

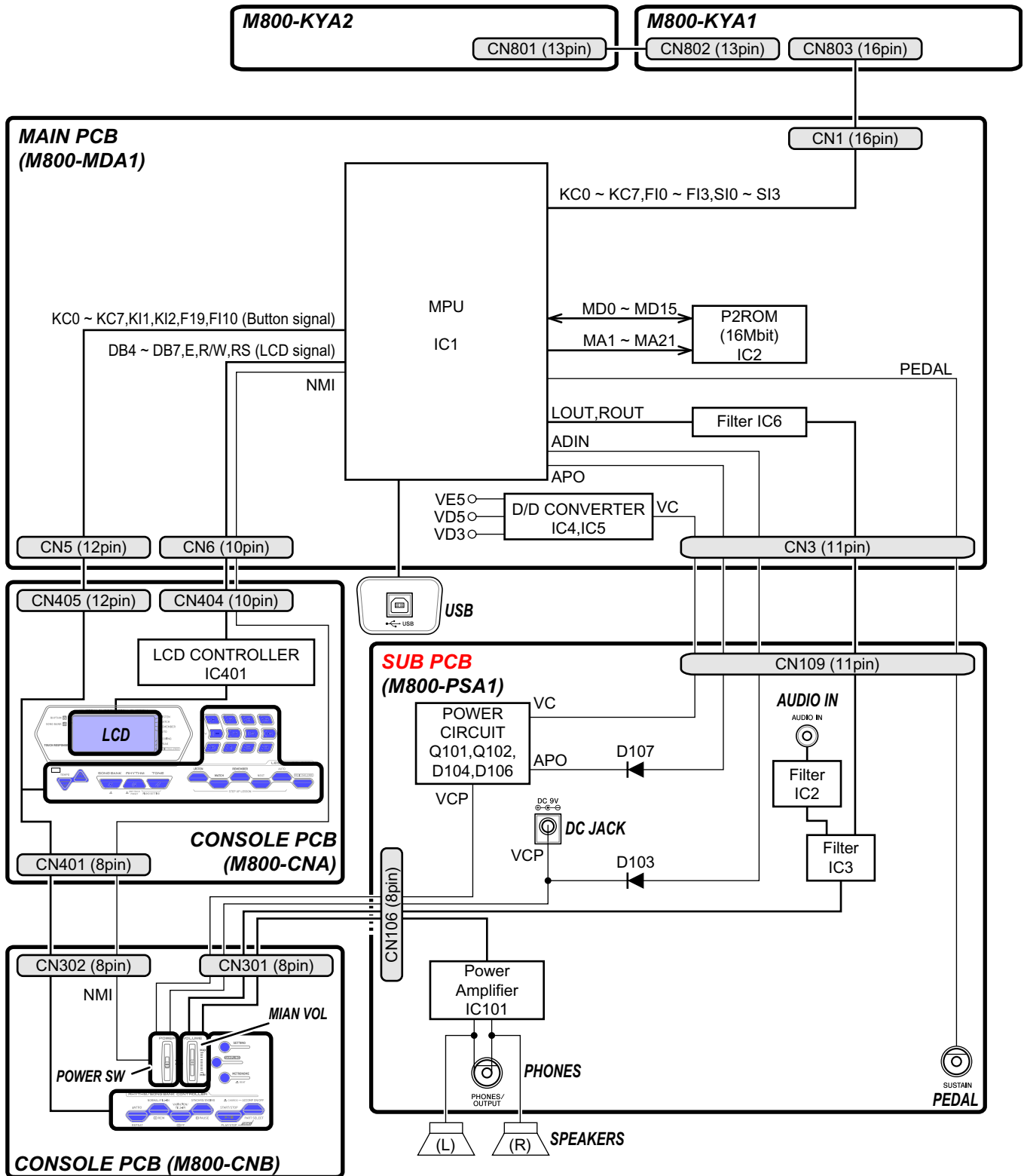
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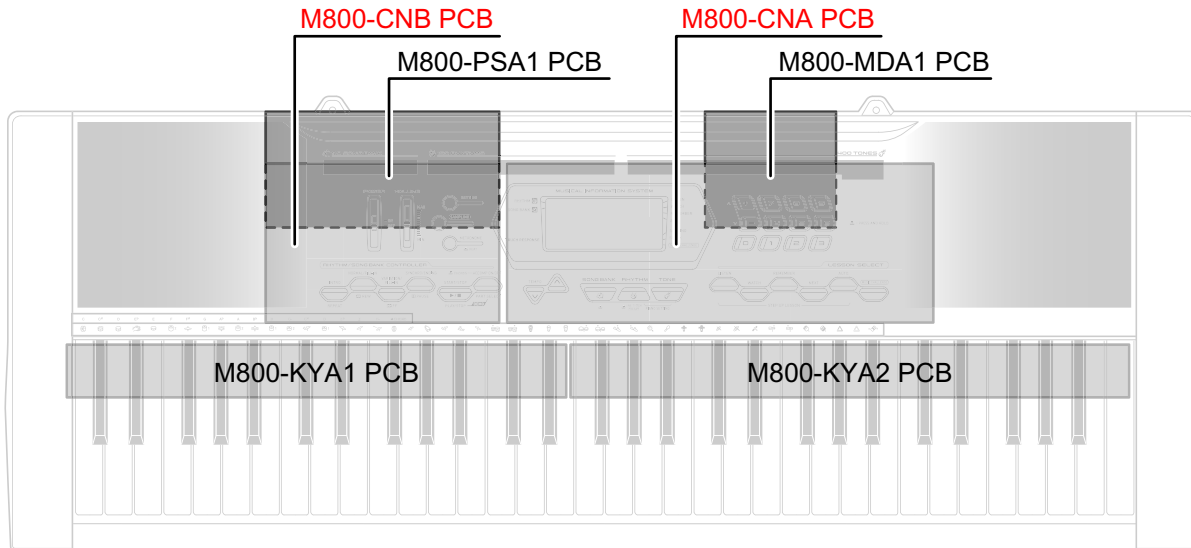
SPECIFICATIONS

Keyboard	61 standard-size keys
Maximum Polyphony	48 notes (24 for certain tones)
Tones	
Built-in Tones	400
Sampling Tones	1
	Sampling time: 1 second (fixed)
	Effects: 10 types
Reverb	1 to 10, Off
Metronome	
Beats per Measure	0, 2 to 6
Tempo Range	30 to 255
Song Bank	
Tunes	110
Step Up Lesson	
Lessons	4 (Listen, Watch, Remember, Auto)
Lesson Part	L, R, LR
Functions	Repeat, Voice Fingering Guide, Note Guide, Performance Evaluation
Music Challenge	20 notes
Auto Accompaniment	
Rhythm Patterns	150
Other Functions	
Transpose	±1 octaves (12 semitones)
Tuning	A4 = approx. 440 Hz ±100 cents
MIDI	16 multi-timbre received, GM Level 1 standard
Musical Information Function	Tone, Rhythm, Song Bank, numbers and names; staff notation, fingering, pedal operation, tempo, measure and beat number, chord name, etc.
Inputs/Outputs	
USB port	TYPE B
Sustain jack	Standard jack (sustain, sostenuto, soft, rhythm start/stop)
Phones/Output jack	Stereo standard jack
	Output Impedance: 200Ω, Output Voltage: 4.8V (RMS) MAX
Audio In jack	Stereo mini jack
	Input Impedance: 40kΩ, Input Sensitivity: 200mV
Power Jack	9V DC
Power Supply	2-way
Batteries	6 AA-size zinc-carbon batteries or alkaline batteries
Battery Life	Approximately 4 hours continuous operation on alkaline batteries
AC Adaptor	AD-5
Auto Power Off	Approximately 6 minutes after last key operation (Operates during battery use only)
Speakers	10cm × 2
Output	2W + 2W
Power Consumption	9V --- 7.7W
Dimensions	94.9 × 35.4 × 11.2 cm (37 ³ / ₈ × 13 ¹⁵ / ₁₆ × 4 ⁷ / ₁₆ inch)
Weight	Approximately 3.8kg (8.4 lbs) (without batteries)

BLOCK AND WIRING DIAGRAM



PCB LAYOUT



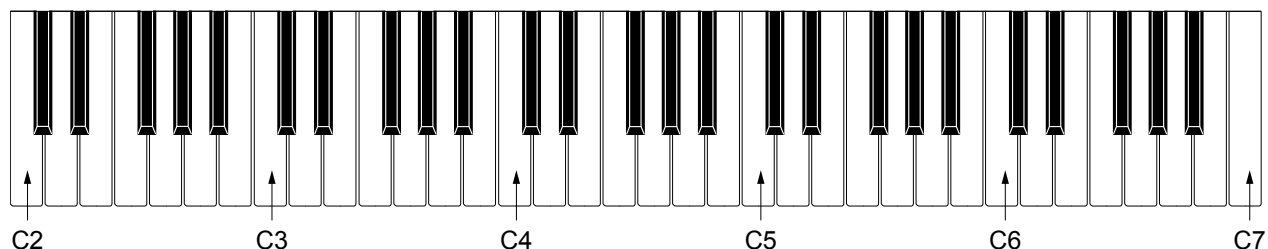
PCB		Components
MAIN PCB	M802-MDA1	MPU, ROM(16Mbit), D/D converter, USB terminal
SUB PCB	M800-PSA1	Power supply circuit, Power amplifier Phones terminal, Pedal terminal, Audio terminal, DC JACK
Console PCBs	M802-CNA	LCD controller, Button
	M802-CNB	Power switch, Main volume, Button
Keyboard PCBs	M802-KYA1	Keyboard
	M802-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

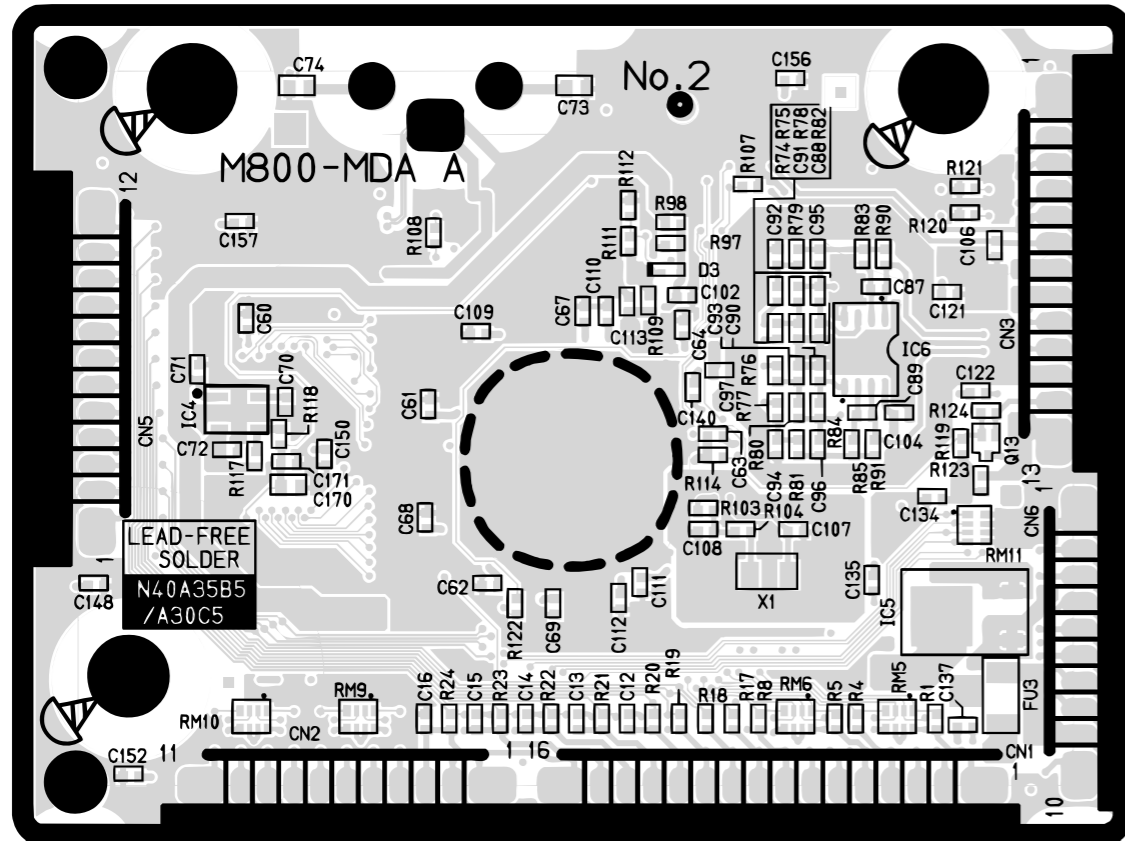


BUTTON MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
KI1	TONE	SONG	TEMPO UP	GAME	WAIT	PLAY/ STOP	METRONOME	REPEAT
KI2	RHYTHM	TEMPO DOWN	TYPE	PHRASE	START/ STOP	REW	FUNCTION	FF
KI9	0	1	2	3	4	5	6	-
KI10	7	8	9	+	GUIDE	PAUSE	PART SELECT	SAMPLING

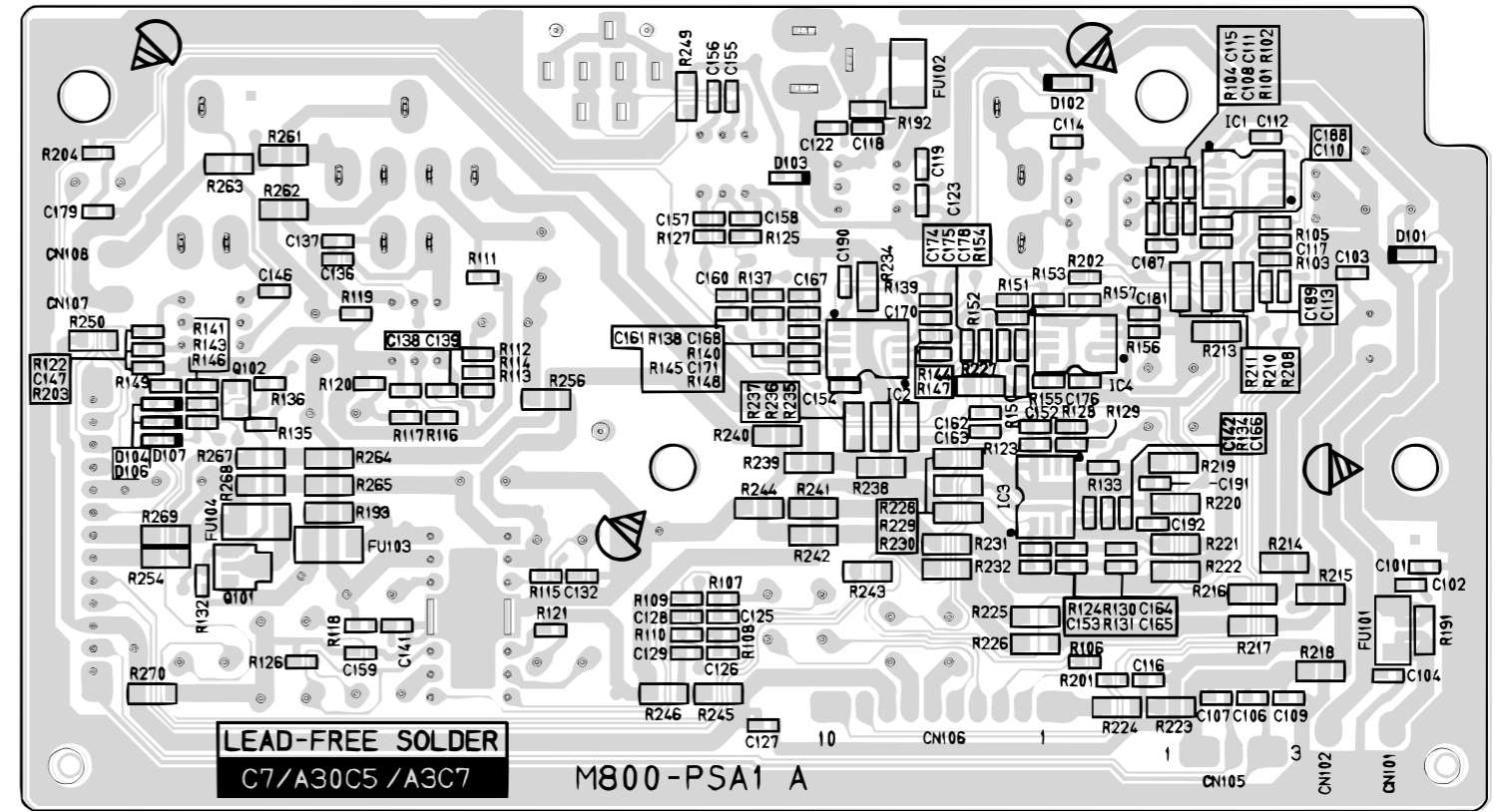
PRINTED CIRCUIT BOARDS

Main PCB M800-MDA1

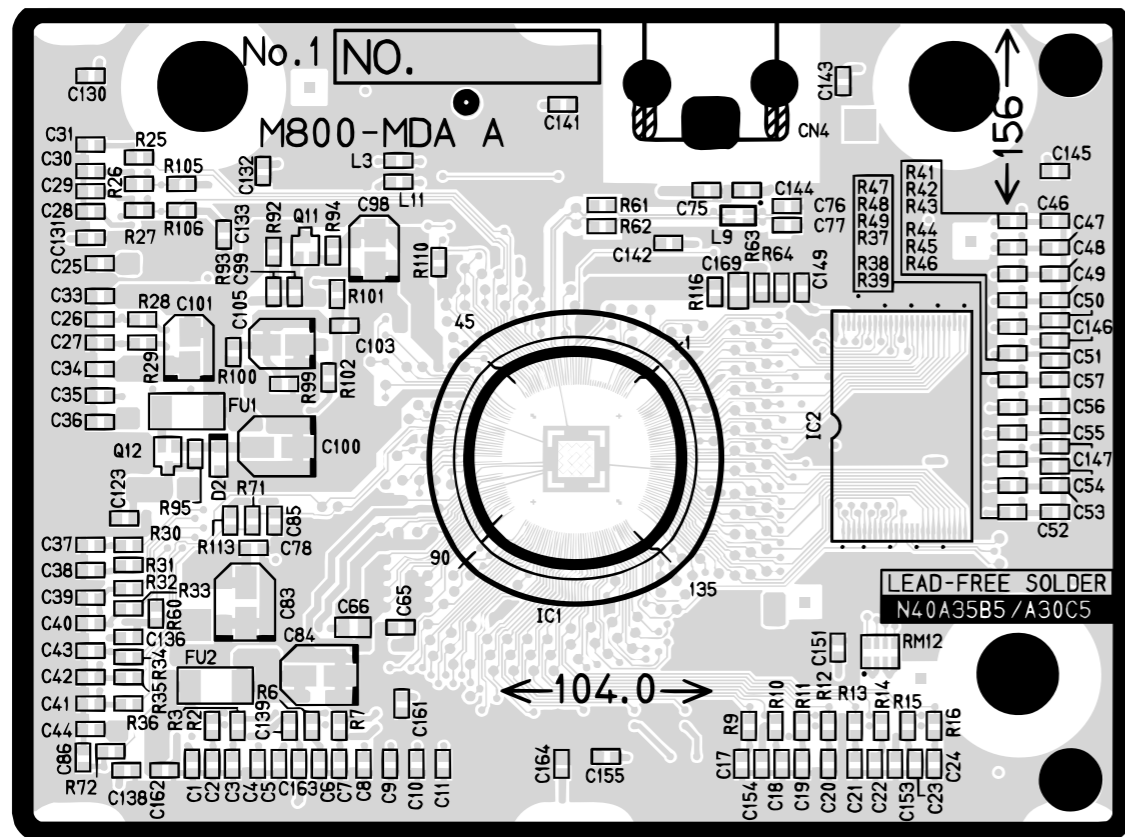


Top View

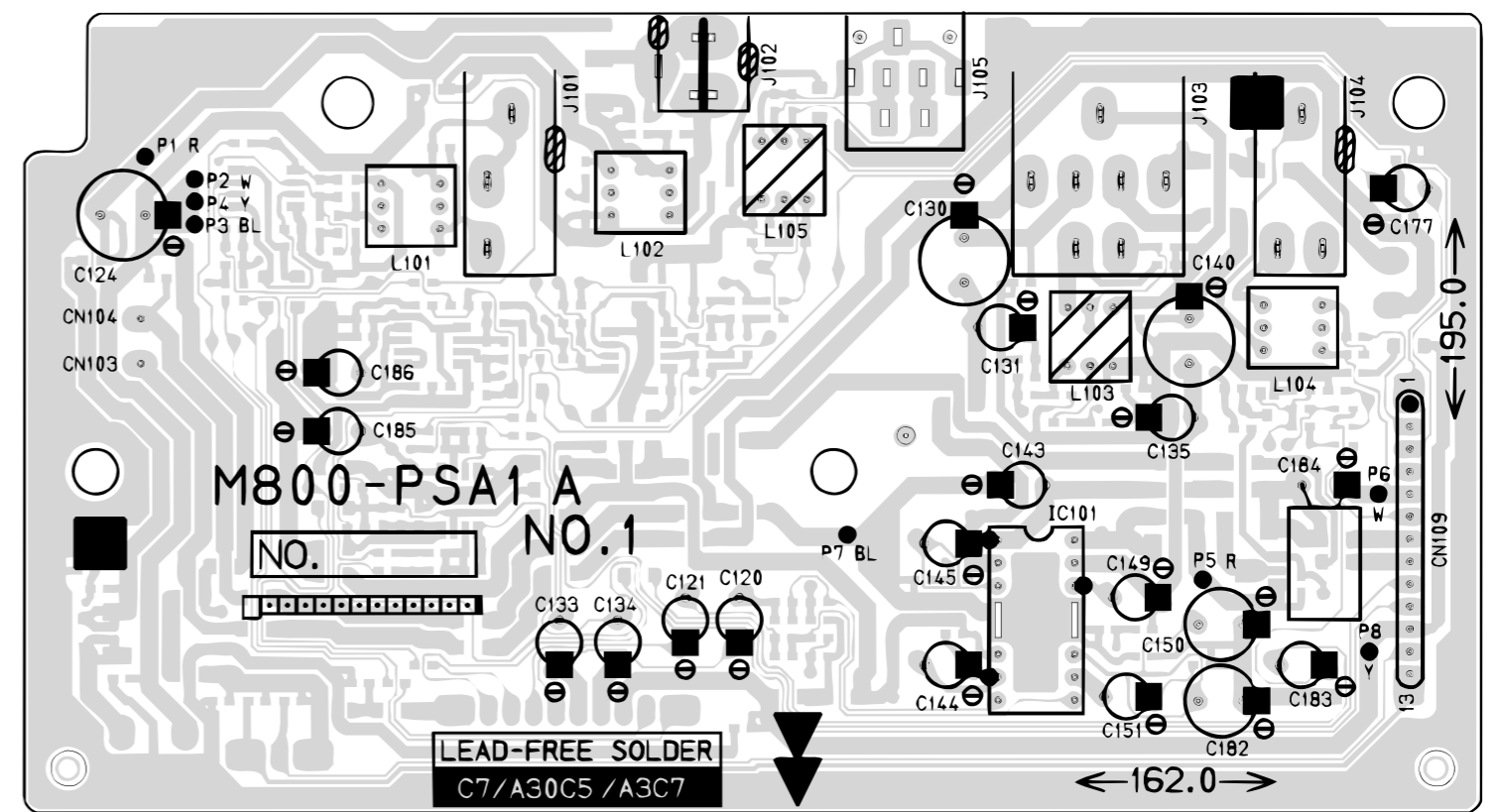
Sub PCB M800-PSA1



Top View

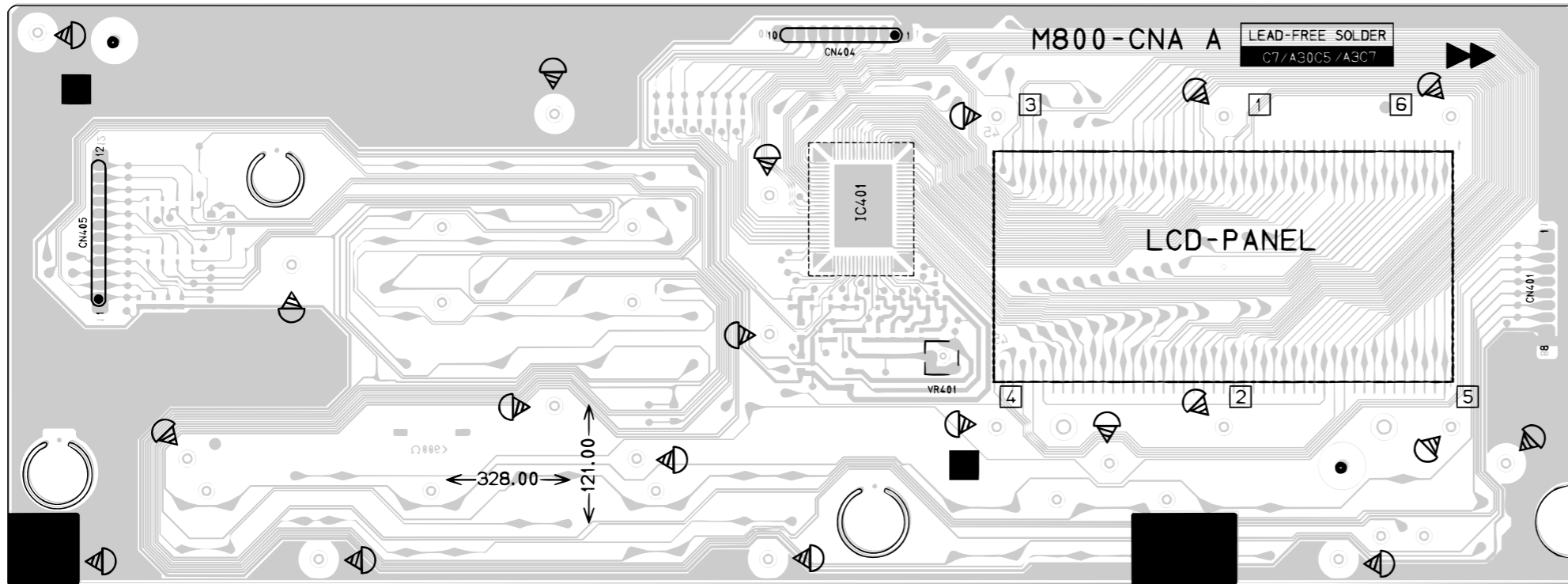


Bottom View

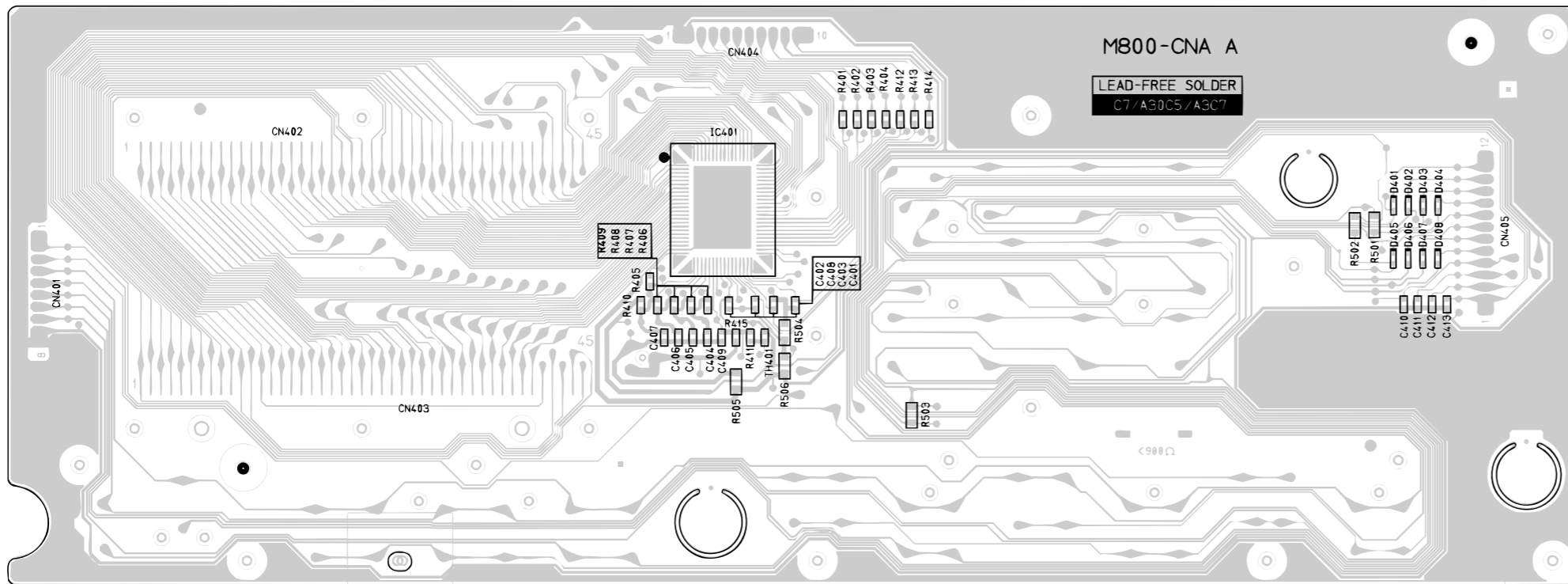


Bottom View

Console PCB M800-CNA

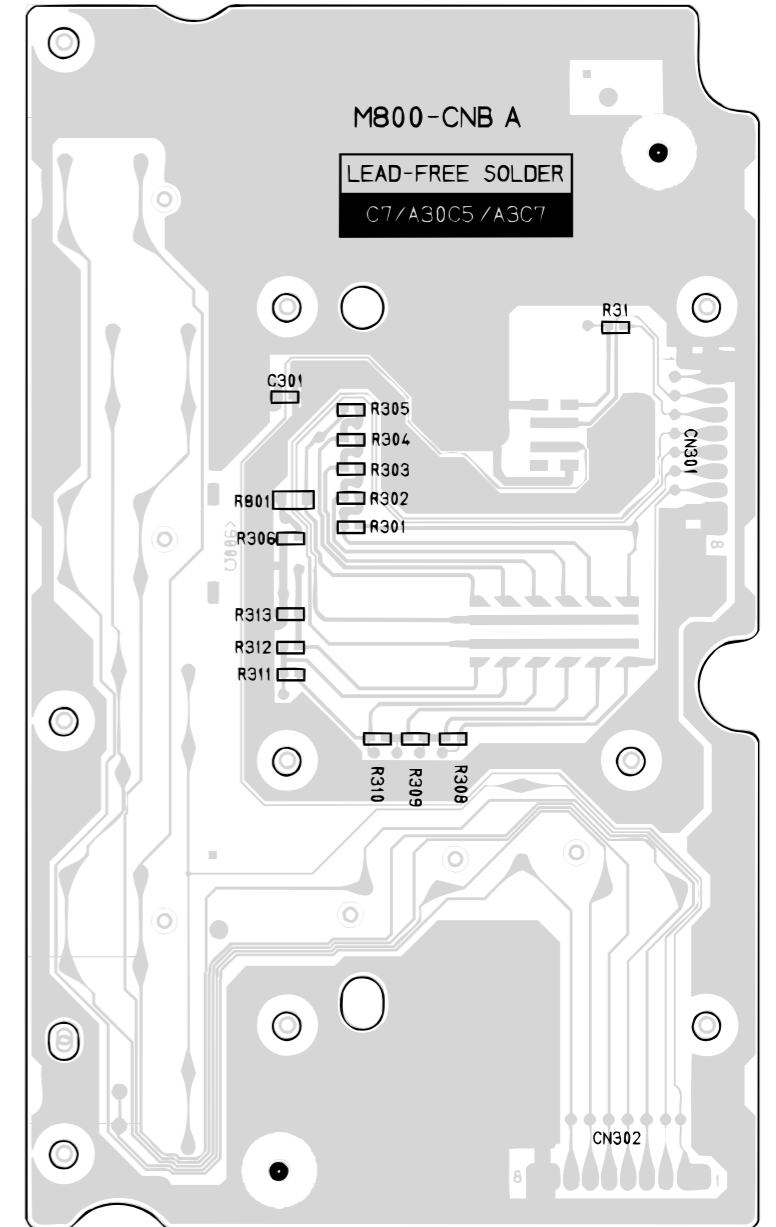


Top View

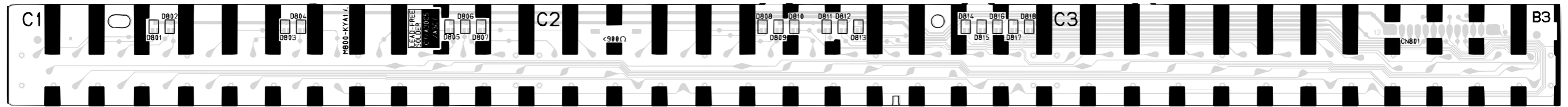


Bottom View

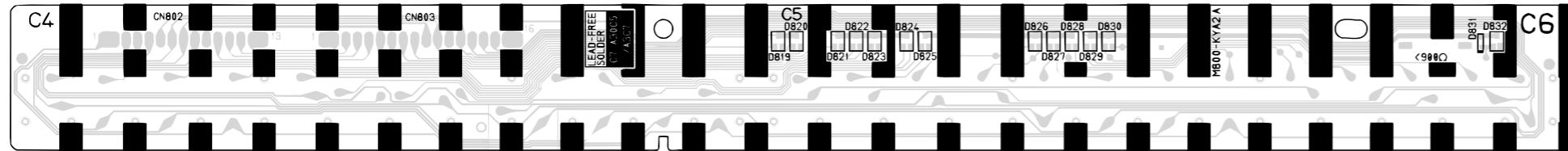
Console PCB M800-CNB



Key PCB M800-KYA1

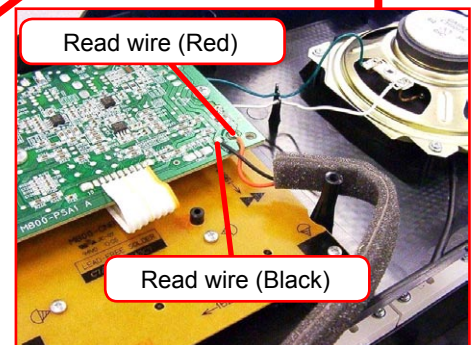
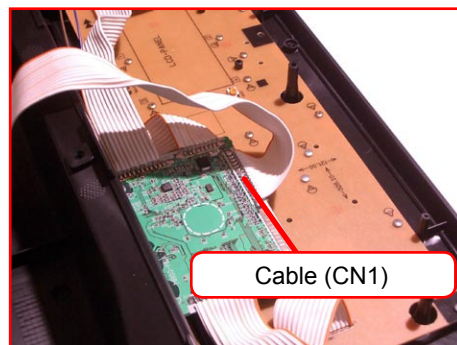
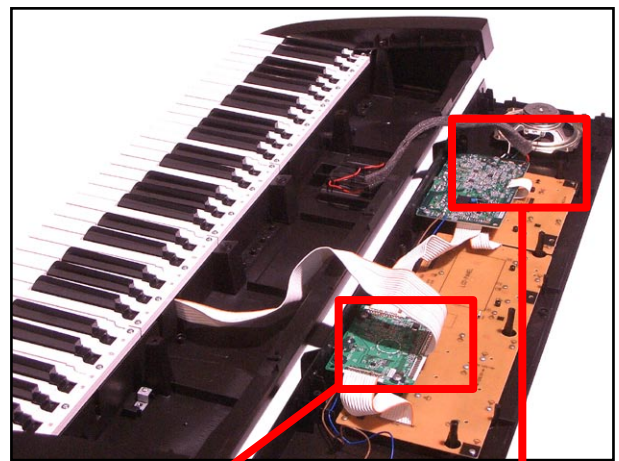
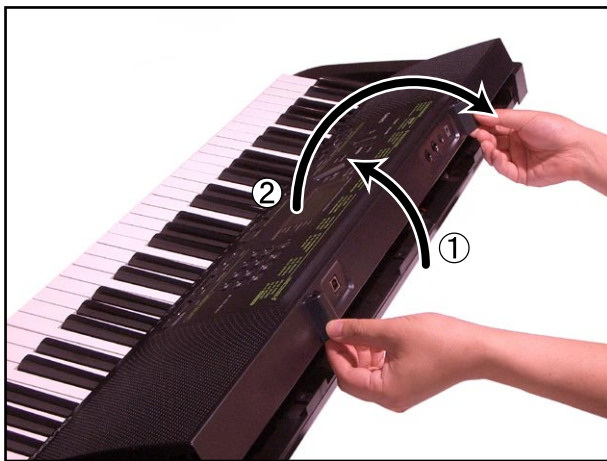
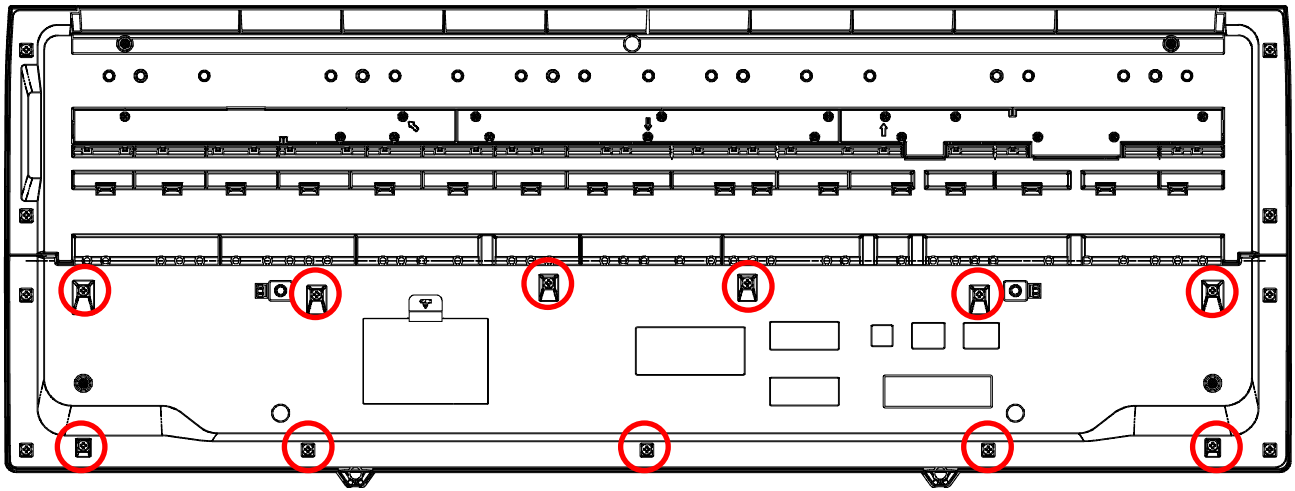


Key PCB M800-KYA2



DISASSEMBLY

1. Remove the battery cover and then battery.
2. Remove 11 screws and then upper case.
3. Remove two lead wires by soldering.
4. Remove **cable** by soldering.
5. Make the keyboard unit and the main unit apart.

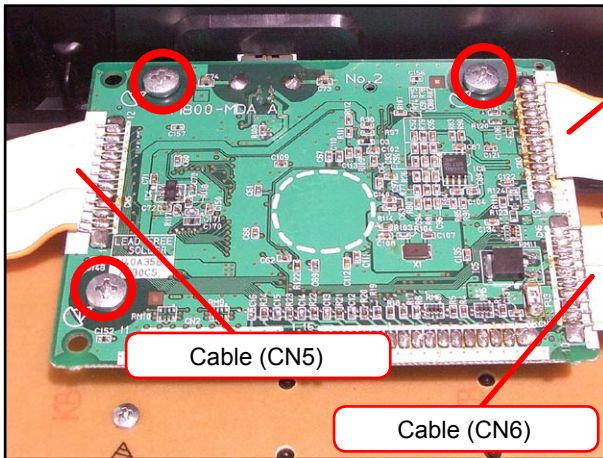


6. To remove the main PCB (M800-MDA1).

6-1. Remove three screws on the PCB (M800-MDA1).

6-2. Remove three cables by soldering.

6-3. Remove the PCB (M800-MDA1).



Cable (CN3)

Precaution while assembling the main Connector 3.
Number of pins on the PCB and pins on the cable are different.
Start connecting from the NO.1 pin whose color is orange.

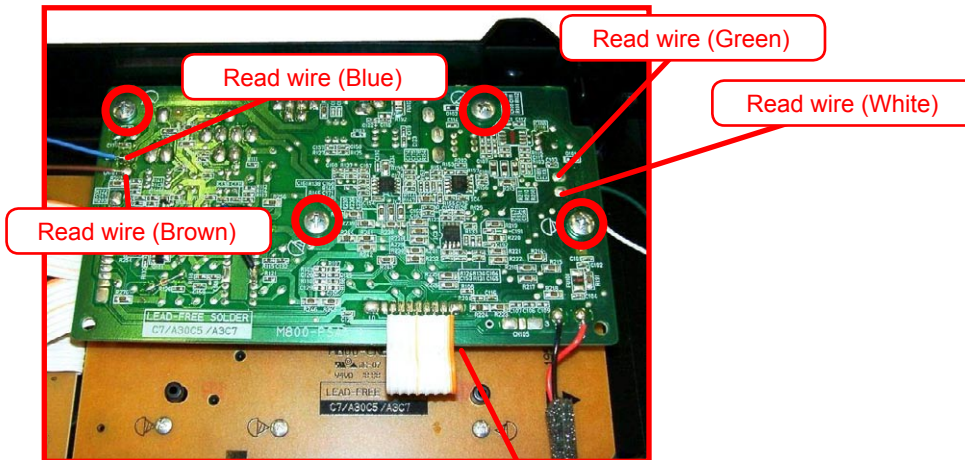
7. To remove the sub PCB (M800-PSA1).

7-1. Remove four screws on the PCB (M800-PSA1).

7-2. Remove one cable by soldering.

7-3. Remove four lead wires by soldering.

7-4. Remove the PCB (M800-PSA1).



Cable (CN106)

Precaution while assembling the main Connector 106.
Number of pins on the PCB and pins on the cable are different.
Start connecting from the NO.1 pin whose color is orange.

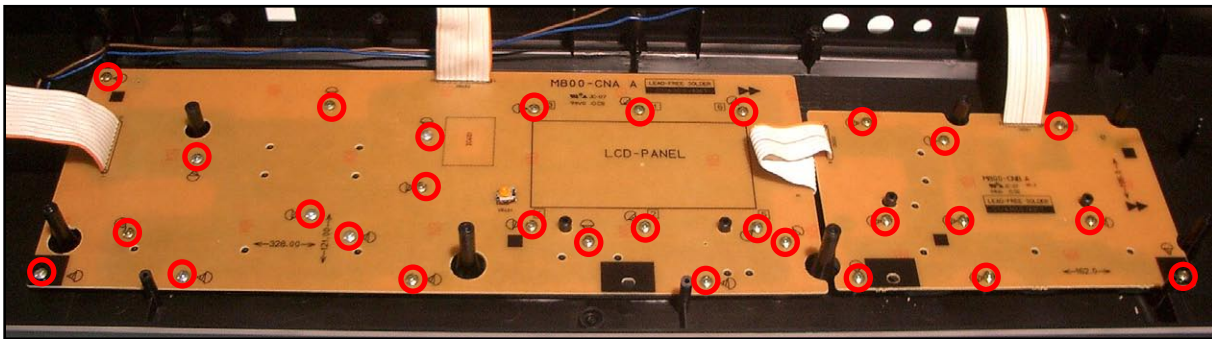
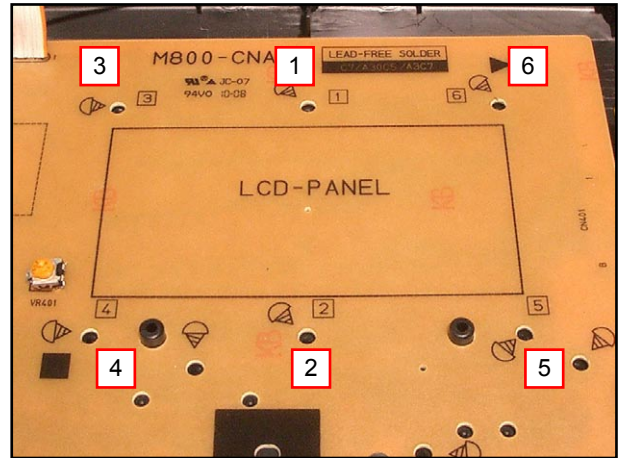
8. To remove the console PCBs (M800-CNA, M800-CNB).

8-1. Remove the volume and Power knob.

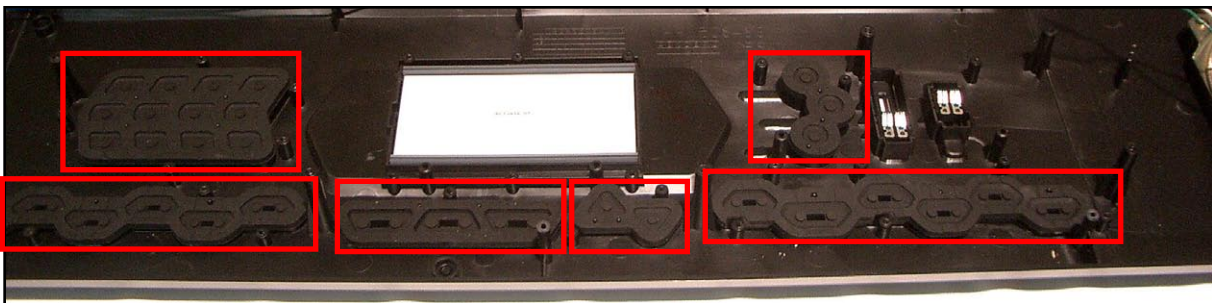
8-2. Remove 29 screws and then the PCBs (M800-CNA and M800-CNB).

Caution while assembling:

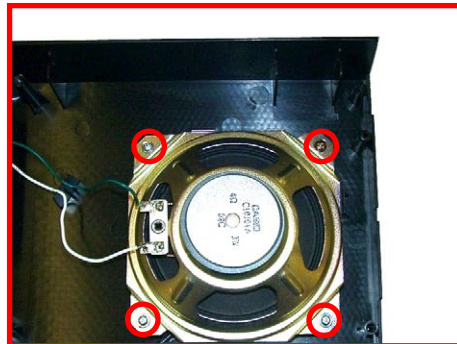
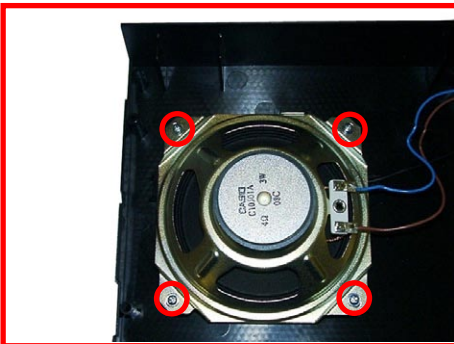
6 screws fixating the LCD unit must be screwed on in a designated order. When assembling, be sure to tighten the screws in the order from 1 - 6 shown in the photo. Failing to do so may cause display malfunctions.



9. Remove the rubber keys.

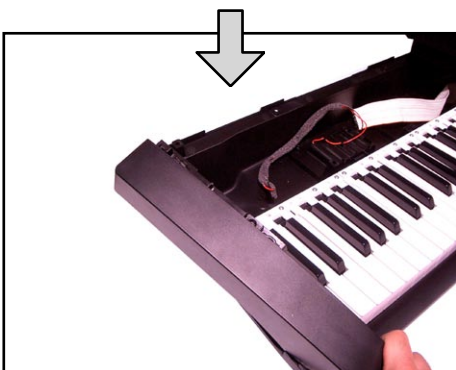
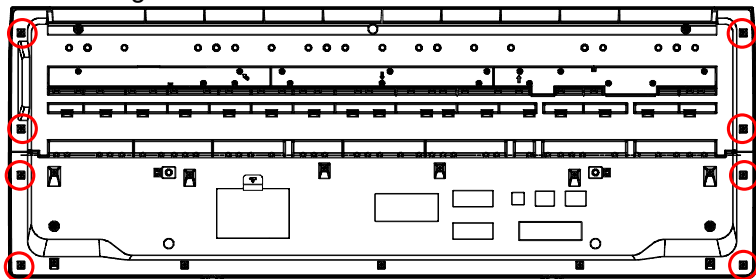


10. Remove 8 screws and then two speakers.

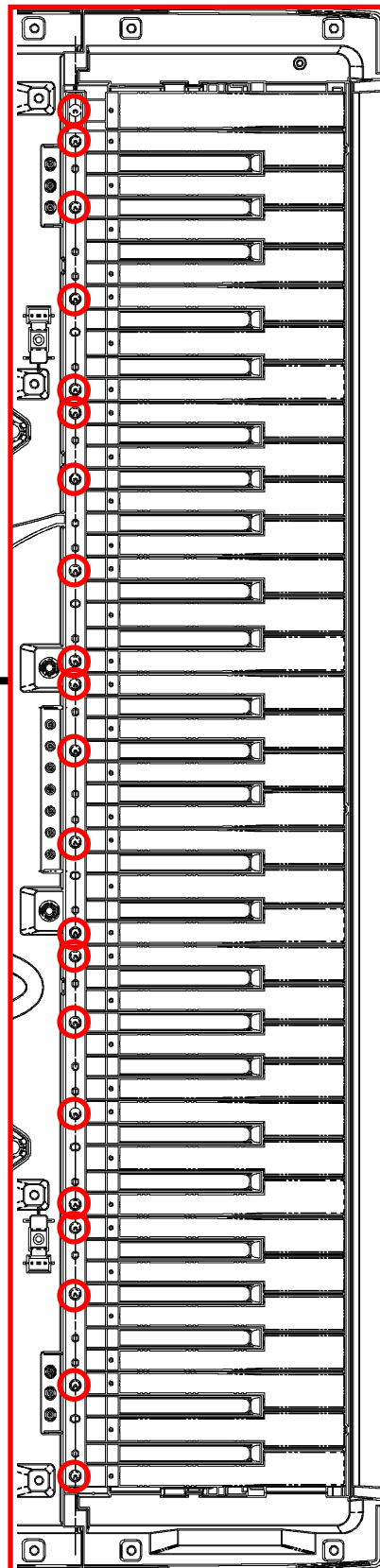
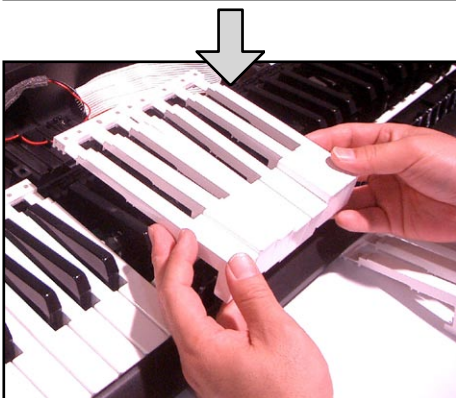


11. To remove the key PCBs (M800-KYA1/KYA2)

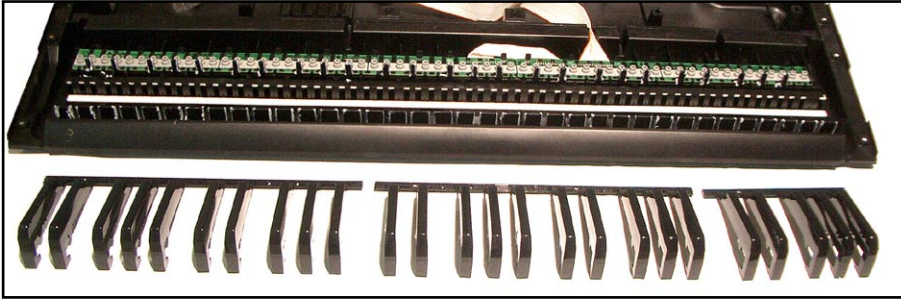
11-1. Remove eight screws and then two side cases.



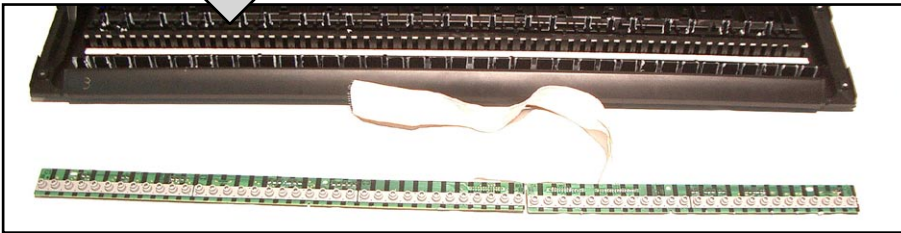
11-2. Remove 21 screws and then the white keys.



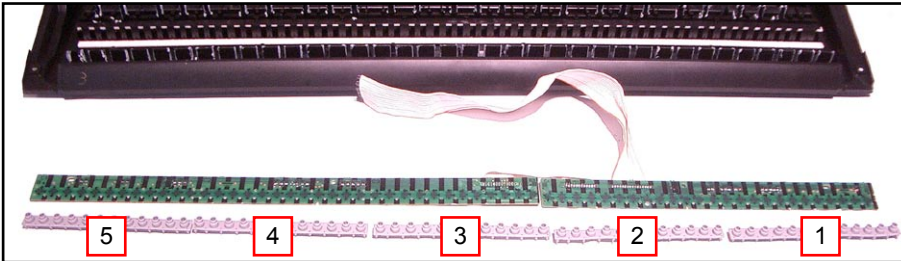
11-3. Remove the black keys.



11-4. Remove the hooks and then Key PCB. (M800-KYA1/KYA2)



11-5. Remove the rubber keys.

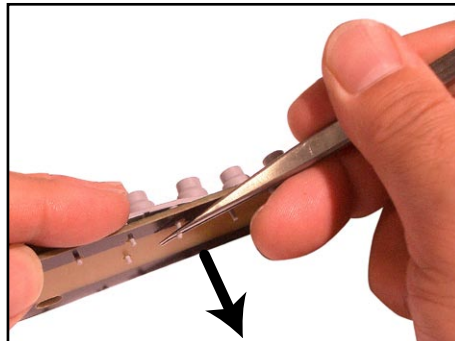


Caution while assembling:

There are two types of rubber keys and they are different in length.

The longest rubber key (1) must be installed at the right end.

How to install the rubber keys.



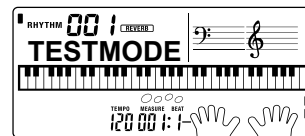
DIAGNOSTIC PROGRAM

■ Initial Setting

1. Connect the AC adaptor.
2. "Main" volume: MAX

■ How to start diagnostic program

1. Press and hold the "0", "1" and "2" buttons.
2. Press the "POWER" button.
3. The message "TESTMODE" is appears on LCD.
4. Release the "0", "1" and "2" buttons.

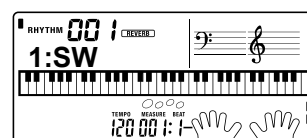


■ Diagnostic program

1. Button check

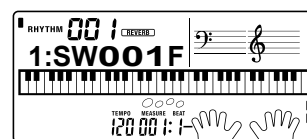
- ① Press "1" button.

Message on LCD



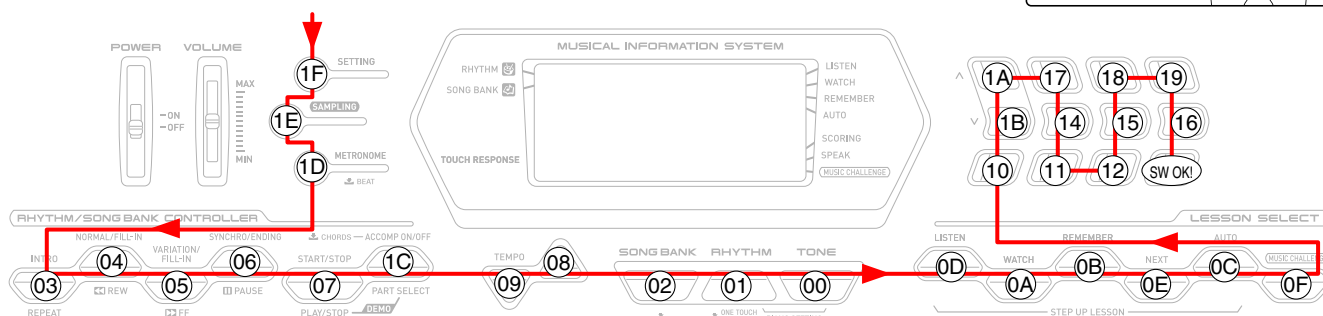
- ② Press the button in the order indicated in the illustration below.
The button number will be displayed on the LCD.
Example) SW00 + (the button number shown in the illustration)

Press "SETTING" button.

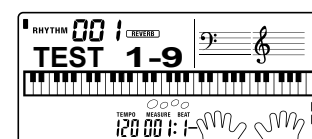


If the switch function is OK: You will hear the OK sound signal and the button number will be displayed.
If the switch function is NG or switches were pressed in a wrong order: You will hear the NG sound signal and the button number will be displayed.

- ③ Press the "3" button the last.



- ④ Press "0" to end the LCD Check.



2. AC adaptor check

① Press "3" button.

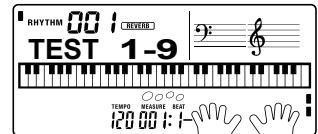
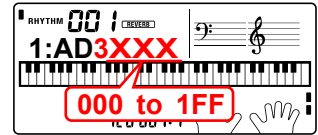
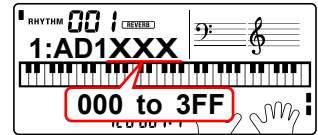
* Make sure that a value "XXX" shown in the illustration is in the range of 000 to 3FF.

② Press "3" button.

* Make sure that a value "XXX" shown in the illustration is in the range of 000 to 1FF.

③ Press "0" to end the AC adaptor Check.

Message on LCD



3. ROM Version and Model check

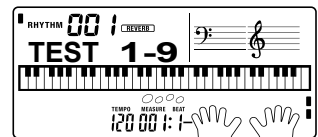
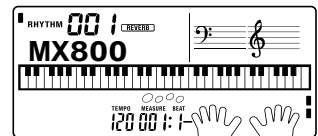
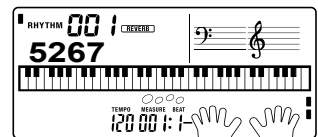
① Press "9" button. (ROM Version)

* "5267" must be displayed.

② Press "9" button. (Model)

* "MX800" must be displayed.

③ Press "0" to end the ROM Version and Model Check.



4. LCD check

① Press "2" button.

② Press "2" button.

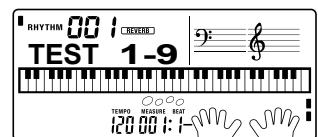
* All dots and characters of LCD turn on.

* There is no lack of the dot and the character.

③ Press "2" button.

* LCD no display.

④ Press "0" to end the LCD Check.



5. USB check

* Operating System

Windows® XP (SP2 or later)*1

Windows Vista® *2

Mac OS® X (10.3.9, 10.4.11 or later, 10.5.2 or later)

*1: Windows XP Home Edition

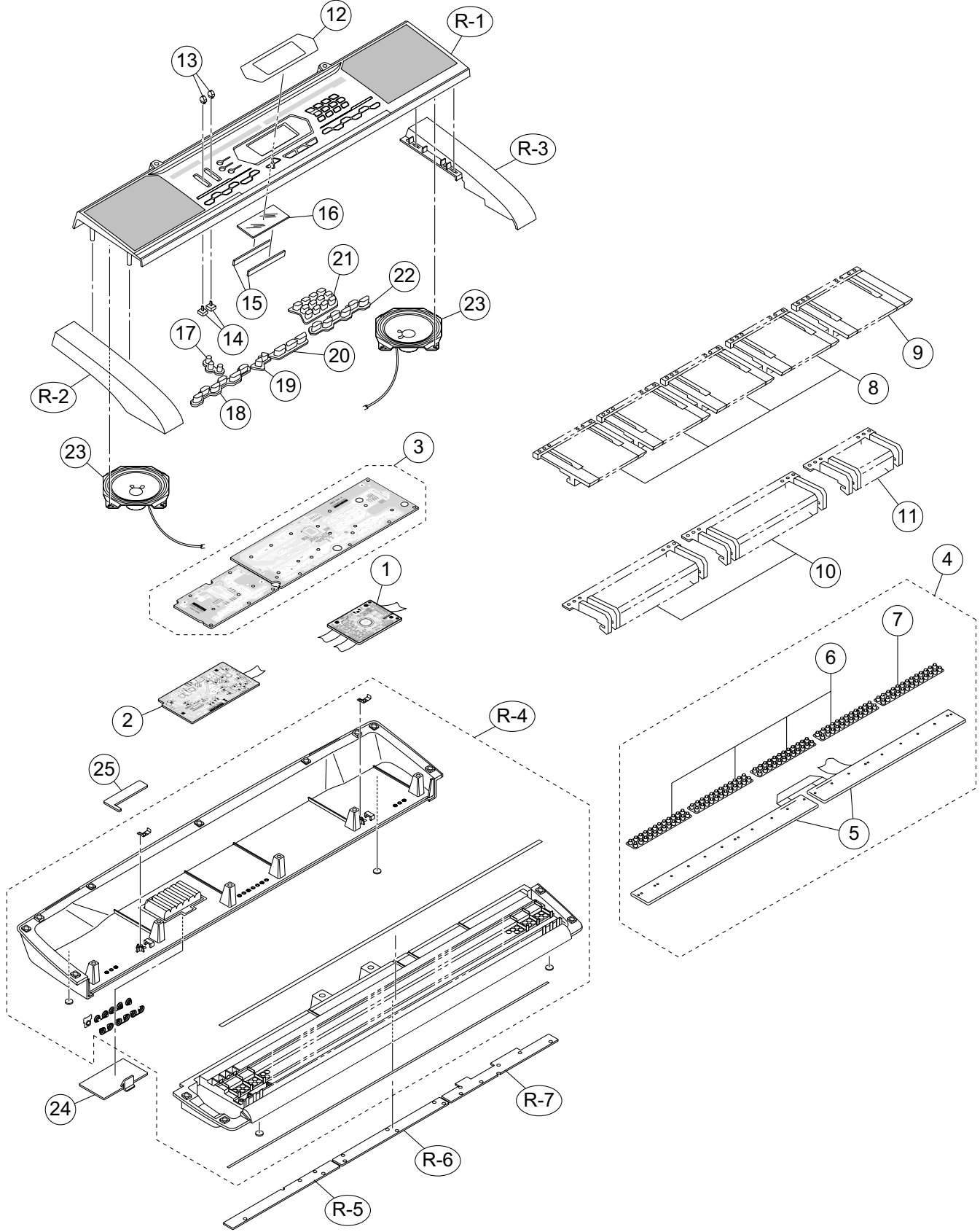
Windows XP Professional (32- bit)

*2: Windows Vista (32- bit)

- ① Connect CTK-2000 to the computer with a USB cable.
- ② Check that the message "USB AUDIO DEVICE" appears in "Device Manager" → "Sound, Video and Game Controller" on the computer monitor.
- ③ Disconnect the USB cable.
- ④ Check that the message "USB AUDIO DEVICE" disappears in "Device Manager" → "Sound, Video and Game Controller" on the computer monitor.

DIAGNOSTIC PROGRAM IS FINISHED.

EXPLODED VIEW



PARTS LIST

CTK-2000

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 seperately.
3. The numbers in item column correspond to the same numbers in drawing.

1 CTK-2000_DI
2 CTK-2000_CHINA
3 CTK-2000_EU
4 CTK-2000_UK
5 CTK-2000_US

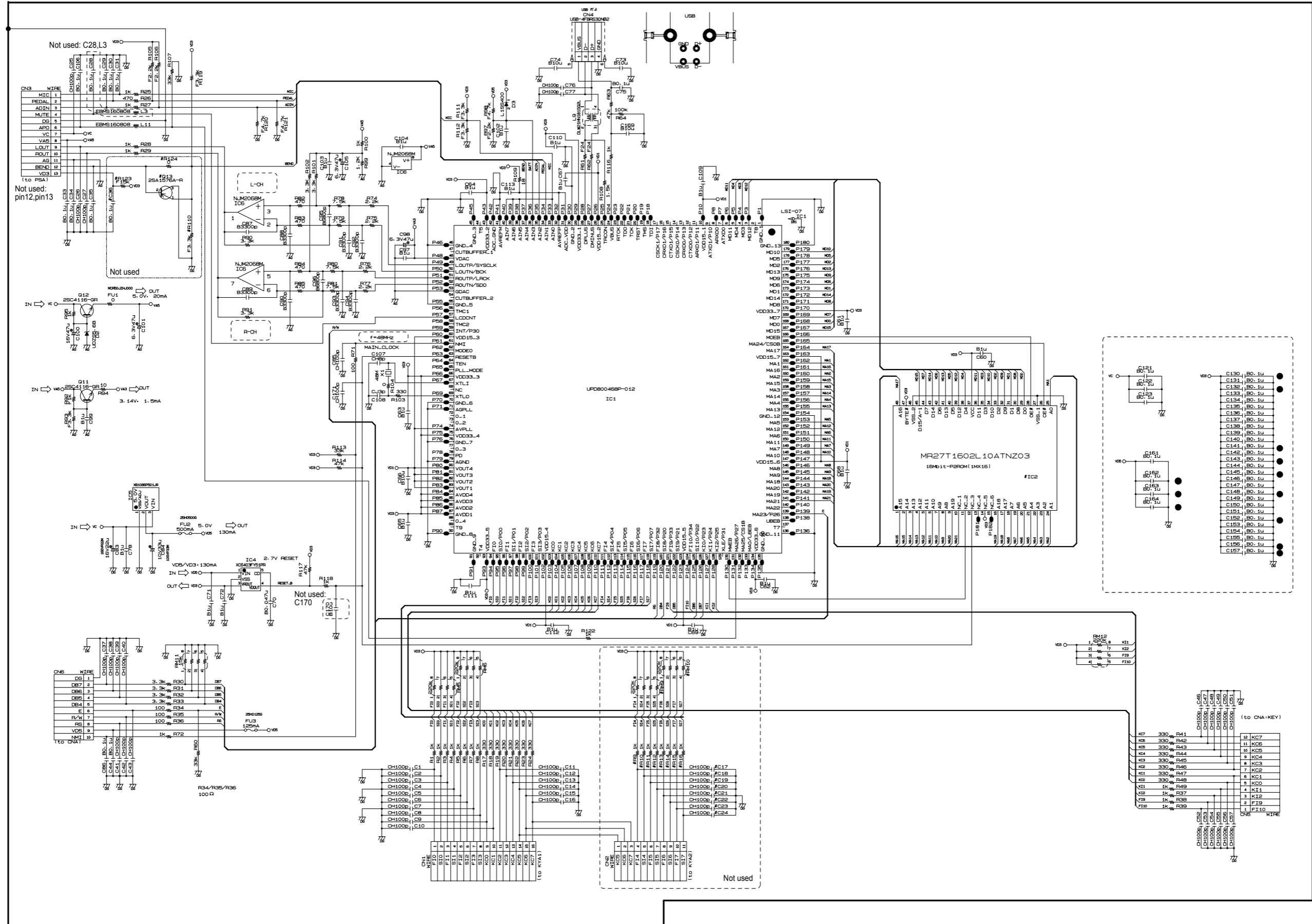
N	Item	Parts No.	Parts Name	Specification	QTY					Price Code	R	Remarks
					1	2	3	4	5			
Main PCB												
N	1	10304685	PCB ASSY/MDA1	TK-RJM508605*001	1	1	1	1	1	CU	A	
	D3	10276977	CHIP DIODE	L1SS400T1G	1	1	1	1	1	AA	X	
	D2	79114195	DIODE	UDZSTE-175.6B	1	1	1	1	1	AA	X	
	IC6	10211950	I.C	NJM2068M-D(TE1)	1	1	1	1	1	AC	C	
	IC4	10269340	IC	XC6403FY51PR	1	1	1	1	1	AE	X	
	L9	10193074	COIL	DLW21HN181SQ2L	1	1	1	1	1	AC	X	
	L11	10238668	CHIP BEAD CORE	EBMS160808A102	1	1	1	1	1	AA	X	
Sub PCB												
N	2	10304686	PCB ASSY/PSA1	TK-RJM508607*001	1	1	1	1	1	CM	B	
	J104	10206815	CONNECTOR	JY-6314*01-030	1	1	1	1	1	AA	C	PEDAL JACK
	L103,105	10231919	COIL	RB53-856396NP	2	2	2	2	2	AA	X	
	L102,104	10231920	COIL	RB53-856397NP	2	2	2	2	2	AA	X	
	J102	10088189	DC JACK	DS-240A2-383V4H	1	1	1	1	1	AC	C	
	D103,104,106,107	10276977	CHIP DIODE	L1SS400T1G	4	4	4	4	4	AA	X	
	D101,102	10210387	DIODE	RSX101VA-30TR	2	2	2	2	2	AA	X	
	IC2,IC3,IC4	10211950	I.C	NJM2068M-D(TE1)	3	3	3	3	3	AC	X	
	Q101	22592702	CHIP TRANSISTOR	2SB1188T100R	1	1	1	1	1	AB	X	
	Q102	69300298	CHIP TRANSISTOR	2SC4081T106R	1	1	1	1	1	AA	X	
Console PCBs												
N	3	10304684	PCB ASSY/CNA1	TK-RJM508599*001	1	1	1	1	1	CO	C	
	IC401	10222381	LSI	ST7066U-0A-QG	1	1	1	1	1	AU	C	
	TH401	10138692	THERMISTOR	NCP18XH103J03RB	1	1	1	1	1	AA	X	
	VR401	69304870	VOLUME	EVND8AA03B53	1	1	1	1	1	AA	X	
	D401-408	10276977	CHIP DIODE	L1SS400T1G	8	8	8	8	8	AA	X	
Keyboard PCBs												
N	4	10304689	PCB UNIT/RUBBER	TK-RJM508597*001	1	1	1	1	1	CB	C	
N	5	10304690	PCB ASSY/KYA	K-RJM508609*001	1	1	1	1	1	CB	C	
Keyboard Unit												
	6	10163902	RUBBER/CONTACT/CB	RJM503854-001	4	4	4	4	4	AD	B	
	7	10163903	RUBBER/CONTACT/CS	RJM503855-001	1	1	1	1	1	AG	B	
N	8	10304687	WHITE KEY/CB	TK-RJM507243*002	4	4	4	4	4	AW	C	
N	9	10304688	WHITE KEY/CS	TK-RJM507244*002	1	1	1	1	1	AX	C	
	10	10274032	BLACK KEY/10P	RJM506595-001V02	2	2	2	2	2	AL	C	
	11	10274160	BLACK KEY/5P	RJM506595-002V02	1	1	1	1	1	AE	C	
Case Unit												
N	12	10301466	PLATE/DISPLAY	RJM508541-001V01	1	1	1	1	1	AG	C	
	13	10199714	KNOB/SLIDE	RJM503803-002V01	2	2	2	2	2	AB	C	
	14	69095890	CONTACT/SLIDE	CSB-12D	2	2	2	2	2	AC	C	
N	15	10301465	CONNECTOR	RJM508539-001V01	2	2	2	2	2	AD	C	
N	16	10301473	LCD	TY-11151N	1	1	1	1	1	AZ	C	
N	17	10301453	RUBBER KEY/A	RJM508524-001V01	1	1	1	1	1	AH	C	
N	18	10301454	RUBBER KEY/B	RJM508525-001V01	1	1	1	1	1	AJ	C	
N	19	10301455	RUBBER KEY/C	RJM508526-001V01	1	1	1	1	1	AH	C	
N	20	10301456	RUBBER KEY/D	RJM508527-001V01	1	1	1	1	1	AH	C	
N	21	10301457	RUBBER KEY/E	RJM508528-001V01	1	1	1	1	1	AL	C	
N	22	10301458	RUBBER KEY/F	RJM508529-001V01	1	1	1	1	1	AJ	C	
	23	10264808	SPEAKER	C10J01A	2	2	2	2	2	AJ	C	
	24	10243428	COVER ASSY/BATTERY	TK-M340884*020	1	1	1	1	1	BE	C	
	25	10310585	PCB ASSY/PSA2	TK-RJM509016*001	1	1	1	1	1	BV	C	

- 1 CTK-2000_DI
- 2 CTK-2000_CHINA
- 3 CTK-2000_EU
- 4 CTK-2000_UK
- 5 CTK-2000_US

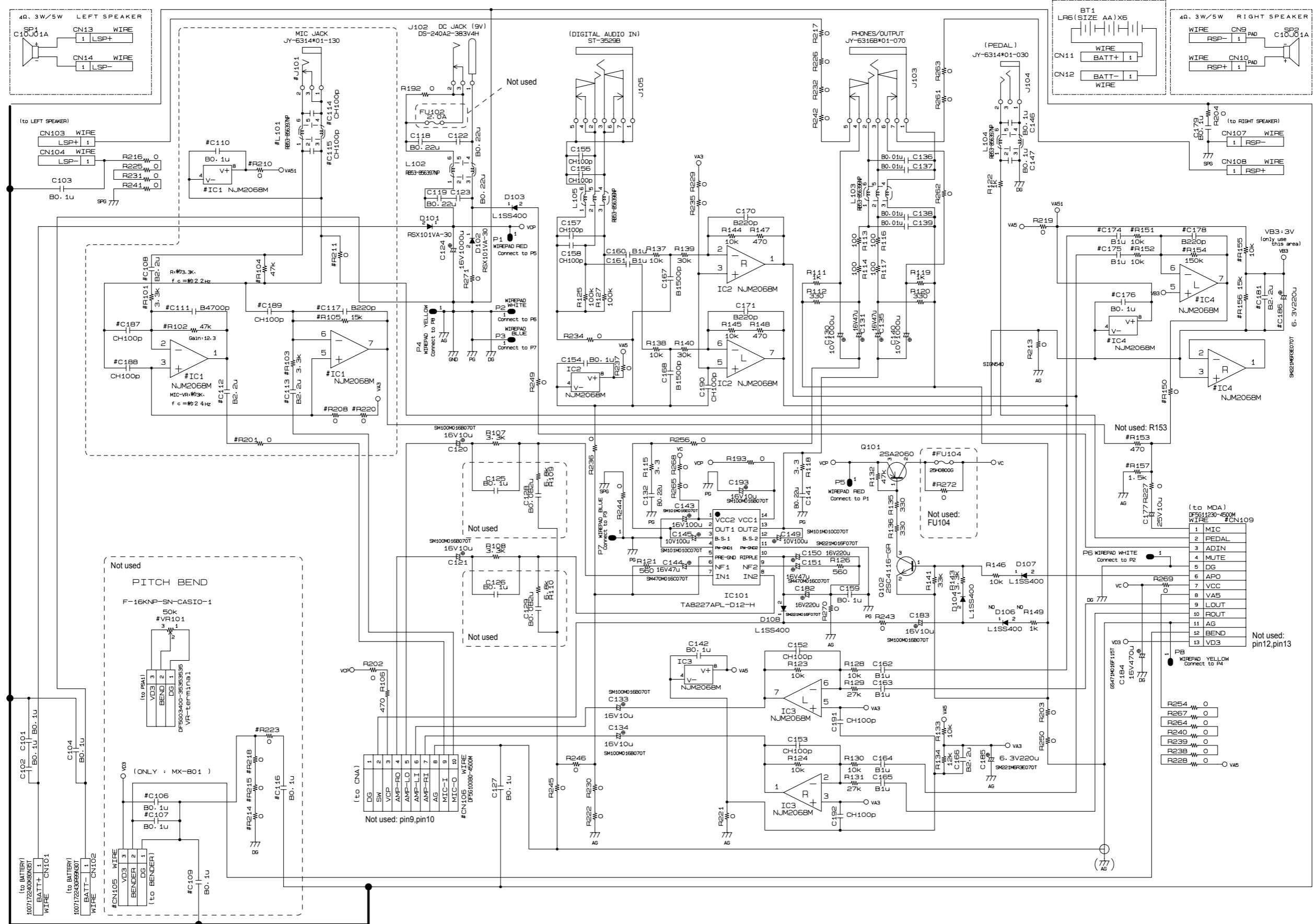
N	Item	Parts No.	Parts Name	Specification	QTY					Price Code	R	Remarks
					1	2	3	4	5			
Accessories												
	-	10118186	STAND/MUSIC	M311760-001V02	1	1	1	1	1	AK	C	
Refurbish												
N	R-1	10301447	PANEL	RJM508496-001V01	1	1	1	1	1	CP	C	
N	R-2	10301445	PANEL/SIDE/L	RJM508445-001V01	1	1	1	1	1	AQ	C	
N	R-3	10301446	PANEL/SIDE/R	RJM508446-001V01	1	1	1	1	1	AQ	C	
N	R-4	10313606	CASE UNIT/MAIN	TK-RJM508586*001	1	1	1	1	1	DC	C	
N	R-5	10302799	LOWER COVER/A	RJM508655-001V01	1	1	1	1	1	AD	X	
N	R-6	10302800	LOWER COVER/B	RJM508656-001V01	1	1	1	1	1	AD	X	
N	R-7	10302801	LOWER COVER/C	RJM508657-001V01	1	1	1	1	1	AD	X	

SCHEMATIC DIAGRAMS

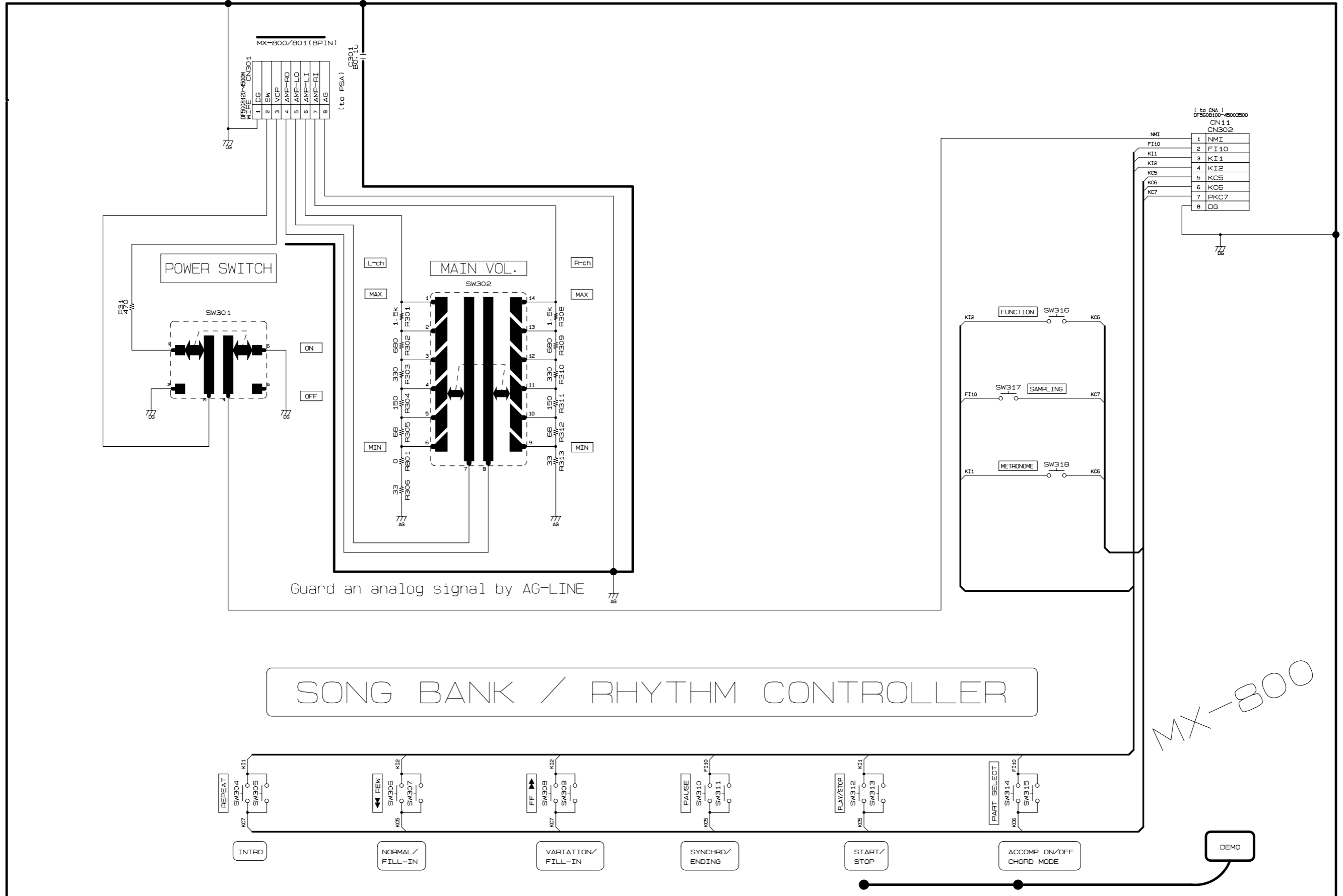
Main PCB M800-MDA1



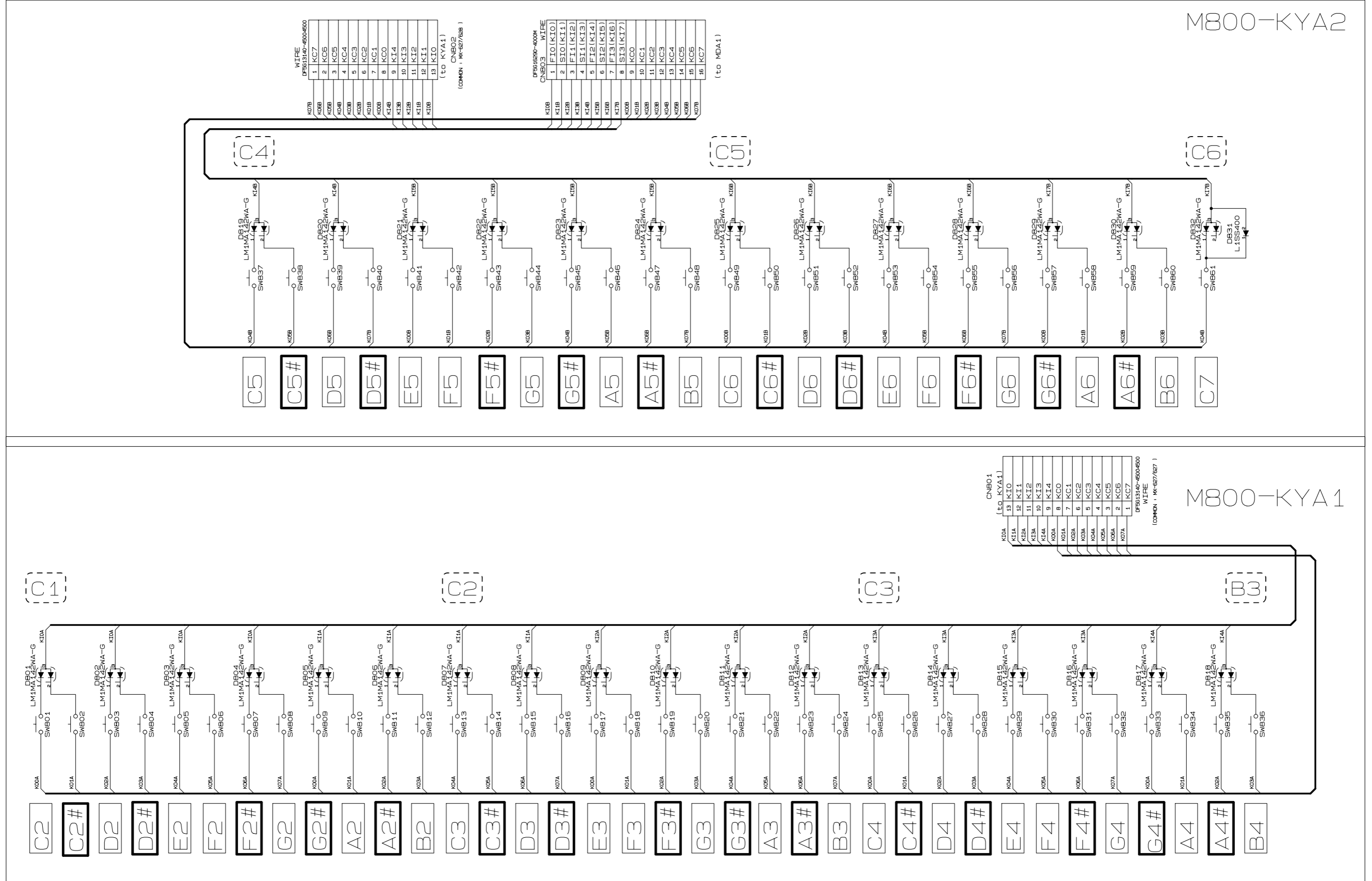
Sub PCB M800-PSA1



Console PCB M800-CNB



Keyboard PCBs M800-KYA1/KYA2



Ver.1 : Oct. 2008

- Addition of The DISASSEMBLY (P8 to P11)
- Addition of The DIAGNOSTIC PROGRAM (P14)

Ver.2 : Nov. 2008

- Correction of The BLOCK AND WIRING DIAGRAM (P2)
- Correction of The PCB LAYOUT (P3)

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