DJ-V5/DJ-V5E/ DJ-V5EA/DJ-V5T
Service Manual

CONTENTS

ALINCO, INC.

SPECIFICATIONS

General

Type	DJ-V5T	DJ-V5E
Receiving range	76-107.995MHz (Default: 88.1MHz) 144~147.995MHz 420~449.995MHz	87.5-107.995MHz (Default: 87.5MHz) 144~145.995MHz 430~439.995MHz
Transmitter range	144~147.995MHz 420~449.995MHz	144~145.995MHz 430~439.995MHz
Modulation	F2, F3 (FM), WFM (Reception)	
Frequency stability	±5ppm (-10°C~+60°C) (+14°F~+140°F)	
Ant. impedance	50Ω	
Supply voltage	Rating: DC13.8V Connection: DC4.0~15.0V	
Ground	Negative ground	
Current consumption (DC 13.8V. Average)	5W output: approx. 1.6A Rating output: approx. 220mA Squelch reception: approx. 70mA Battery save: Approx. 20mA	
Temperature range	-10°C~+60°C (+14°F~+140°F)	
Dimensions	W58×H97×D40.3mm (without projections. Battery case EDH-29 inclusive) (2.28"×3.81"×1.58")	
Weight	Approx. 335g (Ant. battery case. 4 AA batteries inclusive) (0.74lb. approx.)	

Transmitter

Type	DJ-V5T	DJ-V5E
Power output	5W (1/0.5W)	
Modulation	Variable reactance	
Max. deviation	±5.0kHz	
Spurious emission	-60dB or less	
Mic. impedance	Approx. 2kΩ	

Receiver

Type	DJ-V5T	DJ-V5E
System	Double-conversion superheterodyne	
First I.F.	FM: 39.15MHz	
Second I.F.	FM: 450kHz WFM: 13.35MHz	
Sensitivity (12dBSINAD)	76-107.995MHz WFM: 0dBμ 144~147.995MHz FM: -16dBμ 440~449.995MHz FM: -15dBμ	87.5-107.995MHz WFM: 0dBμ 144~145.995MHz FM: -16dBμ 430~439.995MHz FM: -15dBμ
Selectivity (except WFM)	-6dB/12kHz or over -60dB/30kHz or less	
Spurious response	60dB or over	
AF output	500mW or over (8Ω. 10% distortion factor. 13.8V)	
AF load impedance	8Ω	

CIRCUIT DESCRIPTION

1) Receiver System

1. Receiving System
Double Superheterodyne
1st IF: FM 39.15MHz, WFM (Wide FM) 13.35MHz
2nd IF: 450kHz

2. Front End Circuit
VHF

The signal from the antenna is passed through the duplexer FL301 and low-pass filter, and it is switched by D317 and amplified by RF amplifier Q312. Then passing through the band-pass filter, the signal is led to the mixer circuit IC306 via the band switch D314.

FM Radio

The signal from the antenna is passed through the duplexer FL301 and low-pass filter, and the signal is switched by D317 and amplified by RF amplifier Q318. Then passing through the band-pass filter, the signal is led to the mixer circuit IC306 via the band switch D314.

UHF

The signal from the antenna is passed through the duplexer FL301 and low-pass filter, and it is switched by D321 and amplified by RF amplifier Q321. Then passing through the band-pass filter FL303, the signal is led to the mixer circuit IC306 via the band switch D322.

3. Mixer circuit
The input signal is mixed with the signal from the first local oscillator at the first mixer IC306 to make the addition and subtraction. Then the signal is switched between FM and WFM by FM switch D319.

FM

FM receiving signal of 39.15MHz is selected by the crystal filter XF301. After eliminating the adjacent channel frequency signal, it is amplified at the first IF amplifier Q320.

WFM

WFM receiving signal of 39.15MHz is selected by band-filter eliminating the adjacent channel frequency signal.

The first local oscillator signal comes from VCO output, then is injected to the local input terminal of mixer IC306 via the buffer amplifier Q202. VHF band and FM radio employ the upper heterodyne system. UHF band employs the lower heterodyne system.

4. IF Circuit
The amplified signal at the first IF amplifier Q320 is led to the pin16 of IC307 for demodulation. The reference buffer output signal of 12.9MHz from IC302 is multiplied by 3 at Q322, and mixed with the input signal to pin1 of IC307 at the mixer circuit inside IC307. Then it is converted to the second IF signal of 450kHz. The converted second IF signal is output from pin3 of IC307, then fed to pin5 of IC307 after eliminating the adjacent channel frequency signal at the ceramic filter FL302. The second IF signal input to pin5 of IC307 is led to the limiter amplifier inside IC, and demodulated at the quadrature circuit, then the signal is output from pin10 of IC307 as an AF signal.

WFM

WFM signal is led to the pin16 of IC310 for demodulation. The reference buffer output signal of 12.9MHz from IC302 is multiplied by 2 at Q322, and mixed with the input signal to pin2 of IC310 at the mixer circuit inside IC310. Then it is converted to the second IF signal of 13.35MHz. The converted second IF signal is output from pin4 of IC310, then fed to pin7 of IC310 after eliminating the adjacent channel frequency signal at the ceramic filter FL304. The second IF signal input

to pin7 of IC310 is led to the limiter amplifier inside IC, and demodulated at the quadrature circuit, then the signal is output from pin9 of IC310 as an AF signal.

5. Squelch Circuit
FM

The AF signal comes from pin10 of IC307 is fed to pin11 of IC307. The input signal is led to noise filter amplifier inside of IC and the rectifier circuit, then output from pin13 of IC307.
The rectified signal is led to A/D port of microcomputer IC1. The microcomputer IC1 judges the signal to control the audio output ON/OFF switching.

WFM

The S meter signal is output from pin10 of IC310. This signal is led to the A/D port of microcomputer IC1. The microcomputer IC1 judges the signal to control the audio output ON/OFF switching.

6. Audio Circuit
FM/WFM

The audio output signal is switched at IC308 for FM receiving and at IC312 for WFM receiving. Output audio signal is led to the active band-pass filter Q329, then led to volume VR601 to adjust the audio level via audio switch Q330. Adjusted audio signal is led to the audio power amplifier pin2 of IC8, then output from pin6 to drive the speaker, etc.

7. VCO Circuit
VHF/FM Radio

The VCO of VHF/FM radio band is based on the Colpitts oscillator. The oscillating frequency is determined by D202, D204, L202 and L203, and oscillated at the transistor Q201. The oscillated signal is led to pin19 of PLL-IC302 via the buffer amplifier Q202 and Q304.

UHF

The VCO of UHF band is based on the Colpitts oscillator. The oscillating frequency is determined by D206, D208 and L204, and oscillated at the transistor Q203. The oscillated signal is led to pin2 of PLL-IC302 via the buffer amplifier Q202 and Q304.

8. PLL

PLL-IC302 is used to control the oscillating frequency of VCO. The IC302 is controlled by the serial control data from microcomputer IC1. The reference frequency of 12.9MHz is oscillated by the crystal oscillator X301 inside IC302.

VHF/FM Radio

The divide ratio is set by the control signal from IC1. The frequency that divides the input signal to pin19 of IC302 is compared with the frequency that can be gained by dividing the reference frequency of 12.9MHz inside IC302. When a phase error is occurred, the pulse signal is output from the charge pump pin13 of C302 and converted to the DC voltage by the active filter, then fed to the cathode of the varicap diode D202 and D204 to reduce the phase error. In result the stable oscillation can be obtained at the desired frequency.

UHF

The divide ratio is set by the control signal from IC1. The frequency that divides the input signal to pin2 of IC302 is compared with the frequency that can be gained by dividing the reference frequency of 12.9MHz inside IC302. When a phase error is occurred, the pulse signal is output from the charge pump pin8 of C302 and converted to the DC voltage by the active filter, then fed to the cathode of the varicap diode D206 and D208 to reduce the phase error. In result the stable oscillation can be obtained at the desired frequency.

2) Transmitter System

- 5 -

1. Microphone amplifier

The microphone amplifier IC314 consists of two operational amplifiers. The voice is converted into the electric signal through the microphone and led to IC314. The signal is output passing through the amplifier and pre-emphasis circuit.

VHF

Output signal from the microphone amplifier is adjusted the maximum deviation by VR302, then led to cathode of the varicap diode of D205 for modulation in VCO to vary the capacitance of the oscillating circuit. And the FM modulation is produced.

UHF

Output signal from the microphone amplifier is adjusted the maximum deviation by VR301, then led to cathode of the varicap diode of D207 for modulation in VCO to vary the capacitance of the oscillating circuit. And the FM modulation is produced.

2. Power Amplifier

The oscillated signal in VCO is led to buffer amplifier Q202, driver amplifier IC301 and Q308, then input to power amplifier Q306. The power amplified signal is attenuated the harmonic frequency enough passing through the low-pass filter and the duplexer, then fed to the antenna.

3) Terminal function of CPU

No.	Terminal	Signal	I/O	Description	No.	Terminal	Signal	I/O	Description
1	AN7	BP1	I	Country	51	P13	KO1	O	Matrix output port
2	AN6	BP2	I		52	P12	KO2	O	Matrix output port
3	AN5	TMP	I	Temp. input	53	P11	KO3	O	Matrix output port
4	AN4	MRC	I	Remote control	54	P10	KO4	O	Matrix output port
5	AN3	SMT	I	S-melter input	55	P07	CTV	O	
6	AN2	SQL	I	Squelch input	56	P06	LAMPC	O	Lamp out
7	AN1	BATT	I	Battery input	57	P05	SEG31	O	
8	AN0	TIN	I	Tone input	58	P04	SEG30	O	
9	DA2	TOUT	O	Tone out	59	P03	SEG29	O	
10	DA1	DOUT	O	DTMF out	60	P02	SEG28	O	
11	P55	AFS	O	AF switch	61	P01	SEG27	O	
12	P54	AFPC	O	AF power supply	62	P00	SEG26	O	
13	P53	STB1	O	PLL strobe	63	P37	SEG25	O	
14	P52	STB2	O	4094 strobe	64	P36	SEG24	O	
15	P51	CLK	O	Clock	65	P35	SEG23	O	
16	P50	DATA/UL	I/O	Data/unlock	66	P34	SEG22	O	
17	P47	SCK	O	EEPROM clock	67	P33	SEG21	O	
18	P46	SDA	O	EEPROM data	68	P32	SEG20	O	
19	TXD	CTX	O	Clone TX	69	P31	SEG19	O	
20	RXD	CRX	I	Clone RX	70	P30	SEG18	O	
21	P43	TBST	O	Tone burst out	71	SEG17	SEG17	O	
22	INT2	RE2	I	RE input	72	SEG16	SEG16	O	
23	INT1	RE1	I	RE input	73	SEG15	SEG15	O	
24	P40	35C	O	Power	74	SEG14	SEG14	O	
25	P77	MUTE	O	Mute out	75	SEG13	SEG13	O	
26	P76	PT3	I	PTT input	76	SEG12	SEG12	O	
27	P75	DPD	O	Power down mode	77	SEG11	SEG11	O	
28	P74	DSTD	I	DTMF exist	78	SEG10	SEG10	O	
29	P73	ACK	O	Data shift	79	SEG9	SEG9	O	
30	P72	DSD	I	DTMF code	80	SEG8	SEG8	O	
31	P71	STB3	O	DAC strobe	81	SEG7	SEG7	O	
32	INT0	BU	I	Backup signal	82	SEG6	SEG6	O	
33	RESET	RESET	I	Reset signal	83	SEG5	SEG5	O	
34	XCIN	NC			84	SEG4	SEG4	O	
35	XCOUT	NC			85	SEG3	SEG3	O	
36	XIN	XIN	I	Clock input	86	SEG2	SEG2	O	
37	XOUT	XOUT	O	Clock output	87	SEG1	SEG1	O	
38	VSS	GND			88	SEG0	SEG0	O	
39	P27	POWER	I	Power SW	89	VCC	VDD		
40	P26	VTX	O	TX power	90	VREF	VDD		
41	P25	UTX	O	TX power	91	AVSS	AVSS		
42	P24	KI5	I	Matrix input port	92	COM3	COM3	O	
43	P23	KI4	I	Matrix input port	93	COM2	COM2	O	
44	P22	KI3	I	Matrix input port	94	COM1	COM1	O	
45	P21	KI2	I	Matrix input port	95	COM0	COM0	O	
46	P20	KI1	I	Matrix input port	96	VL3	VL3	I	
47	P17	BP3	I	Expand mode	97	VL2	VL2	I	
48	P16	PCNT	O		98	C2	NC		
49	P15	BEEP	O	Beep out	99	C1	NC		
50	P14	BUSY	O	Busy out	100	VL1	VL1	I	

SEMICONDUCTOR DATA

1) 24LC32AT-I/SN (XA0604)

32K 2.5V I²C Serial EEPROM

Block Diagram
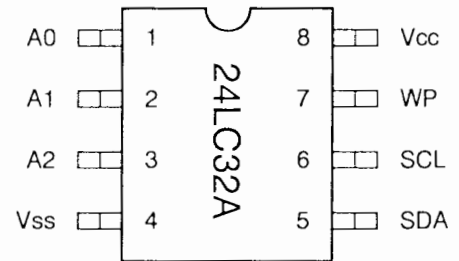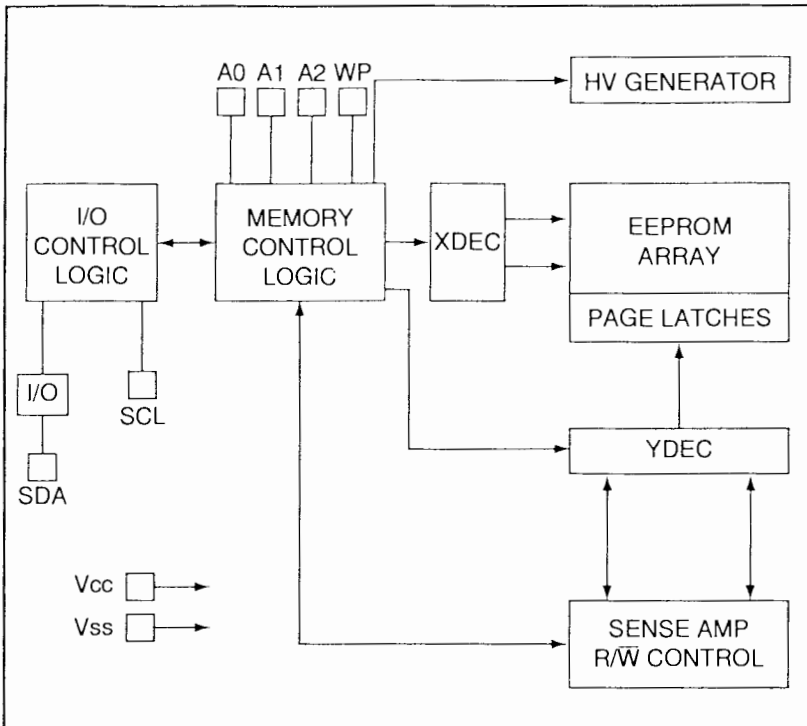
2) BA4510FV-E2 (XA0537)

Dual Operational Amplifier

Vcc = ±2.5V Typ
High through rate: 5V/µSec
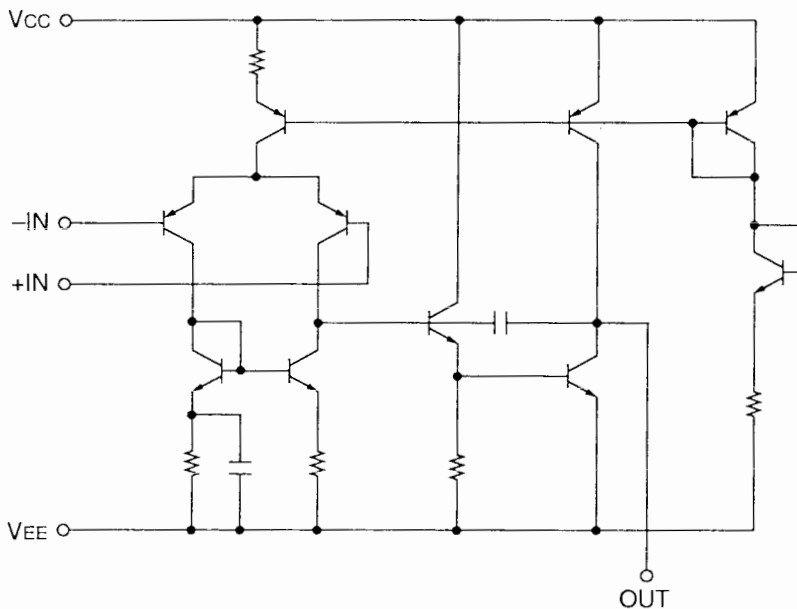
(Top View)
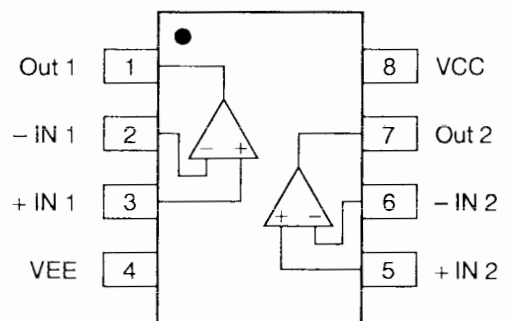
Block Diagram

3) BU4094BCFV-E2 (XA0506)

8-Stage Shift Register

Block Diagram
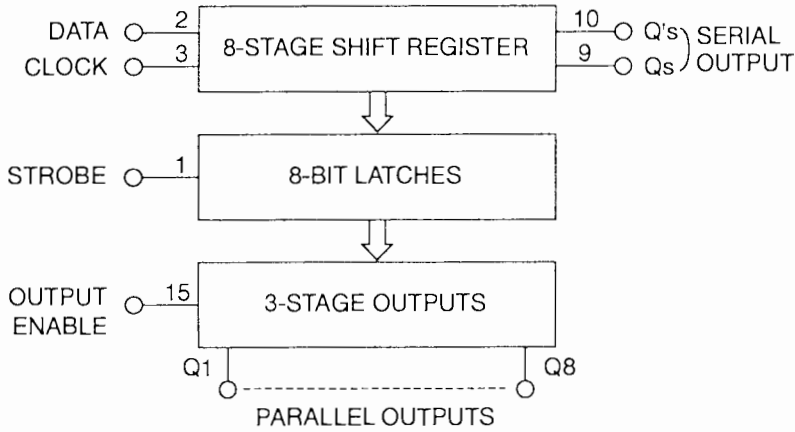
Pin Assignment
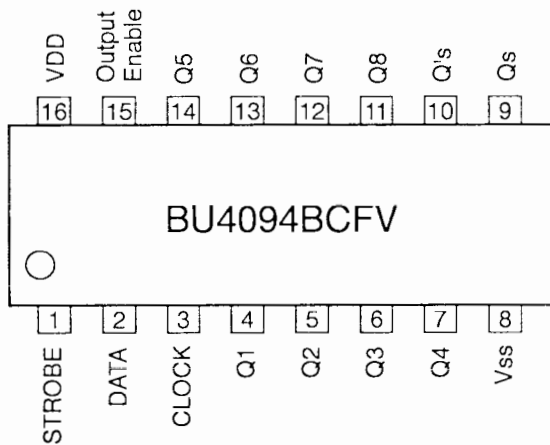
Truth Table

Z=High Impedance
X=Don't Care

Clock	Output enable	Strobe	Data	Parallel outputs		Serial outputs	
				Q1	Qn	Qs	Q's
‾_↑‾	L	X	X	Z	Z	Qs	No Chg.
‾↓_‾	L	X	X	Z	Z	No Chg.	Qs
‾_↑‾	H	L	X	No Chg.	No Chg.	Q7	No Chg.
‾_↑‾	H	H	L	L	Qn-1	Q7	No Chg.
‾_↑‾	H	H	H	H	Qn-1	Q7	No Chg.
‾↓_‾	H	X	X	No Chg.	No Chg.	No Chg.	Qs

4) LC73881M-TLM (XA0344)

DTMF Receiver


```
INPUT  1            10  VDD
PD     2             9  EST
OSC0   3             8  STD
OSCI   4             7  ACK
VSS    5             6  SD
            LC73881M
```
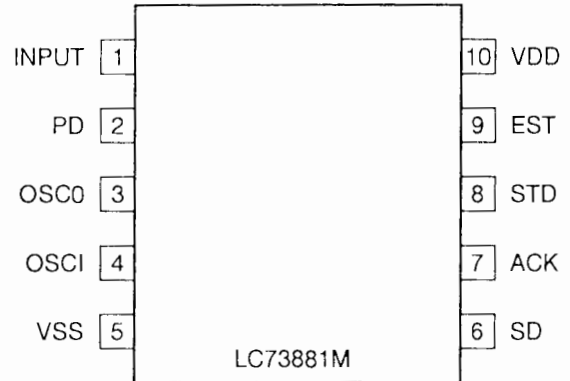
Block Diagram
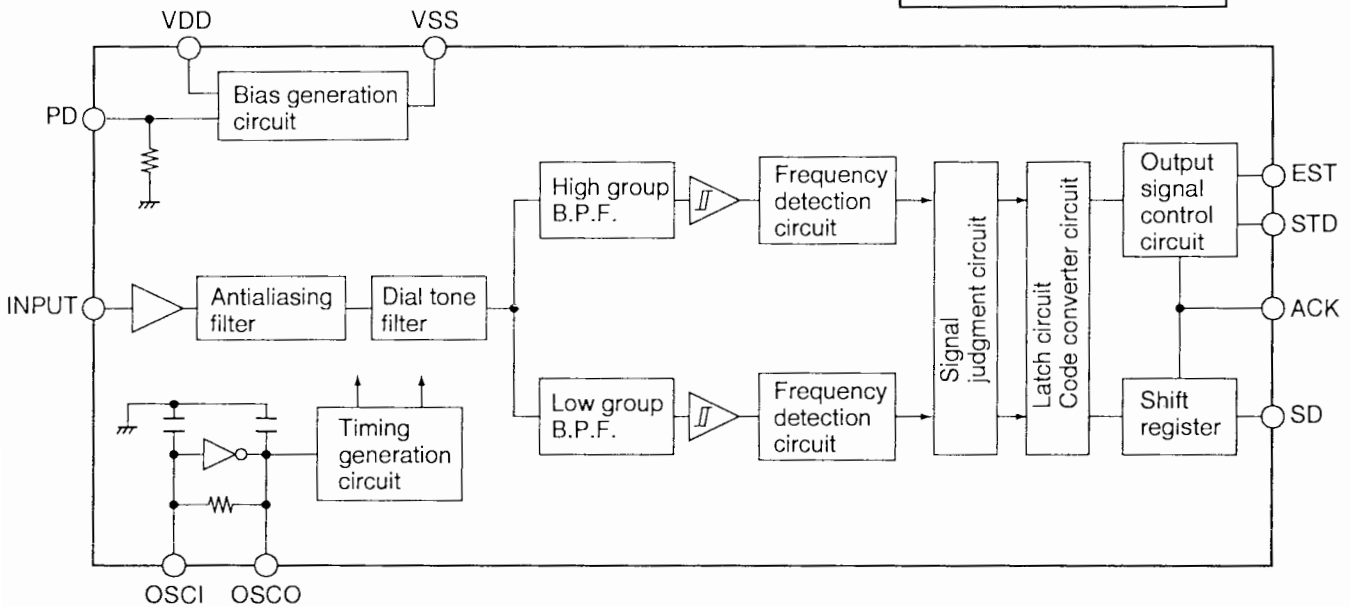
Pin No.	Name	I/O	Descriptions
1	INPUT	I	Input coupling capacitor is required. This input is internally biased to VDD/2.
2	PD	I	When set to "H", the unit goes into the power down mode.
3	OSCO	O	The crystal oscillator or ceramic resonator should be connected between these terminals to compose the oscillator circuit.
4	OSCI	I	
5	VSS		Power supply terminal. Normally 0V.
6	SD	O	Decoded DTMF is output in 4 bit serial data following LSB.
7	ACK	I	ACK pin is used to shift the data to SD pin. 4 pulses are required to shift the DTMF letters consisting of 4 bits. The data is latched in the shift register before the rising edge of the first pulse is shifted.
8	STD	O	"H" indicates that DTMF signal exists. Compared with EST pin, this pin responds slowly to the input signal and doesn't sense the burst signal, etc.
9	EST	O	"H" indicates that DTMF signal exists. This pin is monitored, and 4 pulses are given to ACK to access the data after a proper time has elapsed.
10	VDD		Power supply terminal. Normally 2.7~5.0V.

5) M38267M8L (XA0623)

CPU

Terminal Connection

(TOP VIEW)

Top pins (left to right, pins 75–51):
- 75 SEG13
- 74 SEG14
- 73 SEG15
- 72 SEG16
- 71 SEG17
- 70 P30/SEG18
- 69 P31/SEG19
- 68 P32/SEG20
- 67 P33/SEG21
- 66 P34/SEG22
- 65 P35/SEG23
- 64 P36/SEG24
- 63 P37/SEG25
- 62 P00/SEG26
- 61 P01/SEG27
- 60 P02/SEG28
- 59 P03/SEG29
- 58 P04/SEG30
- 57 P05/SEG31
- 56 P06/SEG32
- 55 P07/SEG33
- 54 P10/SEG34
- 53 P11/SEG35
- 52 P12/SEG36
- 51 P13/SEG37

Left pins (top to bottom):
- SEG12 — 76
- SEG11 — 77
- SEG10 — 78
- SEG9 — 79
- SEG8 — 80
- SEG7 — 81
- SEG6 — 82
- SEG5 — 83
- SEG4 — 84
- SEG3 — 85
- SEG2 — 86
- SEG1 — 87
- SEG0 — 88
- VCC — 89
- VREF — 90
- AVSS — 91
- COM3 — 92
- COM2 — 93
- COM1 — 94
- COM0 — 95
- VL3 — 96
- VL2 — 97
- C2 — 98
- C1 — 99
- VL1 — 100

M38267M8L

Right pins (top to bottom):
- 50 — P14/SEG38
- 49 — P15/SEG39
- 48 — P16
- 47 — P17
- 46 — P20
- 45 — P21
- 44 — P22
- 43 — P23
- 42 — P24
- 41 — P25
- 40 — P26
- 39 — P27
- 38 — VSS
- 37 — XOUT
- 36 — XIN
- 35 — XCOUT
- 34 — XCIN
- 33 — RESET
- 32 — P70/INT0
- 31 — P71
- 30 — P72
- 29 — P73
- 28 — P74
- 27 — P75
- 26 — P76

Bottom pins (left to right, pins 1–25):
- 1 P67/AN7
- 2 P66/AN6
- 3 P65/AN5
- 4 P64/AN4
- 5 P63/SCLK22/AN3
- 6 P62/SCLK21/AN2
- 7 P61/SOUT2/AN1
- 8 P60/SIN2/AN0
- 9 P57/ADT/DA2
- 10 P56/DA1
- 11 P55/CNTR1
- 12 P54/CNTR0
- 13 P53/RTP1
- 14 P52/RTP0
- 15 P51/PWM1
- 16 P50/PWM0
- 17 P47/SRDY1
- 18 P46/SCLK1
- 19 P45/TXD
- 20 P44/RXD
- 21 P43/Ø/TOUT
- 22 P42/INT2
- 23 P41/INT1
- 24 P40
- 25 P77

6) MB88347LPFV-G-BND-EF (XA0599)

D/A converter for digital tuning

Block Diagram
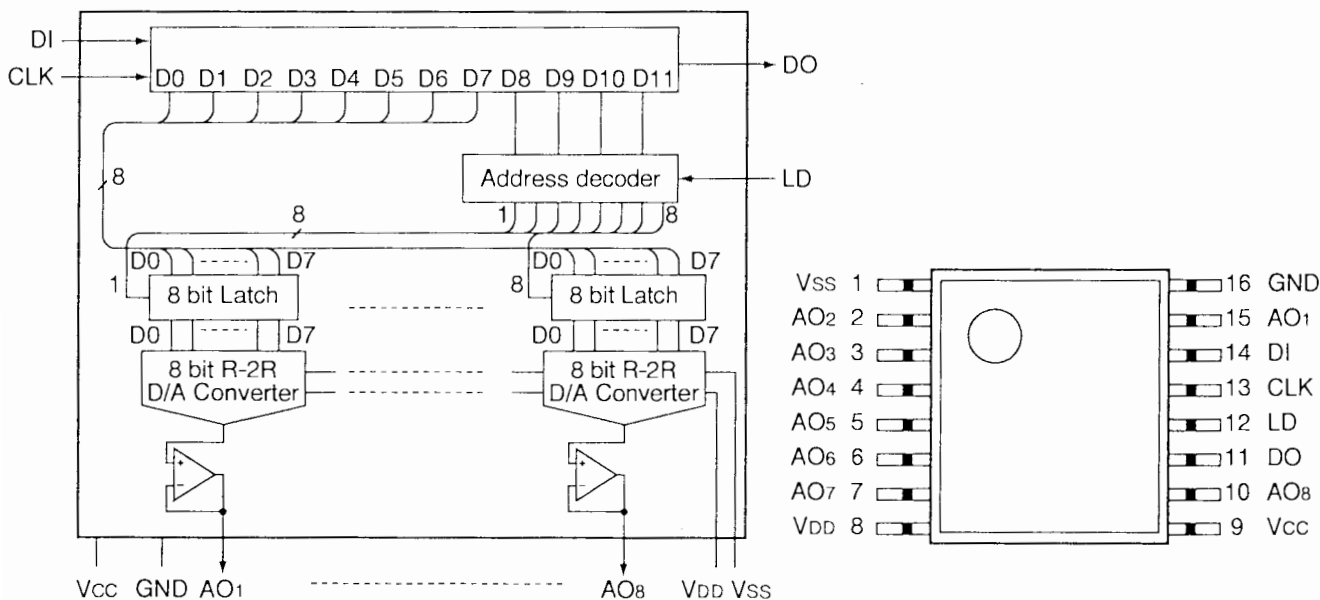
Pin No.	Name	I/O	Descriptions
14	DI	I	Serial data input terminal. Input 12 bit serial data. (Do not leave it open.)
11	DO	O	The MSB bit data of 12 bit shift register is output at the falling edge of CLK.
13	CLK	I	Shift clock input terminal. The input signal of DI terminal is input to 12 bit shift register at the rising edge of clock shift. (Do not leave it open.)
12	LD	I	When LD terminal is "High", the value of shift register is loaded in decoder and D/A output register. (Do not leave it open. Fix to "Low" when no data is transited.)
15 2 3 4 5 6 7 10	AO_1 AO_2 AO_3 AO_4 AO_5 AO_6 AO_7 AO_8	O	8 bit D/A converter output terminal with operational amplifier.
9	V_{CC}	–	MCU interface, power supply terminal of operational amplifier.
16	GND	–	MCU interface, ground terminal of operational amplifier.
8	V_{DD}	–	Reference power supply (High) input terminal of D/A converter.
1	V_{SS}	–	Reference power supply (Low) input terminal of D/A converter.

7) NJM2070M T1 (XA0210)

Low Voltage Power Amplifier

Equivalent Circuit
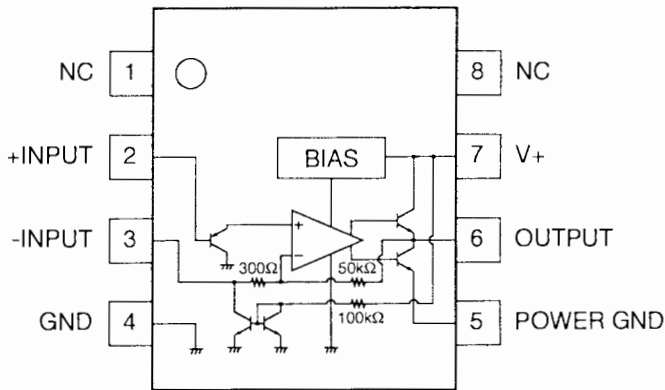
V+=6V, Ta=25±2℃

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=4	Po	0.5	0.6	-	W
		V+=4.5V, RL=4		-	0.32	-	W
		V+=3V, RL=4		-	120	-	mW
		V+=2V, RL=4		-	30	-	mW
	THD=10%, f=1kHz	V+=6V, RL=4		-	500	-	mW
		V+=4.5V, RL=4		-	250	-	mW
Distortion	Po=0.4W, RL=4 ,	f=1kHz	THD	-	0.25	-	%
Voltage gain	f=1kHz		Av	41	44	47	dB
Input impedance	f=1kHz		ZIN	100	-	-	k
Equivalent input noise voltage	Rs=10k	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=8 , Po=250mW		P.B	-	200	-	kHz

8) NJM2904V-TE1 (XA0573)

Dual Single Supply Operational Amplifier
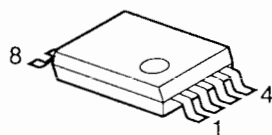
(Top View)
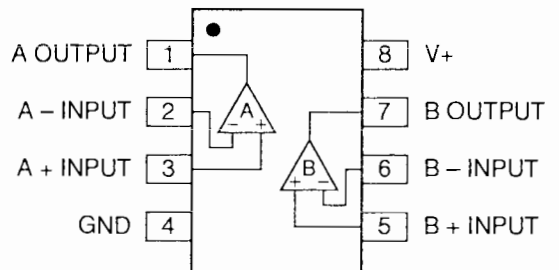
9) NJU7660V-TE1 (XA0600)

Voltage Converter

Test Circuit
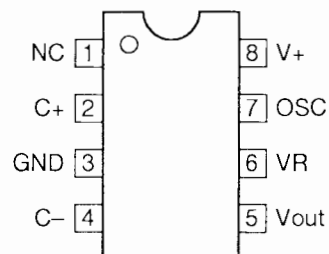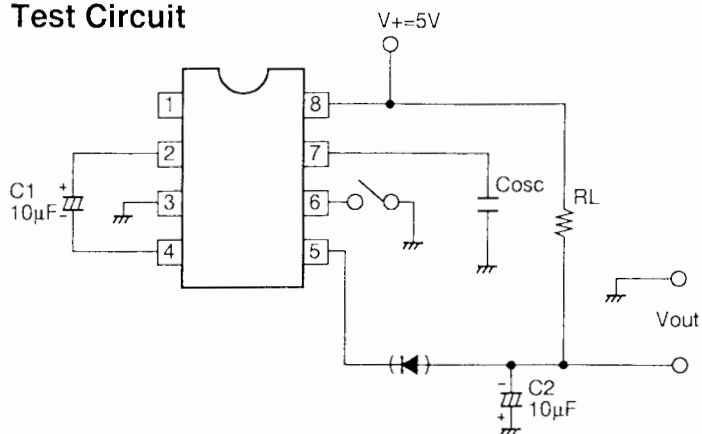
Block Diagram
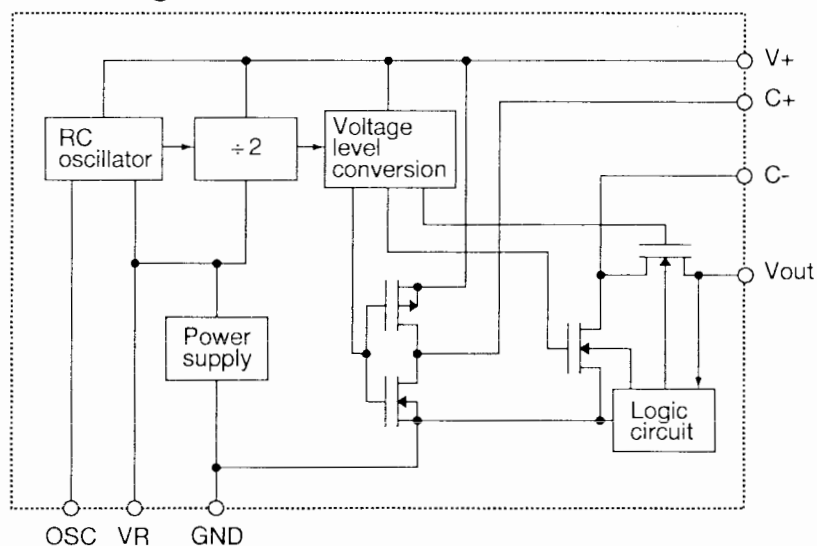
10) S-80730SL-AT-T2 (XA0356)

Voltage Detector

Block Diagram

OUT   V_{DD}   V_{SS}

* Lot number
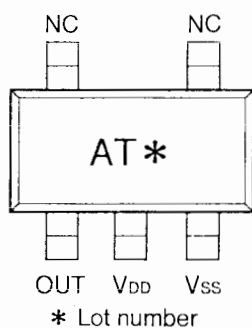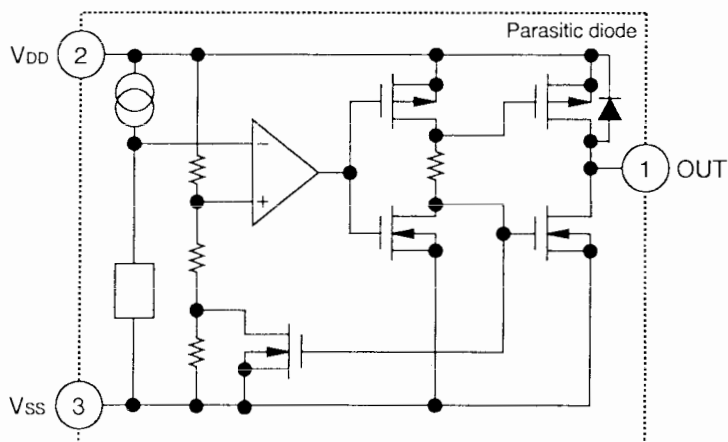
11) S-81235SG-QI-T1 (XA0383)

Voltage Regulator

Vin=18V
Iout=100mA

NC   NC

QI∗   ∗ Lot number

GND Vɪɴ Vᴏᴜᴛ

VIN

Parasitic diode

VOUT

RL

Reference voltage

GND
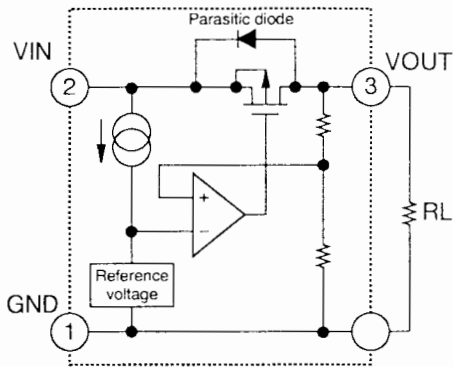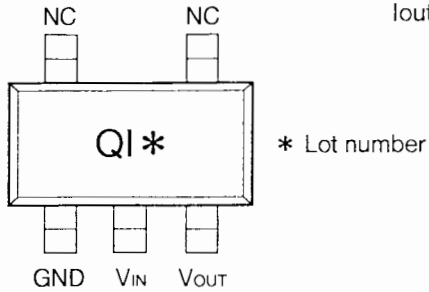
12) TA31161FN (XA0598)

Wide band IF demodulation IC with high speed mixer

Specifications

Mixer operating frequency: 40~300MHz
12dB sensitivity: 21dBμV EMF (50Ω input)
Consumption current: 5.5mA
Operating voltage: 2.3~5.5V

16   8

1

Block Diagram

Vcc

Mixer input   Det output   Limiter output   RSSI output

Vcc

| MIX IN | GND2 | AF OUT | QUAD | IF OUT2 | IF OUT1 | RSSI | VCC2 |
| (16) | (15) | (14) | (13) | (12) | (11) | (10) | (9) |

Detector

RSSI

Mixer

IF Amp

Local oscillator

| OSC IN | OSC OUT | BS | MIX OUT | GND1 | DFC | IF IN | VCC1 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |

Vcc

Local oscillator input   Battery save input
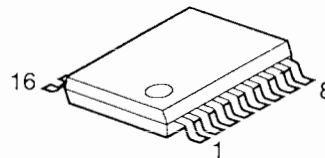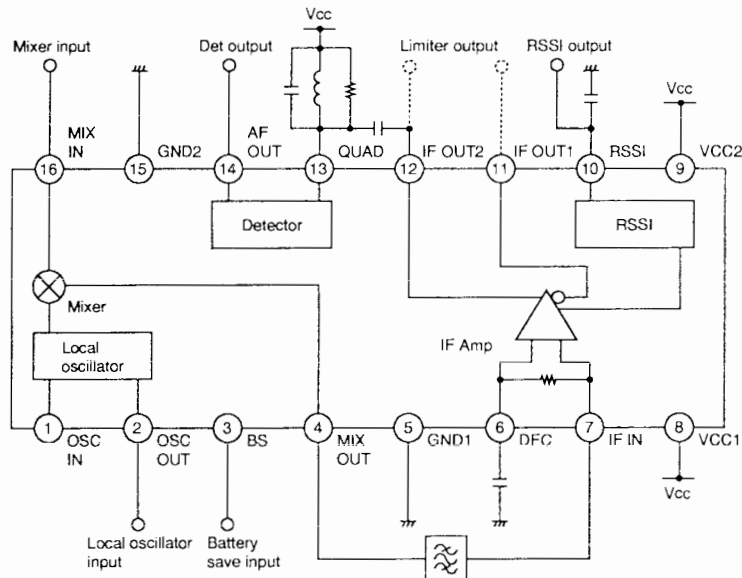
13) TC75S51F (TE85L) (XA0465)

Single Operational Amplifier

$V_{DD}=\pm0.75V\sim\pm3.5V$ or $1.5V\sim7V$
I_{DD} ($V_{DD}=3V$)$=6\mu A$
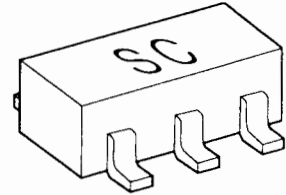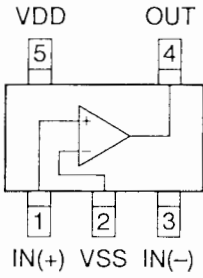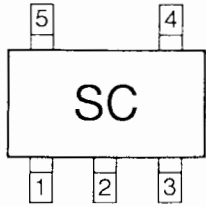
14) TC7S66FU (TE85L) (XA0524)

Analog Switch

Pin Assignment
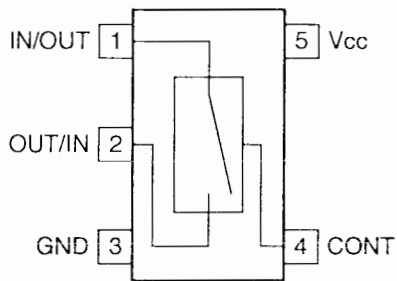
15) TK14521MTL (XA0515)

IF System

Pin labels (top, pins 16–9):
- 16: Mixer Input
- 15: GND
- 14: Squelch Status
- 13: Squelch Adjust
- 12: Filter To Adjust
- 11: Filter Input
- 10: Demodulator Output
- 9: Demodulator Decoupling

Block diagram blocks: MIXER, OSC, Squelch, BPF, De-modulator, IF Limiter, RSSI

Pin labels (bottom, pins 1–8):
- 1: OSC (Base)
- 2: OSC (Emitter)
- 3: Mixer Output
- 4: Vcc
- 5: IF Limiter Input
- 6: Limiter Decoupling
- 7: Limiter Decoupling
- 8: RSSI Output

Ta = 25°C, Vcc = 3V, fin = 10.7MHz, fm = 1kHz, Mod = ±3kHz

Parameter	Symbol	Ratings			Unit	Condition
		Min	Typical	Max		
Supply Current	Icc	4.3	7.0	9.8	mA	No signal
Mixer + IF part						
Limiting Sensitivity	Limit	-94	-100	-106	dBm	-3.0dB point
Output Voltage	Vo	200	300	400	mVrms	
Distortion	THD		0.8	2.8	%	
S/N	S/N	40	46	52	dB	
AM Rejection Ratio	AMRR	30	40		dB	AM 30% mod
Mixer Coversion Gain	G_M	20	26	32	dB	
Mixer 3rd Intercept point	ICP	-10	-3		dBm	
Mixer Input Impedance	R_{IM}	2.8	3.6	4.4	KΩ	DC Test
Mixer Output Impedance	R_{OM}	1.2	1.5	1.9	KΩ	DC Test
Limiter Input Impedance	R_{IFIN}	1.2	1.5	1.9	KΩ	DC Test
RSSI part						
RSSI Output Current 1	$I_{RSSI}1$	41	60	88	µA	-30dBm is input.
RSSI Output Current 2	$I_{RSSI}2$	22	40	59	µA	-60dBm is input.
RSSI Output Current 3	$I_{RSSI}3$	10	17	25	µA	-100dBm is input.
Squelch BPF part						
Center Frequency 1	$f_{CT}1$	10.5	15.0	21.0	kHz	Center frequency setting R=∞
Center Frequency 2	$f_{CT}2$	21.0	30.0	39.0	kHz	Center frequency setting R=36kΩ
Center Frequency 3	$f_{CT}3$	38.5	55.0	71.5	kHz	Center frequency setting R=6.8kΩ
Squelch Output Current	I_{SQ}	6	10	18	µA	Center frequency setting R=36kΩ 25mVrms is input (Pin11)
Squelch ON Voltage	$V_{SQ(ON)}$	0.40	0.47	0.54	V	DC voltage is input to pin13.
Squelch OFF Voltage	$V_{SQ(OFF)}$	0.50	0.57	0.64	V	DC voltage is input to pin13.

16) μPC2758T (XA0546)

L Band Down Converter IC

Terminal Connection

(Top View)   (Bottom View)

C1Y
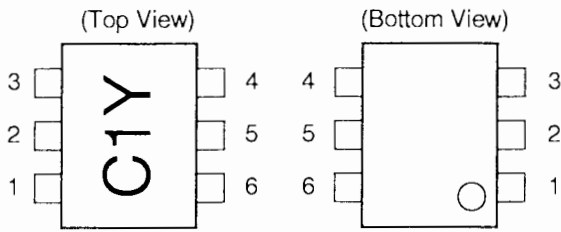
No.	Name
1	RF input
2	GND
3	Lo input
4	PS (power save)
5	Vcc = 3V
6	IF output

Specfications

(TA = +25°C, Vcc, VPS= 3.0V, PLOin = −10dBm, ZL = ZS = 50Ω, fRF = 800MHz, fIF = 130MHz)

Icc (mA)	CG (dB)	SSB NF (dB)	fRF (GHz)	PO (SAT) (dBm)	OIP3 (dBm)
11	19	9	0.1–2.0	−4	+5

Block Diagram
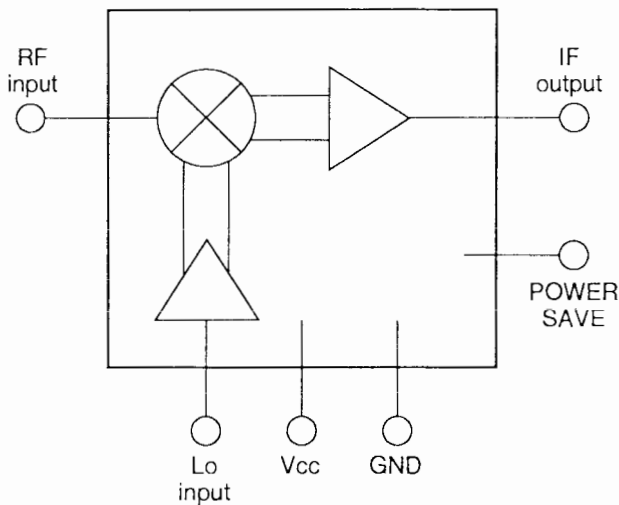
17) μPC2771T (XA0545)

Middle Power RF Amplifier

Terminal Connection

(Top View)   (Bottom View)

C2H
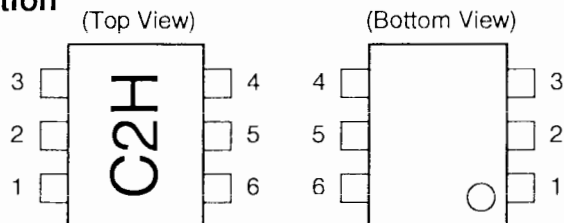
No.	Name
1	Input
2	GND
3	GND
4	Output
5	GND
6	Vcc = 3V

Specfications

(Ta = +25°C, Vcc = 3.0V, ZL = ZS = 50Ω)

Vcc (V)	Icc (mA)	GP (dB)	fu (GHz)	PO (sat) (dBm)	P1dB (dBm)
3	36	21	2.1	+12.5	+11.5

18) µPD3140GS-E1 (XA0312)
80~550MHz Dual PLL Synthesizer

Specifications

Operating frequency:	200~400MHz (Vin=-12~0dBm, pin 2 and 19 input)
	80~550MHz (Vin=-8~0dBm, pin 2 and 19 input)
Consumption current:	2.7~4.1mA (Vcc=1.8V while 1 channel is used)
	4.3~6.6mA (Vcc=1.8V while both channels are used)
	0~10µA (Vcc=1.8V in power save mode)
	3.5~5.3mA (Vcc=5V while 1 channel is used)
	5.6~8.6mA (Vcc=5V while both channels are used)
Operating voltage:	1.8~5.5V

Block Diagram
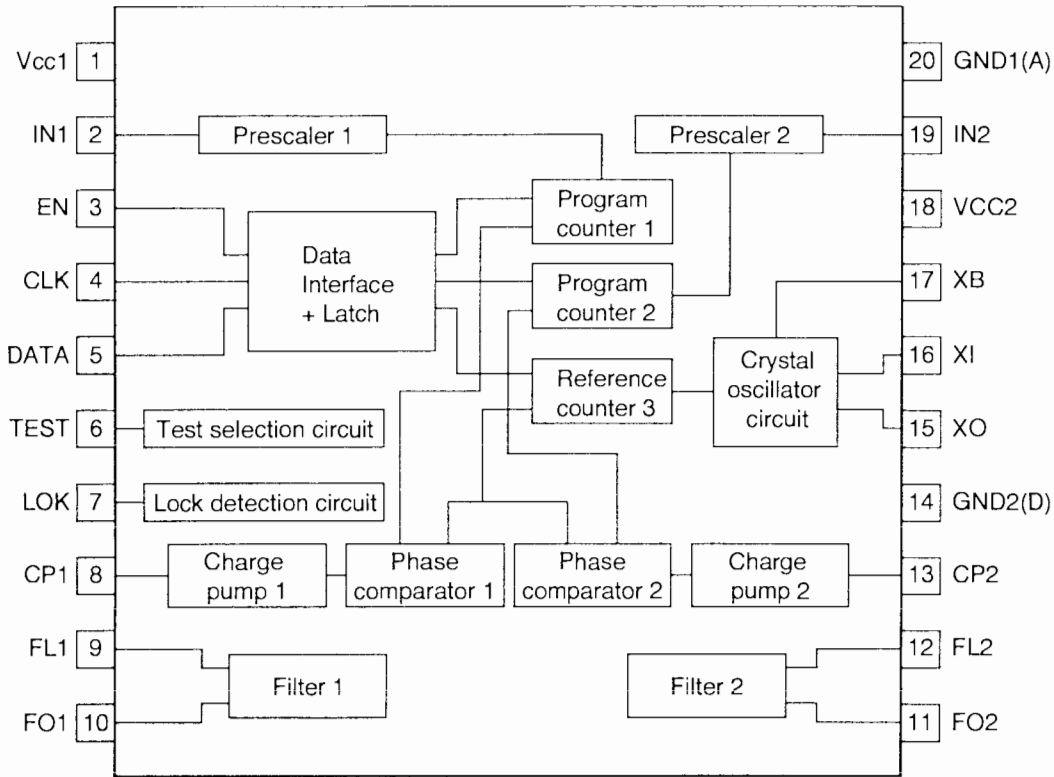
Terminal Connection
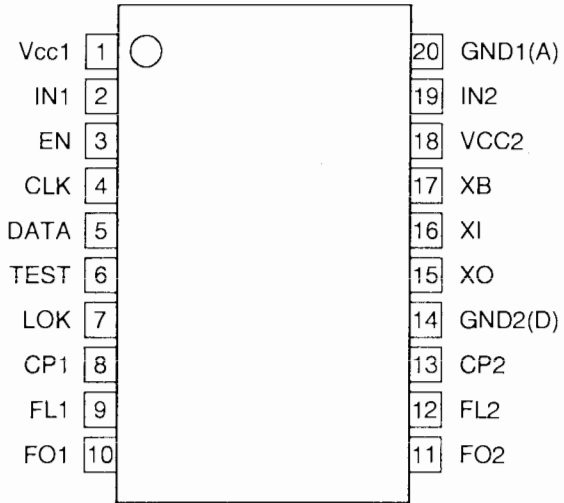
19) Transistor, Diode and LED Outline Drawings

Top View

1SV307(TPH3)	DA204U T106	DA227 TL	DAN235E-TL	MA132WA-TX	MA132WA-TX	MA2S077-TX
XD0326	XD0130	XD0238	XD0320	XD0321	XD0322	XD0319
TX	K	N20	M	M0	MU	5

MA2S111-TX	MA2S30400L	MA2S728-TX	MA2SV0500L	MA729-TX	MA742 TX	RN731V TE-17
XD0323	XD0312	XD0315	XD0324	XD0291	XD0250	XD0257
A	K	B	EA	2B	MIU	9

U2FWJ44N(TE12R)	UDZ TE-17 3.6B	UDZ TE-17 4.3B	BRPG1201W TR	PY1101F-TR	SML-310MTT86	
XD0294	XD0156	XD0160	XL0028	XL0060	XL0036	
2F	6 2	8 2	G R	(Rear view) Cathode Anode		

2SA1774TLR	2SB1132T 100Q	2SC5066O(TE85L)	2SD2216R-TX	2SK1580-T1	2SK2975-T11-A	3SK274 (TE85L)
XT0139	XT0061	XT0138	XT0135	XE0029	XE0038	XE0037
C / FR / B E	C / BA PQ / B C E	C / M1 / B E	C / YR / B E	D / G13 / G S	G K2975 D / S	G2 G1 / UN / D S

UMC5N TR	UN9211 TX	UN9216-R-TX	XP1111-TX	XP1116-TX	XP1501-TX	XP4501-TX
XU0152	XU0063	XU0099	XU0171	XU0188	XU0172	XU0191
C5	C / 8A / B E	C / 8F / B E	9S	7N	5R	5H

20) LCD (EL0043)

LCD Common

LCD Segment

EXPLODED VIEW

1) Assembly 1
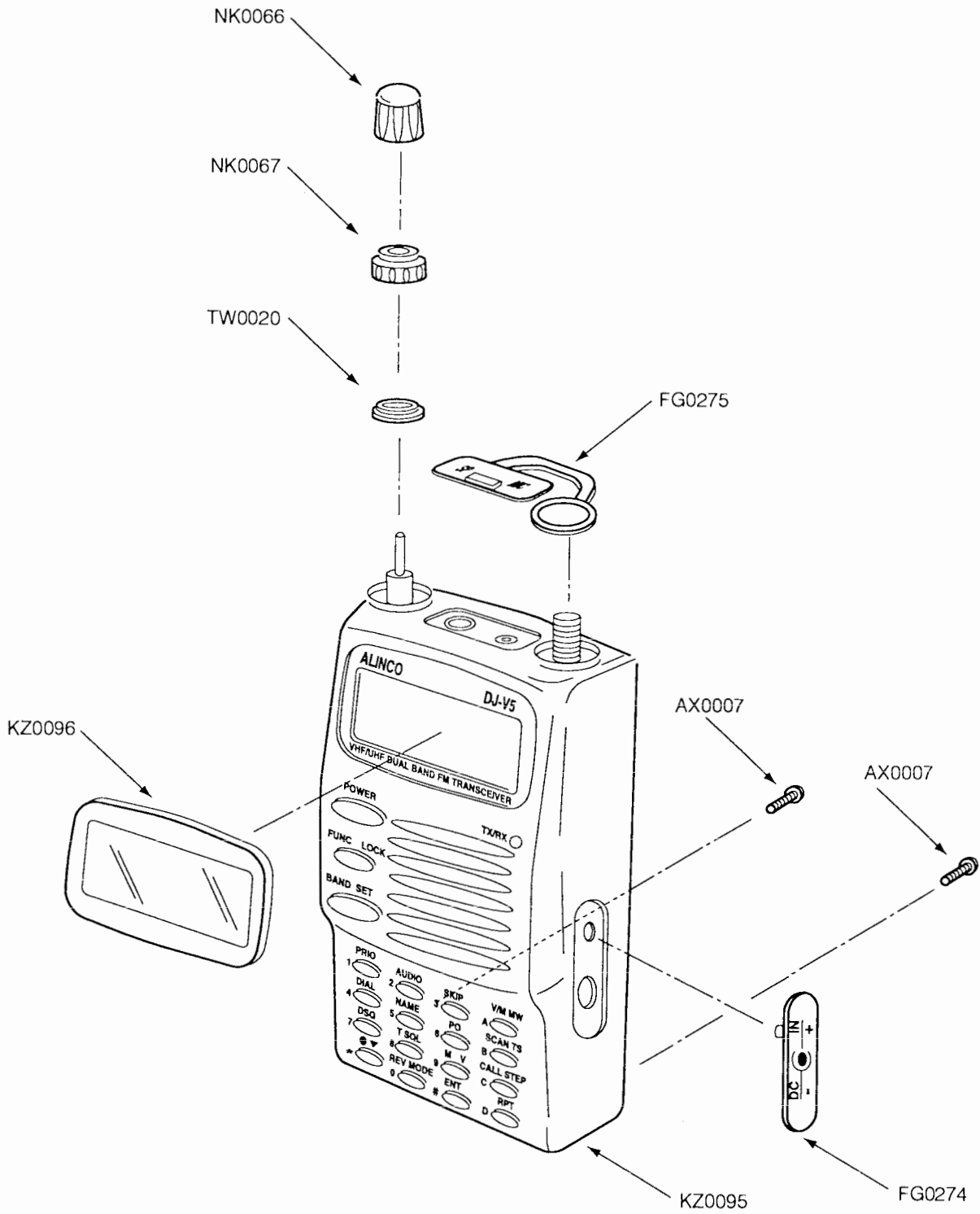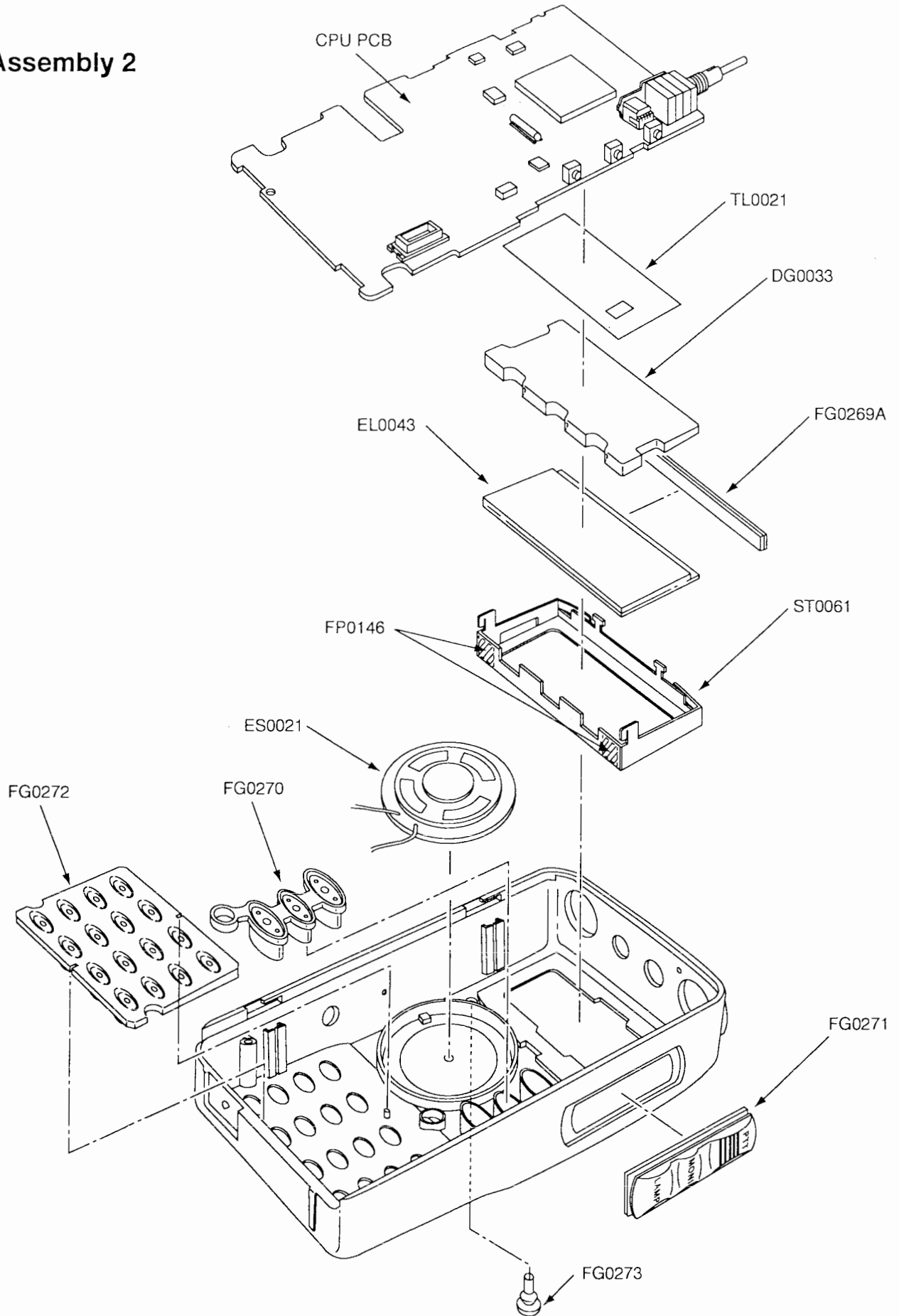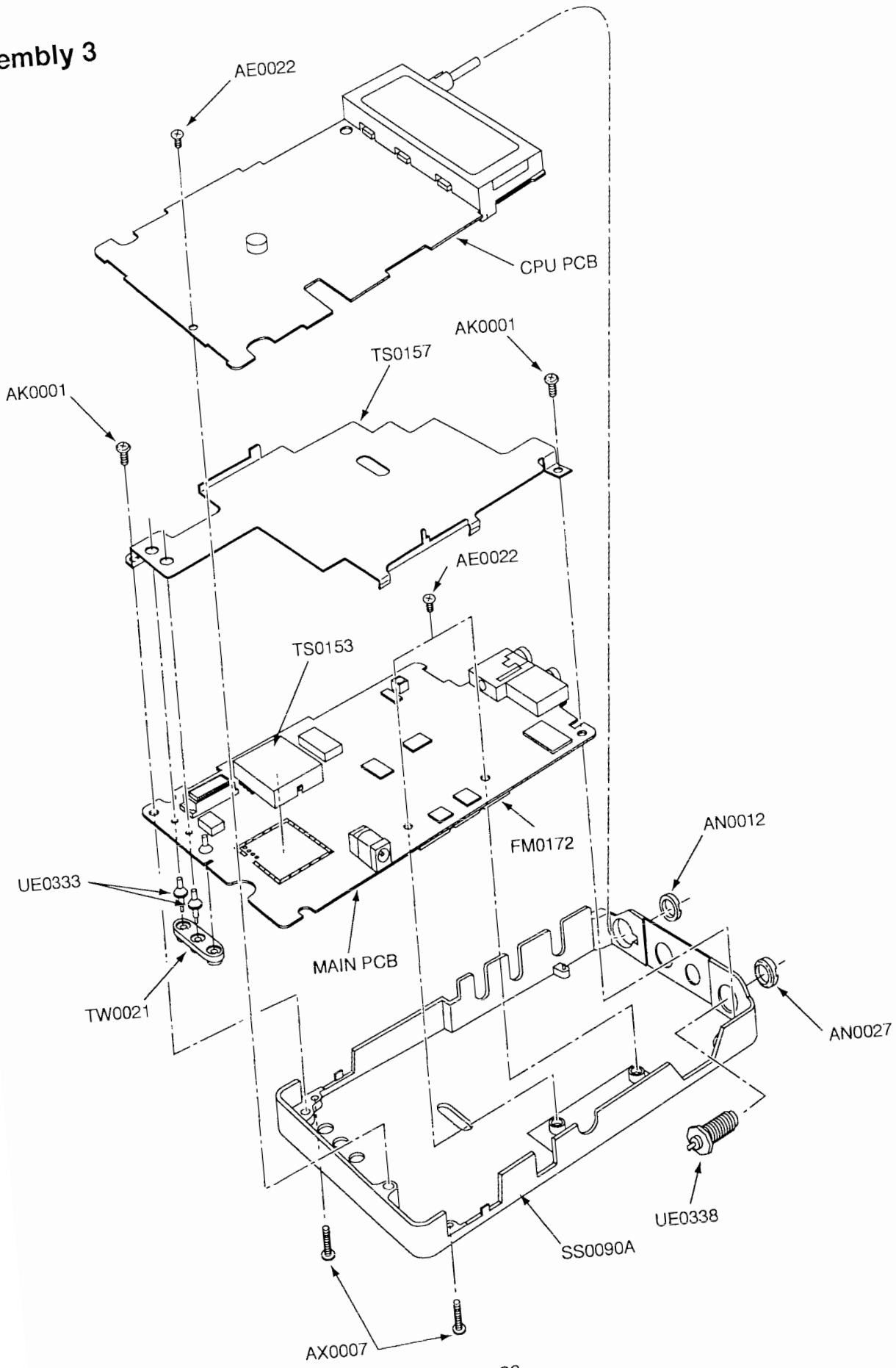
NK0066

NK0067

TW0020

FG0275

KZ0096

AX0007

AX0007

FG0274

KZ0095

2) Assembly 2

CPU PCB

TL0021

DG0033

FG0269A

EL0043

ST0061

FP0146

ES0021

FG0272

FG0270

FG0271

FG0273

3) Assembly 3

AE0022

CPU PCB

TS0157

AK0001

AK0001

AE0022

TS0153

FM0172

AN0012

UE0333

TW0021

MAIN PCB

AN0027

SS0090A

UE0338

AX0007

PARTS LIST

Ref. No.	Parts No.	Description	Parts Name	Note	Ref. No.	Parts No.	Description	Parts Name	Note
CPU Unit					Q14	XU0092	Transistor	UN911H-TX	
C1	CU3535	Chip C.	GRM36B102K50PT		R1	RK3526	Chip R.	ERJ2GEJ101X	
C2	CU3111	Chip C.	C1608JB1C104KT-N		R2	RK3550	Chip R.	ERJ2GEJ103X	
C3	CU0103	Chip C.	C2012JF1C105ZT-N/M		R3	RK3550	Chip R.	ERJ2GEJ103X	
C4	CU3535	Chip C.	GRM36B102K50PT		R4	RK3530	Chip R.	ERJ2GEJ221X	
C5	CU3514	Chip C.	GRM36CH180J50PT		R6	RK3057	Chip R.	MCR03EZHJ393	E.EA
C6	CU3514	Chip C.	GRM36CH180J50PT		R7	RK3550	Chip R.	ERJ2GEJ103X	
C7	CU3535	Chip C.	GRM36B102K50PT		R8	RK3001	Chip R.	MCR03EZHJ000	
C8	CU3100	Chip C.	C1608JB1C393KT-NS		R10	RK3057	Chip R.	MCR03EZHJ393	T
C9	CU3111	Chip C.	C1608JB1C104KT-N		R11	RK3065	Chip R.	MCR03EZHJ184	
C10	CU3505	Chip C.	GRM36CH040C50PT		R12	RK3550	Chip R.	ERJ2GEJ103X	
C11	CU0103	Chip C.	C2012JF1C105ZT-N/M		R13	RK3558	Chip R.	ERJ2GEJ473X	
C12	CU3100	Chip C.	C1608JB1C393KT-NS		R14	RK3550	Chip R.	ERJ2GEJ103X	
C13	CU3037	Chip C.	C1608JB1H152KT-AS		R15	RK3530	Chip R.	ERJ2GEJ221X	
C14	CU3111	Chip C.	C1608JB1C104KT-N		R16	RK3531	Chip R.	ERJ2GEJ271X	
C15	CS0397	Chip Tantal	TMCP1C105MTR		R17	RK3531	Chip R.	ERJ2GEJ271X	
C16	CS0398	Chip Tantal	TMCP0J225MTR		R18	RK3531	Chip R.	ERJ2GEJ271X	
C17	CS0394	Chip Tantal	TMCMB0J476MTR		R19	RK3531	Chip R.	ERJ2GEJ271X	
C18	CU3023	Chip C.	C1608CH1H101JT-AS		R20	RK3531	Chip R.	ERJ2GEJ271X	
C19	CU3535	Chip C.	GRM36B102K50PT		R21	RK3531	Chip R.	ERJ2GEJ271X	
C20	CU3111	Chip C.	C1608JB1C104KT-N		R22	RK3531	Chip R.	ERJ2GEJ271X	
C21	CU3535	Chip C.	GRM36B102K50PT		R23	RK3538	Chip R.	ERJ2GEJ102X	
C22	CS0236	Chip Tantal	TMCMA0J685MTR		R24	RK3538	Chip R.	ERJ2GEJ102X	
C23	CU3111	Chip C.	C1608JB1C104KT-N		R25	RK3566	Chip R.	ERJ2GEJ224X	
C24	CU3535	Chip C.	GRM36B102K50PT		R26	RK3562	Chip R.	ERJ2GEJ104X	
C25	CS0660	Chip Tantal	F950J686ME		R27	RK3550	Chip R.	ERJ2GEJ103X	
C26	CU3535	Chip C.	GRM36B102K50PT		R28	RK3562	Chip R.	ERJ2GEJ104X	
C27	CU3111	Chip C.	C1608JB1C104KT-N		R29	RK3550	Chip R.	ERJ2GEJ103X	
C28	CU3535	Chip C.	GRM36B102K50PT		R30	RK3562	Chip R.	ERJ2GEJ104X	
C29	CS0398	Chip Tantal	TMCP0J225MTR		R31	RK3555	Chip R.	ERJ2GEJ273X	
C30	CS0379	Chip Tantal	TMCMC1A476MTR		R32	RK3555	Chip R.	ERJ2GEJ273X	
C31	CU3543	Chip C.	GRM36B472K25PT		R33	RK3542	Chip R.	ERJ2GEJ222X	
C32	CU3543	Chip C.	GRM36B472K25PT		R34	RK3538	Chip R.	ERJ2GEJ102X	
C34	CU3547	Chip C.	GRM36B103K16PT		R35	RK3554	Chip R.	ERJ2GEJ223X	
C35	CU3547	Chip C.	GRM36B103K16PT		R36	RK3531	Chip R.	ERJ2GEJ271X	
C36	CU3547	Chip C.	GRM36B103K16PT		R37	RK3531	Chip R.	ERJ2GEJ271X	
C37	CU3547	Chip C.	GRM36B103K16PT		R38	RK3558	Chip R.	ERJ2GEJ473X	
CN1	UE0343	Connector	DF17A(2.0)30DP0.5V51		R39	RK3558	Chip R.	ERJ2GEJ473X	
D1	XL0060	LED	PY1101F-TR		R40	RK3550	Chip R.	ERJ2GEJ103X	
D2	XL0060	LED	PY1101F-TR		R41	RK3526	Chip R.	ERJ2GEJ101X	
D3	XL0060	LED	PY1101F-TR		R42	RK3574	Chip R.	ERJ2GEJ105X	
D4	XL0036	LED	SML-310MTT86		R43	RK3562	Chip R.	ERJ2GEJ104X	
D5	XL0036	LED	SML-310MTT86		R44	RK3561	Chip R.	ERJ2GEJ823X	
D6	XL0036	LED	SML-310MTT86		R45	RK3561	Chip R.	ERJ2GEJ823X	
D7	XL0036	LED	SML-310MTT86		R46	RK3561	Chip R.	ERJ2GEJ823X	
D8	XD0315	Diode	MA2S728-TX		R47	RK3562	Chip R.	ERJ2GEJ104X	
D9	XD0238	Diode	DA227 TL		R48	RK3570	Chip R.	ERJ2GEJ474X	
D10	XD0238	Diode	DA227 TL		R49	RK3562	Chip R.	ERJ2GEJ104X	
D11	XD0156	Diode	UDZ TE-17 3.6B		R50	RK3559	Chip R.	ERJ2GEJ563X	
D12	XL0028	LED	BRPG1201W TR		R51	RK3570	Chip R.	ERJ2GEJ474X	
D13	XD0238	Diode	DA227 TL		R52	RK3063	Chip R.	MCR03EZHJ124	
IC1	XA0645	IC	M38267M8L233GP	E.EA	R53	RK3570	Chip R.	ERJ2GEJ474X	
IC1	XA0624	IC	M38267M8L234GP	T	R54	RK3574	Chip R.	ERJ2GEJ105X	
IC2	XA0604	IC	24LC32AT-I/SN		R55	RK3526	Chip R.	ERJ2GEJ101X	
IC4	XA0344	IC	LC73881M-TLM		R56	RK3550	Chip R.	ERJ2GEJ103X	
IC5	XA0383	IC	S-81235SG-QI-T1		R57	RK3001	Chip R.	MCR03EZHJ000	
IC6	XA0356	IC	S-80730SL-AT-T1		R59	RK3550	Chip R.	ERJ2GEJ103X	
IC7	XA0573	IC	NJM2904V-TE1		R60	RK3014	Chip R.	MCR03EZHJ100	
IC8	XA0210	IC	NJM2070M T1		R61	RK3556	Chip R.	ERJ2GEJ333X	
MIC1	EY0017		OB-27P44		R62	RK3001	Chip R.	MCR03EZHJ000	
Q1	XU0099	Transistor	UN9216-R-TX		R63	RK3048	Chip R.	MCR03EZHJ682	
Q2	XU0152	Transistor	UMC5NTR		R64	RK3558	Chip R.	ERJ2GEJ473X	
Q3	XT0061	Transistor	2SB1132T 100Q		R65	RK3558	Chip R.	ERJ2GEJ473X	
Q4	XT0135	Transistor	2SD2216R-TX		R66	RK3538	Chip R.	ERJ2GEJ102X	
Q5	XT0061	Transistor	2SB1132T 100Q		R67	RK3550	Chip R.	ERJ2GEJ103X	
Q6	XU0092	Transistor	UN911H-TX		R68	RK3550	Chip R.	ERJ2GEJ103X	
Q7	XU0172	Transistor	XP1501-TX		R69	RK3562	Chip R.	ERJ2GEJ104X	
Q8	XU0092	Transistor	UN911H-TX		R70	RK3065	Chip R.	MCR03EZHJ184	
Q9	XU0063	Transistor	UN9211 TX		R71	RK3562	Chip R.	ERJ2GEJ104X	
Q10	XU0092	Transistor	UN911H-TX		R72	RK3546	Chip R.	ERJ2GEJ472X	
Q11	XT0061	Transistor	2SB1132T 100Q		R73	RK3554	Chip R.	ERJ2GEJ223X	
Q12	XU0172	Transistor	XP1501-TX		R74	RK3562	Chip R.	ERJ2GEJ104X	
Q13	XU0099	Transistor	UN9216-R-TX		R75	RK3528	Chip R.	ERJ2GEJ151X	

CPU Unit / VCO Unit / MAIN Unit

Ref. No.	Parts No.	Description	Parts Name	Note
SW19	UU0029	Switch	JPM1990-1601	
SW20	UU0029	Switch	JPM1990-1601	
SW21	UU0029	Switch	JPM1990-1601	
W1	MACL02AA	Wire	#30A02-20-02	T.E
X1	XQ0084	Crystal	38C 4.19MHZ	
	DG0033		LCD REFLECTOR	
	EL0043	LCD	WK-TZ9335-FH-A	
	FG0269A		LCD RUBBER CONNECTOR	
	ST0061		LCD HOLDER XH720	
	TL0021		REFLECTOR XH720	
	FP0146		Sheet	2
VCO Unit				
C201	CU3535	Chip C.	GRM36B102K50PT	
C202	CS0376	Chip Tantal	TMCMA0G226MTR	
C203	CU3535	Chip C.	GRM36B102K50PT	
C204	CU3535	Chip C.	GRM36B102K50PT	
C205	CU3531	Chip C.	GRM36B471K50PT	
C206	CU3547	Chip C.	GRM36B103K16PT	
C207	CU3515	Chip C.	GRM36CH220J50PT	
C208	CU3502	Chip C.	GRM36CK010C50PT	
C209	CU3531	Chip C.	GRM36B471K50PT	
C210	CU3535	Chip C.	GRM36B102K50PT	
C211	CU3502	Chip C.	GRM36CK010C50PT	
C212	CU3029	Chip C.	C1608JB1H331KT-AS	
C213	CU3531	Chip C.	GRM36B471K50PT	
C214	CS0376	Chip Tantal	TMCMA0G226MTR	
C215	CU3531	Chip C.	GRM36B471K50PT	
C216	CU3013	Chip C.	C1608CH1H150JT-AS	
C217	CU3501	Chip C.	GRM36CK0R5C50PT	
C218	CU3502	Chip C.	GRM36CK010C50PT	
C219	CU3013	Chip C.	C1608CH1H150JT-AS	
C220	CU3511	Chip C.	GRM36CH100D50PT	
C221	CU3026	Chip C.	C1608CH1H181JT-AS	
CN201	UE0278	Connector	9230B-1-04Z054-T	
CN202	UE0216	Connector	9230B-1-06Z054T	
D201	XD0322	Diode	MA132WK-TX	
D202	XD0312	Diode	MA2S30400L	
D204	XD0312	Diode	MA2S30400L	
D205	XD0324	Diode	MA2SV0500L	
D206	XD0324	Diode	MA2SV0500L	
D207	XD0324	Diode	MA2SV0500L	
D208	XD0324	Diode	MA2SV0500L	
L201	QC0573	Coil	LL1608-FHR10J	
L202	QC0536	Coil	LQN21A68NJ04	
L203	QC0536	Coil	LQN21A68NJ04	
L204	QC0527	Coil	LQN21A12NJ04	
L205	QC0507	Coil	LK16081R0K-T	
Q201	XT0138	Transistor	2SC5066-O(TE85L)	
Q202	XT0138	Transistor	2SC5066-O(TE85L)	
Q203	XT0138	Transistor	2SC5066-O(TE85L)	
Q204	XT0138	Transistor	2SC5066-O(TE85L)	
R201	RK3522	Chip R.	ERJ2GEJ470X	
R202	RK3020	Chip R.	MCR03EZHJ330	
R203	RK3550	Chip R.	ERJ2GEJ103X	
R204	RK3562	Chip R.	ERJ2GEJ104X	
R205	RK3538	Chip R.	ERJ2GEJ102X	
R206	RK3550	Chip R.	ERJ2GEJ103X	
R207	RK3534	Chip R.	ERJ2GEJ471X	
R208	RK3550	Chip R.	ERJ2GEJ103X	
R209	RK3542	Chip R.	ERJ2GEJ222X	
R210	RK3550	Chip R.	ERJ2GEJ103X	
R211	RK3522	Chip R.	ERJ2GEJ470X	
R212	RK3546	Chip R.	ERJ2GEJ472X	
R213	RK3562	Chip R.	ERJ2GEJ104X	
R214	RK3542	Chip R.	ERJ2GEJ222X	
R215	RK3530	Chip R.	ERJ2GEJ221X	
R216	RK3550	Chip R.	ERJ2GEJ103X	
R217	RK3550	Chip R.	ERJ2GEJ103X	
R218	RK3562	Chip R.	ERJ2GEJ104X	
	TS0153		VCO CASE XH720	

Ref. No.	Parts No.	Description	Parts Name	Note
MAIN Unit				
C301	CU3535	Chip C.	GRM36B102K50PT	
C302	CU3531	Chip C.	GRM36B471K50PT	
C303	CU3535	Chip C.	GRM36B102K50PT	
C304	CU0103	Chip C.	C2012JF1C105ZT-N/M	
C305	CU3535	Chip C.	GRM36B102K50PT	
C306	CU3515	Chip C.	GRM36CH220J50PT	
C307	CU3007	Chip C.	C1608CH1H060CT-A	
C308	CU3516	Chip C.	GRM36CH270J50PT	
C309	CU3535	Chip C.	GRM36B102K50PT	
C310	CU3535	Chip C.	GRM36B102K50PT	
C311	CU3512	Chip C.	GRM36CH120J50PT	
C312	CS0394	Chip Tantal	TMCMB0J476MTR	
C313	CS0062	Chip Tantal	TMCSC1C226MTR	
C314	CU3547	Chip C.	GRM36B103K16PT	
C315	CU3515	Chip C.	GRM36CH220J50PT	
C316	CU3535	Chip C.	GRM36B102K50PT	
C317	CU3535	Chip C.	GRM36B102K50PT	
C318	CU3535	Chip C.	GRM36B102K50PT	
C319	CU3531	Chip C.	GRM36B471K50PT	
C320	CU0103	Chip C.	C2012JF1C105ZT-N/M	
C321	CU3535	Chip C.	GRM36B102K50PT	
C322	CU3531	Chip C.	GRM36B471K50PT	
C323	CU7043	Chip C.	GRH110CH220J50PT	
C324	CU3111	Chip C.	C1608JB1C104KT-N	
C325	CU3535	Chip C.	GRM36B102K50PT	
C326	CU3531	Chip C.	GRM36B471K50PT	
C328	CU3517	Chip C.	GRM36CH330J50PT	
C329	CS0398	Chip Tantal	TMCP0J225MTR	
C330	CU3535	Chip C.	GRM36B102K50PT	
C331	CU3535	Chip C.	GRM36B102K50PT	
C332	CU3531	Chip C.	GRM36B471K50PT	
C333	CS0376	Chip Tantal	TMCMA0G226MTR	
C334	CU3535	Chip C.	GRM36B102K50PT	
C335	CS0397	Chip Tantal	TMCP1C105MTR	
C336	CU3535	Chip C.	GRM36B102K50PT	
C337	CU3531	Chip C.	GRM36B471K50PT	
C338	CU3535	Chip C.	GRM36B102K50PT	
C339	CU3535	Chip C.	GRM36B102K50PT	
C340	CU3019	Chip C.	C1608CH1H470JT-AS	
C341	CS0398	Chip Tantal	TMCP0J225MTR	
C342	CU3535	Chip C.	GRM36B102K50PT	
C343	CU3531	Chip C.	GRM36B471K50PT	
C344	CU3111	Chip C.	C1608JB1C104KT-N	
C345	CS0376	Chip Tantal	TMCMA0G226MTR	
C346	CU3531	Chip C.	GRM36B471K50PT	
C347	CU3057	Chip C.	C1608CH1H130JT-A	
C348	CS0403	Chip Tantal	TMCP1D224MTR	
C349	CU3531	Chip C.	GRM36B471K50PT	
C350	CU3535	Chip C.	GRM36B102K50PT	
C351	CU3547	Chip C.	GRM36B103K16PT	
C352	CU3516	Chip C.	GRM36CH270J50PT	
C353	CU3111	Chip C.	C1608JB1C104KT-N	
C354	CU3111	Chip C.	C1608JB1C104KT-N	
C355	CU3535	Chip C.	GRM36B102K50PT	
C356	CU3535	Chip C.	GRM36B102K50PT	
C357	CU3547	Chip C.	GRM36B103K16PT	
C358	CU3531	Chip C.	GRM36B471K50PT	
C359	CU3535	Chip C.	GRM36B102K50PT	
C360	CU3535	Chip C.	GRM36B102K50PT	
C361	CU3535	Chip C.	GRM36B102K50PT	
C362	CU3535	Chip C.	GRM36B102K50PT	
C363	CS0398	Chip Tantal	TMCP0J225MTR	
C364	CS0403	Chip Tantal	TMCP1D224MTR	
C365	CU3019	Chip C.	C1608CH1H470JT-AS	
C366	CS0397	Chip Tantal	TMCP1C105MTR	
C368	CU3111	Chip C.	C1608JB1C104KT-N	
C369	CU3099	Chip C.	C1608CH1H2R5CT-A	
C370	CU3535	Chip C.	GRM36B102K50PT	
C371	CU3111	Chip C.	C1608JB1C104KT-N	
C372	CU3531	Chip C.	GRM36B471K50PT	
C373	CU3547	Chip C.	GRM36B103K16PT	
C374	CU3535	Chip C.	GRM36B102K50PT	

Ref. No.	Parts No.	Description	Parts Name	Note
C375	CU3535	Chip C.	GRM36B102K50PT	
C376	CU3515	Chip C.	GRM36CH220J50PT	
C377	CU3517	Chip C.	GRM36CH330J50PT	
C378	CU3535	Chip C.	GRM36B102K50PT	
C379	CU3514	Chip C.	GRM36CH180J50PT	
C380	CU3013	Chip C.	C1608CH1H150JT-AS	
C381	CU3535	Chip C.	GRM36B102K50PT	
C382	CU3517	Chip C.	GRM36CH330J50PT	
C383	CU3007	Chip C.	C1608CH1H060CT-A	
C384	CS0394	Chip Tantal	TMCMB0J476MTR	
C385	CU3512	Chip C.	GRM36CH120J50PT	
C386	CU3547	Chip C.	GRM36B103K16PT	
C387	CS0236	Chip Tantal	TMCMA0J685MTR	
C388	CU3019	Chip C.	C1608CH1H470JT-AS	
C389	CU3517	Chip C.	GRM36CH330J50PT	
C390	CU3111	Chip C.	C1608JB1C104KT-N	
C391	CU3547	Chip C.	GRM36B103K16PT	
C392	CU3547	Chip C.	GRM36B103K16PT	
C393	CU3547	Chip C.	GRM36B103K16PT	
C394	CU3547	Chip C.	GRM36B103K16PT	
C395	CU3547	Chip C.	GRM36B103K16PT	
C396	CU3547	Chip C.	GRM36B103K16PT	
C397	CU3516	Chip C.	GRM36CH270J50PT	
C398	CU3516	Chip C.	GRM36CH270J50PT	
C399	CU3535	Chip C.	GRM36B102K50PT	
C400	CU3535	Chip C.	GRM36B102K50PT	
C401	CU3547	Chip C.	GRM36B103K16PT	
C402	CU3531	Chip C.	GRM36B471K50PT	
C403	CU3547	Chip C.	GRM36B103K16PT	
C404	CU3547	Chip C.	GRM36B103K16PT	
C405	CU3504	Chip C.	GRM36CJ030C50PT	
C407	CU3517	Chip C.	GRM36CH330J50PT	
C408	CU3518	Chip C.	GRM36CH390J50PT	
C409	CU3518	Chip C.	GRM36CH390J50PT	
C410	CU3111	Chip C.	C1608JB1C104KT-N	
C411	CU3535	Chip C.	GRM36B102K50PT	
C412	CS0398	Chip Tantal	TMCP0J225MTR	
C413	CU3547	Chip C.	GRM36B103K16PT	
C414	CU3511	Chip C.	GRM36CH100D50PT	
C415	CU3504	Chip C.	GRM36CJ030C50PT	
C416	CU3535	Chip C.	GRM36B102K50PT	
C417	CU3504	Chip C.	GRM36CJ030C50PT	
C418	CU3547	Chip C.	GRM36B103K16PT	
C419	CU3516	Chip C.	GRM36CH270J50PT	
C420	CU3030	Chip C.	C1608JB1H391KT-AS	
C421	CU3022	Chip C.	C1608CH1H820JT-AS	
C422	CU3517	Chip C.	GRM36CH330J50PT	
C423	CU3531	Chip C.	GRM36B471K50PT	
C424	CU3516	Chip C.	GRM36CH270J50PT	
C425	CU3531	Chip C.	GRM36B471K50PT	
C426	CU3535	Chip C.	GRM36B102K50PT	
C427	CU3547	Chip C.	GRM36B103K16PT	
C428	CU3531	Chip C.	GRM36B471K50PT	
C429	CU3506	Chip C.	GRM36CH050C50PT	
C430	CU3517	Chip C.	GRM36CH330J50PT	
C431	CU3547	Chip C.	GRM36B103K16PT	
C432	CU3505	Chip C.	GRM36CH040C50PT	
C432	CU3506	Chip C.	GRM36CH050C50PT	T
C433	CU3531	Chip C.	GRM36B471K50PT	E.EA
C434	CU3111	Chip C.	C1608JB1C104KT-N	
C435	CS0376	Chip Tantal	TMCMA0G226MTR	
C436	CU3008	Chip C.	C1608CH1H070CT-A	E.EA
C436	CU3009	Chip C.	C1608CH1H080CT-A	T
C437	CU3515	Chip C.	GRM36CH220J50PT	
C438	CU3531	Chip C.	GRM36B471K50PT	
C439	CU3535	Chip C.	GRM36B102K50PT	
C440	CU3503	Chip C.	GRM36CK020C50PT	
C441	CS0397	Chip Tantal	TMCP1C105MTR	
C442	CS0397	Chip Tantal	TMCP1C105MTR	
C443	CU3535	Chip C.	GRM36B102K50PT	
C444	CU3504	Chip C.	GRM36CJ030C50PT	
C445	CU3531	Chip C.	GRM36B471K50PT	
C446	CU3531	Chip C.	GRM36B471K50PT	
C447	CU3515	Chip C.	GRM36CH220J50PT	
C448	CU3527	Chip C.	GRM36CH221J25PT	
C449	CU3111	Chip C.	C1608JB1C104KT-N	
C450	CS0367	Chip Tantal	TMCMA0J106MTR	
C451	CU3506	Chip C.	GRM36CH050C50PT	
C452	CU3502	Chip C.	GRM36CK010C50PT	
C453	CU3512	Chip C.	GRM36CH120J50PT	
C454	CS0367	Chip Tantal	TMCMA0J106MTR	
C455	CU3535	Chip C.	GRM36B102K50PT	
C456	CU3531	Chip C.	GRM36B471K50PT	
C457	CU3531	Chip C.	GRM36B471K50PT	
C458	CU3512	Chip C.	GRM36CH120J50PT	
C459	CU3531	Chip C.	GRM36B471K50PT	
C460	CU3512	Chip C.	GRM36CH120J50PT	
C461	CU3531	Chip C.	GRM36B471K50PT	
C462	CU3044	Chip C.	C1608JB1H562KT-NS	
C463	CU3539	Chip C.	GRM36B222K50PT	
C464	CU3531	Chip C.	GRM36B471K50PT	
C465	CU3099	Chip C.	C1608CH1H2R5CT-A	
C466	CU3551	Chip C.	GRM36B223K16PT	
C467	CU3009	Chip C.	C1608CH1H080CT-A	
C468	CU3511	Chip C.	GRM36CH100D50PT	
C470	CU3531	Chip C.	GRM36B471K50PT	
C471	CU3535	Chip C.	GRM36B102K50PT	
C473	CS0376	Chip Tantal	TMCMA0G226MTR	
C474	CU3547	Chip C.	GRM36B103K16PT	
C475	CU3111	Chip C.	C1608JB1C104KT-N	
C476	CU3517	Chip C.	GRM36CH330J50PT	
C477	CU3101	Chip C.	C1608JB1C473KT-NS	
C478	CU3101	Chip C.	C1608JB1C473KT-NS	
C479	CU3531	Chip C.	GRM36B471K50PT	
C480	CU3547	Chip C.	GRM36B103K16PT	
C481	CU3503	Chip C.	GRM36CK020C50PT	
C482	CU3547	Chip C.	GRM36B103K16PT	
C483	CU3535	Chip C.	GRM36B102K50PT	
C484	CU3531	Chip C.	GRM36B471K50PT	
C485	CU3517	Chip C.	GRM36CH330J50PT	
C486	CU3506	Chip C.	GRM36CH050C50PT	
C487	CU3503	Chip C.	GRM36CK020C50PT	
C488	CU3099	Chip C.	C1608CH1H2R5CT-A	
C490	CU3503	Chip C.	GRM36CK020C50PT	
C491	CU3111	Chip C.	C1608JB1C104KT-N	
C492	CU3504	Chip C.	GRM36CJ030C50PT	
C493	CU3111	Chip C.	C1608JB1C104KT-N	
C494	CU3111	Chip C.	C1608JB1C104KT-N	
C495	CU3038	Chip C.	C1608JB1H182KT-AS	
C496	CU3547	Chip C.	GRM36B103K16PT	
C497	CU3021	Chip C.	C1608CH1H680JT-AS	
C498	CU3543	Chip C.	GRM36B472K25PT	
C499	CU3547	Chip C.	GRM36B103K16PT	
C500	CU3535	Chip C.	GRM36B102K50PT	
C501	CS0397	Chip Tantal	TMCP1C105MTR	
C502	CU3101	Chip C.	C1608JB1C473KT-NS	
C503	CU3527	Chip C.	GRM36CH221J25PT	
C505	CU3111	Chip C.	C1608JB1C104KT-N	
C506	CS0397	Chip Tantal	TMCP1C105MTR	
C507	CU3535	Chip C.	GRM36B102K50PT	
C508	CU3539	Chip C.	GRM36B222K50PT	
C511	CU3111	Chip C.	C1608JB1C104KT-N	
C512	CU3551	Chip C.	GRM36B223K16PT	
C513	CS0397	Chip Tantal	TMCP1C105MTR	
C518	CU3551	Chip C.	GRM36B223K16PT	
C519	CU3021	Chip C.	C1608CH1H680JT-AS	
C520	CU3111	Chip C.	C1608JB1C104KT-N	
C521	CU3551	Chip C.	GRM36B223K16PT	
C522	CU3551	Chip C.	GRM36B223K16PT	
C523	CU3539	Chip C.	GRM36B222K50PT	
C524	CU3535	Chip C.	GRM36B102K50PT	
C527	CU3111	Chip C.	C1608JB1C104KT-N	
C529	CU3111	Chip C.	C1608JB1C104KT-N	
C534	CU3535	Chip C.	GRM36B102K50PT	
C540	CU3023	Chip C.	C1608CH1H101JT-AS	
C541	CU3535	Chip C.	GRM36B102K50PT	

MAIN Unit

Ref. No.	Parts No.	Description	Parts Name	Note	Ref. No.	Parts No.	Description	Parts Name	Note
C542	CU3531	Chip C.	GRM36B471K50PT		IC314	XA0537	IC	BA4510FV-E2	
C543	CS0394	Chip Tantal	TMCMB0J476MTR		JK301	UJ0015	Jack	HEC2781 010020	
C544	CS0397	Chip Tantal	TMCP1C105MTR		JK302	UJ0019	Jack	HSJ1493-01-010	
C545	CU3535	Chip C.	GRM36B102K50PT		JK303	UJ0022	Jack	HSJ1102-01-540	
C546	CU3505	Chip C.	GRM36CH040C50PT		L301	QB0045	core	EXCCL3225U1	
C547	CU0103	Chip C.	C2012JF1C105ZT-N/M		L302	QS2519A	Coil	0.25-1.90-10T-L	
C548	CU3535	Chip C.	GRM36B102K50PT		L303	QB0045	core	EXCCL3225U1	
C549	CU3037	Chip C.	C1608JB1H152KT-AS		L304	QC0547	Coil	LK1608 R47K-T	
C550	CS0062	Chip Tantal	TMCSC1C226MTR		L305	QS35167	Coil	0.35-1.6-7T-L	
C551	CU3535	Chip C.	GRM36B102K50PT		L306	QS35165	Coil	0.35-1.60-5T-L	
C552	CU3535	Chip C.	GRM36B102K50PT		L307	QB0045	core	EXCCL3225U1	
C553	CU3503	Chip C.	GRM36CK020C50PT		L308	QC0533	Coil	LQN21A39NJ04	
C554	CS0402	Chip Tantal	TMCP1D334MTR		L309	QC0507	Coil	LK16081R0K-T	
C555	CU3006	Chip C.	C1608CH1H050CT-AS		L310	QC0538	Coil	LQN21AR10J04	
C557	CU3057	Chip C.	C1608CH1H130JT-A		L311	QS30093	Coil	0.30-0.90-3T-L	
CN303	UE0342	Connector	DF17A(4.0)30DS0.5V51		L312	QS40142	Coil	0.40-1.40-2T-L	
D301	XD0326	Diode	1SV307(TPH3)		L313	QC0538	Coil	LQN21AR10J04	
D303	XD0326	Diode	1SV307(TPH3)		L314	QC0523	Coil	LQN21A3N3D04	
D304	XD0323	Diode	MA2S111-TX		L315	QC0288	Coil	NL252018T-1R0JA	
D305	XD0321	Diode	MA132WA-TX		L316	QC0507	Coil	LK16081R0K-T	
D306	XD0294	Diode	U2FWJ44N(TE12R)		L317	QC0561	Coil	LL1608-FH10NJ	
D307	XD0294	Diode	U2FWJ44N(TE12R)		L318	QC0507	Coil	LK16081R0K-T	
D309	XD0319	Diode	MA2S077-TX		L319	QC0540	Coil	LQN21AR15J04	
D310	XD0130	Diode	DA204U T106		L320	QC0547	Coil	LK1608 R47K-T	
D311	XD0312	Diode	MA2S30400L		L321	QC0540	Coil	LQN21AR15J04	
D312	XD0312	Diode	MA2S30400L		L322	QC0539	Coil	LQN21AR12J04	
D313	XD0160	Diode	UDZ TE-17 4.3B		L323	QC0533	Coil	LQN21A39NJ04	
D314	XD0320	Diode	DAN235E-TL		L324	QC0532	Coil	LQN21A33NJ04	
D315	XD0312	Diode	MA2S30400L		L325	QC0506	Coil	LK1608R56K-T	
D316	XD0315	Diode	MA2S728-TX		L326	QC0542	Coil	LQN21AR22J04	
D317	XD0320	Diode	DAN235E-TL		L327	QC0542	Coil	LQN21AR22J04	
D318	XD0321	Diode	MA132WA-TX		L330	QC0529	Coil	LQN21A18NJ04	
D319	XD0320	Diode	DAN235E-TL		L331	QC0505	Coil	LK1608R33K-T	
D320	XD0319	Diode	MA2S077-TX		L332	QC0547	Coil	LK1608 R47K-T	
D321	XD0320	Diode	DAN235E-TL		L333	QC0506	Coil	LK1608R56K-T	
D322	XD0320	Diode	DAN235E-TL		L334	QC0529	Coil	LQN21A18NJ04	
D323	XD0319	Diode	MA2S077-TX		L335	QC0536	Coil	LQN21A68NJ04	
D324	XD0320	Diode	DAN235E-TL		L336	QC0536	Coil	LQN21A68NJ04	
D325	XD0320	Diode	DAN235E-TL		L337	QC0506	Coil	LK1608R56K-T	
D326	XD0312	Diode	MA2S30400L		L338	QC0529	Coil	LQN21A18NJ04	
D327	XD0312	Diode	MA2S30400L		L339	QC0561	Coil	LL1608-FH10NJ	
D328	XD0291	Diode	MA729-TX		L340	QC0528	Coil	LQN21A15NJ04	
D329	XD0326	Diode	1SV307(TPH3)		L341	QC0506	Coil	LK1608R56K-T	
D330	XD0321	Diode	MA132WA-TX		L342	QC0558	Coil	LL1608-FH5N6S	
D331	XD0321	Diode	MA132WA-TX		L343	QC0561	Coil	LL1608-FH10NJ	
D332	XD0321	Diode	MA132WA-TX		L344	QC0538	Coil	LQN21AR10J04	
D333	XD0291	Diode	MA729-TX		L345	QC0530	Coil	LQN21A22NJ04	
D334	XD0315	Diode	MA2S728-TX		L346	QC0530	Coil	LQN21A22NJ04	
D335	XD0257	Diode	RN731V TE-17		L347	QC0531	Coil	LQN21A27NJ04	
D336	XD0250	Diode	MA742 TX		L348	QC0561	Coil	LL1608-FH10NJ	
D337	XD0323	Diode	MA2S111-TX		L349	QC0575	Coil	LK1608R82K-T	
D338	XD0326	Diode	1SV307(TPH3)		L350	QC0567	Coil	LL1608-FH33NJ	
D339	XD0319	Diode	MA2S077-TX		L351	QC0575	Coil	LK1608R82K-T	
D340	XD0319	Diode	MA2S077-TX		L352	QC0560	Coil	LL1608-FH8N2J	
D341	XD0250	Diode	MA742 TX		L353	QC0558	Coil	LL1608-FH5N6S	
FL301	XC0053	Filter	GDPX150/350A301		L354	QC0558	Coil	LL1608-FH5N6S	
FL302	XC0054	Filter	CFWC450E1-TC01		L355	QH0006	Coil	KE-07727	
FL303	XC0045	Filter	EFCH435MWNP1	E.EA	L356	QC0542	Coil	LQN21AR22J04	
FL303	XC0046	Filter	EFCH445MWNP1	T	L357	QC0507	Coil	LK16081R0K-T	
FL304	XC0055	Filter	SFECV13.35MA-TC		Q301	XT0061	Transistor	2SB1132T 100Q	
IC301	XA0545	IC	UPC2771T		Q302	XU0171	Transistor	XP1111-TX	
IC302	XA0312	IC	UPD3140GS-E1		Q303	XT0135	Transistor	2SD2216R-TX	
IC303	XA0573	IC	NJM2904V-TE1		Q304	XT0138	Transistor	2SC5066-O(TE85L)	
IC304	XA0600	IC	NJU7660V-TE1		Q305	XU0092	Transistor	UN911H-TX	
IC305	XA0524	IC	TC7S66FU(TE85L)		Q306	XE0038	FET	2SK2975-T11-A	
IC306	XA0546	IC	UPC2758T		Q307	XU0172	Transistor	XP1501-TX	
IC307	XA0515	IC	TK14521MTL		Q308	XE0034	FET	MRF9745T1	
IC308	XA0524	IC	TC7S66FU(TE85L)		Q309	XT0061	Transistor	2SB1132T 100Q	
IC309	XA0465	IC	TC75S51F(TE85L)		Q310	XU0063	Transistor	UN9211 TX	
IC310	XA0598	IC	TA31161FN(EL)		Q311	XU0152	Transistor	UMC5NTR	
IC311	XA0599	IC	MB88347LPFV-G-BND-ER		Q312	XE0037	FET	3SK274(TE85L)	
IC312	XA0524	IC	TC7S66FU(TE85L)		Q314	XU0092	Transistor	UN911H-TX	
IC313	XA0506	IC	BU4094BCFV-E2		Q315	XU0191	Transistor	XP4501-TX	

Ref. No.	Parts No.	Description	Parts Name	Note	Ref. No.	Parts No.	Description	Parts Name	Note
Q316	XT0135	Transistor	2SD2216R-TX		R353	RK3558	Chip R.	ERJ2GEJ473X	
Q317	XU0188	Transistor	XP1116-TX		R355	RK3526	Chip R.	ERJ2GEJ101X	
Q318	XT0138	Transistor	2SC5066-O(TE85L)		R356	RK3534	Chip R.	ERJ2GEJ471X	
Q319	XT0135	Transistor	2SD2216R-TX		R357	RK3562	Chip R.	ERJ2GEJ104X	
Q320	XT0138	Transistor	2SC5066-O(TE85L)		R358	RK3522	Chip R.	ERJ2GEJ470X	
Q321	XE0037	FET	3SK274(TE85L)		R359	RK3555	Chip R.	ERJ2GEJ273X	
Q322	XT0138	Transistor	2SC5066-O(TE85L)		R360	RK3542	Chip R.	ERJ2GEJ222X	
Q323	XT0138	Transistor	2SC5066-O(TE85L)		R361	RK3559	Chip R.	ERJ2GEJ563X	
Q324	XT0138	Transistor	2SC5066-O(TE85L)		R362	RK3534	Chip R.	ERJ2GEJ471X	
Q325	XT0139	Transistor	2SA1774TLR		R363	RK3538	Chip R.	ERJ2GEJ102X	
Q326	XU0171	Transistor	XP1111-TX		R364	RK3566	Chip R.	ERJ2GEJ224X	
Q327	XT0138	Transistor	2SC5066-O(TE85L)		R365	RK3018	Chip R.	MCR03EZHJ220	
Q328	XT0138	Transistor	2SC5066-O(TE85L)		R366	RK3538	Chip R.	ERJ2GEJ102X	
Q329	XU0191	Transistor	XP4501-TX		R367	RK3542	Chip R.	ERJ2GEJ222X	
Q330	XE0029	FET	2SK1580-T1		R368	RK3554	Chip R.	ERJ2GEJ223X	
Q333	XU0171	Transistor	XP1111-TX		R369	RK3568	Chip R.	ERJ2GEJ334X	
Q334	XU0171	Transistor	XP1111-TX		R370	RK3542	Chip R.	ERJ2GEJ222X	
Q335	XU0171	Transistor	XP1111-TX		R371	RK3538	Chip R.	ERJ2GEJ102X	
Q336	XU0171	Transistor	XP1111-TX		R373	RK3574	Chip R.	ERJ2GEJ105X	
Q337	XE0029	FET	2SK1580-T1		R374	RK3550	Chip R.	ERJ2GEJ103X	
Q338	XU0063	Transistor	UN9211 TX		R375	RK3538	Chip R.	ERJ2GEJ102X	
R301	RK3024	Chip R.	MCR03EZHJ680		R376	RK3568	Chip R.	ERJ2GEJ334X	
R302	RK3526	Chip R.	ERJ2GEJ101X		R377	RK3542	Chip R.	ERJ2GEJ222X	
R303	RK3550	Chip R.	ERJ2GEJ103X		R378	RK3522	Chip R.	ERJ2GEJ470X	
R304	RK3550	Chip R.	ERJ2GEJ103X		R379	RK3542	Chip R.	ERJ2GEJ222X	
R305	RK3538	Chip R.	ERJ2GEJ102X		R380	RK3538	Chip R.	ERJ2GEJ102X	
R306	RK3530	Chip R.	ERJ2GEJ221X		R381	RK3542	Chip R.	ERJ2GEJ222X	
R307	RK3558	Chip R.	ERJ2GEJ473X		R382	RK3522	Chip R.	ERJ2GEJ470X	
R308	RK3048	Chip R.	MCR03EZHJ682		R383	RK3522	Chip R.	ERJ2GEJ470X	
R309	RK3035	Chip R.	MCR03EZHJ561		R384	RK3562	Chip R.	ERJ2GEJ104X	
R310	RK3554	Chip R.	ERJ2GEJ223X		R385	RK3542	Chip R.	ERJ2GEJ222X	
R311	RK3546	Chip R.	ERJ2GEJ472X		R386	RK3568	Chip R.	ERJ2GEJ334X	
R312	RK3049	Chip R.	MCR03EZHJ822		R387	RK3542	Chip R.	ERJ2GEJ222X	
R313	RK3522	Chip R.	ERJ2GEJ470X		R388	RK3528	Chip R.	ERJ2GEJ151X	
R314	RK3546	Chip R.	ERJ2GEJ472X		R389	RK3522	Chip R.	ERJ2GEJ470X	
R315	RK3550	Chip R.	ERJ2GEJ103X		R390	RK3562	Chip R.	ERJ2GEJ104X	
R316	RK3530	Chip R.	ERJ2GEJ221X		R391	RK3556	Chip R.	ERJ2GEJ333X	
R317	RK3538	Chip R.	ERJ2GEJ102X		R392	RK3542	Chip R.	ERJ2GEJ222X	
R318	RK3032	Chip R.	MCR03EZHJ331		R393	RK3542	Chip R.	ERJ2GEJ222X	
R319	RK3048	Chip R.	MCR03EZHJ682		R394	RK3562	Chip R.	ERJ2GEJ104X	
R320	RK3546	Chip R.	ERJ2GEJ472X		R395	RK3522	Chip R.	ERJ2GEJ470X	
R321	RK3550	Chip R.	ERJ2GEJ103X		R396	RK3542	Chip R.	ERJ2GEJ222X	
R322	RK3546	Chip R.	ERJ2GEJ472X		R397	RK3538	Chip R.	ERJ2GEJ102X	
R323	RK3047	Chip R.	MCR03EZHJ562		R398	RK3554	Chip R.	ERJ2GEJ223X	
R324	RK3018	Chip R.	MCR03EZHJ220		R399	RK3558	Chip R.	ERJ2GEJ473X	
R325	RK3550	Chip R.	ERJ2GEJ103X		R400	RK3542	Chip R.	ERJ2GEJ222X	
R326	RK3546	Chip R.	ERJ2GEJ472X		R401	RK3534	Chip R.	ERJ2GEJ471X	
R327	RK3020	Chip R.	MCR03EZHJ330		R402	RK3542	Chip R.	ERJ2GEJ222X	
R328	RK3540	Chip R.	ERJ2GEJ152X		R403	RK3542	Chip R.	ERJ2GEJ222X	
R329	RK3526	Chip R.	ERJ2GEJ101X		R404	RK3542	Chip R.	ERJ2GEJ222X	
R330	RK0003	Chip R.	ERJ6GEYJ150V		R405	RK3562	Chip R.	ERJ2GEJ104X	
R331	RK3538	Chip R.	ERJ2GEJ102X		R406	RK3566	Chip R.	ERJ2GEJ224X	
R332	RK3018	Chip R.	MCR03EZHJ220		R407	RK3562	Chip R.	ERJ2GEJ104X	
R333	RK3562	Chip R.	ERJ2GEJ104X		R408	RK3562	Chip R.	ERJ2GEJ104X	
R334	RK3550	Chip R.	ERJ2GEJ103X		R409	RK3561	Chip R.	ERJ2GEJ823X	
R335	RK3546	Chip R.	ERJ2GEJ472X		R410	RK3522	Chip R.	ERJ2GEJ470X	
R336	RK3562	Chip R.	ERJ2GEJ104X		R411	RK3051	Chip R.	MCR03EZHJ123	
R337	RK3556	Chip R.	ERJ2GEJ333X		R412	RK3538	Chip R.	ERJ2GEJ102X	
R338	RK3048	Chip R.	MCR03EZHJ682		R413	RK3069	Chip R.	MCR03EZHJ394	
R339	RK3032	Chip R.	MCR03EZHJ331		R414	RK3526	Chip R.	ERJ2GEJ101X	
R340	RK3014	Chip R.	MCR03EZHJ100		R415	RK3568	Chip R.	ERJ2GEJ334X	
R341	RK3542	Chip R.	ERJ2GEJ222X		R416	RK3534	Chip R.	ERJ2GEJ471X	
R342	RK3530	Chip R.	ERJ2GEJ221X		R417	RK3540	Chip R.	ERJ2GEJ152X	
R343	RK3542	Chip R.	ERJ2GEJ222X		R418	RK3069	Chip R.	MCR03EZHJ394	
R344	RK3047	Chip R.	MCR03EZHJ562		R419	RK3559	Chip R.	ERJ2GEJ563X	
R345	RK3562	Chip R.	ERJ2GEJ104X		R421	RK3043	Chip R.	MCR03EZHJ272	
R346	RK3562	Chip R.	ERJ2GEJ104X		R422	RK3562	Chip R.	ERJ2GEJ104X	
R347	RK3528	Chip R.	ERJ2GEJ151X		R423	RK3064	Chip R.	MCR03EZHJ154	
R348	RK3562	Chip R.	ERJ2GEJ104X		R424	RK3566	Chip R.	ERJ2GEJ224X	
R349	RK3542	Chip R.	ERJ2GEJ222X		R425	RK3546	Chip R.	ERJ2GEJ472X	
R350	RK3562	Chip R.	ERJ2GEJ104X		R426	RK3555	Chip R.	ERJ2GEJ273X	
R351	RK3542	Chip R.	ERJ2GEJ222X		R427	RK3555	Chip R.	ERJ2GEJ273X	
R352	RK3526	Chip R.	ERJ2GEJ101X		R428	RK3542	Chip R.	ERJ2GEJ222X	

MAIN Unit / VR Unit / Mechanical Parts / Packing

Ref. No.	Parts No.	Description	Parts Name	Note
R429	RK3554	Chip R.	ERJ2GEJ223X	
R430	RK3522	Chip R.	ERJ2GEJ470X	
R431	RK3542	Chip R.	ERJ2GEJ222X	
R432	RK3558	Chip R.	ERJ2GEJ473X	
R433	RK3546	Chip R.	ERJ2GEJ472X	
R434	RK3558	Chip R.	ERJ2GEJ473X	
R435	RK3556	Chip R.	ERJ2GEJ333X	
R436	RK3063	Chip R.	MCR03EZHJ124	
R437	RK3556	Chip R.	ERJ2GEJ333X	
R438	RK3554	Chip R.	ERJ2GEJ223X	
R439	RK3060	Chip R.	MCR03EZHJ683	
R440	RK3558	Chip R.	ERJ2GEJ473X	
R441	RK3558	Chip R.	ERJ2GEJ473X	
R444	RK3550	Chip R.	ERJ2GEJ103X	
R445	RK3072	Chip R.	MCR03EZHJ684	
R446	RK3550	Chip R.	ERJ2GEJ103X	
R447	RK3556	Chip R.	ERJ2GEJ333X	
R448	RK3554	Chip R.	ERJ2GEJ223X	
R449	RK3558	Chip R.	ERJ2GEJ473X	
R452	RK3566	Chip R.	ERJ2GEJ224X	
R456	RK3554	Chip R.	ERJ2GEJ223X	
R457	RK3558	Chip R.	ERJ2GEJ473X	
R458	RK3556	Chip R.	ERJ2GEJ333X	
R460	RK3561	Chip R.	ERJ2GEJ823X	
R461	RK3556	Chip R.	ERJ2GEJ333X	
R462	RK3550	Chip R.	ERJ2GEJ103X	
R465	RK3069	Chip R.	MCR03EZHJ394	
R466	RK3534	Chip R.	ERJ2GEJ471X	
R467	RK3558	Chip R.	ERJ2GEJ473X	
R468	RK3550	Chip R.	ERJ2GEJ103X	
R469	RK3556	Chip R.	ERJ2GEJ333X	
R470	RK1018	Chip R.	ERJ8GEYJ101V	
R471	RK3526	Chip R.	ERJ2GEJ101X	
R472	RK3562	Chip R.	ERJ2GEJ104X	
R473	RK3526	Chip R.	ERJ2GEJ101X	
R475	RK3538	Chip R.	ERJ2GEJ102X	
R476	RK3558	Chip R.	ERJ2GEJ473X	
R477	RK3016	Chip R.	MCR03EZHJ150	
R478	RK3047	Chip R.	MCR03EZHJ562	
R479	RK3558	Chip R.	ERJ2GEJ473X	
TC301	CT0012	Trimmer	CTZ3S-10A-W1-P	
TH301	XS0030	Thermistor	NTCCM16084LH223KCT	
VR301	RH0144	Trim Pot	MVR22HXBRN223	
VR302	RH0144	Trim Pot	MVR22HXBRN223	
X301	XQ0110	Crystal	TOP-B12.9M RE0500300	
XF301	XF0039	Filter	DSF753SB D39115GQ1	
	FM0172		RADIATIVE PLATE	
	UE0333	Connector	PIN A XH720	3
	UP0369A	PCB		

Ref. No.	Parts No.	Description	Parts Name	Note
VR Unit				
VR601	RV0040	Volume	TP76D96E20	
Mechanical Parts				
SP1	ES0021	Speaker	T032S23A0000	
W2	MRCL06AA	Wire	#30R02-060-02	
W3	MBCL06AA	Wire	#30B02-060-02	
	AE0022	Screw	M1.7+3 NI	3
	AK0001	Screw	0PH B2+4 FE/N 3	2
	AN0012	Screw	RND N7X0.75 BR/B.ZN	
	AN0027	Screw	ANTENNA NUT XH720	
	AX0007	Screw	XQN 2+CG8FN	2
	FG0270		POWER KEY RUBBER	
	FG0271		PTT RUBBER	
	FG0272		16 KEY RUBBER	
	FG0273		ON AIR KEY RUBBER	
	FG0274		DC CAP	
	FG0275		JACK CAP	
	KZ0095		Front case DJV5	
	KZ0096		LCD panel DJV5	
	NK0066		VOL KNOB XH720	
	NK0067		ENCODE KNOB XH720	
	SS0090A		CHASSIS	
	TS0157		RF SHIELD XH720	
	TW0020		W.PROOF A XH720	
	TW0021		W.PROOF B XH720	
	UE0338	Connector	SMA 19-16-3TGG	
	YX0004		TAPE	
Packing				
	EBP-45N	Battery	EBP-45N	T.E.EA
	EBP-46N	Battery	EBP-46N	TH.EH
	EDC-93	Wall charger	EDC-93	T.TH
	EDC-94	Wall charger	EDC-94	E.EA.EH
	PR0309		CE Label	E
	HK0464		Package	1
	HK0187		Carton 10	1
	HU0145		Inner	1
	HU0146		Inner N	1
	HU0147		Inner 5	1
	DS0388A		Spec. sheet	1 E.EA.EH
	DS0410		Spec.sheet	1T.TH
	PR0237		FCC seal	1T
	PS0308		Instruction Manual	1
	PH0009A		Warranty	1T
	PK0077		Schematic Diagram	1
	EA70	Antenna	Antenna EA70	1
	BH0011		Belt clip	1
	BB0009Y		Strap	1
	HP0003		Protection Bag 5*75*110	1
	PT0004A		Serial No. For Carton	2
	HP0031		Protection Bag 5*165*280	1

ADJUSTMENT

1) Required Test Equipment

The following items are required to adjust radio parameters.

1. Regulated Power Supply

Supply voltage:	5 to 14 VDC
Current:	3A or more

2. Digital Multimeter

Voltage range:	FS = Approx. 20V
Current:	10A or more
Input resistance:	High impedance

3. Oscilloscope

Measurable frequency:	Audio Frequency

4. Audio Dummy Load

Impedance:	8Ω
Dissipation:	1W or more
Jack:	3.5 mm ø

5. SSG

Output frequency:	500MHz or more
Output level:	-20dB/0.1µV to 120dB/1V
Modulation:	AM/FM

6. Spectrum Analyzer

Measuring range:	Up to 2GHz or more

7. Power Meter

Measurable frequency:	Up to 500MHz
Impedance:	50Ω, unbalanced
Measuring range:	0.1W to 10W

8. Audio Voltmeter

Measurable frequency:	Up to 100kHz
Sensitivity:	1mV to 10V

9. Audio Generator

Output frequency:	67Hz to 10kHz
Output impedance:	600Ω, unbalanced

10. Distortion Meter/SINAD Meter

Measurable frequency:	1kHz
Input level:	Up to 40dB
Distortion level:	1% to 100%

11. Frequency Counter

Measurable frequency:	Up to 500MHz
Measurable stability:	Approx. ±0.1ppm

12. Linear Detector

Measurable frequency:	Up to 500MHz
Characteristics:	Flat
CN:	60 dB or more

Note:

- Standard modulation: 1kHz ±3.5kHz/DEV
- Reference sensitivity: 12 dB SINAD
- Specified audio output level: 200 mW at 8Ω
- Standard audio output level: 50 mW at 8Ω
- Use an RF cable (3D2W: 1m) for test equipment.
- Attach a fuse to the RF indicated by EMF.
- All SSG outputs are indicated by EMF.
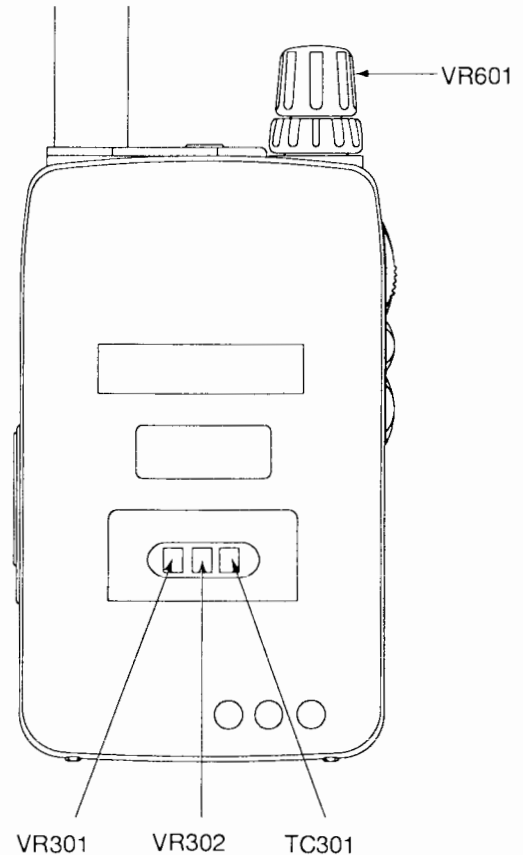- Supply voltage for the transceiver: 13.8 VDC

2) Entering and releasing the adjustment mode

DJ-V5 adjusts various items in the adjustment mode.

1) Press FUNC key more than 1 sec. (The key is locked.)

2) Press 4, 9, 0, 2, 1, and 7 with the keyboard.

3) "UFREQ" is indicated and the unit enters the adjustment mode.

4) Press 0 key to settle the adjustment when finished, then go back to the normal mode.

3) Adjustment

No.	Display	Items	Points
1	UFREQ	Reference frequency	TC301
2	UPO HI	UHF HIGH power	VR601
3	UPO L1	UHF LOW power	VR601
4	VPO HI	VHF HIGH power	VR601
5	VPO L1	VHF LOW power	VR601
6	VMOD	VHF modulation	VR302
7	UMOD	UHF modulation	VR301
8	VTUN L	VHF lower frequency sensitivity	VR601
9	VTUN M	VHF center frequency sensitivity	VR601
10	VTUN H	VHF upper frequency sensitivity	VR601
11	VSQL 1	VHF squelch level 1 setting	FUNC KEY
12	VSQL 5	VHF squelch level 5 setting	FUNC KEY
13	VSMT 1	VHF S-meter level 1 setting	FUNC KEY
14	VSMT 5	VHF S-meter level 5 setting	FUNC KEY
15	UTUN L	UHF lower frequency sensitivity	VR601
16	UTUN M	UHF center frequency sensitivity	VR601
17	UTUN H	UHF upper frequency sensitivity	VR601
18	USQL 1	UHF squelch level 1 setting	FUNC KEY
19	USQL 5	UHF squelch level 5 setting	FUNC KEY
20	USMT 1	UHF S-meter level 1 setting	FUNC KEY
21	USMT 5	UHF S-meter level 5 setting	FUNC KEY
22	WSMT 1	WFM S-meter level 1 setting	FUNC KEY
23	WSMT 5	WFM S-meter level 5 setting	FUNC KEY
24	WSMT 5	WFM AF output	L355

The display can be changed using UP/DOWN key.

VR601

VR301   VR302   TC301

NO.	Item	Condition	Measurement		Adjustment			Specifications
			Equipment	Terminal	Disp	Parts	Method	
1	Reference Frequency	f=435.05 TX	Freq. Counter	ANT	UFREQ	TC301	f=435.05MHz	435.05MHz ±100Hz
2	UTX Power Hi	f=435.05 TX f=445.05 TX (V5T)	Power Meter	ANT	UPO HI	VR601	5.0 W	5.0 W ± 0.1 W
3	UTX Power Low				UPO L1	VR601	1.0 W	1.0 W ± 0.1 W
4	VTX Power Hi	f=145.05 TX			VPO HI	VR601	5.0 W	5.0 W ± 0.1 W
5	VTX Power Low				VPO L1	VR601	1.0 W	1.0 W ± 0.1 W
6	Deviation	f=445.05 TX (V5T) f=435.05 TX AG: 1kHz 50mV	Linear Det. (Filter:0.3~3kHz) Oscilloscope Power Meter AG	ANT	UMOD	VR201	4.5kHz	4.5kHz ± 0.1kHz
7		f=145.05 TX AG: 1kHz 50mV			VMOD	VR202	4.5kHz	4.5kHz ± 0.1kHz
8	Sensitivity (VHF)	f=121.13 RX	SSG Distortion Meter Oscilloscope Level Meter	ANT	VTUNL	V601	12dB SINAD max.	-5dBµ (EMF) or below
9		f=145.13 RX			VTUNM			-9dBµ (EMF) or below
10		f=169.13 RX			VTUNH			0dBµ (EMF) or below
11	Squelch (VHF)	f=145.13 RX Output: -11dBµ Mod: OFF	SSG	ANT	VSQL1		Press FUNC key to finish. A beep sounds.	
12		f=145.13 RX Output: -5dBµ Mod: OFF			VSQL5			
13	S meter (VHF)	f=145.13 RX Output: 0dBµ Mod: OFF			VSMT1			One segment of S meter is turned ON.
14		f=145.13 RX Output: 20dBµ Mod: OFF			VSMT5			5 segments of S meter are turned ON.

NO.	Item	Condition	Measurement		Adjustment			Specifications
			Equipment	Terminal	Disp	Parts	Method	
15	Sensitivity (UHF)	f=379.13 RX	SSG Distortion Meter Oscilloscope Level Meter	ANT	UTUNL	V601	12dBμ SINAD max.	0dBμ (EMF) or below
16		f=419.13 RX			UTUNM			0dBμ (EMF) or below
17		f=459.13 RX			UTUNH			5dBμ (EMF) or below
18	Squelch (UHF)	f=435.13 RX (V5,V5E, V5EA) Output: -11dBμ Mod: OFF	SSG	ANT	USQL1	-	Press FUNC key to finish. A beep sounds.	
19		f=445.13 RX (V5T) Output: -5dBμ Mod: OFF			USQL5	-		
20	S meter (UHF)	f=435.13 RX (V5,V5E, V5EA) Output: 0dBμ Mod: OFF			USMT1	-		One segment of S meter is turned ON.
21		f=445.13 RX (V5T) Output: 20dBμ Mod: OFF			USMT5	-		5 segments of S meter are turned ON.
22	S meter (WFM)	f=88.13 RX Output: 0dBμ Mod: OFF			WSMT1	-		One segment of S meter is turned ON.
23		f=88.13 RX Output: 20dBμ Mod: OFF			WSMT5	-		5 segments of S meter are turned ON.
24	AF output (WFM)	f=88.13 RX Output: 20dBμ Mod: 1kHz Dev: 22.5kHz			WSMT5	L355 (Main unit A)	AF level max.	

After finishing all adjustments, press 0 key to escape from the ajustment mode.

(When escape from the adjustment mode on the way, press 0 key or proceed to the next item then escape from the mode.)

PC BOARD VIEW
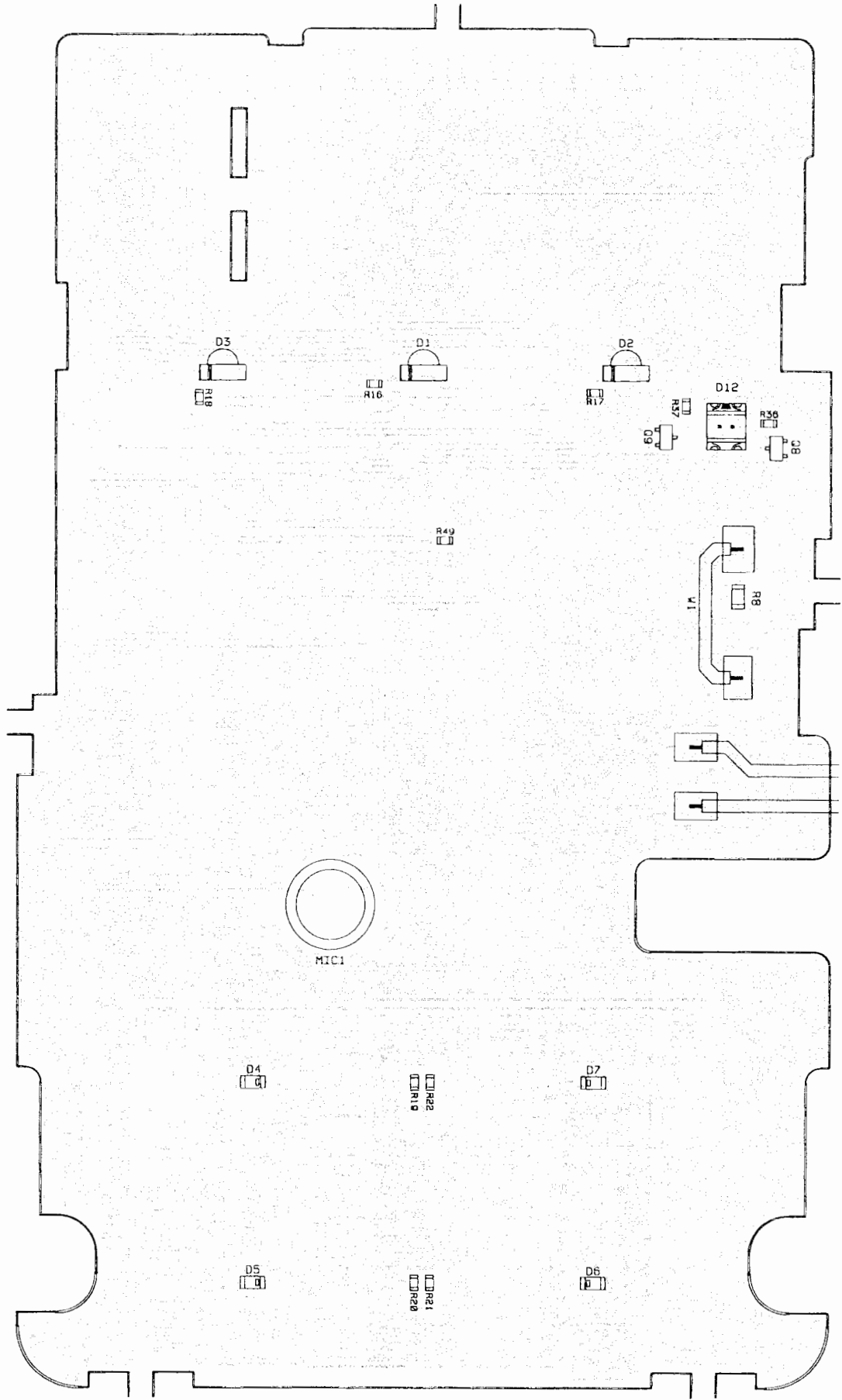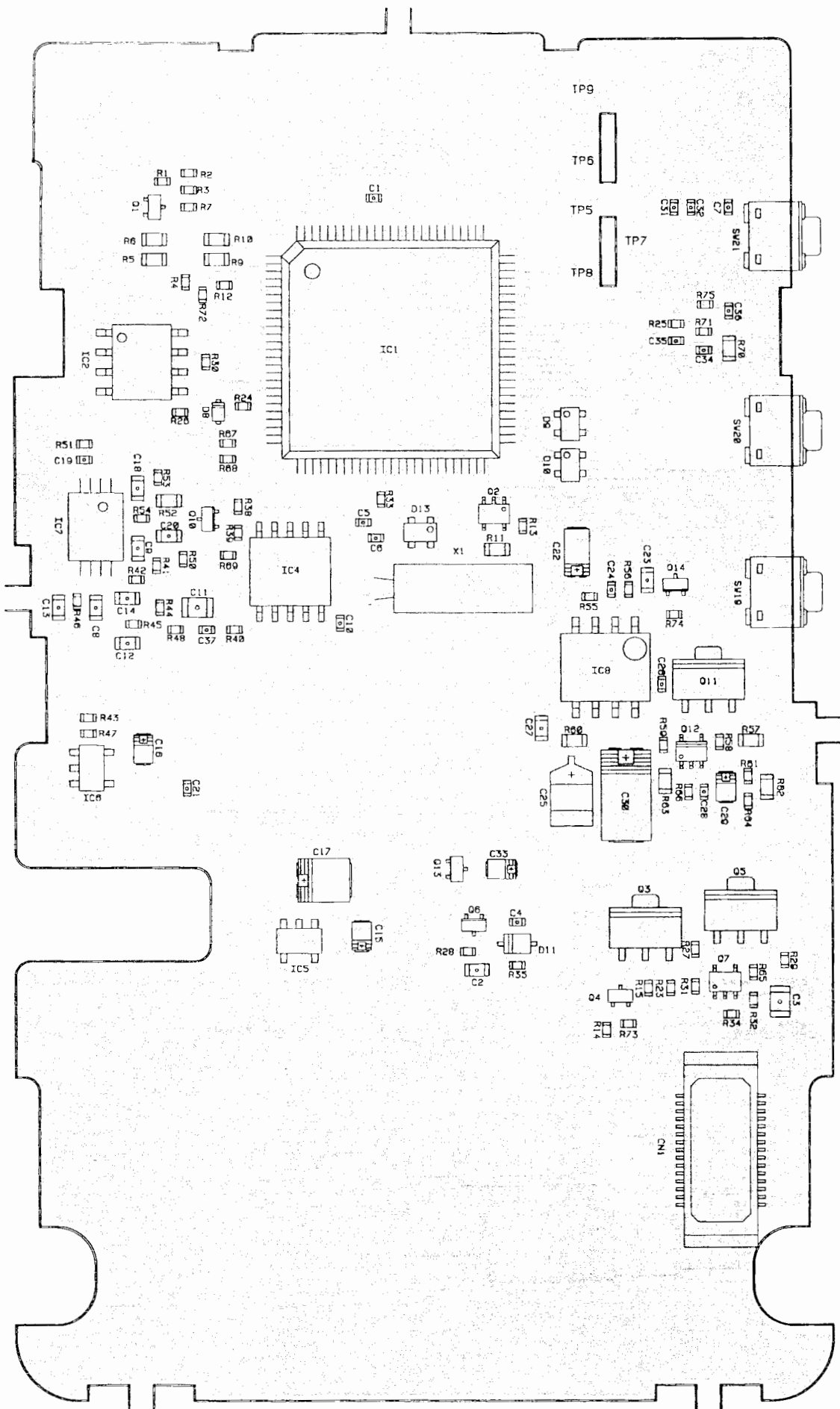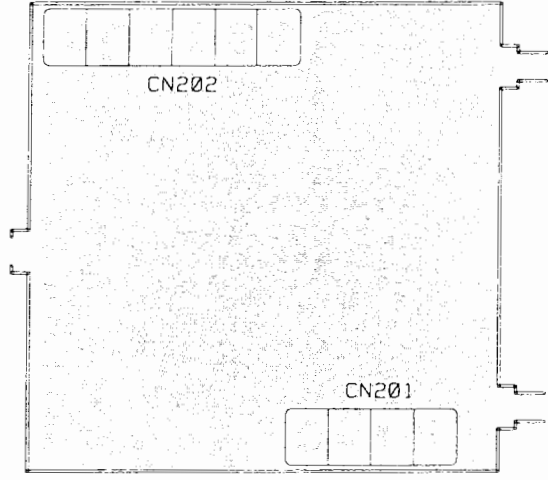
1) MAIN Unit

side A

side B

2) CPU Unit
side A

D3
D1
D2
D12
R18
R16
R17
R37
R36
D9
C8
R49
1A
R8

MIC1

D4
D7
R22
R10

D5
D6
R21
R20
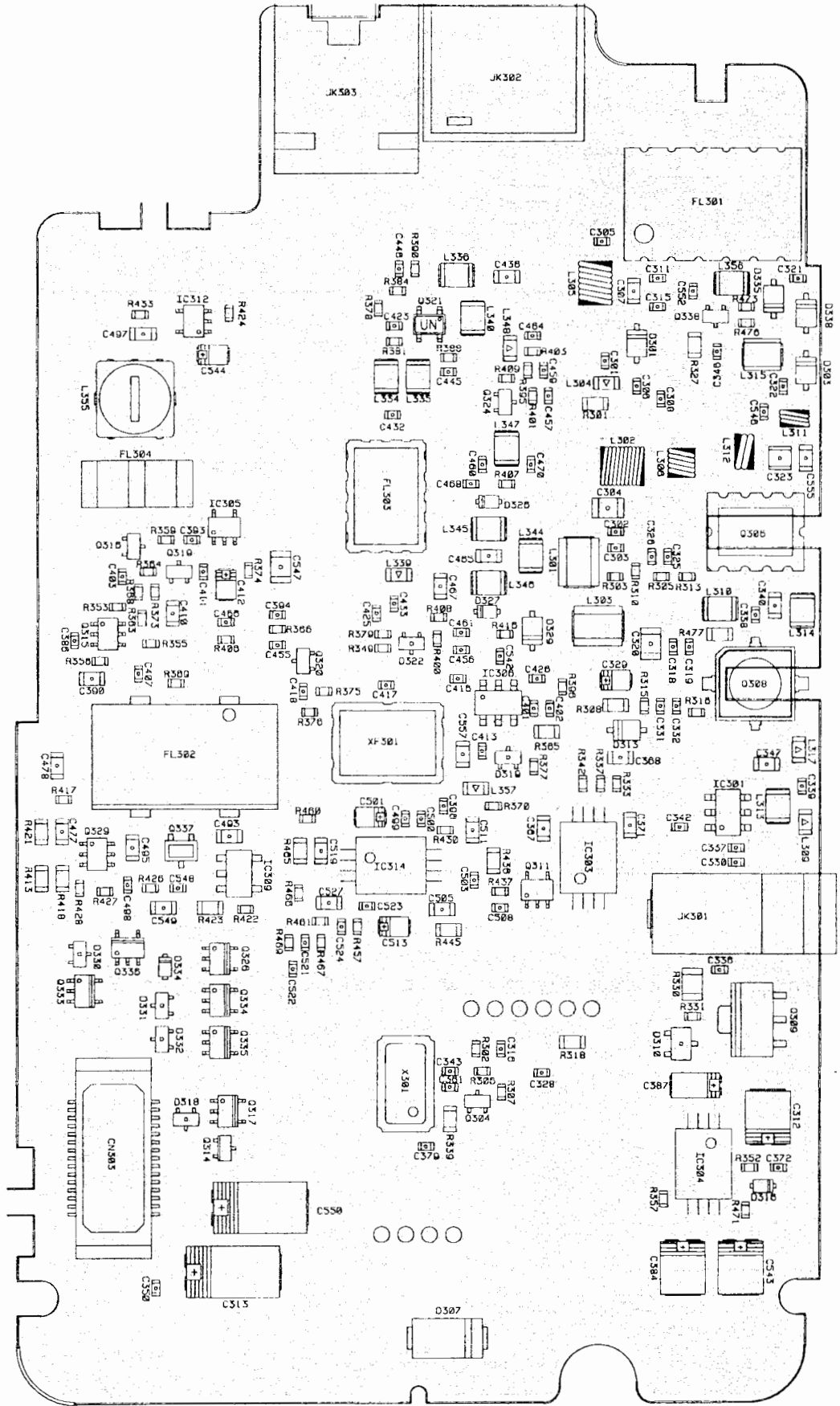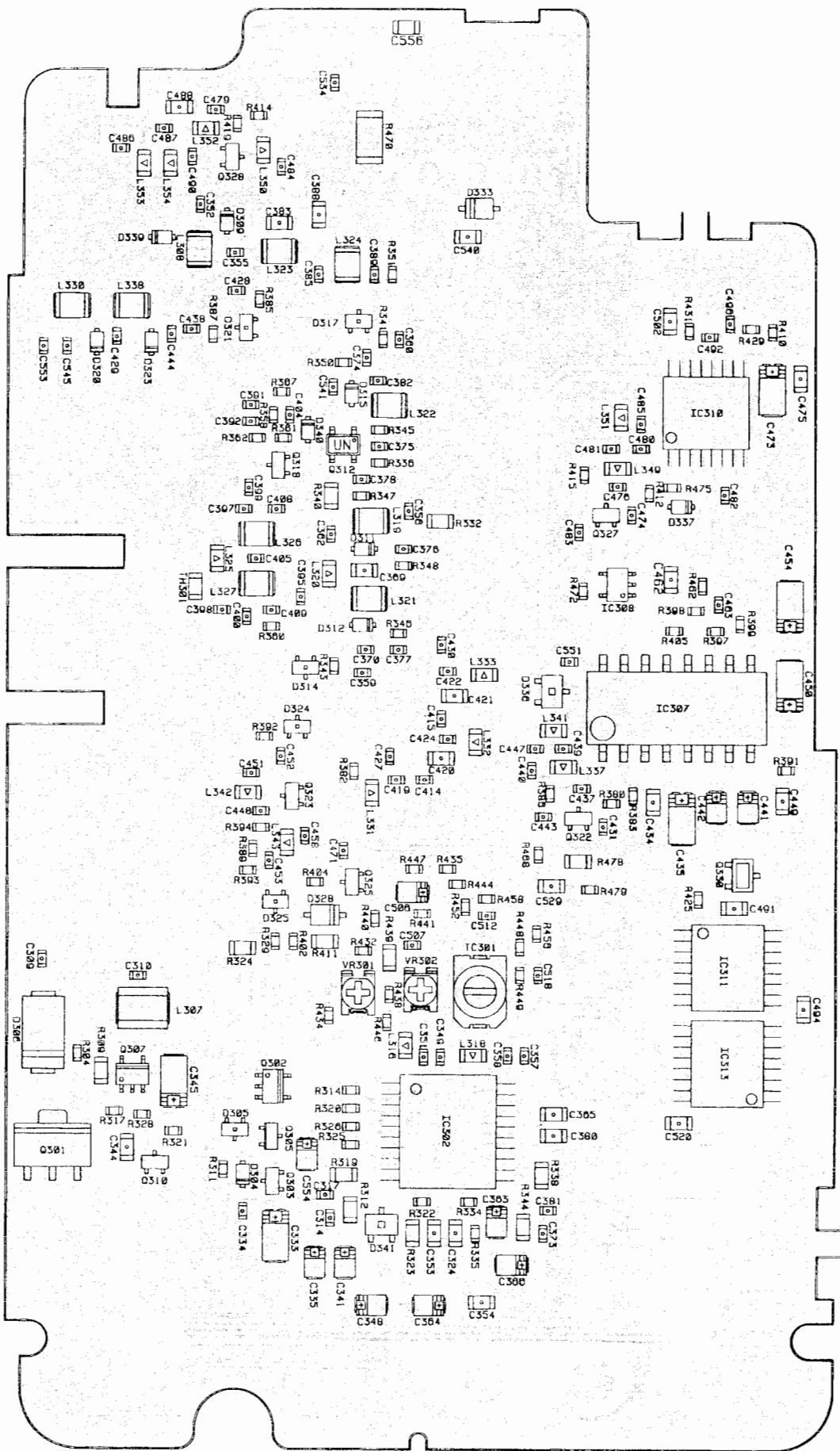
side B

3) VCO Unit

side A

side B
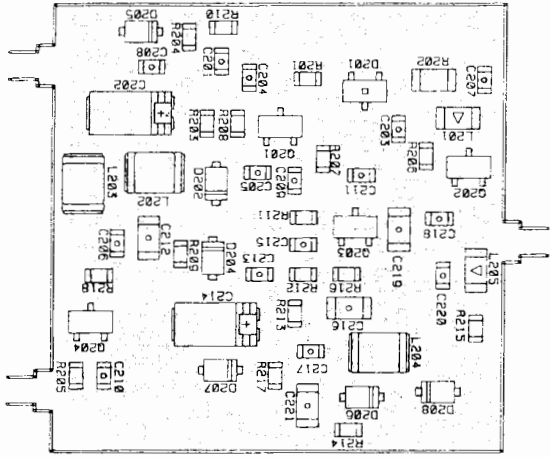
4) VR Unit

side A

side B
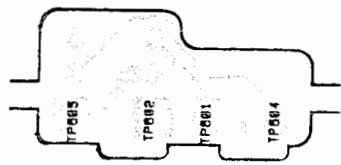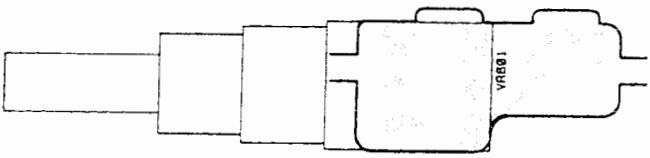
CIRCUIT DIAGRAM   1) MAIN Unit
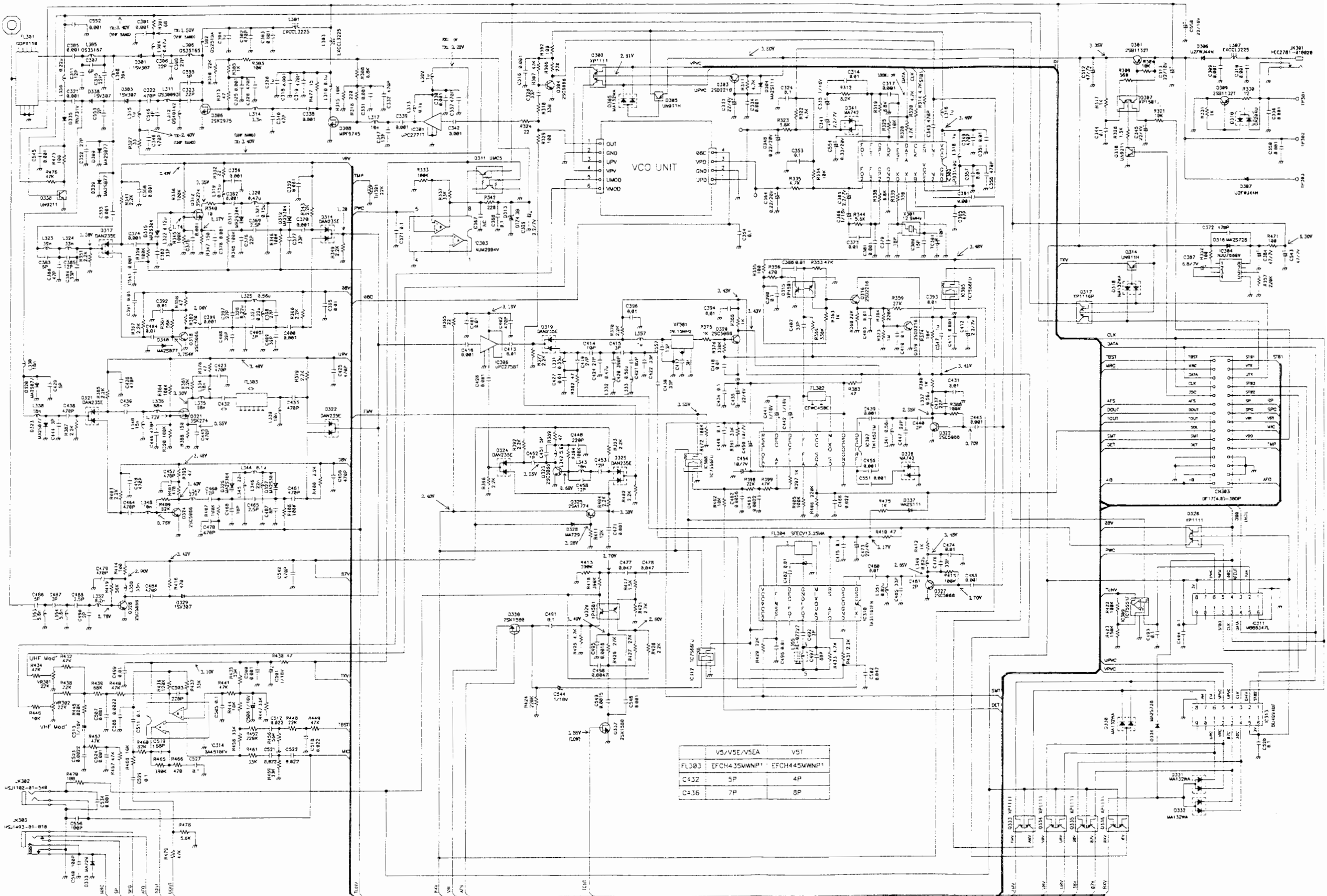
	V5/V5E/V5EA	V5T
FL303	EFCH435MWNP1	EFCH445MWNP1
C432	5P	4P
C436	7P	8P

6

2) CPU Unit
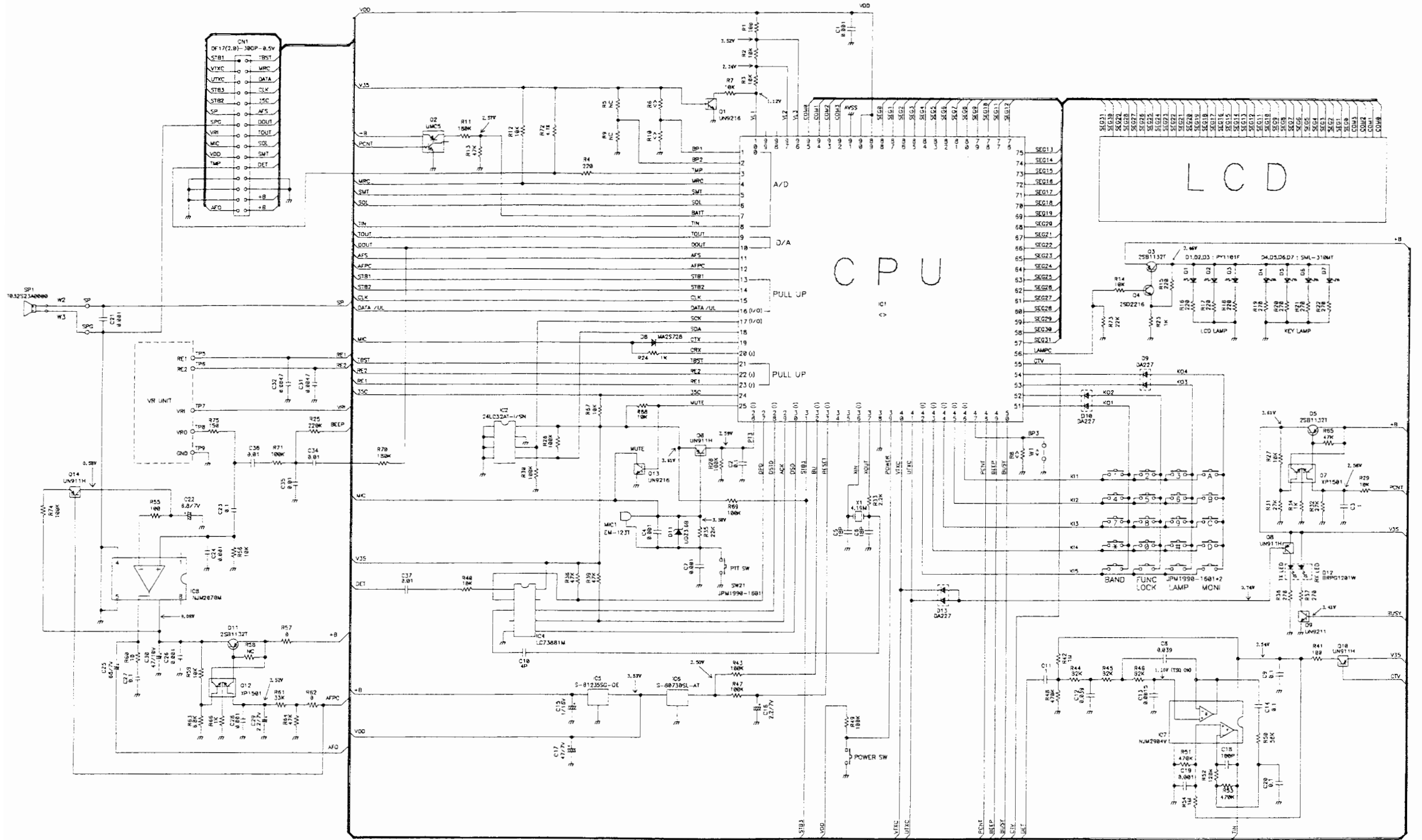
	V5	V5T	V5E	V5EA
R6	NC	NC	39K	39K
R8	0	NC	NC	NC
R10	39K	39K	NC	NC
W1	NC	MRCL02AA	MRCL02AA	NC
IC1	M38267M8L233GP	M38267M8L234GP	M38267M8L234GP	M38267M8L234GP

3) VCO Unit

BLOCK DIAGRAM