

DJ-C1/C4

Service Manual

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SPECIFICATIONS

	DJ-C1		DJ-C4								
Version	T	E	T	E	C						
Receptionrange(MHz)	118.000~173.995	144.000~145.995	420.000~449.995	430.000~439.995	433.05~434.79						
Transmission range (MHz)	144.000~147.995	144.000~145.995	420.000~449.995	430.000~439.995	433.05~434.79						
Signal type	F3E(FM)										
Operating temperature	Transceiver: -10~+50°C Charger:0~40°C										
Rated voltage	3.7V										
Power consumption	Transmission : Approx.240mA Reception : Approx.30mA (Rx squelched)	Transmission : Approx.300mA Reception : Approx.40mA (Rx squelched)	Approx.180mA Approx.40mA (Rx squelched)	Approx.180mA Approx.40mA (Rx squelched)	Approx.180mA Approx.40mA (Rx squelched)						
Ground											
Microphone input impedance											
Dimensions (Without projections)	94(H) x 56(W) x 10.6 (D)										
Weight(With battery)	75g										
Transmitter											
Power output	300mW		10mW								
Modulation system	Reactance modulation										
Max.frequency deviation	+/- 5kHz										
Spurious emission	Max.-60dB		Typ.-50dB								
Receiver											
Receiving system	Double conversion superheterodyne										
1stintermediate frequency	21.7MHz	20.8MHz	21.7MHz								
2nd intermediate frequency	450kHz										
Sensitivity	Better than -16dBu		Better than -15dBu								
AF power output	20mW(32ohm)										

DJ-C1 CIRCUIT DESCRIPTION

1) Reception

1. Front End The signal picked up by the antenna is passed through a low-pass filter and band-pass filter, and amplified by an RF amplifier (Q207). It is then passed through another low-pass filter and sent to the mixer (Q209).
2. Mixer The mixer (Q209) creates the sum and difference of the received signal and the first local signal. The crystal filter (XF201) selects the 21.7 MHz signal and eliminates adjacent signals. The first IF amplifier (Q210) then amplifies the selected signal. The upper side local signal is used as the first local signal. It is obtained by passing the signal from the VCO through two buffer amplifiers (Q204 and Q208) and into the base of the mixer (Q209).
- 3.IF The signal amplified by the first IF amplifier (Q210) is input to pin 16 of the demodulator circuit (IC207). A second local signal of 21.25 MHz is oscillated by the crystal(X201) and IC202, and is input to pin 1 of the IC207. These two signals are mixed by the demodulator's internal mixer and converted to a 450 kHz second IF signal. The converted second IF signal is output from pin 3 of IC207 to a ceramic filter (FL201) where adjacent signals are eliminated. The resulting signal is then sent back to pin 5 of IC207.
- [FM] The second IF signal input to pin 5 of IC207 is demodulated by the internal limiter amplifier and quadrature detection circuit. It is then output as an audio signal from pin 9.
- [AM] For AM, the S-meter output from pin 12 of IC207 is amplified by the AM audio amplifier (Q220). Also, the AGC amplifier (Q221) forward-controls gain of the first IF amplifier (Q210) in order that the correct audio signal is obtained even when the input signal changes.
4. Squelch The squelch takes white noise from pin 9 of IC207 and inputs into pin 8 of IC207. The noise passes through an internal noise filter amplifier and rectifier circuit, and is output from pin 14. The rectified voltage is input to the A/D port of the microcomputer (IC101). The microcomputer turns audio output ON/OFF based on this voltage:

5. Audio	Audio output is switched between AM and FM by IC209. Volume is controlled by Q222 and Q223. The signal is input to pin 2 of the audio power amplifier (IC208) and output from pin 6, thus producing sound from the earphones, etc.
6. VCO	The VCO is built on a Colpits oscillator. Frequency is determined by D203, D207 and L214, and the signal is oscillated by a transistor (Q203). The oscillated signal is passed through a buffer amplifier (Q204) and input to pin 6 of a PLL circuit (IC204).
7. PLL Circuit	The PLL circuit (IC204) is used to control the frequency oscillated by the VCO. Control uses the serial control signal from the microcomputer (IC101). The reference frequency that IC204 uses is oscillated to 21.25 MHz by IC202 in the crystal oscillator (X201) and input to pin 1 of the IC204. The IC204 divides the control signal sent to pin 6 from IC101 and the 21.25 MHz reference signal internally, and compares phases between the two. If a difference is detected in the comparison, the charge pump in pin 9 outputs a pulse signal. The pulse is converted to DC voltage by the PLL loop filter and input to the cathode of the VCO varicaps (D203 and D207) in order to eliminate the difference. This enables stable oscillation at the desired frequency.

2) Transmission

1. Microphone Amplifier

The microphone amplifier (IC205) has two operating amplifiers. Sound is converted to an electric signal and input to IC205. The input signal is amplified for pre-emphasis and then output. The output signal is regulated for maximum frequency deviation by VR202 and input to the cathode of the modulation varicap (D206) of the VCO, thereby generating an FM signal by capacitance change.

2. Power Amplifier The signal oscillated by the VCO is passed through two buffer amplifiers (Q204 and Q218) and an exciter (Q206), and is then input to a power amplifier (Q205). The signal from the power amplifier is passed through a low-pass filter to attenuate harmonic components and is then supplied to the matching circuit and antenna.

DJ-C4 CIRCUIT DESCRIPTION

1) Reception

1. Front End The signal picked up by the antenna is passed through a low-pass filter and amplified by an RF amplifier (Q207). It is then passed through a band-pass filter, reamplified by Q209 and sent to the mixer (Q223).
2. Mixer The mixer (Q223) creates the sum and difference of the received signal and the first local signal. The crystal filter (XF201) selects the 21.7 MHz signal and eliminates all other adjacent signals. The first IF amplifier (Q210) then amplifies the selected signal. The lower side local signal (439.000 ~ 439.995 MHz only upper side) is used as the first local signal. It is obtained by passing the signal from the VCO through two buffer amplifiers (Q204 and Q208) and into the base of the mixer (Q223).
3. IF The signal amplified by the first IF amplifier (Q210) is input to pin 16 of the demodulator circuit (IC206). A second local signal of 21.25 MHz is oscillated by the crystal(X201) and IC202, and is input to pin 1 of the IC206. These two signals are mixed by the demodulator's internal mixer and converted to a 450 kHz second IF signal. The converted second IF signal is output from pin 3 of IC206 to a ceramic filter (FL202) where adjacent signals are eliminated. The resulting signal is then sent back to pin 5 of IC206. The second IF signal input to pin 5 of IC206 is demodulated by the internal limiter amplifier and quadrature detection circuit. It is then output as an audio signal from pin 9.
4. Squelch The squelch takes white noise from pin 9 of IC206 and inputs into pin 8 of IC206. The noise passes through an internal noise filter amplifier and rectifier circuit, and is output from pin I4. The rectified voltage is input to the A/D port of the microcomputer (IC101). The microcomputer turns audio output ON/OFF based on this voltage.
5. Audio Audio output is switched ON/OFF by Q219. Volume is controlled by Q224 and Q225. The signal is input to pin 2 of the audio power amplifier (IC208) and output from pin 6, thus producing sound from the earphones, etc.

7. PLL Circuit The PLL circuit (IC204) is used to control the frequency oscillated by the VCO. Control uses the serial control signal from the microcomputer (IC101). The reference frequency that IC204 uses is oscillated to 21.25 MHz by IC202 in the crystal oscillator (X201) and input to pin 1 of the IC204. The IC204 divides the control signal sent to pin 6 from IC101 and the 21.25 MHz reference signal internally, and compares phases between the two. If a difference is detected in the comparison, the charge pump in pin 9 outputs a pulse signal. The pulse is converted to DC voltage by the PLL loop filter and input to the cathode of the VCO varicaps (D203 and D205) in order to eliminate the difference. This enables stable oscillation at the desired frequency.

2) Transmission

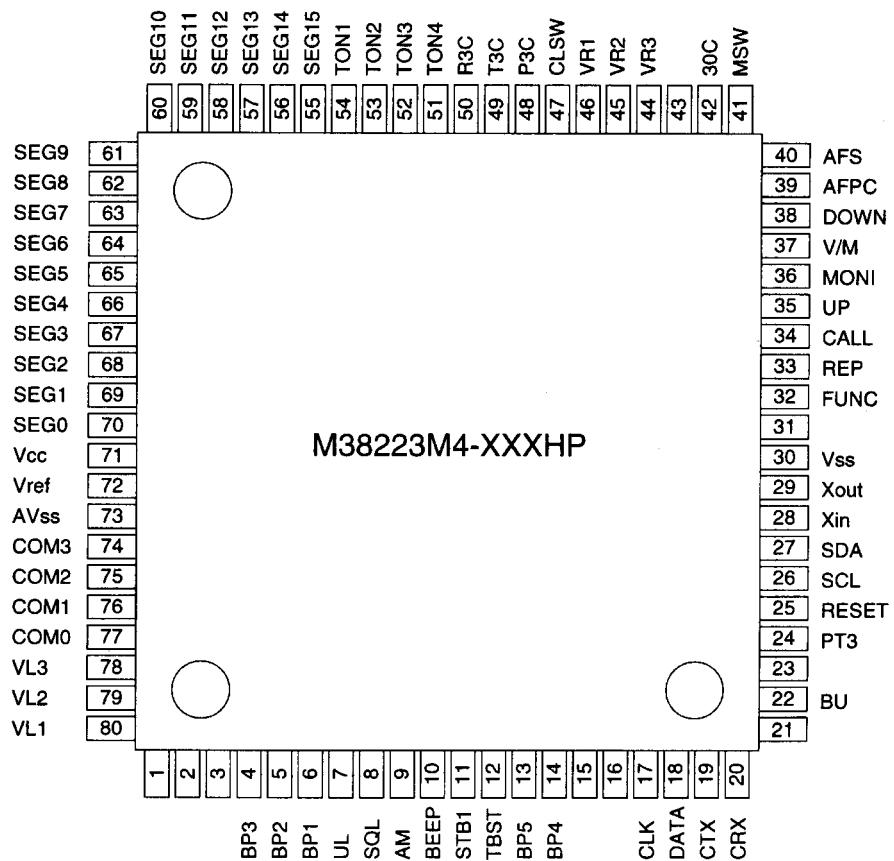
1. Microphone Amplifier

The microphone amplifier (IC205) has two operating amplifiers. Sound is converted to an electric signal and input to IC205. The input signal is amplified for pre-emphasis and then output. The output signal is regulated for maximum frequency deviation by VR202 and input to the cathode of the demodulation varicap (D206) of the VCO, thereby generating an FM signal by capacitance change.

2. Power Amplifier

The signal oscillated by the VCO is passed through two buffer amplifiers (Q205 and Q222) and an exciter (Q204), and is then input to a power amplifier (Q206). The signal from the power amplifier is passed through a low-pass filter to attenuate harmonic components and is then supplied to the matching circuit and antenna.

3) CPU Terminal Functions: M38224M4HP (XA0535)



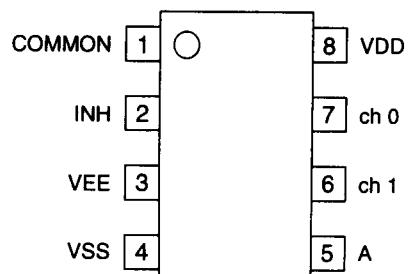
No.	Signal	I/O	Function	H	L
1					
2					
3					
4	BP3	I	Band plan3 (analog input)		
5	BP2	I	Band plan2 (analog input)		
6	BP1	I	Band plan1 (analog input)		
7	UL	I	PLL unlock sinal input (analog input)	UNLOCK	
8	SQL	I	Noise level input for squelch (analog input)		SQL ON
9	AM	O	AM power for short wave (DJ-C1)		AM ON
10	BEEP	O	Beep tone output		
11	STB1	O	Strobe for PLL		
12	TBST	O	Tone burst output		
13	BP5	I	Band plan5		
14	BP4	I	Band plan4		
15					
16					
17	CLK	O	Serial clock output for PLL		
18	DATA	O	Serial data output for PLL		
19	CTX	O	Clone data transmission output		
20	CRX	I	Clone data reception input		

No.	Signal	I/O	Function	H	L
21					
22	BU	I	Backup sinal detection input		BACKUP
23					
24	PT3	I	PTT key input		
25	RESET	I	Reset Sinal input	RESET	
26	SCL	O	Serial clock for EEPROM		
27	SDA	I/O	Serial data for EEPROM		
28	Xin	I	Mainc lock input		
29	Xout	I	Mainc lock output		
30	Vss	I	CPU GND		
31					
32	FUNC	I	FUNC KEY input		ON
33	REP	I	REP KEY input		ON
34	CALL	I	CALL KEY input		ON
35	UP	I	UP KEY input		ON
36	MONI	I	MONI KEY input		ON
37	V/M	I	VFO/MR KEY input		ON
38	DOWN	I	DOWN KEY input		ON
39	AFPC	O	Audio power amprlifier switch	ON	
40	AFS	O	AF mute switch	MUTE	
No.	Name	I/O	Function	H	L
41	MSW	O	Microphone mute switch		MUTE
42	30C	O	3V power switch	ON	
43					
44	VR3	O	Volume leve13		
45	VR2	O	Volume level2		
46	VR1	O	Volume levell		
47	CLSW	O	Clone switch	CLONE	
48	P3C	O	PLL power switch .		ON
49	T3C	O	TX power switch		ON
50	R3C	O	145 M band power switch (DJ-C1)		ON
	43C		430 M band power switch DJ-C4		ON
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	SEG15	O	LCD SEG15		
56	SEGI4	O	LCD SEG14		
57	SEG13	O	LCD SEG13		
58	SEG12	O	LCD SEG12		
59	SEG11	O	LCD SEG11		
60	SEG10	O	LCD SEG10		
61	SEG9	O	LCD SEG9		
62	SEG8	O	LCD SEG8		
63	SEG7	O	LCD SEG7		
64	SEG6	O	LCD SEG6		
65	SEG5	O	LCD SEG5		
66	SEG4	O	LCD SEG4		
67	SEG3	O	LCD SEG3		
68	SEG2	O	LCD SEG2		
69	SEG1	O	LCD SEG1		
70	SEG0	O	LCD SEG0		
71	Vcc	I	Power supply termina 13V		
72	Vref	I	A/D reference level 3V		
73	AVss	I	CPU A/D GND		
74	COM3	O	LCD COM3		
75	COM2	O	LCD COM2		
76	COM1	O	LCD COM1		
77	COM0	O	LCD COM0		
78	VL3	I	LCD power		
79	VL2	I	LCD power		
80	VL1	I	LCD power		

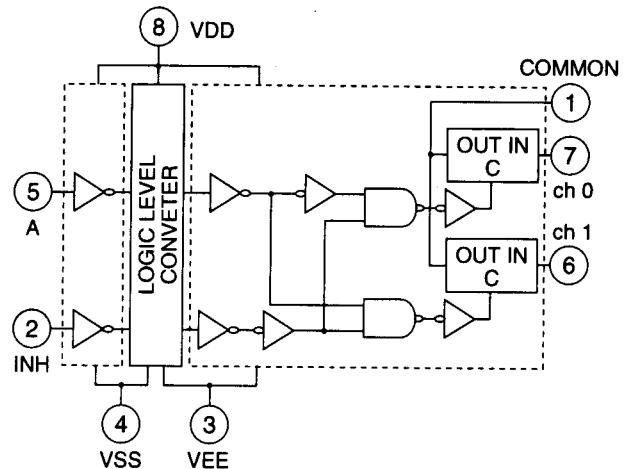
SEMICONDUCTOR DATA

1) TC4W53FU (XA0348)

Pin Assignment

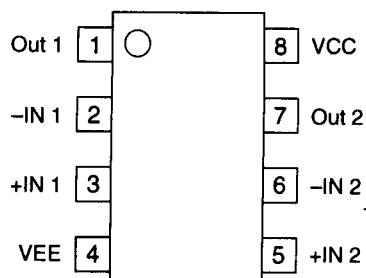


Block Diagram

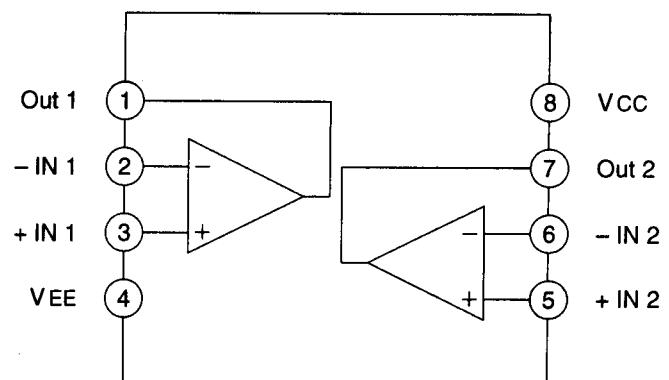


2) BA4510FV (XA0537)

Pin Assignment

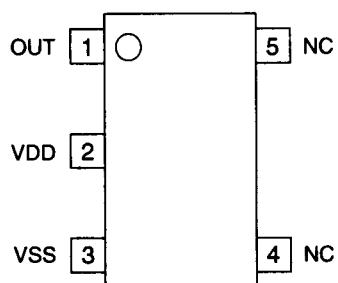


Block Diagram

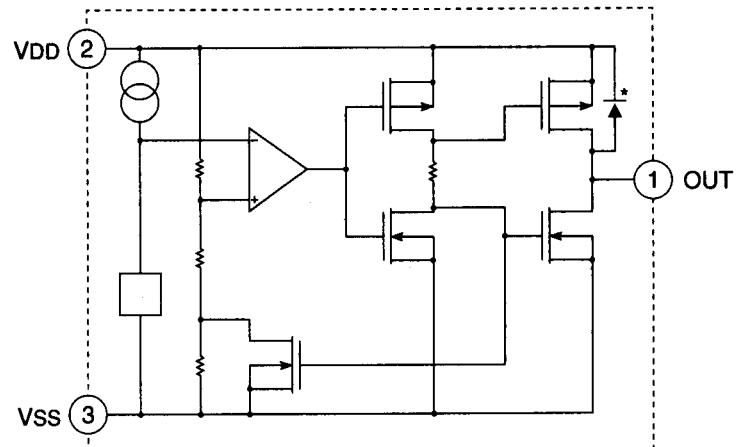


3) S-80730SL-AT (XA0356)

Pin Assignment



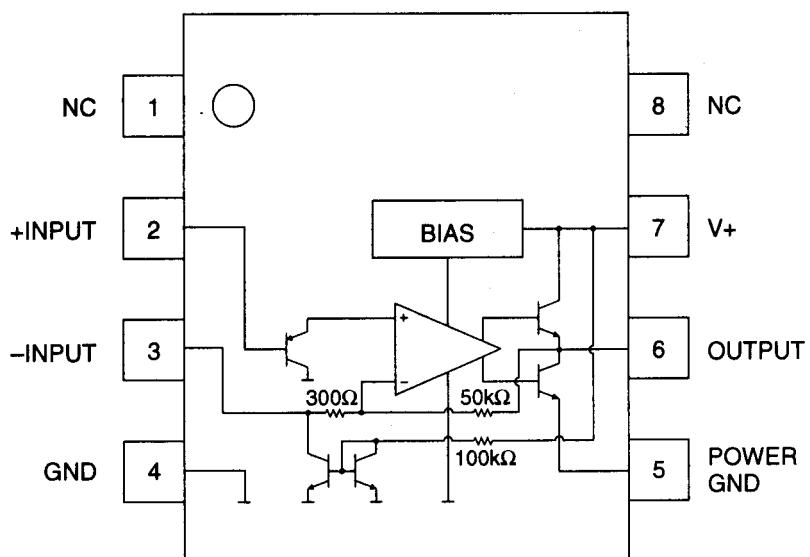
Block Diagram



4) NJM2070M (XA0210)

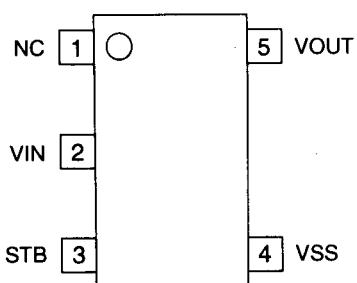
Low Voltage Power Amplifier

Block Diagram

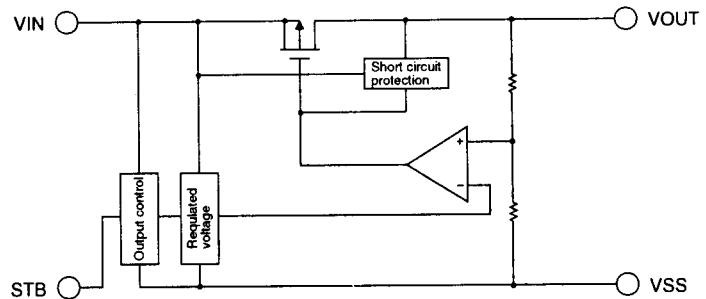


5) XC62SPR332MR (XA0519)

Pin Assignment

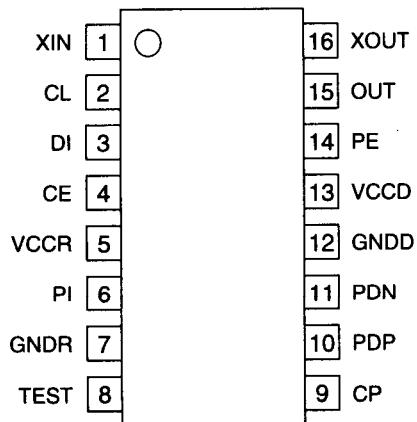


Block Diagram

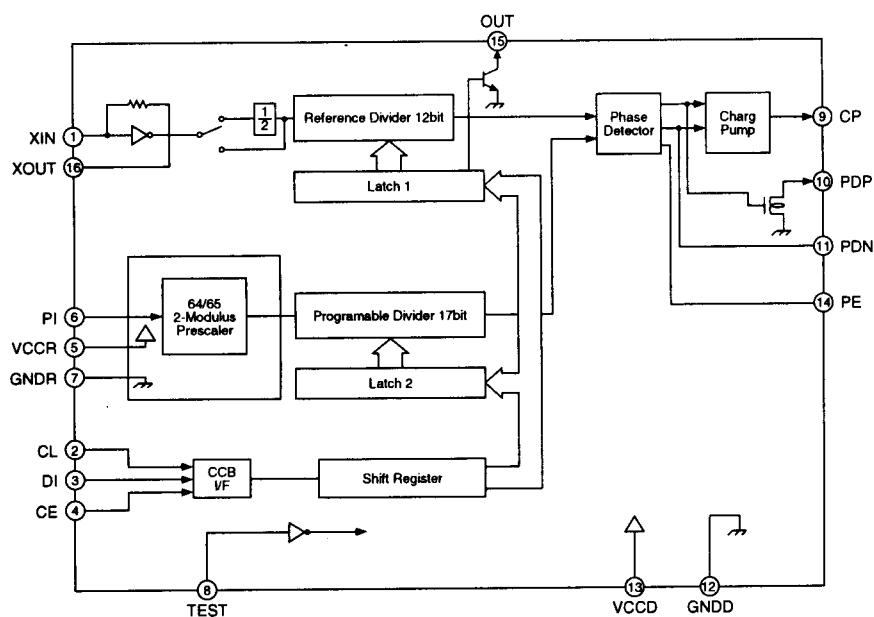


6) LV2105 (XA0520)

Pin Assignment

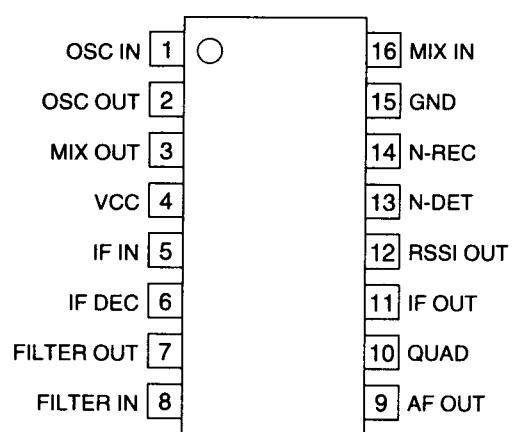


Block Diagram

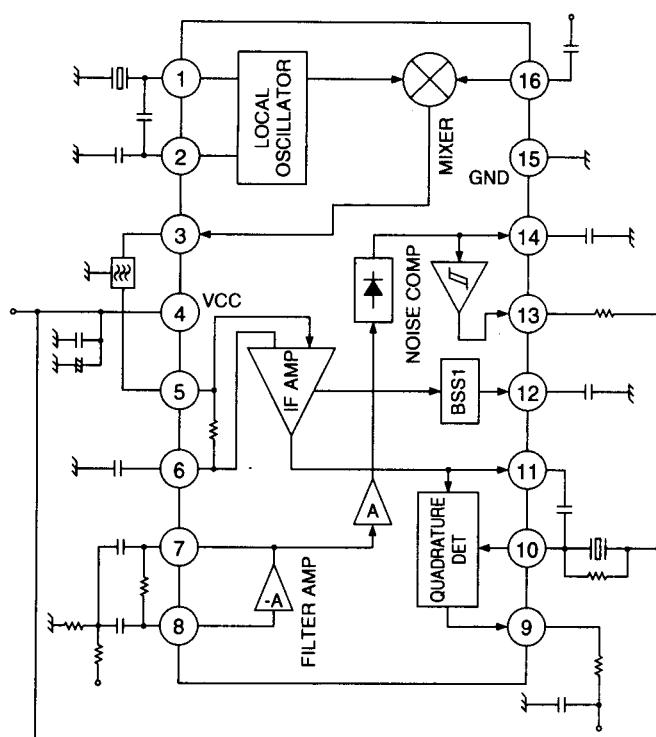


7) BA4116FV (XA0521)

Pin Assignment

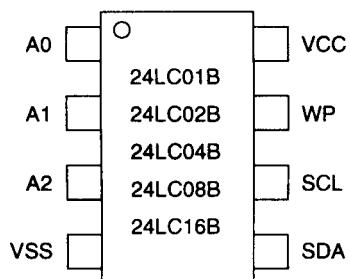


Block Diagram

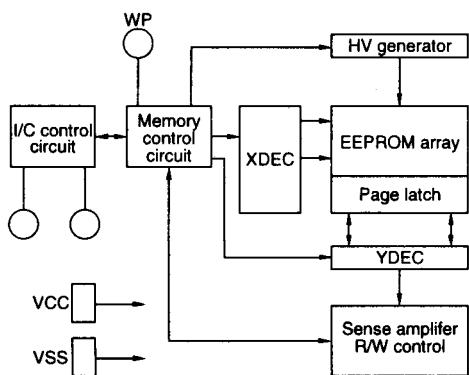


8) 24LC02BT-I (XA0522) EEPROM

SO Package

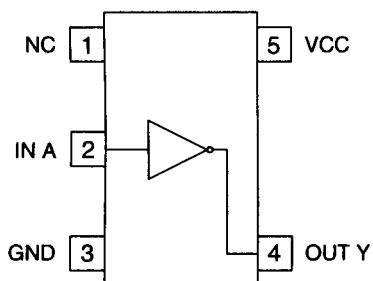


Block Diagram



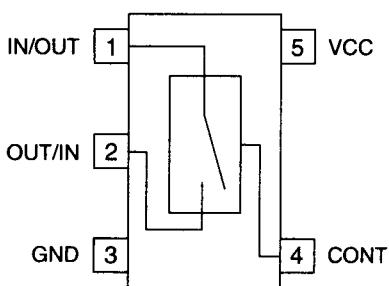
9) TC7SU04FU (XA0523)

Pin Assignment



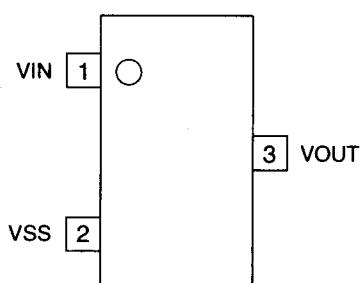
10) TC7S66FU (XA0524)

Pin Assignment

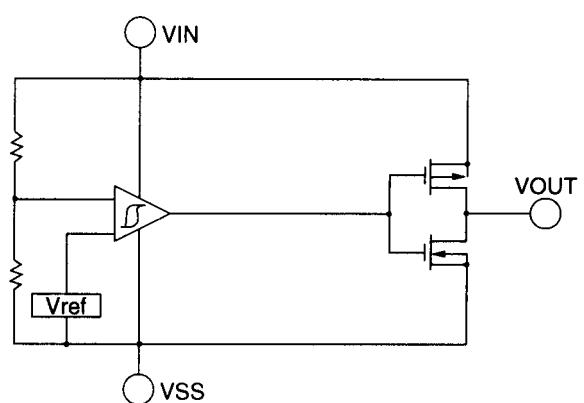


11) XC61AC2902MR (XA0533)

Pin Assignment

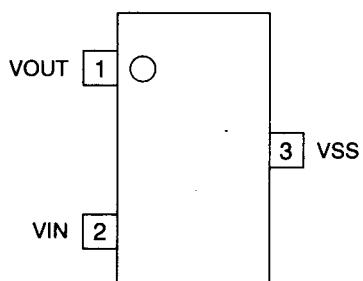


Block Diagram

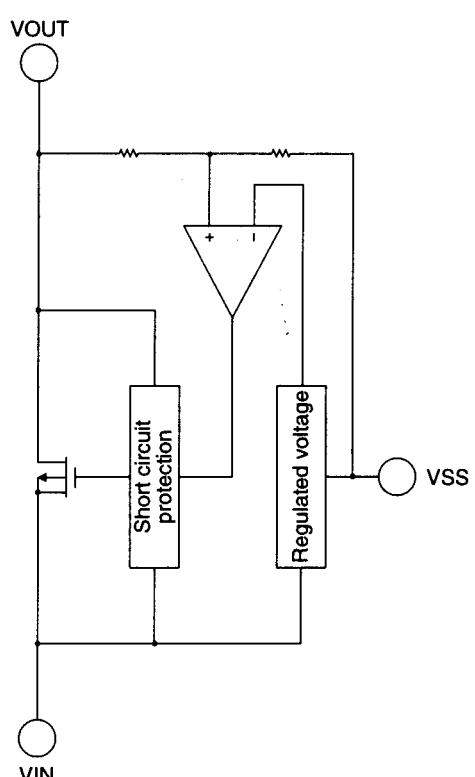


12) XC62FP2802MR (XA0539)

Pin Assignment



Block Diagram



13) Transistor, Diode and LED Outline Drawings

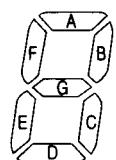
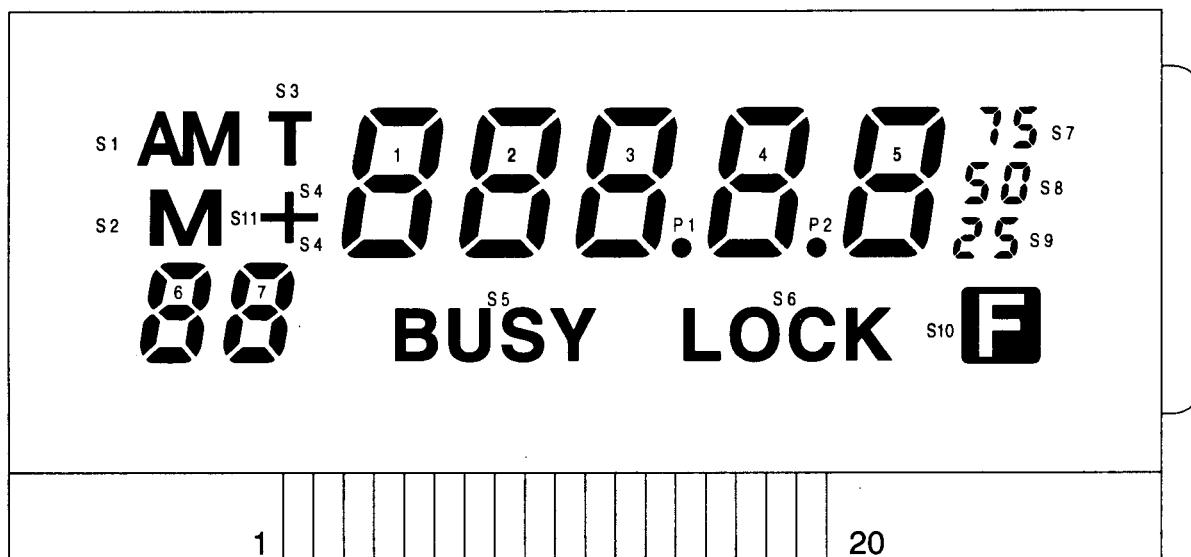
1SS356 XD0272	MA2S728 XD0315	MA2S304 XD0312	MA2S376 XD0316	UDZ 3.6B XD0156	DAN235U XD0246
2SC4649 XT0108	2SD2216R XT0135	2SC5066 XT0138	2SC3356R24 XT0119	2SC3356R25 XT0142	UN9111 XU0062
UN9216 XU0099	DTB114GK XU0187	2SJ144Y XE0019	UMC3 XU0047	UMC5 XU0152	XP1501 XU0172
8 FR XD0252	L 14 XL0054	V Y XE0019	C 3 E1 B1 E2	C 5 E1 B1 E2	5 R B1 E B2

MA741WK XD0252	LN28WP XL0054
UN9211 XU0063	UN911H XU0092

8 A XD0252	6 R XL0054

9 N XD0252	MRF9745 XE0034

14) LCD Diagram



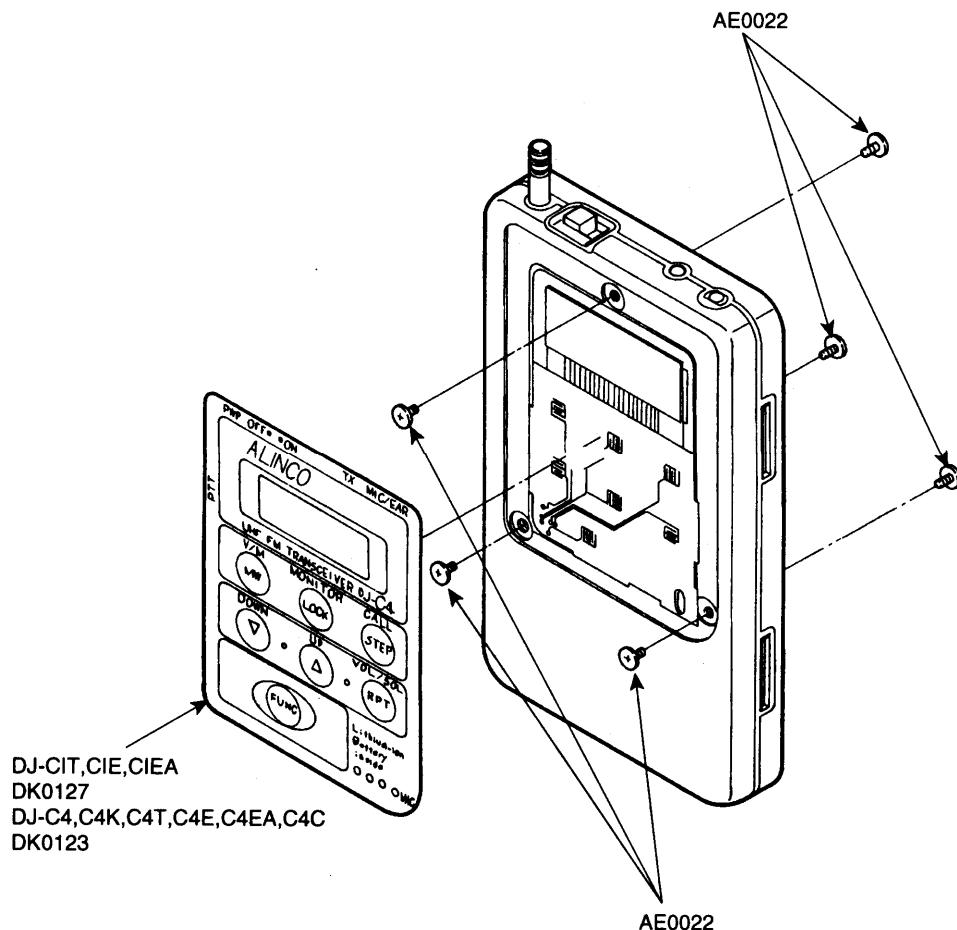
LCD Pin Table

LCD PIN TABLE				
NO.	COM 0	COM 1	COM 2	COM 3
1	COM 0	--	--	--
2	--	COM 1	--	--
3	--	--	COM 2	--
4	--	--	--	COM 3
5	6F	6G	6E	S1
6	6A	6B	6C	6D
7	7F	7G	7E	S2
8	7A	7B	7C	7D
9	1F	1G	1E	
10	1A	1B	1C	1D
11	2F	2G	2E	S5
12	2A	2B	2C	2D
13	3F	3G	3E	S6
14	3A	3B	3C	3D
15	4F	4G	4E	P1
16	4A	4B	4C	4D
17	5F	5G	5E	P2
18	5A	5B	5C	5D
19	S7	S8	S9	S10
20	S3	S4	S11	

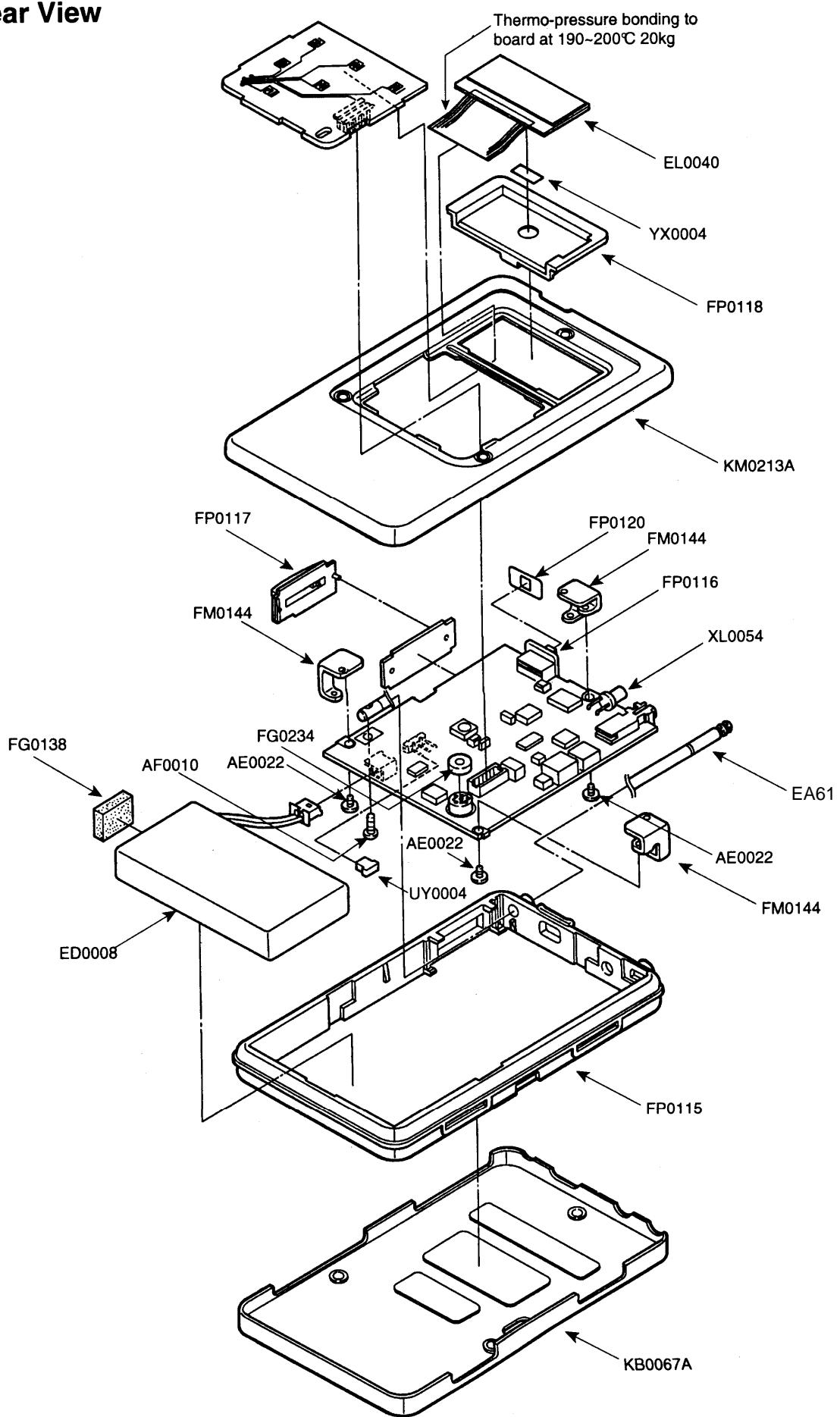
EXPLODED VIEW

EXPLODED VIEW

1) Front View



2) Rear View



PARTS LIST (DJ-C1)

Ref.No.	Parts No.	Parts Name	T	E	EA	side	Ref.No.	Parts No.	Parts Name	T	E	EA	side
	CPU Unit						C204	CS0376	TNCMA0G226MTR	1	1	1	B
C101	CU3047	C1608JB1H103KTA	1	1	1	A	C205	CU3035	C1608JB1H102KTA	1	1	1	B
C102	CU3047	C1608JB1H103KTA	1	1	1	A	C206	CU3035	C1608JB1H102KTA	1	1	1	B
C103	CS0398	TMCP0J225MTR	1	1	1	A	C207	CU3035	C1608JB1H102KTA	1	1	1	A
C104	CU3017	C1608CH1H330JTA	1	1	1	A	C208	CU3035	C1608JB1H102KTA	1	1	1	A
C105	CU3017	C1608CH1H330JTA	1	1	1	A	C209	CU3031	C1608JB1H471KTA	1	1	1	B
CN101	UE0319	DF12A-30DSJ0.5V(81)	1	1	1	A	C210	CU3021	C1608CH1H680JTA	1	1	1	B
D102	XD0315	MA25T28-TX	1	1	1	A	C211	CU3031	C1608JB1H471KTA	1	1	1	B
EL101	EL0040	LCD DJC1	1	1	1	H	C212	CU3035	C1608JB1H102KTA	1	1	1	B
IC101	XA0535	M38223M4-422HP	1	1	1	A	C213	CS0367	TMCMA0J106MTR	1	1	1	A
IC102	XA0356	S-80730SL-AT-T1	1	1	1	A	C214	CS0367	TMCMA0J106MTR	1	1	1	B
R101	RK3042	ERJ3GSYJ222V	1	1	1	A	C215	CU3035	C1608JB1H102KTA	1	1	1	B
R102	RK3058	ERJ3GSYJ473V	1	1	1	A	C216	CU3031	C1608JB1H471KTA	1	1	1	B
R103	RK3058	ERJ3GSYJ473V	1	1	1	A	C217	CS0367	TMCMA0J106MTR	1	1	1	B
R104	RK3056	ERJ3GSYJ333V	0	1	1	A	C218	CU3010	C1608CH1H090CTA	1	1	1	B
R105	RK3056	ERJ3GSYJ333V	0	1	1	A	C219	CU3010	C1608CH1H090CTA	1	1	1	B
R106	RK3056	ERJ3GSYJ333V	0	1	1	A	C220	CU3002	C1608CH1H010CTA	1	1	1	B
R107	RK3058	ERJ3GSYJ473V	1	1	1	A	C221	CU3004	C1608CH1H03CCTA	1	1	1	B
R108	RK3056	ERJ3GSYJ333V	1	0	0	A	C222	CU3031	C1608JB1H471KTA	1	1	1	B
R109	RK3052	ERJ3GSYJ153V	0	0	0	A	C223	CU3011	C1608CH1H100CTA	1	1	1	B
R109	RK3056	ERJ3GSYJ333V	1	0	0	A	C224	CU3035	C1608JB1H102KTA	1	1	1	B
R110	RK3052	ERJ3GSYJ153V	0	0	0	A	C225	CU3019	C1608CH1H470JTA	1	1	1	B
R110	RK3056	ERJ3GSYJ333V	1	0	0	A	C226	CU3014	C1608CH1H180JTA	1	1	1	B
R111	RK3046	ERJ3GSYJ472V	1	1	1	A	C227	CU3011	C1608CH1H100CTA	1	1	1	B
R114	RK3038	ERJ3GSYJ102V	1	1	1	A	C228	CU3019	C1608CH1H470JTA	1	1	1	B
R115	RK3062	ERJ3GSYJ104V	1	1	1	A	C229	CU3023	C1608CH1H101JTA	1	1	1	A
R116	RK3062	ERJ3GSYJ104V	1	1	1	A	C231	CU3013	C1608CH1H150JTA	1	1	1	A
R117	RK3074	ERJ3GSYJ105V	1	1	1	A	C232	CU3013	C1608CH1H150JTA	1	1	1	A
R118	RK3026	ERJ3GSYJ101V	1	1	1	A	C233	CU3008	C1608CH1H070CTA	1	1	1	A
R119	RK3038	ERJ3GSYJ102V	1	1	1	A	C234	CU3017	C1608CH1H330JTA	1	1	1	B
R120	RK3038	ERJ3GSYJ102V	1	1	1	A	C237	CU3011	C1608CH1H100CTA	1	1	1	A
R121	RK3018	ERJ3GSYJ220V	1	1	1	A	C238	CU3020	C1608CH1H560JTA	1	1	1	B
RA102	RA0011	EXBV8V103JV	1	1	1	A	C240	CU3029	C1608JB1H331KTA	1	1	1	B
RA103	RA0010	EXBV8V472JV	1	1	1	A	C241	CU3006	C1608CH1H050CTA	1	1	1	A
RA104	RA0009	EXBV8V102JV	1	1	1	A	C242	CS0394	TMCMB0J476MTR	1	1	1	A
RA105	RA0008	EXBV4V102JV	1	1	1	A	C243	CU3035	C1608JB1H102KTA	1	1	1	B
RA106	RA0009	EXBV8V102JV	1	1	1	A	C244	CU3047	C1608JB1H103KTA	1	1	1	B
RA107	RA0008	EXBV4V102JV	1	1	1	A	C245	CU3035	C1608JB1H102KTA	1	1	1	A
RA108	RA0008	EXBV4V102JV	1	1	1	A	C246	CS0378	TMCMC0G107MTR	1	1	1	B
RA109	RA0009	EXBV8V102JV	1	1	1	A	C247	CU3015	C1608CH1H220JTA	1	1	1	A
RA110	RA0009	EXBV8V102JV	1	1	1	A	C248	CU3014	C1608CH1H180JTA	1	1	1	A
RA111	RA0008	EXBV4V102JV	1	1	1	A	C250	CU3111	C1608JB1C104M	1	1	1	A
RA112	RA0008	EXBV4V102JV	1	1	1	A	C251	CU3019	C1608CH1H470JTA	1	1	1	B
RA113	RA0008	EXBV4V102JV	1	1	1	A	C252	CU3015	C1608CH1H220JTA	1	1	1	B
C253	CU3012	C1608CH1H120JTA	1	1	1	B	C254	CU3019	C1608CH1H470JTA	1	1	1	B
C255	CU3021	C1608CH1H680JTA	1	1	1	B	C256	CU3021	C1608CH1H680JTA	1	1	1	B
C256	CU3031	C1608JB1H471KTA	1	1	1	B	C257	CU3010	C1608CH1H090CTA	1	1	1	B
C258	CU3005	C1608CH1H040CTA	1	1	1	A	C259	CU3005	C1608CH1H040CTA	1	1	1	A
EA0061	Antenna		1	1	1	1	C260	CU3007	C1608CH1H060CTA	1	1	1	A
ED0008	Ions of Lithium		1	1	1	1	C261	CU3017	C1608CH1H330JTA	1	1	1	A
FG0138	Stick Rubber		1	1	1	1	C262	CU3017	C1608CH1H330JTA	1	1	1	A
FG0234Y	MIC Hokler		1	1	1	1	C263	CU3015	C1608CH1H220JTA	1	1	1	A
FM0144	Frame		3	3	3	3	C264	CU3047	C1608JB1H103KTA	1	1	1	A
FP0115	Chassis		1	1	1	1	C265	CU3001	C1608CH1H05CTA	1	1	1	A
FP0116	Power Switch		1	1	1	1	C266	CU3006	C1608CH1H050CTA	1	1	1	B
FP0117	P11 Switch		1	1	1	1	C267	CU3014	C1608CH1H180JTA	1	1	1	B
FP0118	LCD Holder		1	1	1	1	C268	CU3016	C1608CH1H270JTA	1	1	1	A
FP0120	Switch Cover		1	1	1	1	C269	CU3047	C1608JB1H103KTA	1	1	1	A
KB0067A	Rear Case		1	1	1	1	C270	CU3047	C1608JB1H103KTA	1	1	1	B
KM0213A	Front Case		1	1	1	1	C271	CU3035	C1608JB1H102KTA	1	1	1	B
UY0004	1MSA-9215H-GF		1	1	1	1	C273	CU3027	C1608CH1H221JTA	1	1	1	A
YX0004	TAPE		1	1	1	H	C274	CS0397	TNCPTC105MTR	1	1	1	B
	Main Unit						C275	CU3035	C1608JB1H102KTA	1	1	1	B
C201	CS0394	TMCMB0J476MTR	1	1	1	A	C276	CU3035	C1608JB1H102KTA	1	1	1	B
C202	CS0394	TMCMB0J476MTR	1	1	1	A	C277	CU3111	C1608JB1C104M	1	1	1	A
C203	CU3031	C1608JB1H471KTA	1	1	1	B	C278	CU3011	C1608CH1H100CTA	1	1	1	A

PARTS LIST (DJ-C4)

Ref.No.	Parts No.	Parts Name	T	E	EA	C	side
	CPU Unit						
C101	CU3047	C1608JB1H103KTA	1	1	1	A	
C102	CU3047	C1608JB1H103KTA	1	1	1	A	
C103	CS0398	TMCP0J225NTR	1	1	1	A	
C104	CU3017	C1608CH1H330JTA	1	1	1	A	
C105	CU3017	C1608CH1H330JTA	1	1	1	A	
CN101	UE0319	DF12A-30DSJD.5V(81)	1	1	1	A	
D101	NC		1	1	1	A	
D102	XD0315	MA2S728-TX	1	1	1	A	
EL101	EL0040	LCD DJC1	1	1	1	H	
IC101	XA0535	M38223M4-422HP	1	1	1	A	
IC102	XA0356	S-80730SL-AT-T1	1	1	1	A	
IC103	NC		1	1	1	A	
R101	RK3042	ERJ3GSYJ222V	1	1	1	A	
R102	RK3058	ERJ3GSYJ473V	1	1	1	A	
R103	RK3058	ERJ3GSYJ473V	1	1	1	A	
R104	NC		0	0	0	A	
R105	RK3056	ERJ3GSYJ333V	0	1	1	A	
R106	RK3056	ERJ3GSYJ333V	0	1	1	A	
R107	RK3058	ERJ3GSYJ473V	1	1	1	A	
R108	RK3056	ERJ3GSYJ333V	1	1	1	A	
R109	RK3052	ERJ3GSYJ153V	0	0	0	A	
R109	RK3056	ERJ3GSYJ333V	1	0	0	A	
R110	RK3052	ERJ3GSYJ153V	0	0	0	A	
R110	RK3056	ERJ3GSYJ333V	1	0	0	A	
R111	RK3046	ERJ3GSYJ472V	1	1	1	A	
R112	RK3001	ERJ3GSYJ0R00V	1	1	1	A	
R113	NC		1	1	1	A	
R114	RK3038	ERJ3GSYJ102V	1	1	1	A	
R115	RK3062	ERJ3GSYJ104V	1	1	1	A	
R116	RK3062	ERJ3GSYJ104V	1	1	1	A	
R117	RK3074	ERJ3GSYJ105V	1	1	1	A	
R118	RK3026	ERJ3GSYJ101V	1	1	1	A	
R119	RK3038	ERJ3GSYJ102V	1	1	1	A	
R120	RK3038	ERJ3GSYJ102V	1	1	1	A	
RA102	RA0011	EXBV8V103UV	1	1	1	A	
RA103	RA0010	EXBV8V472V	1	1	1	A	
RA104	RA0009	EXBV8V102JV	1	1	1	A	
RA105	RA0008	EXBV4V102JV	1	1	1	A	
RA106	RA0009	EXBV8V102JV	1	1	1	A	
RA107	RA0008	EXBV4V102JV	1	1	1	A	
RA108	RA0008	EXBV4V102JV	1	1	1	A	
RA109	RA0009	EXBV8V102JV	1	1	1	A	
RA110	RA0009	EXBV8V102JV	1	1	1	A	
RA111	RA0008	EXBV4V102JV	1	1	1	A	
RA112	RA0008	EXBV4V102JV	1	1	1	A	
RA113	RA0008	EXBV4V102JV	1	1	1	A	
X101	XQ0077	38C 3.686400MHz	1	1	1	H	
	YX0004	TAPE	1	1	1	H	

Ref.No.	Parts No.	Parts Name	T	E	EA	C	side
		Mechanical Parts					
	AE0022	Screw(FTH/M1.7+3 FEB.N)	9	9	9		
	AF0010	Screw(OPH M2+4 FE/N3)	1	1	1		
	DK0123	Front Panel(for DJC4)	1	1	1		
	EA0061	Antenna	1	1	1		
	ED0008	Ions of Lithium	1	1	1		
	FG0138	Stick Rubber	1	1	1		
	FG0234Y	MIC Holder	1	1	1		
	FM0144	Frame	3	3	3		
	FP0115	Chassis	1	1	1		
	FP0116	Power Switch	1	1	1		
	FP0117	PTT Switch	1	1	1		
	FP0118	LCD Holder	1	1	1		
	FP0120	Switch Cover	1	1	1		
	KB0067A	Rear Case	1	1	1		
	KM0213A	Front Case	1	1	1		
	UY0004	1MSA-9215H-GF	1	1	1		
	YX0004	TAPE	1	1	1	H	
		Main Unit					
	FM0145	Charger Terminal	2	2	2	H	
	IS0142	VCO Case	1	1	1	H	
	UP0346B	DJC4 P.C.B	1	1	5	H	
C201	CS0394	TMCMB0J476MTR	1	1	1	A	
C202	CS0394	TMCMB0J476MTR	1	1	1	B	
C203	CU3047	C1608JB1H103KTA	1	1	1	B	
C204	CU3031	C1608JB1H471KTA	1	1	1	A	
C205	CU3031	C1608JB1H471KTA	1	1	1	A	
C207	CU3016	C1608CH1H270JTA	1	1	1	B	
C208	CU3031	C1608JB1H471KTA	1	1	1	B	
C209	CS0367	TMCMA0J106MTR	1	1	1	A	
C210	CS0367	TMCMA0J106MTR	1	1	1	A	
C211	CU3031	C1608JB1H471KTA	1	1	1	B	
C212	CU3031	C1608JB1H471KTA	1	1	1	B	
C213	CS0376	TMCMAC6226NTR	1	1	1	B	
C214	CU3035	C1608JB1H102KTA	1	1	1	B	
C215	CU3018	C1608CH1H390JTA	1	1	1	A	
C216	CU3031	C1608JB1H471KTA	1	1	1	B	
C217	CS0376	TMCMA0G226MTR	1	1	1	B	
C218	CU3031	C1608JB1H471KTA	1	1	1	B	
C219	CU3031	C1608JB1H471KTA	1	1	1	B	
C220	CU3031	C1608JB1H471KTA	1	1	1	B	
C221	CU3031	C1608JB1H471KTA	1	1	1	B	
C222	CU3011	C1608CH1H100CTA	1	1	1	B	
C223	CU3031	C1608JB1H471KTA	1	1	1	B	
C224	CU3005	C1608CH1H040CTA	1	1	1	B	
C225	CU3015	C1608CH1H220JTA	1	0	0	A	
C225	CU3016	C1608CH1H270JTA	0	1	1	B	
C226	CU3008	C1608CH1H070CTA	1	1	1	B	
C227	CU3011	C1608CH1H100CTA	1	1	1	B	
C228	CU3007	C1608CH1H060CTA	1	1	1	B	
C229	CU3003	C1608CH1H020CTA	1	1	1	B	
C230	CU3014	C1608CH1H180JTA	1	1	1	B	
C233	CU3001	C1608CH1H0R5CTA	1	1	1	B	
C235	CU3002	C1608CH1H100CTA	1	1	1	B	
C236	CU3011	C1608CH1H100CTA	1	1	1	B	
C237	CU3008	C1608CH1H070CTA	1	1	1	B	
C238	CU3013	C1608JB1H471KTA	1	1	1	B	
C239	CU3006	C1608CH1H050CTA	1	1	1	B	
C241	CU3026	C1608CH1H181JTA	1	1	1	B	
C242	CU3031	C1608JB1H471KTA	1	1	1	B	
C243	CU3031	C1608JB1H471KTA	1	1	1	B	
C244	CU3031	C1608JB1H471KTA	1	1	1	B	
C245	CS0367	TMCMA0J106MTR	1	1	1	A	
C246	CS0378	TMCMC0G107NTR	1	1	1	A	
C247	CS0396	TMCPTD104MTR	1	1	1	A	
C248	CU3011	C1608CH1H100CTA	1	1	1	B	
C249	CU3009	C1608CH1H080CTA	1	1	1	B	
C250	CU3006	C1608CH1H050CTA	1	1	1	B	
C251	CU3031	C1608JB1H471KTA	1	1	1	B	

ADJUSTMENT

DJ-C1T/C1E

1) Settings

Power supply voltage 4.0V DC

Item	Procedure	Set to
1. Reference voltage	Tune in 144.95 MHz and set P/D voltage to 1.7 V. (VCO case attached) Adjust L214	1.7 +/- 0.1 V
2. Reference frequency	Transmit on 145.05 MHz and set reference frequency to 145.05 MHz. Adjust TC202	145.05 MHz +/- 0.5 Hz
3. Transmission power	Transmit on 145.05 MHz and set transmission power to 300 mW. Adjust VR201	300 mW +/-20 mW
4. MIC modulation deviation	Transmit on 145.05 MHz and input a 1 kHz - 50 mV Bow-frequency signal to the MIC input pin. Then, set modulation to 4.5 kHz. Adjust VR202	4.5 +/-0.1 kHz

2) Checks

Item	Requirement	Factory-clearance
1. Transmission frequency	145.05 MHz +/-200 Hz	+/- 500 Hz
2. Transmission power	On 145.05 MHz transmission frequency 300 mW +/-30 mW	Same as on left
3. Modulation Deviation	On 145.05 MHz transmission frequency With 1kHz - 50mV AF signal 4.5 kHz +/- 0.2 kHz · With 67/250.4 Hz tone frequency 0.4 ~ 1.2kHz · With 1750 Hz tone burst (E/EA specification only) 2.4 ~ 3.6 kHz	Same as on left Same as on left Same as on left
4. Spurious emission	On 145.05 MHz transmission frequency Max. -55 dB	Same as on left
5. Transmission S/N	On 145.05 MHz transmission frequency Min. 33dB (Measuring instrument's audio filter OFF at 0.3 ~ 3 kHz)	Same as on left
6. Reception sensitivity	On 144.95 MHz reception frequency FM Max. -9dBp (EMF) (12 dB SINAD) On 129.95 MHz reception frequency AM Max. 5 dBBLI (EMF) (10dB S/N)	Same as on left Same as on left
7. Audio (32 ohm)	· Volume-control VR7 Distortion Max. 4% · Volume-control VR8 Output Min. 20 mW	Same as on left Same as on left
8. Reception S/N	On 144.95 MHz reception frequency Min. 40dB	Same as on left
9. Unwanted radiation	On 145.995 MHz reception frequency -55 dB and below	Same as on left
10. Squelch	a) Squelch fully opens at 0 level. b) Squelch opens when receiving -8 dBp reference signal at squelch level 2.	Same as on left Same as on left

DJ-C4T/C4E/C4C

1) Settings

Power supply voltage 4.0V DC For

T-version F1 = 445.05MHz F2 = 444.95MHz

E-version F1 = 435.05MHz F2 = 434.95MHz

C-version F1 = 433.90MHz F2 = 433.80MHz

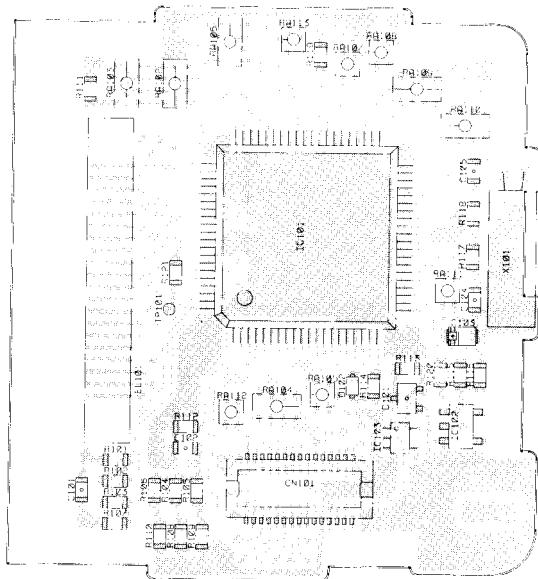
Item	Procedure	Set to
1. Reference frequency	Transmit on F1 and set reference frequency to F1 Adjust TC201	F1 +/- 100Hz
2. Transmission power	Transmit on F1 and set transmission power to 300 mW*. Adjust VR201	300mW +/- 20mW 10mW +/- 2mW(DJ-C4C)
3. MIC modulation deviation	Transmit on F1 and input a 1 kHz - 50mV AFsignal to the MIC input pin. Then, set modulation to 4.5 kHz. Adjust VR202	4.5 kHz +/- 0.1 kHz

2) Checks

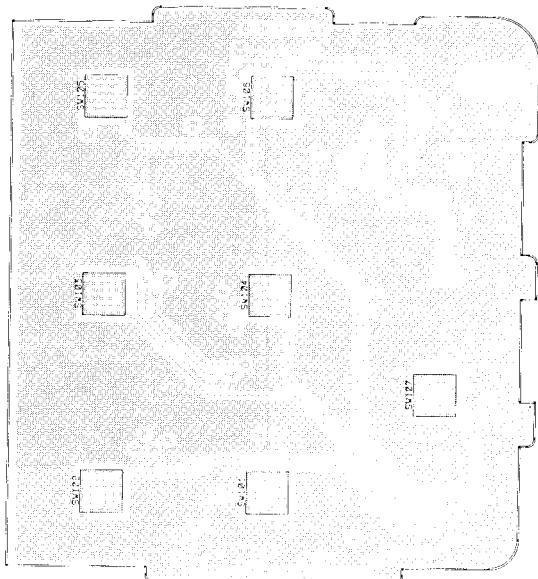
Item	Requirement	Factory-clearance
1. Transmission frequency	F1 +/- 500Hz	+/- 1 kHz
2. Transmission power	On F1 transmission frequency 300mW* +/-30mW	Same as on left
3. Modulation Deviation	On F1 transmission frequency *With 1 kHz-50 mV AF signal 4.5 kHz +/- 0.2 kHz * With 67/250.4 Hz CTCSS tone frequency 0.4 ~ 1.2kHz *With 1750 Hz tone burst (E/EA versions only) 2.4 ~ 3.6 kHz	Same as on left Same as on left Same as on left
4. Spurious emission	On F1 transmission frequency Max. -55 dB	Same as on left
5. Transmission S/N	On F1 transmission frequency Min. 33 dB (Measuring instrument's audio filter OFF at 0.3 ~ 3kHz)	Same as on left
6. Reception sensitivity	*On F2 reception frequency FM Max. -8 dBp (EMF)	Same as on left
7. Audio (32 ohm)	* Volume-control VR7 Distortion Max. 4% * Volume-control VR8 Output Min. 20 mW	Same as on left Same as on left
8. Reception S/N	On F2 reception frequency Min. 40 dB	Same as on left
9. Unwanted radiation	On F2 reception frequency -55 dB and below	Same as on left
10. Squelch	a) Squelch fully opens at 0 level. b) Squelch opens when receiving -8 dB reference signal at squelch level 2.	Same as on left Same as on left

PC BOARD VIEW

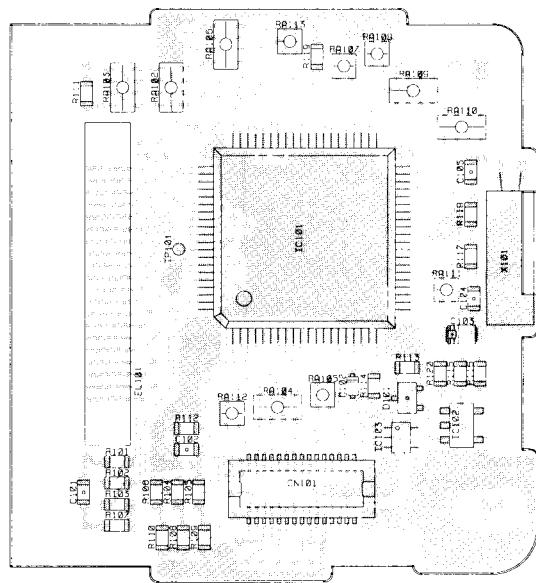
CPU Unit side A(DJ-C1)



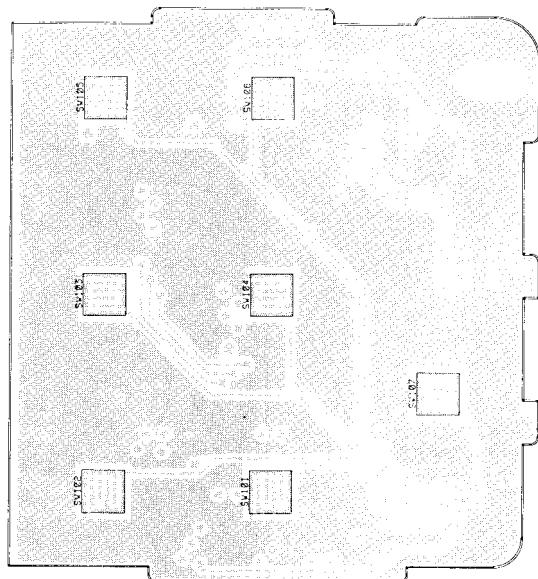
CPU Unit side A(DJ-C1)



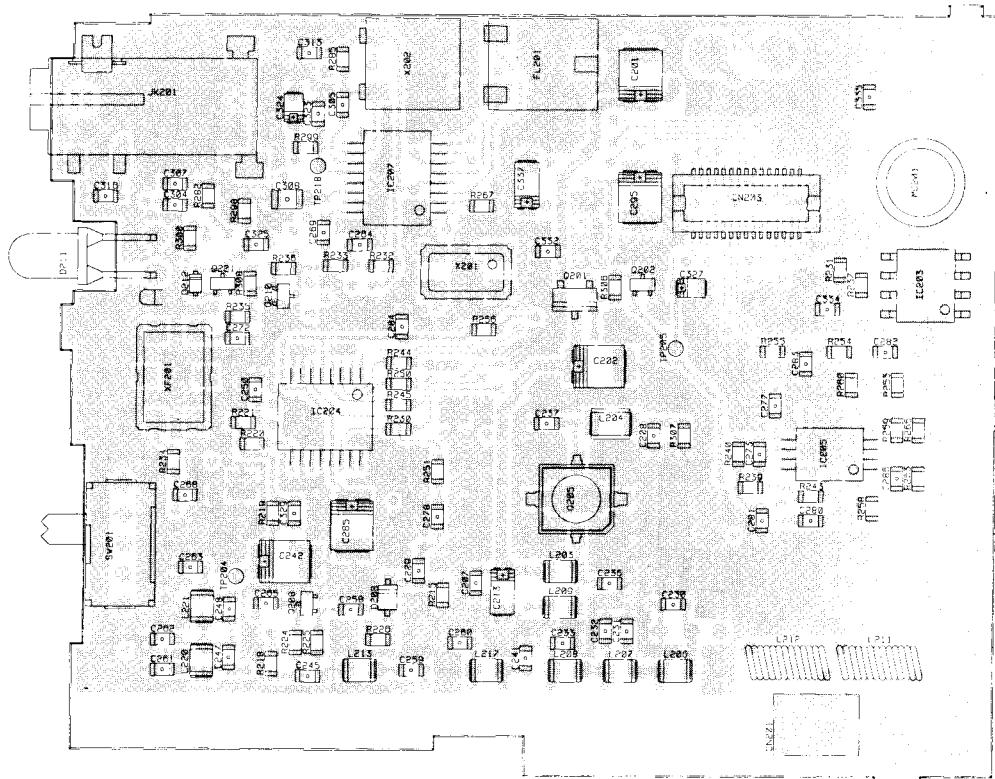
CPU Unit side A(DJ-C4)



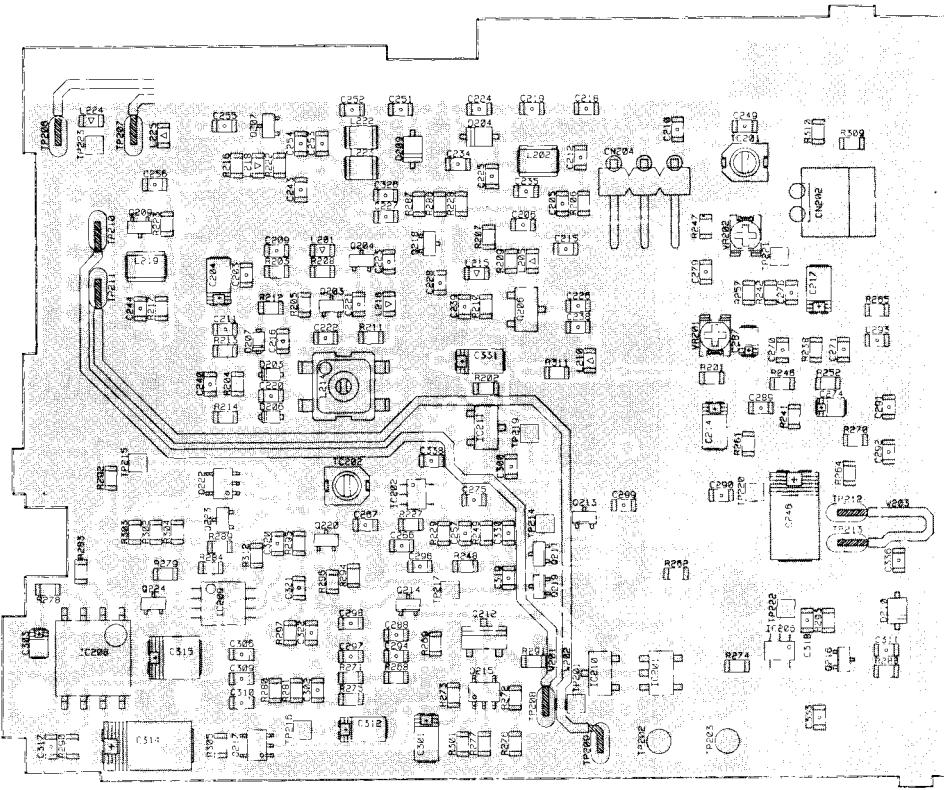
CPU Unit side B(DJ-C4)



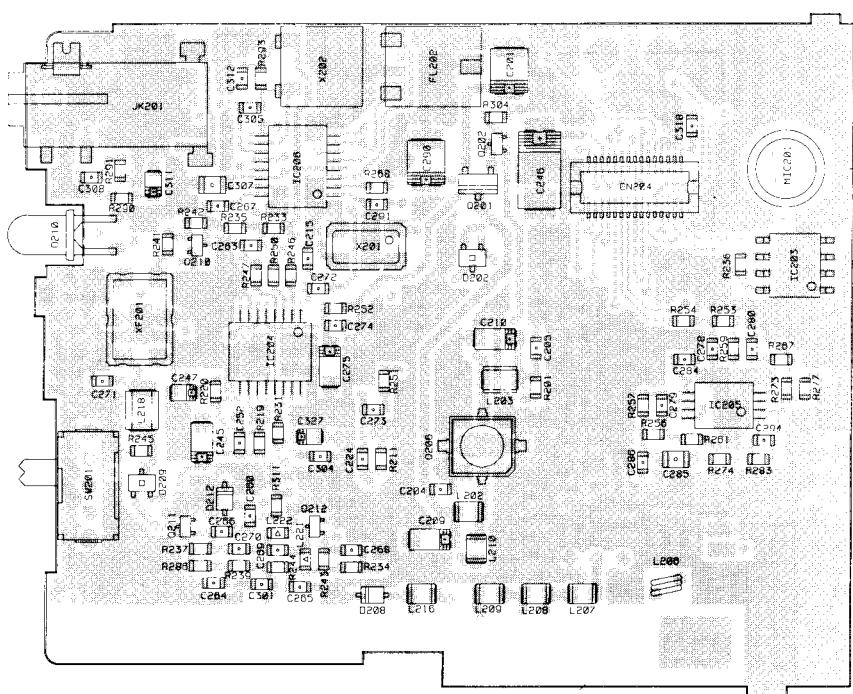
MAIN Unit side A(DJ-C1)

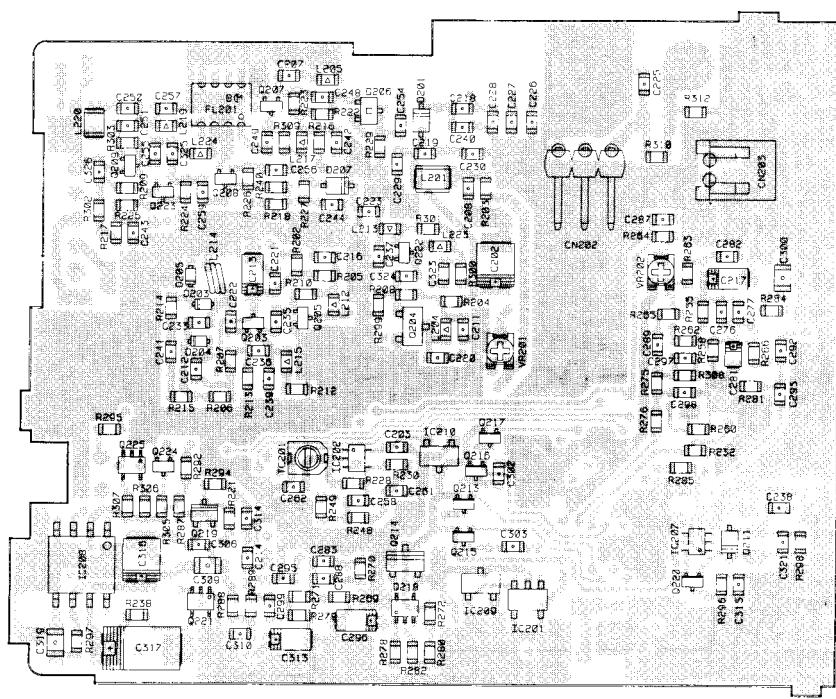


MAIN Unit side B(DJ-C1)

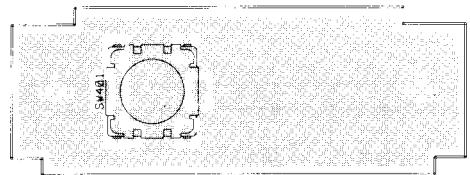


MAIN Unit side A(DJ-C4)

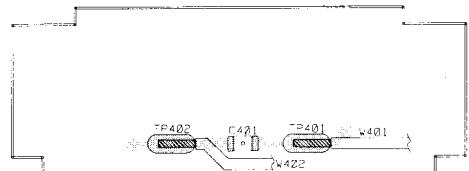




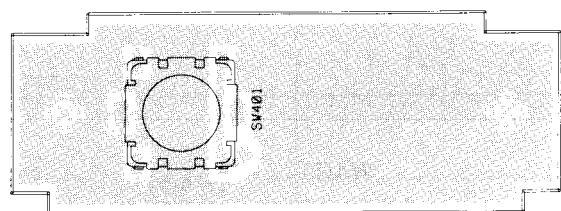
PTT Unit side A(DJ-C1)



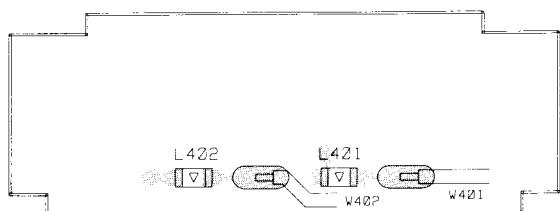
PTT Unit side B(DJ-C1)



PTT Unit side A(DJ-C4)

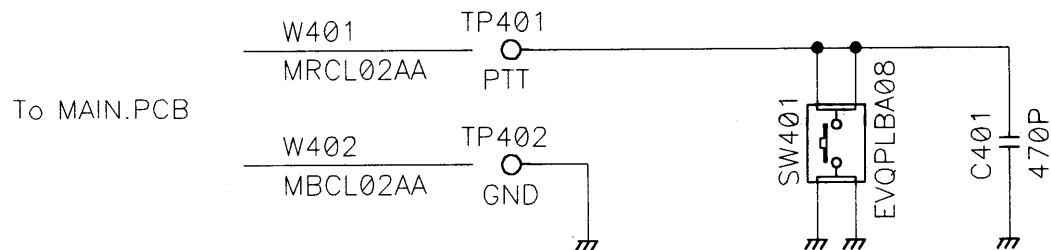


PTT Unit side B(DJ-C4)

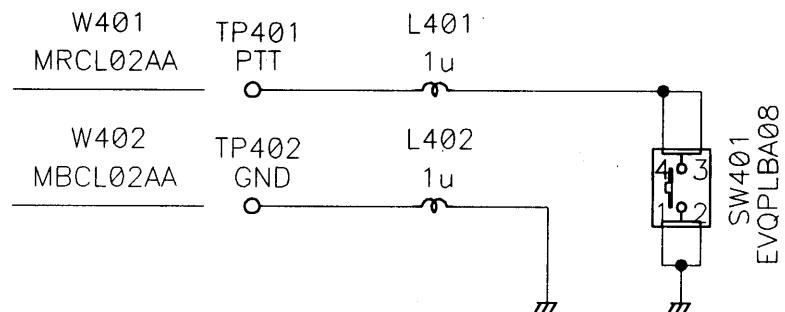


CIRCUIT DIAGRAM

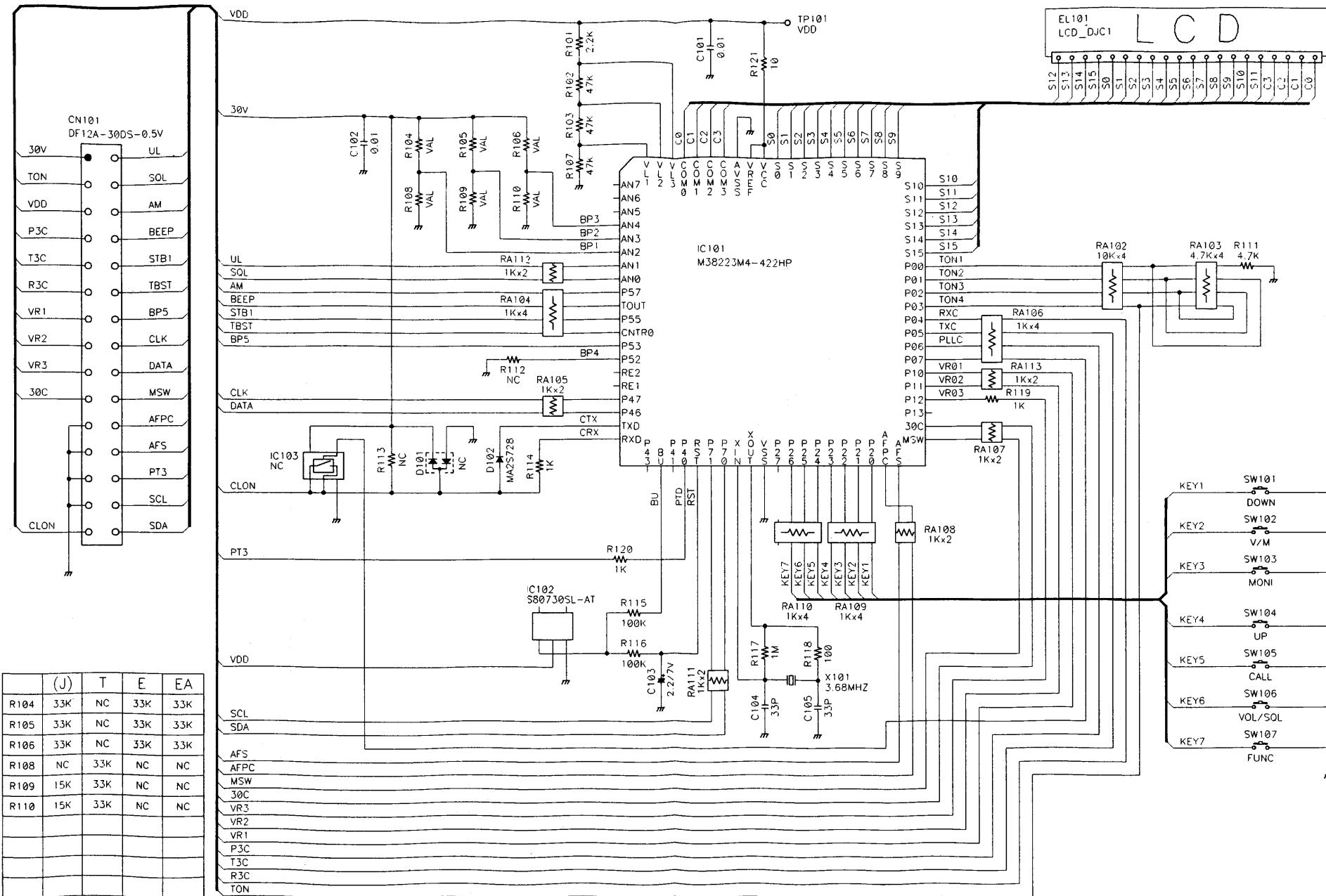
PTT Unit (DJ-C1)



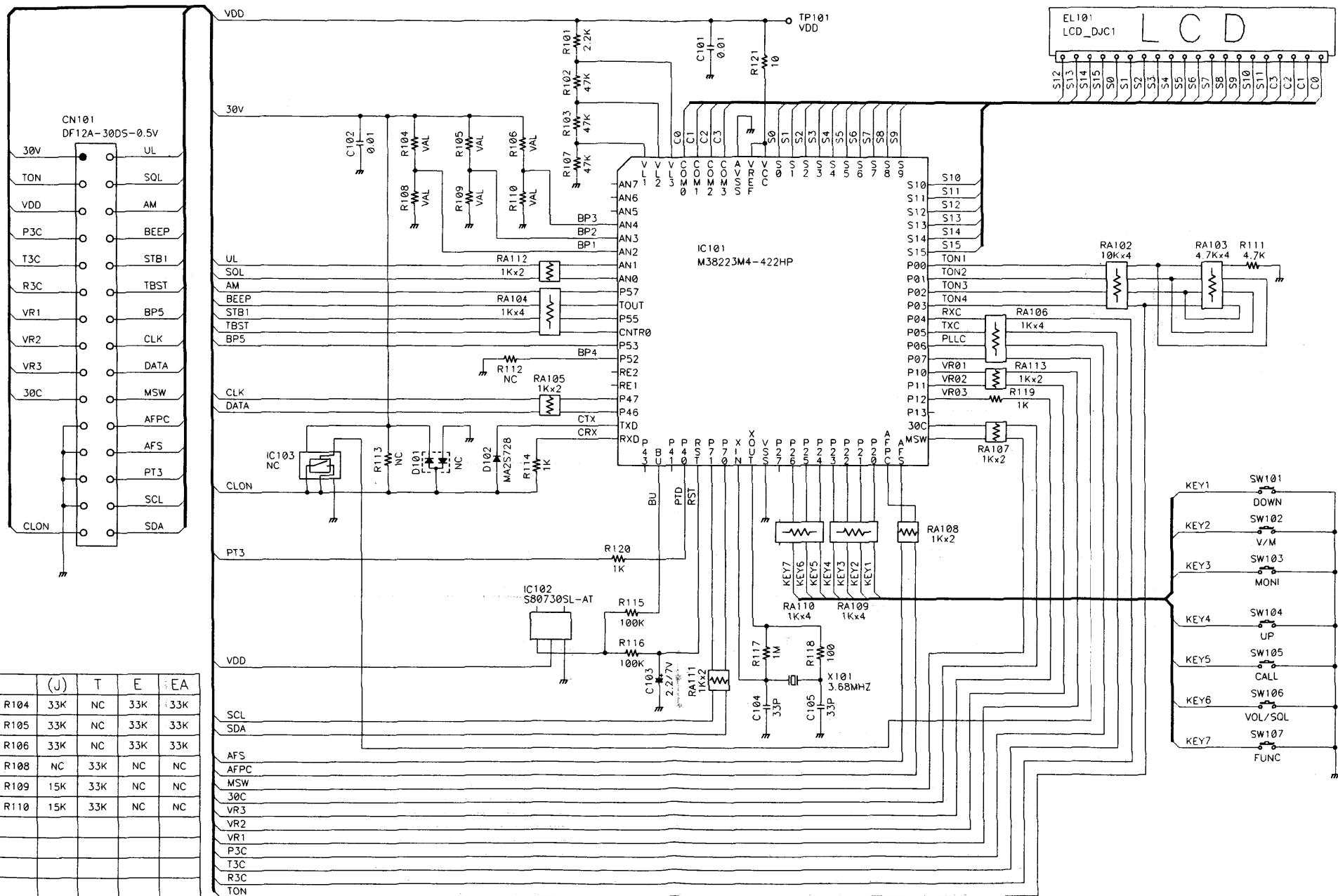
PTT Unit (DJ-C4)



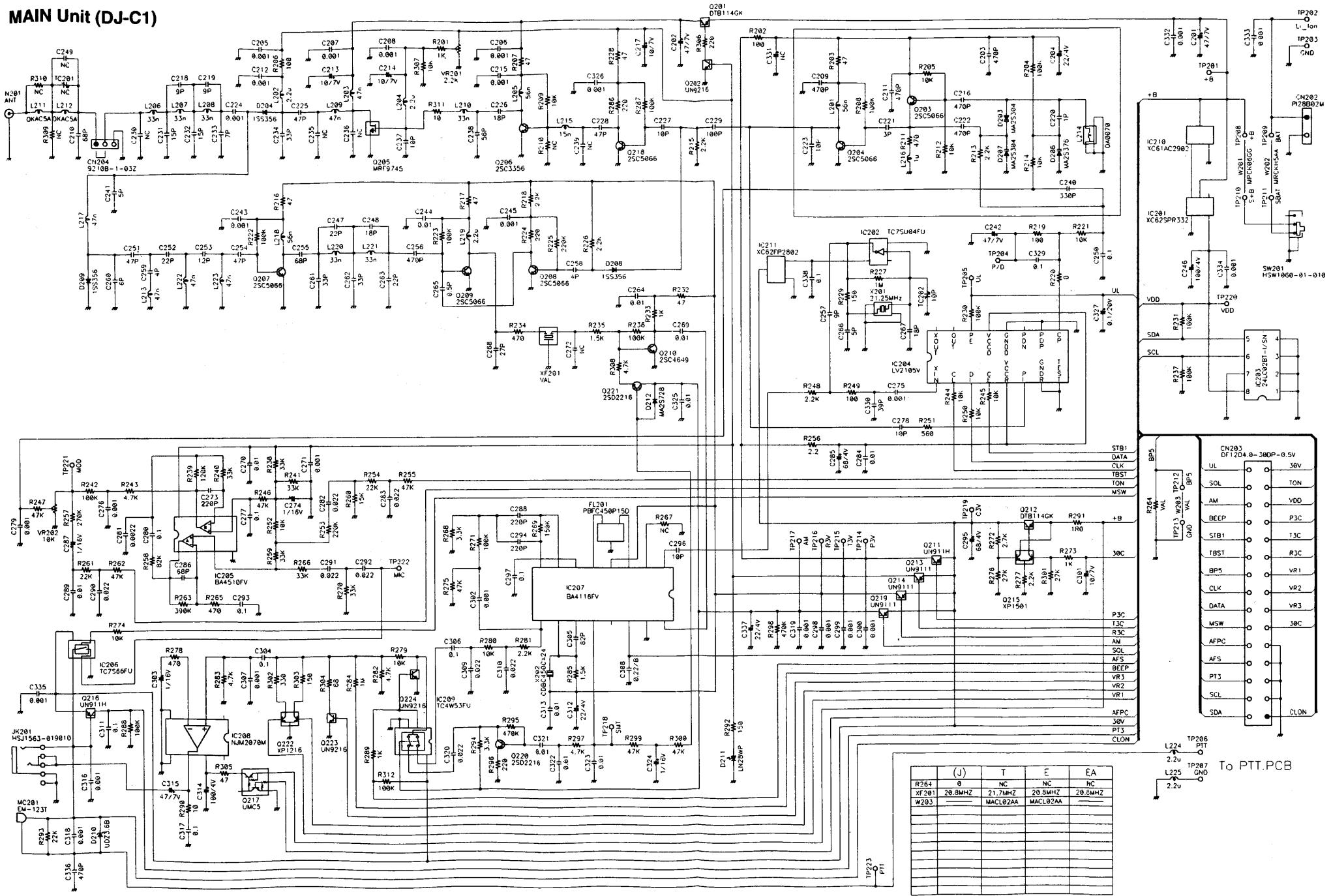
CPU Unit (DJ-C1)



CPU Unit (DJ-C1)



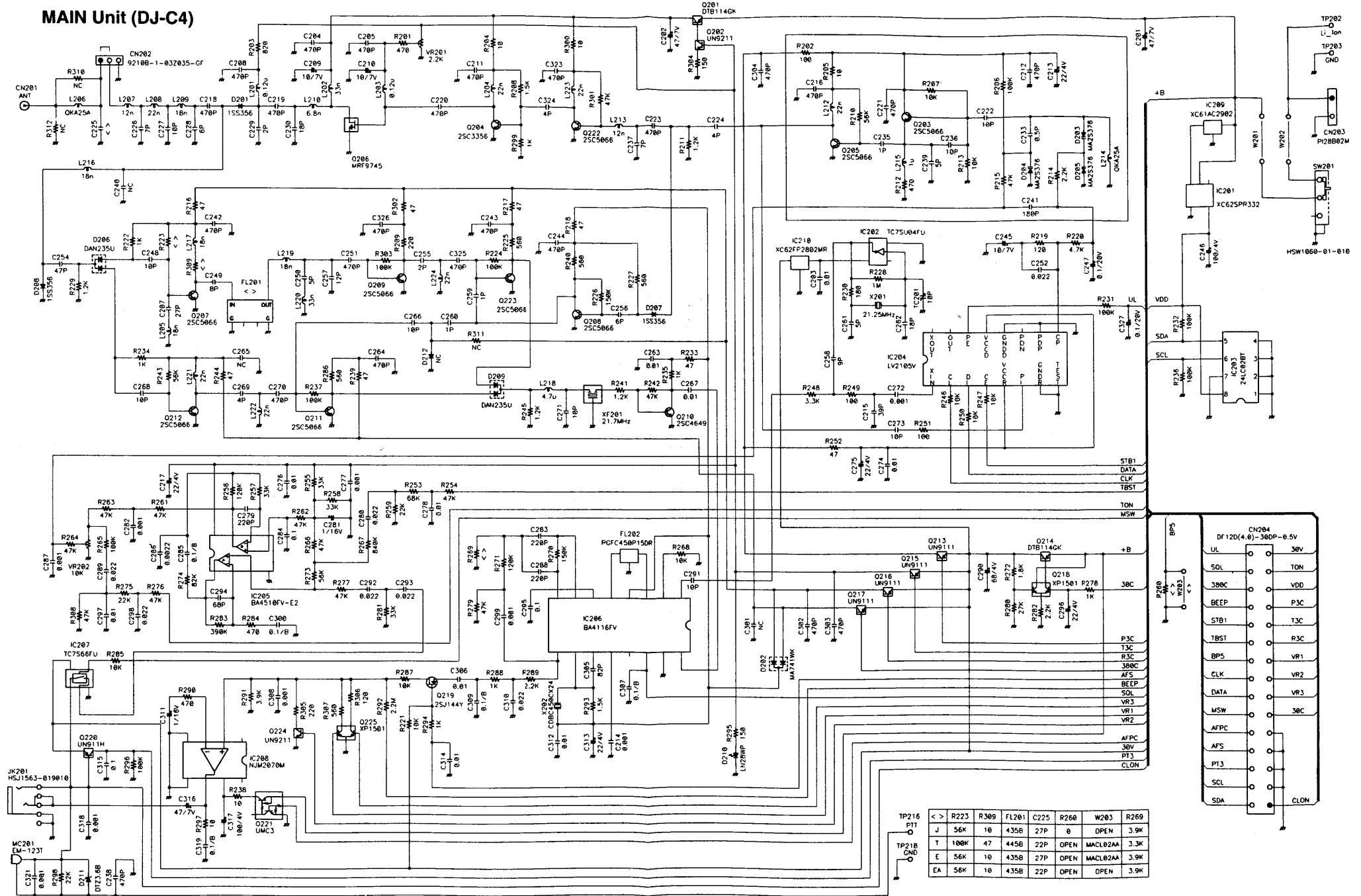
MAIN Unit (DJ-C1)



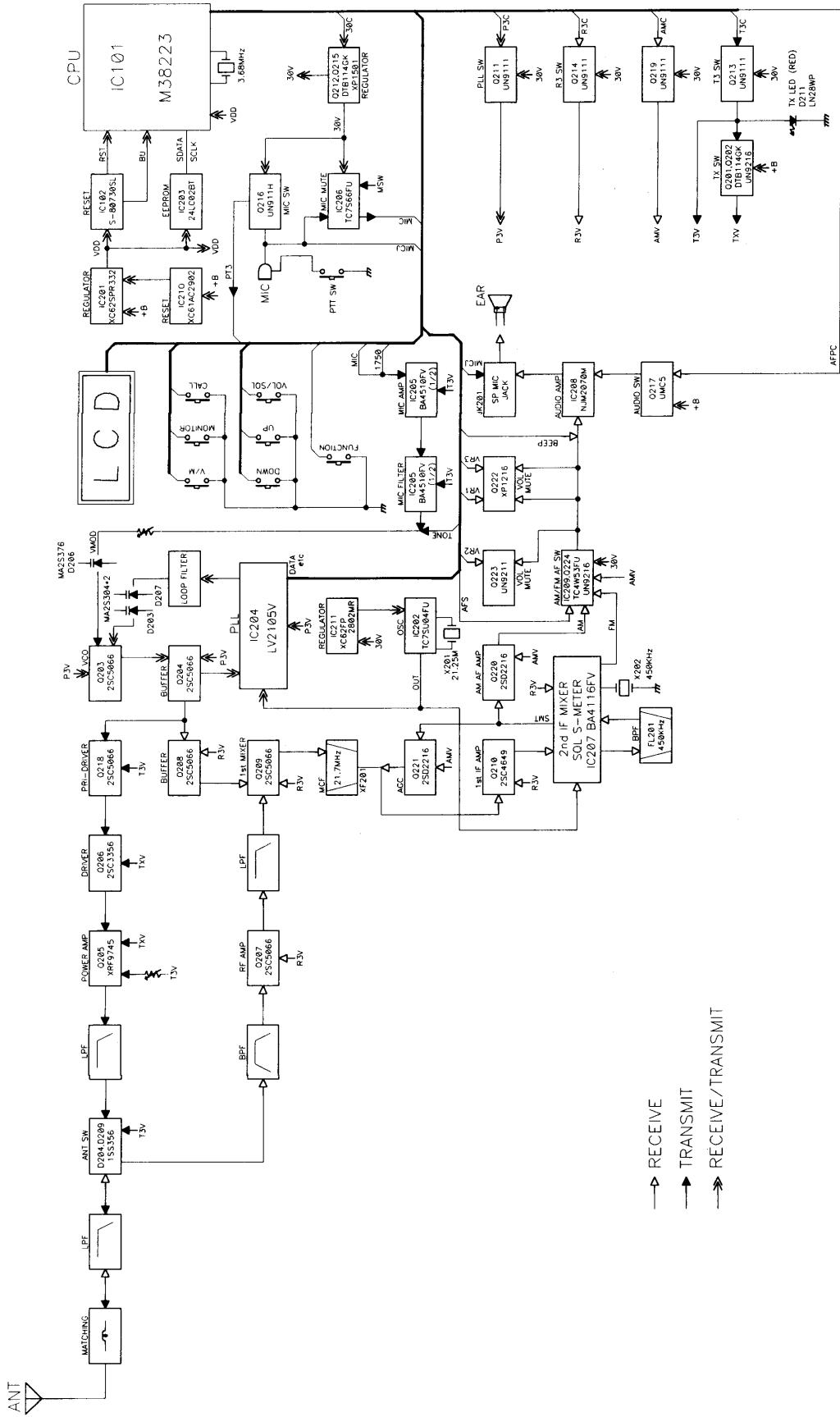
To PTT.PCB

(J)	T	E	EA
R264	θ	NC	NC
XF201	20.8MHZ	21.7MHZ	20.8MHZ
W203		MACL02AA	MACL02AA

MAIN Unit (DJ-C4)



BLOCK DIAGRAM (DJ-C1)



BLOCK DIAGRAM (DJ-C4)

