

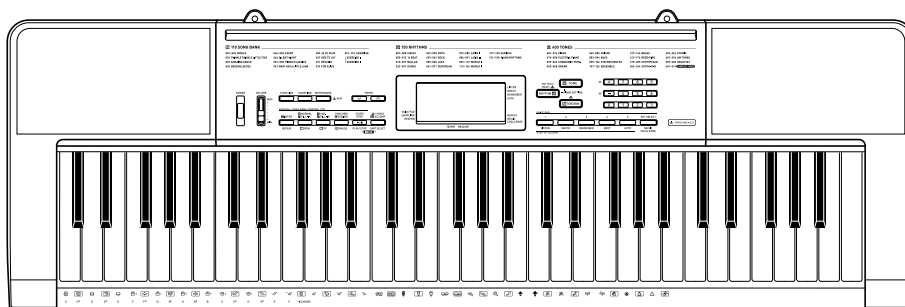
# CASIO®

# SERVICE MANUAL & PARTS LIST

(without price)

## CTK-2080

JUL. 2011



CTK-2080

**ELECTRONIC KEYBOARD**

**Ver. 2 : Feb. 2012**

## CONTENTS

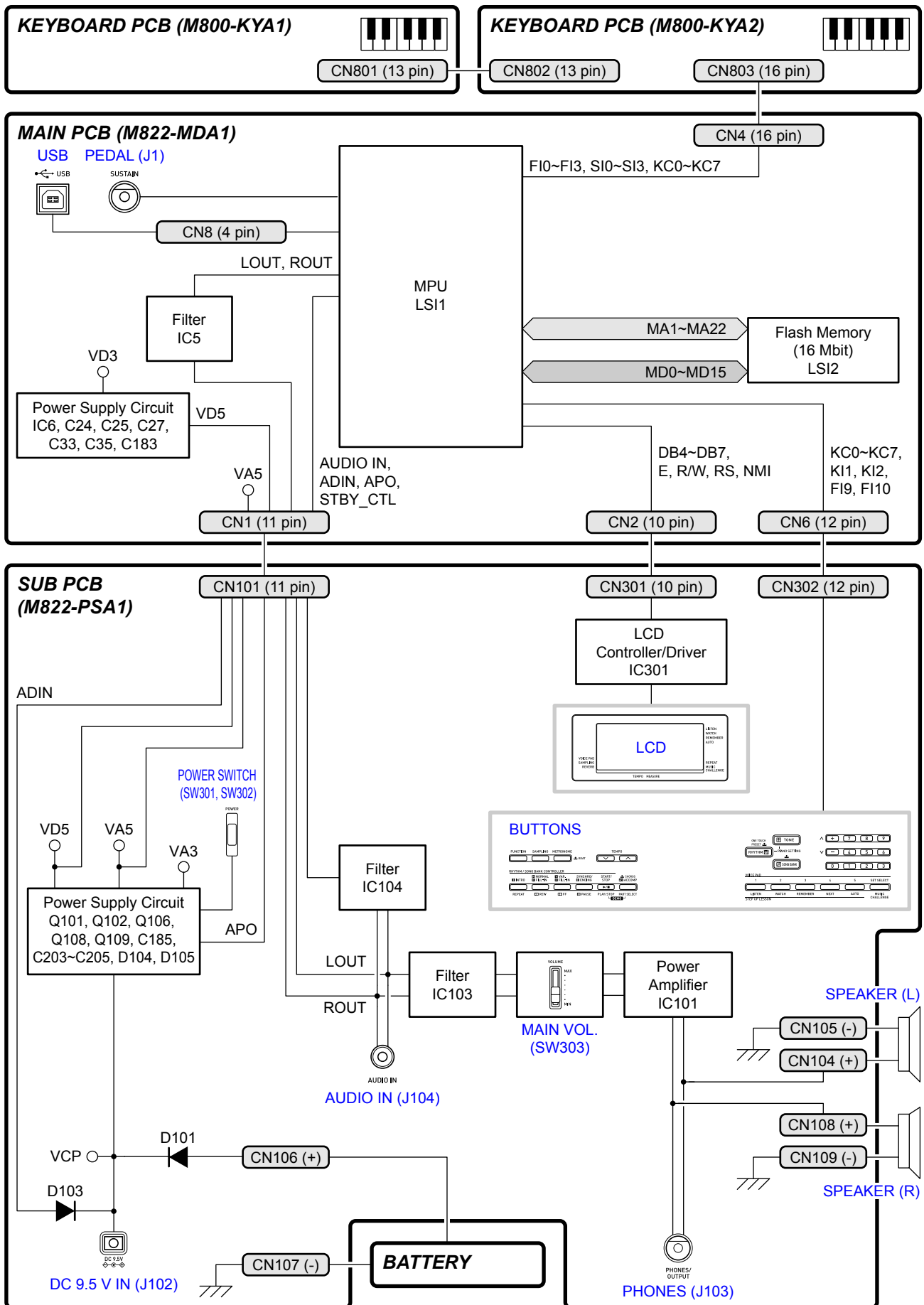
<b>SPECIFICATIONS.....</b>	<b>1</b>
<b>BLOCK AND WIRING DIAGRAM .....</b>	<b>3</b>
<b>PCB INFORMATION .....</b>	<b>4</b>
<b>CIRCUIT DESCRIPTION .....</b>	<b>5</b>
<b>PRINTED CIRCUIT BOARDS.....</b>	<b>6</b>
<b>DISASSEMBLY .....</b>	<b>9</b>
<b>DIAGNOSTIC PROGRAM .....</b>	<b>19</b>
<b>EXPLODED VIEW.....</b>	<b>26</b>
<b>PARTS LIST .....</b>	<b>27</b>
<b>SCHEMATIC DIAGRAMS.....</b>	<b>30</b>

# SPECIFICATIONS

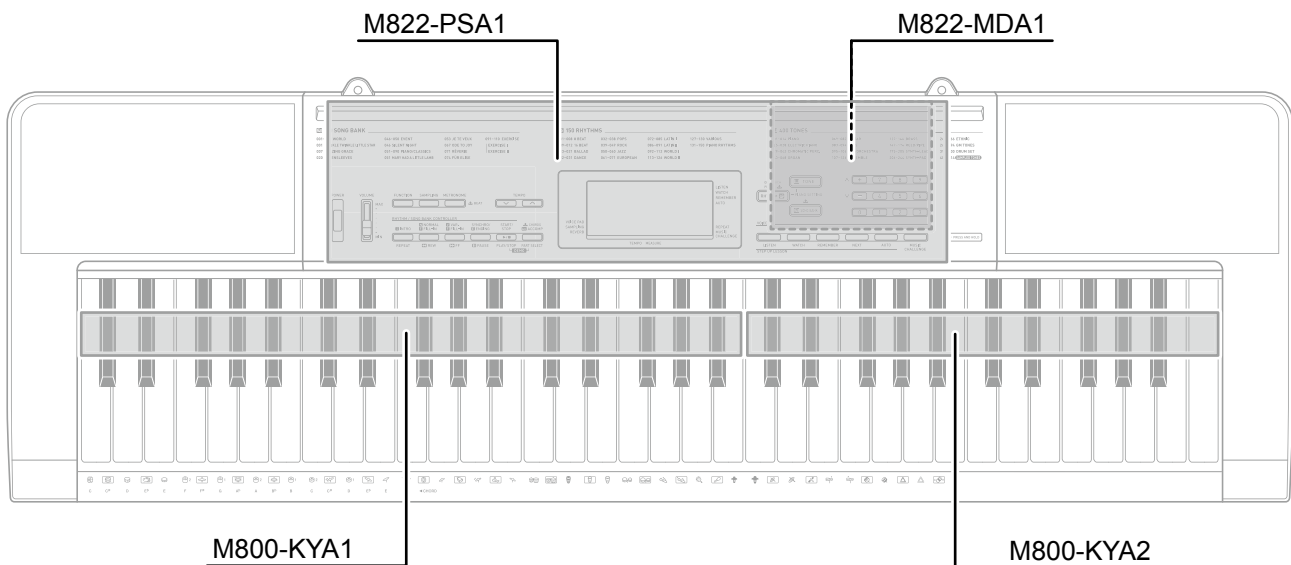
<b>Keyboard</b>	61 standard size keys
<b>Maximum Polyphony</b>	48 notes (24 for certain tones)
<b>Tones</b>	
<b>Built-in Tones</b>	400
<b>Sampling Tones</b>	1 (Full Sampling) or 3 (Short Sampling) Sampling Time: 1 second (Full Sampling) or approximately 0.3 seconds each (Short Sampling) Effects: 10 types (for Full Sampling samples)
<b>Reverb</b>	1 to 10, Off
<b>Voice Pad</b>	5 pads × 4 sets (3 sets for sampled sounds, 1 set for percussion only)
<b>Metronome</b>	
<b>Beats per Measure</b>	0, 2 to 6
<b>Tempo Range</b>	30 to 255
<b>Song Bank</b>	
<b>Tunes</b>	110
<b>Step Up Lesson</b>	
<b>Lessons</b>	4 (Listen, Watch, Remember, Auto)
<b>Lesson Part</b>	L, R, LR
<b>Functions</b>	Repeat, Voice Fingering Guide, Note Guide, Performance Evaluation
<b>Music Challenge</b>	20 notes
<b>Auto Accompaniment</b>	
<b>Rhythm Patterns</b>	150
<b>One Touch Presets</b>	150
<b>Other Functions</b>	
<b>Transpose</b>	±1 octaves (-12 to +12 semitones)
<b>Tuning</b>	A4 = 415.5 to 465.9 Hz (Initial Default: 440.0 Hz)
<b>MIDI</b>	16 multi-timbre received, GM Level 1 standard
<b>Musical Information Function</b>	Tone, Rhythm, Song Bank numbers and names, staff notation, fingering, pedal operation, tempo, measure and beat number, chord name, etc.
<b>Inputs/Outputs</b>	
<b>USB port</b>	TYPE B
<b>Sustain jack</b>	Standard jack (sustain, sostenuto, soft, rhythm)
<b>Phones/Output jack</b>	Stereo standard jack Output Impedance: 200 Ω, Output Voltage: 4.5 V (RMS) MAX
<b>Audio In jack</b>	Stereo mini jack Input Impedance: 9 kΩ, Input Sensitivity: 200 mV
<b>Power Jack</b>	9.5 V DC

<b>Power Supply</b>	2-way
<b>Batteries</b>	6 AA-size zinc-carbon batteries or alkaline batteries
<b>Battery Life</b>	Approximately 3 hours continuous operation on alkaline batteries
<b>AC Adaptor</b>	AD-E95100L
<b>Auto Power Off</b>	Approximately 6 minutes (during battery operation) or 30 minutes (during AC adaptor operation) without any operation
<b>Speakers</b>	10 cm × 2
<b>Output</b>	2 W + 2 W
<b>Power Consumption</b>	9.5 V $\approx$ 7.7 W
<b>Dimensions</b>	94.6 × 30.7 × 9.2 cm (37 $\frac{1}{4}$ × 12 $\frac{1}{16}$ × 3 $\frac{5}{8}$ inch)
<b>Weight</b>	Approximately 3.4 kg (7.5 lbs) (without batteries)

# BLOCK AND WIRING DIAGRAM



## PCB INFORMATION



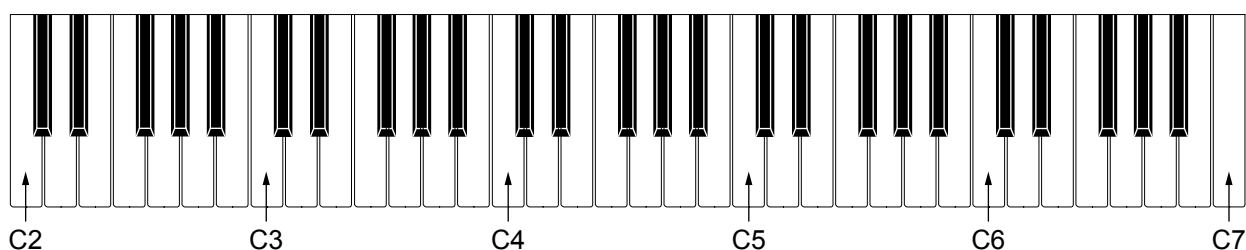
Classification	Parts Name	PCB Name	Components
Main PCB	PCB UNIT/MAIN	M822-MDA1	MPU, Flash Memory (16 Mbit), Power Supply Circuit, Filter, SUSTAIN Jack, USB Port
Sub PCB	PCB UNIT/POWER & AMP	M822-PSA1	Power Supply Circuit, Power Amplifier, Filters, LCD Controller/Driver, LCD, Buttons, Power Switch, Main Volume, DC 9.5 V Terminal, AUDIO IN Jack, PHONES/OUTPUT Jack
Keyboard PCB	PCB UNIT/KYA	M800-KYA1	Keyboard
		M800-KYA2	

## CIRCUIT DESCRIPTION

### ■ KEY MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
KI0	C2	C2#	D2	D2#	E2	F2	F2#	G2
KI1	G2#	A2	A2#	B2	C3	C3#	D3	D3#
KI2	E3	F3	F3#	G3	G3#	A3	A3#	B3
KI3	C4	C4#	D4	D4#	E4	F4	F4#	G4
KI4	G4#	A4	A4#	B4	C5	C5#	D5	D5#
KI5	E5	F5	F5#	G5	G5#	A5	A5#	B5
KI6	C6	C6#	D6	D6#	E6	F6	F6#	G6
KI7	G6#	A6	A6#	B6	C7			

### ■ NOMENCLATURE OF KEYS

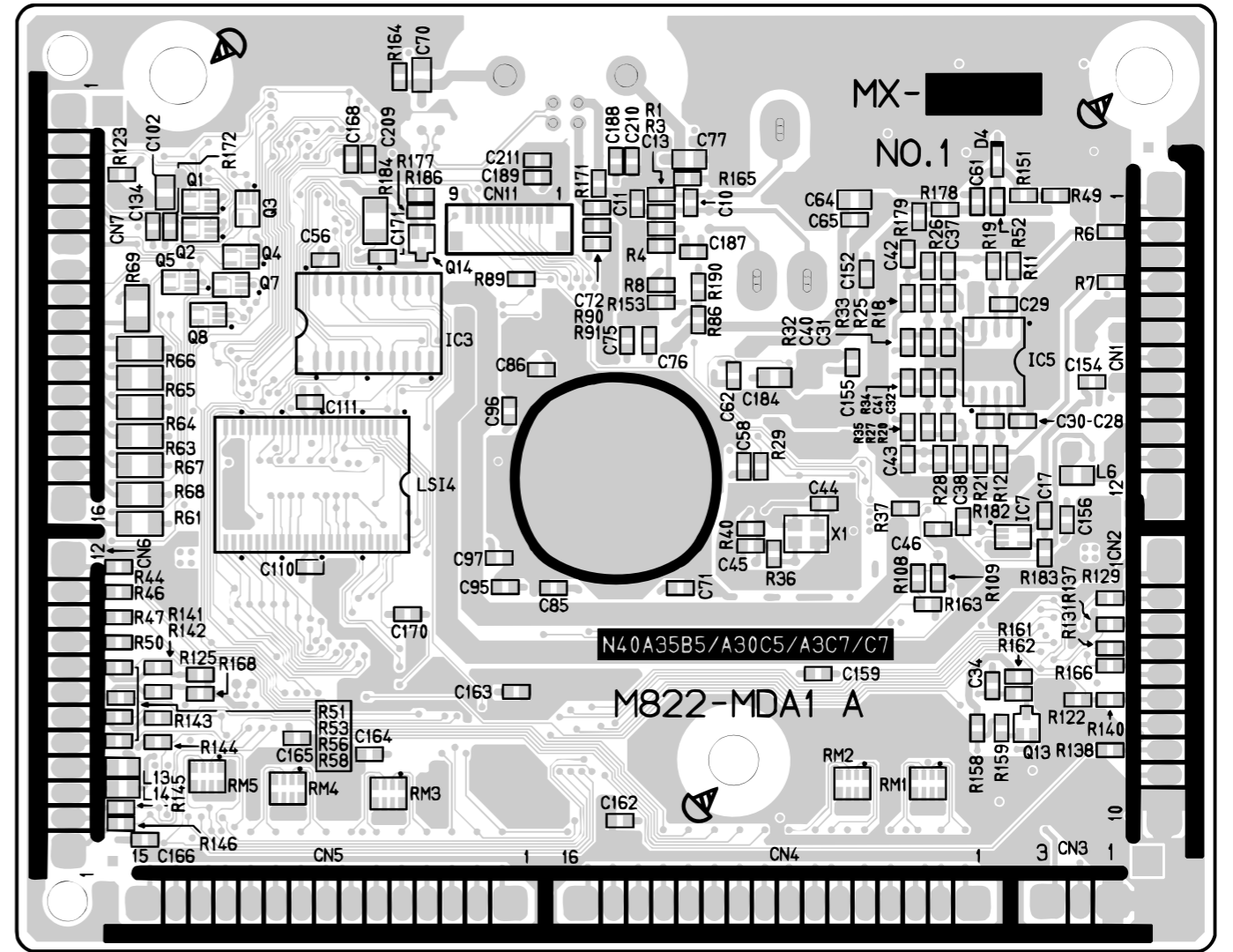
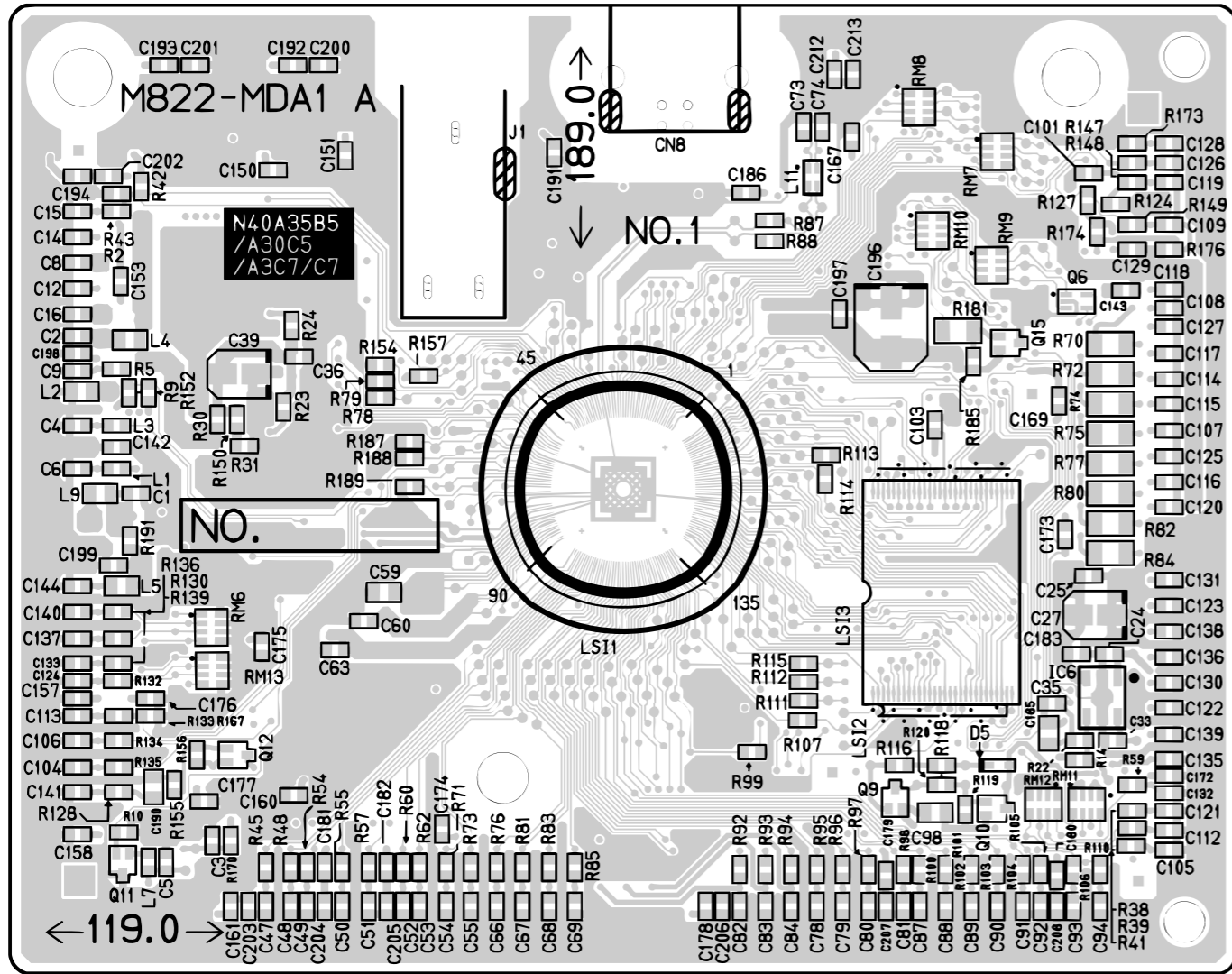


### ■ BUTTON MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
KI1	SONG BANK	TONE	TEMPO ^	SET SELECT, MUSIC CHALLENGE	VOICE PAD4, NEXT	START/ STOP, PLAY/ STOP	METRONOME, ↓ BEAT	REPEAT, INTRO
KI2	RHYTHM, ONE TOUCH PRESET ↓	TEMPO v	VOICE PAD2, WATCH	VOICE PAD3, REMEMBER	VOICE PAD1, LISTEN	NORMAL/ FILL-IN, REW	FUNCTION	VAR./ FILL-IN, FF
FI9	0	1	2	3	4	5	6	-
FI10	7	8	9	+	VOICE PAD5, AUTO	SYNCHRO/ ENDING, PAUSE	ACCOMP, ↓ CHORDS, PART SELECT	SAMPLING

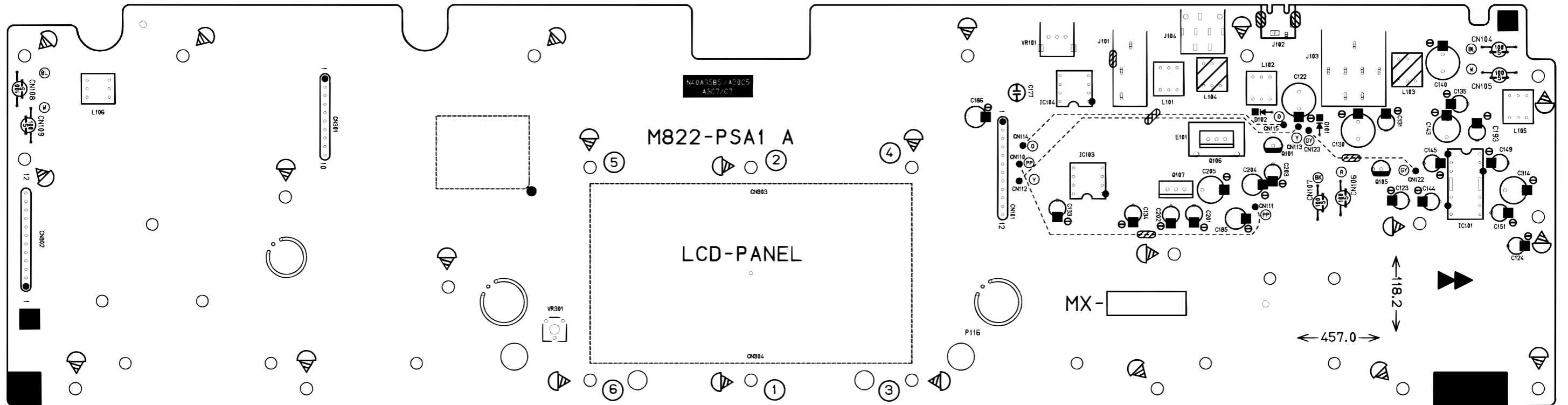
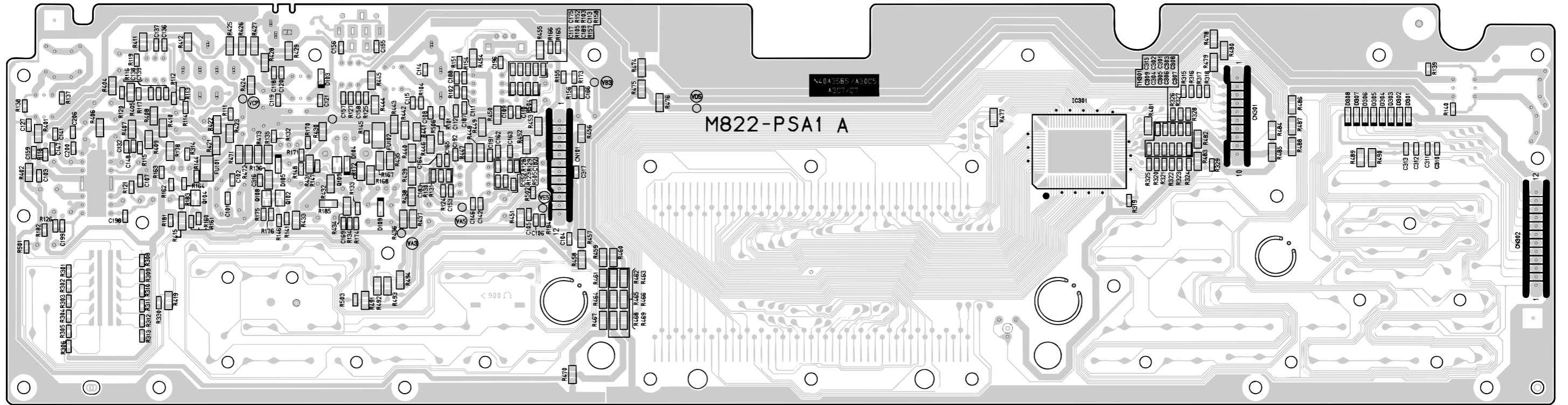
# PRINTED CIRCUIT BOARDS

Main PCB: M822-MDA1

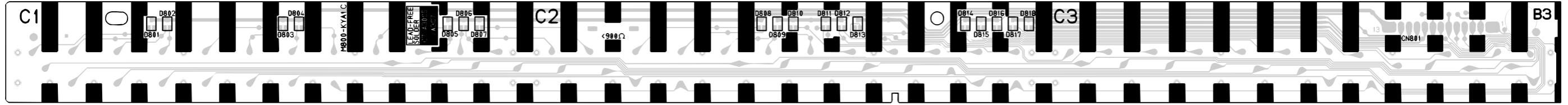




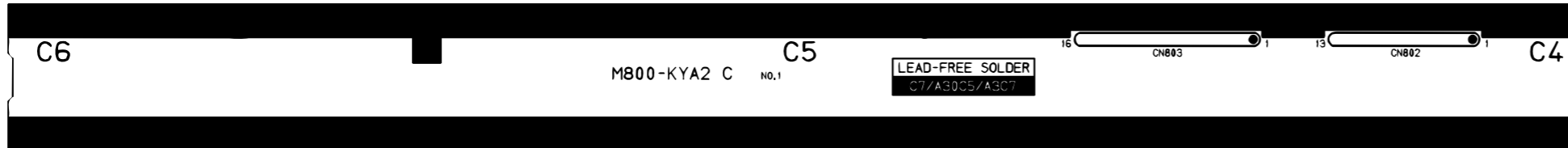
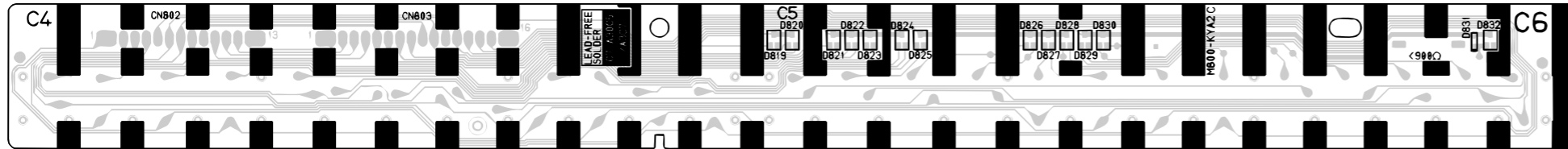
Sub PCB: M822-PSA1



Keyboard PCB: M800-KYA1



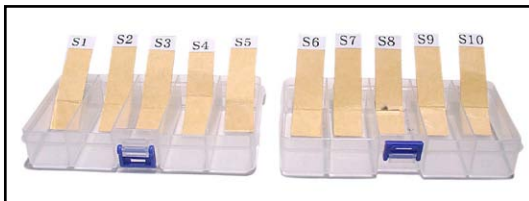
Keyboard PCB: M800-KYA2



## DISASSEMBLY

### ■ CAUTION

- The photos show a prototype. The appearance of the instrument, such as color, may differ from the actual model.
- To avoid damages to the instrument and the floor, lay the instrument on a mattress or blanket before starting disassembling.
- There are several kinds of screws. Be sure to use the correct type of screws when reassembling. It is advisable to sort the screws as shown below after removing them.



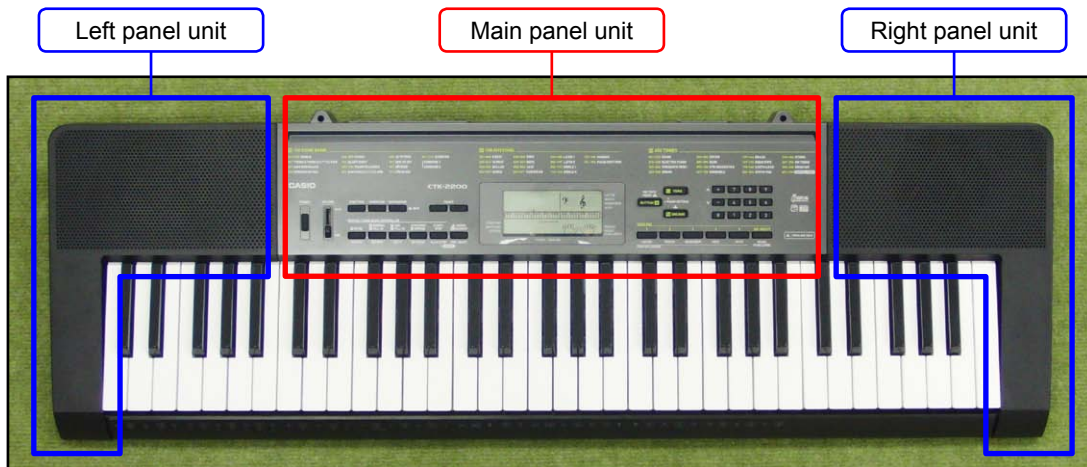
- If a screw cap is attached to a screw, be sure to reattach the screw cap when reassembling.

### ■ BEFORE STARTING REPAIR OR SERVICING

- Remove the AC adaptor, AC cord or batteries.
- Remove accessories such as the music stand.

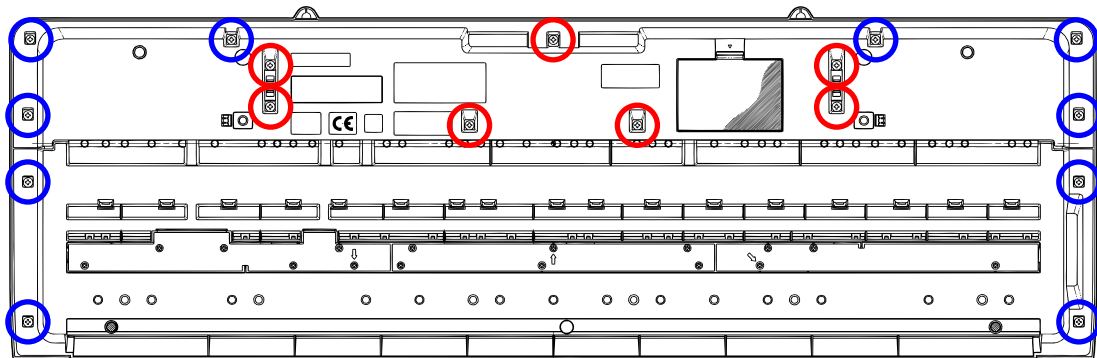
## ■ DISASSEMBLY

### A. REMOVE THE PANEL UNITS



A-1. Undo 17 or seven screws on the bottom surface of the main unit.

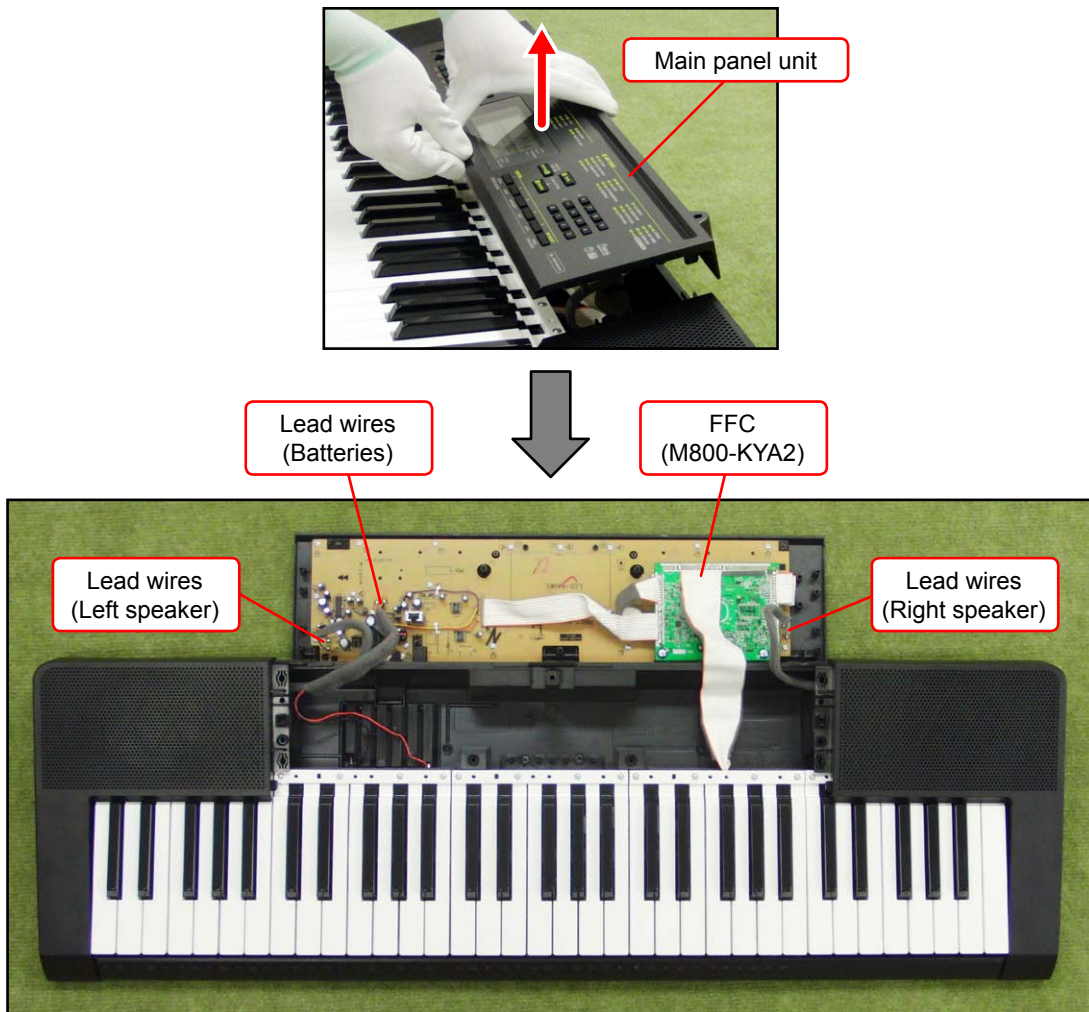
**NOTE:** To remove only the main panel unit, undo seven screws indicated with red circles in the illustration below.



A-2. Place the main unit with the keys facing up.

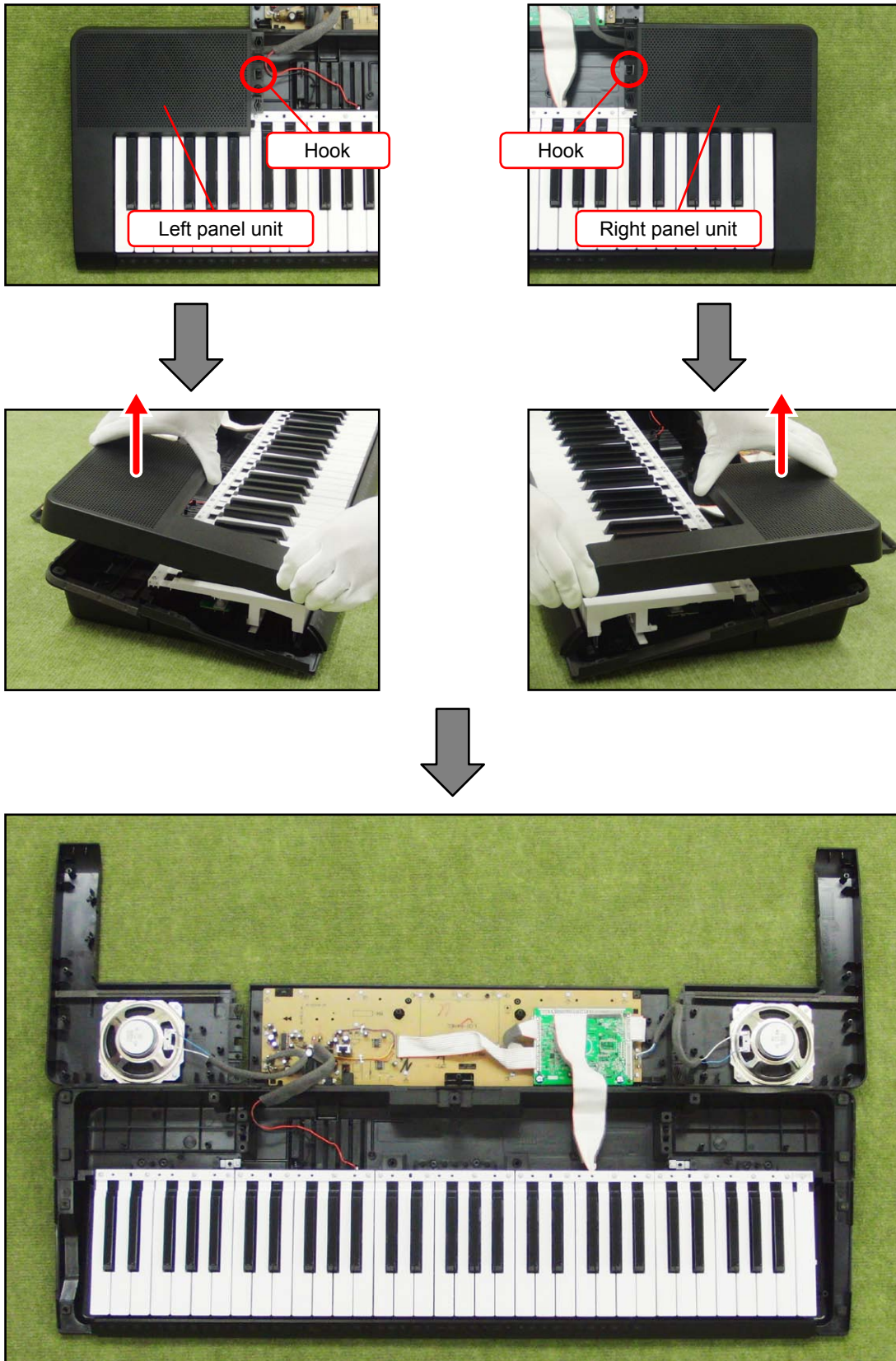
A-3. Lift the main panel unit and turn it over.

**NOTE:** The main panel unit is connected to the lower case unit with the lead wires and FFCs. Use caution when turn over the main panel unit.



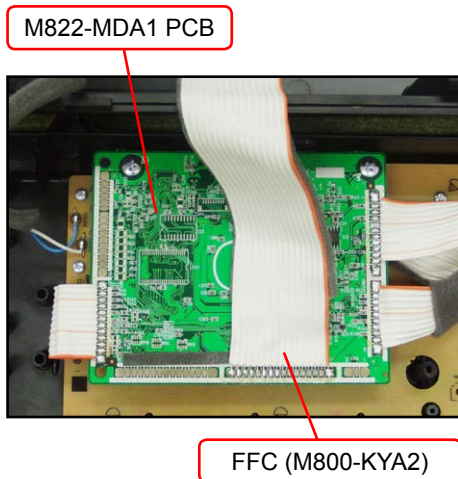
A-4. Disengage one hook and then remove the right panel unit.

A-5. Disengage one hook and then remove the left panel unit.



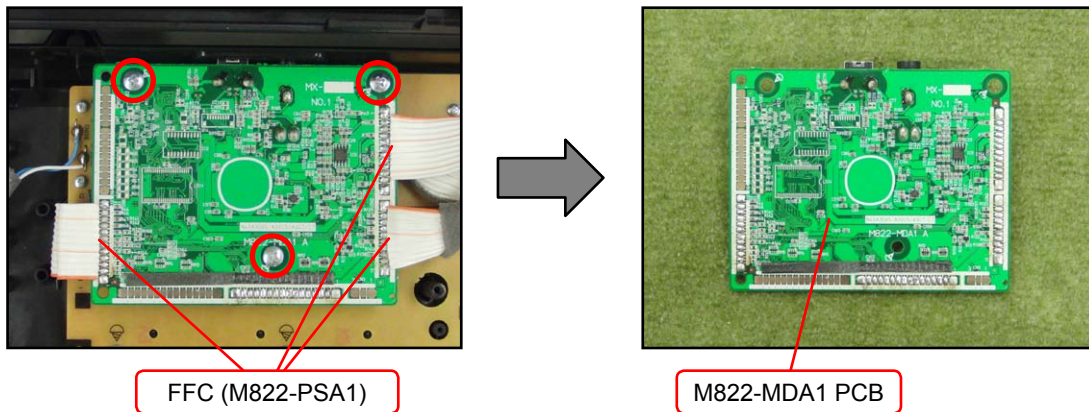
## B. REMOVE THE M822-MDA1 PCB (MAIN PCB)

B-1. Unsolder one FFC.



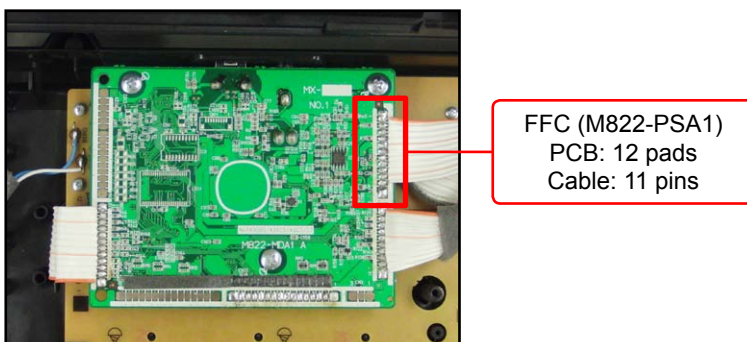
B-2. Unsolder three FFCs.

B-3. Undo three screws and then remove the M822-MDA1 PCB.



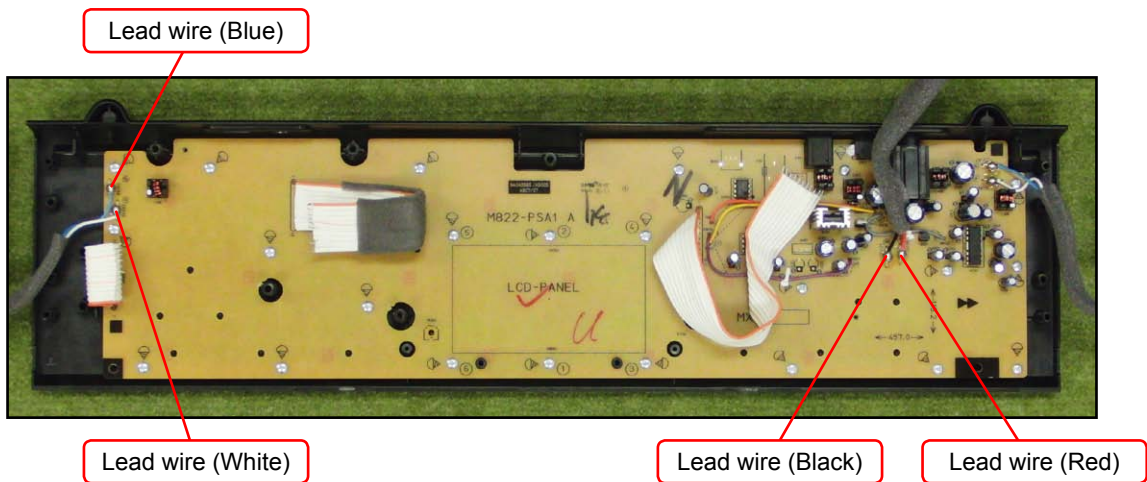
### <Notes On Assembly>

- The number of pins on the PCB pad differs from that on the cable. Solder in the way that No.1 pin on the cable (orange) is connected to No.1 pad on the PCB.



**C. REMOVE THE M822-PSA1 PCB (SUB PCB)**

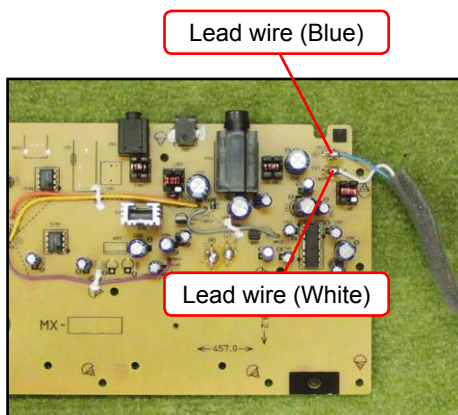
C-1. Unsolder four lead wires.



C-2. Undo 23 screws.

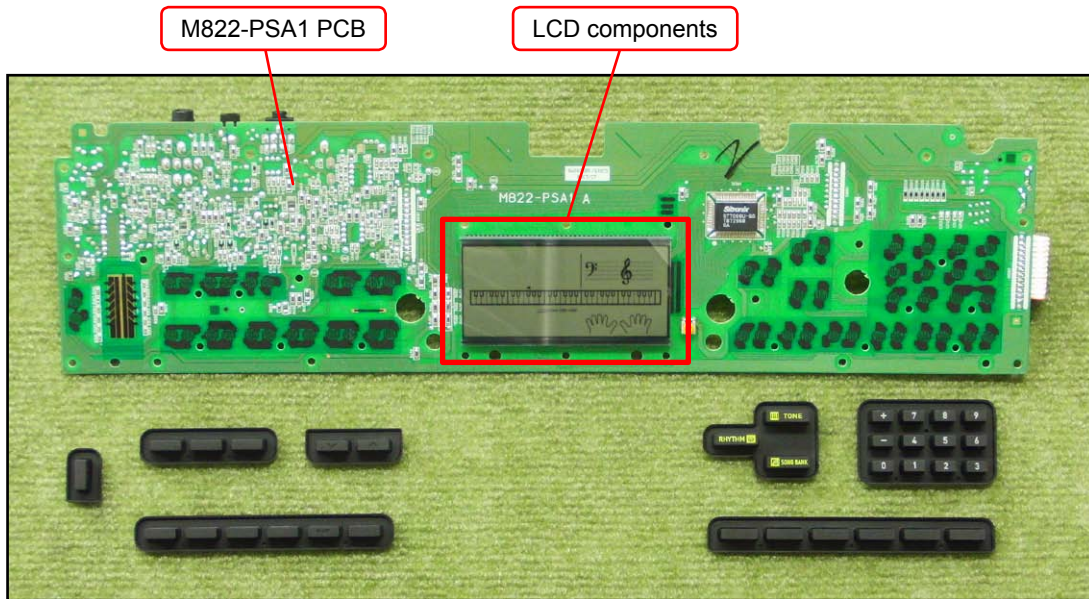


C-3. Remove the M822-PSA1 PCB from main panel and then unsolder two lead wires.



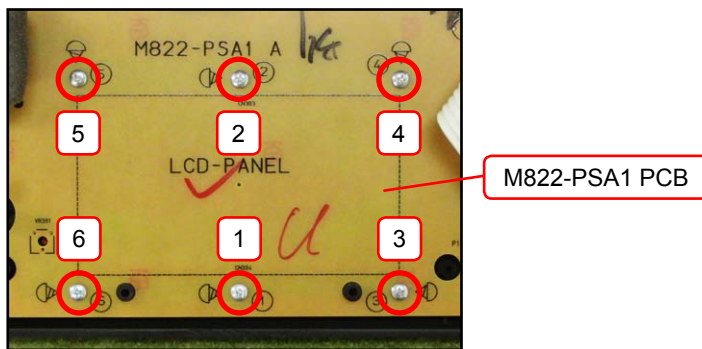


C-4. Remove the M822-PSA1 PCB, LCD components and rubber keys.



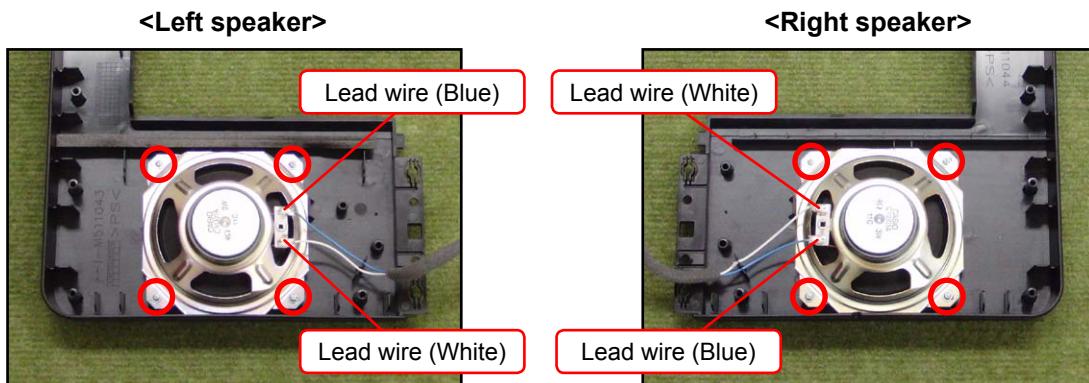
**<Notes On Assembly>**

- To install the M822-PSA1 PCB, tighten the screws for the LCD part in the order indicated with the numbers below. If not tighten correctly, it may cause the LCD display errors.



**D. REMOVE THE SPEAKER**

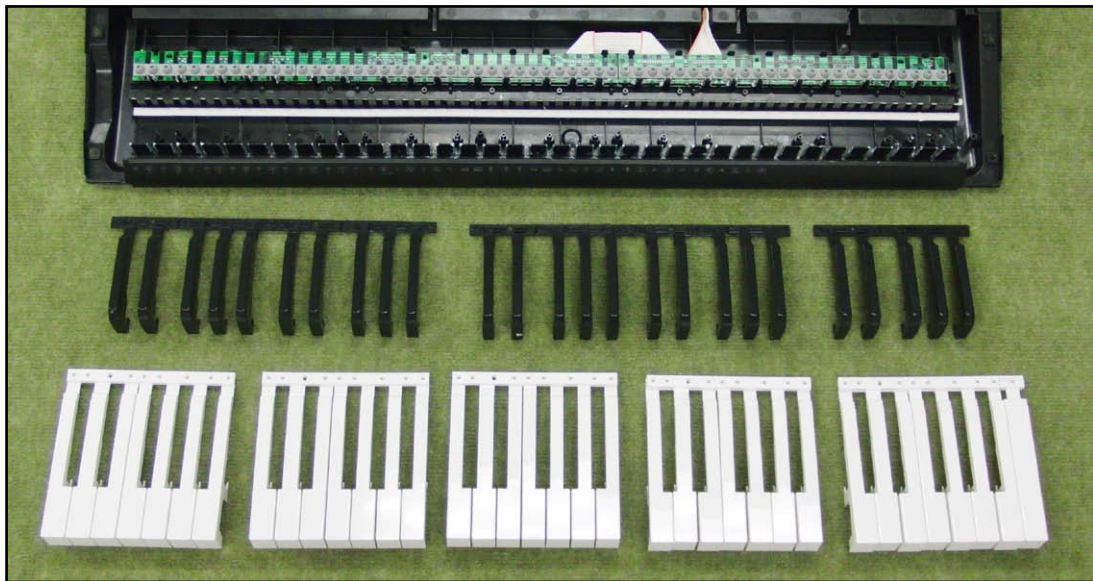
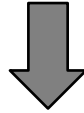
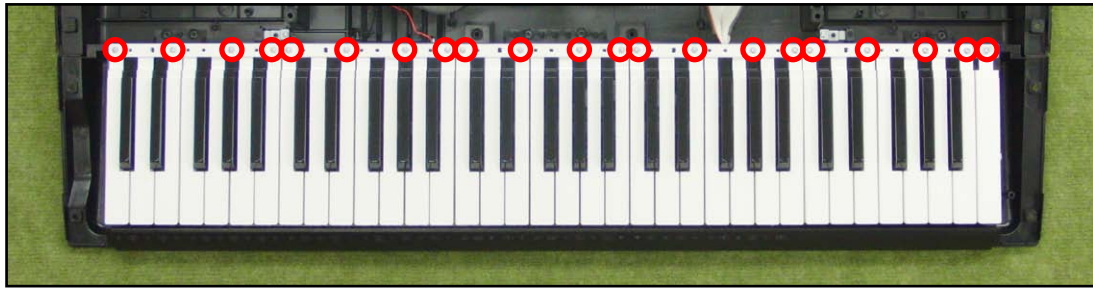
- D-1. Unsolder two lead wires.
- D-2. Undo four screws and then remove the SPEAKER.



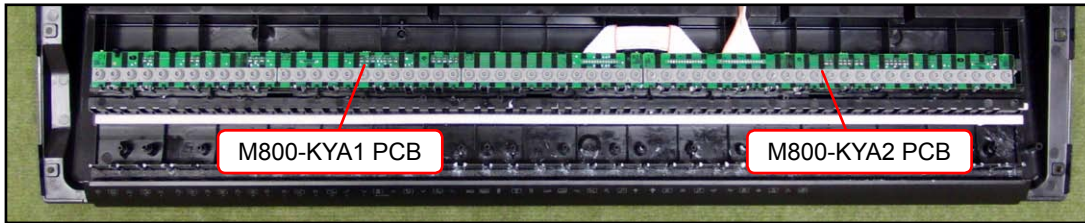
## E. REMOVE THE KEYBOARD

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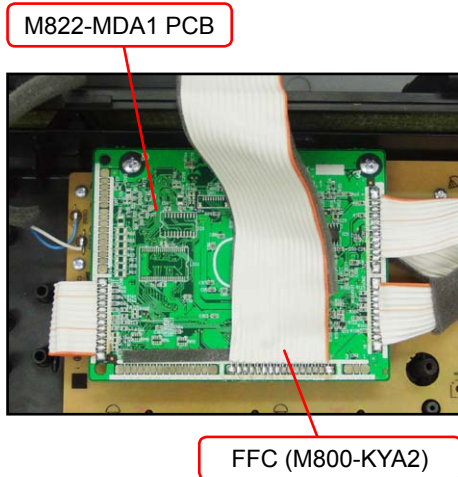
E-1. Undo 21 screws and then remove the keys.



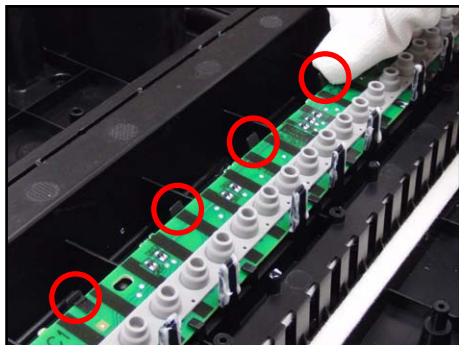
## F. REMOVE THE M800-KYA1/KYA2 PCBs (KEYBOARD PCB)



F-1. Unsolder one FFC connected to the M822-MDA1 PCB.

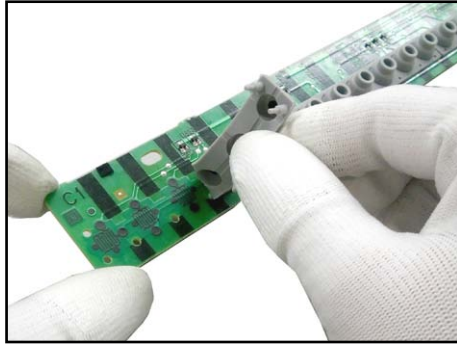
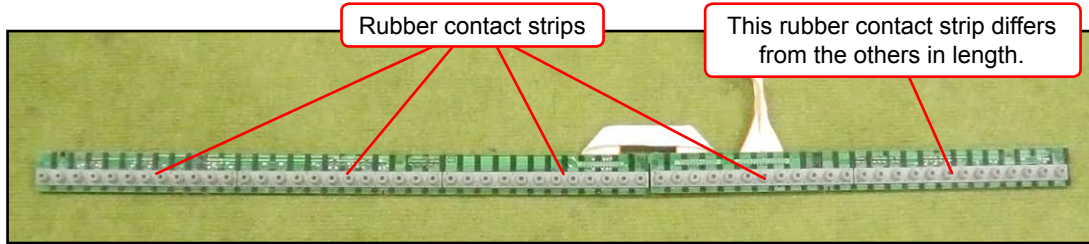


F-2. Disengage the hooks and then remove the M800-KYA1/KYA2 PCBs.



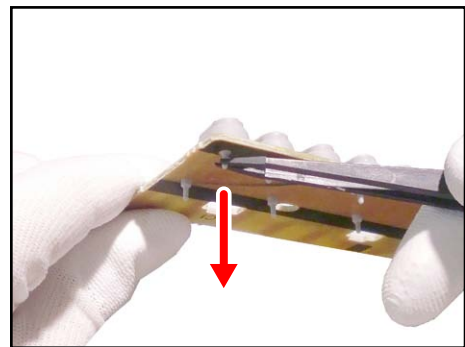
F-3. Remove five rubber contact strips.

**NOTE:** One rubber contact strip differs in length.



#### <How To Install Rubber Contact Strips>

- Lightly insert the tip of a rubber contact strip into the PCB. Pull the tip from the back of the PCB and install it using a tool such as tweezers. Do not forcibly pull it.



## DIAGNOSTIC PROGRAM

### ■ PREPARATION

- (1) Connect the AC adaptor.

**NOTE:** “AC ADAPTOR CHECK” cannot be performed unless the AC adaptor is connected.

- (2) Turn the main volume to the maximum.

- (3) Have a PC and a USB cable ready.

**NOTE:** “USB CHECK” cannot be performed without a PC and a USB cable.

Operating System: Windows® XP (SP2 or later) \*1

Windows Vista® \*2

Windows 7® \*3

Mac OS® X (10.3.9, 10.4.11, 10.5.8 or later, 10.6.6 or later)

\*1: Windows XP Home Edition/Windows XP Professional (32 bit)

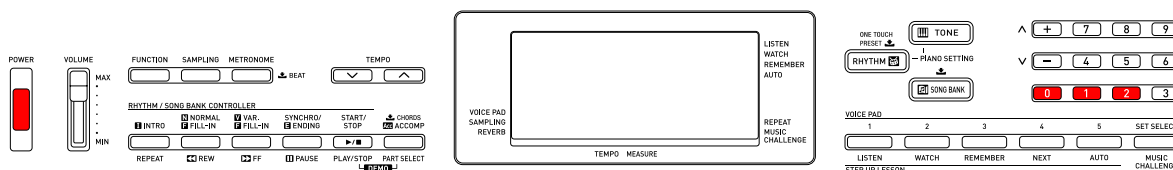
\*2: Windows Vista (32 bit)

\*3: Windows 7 (32 bit, 64 bit)

### ■ HOW TO START THE DIAGNOSTIC PROGRAM

- (1) Hold down the “0”, “1” and “2” buttons at the same time, to turn the power ON.

**NOTE:** Be sure to turn OFF the power when the test is finished.



- (2) Release the “0”, “1” and “2” buttons.

- (3) After the diagnostic program is launched, the test mode screen appears.

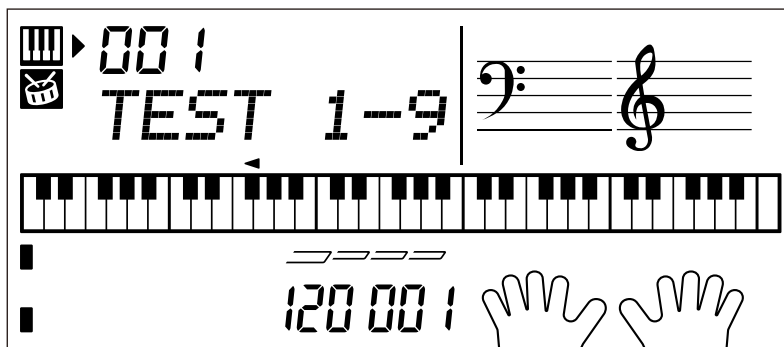


## ■ TEST ITEMS

Pressing a test button after the diagnostic program was launched or while on the main screen enables the corresponding test item to be tested.

Test Items	Buttons	Note
A. BUTTON CHECK	1	
B. AC ADAPTOR CHECK	3	AC adaptor
C. ROM VERSION & MODEL CHECK	9	
D. LCD CHECK	2	
E. USB CHECK		PC, USB cable

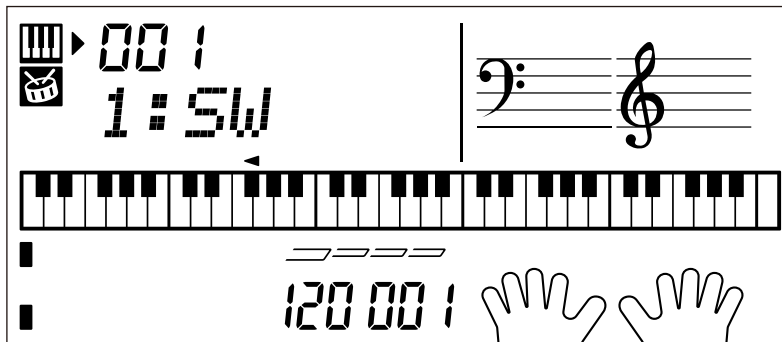
<Test Mode Main Screen>



## ■ TEST PROCEDURES

### A. BUTTON CHECK

A-1. Press the "1" button to select the "BUTTON CHECK".

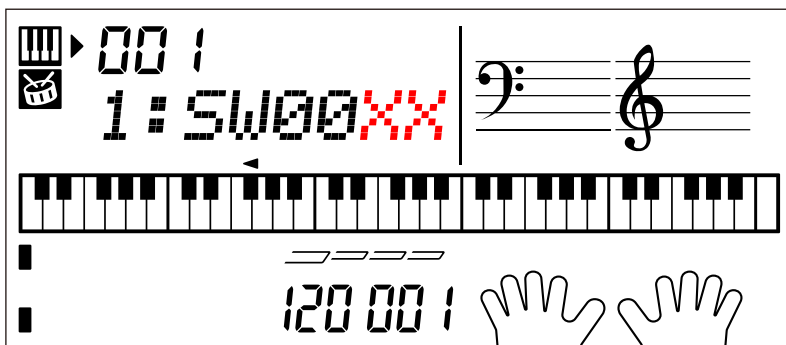


A-2. Press the button in the order indicated in the illustration.

**NOTE:** You cannot cancel this check procedure mid-way.

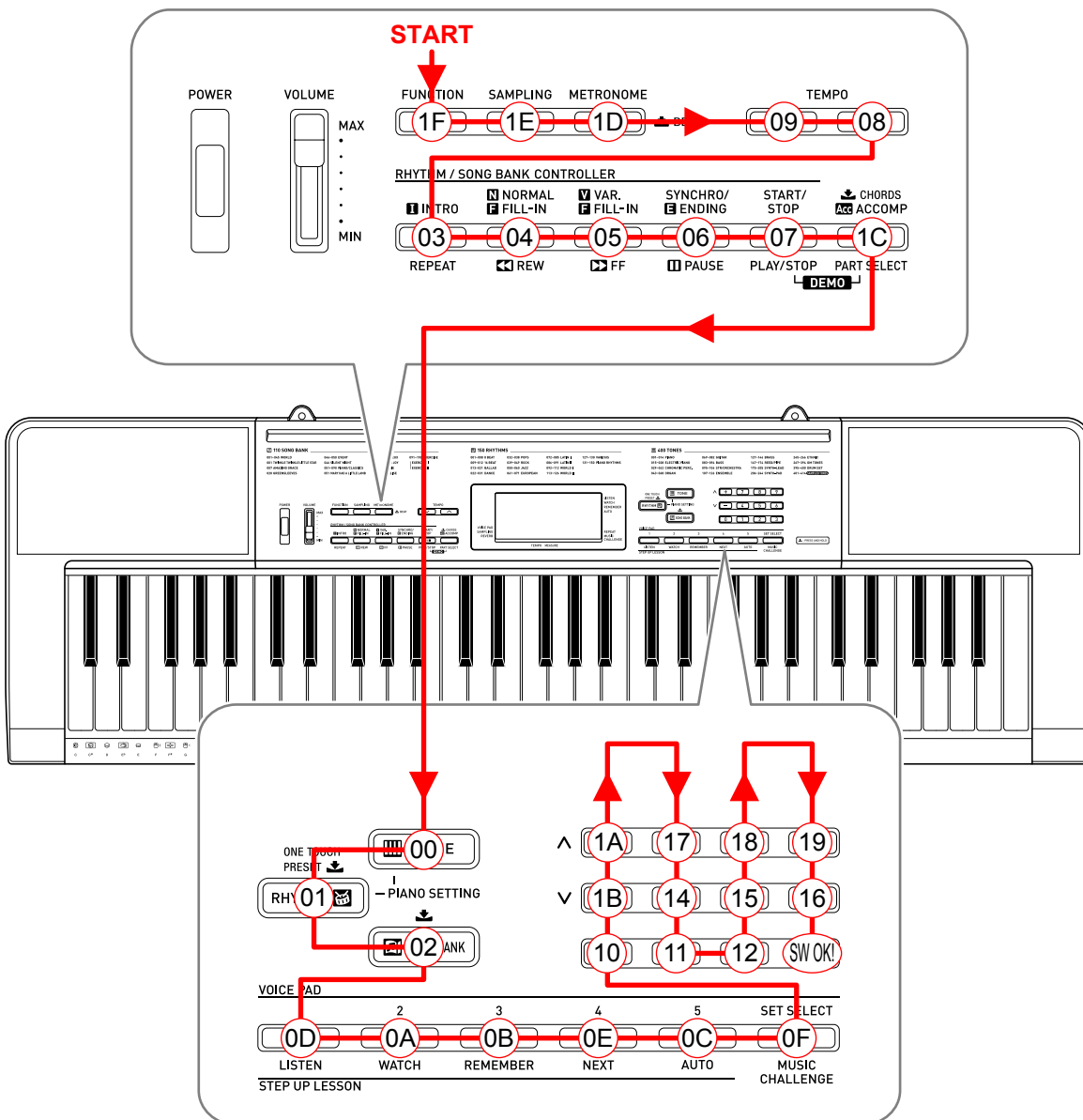
**<If the result passes>**

The confirmation chord sounds and “1:SW00XX” is displayed on the LCD with “XX” indicating the corresponding button number in the illustration.



**<If the result fails>**

If there is a button failure or the buttons are pressed in a wrong sequence, an error tone sounds and the button number which you pressed will be displayed on the LCD.



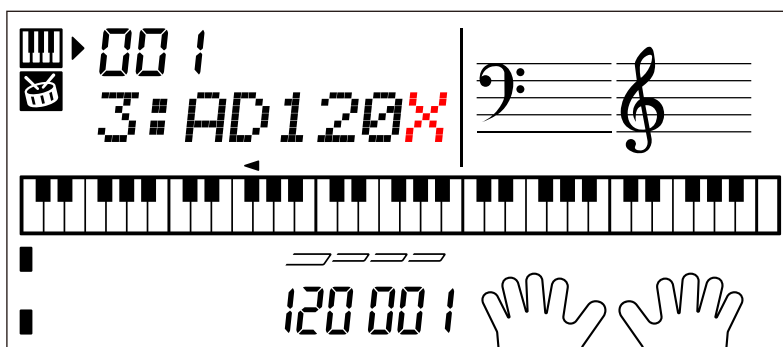
- A-3. When the “3” button is pressed at the end, a confirmation chord sounds and “SW OK!” is displayed on the LCD.
- A-4. Check to see if the LCD is as shown below.



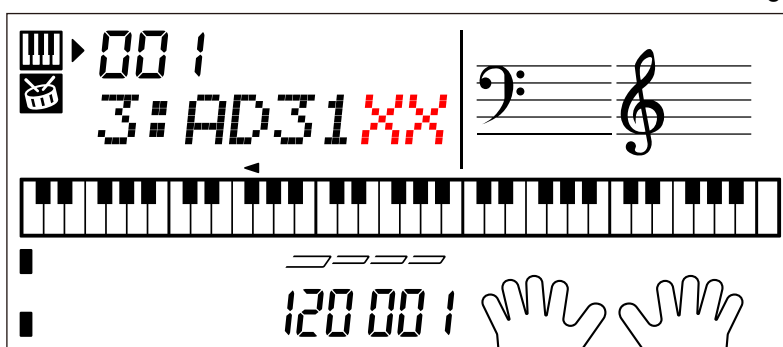
- A-5. Press the “0” button to return to the main screen.

## B. AC ADAPTOR CHECK

- B-1. Press the “3” button to select the “AC ADAPTOR CHECK”.
- B-2. Make sure that a value “X” shown in the illustration is in the range of 1 to 3.



- B-3. Press the “3” button again.
- B-4. Make sure that a value “XX” shown in the illustration is in the range of 00 to FF.



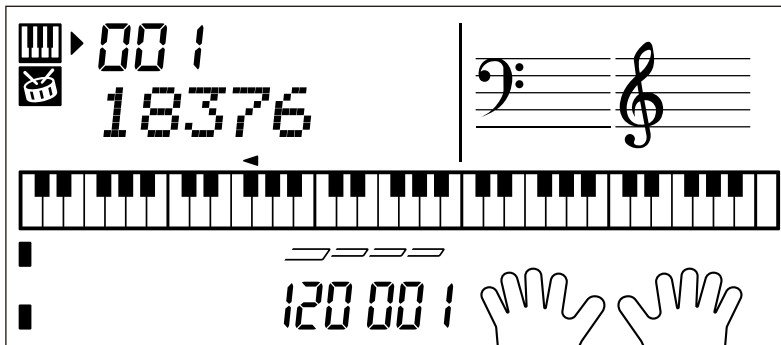
- B-5. Press the “0” button to return to the main screen.



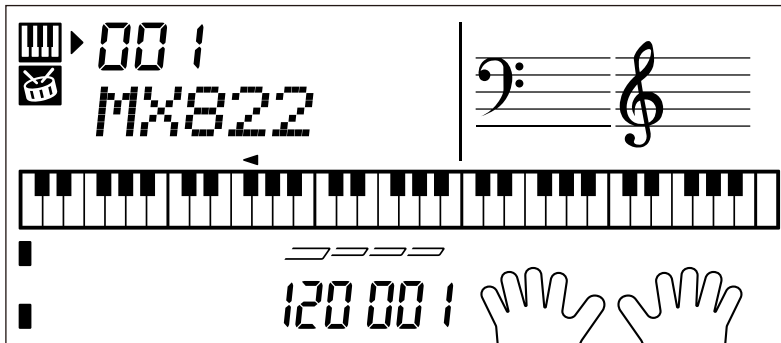
### C. ROM VERSION & MODEL CHECK

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- C-1. Press the “9” button to perform the “ROM VERSION CHECK”.  
The ROM version appears on the LCD.
- C-2. Check that the ROM version is “18376”.



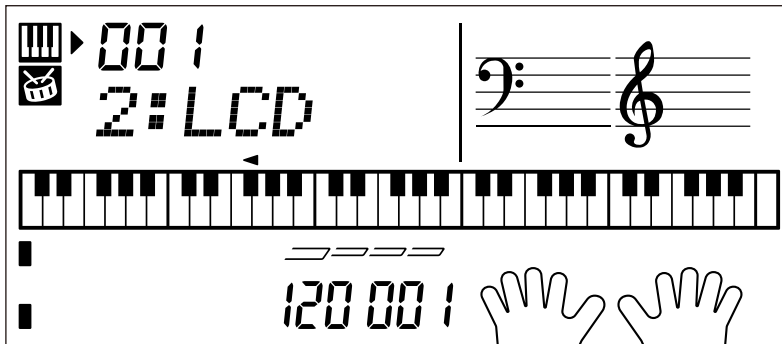
- C-3. Press the “9” button to perform the “MODEL CHECK”.  
The model name appears on the LCD.
- C-4. Check that the model name is “MX822”.



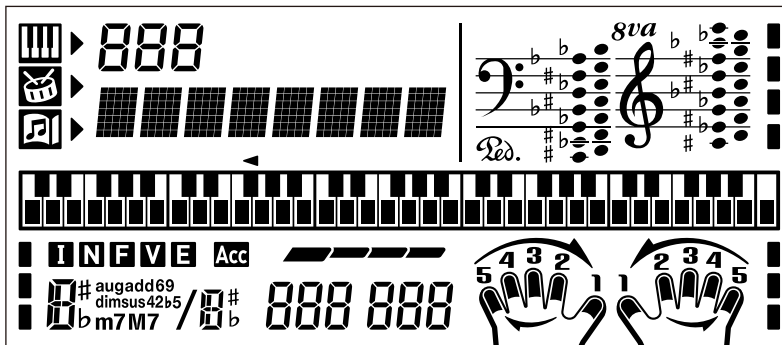
- C-5. Press the “0” button to return to the main screen.

**D. LCD CHECK**

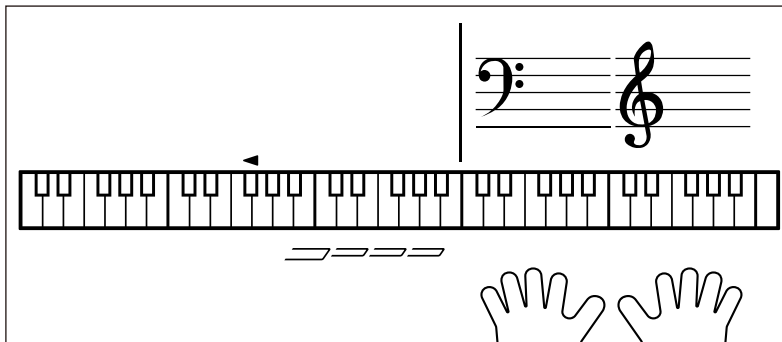
D-1. Press the "2" button to select the "LCD CHECK".



D-2. Press the "2" button and check to see if all LCDs are lit.



D-3. Press the "2" button and check to see if all LCDs are turned off.



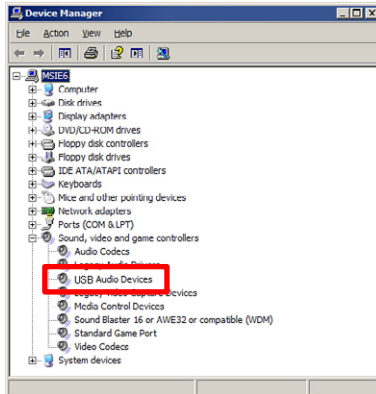
D-4. Press the "0" button to return to the main screen.

## E. USB CHECK

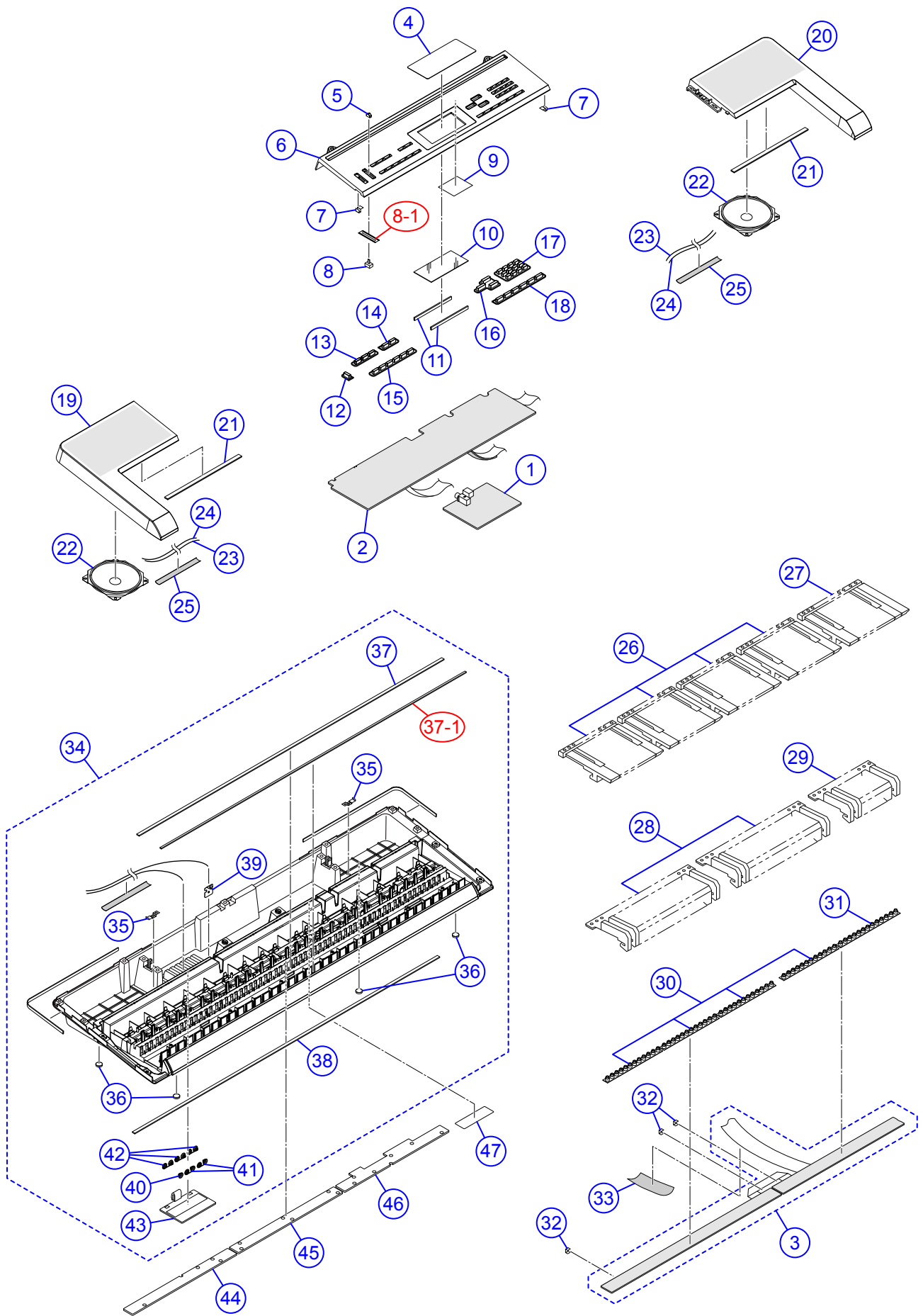
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**NOTE:** The following procedures are for a PC with Windows XP.

- E-1. Connect the main unit to the PC with a USB cable.
- E-2. Open the windows “Device Manager”, and then make sure “USB Audio Devices” is listed under “Sound, video and game controllers”.
- E-3. Disconnect the USB cable.
- E-4. Verify “USB Audio Devices” is not listed under “Sound, video and game controllers”.



# EXPLODED VIEW



# PARTS LIST

## CTK-2080

Notes:

1. Prices and specifications are subject to change without prior notice.
2. Refer to the latest "Parts Price Code" at "PARTS FINDER" on the Casio Service WEB site (<https://www.servicecasio.com>).
3. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare parts Supply", published separately.
4. The numbers in item column correspond to the same numbers in drawing.

## CTK-2080\_US

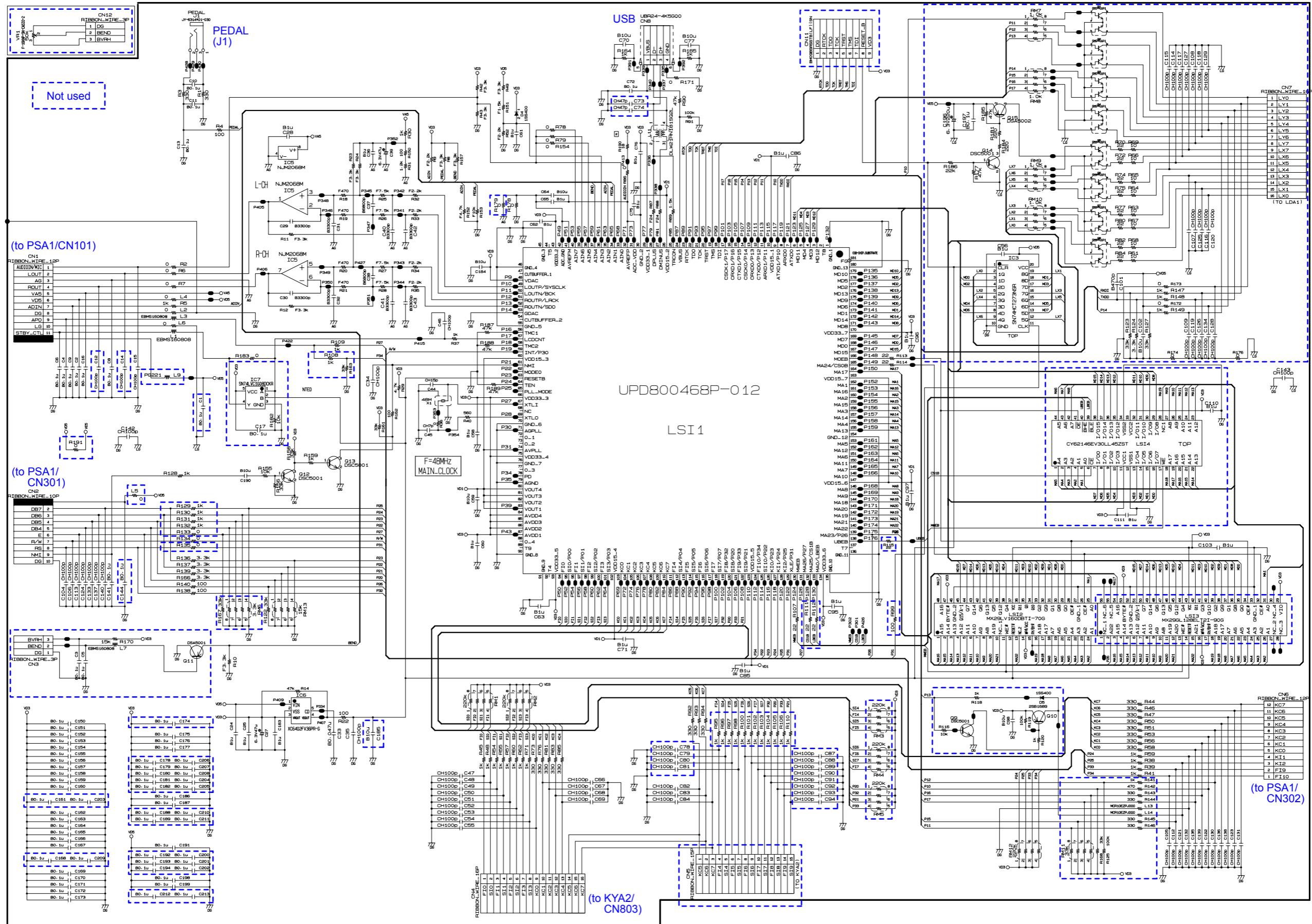
N	Item	Code No.	Parts Name	Specification	Q'ty	Price Code	R	Remarks
<b>MAIN PCB</b>								
N	1	10401017	PCB UNIT/MAIN	TK-RJM511249*001	1		A	MDA1
	J1	10206815	JACK/PEDAL	JY-6314*01-030	1		B	
	CN8	10236624	CONNECTOR/USB	UBR24-4K5G00	1		C	
	L11	10193074	COIL	DLW21HN181SQ2L	1		X	
	D4	10009218	DIODE	1SS400TE61	1		X	
	IC5	10211950	IC	NJM2068M-D(TE1)	1		X	
N	IC6	10398240	IC	XC6402FV36PR-G	1		X	
N	LSI2	10396644	MEMORY	MX29LV160DBTI-70G	1		C	
	X1	10375016	RESONATOR	7V48080006	1		X	
N	Q12,Q13	10399706	TRANSISTOR	DSC500100L	2		X	
<b>SUB PCB</b>								
N	2	10401018	PCB UNIT/POWER & AMP	TK-RJM511239*001	1		B	PSA1
	L103,L104	10231919	COIL	RB53-856396NP	2		X	
	L102,L105,L106	10231920	COIL	RB53-856397NP	3		X	
	J102	35015103	JACK/DC	HEC3110-01-010	1		A	
	J103	10305218	JACK/PHONE	JY-6316B*01-070	1		B	
	J104	10305131	JACK/AUDIO IN	ST-3529B	1		B	
	IC103,IC104	10206677	IC	NJM2068D-D	2		C	
N	IC101	10370338	IC	TA8227APG-D12-H-T	1		X	
	IC301	10222381	LSI	ST7066U-0A-QG	1		C	
	Q106	10206835	TRANSISTOR	KTA1046-Y-U/P	1		X	
	VR301	69304870	VARIABLE RESISTOR	EVND8AA03B53	1		X	Contrast for LCD
	D103,D104, D301-D308	23901820	DIODE	1SS355TE-17	10		X	
	D101,D102	10261170	DIODE	SRT14-A2	2		X	
	D105	23603102	DIODE	UDZSTE-175.1B	1		X	
	TH301	10245365	THERMISTOR	TSM1A103J34D3RZ	1		X	
N	Q102,Q104, Q108,Q109	10399706	TRANSISTOR	DSC500100L	4		X	
	Q105	10217742	TRANSISTOR	KTA1270-Y-AT/P	1		X	
	Q101	10206675	TRANSISTOR	KTA1273-Y-AT/P	1		X	
<b>KEYBOARD PCB</b>								
	3	10401014	PCB UNIT/KYA	TK-RJM508609*003	1		C	KYA1/KYA2
	D801-D830,D832	10301580	DIODE	LM1MA142WAT1G	31		X	
<b>PANEL UNIT</b>								
N	4	10402407	DISPLAY PLATE	RJM511072-001V02	1		X	
	5	10199714	KNOB/SLIDE	RJM503803-002V01	1		X	
N	6	10400571	CASE/PANEL	RJM511042-002V01	1		X	
	7	69276630	FABRIC TAPE/8X15	M440832-1	2		X	
	8	69270510	SLIDE CONTACT/8D	CSB-08D	1		X	
	8-1	10417025	FABRIC TAPE/SL	RJM511833-001V01	1		X	
N	9	10402514	SHEET/for fireproofing	RJM511371-001V02	1		X	
N	10	10405127	LCD	ZAS-TY012725DN00	1		X	
	11	10301465	RUBBER CONNECTOR/for LCD	RJM508539-001V01	2		X	
N	12	10400577	RUBBER BUTTON/A	RJM511051-001V01	1		X	
N	13	10400579	RUBBER BUTTON/B	RJM511052-001V01	1		X	
N	14	10400581	RUBBER BUTTON/C	RJM511053-001V01	1		X	
N	15	10400583	RUBBER BUTTON/D	RJM511054-001V01	1		X	
N	16	10400585	RUBBER BUTTON/E	RJM511055-001V01	1		X	
N	17	10400589	RUBBER BUTTON/F	RJM511056-001V01	1		X	
N	18	10400591	RUBBER BUTTON/G	RJM511057-001V01	1		X	

## CTK-2080\_US

N	Item	Code No.	Parts Name	Specification	Q'ty	Price Code	R	Remarks
<b>SIDE PANEL UNIT</b>								
N	19	10394575	CASE/SIDE PANEL/LEFT	RJM511043-001V01	1		X	
N	20	10394576	CASE/SIDE PANEL/RIGHT	RJM511044-001V01	1		X	
N	21	10405274	PACKING/8X200	RJM511196-002V01	2		X	
N	22	10264808	SPEAKER	C10J01A	2		X	
N	23	10402403	WIRE/BLUE	1007TASC24300B3030	2		X	for Speaker (+)
N	24	10402404	WIRE/WHITE	1007TASC24300W3030	2		X	for Speaker (-)
N	25	10345562	SPONGE/20X200	M440755-001V01	2		X	for Speaker wires
<b>KEYBOARD UNIT</b>								
N	26	10399802	WHITE KEY/CB	TK-RJM507243*004	4		A	
N	27	10399803	WHITE KEY/CS	TK-RJM507244*004	1		X	
	28	10289646	BLACK KEY/10p	RJM506595-005V02	2		A	
	29	10289647	BLACK KEY/5p	RJM506595-006V02	1		X	
	30	10163902	RUBBER CONTACT/CB	RJM503854-001V01	4		A	
	31	10163903	RUBBER CONTACT/CS	RJM503855-001V01	1		X	
N	32	69268840	FABRIC TAPE/4X10	M440684-1	3		X	
	33	10263729	SPONGE/43X180	M441123-001V01	1		X	
<b>MAIN CASE UNIT</b>								
	34	10401011	CASE UNIT/MAIN	TK-RJM511213*001	1		X	
	35	10284332	BRACKET/for STAND	M440866-001V02	2		X	
	36	69226920	RUBBER FOOT	M41361-6	4		X	
N	37	10373683	FELT/LOWER LIMIT/KEYBOARD	RJM508593-001V02	1		X	
	37-1	10317116	FELT/DAMPER/KEYBOARD	RJM509138-001V01	1		X	
N	38	10373681	FELT/UPPER LIMIT/KEYBOARD	M440342-001V03	1		X	
N	39	10400576	BATTERY TERMINAL/+	RJM511046-001V01	1		X	
N	40	10380432	BATTERY TERMINAL/-	M440002-001V03	1		X	
	41	69271060	BATTERY TERMINAL/A	M440676-1	2		X	
	42	69271070	BATTERY TERMINAL/B	M440677-1	3		X	
	43	10243428	BATTERY COVER	TK-M340884*020	1		X	
N	44	10381069	LOWER COVER/A	RJM508655-001V04	1		X	
N	45	10381070	LOWER COVER/B	RJM508656-001V04	1		X	
N	46	10381071	LOWER COVER/C	RJM508657-001V04	1		X	
	47	10400556	LABEL/RATING	RJM504373-050V02	1		X	
<b>ACCESSORIES</b>								
N	-	10366857	MUSIC STAND	RJM510426-001V01	1		C	
N	-	10408260	AC ADAPTOR	AD-E95100LU-P2	1		B	
N	-	10344814	STAND	CS-30X(D)	1		X	

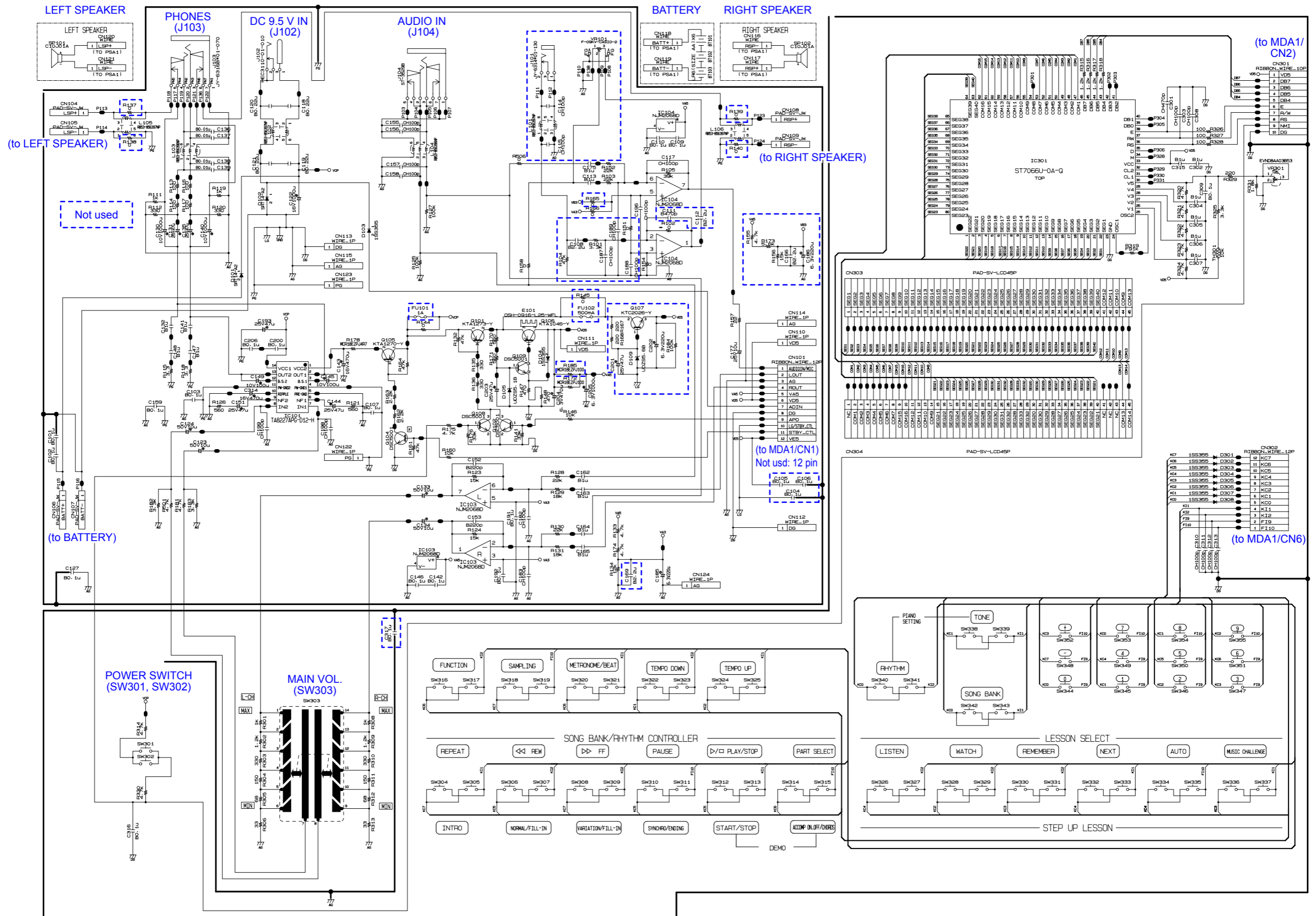
# SCHEMATIC DIAGRAMS

Main PCB: M822-MDA1

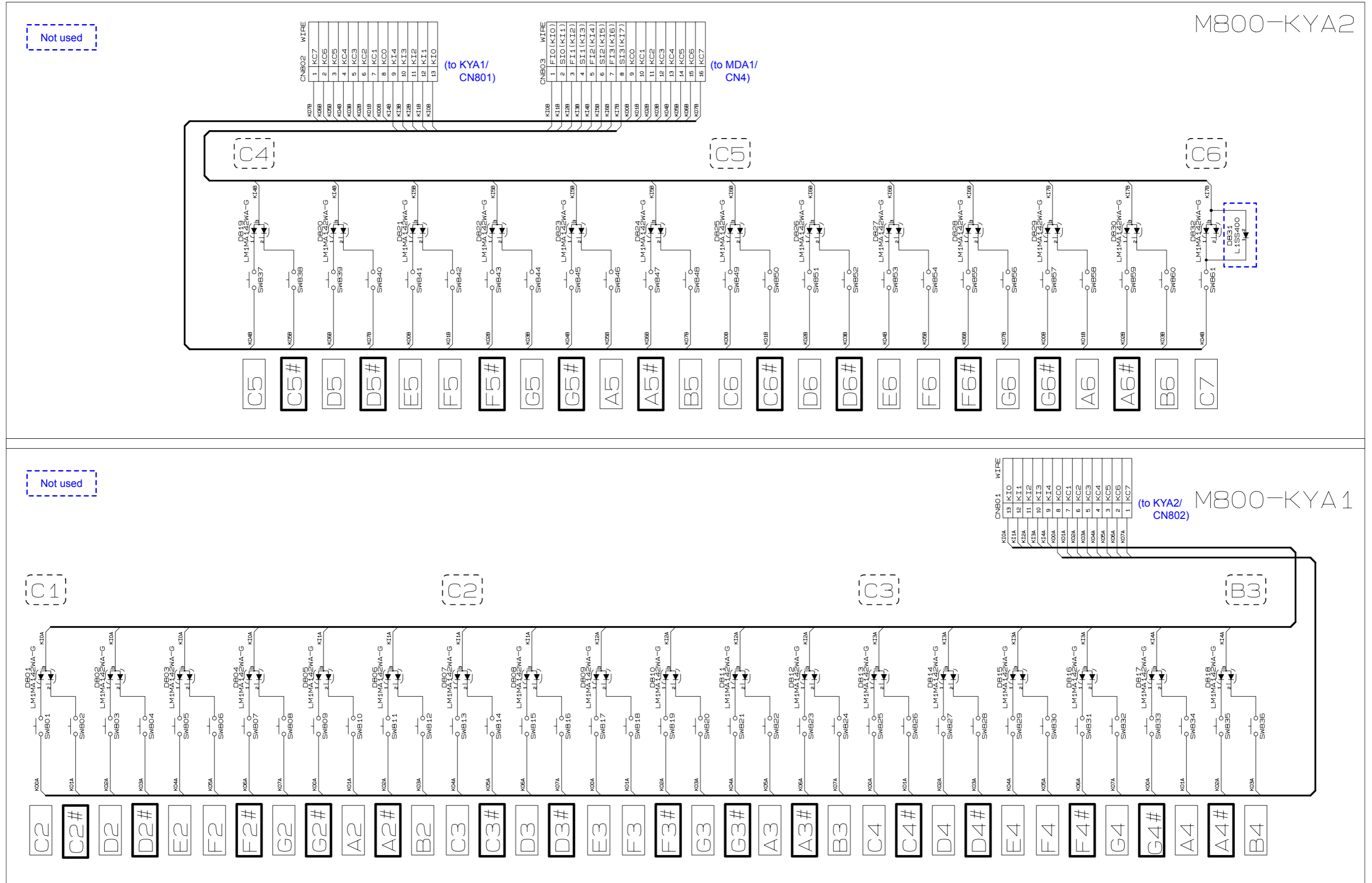




Sub PCB: M822-PSA1



Keyboard PCB: M800-KYA1/KYA2



Ver. 1 : Jul. 2011

- Correction of the PARTS LIST (P28)

Ver. 2 : Feb. 2011

- Correction of the EXPLODED VIEW (P26)
- Correction of the PARTS LIST (P28 and P29)

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