DJ-SR1

Service Manual

CONTENTS

ALINCO, INC.

SPECIFICATIONS

1) General

Frequency Range:

1CH	446.00625MHz	5CH	446.05625MHz
2CH	446.01875MHz	6CH	446.06875MHz
3CH	446.03125MHz	7CH	446.08125MHz
4CH	446.04375MHz	8CH	446.09375MHz

Modulation:	F3E
DC Power Source:	3.6 ~ 4.5 Volts DC (internal battery)
	5.5V (external regulated source)
Current Consumption	TX/approx. 500mA (Hi Power @5.5V DC)
	RX/approx. 33mA (squelched)
Dimensions:	55(W)mm x 100(H)mm x 28(D)mm without projections
Weight:	approx. 185g (with three AA drycells)

2) Transmitter

Output Power:	approx. 500mW (with 5.5V DC supply)
Modulator:	Variable Reactance
Max. Deviation:	±5kHz

3) Receiver

Configuration:	Double Conversion Superheterodyne
Intermediate Frequency:	First: 21.70MHz / Second: 450kHz
Sensitivity:	Better than -15dBμ (12dB SINAD)
AF Output:	Not less than 100mW (@10% distortion @8Ω)

Note: Specifications are subject to change without notice or obligation.

CIRCUIT DESCRIPTION

1) Receiver System

The receiver system is the double superheterodyne.
The first IF is 21.70MHz and the second IF is 450kHz.

1. Front End

The signal from the antenna is passed through a low-pass filter and input to RF coil L108.
The signal from L108 is amplified by Q104, Q103 and led to the band pass filter, and led to the first mixer base of Q101.

2. First Mixer

The amplified signal (f0) by Q104, Q103 is mixed with the first local oscillator signal (f0-21.70MHz) from the PLL circuit by the first stage mixer Q101 and so is converted into the first IF signal.
The unwanted frequency band of the first IF signal is eliminated by the monolithic crystal filter FL101, and led to IF amplifier Q201.

3. IF Circuit

The first IF signal is amplified by Q201, and input to pin16 of IC203, where it is mixed with the second local oscillator signal (21.25MHz) and so is converted into the second IF signal (450kHz).
The second IF signal is output from pin3 of IC203, and unwanted frequency band of second IF signal is eliminated by a ceramic filter FL102.
The resulting signal is then amplified by the second IF limiting amplifier, and detected by quadrature circuit. The audio signal is output from pin9 of IC203.

4. Audio Circuit

The demodulated signal in IF IC203 contains the audio signal and CTCSS signal. CTCSS signal is passed through the low-pass filter of IC504C/D and led to TIN port of CPU to be decoded. The audio signal is input to the main volume VR601 passing through de-emphasis circuit and high-pass filter circuit of IC504B. The signal of which level is adjusted at the main volume VR601 is input to IC502 of AF amp, then it is amplified to the level that can drive the speaker.

5. Squelch Circuit

The noise in the audio signal from IC203 is passed through the squelch control variable resister RT103 and input to pin8 of IC203.
IC203 includes filter amplifier, high-pass filter and rectifier.
When squelch circuit is close, pin13 of IC203 goes to "High".
When squelch circuit is open or a signal is received, pin13 of IC203 goes to "Low", then the signal of pin13 is led to CPU.

2) PLL, VCO Circuit

Output frequency of PLL circuit is set by the serial data from microprocessor.
PLL circuit consists of VCO Q401, buffer amplifier Q301.
The pulse wave output of charge pump is converted to DC voltage by PLL loop filter circuit, and supplied to D402, D401 of varicap diode in VCO unit.
The frequency modulation is executed when audio signal voltage is supplied to the varicap D403.
When PLL is unlocked, pin7 of IC201 goes to "High".

3) Transmitter System

1. Microphone Amplifier

The input signal from built-in or external microphone is led to the high-pass filter IC501A. Passing through HPF, then microphone mute circuit Q501, pre-emphasis circuit, IDC circuit IC501B and IC503B, the signal is input to the maximum deviation adjustment volume RT501. The adjusted signal at RT501 is led to the splutter filter IC503C/D, then mixed at the add circuit of IC503A with the CTCSS tone signal which is generated by CPU. Then it is input to VCO as the modulation signal.

2. Power Amplifier

The signal from VCO is amplified by IC202, and input to power amplifier Q202 and then passed through the low-pass filter, the antenna switch circuit and the output low-pass filter.
The unwanted harmonics frequency signal is eliminated by the low-pass filter and input to the antenna.

4) Terminal function of CPU

No.	Name	I/O	Description	H	L
1	BP1	I	Freq/CH select		
2	BP2	I	Writer set		
3	BP3	I	EEPROM capacity set		
4	BP4	I	Band plan		
5	BP5	I	Model select		
6	TIN	I	Tone signal input		
7	SMT	I	S meter signal input		
8	BATT	I	Low voltage detection input		
9	APF	O	Power supply control for AF amp		Active
10	BEEP	O	Beep sound output		
11	AFS	O	AF mute	Active	
12	TBST	O	Tone burst sound output		
13	BP6	I	IF frequency set		
14	BP7	I	TSQ mode select		
15	CLO	O	Power supply control for Clone output	Normal	Clone
16	STB	O	PLL IC strobe output		
17	DATA	O	PLL IC data output		
18	CLK	O	PLL IC clock output		
19	CTX	O	Clone TX data output		
20	CRX	I	Clone RX data output		
21	SD	I	SD signal input		Active
22	BU	I	Backup signal input		Active
23	PTTK	I	PTT key input	Active	
24	UL	I	PLL unlock signal input		Active
25	RST	I	CPU reset input	at work	on reset
26	SCL	O	EEPROM clock output		
27	SDA	I/O	EEPROM deta input/output		
28	Xin	I	Internal oscillator input		
29	Xout	O	Internal oscillator output		
30	Vss	I	GND		
31	FUNC	I	FUNC key input		Active
32	MONI	I	MONI key input		Active
33	CALL	I	CALL key input		Active
34	V/M	I	V/M key input		Active
35	LAMP	I	LAMP key input		Active
36	SCAN	I	SCAN key input		Active
37	UP	I	UP key input		Active
38	DOWN	I	DOWN key input		Active

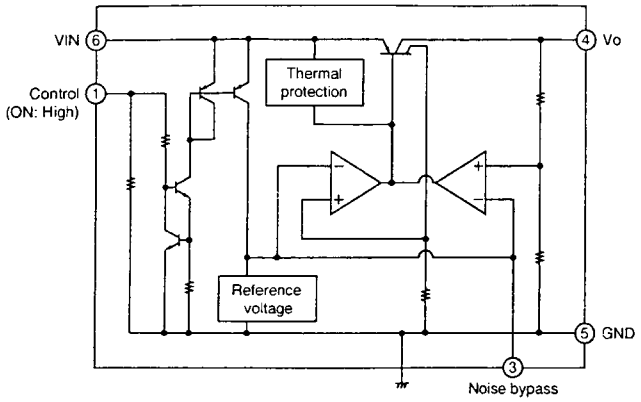
No.	Name	I/O	Description	H	L
39	LAMPC	O	Lamp ON/OFF output	Active	
40	SIFTC	O	VCO shift output	Tx	Rx
41	MMUTE	O	Microphone mute output	Active	
42	RFPOW	O	TX output power switch High/Low	Low	High
43	P3C	O	Power supply control for VCO output		Active
44	C3C	O	Power supply control		Active
45	R3C	O	Power supply control for RX		Active
46	T3C	O	Power supply control for TX		Active
47					
48					
49					
50					
51	TON4	O	Tone output 4		
52	TON3	O	Tone output 3		
53	TON2	O	Tone output 2		
54	TON1	O	Tone output 1		
55					
56	SEG14	O	LCD SEG 14		
57	SEG13	O	LCD SEG 13		
58	SEG12	O	LCD SEG 12		
59	SEG11	O	LCD SEG 11		
60	SEG10	O	LCD SEG 10		
61	SEG9	O	LCD SEG 9		
62	SEG8	O	LCD SEG 8		
63	SEG7	O	LCD SEG 7		
64	SEG6	O	LCD SEG 6		
65	SEG5	O	LCD SEG 5		
66	SEG4	O	LCD SEG 4		
67	SEG3	O	LCD SEG 3		
68	SEG2	O	LCD SEG 2		
69	SEG1	O	LCD SEG 1		
70	SEG0	O	LCD SEG 0		
71	VCC	I	Power supply terminal 3V		
72	VREF	I	A/D reference level 3V		
73	GND	I	Analog ground		
74	COM3	O	LCD COM 3		
75	COM2	O	LCD COM 2		
76	COM1	O	LCD COM 1		
77	COM0	O	LCD COM 0		
78	VL3	I	LCD power supply		
79	VL2	I	LCD power supply		
80	VL1	I	LCD power supply		

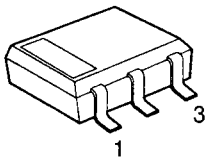
SEMICONDUCTOR DATA

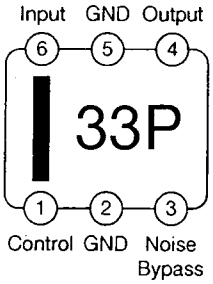
1) TK11233BM (XA0595)

Voltage Regulator

Block Diagram



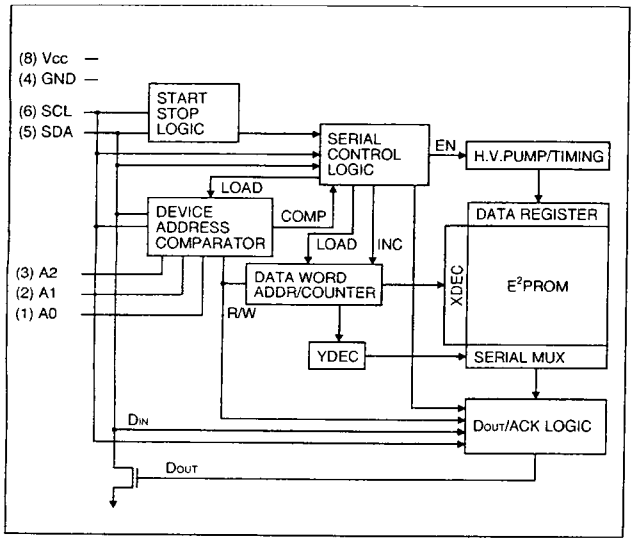


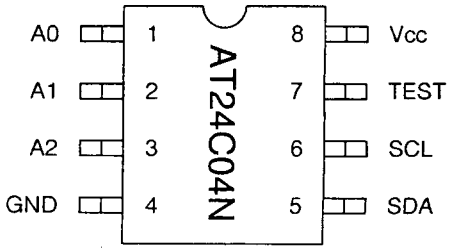


2) AT24C04N(XA0365)

CMOS Serial EEPROM

Block Diagram

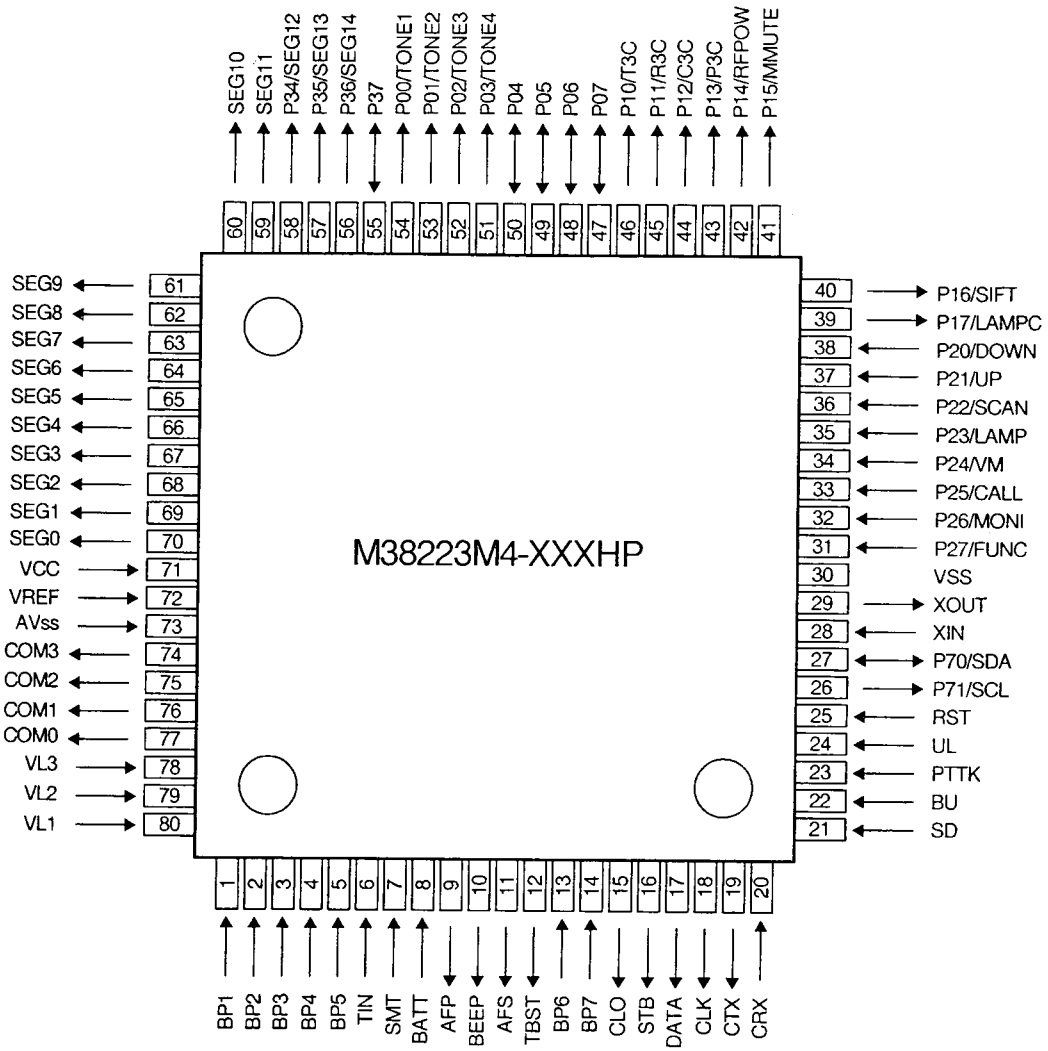




Pin Name	Function
A0 to A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock
TEST	Test Input (GND or Vcc)
NC	No Connect

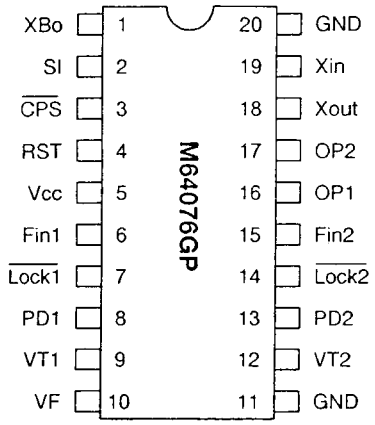
3) M38223M4HP(XA0646)

CPU



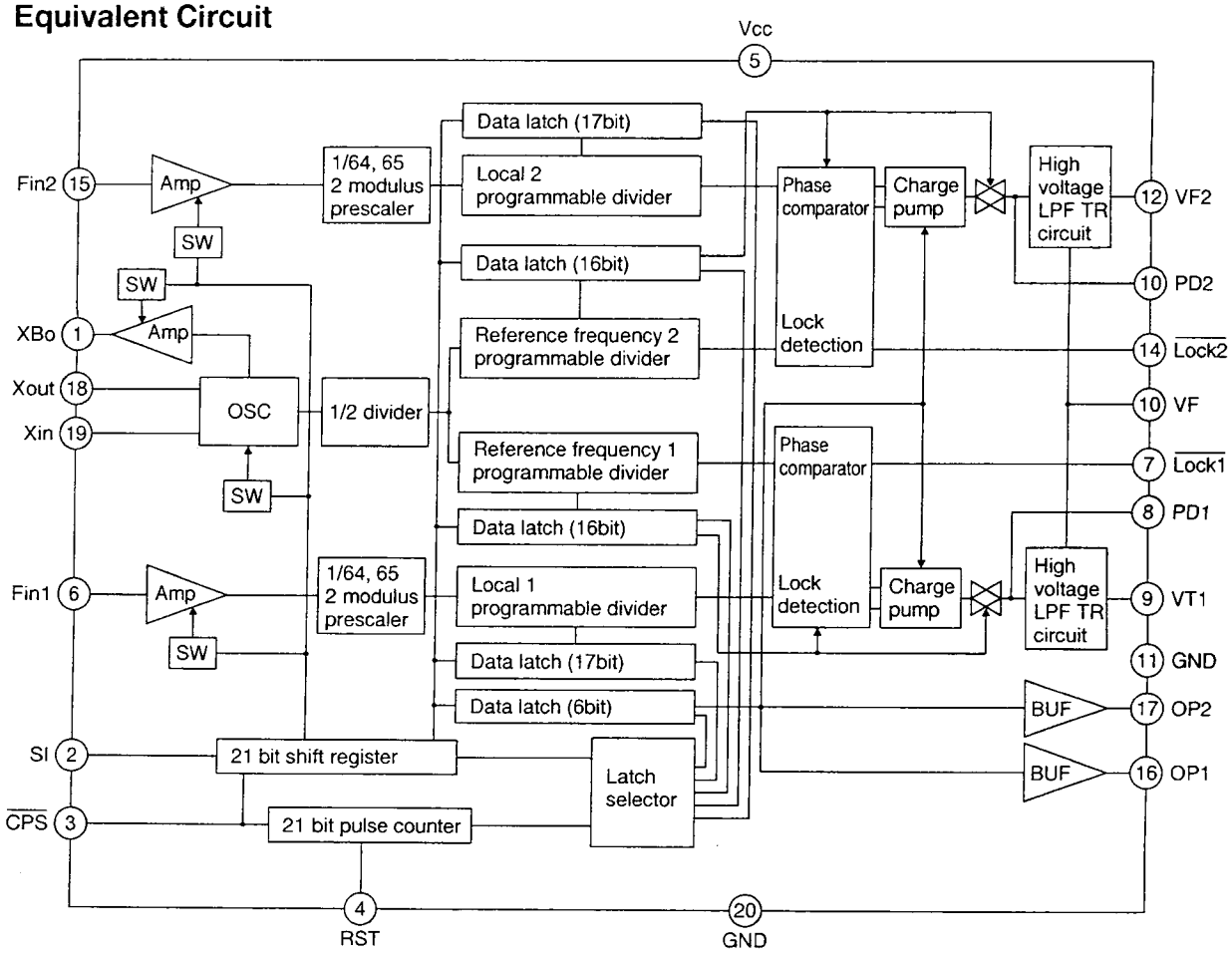
4) M64076GP (XA0352)

Dual PLL Synthesizer



Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	Fin=80~520MHz Vin=– 10dBm	2.7	-	5.5	V
LPF supply voltage	VF		-	9	12	V
Local oscillator input level	Vin	Fin=80~520MHz Vcc=2.7~5.5V	– 20	-	– 4	dBm
Local oscillator input frequency	Fin	Vin=-20~– 4dBm Vcc=2.7~5.5V	80	-	520	MHz
Xin input level	Vxin	Vcc=2.7~5.5V Fxin=10~25MHz Sine wave	0.4	-	1.4	Vp-p
Xin input frequency	Fxin	Vcc=2.7~5.5V Vxin=0.4~1.4Vp-p	10	-	25	MHz

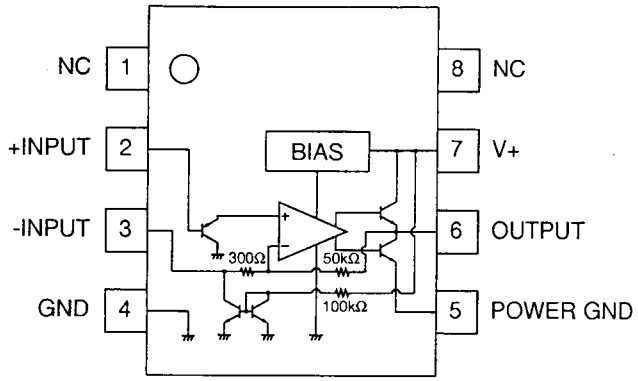
Equivalent Circuit



5) NJM2070M (XA0210)

Low Voltage Power Amplifier

Equivalent Circuit

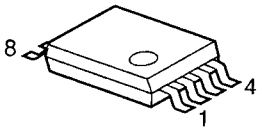


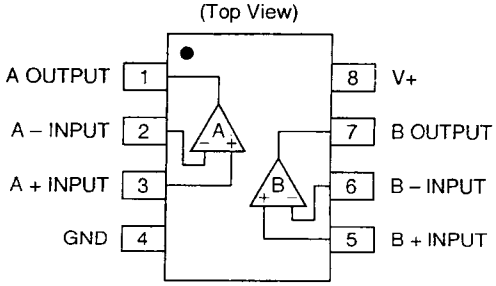
V+=6V, Ta=25±2℃

Parameter	Condition		Symbol	Min.	Typ.	Max.	Unit
Supply voltage			V+	1.8	-	15	V
Idle current	RL=∞		IQ	-	4	7	mA
Output voltage			Vo	-	2.7	-	V
Input bias current			IB	-	200	-	nA
Output power	THD=10%, f=1kHz	V+=6V, RL=4Ω	Po	0.5	0.6	-	W
		V+=4.5V, RL=4Ω		-	0.32	-	W
		V+=3V, RL=4Ω		-	120	-	mW
		V+=2V, RL=4Ω		-	30	-	mW
	THD=10%, f=1kHz	V+=6V, RL=4Ω		-	500	-	mW
		V+=4.5V, RL=4Ω		-	250	-	mW
Distortion	Po=0.4W, RL=4Ω,	f=1kHz	THD	-	0.25	-	%
Voltage gain	f=1kHz		Av	41	44	47	dB
Input impedance	f=1kHz		ZIN	100	-	-	kΩ
Equivalent input noise voltage	Rs=10kΩ	A curve	Vn1	-	2.5	-	μV
		B=22Hz to 22kHz	Vn2	-	3	-	μV
Power supply voltage rejection ratio	f=100Hz, Cx=100μF		SVR	24	30	-	dB
Power gain band width (– 3dB)	RL=8Ω, Po=250mW		P.B	-	200	-	kHz

6) NJM2904V (XA0573)

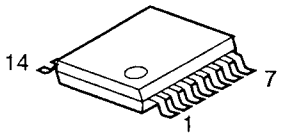
Dual Single Supply Operational Amplifier

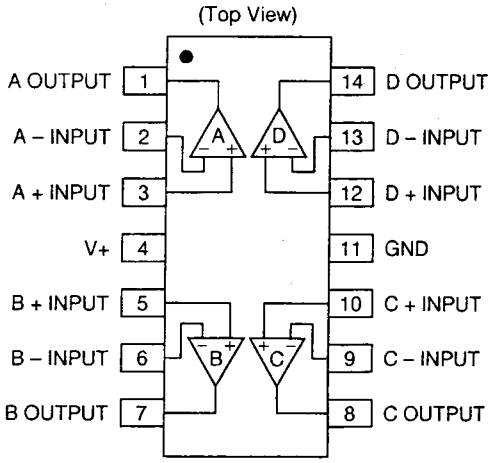




7) NJM2902V (XA0596)

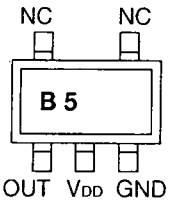
Quad Single Supply Operational Amplifier

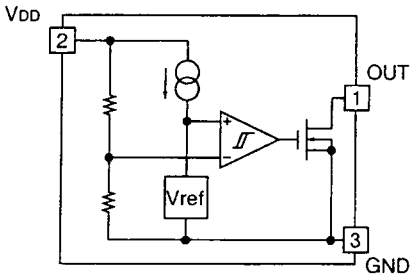




8) RN5VL25AA-T1 (XA0592)

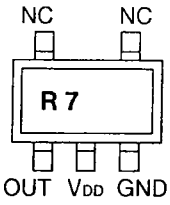
C-MOS Voltage Detector

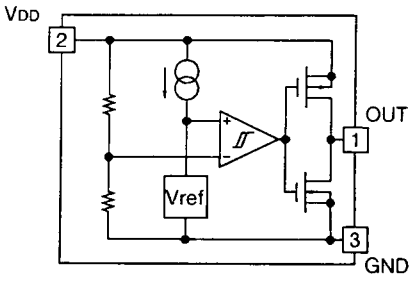




9) RN5VL27CA-T1 (XA0593)

C-MOS Voltage Detector

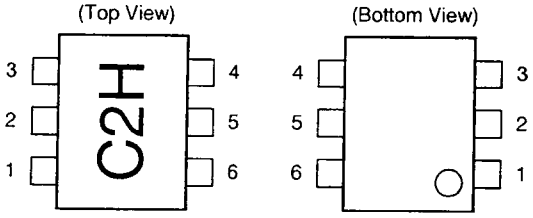




10) μPC2771T (XA0545)

Middle Power RF Amplifier

Terminal Connection



No.	Name
1	Input
2	GND
3	GND
4	Output
5	GND
6	Vcc = 3V

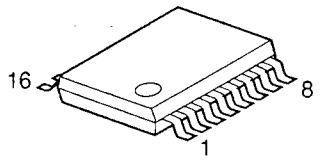
Specfications

(Ta = +25°C, Vcc = 3.0V, Z_L = Z_S = 50Ω)

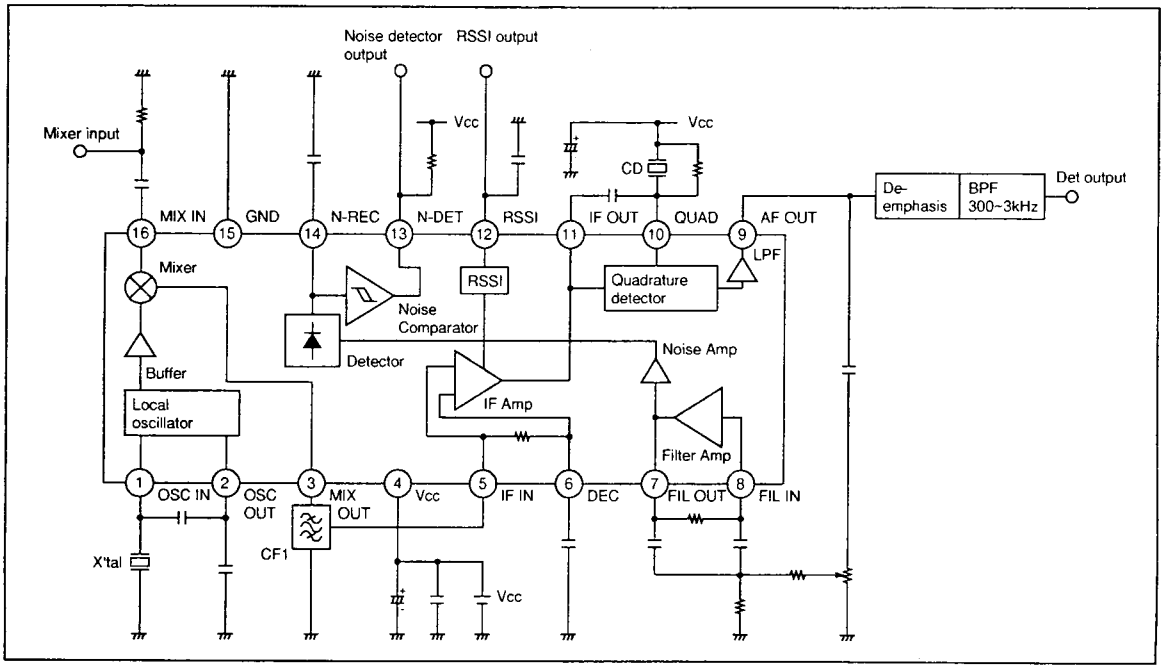
Vcc (V)	Icc (mA)	G_P (dB)	fu (GHz)	$P_{O\,(sat)}$ (dBm)	P_{1dB} (dBm)
3	36	21	2.1	+12.5	+11.5

11) TA31136FN (XA0404)

Low Power FM IF



Block Diagram



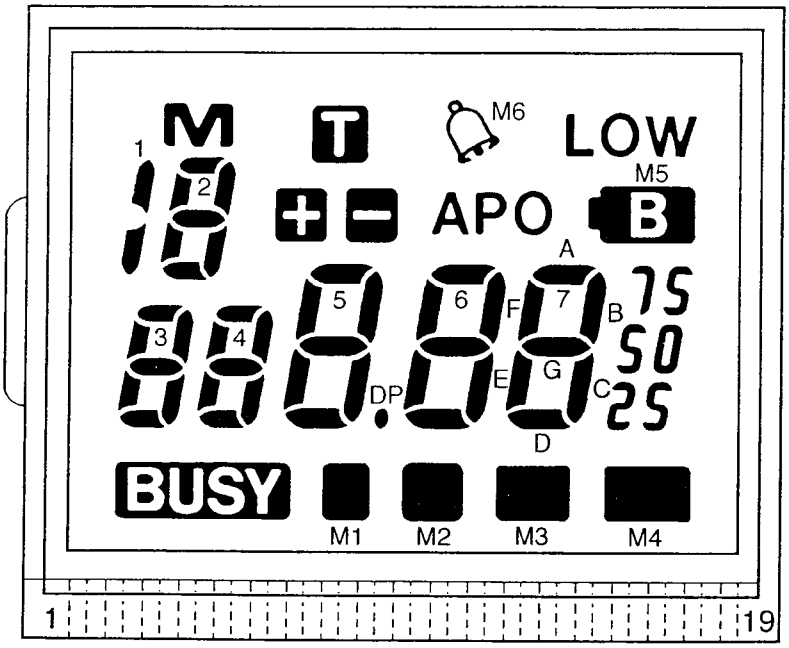
12) Transistor, Diode and LED Outline Drawings

Top View

1SS356	1SV239	1SV257	1SV237	MA729-TX	SML-110MT	SML-310UT	U1GWJ44
XD0272	XD0236	XD0293	XD0141	XD0291	XL0037	XL0035	XD0225
	TC	T8	BB	2B			GW
2SA1182Y	2SA1576	2SC4081	2SC5065	MRF9745T1			
XT0166	XT0094	XT0095	XT0137	XE0034			
C ZY B E	C FR B E	C BR B E	C MAO B E	D S S G			
DTB133HK	DTC363EK	UMC5NTR	UN511H	UN5214	XN111M		
XU0169	XU0160	XU0152	XU0166	XU0052	XU0046		
C G98 B E	C H27 B E	C1 C2 C5 E1 B1 E3	C 6P B E	C 8D B E	B2 E B1 EK C2 C1		

13) LCD (EL0033A)

LCD Pattern

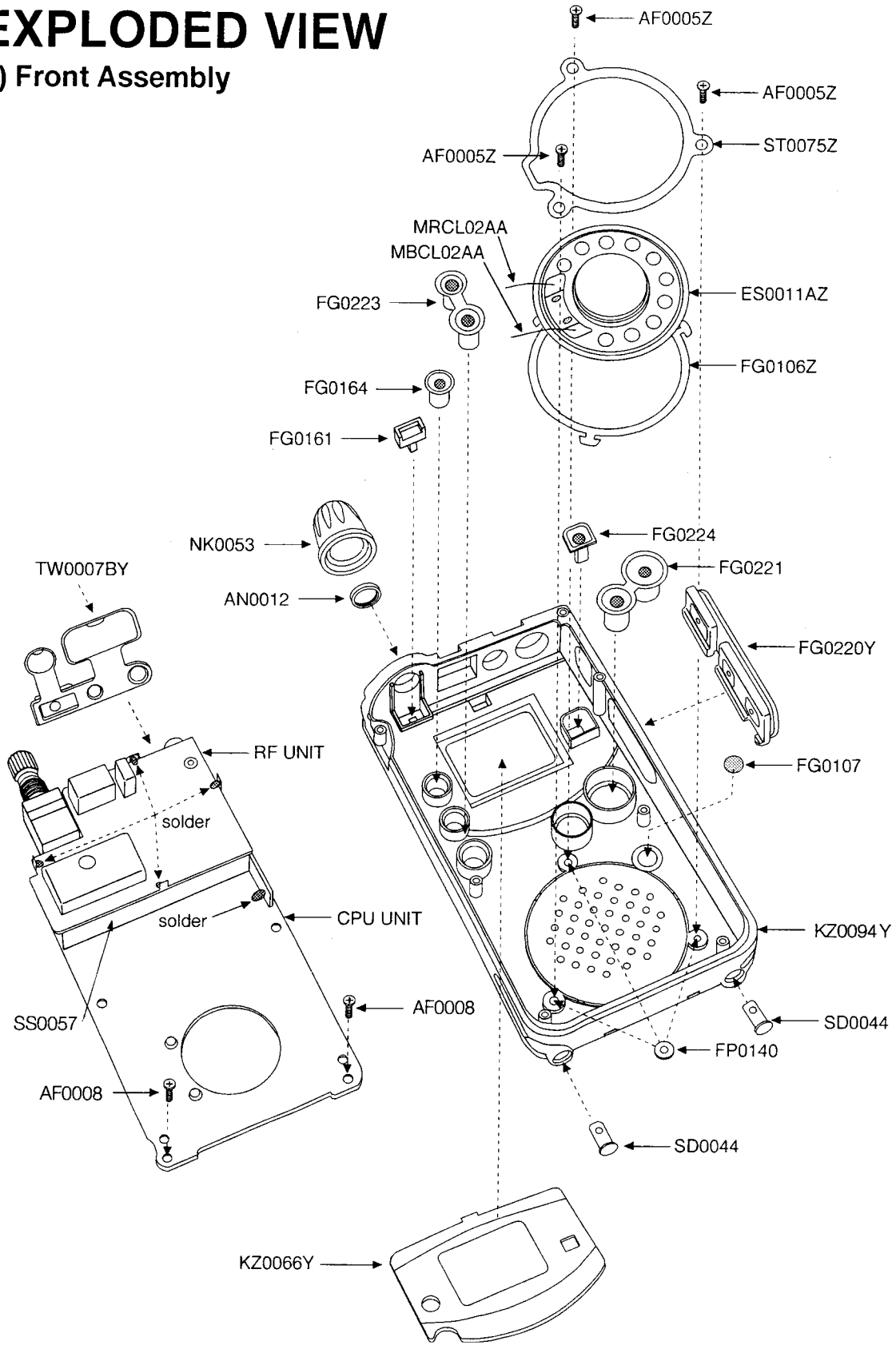


LCD connection table

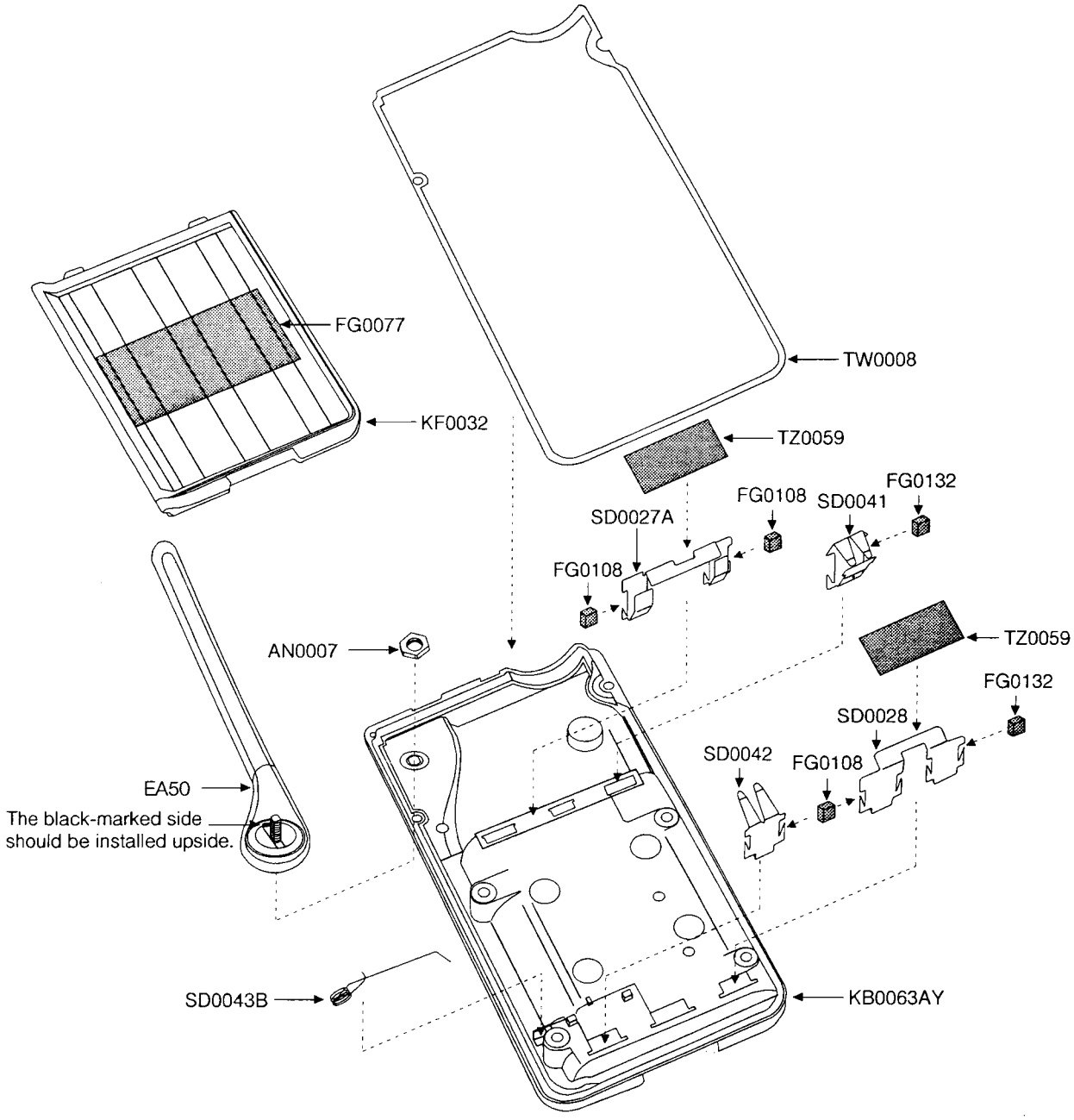
No.	COM1	COM2	COM3	COM4
1	COM1	-	-	-
2	-	COM2	-	-
3	-	-	COM3	-
4	-	-	-	COM4
5	⊟	⊞	T	M
6	2E	2G	2F	1B, C
7	2C	2B	2A	2D
8	APO	M5	LOW	M6
9	3F	3G	3E	BUSY
10	3A	3B	3C	3D
11	4F	4G	4E	M1
12	4A	4B	4C	4D
13	5F	5G	5E	M2
14	5A	5B	5C	5D
15	6F	6G	6E	DP
16	6A	6B	6C	6D
17	7F	7G	7E	M3
18	7A	7B	7C	7D
19	75	50	25	M4

EXPLODED VIEW

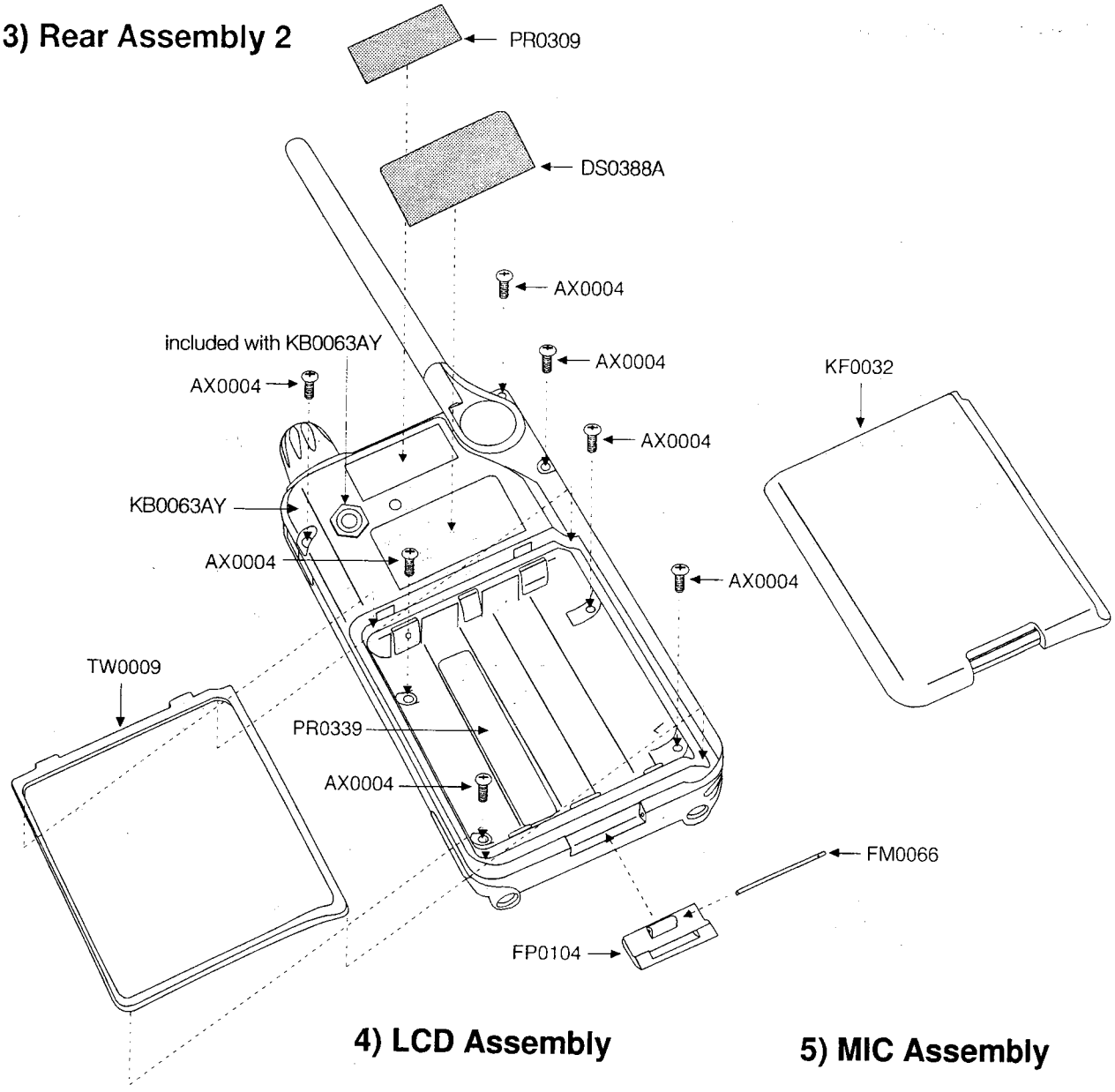
1) Front Assembly



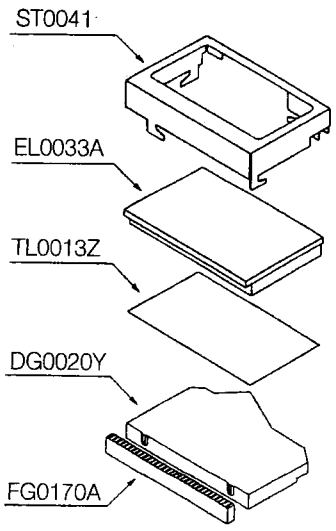
2) Rear Assembly 1



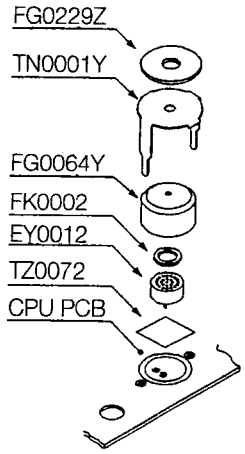
3) Rear Assembly 2



4) LCD Assembly



5) MIC Assembly



PARTS LIST

RF Unit

Ref. No.	Parts No.	Description	Parts Name	Note
RF Unit				
	SS0057		CHASSIS DJP82	
	TZ0049		SILICON DUMPER	
	UP0352	P.C.B.	P.C.B. XH682	
C101	CU3049	Chip C.	C1608JB1E153KT-NS	
C102	CU3035	Chip C.	C1608JB1H102KT-AS	
C103	CU3006	Chip C.	C1608CH1H050CT-AS	
C105	CU3035	Chip C.	C1608JB1H102KT-AS	
C106	CU3035	Chip C.	C1608JB1H102KT-AS	
C107	CU3035	Chip C.	C1608JB1H102KT-AS	
C108	CU3047	Chip C.	C1608JB1H103KT-N	
C110	CU3035	Chip C.	C1608JB1H102KT-AS	
C111	CU3031	Chip C.	C1608JB1H471KT-AS	
C112	CU3011	Chip C.	C1608CH1H100DT-AS	
C113	CU3057	Chip C.	C1608CH1H130JT-A	
C114	CU3002	Chip C.	C1608CH1H010CT-AS	
C115	CU3035	Chip C.	C1608JB1H102KT-AS	
C116	CU3047	Chip C.	C1608JB1H103KT-N	
C117	CU3031	Chip C.	C1608JB1H471KT-AS	
C118	CU3004	Chip C.	C1608CH1H030CT-AS	
C119	CU3064	Chip C.	C1608CH1H1R5CT-AS	
C120	**CU3011**	Chip C.	**C1608CH1H100DT-AS**	
C121	CU3007	Chip C.	C1608CH1H060CT-A	
C122	CU3064	Chip C.	C1608CH1H1R5CT-AS	
C123	CU3002	Chip C.	C1608CH1H010CT-AS	
C123	CU3064	Chip C.	C1608CH1H1R5CT-AS	
C124	CU3064	Chip C.	C1608CH1H1R5CT-AS	
C125	CU3007	Chip C.	C1608CH1H060CT-A	
C126	CU3031	Chip C.	C1608JB1H471KT-AS	
C127	CU8046	Chip C.	C2012JB1C224KT-N/M	
C128	CU3059	Chip C.	C1608JF1E104ZT-N	
C129	**CU3003**	Chip C.	**C1608CH1H020CT-AS**	
C130	**CU3003**	Chip C.	**C1608CH1H020CT-AS**	
C131	CU3004	Chip C.	C1608CH1H030CT-AS	
C132	CU3057	Chip C.	C1608CH1H130JT-A	
C134	CU3009	Chip C.	C1608CH1H080CT-A	
C135	CU3009	Chip C.	C1608CH1H080CT-A	
C136	CU3031	Chip C.	C1608JB1H471KT-AS	
C137	**CU3088**	Chip C.	**C1608CH1H200JT-AS**	
C201	CU3035	Chip C.	C1608JB1H102KT-AS	
C202	CU3047	Chip C.	C1608JB1H103KT-N	
C203	CS0213	Chip Tantalum	TMCMA1A225MTR	
C204	CS0366	Chip Tantalum	TMCMA0G106MTR	
C205	CS0366	Chip Tantalum	TMCMA0G106MTR	
C206	CU3035	Chip C.	C1608JB1H102KT-AS	
C207	CU3035	Chip C.	C1608JB1H102KT-AS	
C208	CU3035	Chip C.	C1608JB1H102KT-AS	
C209	CS0213	Chip Tantalum	TMCMA1A225MTR	
C211	CU3057	Chip C.	C1608CH1H130JT-A	
C212	CU3018	Chip C.	C1608CH1H390JT-AS	
C213	CU8042	Chip C.	C2012JB1C104KT-N/M	
C214	CU3085	Chip C.	C1608CH1H300JT-AS	
C215	CU3023	Chip C.	C1608CH1H101JT-AS	
C216	CU3023	Chip C.	C1608CH1H101JT-AS	
C217	CS0366	Chip Tantalum	TMCMA0G106MTR	
C219	CU3023	Chip C.	C1608CH1H101JT-AS	
C220	CU3023	Chip C.	C1608CH1H101JT-AS	
C221	CU3023	Chip C.	C1608CH1H101JT-AS	
C222	CU3035	Chip C.	C1608JB1H102KT-AS	
C223	CU3023	Chip C.	C1608CH1H101JT-AS	
C225	CU3035	Chip C.	C1608JB1H102KT-AS	
C226	CU3035	Chip C.	C1608JB1H102KT-AS	
C227	CU3031	Chip C.	C1608JB1H471KT-AS	
C228	CU3035	Chip C.	C1608JB1H102KT-AS	
C229	CU3033	Chip C.	C1608JB1H681KT-AS	
C230	CU3035	Chip C.	C1608JB1H102KT-AS	
C231	**CU3010**	Chip C.	C1608CH1H090JT-AS	
C232	CS0367	Chip Tantalum	TMCMA0J106MTR	
C234	CU3035	Chip C.	C1608JB1H102KT-AS	
C235	CU3031	Chip C.	C1608JB1H471KT-AS	
C236	**CU3016**	Chip C.	**C1608CH1H270CT-A**	

RF Unit

Ref. No.	Parts No.	Description	Parts Name	Note
C239	CU3059	Chip C.	C1608JF1E104ZT-N	
C240	CU3027	Chip C.	C1608CH1H221JT-AS	
C241	CU3027	Chip C.	C1608CH1H221JT-AS	
C242	CS0366	Chip Tantalum	TMCMA0G106MTR	
C243	CU3022	Chip C.	C1608CH1H820JT-AS	
C244	CU3033	Chip C.	C1608JB1H681KT-AS	
C245	CU3005	Chip C.	C1608CH1H040CT-AS	
C246	CU3001	Chip C.	C1608CH1H0R5CT-AS	
C247	CU3001	Chip C.	C1608CH1H0R5CT-AS	
C249	CU3035	Chip C.	C1608JB1H102KT-AS	
C250	CU3009	Chip C.	C1608CH1H080CT-A	
C251	CU3035	Chip C.	C1608JB1H102KT-AS	
C252	CU3035	Chip C.	C1608JB1H102KT-AS	
C253	CU3003	Chip C.	C1608CH1H020CT-AS	
C254	CU3003	Chip C.	C1608CH1H020CT-AS	
C255	CS0706	Chip Tantalum	F951A106MS	
C257	CU3031	Chip C.	C1608JB1H471KT-AS	
C258	CU3035	Chip C.	C1608JB1H102KT-AS	
C260	CU3023	Chip C.	C1608CH1H101JT-AS	
CN101	UE0313	Connector	H.FL-R-SMT2(C)(10)	
CN201	UE0215	Connector	AXN320C130P	
D101	XD0272	Diode	1SS356 TW11	
D201	**XD0272**	Diode	1SS356TW11	
D202	XD0272	Diode	1SS356 TW11	
FL101	**XF0012Z**	Filter	21T071A 21.7MHz	
FL102	**XC0008**	Filter	CFWM450G	
IC201	XA0352	IC	M64076GP	
IC202	XA0545	IC	UPC2771T	
IC203	XA0404	IC	TA31136FN(EL)	
L101	QC0446	Chip Coil	MLF1608A2R2K-T	
L102	QC0397	Chip Coil	LQN1A8N8J04	
L103	QC0397	Chip Coil	LQN1A8N8J04	
L104	QC0400	Chip Coil	LQN1A23NJ04	
L105	QC0397	Chip Coil	LQN1A8N8J04	
L106	QC0397	Chip Coil	LQN1A8N8J04	
L107	QC0403	Chip Coil	LQN1A47NJ04	
L108	QC0398	Chip Coil	LQN1A15NJ04	
L201	QC0288	Chip Coil	NL252018T-1R0J	
L202	QC0396	Chip Coil	LQN1AR10J04	
L204	QC0420	Chip Coil	LL1608-F15NK	
L205	QC0400	Chip Coil	LQN1A23NJ04	
L207	QC0397	Chip Coil	LQN1A8N8J04	
L208	QC0398	Chip Coil	LQN1A15NJ04	
L209	QC0446	Chip Coil	MLF1608A2R2K-T	
L210	QC0400	Chip Coil	LQN1A23NJ04	
L211	QC0398	Chip Coil	LQN1A15NJ04	
L212	**QC0559**	Chip Coil	LL1608-FH6N8J	
Q101	XT0137	Transistor	2SC5065-O(TE85L)	
Q102	XT0137	Transistor	2SC5065-O(TE85L)	
Q103	XT0137	Transistor	2SC5065-O(TE85L)	
Q104	XT0137	Transistor	2SC5065-O(TE85L)	
Q201	XT0137	Transistor	2SC5065-O(TE85L)	
Q202	XE0034	FET	MRF9745T1	
Q203	XU0166	Digital TR	UN511H-TX	
R101	RK0107	Chip R.	ERJ6GEY0R00V	
R102	**RK3047**	Chip R.	**MCR03EZHJ562**	
R104	RK3022	Chip R.	MCR03EZHJ470	
R105	RK3026	Chip R.	MCR03EZHJ101	
R106	RK3042	Chip R.	MCR03EZHJ222	
R107	RK3050	Chip R.	MCR03EZHJ103	
R108	RK3026	Chip R.	MCR03EZHJ101	
R109	RK3035	Chip R.	MCR03EZHJ561	
R110	RK3027	Chip R.	MCR03EZHJ121	
R111	RK3060	Chip R.	MCR03EZHJ683	
R112	RK3035	Chip R.	MCR03EZHJ561	
R113	RK3063	Chip R.	MCR03EZHJ124	
R114	RK3026	Chip R.	MCR03EZHJ101	
R115	RK3060	Chip R.	MCR03EZHJ683	
R116	RK3022	Chip R.	MCR03EZHJ470	
R117	RK3034	Chip R.	MCR03EZHJ471	
R118	RK3055	Chip R.	MCR03EZHJ273	
R119	RK3060	Chip R.	MCR03EZHJ683	

RF Unit / VCO Unit

Ref. No.	Parts No.	Description	Parts Name	Note
R120	RK3022	Chip R.	MCR03EZHJ470	
R121	RK3034	Chip R.	MCR03EZHJ471	
R201	RK3030	Chip R.	MCR03EZHJ221	
R202	RK3020	Chip R.	MCR03EZHJ330	
R203	RK3053	Chip R.	MCR03EZHJ183	
R204	RK3040	Chip R.	MCR03EZHJ152	
R205	RK3001	Chip R.	MCR03EZHJ000	
R206	RK3026	Chip R.	MCR03EZHJ101	
R207	RK3034	Chip R.	MCR03EZHJ471	
R208	RK3068	Chip R.	MCR03EZHJ334	
R209	RK3039	Chip R.	MCR03EZHJ122	
R210	RK3038	Chip R.	MCR03EZHJ102	
R211	RK3020	Chip R.	MCR03EZHJ330	
R212	RK3050	Chip R.	MCR03EZHJ103	
R213	RK3051	Chip R.	MCR03EZHJ123	
R214	RK3038	Chip R.	MCR03EZHJ102	
R215	RK3034	Chip R.	MCR03EZHJ471	
R216	RK3024	Chip R.	MCR03EZHJ680	
R217	RK3050	Chip R.	MCR03EZHJ103	
R218	RK3044	Chip R.	MCR03EZHJ332	
R219	RK3064	Chip R.	MCR03EZHJ154	
R220	RK3041	Chip R.	MCR03EZHJ182	
R221	RK3032	Chip R.	MCR03EZHJ331	
R222	RK3001	Chip R.	MCR03EZHJ000	
R223	RK3001	Chip R.	MCR03EZHJ000	
R224	RK3001	Chip R.	MCR03EZHJ000	
RT101	RH0138	Trim. Pot	MVR22HXBRN222	
RT103	RH0146	Trim. Pot	MVR22HXBRN473	
TC101	CT0012	Trim C.	CTZ3S-10A-W1-P	
TC102	CT0012	Trim C.	CTZ3S-10A-W1-P	
TC103	CT0012	Trim C.	CTZ3S-10A-W1-P	
TH101	XS0037	Thermister	NTCCM16083EH101KC	
TP103	UE0213A	Connector	CONTACT PIN DJS41	
X101	XQ0103	Crystal	TOP-B 21.250MHZ	
X102	XK0004	Discriminator	CDBM450C24	

Ref. No.	Parts No.	Description	Parts Name	Note
VCO Unit				
C301	CU3035	Chip C.	C1608JB1H102KT-AS	
C302	CU3006	Chip C.	C1608CH1H050CT-AS	
C303	CU3035	Chip C.	C1608JB1H102KT-AS	
C304	CU3008	Chip C.	C1608CH1H070CT-A	
C305	CU3059	Chip C.	C1608JF1E104ZT-N	
C306	CU3035	Chip C.	C1608JB1H102KT-AS	
C307	CU3010	Chip C.	C1608CH1H090CT-A	
C308	CU3035	Chip C.	C1608JB1H102KT-AS	
C309	CU3035	Chip C.	C1608JB1H102KT-AS	
C310	CU3018	Chip C.	C1608CH1H390JT-AS	
C311	CU3099	Chip C.	C1608CH1H2R5CT-A	
C312	CS0063	Chip Tantalum	TMCSA1V104MTR	
C401	CU3006	Chip C.	C1608CH1H050CT-AS	
C402	CU3004	Chip C.	C1608CH1H030CT-AS	
C403	CU3035	Chip C.	C1608JB1H102KT-AS	
C404	CS0366	Chip Tantalum	TMCMA0G106MTR	
C405	CU3001	Chip C.	C1608CH1H0R5CT-AS	
CN401	UE0216	Connector	9230B-1-06Z054T	
D301	XD0272	Diode	1SS356 TW11	
D401	XD0236	Diode	1SV239 TPH3	
D402	XD0293	Diode	1SV257(TPH3)	
D403	XD0293	Diode	1SV257(TPH3)	
L301	QC0422	Chip Coil	LL1608-F22NK	
L302	QKA25A	Coil	MR1.5 2.5T 0.4	
L401	QC0568	Chip Coil	LL1608-F39NK	
Q301	XT0137	Transistor	2SC5065-O(TE85L)	
Q302	XU0052	Digital TR	UN5214 TX	
Q401	XT0137	Transistor	2SC5065-O(TE85L)	
R301	RK3059	Chip R.	MCR03EZHJ563	
R302	RK3022	Chip R.	MCR03EZHJ470	
R303	RK3050	Chip R.	MCR03EZHJ103	
R304	RK3038	Chip R.	MCR03EZHJ102	
R305	RK3042	Chip R.	MCR03EZHJ222	
R401	RK3034	Chip R.	MCR03EZHJ471	
R402	RK3022	Chip R.	MCR03EZHJ470	
R403	RK3038	Chip R.	MCR03EZHJ102	
R404	RK3062	Chip R.	MCR03EZHJ104	
R405	RK3050	Chip R.	MCR03EZHJ103	
R406	RK3042	Chip R.	MCR03EZHJ222	
R407	RK3062	Chip R.	MCR03EZHJ104	
R408	RK3047	Chip R.	MCR03EZHJ562	
R409	RK3001	Chip R.	MCR03EZHJ000	
	TS0117		VCO CASE	
	TS0148		VCO SHIELD	

Ref. No.	Parts No.	Description	Parts Name	Note
		CPU Unit		
	FG0064Y		FG0064Y	
	FG0170A		RUBBER CONNECT DJP82	
	FG0229Z		MIC HOLDER	
	FK0002		MIC SPACER DJP82	
	ST0041		LCD HOLDER DJP82	
	TL0013Z		REFLECT SHEET DJP82	
	TN0001Y		MIC SHIELD DJP71	
	TZ0072		INSULATOR	
C501	CU3049	Chip C.	C1608JB1E153KT-NS	
C502	CU3041	Chip C.	C1608JB1H332KT-NS	
C503	CU3047	Chip C.	C1608JB1H103KT-N	
C504	CU3050	Chip C.	C1608JB1H183KT-A	
C505	CU8042	Chip C.	C2012JB1C104KT-N/M	
C506	CU3037	Chip C.	C1608JB1H152KT-AS	
C507	CS0049	Chip Tantalum	TMCSA1C105MTR	
C508	CU3043	Chip C.	C1608JB1H472KT-NS	
C509	CU3059	Chip C.	C1608JF1E104ZT-N	
C511	CU3047	Chip C.	C1608JB1H103KT-N	
C512	CS0367	Chip Tantalum	TMCMA0J106MTR	
C513	CU3059	Chip C.	C1608JF1E104ZT-N	
C514	CU3035	Chip C.	C1608JB1H102KT-AS	
C515	CS0367	Chip Tantalum	TMCMA0J106MTR	
C516	CS0367	Chip Tantalum	TMCMA0J106MTR	
C518	CU3059	Chip C.	C1608JF1E104ZT-N	
C519	CU3059	Chip C.	C1608JF1E104ZT-N	
C520	CU3022	Chip C.	C1608CH1H820JT-AS	
C521	CS0049	Chip Tantalum	TMCSA1C105MTR	
C522	CU3051	Chip C.	C1608JB1E223KT-NS	
C524	CU3042	Chip C.	C1608JB1H392KT-NS	
C525	CU3033	Chip C.	C1608JB1H681KT-AS	
C526	CU3037	Chip C.	C1608JB1H152KT-AS	
C527	CU3028	Chip C.	C1608CH1H271JT-AS	
C528	CU3025	Chip C.	C1608CH1H151JT-AS	
C529	CU3034	Chip C.	C1608JB1H821KT-AS	
C530	CU3029	Chip C.	C1608JB1H331KT-AS	
C531	CU3035	Chip C.	C1608JB1H102KT-AS	
C532	CS0367	Chip Tantalum	TMCMA0J106MTR	
C533	CU3059	Chip C.	C1608JF1E104ZT-N	
C534	CU3059	Chip C.	C1608JF1E104ZT-N	
C535	CU3038	Chip C.	C1608JB1H182KT-AS	
C536	CU3041	Chip C.	C1608JB1H332KT-NS	
C537	CU3051	Chip C.	C1608JB1E223KT-NS	
C538	CU3049	Chip C.	C1608JB1E153KT-NS	
C539	CS0049	Chip Tantalum	TMCSA1C105MTR	
C541	CU3044	Chip C.	C1608JB1H562KT-NS	
C542	CU3044	Chip C.	C1608JB1H562KT-NS	
C543	CU3040	Chip C.	C1608JB1H272KT-NS	
C544	CU3041	Chip C.	C1608JB1H332KT-NS	
C545	CU3047	Chip C.	C1608JB1H103KT-N	
C546	CS0367	Chip Tantalum	TMCMA0J106MTR	
C547	CU3047	Chip C.	C1608JB1H103KT-N	
C548	CU3051	Chip C.	C1608JB1E223KT-NS	
C549	CS0376	Chip Tantalum	TMCMA0D226MTR	
C550	CU3059	Chip C.	C1608JF1E104ZT-N	
C551	CS0368	Chip Tantalum	TMCMC0J476MTR	
C552	CU3034	Chip C.	C1608JB1H821KT-AS	
C553	CU3059	Chip C.	C1608JF1E104ZT-N	
C554	CU3059	Chip C.	C1608JF1E104ZT-N	
C555	CU3059	Chip C.	C1608JF1E104ZT-N	
C556	CS0367	Chip Tantalum	TMCMA0J106MTR	
C557	CS0379	Chip Tantalum	TMCMC1A476MTR	
C558	CU3047	Chip C.	C1608JB1H103KT-N	
C559	CU3035	Chip C.	C1608JB1H102KT-AS	
C560	CU3035	Chip C.	C1608JB1H102KT-AS	
C561	CU3051	Chip C.	C1608JB1E223KT-NS	
C562	CU3051	Chip C.	C1608JB1E223KT-NS	
C563	CU3051	Chip C.	C1608JB1E223KT-NS	
C564	CU3051	Chip C.	C1608JB1E223KT-NS	
C565	CS0367	Chip Tantalum	TMCMA0J106MTR	
C566	CU3047	Chip C.	C1608JB1H103KT-N	
C601	CU3035	Chip C.	C1608JB1H102KT-AS	
C602	CU3035	Chip C.	C1608JB1H102KT-AS	

Ref. No.	Parts No.	Description	Parts Name	Note
C603	CU3059	Chip C.	C1608JE1E104ZT-N	
C604	CS0612	Chip Tantalum	F950G227MG	
C606	CU3059	Chip C.	C1608JF1E104ZT-N	
C607	CU3017	Chip C.	C1608CH1H330JT-AS	
C608	CU3017	Chip C.	C1608CH1H330JT-AS	
C609	CS0207	Chip Tantalum	TMCMA0J335MTR	
C610	CS0063	Chip Tantalum	TMCSA1V104MTR	
C611	CU3035	Chip C.	C1608JB1H102KT-AS	
C612	CS0368	Chip Tantalum	TMCMC0J476MTR	
C613	CS0368	Chip Tantalum	TMCMC0J476MTR	
C614	CS0368	Chip Tantalum	TMCMC0J476MTR	
CN601	UE0214	Connector	AXN420C530P	
D501	XD0225	Diode	U1GWJ44 TE12R	
D502	XD0225	Diode	U1GWJ44 TE12R	
D503	XL0037	LED	SML-110MTT86	
D504	XD0225	Diode	U1GWJ44 TE12R	
D505	XL0035	LED	SML-310UTT86	
D601	XD0291	Diode	MA729-TX	
EL501	EL0033A	LCD	T464005C	
IC601	XA0646	IC	M38223M4-448HP	
IC501	XA0573	IC	NJM2904V	
IC502	XA0210	IC	NJM2070M T1	
IC503	XA0596	IC	NJM2902V	
IC504	XA0596	IC	NJM2902V	
IC505	XA0365	IC	AT24C04N-10SI-2.7	
IC506	XA0595	IC	TK11233BM	
IC602	XA0593	IC	RN5VL27CA(T1)	
IC603	XA0592	IC	RN5VL25AA(T1)	
JK601	UJ0016	Jack	HSJ1493-01-050	
JK602	UJ0022	Jack	HSJ1102-01-540	
JK603	UJ0026	Jack	HEC3600-010010	
MIC501	EY0012	Microphone	EM-123T	
Q501	XU0052	Digital TR	UN5214 TX	
Q502	XU0166	Digital TR	UN511H-TX	
Q503	XT0095	Transistor	2SC4081 T106R	
Q504	XU0160	Digital TR	DTC363EKT146	
Q505	XT0094	Transistor	2SA1576A T106R	
Q506	XU0052	Digital TR	UN5214 TX	
Q507	XU0152	Digital TR	UMC5NTR	
Q510	XT0166	Transistor	2SA1182Y TE85L	
Q511	XU0052	Digital TR	UN5214 TX	
Q601	XU0169	Digital TR	DTB133HK T146	
Q602	XU0046	Digital TR	XN111M TX	
R501	RK3063	Chip R.	MCR03EZHJ124	
R502	RK3064	Chip R.	MCR03EZHJ154	
R503	RK3063	Chip R.	MCR03EZHJ124	
R504	RK3054	Chip R.	MCR03EZHJ223	
R505	RK3062	Chip R.	MCR03EZHJ104	
R506	RK3060	Chip R.	MCR03EZHJ683	
R507	RK3048	Chip R.	MCR03EZHJ682	
R508	RK3074	Chip R.	MCR03EZHJ105	
R509	RK3006	Chip R.	MCR03EZHJ2R2	
R510	RK3050	Chip R.	MCR03EZHJ103	
R511	RK3030	Chip R.	MCR03EZHJ221	
R512	RK3074	Chip R.	MCR03EZHJ105	
R513	RK3050	Chip R.	MCR03EZHJ103	
R514	RK3054	Chip R.	MCR03EZHJ223	
R515	RK3052	Chip R.	MCR03EZHJ153	
R516	RK3046	Chip R.	MCR03EZHJ472	
R517	RK3074	Chip R.	MCR03EZHJ105	
R518	RK3050	Chip R.	MCR03EZHJ103	
R519	RK3074	Chip R.	MCR03EZHJ105	
R520	RK3046	Chip R.	MCR03EZHJ472	
R521	RK3060	Chip R.	MCR03EZHJ683	
R522	RK3042	Chip R.	MCR03EZHJ222	
R523	RK3062	Chip R.	MCR03EZHJ104	
R524	RK3062	Chip R.	MCR03EZHJ104	
R525	RK3062	Chip R.	MCR03EZHJ104	
R526	RK3074	Chip R.	MCR03EZHJ105	
R527	RK3042	Chip R.	MCR03EZHJ222	
R528	RK3062	Chip R.	MCR03EZHJ104	
R529	RK3050	Chip R.	MCR03EZHJ103	
R530	RK3042	Chip R.	MCR03EZHJ222	

CPU Unit / SW Unit / Mechanical Parts / Packing

Ref. No.	Parts No.	Description	Parts Name	Note
R531	RK3063	Chip R.	MCR03EZHJ124	
R532	RK3047	Chip R.	MCR03EZHJ562	
R533	RK3054	Chip R.	MCR03EZHJ223	
R534	RK3058	Chip R.	MCR03EZHJ473	
R535	RK3062	Chip R.	MCR03EZHJ104	
R536	RK3053	Chip R.	MCR03EZHJ183	
R537	RK3056	Chip R.	MCR03EZHJ333	
R538	RK3070	Chip R.	MCR03EZHJ474	
R539	RK3058	Chip R.	MCR03EZHJ473	
R540	RK3066	Chip R.	MCR03EZHJ224	
R541	RK3074	Chip R.	MCR03EZHJ105	
R542	RK3054	Chip R.	MCR03EZHJ223	
R543	RK3038	Chip R.	MCR03EZHJ102	
R544	RK3040	Chip R.	MCR03EZHJ152	
R545	RK3057	Chip R.	MCR03EZHJ393	
R546	RK3074	Chip R.	MCR03EZHJ105	
R547	RK3038	Chip R.	MCR03EZHJ102	
R548	RK3046	Chip R.	MCR03EZHJ472	
R549	RK3050	Chip R.	MCR03EZHJ103	
R550	RK3052	Chip R.	MCR03EZHJ153	
R551	RK3074	Chip R.	MCR03EZHJ105	
R552	RK3042	Chip R.	MCR03EZHJ222	
R553	RK3064	Chip R.	MCR03EZHJ154	
R554	RK3072	Chip R.	MCR03EZHJ684	
R555	RK3061	Chip R.	MCR03EZHJ823	
R556	RK3045	Chip R.	MCR03EZHJ392	
R557	RK3059	Chip R.	MCR03EZHJ563	
R558	RK3059	Chip R.	MCR03EZHJ563	
R559	RK3063	Chip R.	MCR03EZHJ124	
R560	RK3067	Chip R.	MCR03EZHJ274	
R561	RK3062	Chip R.	MCR03EZHJ104	
R562	RK3001	Chip R.	MCR03EZHJ000	
R563	RK3054	Chip R.	MCR03EZHJ223	
R564	RK3058	Chip R.	MCR03EZHJ473	
R565	RK3058	Chip R.	MCR03EZHJ473	
R566	RK3058	Chip R.	MCR03EZHJ473	
R567	RK3062	Chip R.	MCR03EZHJ104	
R568	RK3050	Chip R.	MCR03EZHJ103	
R569	RK3062	Chip R.	MCR03EZHJ104	
R570	RK3050	Chip R.	MCR03EZHJ103	
R571	RK3062	Chip R.	MCR03EZHJ104	
R572	RK3038	Chip R.	MCR03EZHJ102	
R573	RK3030	Chip R.	MCR03EZHJ221	
R574	RK4051	Chip R.	ERJ14YJ101U	
R575	RK3031	Chip R.	MCR03EZHJ271	
R576	RK3058	Chip R.	MCR03EZHJ473	
R577	RK3053	Chip R.	MCR03EZHJ183	
R579	RK4059	Chip R.	ERJ14YJ220U	
R580	RK3062	Chip R.	MCR03EZHJ104	
R581	RK3038	Chip R.	MCR03EZHJ102	
R582	RK3045	Chip R.	MCR03EZHJ392	
R583	RK3050	Chip R.	MCR03EZHJ103	
R584	RK3046	Chip R.	MCR03EZHJ472	
R586	RK3068	Chip R.	MCR03EZHJ334	
R601	RK3046	Chip R.	MCR03EZHJ472	
R602	RK3070	Chip R.	MCR03EZHJ474	
R603	RK3070	Chip R.	MCR03EZHJ474	
R605	RK3062	Chip R.	MCR03EZHJ104	
R606	RK3058	Chip R.	MCR03EZHJ473	
R608	RK3062	Chip R.	MCR03EZHJ104	
R609	RK3042	Chip R.	MCR03EZHJ222	
R610	RK3058	Chip R.	MCR03EZHJ473	
R611	RK3058	Chip R.	MCR03EZHJ473	
R612	RK3062	Chip R.	MCR03EZHJ104	
R613	RK3058	Chip R.	MCR03EZHJ473	
R616	RK3001	Chip R.	MCR03EZHJ000	
R618	RK3022	Chip R.	MCR03EZHJ470	
R619	RK3026	Chip R.	MCR03EZHJ101	
R620	RK3062	Chip R.	MCR03EZHJ104	
R621	RK3062	Chip R.	MCR03EZHJ104	
R622	RK3050	Chip R.	MCR03EZHJ103	
RA601	RA0011	Chip R.	EXBV8V103JV	
RA602	RA0010	Chip R.	EXBV8V472JV	

Ref. No.	Parts No.	Description	Parts Name	Note
RT501	RH0142	Trim. Pot	MVR22HXBRN103	
RT502	RH0142	Trim. Pot	MVR22HXBRN103	
RT503	RH0154	Trim. Pot	MVR22HXBRN105	
VR601	RV0025	Variable R.	TP96N00N	
X601	XQ0077	Crystal	38C 3.686400MHZ	
	AF0005Z	Screw	02+3.5 Fe Ni1	
	DG0020Y		LCD REFLECTOR	
SW Unit				
SW701	UU0018	Switch	SOP-112HST	
SW702	UU0018	Switch	SOP-112HST	
SW703	UU0018	Switch	SOP-112HST	
Mechanical Parts				
	AF0005Z	Screw	1P 2X3.5 NIC AF0005Z	2 pcs.
	AF0005Z	Screw	1P 2X3.5 NIC AF0005Z	3 pcs.
	AN0007Z	Nut	SS NUT M4-(3) NIC	
	AN0012	Nut	RND N7X0.75 BR/B.ZN	
	AX0004Z		PT 3P 2X8 BBC AX0004	7 pcs.
	EA50	Antenna	EA0050A	
	ES0011AZ	Speaker	036M9014	
	FG0077Z		FG0077Z BATT. CUSHION	
	FG0106Z		FG0106Z SP. CUSHION	
	FG0107		MIC W/PROOF DJP7	
	FG0108Z		FG0108Z BATT. CUSHION	4 pcs.
	FG0132Z		FG0132Z BATTERY C.L	2 pcs.
	FG0161		ON-AIR RUBBER DJP82	
	FG0164		SCAN KEY RUBBER P82	
	FG0220Y		PTT RUBBER DJS41	
	FG0221		U/D KEY DJS41	
	FG0223		LAMP KEY S41	
	FG0224		V/M KEY DJS41	
	FM0066		HINGE PIN	
	FP0104Y		LOCK LEVER DJS41	
	FP0140		Insulator washer DJS41	3 pcs.
	KF0032Y		BATT.TAP DJS41	
	KZ0066Y		LCD PANEL S41W	
	MBCL02AA	Wire	#30B02-20-02	
	MRCL02AA	Wire	#30R02-20-02	
	NK0053Y		VOL KNOB DJS41	
	PR0339		CAUTION LABEL DJS46	
	SD0027A		BATT TERMINAL B DJP7	
	SD0028		BATT SPRING C DJP7	
	SD0041		PLUS SPRING DJP82	
	SD0042		MINUS SPRING DJP82	
	SD0043B		CHARGE SPRING DJP91	
	SD0044		Charge terminal DJP82	2 pcs.
	ST0075Z		SP FIX. DJP7	
	TW0007B		JACK RUBBER DJP82	
	TW0008Z		TW0008Z TAP	
	TW0009Y		BATT/W.PROOF DJP82	
	TZ0059		INS.DJP82	2 pcs.
	KZ0094Y		FRONT PANEL	
	KB0063AY		REAR CASE S41	
Packing				
	BB0009Y		HAND STRAP DJS41	
	EBC16		BELT CLIP DJS41	
	EBP25N		EBP25N	ES
	EDC79		AC ADAPTER	ES
	DS0388A		SHEET(NEW)	
	HB0008A		PLAST.PACKAGE DJP82	SR1/UK
	HK0421		ITEM CARTON	ES
	HK0463		ITEM CARTON	SR1/UK
	HK0472		ITEM CARTON	ES
	HP0006		PROTECTION BAG 5*90*170	
	HU0113		INNER	ES
	PR0309		CE-MARKLABEL DJG5E	
	PS0309A		INSTRUCTION MANUAL	
	PT0004A		LOT.NO.SEAL	

ADJUSTMENT

1) Required Test Equipment

1. Digital Multimeter

2. Regulated Power Supply

Supply voltage: 5.5VDC
Current: 0.1A or more

3. Oscilloscope

Measurable frequency: Audio Frequency

4. Spectrum Analyzer

Measuring range: Up to 2GHz or more

5. Power Meter

Measurable frequency: Up to 500MHz
Impedance: 50Ω
Power: 1W or more

6. Speaker

Impedance: 8Ω

7. SSG

Output frequency: Up to 1GHz
Output level: -20dB/0.1μV to120dB/1V
Modulation: FM

8. Transceiver Tester

Up to 500MHz

a. Frequency Counter

b. Power Meter
Impedance: 50Ω
Measuring range: 1W or more

c. Audio Voltmeter
Measurable frequency: 50Hz ~ 10kHz
Sensitivity: 1mV ~ 10V

d. Distortion Meter
Measurable frequency: 1kHz
Input level: Up to 40dB
Distortion level: 1% ~ 100%

e. Audio Generator
Output frequency: 1kHz ~ 10kHz
Output impedance: 600Ω

f. Linear Detector

Note:

1. 5.5V of power voltage is supplied from DC jack.
2. The transmitter system should be adjusted or inspected at high power.

2) Adjustment

SSG out put(EMF)

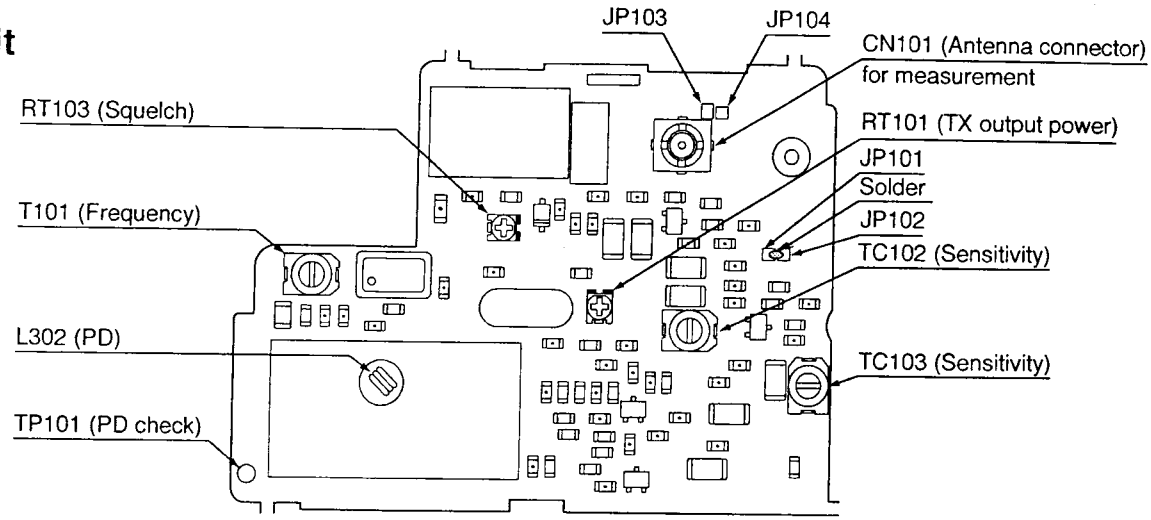
Item	Condition	Measurement			Adjustment			Specifications
		Equipment	Unit	Terminal	Unit	Parts	Method	
PLL VCO	f=446.09375RX	Digital Multimeter	RF	PD	VCO	-	See *1.	0.55~0.75V
	f=446.09375TX					-	Check	1.1V or below
Reference Frequency	f=446.04375TX	Freq. Counter			RF	TC101	f=446.04375	±100Hz
TX Power Hi	f=446.04375TX DC=5.5V	Power Meter	RF	ANT	RF	RT101	400mW or more	400mW or more
TX Power Low	See *2.				-	-	Check	200mW or below
Deviation	f=446.04375TX AG:1kHz 50mV (-24dBm)	Linear Det. Oscilloscope Power Meter AG	RF	ANT	CPU	RT501	2.4±0.1kHz	2.4±0.1kHz
Tone	f=446.04375TX				CPU	RT502	0.4±0.05kHz	0.35~0.45kHz
Sensitivity	f=446.04375RX	SSG Distortion Meter Oscilloscope Level Meter	RF	ANT	RF	TC102 TC103	12dBμ SINAD max.	-7dBμ (EMF) or below
Squelch	f=446.04375RX Output: -14dBμ Mod: ON				RF	RT103	SQ Open	-15dBμ>Close -9dBμ <Open
S meter	f=446.04375RX Out put: +12dBμ Mod: ON				CPU	RT503	All digits are lit up.	

*1:Extend the coil L102 so that the P.D. voltage becomes 0.65 ±0.1V

*2:Switching to Low power
Press SCAN key while transmitting.

3) Adjustment Points

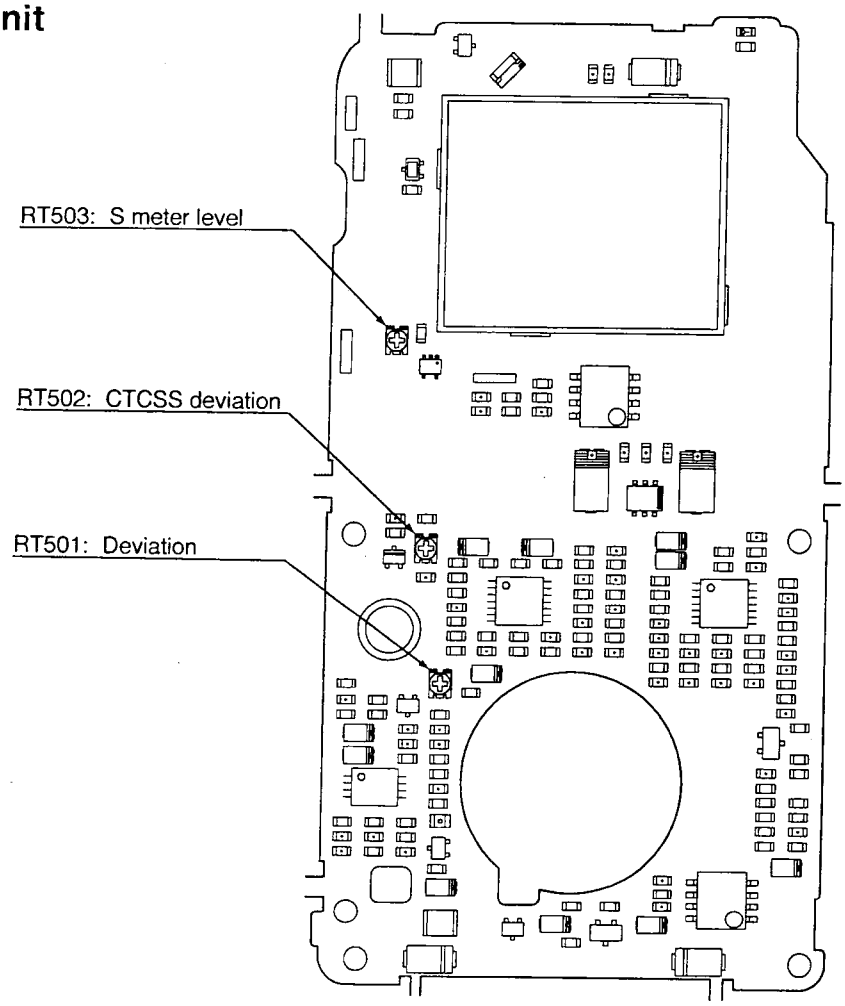
RF Unit



Notes:

- JP101 should be connected with JP102 by soldering before adjusting.
- JP103 should be connected with JP104 by soldering before adjusting.
- Turn the power ON while pressing FUNC and V/W key to reset the unit before starting the adjustment. (The reset is required when the unit is produced or when there is no EEPROM data on replacing EEPROM, etc.)

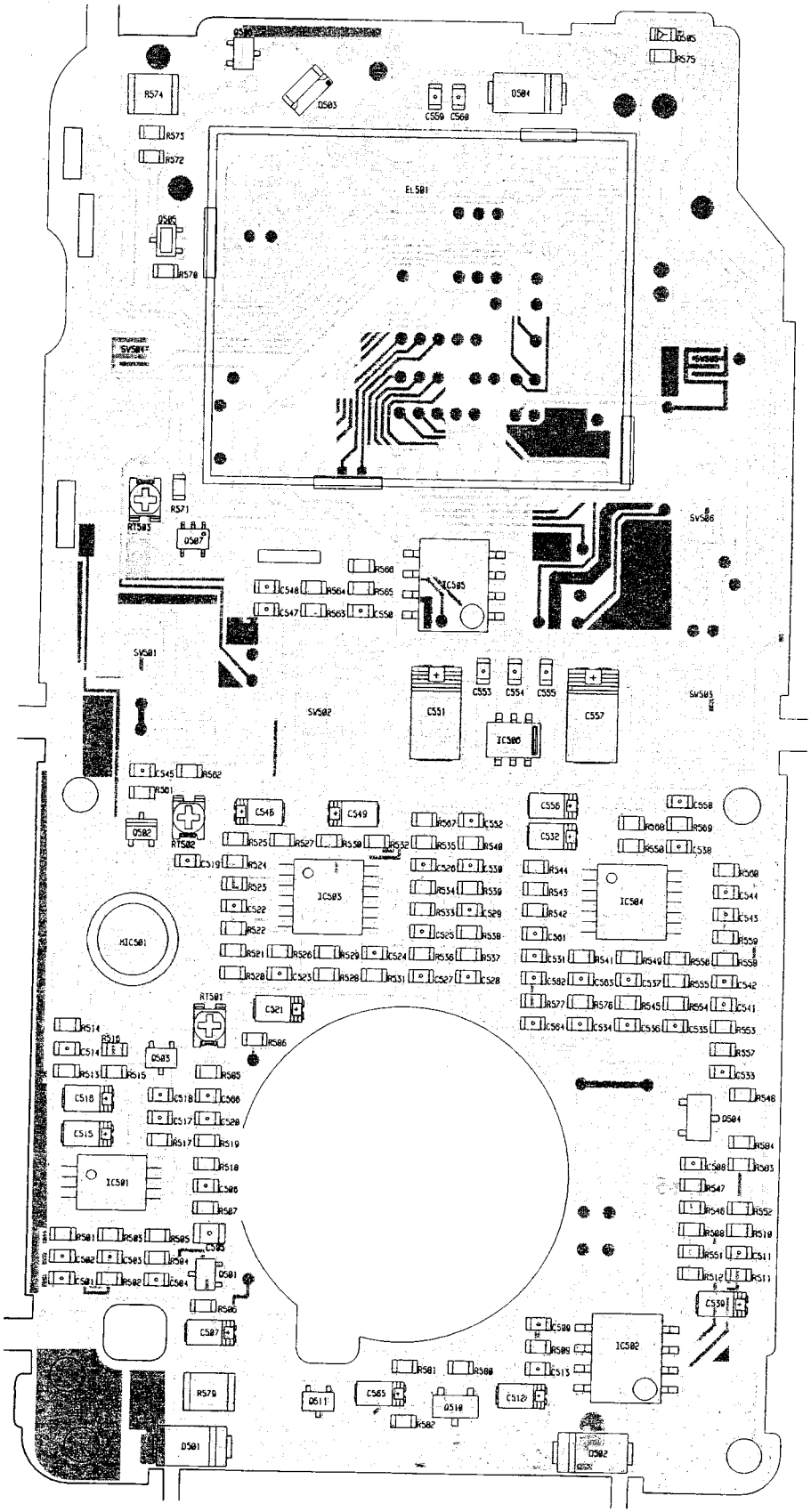
CPU Unit



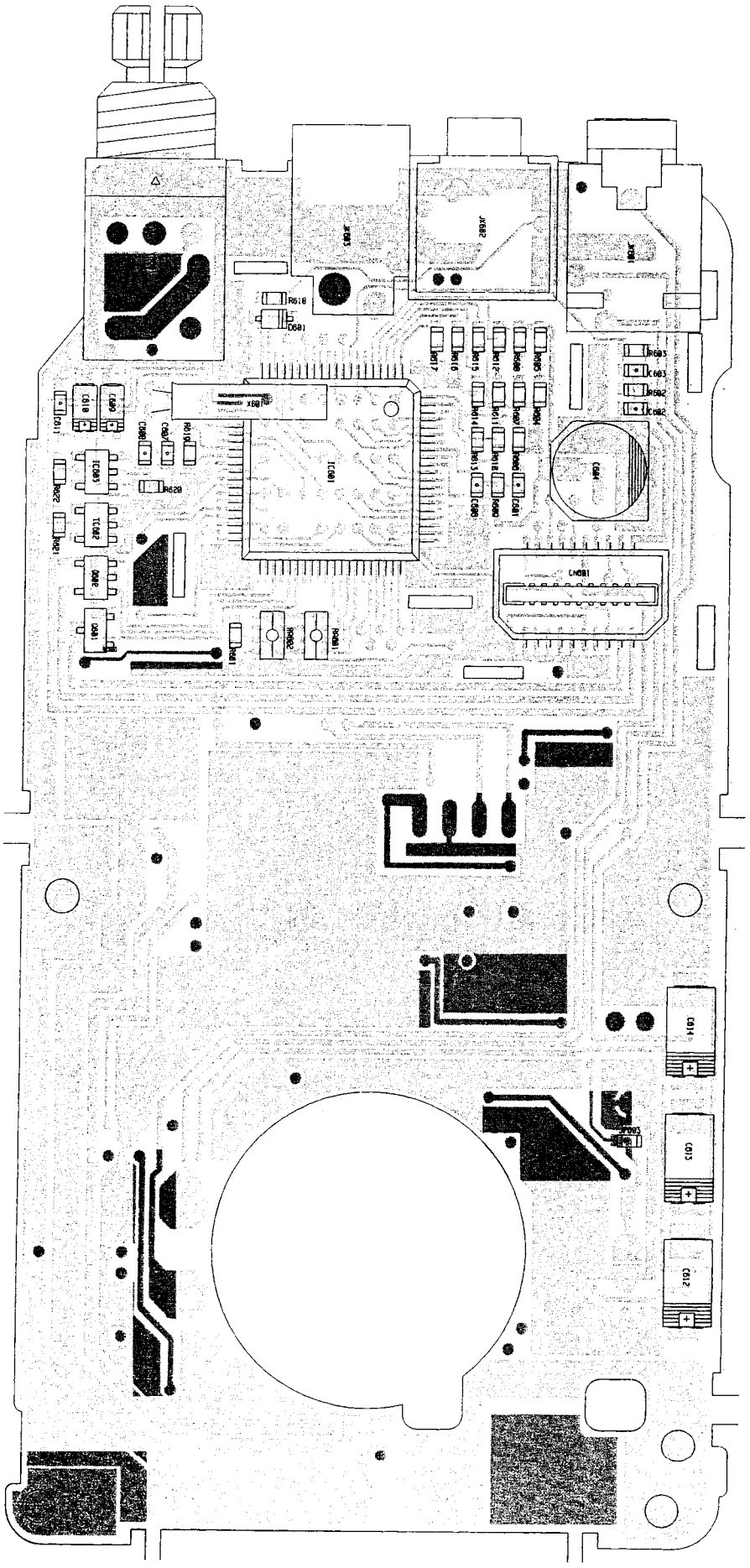
PC BOARD VIEW

1) RF Unit

Side A

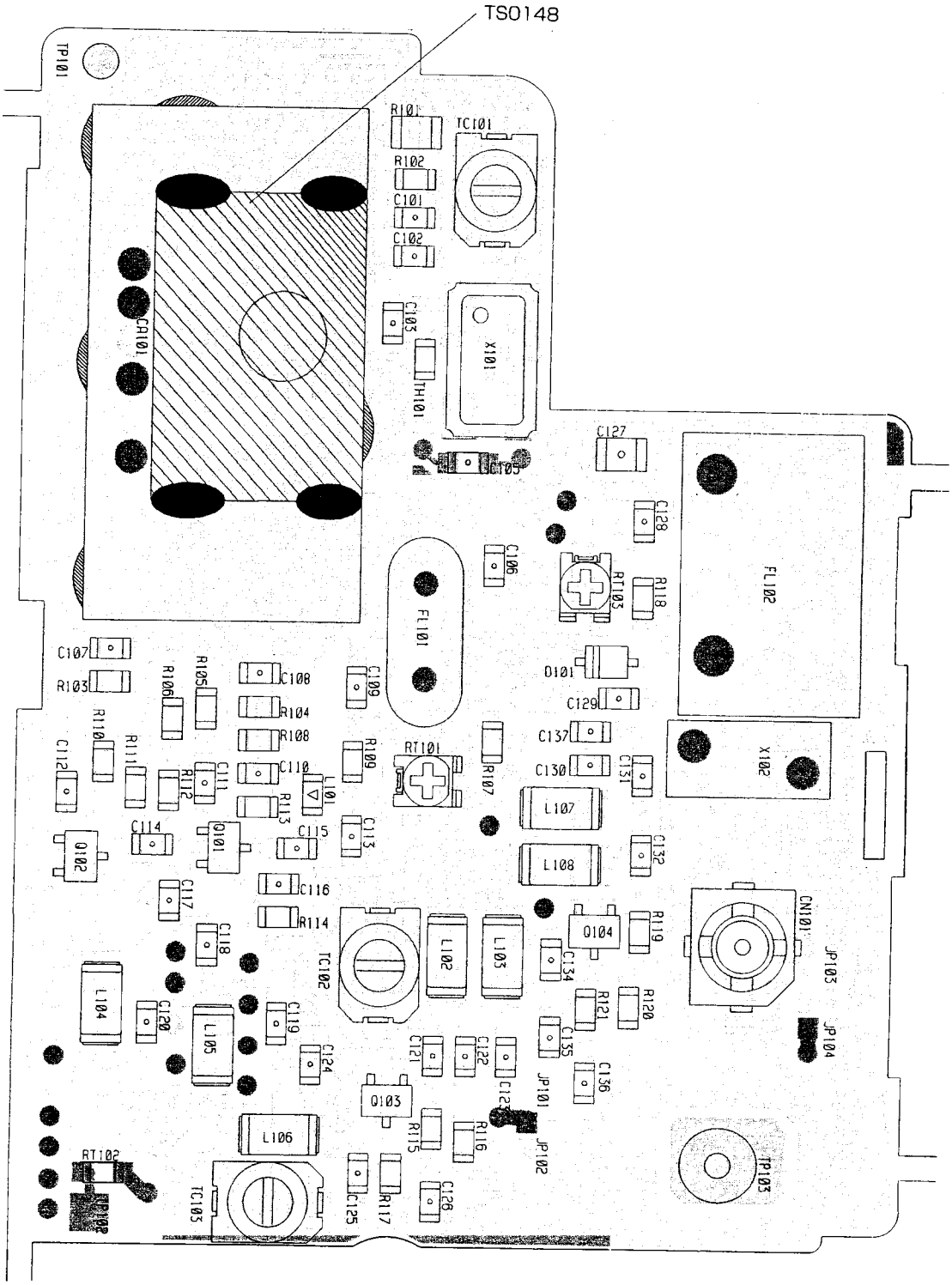


Side B

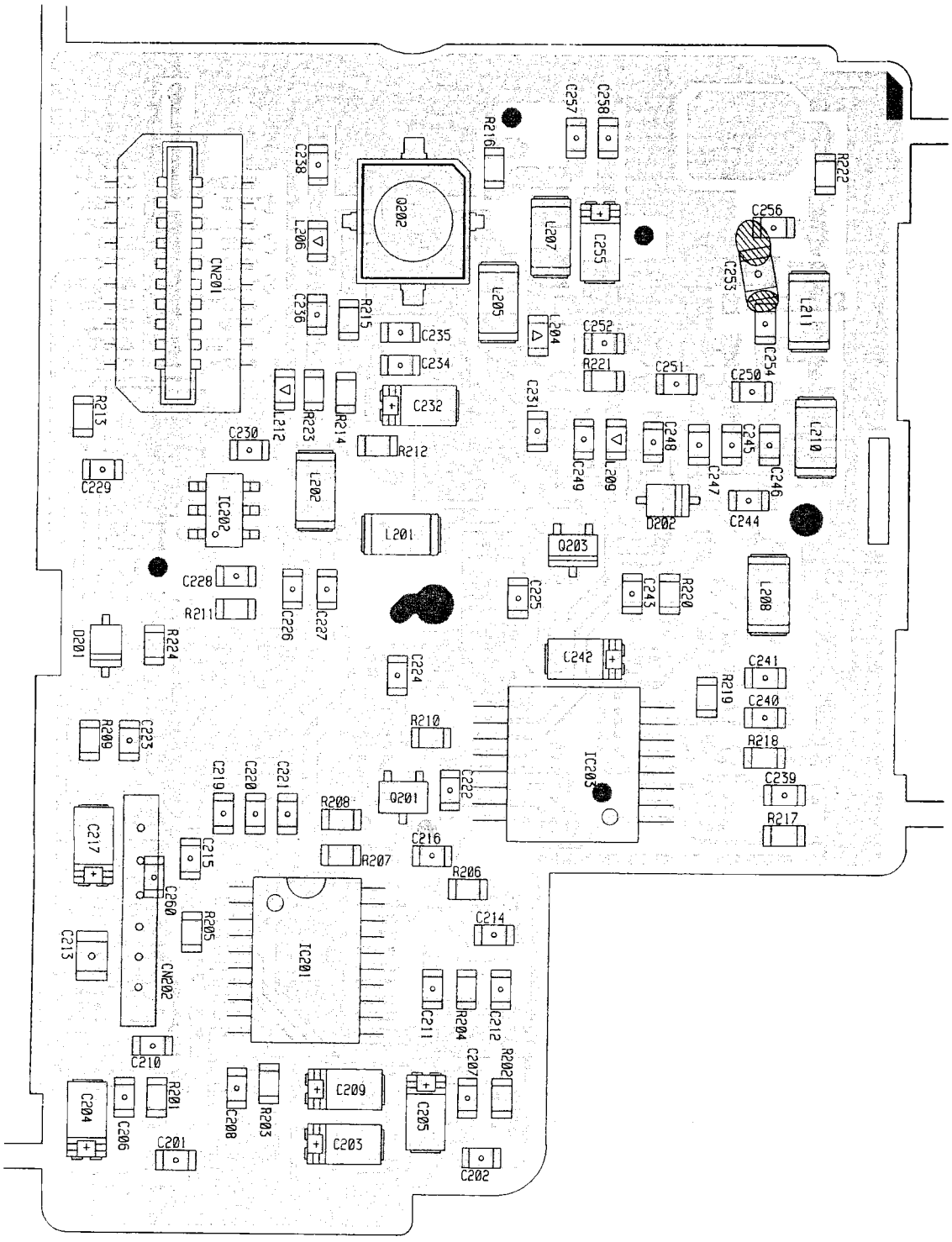


2) CPU Unit

Side A

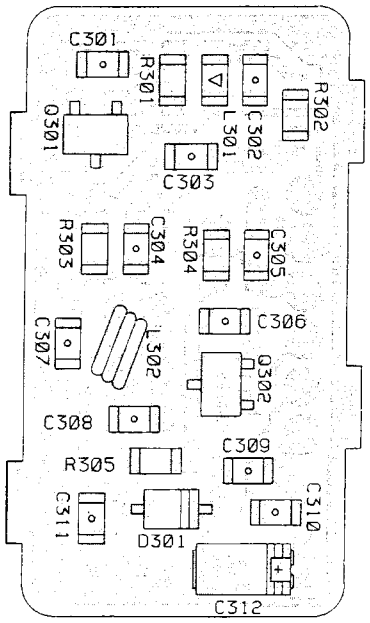


Side B

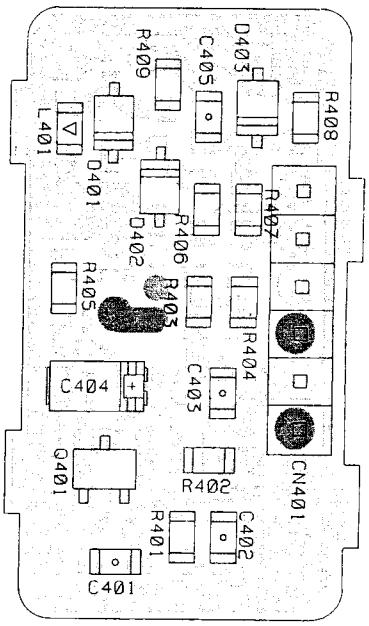

CN201
Q202
L206
L207
C255
C257
C258
R216
C238
C256
C253
L211
C254
L205
L204
C252
R221
C251
C250
C235
C234
C232
C231
C236
R215
R213
L212
R223
R214
R212
C230
C229
IC202
L202
L201
C249
L209
C248
C247
C245
C246
L210
D202
C244
Q203
C228
R211
C226
C227
C225
C243
R220
L208
D201
R224
C224
C242
C241
R219
C240
R210
R209
C223
IC203
R218
C239
C219
C220
C221
R208
Q201
C222
R217
C217
C215
C216
R207
R206
C260
R205
C214
C213
IC201
C211
R204
C212
R202
CN202
C210
C209
C207
C205
R201
C204
C206
C208
R203
C203
C201
C202

3) VCO Unit

Side A

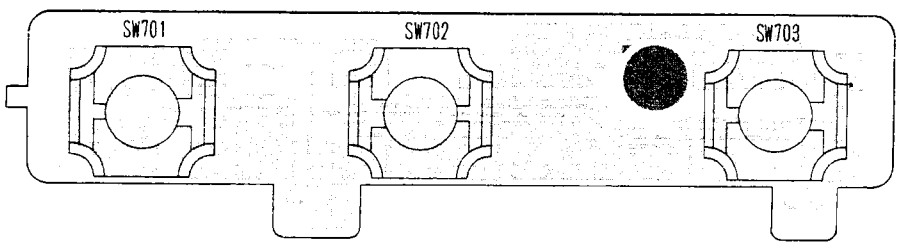


Side B



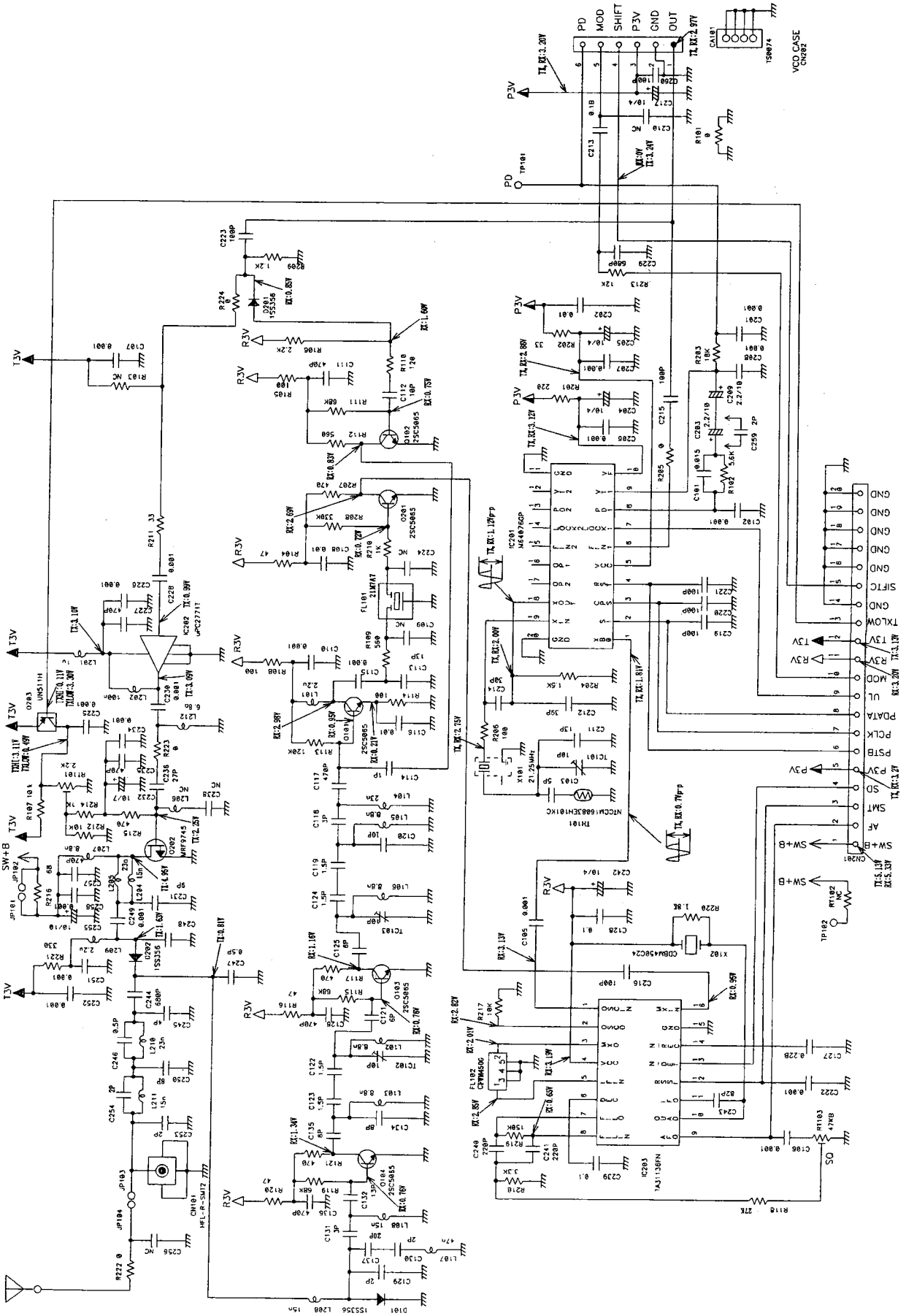
4) SW Unit

Side A

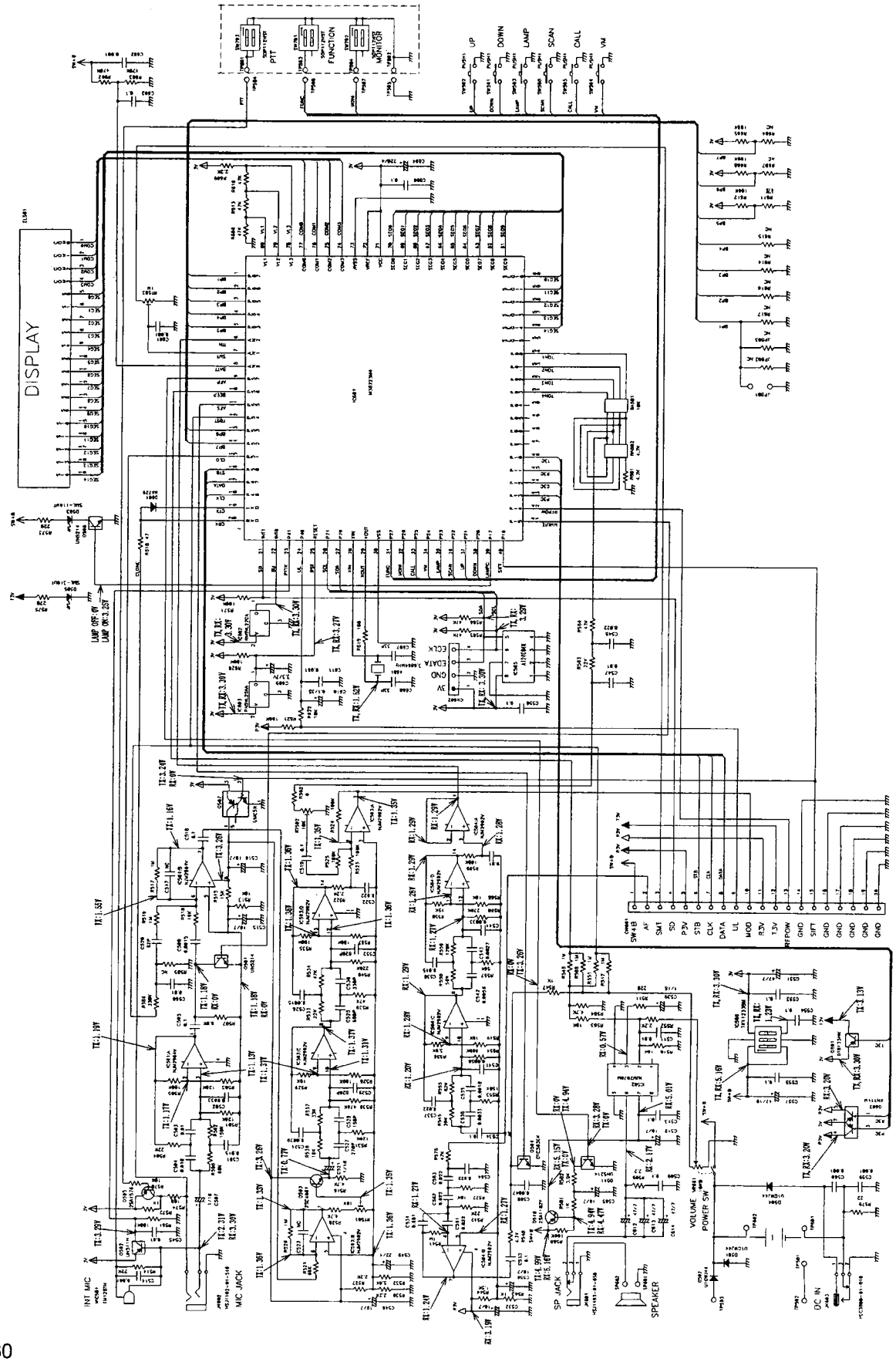


CIRCUIT DIAGRAM

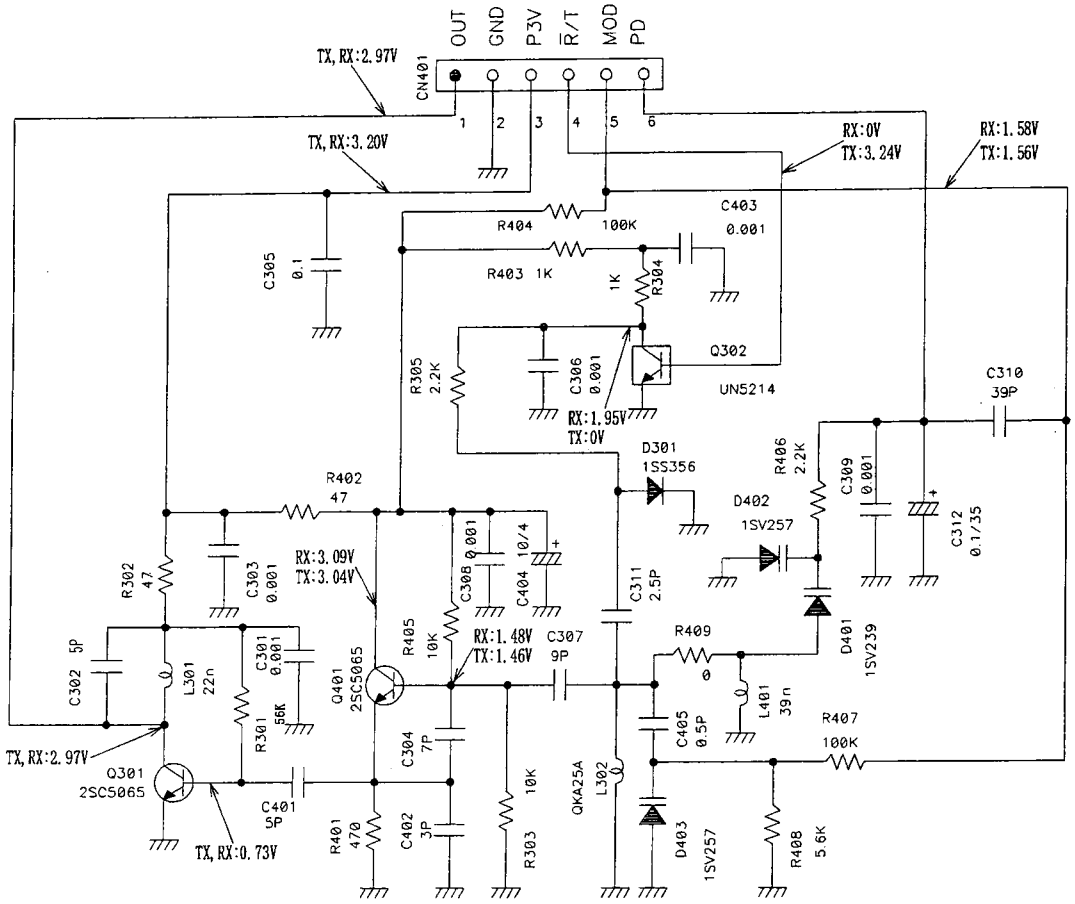
1) RF Unit



2) CPU Unit


DISPLAY
PTT
FUNCTION
MONITOR
UP
DOWN
LAMP
SCAN
CALL
VM
INT MIC
MIC JACK
SP JACK
SPEAKER
VOLUME
POWER SW
DC IN

3) VCO Unit


OUT
GND
P3V
R/T
MOD
PD
CN401
1
2
3
4
5
6
TX, RX:2.97V
TX, RX:3.20V
RX:0V
TX:3.24V
RX:1.58V
TX:1.56V
R404
100K
C403
0.001
R403 1K
1K
R304
C305
0.1
R305
2.2K
C306
0.001
Q302
UN5214
RX:1.95V
TX:0V
C310
39P
D301
1SS356
R406
2.2K
C309
0.001
D402
1SV257
C312
0.1/35
R402
47
R302
47
C303
0.001
RX:3.09V
TX:3.04V
C308
0.001
C404
10/4
C311
2.5P
C302
5P
L301
22n
C301
0.001
R301
56K
Q401
2SC5065
R405
10K
RX:1.48V
TX:1.46V
C307
9P
R409
0
D401
1SV239
L401
39n
C405
0.5P
R407
100K
TX, RX:2.97V
Q301
2SC5065
C304
7P
C401
5P
TX, RX:0.73V
R401
470
C402
3P
R303
10K
QKA25A
L302
D403
1SV257
R408
5.6K

BLOCK DIAGRAM