

# DJ-X10

## Service Manual

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**ALINCO, INC.**

# SPECIFICATIONS

<b>Frequency range</b>	0.1 ~ 1999.999950 MHz		
<b>Radio systems received</b>	WFM, NFM, AM, USB, LSB, CW		
<b>Frequency steps</b>	50 Hz, 100 Hz, 1 kHz, 2 kHz, 5 kHz, 6.25 kHz, 9 kHz, 10 kHz, 12.5 kHz, 15 kHz, 20 kHz, 25 kHz, 30 kHz, 50 kHz, 100 kHz, 125 kHz, 150 kHz, 200 kHz, 250 kHz, 500 kHz		
<b>Sensitivity (Typ.)</b>	AM	0.1 ~ 0.5 MHz	10 $\mu$ V(20 dB $\mu$ )
		0.5 ~ 5 MHz	1.5 $\mu$ V( 3.5 dB $\mu$ )
		5 ~ 30 MHz	1 $\mu$ V(0 dB $\mu$ )
		30 MHz ~ 1000 MHz (1 kHz 30 %mod 10 dB S/N)	1 $\mu$ V(0 dB $\mu$ )
	SSB	0.5 ~ 5 MHz	0.5 $\mu$ V(-6 dB $\mu$ )
		5 ~ 30 MHz	0.25 $\mu$ V(-12 dB $\mu$ )
		30 MHz ~ 1000 MHz (10 dB S/N)	0.5 $\mu$ V(-6 dB $\mu$ )
	NFM	5 ~ 30 MHz	0.35 $\mu$ V(-9 dB $\mu$ )
		30 ~ 1000 MHz	0.25 $\mu$ V(-12 dB $\mu$ )
		1000 ~ 1300 MHz	1.5 $\mu$ V(3.5 dB $\mu$ )
		1300 ~ 1999 MHz (1 kHz 3.5 kHz 12 dB SINAD)	10 $\mu$ V(20 dB $\mu$ )
	WFM	30 ~ 1000 MHz (12 dB SINAD)	1.5 $\mu$ V(3.5 dB $\mu$ )
<b>Memory channels</b>	1200		
<b>Search pass mode channels</b>	1000		
<b>Priority channel</b>	1		
<b>Memory banks</b>	30		
<b>Channels per bank</b>	40		
<b>Search bands</b>	20		
<b>Scan speed</b>	Approx. 25 CH/sec		
<b>Antenna connector</b>	BNC, 50 $\Omega$		
<b>Power supply</b>	4.8V DC (Ni-Cd)/6V DC (AA dry cell)		
<b>External power supply</b>	8 ~ 15V DC		
<b>Rated AF output</b>	Min. 100 mW, 10% THD		
<b>Power consumption</b>	At rated output	Approx. 200 mA	
	Squelched	Approx. 140 mA	
	BS ON	Approx. 30 mA	
<b>Weight</b>	Approx. 320 g		
<b>Dimensions</b>	57 x 150 x 27.5 mm (without projections)		
<b>Operating temperature range</b>	-10 ~ +50°C		
<b>Frequency stability</b>	$\pm$ 10 ppm		

# CIRCUIT DESCRIPTION

## 1) Frequency

- Signals in the 0.1 ~ 449.99 MHz and 1500 ~ 2000 MHz bands are converted into the 736.25 MHz first IF signal by the first local oscillator signal.
- Signals in the 450 ~ 1499.99 MHz band are converted into the 275.45 MHz first IF signal by this same first local oscillator signal.
- The first IF signal is converted into the 45.05 MHz second IF signal from the two second local oscillator signals (671.2 and 230.4 MHz) by the second mixer circuit.
- Depending on the mode, the second IF signal is input to one of the two IF amplifier ICs. In one mode, the second IF signal is mixed with a 34.35 MHz third local oscillator signal and converted into a third IF signal of 10.7 MHz, while in the other, it is mixed with a 44.595 MHz third local oscillator signal and converted into the third IF signal of 455 kHz.

## 2) Receiver Block

### Front-End Circuit

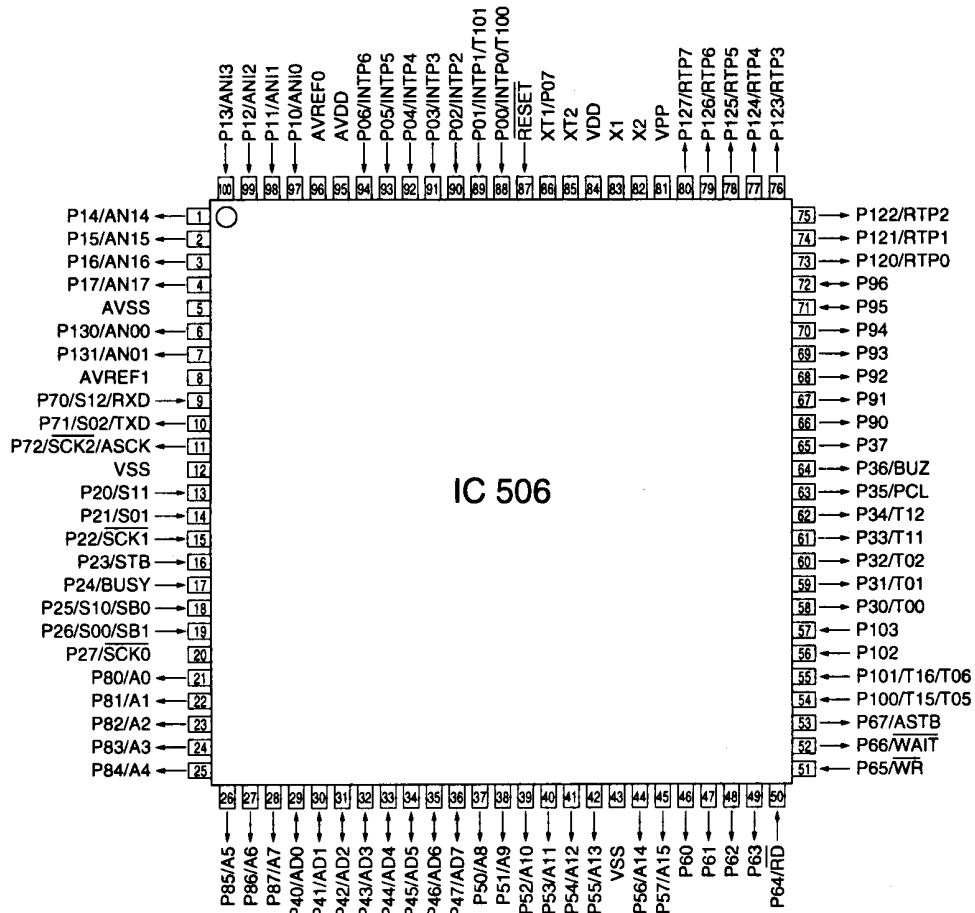
- The received signal from the antenna goes through the antenna circuits (D128, D124 and D125) and is screened by seven band pass filters consisting of several antenna switches (D131, D111, D127, D112, D126, D114, D130, D115, D134, D119, D135, D121, D136, D122 and D133) to remove unwanted signals.
- The RF signal is amplified by each of the RF amplifiers Q123 (0.1 ~ 222 MHz), Q125 (222 ~ 797 MHz), Q126 (797 ~ 2000 MHz) and Q118. It is then converted into the first IF signal by the first mixer circuit (T101, T100, D109 and D116).
- The adjacent signals in first IF signal, the 275.45 MHz IF signal and the 736.25 MHz IF signal are filtered out respectively by the band switch (D110 and D102), the IF filter (L113, L110, L107 and L101) and the IF filter (FL102 and FL101). Then, the signals are input into the second mixer circuit (Q102).
- In the second mixer circuit, the 12.8 MHz reference signal is mixed with either a 230.4 MHz second local oscillator signal (amplified 18 times) or a 691.2 MHz second local oscillator signal (amplified 54 times) selected by a switch (D101), and is converted into a 45.05 MHz second IF signal.
- In the WFM mode, the second IF signal goes through an IF filter (L301) and is input into pin No. 16 of an IF IC (IC305). A 10.7 MHz third IF signal converted by the IC's internal mixer is output from pin No. 14, filtered of adjacent signals by a ceramic filter (FL302) and input into pin No. 12. Next, it is demodulated by IC's internal limiter amplifier and quadrature detection circuit, and output from pin No. 8 as an AF signal.

- In the NFM, AM, SSB and CW modes, the second IF signal goes through an IF filter (XF300 and XF301) and is input to pin No. 16 of an IF IC (IC304). A 455 kHz third IF signal converted by the IC's internal mixer is output from pin No. 3 and is filtered of adjacent signals by a ceramic filter (FL301). Thereafter, a switch (D306 and D309) selects the mode. In the NFM mode, the signal is input to pin No. 5, demodulated by IC's internal limiter amplifier and quadrature detection circuit, and output from pin No. 9 as an AF signal. In the AM mode, the signal is amplified by an AGC amplifier (Q313) and input to pin No. 7 of an IF IC (IC305). It is amplified inside the circuit, demodulated by the detection circuit and output from pin No. 8 as an AF signal. In the SSB mode, the signal goes through a ceramic filter (FL303) and is amplified by an AGC amplifier (Q313) and an IF amplifier (Q316). It is then mixed with a carrier signal, which is generated by the BFO circuit (X302 and Q318) and fed through a buffer (Q317), demodulated by a balanced modulation circuit consisting of diodes (Q315, D314 and D313), and output as an AF signal.
- The AF signal for each of the modes is selected with a switch (IC308) and amplified by an AF signal amplifier (IC309). It is controlled by an AF mute circuit (Q319) and adjusted for volume by an electronic volume (IC306). It is then amplified by an audio amplifier (IC307) and input to the speaker.

### 3) PLL Synthesizer Circuit

- The signal from a 12.8 MHz crystal (X100) oscillator circuit (Q100) is input to a PLL IC (IC101) to obtain a 10 MHz reference oscillation signal frequency. The comparison frequency is output from a VCO circuit (Q114, L108, D104, D105, D107 and D108), amplified by an amplifier (Q115, Q113 and Q116) and divided by a divider inside the PLL IC. It is then compared against the reference frequency to make the PLL synthesizer.
- The VCO output signal (675 ~ 1225 MHz) is amplified by a buffer amplifier (Q115, Q113 and Q120) and input into the first mixer as the first local oscillator signal.
- Frequencies of 9 kHz steps or less are varied by the VCXO circuit (X300, D304 and D305) of the D/A converter (IC303).

#### 4) CPU Terminal Functions: $\mu$ PD78076 (E:XA0536) (T:XA0550)



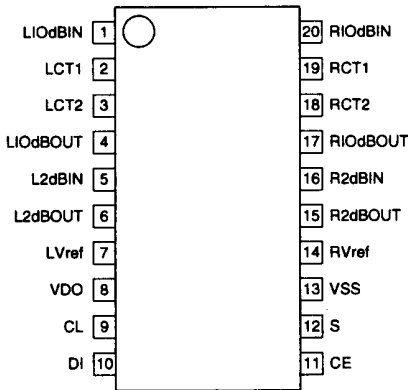
No.	Name	Pin Name	I/O	Description	H	L	Hi Z	Pull UP
1	P14/AN14	C0	O	16KEY MATRIX				
2	P15/AN15	CB1	O	16KEY MATRIX				
3	P16/AN16	CB2	O	16KEY MATRIX				
4	P17/AN17	CB3	O	16KEY MATRIX				
5	AVSS	GND		GND				
6	P130/AN00	BARTU	O	NOT USED				
7	P131/AN01	VCXOIN	O	VCXO CONTROL				
8	AVREF1	VCC		VCC				
9	P70/S12/RXD	RXD	I	CLONE RX INPUT				
10	P71/S02/TXD	TXD	O	CLONE TX OUTPUT				
11	P72/SCK2/ASCK	PCNTS	O	DC DC POWER CONTROL	ON	OFF		
12	VSS	GND		GND				
13	P20/S11	RB0	I	16KEY MATRIX	OFF	ON		
14	P21/S01	RB1	I	16KEY MATRIX	OFF	ON		
15	P22/SCK1	RB2	I	16KEY MATRIX	OFF	ON		
16	P23/STB	RB3	I	16KEY MATRIX	OFF	ON		
17	P24/BUSY	RB4	I	16KEY MATRIX	OFF	ON		
18	P25/S10/SB0	RB5	I	16KEY MATRIX	OFF	ON		
19	P26/S00/SB1	SRCHK	I	SRCH KEY	OFF	ON		
20	P27/SCK0	NOVOEDET		NOT USED				
21	P80/A0	A0	O	EEPROM ADDRESS				
22	P81/A1	A1	O	EEPROM ADDRESS				
23	P82/A2	A2	O	EEPROM ADDRESS				
24	P83/A3	A3	O	EEPROM ADDRESS				
25	P84/A4	A4	O	EEPROM ADDRESS				
26	P85/A5	A5	O	EEPROM ADDRESS				
27	P86/A6	A6	O	EEPROM ADDRESS				
28	P87/A7	A7	O	EEPROM ADDRESS				
29	P40/AD0	DD0	I/O	EEPROM DATA				
30	P41/AD1	DD1	I/O	EEPROM DATA				
31	P42/AD2	DD2	I/O	EEPROM DATA				

No.	Name	Pin Name	I/O	Description	H	L	Hi Z	Pull UP
32	P43/AD3	DD3	I/O	EEPROM DATA				
33	P44/AD4	DD4	I/O	EEPROM DATA				
34	P45/AD5	DD5	I/O	EEPROM DATA				
35	P46/AD6	DD6	I/O	EEPROM DATA				
36	P47/AD7	DD7	I/O	EEPROM DATA				
37	P50/A8	A8	O	EEPROM ADDRESS				
38	P51/A9	A9	O	EEPROM ADDRESS				
39	P52/A10	A10	O	EEPROM ADDRESS				
40	P53/A11	A11	O	EEPROM ADDRESS				
41	P54/A12	A12	O	EEPROM ADDRESS				
42	P55/A13	A13	O	EEPROM ADDRESS				
43	VSS	GND		GND				
44	P56/A14	A14	O	EEPROM ADDRESS				
45	P57/A15	/RES	O	EEPROM LCD RESET				
46	P60	STB4	O	STB FOR IC500				
47	P61	SHIFT	O	NOT USED				
48	P62	OECNT	O	OUT CONTROL IC500				
49	P63	/CE	O	CHIP ENABLE EEPROM				
50	P64/RD	RD	I	OUT ENABLE EEPROM				
51	P65/WR	/WE	I	WRITE ENABLE EEPROM				
52	P66/WAIT	OPTSTB	O	STB FOR OPTION				
53	P67/ASTB	OPTCT	O	CONTROL FOR OPTION	ON	OFF		
54	P100/T15/T05	RDY	I	EEPROM STATUS				
55	P101/T16/T06	OPTDET	I	OPTION DETECT	ON	OFF		
56	P102	WIDES	I	ENABLE BAND				
57	P103	LOCK	I	PLL LOCK		UNLOCK		
58	P30/T00	BEEP	O	BEEP				
59	P31/T01	AFS	O	AMP CONTROL	ON	OFF		
60	P32/T02	MUTE	O	MUTE	ON	OFF		
61	P33/T11	STB3	O	STB FOR IC300				
62	P34/T12	STB2	O	STB FOR IC306				
63	P35/PCL	STB1	O	STB FOR IC103				
64	P36/BUZ	LE	O	STB FOR IC101				
65	P37	BUSLS	O	BUSY LED CONTROL	ON	OFF		
66	P90	DB4	O	DATA LCD				
67	P91	DB5	O	DATA LCD				
68	P92	DB6	O	DATA LCD				
69	P93	DB7	O	DATA LCD				
70	P94	E/SCLK	O	E/SCLK LCD				
71	P95	RW/SID	I/O	RW/SID LCD				
72	P96	RS/CS	I/O	RS/CS LCD				
73	P120/RTP0	DATA	O	DATA FOR 4094				
74	P121/RTP1	CLK	O	CLK FOR 4094				
75	P122/RTP2	BATSV	O	BATT SAV CONTROL	ON	OFF		
76	P123/RTP3	RFL	O	FILTER CONTROL	OFF	ON		
77	P124/RTP4	RFM	O	FILTER CONTROL	OFF	ON		
78	P125/RTP5	RFH	O	FILTER CONTROL	OFF	ON		
79	P126/RTP6	BARS	O	NOT USED				
80	P127/RTP7	IFS	O	IF SWITCH	OFF	ON		
81	VPP	GND						
82	X2			XTAL MAIN				
83	X1			XTAL MAIN				
84	VDD	VDD						
85	XT2			XTAL SUB				
86	XT1/P07			XTAL SUB				
87	/RESET	/RST	I	RESET CPU				
88	P00/INTP0/T100	LAMPK	I	LAMP KEY	OFF	ON		0
89	P01/INTP1/T101	BRDET	I	BAT DETECT				0
90	P02/INTP2	POWK	I	POWER KEY	OFF	ON		0
91	P03/INTP3	MONK	I	MONITOR KEY	OFF	ON		0
92	P04/INTP4	FUNK	I	FUNCTION KEY	OFF	ON		0
93	P05/INTP5	A	I	ROTARY ENCORDER				0
94	P06/INTP6	B	I	ROTARY ENCORDER				0
95	AVDD	VDD		VDD				
96	AVREF0	VCC		VCC				
97	P10/ANI0	SQD	I	SQ				
98	P11/ANI1	SM	I	S-METER				
99	P12/ANI2	JRDET	I	NOT USED				
100	P13/ANI3	BATDET	I	LOW BAT DETECT				

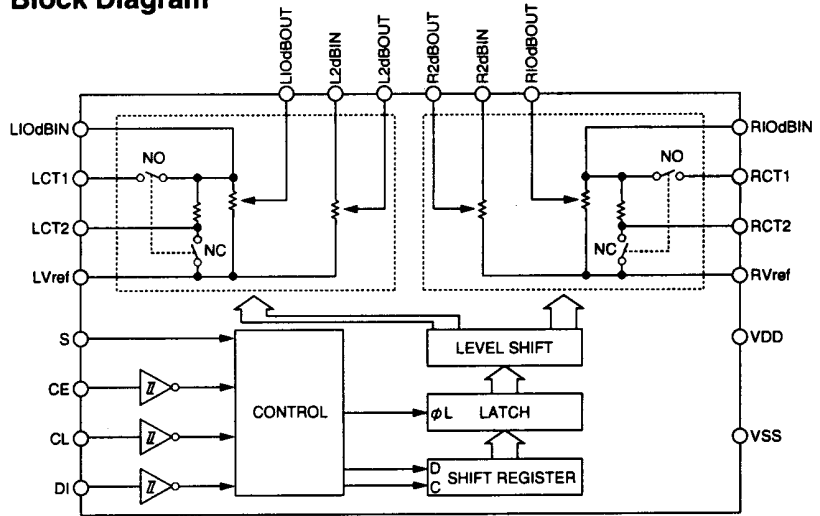
# SEMICONDUCTOR DATA

## 1) LC75366M (XA0345)

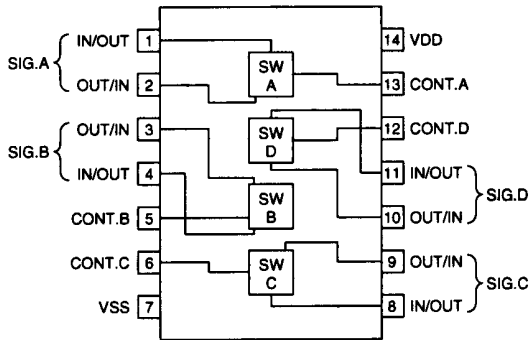
Pin Assignment



Block Diagram

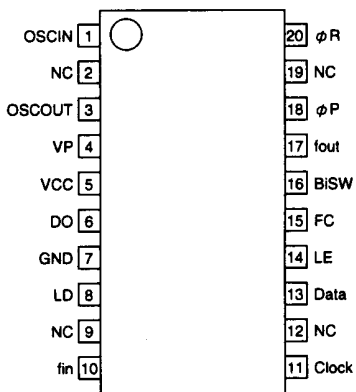


## 2) NJU4066BM (XA0095)

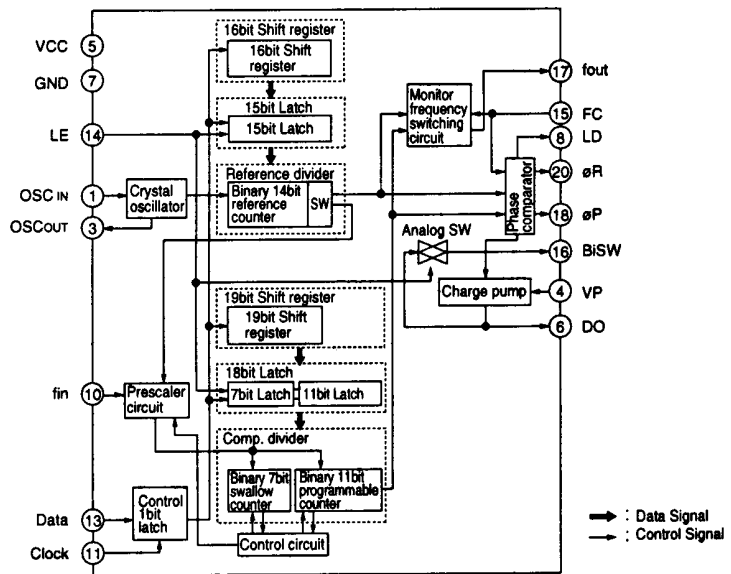


## 3) MB1511 (XA0173)

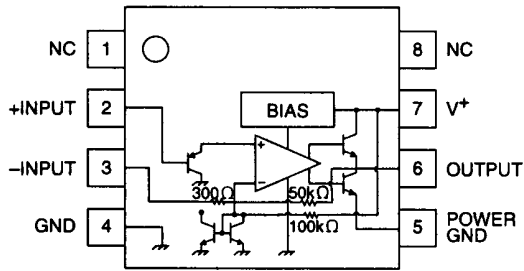
Pin Assignment



Block Diagram

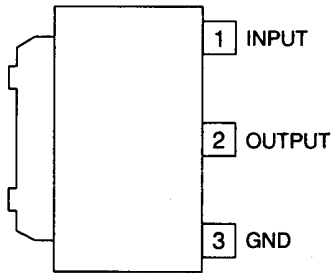


#### 4) NJM2070MT (XA0210)

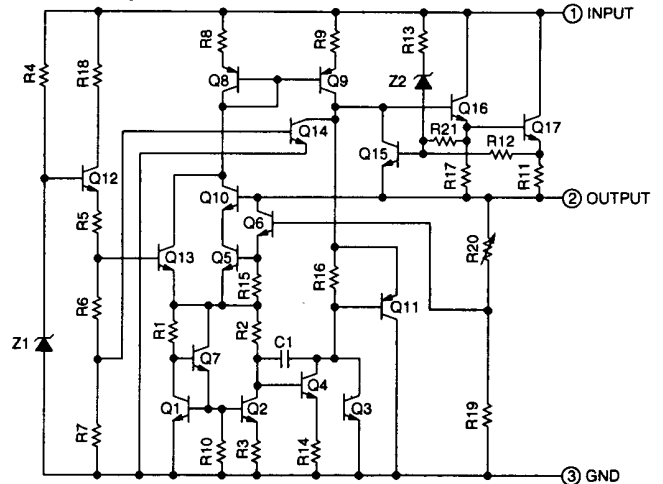


#### 5) TA7806F (XA0267)

Pin Assignment

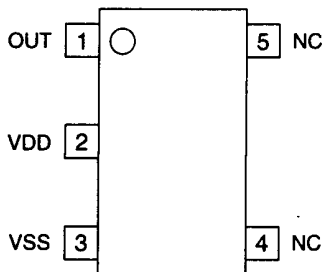


Block Diagram

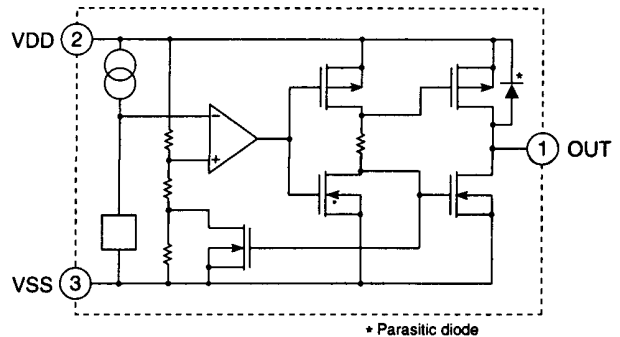


#### 6) S-80733SLAXT2 (XA0357)

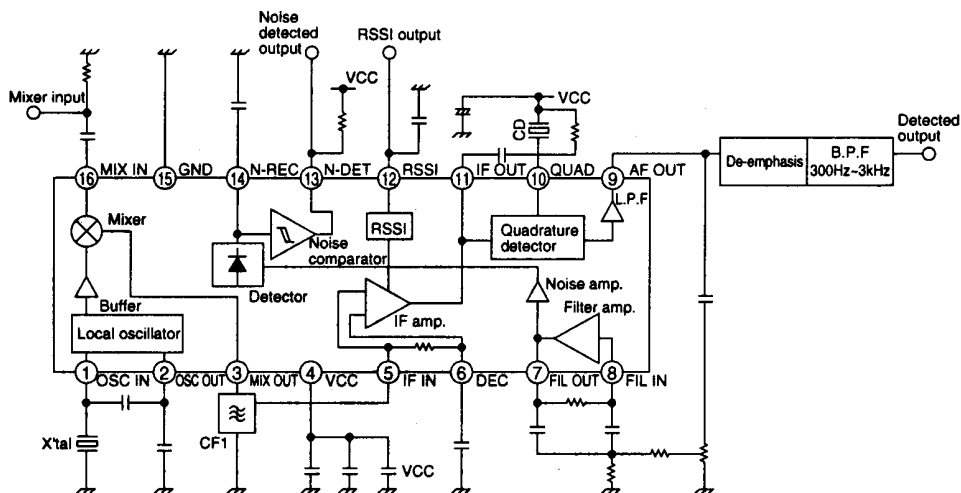
Pin Assignment



Block Diagram



#### 7) TA31136FN (XA0404)



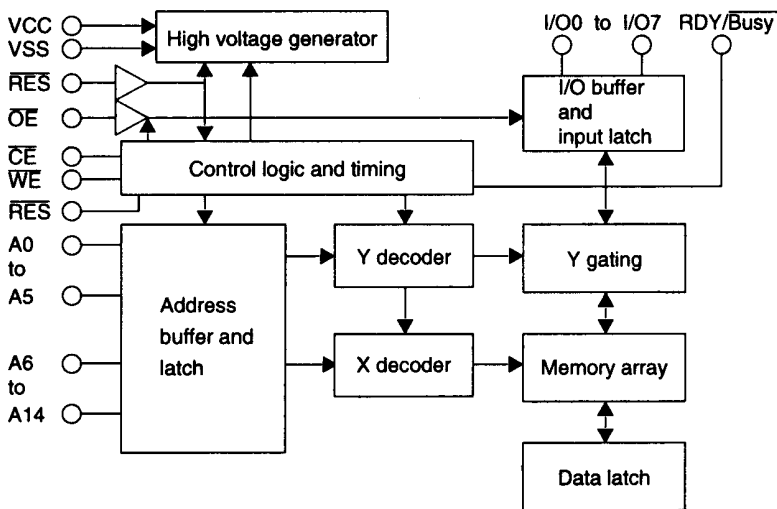


## 8) HN58V257A (XA0462)

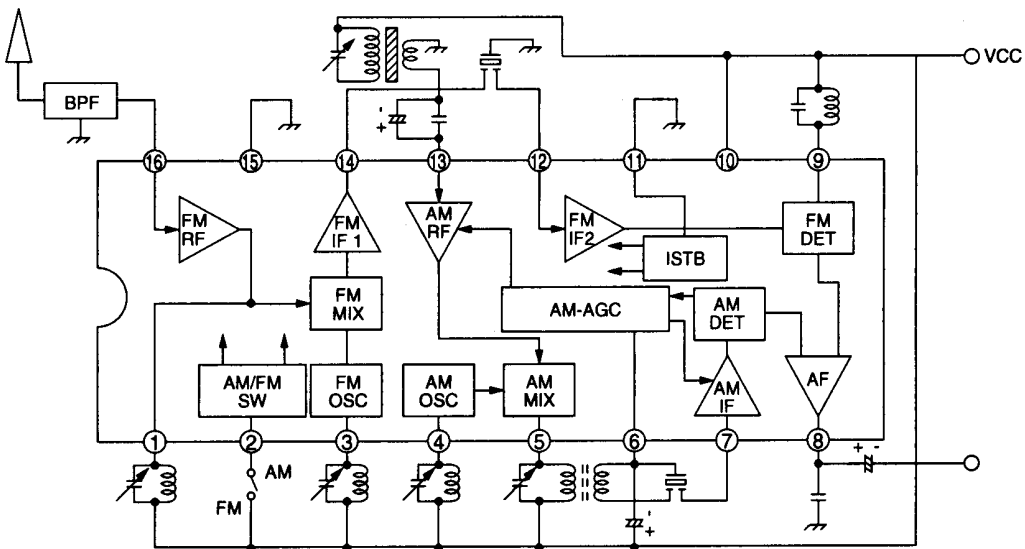
### Pin Assignment

OE	1	32	A10
A11	2	31	CE
A9	3	30	NC
A8	4	29	I/O7
A13	5	28	I/O6
WE	6	27	I/O5
RES	7	26	I/O4
VCC	8	25	I/O3
RDY/Busy	9	24	VSS
A14	10	23	I/O2
A12	11	22	I/O1
A7	12	21	I/O0
A6	13	20	NC
A5	14	19	A0
A4	15	18	A1
A3	16	17	A2

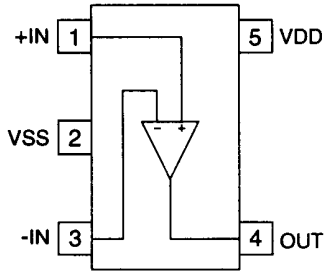
### Block Diagram



## 9) TA7792F (XA0464)

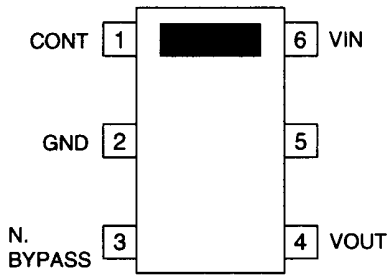


**10) TC75S51F (XA0465)**

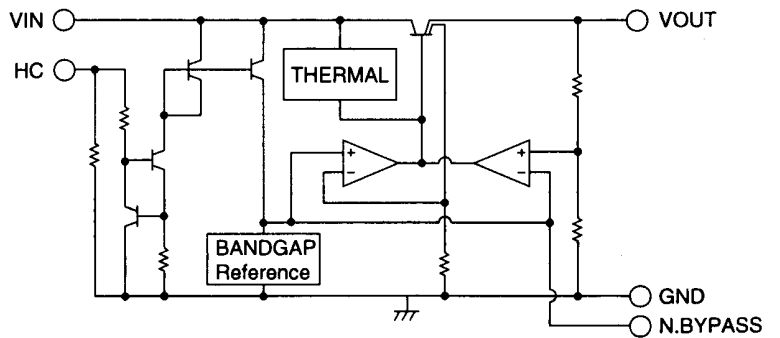


**11) TK11235AM (XA0467)**

**Pin Assignment**

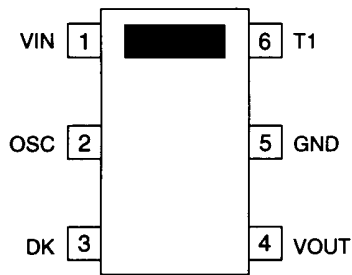


**Block Diagram**

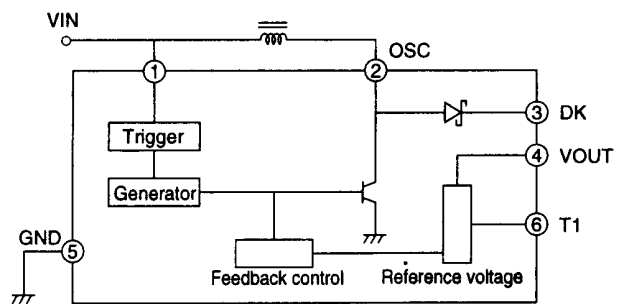


**12) TK11819M (XA0468)**

**Pin Assignment**

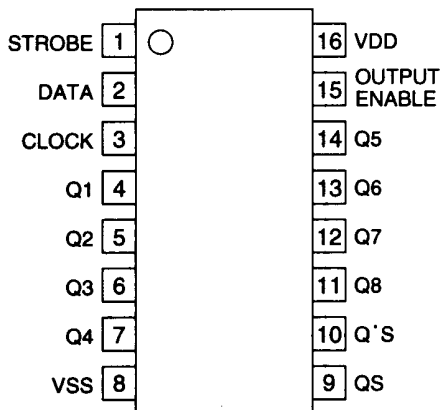


**Block Diagram**

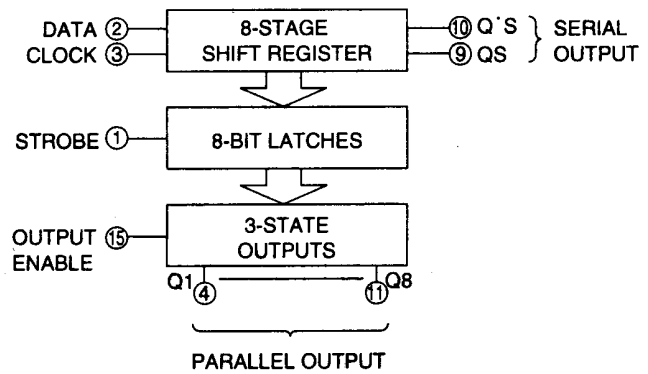


**13) BU4094BCFV (XA0506)**

**Pin Assignment**

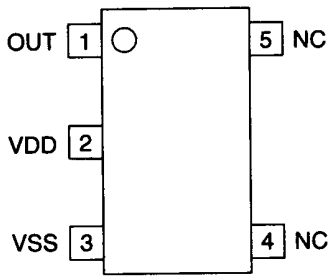


**Block Diagram**

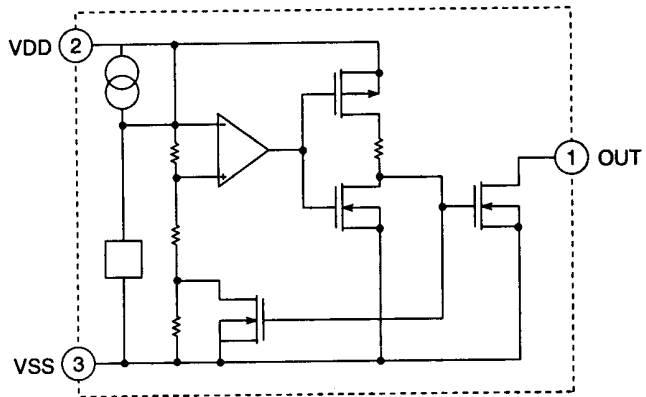


### 14) S-80725SN-2 (XA0528)

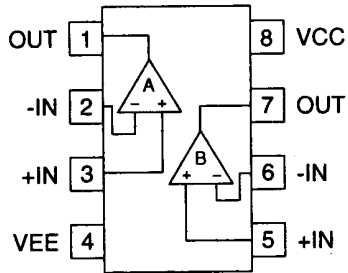
#### Pin Assignment



#### Block Diagram

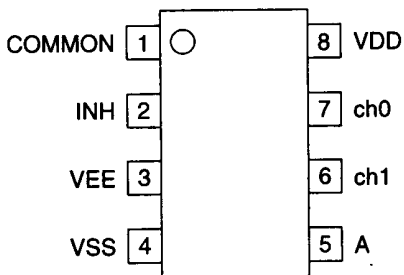


### 15) TA75W01FU-2 (XA0349)

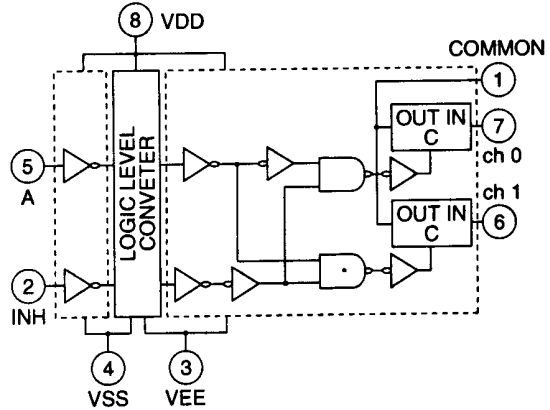


### 16) TC4W53FU (XA0348)

#### Pin Assignment

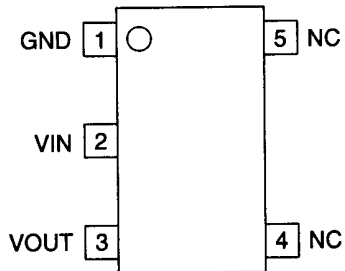


#### Block Diagram

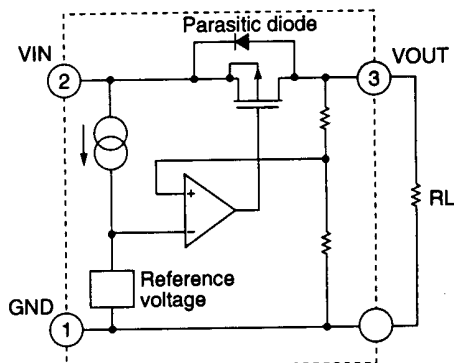


### 17) S-812XXSG (XA0358)

#### Pin Assignment



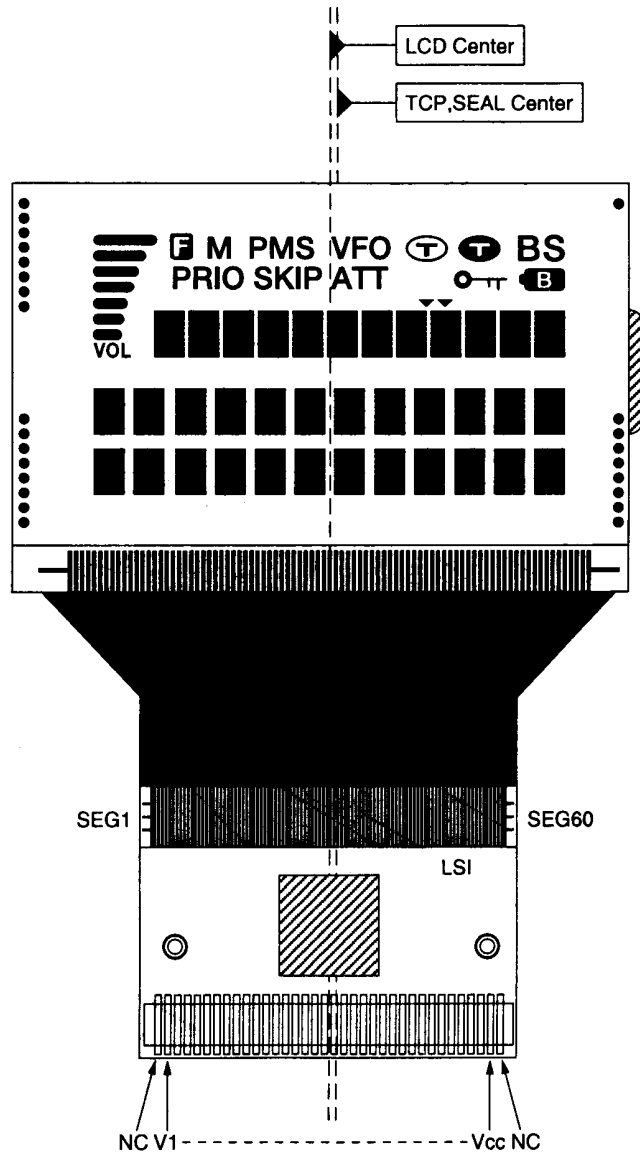
#### Block Diagram



# 18) Transistor, Diode, and LED Outline Drawings

DA204U XD0130	DAN202U XD0230	MA742TX XD0250	MA741WK XD0252	1SS295 XD0306	1SS312 XD0307
1SV231 XD0260	1SS356 XD0272	MA111 XD0290	MA729 XD0291	U2FWJ44N XD0294	HVU350 XD0313
DTB123YK XU0155	XP1501TX XU0172	UN9112 XU0182	UN5212 XU0184	DTA143ZE XU0185	DTC143ZE XU0186
2SC4649 XT0108	2SC4181 XT0149	2SC4738 XT0150	2SC5006 XT0151	2SC5007 XT0152	2SC5008 XT0153
BRPG1201W XL0028	SML-310MT XL0036	PG1101F XL0045	2SK425 XE0033	UMC5N XU0152	
2SA1213-Y XT0088					

# 19) LCD Diagram

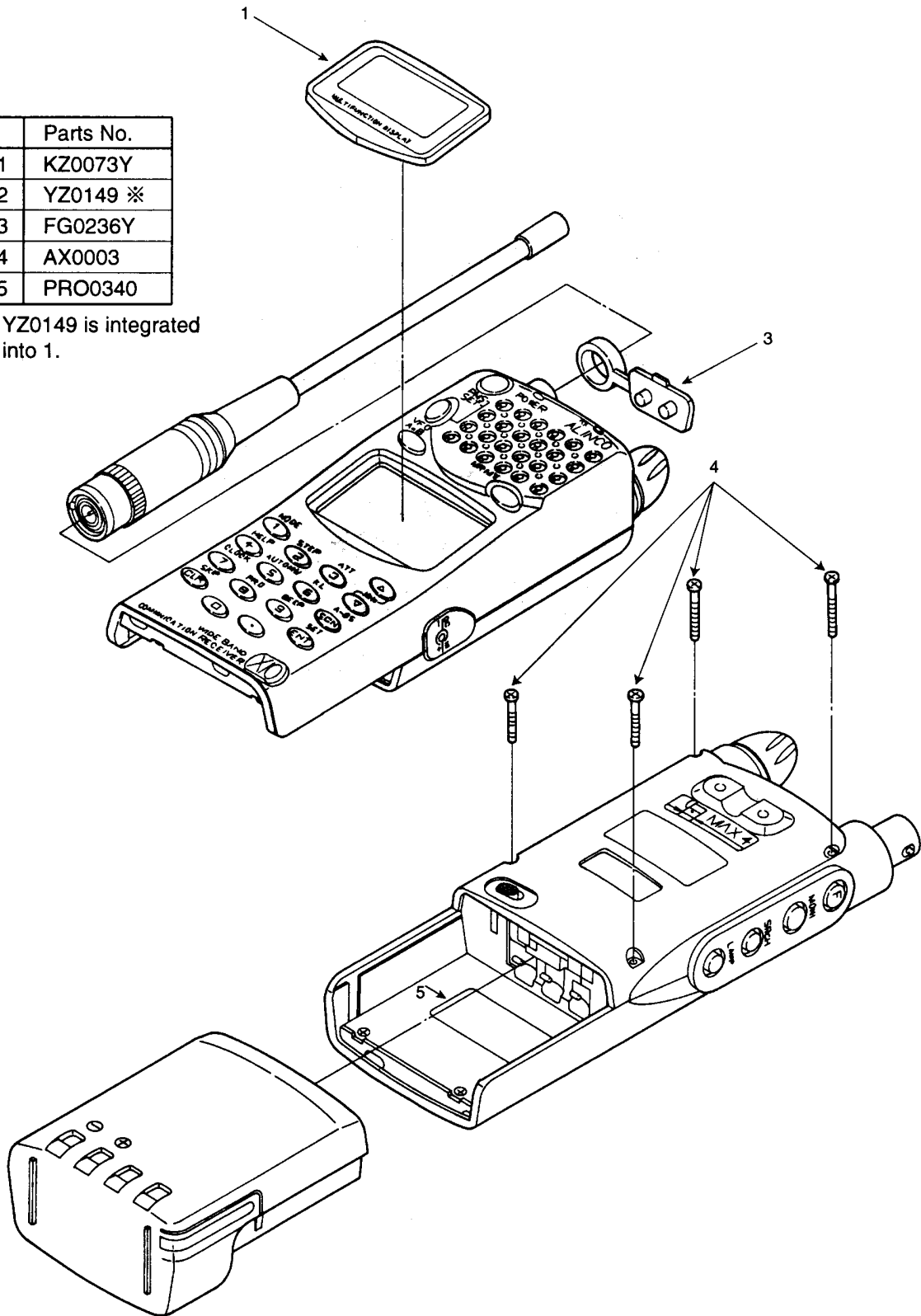


# EXPLODED VIEW

## 1) Front/Rear View

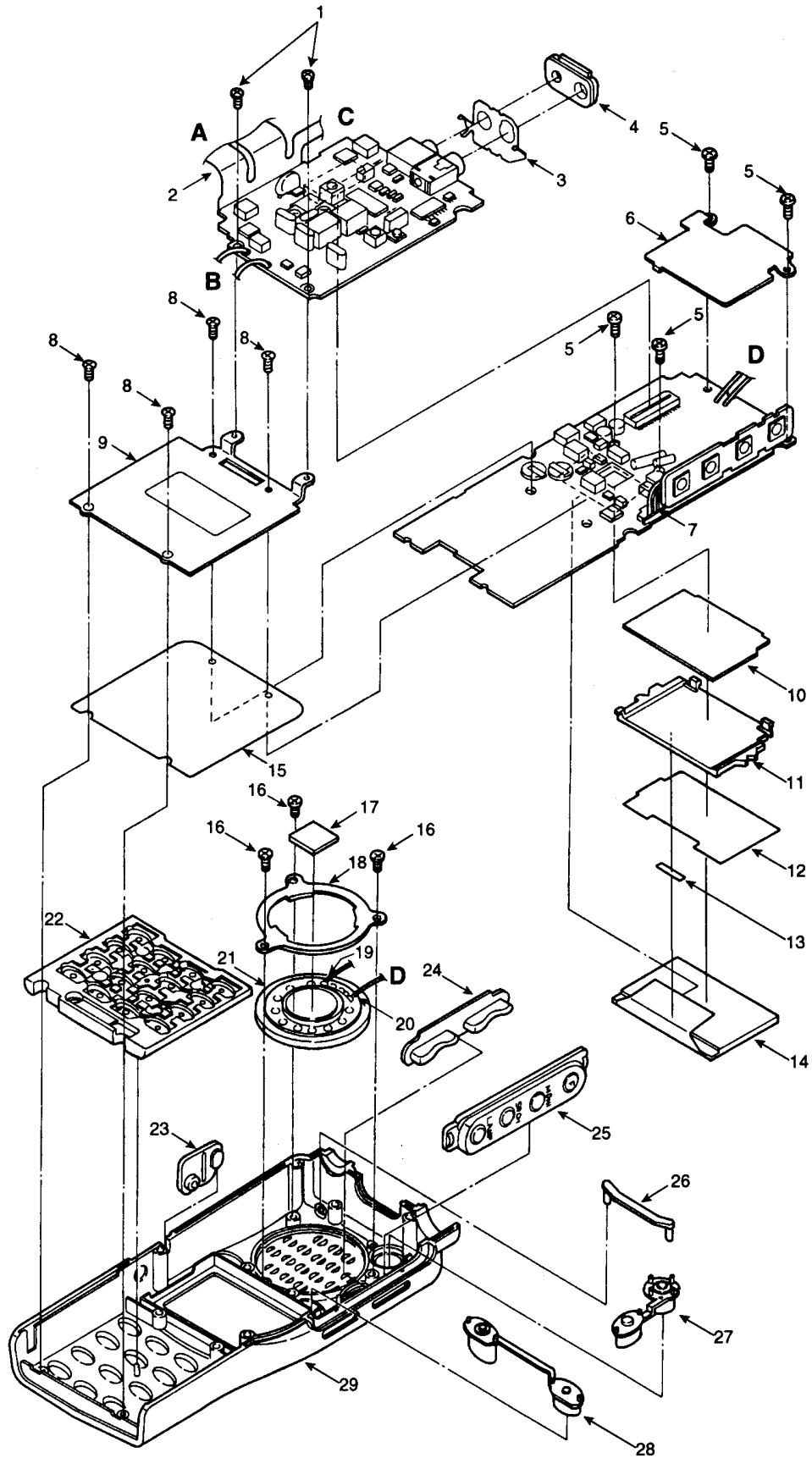
	Parts No.
1	KZ0073Y
2	YZ0149 ※
3	FG0236Y
4	AX0003
5	PRO0340

※YZ0149 is integrated into 1.



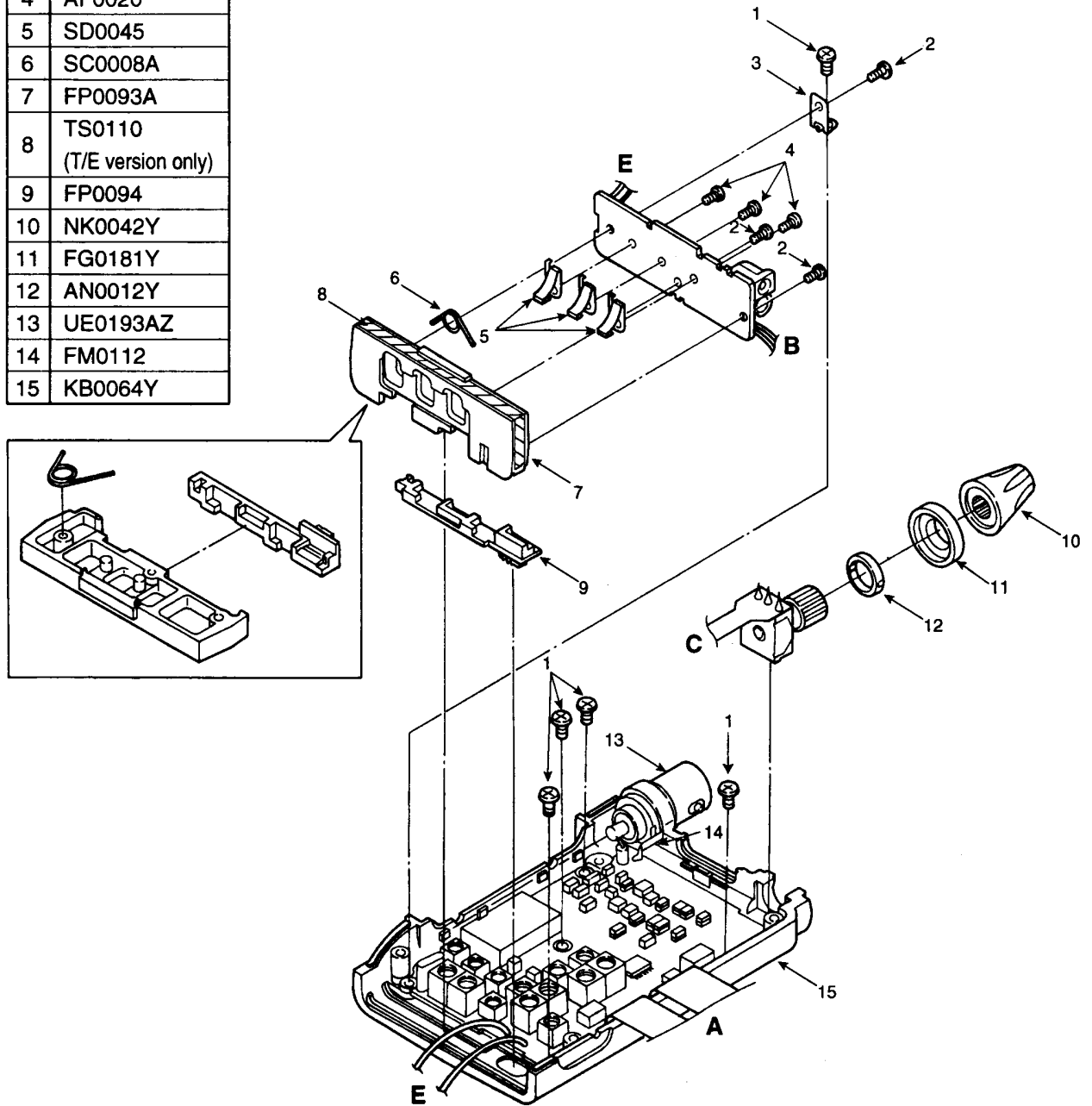
## 2) IF Unit/CPU Unit

	Parts No.
1	AF0020
2	uP0282
3	FM0100
4	FG0178Y
5	AP0004
6	TN006Z
7	uP0281
8	AX0002
9	FM0098
10	TL0017
11	DG0027
12	TL0020
13	TX0004
14	EL0037
15	TZ0064
16	AX0001
17	FG0218
18	ST0052
19	MKCL00AA
20	MNCLH2AA
21	ES0011
22	FG0255
23	FG0180Y
24	FG0176Y
25	FG0235
26	FG0242
27	FG0243Y
28	FG0177Y
29	KZ0051Y



### 3) Charge/RF Unit

	Parts No.
1	AK0001
2	AX0001
3	TS0141
4	AF0020
5	SD0045
6	SC0008A
7	FP0093A
8	TS0110 (T/E version only)
9	FP0094
10	NK0042Y
11	FG0181Y
12	AN0012Y
13	UE0193AZ
14	FM0112
15	KB0064Y





# PARTS LIST

Ref. No.	Parts No.	CHARGE Line	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.
C801	CU3031	C1608JH103KTA	CPU Unit		D501	XL0036	SMI-310MT166		R544	RK3060	ERJ3GSY0800V		R546	RK3001	ERJ3GSY102V	
C802	CS0234	TMCMBI1V55MTR			D502	XL0036	SMI-310MT186		R547	RK3038	ERJ3GSY102V		R548	RK3038	ERJ3GSY101V	
C803	CU0104	C2012JBE104M			D504	XL0045	PG1101FTR		R549	RK3042	ERJ3GSY1222V		R550	RK3042	ERJ3GSY1222V	
C804	CS0234	TMCMBI1V55MTR			D506	XL0045	PG1101FTR		R551	RK3054	ERJ3GSY1222V		R552	RK3038	ERJ3GSY102V	
C805	CU0035	C2012CH1H101K			D508	XL0045	PG1101FTR		R553	RK3056	ERJ3GSY102V		R554	RK3056	ERJ3GSY1033V	
C806	CU0023	C1608CH1H101J			D509	XL0028	BRPG1201WTR		R555	RK3047	ERJ3GSY1662V		R556	RK3047	ERJ3GSY1662V	
C807	CE0336	6MW330SWB			IC500	XA0356	S-41237SS-QE-T2		R557	RK3059	ERJ3GSY102V		R558	RK3038	ERJ3GSY102V	
D801	XD0294	UPFWJ44N1E12R			IC502	XA0357	S-40723SI-AK-T2		R559	RK3026	ERJ3GSY101V		R560	RK3001	ERJ3GSY102V	
D802	XD0294	UPFWJ44N1E12R			IC503	XA0467	TK11235AMTL		R561	RK3001	ERJ3GSY0800V		R562	RK3050	ERJ3GSY1033V	
D803	XD0294	UPFWJ44N1E12R			IC504	XA0468	TK11818MTL		R563	RK3001	ERJ3GSY0800V		R564	RK3050	ERJ3GSY1033V	
D804	XD0294	UPFWJ44N1E12R			IC505	XA0468	TK11818MTL		R565	RK3001	ERJ3GSY0800V		R566	RK3050	ERJ3GSY1033V	
D805	XD0294	UPFWJ44N1E12R			IC506	XA0468	TK11818MTL		R567	RK3001	ERJ3GSY0800V		R568	RK3050	ERJ3GSY1033V	
D806	XD0294	UPFWJ44N1E12R			IC508	XA0550	UPD78076G		R569	RK3001	ERJ3GSY0800V		R570	RK3050	ERJ3GSY1033V	
D807	XD0294	UPFWJ44N1E12R			IC509	XA0550	UPD78076G		R571	RK3050	ERJ3GSY1033V		R572	RK3050	ERJ3GSY1033V	
D808	XD0294	UPFWJ44N1E12R			IC508	XA0462	HN59V257A-12		R573	RK3050	ERJ3GSY1033V		R574	RK3050	ERJ3GSY1033V	
D809	XD0294	UPFWJ44N1E12R			IC510	L500	CC2592		R575	RK3050	ERJ3GSY1033V		R576	RK3050	ERJ3GSY1033V	
D810	XD0294	UPFWJ44N1E12R			L501	LC0500	667MA-102N		R577	RK3001	ERJ3GSY1033V		R578	RK3050	ERJ3GSY1033V	
D811	XD0294	UPFWJ44N1E12R			D500	D500	667MA-102N		R579	RK3001	ERJ3GSY1033V		R580	RK3050	ERJ3GSY1033V	
D812	XD0294	UPFWJ44N1E12R			D501	D501	667MA-102N		R581	RK3001	ERJ3GSY1033V		R582	RK3050	ERJ3GSY1033V	
D813	XD0294	UPFWJ44N1E12R			D502	D502	667MA-102N		R583	RK3001	ERJ3GSY1033V		R584	RK3050	ERJ3GSY1033V	
D814	XD0294	UPFWJ44N1E12R			D503	D503	667MA-102N		R585	RK3001	ERJ3GSY1033V		R586	RK3050	ERJ3GSY1033V	
D815	XD0294	UPFWJ44N1E12R			D504	D504	667MA-102N		R587	RK3001	ERJ3GSY1033V		R588	RK3050	ERJ3GSY1033V	
D816	XD0294	UPFWJ44N1E12R			D505	D505	667MA-102N		R589	RK3001	ERJ3GSY1033V		R590	RK3050	ERJ3GSY1033V	
D817	XD0294	UPFWJ44N1E12R			D506	D506	667MA-102N		R591	RK3001	ERJ3GSY1033V		R592	RK3050	ERJ3GSY1033V	
D818	XD0294	UPFWJ44N1E12R			D507	D507	667MA-102N		R593	RK3001	ERJ3GSY1033V		R594	RK3050	ERJ3GSY1033V	
D819	XD0294	UPFWJ44N1E12R			D508	D508	667MA-102N		R595	RK3001	ERJ3GSY1033V		R596	RK3050	ERJ3GSY1033V	
D820	XD0294	UPFWJ44N1E12R			D509	D509	667MA-102N		R597	RK3001	ERJ3GSY1033V		R598	RK3050	ERJ3GSY1033V	
D821	XD0294	UPFWJ44N1E12R			D510	D510	667MA-102N		R599	RK3001	ERJ3GSY1033V		R600	RK3050	ERJ3GSY1033V	
D822	XD0294	UPFWJ44N1E12R			D511	D511	667MA-102N		R601	RK3001	ERJ3GSY1033V		R602	RK3050	ERJ3GSY1033V	
D823	XD0294	UPFWJ44N1E12R			D512	D512	667MA-102N		R603	RK3001	ERJ3GSY1033V		R604	RK3050	ERJ3GSY1033V	
D824	XD0294	UPFWJ44N1E12R			D513	D513	667MA-102N									
D825	XD0294	UPFWJ44N1E12R			D514	D514	667MA-102N									
D826	XD0294	UPFWJ44N1E12R			D515	D515	667MA-102N									
D827	XD0294	UPFWJ44N1E12R			D516	D516	667MA-102N									
D828	XD0294	UPFWJ44N1E12R			D517	D517	667MA-102N									
D829	XD0294	UPFWJ44N1E12R			D518	D518	667MA-102N									
D830	XD0294	UPFWJ44N1E12R			D519	D519	667MA-102N									
D831	XD0294	UPFWJ44N1E12R			D520	D520	667MA-102N									
D832	XD0294	UPFWJ44N1E12R			D521	D521	667MA-102N									
D833	XD0294	UPFWJ44N1E12R			D522	D522	667MA-102N									
D834	XD0294	UPFWJ44N1E12R			D523	D523	667MA-102N									
D835	XD0294	UPFWJ44N1E12R			D524	D524	667MA-102N									
D836	XD0294	UPFWJ44N1E12R			D525	D525	667MA-102N									
D837	XD0294	UPFWJ44N1E12R			D526	D526	667MA-102N									
D838	XD0294	UPFWJ44N1E12R			D527	D527	667MA-102N									
D839	XD0294	UPFWJ44N1E12R			D528	D528	667MA-102N									
D840	XD0294	UPFWJ44N1E12R			D529	D529	667MA-102N									
D841	XD0294	UPFWJ44N1E12R			D530	D530	667MA-102N									
D842	XD0294	UPFWJ44N1E12R			D531	D531	667MA-102N									
D843	XD0294	UPFWJ44N1E12R			D532	D532	667MA-102N									
D844	XD0294	UPFWJ44N1E12R			D533	D533	667MA-102N									
D845	XD0294	UPFWJ44N1E12R			D534	D534	667MA-102N									
D846	XD0294	UPFWJ44N1E12R			D535	D535	667MA-102N									
D847	XD0294	UPFWJ44N1E12R			D536	D536	667MA-102N									
D848	XD0294	UPFWJ44N1E12R			D537	D537	667MA-102N									
D849	XD0294	UPFWJ44N1E12R			D538	D538	667MA-102N									
D850	XD0294	UPFWJ44N1E12R			D539	D539	667MA-102N									
D851	XD0294	UPFWJ44N1E12R			D540	D540	667MA-102N									
D852	XD0294	UPFWJ44N1E12R			D541	D541	667MA-102N									
D853	XD0294	UPFWJ44N1E12R			D542	D542	667MA-102N									
D854	XD0294	UPFWJ44N1E12R			D543	D543	667MA-102N									
D855	XD0294	UPFWJ44N1E12R			D544	D544	667MA-102N									
D856	XD0294	UPFWJ44N1E12R			D545	D545	667MA-102N									
D857	XD0294	UPFWJ44N1E12R			D546	D546	667MA-102N									
D858	XD0294	UPFWJ44N1E12R			D547	D547	667MA-102N									
D859	XD0294	UPFWJ44N1E12R			D548	D548	667MA-102N									
D860	XD0294	UPFWJ44N1E12R			D549	D549	667MA-102N									
D861	XD0294	UPFWJ44N1E12R			D550	D550	667MA-102N									
D862	XD0294	UPFWJ44N1E12R			D551	D551	667MA-102N									
D863	XD0294	UPFWJ44N1E12R			D552	D552	667MA-102N									
D864	XD0294	UPFWJ44N1E12R			D553	D553	667MA-102N									
D865	XD0294	UPFWJ44N1E12R			D554	D554	667MA-102N									
D866	XD0294	UPFWJ44N1E12R			D555	D555	667MA-102N									
D867	XD0294	UPFWJ44N1E12R			D556	D556	667MA-102N									
D868	XD0294	UPFWJ44N1E12R			D557	D557	667MA-102N									
D869	XD0294	UPFWJ44N1E12R			D558	D558	667MA-102N									
D870	XD0294	UPFWJ44N1E12R			D559	D559	667MA-102N									
D871	XD0294	UPFWJ44N1E12R			D560	D560	667MA-102N									
D872	XD0294	UPFWJ44N1E12R			D561	D561	667MA-102N									
D873	XD0294	UPFWJ44N1E12R			D562	D562	667MA-102N									
D874	XD0294	UPFWJ44N1E12R			D563	D563	667MA-102N									
D875	XD0294	UPFWJ44N1E12R			D564	D564	667MA-102N									
D876	XD0294	UPFWJ44N1E12R			D565	D565	667MA-102N									
D877	XD0294	UPFWJ44N1E12R			D566	D566										

Ref. No.	Parts No.	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.	Ref. No.	Parts No.	Parts Name	Ver.
C300	T20014	Silicon diode		C300	C1608JF1E10A2TA			C300	XU0172	XP1501-TX		R367	RK3001	ERJ6GSV0R00V	
C301	C2012B1E10AM			C301	C1608JF1E10A2TA			C301	XE0033	DT1432EA-TL		R368	RK3022	ERJ6GSVJ470V	
C302	C50213	TMCMA1A225MTR		C302	C1608JF1E10A2TA			C302	Q302	25K425-11B X13 X14		R369	RK3034	ERJ6GSVJ470V	
C303	C30067	TMCMA1A225MTR		C303	C1608JF1E10A2TA			C303	Q303	DT1432EA-TL		R370	RK3026	ERJ6GSVJ101V	
C304	C50068	TMCSC1E475MTR		C304	C1608JF1E10A2TA			C304	Q304	25C478WTEB8L		R371	RK3054	ERJ6GSVJ223V	
C305	CU30035	TMCMA1A225MTR		C305	C1608JF1E10A2TA			C305	Q305	25A1213Y TE12R		R372	RK3026	ERJ6GSVJ101V	
C306	C50213	TMCMA1A225MTR		C306	C1608JF1E10A2TA			C306	Q306	DT1432EA-TL		R373	RK3001	ERJ6GSV0R00V	
C307	CU3114	EMK107B105ZAK1		C307	C1608JF1E10A2TA			C307	Q307	DT1432EA-TL		R374	RK3049	ERJ6GSVJ822V	
C308	CU3069	TMCMA1A225MTR		C308	C1608JF1E10A2TA			C308	Q308	DT1432EA-TL		R375	RK3054	ERJ6GSVJ223V	
C309	CU3069	TMCMA1A225MTR		C309	C1608JF1E10A2TA			C309	Q309	25C464S-TLN		R376	RK3038	ERJ6GSVJ271V	
C310	CU3069	TMCMA1A225MTR		C310	C1608JF1E10A2TA			C310	Q310	25C464S-TLN		R377	RK3062	ERJ6GSVJ104V	
C311	CU3069	TMCMA1A225MTR		C311	C1608JF1E10A2TA			C311	Q311	25C464S-TLN		R378	RK3001	ERJ6GSV0R00V	
C312	CU3069	TMCMA1A225MTR		C312	C1608JF1E10A2TA			C312	Q312	25C478WTEB8L		R379	RK3022	ERJ6GSVJ470V	
C313	CU3069	TMCMA1A225MTR		C313	C1608JF1E10A2TA			C313	Q313	25C478WTEB8L		R380	RK3054	ERJ6GSVJ223V	
C314	CU3069	TMCMA1A225MTR		C314	C1608JF1E10A2TA			C314	Q314	25C478WTEB8L		R381	RK3034	ERJ6GSVJ471V	
C315	CU3069	TMCMA1A225MTR		C315	C1608JF1E10A2TA			C315	Q315	25C464S-TLN		R382	RK3026	ERJ6GSVJ223V	
C316	CU3069	TMCMA1A225MTR		C316	C1608JF1E10A2TA			C316	Q316	25C464S-TLN		R383	RK3038	ERJ6GSVJ102V	
C317	CU3069	TMCMA1A225MTR		C317	C1608JF1E10A2TA			C317	Q317	25C464S-TLN		R384	RK3038	ERJ6GSVJ102V	
C318	CU3069	TMCMA1A225MTR		C318	C1608JF1E10A2TA			C318	Q318	25C464S-TLN		R385	RK3038	ERJ6GSVJ102V	
C319	CU3069	TMCMA1A225MTR		C319	C1608JF1E10A2TA			C319	Q319	25C464S-TLN		R386	RK3038	ERJ6GSVJ102V	
C320	CU3069	TMCMA1A225MTR		C320	C1608JF1E10A2TA			C320	Q320	25C464S-TLN		R387	RK3038	ERJ6GSVJ102V	
C321	CU3069	TMCMA1A225MTR		C321	C1608JF1E10A2TA			C321	Q321	25C464S-TLN		R388	RK3038	ERJ6GSVJ102V	
C322	CU3069	TMCMA1A225MTR		C322	C1608JF1E10A2TA			C322	Q322	25C464S-TLN		R389	RK3038	ERJ6GSVJ102V	
C323	CU3069	TMCMA1A225MTR		C323	C1608JF1E10A2TA			C323	Q323	25C464S-TLN		R390	RK3038	ERJ6GSVJ102V	
C324	CU3069	TMCMA1A225MTR		C324	C1608JF1E10A2TA			C324	Q324	25C464S-TLN		R391	RK3038	ERJ6GSVJ102V	
C325	CU3069	TMCMA1A225MTR		C325	C1608JF1E10A2TA			C325	Q325	25C464S-TLN		R392	RK3038	ERJ6GSVJ102V	
C326	CU3069	TMCMA1A225MTR		C326	C1608JF1E10A2TA			C326	Q326	25C464S-TLN		R393	RK3038	ERJ6GSVJ102V	
C327	CU3069	TMCMA1A225MTR		C327	C1608JF1E10A2TA			C327	Q327	25C464S-TLN		R394	RK3038	ERJ6GSVJ102V	
C328	CU3069	TMCMA1A225MTR		C328	C1608JF1E10A2TA			C328	Q328	25C464S-TLN		R395	RK3038	ERJ6GSVJ102V	
C329	CU3069	TMCMA1A225MTR		C329	C1608JF1E10A2TA			C329	Q329	25C464S-TLN		R396	RK3038	ERJ6GSVJ102V	
C330	CU3069	TMCMA1A225MTR		C330	C1608JF1E10A2TA			C330	Q330	25C464S-TLN		R397	RK3038	ERJ6GSVJ102V	
C331	CU3069	TMCMA1A225MTR		C331	C1608JF1E10A2TA			C331	Q331	25C464S-TLN		R398	RK3038	ERJ6GSVJ102V	
C332	CU3069	TMCMA1A225MTR		C332	C1608JF1E10A2TA			C332	Q332	25C464S-TLN		R399	RK3038	ERJ6GSVJ102V	
C333	CU3069	TMCMA1A225MTR		C333	C1608JF1E10A2TA			C333	Q333	25C464S-TLN		R400	RK3038	ERJ6GSVJ102V	
C334	CU3069	TMCMA1A225MTR		C334	C1608JF1E10A2TA			C334	Q334	25C464S-TLN		R401	RK3038	ERJ6GSVJ102V	
C335	CU3069	TMCMA1A225MTR		C335	C1608JF1E10A2TA			C335	Q335	25C464S-TLN		R402	RK3038	ERJ6GSVJ102V	
C336	CU3069	TMCMA1A225MTR		C336	C1608JF1E10A2TA			C336	Q336	25C464S-TLN		R403	RK3038	ERJ6GSVJ102V	
C337	CU3069	TMCMA1A225MTR		C337	C1608JF1E10A2TA			C337	Q337	25C464S-TLN		R404	RK3038	ERJ6GSVJ102V	
C338	CU3069	TMCMA1A225MTR		C338	C1608JF1E10A2TA			C338	Q338	25C464S-TLN		R405	RK3038	ERJ6GSVJ102V	
C339	CU3069	TMCMA1A225MTR		C339	C1608JF1E10A2TA			C339	Q339	25C464S-TLN		R406	RK3038	ERJ6GSVJ102V	
C340	CU3069	TMCMA1A225MTR		C340	C1608JF1E10A2TA			C340	Q340	25C464S-TLN		R407	RK3038	ERJ6GSVJ102V	
C341	CU3069	TMCMA1A225MTR		C341	C1608JF1E10A2TA			C341	Q341	25C464S-TLN		R408	RK3038	ERJ6GSVJ102V	
C342	CU3069	TMCMA1A225MTR		C342	C1608JF1E10A2TA			C342	Q342	25C464S-TLN		R409	RK3038	ERJ6GSVJ102V	
C343	CU3069	TMCMA1A225MTR		C343	C1608JF1E10A2TA			C343	Q343	25C464S-TLN		R410	RK3038	ERJ6GSVJ102V	
C344	CU3069	TMCMA1A225MTR		C344	C1608JF1E10A2TA			C344	Q344	25C464S-TLN		R411	RK3038	ERJ6GSVJ102V	
C345	CU3069	TMCMA1A225MTR		C345	C1608JF1E10A2TA			C345	Q345	25C464S-TLN		R412	RK3038	ERJ6GSVJ102V	
C346	CU3069	TMCMA1A225MTR		C346	C1608JF1E10A2TA			C346	Q346	25C464S-TLN		R413	RK3038	ERJ6GSVJ102V	
C347	CU3069	TMCMA1A225MTR		C347	C1608JF1E10A2TA			C347	Q347	25C464S-TLN		R414	RK3038	ERJ6GSVJ102V	
C348	CU3069	TMCMA1A225MTR		C348	C1608JF1E10A2TA			C348	Q348	25C464S-TLN		R415	RK3038	ERJ6GSVJ102V	
C349	CU3069	TMCMA1A225MTR		C349	C1608JF1E10A2TA			C349	Q349	25C464S-TLN		R416	RK3038	ERJ6GSVJ102V	
C350	CU3069	TMCMA1A225MTR		C350	C1608JF1E10A2TA			C350	Q350	25C464S-TLN		R417	RK3038	ERJ6GSVJ102V	
C351	CU3069	TMCMA1A225MTR		C351	C1608JF1E10A2TA			C351	Q351	25C464S-TLN		R418	RK3038	ERJ6GSVJ102V	
C352	CU3069	TMCMA1A225MTR		C352	C1608JF1E10A2TA			C352	Q352	25C464S-TLN		R419	RK3038	ERJ6GSVJ102V	
C353	CU3069	TMCMA1A225MTR		C353	C1608JF1E10A2TA			C353	Q353	25C464S-TLN		R420	RK3038	ERJ6GSVJ102V	
C354	CU3069	TMCMA1A225MTR		C354	C1608JF1E10A2TA			C354	Q354	25C464S-TLN		R421	RK3038	ERJ6GSVJ102V	
C355	CU3069	TMCMA1A225MTR		C355	C1608JF1E10A2TA			C355	Q355	25C464S-TLN		R422	RK3038	ERJ6GSVJ102V	
C356	CU3069	TMCMA1A225MTR		C356	C1608JF1E10A2TA			C356	Q356	25C464S-TLN		R423	RK3038	ERJ6GSVJ102V	
C357	CU3069	TMCMA1A225MTR		C357	C1608JF1E10A2TA			C357	Q357	25C464S-TLN		R424	RK3038	ERJ6GSVJ102V	
C358	CU3069	TMCMA1A225MTR		C358	C1608JF1E10A2TA			C358	Q358	25C464S-TLN		R425	RK3038	ERJ6GSVJ102V	
C359	CU3069	TMCMA1A225MTR		C359	C1608JF1E10A2TA			C359	Q359	25C464S-TLN		R426	RK3038	ERJ6GSVJ102V	
C360	CU3069	TMCMA1A225MTR		C360	C1608JF1E10A2TA			C360	Q360	25C464S-TLN		R427	RK3038	ERJ6GSVJ102V	
C361	CU3069	TMCMA1A225MTR		C361	C1608JF1E10A2TA			C361	Q361	25C464S-TLN		R428	RK3038	ERJ6GSVJ102V	
C362	CU3069	TMCMA1A225MTR		C362	C1608JF1E10A2TA			C362	Q362	25C464S-TLN		R429	RK3038	ERJ6GSVJ102V	
C363	CU3069	TMCMA1A225MTR		C363	C1608JF1E10A2TA			C363	Q363	25C464S-TLN		R430	RK3038	ERJ6GSVJ102V	
C364	CU3069	TMCMA1A225MTR		C364	C1608JF1E10A2TA			C364	Q364	25C464S-TLN		R431	RK3038	ERJ6GSVJ102V	
C365	CU3069	TMCMA1A225MTR		C365	C1608JF1E10A2TA			C365	Q365	25C464S-TLN		R432	RK3038	ERJ6GSVJ102V	
C366	CU3069	TMCMA1A225MTR		C366	C1608JF1E10A2TA			C366	Q366	25C464S-TLN		R433	RK3038	ERJ6GSVJ102V	
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C369	CU3069	TMCMA1A225MTR		C369	C1608JF1E10A2TA			C369	Q369	25C464S-TLN		R436	RK3038	ERJ6GSVJ102V	
C370	CU3069	TMCMA1A225MTR		C370	C1608JF1E10A2TA			C370	Q370	25C464S-TLN		R437	RK3038	ERJ6GSVJ102V	
C371	CU3069	TMCMA1A225MTR		C371	C1608JF1E10A2TA			C371	Q371	25C464S-TLN		R438	RK3038	ERJ6GSVJ102V	
C372	CU3069	TMCMA1A225MTR		C372	C1608JF1E10A2TA			C372	Q372	25C464S-TLN		R439	RK3038	ERJ6GSVJ102V	
C373	CU3069	TMCMA1A225MTR		C373	C1608JF1E10A2TA			C373	Q373	25C464S-TLN					



Ref. No.	Part No.	Part Name	Ver.	Ref. No.	Part No.	Part Name	Ver.	Ref. No.	Part No.	Part Name	Ver.	Ref. No.	Part No.	Part Name	Ver.
L106	CH4003	KE-07723		Q128	XU0182	UN9112-(TX)		R168	RK3018	ERJ3G5YJ220V		SW501	UU0018	SW Unit	
L107	CH4003	KE-07723		Q129	XU0182	UN9112-(TX)		R169	RK3031	ERJ3G5YJ271V		SW505	UU0018	SOP-12HST	
L108	CH4003	KE-07723		Q130	XU0182	UN9112-(TX)		R170	RK3039	ERJ3G5YJ122V					
L109	CH4003	KE-07723		Q131	XU0182	UN9112-(TX)		R171	RK3059	ERJ3G5YJ863V					
L110	CH4020	KE-07723		Q132	XU0182	UN9112-(TX)		R172	RK3014	ERJ3G5YJ100V					
L111	CH4020	KE-07723		Q133	XU0182	UN9112-(TX)		R173	RK3051	ERJ3G5YJ271V					
L112	CH4003	KE-07723		Q134	XU0182	UN9112-(TX)		R174	RK3054	ERJ3G5YJ223V					
L113	CH4020	KE-07723		Q135	XU0189	UMCSNTR		R175	RK3054	ERJ3G5YJ223V					
L114	CH4020	LL1609-F15NK		Q136	XU0189	UMCSNTR		R176	RK3059	ERJ3G5YJ0900V					
L115	CH4020	LL1609-F15NK		R101	RK3028	ERJ3G5YJ0900V		R177	RK3039	ERJ3G5YJ122V					
L116	CH4020	LL1609-F15NK		R102	RK3001	ERJ3G5YJ0900V		R178	RK3039	ERJ3G5YJ122V					
L117	CH4024	LL1609-F33NK		R105	RK3060	ERJ3G5YJ863V		R179	RK3039	ERJ3G5YJ122V					
L118	CH4024	LL1609-F33NK		R106	RK3031	ERJ3G5YJ271V		R180	RK3001	ERJ3G5YJ0900V					
L119	CH40512	LCH1N333904		R107	RK3039	ERJ3G5YJ220V		R181	RK3023	ERJ3G5YJ220V					
L120	CH40512	LCH1N333904		R108	RK3039	ERJ3G5YJ122V		R182	RK3046	ERJ3G5YJ566V					
L121	CH4006	LCH1N333904		R109	RK3039	ERJ3G5YJ122V		R183	RK3039	ERJ3G5YJ122V					
L122	CH4006	LCH1N333904		R110	RK3039	ERJ3G5YJ122V		R184	RK3046	ERJ3G5YJ122V					
L123	CH4006	LCH1N333904		R111	RK3039	ERJ3G5YJ122V		R185	RK3046	ERJ3G5YJ122V					
L124	CH4006	LCH1N333904		R112	RK3039	ERJ3G5YJ122V		R186	RK3031	ERJ3G5YJ271V					
L125	CH4006	LCH1N333904		R113	RK3031	ERJ3G5YJ123V		R187	RK3027	ERJ3G5YJ121V					
L126	CH40507	LK16081R10K-T		R114	RK3051	ERJ3G5YJ123V		R188	RK3028	ERJ3G5YJ151V					
L127	CH40507	LK16081R10K-T		R115	RK3049	ERJ3G5YJ123V		R189	RK3021	ERJ3G5YJ151V					
L128	CH40507	LK16081R10K-T		R116	RK3049	ERJ3G5YJ123V		R190	RK3059	ERJ3G5YJ863V					
L129	CH40507	LK16081R10K-T		R117	RK3028	ERJ3G5YJ123V		R191	RK3026	ERJ3G5YJ151V					
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L131	CH40401	LK16081R10K-T		R119	RK3018	ERJ3G5YJ151V		R193	RK3039	ERJ3G5YJ101V					
L132	CH40401	LK16081R10K-T		R120	RK3018	ERJ3G5YJ151V		R194	RK3039	ERJ3G5YJ122V					
L133	CH40397	LK16081R10K-T		R121	RK3060	ERJ3G5YJ220V		R195	RK3026	ERJ3G5YJ101V					
L134	CH40398	LK16081R10K-T		R122	RK3042	ERJ3G5YJ222V		R196	RK3039	ERJ3G5YJ101V					
L135	CH40504	LK16081R10K-T		R123	RK3031	ERJ3G5YJ220V		R197	RK3018	ERJ3G5YJ220V					
L136	CH40399	LK16081R10K-T		R124	RK3031	ERJ3G5YJ220V		R198	RK3026	ERJ3G5YJ122V					
L137	CH40513	MR1.5_1.5T_0.4		R125	RK3047	ERJ3G5YJ220V		R199	RK3026	ERJ3G5YJ122V					
L138	CH40513	MR1.5_1.5T_0.4		R126	RK3038	ERJ3G5YJ102V		R200	RK3059	ERJ3G5YJ122V					
L139	CH40503	MR1.5_1.5T_0.4		R127	RK3038	ERJ3G5YJ102V		R201	RK3026	ERJ3G5YJ122V					
L140	CH40503	MR1.5_1.5T_0.4		R128	RK3039	ERJ3G5YJ102V		R202	RK3039	ERJ3G5YJ122V					
L141	CH40503	MR1.5_1.5T_0.4		R129	RK3026	ERJ3G5YJ102V		R203	RK3039	ERJ3G5YJ122V					
L142	CH40503	MR1.5_1.5T_0.4		R130	RK3026	ERJ3G5YJ102V		R204	RK3026	ERJ3G5YJ122V					
L143	CH40509	LCH1N333904		R131	RK3018	ERJ3G5YJ101V		R205	RK3038	ERJ3G5YJ101V					
L144	CH40511	LCH1N333904		R132	RK3059	ERJ3G5YJ101V		R206	RK3039	ERJ3G5YJ102V					
L145	CH40400	LCH1N333904		R133	RK3018	ERJ3G5YJ101V		R207	RK3038	ERJ3G5YJ102V					
L146	CH40259	LCH1N333904		R134	RK3059	ERJ3G5YJ101V		R208	RK3039	ERJ3G5YJ122V					
L147	CH40257	LCH1N333904		R135	RK3018	ERJ3G5YJ101V		R209	RK3039	ERJ3G5YJ122V					
L148	CH40398	LCH1N333904		R136	RK3047	ERJ3G5YJ101V		R210	RK3038	ERJ3G5YJ102V					
L149	CH40398	LCH1N333904		R137	RK3047	ERJ3G5YJ101V		R211	RK3031	ERJ3G5YJ271V					
L150	CH40401	LCH1N333904		R138	RK3047	ERJ3G5YJ101V		R212	RK3039	ERJ3G5YJ122V					
L151	CH40398	LCH1N333904		R139	RK3047	ERJ3G5YJ101V		R213	RK3054	ERJ3G5YJ122V					
L152	CH40398	LCH1N333904		R140	RK3047	ERJ3G5YJ101V		R214	RK3054	ERJ3G5YJ122V					
L153	CH4015A	MR1.5_1.5T_0.4		R141	RK3054	ERJ3G5YJ101V		R215	RK3039	ERJ3G5YJ102V					
L154	CH40108	2SC4649-TLN		R142	RK3047	ERJ3G5YJ223V		R216	RK3039	ERJ3G5YJ122V					
L155	CH40108	2SC4649-TLN		R143	RK3051	ERJ3G5YJ223V		R217	RK3054	ERJ3G5YJ223V					
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L158	CH40108	2SC4649-TLN		R146	RK3028	ERJ3G5YJ151V		R220	RK3054	ERJ3G5YJ223V					
L159	CH40108	2SC4649-TLN		R147	RK3043	ERJ3G5YJ151V		R221	RK3054	ERJ3G5YJ223V					
L160	CH40108	2SC4649-TLN		R148	RK3043	ERJ3G5YJ102V		R222	RK3054	ERJ3G5YJ223V					
L161	CH40108	2SC4649-TLN		R149	RK3043	ERJ3G5YJ102V		R223	RK3054	ERJ3G5YJ223V					
L162	CH40108	2SC4649-TLN		R150	RK3043	ERJ3G5YJ102V		R224	RK3054	ERJ3G5YJ223V					
L163	CH40108	2SC4649-TLN		R151	RK3043	ERJ3G5YJ102V		R225	RK3054	ERJ3G5YJ223V					
L164	CH40108	2SC4649-TLN		R152	RK3043	ERJ3G5YJ102V		R226	RK3054	ERJ3G5YJ223V					
L165	CH40108	2SC4649-TLN		R153	RK3043	ERJ3G5YJ102V		R227	RK3054	ERJ3G5YJ223V					
L166	CH40108	2SC4649-TLN		R154	RK3043	ERJ3G5YJ102V		R228	RK3054	ERJ3G5YJ223V					
L167	CH40108	2SC4649-TLN		R155	RK3043	ERJ3G5YJ102V		R229	RK3054	ERJ3G5YJ223V					
L168	CH40108	2SC4649-TLN		R156	RK3043	ERJ3G5YJ102V		R230	RK3054	ERJ3G5YJ223V					
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L171	CH40108	2SC4649-TLN		R159	RK3043	ERJ3G5YJ102V		R233	RK3054	ERJ3G5YJ223V					
L172	CH40108	2SC4649-TLN		R160	RK3043	ERJ3G5YJ102V		R234	RK3054	ERJ3G5YJ223V					
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L175	CH40108	2SC4649-TLN		R163	RK3043	ERJ3G5YJ102V		R237	RK3054	ERJ3G5YJ223V					
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L178	CH40108	2SC4649-TLN		R166	RK3043	ERJ3G5YJ102V		R240	RK3054	ERJ3G5YJ223V					
L179	CH40108	2SC4649-TLN		R167	RK3043	ERJ3G5YJ102V		R241	RK3054	ERJ3G5YJ223V					
L180	CH40108	2SC4649-TLN						R242	RK3054	ERJ3G5YJ223V					
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L184	CH40108	2SC4649-TLN						R246	RK3054	ERJ3G5YJ223V					
L185	CH40108	2SC4649-TLN						R247	RK3054	ERJ3G5YJ223V					
L186	CH40108	2SC4649-TLN						R248	RK3054	ERJ3G5YJ223V					
L187	CH40108														

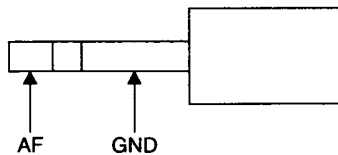
# ADJUSTMENT

## 1) Required measuring instruments and tools

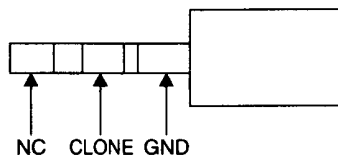
1. Digital voltmeter
2. Regulated power supply of 10 V, 1 A or more
3. Oscilloscope
4. Frequency counter
5. External speaker
6. 0.1 MHz ~ 2 GHz SG
7. Audio analyzer  
Level meter, distortion factor meter, linear detector
8. Spectrum analyzer

1 m coaxial cable with BNC connector

Speaker cable with 3.5ø plug



Cloning cable with 2.5ø stereo plug on both ends



Power supply cable for external power supply terminal (For DJG5)

## 2) Adjustment

All SSG outputs are indicated in EMF.

The SP is 8  $\Omega$ . Output is 50 mW.

Level meter filter must be HPF (30 ~ 50 Hz) and LPF (10 ~ 15 kHz).

## ■ Power supply 10 V

After connecting and turning ON the power supply:

Turn the BS OFF.

Transfer adjustment data by cloning.

## ■ Frequency adjustment

Encircled numbers correspond to memory Nos. in the memory A0 bank.

### 1. PLL reference frequency

- While receiving on  $f=198.70$ (NFM ①), using the frequency counter, measure TP104 in the RF Unit and adjust TC100 to obtain  $934.95\text{MHz} \pm 1\text{kHz}$ .

### 2. VCXO frequency

- While receiving on  $f=198.70$ (step=100Hz, NFM ①), using the frequency counter, measure TP304 in the IF Unit, and adjust VR303 and VR300 to obtain  $44.595\text{MHz} \pm 200\text{Hz}$ .
- When receiving on  $f=198.701\text{MHz}$  ②, adjust to  $44.6049\text{MHz} \pm 200\text{Hz}$ .
- Switch ① 198.700 MHz and ② 198.7001 MHz and set amplitude to 9.9 kHz from VR303. Adjust to 44.5950 MHz when at 198.700 MHz from VR300.

### 3. SSB BFO frequency

- While receiving on  $f=198.70$ (USB ③), using the frequency counter, measure TP308 in the IF Unit and adjust TC300 to obtain  $456.0\text{kHz} +200\text{Hz} / -600\text{Hz}$ .

### 4. PLL lock check

- Check that voltage is 8 ~ 15 V using the digital voltmeter on  $f=300.0$ (NFM ④) and measuring TP103 in the RF Unit.
- Check that voltage is in 3 ~ 25 V using the digital voltmeter on  $f=449.940$ (NFM ⑤) and measuring TP103 in the RF Unit.

### 5. Local level adjustment

- Connect the spectrum analyzer to antenna connector.  
Set to maximum value while receiving on  $f=198.70$  ⑥ and adjusting L103, L105, L106, and FL100 in the RF Unit.

### 6. NFM distortion

- Apply SG=60dBu 1kHz. Measure SP terminal. Adjust L307 in the IF Unit.  
While receiving on  $f=198.70$ , using the distortion factor meter and oscilloscope, set distortion factor to minimum before making other adjustments, and set max. AF output to 6%.
- When receiving on 3.5kHz DEV(NFM ⑥), always turn adjustment core of L307 counter-clockwise. Be careful not to crack the core when turning clockwise.

## 7. NFM sensitivity

- Apply SG=6dBu 1kHz and 3.5kHz DEV (NFM ⑥). Measure SP terminal. Adjust FI102, FL101, and L102 in the RF Unit.

While receiving on f=198.70, using the distortion factor meter oscilloscope, repeat adjustment until obtaining optimum SINAD.

- Apply SG=0dBu 1kHz and 3.5kHz DEV(NFM ⑦). Measure SP terminal. Adjust L113, L110, L107, and L101 in the RF Unit.

While receiving on f=510.03, using the distortion factor meter oscilloscope, repeat adjustment until obtaining optimum SINAD.

## 8. WFM distortion

- Apply SG=60dBu 1kHz and 22.5kHz DEV(WFM ⑧). Measure SP terminal. Adjust L305 in the IF Unit.

While receiving on f=198.7, using the distortion factor meter oscilloscope, set distortion factor to minimum and max. AF output to 6%.

## 9. WFM sensitivity

- Apply SG=10dBu 1kHz and 22.5kHz DEV(WFM ⑧). Measure SP terminal. Adjust L304 and L309 in the IF Unit.

While receiving on f=198.70, using the distortion factor meter oscilloscope, repeat adjustment until obtaining optimum SINAD.

## 10. SQ level adjustment

- Apply SG=-3dBu. Measure SP BUSY terminal. Adjust VR302 in the IF Unit.

While receiving on f=198.70(NFM ⑨), adjust on LCD SQ level 1, turn VR304 clockwise to close squelch. Then, turn counter-clockwise to open and fix. However, close with SQ.

## 11. NFM S meter adjustment

- Apply SG=25dBu, unmodulated(NFM ⑨). Measure LCD terminal. Adjust VR302 in the IF Unit.

While receiving on f=198.70, turn SG OFF when S meter is full scale. Check S meter does not light up.

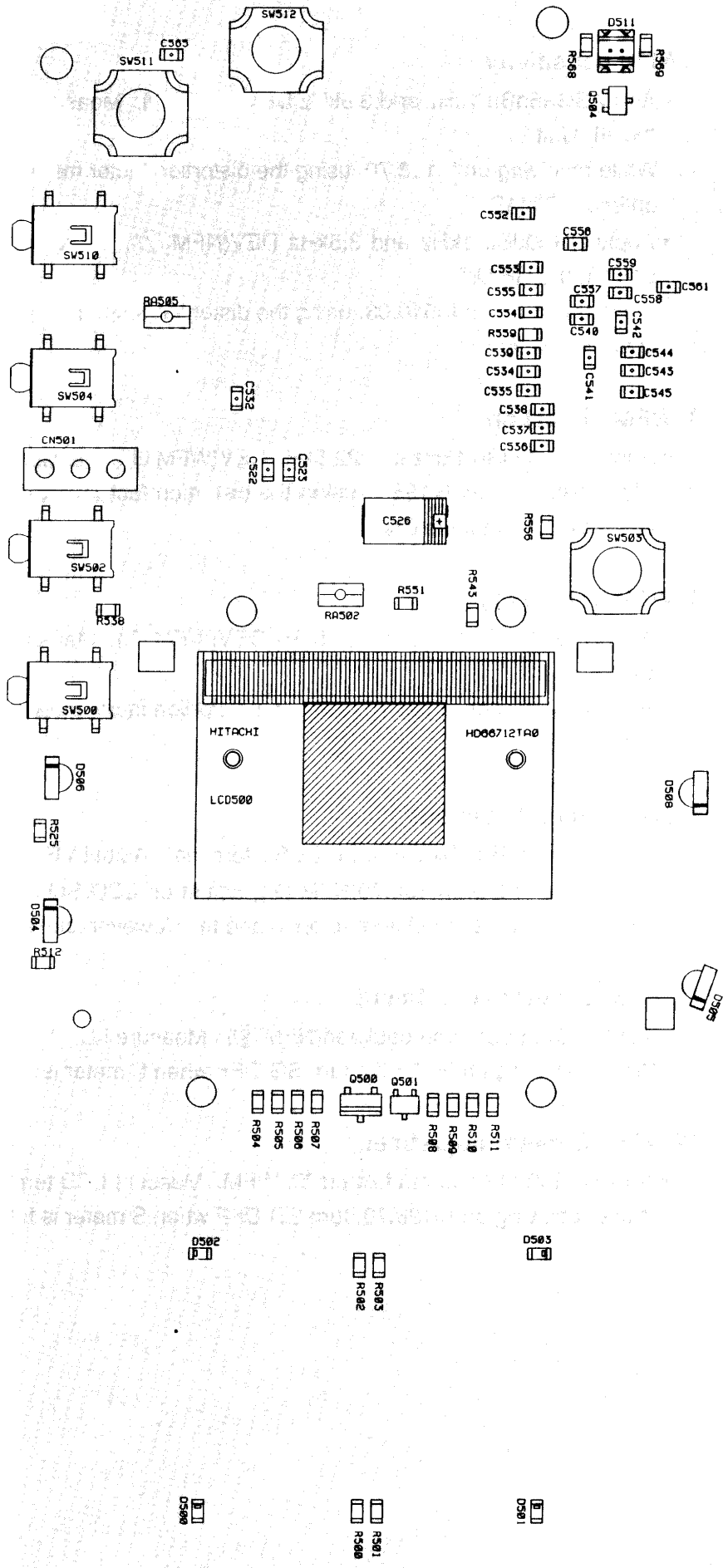
## 12. WFM S meter adjustment

- Apply SG=32dBu, unmodulated ⑩, WFM. Measure LCD terminal. Adjust VR301 in the IF Unit.

While receiving on f=198.70, turn SG OFF when S meter is full scale. Check S meter does not light up.

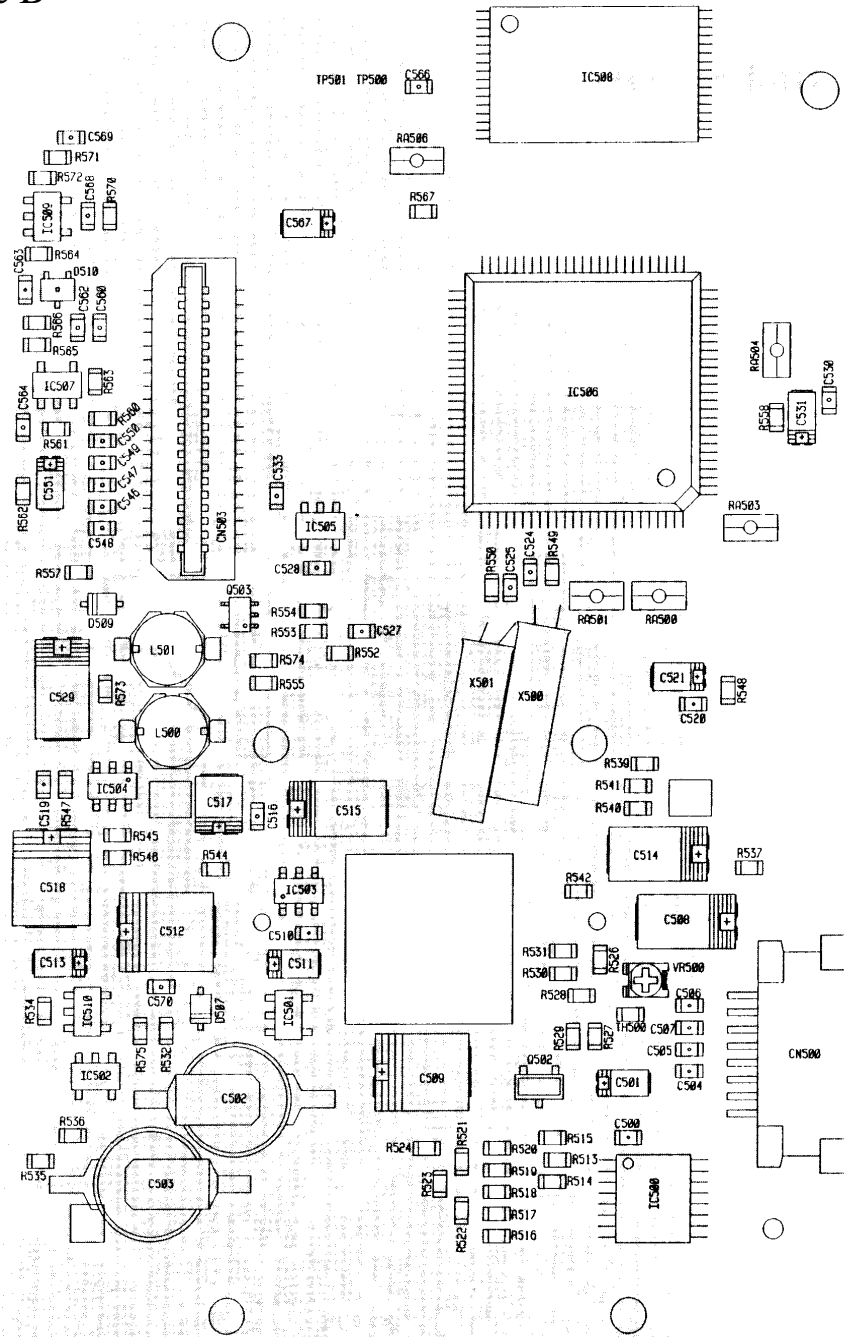
# PC BOARD VIEW

## CPU Unit Side A

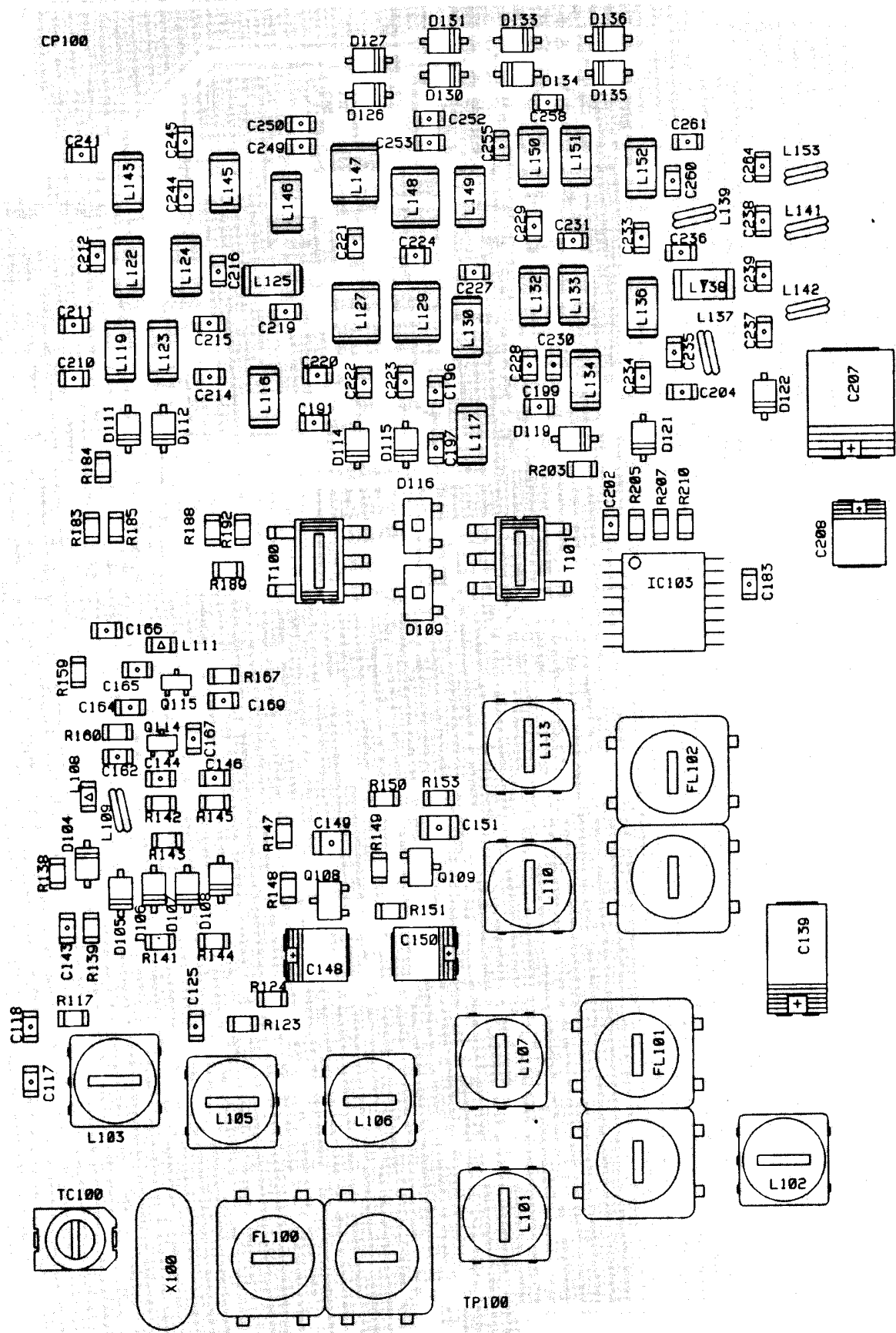




# CPU Unit Side B

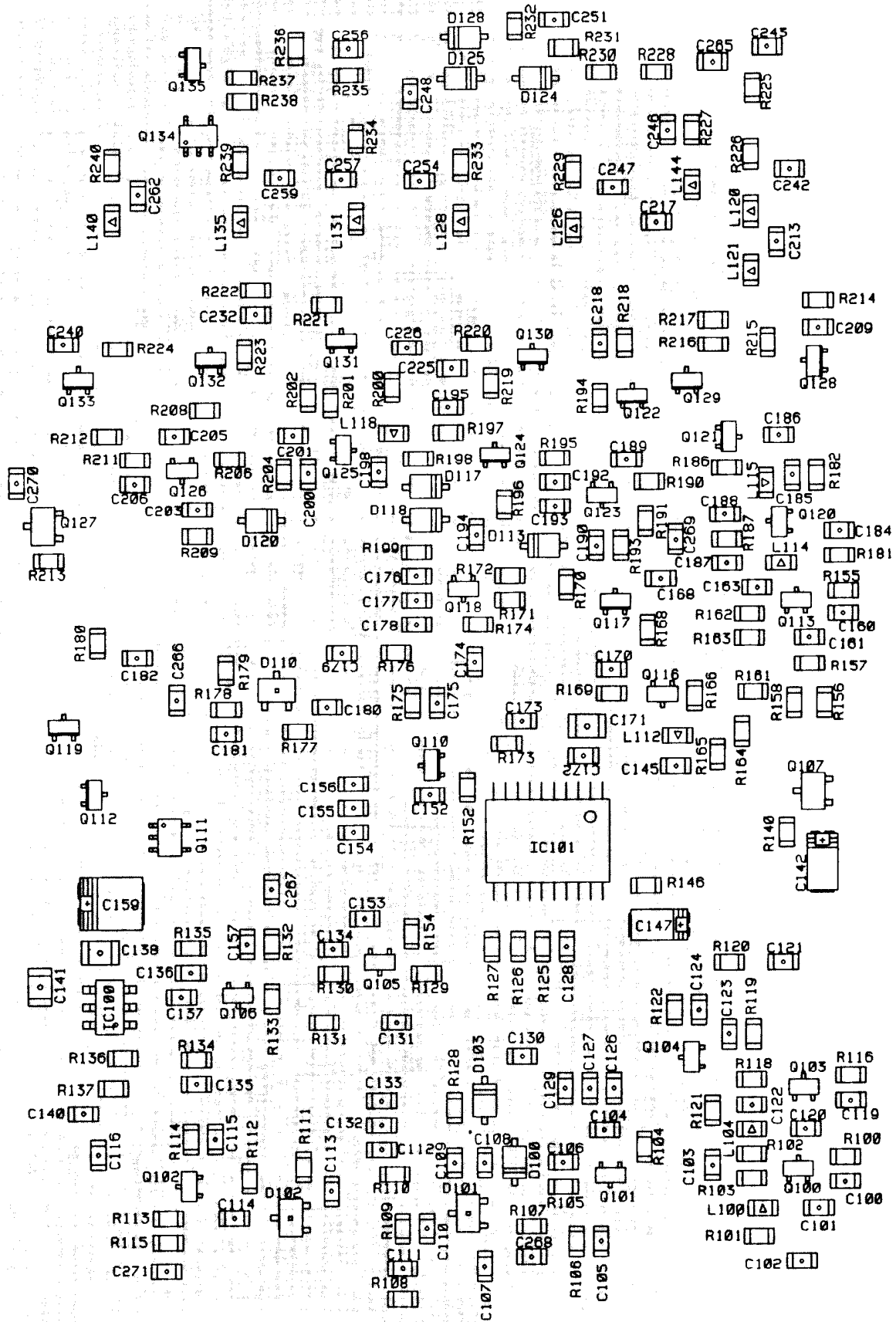


# RF Unit Side A

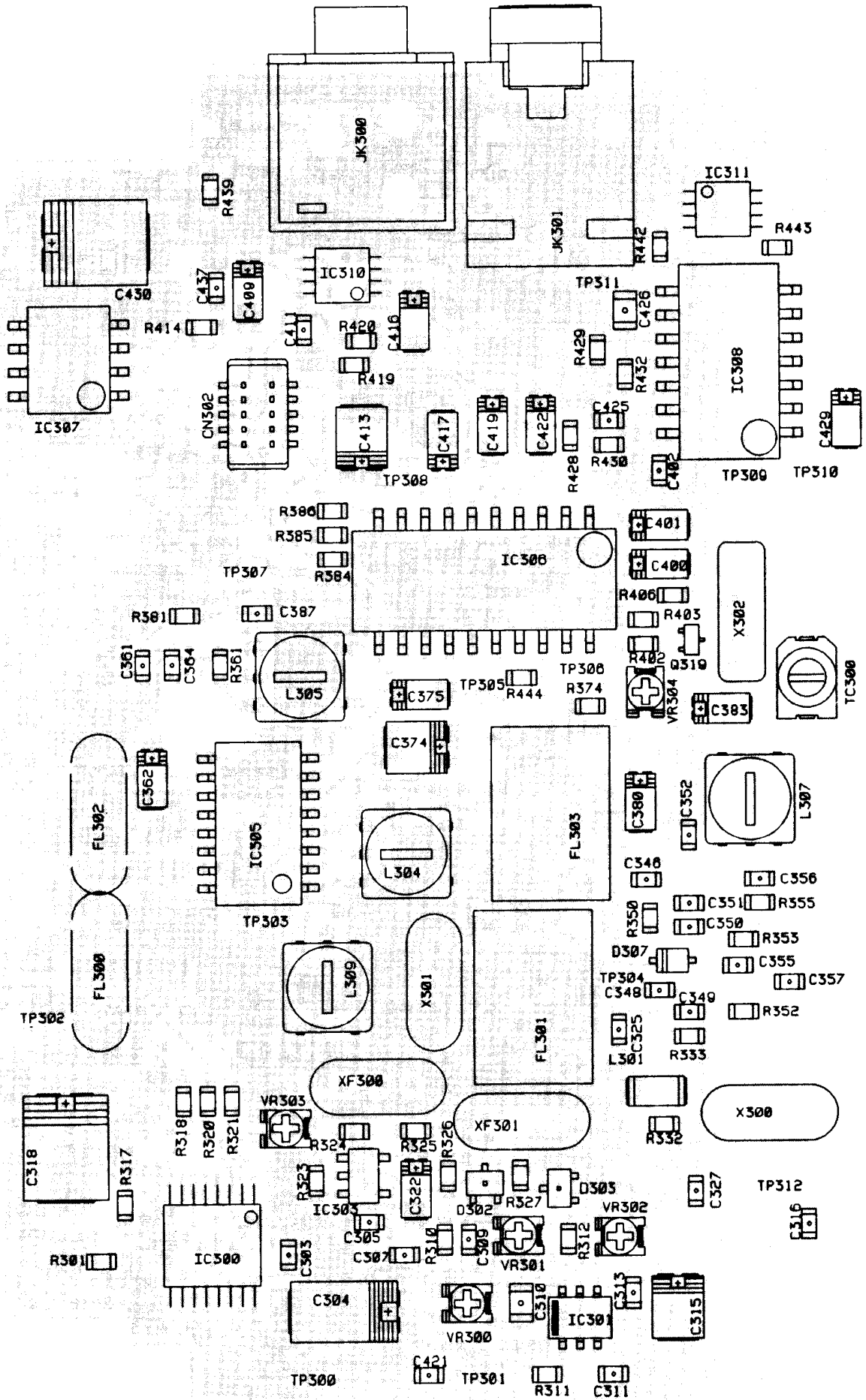


# RF Unit Side B

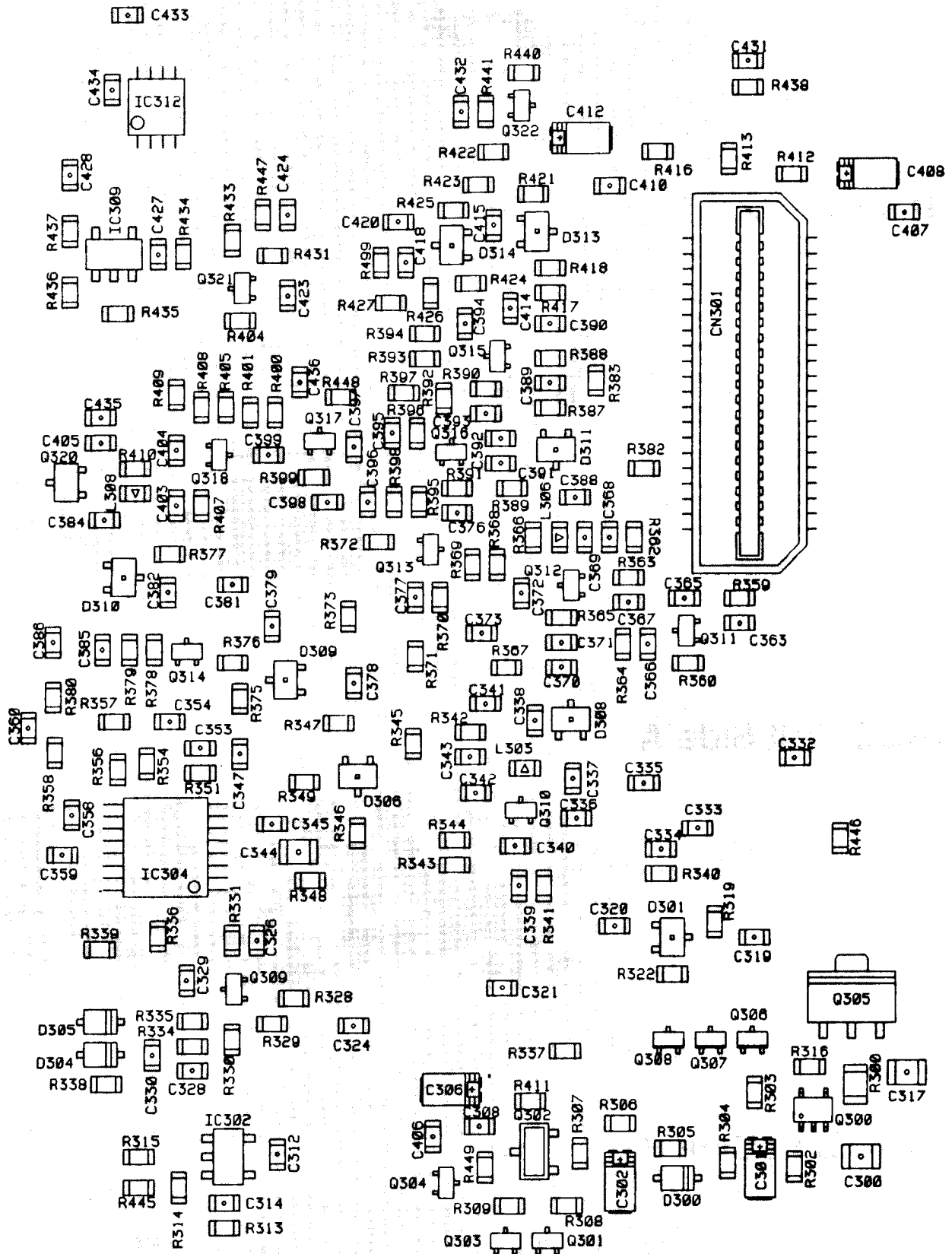
CN100



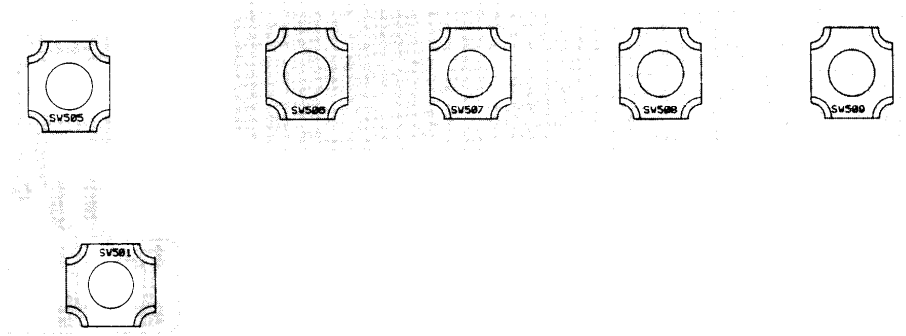
CN300



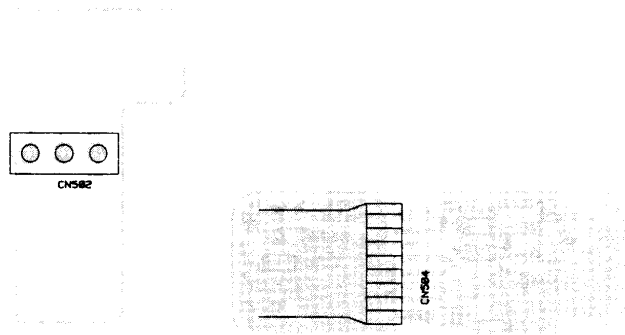
# IF Unit Side B



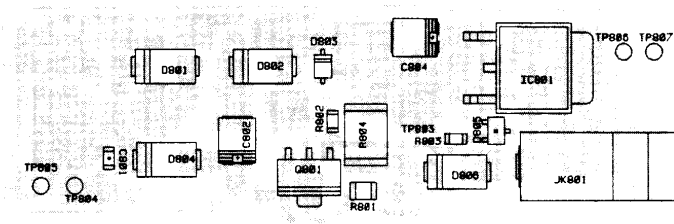
## PTT SW Unit Side A



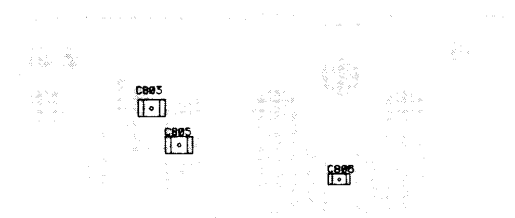
## PTT SW Unit Side B



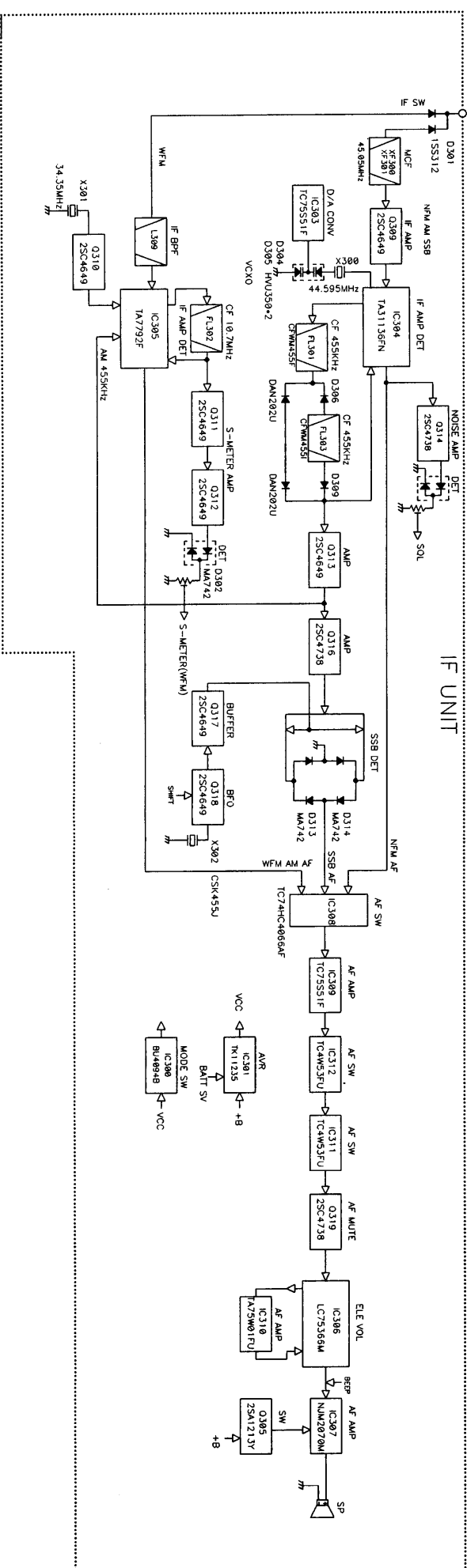
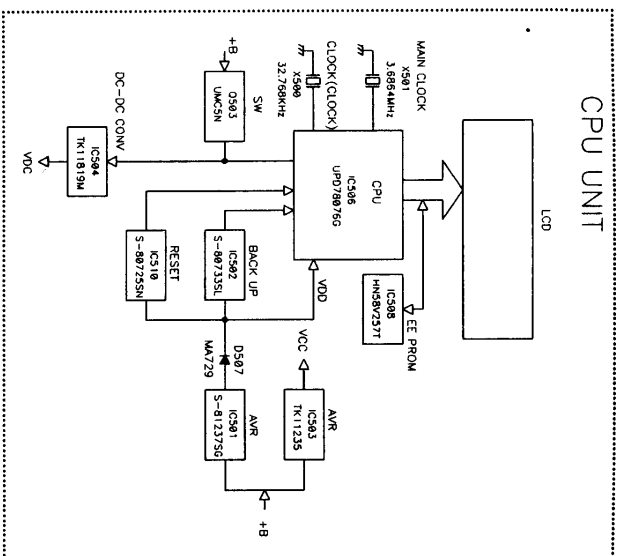
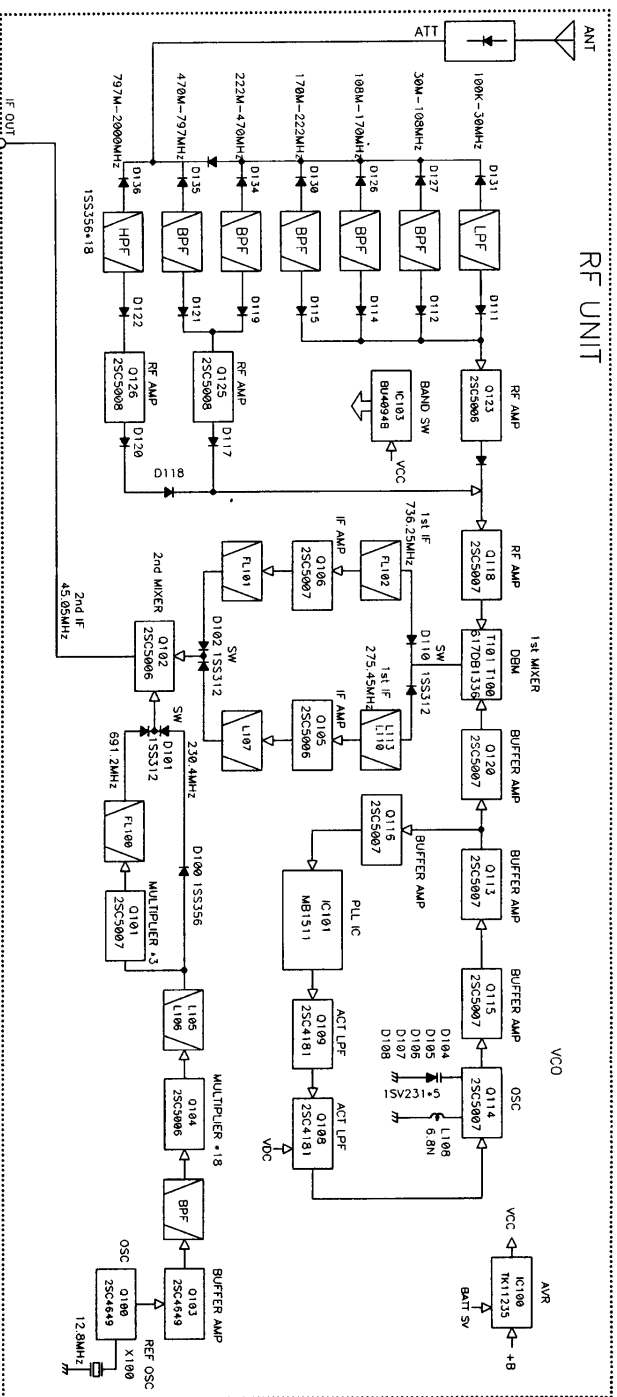
## CHARGE Unit Side A



## CHARGE Unit Side B

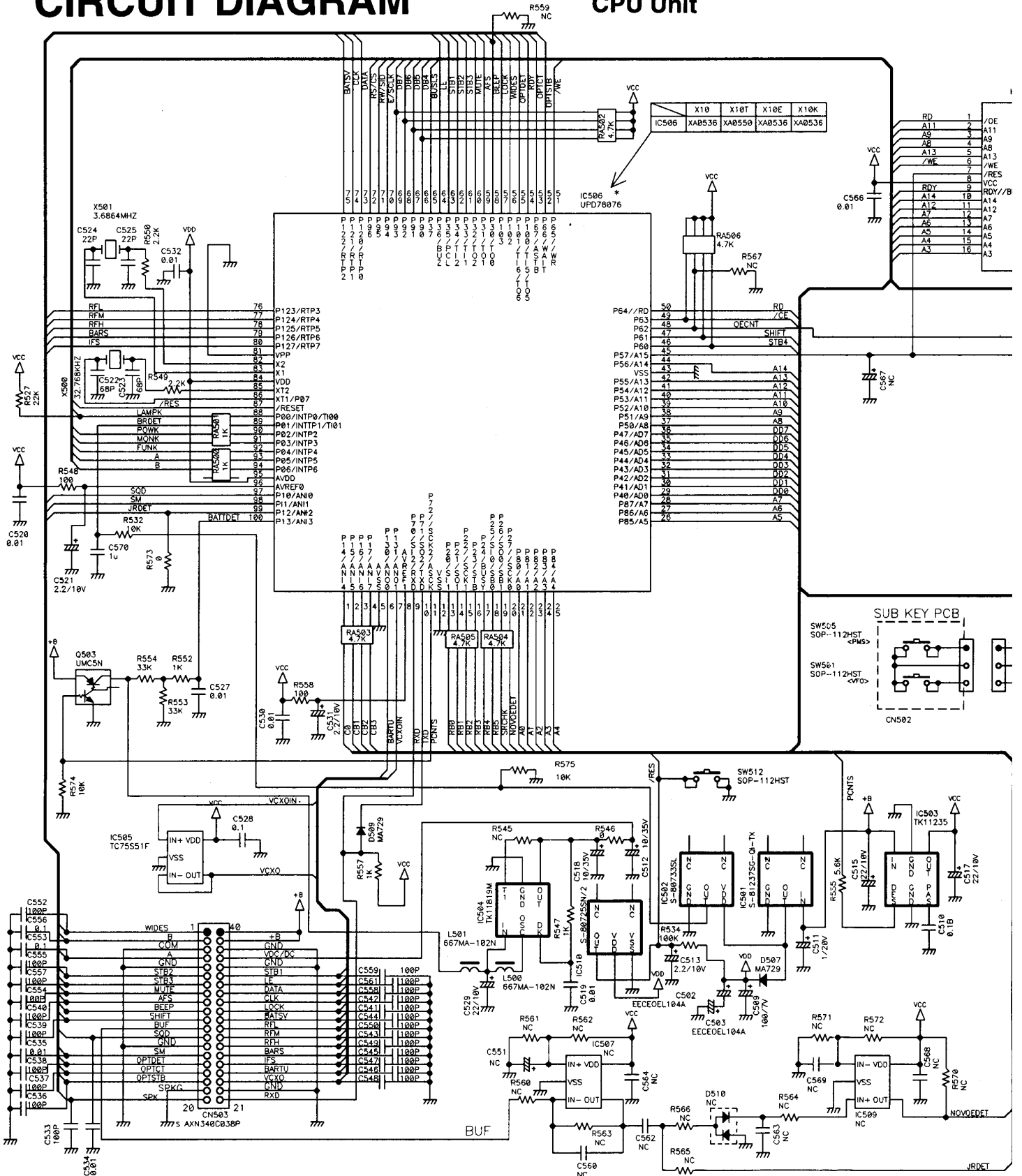


# BLOCK DIAGRAM

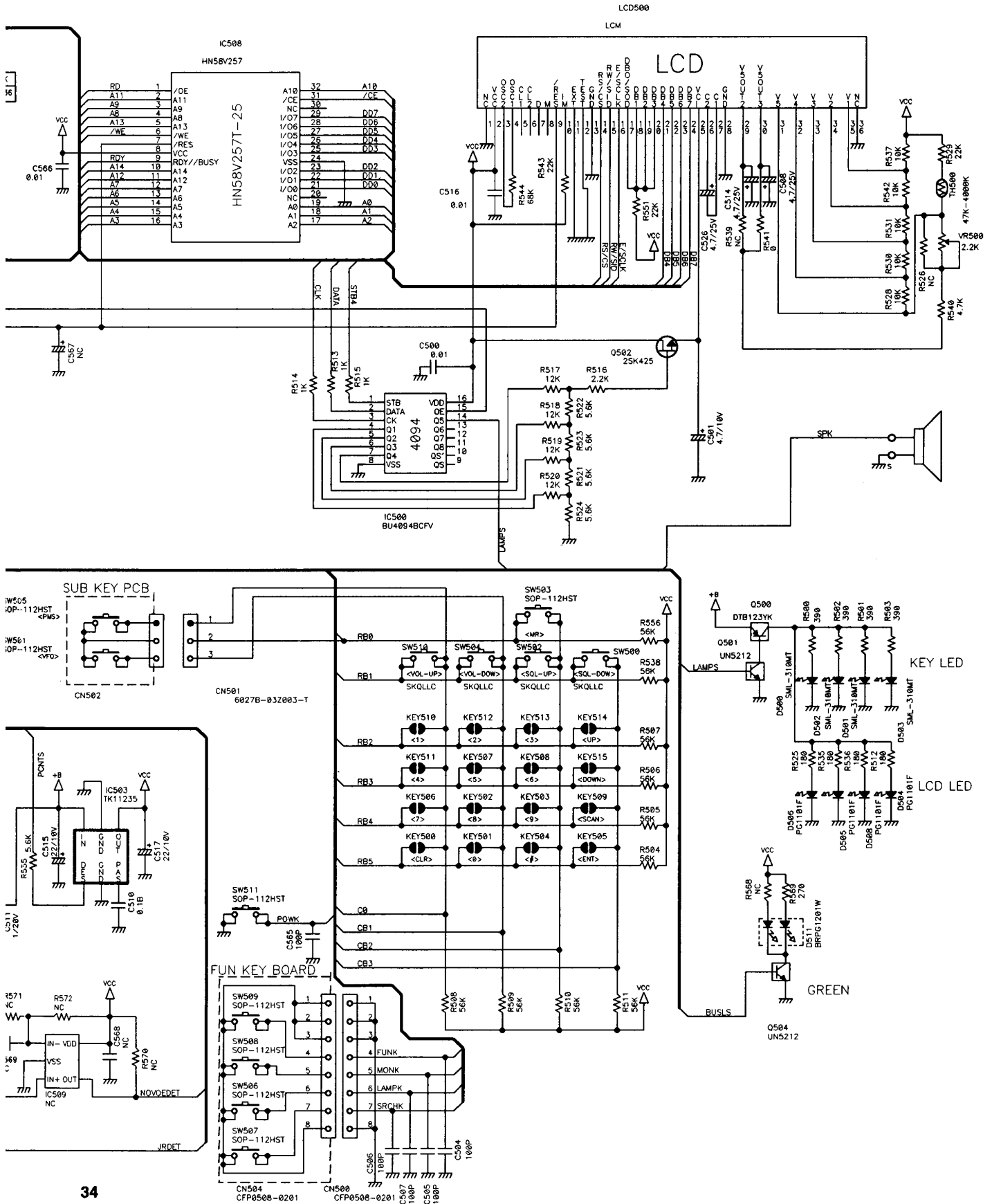


# CIRCUIT DIAGRAM

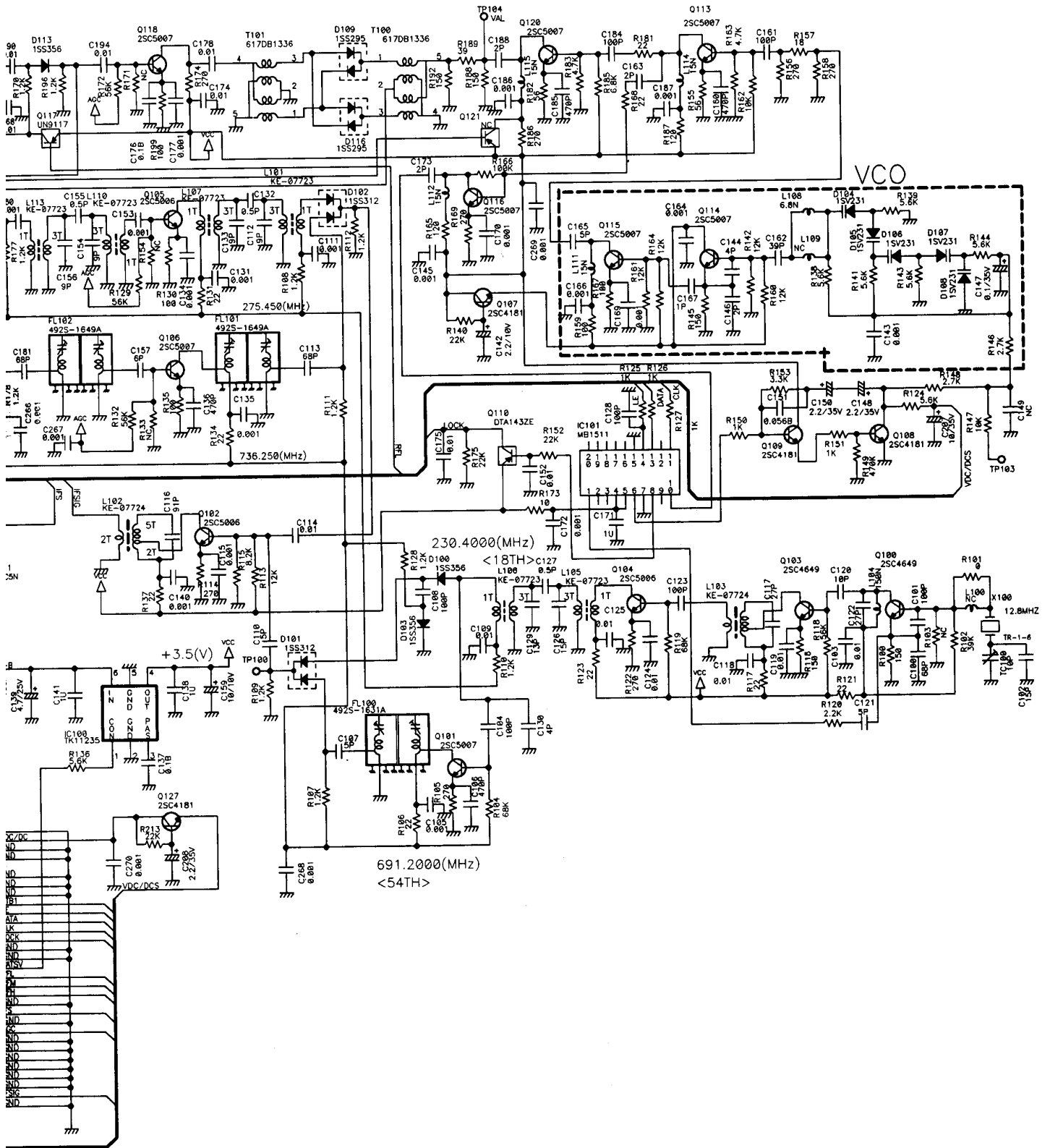
## CPU Unit



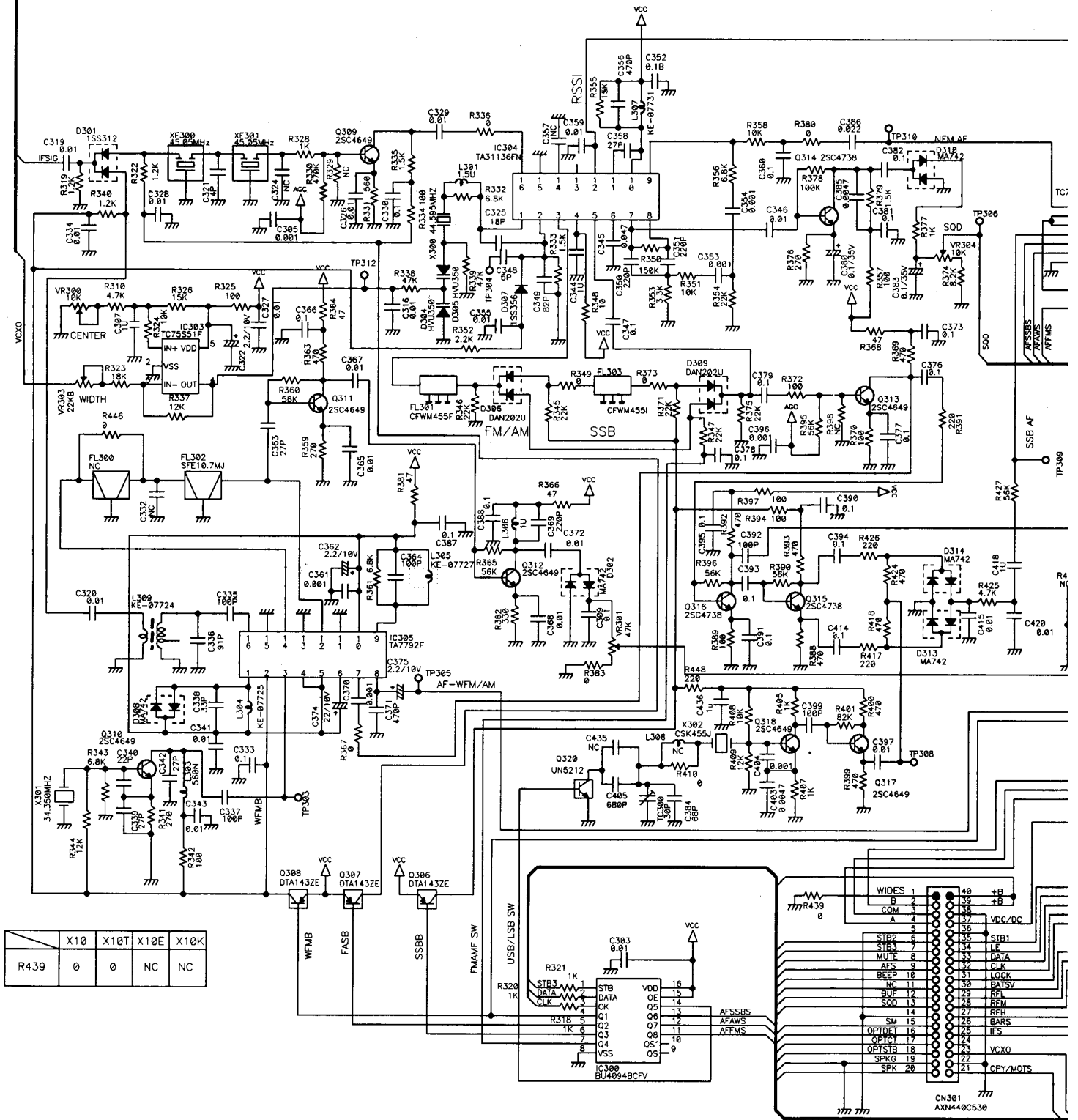




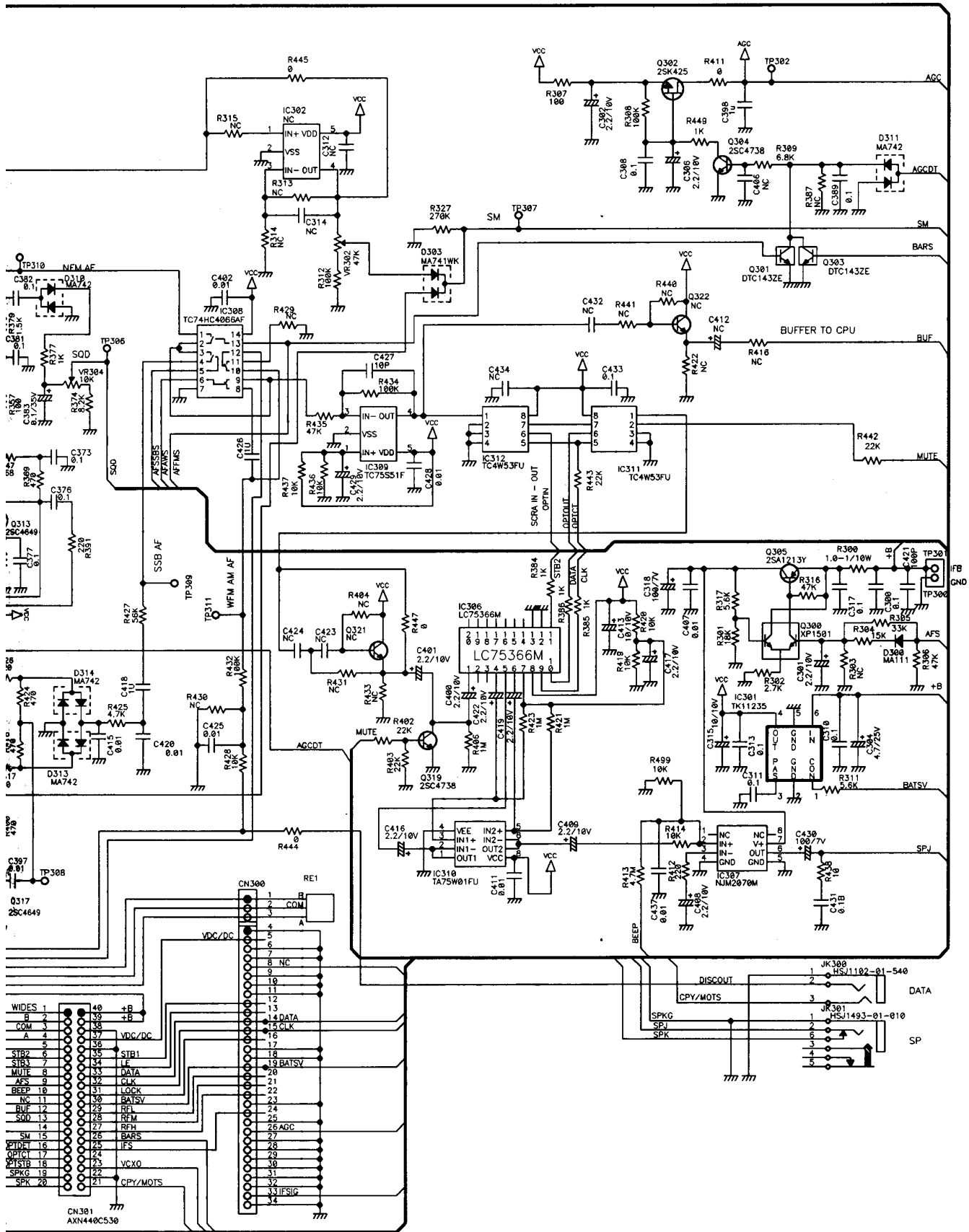




# IF Unit



	X10	X10T	X10E	X10K
R439	0	0	NC	NC



WIDES 1	40	+B
B 2	39	+B
COM 3	38	
A 4	37	VDC/DC
5	36	
STR2 6	35	STR1
STR3 7	34	LF
MUTE 8	33	DATA
AFS 9	32	CLK
BEEP 10	31	LOCK
NC 11	30	BATSU
BUS 12	29	RF
SOD 13	28	RFM
14	27	RFH
SM 15	26	BARS
PTDC 16	25	IFS
OPTIC 17	24	VCXO
PTSTB 18	23	VCXO
SPKG 19	22	CPY/MOTS
SPK 20	21	CPY/MOTS

CN301  
AXN448C530

# CHARGE Unit

