

CASIO®

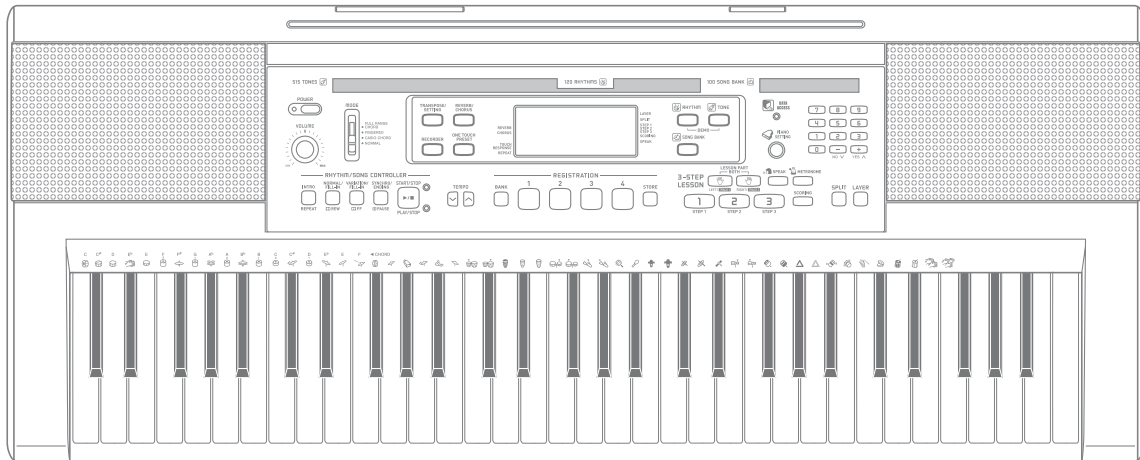
SERVICE MANUAL

& PARTS LIST

(without price)

CTK-810

APR. 2007



CTK-810

ELECTRONIC KEYBOARD

CONTENTS

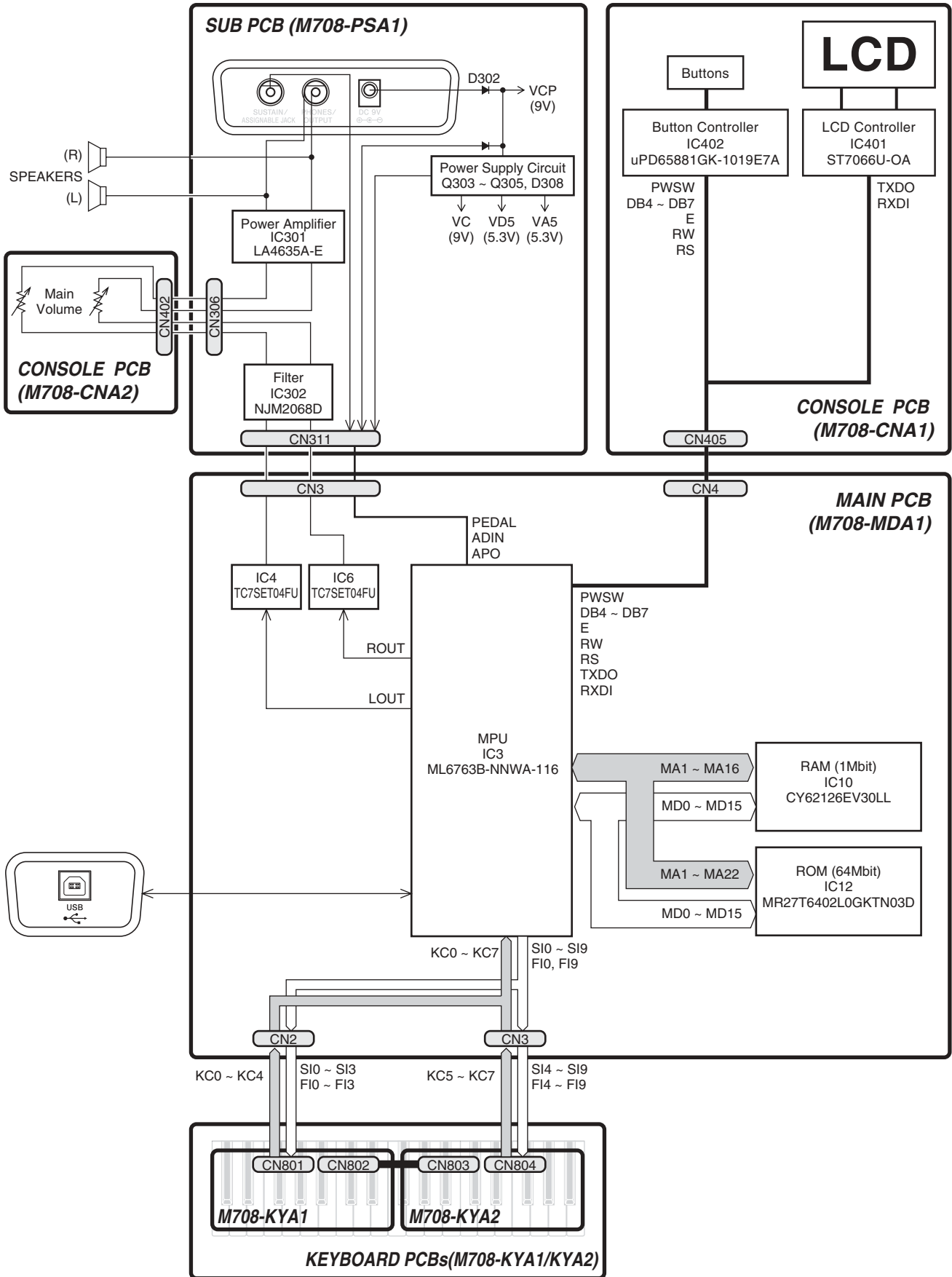
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SPECIFICATIONS

GENERAL

Keyboard:	61 standard-size keys
Tones:	515; with layer and split
Polyphony:	32 notes maximum (16 for certain tones)
Auto Accompaniment:	Rhythm Patterns : 120 Tempo : Variable (226 steps, ♩ = 30 to 255) Chords : 3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD) Rhythm Controller : START/STOP, INTRO, NORMAL/NORMAL FILL-IN, VARIATION/VARIATION FILL-IN, SYNCHRO/ENDING Accomp Volume : 0 to 127 (128 steps) One Touch Presets : Recalls settings for tone, tempo, layer, and split.
3-step Lesson:	3 lessons (Step 1, 2, 3) Playback : Repeat play of a single tune Evaluation Mode : Scoring Voice Fingering Guide : On/Off
Song Bank	Number of Tunes : Song Bank : 100 Download songs : Up to 5 (Capacity: Approximately 70 KB *) *Calculated based on 1 KB = 1024 bytes. Controllers : PLAY/STOP, PAUSE, FF, REW, REPEAT, LEFT/RIGHT
Musical Information Function :	Tone, Auto Accompaniment, Song Bank, numbers and names; staff notation, tempo, metronome, measure and beat number, step lesson display, chord name, fingering, pedal operation, Keyboard, Voice Fingering Guide, Evaluation Mode, Recorder indicator
Metronome:	On/Off Beat Specification : 0, 2 to 6
Registration Memory:	Number of Setups : 32 (4 setups x 8 banks)
Recorder	Number of Songs : Two (1 Lesson Recording, 1 Performance Recording) Recorded Data : Lesson Recording : Right-hand part, left-hand part, both-hand parts Performance Recording: Track 1 (chord accompaniment), Track 2 (melody) Recording Method : Real-time Memory Capacity : Approximately 12,000 notes (total for two songs)
Other Functions	Transpose : 25 steps (-12 semitones to +12 semitones) Tuning : 101 steps (A4 = approximately 440Hz ±50Cents)
Terminals	USB port : TYPE B Sustain/Assignable Jack : Standard jack (sustain, sostenuto, soft, rhythm start/stop) Headphone/Output Terminal : Stereo standard jack Output Impedance : 150Ω Output Voltage : 4.5V (RMS) MAX
Power Jack:	9V DC
Power Supply:	2-way Batteries : 6 AA-size batteries Battery Life : Approximately 2.5 hours continuous operation on alkaline batteries AC Adaptor : AD-5 Auto Power Off : Turns power off approximately 6 minutes after last key operation. Enabled under batter power only, can be disabled manually.
Speaker Output:	2.5W + 2.5W
Power Consumption:	9V --- 7.7W
Dimensions:	94.5 × 37.3 × 13.1 cm (37 1/4 × 14 11/16 × 5 1/8 inch)
Weight:	Approximately 4.8 kg (10.6 lbs)(without batteries)

BLOCK DIAGRAM

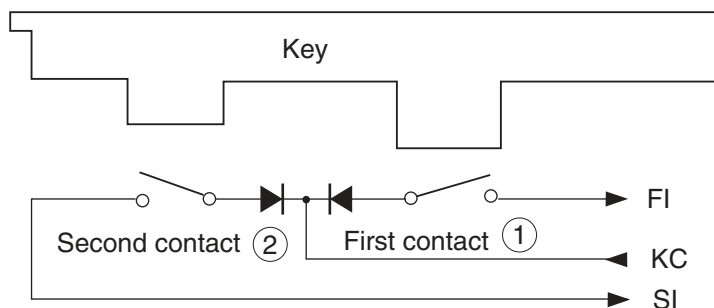


CIRCUIT DESCRIPTION

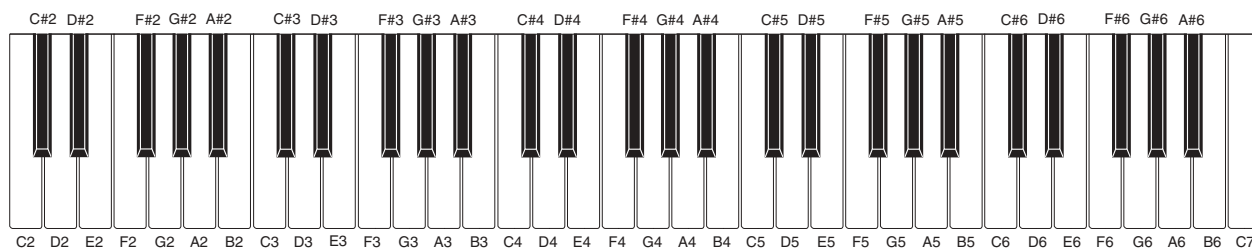
KEY MATRIX

	KC0	KC1	KC2	KC3	KC4	KC5	KC6	KC7
F10	C2①	C#2①	D2①	D#2①	E2①	F2①	F#2①	G2①
SI0	C2②	C#2②	D2②	D#2②	E2②	F2②	F#2②	G2②
F11	G#2①	A2①	A#2①	B2①	C3①	C#3①	D3①	D#3①
SI1	G#2②	A2②	A#2②	B2②	C3②	C#3②	D3②	D#3②
F12	E3①	F3①	F#3①	G3①	G#3①	A3①	A#3①	B3①
SI2	E3②	F3②	F#3②	G3②	G#3②	A3②	A#3②	B3②
F13	C4①	C#4①	D4①	D#4①	E4①	F4①	F#4①	G4①
SI3	C4②	C#4②	D4②	D#4②	E4②	F4②	F#4②	G4②
F14	G#4①	A4①	A#4①	B4①	C5①	C#5①	D5①	D#5①
SI4	G#4②	A4②	A#4②	B4②	C5②	C#5②	D5②	D#5②
F15	E5①	F5①	F#5①	G5①	G#5①	A5①	A#5①	B5①
SI5	E5②	F5②	F#5②	G5②	G#5②	A5②	A#5②	B5②
F16	C6①	C#6①	D6①	D#6①	E6①	F6①	F#6①	G6①
SI6	C6②	C#6②	D6②	D#6②	E6②	F6②	F#6②	G6②
F17	G#6①	A6①	A#6①	B6①	C7①			
SI7	G#6②	A6②	A#6②	B6②	C7②			

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



NOMENCLATURE OF KEYS

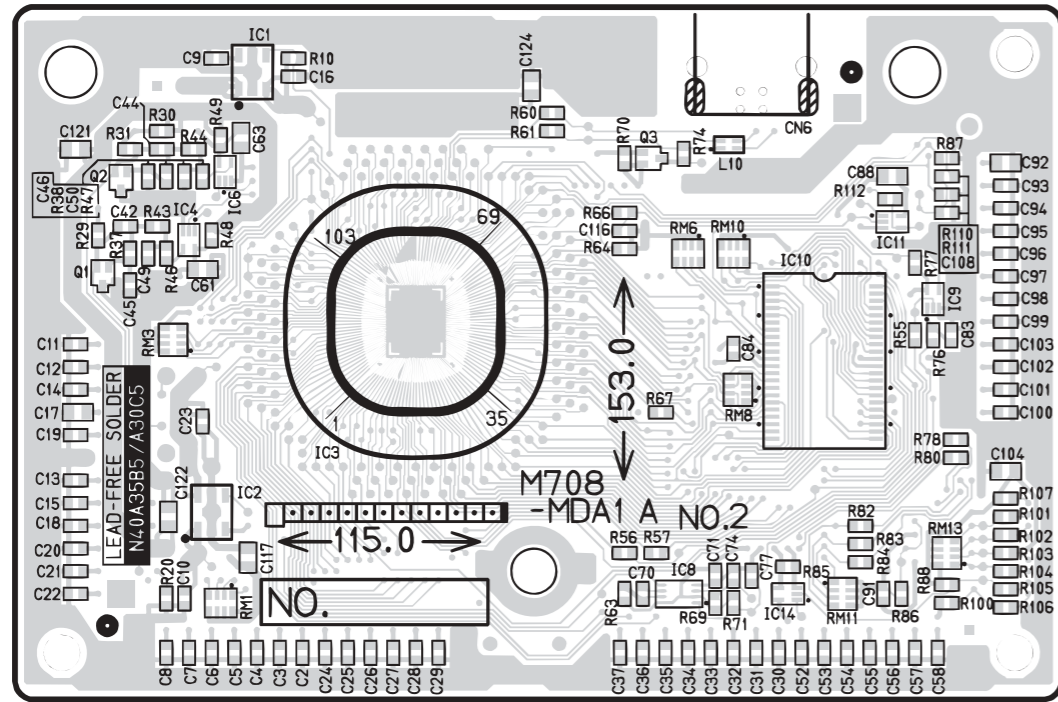


BUTTON MATRIX

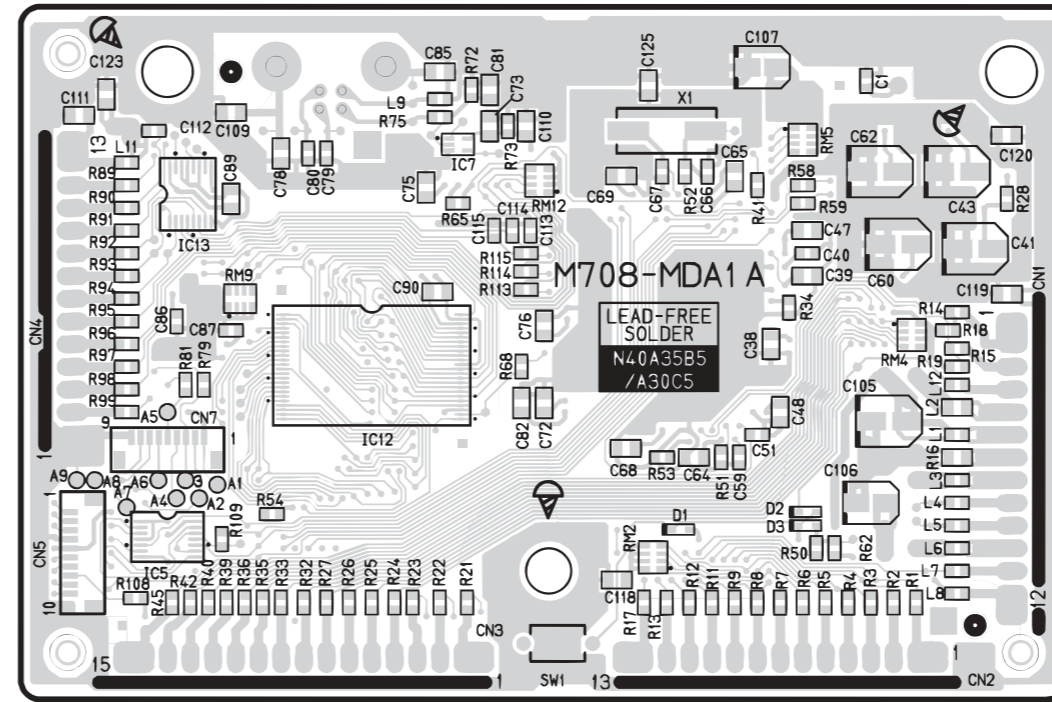
	SW00	SW01	SW02	SW03	SW04	SW05	SW06
SWI0	TRATION 4	STEP 2	3	METRONOME	LAYER	RIGHT/ TRUCK 2	SCORING
SWI1	REGISTRATION 2	Đ NO	STEP 1	SPEAK	SPLIT	TONE	LEFT/ TRUCK 1
SWI2	+ YES	2	5	0	7	9	RHYTHM
SWI3		PIANO SETTING	SONG BANK	NORMAL	CASIO CHORD	FINGARD	FULL RANGE CHORD
SWI4	4	1	6	TRANSEPOSE/ FUNCTION	RECORDER	REVERB/ CHORUS	ONE TOUCH PRESET
SWI5	REGISTRATION 1	8	BANK	TEMPO- DOWN	START/STOP PLAY/STOP	VARIATION/ FILL-IN /FF	INTRO/ REPEAT
SWI6	STORE	REGISTRATION 3	TEMPO-UP	STEP 3	SYNCRO/ ENDING /PAU	NORMAL/ FILL-IN /REW	

PRINTED CIRCUIT BOARDS

Main PCB M708-MDA1

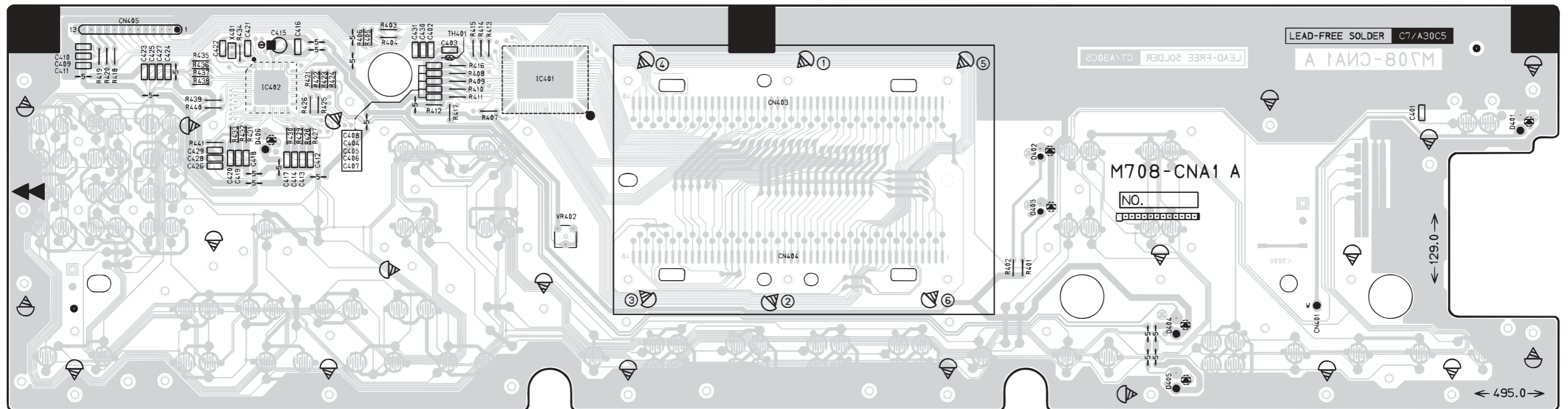


Top View

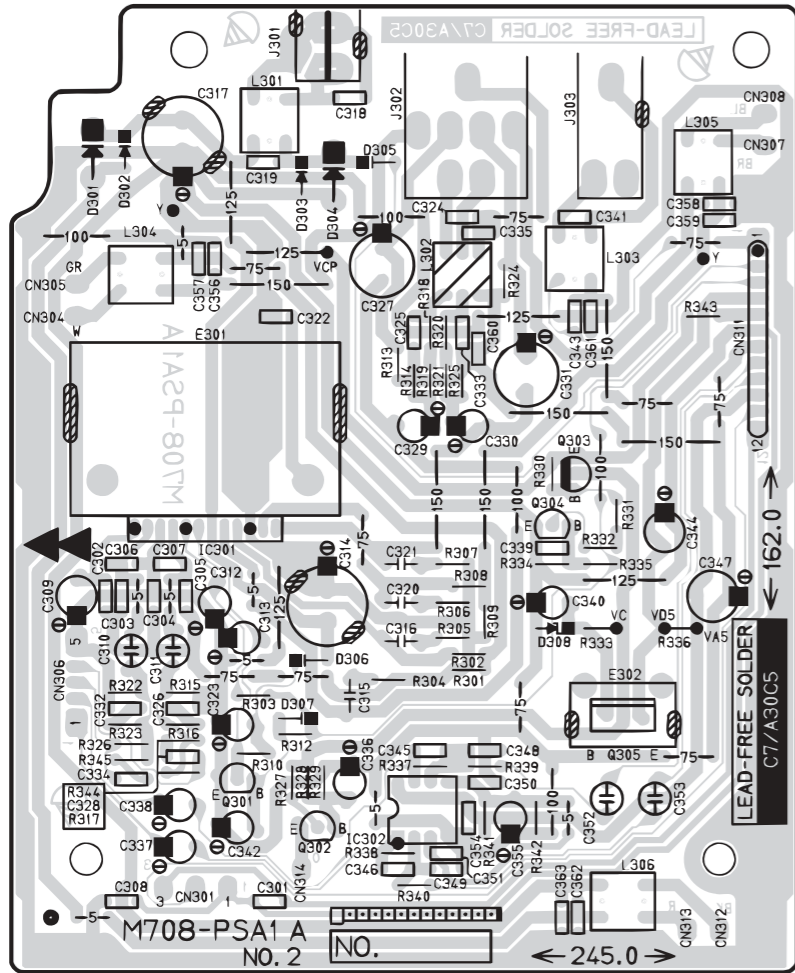


Bottom View

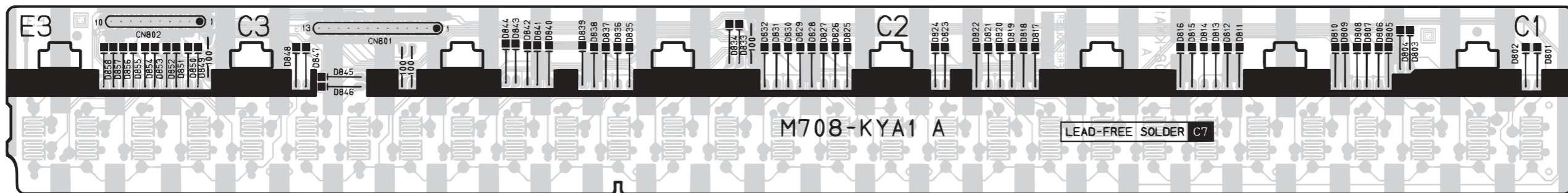
Console PCB M708-CNA1



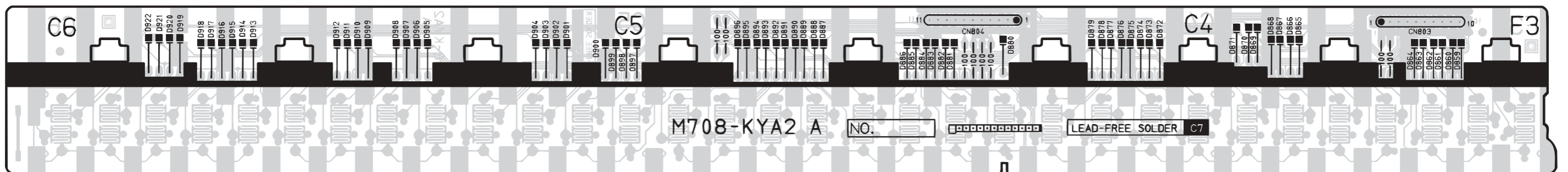
Sub PCB M708-PSA1



Keyboard PCB M708-KYA1

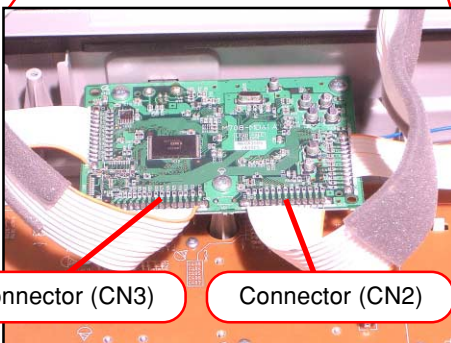
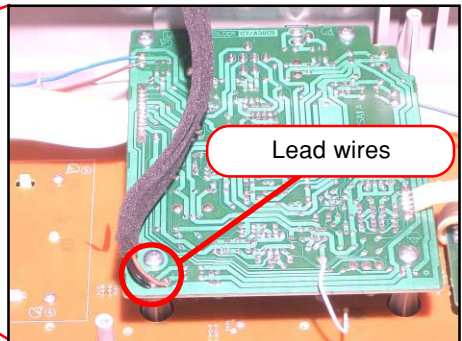
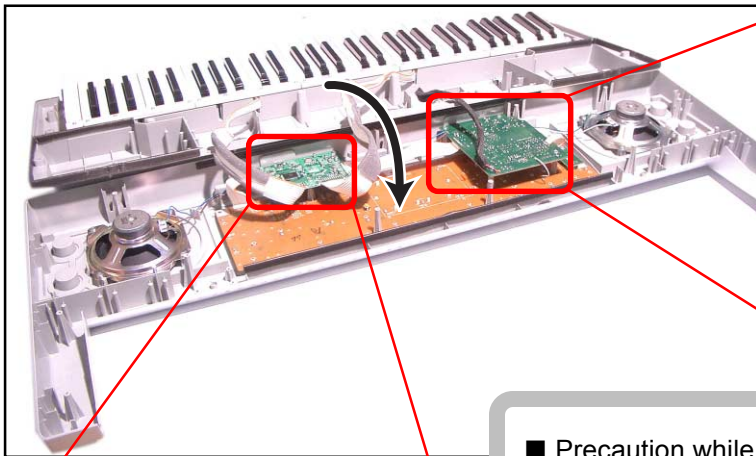
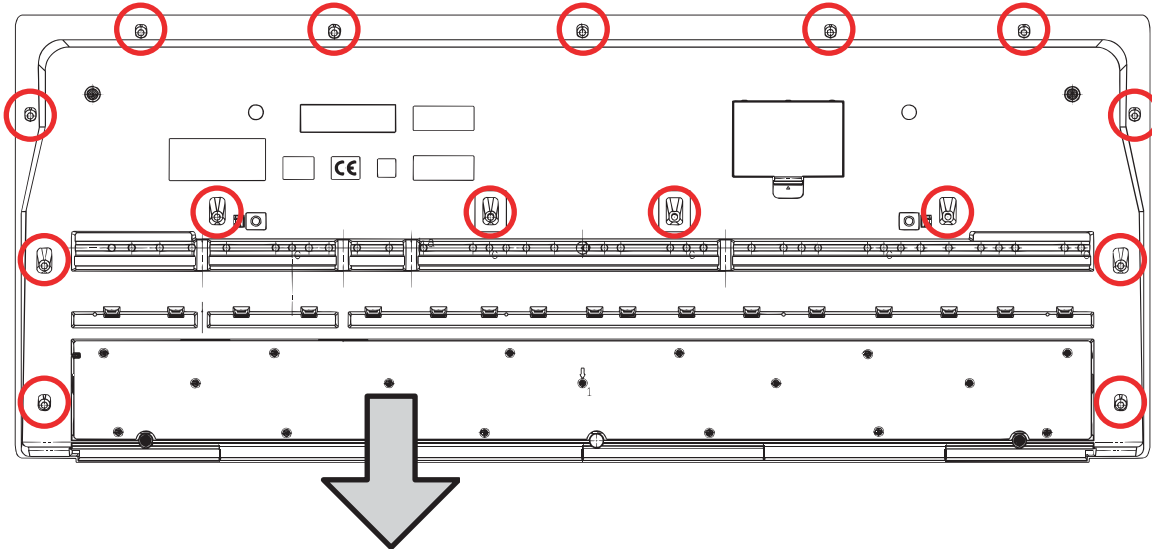


Keyboard PCB M708-KYA1

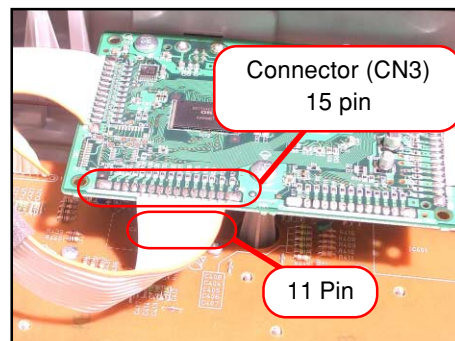


DISASSEMBLY

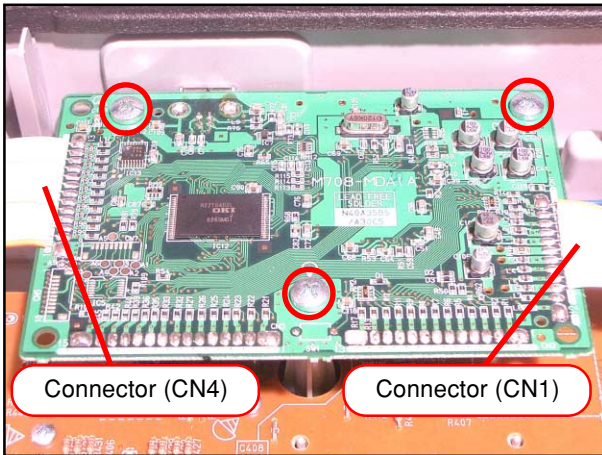
1. Remove the battery cover and then battery.
2. Remove 15 screws and then upper case.
3. Remove two lead wires by soldering.
4. Remove two connectors by soldering.
5. Make the keyboard unit and the main unit apart.



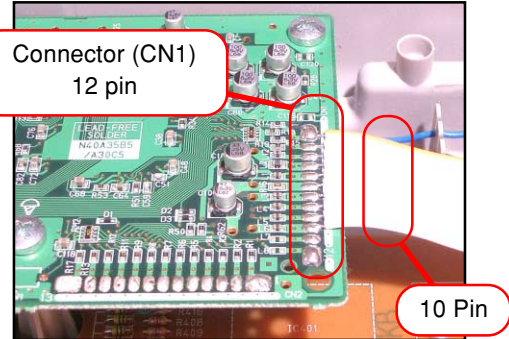
- Precaution while assembling the main Connector 3.
Number of pins on the PCB and pins on the cable are different.
Start connecting from the NO.1 pin whose color is orange.



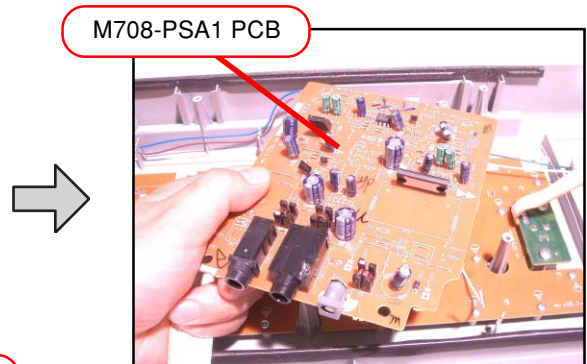
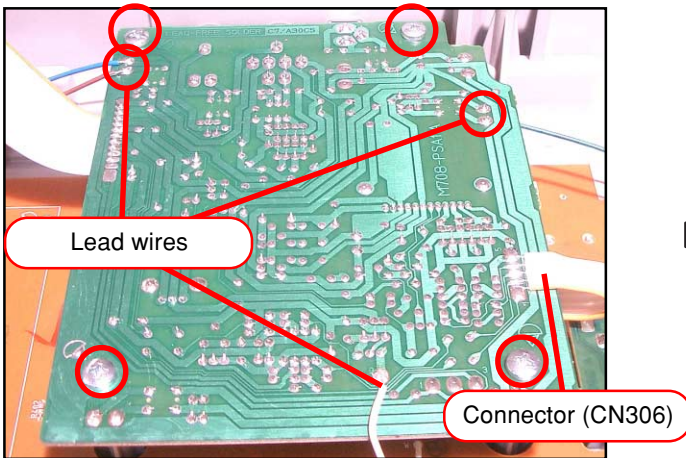
- To remove the main PCB (M708-MDA1).
- 6. Remove three screws on the PCB (M708-MDA1).
- 7. Remove two connectors by soldering.
- 8. Remove the PCB (M708-MDA1).



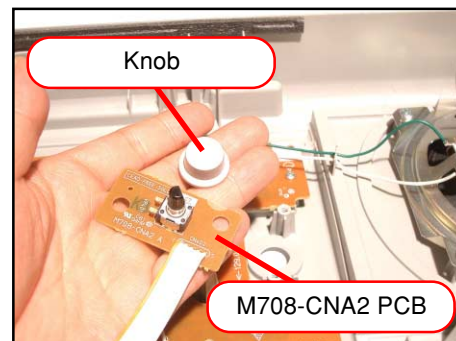
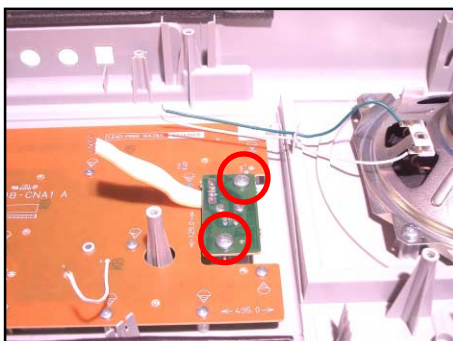
- Precaution while assembling the main Connector 1. Number of pins on the PCB and pins on the cable are different. Start connecting from the NO.1 pin whose color is orange.



- To remove the sub PCB (M708-PSA1).
- 9. Remove four screws on the PCB (M708-PSA1).
- 10. Remove the connectors by soldering.
- 11. Remove five lead wires by soldering.
- 12. Remove the PCB (M708-PSA1).



- To remove the console PCBs (M708-CNA1, CNA2).
- 13. Remove the volume knob.
- 14. Remove two screws on the PCB (M708-CNA2).



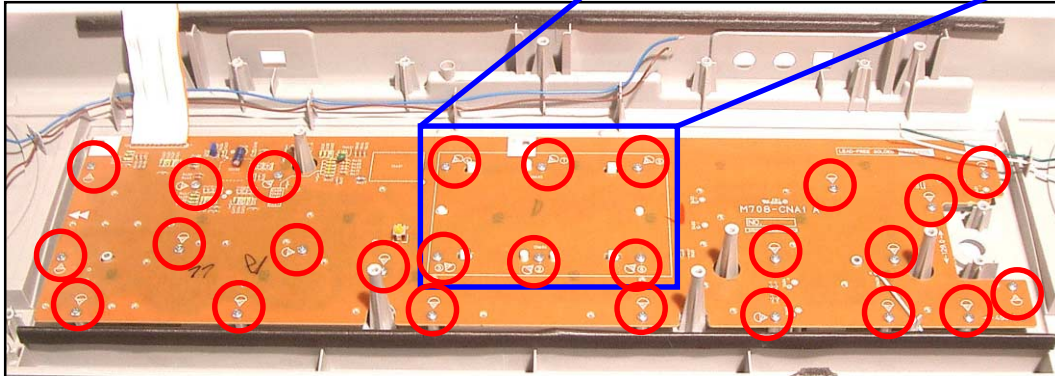
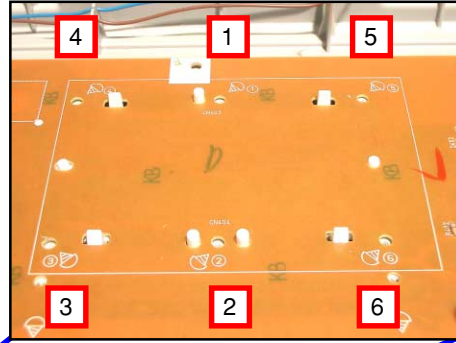
15. Remove 37 screws and then the PCB (M708-CNA1).

Caution while assembling:

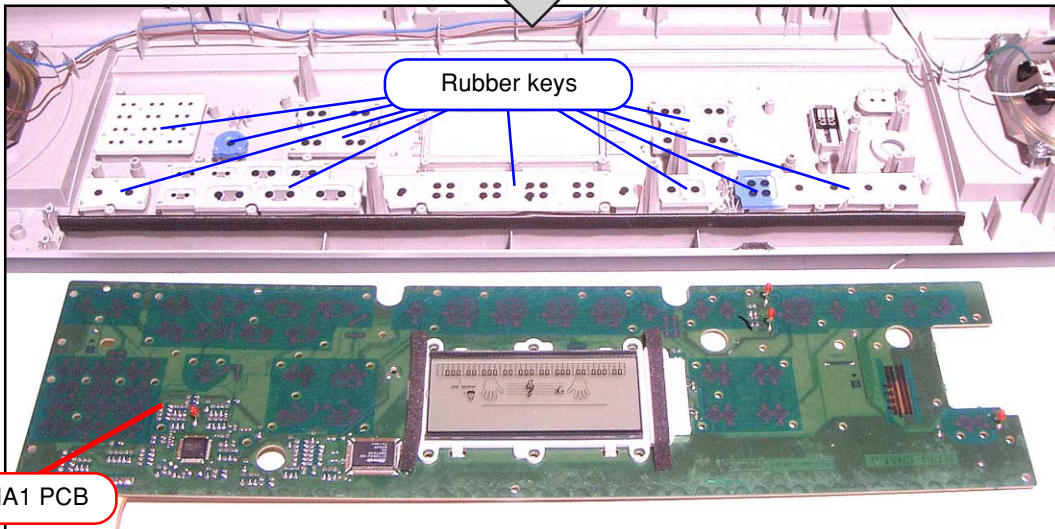
6 screws fixing the LCD unit must be screwed on in a designated order.

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.

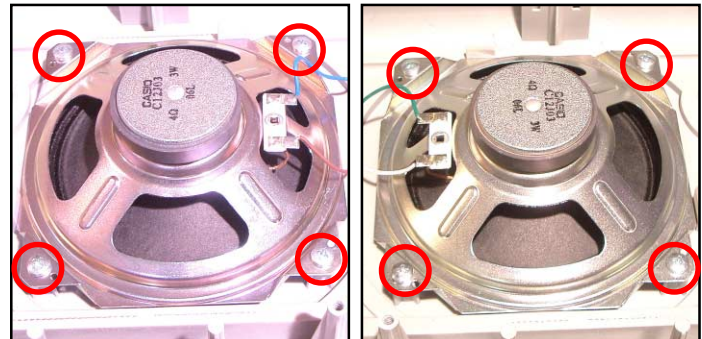


16. Remove the rubber keys.

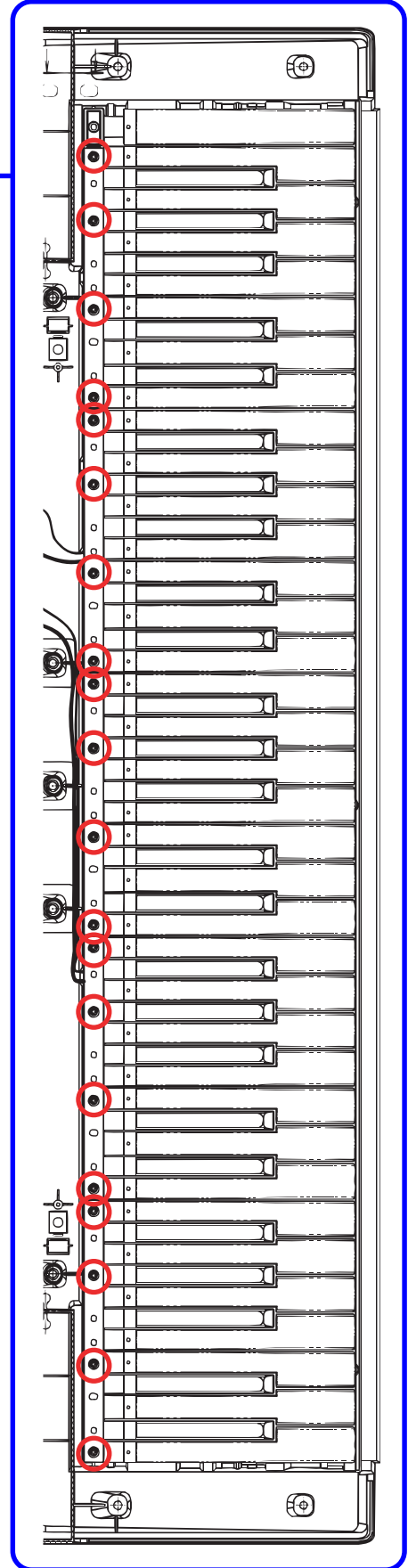
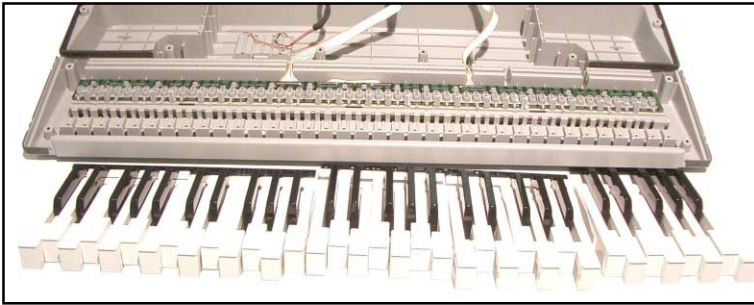


■ To remove the speakers.

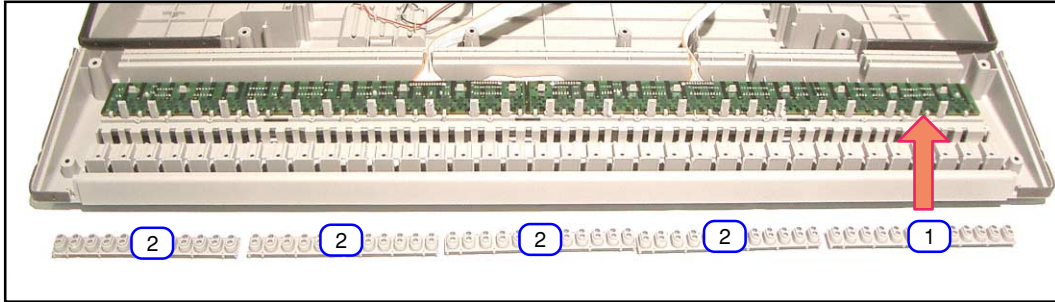
17. Remove 8 screws and then two speakers.



- To remove the key PCBs (M709-KYA1, KYA2)
 18. Remove 21 screws and then the white keys.
 19. Remove the black keys.

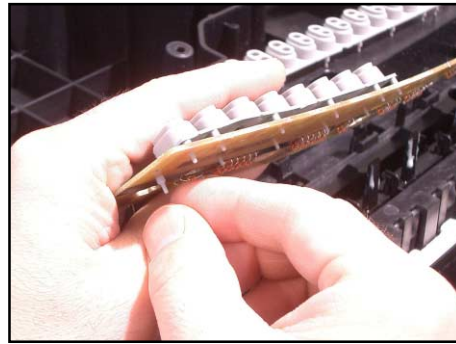


20. Remove the rubber keys.

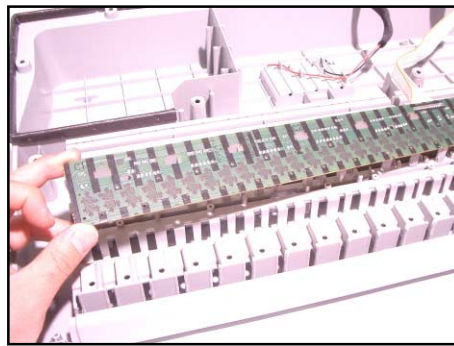
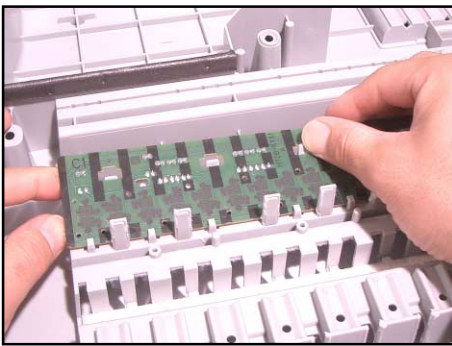
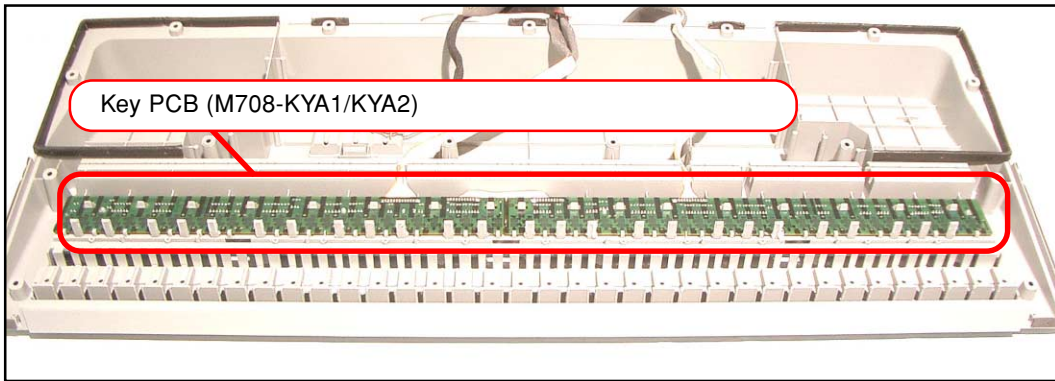


Caution while assembling:
There are two types of rubber keys and they are different in length.
The longest rubber key (1) must be installed at the right end.

How to install the rubber keys.



21. Remove the hooks and then Key PCB.



DIAGNOSTIC PROGRAM

■ Initial Setting

1. Connect the AC adaptor.
2. Connect a Sustain pedal.
NOTE: If there is no Sustain pedal, Sustain pedal check can be skipped.
3. Connect to a PC through USB. (A USB driver must be installed on the PC.)
4. "MODE" switch: NORMAL
5. "Main" volume: MAX

■ How to start diagnostic program

1. While pressing down "+", "=", and "4" buttons at the same time, turn the power ON.
2. The message "TST" is displayed on LCD.
3. Release "+", "=", and "4" buttons.

■ Diagnostic program

Message on LCD

1. Button check

- ① Press "0" button.
* Wait for confirmation sound.
- ② Slide switches or press buttons in the order from No.01 to No.2D.
NOTE: The button numbers are written in hexadecimal numerals.
- ③ Press the "LAYER" button the last.
* Wait for confirmation sound.
* The Button number appears on the LCD.
* A buzzer sounds if buttons are pressed in a wrong order, and "CER" appears on LCD.

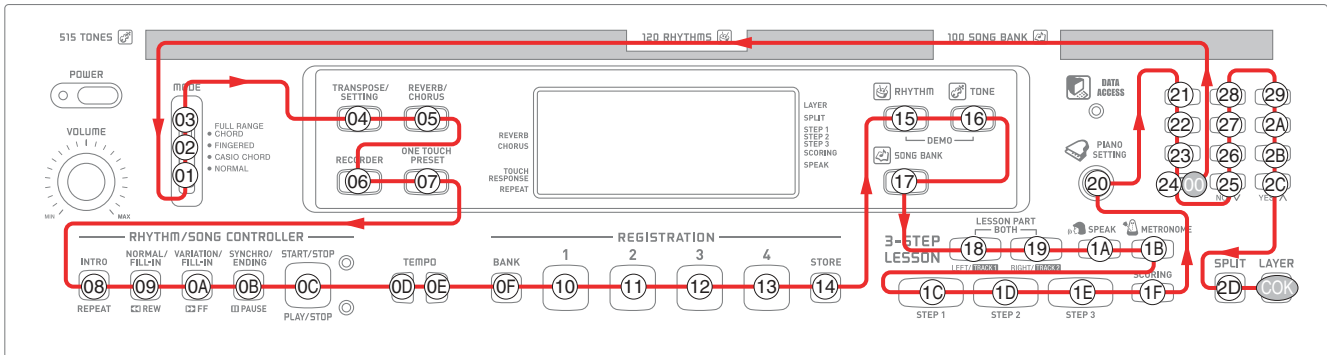
00

BUTTON NO.

COK

BUTTON NO.

NOTE: This check cannot be aborted in mid-course.



2. AC adaptor check

- ① Press "=" button.

JOK

3. Pedal check

- ① Press "1" button.
- ② "Sustain pedal": ON
- ③ "Sustain pedal": OFF

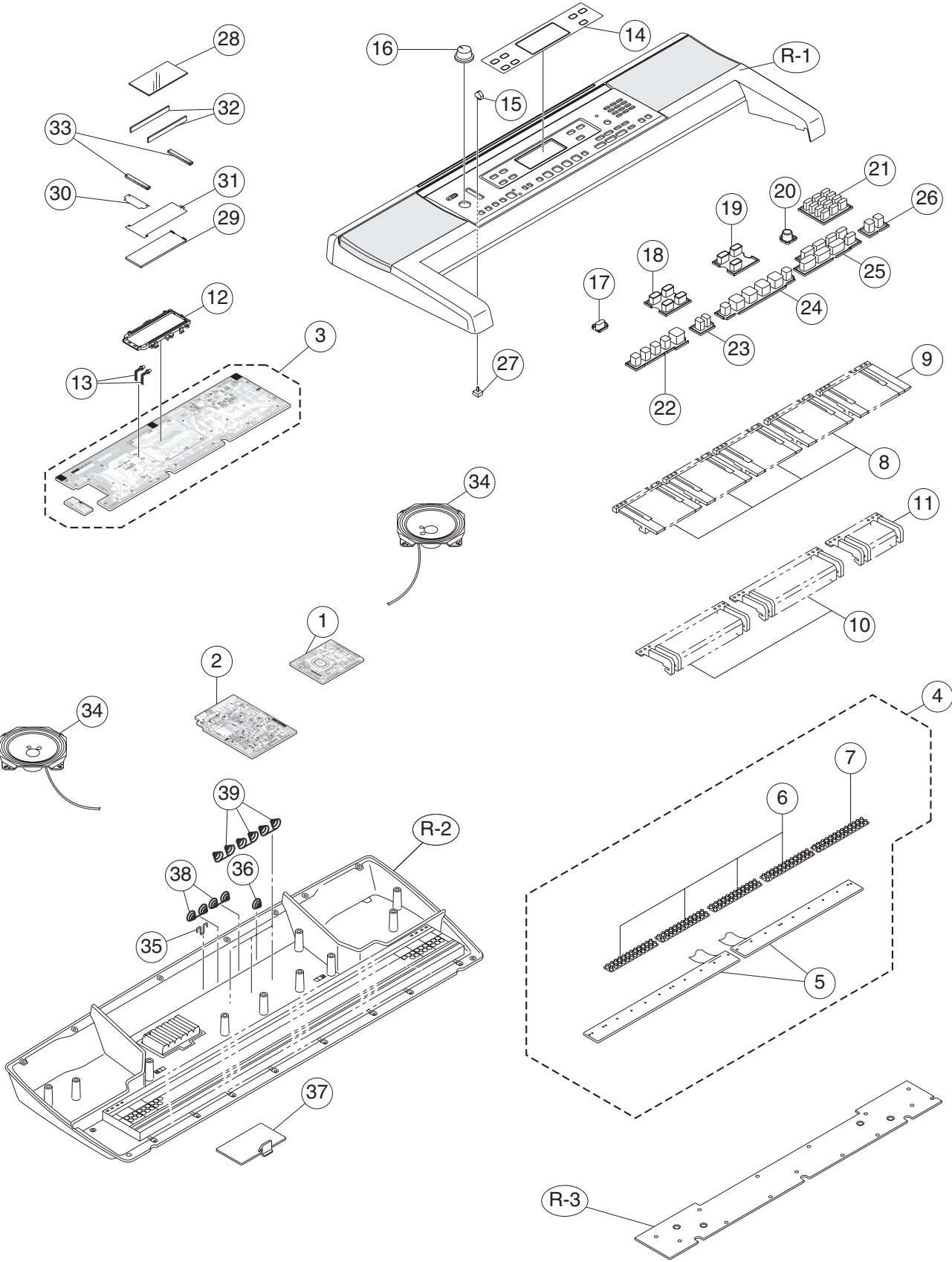
TCH

SUS

	Message on LCD
4. ROM check	
① Press “2” button.	OOK
5. Version check	
① Press “3” button.	708
② Press “3” button.	190
③ Press “3” button.	180
6. RAM check	
① Press “+” button.	AOK
7. Sound check	
① Press the “7” button.	L
* When standing in the center, the tester hears the maximum test sound from the left speaker.	
② Press the “8” button.	R
* When standing in the center, the tester hears the maximum test sound from the right speaker.	
8. LCD check	
① Press the “STEP1” button.	
* All character of LCD turns on.	
* There is no lack of the dot and the character.	
9. Console LED check	
① Press the “SPEAK” button.	
* Keyboard LED must light in the undermentioned order.	
1) DATA ACCESS	
2) Song controller indicator	
3) Rhythm controller indicator	
10.USB check	
① Press the “RHYTHM” button.	ACT USB
11.APO check	
① Press the “TEMPO↓” button.	
* Go out from TEST mode (Power off).	
* The LCD turns off.	

DIAGNOSTIC PROGRAM IS FINISHED.

EXPLODED VIEW



PARTS LIST

CTK-810

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.

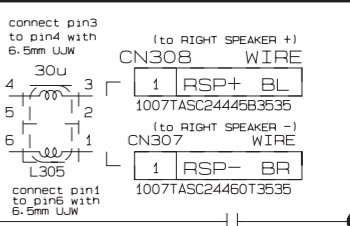
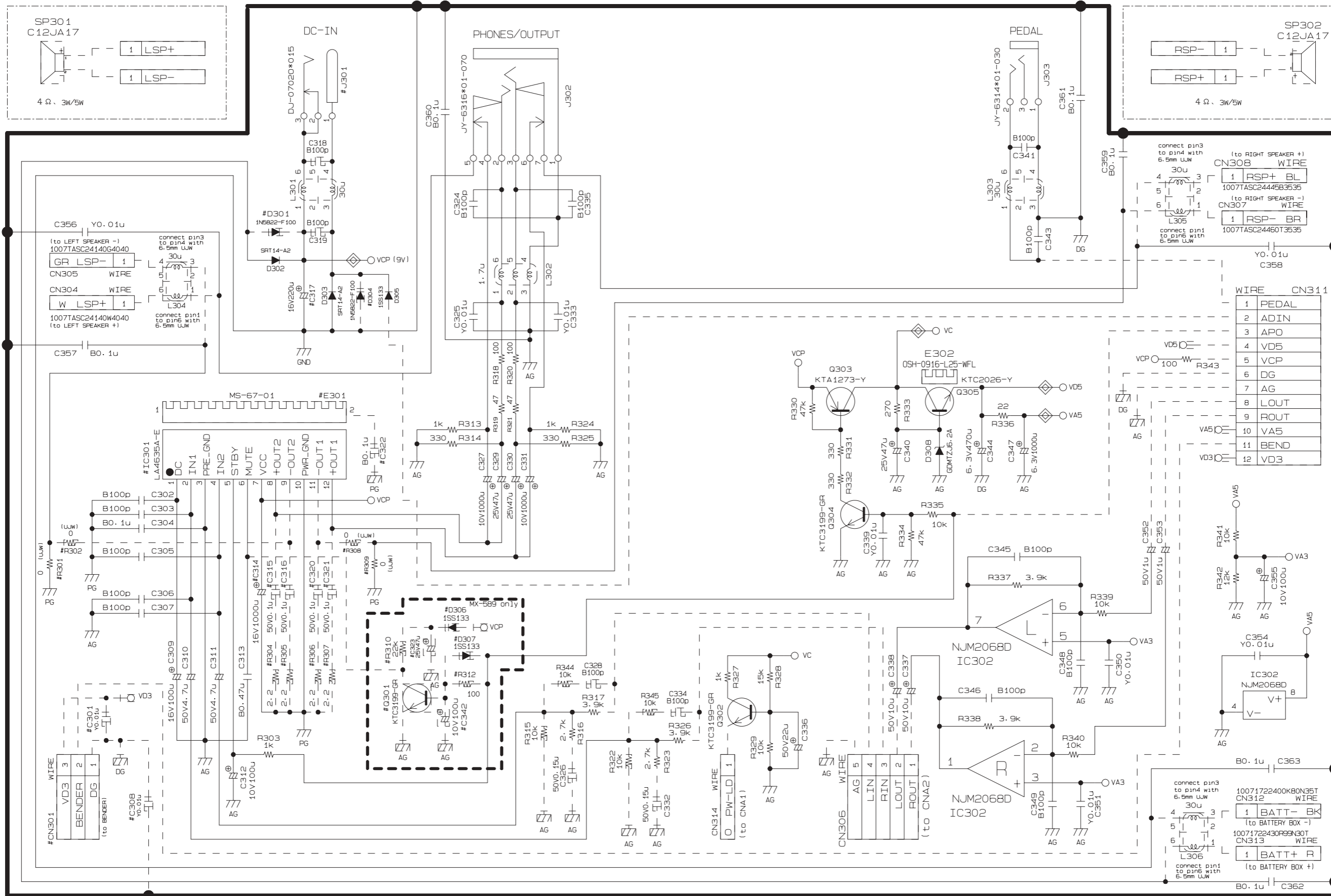
- 1 CTK-810_DI
- 2 CTK-810_EU
- 3 CTK-810_UK
- 4 CTK-810_US

N	Item	Parts No.	Parts Name	Specification	Q'TY				Price Code	R	Remarks
					1	2	3	4			
Main PCB											
N	1	10271791	PCB ASSY/MAIN	TK-RJM507852*001	1	1	1	1	CX	A	
N	IC1	10269340	IC	XC6403FY51PR	1	1	1	1	AE	C	
N	IC2	10269339	IC	XC6216B332PR	1	1	1	1	AF	C	
	IC13	10123002	IC	TC74VHC174FT(EL)	1	1	1	1	AD	C	
	IC7	10197555	IC	TC7SZ14FU(TE85L.F)	1	1	1	1	AE	C	
	IC8	10197809	IC	TC7WH123FU(TE12L.F)	1	1	1	1	AE	C	
N	IC10	10261872	LSI	CY62126EV30LL45ZST	1	1	1	1	AS	C	
N	IC12	10269429	LSI	MR27T6402LOGKTN03D	1	1	1	1	BF	C	
	D1-3	10009218	DIODE	1SS400TE61	3	3	3	3	AA	C	
	IC4,IC6	10216444	IC	TC7SET04FU(TE85L.F)	2	2	2	2	AD	C	
	IC11	10179619	IC	TC7SZ04FU(TE85L.F)	1	1	1	1	AA	C	
	IC9	10197554	IC	TC7SZ126FU(TE85L.F)	1	1	1	1	AE	C	
N	L10	10193074	COIL	DLW21HN181SQ2L	1	1	1	1	AC	C	
N	L1,3,4,5,6,9,11,12	10238668	CHIP BEAD CORE	EBMS160808A102	8	8	8	8	AA	C	
N	L2	10238669	FERRITE BEAD	EBMS201209A102	1	1	1	1	AA	C	
	Q3	10153685	FET	2SJ346(TE85L.F)	1	1	1	1	AA	C	
	Q1,Q2	10202670	TRANSISTOR	KTA2014-GR-RTK/P	2	2	2	2	AA	C	
N	CN6	10236622	CONNECTOR	USB-4FBR30NB2	1	1	1	1	AC	C	
Sub PCB											
N	2	10271790	PCB ASSY/PSA1	TK-RJM507856*001	1	1	1	1	BQ	B	
	IC301	10206337	IC	LA4635A-E	1	1	1	1	AN	C	
	IC302	10206677	IC	NJM2068D-D	1	1	1	1	AH	C	
	J301	10209462	JACK	DJ-0702O*015	1	1	1	1	AA	C	
	J303	10206815	CONNECTOR	JY-6314*01-030	1	1	1	1	AA	C	
	J302	10213695	JACK	JY-6316*01-070	1	1	1	1	AC	C	
	L302	10206672	COIL	R2318-RB53856396NP	1	1	1	1	AA	C	
	L301,303	10206680	COIL	R2318-RB53856397NP	2	2	2	2	AA	C	
	Q305	10206676	TRANSISTOR	KTC2026-Y-U/P	1	1	1	1	AB	C	
Console PCBs											
N	3	10271794	PCB ASSY/CNA	TK-RJM507863*001	1	1	1	1	CA	C	
	D401	10206836	LED	1154HD-B5/5.5-90	1	1	1	1	AA	C	
	D406	10116453	LED	1154HD-B5/6.5-90	1	1	1	1	AB	C	
	D404,405	10123009	LED	1154HD-B5/8-90	2	2	2	2	AA	C	
N	IC401	10222381	LSI	ST7066U-0A-QG	1	1	1	1	AU	C	
	IC402	10159709	LSI	UPD65881GK-1019ETA	1	1	1	1	AT	C	
N	TH401	10236621	THERMISTOR	TTC05103KIY	1	1	1	1	AA	X	
	VR402	69304870	SEMI FIXED VOL	EVND8AA03B53	1	1	1	1	AA	X	
	VR401	10123103	VARIABLE RESISTOR	RK09K12C0D1B	1	1	1	1	AH	C	
N	X401	10093909	CERAMIC OSCILLATOR	CSBLA1M00J58-B0	1	1	1	1	AC	C	
Keyboard PCBs											
N	4	10271796	PCB UNIT/RUBBER	TK-RJM507659*001	1	1	1	1	BU	C	
N	5	10271797	PCB ASSY/KEY	TK-RJM507866*001	1	1	1	1	BK	C	
	D801-D922	23153132	DIODE	1SS133T-77	122	122	122	122	AA	X	

- 1 CTK-810_DI
- 2 CTK-810_EU
- 3 CTK-810_UK
- 4 CTK-810_US

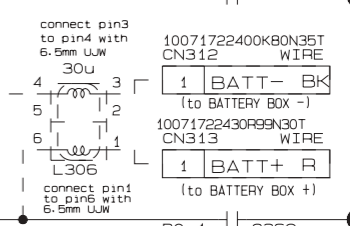
N	Item	Parts No.	Parts Name	Specification	Q'TY				Price Code	R	Remarks
					1	2	3	4			
Keyboard Unit											
N	6	10269451	RUBBER/CONTACT/CB	RJM507656-001V01	4	4	4	4	AF	B	
N	7	10270393	RUBBER/CONTACT/CS	RJM507657-001V01	1	1	1	1	AH	B	
	8	10249864	WHITE KEY/CB	TK-RJM507243*001	4	4	4	4	AQ	C	
	9	10249865	WHITE KEY/CS	TK-RJM507244*001	1	1	1	1	AT	C	
N	10	10274032	BLACK KEY/10P	RJM506595-001V02	2	2	2	2	AL	C	
	11	10247548	BLACK KEY5P	RJM506595-002V01	1	1	1	1	AE	C	
Case Unit											
N	12	10269447	REFRECTOR	RJM507738-001V01	1	1	1	1	AD	C	
	13	10116376	LED	SLR343BBT3F	2	2	2	2	AJ	C	
N	14	10270495	PLATE/DISPLAY	RJM507717-001V01	1	1	1	1	AJ	C	
N	15	10270392	KNOB/SLIDE	RJM503803-006V01	1	1	1	1	AA	C	
N	16	10270487	KNOB/ROTARY	RJM502503-019V02	1	1	1	1	AA	C	
N	17	10270398	RUBBER KEY/A	RJM507682-001V01	1	1	1	1	AA	C	
N	18	10270399	RUBBER KEY/B	RJM507683-001V01	1	1	1	1	AC	C	
N	19	10270400	RUBBER KEY/B	RJM507683-002V01	1	1	1	1	AC	C	
N	20	10270401	RUBBER KEY/C	RJM507684-001V01	1	1	1	1	AA	C	
N	21	10270402	RUBBER KEY/D	RJM507685-001V01	1	1	1	1	AE	C	
N	22	10270403	RUBBER KEY/E	RJM507686-001V01	1	1	1	1	AE	C	
N	23	10270404	RUBBER KEY/F	RJM507687-001V01	1	1	1	1	AA	C	
N	24	10270405	RUBBER KEY/G	RJM507688-001V01	1	1	1	1	AG	C	
N	25	10270406	RUBBER KEY/H	RJM507697-001V01	1	1	1	1	AG	C	
N	26	10270407	RUBBER KEY/J	RJM507698-001V01	1	1	1	1	AA	C	
	27	69270510	SWITCH/SLIDE KNOB	CSB-08D	1	1	1	1	AD	C	
N	28	10272002	LCD	TR6800N	1	1	1	1	AY	C	
N	29	10199879	PLATE/BL	RJM505456-001V01	1	1	1	1	AH	C	
N	30	10199881	TOP PIECE	RJM505457-001V01	1	1	1	1	AA	C	
N	31	10199880	FILM	RJM505454-001V01	1	1	1	1	AA	C	
N	32	10206683	CONNECTOR	RJM506034-001V01	2	2	2	2	AE	C	
	33	10037738	SPONGE	M441167-1	2	2	2	2	AA	C	
N	34	10272063	SPEAKER	C12J03	2	2	2	2	AP	C	
	35	69271080	TERMINAL/BATTERY(+)	M440112-1	1	1	1	1	AB	C	
	36	10008078	TERMINAL/BATTERY(-)	M440002A-1	1	1	1	1	AA	C	
N	37	10271789	COVER ASSY/BATTERY	TK-M340884*024	1	1	1	1	AF	C	
	38	69271060	TERMINAL/BATTERY	M440676-1	2	2	2	2		C	
	39	69271070	TERMINAL/BATTERY	M440677-1	3	3	3	3		C	
Accessories											
N	-	10107083	STAND/MUSIC	M141071-5	1	1	1	1	AW	C	
	-	10269397	CD ROM	USB12CDROMWL1F	1	1	1	1	AG	C	
Refurbish											
N	R-1	10271792	CASE ASSY/UPPER	TK-RJM507637*001	1	1	1	1	CI	C	
N	R-2	10271795	CASE ASSY/MIDDLE	TK-RJM507833*001	1	1	1	1	CI	C	
N	R-3	10270498	PLATE/LOWER	RJM507740-001V01	1	1	1	1	AQ	C	

Sub PCB M708-PSA1

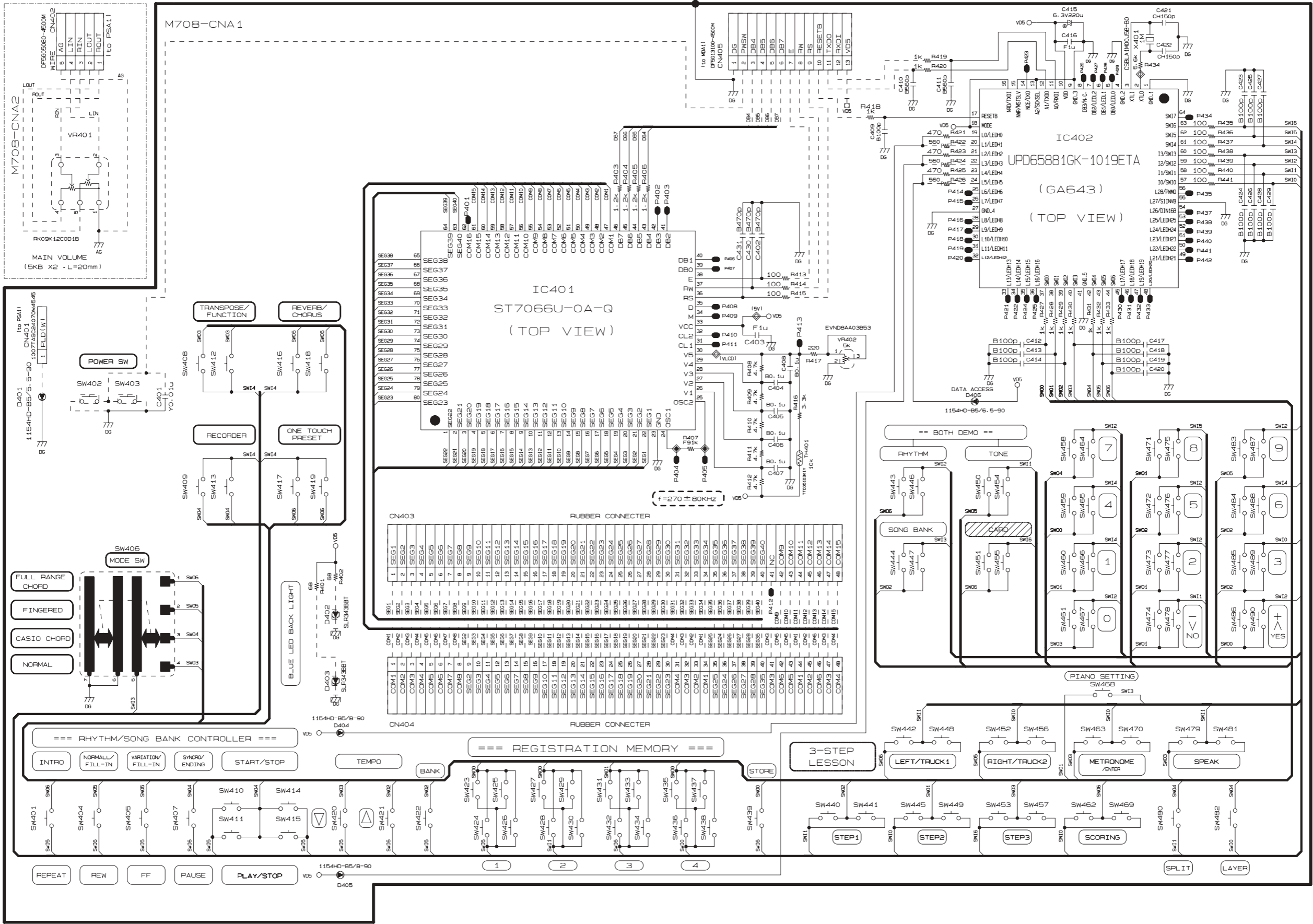


WIRE CN311

1	PEDAL
2	ADIN
3	AP0
4	VD5
5	VCP
6	DG
7	AG
8	LOUT
9	ROUT
10	VA5
11	BEND
12	VD3

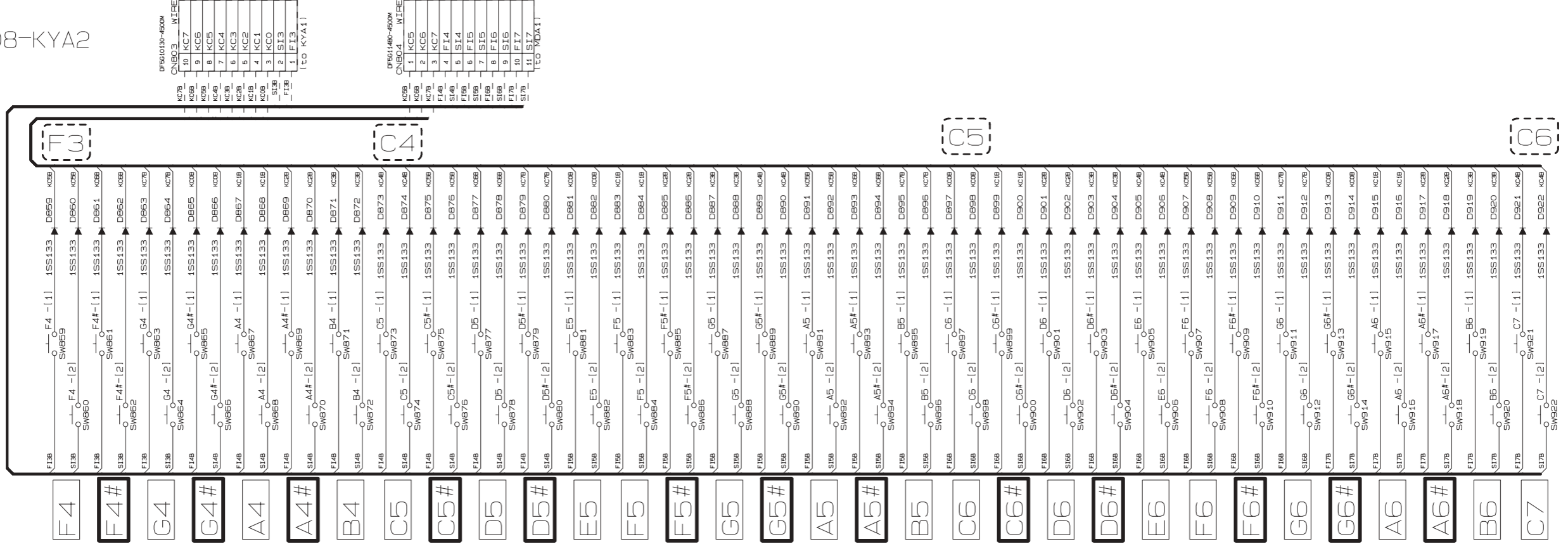


Console PCBs M708-CNA1, CNA2

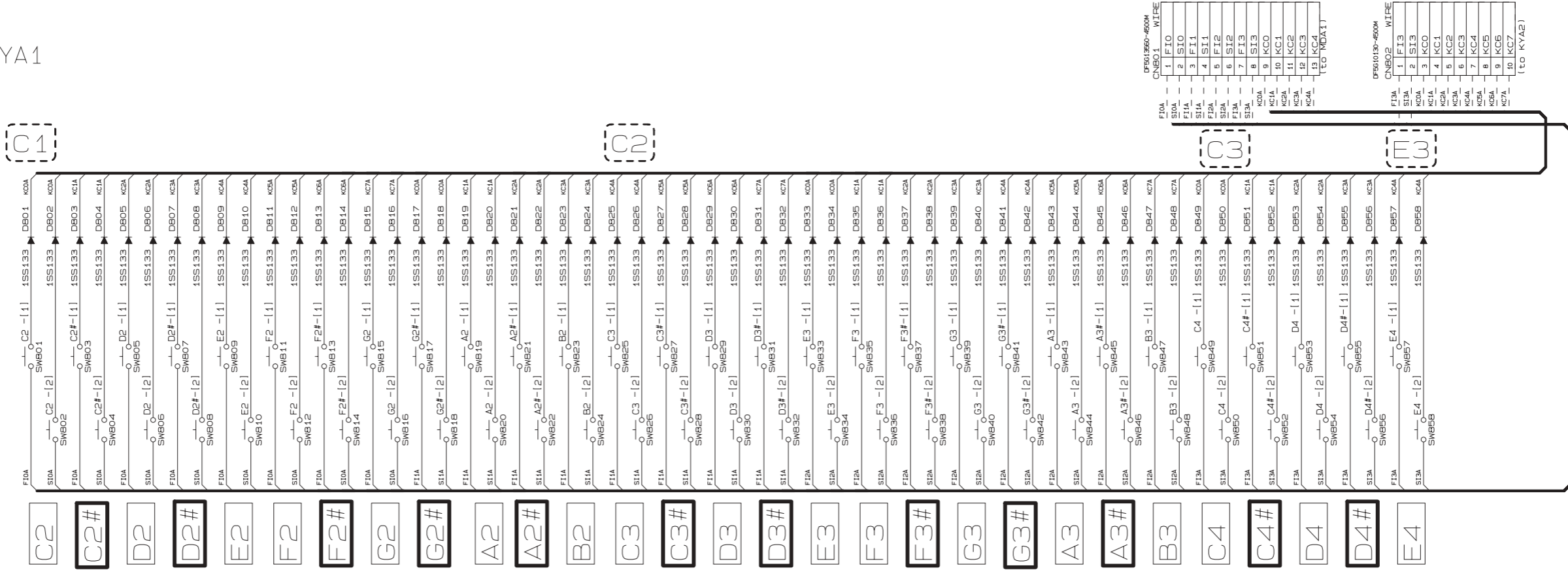


Keyboard PCBs M708-KYA1, KYA2

M708-KYA2



M708-KYA1



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