

CASIO®

SERVICE MANUAL & PARTS LIST

(without price)

CTK-1100

JUL. 2010



CTK-1100

ELECTRONIC KEYBOARD

Ver. 2 : Jan. 2012

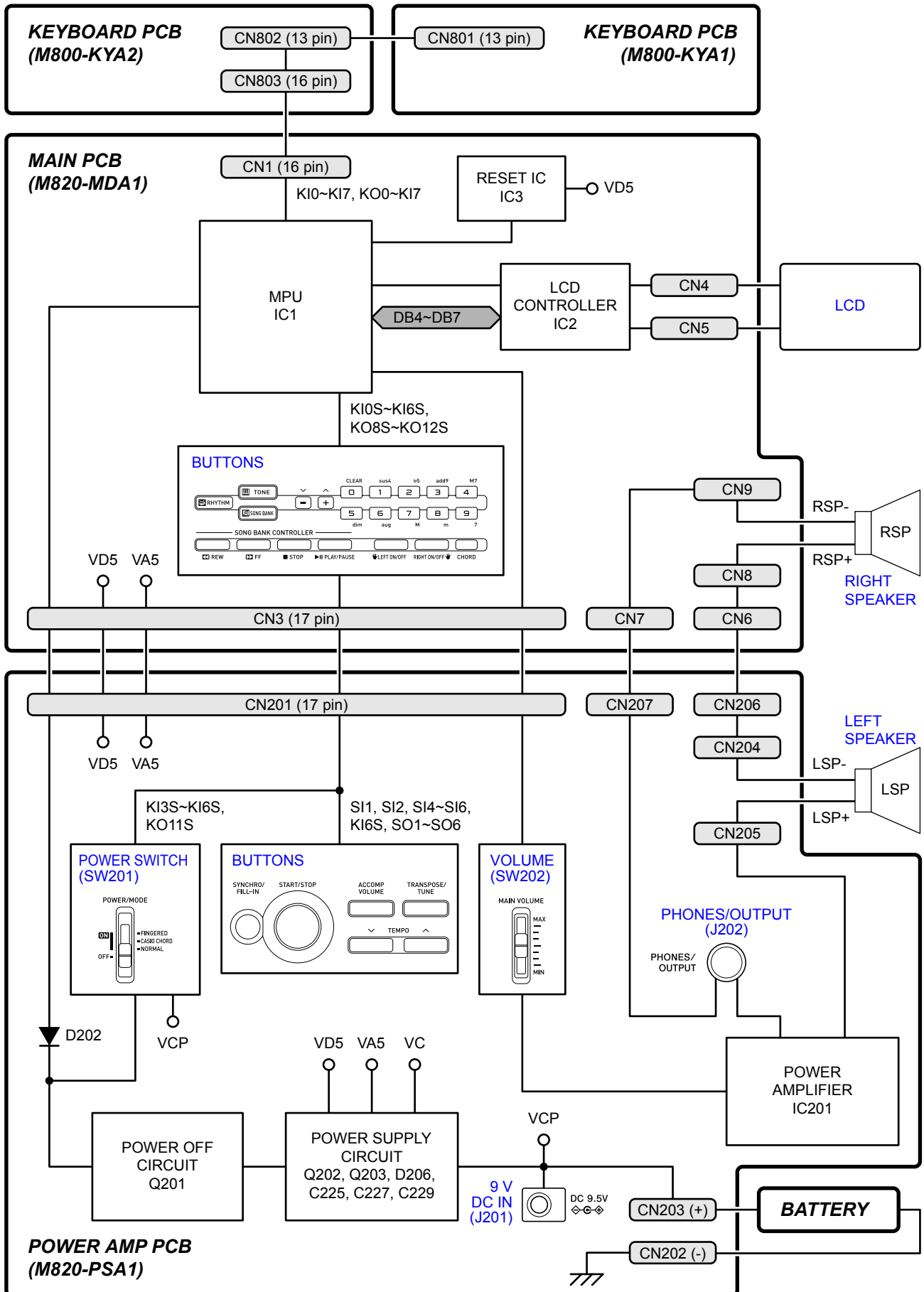
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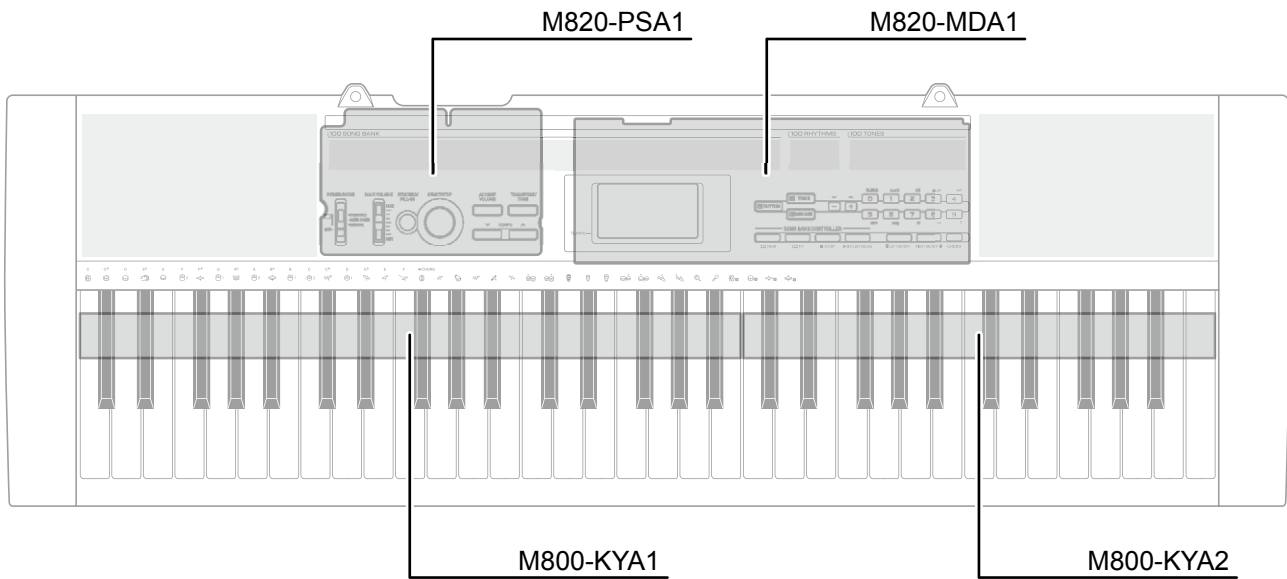
SPECIFICATIONS

Keyboard	61 standard-size keys, 5 octaves
Tones	100
Polyphony	12 notes maximum (6 for certain tones)
Auto Accompaniment	
Rhythm Patterns	100
Tempo	Variable (236 steps, = 20 to 255)
Chords	2 fingering methods (CASIO CHORD, FINGERED)
Rhythm Controller	START/STOP, SYNCHRO/FILL-IN
Accomp Volume	0 to 9 (10 steps)
Song Bank	
Tunes	100
Controllers	PLAY/PAUSE, STOP, REW, FF, LEFT ON/OFF (ACCOMP), RIGHT ON/OFF (MELODY)
Other Functions	
Transpose	12 steps (-6 semitones to +5 semitones)
Tuning	Variable (A4 = approximately 440Hz ± 50 cents)
Terminals	
Phones/Output Terminal	Stereo standard jack (Output is monaural.)
Output Impedance	78 Ω
Output Voltage	4 V (RMS) MAX
Power Supply Terminal	9.5 V DC
Power Supply	
Batteries	Dual power supply system 6 AA-size zinc-carbon batteries or alkaline batteries Battery Life: Approximately 2 hours continuous operation on zinc-carbon batteries
AC Adaptor	AD-E95100L
Auto Power Off	Turns power off approximately 6 minutes after last key operation.
Speaker Output	2.0 W + 2.0 W
Power Consumption	9.5V --- 7.7W
Dimensions	94.9 × 30.4 × 9.3 cm (37 ³ / ₈ × 11 ¹⁵ / ₁₆ × 3 ¹¹ / ₁₆ inch)
Weight	Approximately 3.3 kg (7.3 lbs) (without batteries)

BLOCK AND WIRING DIAGRAM



PCB INFORMATION



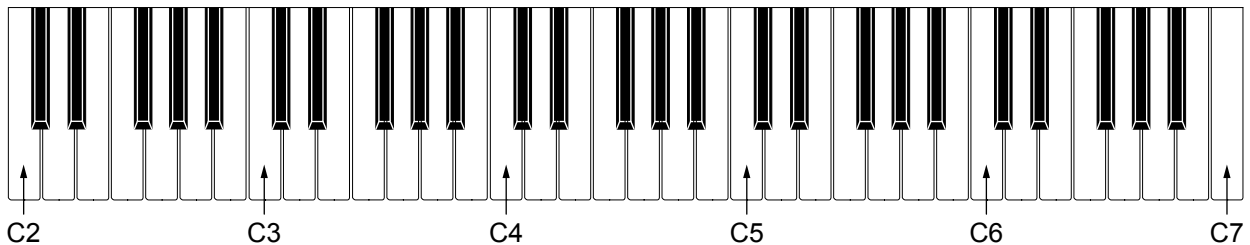
Classification	Parts Name	PCB Name	Components
Main PCB	PCB ASSY/MDA1	M820-MDA1	MPU, LCD Controller, Reset IC, Buttons, Right Speaker Terminal
Power Amp PCB	PCB ASSY/PSA1	MX820-PSA1	Power Supply Circuit, Power Amplifier, Power Switch, Volume, Buttons, DC 9.5V Jack, Left Speaker Terminal, Phones/Output Jack
Keyboard PCB	PCB ASSY/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

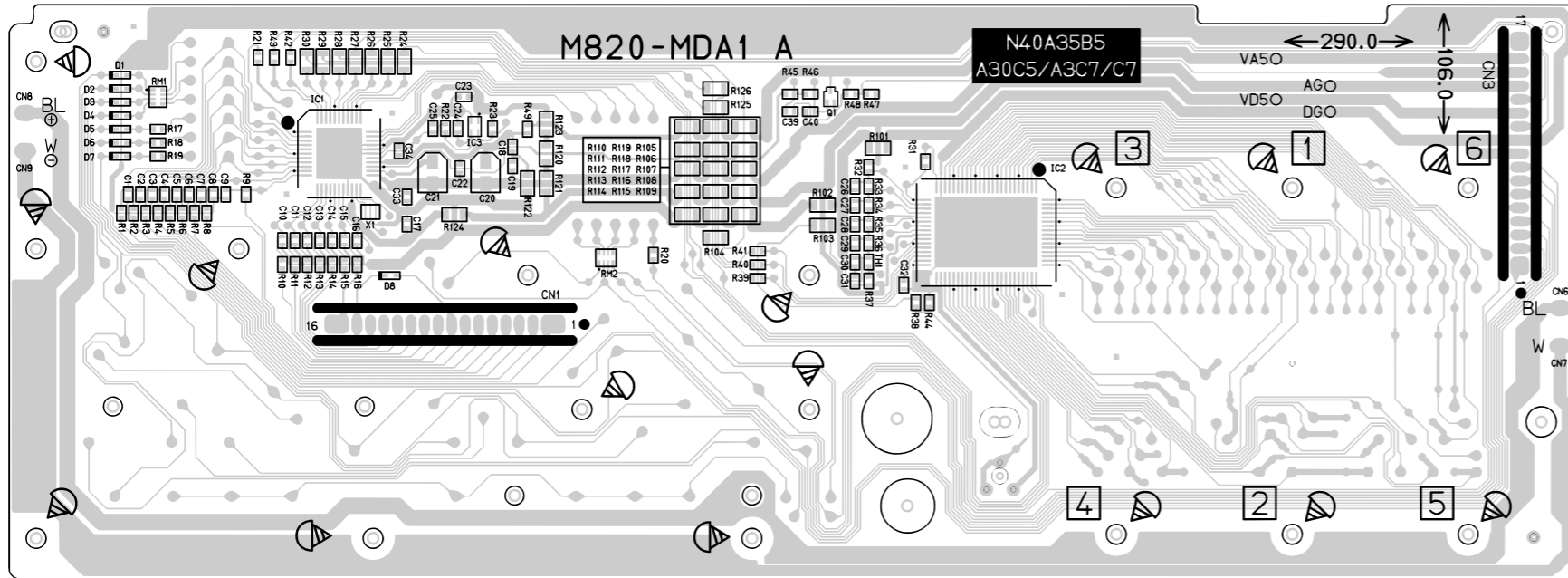


■ BUTTON MATRIX

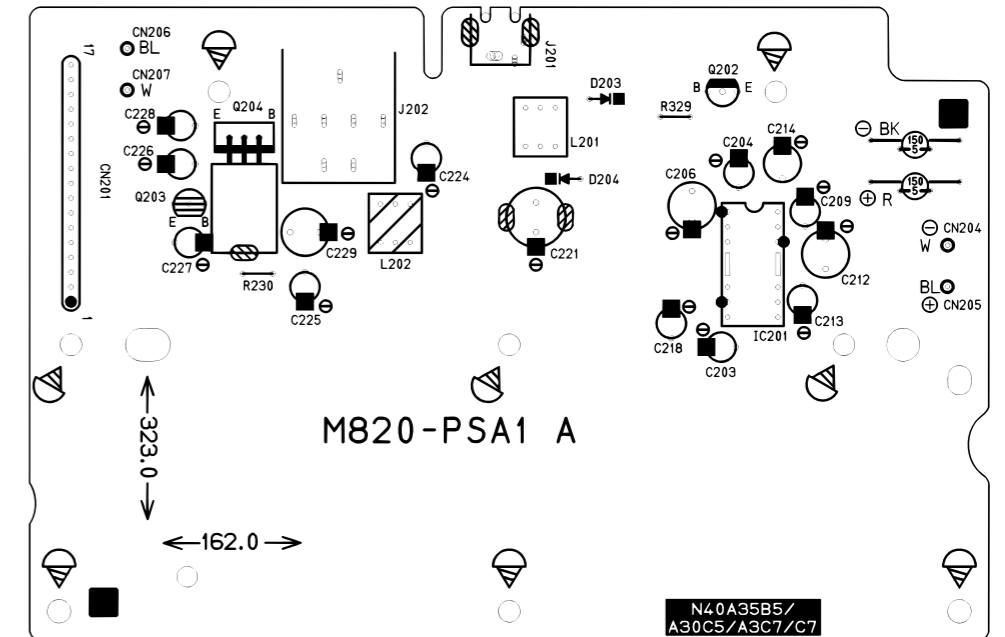
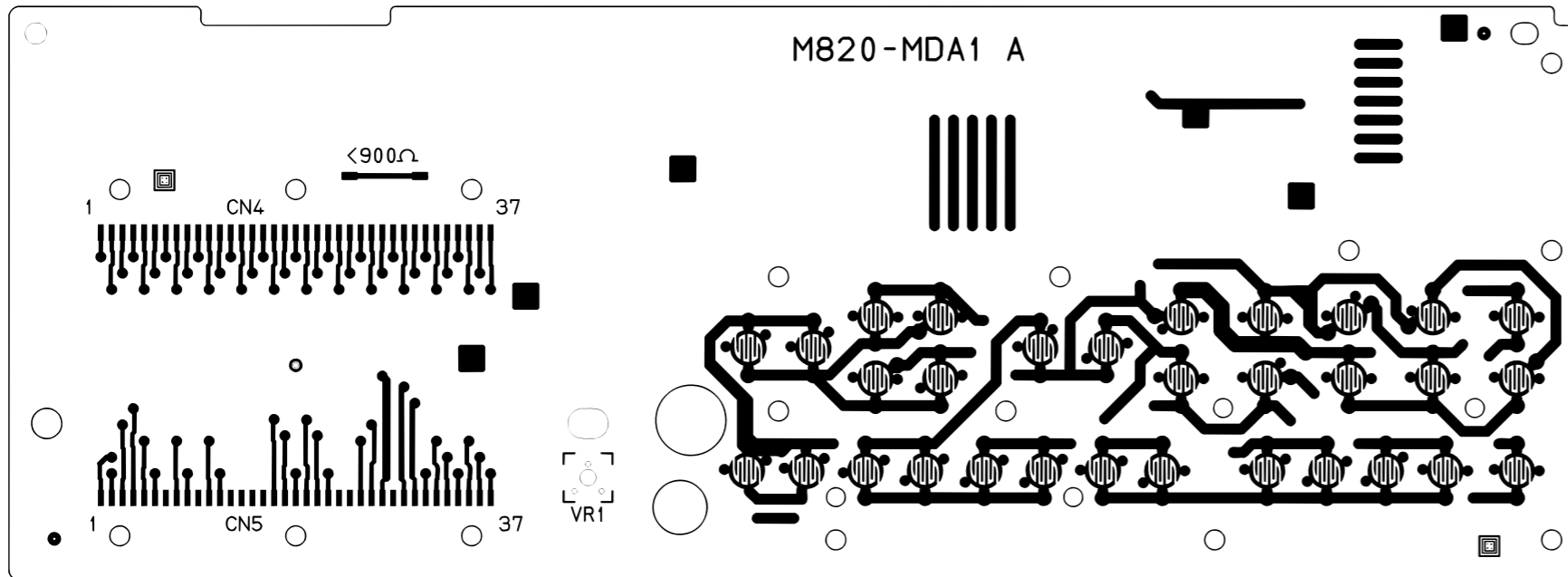
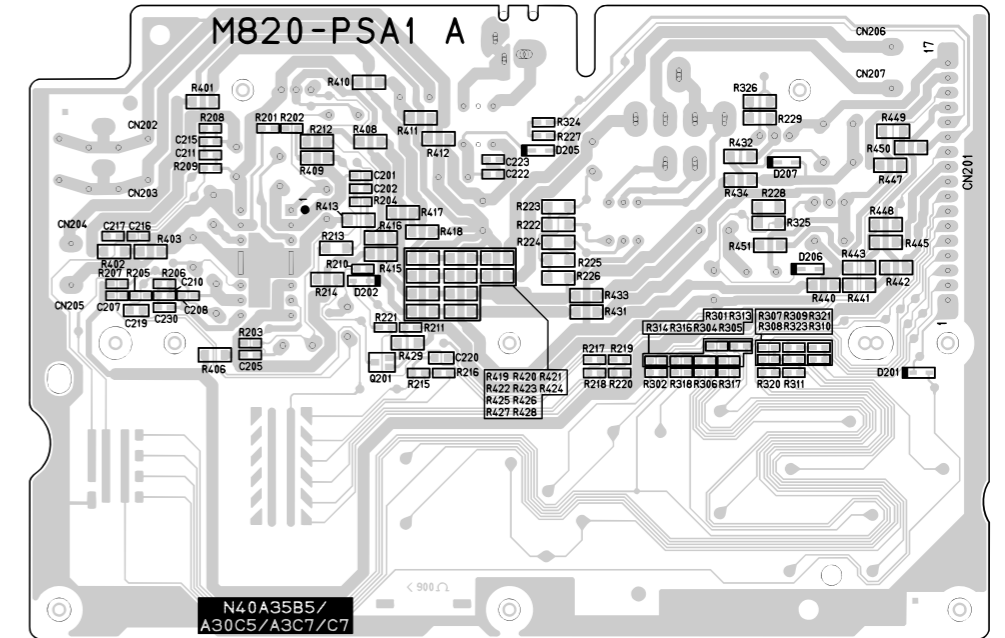
	KO8S	KO9S	KO10S	KO11S	KO12S
KI0S	-	3	6	9	FF
KI1S	+	2	5	8	RIGHT ON/OFF
KI2S	0	1	4	7	PLAY/PAUSE
KI3S	TEMPO DOWN	START/STOP	TRANSPOSE/ TUNE	FINGERED (POWER/ MODE)	STOP
KI4S	TEMPO UP	SYNCHRO/ FILL-IN	SONG BANK	CASIO CHORD (POWER/MODE)	LEFT ON/OFF
KI5S		CHORD	RHYTHM	NORMAL (POWER/MODE)	REW
KI6S		ACCOMP VOLUME	TONE	OFF (POWER/MODE)	

PRINTED CIRCUIT BOARDS

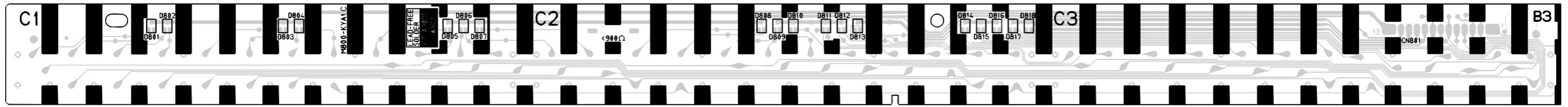
Main PCB: M820-MDA1



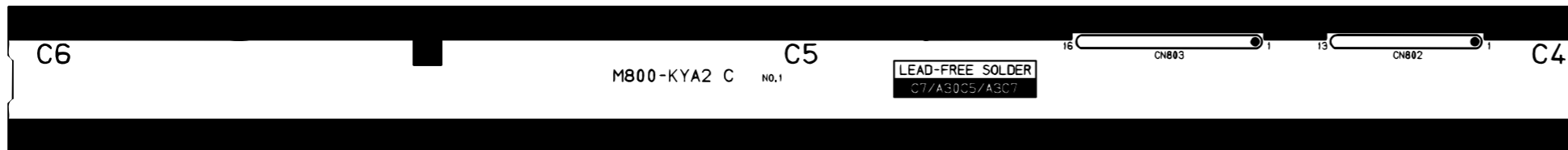
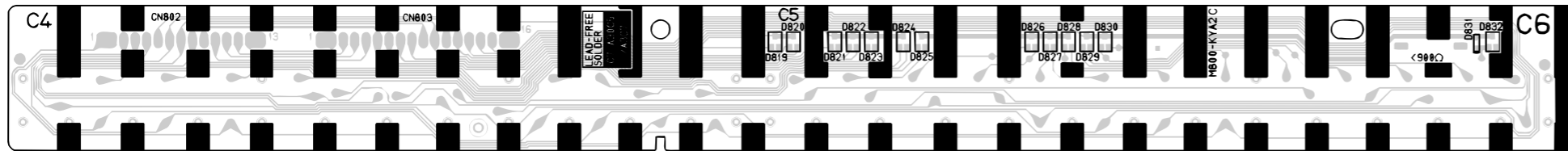
Sub PCB: M820-PSA1



Keyboard PCB: M800-KYA1



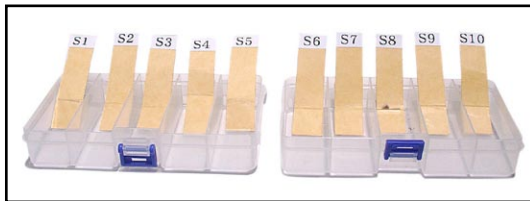
Keyboard PCB: M800-KYA2



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.

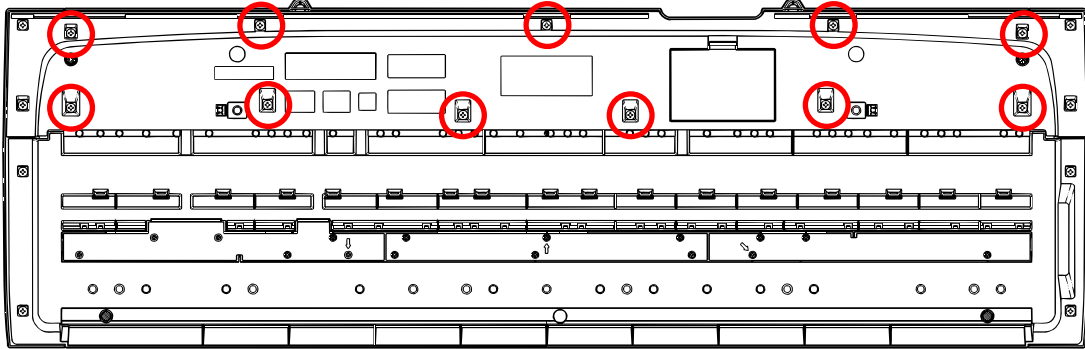
■ BEFORE STARTING REPAIR OR SERVICING

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

■ DISASSEMBLY

A. PANEL UNIT

A-1. Undo 11 screws on the bottom surface of the main unit.

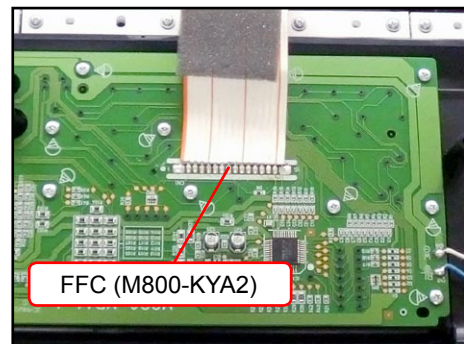
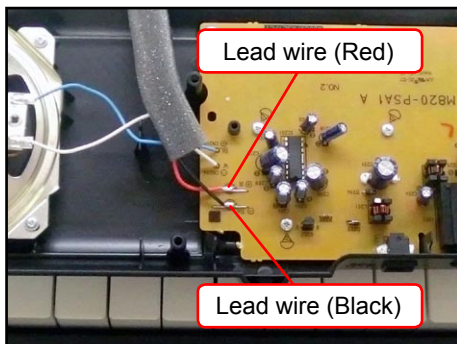


A-2. Turn over the panel unit.

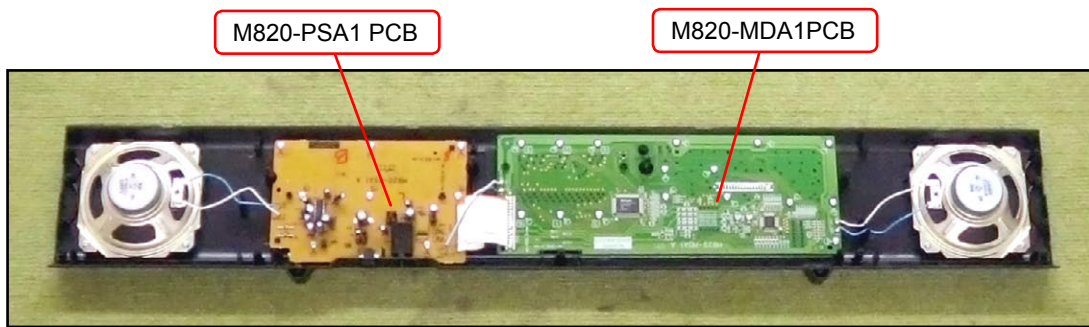


A-3. Unsolder two battery lead wires.

A-4. Unsolder one FFC.

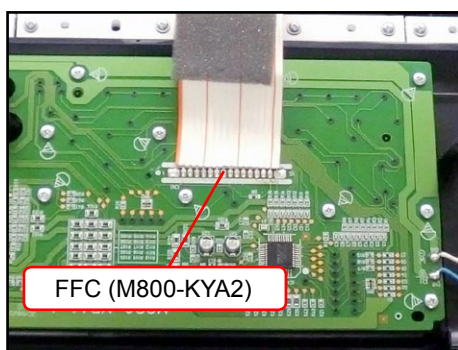


A-5. Remove the panel unit.

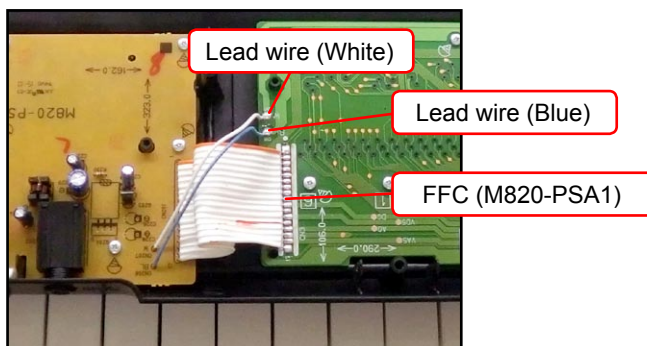


B. MAIN PCB (M820-MDA1)

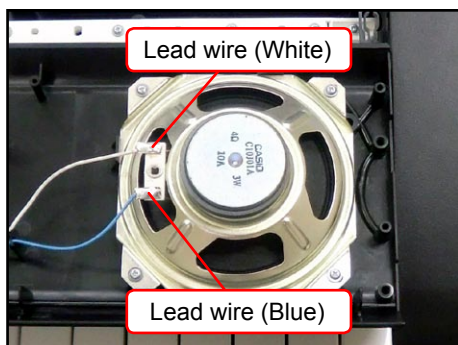
B-1. Unsolder one FFC.



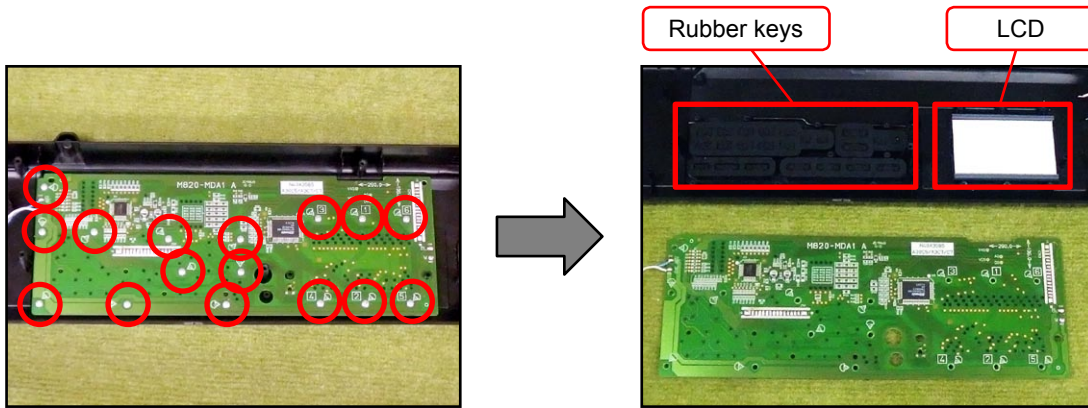
B-2. Unsolder two lead wires and one FFC.



B-3. Unsolder two lead wires connected to the right speaker.

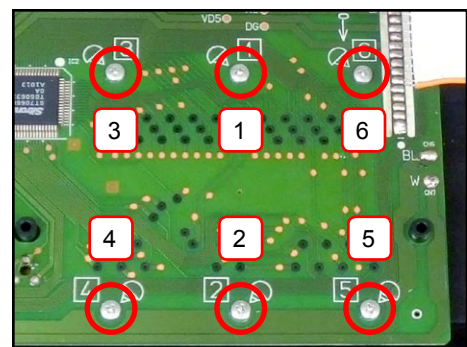


B-4. Undo 16 screws and then remove the M820-MDA1 PCB, rubber keys and LCD.



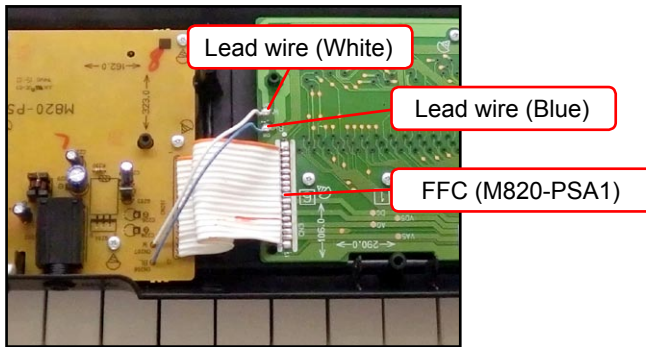
<Caution for installing M820-MDA1 PCB>

To install the M820-MDA1 PCB, tighten the screws for the LCD part in the order shown in the right. If not tighten correctly, it may cause the LCD display errors.

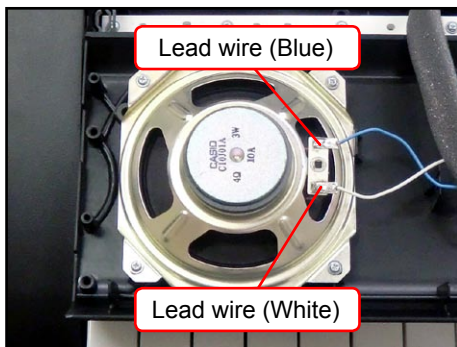


C. POWER AMP PCB (M820-PSA1)

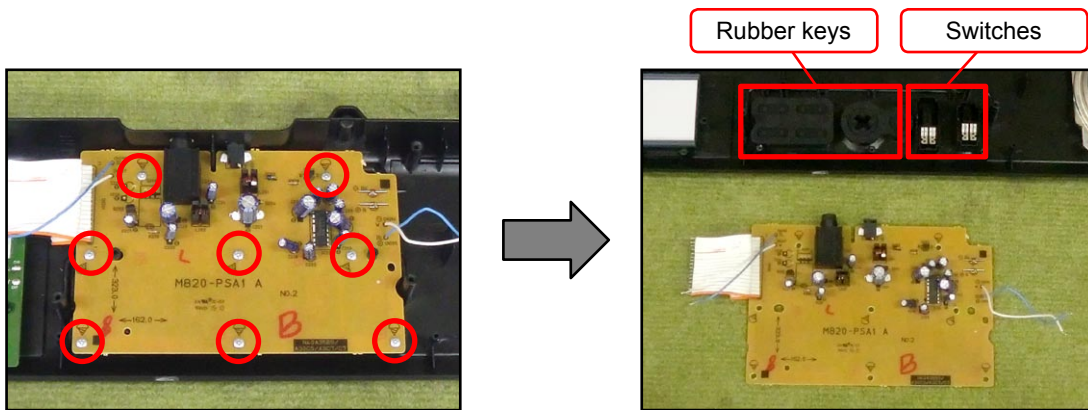
C-1. Unsolder two lead wires and one FFC connected to the M820-MDA1 PCB.



C-2. Unsolder two lead wires connected to the left speaker.

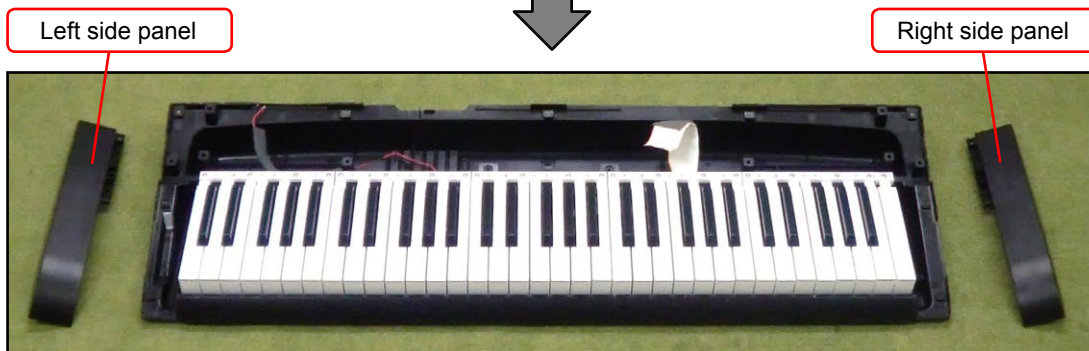
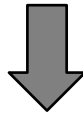
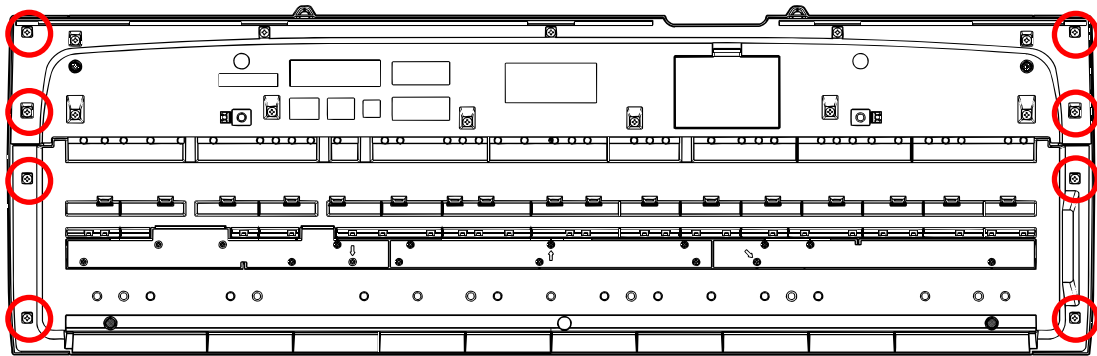


C-3. Undo eight screws and then remove the M820-PSA1 PCB, rubber keys and switches.

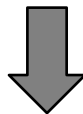


D. KEYBOARD

D-1. Undo eight screws and then remove the side panels.

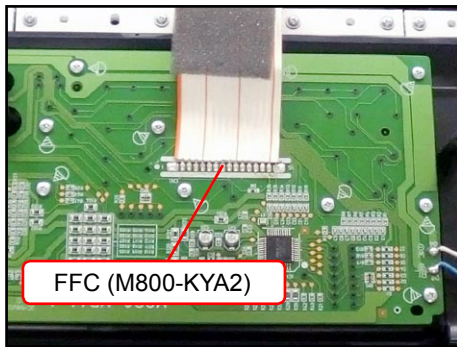


D-2. Undo 21 screws and then remove the white keys and black keys.

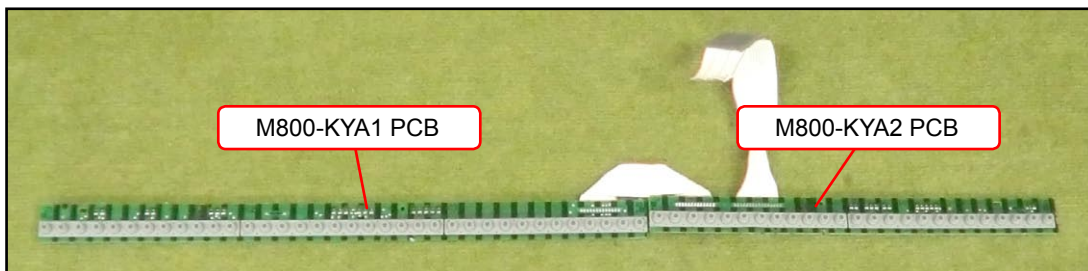
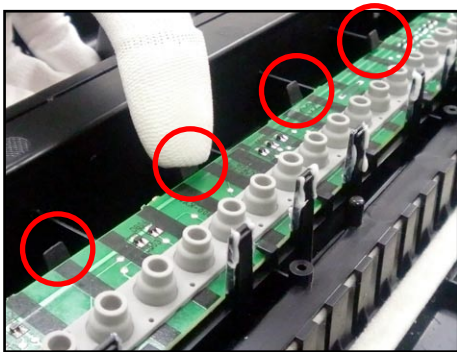


E. KEYBOARD PCB (M800-KYA1/KYA2)

E-1. Unsolder one FFC connected to the M820-MDA1 PCB.

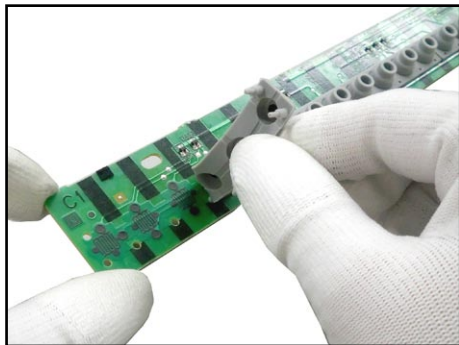
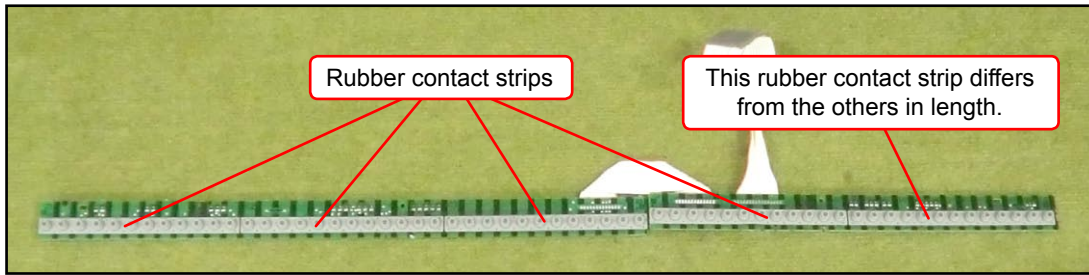


E-2. Disengage the hooks and then remove the M800-KYA1/KYA2 PCBs.



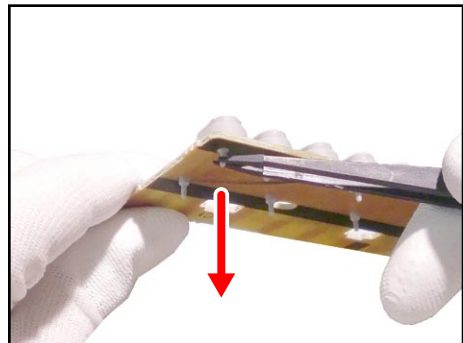
E-3. Remove five rubber contact strips.

NOTE: One rubber contact strip differs in length.



<How to install rubber contact strips>

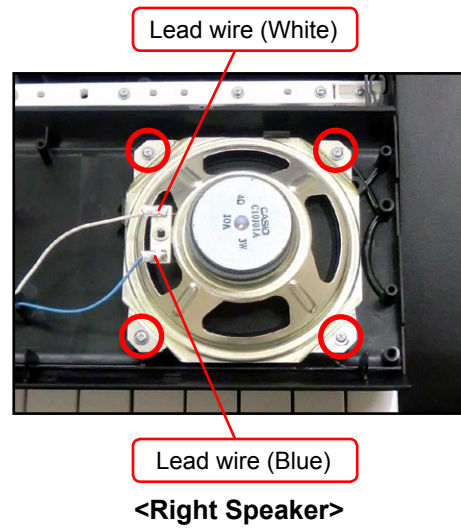
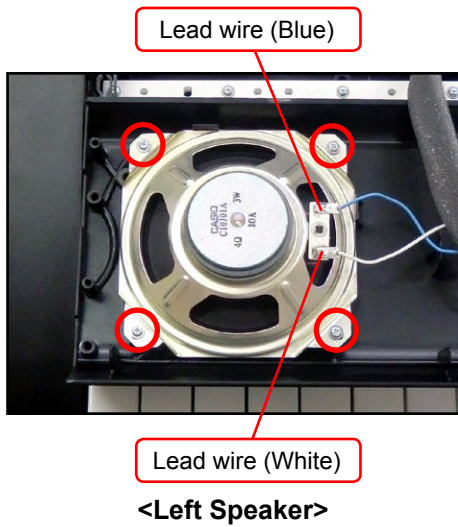
Lightly insert the tip of a rubber contact strip into the PCB. Pull the tip from the back of the PCB and install it using a tool such as tweezers. Do not forcibly pull it.



F. SPEAKER

F-1. Unsolder two lead wires.

F-2. Undo four screws and then remove the speaker.



DIAGNOSTIC PROGRAM

■ INITIAL SETTING

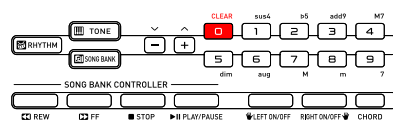
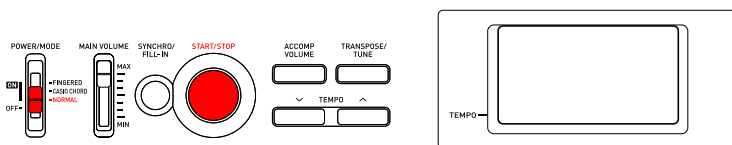
- (1) Connect the AC adaptor.
- (2) Turn the volume to the maximum.

■ HOW TO START THE DIAGNOSTIC PROGRAM

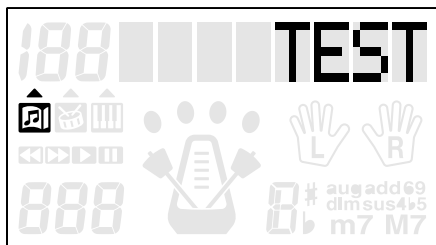
- (1) Hold down the “0” and “START/STOP” buttons at the same time, to turn the power on.

NOTE: Set the mode switch to the “NORMAL”.

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



- (2) Release the “0” and “START/STOP” buttons.
- (3) After the diagnostic program is launched, the test menu appears.



■ TEST ITEMS

Pushing a test button enables the corresponding test item to be tested.

Test Items	Buttons	Note
Mode Switch Check		
Button Check	0	
ROM Version Check	1	
LCD Check	TONE	
Auto Power Off Check	STOP	

This diagnostic program does not test the following items.

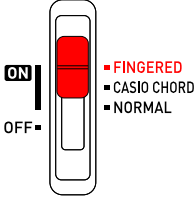
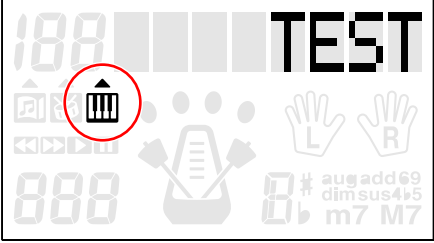
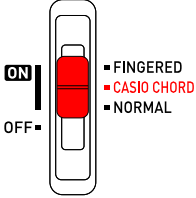
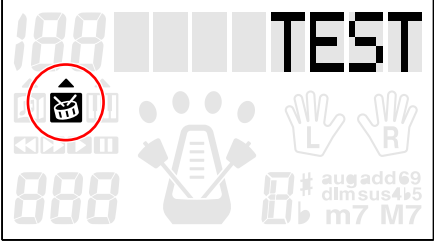
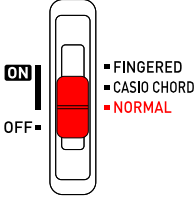
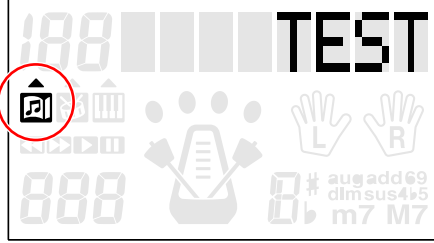
Check the functions with regular power-on state.

Test Items	Buttons	Note
Keyboard Check		
Headphones Check		Headphones

■ DIAGNOSTIC PROGRAM

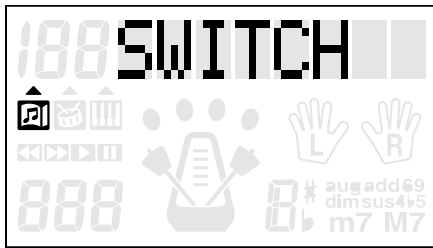
A. MODE SWITCH CHECK

A-1. Switch the mode switch and check that the following screen appears on the LCD.

Mode Switch	LCD
<p>FINGERED</p> <p>POWER/MODE</p>  <p>ON</p> <p>OFF</p> <ul style="list-style-type: none"> ■ FINGERED ■ CASIO CHORD ■ NORMAL 	
<p>CASIO CHORD</p> <p>POWER/MODE</p>  <p>ON</p> <p>OFF</p> <ul style="list-style-type: none"> ■ FINGERED ■ CASIO CHORD ■ NORMAL 	
<p>NORMAL</p> <p>POWER/MODE</p>  <p>ON</p> <p>OFF</p> <ul style="list-style-type: none"> ■ FINGERED ■ CASIO CHORD ■ NORMAL 	

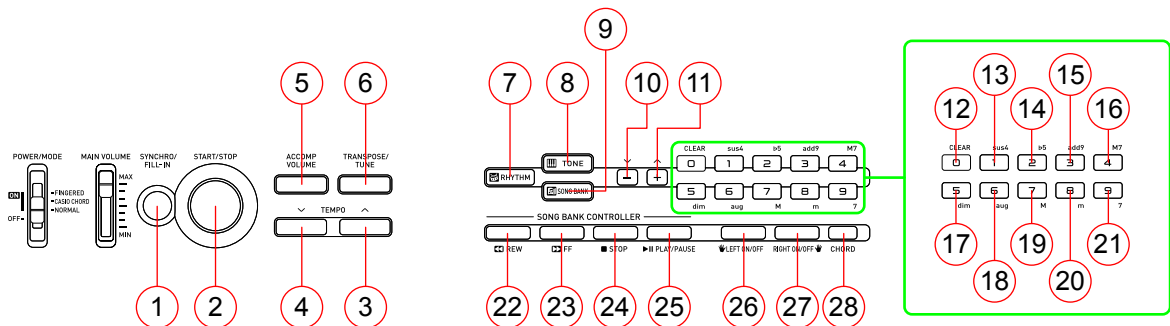
B. BUTTON CHECK

B-1. Press the “0” button to select the “Button Check”.

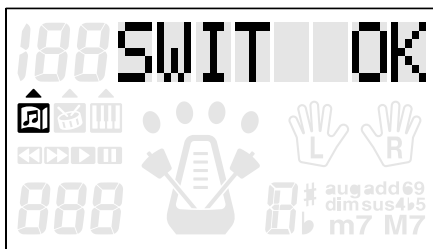


B-2. Press the button in the order indicated in the illustration below. Each time the button is pressed, the confirmation chord sounds. If a button is not operating properly or a button is pressed in a wrong order, an error tone sounds and “NG” appears on the LCD.

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



B-3. When the “CHORD” button is pressed at the end, the confirmation chord sounds and “SWIT OK” appears on the LCD.



C. ROM VERSION CHECK

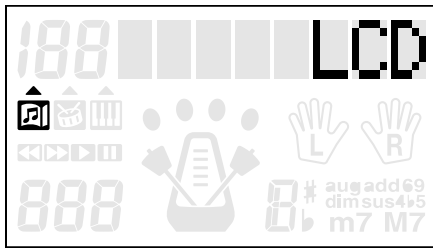
C-1. Press the “1” button to perform the “ROM Version Check”. The ROM version appears on the LCD.

C-2. Check that the ROM version is “820vr100”.

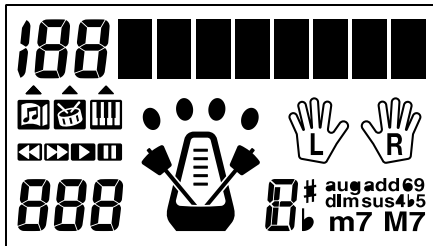


D. LCD CHECK

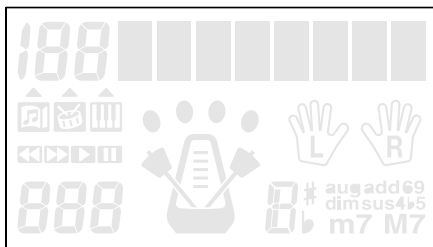
D-1. Press the "TONE" button to select the "LCD Check".



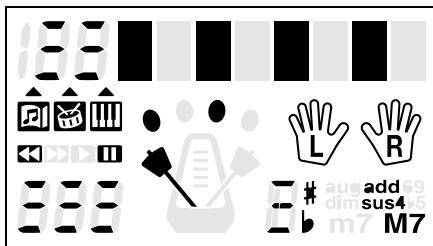
D-2. Press the "TONE" button.
The confirmation chord sounds and the display of the LCD is lit.



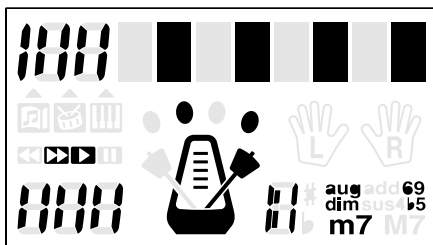
D-3. Press the "TONE" button.
The confirmation chord sounds and the display of the LCD is turned off.



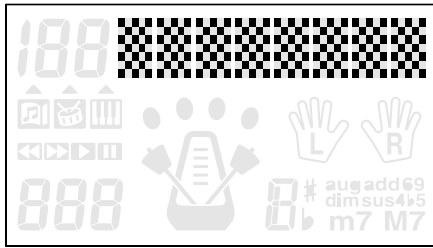
D-4. Press the "TONE" button.
The confirmation chord sounds and the following screen appears on the LCD.



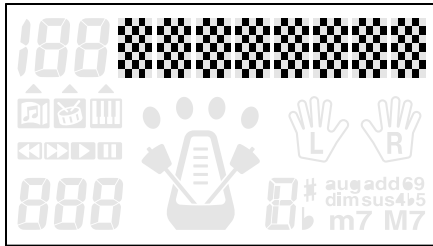
D-5. Press the "TONE" button.
The confirmation chord sounds and the following screen appears on the LCD.



- D-6. Press the “TONE” button.
The confirmation chord sounds and the following screen appears on the LCD.



- D-7. Press the “TONE” button.
The confirmation chord sounds and the following screen appears on the LCD.



E. AUTO POWER OFF CHECK

- E-1. Press the “STOP” button to perform the “Auto Power Off Check”.
- E-2. The power supply is turned off and no screen appears on the LCD.
NOTE: After checking, be sure to turn the mode switch to “OFF”.

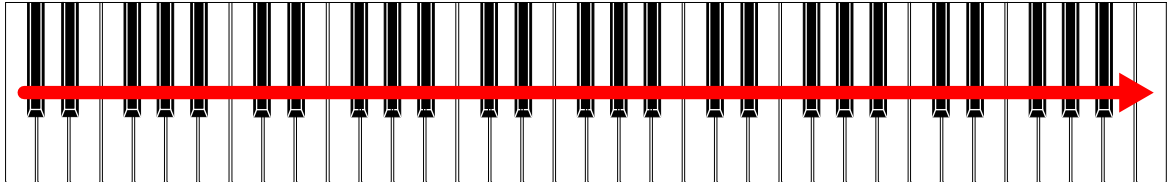
F. KEYBOARD CHECK

NOTE: Perform the tests with regular power-on state.

F-1. Check the following points by pressing all keys.

- The tones sound correctly by hitting keys.
- The pitch of the sound corresponding to a key is correct.
- Hitting a key does not produce two tones or make sounds twice.
- The stroke and the load of keys are normal.
- The difference in height and the gap between keys are even.

NOTE: Press the keys in the order shown in the illustration below.

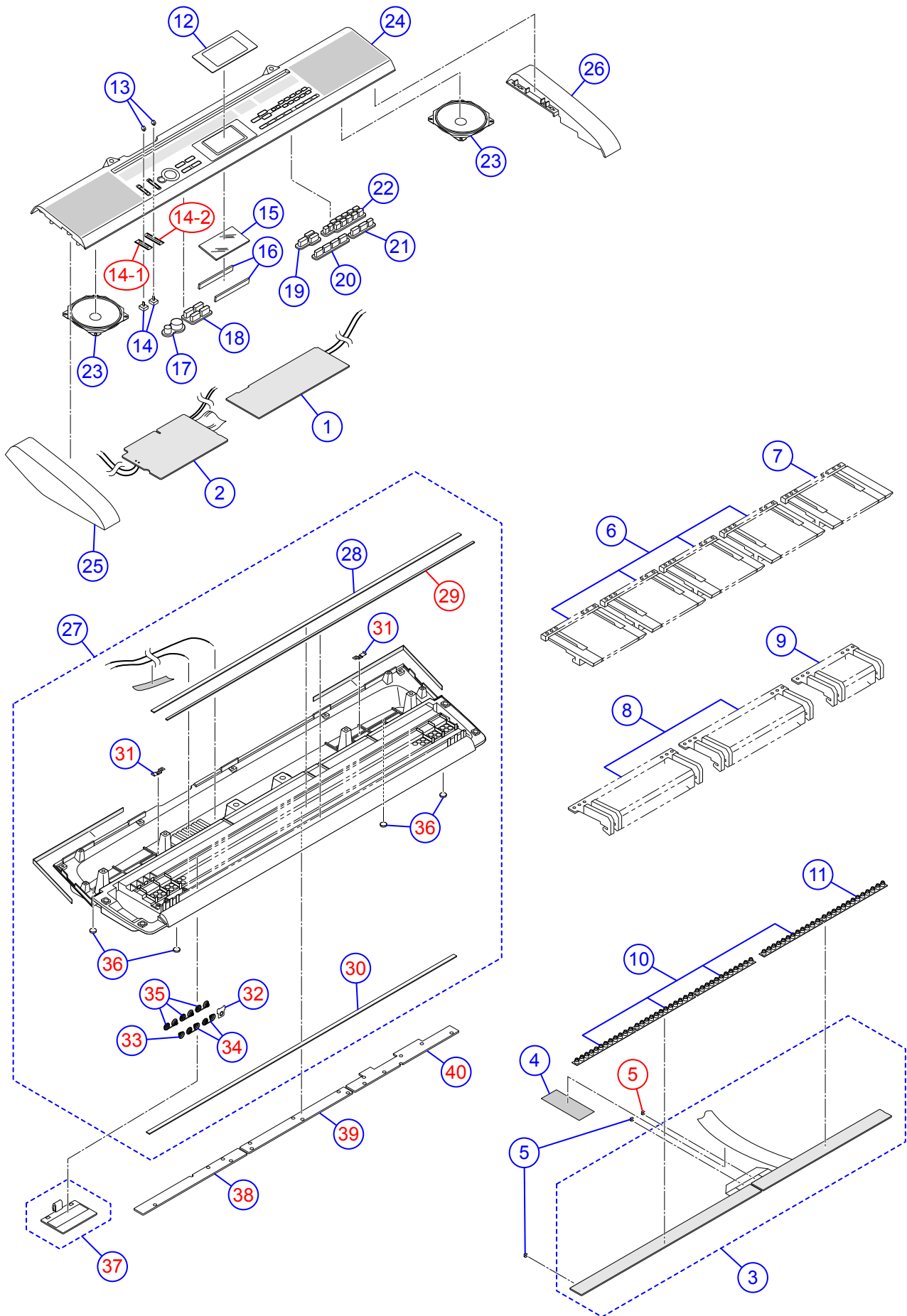


G. HEADPHONES CHECK

NOTE: Perform the tests with regular power-on state.

- G-1. Connect the headphones to the PHONES/OUTPUT jack.
- G-2. Press any key and check that you can hear the sound through the headphones.
- G-3. Remove the headphones.
- G-4. Press any key and check that sounds come out from the speakers.

EXPLODED VIEW



PARTS LIST

CTK-1100

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.

- 1: CTK-1100_DI
- 2: CTK-1100_EU
- 3: CTK-1100_UK
- 4: CTK-1100_US

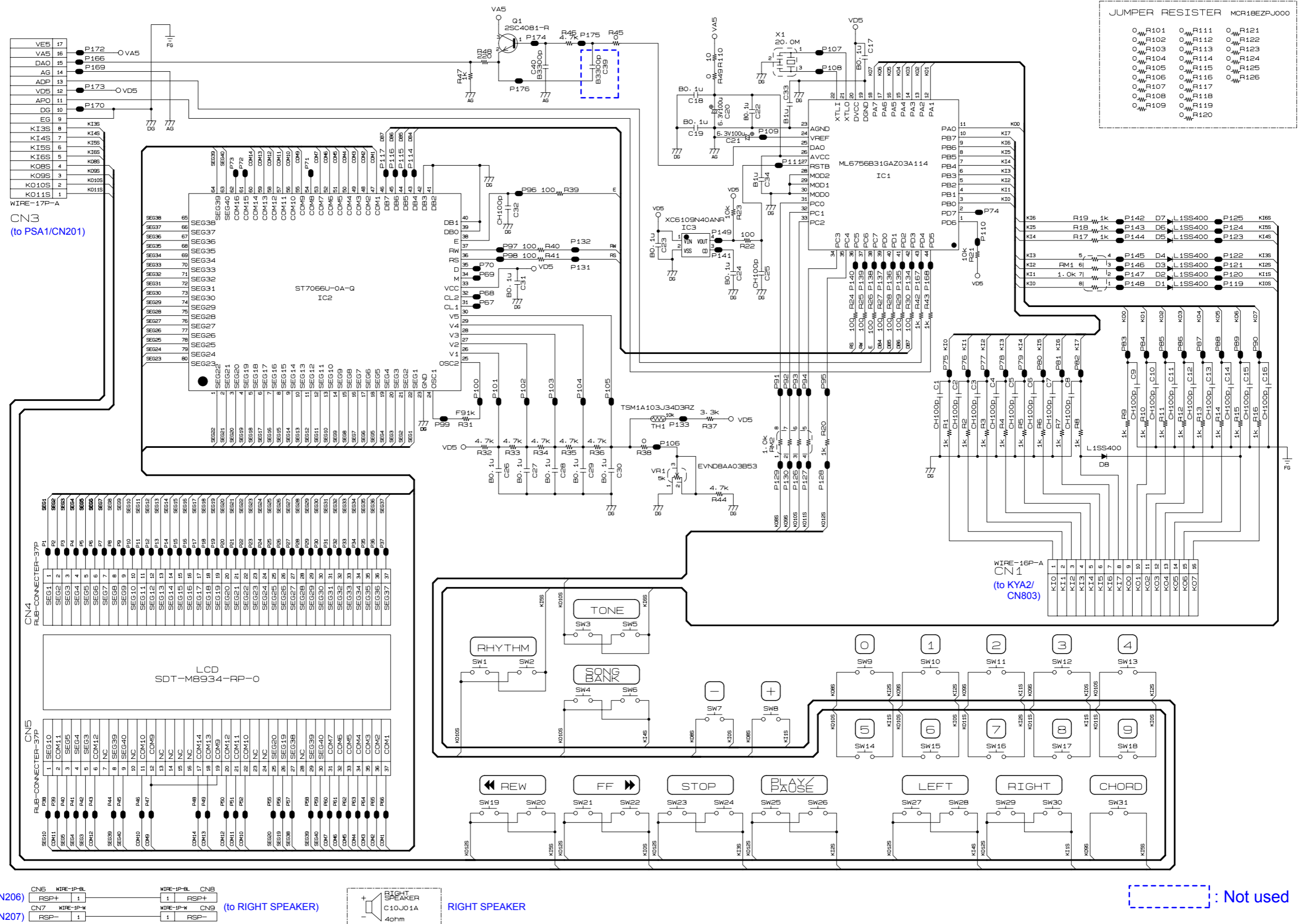
N	Item	Code No.	Parts Name	Specification	Q'ty				Price Code	R	Remarks
					1	2	3	4			
Main PCB (MDA1)											
N	1	10368206	PCB ASSY/MDA1	TK-RJM510415*001	1	1	1	1		B	Main PCB
N	CN8	10178633	WIRE/for speaker	1007TASC24100B4040	1	1	1	1		X	Blue (+)
N	CN9	10366747	WIRE/for speaker	1007TASC24100W4040	1	1	1	1		X	White (-)
	VR1	69304870	VARIABLE RESISTOR	EVND8AA03B53	1	1	1	1		X	LCD Contrast Volume
	D1-D8	10276977	DIODE	L1SS400T1G	8	8	8	8		X	
	IC3	10240586	IC	XC6109N40ANR	1	1	1	1		X	
N	IC1	10363081	LSI	ML6756B31GAZ03A114	1	1	1	1		C	
	IC2	10222381	LSI	ST7066U-0A-QG	1	1	1	1		C	
	Q1	69300298	TRANSISTOR	2SC4081T106R	1	1	1	1		X	
	TH1	10245365	THERMISTOR	TSM1A103J34D3RZ	1	1	1	1		X	
	X1	10070555	RESONATOR	CSTCW20M0X51-R0	1	1	1	1		X	
Power Amp PCB (PSA1)											
N	2	10368207	PCB ASSY/PSA1	TK-RJM510417*001	1	1	1	1		C	PSA1 PCB
N	CN205,CN206	10178633	WIRE/for speaker	1007TASC24100B4040	2	2	2	2		X	Blue (+)
N	CN204,CN207	10366747	WIRE/for speaker	1007TASC24100W4040	2	2	2	2		X	White (-)
	J201	35015103	JACK	HEC3110-01-010	1	1	1	1		B	DC Jack
	J202	10305218	JACK	JY-6316B*01-070	1	1	1	1		C	Phones/Output Jack
	IC201	10300598	IC	TA8227APL-D12-H-T	1	1	1	1		X	
	L202	10231919	COIL	RB53-856396NP	1	1	1	1		X	
	L201	10231920	COIL	RB53-856397NP	1	1	1	1		X	
N	D203-D204	10261170	DIODE	SRT14-A2	2	2	2	2		X	
	D206	79114195	DIODE	UDZSTE-175.6B	1	1	1	1		X	
N	D201-D202	10371167	DIODE	L1SS355T1G	2	2	2	2		X	
	Q201	69300298	TRANSISTOR	2SC4081T106R	1	1	1	1		X	
N	Q202	10217742	TRANSISTOR	KTA1270-Y-AT/P	1	1	1	1		X	
	Q203	10209015	TRANSISTOR	KTD863-GR-AT/P	1	1	1	1		X	
Keyboard PCB											
N	3	10368208	PCB ASSY/KYA	TK-RJM508609*002	1	1	1	1		C	KYA PCB
	D801-D830, D832	10301580	DIODE	LM1MA142WAT1G	31	31	31	31		X	
	4	10078918	SPONGE-40-100	M440962-001V01	1	1	1	1		X	
	5	69268840	FABRIC TAPE-4-10	M440684-1	3	3	3	3		X	
Keyboard unit											
	6	10304687	WHITE KEY/CB	TK-RJM507243*002	4	4	4	4		C	
	7	10304688	WHITE KEY/CS	TK-RJM507244*002	1	1	1	1		C	
	8	10274032	BLACK KEY/10P	RJM506595-001V02	2	2	2	2		C	
	9	10274160	BLACK KEY/5P	RJM506595-002V02	1	1	1	1		C	
	10	10163902	RUBBER CONTACT/CB	RJM503854-001V01	4	4	4	4		B	
	11	10163903	RUBBER CONTACT/CS	RJM503855-001V01	1	1	1	1		B	

- 1: CTK-1100_DI
- 2: CTK-1100_EU
- 3: CTK-1100_UK
- 4: CTK-1100_US

N	Item	Code No.	Parts Name	Specification	Q'ty				Price Code	R	Remarks
					1	2	3	4			
Panel unit											
N	12	10371164	PLATE/DISPLAY	RJM510316-001V02	1	1	1	1		X	
	13	10199714	KNOB	RJM503803-002V01	2	2	2	2		X	
	14	69095890	CONTACT/SLIDE SWITCH	CSB-12D	2	2	2	2		X	
N	14-1	10417026	FABRIC TAPE	RJM511849-001V01	1	1	1	1		X	
N	14-2	10417025	FABRIC TAPE	RJM511833-001V01	1	1	1	1		X	
N	15	10367051	LCD	SDT-M8934-RP-0	1	1	1	1		X	
N	16	10366853	RUBBER CONNECTOR	RJM510317-001V01	2	2	2	2		X	
N	17	10366836	RUBBER KEY/A	RJM510262-001V01	1	1	1	1		X	
N	18	10366837	RUBBER KEY/B	RJM510264-001V01	1	1	1	1		X	
N	19	10366843	RUBBER KEY/C	RJM510282-001V01	1	1	1	1		X	
N	20	10366845	RUBBER KEY/D	RJM510283-001V01	1	1	1	1		X	
N	21	10366849	RUBBER KEY/E	RJM510284-001V01	1	1	1	1		X	
N	22	10366850	RUBBER KEY/G	RJM510286-001V01	1	1	1	1		X	
	23	10264808	SPEAKER	C10J01A	2	2	2	2		X	
N	24	10366838	PANEL	RJM510265-001V01	1	1	1	1		X	
N	25	10366841	SIDE PANEL/LEFT	RJM510267-001V01	1	1	1	1		X	
N	26	10366842	SIDE PANEL/RIGHT	RJM510268-001V01	1	1	1	1		X	
Main case unit											
N	27	10368209	CASE UNIT/MAIN	TK-RJM510380*001	1	1	1	1		X	
	28	10301471	FELT/LOWER	RJM508593-001V01	1	1	1	1		X	
	29	10317116	FELT/DAMPER/KEYBOARD	RJM509138-001V01	1	1	1	1		X	
	30	10205015	FELT/UPPER	M440342-001V02	1	1	1	1		X	
	31	10284332	BRACKET/for stand	M440866-001V02	2	2	2	2		X	
	32	69271080	BATTERY SPRING/(+)	M440112-1	1	1	1	1		X	
	33	10274835	BATTERY SPRING/(-)	M440002-001V02	1	1	1	1		X	
	34	69271060	BATTERY SPRING-470A	M440676-1	2	2	2	2		X	
	35	69271070	BATTERY SPRING-470B	M440677-1	3	3	3	3		X	
	36	69226920	RUBBER FOOT	M41361-6	4	4	4	4		X	
	37	10243428	COVER ASSY/BATTERY	TK-M340884*020	1	1	1	1		X	
N	38	10329837	LOWER COVER-A	RJM508655-001V03	1	1	1	1		X	
N	39	10329838	LOWER COVER-B	RJM508656-001V03	1	1	1	1		X	
N	40	10329839	LOWER COVER-C	RJM508657-001V03	1	1	1	1		X	
Accessories											
N	-	10366857	M-STAND-M820	RJM510426-001V01	1	1	1	1		C	

SCHEMATIC DIAGRAMS

Main PCB : M820-MDA1

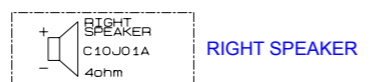


(to PSA1/CN206)

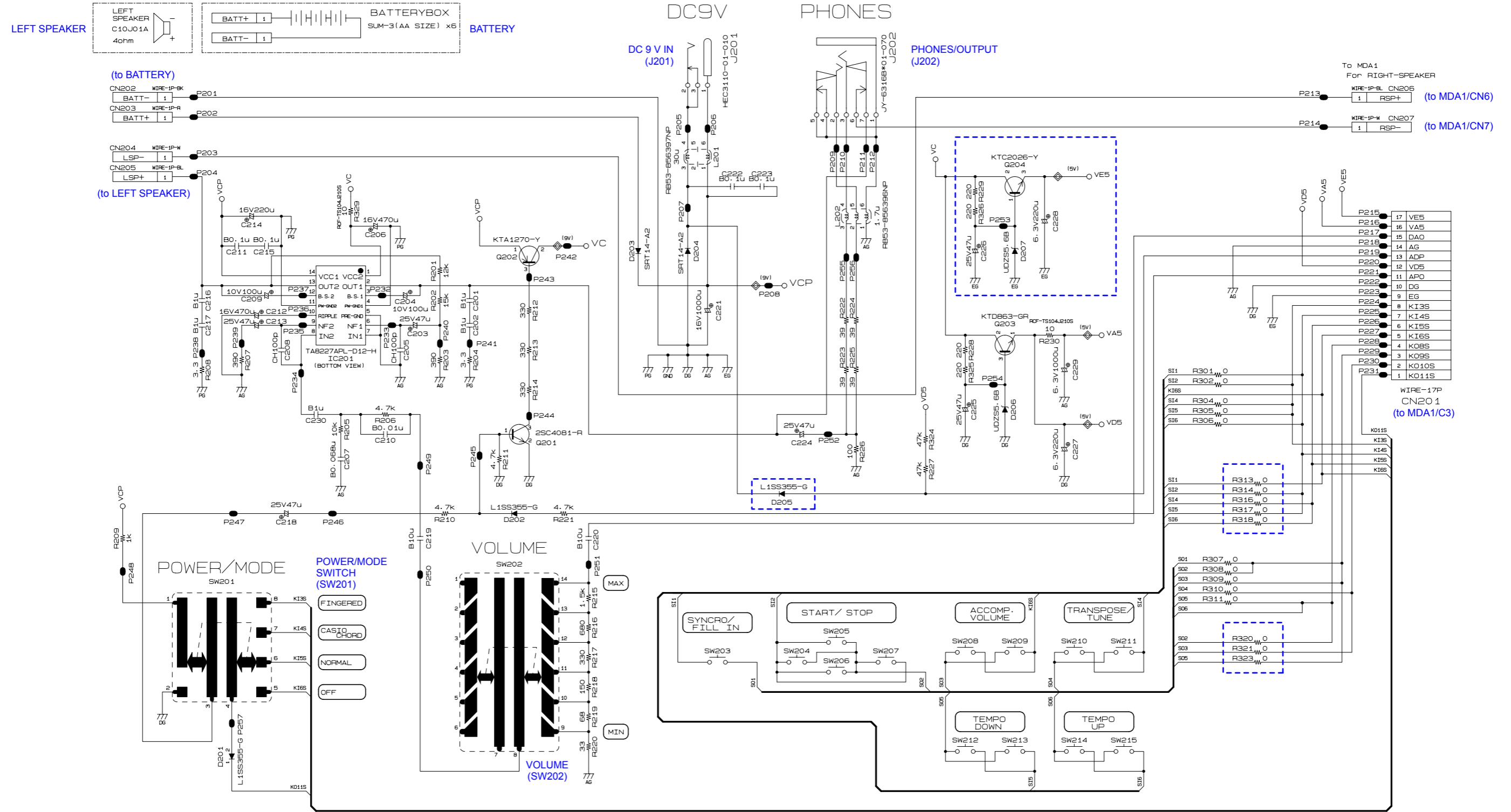
CN6 WIRE-1P-BL	1	RSP+
CN7 WIRE-1P-W	1	RSP-

(to RIGHT SPEAKER)

WIRE-1P-BL	CN8	RSP+
WIRE-1P-W	CN9	RSP-



Sub PCB: M820-PSA1

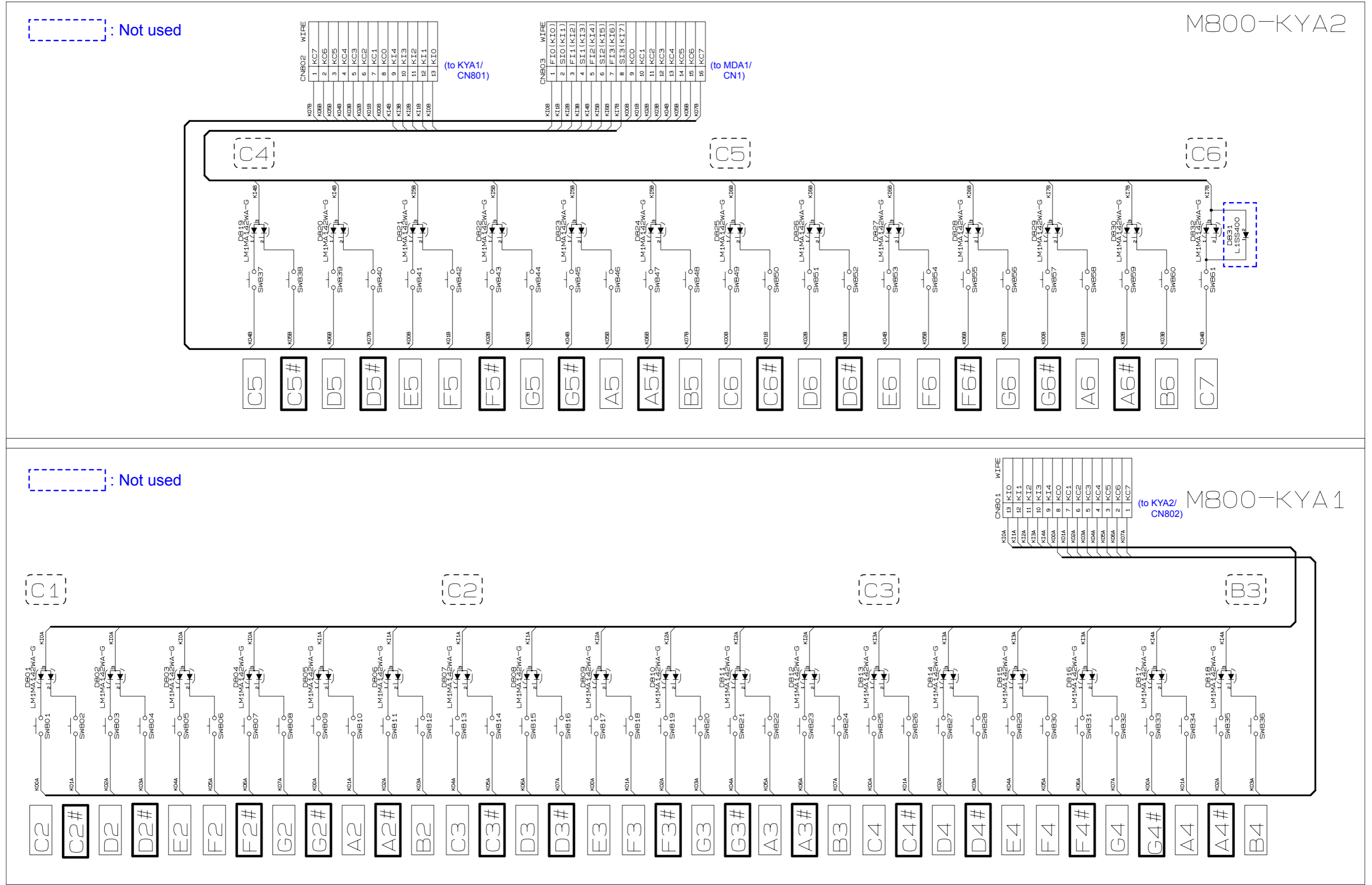


JUMPER RESISTOR MCR18E2PJ000

O _W R401	O _W R411	O _W R421	O _W R431	O _W R441
O _W R402	O _W R412	O _W R422	O _W R432	O _W R442
O _W R403	O _W R413	O _W R423	O _W R433	O _W R443
O _W R406	O _W R415	O _W R424	O _W R434	O _W R445
O _W R408	O _W R416	O _W R425	O _W R435	O _W R447
O _W R409	O _W R417	O _W R426	O _W R436	O _W R448
O _W R410	O _W R418	O _W R427	O _W R437	O _W R449
	O _W R419	O _W R428	O _W R438	O _W R450
	O _W R420	O _W R429	O _W R439	O _W R451

 : Not used

Keyboard PCB: M800-KYA1/KYA2



Ver. 1 : Nov. 2010

- Correction of the CIRCUIT DESCRIPTION (P4)

Ver. 2 : Jan. 2012

- Correction of the EXPLODED VIEW (P22)
- Correction of the PARTS LIST (P24 and P25)

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