

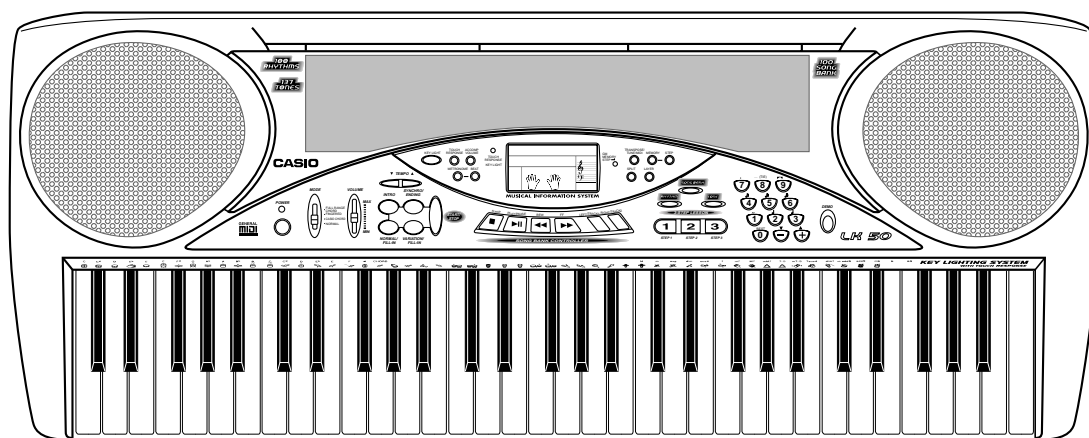
CASIO®

Service Manual

(without price)

LK-50

JUNE. 2000



LK-50

KEY LIGHTING KEYBOARD

Ver.2 : Dec. 2003

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SPECIFICATIONS

GENERAL

Keyboard:	61 full-size keys, 5 octaves (with touch response on/off)
Key light system:	Can be turned on and off (up to 10 keys can be lit at the same time)
Tones:	137 (128 General MIDI tones + 9 drum tones); with layer and split
Rhythm instrument tones:	61
Polyphony:	24 notes maximum (12 for certain tones)
Auto accompaniment	
Rhythm patterns:	100
Tempo:	Variable (216 steps, ♩ = 40 to 255)
Chords:	3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD)
Rhythm controller:	START/STOP, INTRO, NORMAL/NORMARL FILL-IN, VARIATION/VARIATION FILL-IN, SYNCHRO/ENDING
Accomp volume:	0 to 127 (128 steps)
3-step lesson:	3 lessons (step 1, 2, 3)
Playback:	Repeat play of a single tune
Song bank	
Number of tunes:	100
Controllers:	PLAY/PAUSE, STOP, FF, REW, LEFT/TRACK 1, RIGHT/TRACK 2
Musical information function:	Tone, Auto Accompaniment, Song Bank numbers and names; staff notation, tempo, metronome, measure and beat number, step lesson display, chord name, dynamic mark, fingering, pedal operation
Metronome:	On/Off
Beat specification:	1 to 6
Memory	
Songs:	2
Recording tracks:	2
Recording methods:	Real-time, step
Memory capacity:	Approximately 5,200 notes (total for two songs)
MIDI:	16 multi-timbre receive, GM Level 1 standard
Other functions	
Transpose:	25 steps (-12 semitones to +12 semitones)
Tuning:	101 steps (A4 = approximately 440 Hz ± 50 cents)
Terminals	
MIDI terminals:	IN, OUT
Assignable jack:	Standard jack (sustain, sostenuto, soft, rhythm start/stop)
Headphone/output terminal:	Stereo standard jack
Output Impedance:	100 Ω
Output voltage:	4.5 V (RMS) MAX

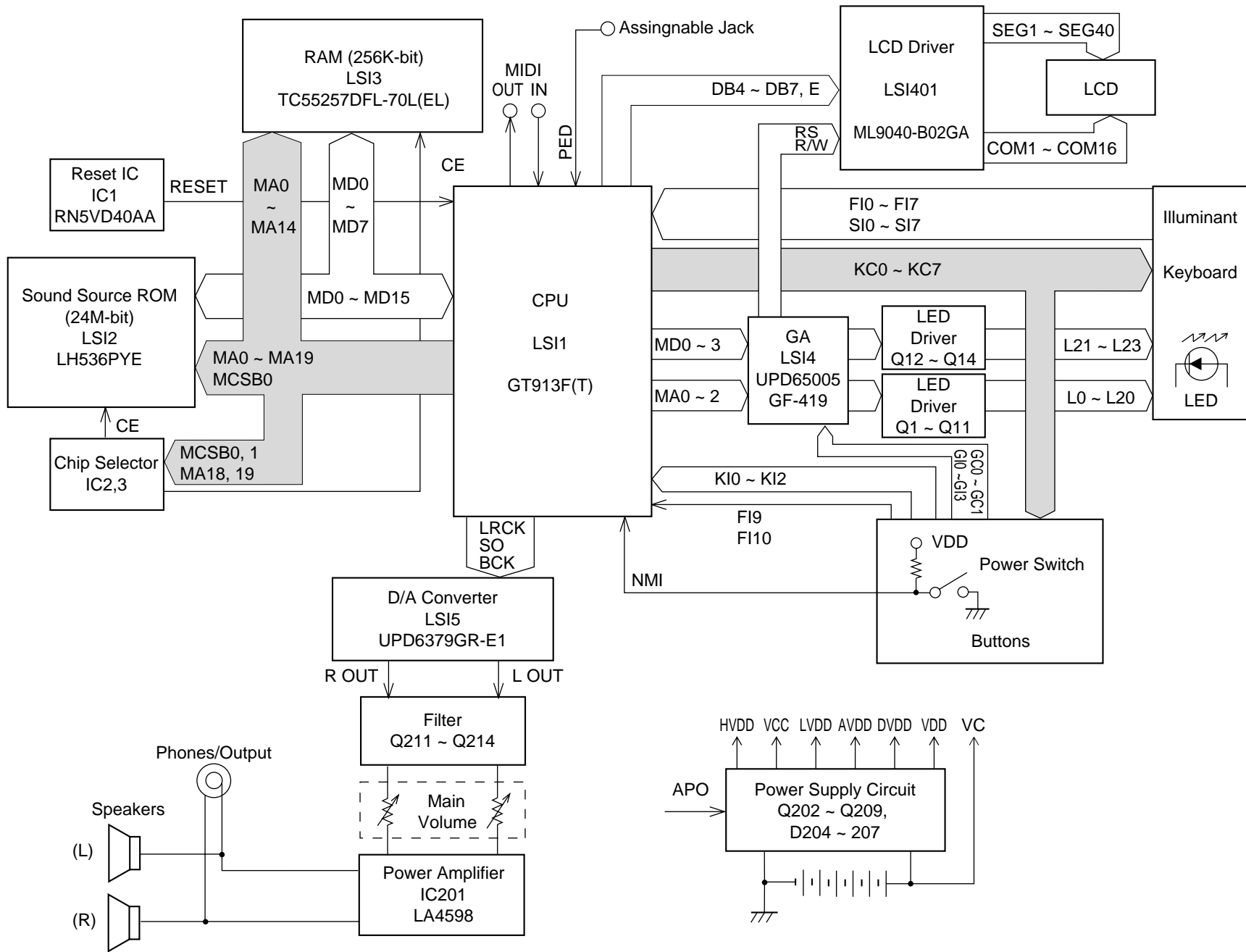
Power jack	9 V DC
Power supply:	2-way
Batteries:	Six D-size batteries
Battery life:	Approximately 4 hours continuous operation on manganese batteries
AC adaptor:	AD-5
Auto power off:	Turns power off approximately six minutes after last key operation. Enabled under battery power only, can be disabled manually.
Speaker output:	2.5 W + 2.5 W
Power consumption:	9 V \approx 7.7 W
Dimensions (HWD):	94.3 × 37.8 × 13.4 cm (37 1/8 × 14 7/8 × 5 1/4 inch)
Weight:	Approximately 5.4 kg (11.9 lbs) (without batteries)

ELECTRICAL

Current drain with 9 V DC:	
No sound output	170 mA ± 20 %
Maximum volume	970 mA ± 20 %
with 10 keys from C1 to E2 pressed in French Horn	
Volume: maximum, Velocity: maximum	
Speaker output level (Vrms with 4 Ω load each channel):	
with key E1 in French Horn	
Volume: maximum, Velocity: maximum	1400 mV ± 20 %
Phone output level (Vrms with 8 Ω load each channel):	
with key, F1 in French Horn	
Volume: maximum, Velocity: maximum	110 mV ± 20 %
Output level (Vrms with 47 Ω load each channel):	
with key C1 in French Horn	
Volume: maximum, Velocity: maximum	1500 mV ± 20 %

About General MIDI

General MIDI standardizes MIDI data for all sound source types, regardless of manufacturer. General MIDI specifies such factors as tone numbering, drum sounds, and available MIDI channels for all sound sources. This standard makes it possible for all MIDI equipment to reproduce the same nuances when playing General MIDI data, regardless of the manufacturer of the sound source. This keyboard supports General MIDI, so it can be used to play commercially available pre-recorded General MIDI data and General MIDI data send to it from a personal computer.



BLOCK DIAGRAM

CIRCUIT DESCRIPTION

KEY MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
FI0	C2 (1)	C#2 (1)	D2 (1)	D#2 (1)	E2 (1)	F2 (1)	F#2 (1)	G2 (1)
SI0	C2 (2)	C#2 (2)	D2 (2)	D#2 (2)	E2 (2)	F2 (2)	F#2 (2)	G2 (2)
FI1	G#2 (1)	A2 (1)	A#2 (1)	B2 (1)	C3 (1)	C#3 (1)	D3 (1)	D#3 (1)
SI1	G#2 (2)	A2 (2)	A#2 (2)	B2 (2)	C3 (2)	C#3 (2)	D3 (2)	D#3 (2)
FI2	E3 (1)	F3 (1)	F#3 (1)	G3 (1)	G#3 (1)	A3 (1)	A#3 (1)	B3 (1)
SI2	E3 (2)	F3 (2)	F#3 (2)	G3 (2)	G#3 (2)	A3 (2)	A#3 (2)	B3 (2)
FI3	C4 (1)	C#4 (1)	D4 (1)	D#4 (1)	E4 (1)	F4 (1)	F#4 (1)	G4 (1)
SI3	C4 (2)	C#4 (2)	D4 (2)	D#4 (2)	E4 (2)	F4 (2)	F#4 (2)	G4 (2)
FI4	G#4 (1)	A4 (1)	A#4 (1)	B4 (1)	C5 (1)	C#5 (1)	D5 (1)	D#5 (1)
SI4	G#4 (2)	A4 (2)	A#4 (2)	B4 (2)	C5 (2)	C#5 (2)	D5 (2)	D#5 (2)
FI5	E5 (1)	F5 (1)	F#5 (1)	G5 (1)	G#5 (1)	A5 (1)	A#5 (1)	B5 (1)
SI5	E5 (2)	F5 (2)	F#5 (2)	G5 (2)	G#5 (2)	A5 (2)	A#5 (2)	B5 (2)
FI6	C6 (1)	C#6 (1)	D6 (1)	D#6 (1)	E6 (1)	F6 (1)	F#6 (1)	G6 (1)
SI6	C6 (2)	C#6 (2)	D6 (2)	D#6 (2)	E6 (2)	F6 (2)	F#6 (2)	G6 (2)
FI7	G#6 (1)	A6 (1)	A#6 (1)	B6 (1)	C7 (1)			
SI7	G#6 (2)	A6 (2)	A#6 (2)	B6 (2)	C7 (2)			

BUTTON MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
KI0	MEMORY	STEP 2	3	TONE	5	TEMPO ▼	TEMPO ▲	SYNCHRO/ ENDING
KI1	STEP	STEP 3	—	7	6	ACC. VOL.	BEAT	METRO
KI2	STEP 1	0	+	4	DEMO	TOUCH		
FI9	LAYER	RIGHT	2	RHYTHM	9	PLAY/PAUSE ▶	STOP ■	KEY LIGHT
FI10	SPLIT	LEFT	1	SONG	8	FF ▷▷	REW ◁◁	TRANPOSE/ TUNE/MIDI

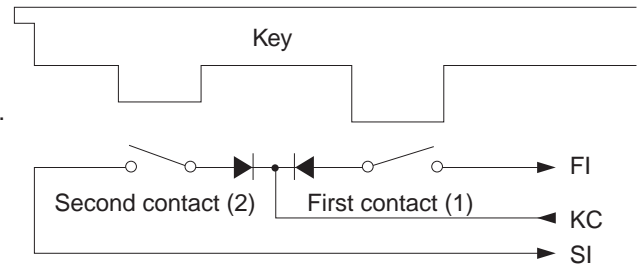
	GC0	GC1
GI0	INTRO	FILL RANGE CHORD
GI1	NORMAL FILL-IN	FINGERED
GI2		CASIO CHORD
GI3	START/ STOP	NORMAL
KI0	SYNCHRO/ ENDING	

LED MATRIX

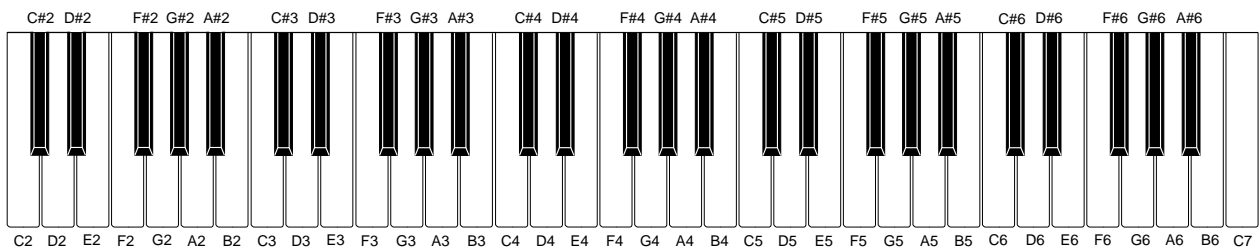
	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
L21	A2#	F4	B4	E5	A5	D6	G6	C7	A6#	G6#	F6#
L22	G2#	E4	A4	D5	G5	C6	F6	B6	A5#	C6#	D6#
L23	C2	D4	G4	C5	F5	B5	E6	A6	G5#	F5#	D5#

	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20
L21	C3#	D3#	F3#	G2	C3	F3	D4#	C4#	A3#	G3#
L22	F2#	D2#	C2#	F2	B2	E3	F4#	G4#	A4#	C5#
L23			D2	E2	A2	D3	G3	A3	B3	C4

Note: Each key has two contacts, the first contact (1) and second contact (2).⁽²⁾



NOMENCLATURE OF KEYS



POWER SUPPLY CIRCUIT

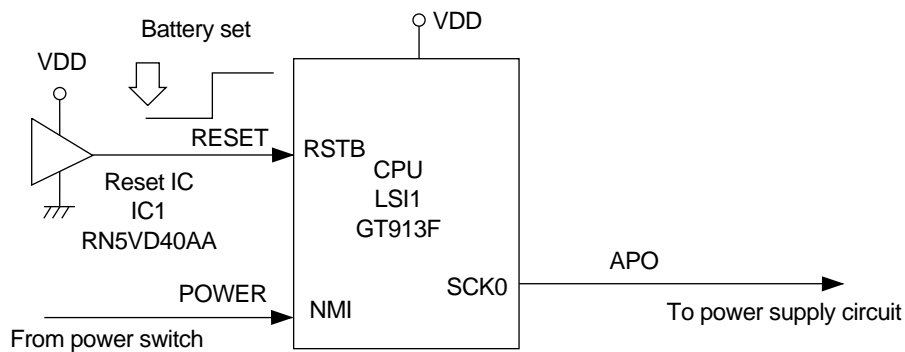
The power supply circuit generates seven voltages as shown in the following table. VDD voltage is always generated. The others are controlled by APO signal from the CPU.

Name	Voltage	For operation of
VDD	+5 V	CPU, Reset IC, Sound source ROM, RAM, LED driver
DVDD	+5 V	CPU, Sustain jack, MIDI jack
AVDD	+5 V	DAC, Filter
LVDD	+5 V	GA
VCC	+9 V	Power amplifier
HVDD	+5.3 V	LCD driver

RESET CIRCUIT

When batteries are set or an AC adapter is connected, the reset IC provides a low pulse to the CPU. The CPU then initializes its internal circuit, and clears the RAM.

When the power switch is pressed, the CPU receives a low pulse of POWER signal. The CPU sends APO signal to the power supply circuit.



CPU (LSI1: GT913F)

The 16-bit CPU contains a 1k-byte RAM, three 8-bit I/O ports, two timers, a key controller and serial interfaces. The CPU detects key velocity by counting the time between first-key input signal FI and second-key SI from the keyboard. The CPU reads sound data and velocity data from the sound source ROM in accordance with the selected tone; the CPU can read rhythm data simultaneously when a rhythm pattern is selected. Then the CPU provides 16-bit serial sound data to the DSP. The CPU also controls MIDI input/output and stores sequencer data into the working storage RAM.

The following table shows the pin functions of LSI1.

Pin No.	Terminal	In/Out	Function
1	TXD0	Out	Not used
2	RXD0	In	Not used
3	SCK0	Out	APO (Auto Power Off) signal output
4	TXD1	Out	MIDI signal output
5	RXD1	In	MIDI signal input
6	SCK1	Out	1 MHz synchronizing pulse output
7	AVCC	In	DVDD (+5 V) source
8	AN0	In	AC adaptor detection terminal. +5 V when the keyboard is powered by batteries and becomes 0 V to cancel the APO function when AC adaptor is connected.
9	AN1	—	Not used. Connected to ground.
10	AGND	In	Ground (0 V) source
11	BCK	Out	Bit clock output
12	SO	Out	Serial sound data output
13	LRCK	Out	Word clock output
14	GND	In	Ground (0 V) source
15, 16	XLT0, XLT1	In/Out	30 MHz clock input/output
17	VCC	In	+5 V source
18, 19	MD0, MD1	In	Mode selection terminal
20	RSTB	In	Reset signal input
21	NMI	In	Power ON signal input
22	INT/P10	In/Out	Data bus for the LCD driver
23 ~ 30	FI0 ~ FI3 SI0 ~ SI3	In	Terminal for key input signal
31 ~ 38	KC0 ~ KC7	Out	Terminal for key scan signal
39 ~ 46	FI4 ~ FI7 SI4 ~ SI7	In	Terminal for key input signal
47, 48	FI8, SI8	—	Not used
49	FI9	In	Terminal for button input signal
50	SI9	In	Data bus for LCD driver
51	FI10	In	Terminal for button input signal
52	SI10/P23	Out	Data bus for the LCD driver
53 ~ 55	KI0 ~ KI2	In	Terminal for button input signal
56	MWNB	Out	Write enable signal for the DSP

Pin No.	Terminal	In/Out	Function
57 ~ 76	MA0 ~ MA19	Out	Address bus
77, 78	MCSB0, MCSB1	Out	Chip enable signal output for the sound source ROM, working RAM and DSP
79	MCSB2	Out	Not used
80	VCC	In	+5 V source
81	GND	In	Ground (0 V) source
82	MRDB	Out	Read enable signal output for the sound source ROM
83 ~ 98	MD0 ~ MD15	In/Out	Data bus
99	PLE	Out	Reset signal output for the DSP
100	P17	In/Out	Data bus for the LCD driver

LCD DRIVER (LSI401: ML9040-B02GA)

The LCD driver can drive a dot matrix LCD having 40 segment and 16 common lines. The LSI contains 160 characters in the built-in character generator ROM, and stores 8 characters in the built-in display data RAM. In accordance with command from the CPU, the LSI is capable of displaying up to 8 characters simultaneously. The following table shows the pin functions of LSI 401.

Pin No.	Terminal	In/Out	Function
1 ~ 22, 63 ~ 80	SEG1 ~ SEG40	Out	Segment signal output
23	GND	—	GND (0 V) source
24, 25	OSC1, OSC2	In/Out	Terminals for the built-in clock pulse generator. The external resistor connected determines the oscillation frequency.
26 ~ 30	V1 ~ V5	In	LCD drive voltage input. Those voltages are used for generating the stepped pulse of the LCD drive signals.
31, 32	L, CP	—	Not used
33	VDD	In	DVDD (+5 V) source
34, 35	DF, DO	—	Not used
36	RS	In	Data/command determination terminal. High: data, Low: command
37	R/W	In	Read/write terminal. High: read, Low: write
38	E	In	Chip enable signal. High: enable, the writing is done at fall edge. Low: disenable
39 ~ 42	DB0 ~ DB3	—	Not used. Connected to GND (0 V)
43 ~ 46	DB4 ~ DB7	In/Out	Data bus
47 ~ 53, 55 ~ 62	COM1 ~ COM7 COM9 ~ COM16	Out	Common signal/output
54	COM8	—	Not used

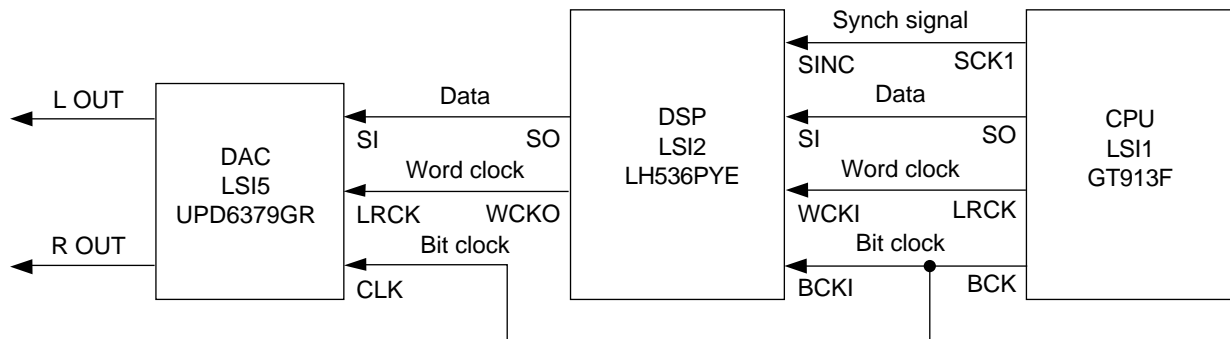
GATE ARRAY (LSI4: UPD65005GF-419)

The gate array can control 63 LEDs of key illuminators. In accordance with the command from the CPU, the LSI is capable of controlling the illuminator LEDs. The following table shows the pin functions of LSI4.

Pin No.	Terminal	In/Out	Function
3 ~ 6	MI0, MI1, MO0, MO1	—	Not used
7, 26, 43, 58	GND	In	GND (0 V) source
8, 27, 44	VDD	In	LVDD (5 V) source
9 ~ 12	DB0 ~ DB3	In	Data bus
13 ~ 15	MA0 ~ MA2	In	Address bus
16	NCE	In	Chip enable signal
19	NWR	In	Write enable signal
20, 21	NRD, NRS	—	Not used
22 ~ 25, 28 ~ 32, 35 ~ 42, 45 ~ 48	L0 ~ L20	Out	LED drive signal output
50 ~ 52	L21 ~ L23	Out	LED common signal output
53 ~ 57, 59	L24 ~ L28, L29	—	Not used
60 ~ 63	I0 ~ I3	—	Not used
1, 2, 17, 18, 33, 34, 49, 64	NC	—	Not connected

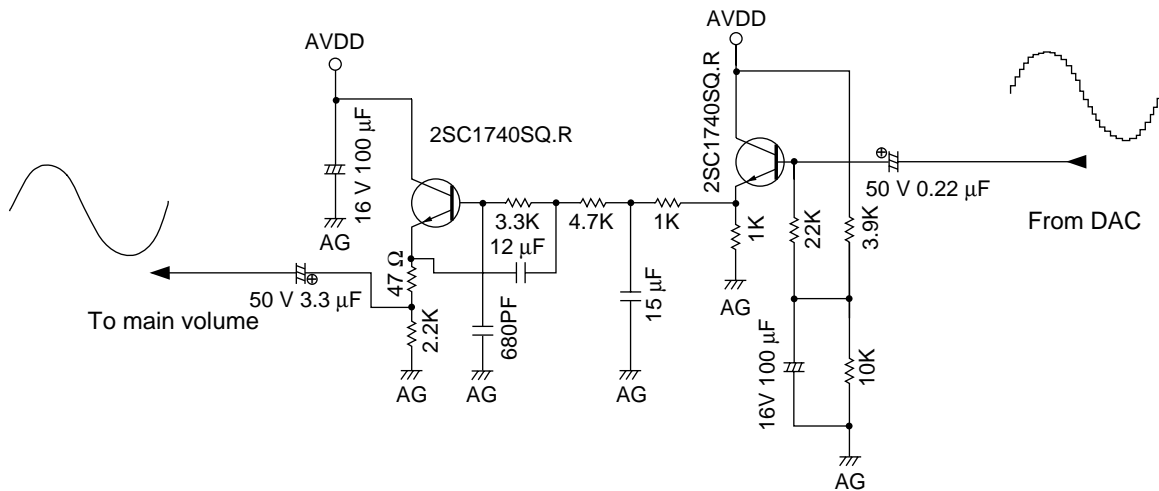
DAC (LSI5: UPD6379GR)

The DAC receives 16-bit serial data output from the DSP. The data contains digital sound data of the melody, chord, bass, and percussion for the right and left channels. The DAC converts the data into analog waveforms and output them to each channel separately.



FILTER BLOCK

Since the sound signals from the DAC are stepped waveforms, the filter block is added to smooth the waveforms.



POWER AMPLIFIER (IC201: LA4598)

The power amplifier is a two-channel amplifier with standby switch.

The following table shows the pin function of IC201.

Pin No.	Terminal	In/Out	Function
1	Power GND	In	Ground (0 V) source
2	ch1 B.S.	–	Terminal for a bootstrap capacitor
3	ch1 OUT	Out	Channel 1 output
4	VCC	In	+9 V source
5	ch1 N.F.	In	Negative feedback input
6	ch1 IN	In	Channel 1 input
7	D.C.	–	Terminal for a decoupling capacitor
8	Pre GND	In	Ground (0 V) source
9	Stand by	In	Power control signal input. 0 V: Off, +9 V: On
10	ch2 IN	In	Channel 2 input
11	ch2 N.F.	In	Negative feedback input
12	ch2 OUT	Out	Channel 2 output
13	ch2 B.S.	–	Terminal for a bootstrap capacitor
14	N.C.	–	Not used

ADJUSTMENT

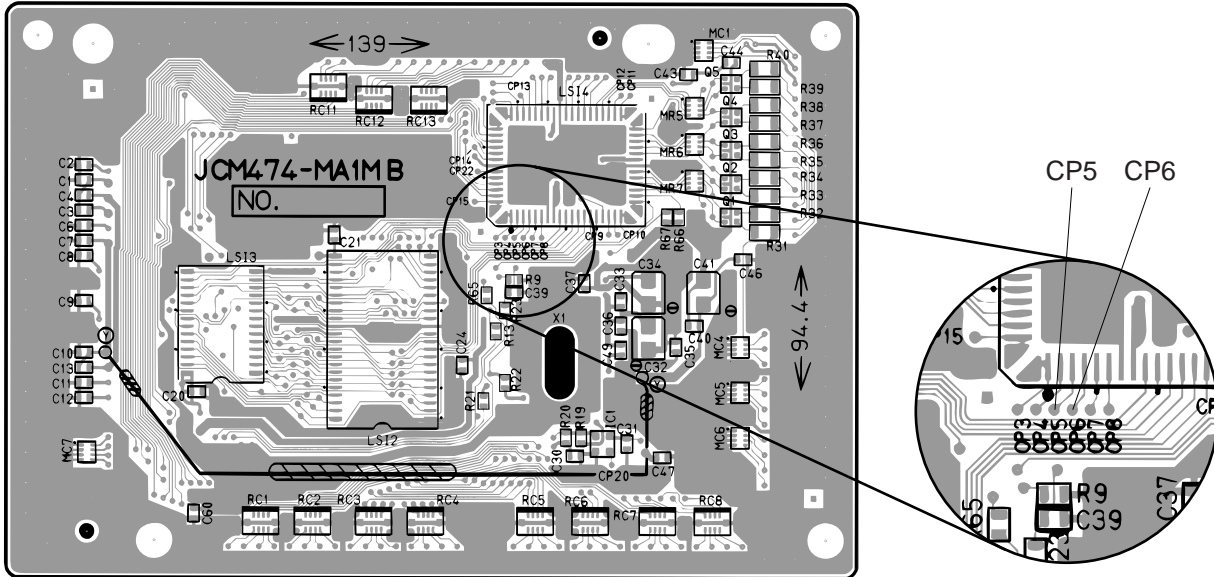
DISPLAY PCB

1) Items to be adjusted:

Item	Measuring Instrument
Vop voltage setting	Voltmeter

2) Adjustment and Test Point Locations

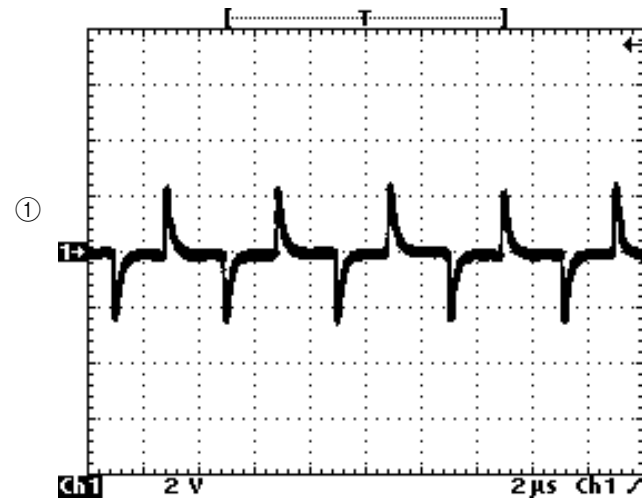
(TOP VIEW)



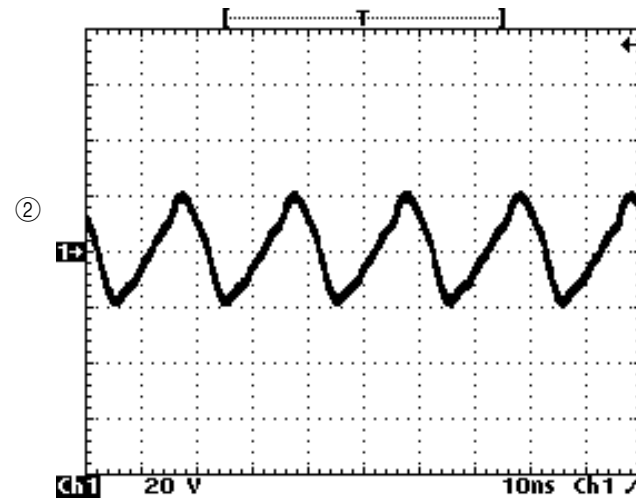
3) Equipment connection/Procedure

Vop voltage setting						
Input Connection	Input Point	Input Signal	Adjust	Output Connection	Output Point	Adjust for
—	—	—	VR401	Voltmeter	CP6-CP5	Adjust for 3.8 ~ 3.9 V reading on voltmeter under the temperature 20 ~ 25 °C. Make fine adjustment according to the next instruction.
<p>Watching the LCD at a 36.5° angle to the horizontal, adjust Vop voltage so that unenergized segments are seen dimly.</p>						

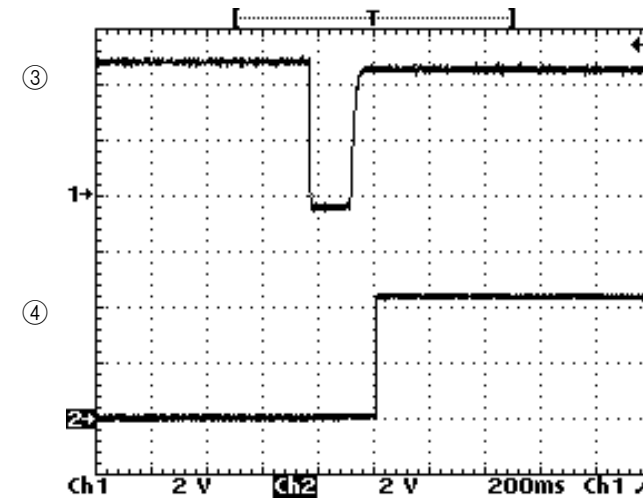
MAJOR WAVEFORMS



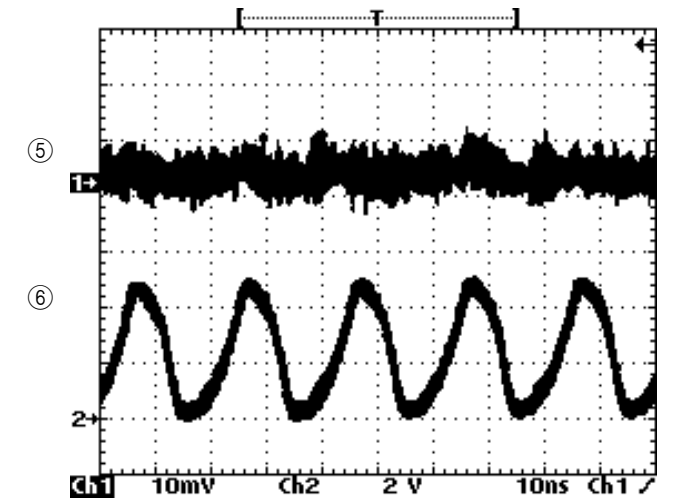
① Clock signal for LCD Driver
Check point CP8



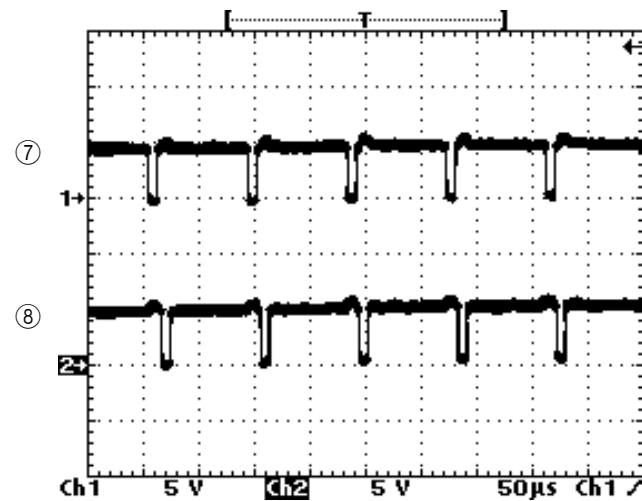
② Clock signal for CPU
LS11 pin 15



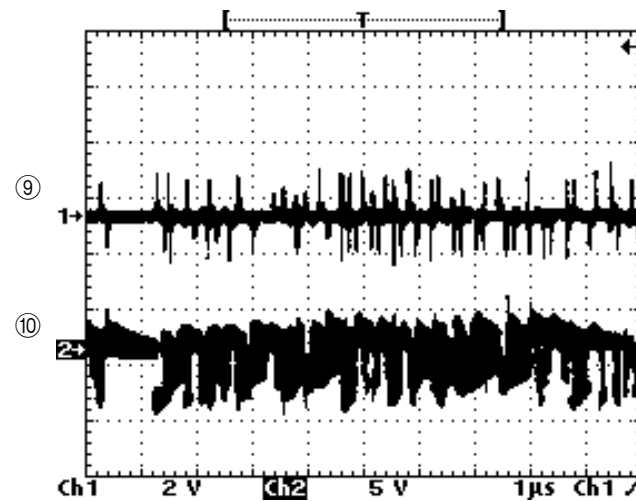
③ MNI signal
JK connector pin 1
④ APO signal
JH connector pin 6



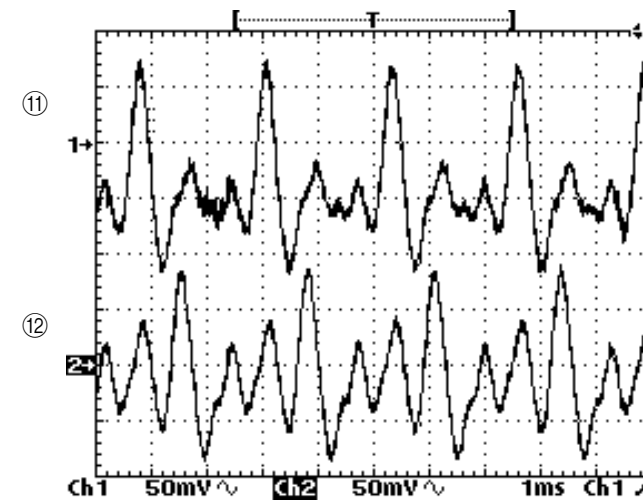
⑤ LED common signal L23
JD connector pin 1
⑥ LED common signal L22
JD connector pin 2
Key : C7



⑦ Key common signal KC0
JB connector pin 1
⑧ Key common signal KC1
JB connector pin 2



⑨ \overline{CE} signal for ROM
LSI2 LH536PYE pin 12
⑩ \overline{CE} signal for working RAM
LSI3 TC55257DFL pin 20

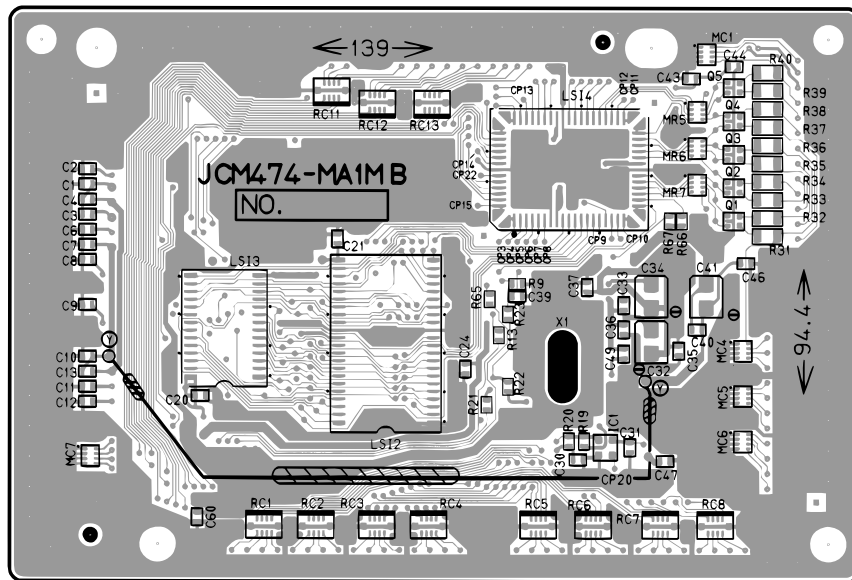
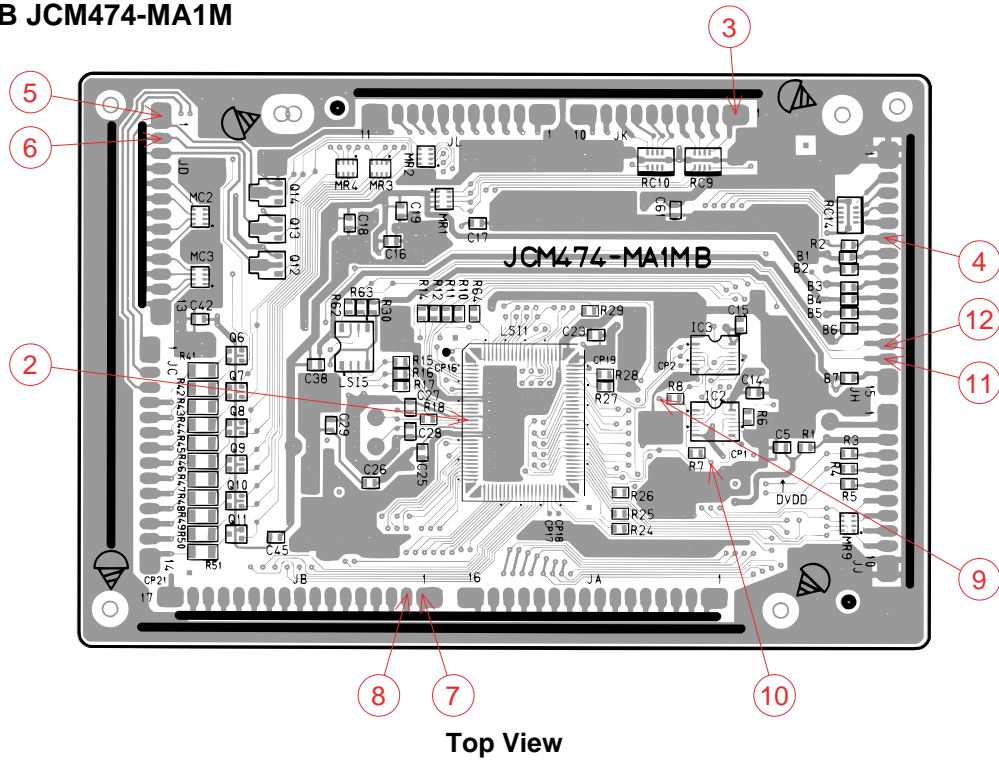


⑪ Sound signal (R)
JH connector pin 14
⑫ Sound signal (L)
JH connector pin 13

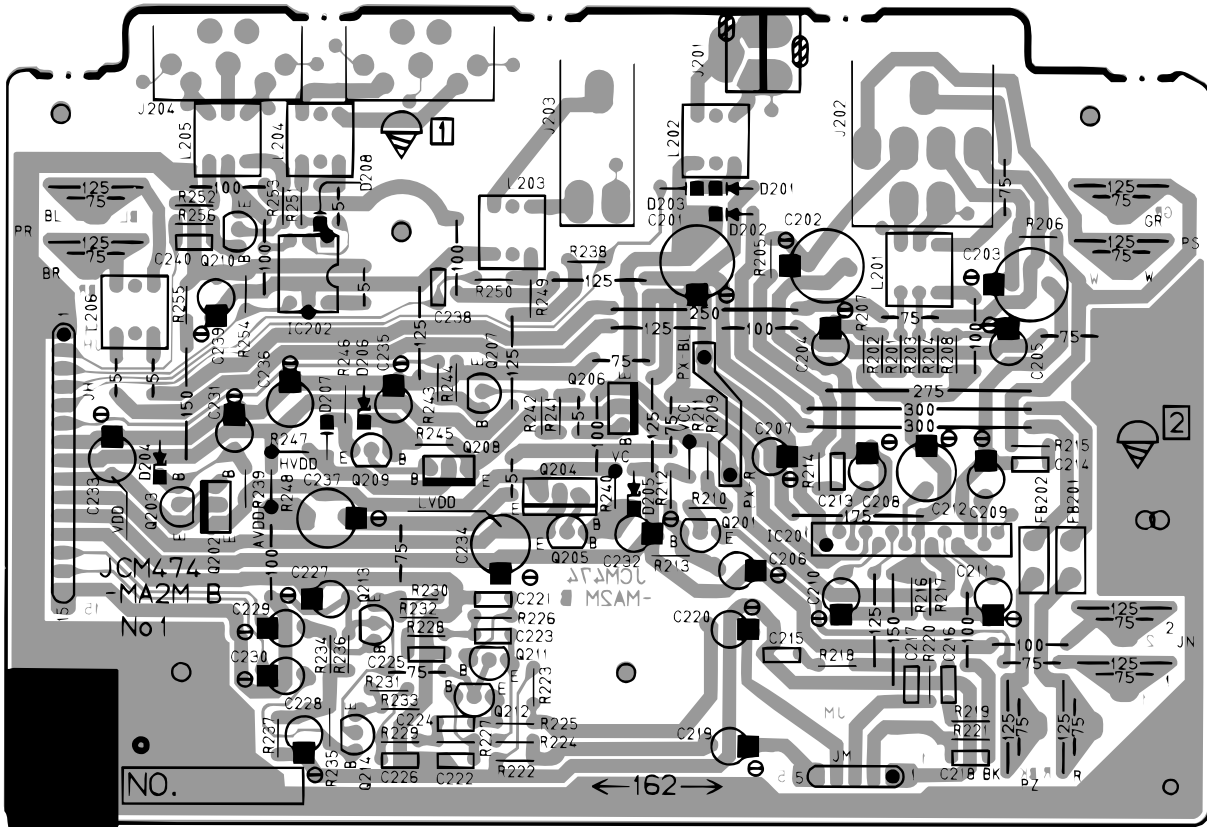
Tone : French horn
Volume : Maximum
Touch speed : Maximum
Key : A4

PRINTED CIRCUIT BOARDS

Main PCB JCM474-MA1M

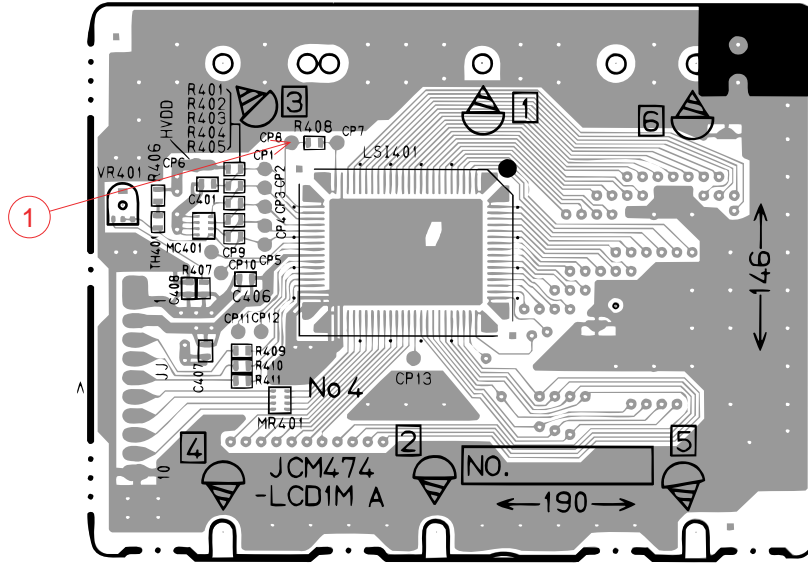


Sub PCB JCM474-MA2M

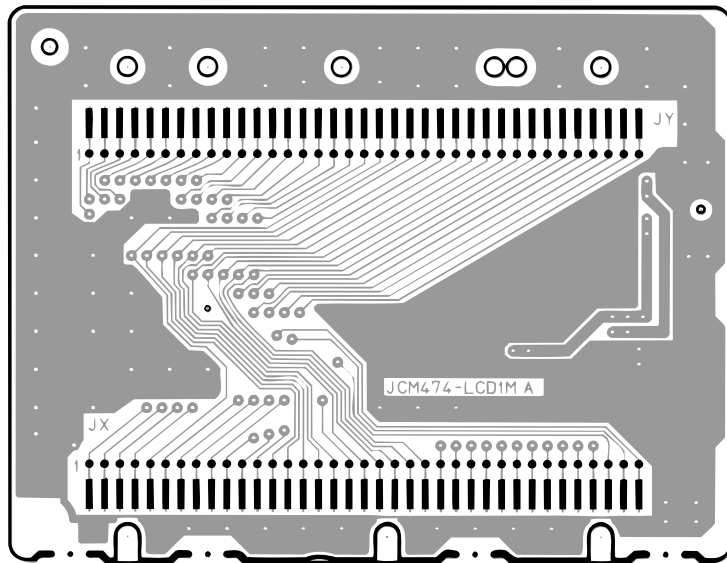


Top View

JCM474-LCD1M



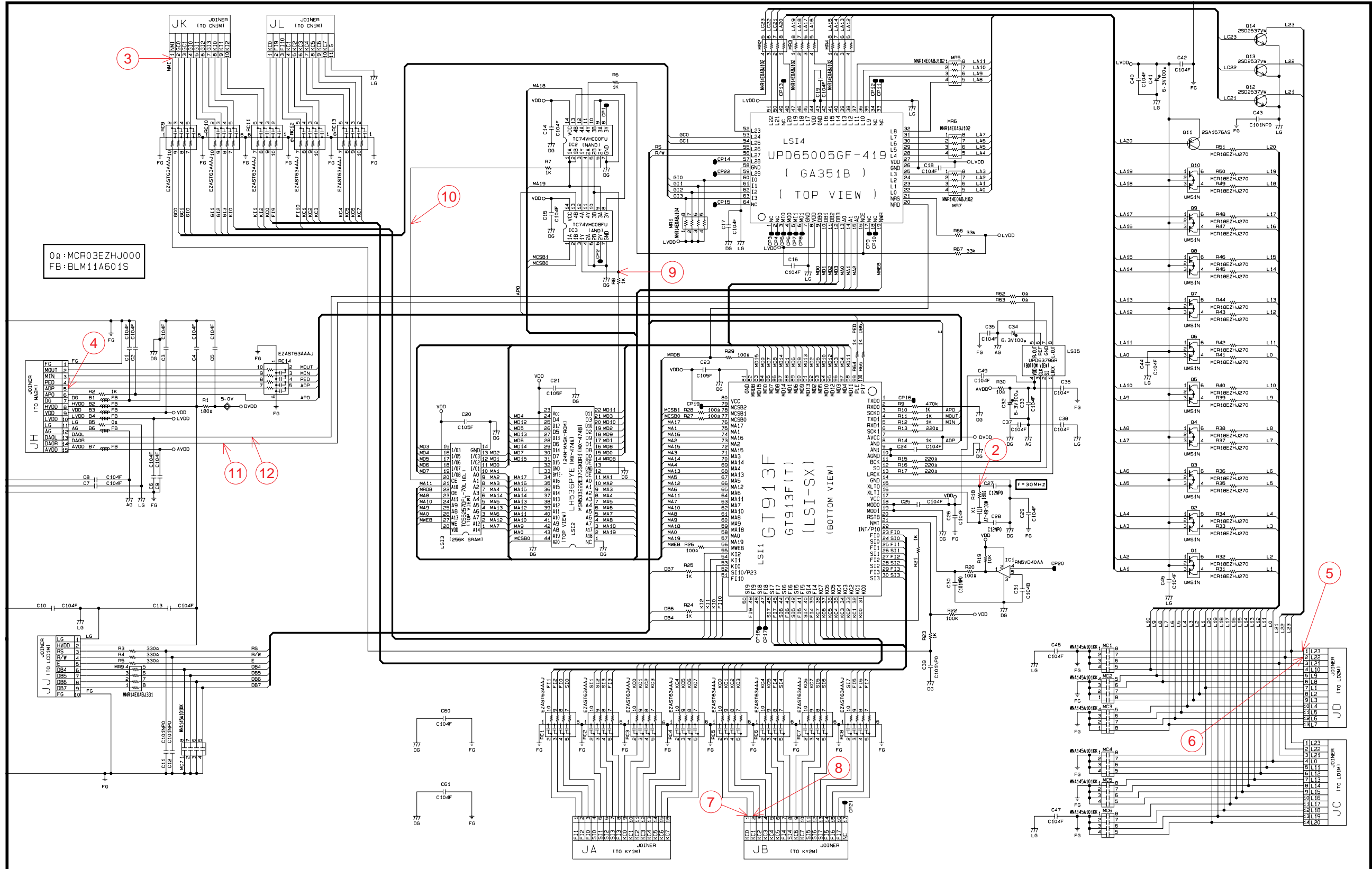
Top View



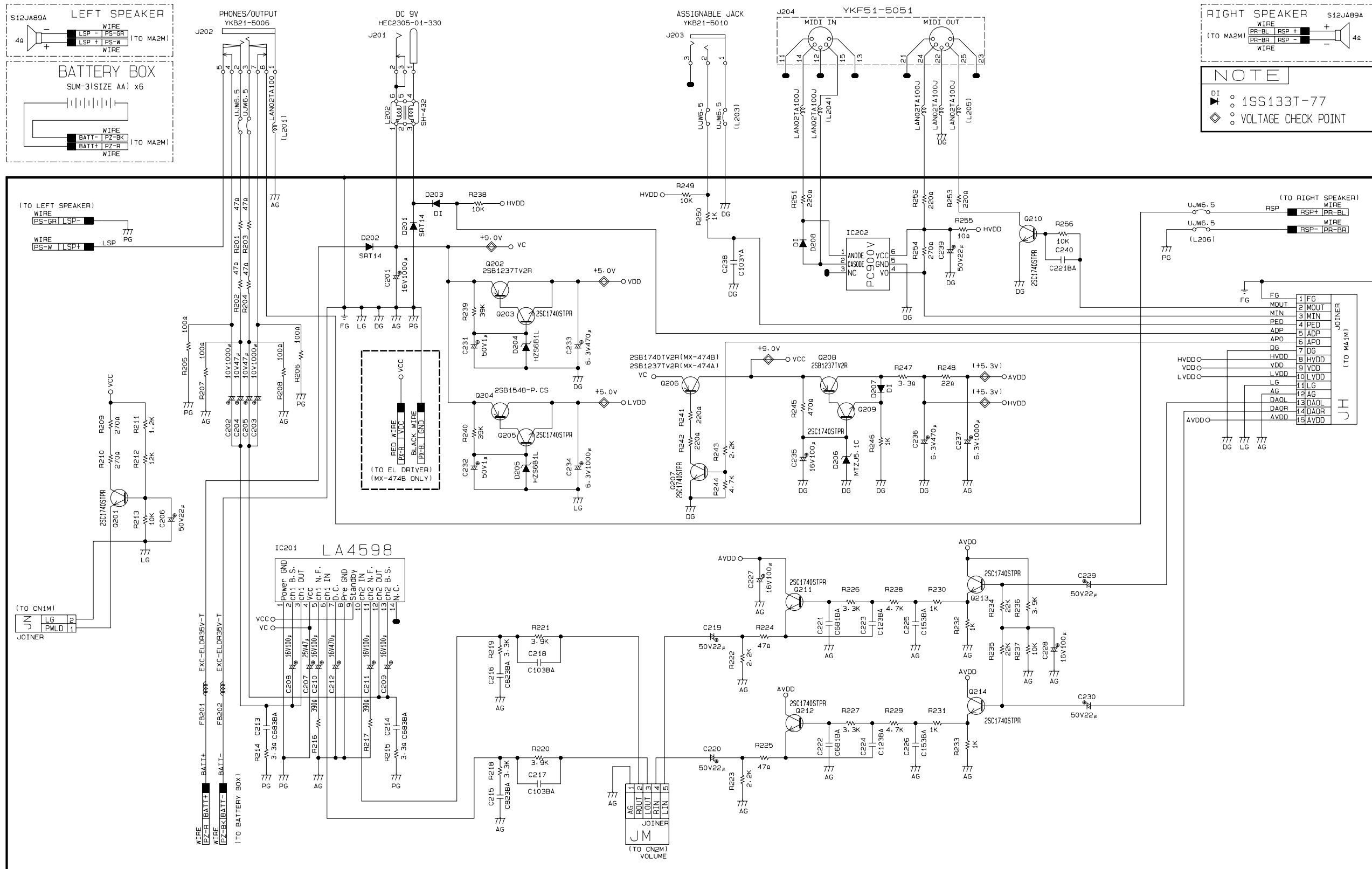
Bottom View

SCHEMATIC DIAGRAMS

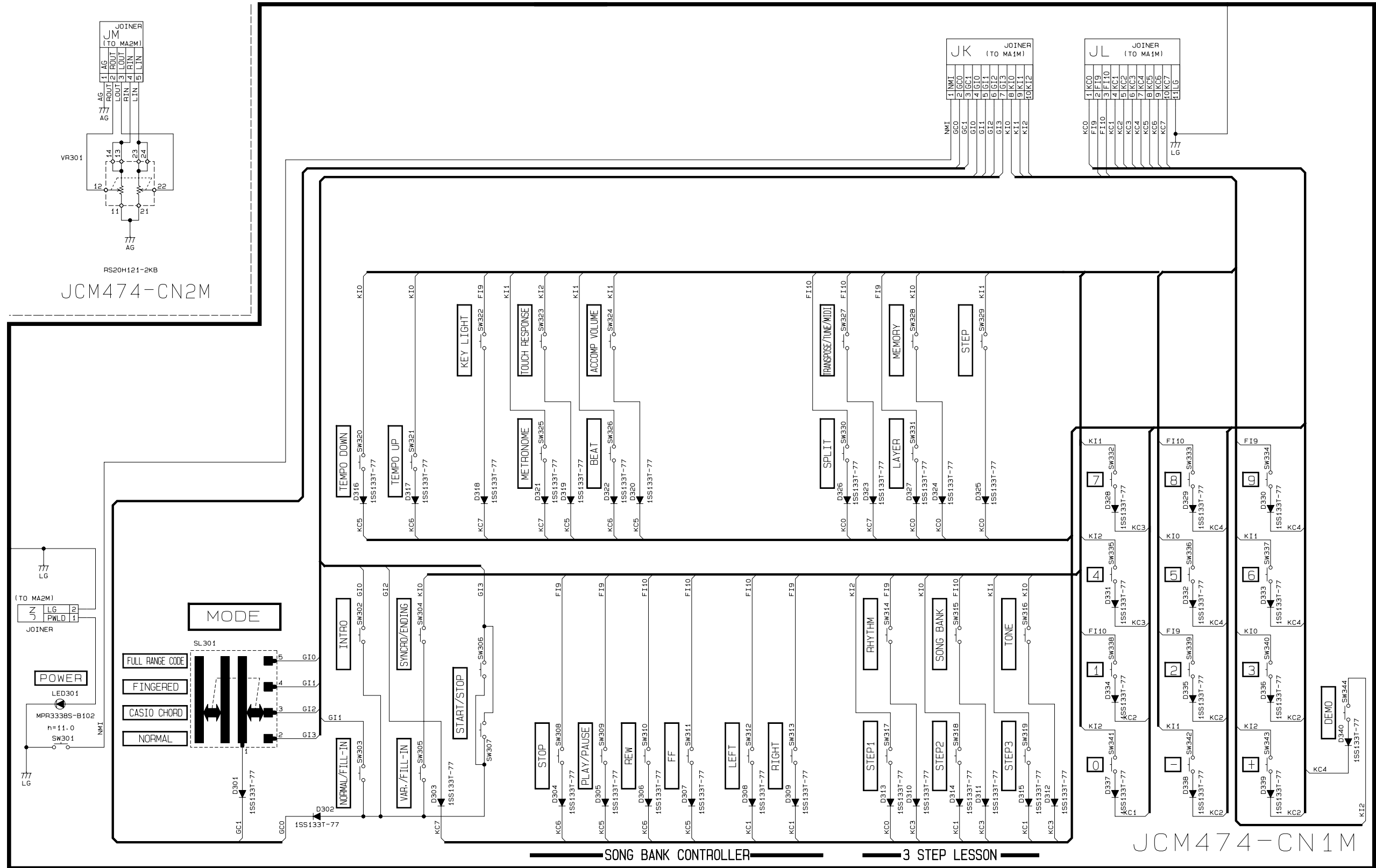
Main PCB JCM474-MA1M



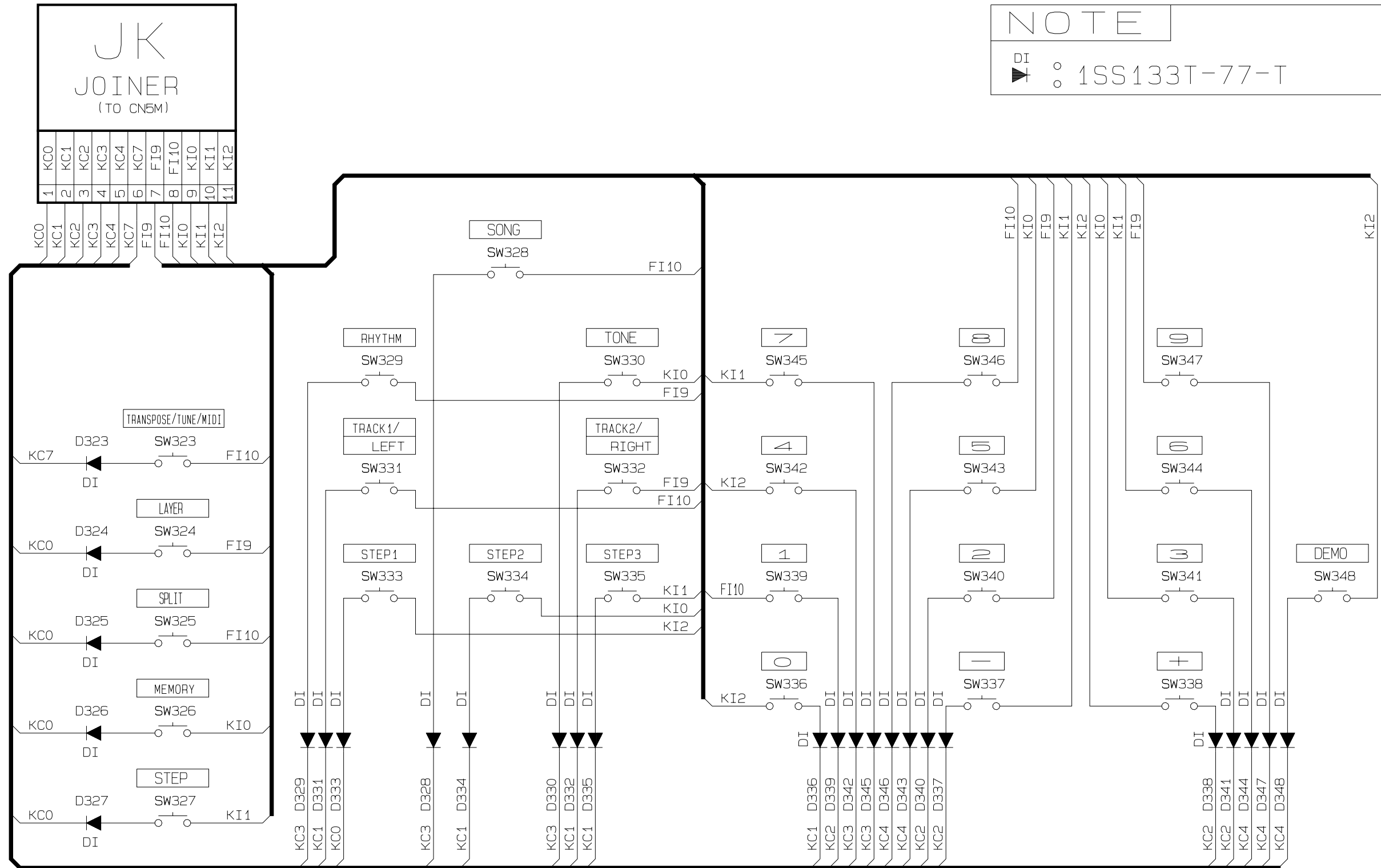
Sub PCB JCM474-MA2M



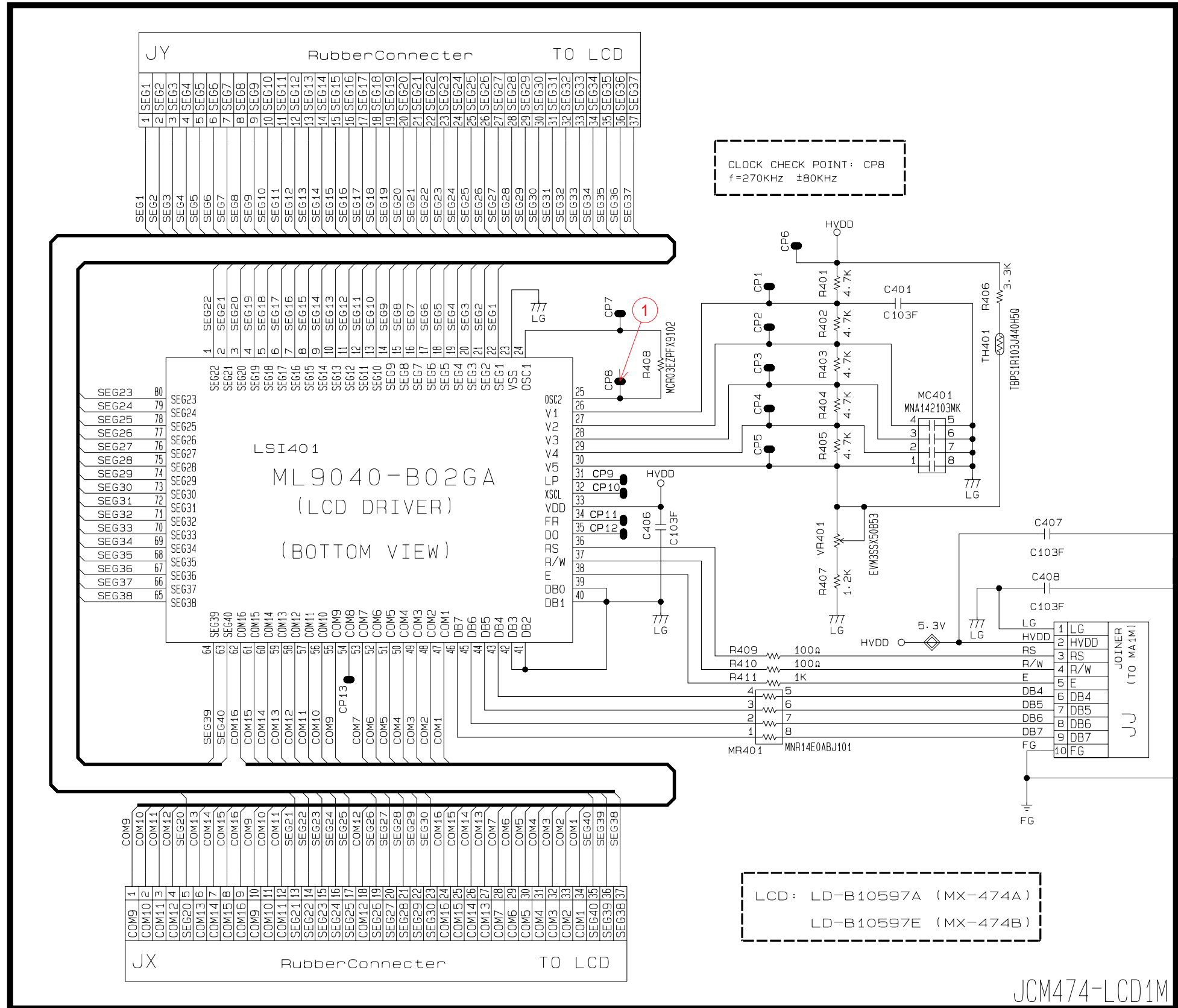
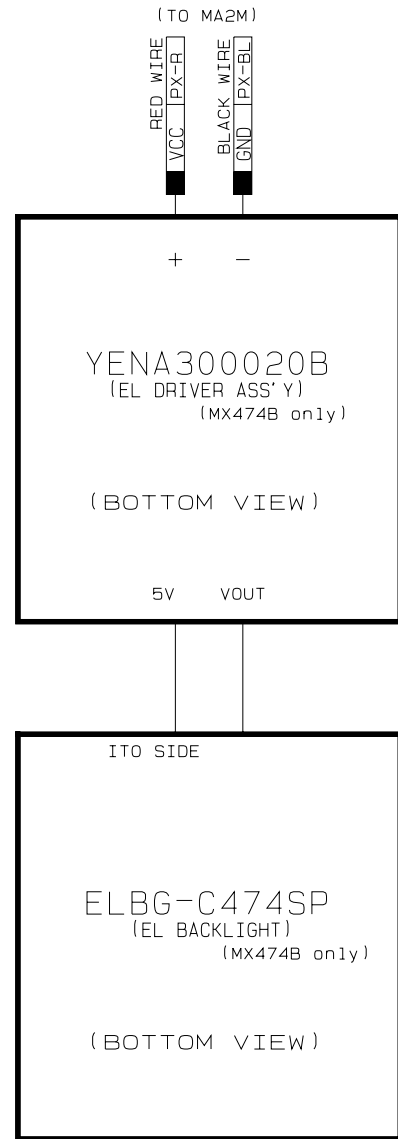
Console PCB JCM474-CN1M/CN2M



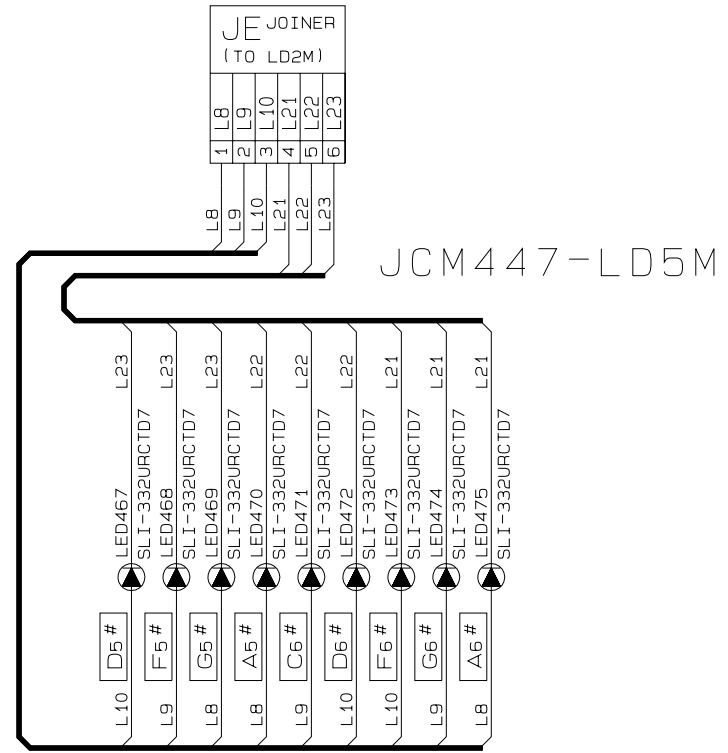
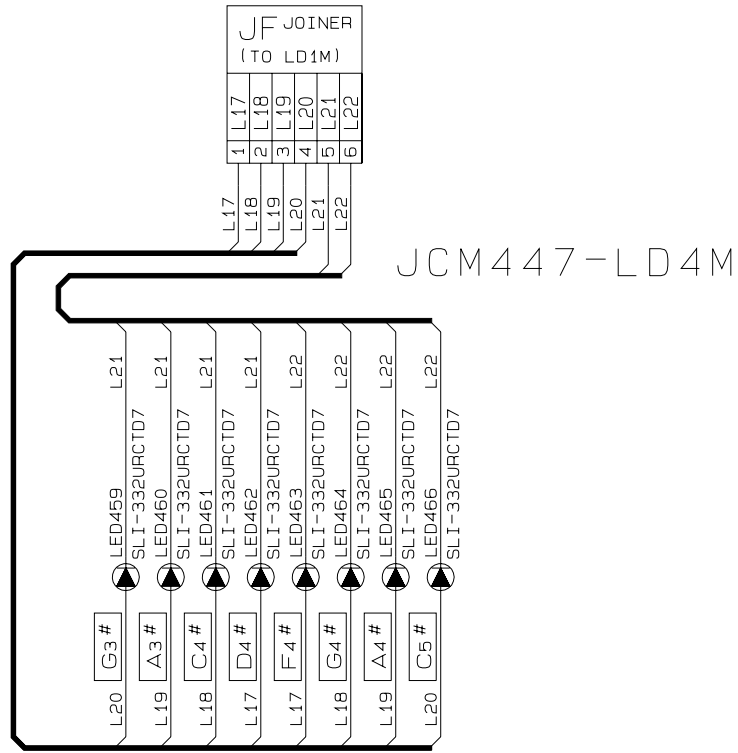
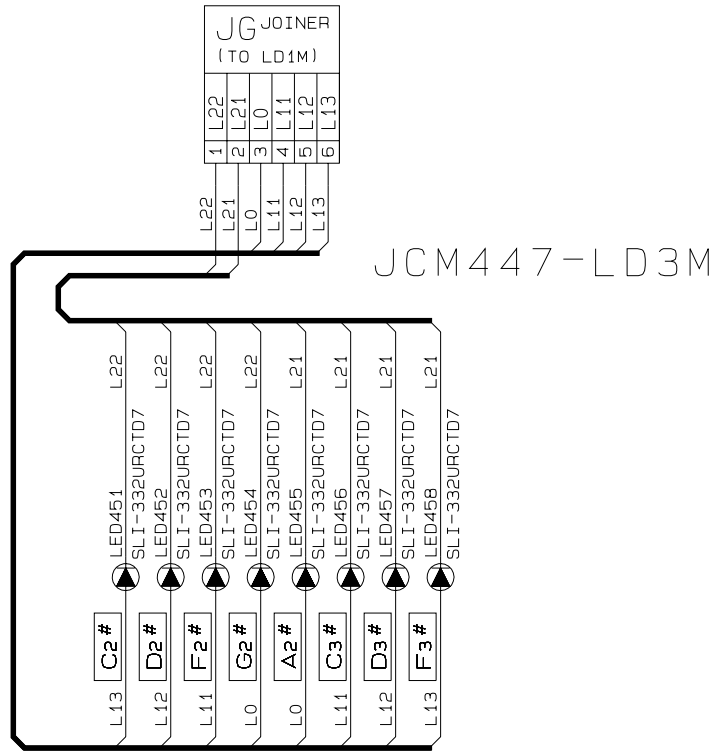
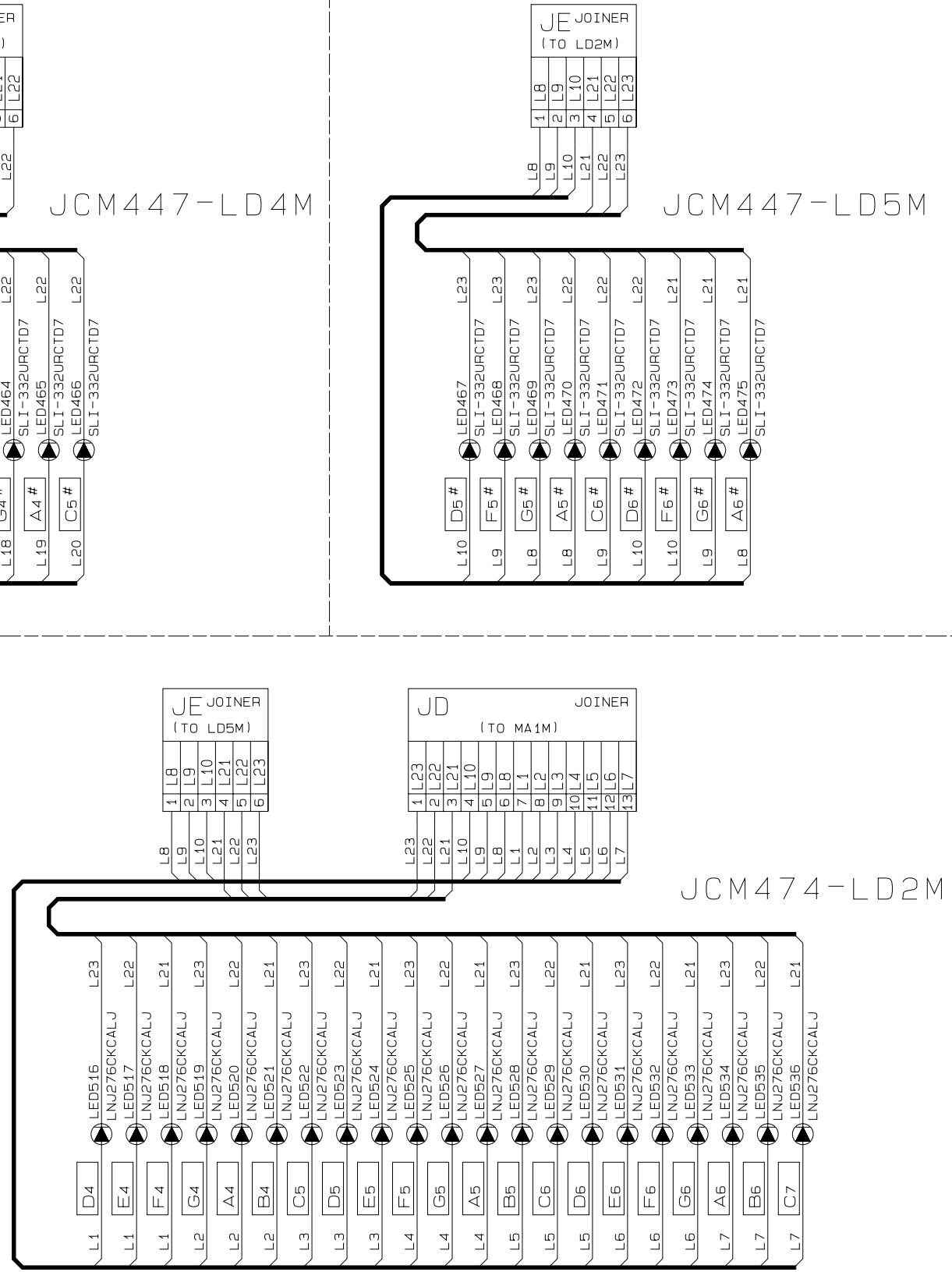
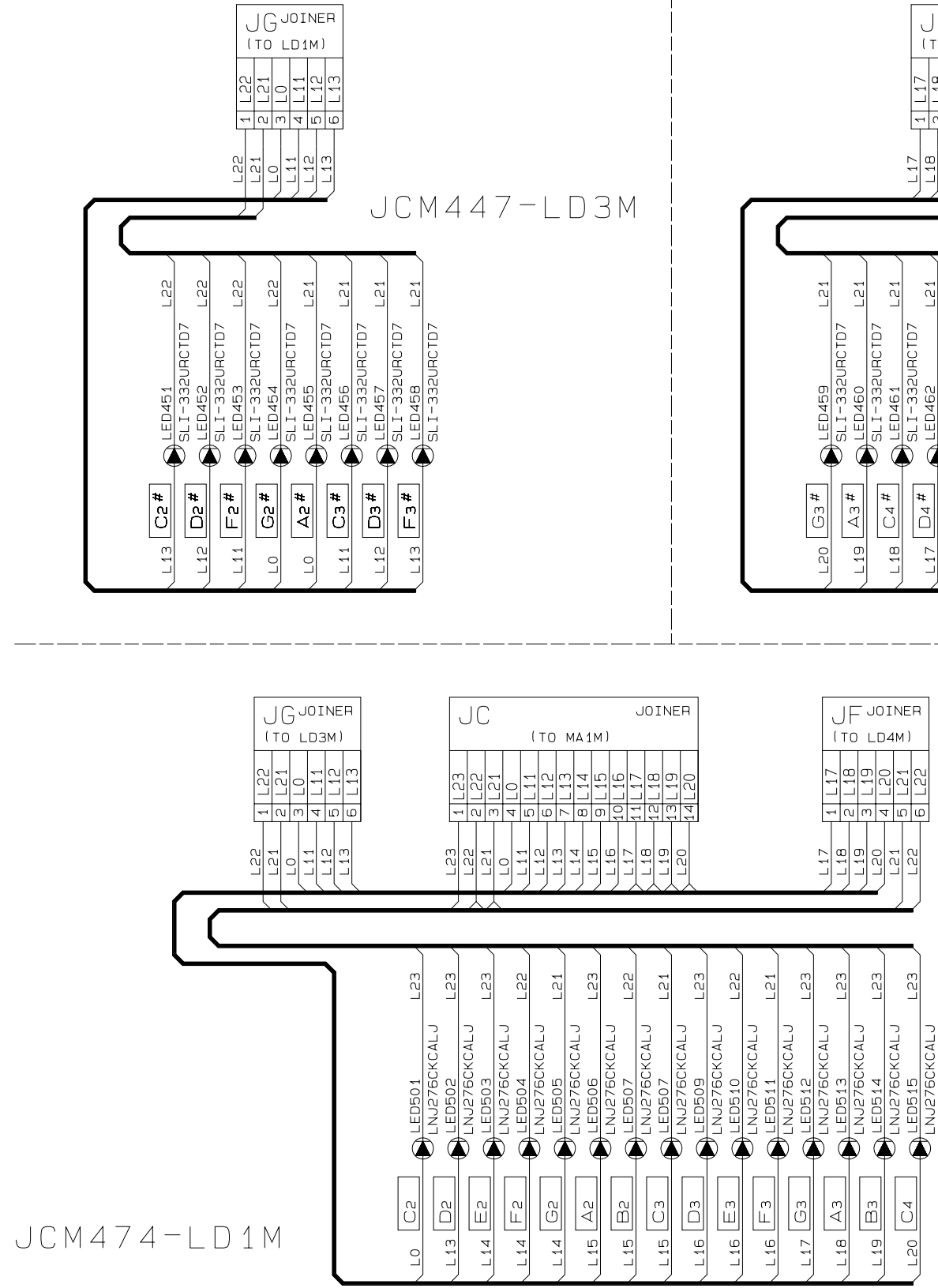
Console PCB JCM447-CN2M



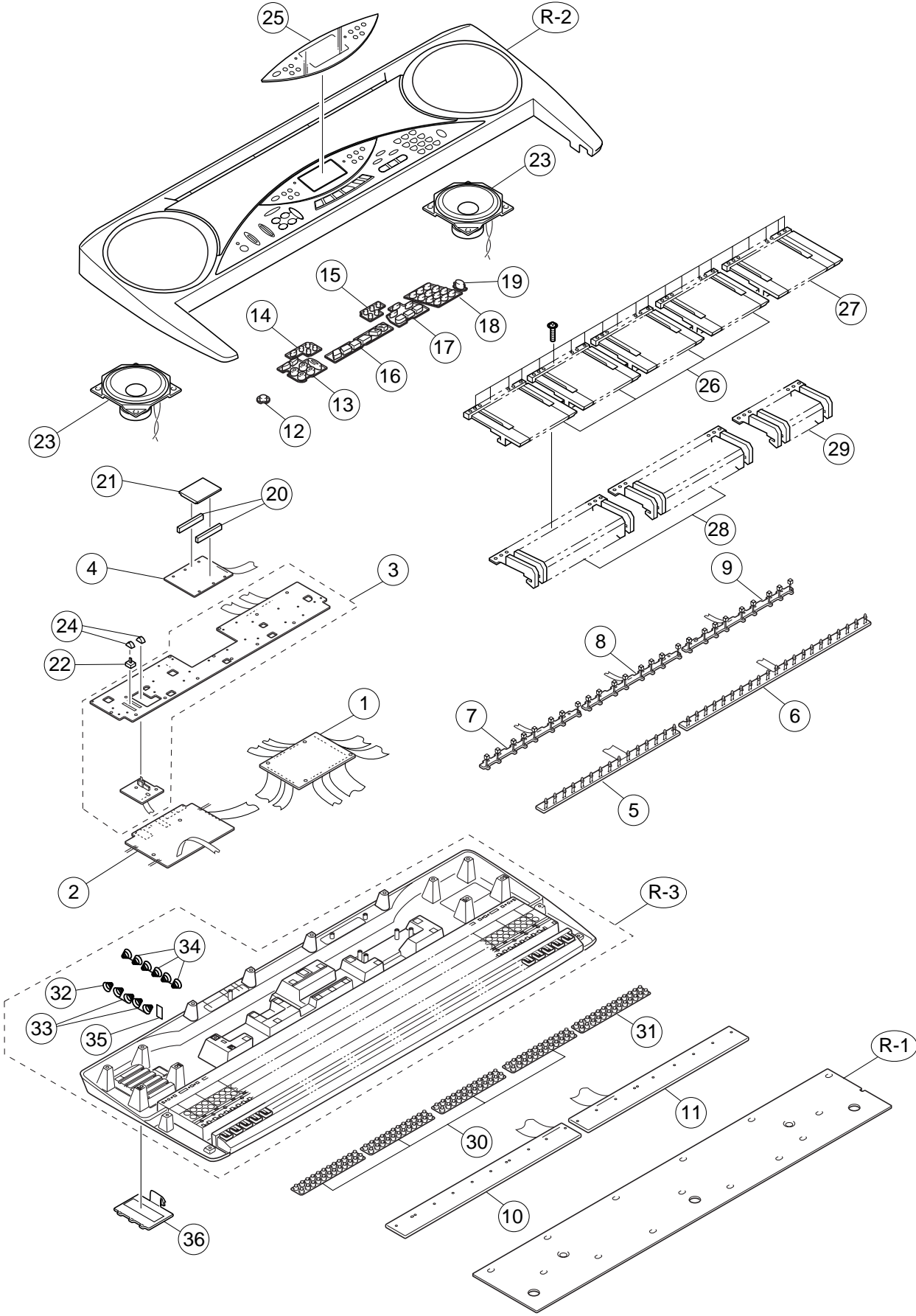
Display PCB JCM474-LCD1M



LED PCB JCM474-LD1M/ LD2M/ LD3M/ LD4M/ LD5M



EXPLODED VIEW



PARTS LIST

LK-50

Notes: This parts list does not include the cosmetic parts, which parts are marked with item No. "R-X" in the exploded view.

Contact our spare parts department if you need these parts for refurbish.

1. Prices and specifications are subject to change without prior notice.
2. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare parts Supply", published separately.
3. The numbers in item column correspond to the same numbers in drawing.

N	Item	CodeNo.	Part Name	Specification	Q	Price Code	R
Main PCB							
	1	1002 5792	PCB ASSY/MA1M	TK-M241346*1(M474)	1	EH	A
	LSI1	2012 5005	LSI	GT913F(T)	1	BO	B
	LSI2	1001 4310	LSI	LH536PYE	1	BG	B
	LSI3	2012 5572	LSI	TC55257DFL-70L(EL)	1	AS	B
	LSI4	2011 0812	LSI	UPD65005GF-419	1	AT	B
	LSI5	2105 4249	LSI	UPD6379GR	1	AN	B
	IC1	2012 1883	IC	RN5VD40AA-TR	1	AE	C
	IC2	1004 6049	IC	TC74VHC00FT(EL)	1	AC	C
	IC3	2105 6631	IC	TC74VHC08FT(EL)	1	AC	C
	Q1 - Q10	2259 2562	TRANSISTOR/CHIP/DIGITAL	UMS1NTL	10	AB	C
	Q12-Q14	2259 2737	TRANSISTOR/CHIP/DIGITAL	2SD2537T100VW	3	AC	C
	Q11	2250 1169	TRANSISTOR/CHIP/DIGITAL	2SA1576AT106S	1	AA	C
	X1	2590 2742	OSCILLATOR/CERAMIC	AT-49-30M	1	AG	C
Sub PCB							
	2	1002 5793	PCB ASSY/MA2M	TK-M241355*1(M474)	1	CY	B
	IC201	2114 2891	IC	LA4598	1	AK	C
	IC202	2114 1421	PHOTO COUPLER	PC900V	1	AK	C
	Q202,Q206,Q208	2250 1591	TRANSISTOR	2SB1237TV2R	3	AB	C
	Q201,Q203,Q205 Q207,Q209-Q214	2250 1592	TRANSISTOR	2SC1740STPR	10	AA	C
	Q204	2251 0672	TRANSISTOR	2SC1741STPR	1	AD	C
	D201-D202	2390 3021	DIODE	2SC1742STPR	2	AF	C
	D203,D207-D208	2390 1344	DIODE	2SC1743STPR	3	AA	C
	D206	2360 1939	DIODE/ZENER	2SC1744STPR	1	AA	C
	D204-D205	2360 1085	DIODE/ZENER	2SC1745STPR	2	AA	C
	J201	3501 7049	JACK/DC	2SC1746STPR	1	AC	C
	J202	3612 0665	JACK/PHONE	2SC1747STPR	1	AG	C
	J203	3612 0789	JACK	2SC1748STPR	1	AC	C
	J204	3501 4816	JACK/DIN	2SC1749STPR	1	AH	C
Console PCB							
	3	1002 5794	PCB ASSY/CN1,2M	TK-M241349*1(M474)	1	CB	B
	LED301	2370 1008	LED	MPR3338S-B102	1	AA	C
	VR301	2765 2213	VOLUME/SLIDE	RS20H121-2KB	1	AD	C
	D301-D340	2390 1344	DIODE	1SS133-T77	40	AA	C
LCD PCB							
	4	1002 5795	PCB ASS'Y/LCD1M	TK-M241350*1(M474)	1	CM	B
	LSI401	2012 6018	LSI	SED1278F2A	1	AV	B
	VR401	2775 3286	POTENTIOMETER	EVM3SSX50B53	1	AC	C
	TH501	2590 2177	THERMISTOR	TBPS1R103J440H5Q	1	AD	C
LED PCBs							
	5	1002 5796	PCB ASS'Y/LD1M	TK-M241351*1(M474)	1	BW	B
	6	1002 5797	PCB ASS'Y/LD2M	TK-M241352*1(M474)	1	BV	B
	7	6926 3130	PCB ASS'Y/LD3M	M240428*2	1	BL	B
	8	1002 5798	PCB ASS'Y/LD4M	TK-M240429*5(M474)	1	BD	B
	9	6926 3150	PCB/ASSY(LD5M)	M240430*2	1	BL	B
	LED451-LED475 LED501-LED536	2370 1395	LED	SLR-33JTDD7	61	AC	C
Keyboard PCBs							
	10	1002 5799	PCB ASS'Y/KY1M	TK-M140687*7(M474)	1	BV	B
	11	1002 5800	PCB ASS'Y/KY2M	TK-M140688*7(M474)	1	AT	B
	D501-D622	2390 0252	DIODE	1S2473T-77	122	AA	C

Notes : N- New parts
Q- Quantity used per unit
R- Rank

R- A: Essential
B: Stock recommended
C: Others
X: No stock recommended

N	Item	CodeNo.	Part Name	Specification	Q	Price Code	R
Mechanical Parts							
	12	1002 0383	BUTTON 474A/RUBBER	M241277-1	1	AA	C
	13	1002 0385	BUTTON 474B/RUBBER	M241278-1	1	AC	C
	14	1002 0387	BUTTON 474C/RUBBER	M241279-1	1	AA	C
	15	1002 0388	BUTTON 474D/RUBBER	M241280-1	1	AA	C
	16	1002 0389	BUTTON 474E/RUBBER	M241281-1	1	AC	C
	17	1002 0386	BUTTON 474F/RUBBER	M241282-1	1	AC	C
	18	1002 0390	BUTTON 474G/RUBBER	M241283-1	1	AC	C
	19	1002 0384	BUTTON 474H/RUBBER	M241284-1	1	AA	C
	20	1002 5788	CONNECTOR	M440435-1	2	AE	C
	21	1002 5300	LCD	LD-B10597	1	BJ	C
	22	6927 0510	CONTACT/SLIDE	CSB-08D	1	AD	C
	23	3831 1096	SPEAKER	S12J89A	2	BH	C
	24	6906 9312	KNOB/SLIDE	M311859B-1	1	AA	C
	25	1002 5270	PLATE/DISPLAY	M241276-1	1	AE	C
	26	6927 3390	KEY SET/LS WHITE CB	M340489*3	4	AU	B
	26-1	6925 2110	W-KEY-LSK-GEGB	M140366-1	4	BC	B
	26-2	6925 2120	W-KEY-LSK-DFA	M140367-1	4	BF	B
	27	6927 3400	KEY SET/LS WHITE CS	M340489*4	1	AV	B
	28	6925 1720	KEY SET/LS BLACK 10P	M140369-1	2	BN	B
	29	6925 1730	KEY SET/LS BLACK 5P	M140369-2	1	AW	B
	30	6922 2760	KEY/RUBBER CB	M211704-1	4	AH	B
	31	6922 2770	KEY/RUBBER CS	M211705-1	1	AI	B
	32	1000 8078	SPRING/BATTERY	M440002A-1	1	AA	X
	33	6927 1060	SPRING/BATTERY	M440676-1	2	AA	X
	34	6927 1070	SPRING/BATTERY	M440677-1	3	AA	X
	35	6927 1080	SPRING/BATTERY	M440112-1	1	AB	X
	36	1002 5789	COVER/BATTERY	M340884*2	1	AM	C
Accessory							
		1002 5472	STAND/MUSIC	M141071-1	1	AT	X

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Ver.1 : Feb. 2002

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Ver.2 : Dec. 2003

Replacement of the PARTS LIST (P25, P26)

CASIO TECHNO CO.,LTD.
Overseas Service Division

6-2, Hon-machi 1-Chome
Shibuya-ku, Tokyo 151-8543, Japan