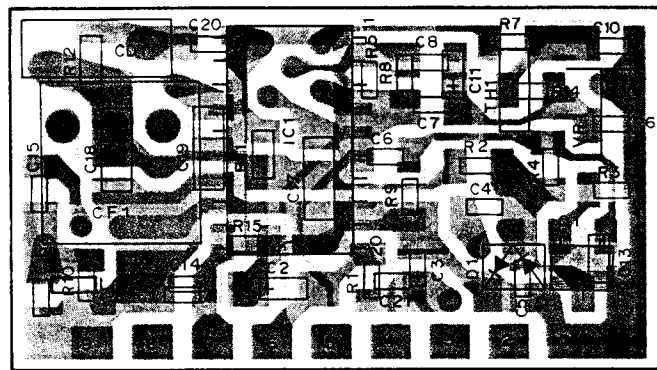


- IC1 : TK10486M (B,C).
 Q1 : 2SC2712 (GR)
 D1 : HSM88AS

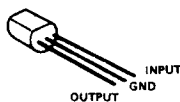
Component side view



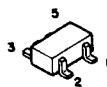
Foil side view



LP2950CZ-5.0



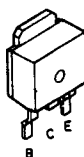
FMW1



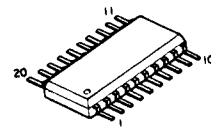
2SA1313(Y)
 2SC2712(GR)
 DTA143XK
 DTA144EK
 DTC144EK



2SB1182F5(Q)



TK10486MT1(B,C)

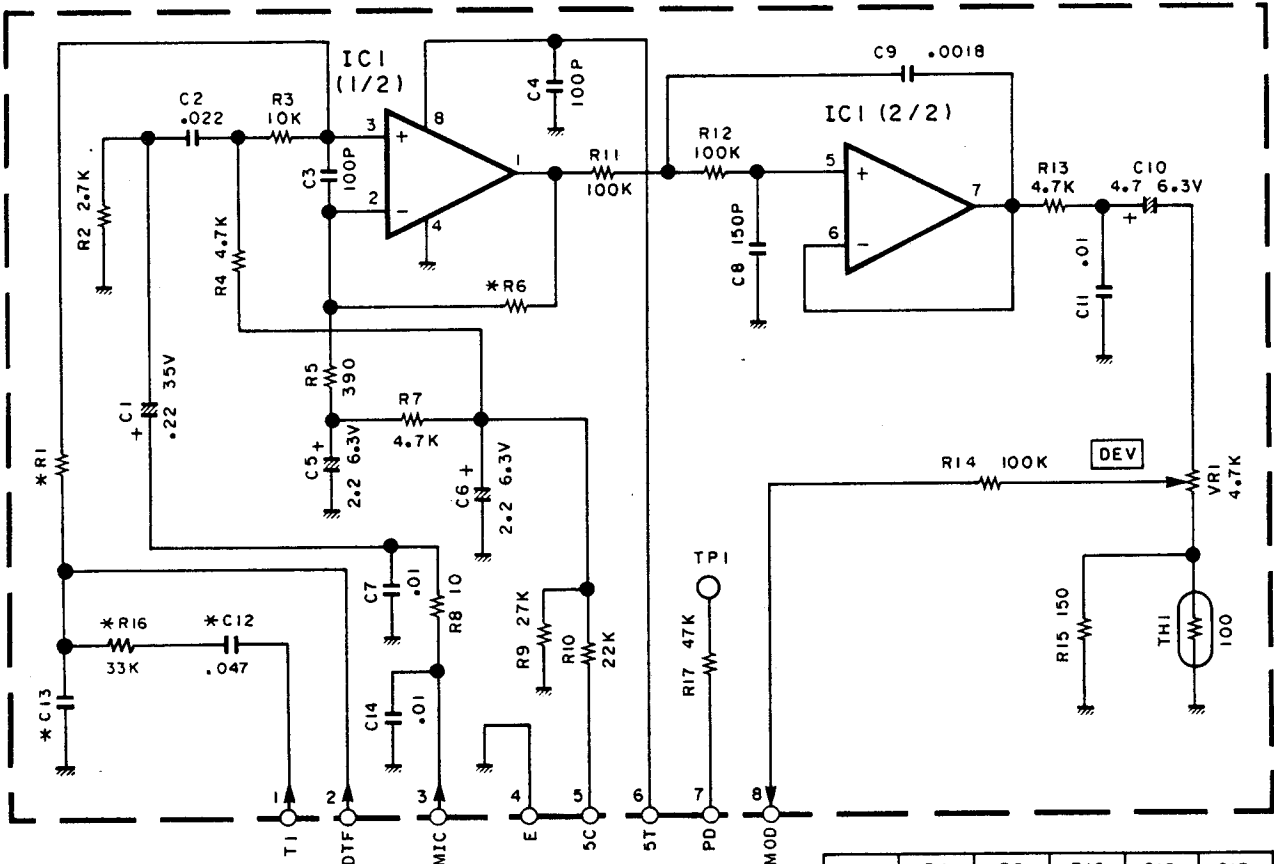


A B C D E F

TH-55AT/E PC BOARD VIEWS/CIRCUIT DIAGRAM

MIC AMP UNIT (X58-3370-XX) -11 : TH-55AT -61 : TH-55E

(X58-3370-XX)

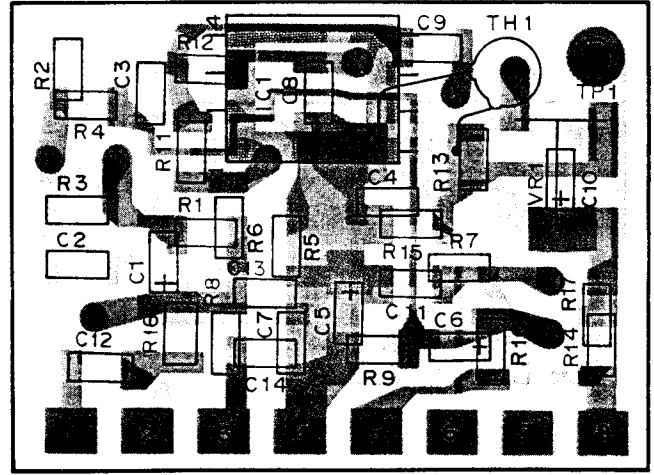
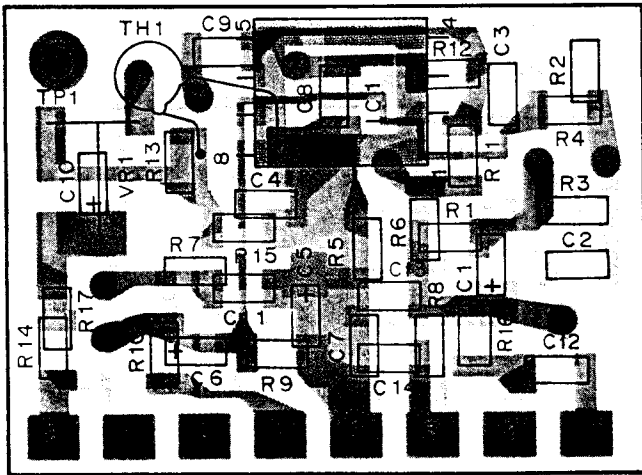


IC1 : NJM4560M

	R1	R6	R16	C12	C13
-11	100K	82K	-	-	.01
-61	330K	150K	33K	.047	.047

Component side view

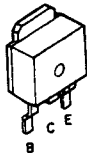
Foil side view



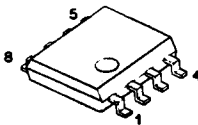
DTC144EU
2SC4081 (BR)



2SB1182F5(Q)



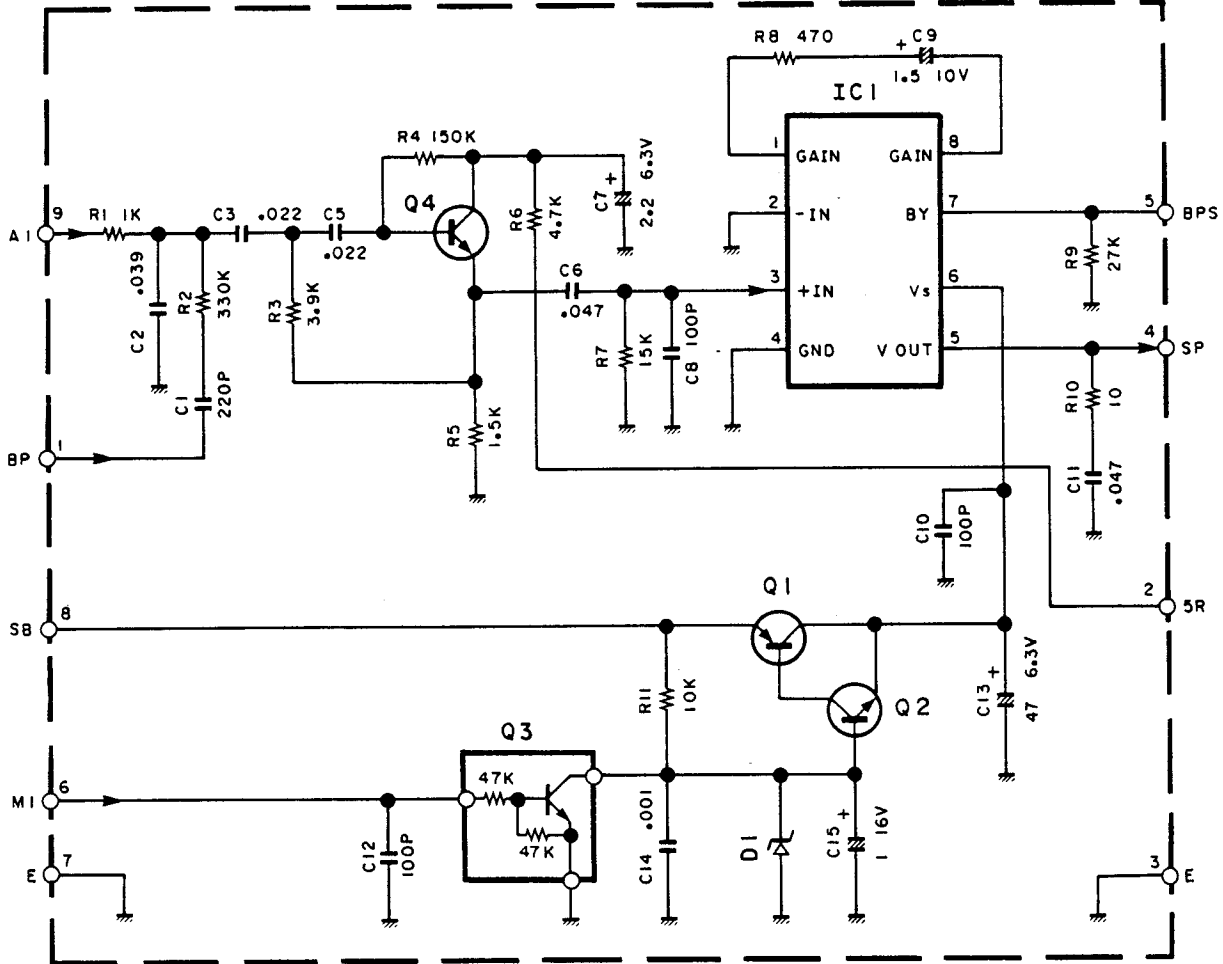
NJM386BM
NJM4560M



PC BOARD VIEWS/CIRCUIT DIAGRAM TH-55AT/E

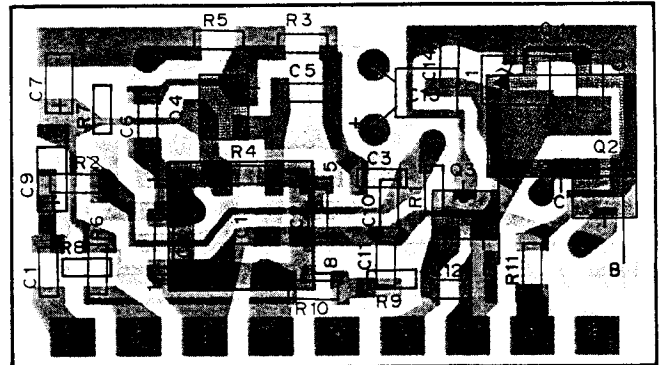
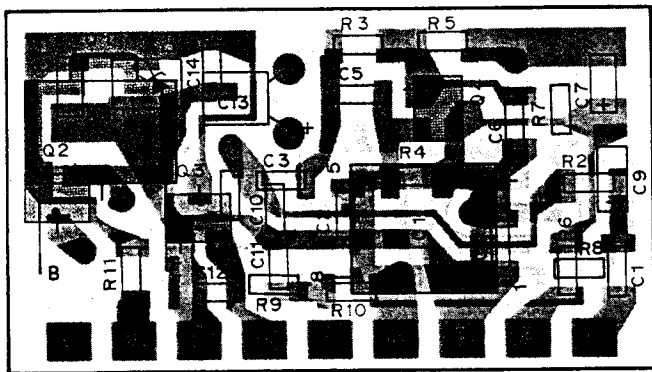
AF AMP UNIT (X58-3380-00)

(X58-3380-00)



- IC1 : NJM3868M
- Q1 : 2SB1182F5(Q)
- Q2,4 : 2SC4081(BR)
- Q3 : DTC144EU
- D1 : 02CZ 6.8X or RD6.8M-B1

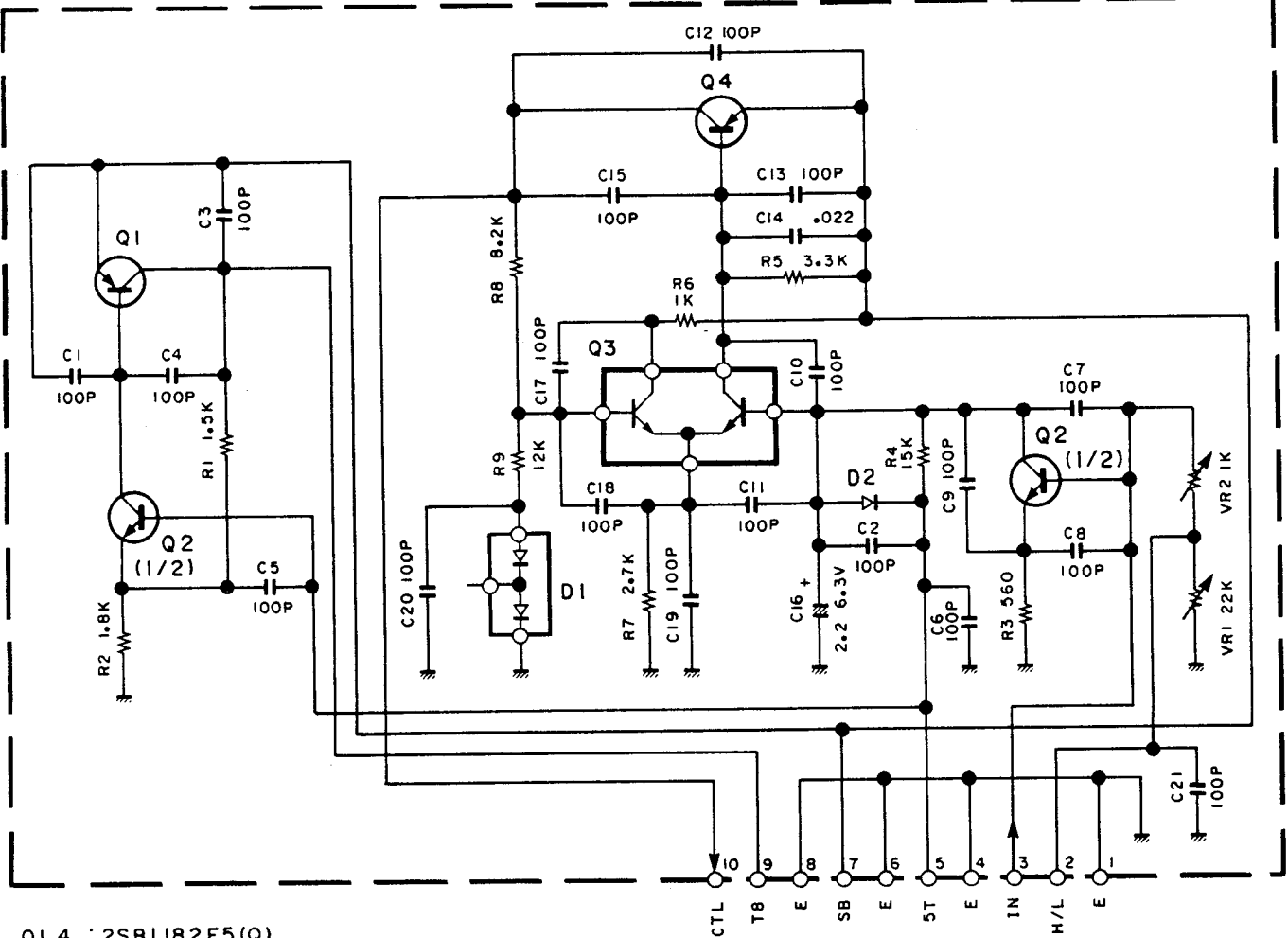
Component side view : Component side
 Foil side view : Foil side



TH-55AT/E PC BOARD VIEWS/CIRCUIT DIAGRAM

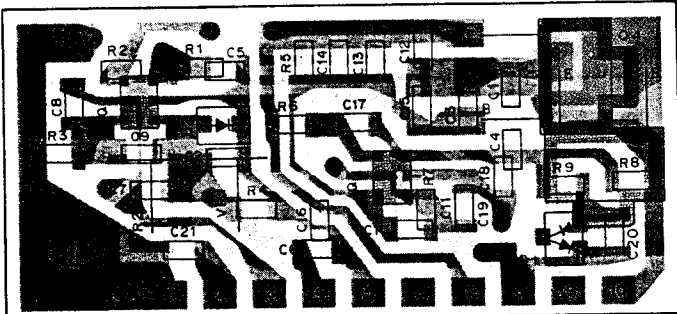
APC UNIT (X59-3420-00)

(X59-3420-00)

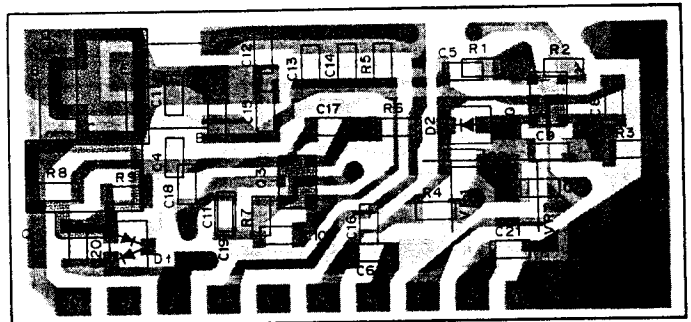


- Q1,4 : 2SB1182F5(Q)
- Q2 : 1MX1
- Q3 : FMW1
- D1 : DA204U
- D2 : MA1110

Component side view

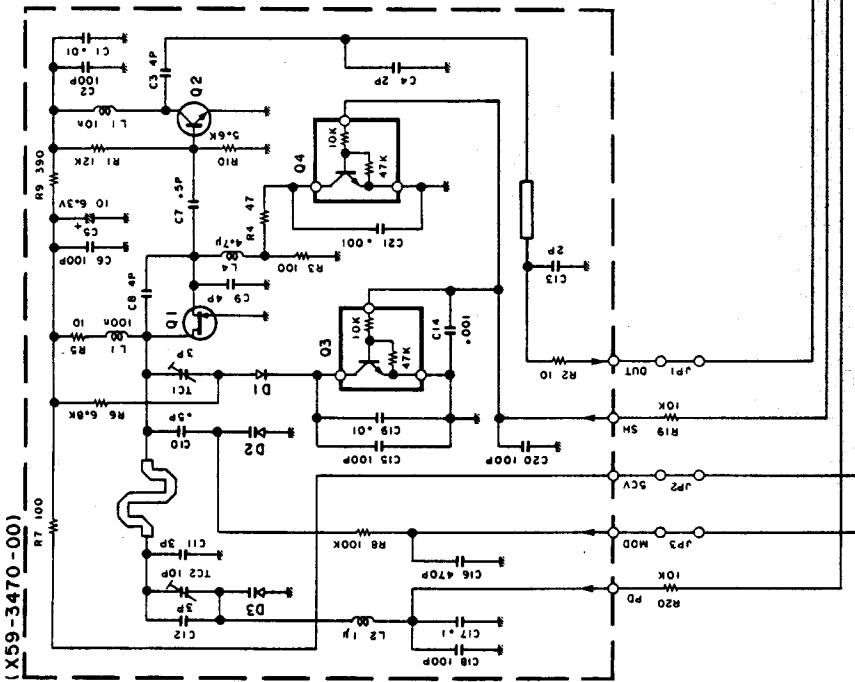


Foil side view



○ : Component side
 ■ : Foil side

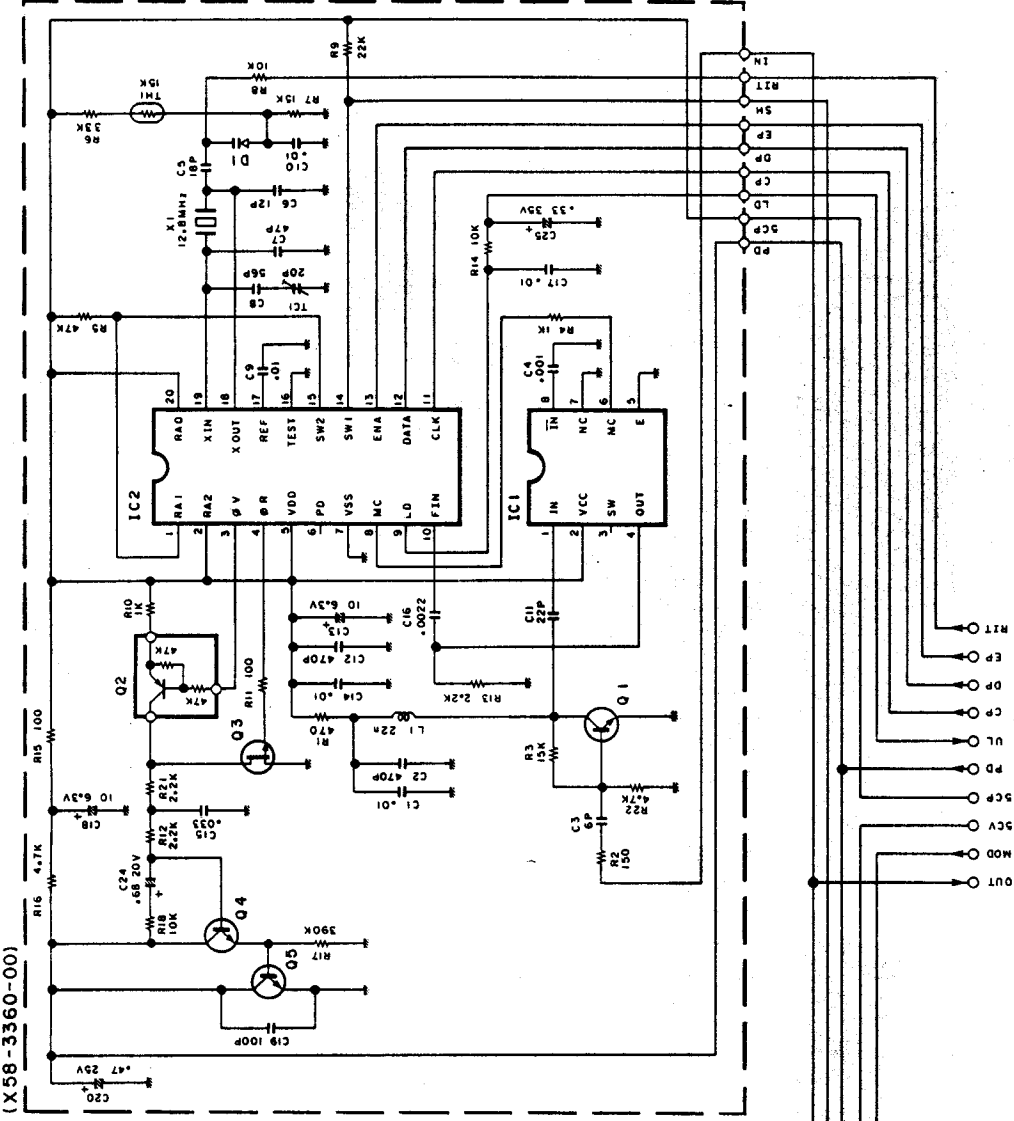
VCO UNIT (X59-3470-00)



(X59-3470-00)

- Q1 : 2SK508 (K51)
- Q2 : 2SC4093 (R26, 27)
- Q3, 4 : DTC114YU
- D1 : MA77
- D2, 3 : MA360

PLL UNIT (X58-3360-00)



(X58-3360-00)

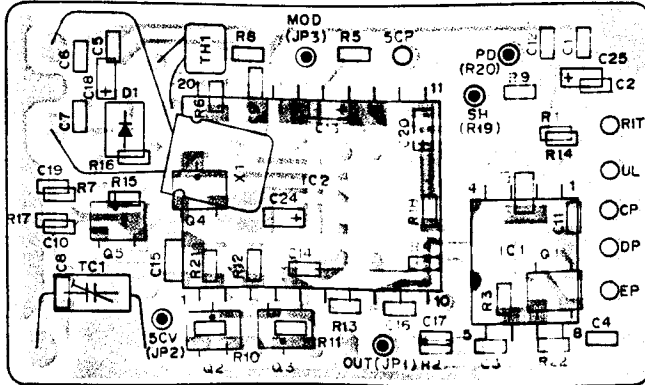
(X58-3360-00)

- IC1 : MB501LL
- IC2 : JLC1075F
- Q1 : 2SC4093 (R26, 27)
- Q2 : DTA144EU
- Q3 : 2SJ144 (GR)
- Q4 : 2SC3624 (LL18)
- Q5 : 2SC2712 (GR)
- D1 : MA360

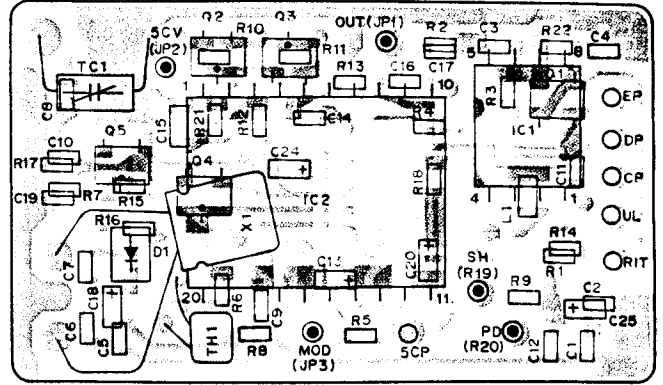
PC BOARD VIEWS/CIRCUIT DIAGRAM TH-55AT/E

PLL UNIT (X58-3360-00)

Component side view



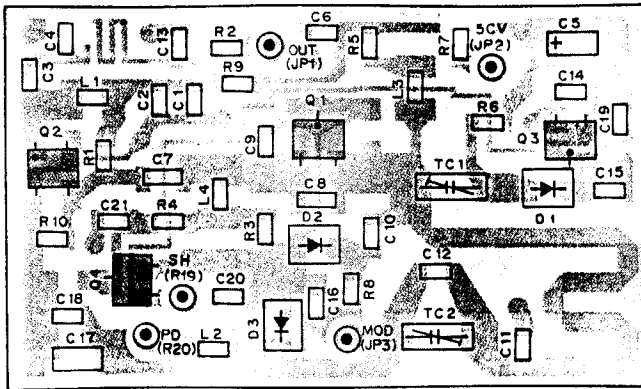
Foil side view



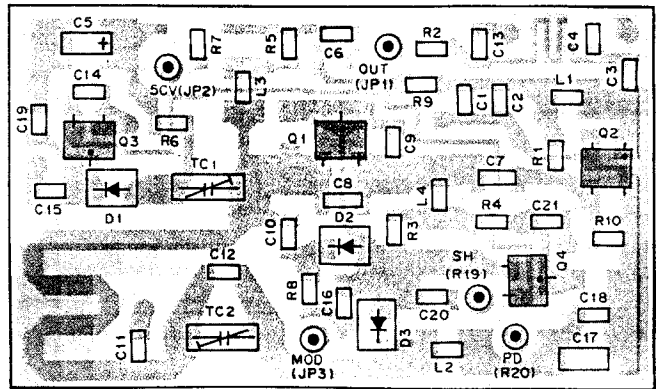
○ Component side
○ Foil side

VCO UNIT (X59-3470-00)

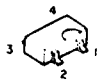
Component side view



Foil side view



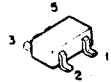
2SC4093(R26, 27)



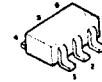
2SC2712(GR)
2SC3624(L18)
DTA144EU
DTC114YU



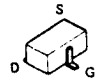
FMW1



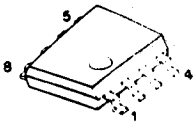
IMX1



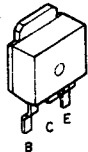
2SJ144(GR)
2SK508(K51)



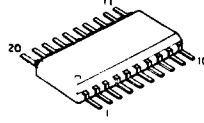
MB501LL



2SB1182F5(Q)

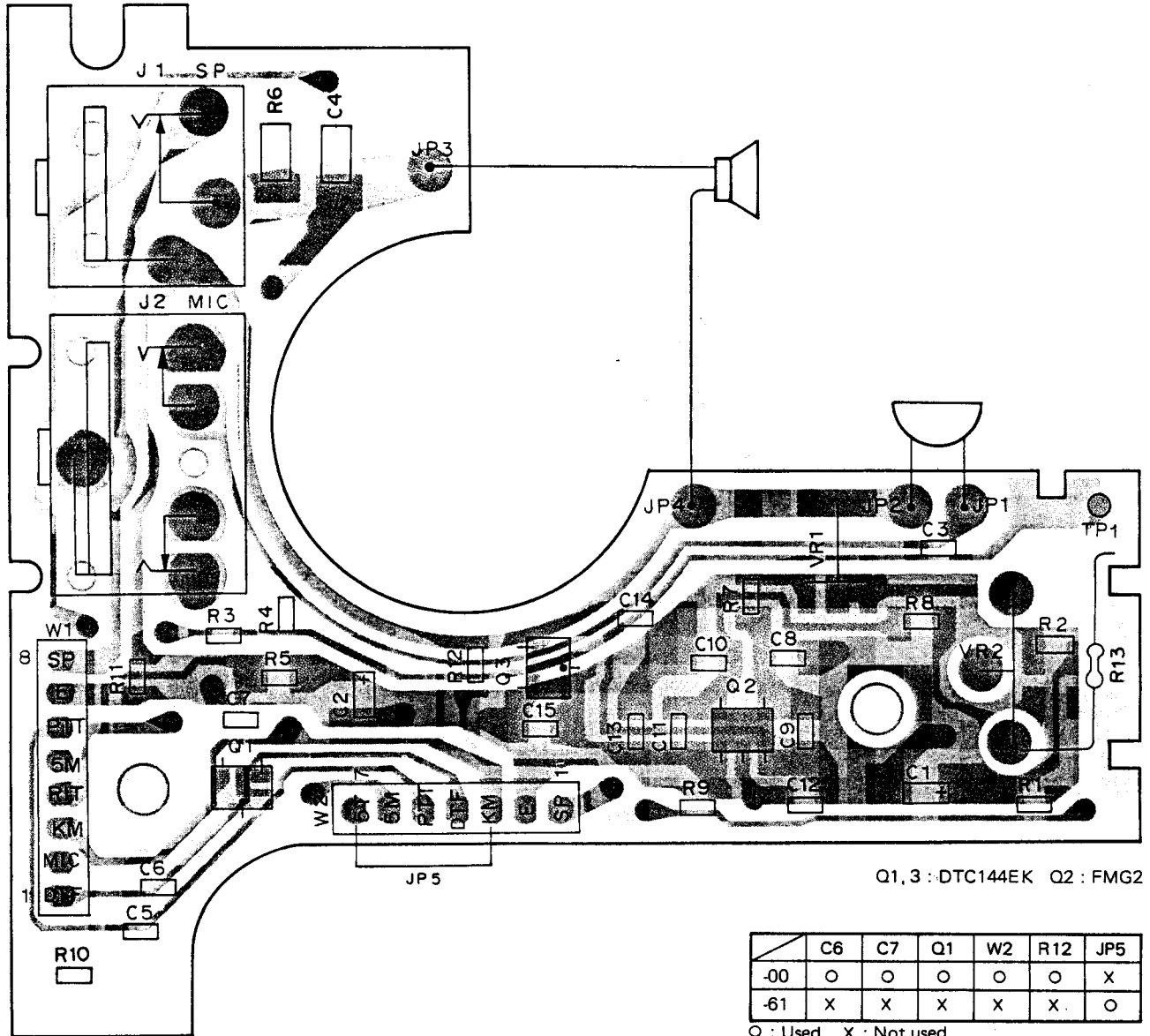


JLC1075F

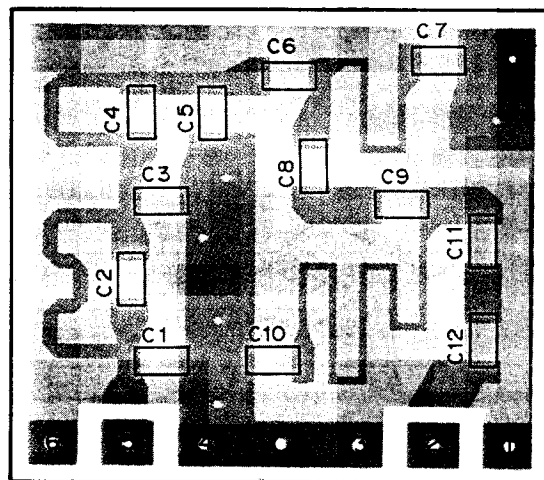


TH-55AT/E PC BOARD VIEWS

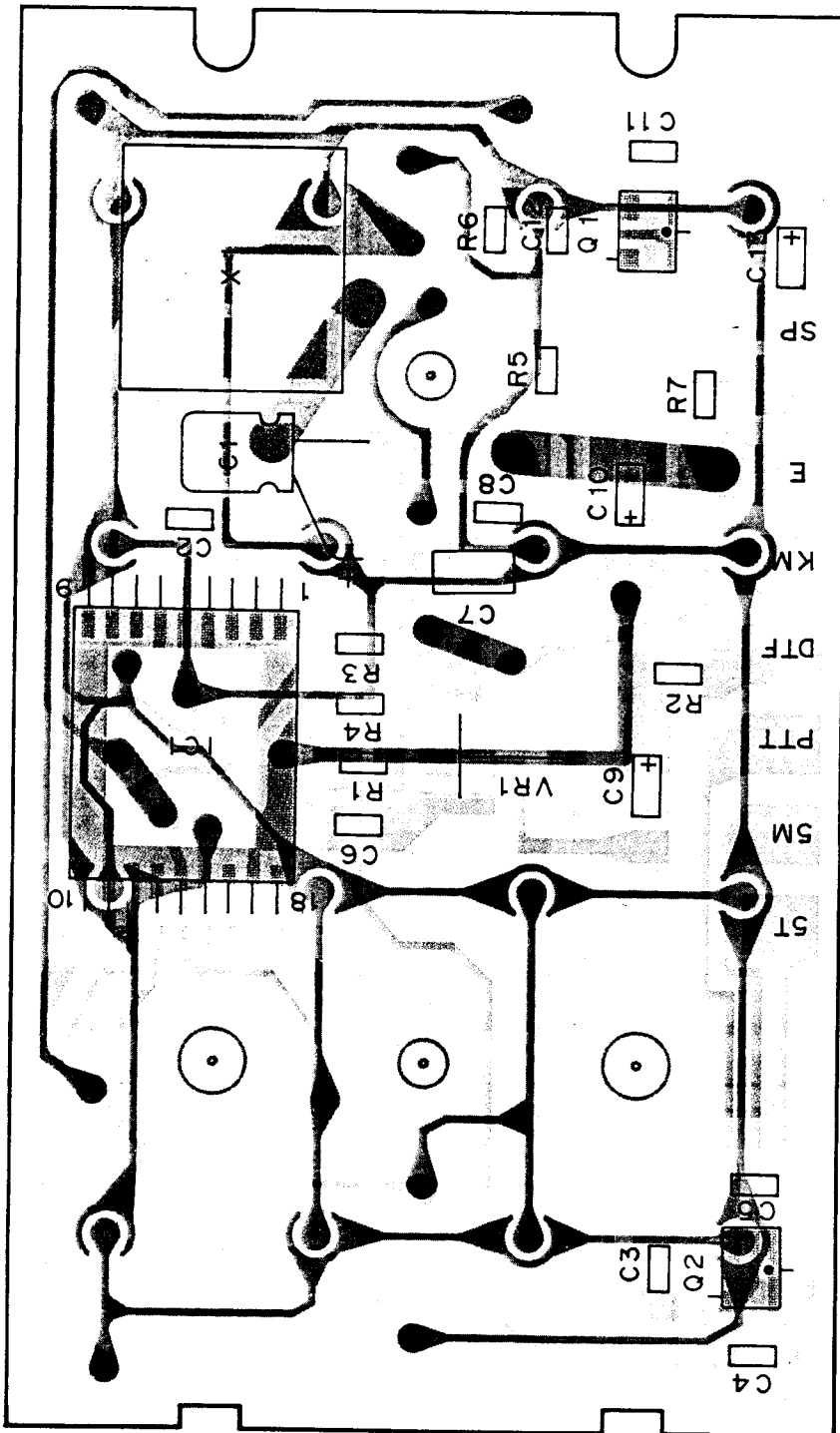
SWITCH UNIT (X41-3070-XX) -00 : TH-55AT -61 : TH-55E Component side view



BPF UNIT (X59-3430-00) Component side view



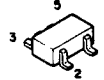
SIGNALING UNIT (X52-3130-00) TH-55AT ONLY Component side view



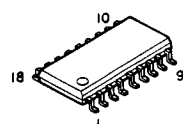
- 2SA1162(Y)
- 2SC2712(GR)
- 2SC2712(Y)
- DTA114EK
- DTC144EK



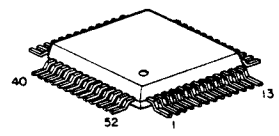
FMG2



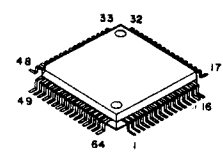
LR40872



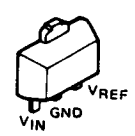
LH5008TP



75108AG-028-22

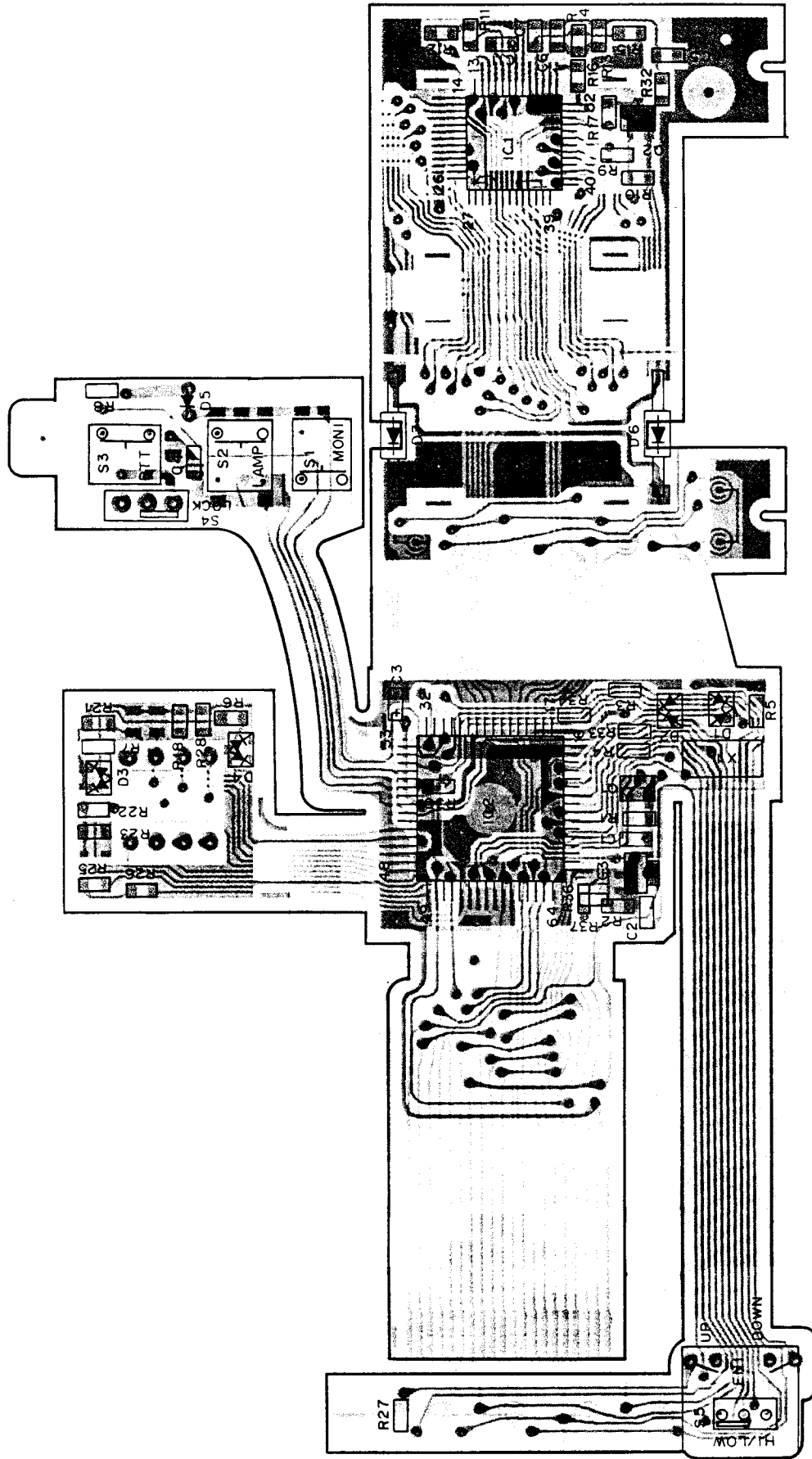


S8054ALR-LN



Q1 : 2SC2712(GR) Q2 : DTA114EK
IC1 : LR40872

CONTROL UNIT (X53-3150-XX) -11 : K -51 : T -61 : W Component side view



Q1 : 2SC2712(Y) Q2 : 2SA1162(Y)
 IC1 : LH5008TP IC2 : 75108AG-028-22 IC3 : S8054ALR-LN
 D1, 2 : 1SS184 D3, 4 : 1SS181 D5 : SLH34VC3 D6, 7 : LN01301C(Q)

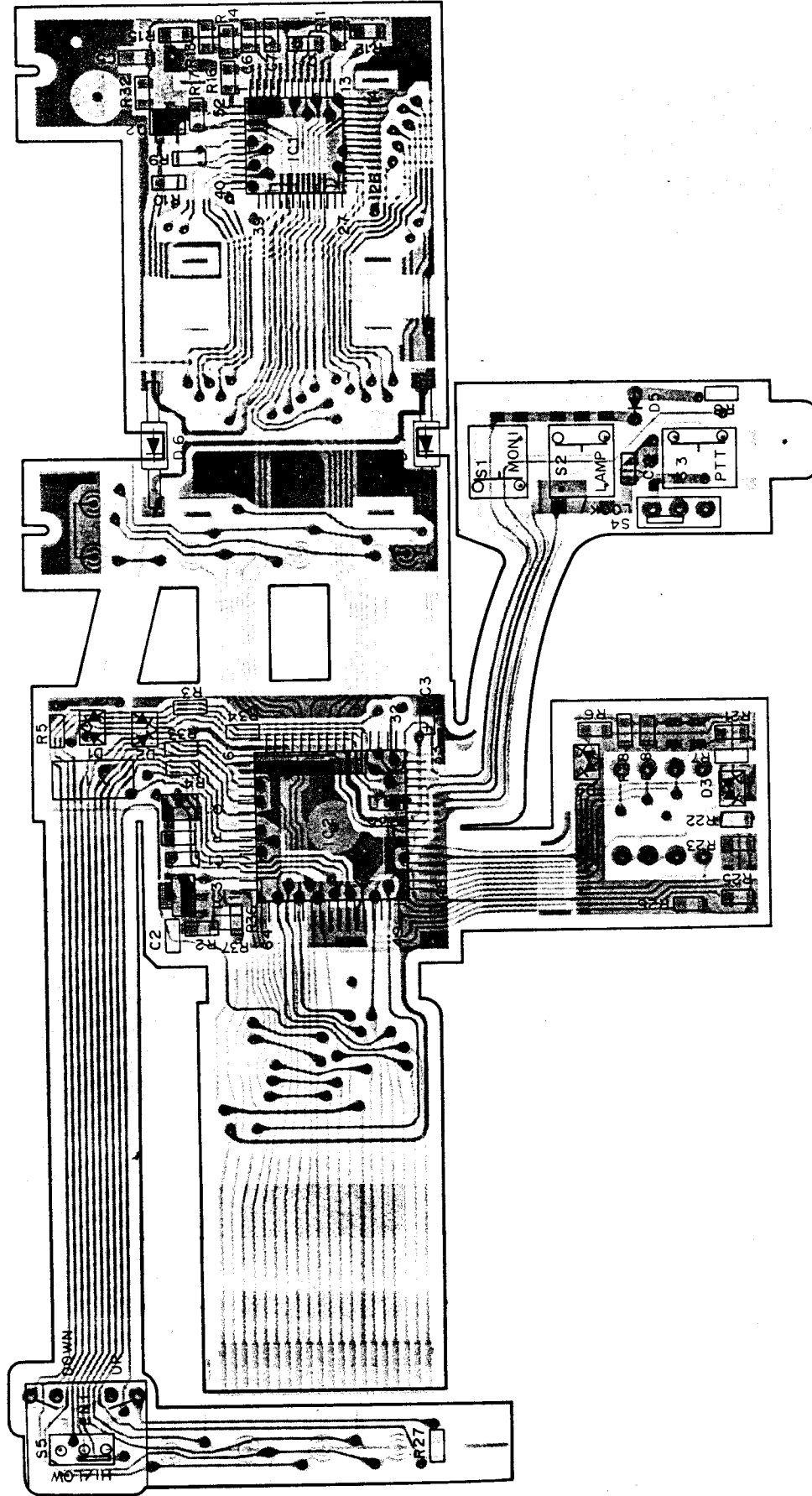
: Component side
 : Fall side

	R18	R21	R22	R25	R26	R36	R37
-11	X	O	X	X	X	X	X
-51	O	X	O	X	O	O	O
-61	O	X	O	O	O	O	O

O : Used. X : Not used.

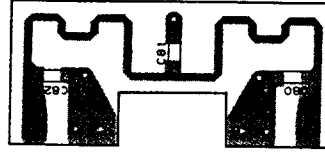
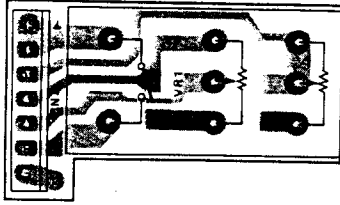
PC BOARD VIEWS TH-55AT/E

CONTROL UNIT (X53-3150-XX) Foil side view

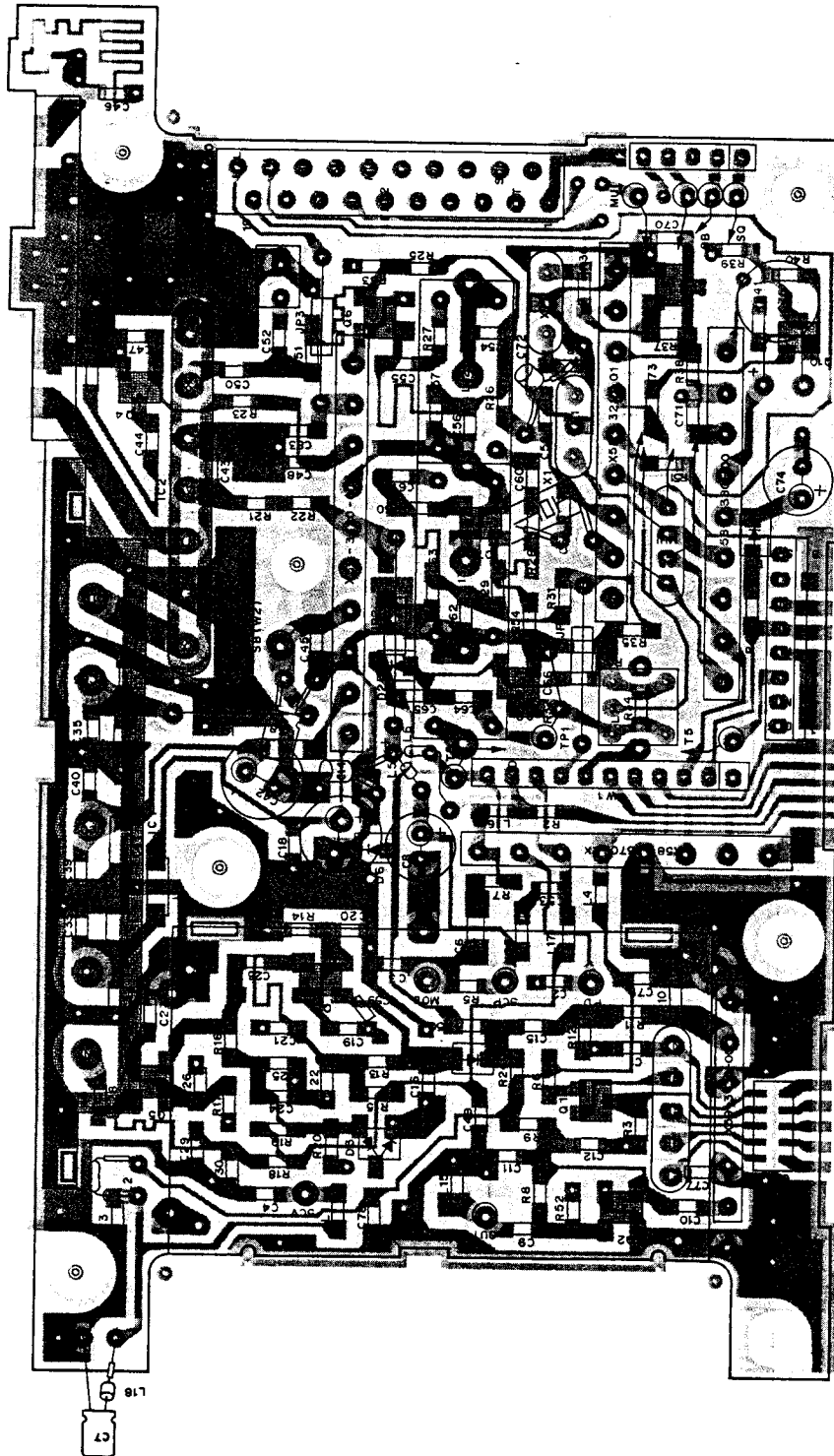


TH-55AT/E PC BOARD VIEWS

TX-RX UNIT (X57-3250-XX) -11 : TH-55AT -61 : TH-55E Component side view

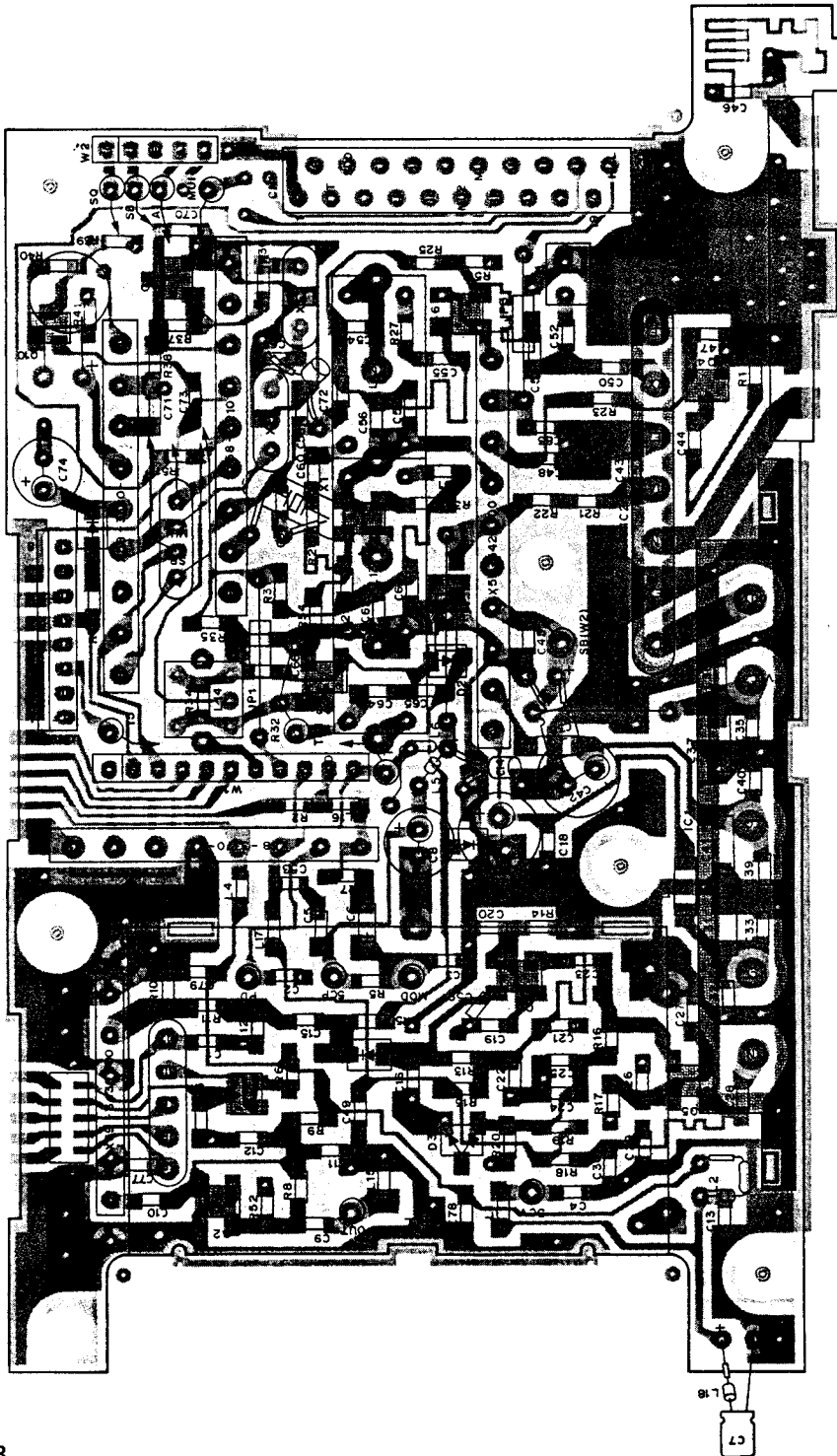
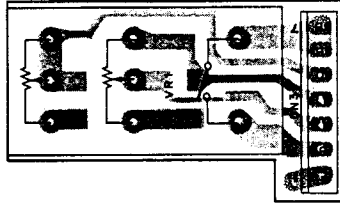
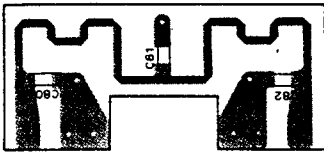


: Component side
: Foil side

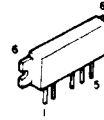


Q1 : DTA114YU Q2, 3, 5 : 2SC4093(R27) Q6, 7 : 2SC4095(R47.6) Q8 : 2SC3585(R44.3) Q9 : 2SC2714(O) Q10 : 2SJ144(GR)
 IC1 : M57787 IC2 : MD-004
 D1, 2, 6 : MA77 D3 : DA204K D4 : HSM88AS D5 : MA110

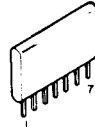
TX-RX UNIT (X57-3250-XX) Foil side view



M57787



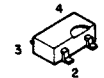
MD-004



DTA114YU
 2SC3585(R44.3)
 2SC2714(O)



2SC4093(R27)
 2SC4095(R47.6)



2SJ144(GR)

