DR-430E/T/TE1-5

Service Manual

CONTENTS

NOTICE: When ordering replacement parts, make sure to include the following fourpoints: (1) Parts No.
(2) Description
(3) Equipment model name
(4) Quantity required

ALINCO INCORPORATED

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SPECIFICATIONS

1) General

Frequency Coverage:

RX: 430.000 ~ 460.000MHz	(T version)
TX: 440.000 ~ 450.000MHz	(T version)
TX/RX: 430.000 ~ 440.000MHz	(E version)
RX: 400.000 ~ 425.000MHz	(TE1 version)
TX: 400.000 ~ 420.000MHz	(TE1 version)
RX: 445.000 ~ 475.000MHz	(TE2 version)
TX: 450.000 ~ 470.000MHz	(TE2 version)
TX/RX: 430.000 ~ 450.000MHz	(TE3 version)
TX/RX: 470.000 ~ 490.000MHz	(TE4 version)
TX/RX: 490.000 ~ 510.000MHz	(TE5 version)

Frequency Resolution:	5, 10, 12.5, 15,20,25kHzsteps
Antenna Impedance:	50 ohm unbalanced
Power Supply Requirements:	DC 13.8 +/-10% Volts DC
Current Drain at l3.8V	
	Receiving: Squelched less than 800mA
	Transmitting: High/10.0A (approx.)
	Low/3.5A (approx.)
Dimensions:	140mm(W) x 40mm(H) x 154mm(D)
Weight:	0.86kg (approx.)

2) Transmitter

Output Power:	High: 35Watts
	Low: 5Watts (Approx.)
Emission Mode:	F3E(FM)
Modulation System:	Variable Reactance Frequency Modulation
Max. Frequency Deviation:	+/ -5kHz (Wide Version)
	+/ -2.5kHz (Narrow Version)
Spurious Emission:	-60dB or below carrier
Microphone:	Electret Condenser Microphone
Operating Mode:	Simplex/Semi-Duplex
Offset :	0ffset from 0 to 15.995MHz

3) Receiver

Receiving System:	Superheterodyne Dual Conversion
Intermediate Frequency:	1stIF: 30.85MHz
	2nd lF: 455kHz
	12dB SINAD less than -16dBu
Sensitivity:	More than +/-6kHz at -6dB (Wide Version)
Selectivity:	Less than +/-15kHz at -60dB (Wide Version)
Audio Power Output:	More than 2.5W 10% Distortion
Speaker Impedance:	8 ohm

CIRCUIT DESCRIPTION
1) Receiver System

1. Front End — The signal from the antenna is passed through a low-pass filter and input to the L16. The signal from L16 is led to the gate of Q1. D4 and D17 are the diode limiter circuit against the excessive input power of more than 20dBm. Q1 is the FET which.has two gates. The voltage of the gate 2 is set higher to get the high gain and sensitivity. The signal from Q1 is led to the band pass filter L5, and gets the high image rejection ratio. The signal is amplified by Q18, and led to the band pass filter L3.

2. Mixer Circuit — The signal from the band pass filter L3 is converted into the first IF signal of 30.85MHz. The receiving signal is led to the gate 1 of Q2, and the first local oscillator signal is led to the gate 2 of Q2. To reduce the high adjacent channel interference, the band width of the FL2 is set to 20kHz. The signal from FL2 is amplified by Q8, and input to FM IF system IC3 of TK10487.

3. lF Circuit — The TK10487 has the second local oscillator circuit, mixer circuit, detector circuit, squelch circuit, and so on. Pin1 and 2 are the terminals of the crystal oscillator circuit. Pin2 (emitter) is connected to the ground via the resister R108 to prevent the oscillator from decreasing the power at the low temperature. Pin4 of IC3 is connected to FL1 directly because the matching resistor for ceramic filter is built-in. The quadrature circuit (pin10 of IC3) is connected to the ceramic resonator X2 for the temperature stability and good quality. The signal from pin11 of IC3 is connected to the LPF. The detected AF signal, which has flat frequency characteristics, is led to the control unit and used as both squelch signal and tone squelch signal. De-emphasis circuit consists of R22, R23, C30 and C31. The LPF amplifier consisting of Q5 and Q6 is located far away from the VR in the control unit, so it outputs the high voltage signal to prevent S/N from the deterioration. The squelch switch circuit consists of Q4 and Q16, and switches on/off at the point where there is no voltage to prevent from the switching noise. The S meter signal from pin12 of IC3 is led to the CPU in the control unit after adjusting the level at D16 and VR3. The S meter signal is thermal compensated by TH1 and stabilized. The noise amplifier consists of pin13 and 14, the built-in OP amplifier in IC3. The output signal of noise amplifier is amplified by Q14, rectified by D10, and then led to the pin15 (hysteresis comparator input) of IC3.

4. AF Circuit — IC4 is about 5W audio power amplifier IC. When the capacity of pin1 in C82 is increased more, the output incidental noise becomes smaller. The high-pitched tone becomes smaller at the same time. This radio's capacity of C82 is determined considering the high-pitched tone.

2) Transmitter System

1. Modulation Circu The microphone amplifier IC1 (IDC, LPF) consists of two operational amplifiers. The signal from the microphone is led to pre-emphasis circuit consisting of C129 and R34 and then to the limiter circuit. The limiter circuit uses the saturation of the OP amplifier. The amplified signal is input to the low-pass filter IC1A. The output signal from the microphone amplifier is passed through variable resistors VR2 for modulation adjustment and input to the VCO unit. Sub tone deviation is determined by R18, R74 and VR2. The radio does not have the adjustment variable resistor for sub tone deviation.

2. TX Amp. Circuit The signal from VCO is amplified by TX, RX wide band LO amplifier Q19. The signal from Q19 is passed through the transmission/reception selector, and amplified by Q27, Q20 and Q15. The PA unit is driven at 400mW driving power.

3. PA Circuit IC5 is 35W powered amplifier module. The output power is controlled by the voltage of V1. The RF signal amplified 35W in PA is passed through D5 and two-stage transmission/reception low-pass filter, and input to the antenna connector.

4. ALC Circuit The power detection circuit consisting of D11 and D12 rectifies the output signal voltage. The detected DC voltage is led to the VR1 (power adjust trimmer), and amplified by Q3, Q9 and Q13. Output power is controlled by voltage of V1 in IC5 and collector voltage of Q15. When the temperature goes up unusually, the power down circuit consisting of R83 and TH2 works to prevent the device from the destruction.

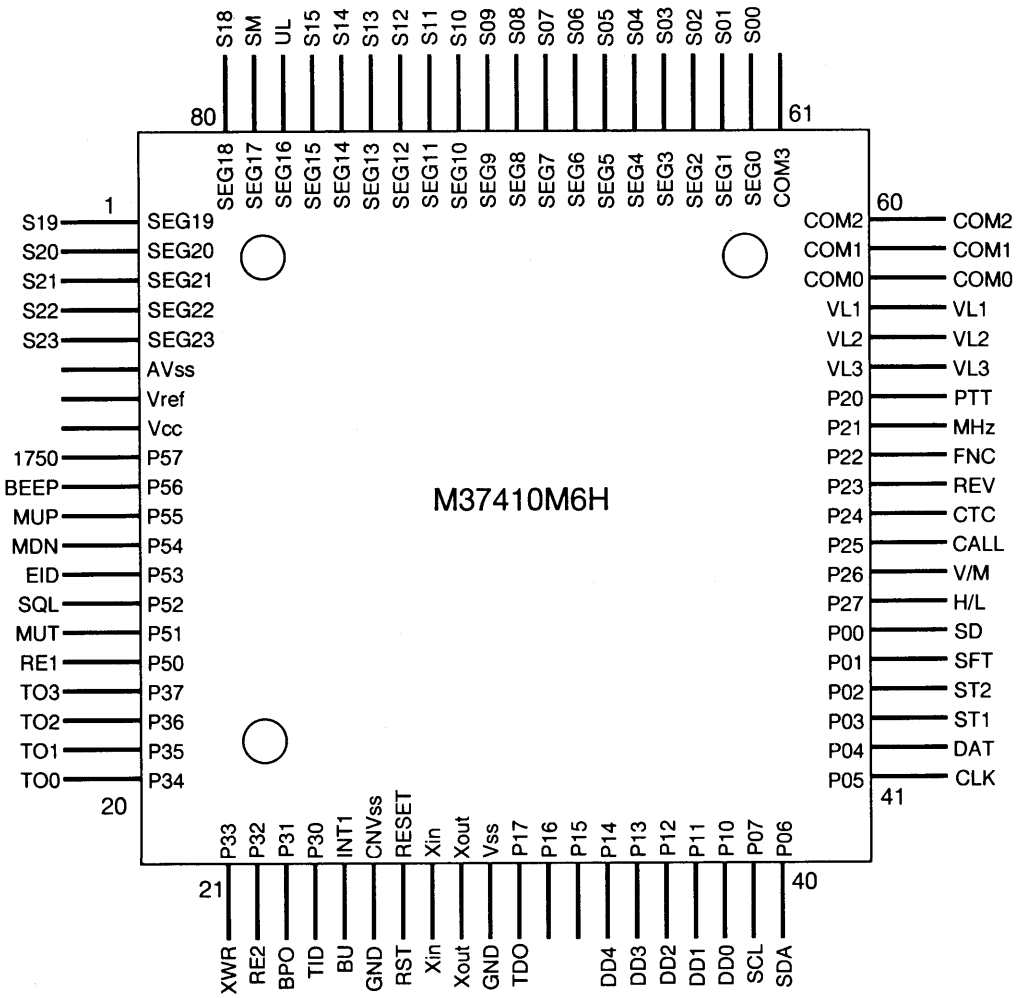
3) PLL Circuit The VCO unit is designed for the PLL circuit, putting the VCO on one side, and PLL circuit on the other side.
Q301 in the VCO is grounded using the gate oscillator, and its frequency covers 430MHz to 460MHz without transmission/reception shift circuit.
IC301 is pulse swallow system based PLL IC with the built-in prescaler, which synthesizes 430MHz-band signal.
The loop filter consisting of Q302, Q303 and Q306 is the active type.

4) Terminal Function of Microprocessor

Port No.	I/O	Logic	PinName	Description
1	O		SEG19	LCDSegment19 Output
2	O		SEG20	LCDSegment20 Output
3	O		SEG21	LCDSegment21 Output
4	O		SEG22	LCDSegment22 Output
5	O		SEG23	LCDSegment23 Output
6	I		GND	AnalogGround 0V
7	I		Vref	Reference Voltage Input 5V
8	I		Vcc	CPU Power Supply hnput 5V
9	O		1750_	ToneBurstOutput
10	O	Clock	BEEP	BeepToneOutput
11	I	Active Low	MUP	Channel Up Input (Microphone Control)
12	I	Active Low	MDN	Channel Down Input (Microphone Control)
13	I	NoUse	EID	
14	O	Active Low	SQL	Squelch Control (L: Audio is off.)
15	O	ActiveHigh	MUT	Microphone Mute (H: Mic Amp is off.)
16	I	Active Low	REI	RotaryEncoder Input
17	O	Clock	TO3	ToneOutput
18	O	Clock	TO2	ToneOutput
19	O	Clock	TO1	ToneOutput
20	O	Clock	TO0	ToneOutput
21	I	ActiveHigh	XWR	EEPROM Write Status External Input
22	I	Active Low	RE2	RotaryEncoder Input
23	O	Active Low	BPO	Band Plan Detection Input (Common)
24	I	Active Low	TID	Tone Unit Detection Input
25	I	Active Low	BU	Back Up Signal Detection input
26	I		GND	Ground
27	I	Active Low	RST	ResetInput
28	I		Xin	Crystal Oscillator Terminal (3.58MHz)
29	O		Xout	Crystal Oscillator Terminal (3.58MHz)
30	I		GND	Ground
31	I	Active Low	TDO	CTCSS Tone Detection Output
32	O	Active High	DTD	For Trunking
33	O	NoUse		
34	I	Active Low	DD4	Band Plan 4 (V/U Selection) R286 0-U
35	I	Active Low	DD3	Band Plan 3 (445/435 Selection) R285 0-445
36	I	Active Low	DD2	Band Plan 2 (5k/12.5k Selection) R284 0-12.5
37	I	Active Low	DD1	Band Plan 1
38	I	Active Low	DD0	Band Plan 0
39	O	Clock	SCL	Clock Output for EEPROM
40	I/O	Clock	SDA	Data Output for EEPROM

Port No.	I/O	Logic	PinName	Description
41	O	Clock	CLK	Clock Output
42	O	Clock	DAT	DataOutput
43	O	Clock	ST1	Strobe Output for PLL IC
44	O	Clock	ST2	Strobe Output for CTCSS IC
45	I	Active Low	SFT	Shift Key Input
46	I	Active High	SD	Signal Detection Input
47	O	Active High	H/L	Transmission Power (H: Low Power)
48	I	Active Low	V/M	VFO/Memory Key Input
49	I	Active Low	CAL	Call Key Input
50	I	Active Low	CTC	CTCSS Mode Set Input
51	I	Active Low	REV	Reverse Key Input
52	I	Active Low	FNC	Function Key Input
53	I	Active Low	MHz	MHzKeyInput
54	I	Active Low	PTT	PTTKeyInput
55	I		LV3	Power Supply Input for LCD
56	I		LV2	Power Supply Input for LCD
57	I		LV1	Power Supply Input for LCD
58	I		COM0	LCD Common 0 Output
59	I		COM1	LCD Common 1 Output
60	I		COM2	LCD Common 2 Output
61	I	No Use		
62	O		SEG00	LCD Segment 00 Output
63	O		SEG01	LCD Segment 01 Output
64	O		SEG02	LCD Segment 02 Output
65	O		SEG03	LCD Segment 03 Output
66	O		SEG04	LCD Segment 04 Output
67	O		SEG05	LCD Segment 05 Output
68	O		SEG06	LCD Segment 06 Output
69	O		SEG07	LCD Segment 07 Output
70	O		SEG08	LCD Segment 08 Output
71	O		SEG09	LCD Segment 09 Output
72	O		SEG10	LCD Segment 10 Output
73	O		SEG11	LCD Segment 11 Output
74	O		SEG12	LCD Segment 12 Output
75	O		SEG13	LCD Segment 13 Output
76	O		SEG14	LCD Segment 14 Output
77	O		SEG15	LCD Segment 15 Output
78	I	ActiveHigh	UL	UnlockInput
79	I	Analog	SM	SignalMeterInput
80	O		SEG18	LCD Segment 18 Output

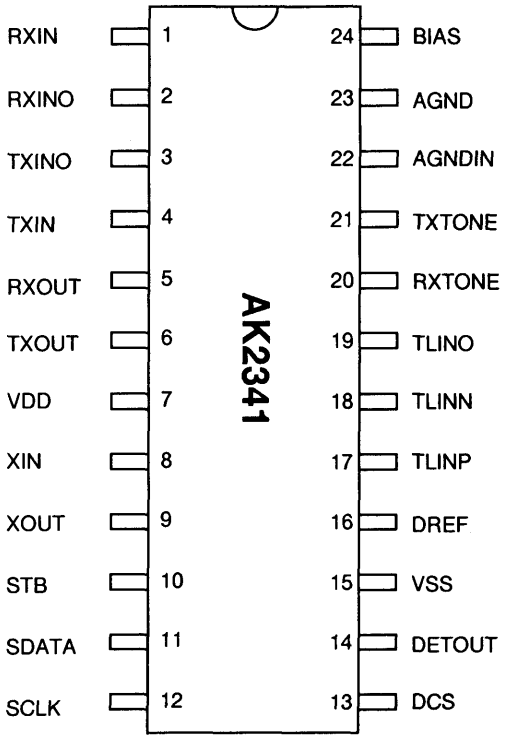
5) Terminal Connection of Microprocessor



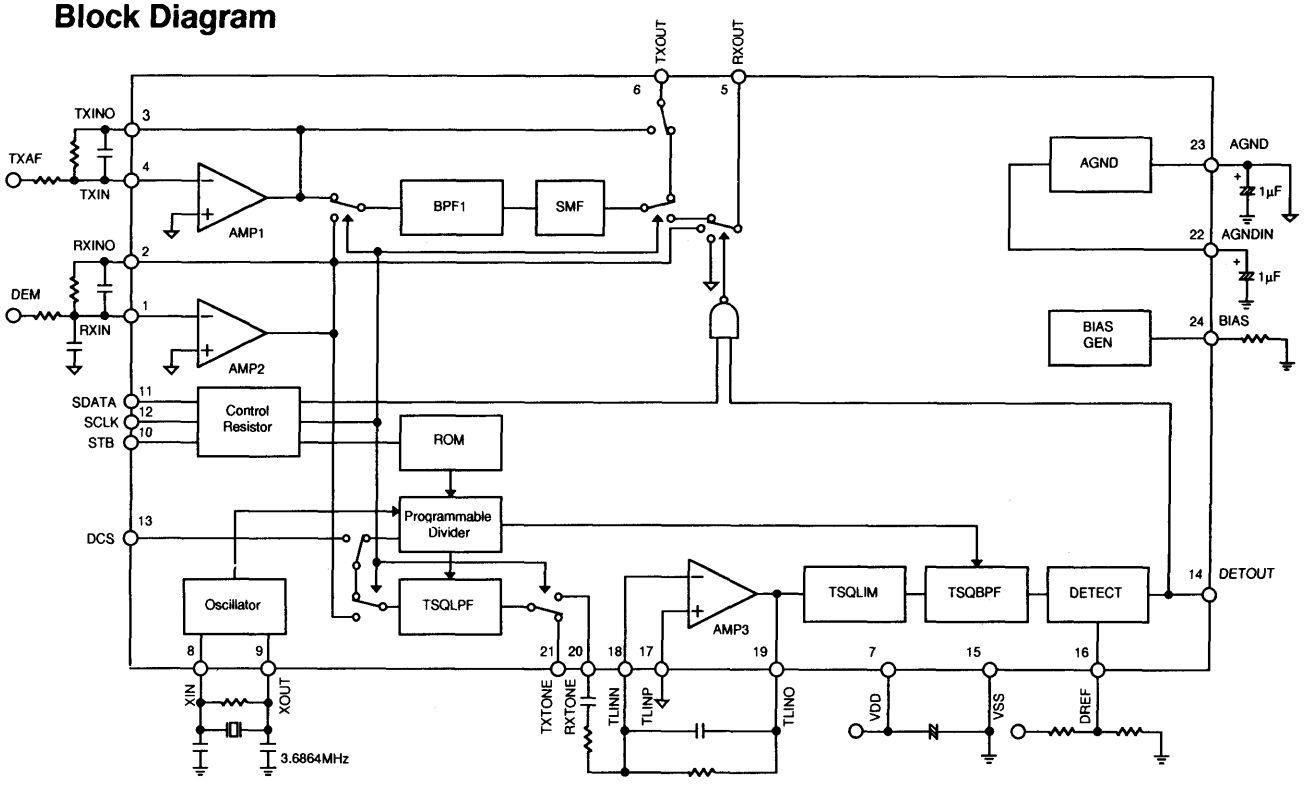
SEMICONDUCTOR DATA

1) AK2341 (XA0239)
CTCSS Encoder/Decoder

Pin No.	Pin Name	I/O	Function
1	RXIN	I	RX Signal Input
2	RXINO	O	AMP2 Output
3	TXINO	O	AMP1 Output
4	TXIN	I	TX Audio Input
5	RXOUT	O	RX Audio Output
6	TXOUT	O	TX Audio Output
7	VDD	-	Power Supply (1.8 ~ 5.5V)
8	XIN	I	Crystal Terminal (3.6864MHz)
9	XOUT	O	Crystal Terminal (3.6864MHz)
10	STB	I	Strobe for Serial Data
11	SDATA	I	Serial Data
12	SCLK	I	Serial Clock
13	DCS	I	DCS Input
14	DETOUT	O	Tone Detection Output (Detect: Low)
15	VSS	-	Ground
16	DREF	I	Tone Detection Level Adjust Input
17	TLINP	I	RX Tone Signal Reference Input
18	TLINN	I	RX Tone Signal Input
19	TLINO	O	AMP3 Output
20	RXTONE	O	RX Tone Signal Output
21	TXTONE	O	TX Tone Signal Output
22	AGNDIN	I	Analog Ground Input
23	AGND	O	Analog Ground Output
24	BIAS	I	Bias Input

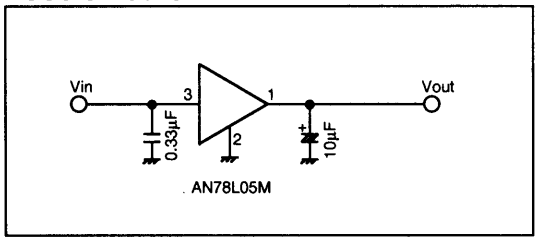


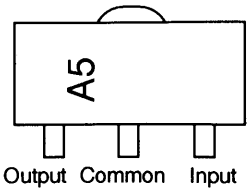
Block Diagram



2) AN78L05M (XA0238)
5V Voltage Regulator

Test Circuit

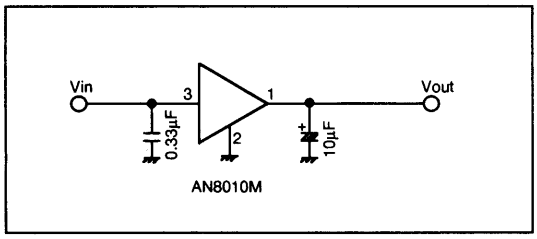


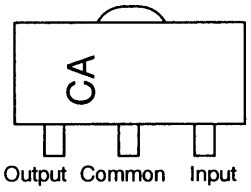


AN78L05M

3) AN8010M (XA0119)
Voltage Regulator

Test Circuit



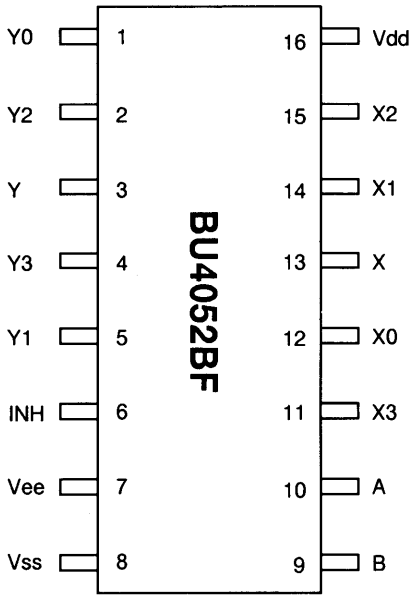


AN8010M

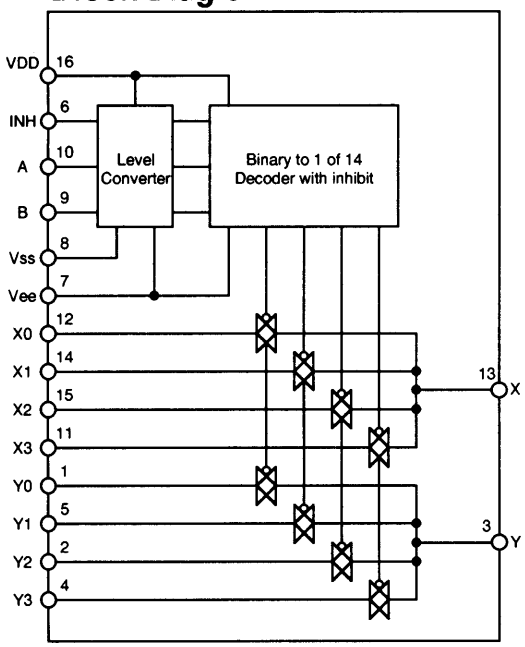
4) BU4052BF (XA0236)
Analog Multiplexers/Demultiplexers

Function Table

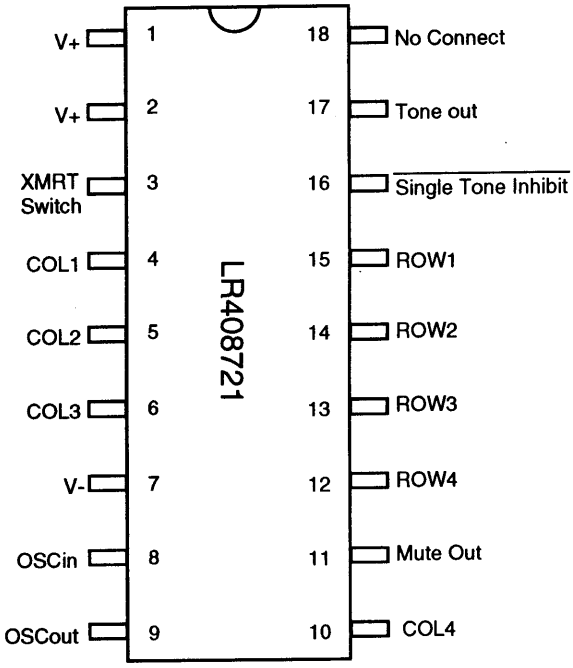
INHIBIT	A	B	ON Switch
Low	Low	Low	X0 Y0
Low	High	Low	X1 Y1
Low	Low	High	X2 Y2
Low	High	High	X3 Y3
High	Don't Care	Don't Care	None



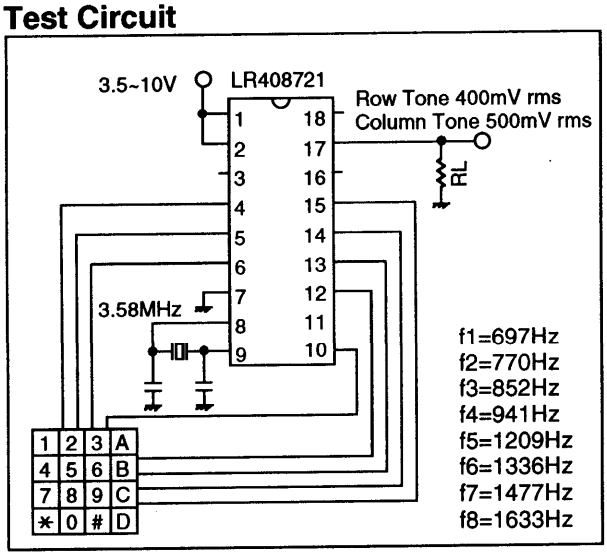
Block Diagram



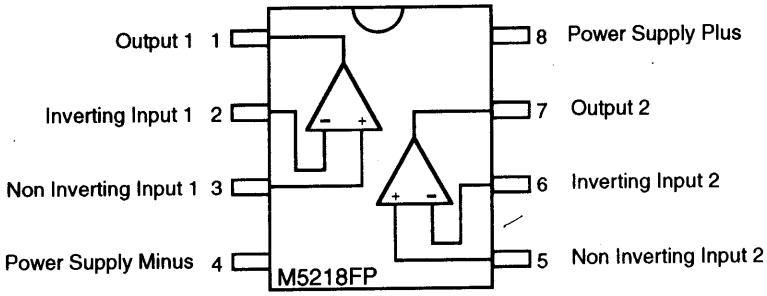
5) LR408721 (XA0042)
Tone Dialer



Test Circuit

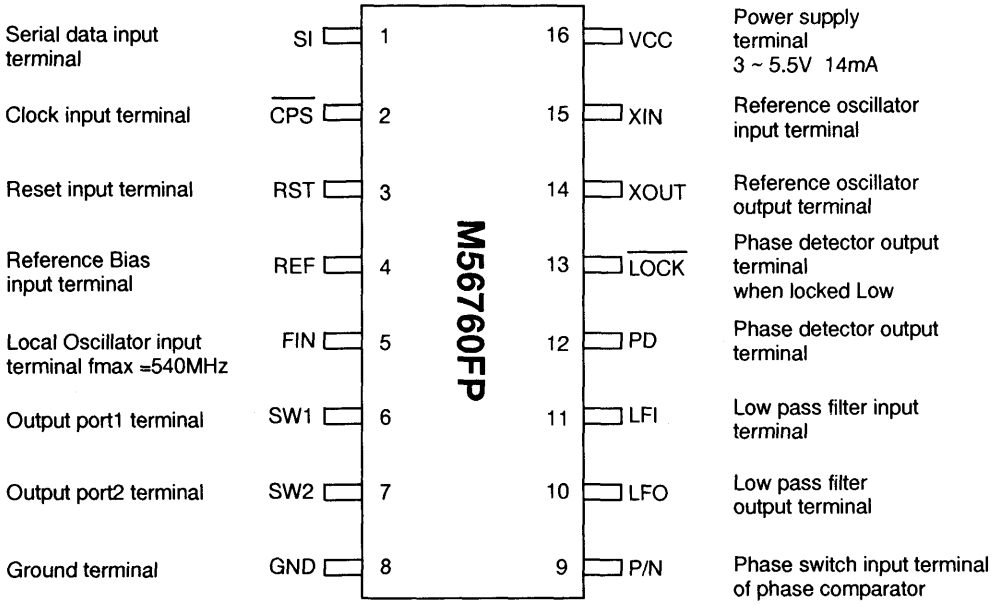


6) M5218FP (XA0068)
Dual Low Noise
Operational Amplifiers



7) M56760FP (XA0235)

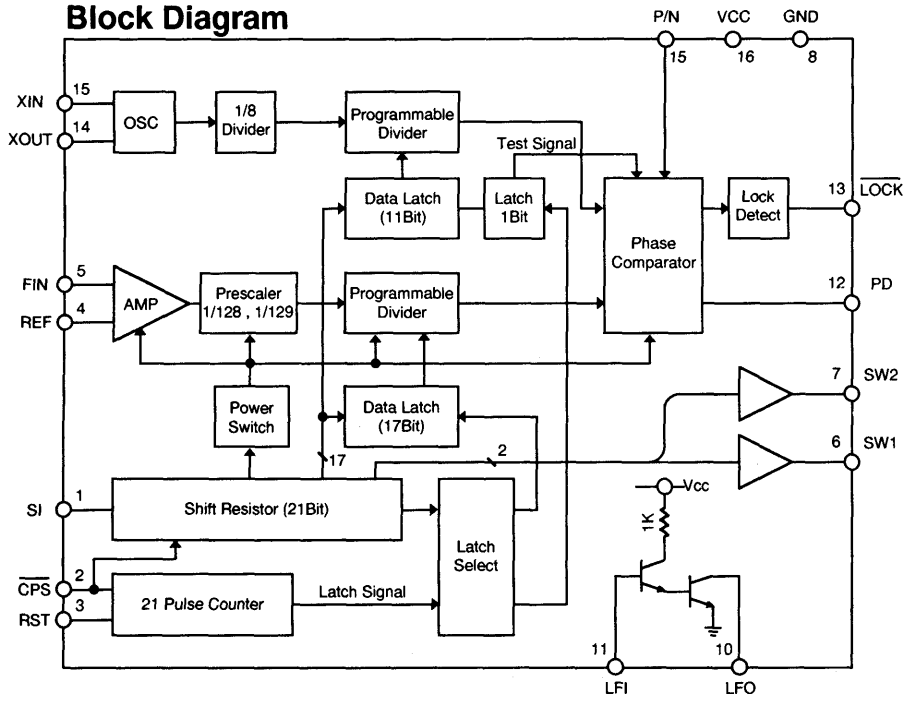
540MHz Frequency Synthesizer



Function Table

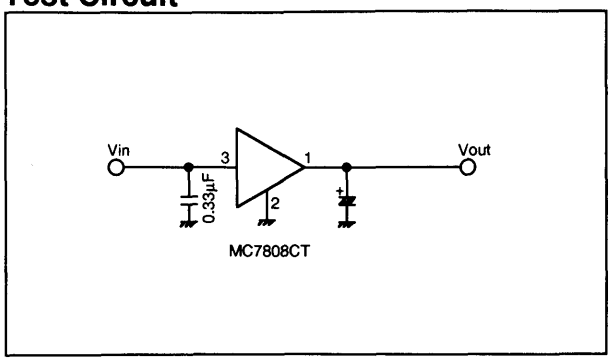
P/N input	Phase	PD output
High or Low	Locked	Hi-Z
High	Lead	High
High	Lag	Low
Low	Lead	Low
Low	Lag	High

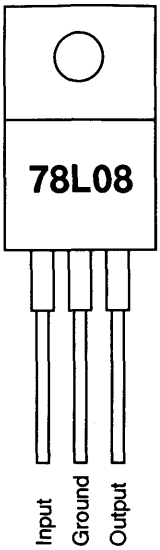
Block Diagram



8) MC7808CT (XA0082)
8V Voltage Regulator

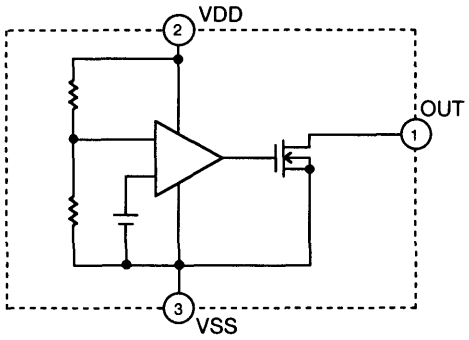
Test Circuit

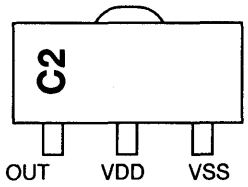




9) RH5VA32AA-T1 (XA0198)
C-MOS Voltage Detector

Equivalent Circuit

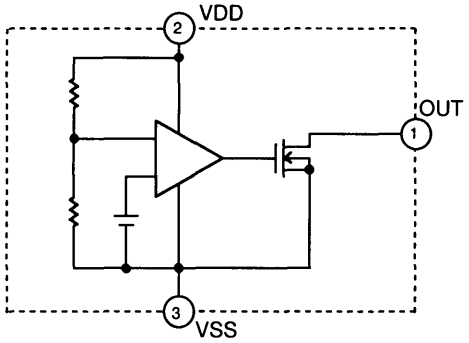


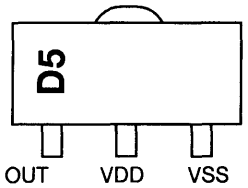


RH5VA32AA

10) RH5VA45AA-T1 (XA0208)
C-MOS Voltage Detector

Equivalent Circuit

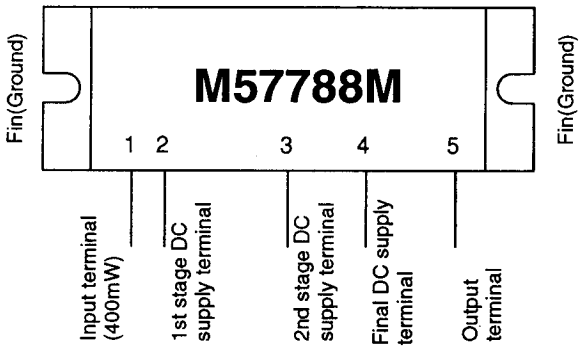


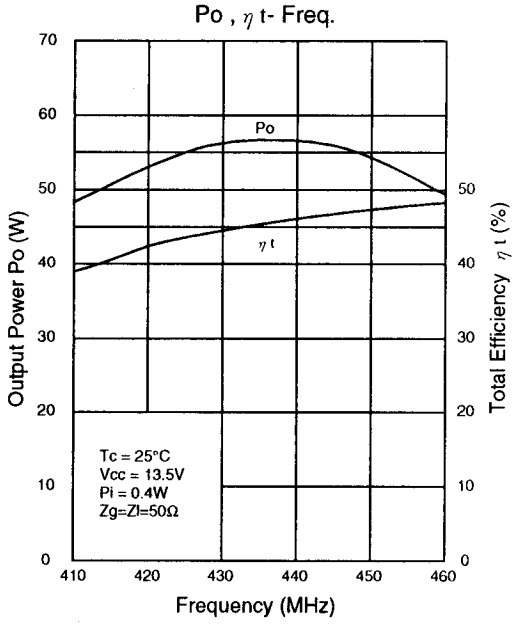


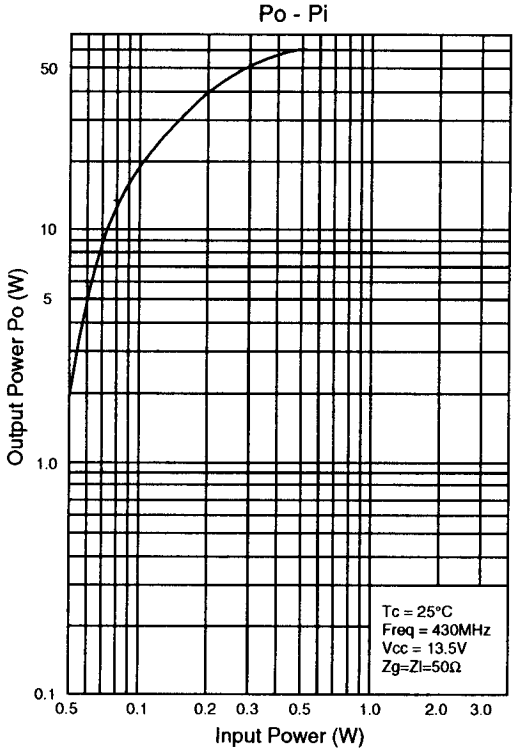
RH5VA45AA

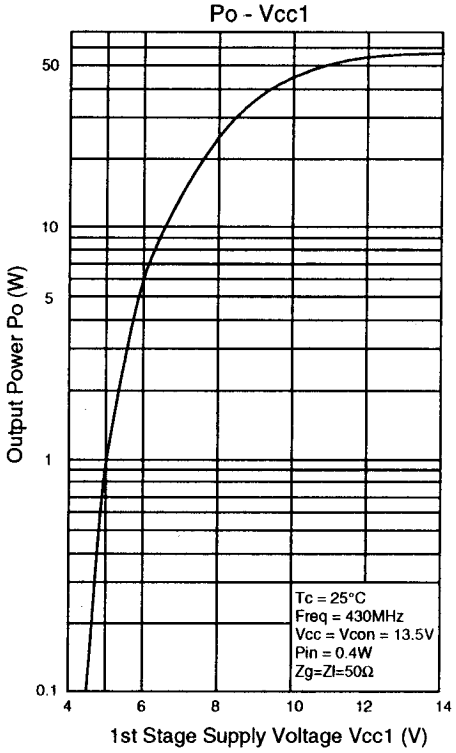
11) M57788L (XA0261)
M57788M (XA0077A)
M57788H (XA0262)

430 ~ 470MHz FM 35W RF Power Module





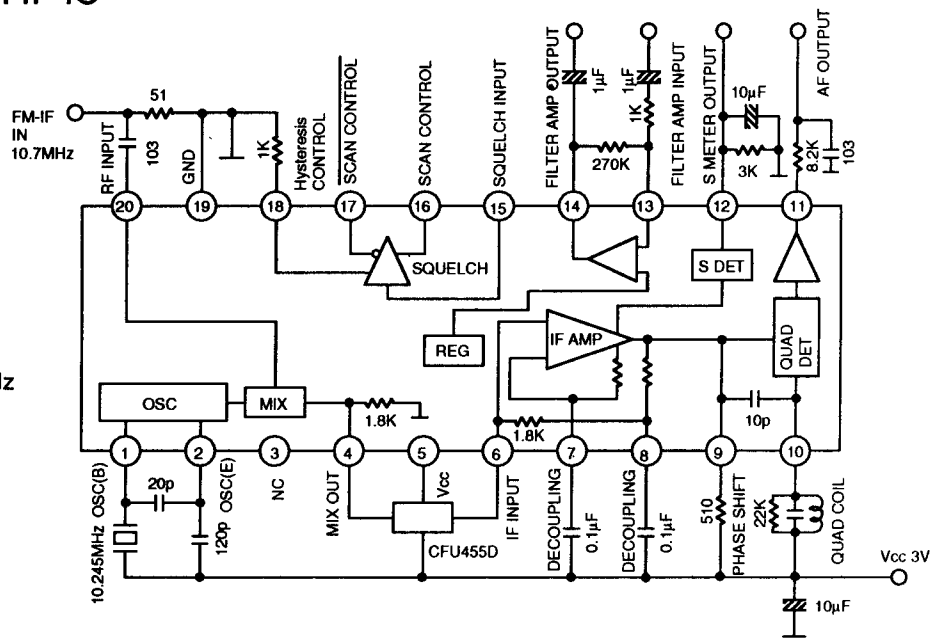




12) TK10487MTR (XA0144)

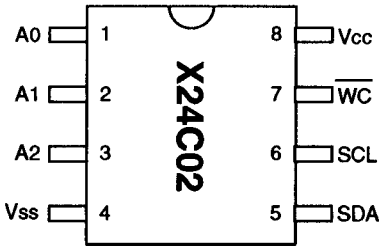
Narrow Band FM IF IC

Vcc=3V
F=10.7MHz
Icc 5mA
Limit 2μV -3dB
Vo 180mV Dev=3kHz
THD 1.0%



13) X24C02S8-3.0 (XA0227)

EEPROM 256 x 8Bit



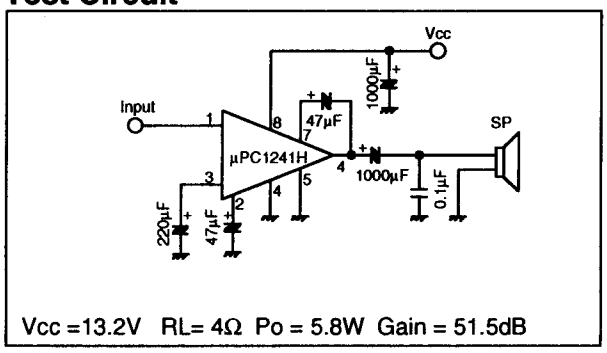
Pin Names

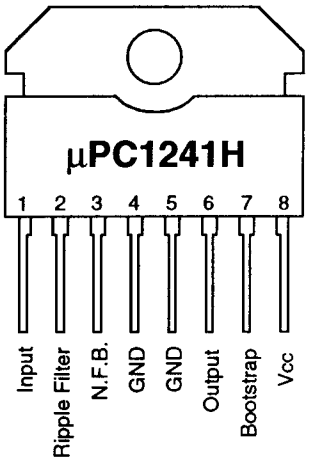
A0 ~ A2	Address inputs
SDA	Serial Data
SCL	Serial Clock
WC	Write Control
Vss	Ground
Vcc	+5V

14) μPC1241H (XA0079)

Audio Power Amplifiers

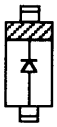
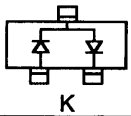
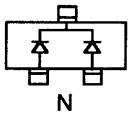
Test Circuit





15) Transistor, Diode and LED Outline Drawings

Top View

1SS318	1SS355	1SV214	1SV215	DA204U	DAN202U	DTZ2.2A	DTZ5.1A
XD0129	XD0254	XD0131	XD0132	XD0130	XD0230	XD0145	XD0136
							
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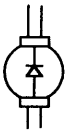	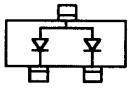	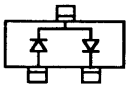					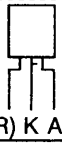
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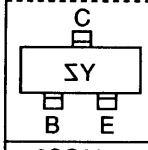	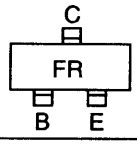	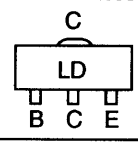	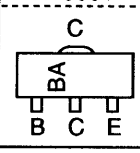	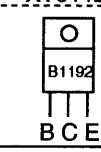	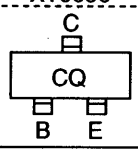	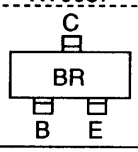	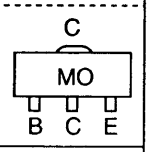
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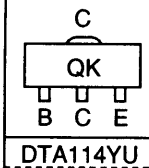
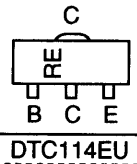
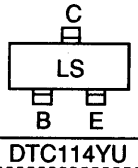
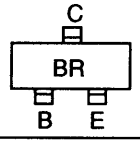
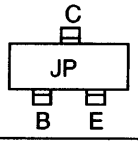
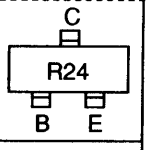
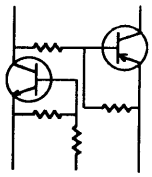
XT0084	XT0048	XT0111	XT0095	XT0096	XT0106	XU0060	
							
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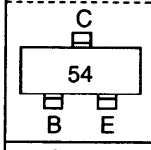
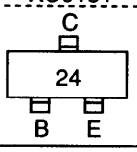
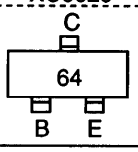
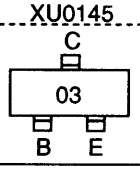
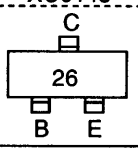
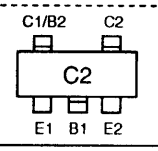
XU0112	XU0131	XU0029	XU0145	XU0148			
							
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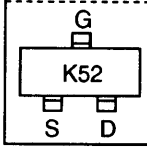
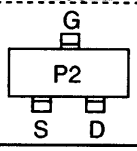
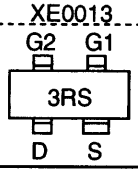
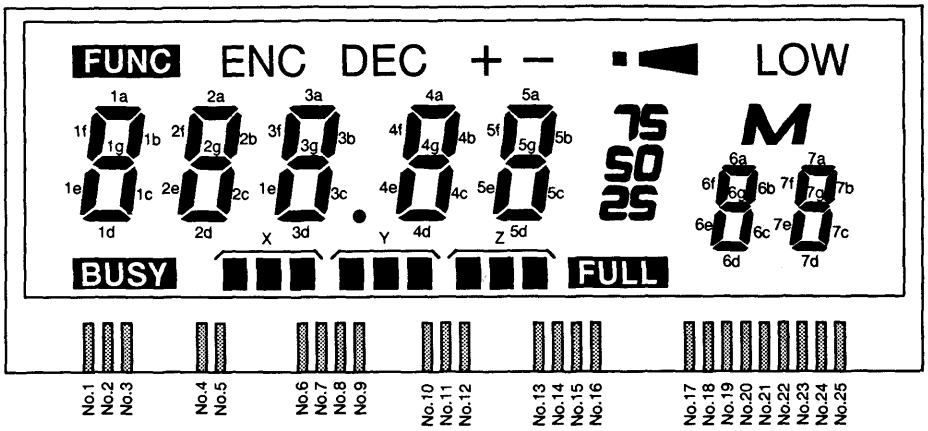
XE0010	XE0022	XE0013					
							

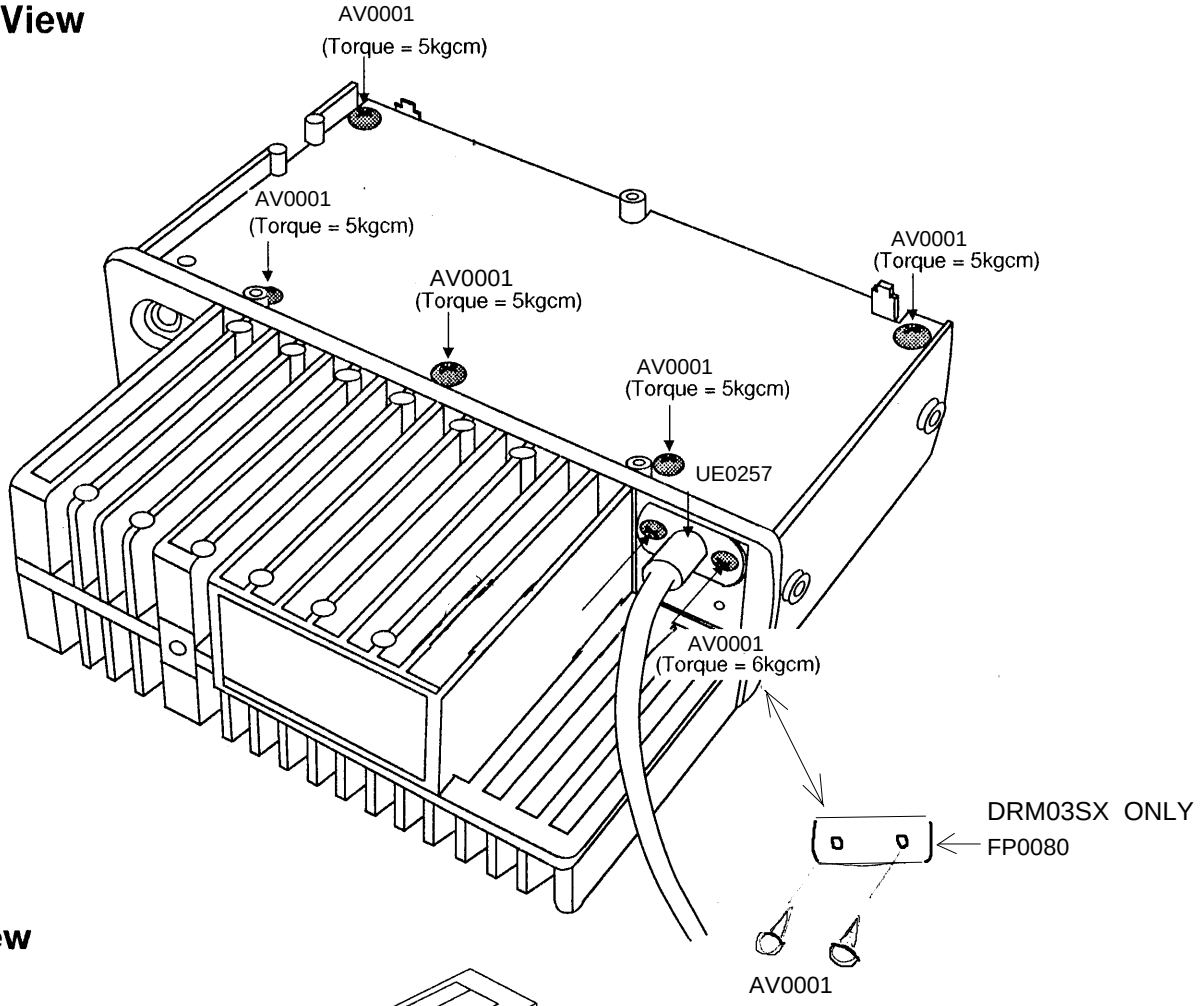
17) LCD Connection (EL0024)



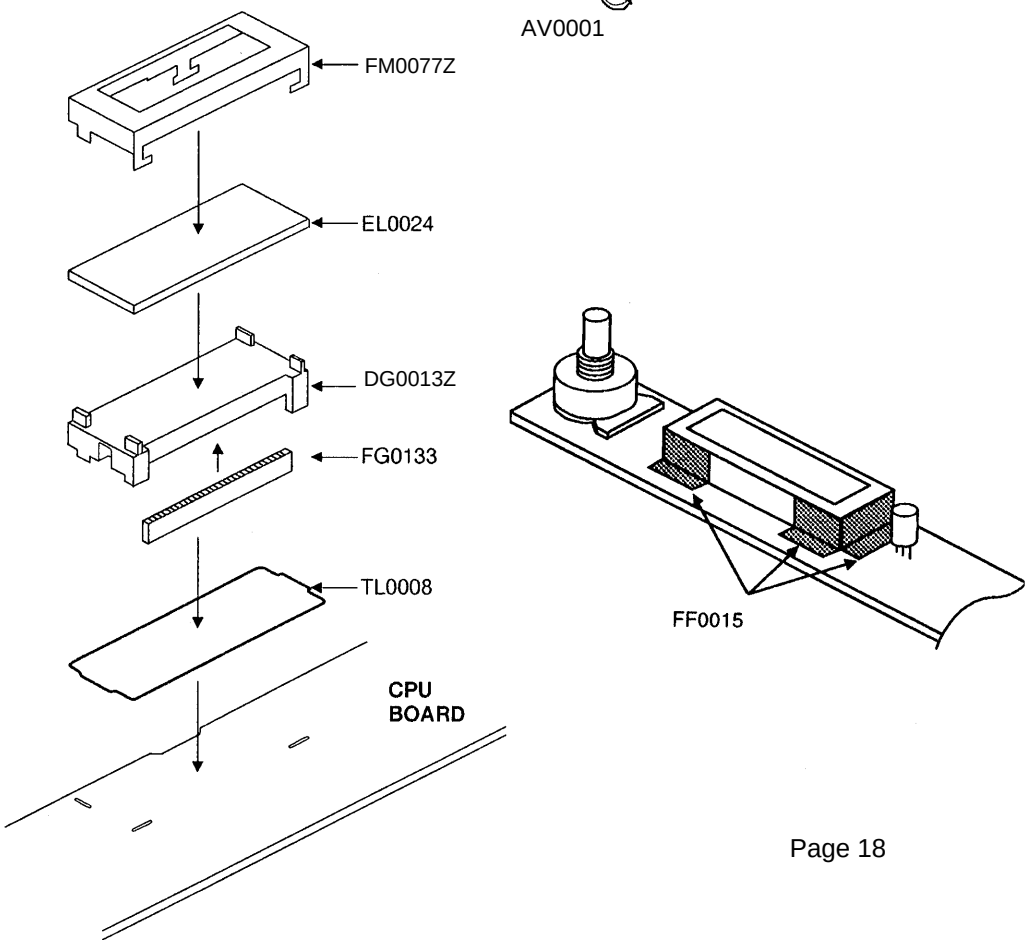
Pin No.	COMMON1	COMMON2	COMMON3
1	FUNC	1e	1f
2	1d	1g	1a
3	BUSY	1c	1b
4	ENC	2e	2f
5	2d	2g	2a
6	X	2c	2b
7	DEC	3e	3f
8	3d	3g	3a
9	●	3c	3b
10	Y	4e	4f
11	4d	4g	4a
12	+	4c	4b
13	Z	5e	5f
14	5d	5g	5a
15	−	5c	5b
16	FULL	25	50
17	75	6e	6f
18	6d	6g	6a
19	▪◀	6c	6b
20	M	7e	7f
21	7d	7g	7a
22	LOW	7c	7b
23		COM.1	
24			COM.2
25	COM.0		

EXPLODED VIEW

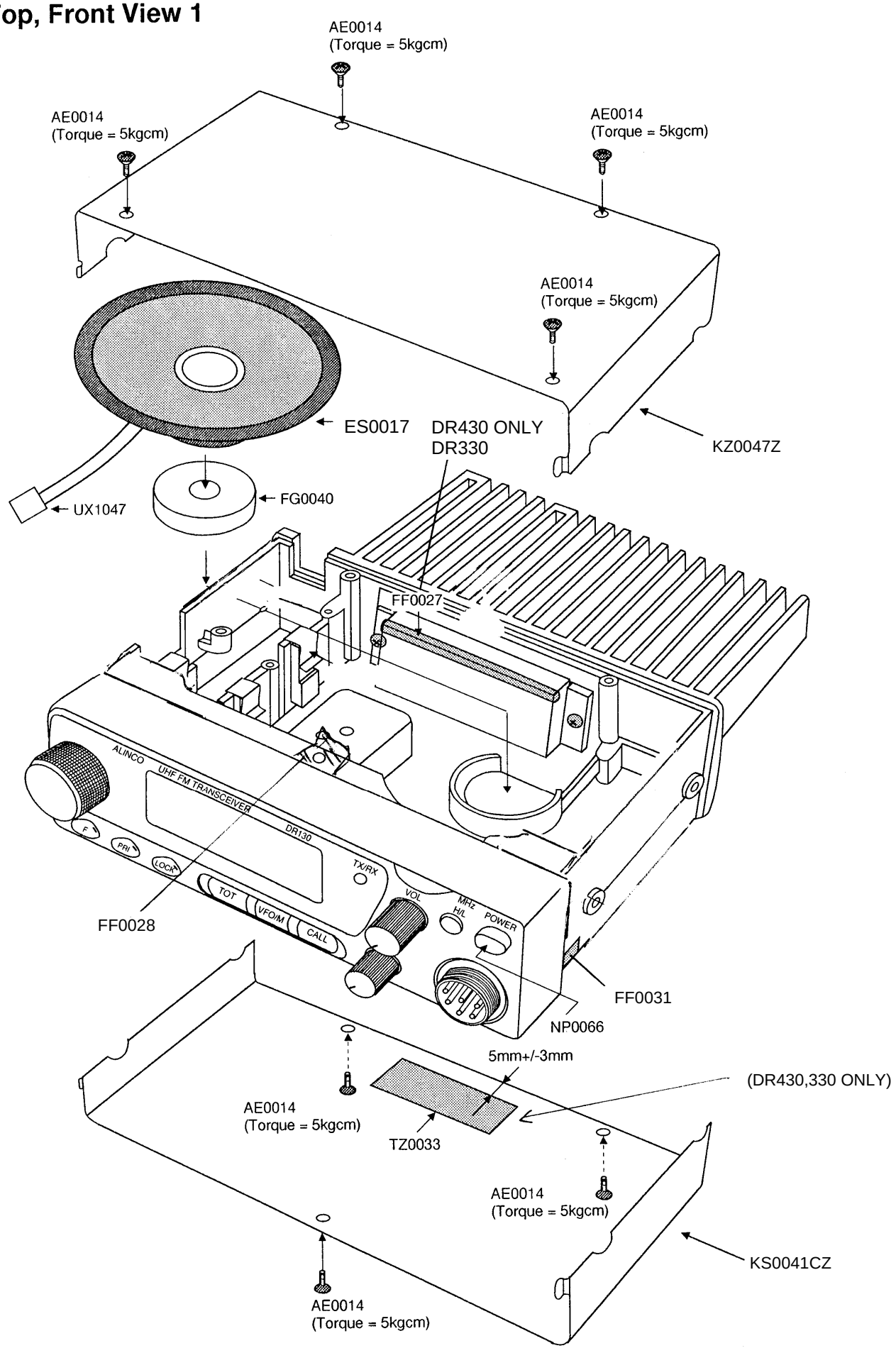
1) Bottom View



2) LCD View

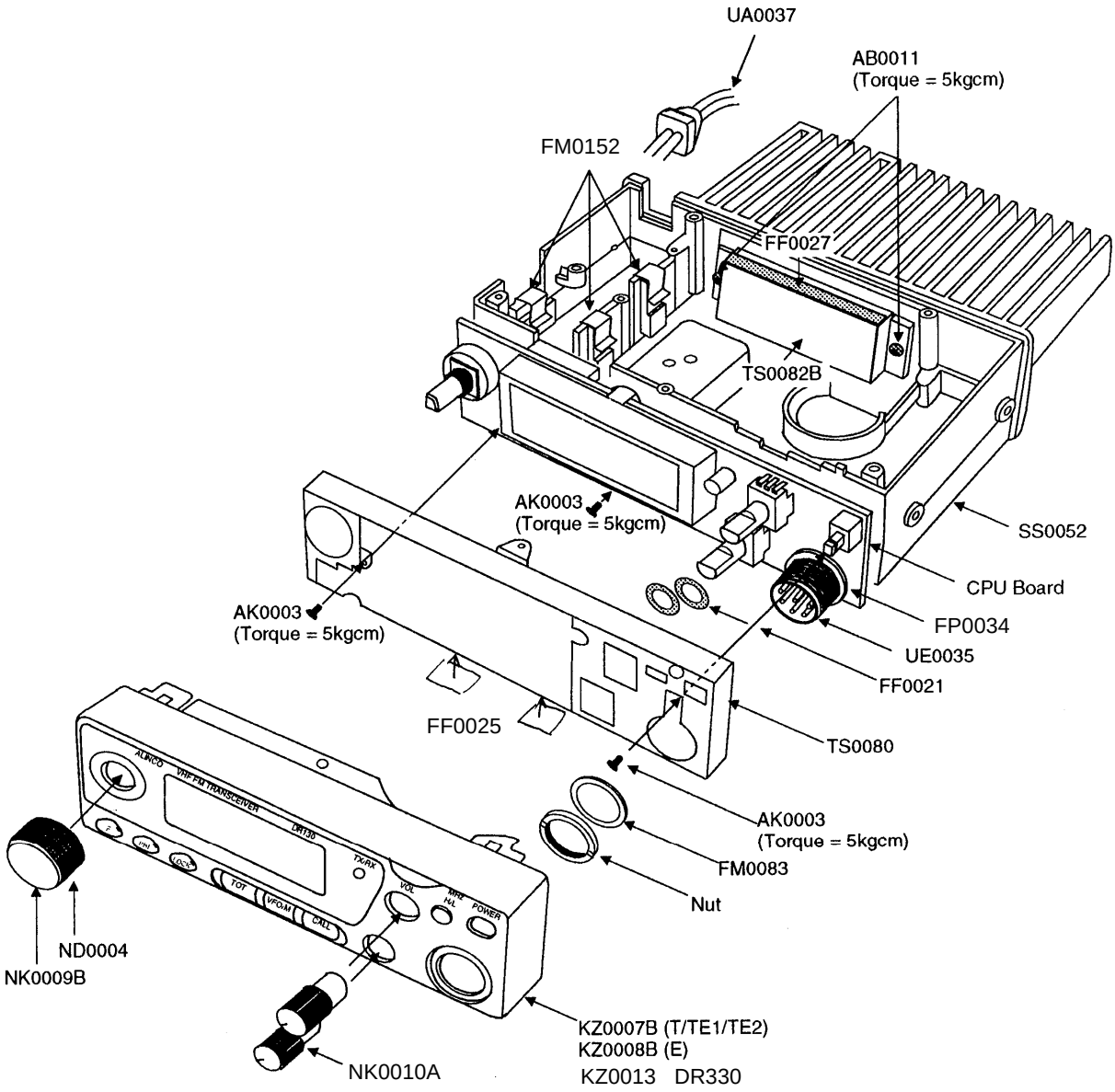


3) Top, Front View 1



3) Top, Front View 2

DR330
DR430



PARTS LIST

MAIN Unit

Ref No	Parts No	Description	Parts Name	Ver
		MAIN Unit		
C1	CU3035	Chip C.	C1608JB1H102KTA	
C2	CU3044	Chip C.	C1608JB1H562KTA	
C3	CU3100	Chip C.	C1608JB1C393ZTA	
C4	CS0049	Chip Tantal	TMCSA1C105MTR	
C5	CU3044	Chip C.	C1608JB1H562KTA	
C6	CU3031	Chip C.	C1608JB1H471KTA	
C7	CU3031	Chip C.	C1608JB1H471KTA	
C8	CU3001	Chip C.	C1608CH1H0R5CTA	
C9	CU3001	Chip C.	C1608CH1H0R5CTA	
C10	CU3031	Chip C.	C1608JB1H471KTA	
C11	CU3019	Chip C.	C1608CH1H470JTA	
C12	CU3031	Chip C.	C1608JB1H471KTA	
C13	CU3031	Chip C.	C1608JB1H471KTA	
C14	CU3031	Chip C.	C1608JB1H471KTA	
C15	CU3031	Chip C.	C1608JB1H471KTA	
C16	CU3031	Chip C.	C1608JB1H471KTA	
C17	CU3031	Chip C.	C1608JB1H471KTA	
C18	CU3031	Chip C.	C1608JB1H471KTA	
C19	CS0232	Chip Tantal	TMCMA1V474MTR	
C20	CU3059	Chip C.	C1608JF1E104ZTA	
C21	CU3059	Chip C.	C1608JF1E104ZTA	
C22	CU3047	Chip C.	C1608JB1H103KTA	
C23	CU3059	Chip C.	C1608JF1E104ZTA	
C24	CU3031	Chip C.	C1608JB1H471KTA	
C25	CU3035	Chip C.	C1608JB1H102KTA	
C26	CU3028	Chip C.	C1608CH1H271KTA	
C27	CU3047	Chip C.	C1608JB1H103KTA	
C28	CU3059	Chip C.	C.1608JF1E104ZTA	
C29	CU3102	Chip C.	C1608JB1C333KTA	
C30	CU3047	Chip C.	C1608JB1H103KTA	
C31	CU3049	Chip C.	C1608JB1E153KTA	
C32	CU3031	Chip C.	C1608JB1H471KTA	
C33	CU3031	Chip C.	C1608JB1H471KTA	
C34	CU3031	Chip C.	C1608JB1H471KTA	
C35	CU3031	Chip C.	C1608JB1H471KTA	
C36	CU3064	Chip C.	C1608CH1H1R5CTA	
C37	CU3035	Chip C.	C1608JB1H102KTA	
C38	CU3004	Chip C.	C1608CH1H030CTA	T/E
	CU3003	Chip C.	C1608CH1H020CTA	1-5
C39	CU3035	Chip C.	C1608JB1H102KTA	
C40	CE0342	Electrolytic.C	16MV470HC+TS	
C41	CE0340	Electrolytic.C	16MV47HC+TS	
C42	CE0340	Electrolytic.C	16MV47HC+TS	
C43	CU3031	Chip C.	C1608JB1H471KTA	
C44	CU3035	Chip C.	C1608JB1H102KTA	
C45	CE0339	Electrolytic.C	16MV10SW+TS	
C46	CU3031	Chip C.	C1608JB1H471KTA	
C47	CU3009	Chip C.	C1608CH1H080CTA	
C48	CU3047	Chip C.	C1608JB1H103KTA	
C49		Chip C.	See the "Version Table."	Ver
C50	CU3059	Chip C.	C1608JF1E104ZTA	
C51	CU3035	Chip C.	C1608JB1H102KTA	

MAIN Unit

Ref No	Parts No.	Description	Parts Name	Ver
C52	CU3031	Chip C.	C1608JB1H471KTA	
C53	CU3009	Chip C.	C1608CH1H080CTA	
C54	CE0339	Electrolytic.	16MV10SW+TS	
C55	CE0339	Electrolytic.	16MV10SW+TS	
C56	CU3035	Chip C.	C1608JB1H102KTA	
C57	CU3035	Chip C.	C1608JB1H102KTA	
C58		Chip C.	See the "Version Table."	Ver
C59	CU3031	Chip C.	C1608JB1H471KTA	
C60	CU3031	Chip C.	C1608JB1H471KTA	
C61	CU3011	Chip C.	C1608CH1H100DTA	
C62	CU3031	Chip C.	C1608JB1H471KTA	
C63	CU3003	Chip C.	C1608CH1H020CTA	
C64	CU3011	Chip C.	C1608CH1H100DTA	
C65		Chip C.	See the "Version Table."	Ver
C66	CE0341	Electrolytic.	16MV100HC+TS	
C67		Chip C.	See the "Version Table."	Ver
C68	CU3039	Chip C.	C1608JB1H222KTA	
C69	CU3035	Chip C.	C1608JB1H102KTA	
C70	CU3031	Chip C.	C1608JB1H471KTA	
C71	CU3031	Chip C.	C1608JB1H471KTA	
C72	CE0339	Electrolytic.	16MV10SW+TS	
C73	CU3031	Chip C.	C1608JB1H471KTA	
C74	CU3031	Chip C.	C1608JB1H471KTA	
C75	CU3031	Chip C.	C1608JB1H471KTA	
C76	CU3019	Chip C.	C1608CH1H470JTA	
C77	CU3011	Chip C.	C1608CH1H100DTA	wide
	CU3057	Chip C.	C1608CH1H130JTA	Narrow
C78	CU3031	Chip C.	C1608JB1H471KTA	
C79	CU3005	Chip C.	C1608CH1H040CTA	
C81	CE0337	Electrolytic.	50MV2R2SW+TS	
C82	CU3102	Chip C.	C1608JB1C333KTA	
C83	CE0339	Electrolytic.	16MV10SW+TS	
C84	CU3035	Chip C.	C1608JB1H102KTA	
C85	CE0343	Electrolytic.	16MV1000HC+T	
C86	CU3047	Chip C.	C1608JB1H103KTA	
C87	CU3047	Chip C.	C1608JB1H103KTA	
C88	CU3047	Chip C.	C1608JB1H103KTA	
C89	CU3047	Chip C.	C1608JB1H103KTA	
C90	CU3031	Chip C.	C1608JB1H471KTA	
C91	CU3022	Chip C.	C1608CH1H820JTA	
C92	CU3023	Chip C.	C1608CH1H101JTA	
C93	CU3017	Chip C.	C1608CH1H330JTA	
C94	CU3023	Chip C.	C1608CH1H101JTA	
C95	CE0340	Electrolytic.	16MV47HC+TS	
C96	CU3018	Chip C.	C1608CH1H390JTA	
C97		Chip C.	See the "Version Table."	Ver
C98	CE0338	Electrolytic.	25MV4R7SW+TS	
C99	CE0338	Electrolytic.	25MV4R7SW+TS	
C100	CU3031	Chip C.	C1608JB1H471KTA	
C101	CS0049	Chip Tanta	TMCSA1C105MTR	
C102	CS0237	Chip Tanta	TMCMA1A475MTR	
C103	CS0049	Chip Tanta	TMCSA1C105MTR	
C104	CS0049	Chip Tanta	TMCSA1C105MTR	

MAIN Unit

Ref No	Parts No.	Description	Parts Name	Ver
C105	CU3002	Chip C.	C1608CH1H010CTA	
C106	CU3002	Chip C.	C1608CH1H010CTA	
C107	CU3035	Chip C.	C1608JB1H102KTA	
C108	CU8042	Chip C.	C2012JB1C104KTA	
C109	CS0049	Chip Tantal	TMCSA1C105MTR	
C110	CU3035	Chip C.	C1608JB1H102KTA	
C111	CS0049	Chip Tantal	TMCSA1C105MTR	
C112		Ceramic C.	See the "Version Table."	Ver
C113		Ceramic C.	See the "Version Table."	Ver
C114		Ceramic C.	See the "Version Table."	Ver
C115		Ceramic C.	See the "Version Table."	Ver
C116		Ceramic C.	See the "Version Table."	Ver
C117	CU3031	Chip C.	C1608JB1H471KTA	
C118	CU3031	Chip C.	C1608JB1H471KTA	
C119	CU3013	Chip C.	C1608CH1H150JTA	
C120	CU3047	Chip C.	C1608JB1H103KTA	
C121	CU3047	Chip C.	C1608JB1H103KTA	
C122	CE0339	Electrolytic.C	16MV 10SW+TS	
C123		Ceramic C.	See the "Version Table."	Ver
C124	CU3011	Chip C.	C1608CH1H100DTA	
C125	CE0339	Electrolytic.C	16MV 10SW+TS	
C126	CU3031	Chip C.	C1608JB1H471KTA	
C128		Chip C.	See the "Version Table."	Ver
C129	CU3047	Chip C.	C1608JB1H103KTA	
C130	CU3019	Chip C.	C1608CH1H470JTA	
C132	CU3004	Chip C.	C1608CH1H030CTA	
C133	CU3031	Chip C.	C1608JB1H471KTA	
C134	CU3019	Chip C.	C1608CH1H470JTA	
C135	CU3019	Chip C.	C1608CH1H470JTA	
C136	CU3019	Chip C.	C1608CH1H470JTA	
C137	CU3031	Chip C.	C1608JB1H471KTA	
C138	CU3031	Chip C.	C1608JB1H471KTA	
C139	CU3031	Chip C.	C1608JB1H471KTA	
C140	CU3031	Chip C.	C1608JB1H471KTA	
C141	CU3031	Chip C.	C1608JB1H471KTA	
C142	CU3031	Chip C.	C1608JB1H471KTA	
C143	CU3019	Chip C.	C1608CH1H470JTA	
C144	CU3031	Chip C.	C1608JB1H471KTA	
C145	CU3035	Chip C.	C1608JB1H102KTA	
C146	CU3027	Chip C.	C1608CH1H221JTA	
C147	CU3023	Chip C.	C1608CH1H101JTA	
C148	CS0236	Chip Tantal	TMCMA0J685MTR	
C149	CU3035	Chip C.	C1608JB1H102KTA	
C150	CU3031	Chip C.	C1608JB1H471KTA	
C151	CU3035	Chip C.	C1608JB1H102KTA	
C152	CU3031	Chip C.	C1608JB1H471KTA	
C153	-	-		T/E
	CU3047	Chip C.	C1608JB1H103KTA(TE	1-5
C154	CU3013	Chip C.	C1608CH1H150JTA	

Ref No	Parts No.	Description	Parts Name	Ver
C155	CU3103	Chip C.	C1608UJ1H150JTA	
CN1	UE0191	Connector	11PS-JE	
CN2	UE0191	Connector	11PS-JE	
CN3	UE0043	Connector	PI22AO2M	
CN6	UE0043	Connector	PI22AO2M	
D1	XD0014	Diode	M1308	
D2	XD0130	Diode	DA204UT106	
D3	XD0130	Diode	DA204UT106	
D4	XD0129	Diode	1SS318 TT11	
D5	XD0013	Diode	MI407	
D6	XD0254	Diode	1SS355TT17	
D7	XD0254	Diode	1SS355TT17	
D8	XD0107	Diode	G3B	
D9	XD0254	Diode	1SS355TT17	
D10	XD0130	Diode	DA204UT106	
D11	XD0250	Diode	MA742-TX	
D12	XD0250	Diode	MA742-TX	
D13	XD0136	Diode	DTZ5.1ATT11	
D14	XD0257	Diode	RN711H	
D15	XD0257	Diode	RN711H	
D16	XD0145	Diode	DTZ2.2ATTl1	
D17	XD0129	Diode	1SS318 TT11	
FL1	XC0001	Filter	CFW455F	wide
	XC0017	Filter	CFW455G	Narrow
FL2	XF0014	Filter	30.85MHz 30.M15B9	wide
	XF0031Z	Filter	30.85MHz 30.M7B	Narrow
IC1	XA0068	IC	M5218FP-TO1 -1	
IC2	XA0082	IC	MC7808CT	
IC3	XA0144	IC	TK10487M	
IC4	XA0079	IC	uPCI241H	
IC5	XA0077A	IC	M57788M-E (T/E)	
IC5	XA0262	IC	M57788H (TE2)	
IC5	XA0261	IC	M57788L (TE1)	
IC6	XA0119	IC	AN8010MJE1	
JK1	UA0037	Connector	R-B2.0'0.2M Plug 15A	
JK2	UE0190A	Connector	ANTCable	
JK4	UJ0024	Connector	HSJ1403-01-OIO	
L1	QC0057	Coil	NL322522T-OI 5M	
L2	QC0062	Coil	NL322522T-039M	
L3	QA0069	Filter	QA0069 (T)	
	QA0061	Filter	QA0061(E)	
	QA0090	Filter	KEO7276 (TE2)	
	QA0089	Filter	KEO7275 (TE1)	
L4	QC0056	Coil	NL322522T-01 2M	
L5	QA0069	Fitter	QA0069(T)	
	QA0061	Filter	QA0061(E)	
	QA0090	Filter	KEO7276 (TE2)	
	QA0089	Filter	KEO7275 (TE1)	
L8	QC0043	Coil	NL322522T-2R2J	
L9	QKA95D	Coil	MR3.0 9.5T 0.6	

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Ref No	Parts No	Description	Parts Name	Ver
L10	QKA15F	Coil	MR4.0 1.5T 0.6	
L11	QKA25D	Coil	MR3.0 2.5T 0.6	
L12	QKA15D	Coil	MR3.0 1.5T 0.6	
L13	QKA15E	Coil	MR3.0 1.5T 0.8	
L14	QKA15E	Coil	MR3.0 1.5T 0.8	
L16	QKA15E	Coil	MR3.0 1.5T 0.8	
L17	QC0061	Coil	NL322522T-033M	
L18	QKA95D	Coil	MR3.0 9.5T 0.6	
L19	QKA35E	Coil	MR3.0 3.5T 0.8	
	-	-	-	
L20	QC0059	Coil	N L322522T-022M	
L21	QC0059	Coil	N L322522T-022M	
M101	SD0034		Earth Spring (DR130)	
M104	TS0085		RF Shield	
M105	TS0085		RF Shield	
M106	SD0040		Module Earth	
Q1	XE0013	PET	3SK184STX	
Q2	XE0013	FET	3SK184STX	
Q3	XT0094	Transistor	2SA1576 T1 06R	
Q4	XT0095	Transistor	2SC4081 T106R	
Q5	XT0095	Transistor	2SC4081 T106R	
Q6	XT0095	Transistor	2SC4081 T106R	
Q7	XT0061	Transistor	2SB1132 T100Q	
Q8	XT0096	Transistor	2SC4099 T106N	
Q9	XT0037	Transistor	2SC2412K T146R	
Q10	XU0131	Transistor	DTC114EU T106	
Q11	XU0148	Transistor	DTC144EU T106	
Q12	XU0112	Transistor	DTA114YU T106	
Q13	XT0112	Transistor	2SB1292F	
Q14	XT0095	Transistor	2SC4081 T106R	
Q15	Xr0084	Transistor	2SC2954 T1	
Q16	XT0095	Transistor	2SC4081 T106R	
Q17	XT0017	Transistor	2SA1162YTE85	
Q18	XE0022	Transistor	2SK1577	
Q19	XT0106	Transistor	2SC4226 T1R24	
Q20	XT0048	Transistor	2SC3357 T1RE	
Q21	XT0099	Transistor	2SA1736Y TE12L	
Q22	XT0095	Transistor	2SC4081 T106R	
Q24	XU0131	Transistor	DTC114EU T106	
Q25	XU0148	Transistor	DTC144EU T106	
Q27	XT0106	Transistor	2SC4226 T1R24	
Q28	XT0095	Transistor	2SC4081 T106R	
Q30	XU0148	Transistor	DTC144EUT1 06	
R1	RK4034	Chip R.	ERJ-12YJ471V	
R2	RK3038	Chip R.	ERJ3GSYJ102V	
R3	RK3071	Chip R.	ERJ3GSYJ564V	
R4	RK3034	Chip R.	ERJ3GSYJ471V	
R5	RK3062	Chip R.	ERJ3GSYJ104V	
R6	RK3042	Chip R.	ERJ3GSYJ222V	
R7	RK3042	Chip R.	ERJ3GSYJ222V	
R8	RK3054	Chip R.	ERJ3GSYJ223V	

Ref No	Parts No.	Description	Parts Name	Ver
R9	RK3046	Chip R.	ERJ3GSYJ472V	
R10	RK3040	Chip R.	ERJ3GSYJ152V	
R11	RK3036	Chip R.	ERJ3GSYJ681V	
R12	RK3071	Chip R.	ERJ3GSYJ564V	
R13	RK3050	Chip R.	ERJ3GSYJ103V	
R14	RK3057	Chip R.	ERJ3GSYJ393V	
R15	RK3042	Chip R.	ERJ3GSYJ222V	
R16	RK3051	Chip R.	ERJ3GSYJ123V	
R17	RK3050	Chip R.	ERJ3GSYJ103V	
R18	RK3050	Chip R.	ERJ3GSYJ103V	
R19	RK3058	Chip R.	ERJ3GSYJ473V	
R20	RK3042	Chip R.	ERJ3GSYJ222V	
R21	RK3050	Chip R.	ERJ3GSYJ103V	
R22	RK3054	Chip R.	ERJ3GSYJ223V	
R23	RK3057	Chip R.	ERJ3GSYJ393V	
R24	RK3038	Chip R.	ERJ3GSYJ102V	
R25	RK3050	Chip R.	ERJ3GSYJ103V	
R26	RK3054	Chip R.	ERJ3GSYJ223V	
R27	RK3042	Chip R.	ERJ3GSYJ222V	
R28	RK3042	Chip R.	ERJ3GSYJ222V	
R29	RK3041	Chip R.	ERJ3GSYJ182V	
R30		Chip R.	See the "Version Table."	Ver
R31	RK3056	Chip R.	ERJ3GSYJ333V	
R32	RK3062	Chip R.	ERJ3GSYJ104V	
R34	RK3062	Chip R.	ERJ3GSYJ104V	
R35	RK3026	Chip R.	ERJ3GSYJ101V	
R36	RK3062	Chip R.	ERJ3GSYJ104V	
R37	RK3070	Chip R.	ERJ3GSYJ474V	
R38	RK3042	Chip R.	ERJ3GSYJ222V	
R39	RK4034	Chip R.	ERJ-12YJ471V	
R40	RK3050	Chip R.	ERJ3GSYJ103V	
R41	RK3050	Chip R.	ERJ3GSYJ103V	
R42	RK3026	Chip R.	ERJ3GSYJ101V	
R43	RK3026	Chip R.	ERJ3GSYJ101V	
R44	RK3026	Chip R.	ERJ3GSYJ101V	
R45	RK3053	Chip R.	ERJ3GSYJ183V	
R46	RK3044	Chip R.	ERJ3GSYJ332V	
R47	RK3034	Chip R.	ERJ3GSYJ471V	
R48	RK3049	Chip R.	ERJ3GSYJ822V	
R49	RK3032	Chip R.	ERJ3GSYJ331V	
R50	RK3026	Chip R.	ERJ3GSYJ101V	
R51	RK3050	Chip R.	ERJ3GSYJ103V	
R52	RK3071	Chip R.	ERJ3GSYJ564V	
R53	RK3054	Chip R.	ERJ3GSYJ223V	
R54	RK3042	Chip R.	ERJ3GSYJ222V	
R55	RK3001	Chip R.	ERJ3GSY0R00V	
R56	RK2012	Chip R.	MCR50JZHJ470	
R57	RK3026	Chip R.	ERJ3GSYJ101V	
R58	RK3030	Chip R.	ERJ3GSYJ221V	
R59	RK3030	Chip R.	ERJ3GSYJ221V	
R60	RK3044	Chip R.	ERJ3GSYJ332V	
R61	RK3026	Chip R.	ERJ3GSYJ101V	
R64	RK3045	Chip R.	ERJ3GSYJ392V	
R65	RK3026	Chip R.	ERJ3GSYJ101V	

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Ref No	Parts No.	Description	Parts Name	Ver
R66	RK3026	Chip R.	ERJ3GSYJ101V	
R67	RK3001	Chip R.	See the "Version Table."	Ver
R68	RK3032	Chip R.	ERJ3GSYJ331V	
R69	RK3042	Chip R.	ERJ3GSYJ222V	
R70	RK3054	Chip R.	ERJ3GSYJ223V	
R71	RK3050	Chip R.	ERJ3GSYJ103V	
R72	RK3060	Chip R.	ERJ3GSYJ683V	
R73	RK3060	Chip R.	ERJ3GSYJ683V	
R74	RK3047	Chip R.	ERJ3GSYJ562V	
R75	RK3026	Chip R.	ERJ3GSYJ101V	
R76	RK3050	Chip C.	ERJ3GSYJ103V	
R77	RK3018	Chip R.	ERJ3GSYJ220V	
R78	RK3022	Chip R.	ERJ3GSYJ470V	
R79	RK3050	Chip R.	ERJ3GSYJ103V	
R80	RK3026	Chip R.	ERJ3GSYJ101V	
R81	RK0105	Chip R.	ERJ6GEYJ2R2V	
R82	RK3054	Chip R.	ERJ3GSYJ223VT	
R83	RK3044	Chip R.	ERJ3GSYJ332V	
R84	RK3001	Chip R.	ERJ3GSY0R00V(T/E)	T/E
	-	-	-	TE1-5
R85	RK4028	Chip R.	ERJ-12YJ151V	
R86	RK3042	Chip R.	ERJ3GSYJ222V	
R87	RK3042	Chip R.	ERJ3GSYJ222V	
R90	RK3054	Chip R.	ERJ3GSYJ223V	
R92	RK3050	Chip R.	ERJ3GSYJ103V	
R93	RK3038	Chip R.	ERJ3GSYJ102V	
R94	RK3036	Chip R.	ERJ3GSYJ681V	
R95	RK3030	Chip R.	ERJ3GSYJ221V	
R96	RK3034	Chip R.	ERJ3GSYJ471V	
R97	RK4018	Chip R.	ERJ-12YJ220V	
R98	RK3050	Chip R.	ERJ3GSYJ103V	
R99	RK3001	Chip R.	ERJ3GSY0R00V	
R100	RK3068	Chip R.	ERJ3GSYJ334V	
R101	RK3030	Chip R.	ERJ3GSYJ221V	
R102	RK3050	Chip R.	ERJ3GSYJ103V	
R103	RK0130	Chip R.	ERJ6GSYJ4R7V	
R104	RK3038	Chip R.	ERJ3GSYJ102V	
R106	RK3062	Chip R.	ERJ3GSYJ104V	
R107	RK3062	Chip R.	ERJ3GSYJ104V	
R108	RK3058	Chip R.	ERJ3GSYJ473V	
R109		Chip R.	See the "Version Table."	Ver
R110	RK3026	Chip R.	ERJ3GSYJ101V	
R111	RK3038	Chip R.	ERJ3GSYJ102V	
R112	RK3055	Chip R.	ERJ3GSYJ273V	
R113	RK3046	Chip R.	ERJ3GSYJ472V	
R114	RK3054	Chip R.	ERJ3GSYJ223V	
R115	RK3001	Chip R.	ERJ3GSY0R00V	
R117	RK3062	Chip R.	ERJ3GSYJ104V	
R119	RK3038	Chip R.	ERJ3GSYJ102V	
R120	RK3039	Chip R.	ERJ3GSYJ122V	
R121	RK3054	Chip R.	ERJ3GSYJ223V	
R124	RK3038	Chip R.	ERJ3GSYJ102V	

Ref No	Parts No.	Description	Parts Name	Ver
TC1	CT0031	Trimmer	CTZ-05AW	
TC2		Trimmer	See the "Version Table	Ver
TC3	CT0012	Trimmer	CTZ-10AW	
TH1	XS0012	Thermistor	TD5-C220DH	
TH2	XS0013	Thermistor	TD5-C268DH	
TH3	XS0014	Thermistor	TBPS1 R223K460H5Q	
VRl	RH0106	Trim.Pot	EVM1YSX50BQ4	
VR2	RH0103	Trim.Pot	EVM1YSX50B14	
VR3	RH0106	Trim. Pot	EVM1YSX50BQ4	
VR4	RH0060	Trim.Pot	MVR32HXBR N473	
VR6	RH0061	Trim.Pot	MVR32HXBR N472	
W5	MPAL05AA	Wire	#30 P02-050-02 (TE1/2	TE1-5
X1	XQ0037	Crystal	HC-49/U-12.8MHz	
X2	XK0002	Discrimina	CDBM455C7	
X3	XQ0058	Crystal	UM5 30.395MHz	
YI	TZ0049		Silicon Dumper	
Y2	TZ0049		Silicon Dumper	
Y3	TZ0049		Silicon Dumper	
Y4	TZ0056		Silicon Dumper 49U	
Y5	YZ0001		Silicon Grease G746 lg	

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Ref No	Parts No	Description	Parts Name	Ver
		CPU Unit		
C201	CU3035	Chip C.	C1608JB1H102KTA	
C202	CU3035	Chip C.	C1608JB1H102KTA	
C203	CU3035	Chip C.	C1608JB1H102KTA	
C204	CU3035	Chip C.	C1608JB1H102KTA	
C205	CU3101	Chip C.	C1608JB1C473KTA	
C206	CE0312	Electrolytic.C	ECEV1CA100R	
C207	CU3035	Chip C.	C1608JB1H102KTA	
C208	CS0232	Chip Tantal	TMCMD1A474MTR	
C209	CU3035	Chip C.	C1608JB1H102KTA	
C210	CU3035	Chip C.	C1608JB1H102KTA	
C211	CU3035	Chip C.	C1608JB1H102KTA	
C212	CU3035	Chip C.	C1608JB1H102KTA	
C213	CU3035	Chip C.	C1608JB1H102KTA	
C215	CU3035	Chip C.	C1608JB1H102KTA	
C216	CU3059	Chip C.	C1608JF1E104ZTA	
C217	CU3051	Chip C.	C1608J81E223KTA	
C218	CU3059	Chip C.	C1608JF1E104ZTA	
C219	CU3059	Chip C.	C1608JF1E104ZTA	
C220	CU3059	Chip C.	C1608JF1E104ZTA	
C221	CU3023	Chip C.	C1608CH1H101JTA	
C222	CU3023	Chip C.	C1608CH1H101JTA	
C223	CU3051	Chip C.	C1608JB1E223KTA	
C225	CU3023	Chip C.	C1608CH1H101JTA	
C226	CU3023	Chip C.	C1608CH1H101JTA	
C227	CU3035	Chip C.	C1608JB1H102KTA	
C229	CS0209	Chip Tantal	TMCMB0J106MTR	
C230	CU3035	Chip C.	C1608JB1H102KTA	
C231	CE0312	Electrolytic.C	ECEV1CA100R	
C234	CU3035	Chip C.	C1608JB1H102KTA	
C235	CU3047	Chip C.	C1608JB1H103KTA	
C236	CU3031	Chip C.	C1608JH1H471KTA	
C237	CU3035	Chip C.	C1608JB1H102KTA	
C238	CU3035	Chip C.	C1608JB1H102KTA	
C239	CU3023	Chip C.	C1608CH1H101JTA	
C240	CU3023	Chip C.	C1608CH1H101JTA	
C241	CU3023	Chip C.	C1608CH1H101JTA	
C242	CU3035	Chip C.	C1608JB1H102KTA	
C243	CS0237	Chip Tantal	TMCMA1A475MTR	
C244	CU3051	Chip C.	C1608JB1E223KTA	
C245	CS0237	Chip Tantal	TMCMA1A475MTR	
C246	CU3035	Chip C.	C1608JB1H102KTA	
C247	CU3085	Chip C.	C1608CH1H300JTA	
C248	CU3085	Chip C.	C1608CH1H300JTA	
C249	CS0218	Chip Tantal	TMCMD1A476MTR	
C250	CU3043	Chip C.	C1608J81H472KTA	
C251	CU3043	Chip C.	C1608JB1H472KTA	
C252	CU3059	Chip C.	C1608JF1E104ZTA	
CN201	UE0170	Connector	B9B-ZR	
CN202	UE0192	Connector	11R-JE	
CN203	UE0192	Connector	11R-JE	
CN204	UE0165	Connector	B4B-ZR	

Ref No	Parts No.	Description	Parts Name	Ver
D201	XD0255	Diode	MA8110H-TX	
D202	XD0127	Diode	MA704WA.TX	
D203	XD0230	Diode	DAN202U T106	
D204	XD0230	Diode	DAN202U Tl 06	
D205	XL0029	LED	TLSG264	
DS201	EL0024		LCD DRW130	
1C201	XA0289	IC	M37410M6H271FP	
1C202	XA0227	IC	X24CO2S8-3.0	
1C205	XA0238	IC	AN78LO5M TX	
1C206	XA0208	IC	RH5VA45AA-T1	
1C207	XA0198	IC	RH5VA32AA-T1	
1C209	XA0236	IC	BU4052BCF	
JK201	UE0035	Connector	FM214-8SMPY	
M201	FM0077		LCDHolder	
M202	FG0133		LCD Rubber Connector	
M203	TL0008		LCDFilter	
M204	FP0034		Mic Connector Spacer	
M205	FP0069		Crystal Sheet	
M206	DG0013		LCDLight	
PL201	EP0003	Lamp	BQO31-30403A	
PL202	EP0003	Lamp	BQO31-30403A	
Q201	XT0095	Transistor	2SC4081 T106R	
Q202	XT0113	Transistor	2SC2873Y TE12L	
Q203	XU0029	Transistor	DTC114YU T106	
Q204	XU0145	Transistor	DTC143TU T106	
Q205	XU0112	Transistor	DTA114YU T106	
Q206	XU0112	Transistor	DTA114YU T106	
Q208	XU0060	Transistor	UMC2TR	
Q209	XU0112	Transistor	DTA114YU T106	
R201	RK3062	Chip R	ERJ3GSYJ104V	
R202	RK3052	Chip R	ERJ3GSYJ153V	
R203	RK3072	Chip R	ERJ3GSYJ684V	
R204	RK3052	Chip R	ERJ3GSYJ153V	
R205	RK3043	Chip R	ERJ3GSYJ272V	
R206	RK3026	Chip R	ERJ3GSYJ101V	
R207	RK3038	Chip R	ERJ3GSYJ102V	
R208	RK3026	Chip R	ERJ3GSYJ101V	
R209	RK3074	Chip R	ERJ3GSYJ105V	
R210	RK3052	Chip R	ERJ3GSYJ153V	
R211	RK3062	Chip R	ERJ3GSYJ104V	
R212	RK3054	Chip R	ERJ3GSYJ223V	
R213	RK3070	Chip R	ERJ3GSYJ474V	
R214	RK3058	Chip R	ERJ3GSYJ473V	
R215	RK3102	Chip R	ERJ3GSYJ203V	
R216	RK3050	Chip R	ERJ3GSYJ103V	
R217	RK3102	Chip R	ERJ3GSYJ203V	
R218	RK3050	Chip R	ERJ3GSYJ103V	

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Ref No	Parts No.	Description	Parts Name	Ver
R219	RK3102	Chip R	ERJ3GSYJ203V	
R220	RK3050	Chip R	ERJ3GSYJ103V	
R221	RK3102	Chip R	ERJ3GSYJ203V	
R222	RK3102	Chip R	ERJ3GSYJ203V	
R223	RK3058	Chip R	ERJ3GSYJ473V	
R224	RK3055	Chip R	ERJ3GSYJ273V	
R225	RK3046	Chip R	ERJ3GSYJ472V	
R226	RK3070	Chip R	ERJ3GSYJ474V	
R227	RK3038	Chip R	ERJ3GSYJ102V	
R228	RK3038	Chip R	ERJ3GSYJ102V	
R229	RK3038	Chip R	ERJ3GSYJ102V	
R230	RK3038	Chip R	ERJ3GSYJ102V	
R231	RK3038	Chip R	ERJ3GSYJ102V	
R232	RK3050	Chip R	ERJ3GSYJ103V	
R234	RK3038	Chip R	ERJ3GSYJ102V	
R235	RK3038	Chip R	ERJ3GSYJ102V	
R236	RK3074	Chip R	ERJ3GSYJ105V	
R238	RK3038	Chip R	ERJ3GSYJ102V	
R239	RK3062	Chip R	ERJ3GSYJ104V	
R241	RK3062	Chip R	ERJ3GSYJ104V	
R242	RK3062	Chip R	ERJ3GSYJ104V	
R243	RK3062	Chip R	ERJ3GSYJ104V	
R244	RK3062	Chip R	ERJ3GSYJ104V	
R247	RK3050	Chip R	ERJ3GSYJ103V	
R248	RK3050	Chip R	ERJ3GSYJ103V	
R249	RK3050	Chip R	ERJ3GSYJ103V	
R250	RK3046	Chip R.	ERJ3GSYJ472V	
R251	RK3046	Chip R	ERJ3GSYJ472V	
R252	R K3046	Chip R	ERJ3GSYJ472V	
R253	RK3038	Chip R	ERJ3GSYJ102V	
R254	RK3038	Chip R	ERJ3GSYJ102V	
R255	RK0014	Chip R	ERJ6GEYJ680V	
R256	RK3042	Chip R	ERJ3GSYJ222V	
R257	RK3001	Chip R	ERJ3GSYJ000V	
R258	RK3046	Chip R	ERJ3GSYJ472V	
R259	RK3054	Chip R	ERJ3GSYJ223V	
R260	RK3038	Chip R	ERJ3GSYJ102V	
R261	RK3038	Chip R	ERJ3GSYJ102V	
R262	RK3038	Chip R	ERJ3GSYJ102V	
R263	RK3038	Chip R	ERJ3GSYJ102V	
R264	RK3038	Chip R	ERJ3GSYJ102V	
R265	RK3050	Chip R	ERJ3GSYJ103V	
R267	RK3038	Chip R	ERJ3GSYJ102V	
R268	RK3038	Chip R	ERJ3GSYJ102V	
R269	RK3054	Chip R	ERJ3GSYJ223V	
R270	RK3001	Chip R	ERJ3GSYJ000V	
R271	RK3062	Chip R	ERJ3GSYJ104V	
R272	RK3058	Chip R	ERJ3GSYJ473V	
R273	RK3058	Chip R	ERJ3GSYJ473V	
R274	RK3038	Chip R	ERJ3GSYJ102V	
R275	RK3062	Chip R	ERJ3GSYJ104V	
R276	RK3034	Chip R	ERJ3GSYJ471V	
R277	RK3034	Chip R	ERJ3GSYJ471V	
R279	RK3001	Chip R	ERJ3GSYJ000V	

Ref No	Parts No.	Description	Parts Name	Ver
R280	RK3038	Chip R	ERJ3GSYJ102V	
R281	RK3038	Chip R	ERJ3GSYJ102V	
R282	RK3001	Chip R	ERJ3GSYJ000V	
R284	RK3001	Chip R	ERJ3GSYJ000V	E
R285	RK3001	Chip R	ERJ3GSYJ000V	T
R286	RK3001	Chip R	ERJ3GSYJ000V	
R287	RK3001	Chip R	ERJ3GSYJ000V	
R288	RK3052	Chip R	ERJ3GSYJ153V	
R289	RK3052	Chip R	ERJ3GSYJ153V	
R290	RK3052	Chip R	ERJ3GSYJ153V	
R291	RK3052	Chip R	ERJ3GSYJ153V	
R292	RK3052	Chip R	ERJ3GSYJ153V	
R293	RK3050	Chip R	ERJ3GSYJ103V	
R294	RK3001	Chip R	ERJ3GSYJ000V(T/E)	T/E
R295	RK3001	Chip R	ERJ3GSYJ000V(T/E)	T/E
S201	UU0015	Switch	SKQD-901	
S202	UU0015	Switch	SKQD-901	
S203	UU0015	Switch	SKQD-901	
S204	UU0015	Switch	SKQD-901	
S205	UU0015	Switch	SKQD-901	
S206	UU0015	Switch	SKQD-901	
S207	UU0015	Switch	SKQD-901	
S209	UQ0011	Switch	ESB-64801	
S210	UR0002	Switch	EVQ-WQGF1 524B	
VR201	RV0009	Trim.Pot	EVU-F2AF20B1 4	
VR202	RV0009	Trim. Pot	EVU-F2AF20B 1 4	
W1	MACL04AA		#30Blue 2-40-2 (T/E)	T/E
W2	MRCL04AA		#30Red 2-40-2 (E)	E
W3	MPAL05AA		#30PO2-50-2 (TE 1/2)	TE1-5
W4	MPAL05AA		#30PO2-50-2 (TE 1/2)	TE1-5
X203	XQ0045	Crystal	DSMT3.58MHz 18P	
Y201	TT1002		Tube 1mm x 12	
Y202	YZ0042	Adhesion	Bond G17	

VCO Unit/SP Unit

Ref No	Parts No	Description	Parts Name	Ver
		VCO Unit		
C301	CU3035	Chip C.	C1608JB1H102KTA	
C302	CU3017	Chip C.	C1608CH1H330JTA	
C303	CU3031	Chip C.	C1608CH1H471KTA	
C304	CU3059	Chip C.	C1608JF1E104ZTA	
C305	CU3035	Chip C.	C1608JB1H102KTA	
C306	CS0220	Chip Tantal	TMCMA1C225MTR	
C307	CU3035	Chip C.	C1608JB1H102KTA	
C308	CU3059	Chip C.	C1608JF1E104ZTA	
C310		Chip C.	See the "Version Table."	Ver
C311		Chip C.	See the "Version Table."	Ver
C312	CU3009	Chip C.	C1608CH1H080CTA	
C313	CU3003	Chip C.	C1608CH1H020CTA	
C314	CU3035	Chip C.	C1608JB1H102KTA	
C315	CS0217	Chip Tantal	TMCMC1A226MTR	
C316	CU3001	Chip C.	C1608CH1H0R5CTA	
C317	CU3003	Chip C.	C1608CH1H020CTA	
C318	CU3003	Chip C.	C1608CH1H020CTA	
C319	CS0061	Chip Tantal	TMSCA1V224MTR	
C320	CU3006	Chip C.	C1608CH1H050CTA	
C321	CS0220	Chip Tantal	TMCMA1C225MTR	
C322	CU3035	Chip C.	C1608JB1H102KTA	
C323	CS0063	Chip Tantal	TMSCA1V104MTR	
C324	CU3047	Chip C.	C1608CH1H103KTA	
C326	CU3035	Chip C.	C1608JB1H102KTA	
C327	CU3031	Chip C.	C1608JB1H471KTA	
C328	CU3031	Chip C.	C1608JB1H471KTA	
C329	CU3047	Chip C.	C1608CH1H103KTA	
C330	CU3031	Chip C.	C1608JB1H471KTA	
C331	CU3047	Chip C.	C1608CH1H103KTA	
C332	CU3035	Chip C.	C1608JB1H102KTA	
CN301	UE0188	Connector	B9P-BC-2	
CN302	UE0185	Connector	B6P-BC-2	
D301	XD0132	Diode	1SV215TPH4	
D302	XD0132	Diode	1SV215TPH4	
D303	XD0131	Diode	1SV214TPH4	
TC301	XA0235	IC	M56760FP-600A	
L301	QC0053	Coil	LER015T1R0M	
L302	QC0096	Coil	LER015TR33M	
L303	QC0053	Coil	LER015T1R0M	
L304		Coil	See the "Version Table."	Ver
L305	QC0219	Coil	MLF2012DR10KT	
L306		Coil	See the "Version Table."	Ver
M301	TS0081	Case	VC0 Case	
M302	YZ0013		Hot Melt TC3764(3M)1g	

Ref No	Parts No.	Description	Parts Name	Ver
Q301	XE0010	FET	2SK508K52-T2B	
Q302	XT0111	Transistor	2SC4081LN T106S	
Q303	XT0111	Transistor	2SC4081LN T106S	
Q304	XT0106	Transistor	2SC4226T1R24	
Q305	XT0096	Transistor	2SC4099T106N	
Q306	XT0111	Transistor	2SC4081LN T106S	
Q307	XU0060	Transistor	UMC2TR	
Q308	XU0131	Transistor	DTC114EU T106	
R301	RK3046	Chip R.	ERJ3GSYJ472V	
R302	RK3043	Chip R.	ERJ3GSYJ272V	
R303	RK3030	Chip R.	ERJ3GSYJ221V	
R304	RK3042	Chip R.	ERJ3GSYJ222V	
R305	RK3058	Chip R.	ERJ3GSYJ473V	
R306	RK3046	Chip R.	ERJ3GSYJ472V	
R307	RK3026	Chip R.	ERJ3GSYJ101V	
R308	RK3060	Chip R.	ERJ3GSYJ683V	
R309	RK3026	Chip R.	ERJ3GSYJ101V	
R310	RK3025	Chip R.	ERJ3GSYJ820V	
R311	RK3026	Chip R.	ERJ3GSYJ101V	
R312	RK3052	Chip R.	ERJ3GSYJ153V	
R313	RK3044	Chip R.	ERJ3GSYJ332V	
R314	RK3032	Chip R.	ERJ3GSYJ331V	
R316	RK3054	Chip R.	ERJ3GSYJ223V	
R317	RK3050	Chip R.	ERJ3GSYJ103V	
R318	RK3042	Chip R.	ERJ3GSYJ222V	
R319	RK3026	Chip R.	ERJ3GSYJ101V	
R320	RK3034	Chip R.	ERJ3GSYJ471V	
R321	RK3034	Chip R.	ERJ3GSYJ471V	
R322	RK3022	Chip R.	ERJ3GSYJ470V	
R324	RK3058	Chip R.	ERJ3GSYJ473V	
R325	RK3046	Chip R.	ERJ3GSYJ472V	
R326	RK3046	Chip R.	ERJ3GSYJ472V	
R327	RK3001	Chip R.	ERJ3GSY0R00V	
R328	RK3030	Chip R.	ERJ3GSYJ221V	
R329	RK3058	Chip R.	ERJ3GSYJ473V	
R330	RK3070	Chip R.	ERJ3GSYJ474V	
R331	RK3022	Chip R.	ERJ3GSYJ470V	
R332	RK3062	Chip R.	ERJ3GSYJ104V	
		SP Unit		
	ES0017	Speaker	VS-57-0814-1.5W	
	FG0040		Speaker Cushion	
	UX1047		Wire	

Mechanical Parts/Packing

Ref No	Parts No.	Description	Parts Name	Ver
		Mechanical Parts		
	AB0011		S3+8FeNi	
	AE0014	Screw	B2.6+8FeBG	
	AK0003	Screw	0B2.6+6FeNi1	
	AV0001	Screw	B2.6+6FeNi	
	DS0288		Specifications Card	T
	DS0289		Specifications Card	E
	FF0015		Light Shield cloth	
	FF0021		Volume Cloth	
	FF0025		Cloth 7.5-10	
	FF0027		Cloth 9-56	
	FF0028		Cloth 10-22	
	FF0030		Cloth 4-22	
	FF0031			
	FG0147		Rubber	
	FM0152		IC Spring	
	FM0083	Washer	Spring Washer	
	KS0041CZ		Bottom Case	
	KZ0007B		Front Panel DR430T	T/1-5
	KZ0008B		Front Panel DR430E	E
	KZ0009		Top Case	
	ND0004		Dial Cover	
	NK0047Z		Dial Knob	
	NK0010A		Volume Knob	
	NP0066		Power Switch Knob	
	SS0052CZ		Chassis	
	TS0056		VCO Shield K1	
	TS0080Z		Front Shield Case	
	TS0082B		Module Shield M40	
	TZ0033		Crystal Converter Insulator	
	UP0246	P.C.B.	PWB DRM40	
	YZ0062		Filament Tape	1-5

Ref No	Parts No.	Description	Parts Name	Ver
		Packing		
	EMS-5		Microphone(EHM35B)	E
	MMS-11		Microphone(EHM38A)	T/1-5
	DK0115		Protection Seal	
	DS0288		Specifications Card	T
	DS0289		Specifications Card	E
	DS0306		Specifications Card	2
	DS0305		Specifications Card	1
	ADFM78		Bracket(FM0078)	
	HH0042		CushionDR130	
	HK0313		Item Carton DRl30	T/1-5
	HK0314		Item Carton DR130	E
	HM0119A		Item Carton	
	HP0016		Protection Bag (Button Cover)	
	HP0028		Protection Bag (Instr. Card)	
	HP0035		Protection Bag (Radio)	
	HU0047		Fixture (A) DR130	
	HU0048		Fixture (B) DR130	
	KZ0003		Button Cover	
	PH0009		Registration Card	T
	PK0048		Schematic Diagram	T/1-5
	PR0231		Seal	1
	PR0232		Seal	2
	PR0237		FCC Part15 Seal	T
	PS0181		Instruction Card	E
	PS0182		Instruction Card	T/1-5
	PT0004A		Lot Number Seal	
	YZ0118		Tape50mm	
	YZ0121		Tape10mm	

Ref No	Parts No	Description	Parts Name	Ver
	EMS-5			
C1	CC5029	Ceramic C.	X1E393KYA	
C2	CK0011	Ceramic C.	SC45TF1C104Z-A	
C3	CE0037	Electrolytic.C	MS5 6.3V 100pF	
C4	CK0003	Ceramic C.	50V102	
D1	XD0067	Diode	MA700	
R1	RD0031	Resistor	R20 1/4W 680	
R2	RD0021	Resistor	R20 1/4W 180	
R3	RD0039	Resistor	R20 1/4W 2.2K	
R4	RD0039	Resistor	R20 1/4W 2.2K	
R6	RD0040	Resistor	R20 1/4W 2.7K	
S1	US0015	Switch	HSWO880-01 -21 0	
S2	UU0009	Switch	EVQ-QHJO4G	
S3	UU0009	Switch	EVQ-QHJO4G	
S4	UM0002	Switch	Micro Switch SS-5	
	AS0142		Screw Set	
	DE0006		Stopper	
	EY0006	Microphone	WMI60AT	
	FG0045		Mic Rubber Cushion	
	HP0036		Protection Bag	
	KB0033		Rear Case	
	KM0071A		Front Case	
	NP0041		PTT Button	
	NP0042		Up Button	
	NP0043		Down Button	
	NS0003		SlideKnob	
	SC0004		PTT Spring	
	UE0051A		CurlCode	
	UP0193		P.C.B.	
	UX0133	Wire	EMS-5	

Ref No	Parts No.	Description	Parts Name	Ver
	EMS-11			
C1	CU8003	Chip C.	C2012JF1E104Z	
C2	CU8035	Chip C.	C2012B1E393K	
C3	CU8003	Chip C.	C2012JF1E104Z	
C4	CU8012	Chip C.	C2012JB1H471KTA	
C5	CU8012	Chip C.	C2012JB1H471KTA	
C6	CU8016	Chip C.	C2012JB1H102K	
C7	CE0315	Electrolytic.	ECEV1CA470P	
C8	CK0004	Ceramic C.	CK45-F1H102ZTA	
C10	CS0066	Chip Tanta	TMCSB1D225MTR	
FAR1	XB0001	Crystal	FARC4CAO3580000K01 R	
1C1	XA0042	IC	LR40872	
Q1	XT0031	Transistor	2SC2712Y TE85L	
R1	RK0062	Chip R.	ERJ6GEYJ473V	
R2	RK0062	Chip R.	ERJ6GEYJ473V	
R3	RK0035	Chip R.	ERJ6GEYJ102V	
R4	RK0039	Chip R.	ERJ6GEYJ222V	
R5	RK0039	Chip R.	ERJ6GEYJ222V	
R7	RK0039	Chip R.	ERJ6GEYJ222V	
R8	RK0021	Chip R.	ERJ6GEYJ181V	
R9	RK0040	Chip R.	ERJ6GEYJ272V	
R10	RK0069	Chip R.	ERJ6GEYJ104V	
R15	RK0025	Chip R.	ERJ6GEYJ331V	
R16	RK3001	Chip R.	ERJ3JSYJ000V	
R17	RK3002	Chip R.	ERJ3JSYJ000V	
SW1	RK3003	Switch	Micro Switch SS-5	
SW2	RK3004	Switch	EVQ-QHJ-04G	
SW3	RK3005	Switch	EVQ-QHJ-04G	
SW4	RK3006	Switch	HSWO880-01-210	
VR1	RK3007	Trim. Pot	CVR-42A-1 03AW1D	
W1	RK3008	Wire	#28AO2-020-02	
W2	RK3009	Wire	#28YO2-020-02	
	RK3010	Screw	1M2.3+12FeCr	
	RK3011	Screw	1M3.5+10FeN	
	RK3012	Screw	PM2+5FeCr	
	RK3013	Screw	PM3+8FeBC	
	RK3014		Stopper	
	RK3015	Microphone	WM-60AT	
	RK3016		Mic Rubber Cushion	
	RK3017		Rubber Switch	
	RK3018		Protection Bag	
	RK3019		Rear Case	
	RK3020		Front Case	
	RK3021		PTT Button	
	RK3022		Up Button	
	RK3023		Down Button	
	RK3024		Slide Switch	
	RK3025		PTT Spring	
	RK3026	Tube	1.Oxlmm	
	RK3027		Curl Code EMS3	
	RK3028		P.C.B.	

Ref No	Parts No.	Description	Parts Name	Ver
	EJ19U			
C401	CU3035	Chip C.	C1608JB1H102KTA	
1C401	XA0226	IC	X24CO8S 1 4-3.OT	
R401	RK3038	Chip R	ERJ3GSYJ102V	
R402	RK3038	Chip R	ERJ3GSYJ102V	
	FG0057		Cushion	
	UX1049		WireEJ19u	

Ref No	Parts No.	Description	Parts Name	Ver
	EJ20			
C501	CS0236	Chip Tanta	TMCMA0J685MTR	
C502	CU3059	Chip C.	C1608JF1E104ZTA	
C503	CS0230	Chip Tanta	TMCMA1E105MTR	
C504	CU3059	Chip C.	C1608JF1E104ZTA	
C505	CS0230	Chip Tanta	TMCMA1E105MTR	
C506	CS0230	Chip Tanta	TMCMA1E105MTR	
C507	CS0230	Chip Tanta	TMCMA1E105MTR	
C508	CU3023	Chip C.	C1608CH1H101JTA	
C509	CS0237	Chip Tanta	TMCMA1A475MTR	
C510	CU3019	Chip C.	C1608CH1H470JTA	
C511	CU3035	Chip C.	C1608JB1H102KTA	
C512	CU3015	Chip C.	C1608CH1H220KTA	
C513	CU3015	Chip C.	C1608CH1H220KTA	
CN501	UX1050	Wire	EJ20u	
1C501	XA0239	IC	AK2341	
Q501	XT0095	Transistor	2SC4081 T106R	
R501	RK3040	Chip R.	ERJ3GSYJ152V	
R502	RK3022	Chip R.	ERJ3GSYJ470V	
R503	RK3067	Chip R.	ERJ3GSYJ274V	
R504	RK3038	Chip R.	ERJ3GSYJ102V	
R505	RK3051	Chip R.	ERJ3GSYJ123V	
R506	RK3089	Chip R.	ERJ3GSYJ912V	
R507	RK3067	Chip R.	ERJ3GSYJ274V	
R508	R K3047	Chip R.	ERJ3GSYJ562V	
R509	RK3068	Chip R.	ERJ3GSYJ334V	
R510	RK3054	Chip R.	ERJ3GSYJ223V	
R511	RK3054	Chip R.	ERJ3GSYJ223V	
R512	RK3055	Chip R.	ERJ3GSYJ273V	
R513	RK3074	Chip R.	ERJ3GSYJ105V	
R514	RK3066	Chip R.	ERJ3GSYJ224V	
R515	RK3048	Chip R.	ERJ3GSYJ682V	
VR501	RH0106	Trim. Pot	EVM1YSX50BQ4	
X501	XQ0057	Crystal	DS-MAT 3.6864MHz	
	HK0305		Carton	
	HP0029		Protection Bag	
	PG0057		Rubber Cushion	
	UP0243		P.C.B.	
	YZ0042	Adhesion	Bond G17	

DR430 Version Table

RF Unit Side A

	C49	C58	C65	C67	C80	C97	C128	R30	R67	R109	R115	L22
E	CU3029330	CU3011100	CU3002010	CU3015220	-	CU3005040	CU3004030	RK3042222	RK3001000	RK3001000	RK3001000	-
TE1	CU3029390	CU3011100	CU3003020	CU3015220	-	CU3009080	CU3004030	RK3042222	RK3001000	RK3001000	RK3001000	-
TE2	CU3029330	CU3011100	CU3002010	CU3006050	-	CU3005040	CU3004030	RK3050103	RK3001000	-	RK3001000	-
TE3/T	CU3029330	CU3006050	CU3002010	CU3015220	-	CU3005040	CU3004030	RK3042222	RK3001000	RK3001000-	RK3001000	-
TE4	CU3029330	CU3011100	CU3003020	CU3015220	-	CU3005040	CU3004030	RK3050103	RK3001000	RK3001000	RK3001000	-
TE5	CU3029330	CU3011100	CU3003020	CU3006050	471	-	-	RK3046472	RK3011 5R6	RK3001000	-	022

M103	C156	C157	C158
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
SD0034	103	103	103

RF Unit Side B

	IC5	L3.L5	L4	L6	L19	TC2	C112	C113	C114	C115	C116	C123
E	XA0077AM57788M	QA0061	QKA14D	QKA15E	-	CT0012 10p	CC5058100	CU3005040	-	CC5054060	-	CU3007060
TE1	XA0261M57788L	QA0089	QKA15E	QKA15E	-	CT0031 5p	CC5058100	CC5051030	CC5062180	CC5054060	-	CC5052040
TE2	XA0262M57788H	QA0090	QKA15E	QKA15E	QKA35E	CT0031 5p	CC5058100	CC5052040	CC5064220	CC5054060	CC5060150	CC5054060
TE3/T	XA0077AM57788M	QA0069	QKA15D	QKA15E	-	CT0031 5p	CC5058100	CC5052040	-	CC5054060	-	CC5053050
TE4	XA0281M57788UH	QA0103	QKA15E	QKA12D	-	CT0031 5p	CC5055070	CC5049010	CC5060150	CC5054060	-	CC5049010
TE5	XA0334M57788SH	QA0116	QKA15E	QKA15C	-	CT0031 5p	CC5054060	CC5050020	CC5060150	CC5052040	-	CC5052040

VC0 Unit

	C310	C311	L306	L304
E	CU30010R5	CU3008070	QC0099560n	QKA35B
TE1	-	CU3010090	QC0096330n	QKA35C
TE2	CU30010R5	CU3008070	QC0099560n	QKA25D
TE3/T	CU30010R5	CU3008070	QC0099560n	QKA35B
TE4	CU30010R5	CU3006050	QC0099560n	QKA25C
TE5	CU30010R5	CU3006050	QC0099560n	QKA25B

Cpu unit

	W1	W2	W3/W4	R284	R285	R294/295	R286
DR430E	JP	JP	-	O	-	O	O
DR430T	JP	-	-	-	O	O	O
DR430 TE1-5			JP				O
	TX Free	RX Free	Tranking	12.5k/5k	435/445	Tranking	V/U

Wide/Narrow Version

	FL1		FL2		C77	
430 narrow	XC0017	CFW455C	XF00312	30M7B	CU3057	13P
430 wide	XC0001	CFW455F	XF00142	30M15B	CU3011	10P

ADJUSTMENT

1) Required Test Equipment

1. Digital Multimeter
   Voltage range: FS= 18Vorso
   Input resistance: 1M ohm or more

2. Regulated Power Supply
   Supply voltage: 13.80V
   Current : 15A or more

3. Oscilloscope
   Measurable frequency: DC to 30MHz

4. Spectrum Analyzer
   Measuring range: Up to 2GHz or more

5. Tracking Generator
   Output frequency: Up to 2GHz or more

6. Audio Dummy Load
   Impedance: 8 ohm
   Dissipation: 5W or more

7. SSG
   Output frequency: 1GHz or more
   Output level: -20dB/0.1uV to 120dB/1V
   Moduration: FM

8. Frequency Counter
   Measurable frequency.I Up to 500MHz
   Measurements stability: 0.2ppm or so

9. Power Meter
   Measurable frequency.I Up to 500MHz
   Impedance: 50 ohm, unbalanced
   Measuring range: Full scale of 60W or so

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

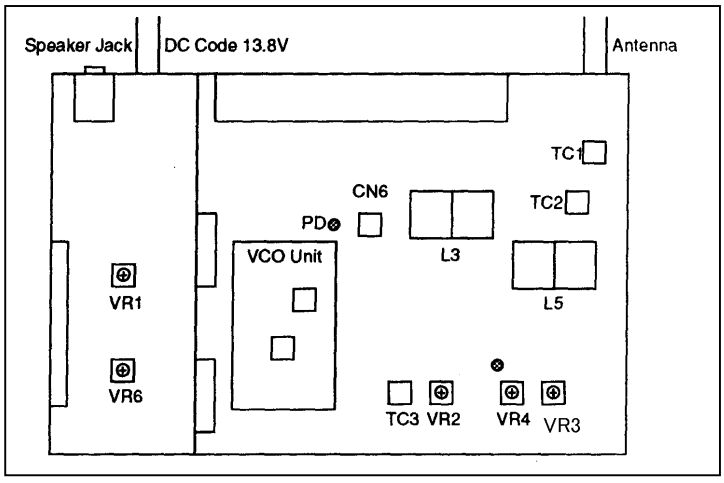
11. Distortion Meter
    Measurable frequency 1kHz
    Input level: Up to 40dB
    Distortion level: 1% -100%

12. Audio Generator
    Output frequency: 88.5Hz and lkHz
    Output impedance: 600 ohm, unbalanced

13. Linear Detector
    Measurable frequency Up to 500MHz
    Characteristics: FIat
    CN: 60dB or more

2) Adiusment Point

VR1: High Power
VR2: Deviation
VR3: S Meter
VR4: Mic Gain
VR6: Low Power
TC3:Reference Frequency

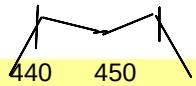


3) Adjustment for DR430T

SSG Mod:1KHz +/-3.5 KHz/DEV
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

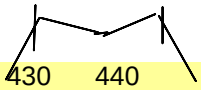
Item	Condition		Measurement			Adjustment			Specification
			Test equipment	Unit	Terminal	Unit	Parts	Method	
Frequency	Frequency: 445.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	445.00 MHz	+/- 100Hz
PLL VCO	Frequency: 420.00MHz Frequency: 480.00MHz	RX	Digital Multimeter	Main	PD			Check	1.7V < <5.2V
Tracking Adjustment	Frequency: 445.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5	TC1,TC2/MAX Level  440 450	
RX Sensitivity	Frequency: 440.03MHz Frequency: 445.03MHz Frequency: 449.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB
	Frequency: 420.03MHz Frequency: 470.03MHz SSG out:60dBu	RX							
S Meter	Frequency: 445.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing	
	Frequency: 445.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.
SQL Level	Frequency: 445.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON
High Powe	VR1: max	TX High	Power Meter	Back	ANT	Main			
	Frequency: 445.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A
	Frequency: 420.00MHz Frequency: 470.00MHz	TX High						Check	Above 5W
Low Power	Frequency: 445.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W
MAX DEV	Frequency: 445.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev
MIC Gain	Frequency: 445.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 445.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev
Tone Burst DEV	Frequency: 445.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev

4) Adjustment for DR430E

SSG Mod:1KHz +/-3.5KHz/DEV
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

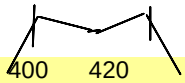
Item	Condition		Measurement			Adjustment			Specification
			Test equipment	Unit	Terminal	Unit	Parts	Method	
Frequency	Frequency: 435.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	435.00 MHz	+/- 100Hz
PLL VCO	Frequency: 420.00MHz Frequency: 480.00MHz	RX	Digital Multimeter	Main	PD			Check	1.7V < <5.2V
Tracking Adjustment	Frequency: 435.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5	TC1,TC2/MAX Level  430 440	
RX Sensitivity	Frequency: 430.03MHz Frequency: 435.03MHz Frequency: 439.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB
	Frequency: 420.03MHz Frequency: 470.03MHz SSG out:60dBu	RX							
S Meter	Frequency: 435.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing	
	Frequency: 435.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.
SQL Level	Frequency: 435.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON
High Powe	VR1: max	TX High	Power Meter	Back	ANT	Main			
	Frequency: 435.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A
	Frequency: 420.00MHz Frequency: 470.00MHz	TX High						Check	Above 5W
Low Power	Frequency: 435.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W
MAX DEV	Frequency: 435.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev
MIC Gain	Frequency: 435.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 435.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev
Tone Burst DEV	Frequency: 435.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev

5) Adjustment for DR430TE1

SSG Mod:1KHz +/-3.5 KHz/DEV (The Wide Version)
SSG Mod:1KHz +/-1.75KHz/DEV (The Narrow Version)
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

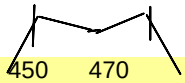
Item	Condition		Measurement			Adjustment			Specification	
			Test equipment	Unit	Terminal	Unit	Parts	Method		
Frequency	Frequency: 410.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	410.00 MHz	+/- 100Hz	
PLL VCO	Frequency: 400.00MHz Frequency: 450.00MHz	RX	Digital Multimeter	Main	PD			Check	1.5V < <7.0V	
Tracking Adjustment	Frequency: 410.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5		TC1,TC2/MAX Level 400 420	
RX Sensitivity	Frequency: 400.03MHz Frequency: 410.03MHz Frequency: 419.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB	
	Frequency: - MHz Frequency: 450.03MHz SSG out:60dBu	RX								
S Meter	Frequency: 410.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing		
	Frequency: 410.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.	
SQL Level	Frequency: 410.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON	
High Power	VR1: max	TX High	Power Meter	Back	ANT	Main				
	Frequency: 410.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A	
	Frequency: - MHz Frequency: 450.00MHz	TX High						Check	Above 5W	
Low Power	Frequency: 410.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W	Narrow Version
MAX DEV	Frequency: 410.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev	2.4 +/-0.2 kHz/Dev
MIC Gain	Frequency: 410.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev	2.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 410.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev	0.35-1.2 kHz/Dev
Tone Burst DEV	Frequency: 410.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev	1.3-1.75kHz/Dev

6) Adjustment for DR430TE2

SSG Mod:1KHz +/-3.5 KHz/DEV (The Wide Version)
SSG Mod:1KHz +/-1.75KHz/DEV (The Narrow Version)
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

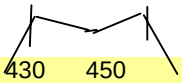
Item	Condition		Measurement			Adjustment			Specification	
			Test equipment	Unit	Terminal	Unit	Parts	Method		
Frequency	Frequency: 460.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	460.00 MHz	+/- 100Hz	
PLL VCO	Frequency: 430.00MHz Frequency: 490.00MHz	RX	Digital Multimeter	Main	PD			Check	1.5V < <7.0V	
Tracking Adjustment	Frequency: 460.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5	TC1,TC2/MAX Level  450 470		
RX Sensitivity	Frequency: 450.03MHz Frequency: 460.03MHz Frequency: 469.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB	
	Frequency: 430.03MHz Frequency: 490.03MHz SSG out:60dBu	RX								
S Meter	Frequency: 460.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing		
	Frequency: 460.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.	
SQL Level	Frequency: 460.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON	
High Power	VR1: max	TX High	Power Meter	Back	ANT	Main				
	Frequency: 460.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A	
	Frequency: 430.00MHz Frequency: 490.00MHz	TX High						Check	Above 5W	
Low Power	Frequency: 460.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W	Narrow Version
MAX DEV	Frequency: 460.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev	2.4 +/-0.2 kHz/Dev
MIC Gain	Frequency: 460.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev	2.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 460.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev	0.35-1.2 kHz/Dev
Tone Burst DEV	Frequency: 460.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev	1.3-1.75kHz/Dev

7) Adjustment for DR430TE3

SSG Mod:1KHz +/-3.5 KHz/DEV (The Wide Version)
SSG Mod:1KHz +/-1.75KHz/DEV (The Narrow Version)
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

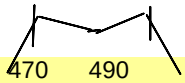
Item	Condition		Measurement			Adjustment			Specification	
			Test equipment	Unit	Terminal	Unit	Parts	Method		
Frequency	Frequency: 440.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	440.00 MHz	+/- 100Hz	
PLL VCO	Frequency: 430.00MHz Frequency: 490.00MHz	RX	Digital Multimeter	Main	PD			Check	1.7V < <5.2V	
Tracking Adjustment	Frequency: 440.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5	TC1,TC2/MAX Level  430 450		
RX Sensitivity	Frequency: 430.03MHz Frequency: 440.03MHz Frequency: 449.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB	
	Frequency: 430.03MHz Frequency: 490.03MHz SSG out:60dBu	RX								
S Meter	Frequency: 440.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing		
	Frequency: 440.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.	
SQL Level	Frequency: 440.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON	
High Power	VR1: max	TX High	Power Meter	Back	ANT	Main				
	Frequency: 440.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A	
	Frequency: 430.00MHz Frequency: 490.00MHz	TX High						Check	Above 5W	
Low Power	Frequency: 440.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W	Narrow Version
MAX DEV	Frequency: 440.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev	2.4 +/-0.2 kHz/Dev
MIC Gain	Frequency: 440.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev	2.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 440.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev	0.35-1.2 kHz/Dev
Tone Burst DEV	Frequency: 440.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev	1.3-1.75kHz/Dev

8) Adjustment for DR430TE4

SSG Mod:1KHz +/-3.5 KHz/DEV (The Wide Version)
SSG Mod:1KHz +/-1.75KHz/DEV (The Narrow Version)
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

PLL Adjustment

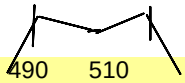
Item	Condition		Measurement			Adjustment			Specification
			Test equipment	Unit	Terminal	Unit	Parts	Method	
Frequency	Frequency: 480.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	480.00 MHz	+/- 100Hz
PLL VCO	Frequency: 460.00MHz Frequency: - MHz	RX	Digital Multimeter	Main	PD			Check	- 3.3-3.7V
Tracking Adjustment	Frequency: 480.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5		TC1,TC2/MAX Level 470 490
RX Sensitivity	Frequency: 470.03MHz Frequency: 480.03MHz Frequency: 490.99MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB
	Frequency: 460.03MHz Frequency: 500.03MHz SSG out:60dBu	RX							
S Meter	Frequency: 480.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing	
	Frequency: 480.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.
SQL Level	Frequency: 480.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON
High Power	VR1: max	TX High	Power Meter	Back	ANT	Main			
	Frequency: 480.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A
	Frequency: 460.00MHz Frequency: 500.00MHz	TX High						Check	Above 5W
Low Power	Frequency: 480.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W
MAX DEV	Frequency: 480.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev
MIC Gain	Frequency: 480.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 480.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev
Tone Burst DEV	Frequency: 480.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev

9) Adjustment for DR430TE5

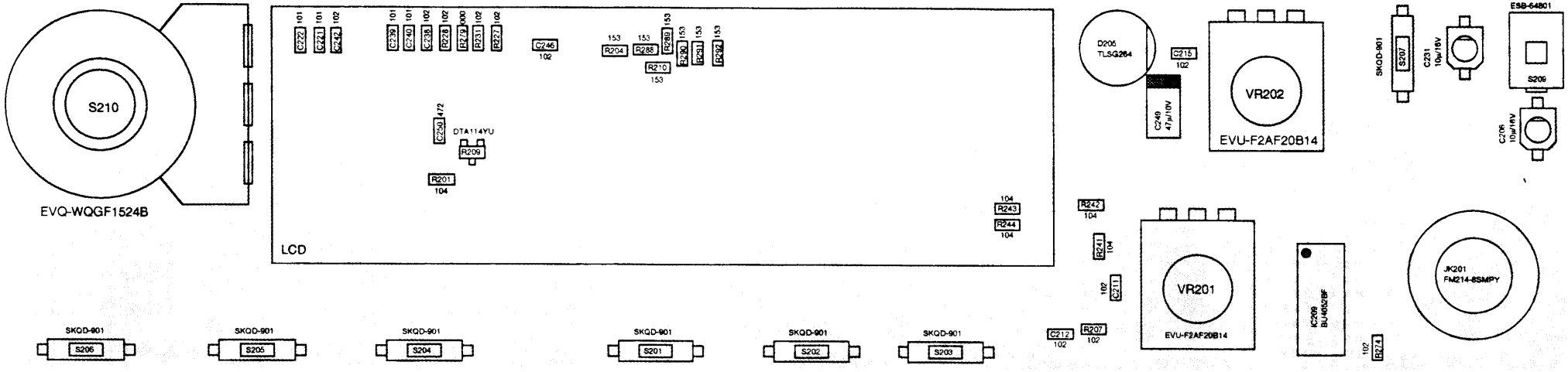
SSG Mod:1KHz +/-3.5 KHz/DEV (The Wide Version)
SSG Mod:1KHz +/-1.75KHz/DEV (The Narrow Version)
SP terminal is connected to 8ohm dummy load.
RX speaker output level is 50 to 100mW

1. Power supply voltage is 13.8V. Power switch is off.
2. Turn the squelch and volume knobs counterclockwise.
3. Press and hold the "F"key,then turn on the power switch.
The display shows that the frequency is 445.00MHz

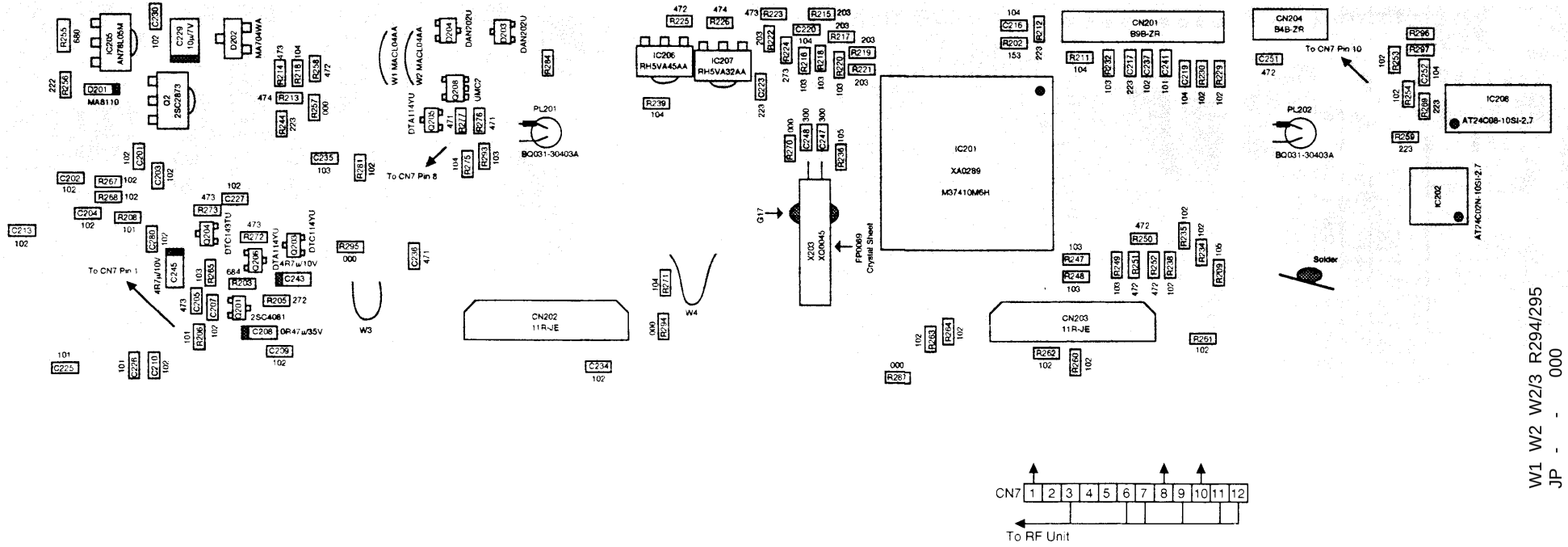
PLL Adjustment

Item	Condition		Measurement			Adjustment			Specification
			Test equipment	Unit	Terminal	Unit	Parts	Method	
Frequency	Frequency: 500.00MHz	TX LOW	Freq.Counter Power Meter	Back	ANT	MAIN	TC3	500.00 MHz	+/- 100Hz
PLL VCO	Frequency: 500.00MHz Frequency: 500.00MHz	RX	Digital Multimeter	Main	PD			Check	- 1.9-2.2V
Tracking Adjustment	Frequency: 500.03MHz TG out:-20dBm	RX	Tracking Generator	Main	CN6	Main	TC1 TC2 L3,L5		TC1,TC2/MAX Level 490 510
RX Sensitivity	Frequency: 490.03MHz Frequency: 500.03MHz Frequency: 510.03MHz SSG out:-9.5dBu	RX	Distortion Meter SSG	Main		Main			SINAD is above12dB
	Frequency: 480.03MHz Frequency: - MHz SSG out:60dBu	RX							
S Meter	Frequency: 500.03MHz SSG out: 15dBu Mod: 1KHz	RX	LCD S Meter	Front Panel		Main	VR3	Full flashing	
	Frequency: 500.03MHz SSG out:OFF Mod: 1KHz	RX						Check	S Meter does not light.
SQL Level	Frequency: 500.03MHz SSG out:-10dBu SQL VR:Threshold	RX	LCD Busy	Front Panel		Main		Make sure that SQL is open	Busy ON
High Power	VR1: max	TX High	Power Meter	Back	ANT	Main			
	Frequency: 500.00MHz	TX High					VR1	36W	+/- 1.0W Below 10A
	Frequency: 480.00MHz Frequency: - MHz	TX High						Check	Above 5W
Low Power	Frequency: 500.00MHz Power:Low *1	TX Low					VR6	5.0w	+/- 0.1W
MAX DEV	Frequency: 500.00MHz AG:1KHz -30dBm	TX Low	Linear Detector Power Meter Oscilloscope	Back	ANT	Main	VR2	4.7kHz /Dev	4.7 +/-0.2 kHz/Dev
MIC Gain	Frequency: 500.00MHz AG:1KHz -47dBm	TX Low					VR4	4.0kHz /Dev	4.0+/-0.2 kHz/Dev
CTCSS To DEV	Frequency: 500.00MHz AG: OFF ToneSW(88.5Hz):ON	TX Low						Check	0.60-1.2 kHz/Dev
Tone Burst DEV	Frequency: 500.00MHz AG: OFF ToneSW:ON	TX Low						Check	2.5-3.5kHz/Dev

3) CPU Unit Side A

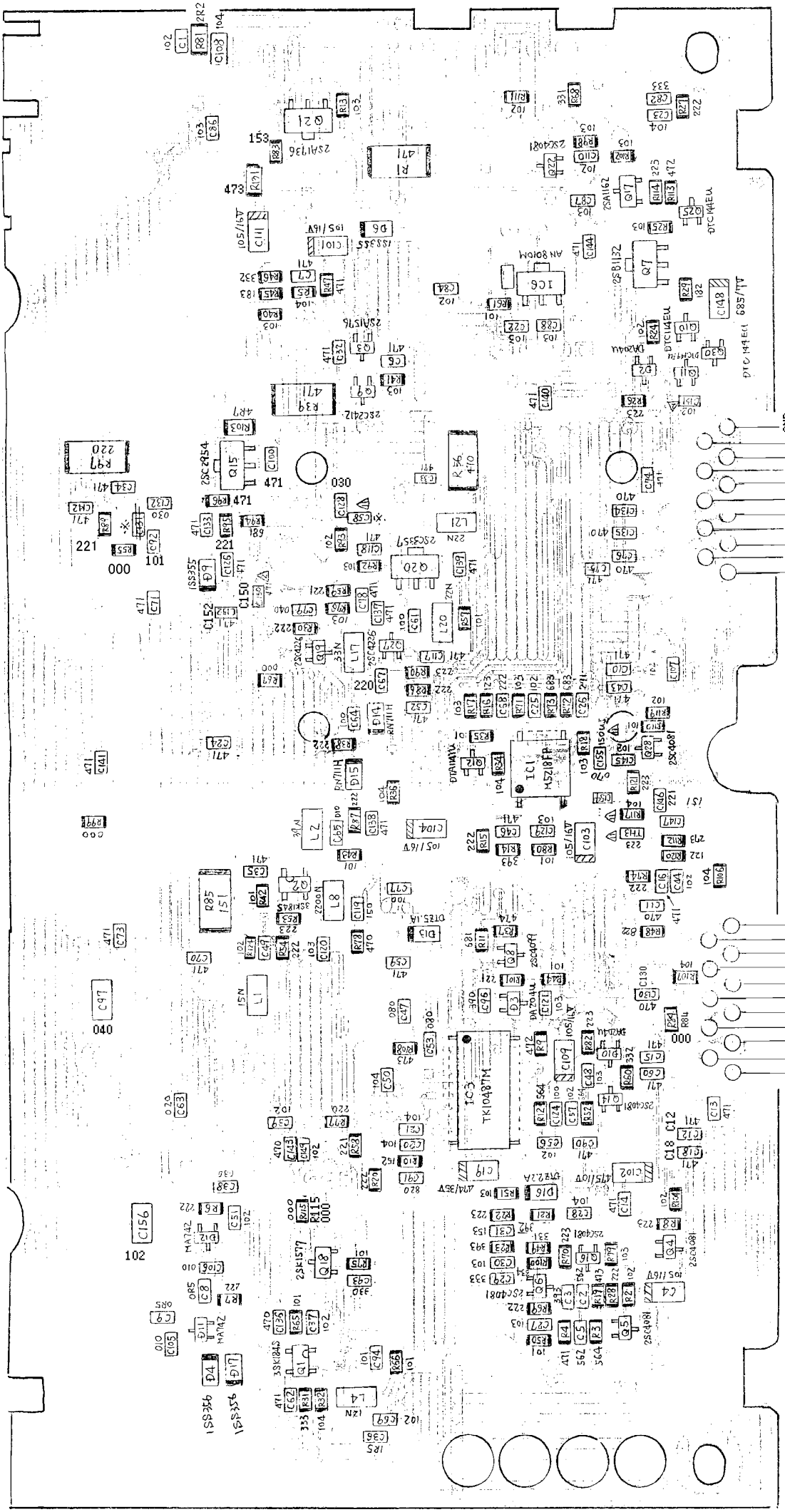


4) CPU Unit Side B



	W1	W2	W2/3	R294/295
T	JP	-	-	000
E	JP	-	-	000
TE1/2/3/4/5	-	-	JP	-

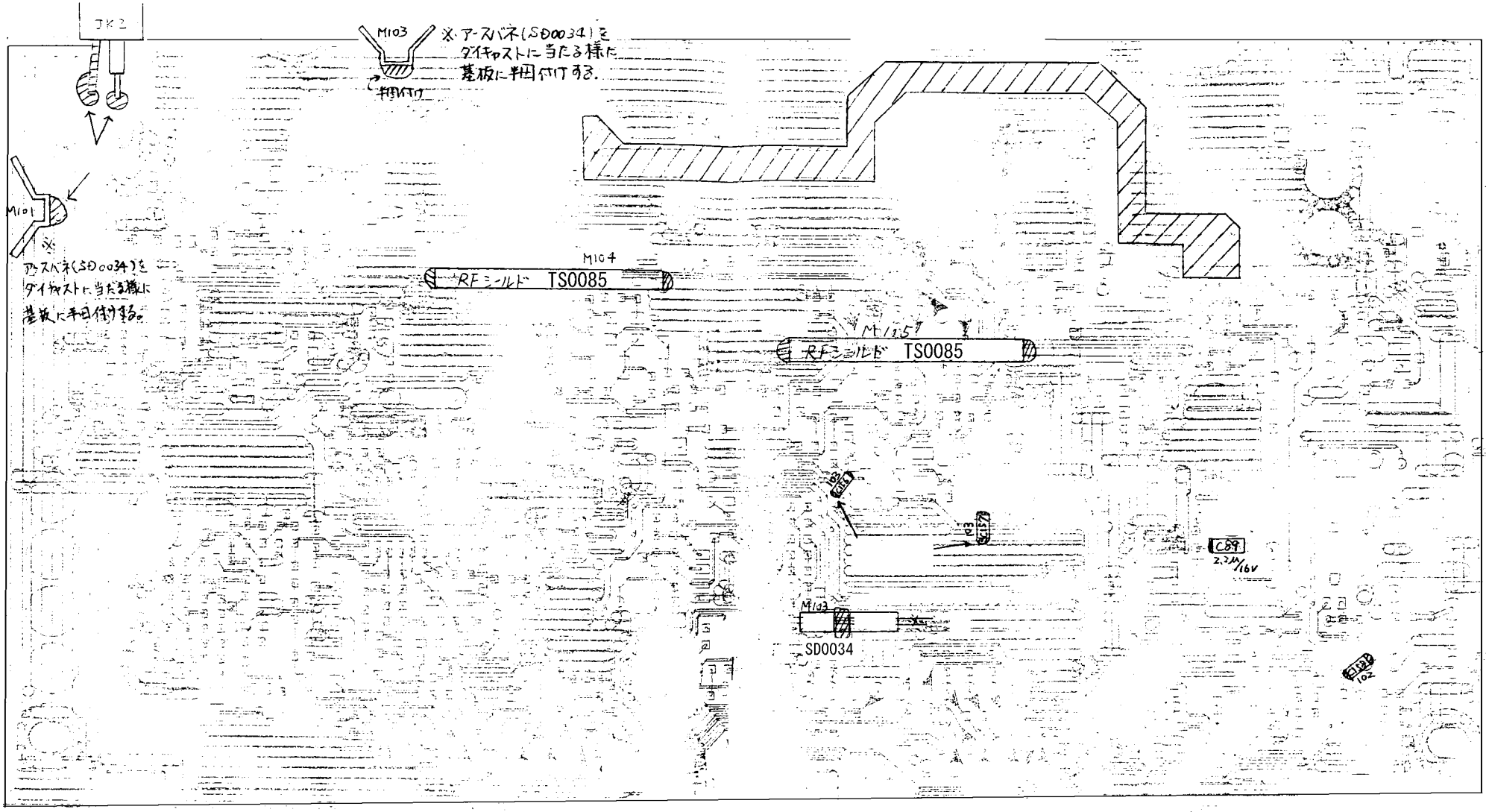
3)RF Unit Side A-1



	C97	C49	C58	C65	C80	C126	C67	R30	R87	R109	R115	L22
---	-	330	100	020	471	-	030	220	103	050	472	022
E	040	330	100	010	-	030	220	222	000	000	5R6	000
TE1	080	330	100	020	-	030	220	222	000	000	-	-
TE2	040	330	100	010	-	030	220	222	000	000	-	-
TE3/T	040	330	050	010	-	030	220	222	000	000	-	-
TE4	040	330	100	020	-	030	220	103	000	000	-	-
TE5	-	330	100	020	471	-	050	472	5R6	000	-	022

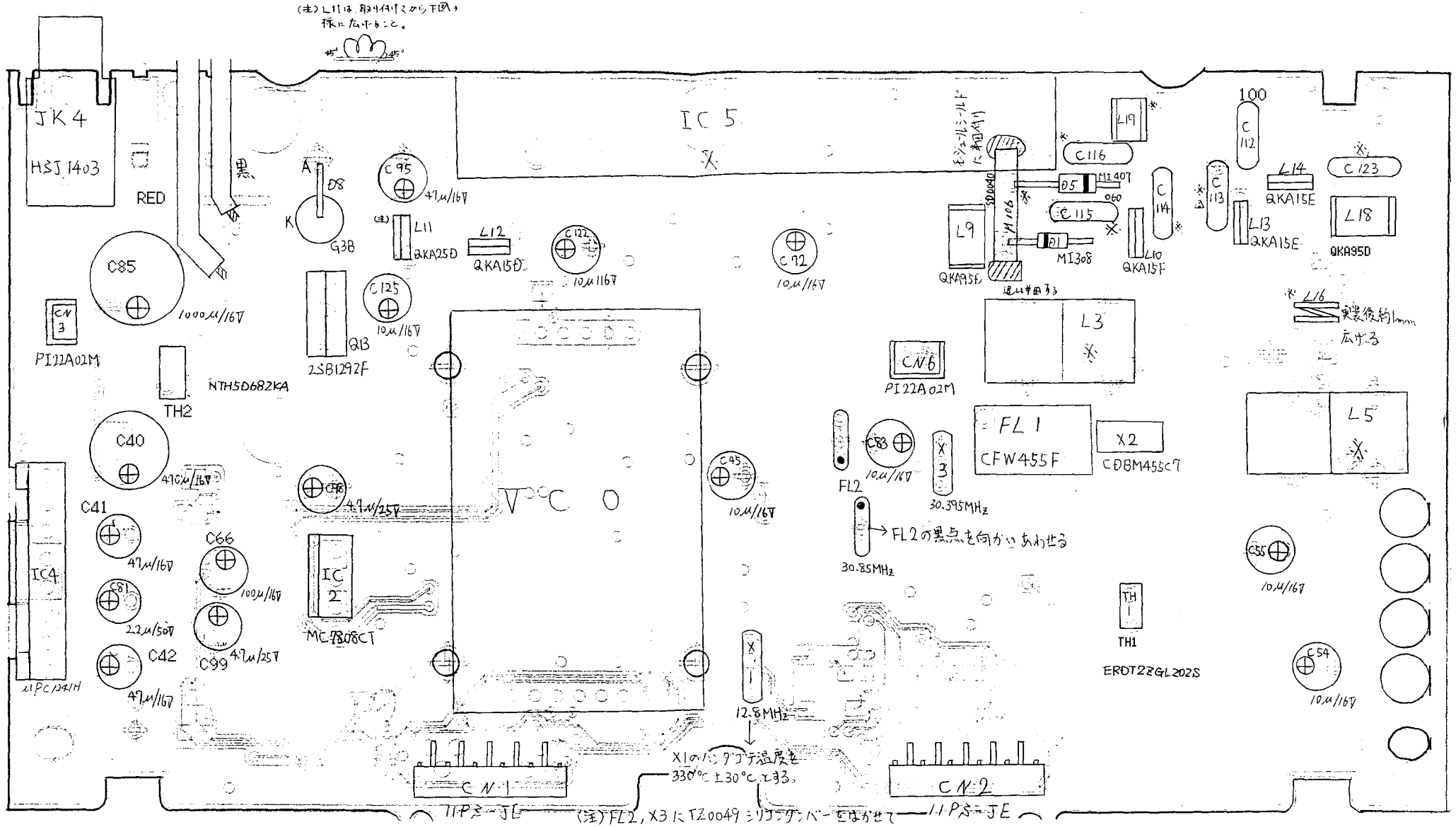
3) RF Unit Side A-2

UE0257 ANTケーブル A30-30190-05



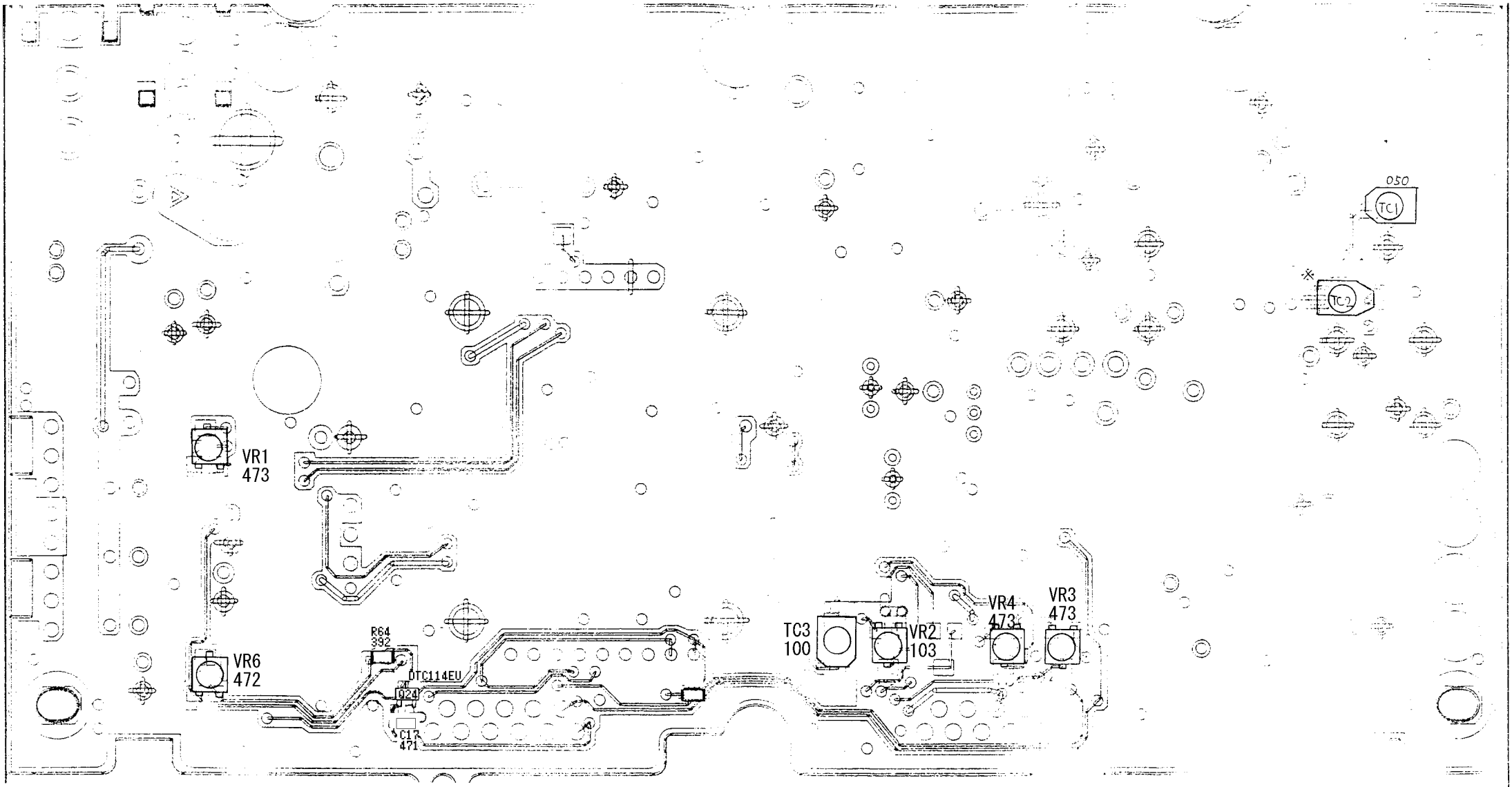
※	M103		C156	C157	C158
TE1	—		—	—	—
TE2	—	—	—	—	—
TE4	—		—	—	—
TE5	○		103	103	102

4)RF UNIT Side B-1



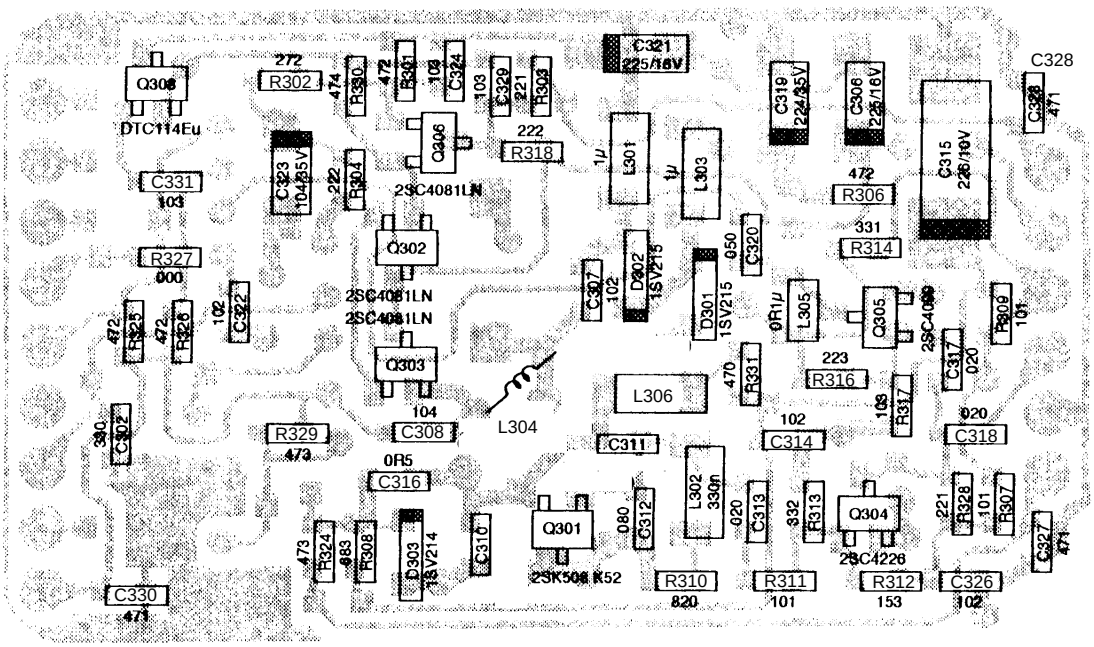
----	IC5	L3.L5	L14	L16	L19	C112	C113	C115	C114	C116	C123
E	M57788M	QA0061	QKA14D	QKA15E	-	120	040	060	-	-	060
TE1	M57788L	QA0089	QKA15E	QKA15E	QKA35E	100	030	060	180	-	040
TE2	M57788H	QA0070	QKA15E	QKA15E	-	100	040	060	220	150	060
TE3/T	M57788M	QA0069	QKA15D	QKA15E	-	120	040	030	-	-	050
TE4	M57788UH	QA0103	QKA15E	QKA12D	-	070	010	060	150	-	010
TE5	M57788SH	QA0116	QKA15E	QKA15C	-	060	020	040	150	-	040

4)RF Unit Side B-2



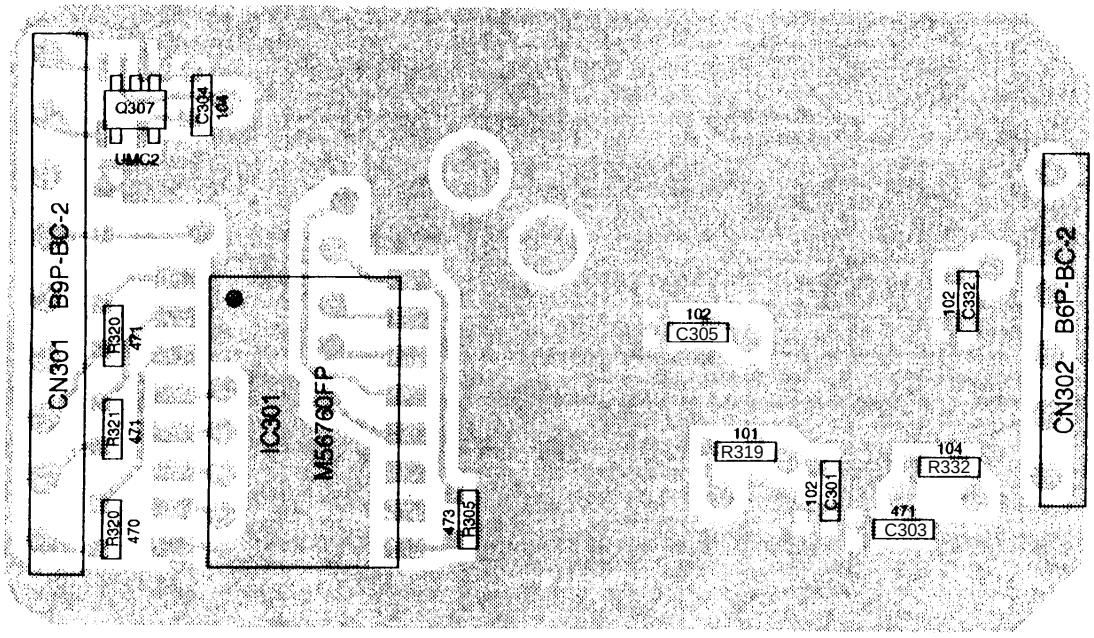
----	TC2
E	100
TE1	050
TE2	050
TE3 /T	050
TE4	050
TE5	050

5) VCO Unit Side A



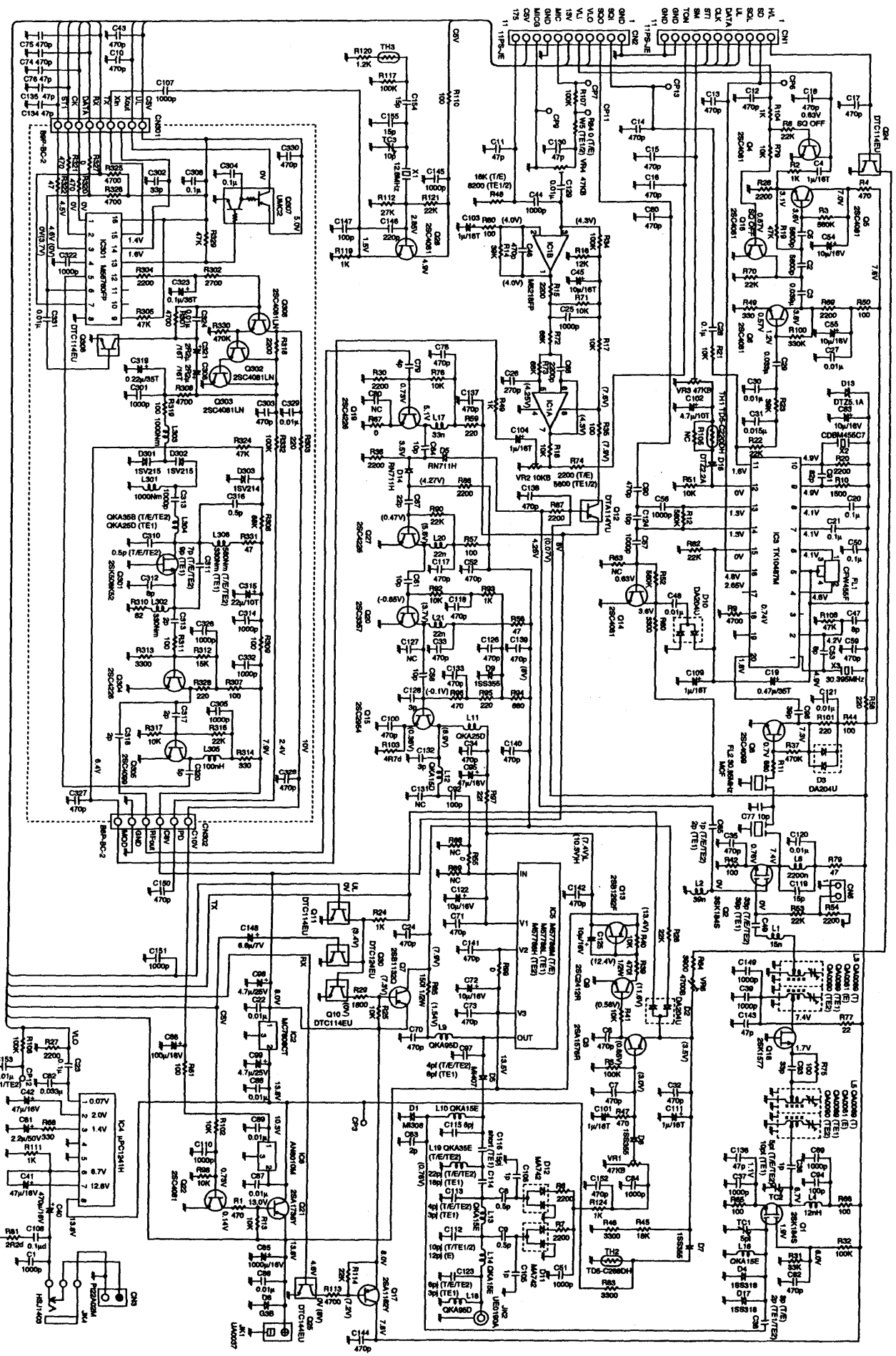
	C310	C311	L306	L304
T/E	0R5	070	560n	QKA35B
TE1	-	090	330n	QKA35C
TE2	0R5	070	560n	QKA25D
TE3	0R5	070	560n	QKA35B
TE4	0R5	050	560n	QKA25C
TE5	0R5	050	560n	QKA25B

6) VCO Unit Side B

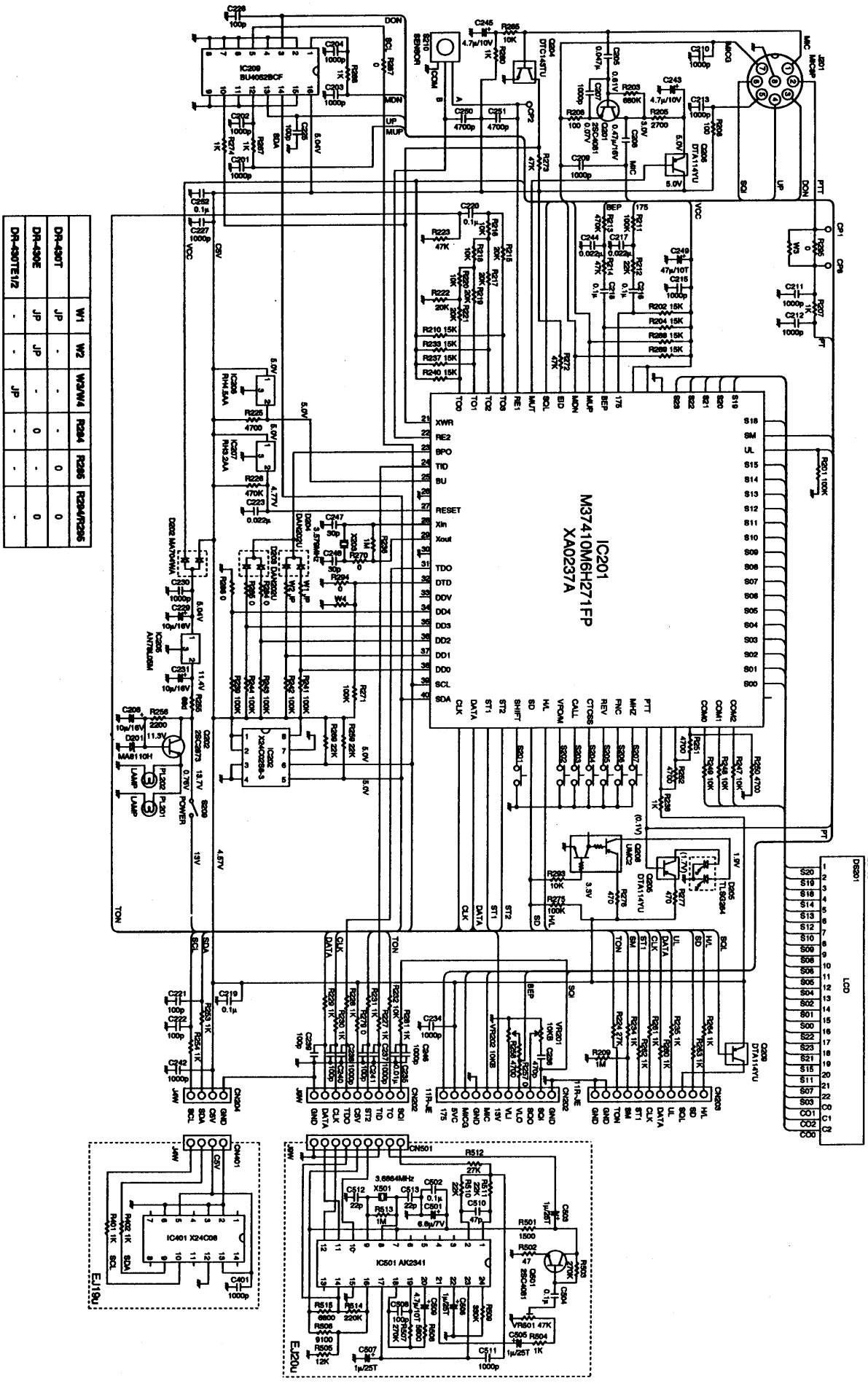


SCHEMATIC DIAGRAM

1) RF UNIT

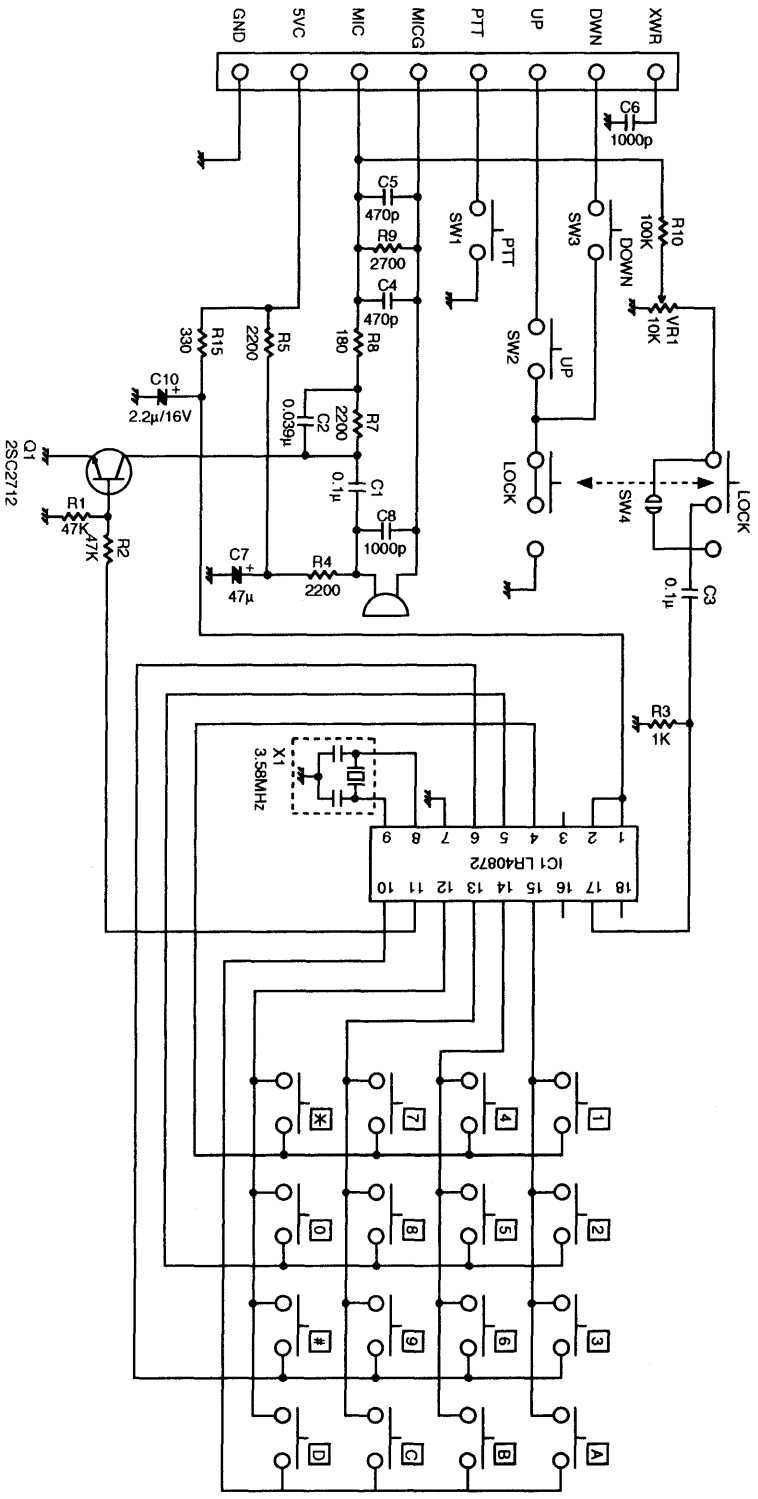


2) CPU UNIT

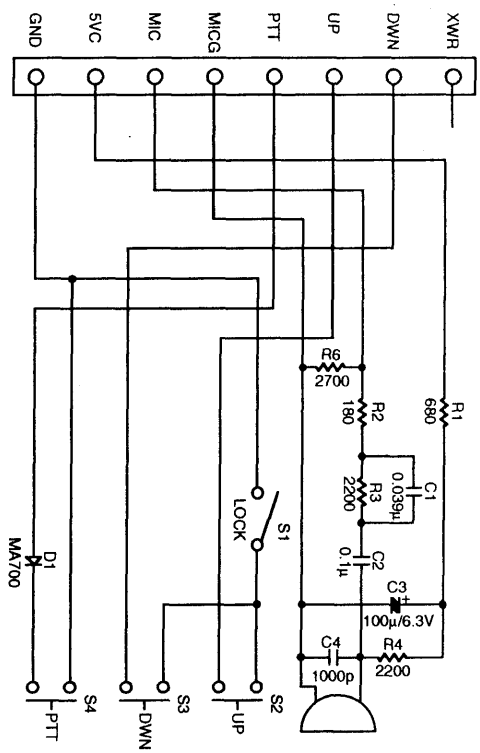


	W1	W2	W3/W4	R284	R285	R284/R285
DR-430T	JP	-	-	-	0	0
DR-430E	JP	JP	-	0	-	0
DR-430TE1/2	-	-	JP	-	-	-

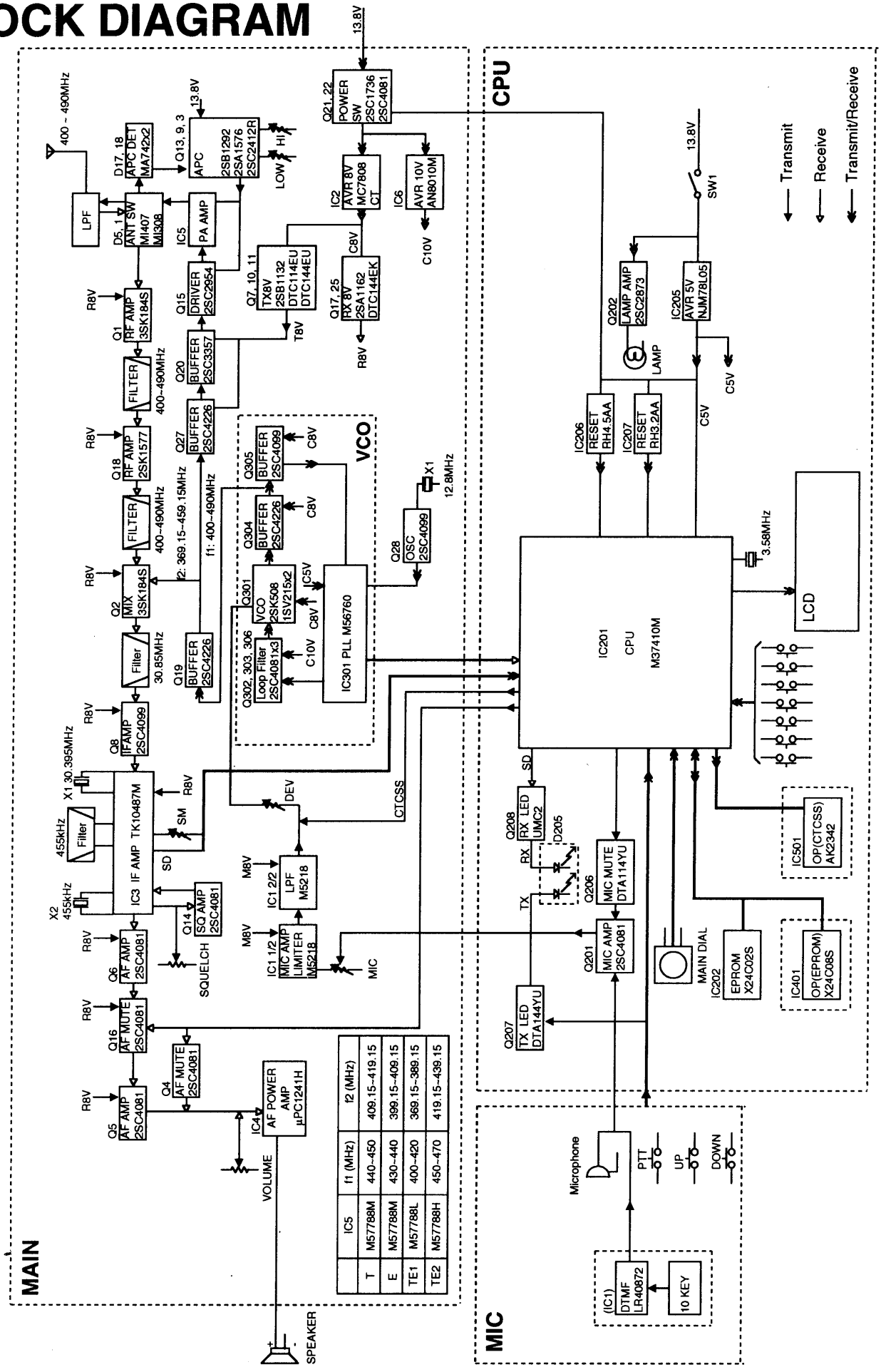
4) EMS-11 CIRCUT DIAGRAM



3) EMS-5A CIRCUT DIAGRAM



BLOCK DIAGRAM



IC5	f1 (MHz)	f2 (MHz)
T	M57788M	440~450	409.15~419.15
E	M57788M	430~440	399.15~409.15
TE1	M57788L	400~420	369.15~389.15
TE2	M57788H	450~470	419.15~439.15