

DJ-X30T/E/K

Service Manual

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SPECIFICATIONS

General

Receiving range (Default frequency Range)

E & K : 0.1 - 1299.9975 MHz
T : 0.1 - 823.9975 MHz
850.000 - 868.9975 MHz
895.000 - 1299.9975 MHz

Modulation mode: FM,WFM,AM
Ant.impedance: 50 ohm (SMA)
Supply voltage: DC 2.4V – 3.0V (Internal battery)
DC 5.4V – 6.0V (external regulated source)
Ground: Negative ground
Current consumption: reception:approx.140mA
Battery save (1:4) approx.26mA
Temperature range: -10 - +60°C (+14 - +140 F°)
Frequency stability: +3~-7ppm (-10 - +60°C) (+14 - +140 F°)
Dimensions: 58(W) x99 (H) x32 (D) mm (Projections exclusive)
Weight : Approx. 165g (SMA ANTENNA inclusive)

Receiver

System: Triple-conversion super heterodyne (NFM,AM)
Double-conversion super heterodyne (WFM)
First IF: 243.95 MHz (NFM,AM,WFM)
Second IF: 39.15 MHz (NFM,AM) ,10.7MHz (WFM)
Third IF: 450 kHz (NFM,AM)
Selectivity: AM/FM -6dB/12 kHz or more , -60dB/35kHz or less
WFM -6dB/130kHz or more, -60dB/300kHz or more
Sensitivity: FM : 30~470MHz -15dBu 12dB SINAD
470MHz or higher -7dBu 12dB SINAD
WFM : 76~470MHz -6dBu 12dB SINAD
470MHz or higher -3dBu 12dB SINAD
AM : 0.1~50MHz -1dBu 10dB S/N
50MHz or higher -6dBu 10dB S/N
Audio output power: more than 100mW (8Ω)
Spurious response: 60dB or over

! NOTE: All specifications are subject to change without notice or obligation.

CIRCUIT DESCRIPTION

1) Receiver System

Triple Super heterodyne Conversion (NFM,AM)

Double Super heterodyne Conversion (WFM)

1st IF : 243.95MHz

2nd IF : 39.15MHz (NFM,AM)

2nd IF : 10.7MHz (WFM)

3rd IF : 450kHz (NFM,AM)

1. Front End

[0.100-29.995MHz]

The incoming signal from the bar antenna goes to band switch circuitry (D402). The signal goes to the first RF amplifier (Q401), then the signal goes to the common mixer (IC403).

The incoming signal from the SMA antenna goes to band switch circuitry (D419, D425, D437). The signal passes through the low-pass filter, then it is amplified at RF amplifier (Q422). The amplified signal goes to the common mixer (IC403).

[30-117.995MHz, 170-334.995MHz]

The incoming signal from the antenna passes through a band-pass filter and goes to the first amplifier (Q412).

Then the signal goes to the common mixer (IC403).

[118-169.995MHz]

The incoming signal from the antenna passes through a band-pass filter and goes to the first amplifier Q414.

Then the signal goes to the common mixer (IC403).

[335-469.995MHz]

The incoming signal from the antenna passes through a band-pass filter and goes to the first amplifier (Q419).

Then the signal goes to the common mixer (IC403).

[470-849.995MHz]

The incoming signal from the antenna passes through a band-pass filter and goes to the first amplifier (Q423).

Then the signal goes to the common mixer (IC403).

[850-1299.995MHz]

The incoming signal from the antenna passes through a band-pass filter and goes to the first amplifier (Q425). Then the signal goes to the common mixer (IC403).

Note that the cellular-phone band block system is mentioned on the separated sheet for the T-version.

2. Mixer

[The 1st Mixer]

The 1st local oscillator signal for the 1st mixer is supplied from the VCO.

The incoming signal to the 1st mixer (IC403) and the 1st local signal are added or subtracted at mixer (IC403), and the SAW filter (FL402) selects the signal of 243.95MHz, then it goes to the 2nd mixer (IC404) after the adjacent signal is eliminated.

[The 2nd Mixer]

The 2nd local oscillator signal for the 2nd mixer is supplied from the VCO.

{FM/AM}

In FM/AM mode, the signal heterodowned to the 2nd IF of 39.15MHz by the mixer passes through a crystal filter (FL401) and unwanted signal components are eliminated.

The resulting signal is amplified by the 2nd IF amplifier Q413 and goes to the IF IC (IC406).

{WFM}

In WFM mode, the signal heterodowned to the 2nd IF of 10.7MHz by the mixer passes through a ceramic filter (FL403) and unwanted signal components are eliminated.

The resulting signal is amplified by the IF amplifier Q416 and goes to the IF IC (IC406).

[The 3rd Mixer]

The 3rd local oscillator signal for the 3rd mixer is 38.7MHz signal that is produced by multiplying the 12.9MHz (X401) oscillator output with a multiplier (Q411).

3. IF

[FM]

In FM mode, the signal passes through an external ceramic filter (FL404) and FM/AM switch D440, and goes back to the IF IC (IC406).

The signal is amplified by the internal IF amplifier is demodulated by the quadrature FM demodulation circuit using a coil (L445) and output as an AF signal.

[AM]

In AM mode, the signal passes through an external ceramic filter (FL404) and goes back to the IF IC (IC406).

The 2nd IF amplifier (Q413) and RF amplifier (Q414) is controlled by reverse AGC at AGC amplifier Q420 to get better audio output even though the input is changed, and the gain is controlled.

[WFM]

In WFM mode, the signal of 10.7MHz passes through FM/AM switch (D440) and goes to the IF IC (IC406).

The signal is amplified by the internal IF amplifier is demodulated by the quadrature FM demodulation circuit using a coil (L442) and output as an AF signal.

4. Squelch

The AF signal got from pin 12 of IF IC (IC406) is fed to pin 19 of IF IC (IC406). The input signal is output from pin 21 of IF IC (IC406) passing through the noise filter amplifier and rectifier circuits inside of IF IC (IC406). The rectified signal is added to the A/D port of the microcomputer (IC203). Judging the signal, the microcomputer controls ON/OFF of the audio output.

5. Audio

[FM/AM/WFM]

The AF signal goes to the switching IC (IC407). The switched signal passes through active filter (Q213) and goes to the electronic volume (IC216).

The adjusted signal goes to the AUDIO IC (IC215) and drives a speaker, etc.

6. VCO

[The 1st Local]

The VCO for the 1st local consists of the Colpitts oscillator. D406, D409 and L403 determine the frequency, and they are oscillated at the transistor Q402. The oscillated signal passes through the buffer amplifiers (Q403, Q404) and goes to the PLL-IC (IC401).

[The 2nd Local]

The VCO for the 1st local consists of the Colpitts oscillator. D424, D426 and L410 determine the frequency, and they are oscillated at the transistor Q409. The oscillated signal passes through the butter amplifier (Q410) and goes to the PLL-IC (IC401).

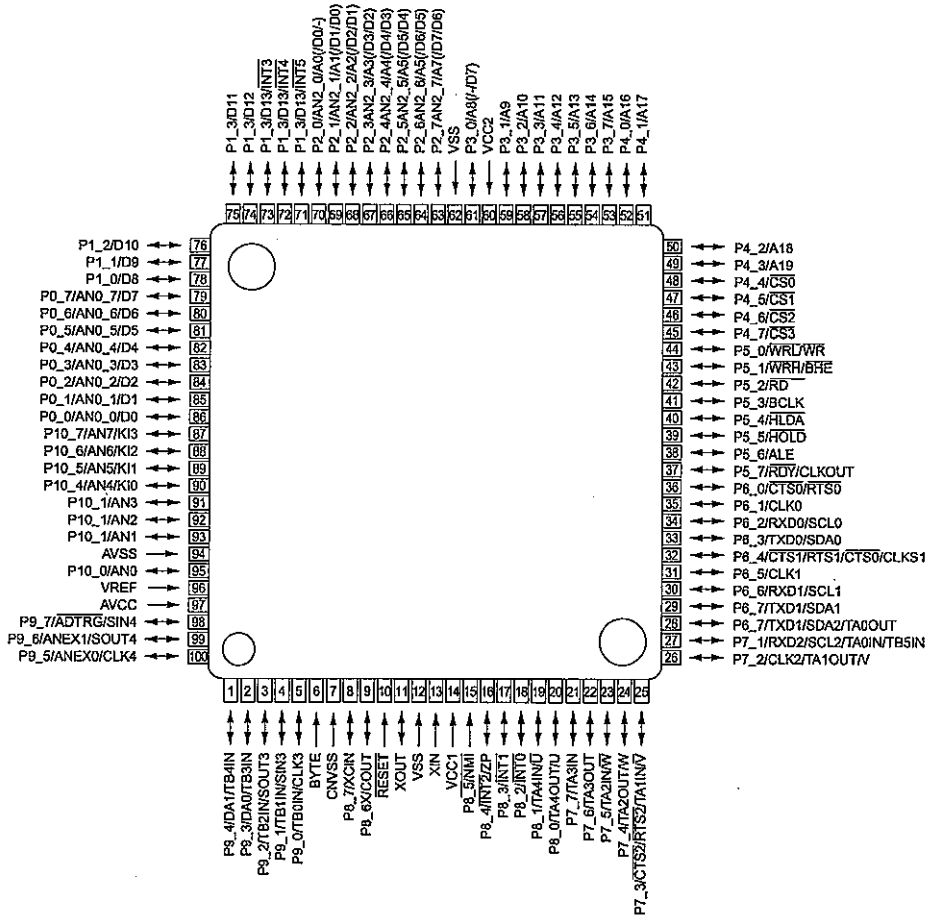
7. PLL

PLL-IC (IC401) is used to control the oscillation frequency of VCO. The microcomputer (IC203) sends the signal with serial data to PLL-IC (IC401). The 12.9MHz reference frequency of PLL-IC (IC401) oscillates the crystal oscillator (X401) at the external circuit (IC402).

2) M30620 (E&K : XA1224B , T : XA1232B)

CPU

Terminal Connection
(TOP VIEW)

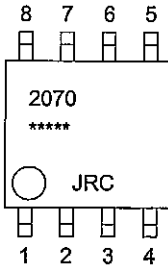


No.	Terminal	Signal	I/O	Description
1	P9_3	NC	—	—
2	DA0	TRC	O	Tracking control
3	P9_2	BUGC	O	Bugging SW output
4	P9_1	WFC	O	WFM SW
5	P9_0	SCC	O	Secret function SW
6	BYTE	VSS	—	CPU GND
7	CNVSS	VSS	—	CPU GND
8	XCIN	NC	—	—
9	XCOU	NC	—	—
10	RESET	RESET	I	Reset input
11	XOUT	XOUT	O	Clock output
12	VSS	VSS	—	CPU GND
13	XIN	XIN	I	Clock input
14	VCC1	VDD	—	Power supply
15	NMI	VDD	—	Power supply
16	INT2	BU	I	Back up signal detection input
17	INT1	PWR	I	POWER key input
18	INT0	RE1	I	Rotary encoder input 1
19	P8_1	RE2	I	Rotary encoder input 2
20	P8_0	SCT	O	Secret signal output
21	P7_7	RESW	I	Rotary encoder push SW input
22	TA3OUT	BEEP	O	Beep tone output
23	P7_5	MONI	I	MONI key input
24	P7_4	FNC	I	FUNC key input
25	P7_3	RCSW	I	Remote controller AF SW
26	P7_2	AFS	O	AF SW
27	P7_1	CLNC	O	Clone SW
28	P7_0	NC	—	—
29	TXD1	TXD	O	Clone data transmission output
30	RXD1	RXD	I	Clone data reception input
31	P6_5	NC	—	—
32	P6_4	RECSW	—	—
33	TXD0	SDA	—	—
34	RXD0	SCL	—	—
35	P6_1	BLLMP	O	Backlight SW
36	P6_0	INT	—	—
37	P5_7	CLK	I/O	Serial clock I/O for EEPROM
38	P5_6	DATA	I/O	Serial data I/O for EEPROM
39	P5_5	R3C	O	RX common power SW
40	P5_4	NFC	O	NFM SW
41	P5_3	BF6C	O	BND6 power SW output
42	P5_2	DB2C	O	Doubler2 SW
43	P5_1	BF5C	O	BND5 power SW output
44	P5_0	LCONT	O	LCD driver control
45	P4_7	DB3C	O	Doubler3 SW
46	P4_6	STB2	O	Strobe for LCD driver
47	P4_5	AFPC	O	AF power control
48	P4_4	TONE	O	AF tone control
49	P4_3	MIDO	O	Green LED SW
50	P4_2	AKA	O	Red LED SW

No.	Terminal	Signal	I/O	Description
51	P4_1	DB1C	O	Doubler1 SW
52	P4_0	AT2C	—	—
53	P3_7	EARC	O	Earphone antenna SW
54	P3_6	TNC	O	Tone SQL function SW
55	P3_5	STB1	O	Strobe for PLL
56	P3_4	DATA	I/O	Serial data output/Unlock input
57	P3_3	CLK	O	Serial clock output
58	P3_2	PS	O	PLL IC power save control
59	P3_1	STB3	O	Strobe for Evol
60	VCC2	VDD	—	Power supply
61	P3_0	NC	—	—
62	VSS	VSS	—	CPU GND
63	P2_7	SBRC	O	SW BAR antenna control
64	P2_6	ABRC	O	AM BAR antenna control
65	P2_5	ATONC	O	ATT ON control
66	AN2_4	TIN	I	Tone input
67	AN2_3	ADIN	I	Remote controller SW level input
68	AN2_2	SQL	I	Noise level input for squelch
69	AN2_1	SMT	I	S-meter input
70	AN2_0	BCHK	I	Power supply level input
71	P1_7	DCDET	I	External supply level input
72	P1_6	RAC	—	—
73	P1_5	BF4C	O	BND4 power SW output
74	P1_4	ATOFc	O	ATT OFF control
75	P1_3	CNT	O	Battery detection SW output
76	P1_2	BF3C	O	BND3 power SW output
77	P1_1	BF2C	O	BND2 power SW output
78	P1_0	BF1C	O	BND1 power SW output
79	P0_7	AT1C	O	ATT SW
80	P0_6	PLC	O	PLL IC power SW
81	P0_5	RECC	—	—
82	P0_4	KSC	—	—
83	P0_3	KO3	O	Key matrix output
84	P0_2	KO2	O	Key matrix output
85	P0_1	KO1	O	Key matrix output
86	P0_0	KO0	O	Key matrix output
87	P10_7	KI2	I	Key matrix input
88	P10_6	KI1	I	Key matrix input
89	P10_5	KI0	I	Key matrix input
90	P10_4	KI3	I	Key matrix input
91	AN3	CDET	I	Battery Voltage input
92	AN2	BP1	I	BAND PLAN 1 input
93	AN1	BP2	I	BAND PLAN 2 input
94	AVSS	VSS	—	CPU GND
95	AN0	NC	—	—
96	VREF	VDD	—	Power supply
97	AVCC	VDD	—	Power supply
98	P9_7	EVC	O	Evol power control
99	P9_6	CHG	O	Charge function SW
100	P9_5	AMC	O	AM SW

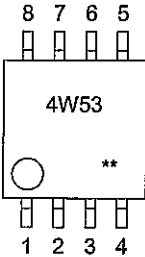
SEMICONDUCTOR DATA

1) NJM2070M (XA0210) Audio Power Amplifier



1. NC
2. + INPUT
3. - INPUT
4. GND
5. GND
6. OUTPUT
7. V+
8. NC

2) TC4W53FU (XA0348) Analog Multiplexer / De-multiplexer

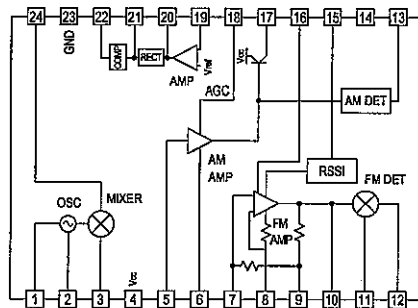
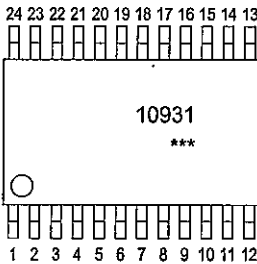


1. COMMON
2. INH
3. VEE
4. VSS
5. A
6. ch1
7. ch0
8. VDD

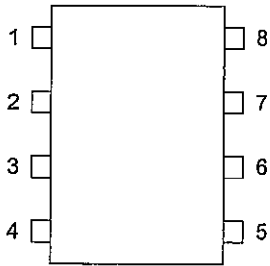
Control input		On channel
INH	A	
L	L	ch0
L	H	ch1
H	*	NONE

*Don't care

3) TK10931V (XA0666) Narrow Band AM / FM IF IC

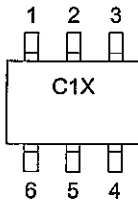


4) TK11850L (XA0950) Step-up Dc-dc Converter



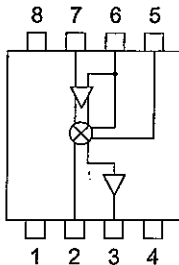
1. Power Supply Voltage Input
2. Inductor Current Limit
3. External Inductor
4. Cathode Terminal of an Built-in Schottky Diode
5. Feedback Voltage
6. Ground
7. Timing Capacitor
8. Enable (ON/OFF) Input

5) uPC2757TB (XA0976) MMIC Down-converter



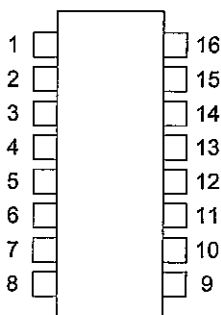
1. RF INPUT
2. GND
3. LO INPUT
4. PS
5. Vcc
6. IF OUTPUT

6) NJM2594V (XA0995) Double Balanced Modulation / Demodulation



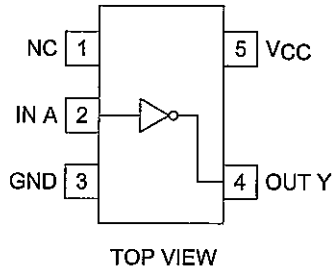
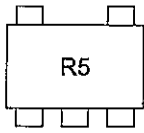
1. V+
2. Output 1
3. Output 2
4. GND
5. Signal Input
6. Bypass
7. Carrier Input
8. NC

7) MB15F07SL (XA1033) Pull Frequency Synthesizer

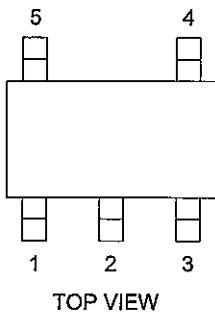


1. GND 2
2. OSC IN
3. GND 1
4. fin 1
5. VCC
6. LD/fout
7. PS 1
8. DO 1
9. DO 2
10. PS 2
11. Xfin 2
12. VCC 2
13. fin 2
14. LE
15. Data
16. Clock

8) TC7SZ04AFE (XA1035) Inverter

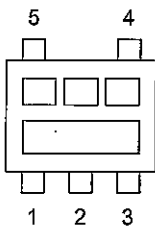


9) XC62HR3002MR (XA1054) 3.0V Voltage Regulator

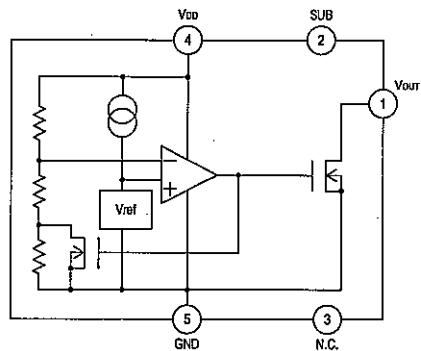


PIN No.	PIN NAME	FUNCTION
1	(NC)	No connection
2	VIN	Supply Voltage Input
3	CE	Chip Enable
4	VSS	Ground
5	VOUT	Regulated Output Voltage

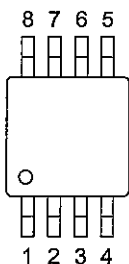
10) BU4818FVE (XA1095) RESET IC



1. VOUT
2. SUB
3. N.C.
4. V_{DD}
5. GND

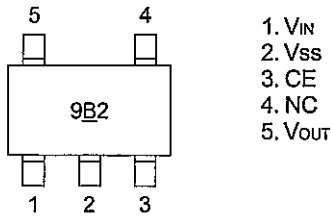


11) LM2904 (XA1103) Dual Operational Amplifiers

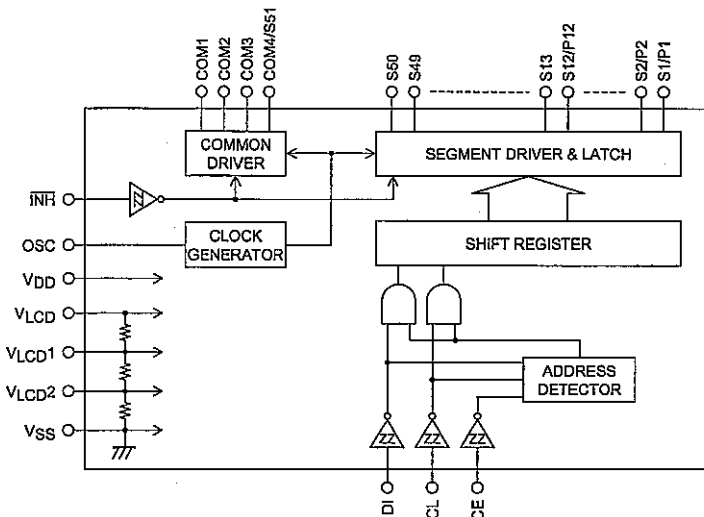
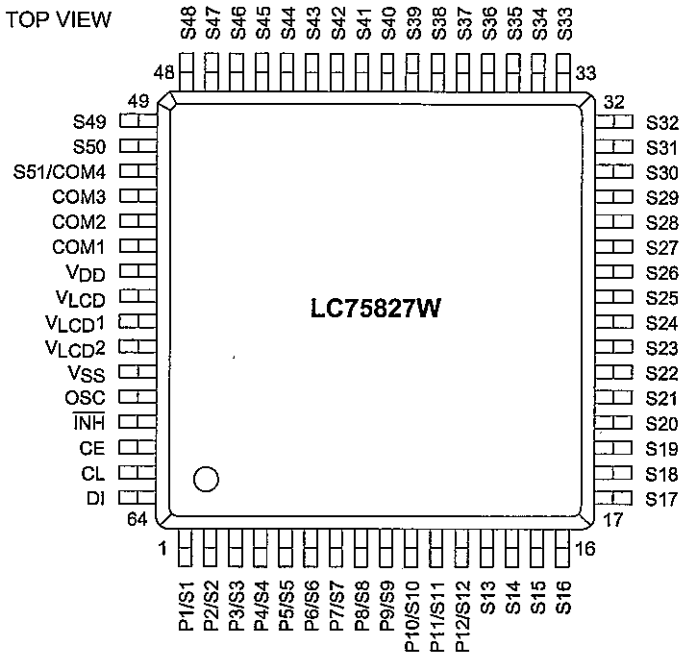


1. 1OUT
2. 1IN-
3. 1IN+
4. GND
5. 2IN+
6. 2IN-
7. 2OUT
8. Vcc

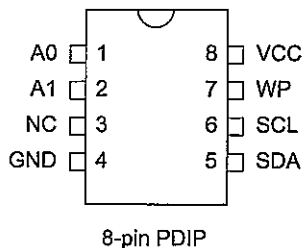
12) XC6209F332MR (XA1182) 3.3V Voltage Regulator



13) LC75827W (XA1183) LCD Display Driver



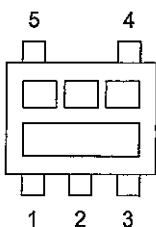
14) AT24C512-1.8 (XA1184) 2-wire Serial EEPROM



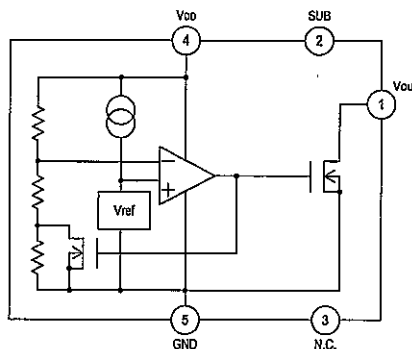
Pin Configurations

PIN NAME	FUNCTION
A0 - A1	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect
NC	No Connect

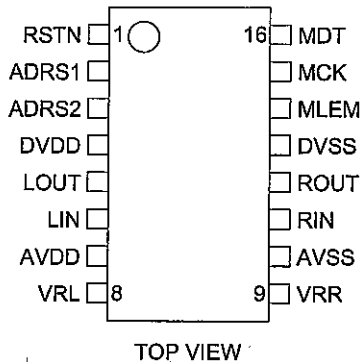
15) BU4846FVE (XA1185) RESET IC



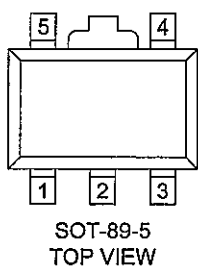
1. Vout
2. SUB
3. N.C.
4. VDD
5. GND



16) SM6451B (XA1186) Audio Variable Volume



17) XC6371C330PR (XA1239) DC-DC Converter IC



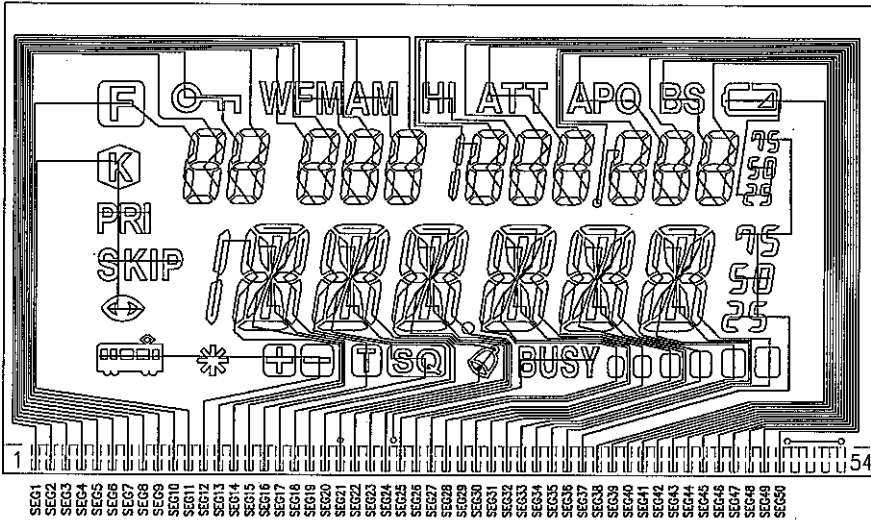
18) Transistor, Diode and LED Outline Drawings

Top View

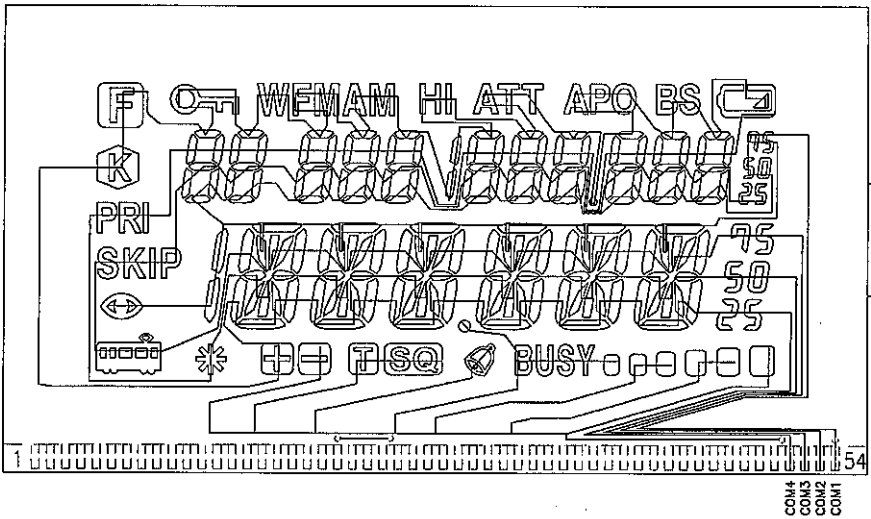
XD0338 1SS362	XD0364 1SV279	XD0384 JDP2S02S	XD0412 CRS09	XD0427 JDV2S14E	XD0432 JDS2S03S	XD0433 RB715W
XD0434 1SS426	XD0435 1SS361FV	XD0437 RB751G	XD0449 RB161M	XE0029 2SK1580	XE0030 2SK881	XE0069 SSM3K15FV
XL0115 PG1111C	XL0116 BRPY1211F	XT0180 2SC5066FT	XT0182 2SC5096FT	XT0210 2SC6026MFV	XT0211 CPH3116	XT0212 2SA1955FV
XT0222 2SD2654	XU0207 EMA8	XU0208 EMD3	XU0210 RN1107FV	XU0211 RN2107FV	XU0212 RN2115FV	XU0223 HN1B04FU
	 Rb=10kohm Rbe=47kohm	 Rb=10kohm Rbe=10kohm	 Rb=10kohm Rbe=47kohm	 Rb=10kohm Rbe=47kohm	 Rb=2.2kohm Rbe=10kohm	 Rb=10kohm Rbe=10kohm
XU0224 MT6C03AE						

19) LCD Connection (EL0061)

SEGMENT

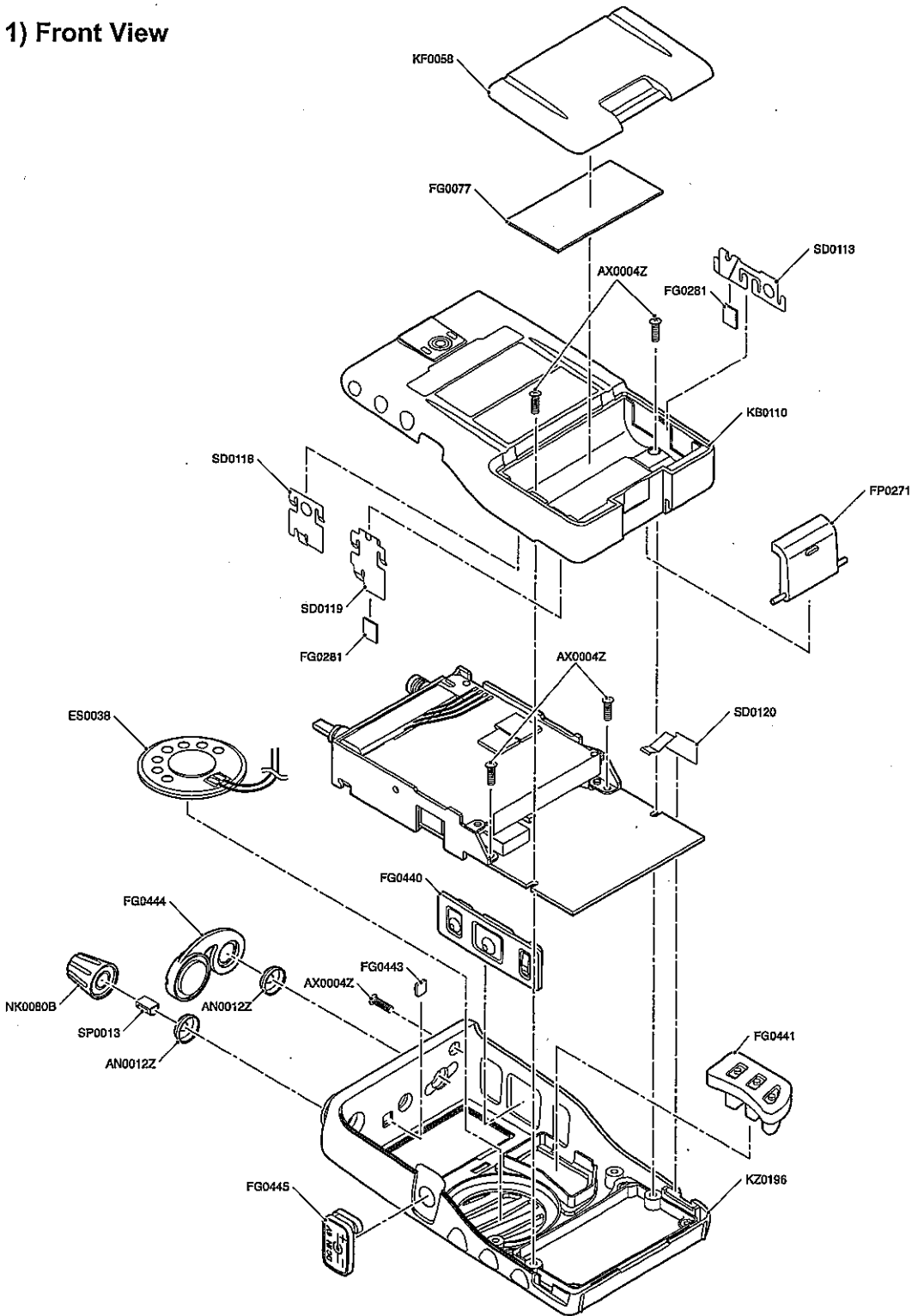


COMMON

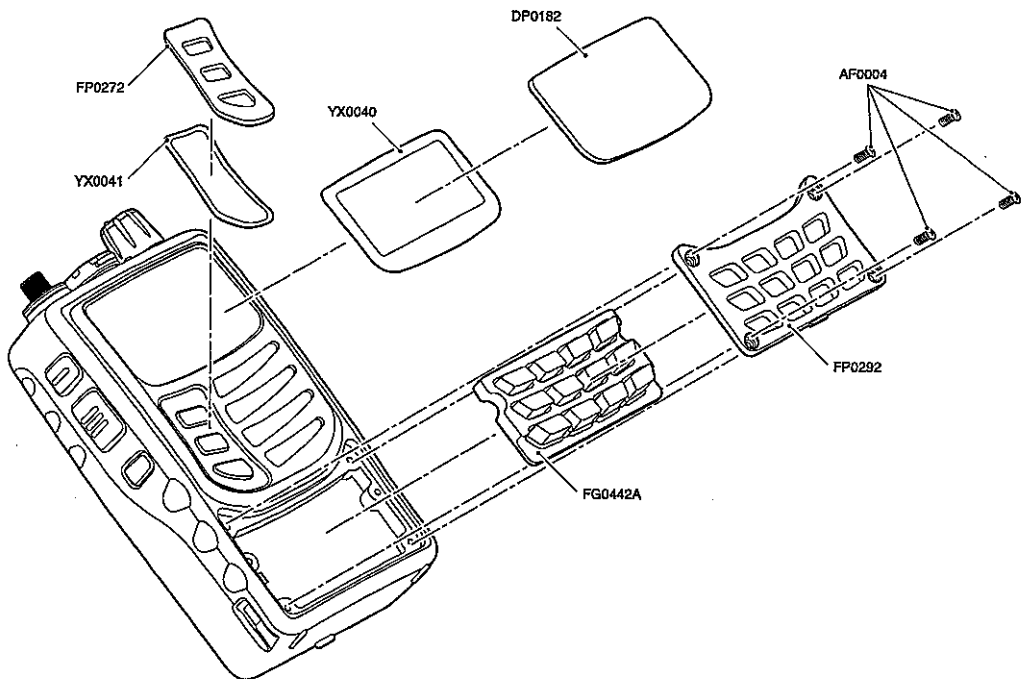
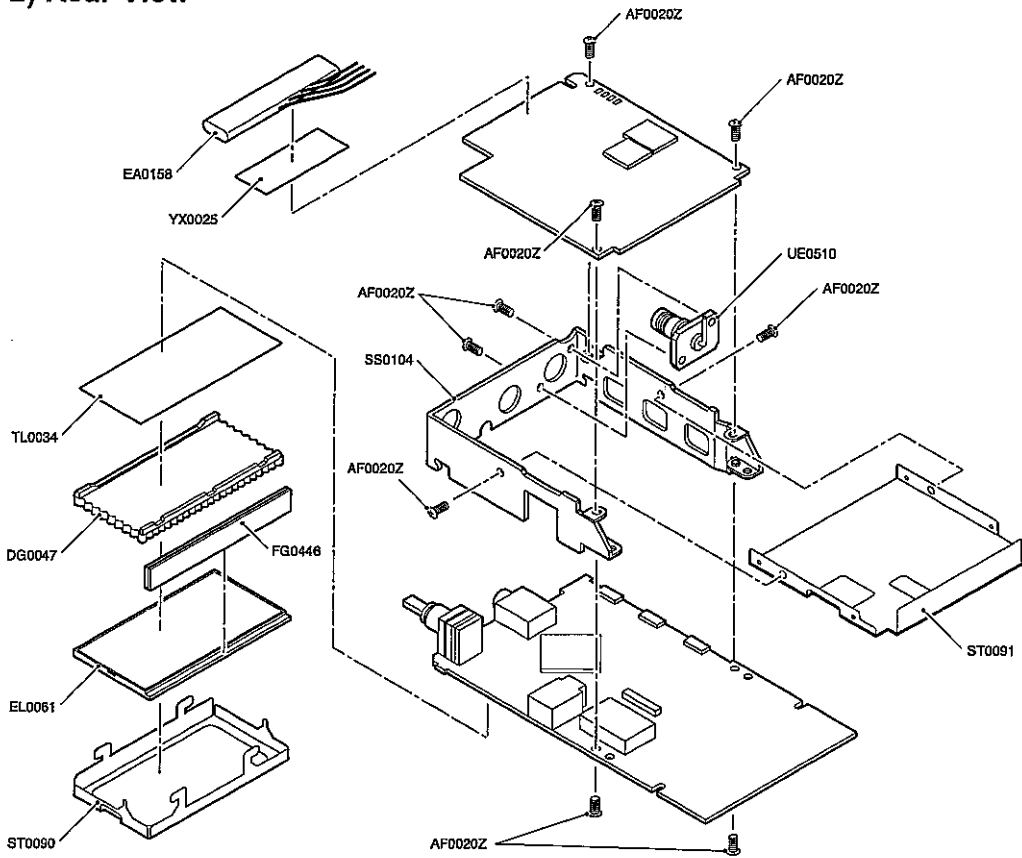


EXPLODED VIEW

1) Front View



2) Rear View



PARTS LIST

CPU Unit

Ref. No.	Parts No.	Description	Parts Name	Version	Ref. No.	Parts No.	Description	Parts Name	Version
	TL0034		REFLECTIV SHEET		C291	CU3547	Chip C.	GRM36B103K16PT	
	TS0185		SHIELD CASE		C292	CS0427	Chip Tantalum.	6.3V10UF	
	EL0061		LCD X8		C293	CU3551	Chip C.	GRM36B223K16PT	
	DG0047		LCD LIGHT		C294	CU3554	Chip C.	GRM36B104K10PT	
	FG0446		LCD RUBBER CONNECTOR		C295	CU3559	Chip C.	GRM155B30J105KE18D	
	ST0090		LCD HOLDER		C297	CS0427	Chip Tantalum.	6.3V10UF	
C201	CU3535	Chip C.	GRM36B102K50PT		C298	CU3551	Chip C.	GRM36B223K16PT	
C202	CU3535	Chip C.	GRM36B102K50PT		C300	CU3559	Chip C.	GRM155B30J105KE18D	
C203	CS0451	Chip Tantalum.	TMCP0G336MTR		C301	CS0397	Chip Tantalum.	16V 1UF	
C204	CS0451	Chip Tantalum.	TMCP0G336MTR		C302	CU3554	Chip C.	GRM36B104K10PT	
C207	CU3554	Chip C.	GRM36B104K10PT		C303	CU3547	Chip C.	GRM36B103K16PT	
C210	CU3559	Chip C.	GRM155B30J105KE18D		C305	CU3559	Chip C.	GRM155B30J105KE18D	
C211	CU3554	Chip C.	GRM36B104K10PT		C306	CS0425	Chip Tantalum.	TMCMBOJ107MTR	
C212	CS0425	Chip Tantalum.	TMCMBOJ107MTR		CN201	UE0530	Connector	40R-JMCS-G-B-TF	
C218	CU3535	Chip C.	GRM36B102K50PT		D201	XL0115	Chip LED.	PG1111C	
C219	CU3535	Chip C.	GRM36B102K50PT		D202	XL0115	Chip LED.	PG1111C	
C220	CU3559	Chip C.	GRM155B30J105KE18D	E	D203	XL0115	Chip LED.	PG1111C	
C221	CU3547	Chip C.	GRM36B103K16PT	E	D204	XL0115	Chip LED.	PG1111C	
C222	CU3551	Chip C.	GRM36B223K16PT		D205	XL0115	Chip LED.	PG1111C	
C223	CU3559	Chip C.	GRM155B30J105KE18D	E	D206	XL0115	Chip LED.	PG1111C	
C224	CS0451	Chip Tantalum.	TMCP0G336MTR		D207	XL0115	Chip LED.	PG1111C	
C225	CU3559	Chip C.	GRM155B30J105KE18D	E	D209	XL0116	Chip LED.	BRPY1211F	
C226	CU3559	Chip C.	GRM155B30J105KE18D	E	D210	XD0437	Chip Diode	RB751G	
C228	CU3559	Chip C.	GRM155B30J105KE18D	E	D211	XD0435	Chip Diode	1SS361FV	
C229	CU3547	Chip C.	GRM36B103K16PT	E	D213	XD0412	Chip Diode	CRS09(TE85L,Q)	
C230	CU3547	Chip C.	GRM36B103K16PT	E	D214	XD0412	Chip Diode	CRS09(TE85L,Q)	
C231	CS0451	Chip Tantalum.	TMCP0G336MTR		D215	XD0412	Chip Diode	CRS09(TE85L,Q)	
C233	CS0451	Chip Tantalum.	TMCP0G336MTR	E	D216	XD0412	Chip Diode	CRS09(TE85L,Q)	
C236	CU3544	Chip C.	GRM36B562K25PT	E	D217	XD0338	Chip Diode	1SS362(TE85L)	
C237	CU3559	Chip C.	GRM155B30J105KE18D	E	D218	XD0435	Chip Diode	1SS361FV	
C238	CU3547	Chip C.	GRM36B103K16PT		D219	XD0449	Chip Diode	RB161M-20	
C239	CS0451	Chip Tantalum.	TMCP0G336MTR	E	D220	XD0437	Chip Diode	RB751G	
C242	CU3535	Chip C.	GRM36B102K50PT		D221	XL0115	Chip Diode	PG1111C	
C244	CU3559	Chip C.	GRM155B30J105KE18D		D224	XL0115	Chip Diode	PG1111C	
C245	CU3517	Chip C.	GRM36CH330J50PT		D225	XL0115	Chip Diode	PG1111C	
C246	CU3517	Chip C.	GRM36CH330J50PT		D226	XD0412	Chip Diode	CRS09(TE85L,Q)	
C248	CU3552	Chip C.	GRM36B333K10PT		D227	XD0437	Chip Diode	RB751G	
C250	CS0451	Chip Tantalum.	TMCP0G336MTR		IC201	XA1183	IC	LCU75827W	
C253	CU3554	Chip C.	GRM36B104K10PT		IC203	XA1232B	IC	GPU DJX30T(1)	
C254	CU3552	Chip C.	GRM36B333K10PT		IC203	XA1224B	IC	CPU DJX8 (1)	T
C256	CU3535	Chip C.	GRM36B102K50PT		IC205	XA1103	IC	LM2904PWR	E
C259	CU3537	Chip C.	GRM36B152K50PT		IC206	XA0995	IC	NJM2594V TE1	E
C260	CU3554	Chip C.	GRM36B104K10PT		IC207	XA1184	IC	AT24C512-1.8	
C262	CU3523	Chip C.	GRM36CH101J50PT		IC208	XA1095	IC	BU4818FVE-TR	
C263	CU3554	Chip C.	GRM36B104K10PT		IC211	XA1103	IC	LM2904PWR	
C264	CU3535	Chip C.	GRM36B102K50PT		IC212	XA1054	IC	XC62HR3002MR	
C268	CU3535	Chip C.	GRM36B102K50PT		IC213	XA1182	IC	XC6209F332MR	
C270	CS0451	Chip Tantalum.	TMCP0G336MTR		IC214	XA1239	IC	XC6371C330PR	
C272	CU3535	Chip C.	GRM36B102K50PT		IC215	XA0210	IC	IC NJM2070M	
C273	CU3535	Chip C.	GRM36B102K50PT		IC216	XA1186	IC	SM6451B	
C274	CS0425	Chip Tantalum.	TMCMBOJ107MTR		IC217	XA1185	IC	BU4846FVE	
C275	CS0435	Chip Tantalum.	TMCMBOJ107MTR		JK201	UJ0048	Jack	HEC3600-018110	
C276	CU3535	Chip C.	GRM36B102K50PT		JK202	UJ0060	Jack	HSJ1594-010150	
C277	CU3547	Chip C.	GRM36B103K16PT		L201	QC0711	Chip Inductor	ODRH5D28-220NC	
C278	CU3551	Chip C.	GRM36B223K16PT		L202	QC0732	Chip Inductor	LK10051R0K-B	
C279	CU3554	Chip C.	GRM36B104K10PT		L203	QB0052	Chip Inductor	BKP1608HS271-T	
C280	CS0425	Chip Tantalum.	TMCMBOJ107MTR		Q201	XU0207	Chip Transistor	EMA8T2R	
C281	CU3554	Chip C.	GRM36B104K10PT		Q202	XU0207	Chip Transistor	EMA8T2R	
C283	CS0427	Chip Tantalum.	6.3V10UF		Q203	XU0211	Chip Transistor	RN2107FV	
C284	CU3535	Chip C.	GRM36B102K50PT		Q204	XU0210	Chip Transistor	RN1107FV	
C286	CU3559	Chip C.	GRM155B30J105KE18D		Q206	XU0210	Chip Transistor	RN1107FV	
C287	CU3553	Chip C.	GRM36B473K10PT		Q207	XU0208	Chip Transistor	EMD3T2R	
C288	CS0425	Chip Tantalum.	TMCMBOJ107MTR		Q208	XE0069	Chip FET	SSM3K15FV(TPL3)	
C289	CU3551	Chip C.	GRM36B223K16PT		Q210	XT0211	Chip Transistor	CPH3116TLE	
C290	CU3551	Chip C.	GRM36B223K16PT		Q211	XT0210	Chip Transistor	2SC6026MFV-GR	

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Q212	XT0212	Chip Transistor	2SA1955FV-A(TPL3)	
Q213	XT0210	Chip Transistor	2SC6026MFV-GR	
Q214	XU0210	Chip Transistor	RN1107FV	
Q215	XT0212	Chip Transistor	2SA1955FV-A(TPL3)	
Q216	XU0207	Chip Transistor	EMA8T2R	E
Q217	XU0207	Chip Transistor	EMA8T2R	
Q218	XU0207	Chip Transistor	EMA8T2R	
Q219	XU0207	Chip Transistor	EMA8T2R	
Q220	XU0207	Chip Transistor	EMA8T2R	
Q221	XU0207	Chip Transistor	EMA8T2R	
Q222	XU0207	Chip Transistor	EMA8T2R	
Q223	XU0207	Chip Transistor	EMA8T2R	
Q224	XU0207	Chip Transistor	EMA8T2R	
Q225	XU0207	Chip Transistor	EMA8T2R	
Q228	XT0210	Chip Transistor	2SC6026MFV-GR	
Q230	XU0207	Chip Transistor	EMA8T2R	
Q231	XU0210	Chip Transistor	RN1107FV	
Q232	XE0069	Chip FET	SSM8K15FV(TPL3)	
Q233	XU0210	Chip Transistor	RN1107FV	
R201	RK3537	Chip R.	1005 1/16W 820 OHM J	
R202	RK3537	Chip R.	1005 1/16W 820 OHM J	
R203	RK3537	Chip R.	1005 1/16W 820 OHM J	
R204	RK3537	Chip R.	1005 1/16W 820 OHM J	
R205	RK3537	Chip R.	1005 1/16W 820 OHM J	
R206	RK3526	Chip R.	1005 1/16W 100 OHM J	
R207	RK3526	Chip R.	1005 1/16W 100 OHM J	
R209	RK3557	Chip R.	1005 1/16W 39K OHM J	
R210	RK3526	Chip R.	1005 1/16W 100 OHM J	
R214	RK3526	Chip R.	1005 1/16W 100 OHM J	
R218	RK3532	Chip R.	1005 1/16W 330 OHM J	
R223	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R226	RK3563	Chip R.	1005 1/16W 120K OHMJ	
R227	RK3561	Chip R.	1005 1/16W 82K OHM J	E
R228	RK3501	Chip R.	1005 1/16W 0 OHM J	E
R229	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	E
R230	RK3556	Chip R.	1005 1/16W 100 OHM J	E
R236	RK3568	Chip R.	1005 1/16W 330K OHMJ	E
R239	RK3566	Chip R.	1005 1/16W 220K OHMJ	E
R240	RK3562	Chip R.	1005 1/16W 100K OHMJ	E
R241	RK3574	Chip R.	1005 1/16W 1.0M OHMJ	E
R242	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R244	RK3566	Chip R.	1005 1/16W 220K OHMJ	E
R245	RK3552	Chip R.	1005 1/16W 15K OHM J	E
R246	RK3552	Chip R.	1005 1/16W 15K OHM J	E
R248	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R249	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R250	RK3570	Chip R.	1005 1/16W 470K OHMJ	E
R252	RK3541	Chip R.	1005 1/16W 1.8K OHMJ	E
R256	RK3566	Chip R.	1005 1/16W 220K OHMJ	E
R257	RK3574	Chip R.	1005 1/16W 1.0M OHMJ	
R258	RK3546	Chip R.	1005 1/16W 6.8K OHMJ	
R259	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R260	RK3561	Chip R.	1005 1/16W 82K OHM J	
R261	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R262	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R263	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R264	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R265	RK3574	Chip R.	1005 1/16W 1.0M OHMJ	
R269	RK3554	Chip R.	1005 1/16W 22K OHM J	
R270	RK3561	Chip R.	1005 1/16W 82K OHM J	
R272	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R273	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R276	RK3561	Chip R.	1005 1/16W 82K OHM J	
R277	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R278	RK0001	Chip R.	2125 1/8W 10 OHM J	
R279	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R282	RK3559	Chip R.	1005 1/16W 56K OHM J	
R285	RK3574	Chip R.	1005 1/16W 1.0M OHMJ	
R287	RK3570	Chip R.	1005 1/16W 470K OHMJ	
R288	RK3563	Chip R.	1005 1/16W 120K OHMJ	
R290	RK3574	Chip R.	1005 1/16W 1.0M OHMJ	

Ref. No.	Parts No.	Description	Parts Name	Version
R293	RK0001	Chip R.	2125 1/8W 10 OHM J	
R294	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R295	RK3526	Chip R.	1005 1/16W 100 OHM J	
R296	RK3550	Chip R.	1005 1/16W 10K OHM J	
R297	RK3530	Chip R.	1005 1/16W 220 OHM J	
R298	RK3556	Chip R.	1005 1/16W 33K OHM J	
R299	RK3566	Chip R.	1005 1/16W 220K OHMJ	
R300	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R301	RK3568	Chip R.	1005 1/16W 330K OHMJ	
R302	RK3514	Chip R.	1005 1/16W 10 OHM J	
R303	RK3554	Chip R.	1005 1/16W 22K OHM J	
R304	RK3554	Chip R.	1005 1/16W 22K OHM J	
R305	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R306	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R307	RK3526	Chip R.	1005 1/16W 100 OHM J	
R308	RK3558	Chip R.	1005 1/16W 47K OHM J	
R309	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R310	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R311	RK3548	Chip R.	1005 1/16W 6.8K OHMJ	
R312	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R313	RK3548	Chip R.	1005 1/16W 6.8K OHMJ	
R314	RK3550	Chip R.	1005 1/16W 10K OHM J	
R315	RK3530	Chip R.	1005 1/16W 220 OHM J	
R317	RK3550	Chip R.	1005 1/16W 10K OHM J	
R318	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R319	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R320	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R323	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R324	RK3537	Chip R.	1005 1/16W 820 OHM J	
R327	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R328	RK3550	Chip R.	1005 1/16W 10K OHM J	
R329	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R330	RK3537	Chip R.	1005 1/16W 820 OHM J	
R331	RK3537	Chip R.	1005 1/16W 820 OHM J	
R332	RK3563	Chip R.	1005 1/16W 120K OHMJ	
R333	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R334	RK3566	Chip R.	1005 1/16W 220K OHMJ	T, K
R335	RK3001	Chip R.	1608 0 OHM	T, K
RE201	UR0023	Rotary Encoder	TP70N00AE20 13.5F	
SW217	UU0041	Chip Switch	EVQP4203M	
SW218	UU0041	Chip Switch	EVQP4203M	
SW219	UU0041	Chip Switch	EVQP4203M	
VR201	RH0211	Chip Switch	PVA2A104A01R00	E
W201	MRCKH6A	Wire	J-#28R02-065-02	
W202	MBCKH7A	Wire	J-#28B02-075-02	
XQ0132	Crystal		CSA309/4.194304MHZ	

Ref. No.	Parts No.	Description	Parts Name	Version
C551	CU3554	Chip C.	GRM36B104K10PT	
C552	CU3547	Chip C.	GRM36B103K16PT	
C553	CU3559	Chip C.	GRM155B30J105KE18D	
C554	CU3520	Chip C.	1005 CH 50V 56PF J	
C555	CU3525	Chip C.	GRM36CH151J50PT	
C556	CU3522	Chip C.	GRM36CH820J50PT	
C557	CU3547	Chip C.	GRM36B103K16PT	
C558	CS0451	Chip Tantalum.	TMCP0G336MTR	
C559	CU3554	Chip C.	GRM36B104K10PT	
C560	CU3535	Chip C.	GRM36B102K50PT	
C561	CU3531	Chip C.	GRM36B471K50PT	
C562	CU3531	Chip C.	GRM36B471K50PT	
C563	CU3506	Chip C.	GRM36CH050C50PT	
C564	CU3559	Chip C.	GRM155B30J105KE18D	
C565	CU3554	Chip C.	GRM36B104K10PT	
C566	CU3554	Chip C.	GRM36B104K10PT	
C567	CU3554	Chip C.	GRM36B104K10PT	
C568	CU3554	Chip C.	GRM36B104K10PT	
C569	CU3511	Chip C.	GRM36CH100D50PT	
C570	CU3531	Chip C.	GRM36B471K50PT	
C571	CU3504	Chip C.	GRM36CJ030C50PT	
C572	CU3531	Chip C.	GRM36B471K50PT	
C573	CU3547	Chip C.	GRM36B103K16PT	
C574	CU3554	Chip C.	GRM36B104K10PT	
C575	CU3523	Chip C.	GRM36CH101J50PT	
C576	CU3508	Chip C.	1005 CH 50V 7PF D	
C577	CU3508	Chip C.	1005 CH 50V 7PF D	
C578	CU3547	Chip C.	GRM36B103K16PT	
C579	CU3554	Chip C.	GRM36B104K10PT	
C580	CS0451	Chip Tantalum.	TMCP0G336MTR	
C581	CU3132	Chip C.	GRM1883U1H471JZ01D	
C582	CU3531	Chip C.	GRM36B471K50PT	
C583	CU3547	Chip C.	GRM36B103K16PT	
C584	CU3554	Chip C.	GRM36B104K10PT	
C585	CU3531	Chip C.	GRM36B471K50PT	
C586	CU3503	Chip C.	GRM36CK020C50PT	
C587	CU3504	Chip C.	GRM36CJ030C50PT	
C588	CU3503	Chip C.	GRM36CK020C50PT	
C589	CU3503	Chip C.	GRM36CK020C50PT	
C590	CU3505	Chip C.	GRM36CH040C50PT	
C592	CU3547	Chip C.	GRM36B103K16PT	
C593	CU3512	Chip C.	GRM36CH120J50PT	
C594	CU3504	Chip C.	GRM36CJ030C50PT	
C595	CU3505	Chip C.	GRM36CH040C50PT	
C596	CU3523	Chip C.	GRM36CH101J50PT	
C598	CS0397	Chip Tantalum.	16V 1UF	
C599	CU3554	Chip C.	GRM36B104K10PT	
C600	CS0451	Chip Tantalum.	TMCP0G336MTR	
CN401	UE0531	Connector	40P9.0-JMOS-G-B-TF	
D401	XD0433	Chip Diode	RB715WTL	
D402	XD0435	Chip Diode	1SS361FV	
D403	XD0432	Chip Diode	JDS2S03S	
D404	XD0427	Chip Diode	JDV2S14E	
D405	XD0427	Chip Diode	JDV2S14E	
D406	XD0427	Chip Diode	JDV2S14E	
D407	XD0432	Chip Diode	JDS2S03S	
D408	XD0432	Chip Diode	JDS2S03S	
D409	XD0427	Chip Diode	JDV2S14E	
D410	XD0437	Chip Diode	RB751G	
D411	XD0437	Chip Diode	RB751G	
D413	XD0384	Chip Diode	JDP2S02S(TPH3)	
D414	XD0432	Chip Diode	JDS2S03S	
D415	XD0384	Chip Diode	JDP2S02S(TPH3)	
D416	XD0384	Chip Diode	JDP2S02S(TPH3)	
D417	XD0384	Chip Diode	JDP2S02S(TPH3)	
D418	XD0338	Chip Diode	1SS362(T85L)	
D419	XD0432	Chip Diode	JDS2S03S	
D420	XD0384	Chip Diode	JDP2S02S(TPH3)	
D421	XD0432	Chip Diode	JDS2S03S	
D422	XD0432	Chip Diode	JDS2S03S	
D423	XD0384	Chip Diode	JDP2S02S(TPH3)	

Ref. No.	Parts No.	Description	Parts Name	Version
D424	XD0384	Chip Diode	1SV279-TPH3	
D425	XD0384	Chip Diode	JDP2S02S(TPH3)	
D426	XD0384	Chip Diode	1SV279-TPH3	
D427	XD0432	Chip Diode	JDS2S03S	
D428	XD0432	Chip Diode	JDS2S03S	
D429	XD0432	Chip Diode	JDS2S03S	
D430	XD0432	Chip Diode	JDS2S03S	
D431	XD0435	Chip Diode	1SS361FV	
D432	XD0433	Chip Diode	RB715WTL	
D433	XD0434	Chip Diode	1SS426	
D434	XD0432	Chip Diode	JDS2S03S	
D435	XD0432	Chip Diode	JDS2S03S	
D436	XD0432	Chip Diode	JDS2S03S	
D437	XD0432	Chip Diode	JDS2S03S	
D438	XD0384	Chip Diode	JDP2S02S(TPH3)	
D439	XD0384	Chip Diode	JDP2S02S(TPH3)	
D440	XD0435	Chip Diode	1SS361FV	
D441	XD0384	Chip Diode	JDP2S02S(TPH3)	
D442	XD0384	Chip Diode	JDP2S02S(TPH3)	
D443	XD0384	Chip Diode	JDP2S02S(TPH3)	
D445	XD0437	Chip Diode	RB751G	
D446	XD0437	Chip Diode	RB751G	
D448	XD0384	Chip Diode	JDP2S02S(TPH3)	
FL401	XF0061	Crystral Filter	DSF444SAF 39.15MHZ	
FL402	XC0120	SAW Filter	NSVS1123	
FL403	XC0097	Ceramic Filter	SFECV10M7JA00-R0	
FL404	XC0075	Ceramic Filter	CFUGG450E-TC	
IC401	XA1033	IC	MB15F075LPFV1-G-BND	
IC402	XA1035	IC	TC7S204AFE	
IC403	XA0976	IC	UPC2757TB-E3	
IC404	XA0976	IC	UPC2757TB-E3	
IC405	XA0950	IC	TK11850LTL	
IC406	XA0866	IC	TK10931V	
IC407	XA0348	IC	TC4W53FU(TE12L)	
L401	QC0800	Chip Inductor	MLG1005S10NJT	
L402	QC0809	Chip Inductor	1005 56NH	
L403	QC0780	Chip Inductor	C1608H-12NJ	
L404	QC0803	Chip Inductor	MLG1005S18NJT	
L406	QC0801	Chip Inductor	MLG1005S12NJT	
L407	QC0794	Chip Inductor	MLG1005S3N3ST	
L408	QC0738	Chip Inductor	LK10052R2K-B	
L409	QC0729	Chip Inductor	LK1005R56K-B	
L410	QC0787	Chip Inductor	C1608H-47NJ	
L411	QC0794	Chip Inductor	MLG1005S3N3ST	
L412	QC0805	Chip Inductor	MLG1005S27NJT	
L413	QC0812	Chip Inductor	1005 100NH	
L414	QC0805	Chip Inductor	MLG1005S27NJT	
L415	QC0729	Chip Inductor	LK1005R56K-B	
L417	QC0816	Chip Inductor	1005 220NH	
L418	QC0816	Chip Inductor	1005 220NH	
L419	QC0810	Chip Inductor	1005 68NH	
L420	QC0809	Chip Inductor	1005 56NH	
L421	QC0736	Chip Inductor	LK10052R2K-B	
L422	QC0812	Chip Inductor	1005 100NH	
L423	QC0812	Chip Inductor	1005 100NH	
L424	QC0812	Chip Inductor	1005 100NH	
L425	QC0806	Chip Inductor	MLG1005S33NJT	
L426	QC0806	Chip Inductor	MLG1005S33NJT	
L427	QC0807	Chip Inductor	MLG1005S39NJT	
L428	QC0737	Chip Inductor	C3-Z1.5R-EE	
L429	QC0738	Chip Inductor	LQH32CN100K33L	
L430	QC0736	Chip Inductor	LK10052R2K-B	
L431	QC0808	Chip Inductor	1005 47NH	
L432	QC0803	Chip Inductor	MLG1005S18NJT	
L433	QC0800	Chip Inductor	MLG1005S10NJT	
L434	QC0800	Chip Inductor	MLG1005S10NJT	
L435	QC0804	Chip Inductor	MLG1005S22NJT	
L436	QC0804	Chip Inductor	MLG1005S22NJT	
L437	QC0816	Chip Inductor	1005 220NH	
L438	QC0817	Chip Inductor	MLG1005SR27JT	
L440	QC0801	Chip Inductor	MLG1005S12NJT	

Ref. No.	Parts No.	Description	Parts Name	Version
L441	QC0803	Chip Inductor	MLG1005S18NJT	
L442	QA0160	Chip Inductor	K5-S2/33331 R12T739B	
L443	QC0799	Chip Inductor	MLG1005S8N2JT	
L444	QC0799	Chip Inductor	MLG1005S8N2JT	
L445	QA0159	Chip Inductor	DET COIL QA0159	
L446	QC0797	Chip Inductor	MLG1005S5N6ST	
L447	QC0798	Chip Inductor	MLG1005S6N8JT	
L448	QC0797	Chip Inductor	MLG1005S5N6ST	
L449	QC0798	Chip Inductor	MLG1005S6N8JT	
L450	QC0812	Chip Inductor	1005 100NH	
L451	QC0736	Chip Inductor	LK10052R2K-B	
L452	QC0804	Chip Inductor	MLG1005S22NJT	
L453	QC0736	Chip Inductor	LK10052R2K-B	
Q401	XE0036	Chip FET	FET 2SK881-Y(TE85R)	
Q402	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q403	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q404	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q405	XE0029	Chip Transistor	2SK1580-T1	
Q408	XT0222	Chip Transistor	2SD2854	
Q407	XU0224	Chip Transistor	MT8C03AE	
Q408	XU0212	Chip Transistor	RN2115FV	
Q409	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q410	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q411	XT0210	Chip Transistor	2SC6028MFV-GR	
Q412	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q413	XT0210	Chip Transistor	2SC6028MFV-GR	
Q414	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q415	XU0212	Chip Transistor	RN2115FV	
Q416	XT0210	Chip Transistor	2SC6028MFV-GR	
Q417	XU0211	Chip Transistor	RN2107FV	
Q418	XU0207	Chip Transistor	EMA8T2R	
Q419	XU0224	Chip Transistor	MT8C03AE	
Q420	XT0210	Chip Transistor	2SC6028MFV-GR	
Q422	XT0180	Chip Transistor	2SC5068FT-Y(TE85L)	
Q423	XT0182	Chip Transistor	2SC5096FT-O(TE85L)	
Q424	XU0210	Chip Transistor	RN1107FV	
Q425	XT0182	Chip Transistor	2SC5096FT-O(TE85L)	
Q426	XU0223	Chip Transistor	HN1B04FU	
Q427	XT0210	Chip Transistor	2SC6028MFV-GR	
Q428	XT0210	Chip Transistor	2SC6028MFV-GR	
R401	RK3550	Chip R.	1005 1/16W 10K OHM J	
R402	RK3533	Chip R.	1005 1/16W 390 OHM J	
R403	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R404	RK3550	Chip R.	1005 1/16W 10K OHM J	
R405	RK3562	Chip R.	1005 1/16W 100K OHM J	
R406	RK3526	Chip R.	1005 1/16W 100 OHM J	
R407	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R408	RK3522	Chip R.	1005 1/16W 47 OHM J	
R409	RK3522	Chip R.	1005 1/16W 47 OHM J	
R410	RK3528	Chip R.	1005 1/16W 100 OHM J	
R411	RK3501	Chip R.	1005 1/16W 0 OHM J	
R412	RK3562	Chip R.	1005 1/16W 100K OHM J	
R413	RK3550	Chip R.	1005 1/16W 10K OHM J	
R414	RK3534	Chip R.	1005 1/16W 470 OHM J	
R415	RK3526	Chip R.	1005 1/16W 100 OHM J	
R416	RK3514	Chip R.	1005 1/16W 10 OHM J	
R417	RK3558	Chip R.	1005 1/16W 47K OHM J	
R418	RK3562	Chip R.	1005 1/16W 100K OHM J	
R419	RK3548	Chip R.	1005 1/16W 4.7K OHM J	
R420	RK3522	Chip R.	1005 1/16W 47 OHM J	
R421	RK3544	Chip R.	1005 1/16W 3.3K OHM J	
R422	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R423	RK3526	Chip R.	1005 1/16W 100 OHM J	
R424	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R426	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R427	RK3526	Chip R.	1005 1/16W 100 OHM J	
R429	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R430	RK3533	Chip R.	1005 1/16W 390 OHM J	
R431	RK3550	Chip R.	1005 1/16W 10K OHM J	
R433	RK3550	Chip R.	1005 1/16W 10K OHM J	
R434	RK3550	Chip R.	1005 1/16W 10K OHM J	

Ref. No.	Parts No.	Description	Parts Name	Version
R435	RK3550	Chip R.	1005 1/16W 10K OHM J	
R437	RK3519	Chip R.	1005 1/16W 27 OHM J	
R438	RK3519	Chip R.	1005 1/16W 27 OHM J	
R439	RK3550	Chip R.	1005 1/16W 10K OHM J	
R440	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R441	RK3518	Chip R.	1005 1/16W 15 OHM J	
R442	RK3550	Chip R.	1005 1/16W 10K OHM J	
R443	RK3528	Chip R.	1005 1/16W 100 OHM J	
R444	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R445	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R446	RK3546	Chip R.	1005 1/16W 4.7K OHM J	
R447	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R448	RK3562	Chip R.	1005 1/16W 120K OHM J	
R449	RK3526	Chip R.	1005 1/16W 100 OHM J	
R450	RK3522	Chip R.	1005 1/16W 47 OHM J	
R451	RK3526	Chip R.	1005 1/16W 100 OHM J	
R452	RK3528	Chip R.	1005 1/16W 100 OHM J	
R453	RK3544	Chip R.	1005 1/16W 3.3K OHM J	
R454	RK3550	Chip R.	1005 1/16W 10K OHM J	
R455	RK3544	Chip R.	1005 1/16W 4.7K OHM J	
R456	RK3550	Chip R.	1005 1/16W 10K OHM J	
R457	RK3534	Chip R.	1005 1/16W 470 OHM J	
R458	RK3541	Chip R.	1005 1/16W 1.8K OHM J	
R459	RK3544	Chip R.	1005 1/16W 3.3K OHM J	
R460	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R461	RK3550	Chip R.	1005 1/16W 10K OHM J	
R462	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R463	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R464	RK3559	Chip R.	1005 1/16W 56K OHM J	
R465	RK3562	Chip R.	1005 1/16W 100K OHM J	
R466	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R467	RK3566	Chip R.	1005 1/16W 220K OHM J	
R468	RK3528	Chip R.	1005 1/16W 100 OHM J	
R469	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R470	RK3546	Chip R.	1005 1/16W 4.7K OHM J	
R471	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R472	RK3522	Chip R.	1005 1/16W 47 OHM J	
R473	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R474	RK3526	Chip R.	1005 1/16W 100 OHM J	
R475	RK3501	Chip R.	1005 1/16W 0 OHM J	
R476	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R477	RK3559	Chip R.	1005 1/16W 56K OHM J	
R478	RK3530	Chip R.	1005 1/16W 220 OHM J	
R479	RK3550	Chip R.	1005 1/16W 10K OHM J	
R480	RK3574	Chip R.	1005 1/16W 1.0M OHM J	
R481	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R482	RK3550	Chip R.	1005 1/16W 10K OHM J	
R483	RK3528	Chip R.	1005 1/16W 100 OHM J	
R484	RK3530	Chip R.	1005 1/16W 220 OHM J	
R485	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R486	RK3522	Chip R.	1005 1/16W 47 OHM J	
R487	RK3522	Chip R.	1005 1/16W 47 OHM J	
R488	RK3542	Chip R.	1005 1/16W 2.2K OHM J	
R489	RK3562	Chip R.	1005 1/16W 100K OHM J	
R490	RK3550	Chip R.	1005 1/16W 10K OHM J	
R491	RK3563	Chip R.	1005 1/16W 120K OHM J	
R492	RK3559	Chip R.	1005 1/16W 56K OHM J	
R493	RK3520	Chip R.	1005 1/16W 33 OHM J	
R494	RK3538	Chip R.	1005 1/16W 1.0K OHM J	
R495	RK3518	Chip R.	1005 1/16W 22 OHM J	
R496	RK3568	Chip R.	1005 1/16W 330K OHM J	
R497	RK3501	Chip R.	1005 1/16W 0 OHM J	
R498	RK3550	Chip R.	1005 1/16W 10K OHM J	
R499	RK3550	Chip R.	1005 1/16W 10K OHM J	
R500	RK3530	Chip R.	1005 1/16W 220 OHM J	
R501	RK3550	Chip R.	1005 1/16W 10K OHM J	
R502	RK3529	Chip R.	1005 1/16W 180 OHM J	
R503	RK3568	Chip R.	1005 1/16W 220K OHM J	
R504	RK3502	Chip R.	1005 1/16W 1.0 OHM J	
R505	RK3556	Chip R.	1005 1/16W 33K OHM J	
R506	RK3532	Chip R.	1005 1/16W 330 OHM J	

Ref. No.	Parts No.	Description	Parts Name	Version
R507	RK3526	Chip R.	1005 1/16W 100 OHM J	
R508	RK3501	Chip R.	1005 1/16W 0 OHM J	
R509	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R510	RK3559	Chip R.	1005 1/16W 56K OHM J	
R511	RK3559	Chip R.	1005 1/16W 56K OHM J	
R512	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R513	RK3522	Chip R.	1005 1/16W 47 OHM J	
R514	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R515	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R516	RK3550	Chip R.	1005 1/16W 10K OHM J	
R518	RK3526	Chip R.	1005 1/16W 100 OHM J	
R520	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R521	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R522	RK3559	Chip R.	1005 1/16W 56K OHM J	
R524	RK3553	Chip R.	1005 1/16W 18K OHM J	
R525	RK3550	Chip R.	1005 1/16W 10K OHM J	
R526	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R527	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R528	RK3565	Chip R.	1005 1/16W 180K OHMJ	
R529	RK3566	Chip R.	1005 1/16W 220K OHMJ	
R530	RK3551	Chip R.	1005 1/16W 12K OHM J	
R531	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R532	RK3558	Chip R.	1005 1/16W 47K OHM J	
R533	RK3568	Chip R.	1005 1/16W 330K OHMJ	
R534	RK3522	Chip R.	1005 1/16W 47 OHM J	
R535	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R536	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R537	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R538	RK3501	Chip R.	1005 1/16W 0 OHM J	
R539	RK3559	Chip R.	1005 1/16W 56K OHM J	
R540	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R541	RK3542	Chip R.	1005 1/16W 2.2K OHMJ	
R542	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R543	RK3558	Chip R.	1005 1/16W 47K OHM J	
R544	RK3522	Chip R.	1005 1/16W 47 OHM J	
R545	RK3550	Chip R.	1005 1/16W 10K OHM J	
R546	RK3553	Chip R.	1005 1/16W 18K OHM J	
R547	RK3554	Chip R.	1005 1/16W 22K OHM J	
R548	RK3526	Chip R.	1005 1/16W 100 OHM J	
R549	RK3554	Chip R.	1005 1/16W 22K OHM J	
R550	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R551	RK3554	Chip R.	1005 1/16W 22K OHM J	
R552	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R553	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R554	RK3559	Chip R.	1005 1/16W 56K OHM J	
R555	RK3562	Chip R.	1005 1/16W 100K OHMJ	
R556	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R557	RK3546	Chip R.	1005 1/16W 4.7K OHMJ	
R558	RK3532	Chip R.	1005 1/16W 330 OHM J	
R559	RK3538	Chip R.	1005 1/16W 1.0K OHMJ	
R561	RK3526	Chip R.	1005 1/16W 100 OHM J	
R562	RK3526	Chip R.	1005 1/16W 100 OHM J	
R575	RK3526	Chip R.	1005 1/16W 100 OHM J	
TC401	CT0050	Chip Trimmer.	TZY22100A001R00	
X401	XQ0172	Crystal	DSX321G 12.9MHZ	

Mechanical Unit

Ref. No.	Parts No.	Description	Parts Name	Version
	SD0119		BATTERY SPRING C	
	SD0118		BATTERY SPRING A	
	SD0113		BATTERY SPRING B	
	NK0080B		KNOB	
	KZ0196		FRONT CASE ASSY	
	SD0120		BATTERY SPRING D	
	SP0013		KNOB SPRING 7800	
	SS0104		CHASSIS	
	ST0091		RF SHIELD	
	UE0510		SMA ANTENA CONNECTOR	
	YX0025		TAPE BA DJX2	
	YX0040		LCDテープ	
	KF0058		BATTERY COVER	
	YX0041		3 KEY TAPE	
	ES0038	Speaker	32-8BB-07GP	
	AF0004		OPH M2+3 FE/B.ZN3	
	AF0020Z		OPH M2+3 FE/N 1	
	AX0004Z		OPH P2+8 FE/B.ZN 3	
	AN0012Z		ダイヤルナット	
	EA0158		BAR ANTENNA DJ-X8	
	FG0077Z		CUSHION BATT. DJK1	
	DP0182		LCD PANEL	
	FG0440		PTT RUBBER	
	KB0110		REAR CASE	
	FG0441		3 KEY RUBBER	
	FG0442		12 KEY RUBBER	
	FG0443		ON AIR RUBBER	
	FG0444		JACK CAP	
	FG0445		DC CAP	
	FP0271		LOCK LEVER	
	FP0272		3 KEY PANEL	
	FP0292		12 KEY PANEL X30	
	FG0281		BATT.RUBBER XH728	

Packing Unit

Ref. No.	Parts No.	Description	Parts Name	Version
	EA0154		ANT.EA0154	
	#G1401		BELT CLIP	
	PS0542		INSTRUCTION DJX30	
	PH0015		WARRANTY EXPORT	T, K
	PR0514		E 10X49 STICKER (W)	
	DS0446		NITTO MODEL PLATE(S)	
	PR0478		CE PLAIN STICKER	
	PR0452		FCC HOME USE	T
	PR0447		WARNING FCC (N)	T
	HK0659		Individual Box DJX30	
	HU0249		INNER	
	HM0252		CARTON BOX	
	HU0250		10 INNER	
	FP0274		KEY COVER	
	FG0455		RUBBER SHEET	
	PR0513		N-13 x 13 SEAL(W)	T, K
	HP0003		P BAG	
	HP0006Z		P BAG	
	PF0135		ADD SHEET DJ-X30E	E

ADJUSTMENTS

1) Required Test Equipment

The following items are required to adjust radio parameters

1. Regulated Power Supply

Supply voltage: 6.0VDC
Current: 1A 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: 8 Ω
Dissipation: 1W or more
Jack: 3.5 Φ

5. SSG

Output frequency: 1300MHz or more
Output level: -20dB μ / 0.1 μ V to 120dB μ / 1V
Modulation: FM / AM

6. Audio Voltmeter

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

7. Audio Generator

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

8. Distortion Meter / SINAD Meter

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

9. Frequency Counter

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

Note:

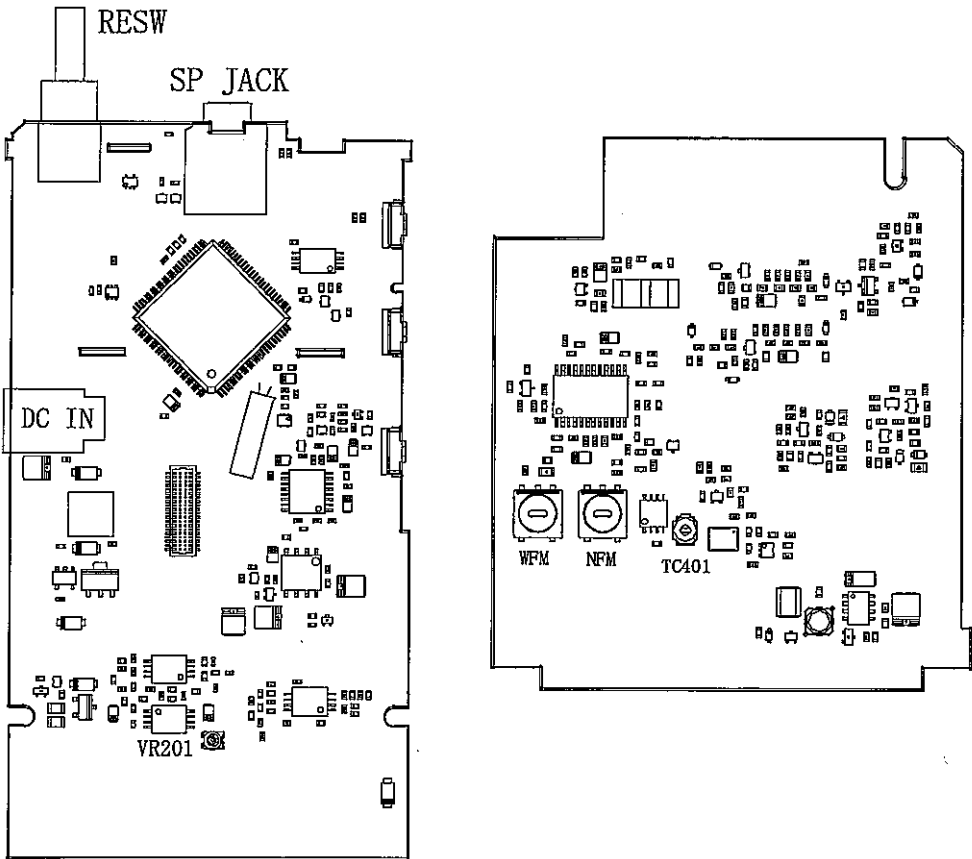
- Standard modulation: 1kHz \pm 3.5kHz / DEV
- Reference sensitivity: 12dB SINAD
- Specified audio output level: 200mW at 8 Ω
- Standard audio output level: 50mW at 8 Ω
- Use an RF cable (3D2W: 47cm) for test equipment.
- Attach a fuse to RF indicated by EMF.
- All SSG outputs are indicated by EMF.
- Supply voltage for the transceiver: 6.0VDC

2) Entering and Releasing the Adjustment Mode

The DJ-X30 does not require a serviceperson to manipulate the components on the printed-circuit board, except the trimmer when adjusting reference frequency and deviation. Most of the adjustments for the transceiver are mode by using the keys on it while the unit is in the adjustment mode. Because the adjustment mode temporarily uses the channels, frequency must be set on each channel before adjustments can be mode. For instructions on how to program the channels, see the "DJ-X30 INSTRUCTION MANUAL" which came with the product. In consideration of the radio environment, the frequency on each channel must be near the value (+/-1MHz) listed in the table below. To enter the adjustment mode, set key lock and press [BAND], [SCAN], [V/P/M], [BAND], [V/P/M], and [SCAN] key. "ALL Characters" appears in LCD. When changing the adjustment parameters, press the [V/P/M] or [BAND] key.

To exit the adjustment mode, press the [FUNC] key.

Adjustment Points



Set power supply voltage to 6.0V.

1. Reference frequency adjustment

Display: FRWQ, Adjust point: TC401
Adjust the TC1 to 339.56MHz±300Hz

2. NFM-AF output adjustment

Display: N AF, Adjust point: L445
Input 60dBu to the test unit which modulation is 1kHz 3.5kHz and adjust the L445 to maximum AF level.
Frequency: 435.17MHz

3. WFM-AF output adjustment

Display: W AF, Adjust point: L442
Input 60dBu to the test unit which modulation is 1kHz 50.5kHz and adjust the L442 to maximum AF level.
Frequency: 84.5MHz

4. Descrambling Signal level Adjustment (X30E)

Display: SCR Adjust point : VR201
Input the 380.17MHz of 30dBu (standard modulation)
Then if the test unit has strange sound, adjust the VR201 until can't hear strange sound

5. Aging

Display: AGING
Press SCAN key to start Aging.
It's finished automatically

6. NFM-SQL adjustment

SQL 1 level Adjustment

Display: SQL 3L Adjust point: [SCAN] key

Input the 145.17MHz of -13dBu which modulation is 3.5kHz, and press the [SCAN] key.
Check the BEEP sound.

SQL 9 level Adjustment

Display: SQL 3H Adjust point: [SCAN] key

Input the 145.17MHz of -5dBu which modulation is 3.5kHz, and press the [SCAN] key.
Check the BEEP sound.

7. NFM-S-meter adjustment

S meter 1 level Adjustment.

Display: SNL Adjust point: [SCAN] key

Input the 145.17MHz of 7dBu which modulation is 3.5kHz, and press the [SCAN] key.
Check the BEEP sound.

Display: SNH Adjust point: [SCAN] key.

Input the 145.17MHz of 16dBu which modulation is 3.5kHz, and press the [SCAN] key.
Check the BEEP sound.

Input the 119.17MHz of -2dBu which modulation is 30%, and press the [SCAN] key.
Check the BEEP sound.

8. WFM-SQL adjustment

SQL 1 level Adjustment

Display: SQL WL Adjust point: [SCAN] key

Input the 84.5MHz of -8dBu which modulation is 50.5kHz, and press the [SCAN] key. Check the BEEP sound.

SQL 9 level Adjustment

Display: SQL WH Adjust point: [SCAN] key

Input the 84.5MHz of 4dBu which modulation is 50.5kHz, and press the [SCAN] key. Check the BEEP sound.

9. WFM- S-meter adjustment

SQL 1 level Adjustment

Display: SWL Adjust point: [SCAN] key

Input the 84.5MHz of 17dBu which modulation is 50.5kHz, and press the [SCAN] key. Check the BEEP sound.

SQL 9 level Adjustment

Display: SWH Adjust point: [SCAN] key

Input the 84.5MHz of 30dBu which modulation is 50.5kHz, and press the [SCAN] key. Check the BEEP sound.

10. AM-SQL adjustment

SQL 1 level Adjustment

Display: SQL AL Adjust point: [SCAN] key

Input the 119.17MHz of -6dBu which modulation is 30%, and press the [SCAN] key.
Check the BEEP sound.

SQL 9 level Adjustment

Display: SQL AH Adjust point: [SCAN] key

Input the 119.17MHz of 1dBu which modulation is 30%, and press the [SCAN] key.
Check the BEEP sound.

11. AM- S-meter adjustment

SQL 1 level Adjustment

Display: SAL Adjust point: [SCAN] key

Input the 119.17MHz of -2dBu which modulation is 30%, and press the [SCAN] key.

Check the BEEP sound.

SQL 9 level Adjustment

Display: SAH Adjust point: [SCAN] key

Input the 119.17MHz of 12dBu which modulation is 30%, and press the [SCAN] key.

Check the BEEP sound.

12. Low Battery Display Setting

Display: BATT M Adjust point: [SCAN] key

Set power supply voltage to 2.5V.

After that, press the [SCAN] key.

Check the BEEP sound.

Display: BATT L Adjust point: [SCAN] key

Set power supply voltage to 2.4V.

After that, press the [SCAN] key.

Check the BEEP sound.

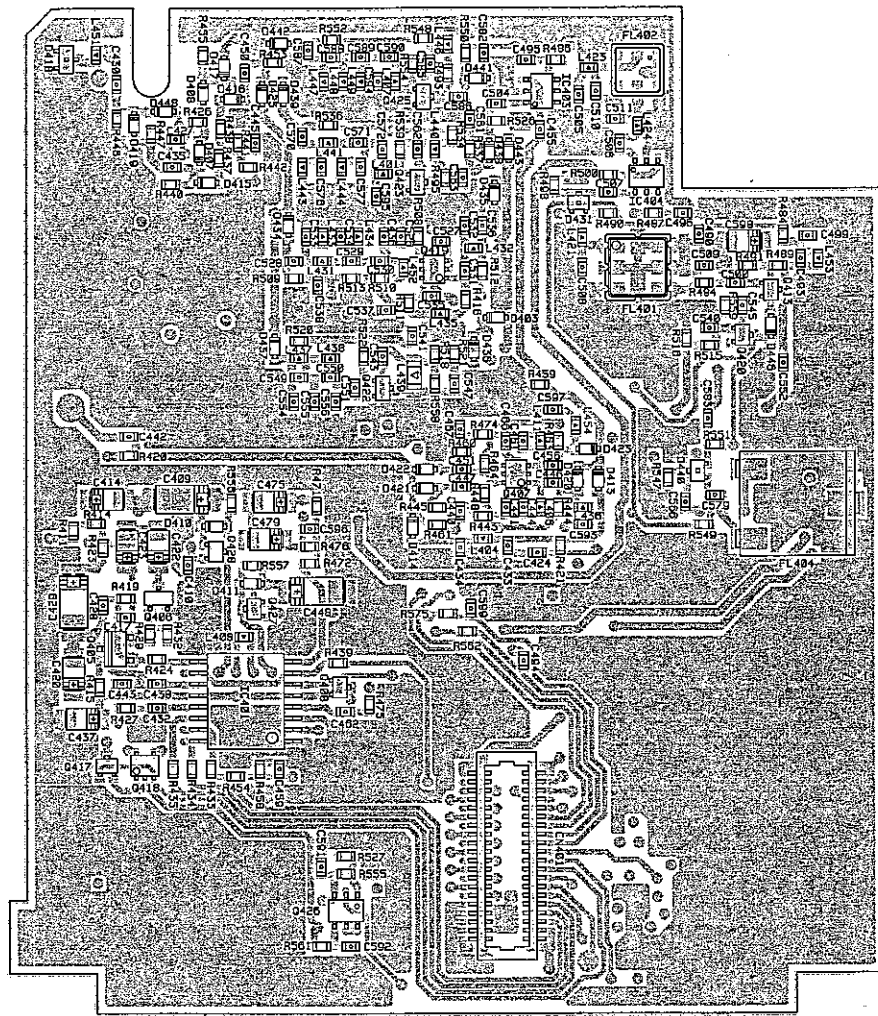
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E-mail: export@alinco.co.jp

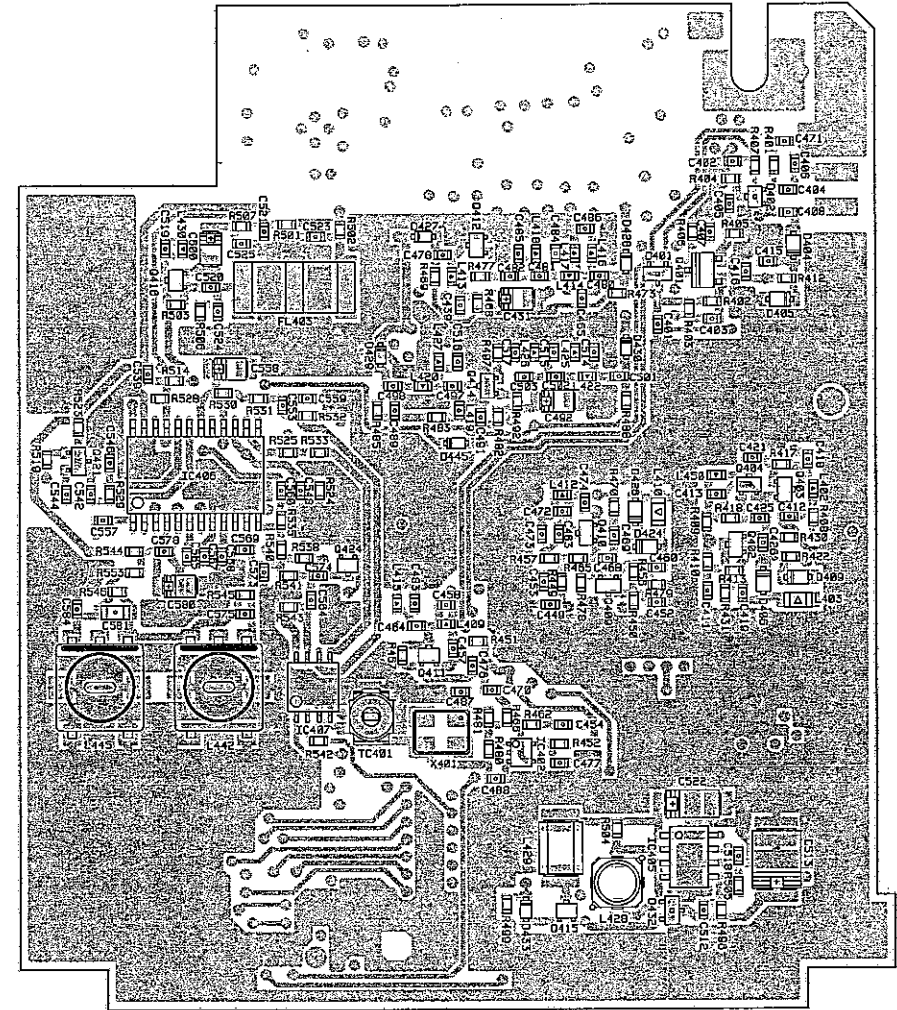
Dealer/Distributor

PC BOARD VIEW

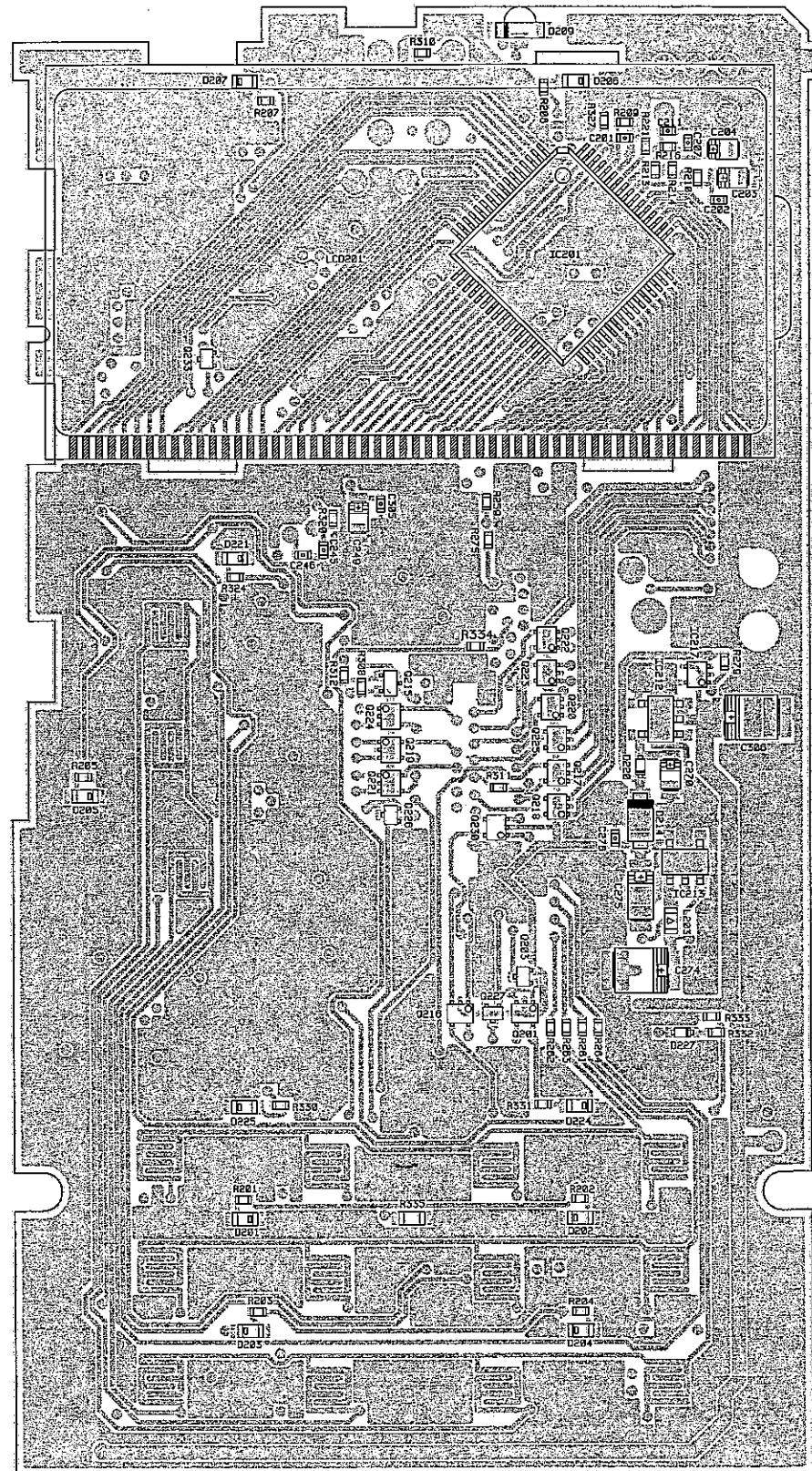
MAIN Unit Side A



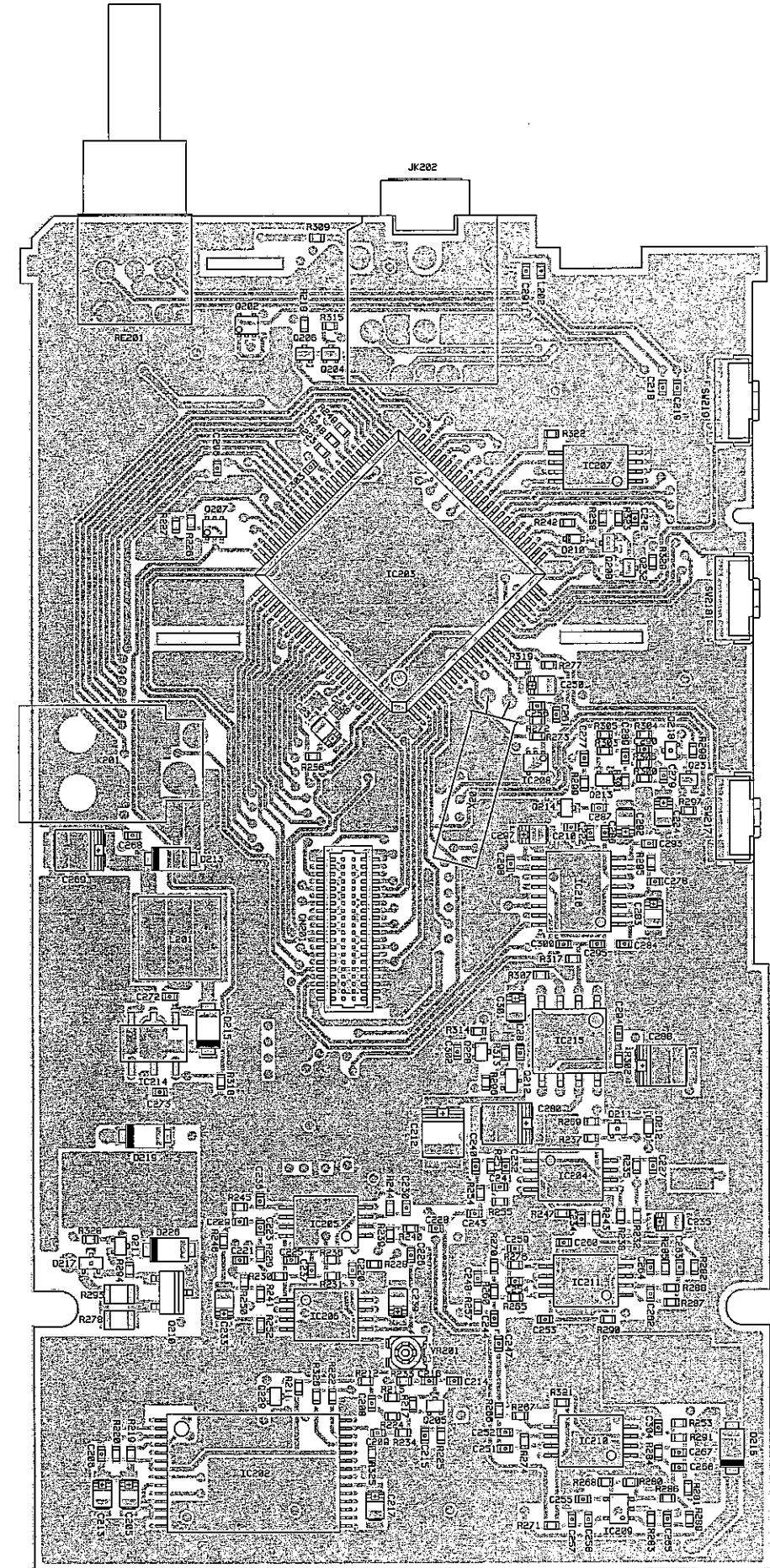
MAIN Unit Side B



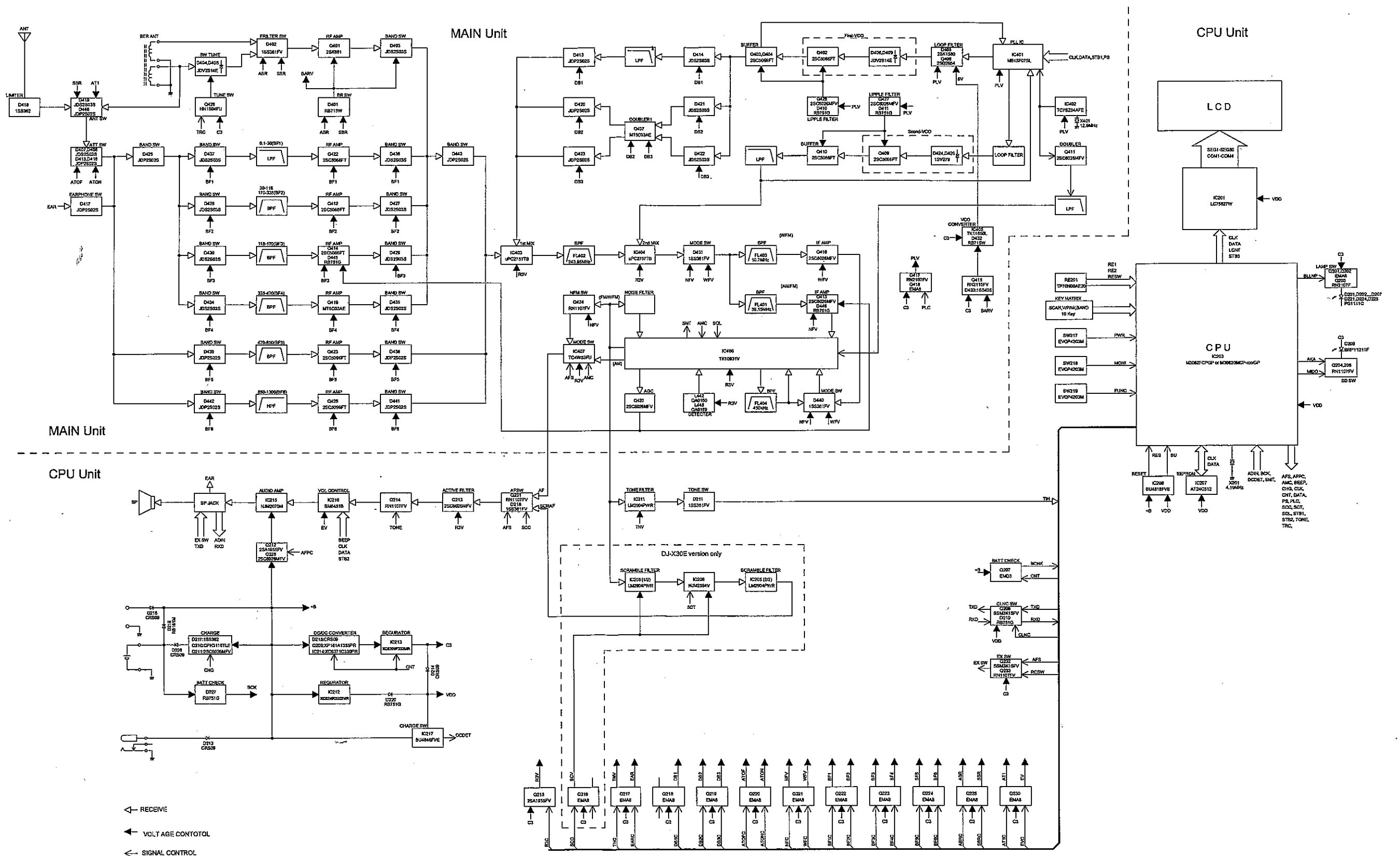
CPU Unit Side A



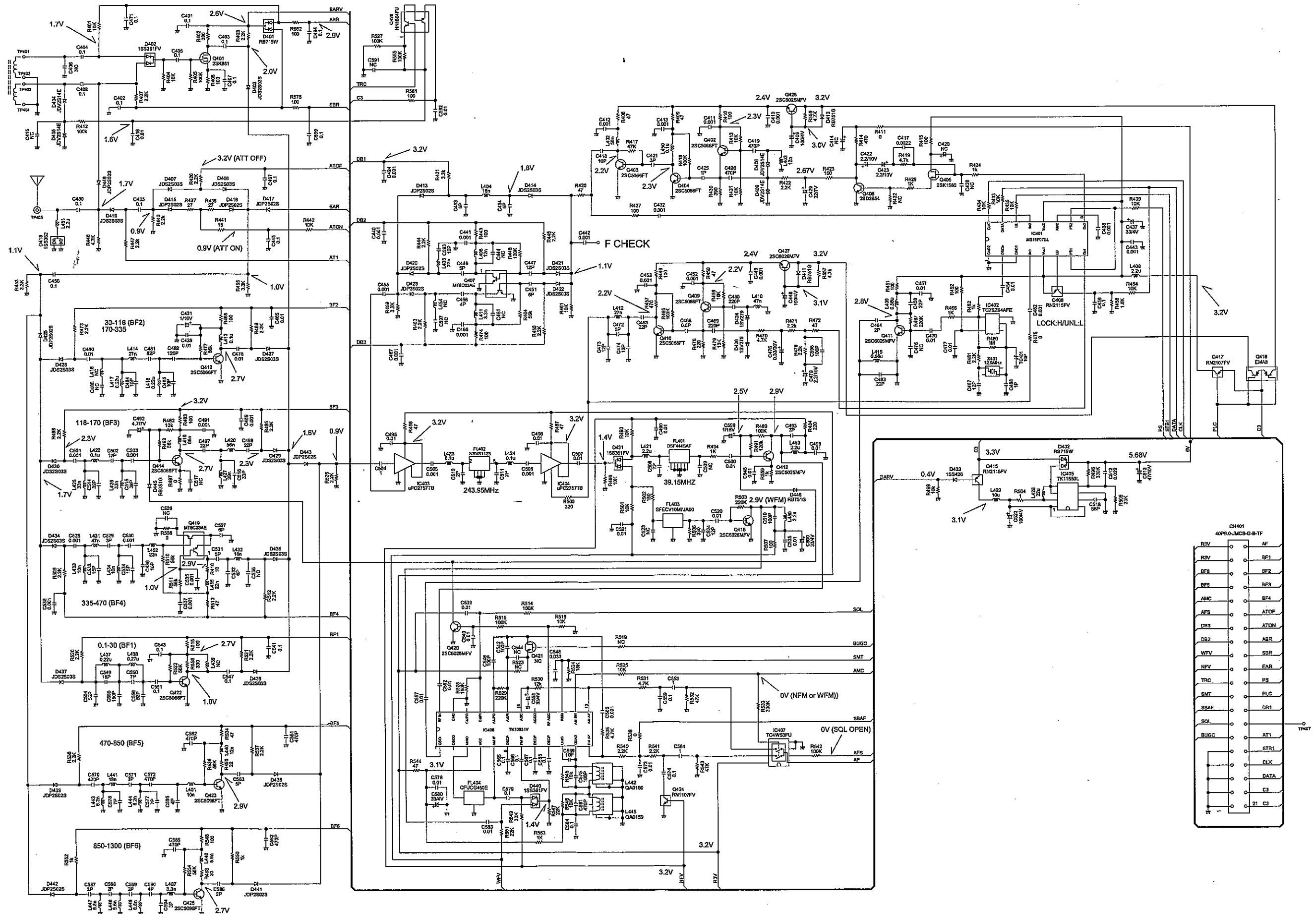
CPU Unit Side B



BLOCK DIAGRAM



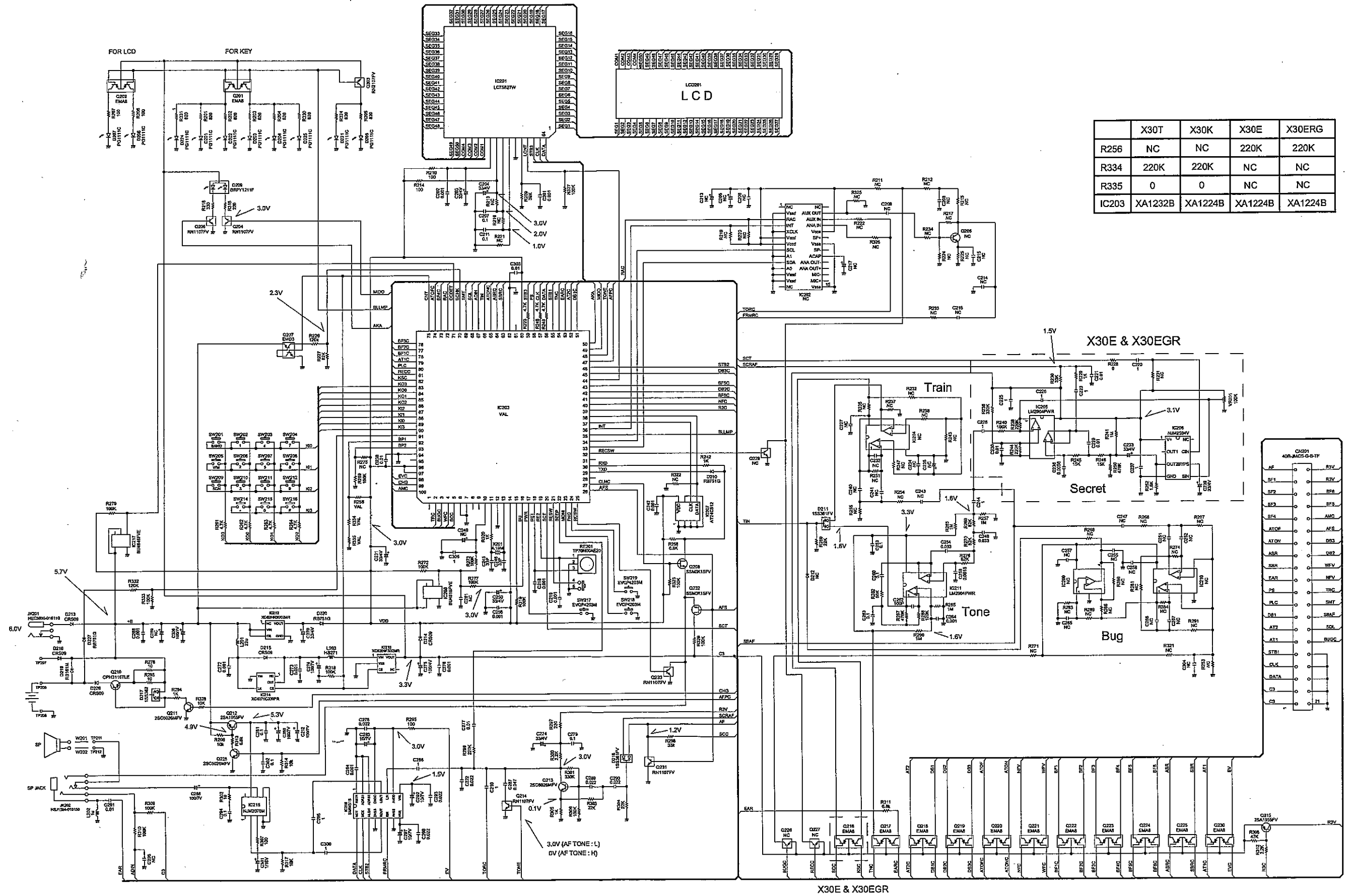
SCHEMATIC DIAGRAM MAIN Unit



CH401
40P10-JMCS-G-B-TF

RVV	AF
BFV	BF1
BF8	BF2
BF5	BF3
AMC	BF4
AFS	ATDF
DB3	ATON
DB2	ABR
WVY	SBR
NFV	EAR
TRC	PS
SMT	PLC
SEAF	DB1
SCL	AT1
BUIC	STR1
	CLK
	DATA
	C3
	21 C3

CPU Unit



	X30T	X30K	X30E	X30ERG
R256	NC	NC	220K	220K
R334	220K	220K	NC	NC
R335	0	0	NC	NC
IC203	XA1232B	XA1224B	XA1224B	XA1224B