

FR-8X

V-Accordion

SERVICE NOTES

Second edition

Issued by RES

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Revise Information

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CAUTIONARY NOTES

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

About Disassembly Operations

- When disassembling the unit, a table or stand for temporary placement of the unit may become necessary. To ensure safe operations, we recommend providing a table or stand assured of supporting 55 kg or more, and space measuring at least 1.5 m wide.
- To prevent accidents, when performing disassembly of the unit, be sure to first switch off the power to the unit and unplug the power cord.

Part Replacement

When replacing components near the power-supply circuit or a heat-generating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

Parts List

A component whose part code is ***** cannot be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).

Circuit Diagram

In the circuit diagram, "NIU" is an abbreviation for "NOT IN USE." The circuit board and circuit-board diagram show silkscreened indications, but no components are mounted.

FR-8X Series

FR-8X BLACK	230V	074081A32
	100V	074081A19
	117V	074081A28
	230VE	074081A49
	240VA	074081A59
	117V-US	074081A22
	220V	074081A63
	117V BL	074081A26

FR-8X RED	230V	074082A32
	100V	074082A19
	117V	074082A28
	230VE	074082A49
	240VA	074082A59
	117V-US	074082A22
	220V	074082A63
	117V BL	074082A26

FR-8XD BLACK	230V	074083A32
	100V	074083A19
	117V	074083A28
	230VE	074083A49
	240VA	074083A59
	117V-US	074083A22
	220V	074083A63
	117V BL	074083A26

SPECIFICATIONS


DISPLAY TYPE	
Display	320 x 240 pixels, color graphic LCD 2,4" (backlit)
KEYBOARD	
Right Hand	Piano Type: 41 keys piano type with velocity sensitive and aftertouch
Left hand	120 bass buttons velocity sensitive. Standard Mode: Standard, Free Bass, Orch. Bass, Orch. Chord, Orch. Free Bass
Free Bass Mode	2 Bs Rows, 3 Bs Rows A-7th, 3 Bs Rows A-5dim, 3 Bs Rows B-7th, 3 Bs Rows B-5dim, 3 Bs Rows Bx-7th, 3 Bs Rows Belgium
BELLOWS	
Type	Advanced "Dynamic Bellows Behaviour" technology to manage the behavior of bellows. The Advanced "Dynamic Bellows Behaviour" technology consider the selected register and the number of played notes
Bellows Resistance	Off, On, -63 ~ 0 ~ +64
Bellows Curve	Fixed Low, Fixed Med, Fixed High, X-Light, Light, Standard, Heavy, X-Heavy
SOUND GENERATOR	
Max. Polyphony	128 voices
Tones (Accordion Set)	100 Accordion Sets, each one including: 14 Right Hand Registers, 7 Bass/Chord registers, 7 Free Bass registers, 7 Orchestra Free Bass registers, 7 Orchestra Bass registers, 7 Orchestra Chord registers, 180 Orchestral sounds (28 real time + others selectable by MENU), 18 Drum Sets
Reed Footages	7 Treble, 5 Bass, 3 Chord, 2 Free Bass
Wave Expansion	4 internal areas (8Mb each) to load new sounds
ORCHESTRAL SOUNDS	
Right Hand Tones	180: 28 real time (14x2) the others selectable by MENU
Left Hand Chord Tones	180: 7 real time, the others selectable by MENU
Left Hand Bass Tones	
Left Hand Free Bass Tones	
ORGAN SOUNDS (Virtual Tone Wheel Technology)	
Presets	32 for Right Hand, Chord and Free Bass sections, 16 x Bass section
Harmonic Bar combinations	Up to 28 customizable, can be controlled and shaped by bellows.
Vibrato/Chorus	V-1/V-2/V-3/C-1/C-2/C-3
Percussion	2nd/3rd, Soft, Slow
Rotary Sound	Slow/Fast, Brake, Level
Tone Wheel Type	50/60/70
Amplifier Type	TYPE 1/TYPE 2/TYPE 3/TYPE 4/ TYPE 5
DRUM SOUNDS	
Drum Set	18
Drum Shift	-36 ~ 0 ~ +36
Bass&Chord with drum/percussion sounds	Programmable drum/percussion sounds for Bass/Orch Bass 2 rows, Chord/Orchestra Chord 4 rows
APBM (Advanced Physical Behaviour Modelling)	
Noises	Stopping-reed growl, Closing valve noise, Left button noise
Individual Reed Simulation	Hysteresis threshold, Expression curve, Pressure variant filter, Pressure variant pitch deviation
Switching Reed Sound Wave	By bellows acceleration. by note repetition speed
Bellows opening/closing sound change	By bellows opening/closing detection
Bellows Behavior	Dynamic Bellows Behavior technology for a perfect simulation of the bellows behavior in an acoustic accordion
MUSETTE TUNING	
Micro-Tuning Presets	16 Types: Off, Dry, Classic, F-Folk, American L/H, North Europe, German L/H, D-Folk L/H, Alpine, Italian L/H, French, Scottish
Fine Tuning reed footages 8- / 8+	-100 ~ 0 ~ +100
EFFECTS	
Reverb/Chorus/Delay	8 types, 8 types, 10 types
MFX multi effects	MFX x 4 (84 types) for: Accordion, Orchestra 1, Orchestra 2, Orch Chord/Orch Free Bass
Rotary for Organ sound	Slow/Fast with Vibrato, Chorus, Overdrive and VK-Rotary
"Cassotto" simulation	Yes
USER PROGRAMS	
User Program Lists	Unlimited number (storage on USB memory)

Performance memories per List	1400: 100 User Program Bank x 14 registers
AUDIO PLAYER and AUDIO RECORDING	
Media	USB Flash memory
Audio Recorder Save format	Audio files (WAVE 44.1 kHz, 16-bit linear), MIDI files (SMF)
Audio Loop Function	REC (with Overdub function) and Play
OTHER FUNCTION	
Accordion, Orchest1/Organ Orchest2, Drum	Zone, High, Low
Octave	-1, 0, +1 for Treble, -3, 0, +3 for Orchest1, Orchest2
Orchestra Chord Guitar Mode	Gtr Table1, Gtr Table2, Gtr Table3
Sound Edit	Orchest1, Orchest2, Orch Bass, Orch Chord, Orch Free Bass
Speakers Off	Yes
Additional switches	6 user assignable function switches on last row of bass buttons
PANEL CONTROLS	
Encoder	Data Edit with Enter
Knob controls	Volume, Balance, Reverb Chorus, Delay, Effect (assignable)
Registers	14 Right Hand registers 7 Left Hand registers
Navigation switches	Up, Down, Menu/Write, Exit/Jump
Chin switches	3 programmable chin switches
Other switches	Set Up, Set Down, Orch 1 On/Off, Orch 2 On/Off, Organ On/Off, Accordion On/Off, Orch Bass On/Off, Orch Chord/Free Bass On/Off, Free Bass On/Off, Bass&Chord On/Off, Drums On/Off, Bass to Treble On/Off, User Program On/Off, Song List On/Off, Power On/Off, Charge On/Off, Loop/Wave/MP3 player: Loop, Reset/Stop, Play/Pause, Audio Rec
CONNECTORS	
Audio OUTPUT jacks (R, L/Mono)	1/4" phone type
PHONES jack	Stereo 1/4" phone type
MIDI connectors	IN, OUT
USB ports	USB COMPUTER connector (Type B, reception and transmission of MIDI data) USB MEMORY (Type A, data storage devices)
GENERAL SPECIFICATION	
Power supply	AC adaptor (PSB-14U adaptor)
Current Draw	3750 mA
Auto Off function	Disable, 10, 15, 20 minute
Dimensions	Piano type: 415 (H) x 543 (W) x 280 (D) mm; 16-3/8 (H) x 21-7/16 (W) x 11-1/16 (D) inches
Weight	Piano type: 12,1 Kg, 26 lbs 11 oz without straps
SUPPLIED ACCESSORIES	
	Owner's Manual PSB-14U AC adaptor, Power cord (for connecting the AC adaptor) Rechargeable Ni-MH battery pack (BP-24-45) Reference caps for the bass buttons Straps Accordion Cloth Accordion soft bag
OPTIONS	
USB	USB flash memory (M-UF-series) Wireless USB Adaptor (WNA1100-RL)
Headphone	Roland RH Series
MIDI Foot Controller	FC-300

NOTE

In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

For EU Countries



This product complies with the requirements of EMC Directive 2004/108/EC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 (1) this device may not cause harmful interference, and
 (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment requires shielded interface cables in order to meet FCC class B limit.
 Any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For Canada

CAN ICES-3 (B)/NMB-3 (B)

For C.A. US (Proposition 65)

WARNING

This product contains chemicals known to cause cancer, birth defects and other reproductive harm, including lead.

For Korea

사용자 안내문

기종별	사용자 안내문
B 급 기기 (가정용 방송통신기자재)	이 기기는 가정용(B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든지역에서 사용할 수 있습니다.

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
 The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
 The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
 Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

For the USA

DECLARATION OF CONFORMITY Compliance Information Statement




Model Name : FR-8x
 Type of Equipment : Digital Accordion
 Responsible Party : Roland Corporation U.S.
 Address : 5100 S. Eastern Avenue, Los Angeles, CA 90040-2938
 Telephone : (323) 890-3700

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠ WARNING and ⚠ CAUTION Notices

⚠ WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The ⚠ symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The ⚡ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The Ⓜ symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

⚠ WARNING

To completely turn off power to the unit, pull out the plug from the outlet

Even with the power switch turned off, this unit is not completely separated from its main source of power. When the power needs to be completely turned off, turn off the power switch on the unit, then pull out the plug from the outlet. For this reason, the outlet into which you choose to connect the power cord's plug should be one that is within easy reach and readily accessible.



Do not disassemble or modify by yourself

Do not open (or modify in any way) the unit or its AC adaptor.



Do not repair or replace parts by yourself

Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.



Do not use or store in the following types of locations

- Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
- Damp (e.g., baths, washrooms, on wet floors); or are
- Exposed to steam or smoke; or are
- Subject to salt exposure; or are
- Humid; or are
- Exposed to rain; or are
- Dusty or sandy; or are
- Subject to high levels of vibration and shakiness.



⚠ WARNING

Use only the included AC adaptor and the correct voltage

Be sure to use only the AC adaptor included with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.



Do not place in an unstable location

Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.



Use only the included power cord

Use only the attached power-supply cord. Also, the included power cord must not be used with any other device.



Do not bend the power cord or place heavy objects on it

Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!



Avoid extended use at high volume

This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.



Adults must provide supervision in places where children are present

When using the unit in locations where children are present, be careful so no mishandling of the unit can take place. An adult should always be on hand to provide supervision and guidance.



⚠ WARNING

Don't allow foreign objects or liquids to enter unit; never place containers with liquid on unit

Do not place containers containing liquid (e.g., a glass of water) on this product. Never allow foreign objects (e.g., flammable objects, coins, wires) or liquids (e.g., water or juice) to enter this product. Doing so may cause short circuits, faulty operation, or other malfunctions.



Do not drop or subject to strong impact

Protect the unit from strong impact. (Do not drop it!)



Turn off the unit if an abnormality or malfunction occurs

Immediately turn the unit off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:

- The AC adaptor, the power-supply cord, or the plug has been damaged; or
- If smoke or unusual odor occurs; or
- Objects have fallen into, or liquid has been spilled onto the unit; or
- The unit has been exposed to rain (or otherwise has become wet); or
- The unit does not appear to operate normally or exhibits a marked change in performance.



Do not share an outlet with an unreasonable number of other devices

Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.



⚠ WARNING

Do not use overseas

Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.



Handle batteries carefully

The battery pack must never be heated, taken apart, or thrown into fire or water.



Never expose the battery pack to excessive heat such as sunshine, fire or the like.



Incorrect handling of battery pack, can cause leakage, overheating, fire, or explosion. Before use, you must read and strictly observe all of the precautions written in this owner's manual.



Use only the FR-8x to recharge the battery pack.



⚠ CAUTION

Place in a well ventilated location

The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.



Grasp the plug when connecting or disconnecting the AC adaptor

Always grasp only the plug on the AC adaptor cord when plugging into, or unplugging from, an outlet or this unit.



Periodically clean the AC adaptor's plug

At regular intervals, you should unplug the AC adaptor and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.



Manage cables for safety

Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.



Avoid climbing on top of the unit, or placing heavy objects on it

Never climb on top of, nor place heavy objects on the unit.



Do not connect or disconnect the AC adaptor with wet hands

Never handle the AC adaptor or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.



Disconnect everything before moving the unit

Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.



Unplug the AC adaptor from the outlet before cleaning

Before cleaning the unit, turn it off and unplug the AC adaptor from the outlet



If there is a possibility of lightning strike, disconnect the AC adaptor from the outlet

Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.



⚠ CAUTION

Handle battery pack carefully

If used improperly, battery pack may explode or leak and cause damage or injury. In the interest of safety, please read and observe the following precautions.



- Carefully follow the installation instructions for battery pack, and make sure you observe the correct polarity.



- Remove the battery pack whenever the unit is to remain unused for an extended period of time.



- Never keep battery packs together with metallic objects such as ballpoint pens, necklaces, hairpins, etc.

- Used battery pack must be disposed of in compliance with whatever regulations for their safe disposal that may be observed in the region in which you live.

Keep small items out of the reach of children

To prevent accidental ingestion of the parts listed below, always keep them out of the reach of small children.



- Reference buttons for the treble keyboard (only for FR-8X button type).

- Reference caps for the bass buttons.

Take care not to get burned

Battery pack may reach a high temperature; please be careful to avoid burning yourself.



Handle leaking battery pack carefully

If fluid has leaked from a battery pack, make sure not to touch it with your bare hands.



If any of the leaking fluid gets into your eyes, the loss of vision may result. Do not rub your eyes; use clean water to flush them thoroughly. Then, promptly see a doctor.



Burning of the skin or dermatitis may result if fluid has gotten onto your skin or clothing. Use clean water to flush affected areas thoroughly; then, promptly see a doctor.

Using a soft cloth, carefully wipe any remaining fluid from the inside of the battery compartment. Then, install new battery pack.

For EU Countries



- UK** This symbol indicates that in EU countries, this product must be collected separately from household waste, as defined in each region. Products bearing this symbol must not be discarded together with household waste.
- DE** Dieses Symbol bedeutet, dass dieses Produkt in EU-Ländern getrennt vom Hausmüll gesammelt werden muss gemäß den regionalen Bestimmungen. Mit diesem Symbol gekennzeichnete Produkte dürfen nicht zusammen mit dem Hausmüll entsorgt werden.
- FR** Ce symbole indique que dans les pays de l'Union européenne, ce produit doit être collecté séparément des ordures ménagères selon les directives en vigueur dans chacun de ces pays. Les produits portant ce symbole ne doivent pas être mis au rebut avec les ordures ménagères.
- IT** Questo simbolo indica che nei paesi della Comunità europea questo prodotto deve essere smaltito separatamente dai normali rifiuti domestici, secondo la legislazione in vigore in ciascun paese. I prodotti che riportano questo simbolo non devono essere smaltiti insieme ai rifiuti domestici. Ai sensi dell'art. 13 del D.Lgs. 25 luglio 2005 n. 151.
- ES** Este símbolo indica que en los países de la Unión Europea este producto debe recogerse aparte de los residuos domésticos, tal como está regulado en cada zona. Los productos con este símbolo no se deben depositar con los residuos domésticos.
- PT** Este símbolo indica que nos países da UE, a recolha deste produto deverá ser feita separadamente do lixo doméstico, de acordo com os regulamentos de cada região. Os produtos que apresentem este símbolo não deverão ser eliminados juntamente com o lixo doméstico.
- NL** Dit symbool geeft aan dat in landen van de EU dit product gescheiden van huishoudelijk afval moet worden aangeboden, zoals bepaald per gemeente of regio. Producten die van dit symbool zijn voorzien, mogen niet samen met huishoudelijk afval worden verwijderd.
- DK** Dette symbol angiver, at i EU-lande skal dette produkt opsamles adskilt fra husholdningsaffald, som defineret i hver enkelt region. Produkter med dette symbol må ikke smides ud sammen med husholdningsaffald.
- NO** Dette symbolet indikerer at produktet må behandles som spesialavfall i EU-land, iht. til retningslinjer for den enkelte regionen, og ikke kastes sammen med vanlig husholdningsavfall. Produkter som er merket med dette symbolet, må ikke kastes sammen med vanlig husholdningsavfall.

- SE** Symbolen anger att i EU-länder måste den här produkten kasseras separat från hushållsavfall, i enlighet med varje regions bestämmelser. Produkter med den här symbolen får inte kasseras tillsammans med hushållsavfall.
- FI** Tämä merkintä ilmaisee, että tuote on EU-maissa kerättävä erillään kotitalousjätteistä kunkin alueen voimassa olevien määräysten mukaisesti. Tällä merkinnällä varustettuja tuotteita ei saa hävittää kotitalousjätteiden mukana.
- HU** Ez a szimbólum azt jelenti, hogy az Európai Unióban ezt a terméket a háztartási hulladéktól elkülönítve, az adott régióban érvényes szabályozás szerint kell gyűjteni. Az ezzel a szimbólummal ellátott termékeket nem szabad a háztartási hulladék közé dobni.
- PL** Symbol oznacza, że zgodnie z regulacjami w odpowiednim regionie, k produktów UE produktu nie należy wyrzucać z odpadami domowymi. Produktów opatrzonych tym symbolem nie można utylizować razem z odpadami domowymi.
- CZ** Tento symbol udává, že v zemích EU musí být tento výrobek sbírán odděleně od domácího odpadu, jak je určeno pro každý region. Výrobky nesoucí tento symbol se nesmí vyhazovat spolu s domácím odpadem.
- SK** Tento symbol vyjadruje, že v krajinách EÚ sa musí zber tohto produktu vykonávať oddelene od domového odpadu, podľa nariadení platných v konkrétnej krajine. Produkty s týmto symbolom sa nesmú vyhazovať spolu s domovým odpadom.
- EE** See sümbol näitab, et EL-i maades tuleb see toode olemprügist eraldi koguda, nii nagu on iga piirkonnas määratletud. Selle sümboliga märgitud tooteid ei tohi ära visata koos olmeprügiga.
- LT** Šis simbolis rodo, kad ES šalyse šis produktas turi būti surenkamas atskirai nuo buitinių atliekų, kaip nustatyta kiekviename regione. Šiuo simboliu paženklinėti produktai neturi būti išmetami kartu su buitiniomis atliekomis.
- LV** Šis simbols norāda, ka ES valstīs šo produktu jāievāc atsevišķi no mājsaimniecības atkritumiem, kā noteikts katrā reģionā. Produkta ar šo simbolu nedrīkst izmest kopā ar mājsaimniecības atkritumiem.
- SI** Ta simbol označuje, da je treba proizvod v državah EU zbirati ločeno od gospodinjjskih odpadkov, tako kot je določeno v vsaki regiji. Proizvoda s tem znakom ni dovoljeno odlagati skupaj z gospodinjjskimi odpadki.
- GR** Το σύμβολο αυτό υποδηλώνει ότι στις χώρες της Ε.Ε. το συγκεκριμένο προϊόν πρέπει να συλλέγεται χωριστά από τα υπόλοιπα οικιακά απορρίμματα, σύμφωνα με όσα προβλέπονται σε κάθε περιοχή. Τα προϊόντα που φέρουν το συγκεκριμένο σύμβολο δεν πρέπει να απορρίπτονται μαζί με τα οικιακά απορρίμματα.

For China

有关产品中所含有害物质的说明

本资料就本公司产品中所含的特定有害物质及其安全性予以说明。

本资料适用于 2007 年 3 月 1 日以后本公司所制造的产品。

环保使用期限



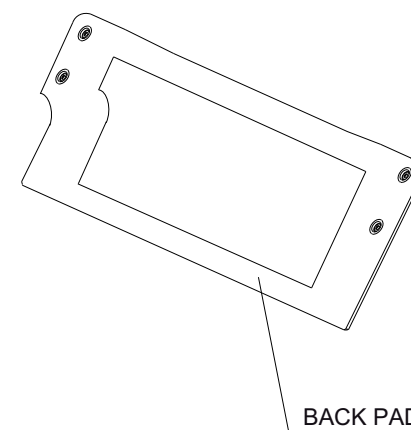
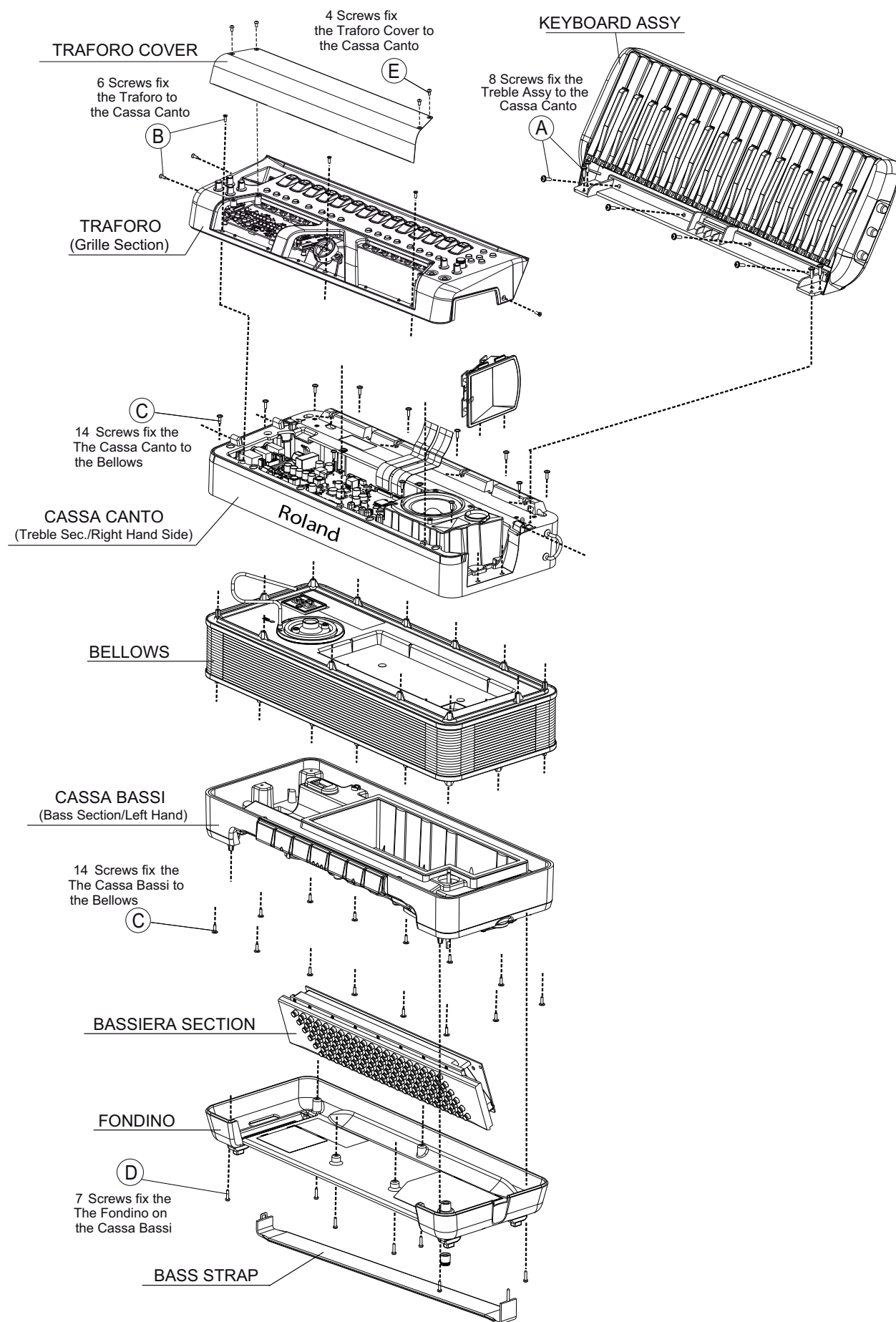
此标志适用于在中国国内销售的电子信息产品，表示环保使用期限的年数。所谓环保使用期限是指在自制造日起的规定的期限内，产品中所含的有害物质不致引起环境污染，不会对人身、财产造成严重的不良影响。环保使用期限仅在遵照产品使用说明书，正确使用产品的条件下才有效。不当的使用，将会导致有害物质泄漏的危险。

产品中有毒有害物质或元素的名称及含量

部件名称	有毒有害物质或元素					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬(Cr(VI))	多溴联苯(PBB)	多溴二苯醚(PBDE)
外壳(壳体)	×	○	○	○	○	○
电子部件(印刷电路板等)	×	○	×	○	○	○
附件(电源线、交流适配器等)	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
 ×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。
 因根据现有的技术水平，还没有什么物质能够代替它。

DISASSEMBLY FR-8X

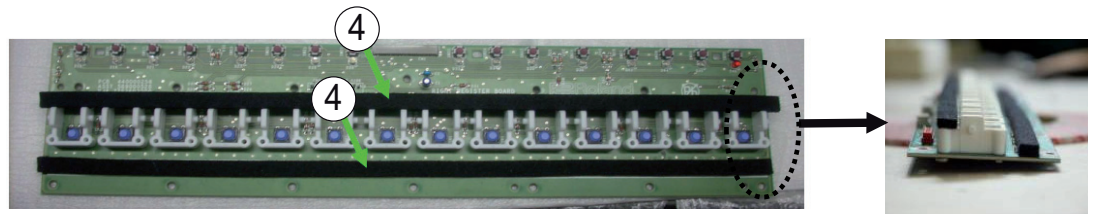
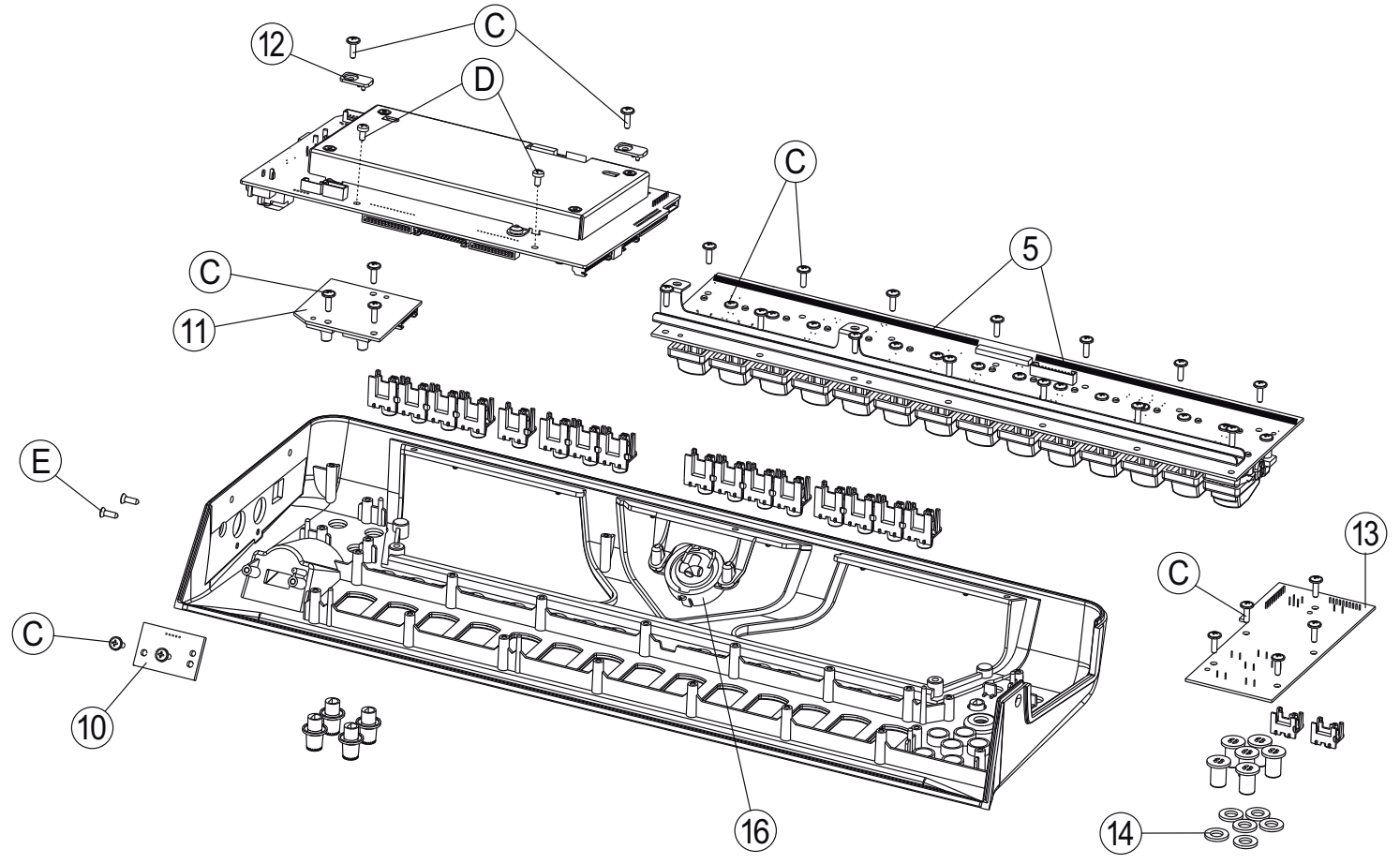
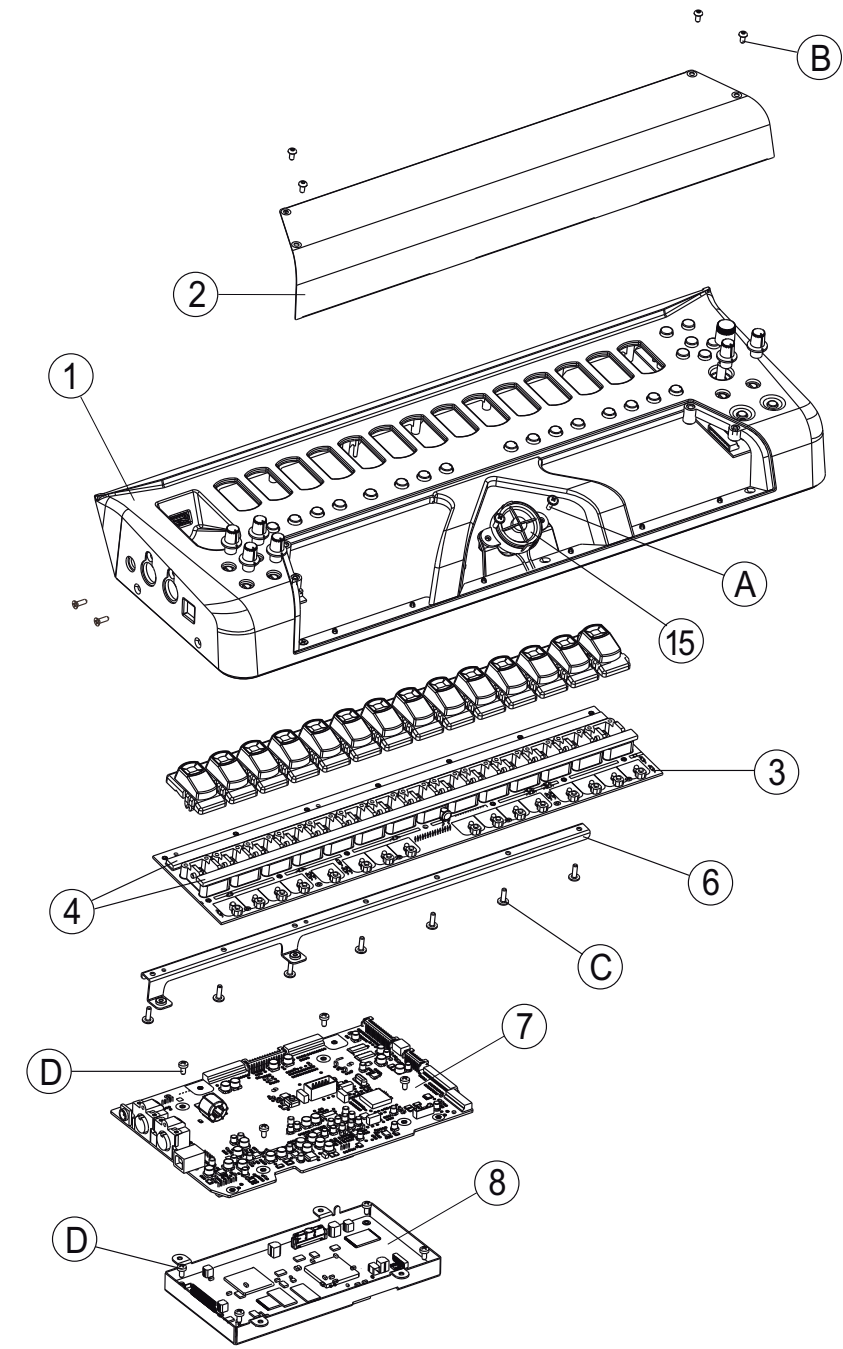


- K2268248 BACK PAD (for FR-8X BK RD)
- K2268249 BACK PAD FR-8XD
- K2318114 BASS STRAP (for FR-8X BK RD)
- K2318115 BASS STRAP (BLACK LEATHER) FR-8XD/XBD
- K2318113 PAIR OF SHOULDER STRAPS (for FR-8X BK RD)
- K2268250 PAIR OF SHOULDER STRAPS FR-8XD/XBD



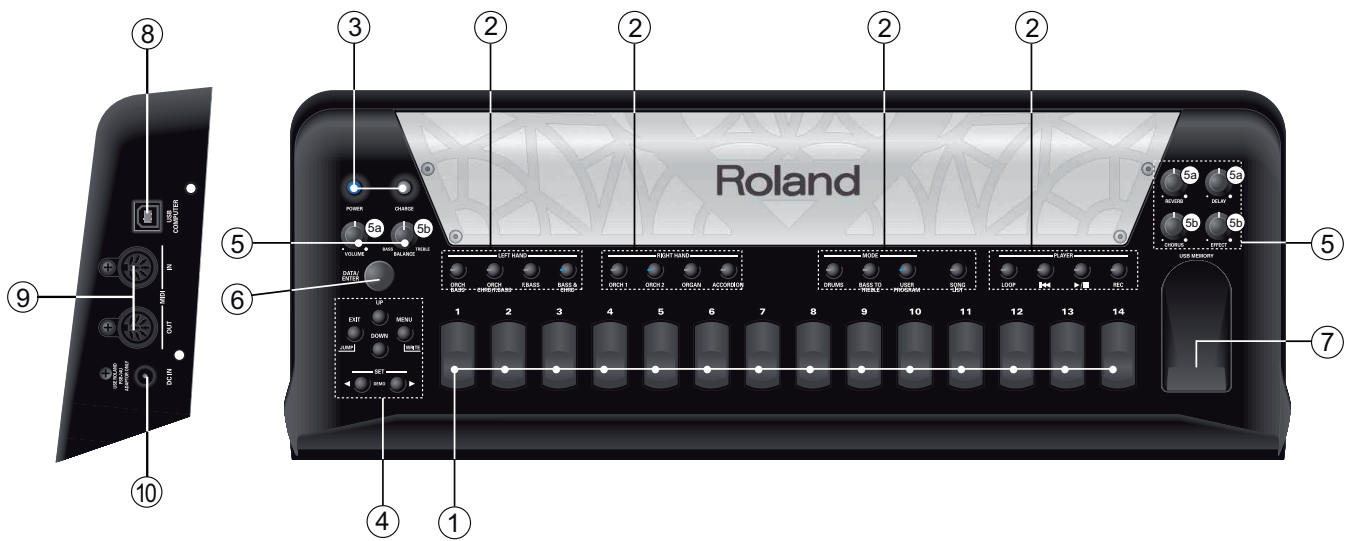
- Screws
- A K2288133 SCREW 3.5X13 TC TC PR TFR H.7 BRUN
 - B J2289250 SELFTAP.SCREW 2.9X9.5 TC TSP PR BRUN
 - C J2289316 SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
 - D J2289160 SELF TAP.SCREW 2.9X13 TCTCPR BR
 - E J2289347 SCREW M3X6 UNI 7380 A2-70

EXPLODED VIEW - TRAFORO (GRILLE SECTION)



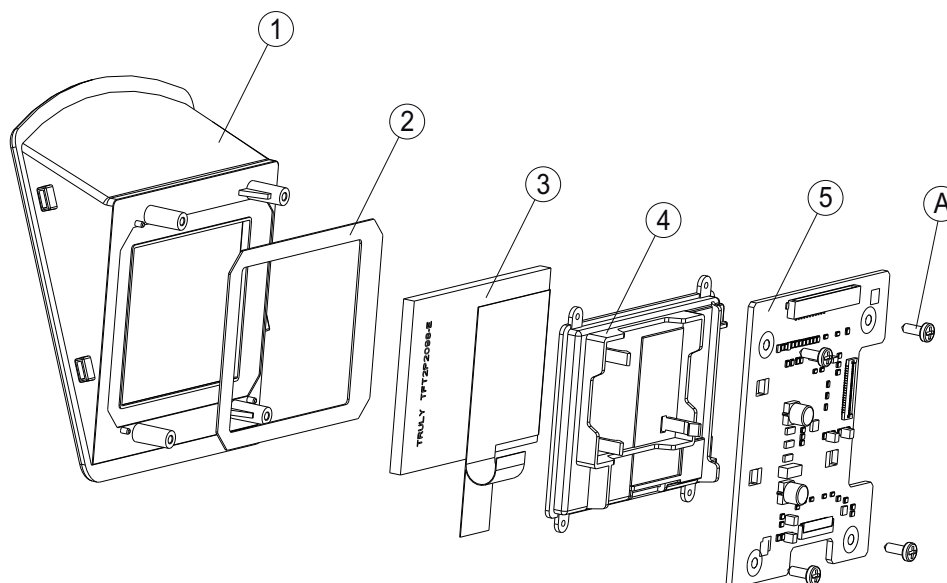
No.	Part Code	Part name
1	7783620000	GRILLE ASSY BLACK (for FR-8X BK FR-8XD)
	7784002000	GRILLE ASSY RED (for FR-8X RD)
2	K2028183	DECORATED METALLIC GRILLE (for FR-8X BK RD)
	K2028182	DECORATED METALLIC GRILLE FR-8XD
3	7783603000	RIGHT REGISTER PCB ASSY
4	K2268255	ADHESIVE FELT MM. 350X10X3 (BLACK)
5	J2269121	ADHESIVE RUBBER 10 MM. TH. 2
Note: When you substitute the RIGHT REGISTER PCB ASSY you must replace also #J2269121 as showed in the picture		
6	no service	JACK B. HOLDER
7	7783607002	JACK PCB ASSY
8	5100032238	VP-BOARD ASSY FR-8X
	7784102000	VP-BOARD ASSY FR-8XD/XBD
9	no service	VP-BOARD SHIELD
10	7783612000	USB HOST PCB ASSY
11	7783606000	EFX PCB ASSY
12	K2168128	JACK BOARD COMPENSATOR (BLACK)
13	7783605000	VOLUME PCB ASSY
14	K2248150	FELT WASHER I/D 7 E/D 13 TH.1.5
15	K2418118	TWEETER SPEAKER W/CABLES
16	K1188130	TWEETER SUPPORT EM2000/EG101
Screws		
A	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR
B	J2289347	SCREW M3X6 UNI 7380 A2-70
C	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
D	J2289193	SELF LOCK.SCREW M3X6 TC TC H.6
E	J2289250	SELFTAP.SCREW 2.9X9.5 TC TSP PR BRUN

LOCATION - TRAFORO (GRILLE SECTION)



No.	Part Code	Part name
1	K247841101	REGISTER TILT TAB(BLACK) FR-5/7
	J3169114	SWITCH (SKEYAC)
2	K2478477	4-BUTTON GROUP (BLACK) F/TRAFORO
3	01670490	FC-KEYTOP SX1H CLR
4	K2478348	ROUND PUSHBUTTON (BLACK) H.13.5
	01340290	SWITCH EVQ11A05R H=5,0
5	K2478353	SMALL BLACK KNOB WITH WHITE INSERT
5(a)	13289186	RK11K1130 10KB LM1-15C W/CLK
5(b)	13289185	RK11K1130 10KB LM1-15
6	K2478399	BLACK KNOB
	J3119105	ROTARY ENCODER EC12E24244F25
7	J3449107	USB SOCKET AC809
8	5100024850	DC JACK HEC3800-01-010
9	13429676	5P DIN SOCKET YKF51-5048 (2PCS)USB SOCKET AC809
10	5100009531	USB CONNECTOR B TYPE FEMALE YKF45-0044N

VARN. LCD COVER (GRILLE SECTION)

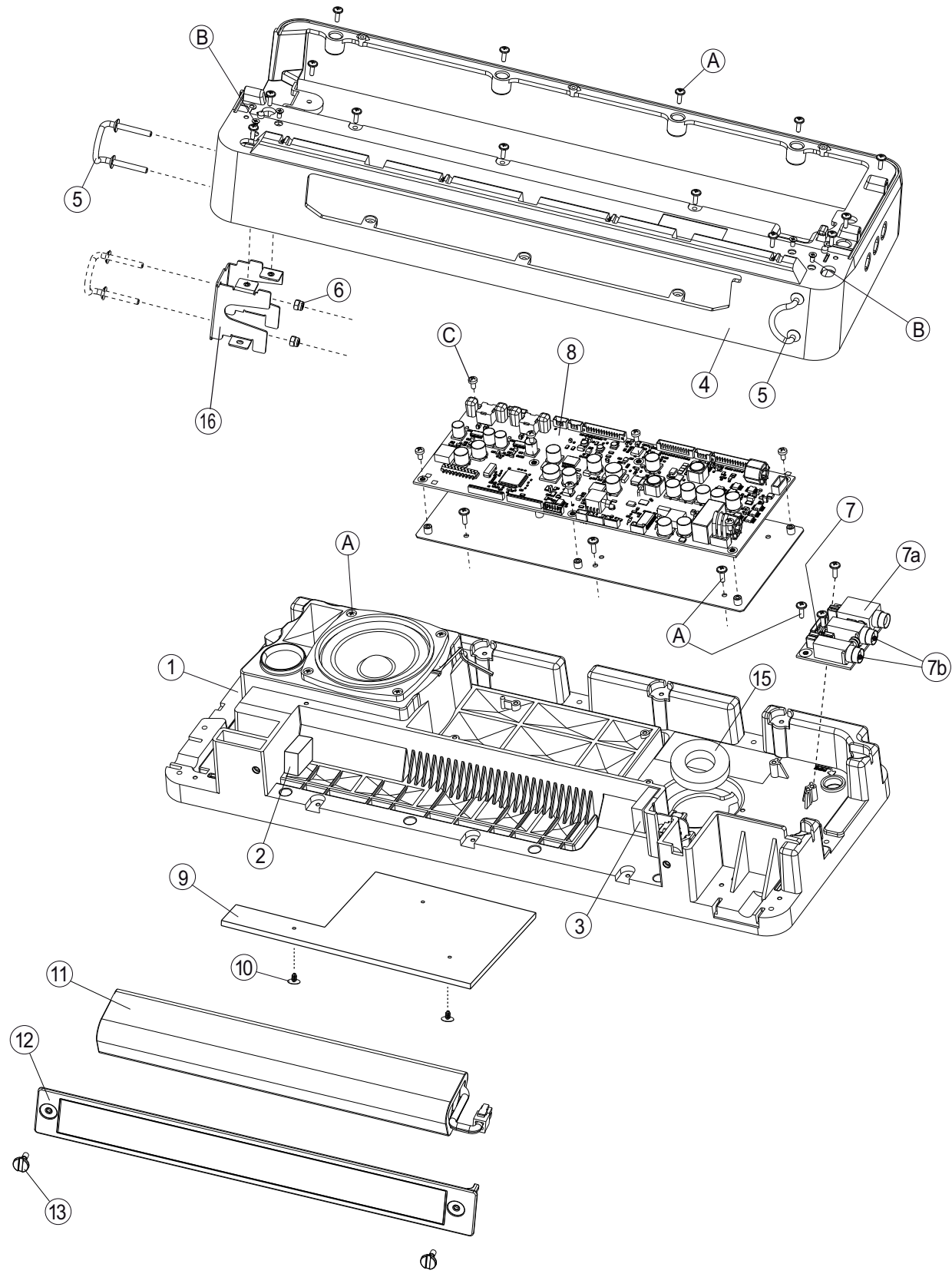


No.	Part Code	Part name
1	7783624000	VARN. LCD COVER BLACK (for FR-8X BK FR-8XD)
	7784008000	VARN. LCD COVER RED (for FR-8X RD)
2	K2228116	DISPLAY GASKET
3	J5039113	LCD TFT2P2098-E V.1.0 (TRULY)
4	K1188166	LCD HOLDER BLACK
5	7783604000	LCD PCB ASSY

Screw

A	K2288146	SCREW 2.2X9.5 TCTCPRBZ ZINC.
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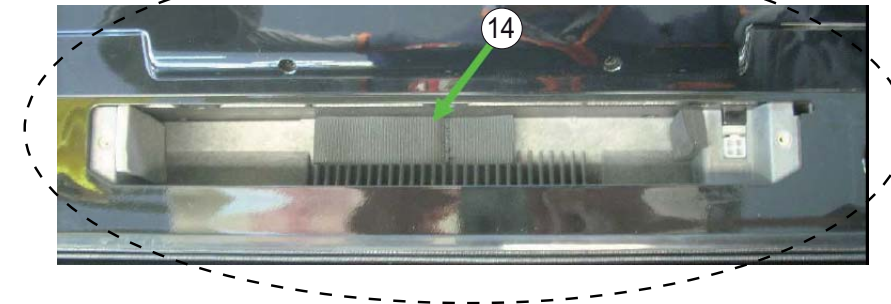
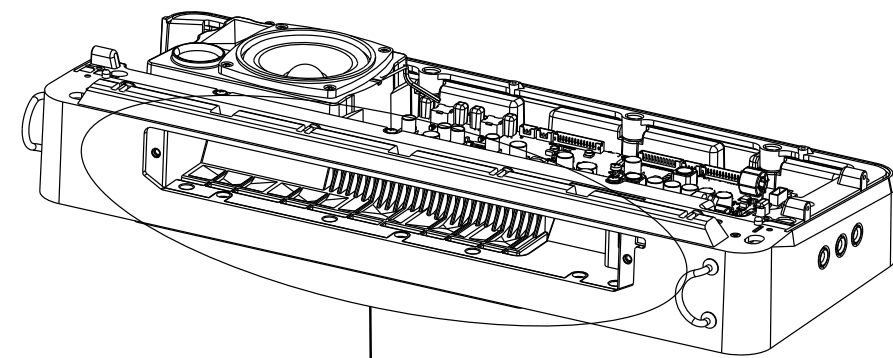
EXPLODED VIEW - CASSA CANTO (TREBLE SECTION/ RIGHT HAND SIDE)



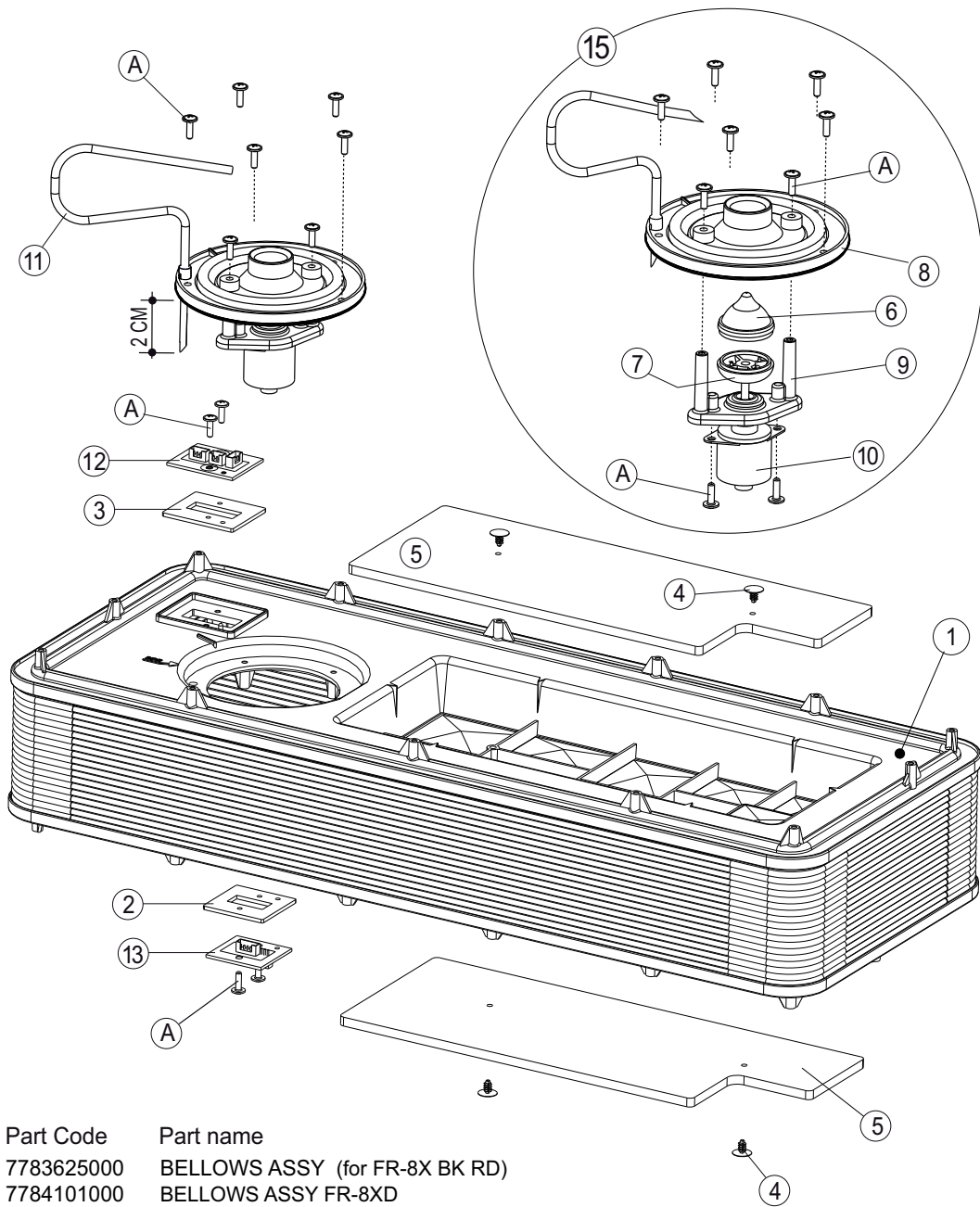
No.	Part Code	Part name
1	7783652000	CASSA CANTO INNER PART+FOAM (for FR-8X BK RD FR-8XD)
* This unit includes the following parts.		
2	no service	ADHESIVE RUBBER STRIP MM 30X20X10
3	no service	ADHESIVE FOAM HLC30 MM.110X30X5
4	7783653000	CASSA CANTO BLACK+LOGO LABEL ROLAND (for FR-8X BK FR-8XD)
	7784006000	CASSA CANTO RED+LOGO LABEL ROLAND (for FR-8X RD)
* This units includes the following part.		
	K2518105	LOGO LABEL (ROLAND) 1
5	K2128176	SHOULDER STRAP HOLDER (for FR-8X BK RD)
	K2128177	SHOULDER STRAP HOLDER FR-8XD
6	J2289328	NUT MA4 DIN 6923 ISO4161 ZINC
7	7783609000	PHONES PCB ASSY
7a	13449252	JACK SOCKET YKB 21-5006
7b	13449146	6.5MM JACK YKB21-5012G(W/SW)
8	7783608002	POWER AMP PCB ASSY
9	K2268252	SOUNDPROOFING FOAM (CASSA CANTO)
10	J2159123	RIVET PFP-7-01 (RICHCO)
11	no service	BATTERY NIMH 24V 4.5A FDK (new tco)
It will be distributed only as an accessory, so please order it via your Sales dept. with the following code: 072850099 BATTERY PACK BTY / FR.		
12	7781031000	BATTERY COVER FR-7X FR-7XB (for FR-8X BK RD FR-8XD)
Note: The BATTERY COVER includes the following part:		
	K2268243	FOAM PROTECTION F/BTRY COVER MM 300X30X5 1
	no service	(BATTERY COVER FR-7X/FR-7XB) LABEL 1
13	K2288164	SCREW M4 W/POLISHED HEAD
14	K3468295	ELASTIC BAND F/BATTERY
15	K2268251	AIR FLOW DAMPER
16	no service	HOLDER F/SHOULDER STRAP BUCKLE

Screws

A	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
B	J2289292	SCREW M3X6 TC TSP BRUN
C	J2289292	SCREW M3X6 TC TSP BRUN



EXPLODED VIEW - BELLOWS

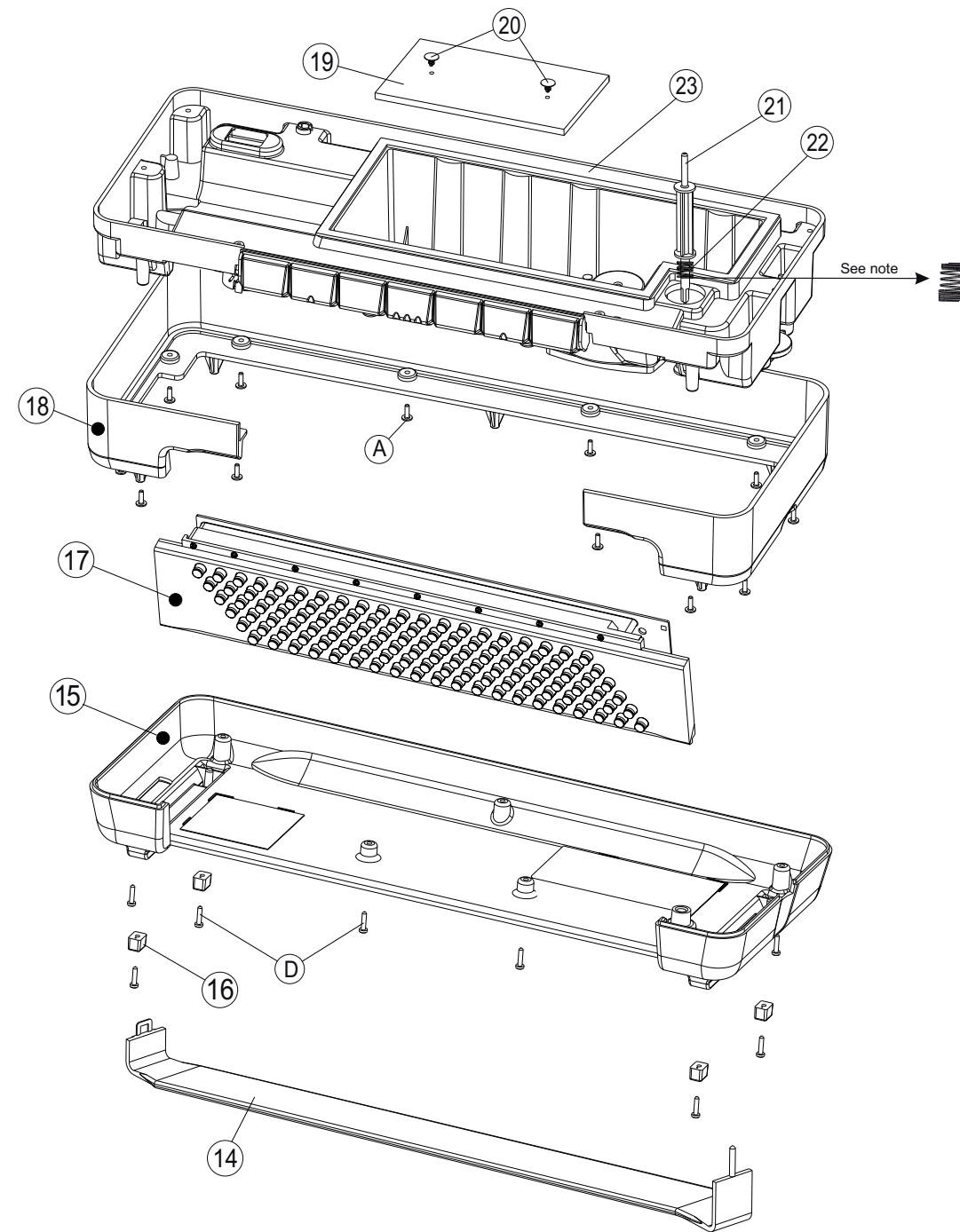
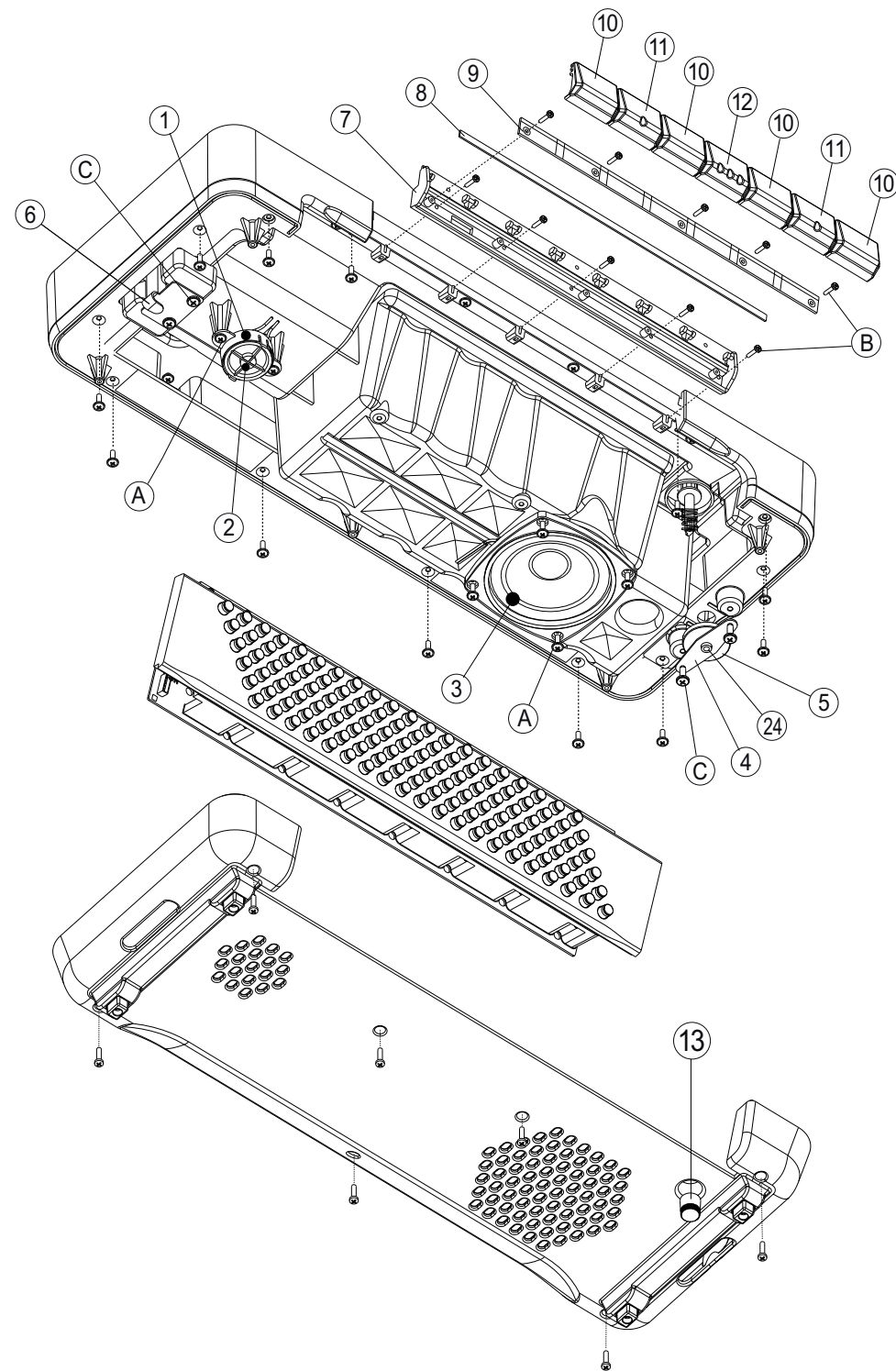


No.	Part Code	Part name	
1	7783625000	BELLOWS ASSY (for FR-8X BK RD)	
	7784101000	BELLOWS ASSY FR-8XD	
	* This unit includes the following parts.		
2	no service	GASKET F/CONNECTOR BOUNCE PCB	
3	no service	GASKET F/STEPPER MOTOR BOUNCE PCB	
4	J2159123	RIVET PFP-7-01 (RICHCO)	
5	K2268253	SOUNDPROOFING FOAM BELLOWS STOPPER	
15	7783654000	AIR VENT+STEPPER MOTOR DEVICE ASSY	
	* This unit includes the following parts.		
6	no service	OGIVE	1
7	no service	OGIVE STOPPER	1
8	no service	ANTIVIBRATION FLANGE	1
9	no service	STEPPER MOTOR HOLDER	1
10	no service	STEPPER MOTOR PL25L-A24-YIC6	1
	no service	GREASE FLOIL G-424F	1
A	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO	4
11	J2159118	SILICONE SENSOR TUBE MM 2X4	
12	7783613000	BELLOWS BOUNCE MOTOR PCB ASSY FR-8X	
13	7783614000	BELLOWS BOUNCE PCB ASSY FR-8X	

Screws

A	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
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EXPLODED VIEW - CASSA BASSI - FONDINO

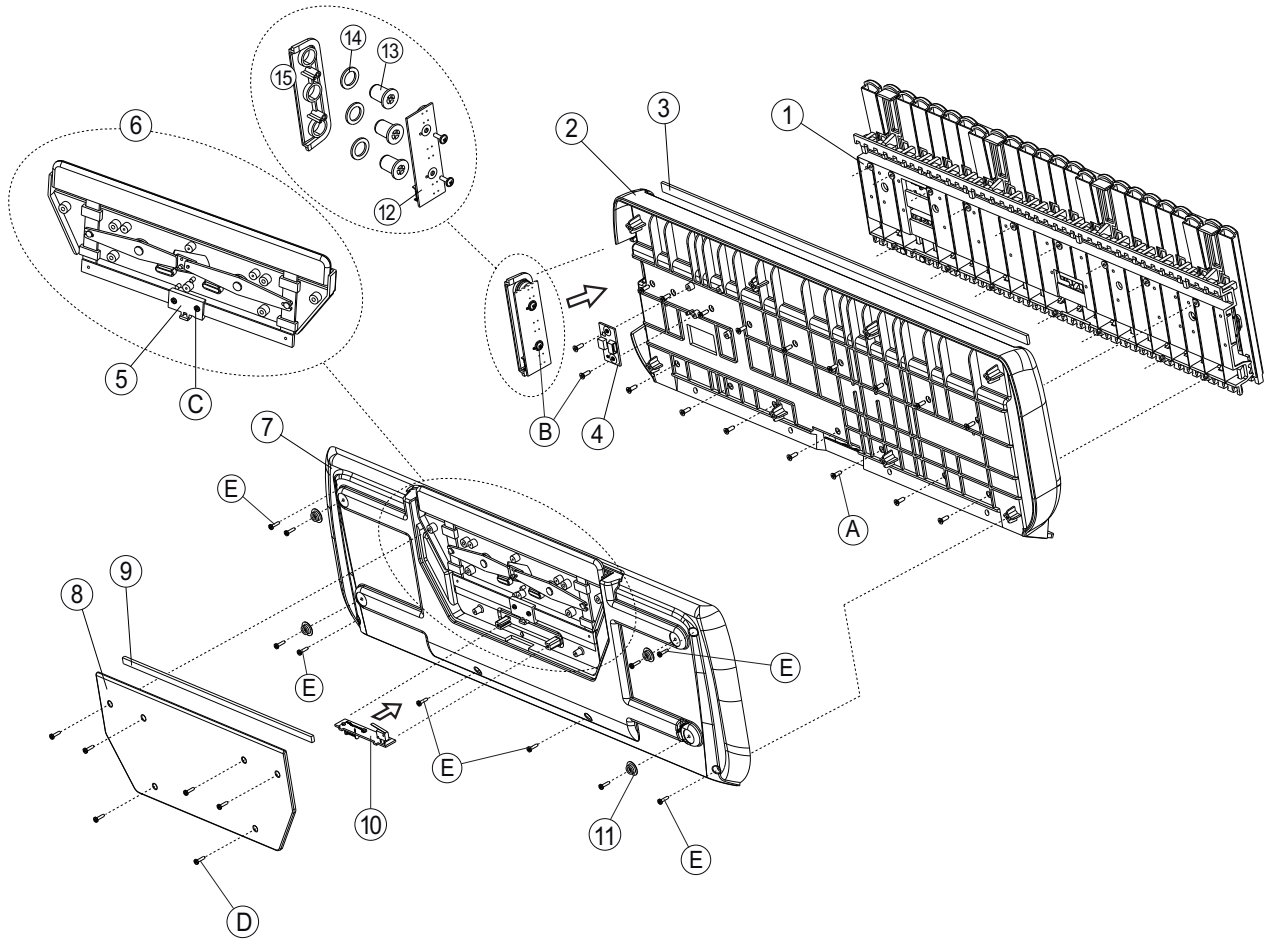


No.	Part Code	Part name
1	K1188130	TWEETER SUPPORT EM2000/EG101
2	K2418118	TWEETER SPEAKER W/CABLES
3	J2419108	WOOFER SPEAKER LP88.25/N28+14 8-OHM
4	no service	WHEEL SUPPORT
5	K2328108	ALUMINIUM WHEEL F/BASS STRAP
6	no service	BLACK ALUMINIUM WHEEL F/BASS STRAP
7	K118813801	BASS STRAP COUPLER
8	K2268203	SUPPORT F/BASS REGISTERS
9	K2358112	BLACK ADHESIVE FELT MM 250X5X1
10	7775212000	BASS REGISTERS PCB ASSY FR-5/7
11	K2478455	LEFT REGISTER BUTTON
12	K2478430	1-NOTCH BASS SWITCH

12	K2478414	3-NOTCH LEFT REGISTER BUTTON	
13	K2478399	BLACK KNOB	
14	K2318114	BASS STRAP (for FR-8X BK RD)	
	K2318115	BASS STRAP (BLACK LEATHER) (for FR-8XD)	
15	7783651000	VARN. FONDINO BLACK+CLOTH (for FR-8X BK FR-8XD)	
	7784007000	VARN. FONDINO RED+CLOTH (for FR-8X RD)	
* This unit includes the following parts.			
	no service	SILVER CLOTH (A) FOR FONDINO	1
	no service	SILVER CLOTH (B) FOR FONDINO	1
	K2358112	FOOT HERAFLEX 56SH H.9	4
	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR	4
16	K2358112	FOOT HERAFLEX 56SH H.9	
17	7783617001	COMPLETE BASSIERA GROUP	

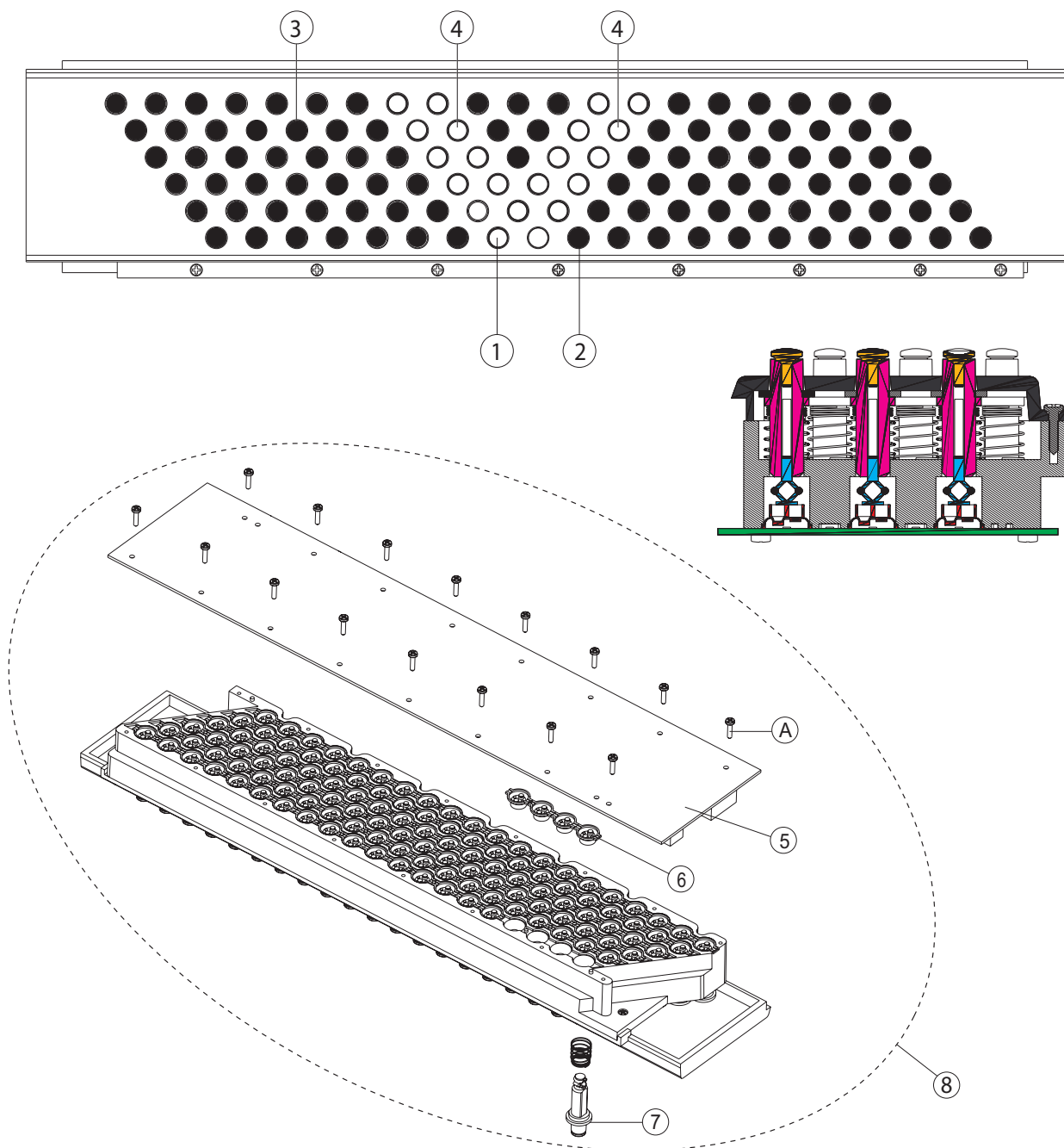
18	7783619000	VARN. BLACK+SILK. CASSA BASSI (for FR-8X BK FR-8XD)
	7784001000	VARN. RED+SILK. CASSA BASSI (for FR-8X RD)
19	K2268254	SOUNDPROOFING FOAM (CASSA BASSI)
20	J2159123	RIVET PFP-7-01 (RICHCO)
21	K2148130	AIR VENT SHAFT
22	K2178109	SPRING F/TREBLE BUTTON
Note: When you substitute the SPRING F/TREBLE BUTTON pay attention to replace the spring in its correct position.		
23	K2018150	CASSA BASSI INNER PART
24	no service	SEEGER RING E 1110201-11070
Screws		
A	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
B	J2289346	SCREW 2.2X13 TC PR BLACK UNI 6954
C	K2288133	SCREW 3.5X13 TC TC PR TFR H.7 BRUN
D	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR

EXPLODED VIEW - KEYBOARD BASE



No.	Part Code	Part name
1	7783616001	KEYBOARD ASSY 41 KEYS (AFT-B SK-961)
2	7783622000	VARN. KBD BASE ENCLOSURE BLACK (for FR-8X BK FR-8XD)
	7784004000	VARN. KBD BASE ENCLOSURE RED (for FR-8X RD)
3	K2268255	ADHESIVE FELT MM. 350X10X3 (BLACK)
4	7783615000	AFTER-TOUCH PCB ASSY
5	K2148124	ACTUATOR AFT.-MASTER BAR FR-5b/7b
6	7783650000	BAR MASTER ASSY
* This unit includes the following parts.		
	K2148124	ACTUATOR AFT.-MASTER BAR FR-5b/7b 1
	J2289329	SCREW 2.2X4.5 TC TC (NICKEL-PLATED) 2
7	7783621000	VARN. KBD BASE ENCL. COVER BLACK (for FR-8X BK FR-8XD)
	7784003000	VARN. KBD BASE ENCL. COVER RED (for FR-8X RD)
8	K2138137	STOPPER F/KEYBOARD BASE ENCLOSURE (for FR-8X BK RD FR-8XD)
9	K2268247	ADHESIVE BLACK FELT MM 248X6X3
10	7783601000	MASTER SWITCH PCB ASSY
11	J2289304	RING BUTTON F/ BACK PAD GODRON K1C FE-NK
12	7783602000	CHIN SWITCHES PCB ASSY
13	K2478476	CHIN SWITCH CAP
14	K226821501	RUBBER WASHER FOR BASSIERA
15	7783623000	FLANGE CHIN SWITCH BLACK (for FR-8X BK FR-8XD)
	7784005000	FLANGE CHIN SWITCH RED (for FR-8X RD)
Screws		
A	J2289250	SELFTAP.SCREW 2.9X9.5 TC TSP PR BRUN
B	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO
C	J2289329	SCREW 2.2X4.5 TC TC (NICKEL-PLATED)
D	J2289346	SCREW 2.2X13 TC PR BLACK UNI 6954
E	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR
F	J2289280	SCREW 2.9X9.5 TC TC INOX

EXPLODED VIEW - BASSIERA



No.	Part No.	Description	Q'ty
1	K2478460	WHITE CONVEX BASS BUTTON CAP	19
2	K247841501	BLACK CONVEX BASS BUTTON CAP	98
3	K247841601	BLACK CONCAVE BASS BUTTON CAP	1
4	K2478461	WHITE CONCAVE BASS BUTTON CAP	2
Note : the above Bass Button Caps are also included on the BLACK (FREE BASS) CONFIGURATION ASSY #7783618000 supplied as accessory.			
#7783618000 BLACK (FREE BASS) CONFIGURATION ASSY includes the following parts:			
	K2478460	WHITE CONVEX BASS BUTTON CAP	2
	K2478461	WHITE CONCAVE BASS BUTTON CAP	3
⊗	K2478462	WHITE KNURLED BASS BUTTON CAP	3
	K247841501	BLACK CONVEX BASS BUTTON CAP	20
	K247841601	BLACK CONCAVE BASS BUTTON CAP	10
⊗	K247841701	BLACK KNURLED BASS BUTTON CAP	10
5	7781003000	BASSIERA PCB ASSY FR-7X FR-7XB	1
6	K3168104	4 KEYDOMES DYNAMIC RUBBER PAD	30
7	K226821501	RUBBER WASHER FOR BASSIERA	120
8	7783617001	COMPLETE BASSIERA GROUP	
A	J2289243	SCREW 2.2X9.5 TC TC	

KEYBOARD PARTS LIST

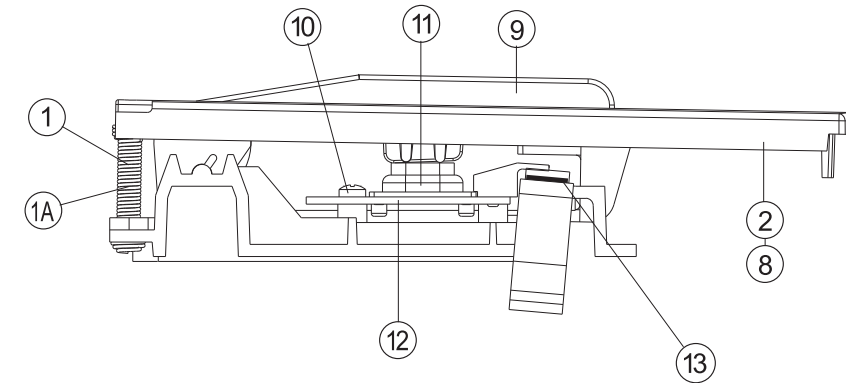
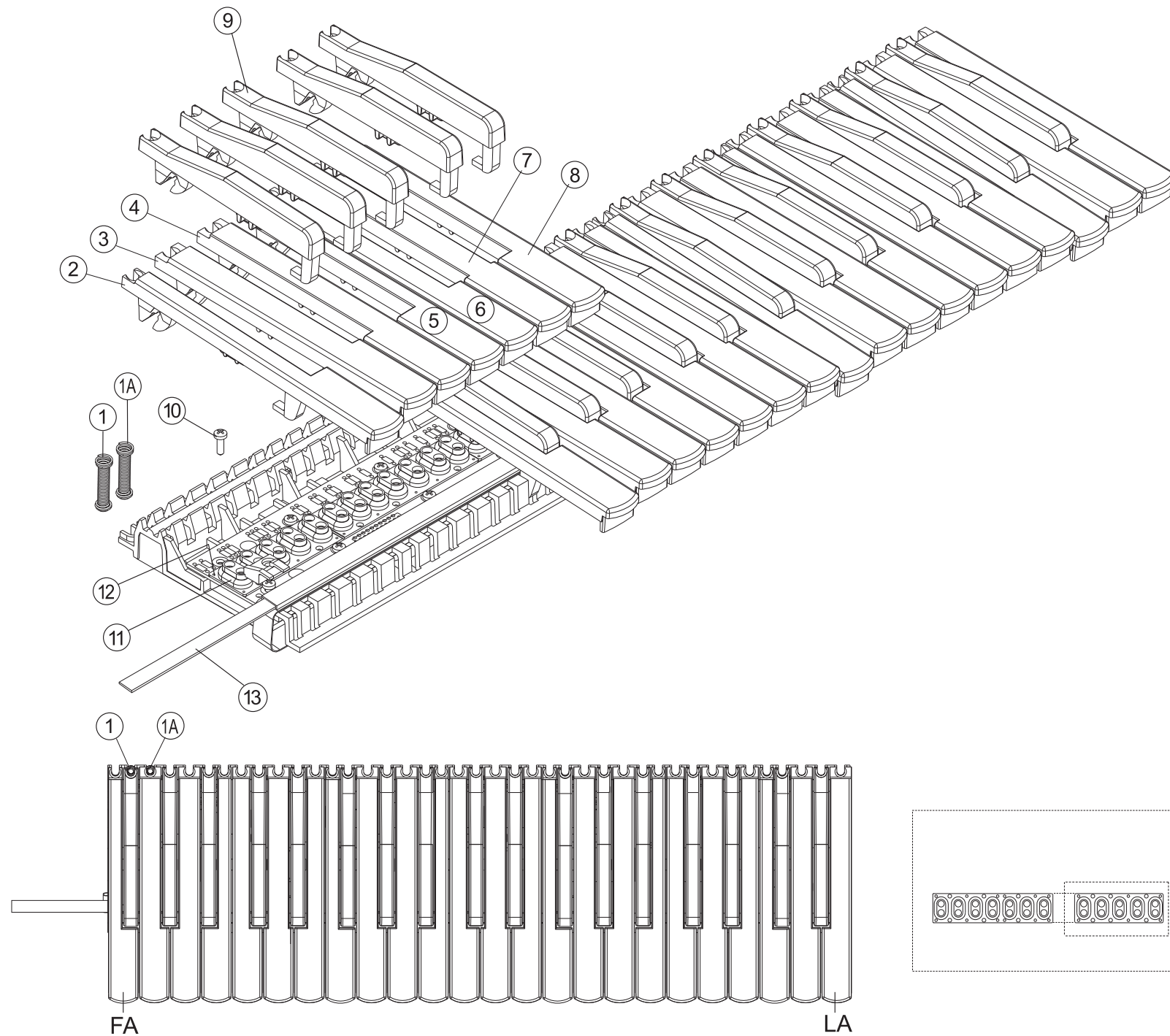
KEYBOARD ASSY 41 KEYS (AFT-B SK-961) code 7783616001

~~KEYBOARD ASSY 41 KEY SAN FR-7X code 7781035000 First production~~

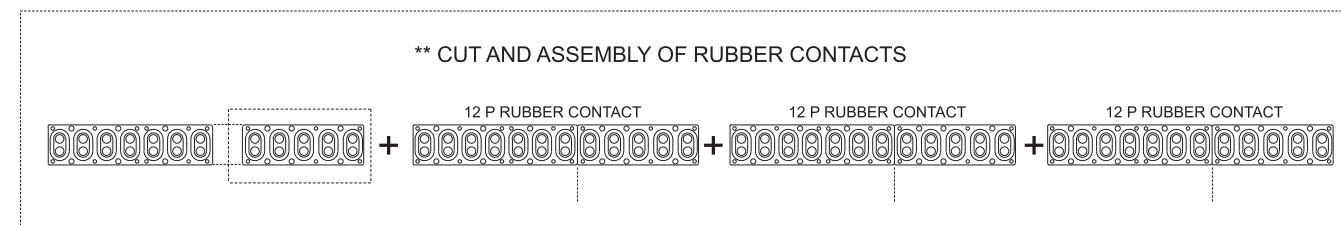
KEYBOARD ASSY 41 KEYS (AFT-B SK-961) code 7783616000 First production

Note: The SPRING FOR SHARP KEY #J2179114 has been discontinued
 we have substituted it with the new one, Keyboard Assy #~~7781035000~~ #7783616000 will be #7783616001
 Service Center will supply old SPRING until end of stock and only the new Keyboard Assy #7783616001

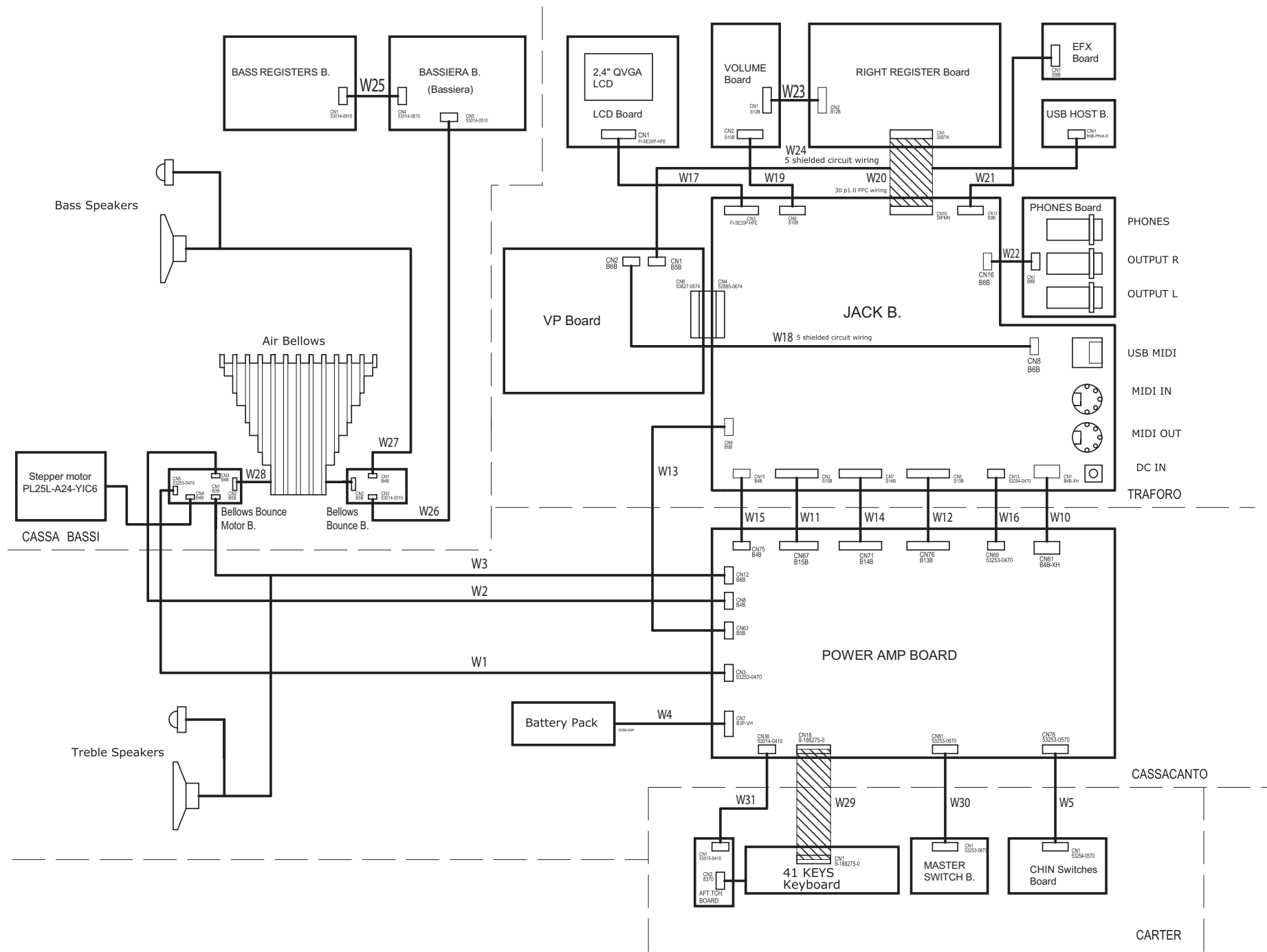
KEYBOARD ASSY 41 KEYS (AFT-B SK-961) code 7783616001 Mass production



No.	PARTS NAME	CODE RJA
1	SPRING FOR SHARP KEY (n.17)	J2179119
1A	SPRING FOR NATURAL KEY (n.24)	J2179115
2	NATURAL KEY (F) FA (n.4)	K2578117
3	NATURAL KEY (G) SOL (n.4)	K2578118
4	NATURAL KEY (A) LA (n.4)	K2578112
5	NATURAL KEY (B) SI (n.3)	K2578113
6	NATURAL KEY (C) DO (n.3)	K2578114
7	NATURAL KEY (D) RE (n.3)	K2578115
8	NATURAL KEY (E) MI (n.3)	K2578116
9	SHARP KEY (DIESIS) (n.17)	K2578102
10	SCREW 2.9x10 TC TC PR TROP (n.22)	J2289125
11	RUBBER CONTACT 12V	J3169124
12	CONTACT PCB+RUBBER SW.(CARB) FR5/7	K2928102
13	AFTERTOUCH-B(61P) SK-961	04013278
KEY GREASE		J259913701




WIRING DIAGRAM



Ref.	Code	Description	Q.ty	W18	7783641000	5P SHIELDED CBL ASSY (14)-2C 6V JST D/R	1
W1	7783629000	4P CBL ASSY (12) -2C(51065) P.2 D/R	1	W19	7783636000	10P CBL ASSY (32) -2C P.2 D/R JST	1
W2	7783631000	4P CBL ASSY (14) -2C P.2 D/R JST	1	W20	K3468383	SML2CD-30x60-BDx10(BL)-P1-S5-M UL20624	1
W3	7783628000	6P CBL ASSY 12/15/36 C6/3P2 JST+F.+TW.	1	W21	7783637000	9P CABLE ASSY (22) -2C P.2 JST D/R	1
W4	no service	3P CABLE ASSY (CM.28) 2C/D P3.96+FERRITE	1	W22	7783645000	8P CBL ASSY (16) -2C P.2 D/R JST	1
W5	7783644000	5P CABLE ASSY (40) -2C P.2 D/R 51065	1	W23	7783638000	12P CBL ASSY (18) -2C P.2 D/R JST	1
W10	7783627000	4P CABLE ASSY (20) 2C XHP-4 P.2.5 (JST)	1	W24	7783643000	5P SHIELDED CBL ASSY (28)-2C 5V JST D/R	1
W11	7783632000	15P CABLE ASSY AWG28 (30) -2C P.2 D/R	1	W25	7783639000	6P CABLE ASSY (18) -2C P.2 D/R	1
W12	7783633000	13P CBL ASSY (30) -2C P.2 D/R JST	1	W26	7783648000	5P CABLE ASSY (38) -2C P.2	1
W13	7783634000	5P CABLE ASSY (24) -2C P.2 D/R (JST)	1	W27	7783630000	4P CABLE ASSY 12/34	1
W14	7783635000	14P CBL ASSY (40) -2C P.2 D/R JST	1	W28	no service	5P CABLE ASSY (92) -2C P.2 D/R (JST)	1
W15	7783640000	1+1P COAXIAL CBL ASSY (22)P.2 JST	1	W29	7783649000	20P CABLE ASSY (28)	1
W16	7783642000	4P CBL ASSY (18) -2C P.2 D/R 51065	1	W30	7783646000	3P CBL ASSY/28 (18) -2C 6V. P2 51065	1
W17	5100013777	FI-SE20S CABLE	1	W31	7783647000	4P CABLE ASSY/28 (CM.36)	1

PARTS LIST FR-8X BK RD FR-8XD BK

SAFETY PRECAUTIONS:
The parts marked  have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code "*****" cannot be supplied as service parts.


- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially


NOTE: The parts marked # are new. (Initial parts) The description "QTY" means a necessary number of the parts per one product.

NOTE:

The parts marked "# " are new (Initial Parts).

A The parts marked "A " are new (Initial Parts) for RES but already used by RJA

The parts marked  have Safety - Related characteristics.

 Use only listed parts for replacement.

<< EMI >> Component for EMC.

Note: Replacement should be made on a unit basis. No replacements available for individual parts. Replacement only be a unit.

CASING

Q.ty

#	K2028183	DECORATED METALLIC GRILLE	for FR-8X BK RD	1
#	K2028182	DECORATED METALLIC GRILLE FR-8XD	for FR-8XD	1
#	K2018150	CASSA BASSI INNER PART		1
#	7783619000	VARN. BLACK+SILK. CASSA BASSI	for FR-8X BK XD	1
#	7784001000	VARN. RED+SILK. CASSA BASSI	for FR-8X RD	1
#	7783620000	GRILLE ASSY BLACK	for FR-8X BK XD	1
#	7784002000	GRILLE ASSY RED	for FR-8X RD	1
#	7783621000	VARN. KBD BASE ENCL. COVER BLACK	for FR-8X BK XD	1
#	7784003000	VARN. KBD BASE ENCL. COVER RED	for FR-8X RD	1
#	7783622000	VARN. KBD BASE ENCLOSURE BLACK	for FR-8X BK XD	1
#	7784004000	VARN. KBD BASE ENCLOSURE RED	for FR-8X RD	1
#	7783623000	FLANGE CHIN SWITCH BLACK	for FR-8X BK XD	1
#	7784005000	FLANGE CHIN SWITCH RED	for FR-8X RD	1
#	7783617001	COMPLETE BASSIERA GROUP		1
#	7783624000	VARN. LCD COVER BLACK	for FR-8X BK XD	1
#	7784008000	VARN. LCD COVER RED	for FR-8X RD	1
#	7783625000	BELLOWS ASSY	for FR-8X BK RD	1
#	7784101000	BELLOWS ASSY FR-8XD	for FR-8XD	1
#	7783652000	CASSA CANTO INNER PART+FOAM		1
	Note: CASSA CANTO INNER PART+FOAM includes the following parts:			
	1pce	no service	ADHESIVE RUBBER STRIP MM 30X20X10	
	1pce	no service	ADHESIVE FOAM HLC30 MM.110X30X5	
#	7783653000	CASSA CANTO BLACK+LOGO LABEL ROLAND	for FR-8X BK XD	1
#	7784006000	CASSA CANTO RED+LOGO LABEL ROLAND	for FR-8X RD	1
	Note: CASSA CANTO+LOGO LABEL ROLAND includes also :			
	1pce	K2518105	LOGO LABEL (ROLAND)	
#	7783651000	VARN. FONDINO BLACK+CLOTH	for FR-8X BK XD	1
#	7784007000	VARN. FONDINO RED+CLOTH	for FR-8X RD	1
	Note: VARN. FONDINO+CLOTH includes the following parts:			
	4pcs	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR	
	4pcs	K2358112	FOOT HERAFLEX 56SH H.9	
	1pce	no service	SILVER CLOTH (A) FOR FONDINO	
	1pce	no service	SILVER CLOTH (B) FOR FONDINO	
	1pce	no service	DOUBL-FACE TAPE #500 W3MM 20M 136P	
#	7783654000	AIR VENT+STEPPER MOTOR DEVICE ASSY		1
	Note: AIR VENT+STEPPER MOTOR DEVICE ASSY includes the following parts:			
	1pce	no service	ANTIVIBRATION FLANGE	
	1pce	no service	OGIVE	
	1pce	no service	OGIVE STOPPER	
	1pce	no service	STEPPER MOTOR HOLDER	
	1pce	no service	STEPPER MOTOR PL25L-A24-YIC6	
	4pcs	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO	
#	7783650000	BAR MASTER ASSY		1
	Note: BAR MASTER ASSY includes the following parts:			
	2pcs	J2289329	SCREW 2.2X4.5 TC TC (NICKEL-PLATED)	
	1pce	no service	MASTER BAR FR-5/7	
	1pce	K2148124	ACTUATOR AFT.-MASTER BAR FR-5b/7b	
	7781031000	BATTERY COVER FR-7X FR-7XB		
	Note: BATTERY COVER FR-7X FR-7XB includes the following parts:			
	1pce	no service	(BATTERY COVER FR-7X/FR-7XB) LABEL	
	1pce	K2268243	FOAM PROTECTION F/BTRY COVER MM 300X30X5	
	1pce	J2599112	BI-ADHESIVE TAPE 950 3M MM5	

KNOB BUTTON

	K2478399	BLACK KNOB		2
	K2478455	LEFT REGISTER BUTTON	on Bass Registers	4
#	K2478430	1-NOTCH BASS SWITCH	on Bass Registers	2
	K2478414	3-NOTCH LEFT REGISTER BUTTON	on Bass Registers	1

	K2478353	SMALL BLACK KNOB WITH WHITE INSERT		6
#	K2478476	CHIN SWITCH CAP		3
	01670490	FC-KEYTOP SX1H CLR		2
	K2478348	ROUND PUSHBUTTON (BLACK) H.13.5		6
#	K2478477	4-BUTTON GROUP (BLACK) F/TRAFORO		4
	K247841101	REGISTER TILT TAB(BLACK) FR-5/7		14
	K2478460	WHITE CONVEX BASS BUTTON CAP	on Bassiera	19
	K2478461	WHITE CONCAVE BASS BUTTON CAP	on Bassiera	2
	K2478462	WHITE KNURLED BASS BUTTON CAP	on Bassiera	3
	K247841501	BLACK CONVEX BASS BUTTON CAP	on Bassiera	98
	K247841601	BLACK CONCAVE BASS BUTTON CAP	on Bassiera	1
	K247841701	BLACK KNURLED BASS BUTTON CAP	on Bassiera	10
	Note: BLACK KNURLED BASS B. CAP K247841701 and WHITE KNURLED BASS B. CAP K2478462 are included in BLACK (FREE BASS) CONFIGURATION ASSY #7783618000			

SWITCH

	J3169114	SWITCH (SKEYACA010)	SW1,SW2,SW3,SW4,SW5,SW6,SW7 on Bass Reg. B. SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8, SW9,SW10,SW11,SW12,SW13,SW14 on Right Register B.	24
	01340290	PTR TACT SWITCH EVQ11A05R H=5,0	SW1 SW2 SW3 on Chin Switches B. SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8 on Volume B. SW15,SW16,SW17,SW18,SW19,SW20,SW21, SW22,SW23,SW24,SW25,SW26,SW27, SW28,SW29,SW30 on Right Register B.	24
	00345290	SWITCH SSCUANP	SW1 on Master Switch B.1	
	K3168104	4 KEYDOMES DYNAMIC RUBBER PAD	on Bassiera B.	30
	J3169124	RUBBER CONTACT 12V	on Keyboard Assy	4

JACK, SOCKET

	J3449107	USB SOCKET AC809	JK1 on Usb Host B.	1
	5100009531	USB CONNECTOR B TYPE FEMALE YKF45-0044N	JK3 on Jack B.	1
A	5100024850	DC JACK HEC3800-01-010	JK1 on Jack B.	1
	13449252	JACK SOCKET YKB 21-5006	JK1 on Phones B.	1
	13449146	6.5MM JACK YKB21-5012G(W/SW)	JK2,JK3 on Phones B.	2
	13429676	5P DIN SOCKET YKF51-5048 (2PCS)	JK2 on Jack B.	1

DISPLAY UNIT

#	J5039113	LCD TFT2P2098-E V.1.0 (TRULY)	on Cassa Canto	1
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SPEAKER

△#	J2419108	WOOFER SPEAKER LP88.25/N28+14 8-OHM		2
△	K2418118	TWEETER SPEAKER W/CABLES		2

KEYBOARD ASSY

#	7783616001	KEYBOARD ASSY 41 KEYS (AFT-B SK-961)		1
	NOTE : For details, refer to KEYBOARD PARTS LIST (Page 24/25)			

PCB ASSY

#	5100032238	VP-BOARD ASSY FR-8X	for FR-8X BK RD	1
#	7784102000	VP-BOARD ASSY FR-8XD/XBD	for FR-8XD	1
#	7783607002	JACK PCB ASSY		1
#	7783601000	MASTER SWITCH PCB ASSY		1
#	7783602000	CHIN SWITCHES PCB ASSY		1
#	7783603000	RIGHT REGISTER PCB ASSY		1
#	7783604000	LCD PCB ASSY		1
#	7783605000	VOLUME PCB ASSY		1
#	7783606000	EFX PCB ASSY		1
#	7783608002	POWER AMP PCB ASSY		1
#	7783609000	PHONES PCB ASSY		1
#	7783612000	USB HOST PCB ASSY		1
#	7783614000	BELLOWS BOUNCE PCB ASSY		1
#	7783613000	BELLOWS BOUNCE MOTOR PCB ASSY		1
#	7783615000	AFTER-TOUCH PCB ASSY		1
	7775212000	BASS REGISTERS PCB ASSY FR-5/7		1
	7781003000	BASSIERA ASSY FR-7X FR-7XB		1
	K2928102	CONTACT PCB+RUBBER SW.(CARB) FR5/7		1

IC

	J5259192	I.C. TC74VHC138FT(EL) FLAT	IC9 on Jack B.	1
	02455212	IC (CUSTOM) S1L50282F32H200(KSM) KEY SCA	IC9 on Power Amp B., IC22 on Bassiera B.	2
	04451567	DUAL SWITCH.REG.LT347EDD#TR BF-E3	IC21 on Power Amp B.	1
	J5259203	SWITCHING REGULATOR BD9781HFP-TR	IC22 IC23 on Power Amp B.	2
	02905445	I.C. CMOS TC7SET08FU(T5L,F,T)	IC26 IC29 on Power Amp B.	2
	J5259206	I.C. OP296GS	IC6 on Power Amp B.	1
#	01236912	IC OP AMP FLAT NJM4580M(TE3)	IC18,IC21 on Jack B.	2
	03015923	IC VOLT.DET. S-80130ANMC-JCP-T2G	IC3 on Power Amp B.	1
	01908701	IC CMOS TC74VHC14FT(EL)	IC13 on Jack B., IC1 on Volume B.	2
	04458089	CEM CMOS OP AK2923H-E2	IC3 on Jack B., IC35 IC42 on Power Amp B.	3
	J5259219	I.C. TC7SH08FU (T5L-JF-T) FLAT	IC24 on Jack B., IC350 on Bassiera B.	2
#	J5259222	I.C. TS372IDT SO8 FLAT ST MICRO	IC41 on Power Amp B.	1
A	00344390	IC (REGULATOR) TA7805F(TE16L)	IC7 on Power Amp B., IC23 on Jack B.	2
#	J5259223	I.C. A3982 (DMOS STEP MOTOR DRIVER)	U3 on Power Amp B.	1

#	5100021349	I.C. TPA3110D2 (15W AUDIO POWER AMP)	U4 U5 on Power Amp B.	2
#	J5259224	I.C. LT3957EUHE (REGULATOR)	IC36 on Power Amp B.	1
#	J5259225	I.C. LT6100CMS8 (HIGH CURR. AMPL.)	IC39 on Power Amp B.	1
#	J5259226	IC LTC4412HVIS6 (LOWLOSS CONTROLLER)	IC1 on Power Amp B.	1
#	J5259227	IC CAT4004AHU2-GT3 (LED DRIVER)	IC1 on Lcd B.	1
	15259884	I.C. TC7S08F MOS CMOS	IC27 on Jack B.	1
#	5100020122	I.C. TC74VHC245FT(EL K) SMD FLAT	IC28,IC29 on Jack B.	2
	J5259175	I.C. TC 7SH04FU (TE85L.J)	IC5 on Jack B.	1
	J5259147	I.C. TC7WU04FU FLAT	IC28 on Power Amp B., IC348 on Bassiera B.	2
	15289105	I.C. UPC4570G2-E2-A (OP AMP)	IC12,IC19,IC22 on Jack B., IC2 on Volume B.	6
	15289109	I.C. M5216FP-DF0R OP AMP	IC1,IC2 on Efx B.	1
	15199937	I.C. M51953BFP-CF0R FLAT	IC16 on Jack B.	1
#	7783626000	PROGRAMMED IC10 ON JACK B. FR-8X	IC6 on Jack B., IC20 on Bassiera B.	2
#	J3169128	PHOTOINTERRUPTER KTIR0811S	IC10 on Jack B.	1
	01899790	REGULATOR UPC29L33T-E2	IC7 on Master Switch B.	1
			IC349 on Bassiera B.	1

TRANSISTOR

00901523	TRANSISTOR 2SA-1681K	Q25 on Jack B.	1
03344078	TRANSISTOR 2SC4738-GR(TE85L.F)	Q24,Q27 on Jack B., Q3 on Volume B.	3
15329536	TRANSISTOR RN1442-A(TE85L)	Q6 on Power Amp B.	1
15319101	TRANSISTOR 2SC-2412K T106 R(PbFree)	Q2 on Jack B., Q7 Q9 Q47 on Power Amp B.	4
15309101	TRANSISTOR 2SA1037AKT146R(PB FREE)	Q1 on Master Switch B.	1
15319105	TRANSISTOR 2SC-3326A	Q3 Q4 on Power Amp B.	2
15329516	TRANSISTOR DTC-114EK	Q7,Q8,Q9,Q11 on Jack B.	4
J5119104	TRANSISTOR DTA-114 EKAT146 (PbFree)	Q1 on Jack B.	1
J5119117	TRANSISTOR DTC-114 EVA CHIP	Q5 Q8 on Power Amp B.	2
01783612	CEA TRANSISTOR RN2426(TE85L.F)	Q3,Q4,Q5,Q6 on Jack B., Q1,Q2 on Volume B.	6
J5119106	TRANSISTOR 2SC-4213-A (TE85L.F)	Q12,Q13,Q14,Q15,Q16,Q17,Q18,Q19, Q20,Q21,Q22,Q23,Q26 on Jack B.	13

DIODE

01897178	MA3J142DGL (MA142WA-(TX)) DIODE	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23 D24 D25 D26 D27 D28 D29 D30 D31 D32 D33 D34 D35 D36 D37 D38 D39 D40 D41 D42 D43 D44 D45 D46 D47 D48 D49 D50 D51 D52 D53 D54 D55 D56 D57 D58 D59 D60 D61 D62 D63 D64 D65 D66 D67 D68 D69 D70 D71 D72 D73 D74 D75 D76 D77 D78 D79 D80 D81 D82 D83 D84 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 D96 D97 D98 D99 D100 D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 on Bassiera B. D117 D118 D119 D120	120
J5029119	LED DIODE SLI-343URC3F (RED)	D46 on Right Register B.	1
J5019125	DIODE SCHOTTKY SB560	D51 on Power Amp B.	1
02900545	IC (PHOTO COUPLER) PC410LKNIP0F	ISO1 on Jack B.	1
J5029129	DIODE SCHOTTKY RB161L-40TE25	D7 D8 on Power Amp B.	2
J5029130	RECTIFIER DIODE 1SR154-400TE25	D22 on Jack B., D11 D12 on Power Amp B.	3
J5029132	DIODE 1S3300 SILICON EPITAXIAL PLANAR	on Contact B.	42
04902023	LED SPI-325MUWT31	D5 on Volume B.	1
J5019126	DIODE SWITCHING MA3J142E (EX MA142WK)	D1,D2,D3,D4 on Volume B.	4
J5029141	DIODE SCHOTTKY RB050L-40 TE25 (PB FREE)	D9 D10 on Power Amp B.	2
5100009780	LED LJR3UB5C194	D15,D16,D21,D22,D23,D24,D25,D26,D33, D34,D35,D36,D43,D44,D45 on Right Register B.	15
01019534	SWITCHING DIODE 1SS355 TE-17	D5 D15 on Power Amp B.	2
J5339105	DIODE SCHOTTKY RSX501L-20TE25 SMD (ROHM)	D1 D14 on Power Amp B.	2
15019159RI	DIODE 1N-4148	D1,D2,D3,D4,D5,D6,D7 Bass Register B. D1,D2,D3,D4,D5,D6,D7,D8,D9,D10,D11,D12,D13,D14, D17,D18,D19,D20,D27,D28,D29,D30,D31,D32,D37,D38, D39,D40,D41,D42 on Right Register B. D1 D2 D3 on Chin Switches B.	40
15339109	DIODE DAP 202K CHIP	D28 D30 on Power Amp B.	2
01121323	DIODE DA-204U T-106 CHIP	D53 D58 D67 D72 on Power Amp B.	4
J5029117	DIODE LED L-934MBDL BLUE	D6 on Volume B.	1
J5019122	DIODE 1N-4007	D55 on Power Amp B.	1
J5019113	DIODE 1N 4004	D74 on Power Amp B.	1

RESISTOR

J3919119	RESISTOR ARRAY EXB28V103JX	RA4,RA6,RA8,RA9,RA12 on Lcd B., RA4,RA5,RA6,RA7,RA11,RA15,RA18,RA20 on Jack B. RA1 RA2 RA3 RA4 RA5 RA6 RA7 RA8 RA9 on Power Amp B. RA165 RA166 RA167 RA169 RA170 RA188 RA190 RA192 RA195 on Bassiera B.	31
J3919122	RESISTOR ARRAY EXB28V330JX	RA8,RA9,RA10,RA12,RA13,RA16,RA17, RA19,RA21,RA22,RA23,RA26 on Jack B.	12
03348012	RESISTOR-ARRAY EXB28V101JX	RA176 RA177 RA178 RA179 RA180 RA181 RA182 RA183 RA186 RA185 RA187 RA196 RA197 on Bassiera B.	13
03015290	RESISTOR-ARRAY EXB28V104JX	RA14 on Jack B.	1
J3809137	UNINFL.RES. 150 OHM 0.6W 5%	R419 on Power Amp B.	1
13749314D0	UNINFL.RES. 2.2 OHM 0.6W 5%	R34 R40 on Power Amp B.	2
J3809156	UNINFL. RES. 47 OHM 0.6W 5%	R1 R2 R3 on Phones B.	3
01566912	MTL.FILM RESISTOR RR0816P-333-D	R155 on Power Amp B.	1
01011856	MTL.FILM RESISTOR RPC05T 0R0 J	R98 on Jack B., R1,R2,R3 on Usb Host B.	4
01566923	MTL.FILM RESISTOR RR0816P-183-D	R151 R445 on Power Amp B.	2
J3809166	RESISTOR 0603 10 OHM/1/16 5%	R147 on Power Amp B.	1
15399581	CARBON RESISTOR RPC18T 221 J	R3 on Volume B.	1
02014945	RESISTOR 0 OHM1/2W 5% 2010 (MCR50)	R351 on Jack B.	12

		R167 R168 R169 R170 R172 R174 R175 R177 R178 R179 R180 on Power Amp B.	
J3709171	RESIST. 2010 22 OHM1/2W 5%	R132,R134 on Jack B.	2
J3709172	RESISTOR 2010 33 OHM 1/2W 5% (MCR50)	R340,R348 on Jack B., R44 on Power Amp B.	3
J3809160	RESIST. 2010 47 OHM1/2W 5%	R221,R227,R341,R346 on Jack B.	4
02017490	RESISTOR 2512 0 OHM 1W 5% (MCR100)	R384,R385 on Jack B.	2
03344734	RESISTOR POLYSWITCH MINISMDC075-F02	F1 on Power Amp B.	1

POTENTIOMETER

13289186	RK11K1130 10KB LM1-15C W/CLK	VR2 on Volume B., VR1,VR3 on Efx B.	3
13289185	RK11K1130 10KB LM1-15	VR1 on Volume B., VR2,VR4 on Efx B.	3

CAPACITOR

01674578	CERAMIC CAPACITOR ECJ1VB1H682K	C147 C149 on Power Amp B.	2
J5369103	ELECTR.CAPACITOR RV2 100U 16V (SMD)	C7,C10,C45,C47,C66,C68,C69,C70, C131,C132,C145,C148,C175,C176, C189,C190,C195,C206,C208,C213 on Jack B.	20
J5369104	ELECTR. COND. RV2 10U 16V (SMD)	C50,C54,C56,C77,C92,C96,C107,C114,C122,C124, C126,C134,C135,C138,C146,C156,C158,C163,C169, C170,C173,C187,C198,C199,C200,C201,C204,C207, C212,C218,C219,C220,C221,C233,C242 on Jack B. C1,C10,C15 on Efx B.	38
J5369101	ELECTR.CAPACITOR RV2 22U 16V (SMD)	C11,C14 on Lcd B., C9,C224 on Jack B., C2 on Usb Host B.	5
J5369102	ELECTR.COND. RV2 47U 16V SMD	C109,C116 on Jack B.	2
J5369114	ELECTR. CAPACITOR RV3 680U 16V (SMD)	C146 C151 on Power Amp B.	2
J3629176	ELECTR. COND. 220U 50V EEEFK1H221P	C25 C27 C148 C150 C165 C168 C217 C218 C223 C313 C317 C333 on Power Amp B.	12
J5369112	ELECTR. COND. RV2 3.3U 50V (SMD)	C110 on Bassiera B.	1
J3629143	ELECTR. COND. 10U 16V H.7	C1 on Right Register B.	1
J5369117	CAPACITOR 100u6V3 GRM31CR60J107M 1206	C39 C102 on Power Amp B., C1 on Bassiera B.	3

FUSE, FUSE HOLDER

#	J2559126	FUSE 2.5A 125V 045302.5MRL (SMD)	F5 F7 on Power Amp B.	2
#	J2559127	FUSE 5A 125V 0453005MRL (SMD)	F6 on Power Amp B.	1

INDUCTOR, COIL, FILTER

12449381	NOISE SUP. SBT-0460TF	L4,L6 on Phones B.	2
J2399101	NOISE SUP. BL03RN2-R62T2	L1,L2,L3 on Phones B.	3
J2399104	CHIP NOISE SUP. EXCCL4532U1 xxxx	L30 L31 on Power Amp B.	2
00907856	NOISE SUP. BLM21A601SPT CHIP	L29,L30,L32,L34,L43,L44,L46,L50,L65,L67,L68 on Jack B.	11
01340834	FERRITE BEAD EXCML 20A390U	L13 L41 L43 L45 L46 L47 L49 L50 L51 on Power Amp B.	9
01787056	N1608Z 102T01 FERRITE-BEAD	L32 L35 L36 L37 L39 L40 on Power Amp B. L1 L4 L5 L6 L7 L8 L9 on Bassiera B.	13
01909645	FERRITE BEAD EXCML16A270U	L1,L6 on Lcd B., L65 on Bassiera B. L1 L3 L4 L5 L6 L7 L34 L38 on Power Amp B.	11
01565578	NOISE SUPPRESSOR N1608Z601T01	L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L13,L14,L15,L16, L17,L18,L19,L20,L21,L22,L23,L24,L25,L26,L27,L31,L33,L35, L36,L37,L38,L39,L40,L41,L42,L45,L47,L48,L49,L51,L52,L53, L54,L55,L56,L57,L58,L59,L61,L62,L63,L66 on Jack B.	52
J2399114	POWER INDUCTOR CDRH4D28NP-100NC-R	L14 L15 L16 on Power Amp B.	3
J2399115	POWER INDUCTOR SLF12565T-220M3R5-PF	L18 on Power Amp B.	1
03239145	CHOKE COIL ACM2012-900-2P-T	L64 on Jack B.	1
03567667	CHOKE CDRH127/LDNP-101MC	L17 on Power Amp B.	1
J2399116	CHOKE COIL DLW31SN222SQ2L (COMMON MODE)	L11 on Jack B.	1
J2399107	FERRITE RING CORE FSOB250RT		1
5100017234	FERRITE CORE ZCAT2032-0930-BK TDK		2

CRYSTAL, RESONATOR

#	J2389107	QUARTZ 16 MHZ HCM49 16.000MABJ-UT (SMD)	X1 on Jack B.	1
	01124812	QUARTZ 10 MHZ MA-406	X2 on Power Amp B., X1 on Bassiera B.	2

RELAY

△#	J2439104	RELAY DPDT G2RL-2-24DC	RL3 on Power Amp B.	1
----	----------	------------------------	---------------------	---

ENCODER

J3119105	ROTARY ENCODER EC12E24244F25	ENC1 on Volume B.	1
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PRESSURE SENSOR

J2309101	PRESSURE SENSOR MPXV7007DP	S1 on Power Amp B.	1
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CONNECTOR

J3439197	14P MALE CONNECTOR B14B-PH-K-S JST	CN71 on Power Amp B.	1
13369567	4P MALE CONNECTOR B4B-PH-K-S (JST)	CN15 on Jack B., CN8 CN75 on Power Amp B. CN1 on Bellows Bounce B. CN3 CN4 on Bellows Bounce Motor B.	6
J3439198	5P MALE CONNECTOR P.2 M 53253-0570	CN78 on Power Amp B.	1
J3439206	15P MALE CONN. B15B-PH-K-S (JST)	1	
J3439211	5P MALE CONN. B5B-PH-K-S (JST)	CN6 on Jack B., CN78 on Power Amp B. CN1 on Usb Host B., CN2 on Bellows Bounce B. CN2 on Bellows Bounce Motor B.	5
J3439207	14P MALE CONN.(90) S14B-PH-K-S P.2 (JST)	CN7 on Jack B.	1

J3439201	MALE CONNECTOR 10V.90 S10B-PH-K-S P.2JST	CN2 on Volume B., CN9 on Jack B.	2
J3439214	6P MALE CONNECTOR P.2 M53253-0610	CN81 on Power Amp B.	2
J3439218	9P MALE CONNECTOR S9B-PH-K-S P.2 (JST)	CN1 on Master Switch B.	
13369672	CONNECTOR S12B-PH-K-S(LF/SN)	CN12 on Jack B., CN1 on Efx B.	2
J3429134	20P FEM. CONNECTOR AMP1.27 9-188275-0	CN1 on Volume B.	1
J3439120	4P MALE CONN. P.2 M	CN18 on Power Amp B., CN1 on Contact B.	2
J3439121	6P MALE CONN. P.2 M	CN36 on Power Amp B.	1
J3439125	5P MALE CONNECTOR P.2 M	CN1 on Bass Register B., CN4 on Bassiera B.	2
J3439144	MALE CONNECTOR 53254 5V.90 P.2	CN5 on Bassiera B., CN3 on Bellows Bounce B.	2
J3439159	4P MALE CONN. 53254-0470 90° P.2	CN1 on Chin Switch B.	1
13369568	B3B-PH-K-S CONNECTOR	CN13 on Jack B.	1
13369566	B6B-PH-K-S CONNECTOR	CN1 on Bellows Bounce Motor B.	1
13369564	B12B-PH-K-S CONNECTOR	CN8 on Jack B., CN12 on Power Amp B.	2
13369582	B13B-PH-K-S JST CONNECTOR	CN2 on Right Register B.	1
J3439171	4P MALE CONNECTOR 90 P.2 M	CN76 on Power Amp B.	1
J3439189	8P MALE CONNECTOR B8B-PH-K-S P.2 JST	CN1 on After Touch B.	1
		CN16 on Jack B., CN1 on Phones B.	2

WIRING, CABLE

#	5100013777	FI-SE20S CABLE	1
#	K3468383	SML2CD-30x60-BDx10(BL)-P1-S5-M UL20624	1
#	7783627000	4P CABLE ASSY (20) 2C XHP-4 P.2.5 (JST)	1
#	7783628000	6P CBL ASSY 12/15/36 C6/3P2 JST+F.+TW.	1
#	7783629000	4P CBL ASSY (12) -2C(51065) P.2 D/R	1
#	7783630000	4P CABLE ASSY 12/34	1
#	7783631000	4P CBL ASSY (14) -2C P.2 D/R JST	1
#	7783632000	15P CABLE ASSY AWG28 (30) -2C P.2 D/R	1
#	7783633000	13P CBL ASSY (30) -2C P.2 D/R JST	1
#	7783634000	5P CABLE ASSY (24) -2C P.2 D/R (JST)	1
#	7783635000	14P CBL ASSY (40) -2C P.2 D/R JST	1
#	7783636000	10P CBL ASSY (32) -2C P.2 D/R JST	1
#	7783637000	9P CABLE ASSY (22) -2C P.2 JST D/R	1
#	7783638000	12P CBL ASSY (18) -2C P.2 D/R JST	1
#	7783639000	6P CABLE ASSY (18) -2C P.2 D/R	1
#	7783640000	1+1P COAXIAL CBL ASSY (22)P.2 JST	1
#	7783641000	5P SHIELDED CBL ASSY (14)-2C 6V JST D/R	1
#	7783642000	4P CBL ASSY (18) -2C P.2 D/R 51065	1
#	7783643000	5P SHIELDED CBL ASSY (28)-2C 5V JST D/R	1
#	7783644000	5P CABLE ASSY (40) -2C P.2 D/R 51065	1
#	7783645000	8P CBL ASSY (16) -2C P.2 D/R JST	1
#	7783649000	20P CABLE ASSY (28)	1
#	7783646000	3P CBL ASSY/28 (18) -2C 6V. P2 51065	1
#	7783647000	4P CABLE ASSY/28 (36)	1
#	7783648000	5P CABLE ASSY (38) -2C P.2	1

SCREW

#	J2289329	SCREW 2.2X4.5 TC TC (NICKEL-PLATED)	2
#	J2289346	SCREW 2.2X13 TC PR BLACK UNI 6954	6
	K2288146	SCREW 2.2X9.5 TCTCPRBZ ZINC.	14
	J2289314	SCREW 2.2X9.5 TCTCPRBZ ZINC.WHITE	33
	J2289160	SELF TAP.SCREW 2.9X13 TCTCPR BR	20
	K2288133	SCREW 3.5X13 TC TC PR TFR H.7 BRUN	12
	J2289250	SELFTAP.SCREW 2.9X9.5 TC TSP PR BRUN	8
	J2289193	SELF LOCK.SCREW M3X6 TC TC H.6	17
	J2289292	SCREW M3X6 TC TSP BRUN	4
	J2289280	SCREW 2.9X9.5 TC TC INOX	4
	J2289316	SCREW 2.9X10 TC BZ TFR T.7 ZINC HILO	155
	K2288164	SCREW M4 W/POLISHED HEAD	2
#	J2289347	SCREW M3X6 UNI 7380 A2-70	4

PACKING

#	K2678106	POLYETH.ENVELOPE 55x40	1
#	K2618374	OUTER PACKAGE FR-8X/XB	1
#	K2638426	RIGHT LDPE PROTECTION	1
#	K2638427	LEFT LDPE PROTECTION	1

MISCELLANEOUS

#	J2269121	ADHESIVE RUBBER 10 MM. TH. 2	1
	40238734	ACETATE TAPE(1ROLL=30 MT.)	1
	40122612	NITTO ACETATE TAPE #5 BLACK W10MM 30M	1
	K2268203	BLACK ADHESIVE FELT MM 250X5X1	1
	40122556	NITTO BI-STICK TAPE #575 W30MM 30M	1
#	K2268246	ADHESIVE FELT (BLACK) MM 3X8X484	1
#	K2268255	ADHESIVE FELT MM. 350X10X3 (BLACK)	2
#	K2518105	LOGO LABEL (ROLAND)	1
#	K2268251	AIR FLOW DAMPER	1
	J2289328	NUT MA4 DIN 6923 ISO4161 ZINC	4
	K2168117	LED SPACER H.1.5 D.E.5.5	32
#	K2268243	FOAM PROTECTION F/BTRY COVER MM 300X30X5	1
	K3468295	ELASTIC BAND F/BATTERY	1
#	K226821501	RUBBER WASHER FOR BASSIERA	123
	J2159118	SILICONE SENSOR TUBE MM 2X4	1
	K2358112	FOOT HERAFLEX 56SH H.9	4
	J2159123	RIVET PFP-7-01 (RICHCO)	9
#	K2268247	ADHESIVE BLACK FELT MM 248X6X3	1

	J2599112	BI-ADHESIVE TAPE 950 3M MM5		2
	K2248150	FELT WASHER I/D 7 E/D 13 TH.1.5		6
#	K2178109	SPRING F/TREBLE BUTTON		1
	K1188130	TWEETER SUPPORT EM2000/EG101		2
	K2168128	JACK BOARD COMPENSATOR (BLACK)		2
#	K1188166	LCD HOLDER BLACK		1
#	K2228116	DISPLAY GASKET		1
#	K2148130	AIR VENT SHAFT		1
#	K2138137	STOPPER F/KEYBOARD BASE ENCLOSURE		1
#	K2268252	SOUNDPROOFING FOAM (CASSA CANTO)		1
#	K2268253	SOUNDPROOFING FOAM BELLOW STOPPER		2
#	K2268254	SOUNDPROOFING FOAM (CASSA BASSI)		1
	J259913701	KEY GREASE		1
	K118813801	SUPPORT F/BASS REGISTERS		1
	K2148124	ACTUATOR AFT.-MASTER BAR FR-5b/7b		1
#	K2318114	BASS STRAP	for FR-8X BK RD	1
#	K2318115	BASS STRAP (BLACK LEATHER)	for FR-8XD	1
#	K2268248	BACK PAD	for FR-8X BK RD	1
#	K2268249	BACK PAD FR-8XD	for FR-8XD	1
	Note: BACK PAD includes four #J2289304 RING BUTTON F/ BACK PAD GODRON K1C FE-NK			
	J2289304	RING BUTTON F/ BACK PAD GODRON K1C FE-NK		4
	K2328108	ALUMINIUM WHEEL F/BASS STRAP	for FR-8X BK RD	1
#	K2328110	BLACK ALUMINIUM WHEEL F/BASS STRAP	for FR-8XD	1
#	K2128176	SHOULDER STRAP HOLDER	for FR-8X BK RD	2
#	K2128177	SHOULDER STRAP HOLDER FR-8XD	for FR-8XD	2
ACCESSORIES				
	K2498101	COVER CLOTH FR-7	for FR-8X BK RD	1
#	K2498102	COVER CLOTH FR-8XD/XBD	for FR-8XD	1
#	K2318113	PAIR OF SHOULDER STRAPS	for FR-8X BK RD	1
#	K2268250	PAIR OF SHOULDER STRAPS FR-8XD	for FR-8XD	1
#	7783618000	BLACK (FREE BASS) CONFIGURATION ASSY		
	Note: WHITE (FREE BASS) CONFIGURATION ASSY includes the following parts:			
	2 pcs	K2478460	WHITE CONVEX BASS BUTTON CAP	
	3 pcs	K2478461	WHITE CONCAVE BASS BUTTON CAP	
	3pcs	K2478462	WHITE KNURLED BASS BUTTON CAP	
	20pcs	K247841501	BLACK CONVEX BASS BUTTON CAP	
	10pcs	K247841601	BLACK CONCAVE BASS BUTTON CAP	
	10pcs	K247841701	BLACK KNURLED BASS BUTTON CAP	
#	K6018832	OWNER'S MANUAL (E) FR-8X/XD		1
#	K6018833	OWNER'S MANUAL (J) FR-8X/XD		1
#	K6018834	ADDENDUM OF OWNER'S MAN. (E) FR-8XD/XBD		
#	K6018835	ADDENDUM OF OWNER'S MAN. (J) FR-8XD/XBD		
A	5100028861	AC ADAPTOR PSB-14U		1
△	J3439188	AC CORD 230V FOR ADAPT.SA165A-1250U	(only for 230V)	1
△	01903334	AC CORD SET 100V 1.0M FOR PSB	(only for 100V)	1
△	02562456	AC CORD SET 120V 1.0M (NON POLAR)	(only for 117V / 117V-US)	1
△	J3439226	POWER CORD 230VE MT.2.5	(only for 230VE)	1
△	03785590	AC CORD SET SC-078-NA05 240VA	(only for 240VA)	1
△	03453012	AC CORD SET CCC CERT 220V 2P-2P 2.5M BL	(only for 220V)	1
△	5100012293	AC CORD SET 117VBL 1.0M FOR PSB	(only for 117V-BL)	1

Checking the Program version

Power on the FR-8x and wait for the opening window sequence: in the second window the current version number appears under the writing "Roland FR-8x".

For FR-8X e.g.



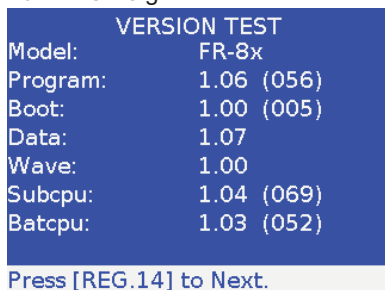
For FR-8XD Dallape' e.g.



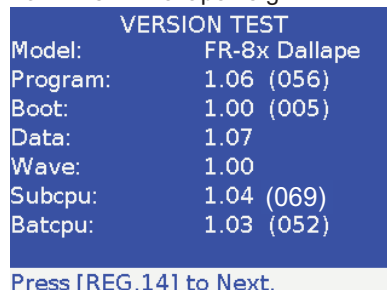
Checking the Version Number

Please refer to 4. Version Test (page 37) in Test Mode section.

For FR-8X e.g.



For FR-8XD Dallape' e.g.



6. Turn FR-8X off.

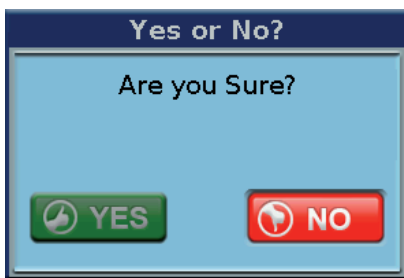
Performing a Factory Reset

This procedure restores all factory settings. You may wish to save your settings to a USB storage device before initializing the FR-8x. Please refer to FR-8X Owner's Manual for the Export /Import procedure.

1. Press the [MENU] button
2. Rotate the [DATA/ENTER] knob until you reach the UTILITY function.
3. Push the [DATA/ENTER] knob
4. Rotate the [DATA/ENTER] knob until you reach the following message:



5. Press the [MENU/WRITE] button to start initializing the FR-8x. The following message is displayed:



6. To reset the FR-8x to its factory settings, rotate the [DATA/ENTER] knob to select "YES" and push it. Otherwise, select "NO" or press the [EXIT] button. The display briefly shows a "Please Wait" message and then "Operation Complete".

Updating the System/Data

Required Items:

- USB memory
- PC (Windows XP)
- File for updating - FR-8X_Vxx.zip (available from the service-net).

Procedure:

1. First delete all existing files from the USB memory.
2. Decompress the FR-8X_Vxx.zip on a personal computer and copy them to the USB memory root directory.
3. Once the FR-8x has been turned off, plug the USB memory into the USB port.
4. Turn the power on while holding the [MENU/WRITE] button pressed and do not release it until the message "Update Mode:" appears on the display.

Note: The update procedure takes about 5 minutes.

Attention:

During the update procedure you must not:

- a. switch the FR-8x off
- b. disconnect the Usb Memory

5. Once the updating procedure has been successfully completed, the "SUCCESS" message will appear on the display.
6. Turn the FR-8X power off and unplug the USB memory.

Test Mode

All data is lost when a Test Mode operation is executed.*

Therefore, make sure to back up important user data to a USB memory before executing the Test Mode operation.

** Only if the Factory Reset will be executed. (Please refer to 2. Factory reset on Test Mode section).*

Required Items

- AC cord
- PSB-14U
- USB memory (like ROLAND M-UF2G)
- Headphones
- Oscilloscope
- MIDI Cable
- USB cable
- Audio cable to connect Oscilloscope ➔ OUTPUT L/MONO - R/MONO
- Battery Pack NIMH UL2054 4,5A SANYO

Entering the Test Mode

Turn on the FR-8X while holding down the SET [◀] [▶] buttons.
Keep the buttons pressed until "Model Setting" message appears on the LCD.

Exiting the Test Mode

Turn the power off.

Moving (forced) between Test Items

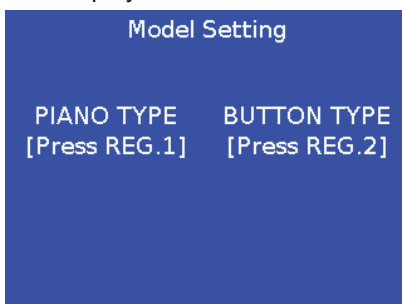
To skip to the next test item, press the [Menu/Write] and SET [▶] buttons.
 To return to the previous test item, press the [Menu/Write] and SET [◀] buttons

Test Items

1. Model setting (p. 36)
2. Factory Reset (p. 36)
3. Pressure sensor calibration (p. 37)
4. Version Test (p. 37)
5. Keyboard Test (p. 37)
6. Bass Board check (p. 38)
7. Switches/ LED (p. 38)
8. Encoder [DATA/ENTER] check (p. 39)
9. AFT calibration (p. 40)
10. ADC (p. 40)
11. Bellows Test (p. 41)
12. LCD Test (p. 41)
13. MIDI IN/OUT Test (p. 42)
14. USB MIDI Test (p. 42)
15. USB MEMORY Test (p. 42)
16. Speakers Test (p. 43)
17. Phones Test (p. 43)
18. Outputs Test (p. 44)
19. Device Test (p. 46)
20. Battery charging Test (p. 46)
21. Power Battery Test (p. 48)
22. Power Off Test (p. 48)

1. Model setting

The display shows:



Press the Treble register [1] to configure the accordion as **FR-8X** .

At the end of the setting, the accordion will automatically go to the next test.

2. Factory Reset

The display shows:



Press the Treble register [1] to start the Factory Reset and wait until it is completed alternatively you can choose to skip the Factory reset by pressing the [Menu/Write] and SET [▶] buttons.

At the end, the accordion will automatically pass on to the next test.

3. Pressure sensor calibration

The display shows:



Close the bellows by pressing the air button.

Attention:

Make sure to close the bellows very well so as to purge all the remaining air.

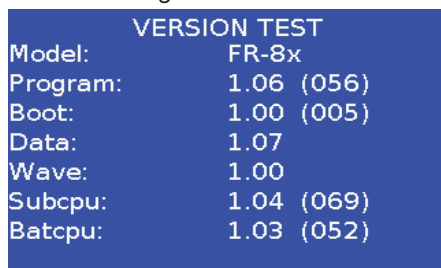
Press the Treble register [1].

At the end, the accordion will automatically pass on to the next test.

4. Version test

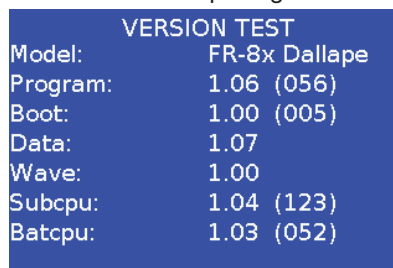
The display shows:

For FR-8X e.g.



Press [REG.14] to Next.

For FR-8XD Dallape' e.g.



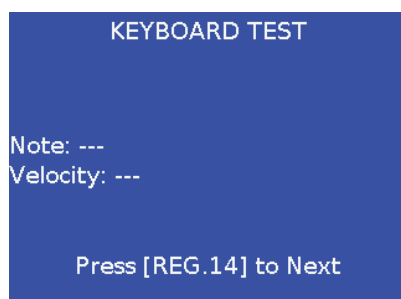
Press [REG.14] to Next.

Attention: If the display shows "---" instead of the version no. (e.g. 1.00), it means that this part of the software has not been loaded, so you will have to perform the system and data update.

At the end, press the Treble register [14] to pass on to the next test.

5. Keyboard check

The display shows:



Perform all the chromatic scale twice, while exerting first a light pressure then a strong pressure on the keys.

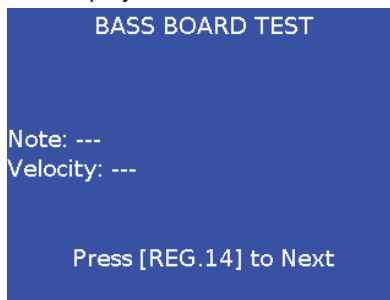
For each key make sure:

- That the sound can be heard correctly and with the right dynamics.
- That one single note can be heard for each single key.
- That the note be of the appropriate frequency (low for the keys on the left and higher for the keys on the right).

At the end, press the Treble register [14] to pass on to the next test.

6. Bass board (Bassiera) check

The display shows:



Perform all the chromatic scale twice, while exerting first a light pressure then a strong pressure on the buttons. For each button make sure:

- That the sound can be heard correctly and with the right dynamics.
- That one single note can be heard for each single button.
- That the note be of the appropriate frequency.

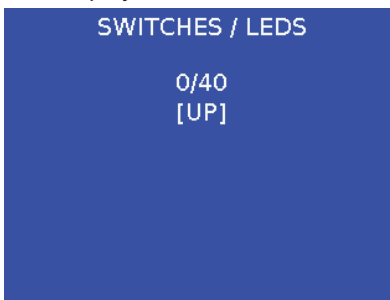
Note:

Should the Bassiera not work, it might be either caused by the incorrect connection of the cable inside the bellows or by the malfunctioning of the MIDI serial between the Bassiera and the Main board.

At the end, press the Treble register [14] to pass on to the next test.

7. Switches check

The display shows:



Press the switches one at a time while respecting the sequence shown in the figures underneath. After having pressed the [REC] button, (no. 24) the LED associated to it will blink. For each switch pressed the corresponding LED will be lit. The display will show the button to be pressed every time.

TRAFORO section – Switches -Treble registers – Master Bar – Chin Switches



The display shows:



Press the Bass Registers one at a time, while respecting the sequence shown in the figures underneath: the display will show the button to be pressed every time.

CASSA BASSI section – Bass registers

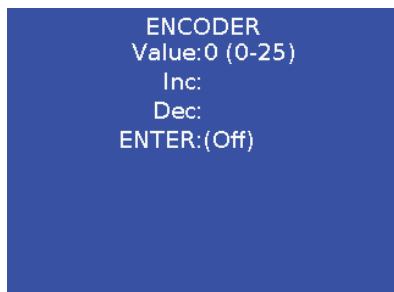


For each pressure a musical note must be heard.

At the end of the sequence, the accordion will automatically pass on to the next test.

8. Encoder [DATA/ENTER] check

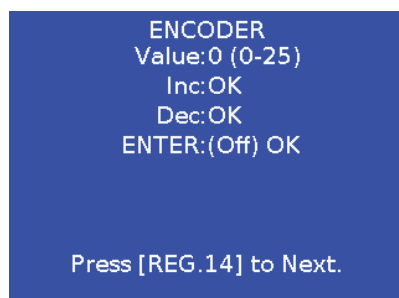
The display shows:



Move the [DATA/ENTER] knob clockwise and make sure that only the value on "INC Number" increases as long as you get an OK after 25 steps.

Move the [DATA/ENTER] knob counter-clockwise and make sure that only the value on "DEC Number" decreases as long as you get an OK after 25 steps.

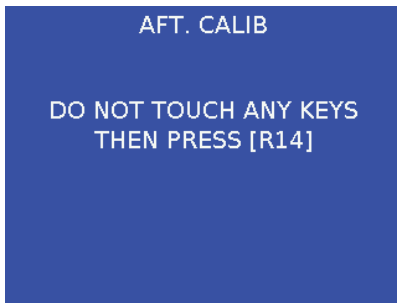
Press the [DATA/ENTER] knob and be sure that the ENTER value changes from (off) to (on).



At the end, press the Treble register [14] to pass on to the next test.

9. AFT calibration

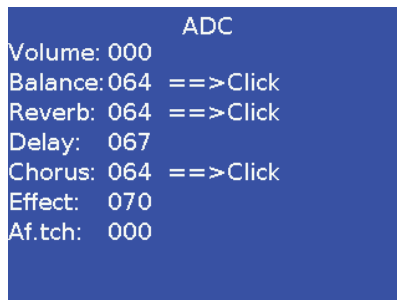
The display shows:



Press the Treble register [14] to automatically calibrate the after touch.

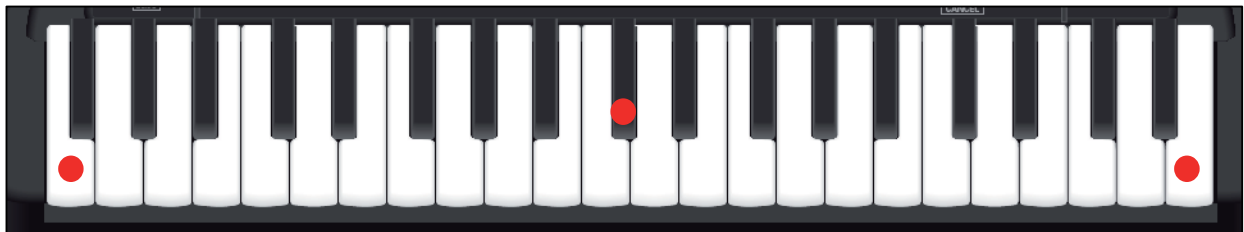
10. ADC

The display shows:



Move the six digital potentiometers, one at a time, from the minimum to the maximum or vice versa, and make sure that the value gradually changes from **0** (minimum) a **127** (maximum).
In addition, for the BALANCE-CHORUS-REVERB potentiometers, make sure that in the central position (a mechanical click will be heard) the value is **64**.

One at a time, press the first white key, a central black key and the last white key, then check that the display shows the value of the After Touch (**AFT**) which gradually changes from **0** (minimum) to **127** (maximum).



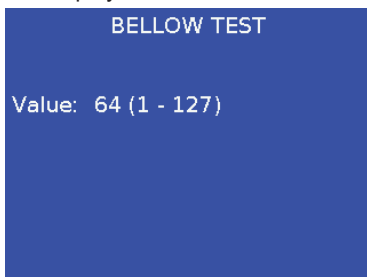
Attention

While moving either a potentiometer or the After Touch, carefully check that the display shows the variation of one value only and that this value corresponds to the name of the potentiometer which is being moved.
If several values change together, there must certainly be something wrong (the instrument might need to be repaired).

Press the Treble register [14] to automatically calibrate the after touch.

11. Bellows check

The display shows:



Note: 64 is the idle value of the bellows.

Make sure that the display shows the value of 64 when the bellows is idle.

Check that, when opening the bellows with a growing strength, the value on the display varies from 64 to 127.

Check that, when closing the bellows with a growing strength the display shows a value variation from 64 to 1.

Press the Treble register [14] to pass on to the next test.

12. LCD check

The display shows:

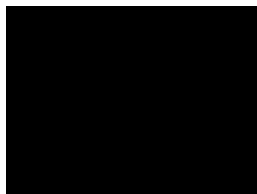


The Treble registers from [1] to [6] are associated to the tests for the LCDs; press them one at a time while checking that the LCD works properly:

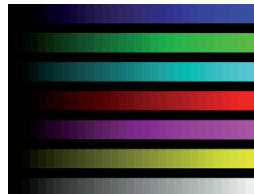
Treble registers [1] = LCD On



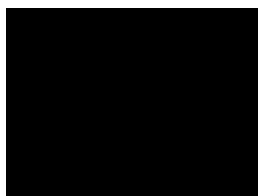
Treble registers [2] = LCD Off



Treble registers [3] = Colors



Treble registers [4] = Light Off



Treble registers [5] = Light On



Treble registers [6] = Image



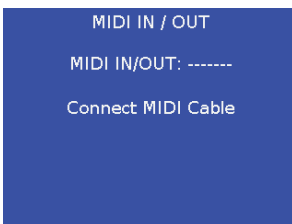
Treble registers [7]



Press the Treble register [14] to pass on to the next test.

13. MIDI IN / OUT

The display shows:



Connect the MIDI Cable between the **MIDI IN** and the **MIDI OUT**.
Verify that that the display visualizes "**MIDI I/O : Connected**".
Disconnect the MIDI cable and make sure the display shows "**MIDI I/O : Disconnected OK**".

Press the Treble register [14] to pass on to the next test.

14. USB/MIDI

The display shows:



Connect the USB cable from **USB COMPUTER** socket to **USB MEMORY** socket.
Verify that the display shows "**USB MIDI : Connected**".
Disconnect the USB cable and make sure the display shows "**USB MIDI : Disconnected OK**".

Press the Treble register [14] to pass on to the next test.

15. USB Memory

The display shows:



Connect the **USB Memory** (like ROLAND M-UF2G) to **USB MEMORY** socket.
Verify that the display shows "**USB MEMORY : Connected**" and "**Read/Write: OK**".
Disconnect the USB memory and make sure the display shows "**USB MEMORY : Disconnected OK**" and "**Read/Write: OK**".

Press the Treble register [14] to pass on to the next test.

16. Internal speakers check

The display shows:



The Treble registers from [1] to [8] are associated to the audio tests of the speakers:

Setting: **VOLUME** = Max

Keep the Treble register [1] pressed and make sure that the sound can be heard from the LEFT speaker only.

Keep the Treble register [2] pressed and make sure that the sound can be heard from the RIGHT speaker only.

Keep the Treble register [3] pressed and make sure that the sound can be heard from both speakers.

Keep the Treble register [4] pressed and make sure that the sound can be heard from both tweeters.

While keeping the Treble register [3] pressed, make sure that if you keep also the Treble register [5] pressed, the sound immediately disappears, and returns once you release it.

While keeping the Treble register [3] pressed (sound on both speakers), make sure that, if you keep also the Treble register [6] pressed, the sound immediately disappears, and returns once you release it.

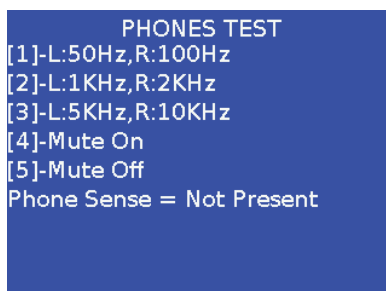
Keep the Treble register [7] pressed and make sure that the sound heard from the speakers has a Reverb effect.

Keep the Treble register [8] pressed and make sure that the sound heard from the speakers has a Chorus effect.

Press the Treble register [14] to pass on to the next test.

17. Phones test

The display shows:



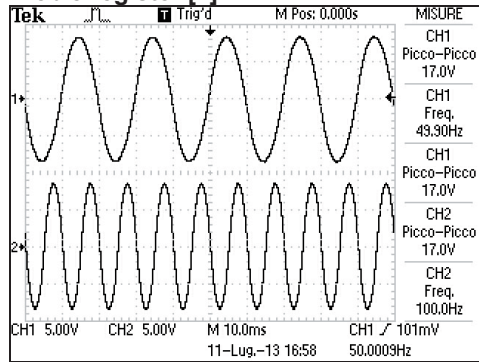
Insert the headphones, the message "Present" must be shown.

Setting:

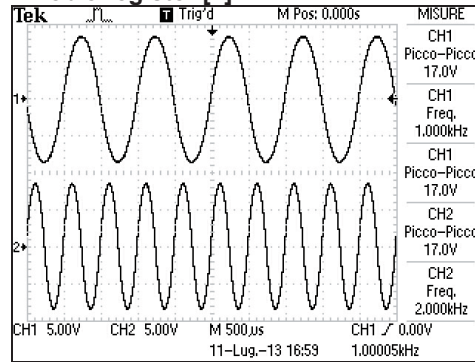
- Connect 1 x Stereo Audio Cable from **PHONES** to the **oscilloscope CH1-CH2** inputs.
- Oscilloscope setup: 5 V/div

Press the **Treble registers [1] - [2] - [3] - [4] - [5]** one by one and check the values on the oscilloscope as shown hereunder:

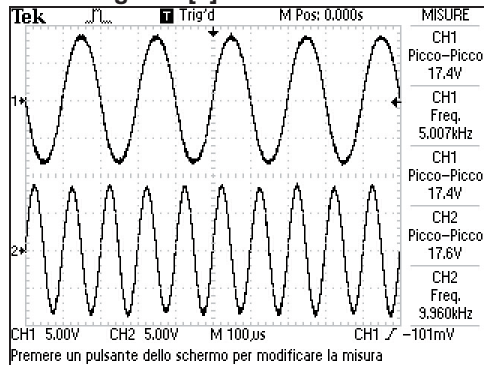
Treble register [1]



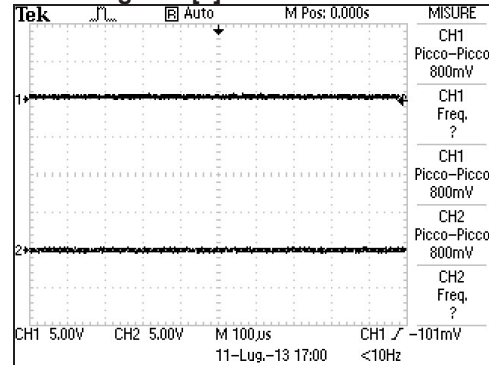
Treble register [2]



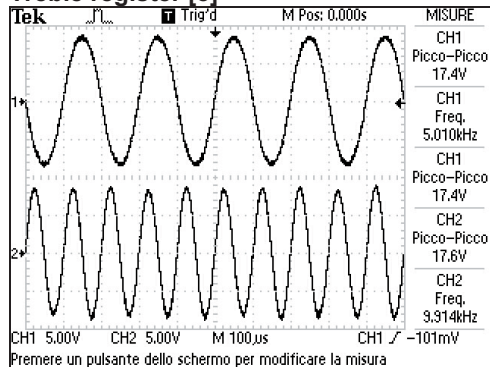
Treble register [3]



Treble register [4]



Treble register [5]



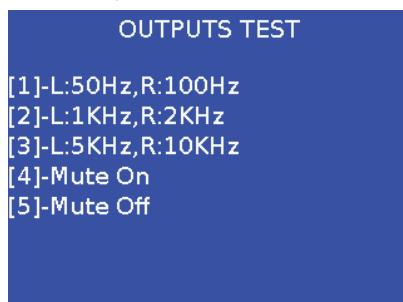
Mute ON check:

Keep the Treble register [5] pressed, verify that, the wave forms immediately disappear, and then return.

Press the Treble register [14] to pass on to the next test.

18. Output test

The display shows:



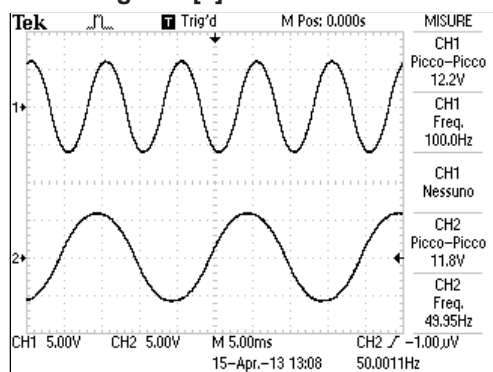
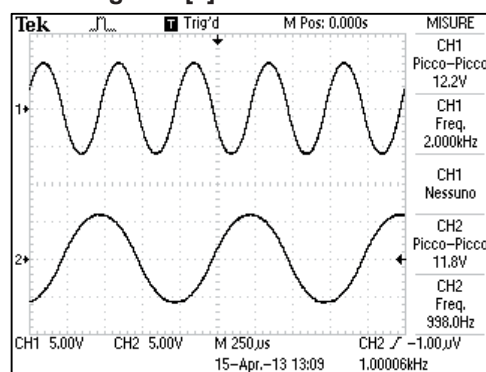
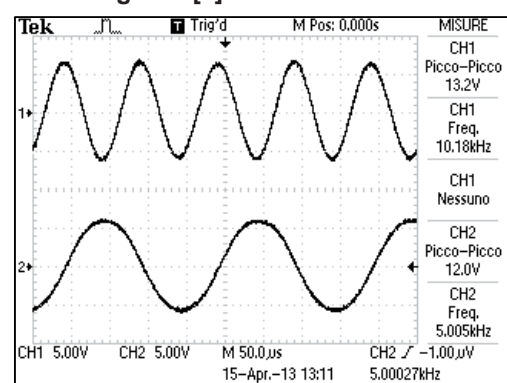
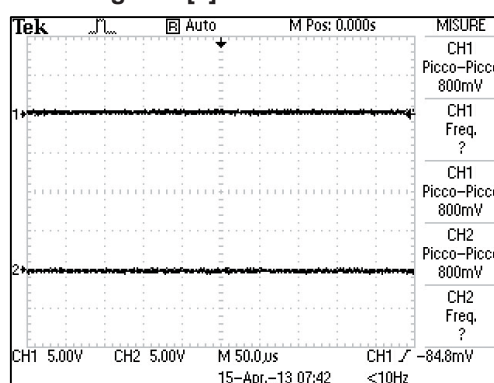
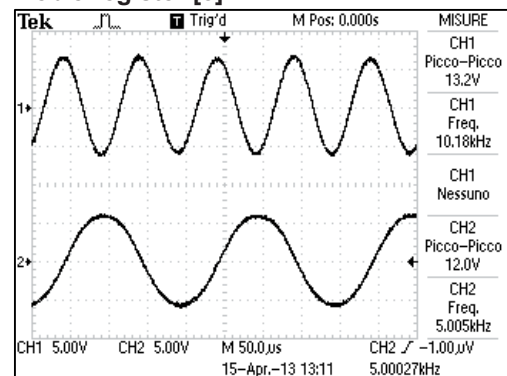
Setting:

- Connect 2 x Mono Audio cables from OUTPUT R/MONO and L/MONO to the oscilloscope CH1-CH2 inputs.
- Oscilloscope setup: 5 V/div

Attention:

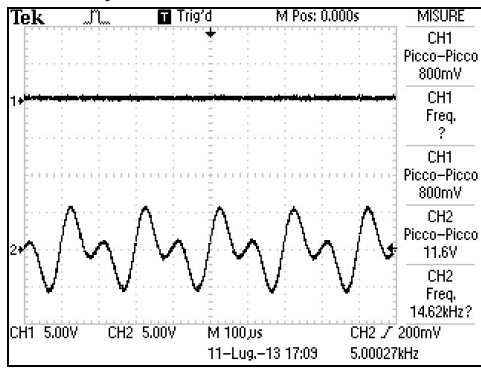
The two channels **OUTPUT R/MONO** and **L/MONO** must be inverted. When a signal is generated on the left, in fact it must come out from **OUTPUT R/MONO**, and the other way round, when a signal is generated on the right, it must come out from **OUTPUT L/MONO**.

Press the **Treble registers [1] - [2] - [3] - [4] - [5]** one by one and check the values on the oscilloscope as shown hereunder:

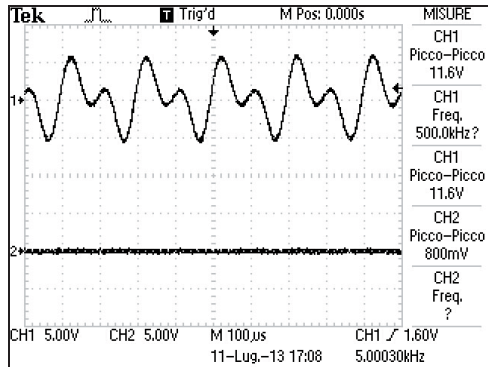
Treble register [1]**Treble register [2].****Treble register [3]****Treble register [4]****Treble register [5]****Mute ON check:**

Keep the Treble register [5] pressed, verify that, the wave forms immediately disappear, and then return.

Remove jack from **OUTPUT R/MONO**. Check the following values on the oscilloscope:



Remove jack from **OUTPUT L/MONO**. Check the following values on the oscilloscope:

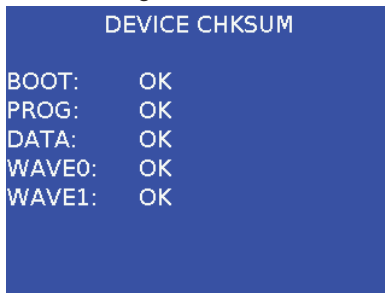


Press the Treble register [14] to pass on to the next test.

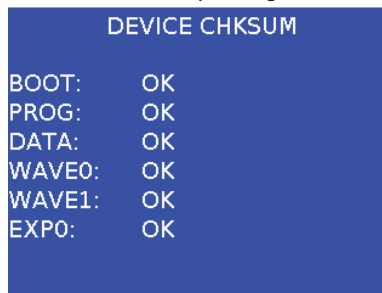
19. Device check

Wait until all the tests are performed and, at the end, make sure that all their results are **OK**.

For FR-8X e.g.



For FR-8XD Dallape' e.g.

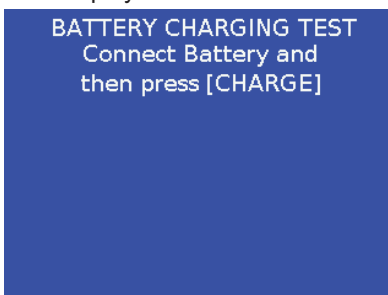


In case of error of one or more memory devices, the display will show a NG message near the involved item.


At the end, the accordion will automatically pass on to the next test.

20. Battery charging test

The display shows:



Connect the Battery Pack NIMH UL2054 4,5A SANYO.

Keep the [CHARGE] button pressed as long as the red LED remains lit steadily. 

The display shows:



```

BATTERY CHARGING TEST

      PRE-CHARGE
Vbatt:---
ISens1:---      Temp1:---
ISens2:---      Temp2:---
  
```

Verify that all the results of PRE-CHARGE test are "OK".

```

BATTERY CHARGING TEST

      PRE-CHARGE
Vbatt:OK
ISens1:OK      Temp1:26.5 OK
ISens2:OK      Temp2:26.5 OK

      Press [REG14] to test charge
  
```

Press the Treble register [14] to start the battery charge.

```

BATTERY CHARGING TEST

      CHARGE
Vbatt:---
ISens1:---      Temp1:---
ISens2:---      Temp2:---
  
```

Verify that all the results of CHARGE test are "OK".

```

BATTERY CHARGING TEST

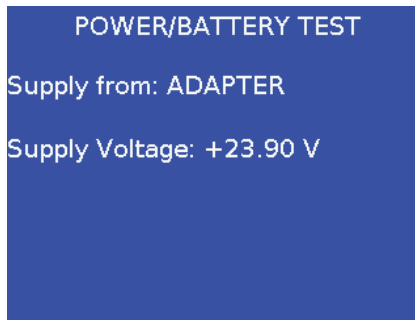
      CHARGE
Vbatt:OK
ISens1:OK      Temp1:24.0 OK
ISens2:OK      Temp2:24.0 OK

      Press [REG14] to next
  
```

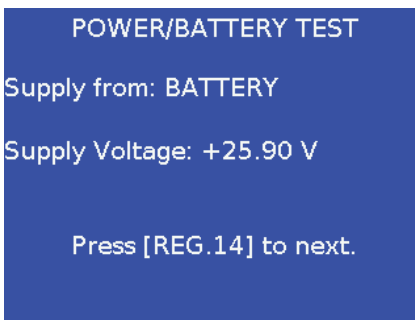
Press the Treble register [14] to pass on to the next test.

21. Power/Battery test

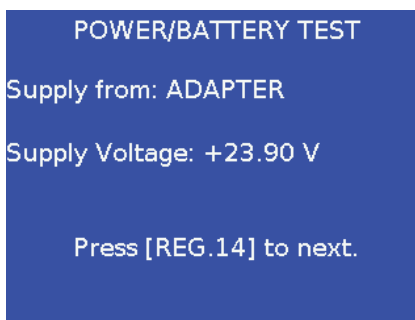
The display shows:



Disconnect the PSB-14U and verify that after a few seconds, the display shows : **“Supply from: BATTERY”**. Wait for a few seconds and check that the **“Supply Voltage”** ranges from **+25V** to **+29.8V** (if the battery is fully charged):



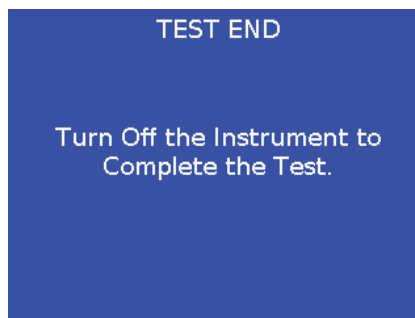
Connect the PSB-14U and verify that after a few seconds, the display shows : **“Supply from: ADAPTER”**:



Press the Treble register [14] to pass on to the next test.

22. Auto Power Off check

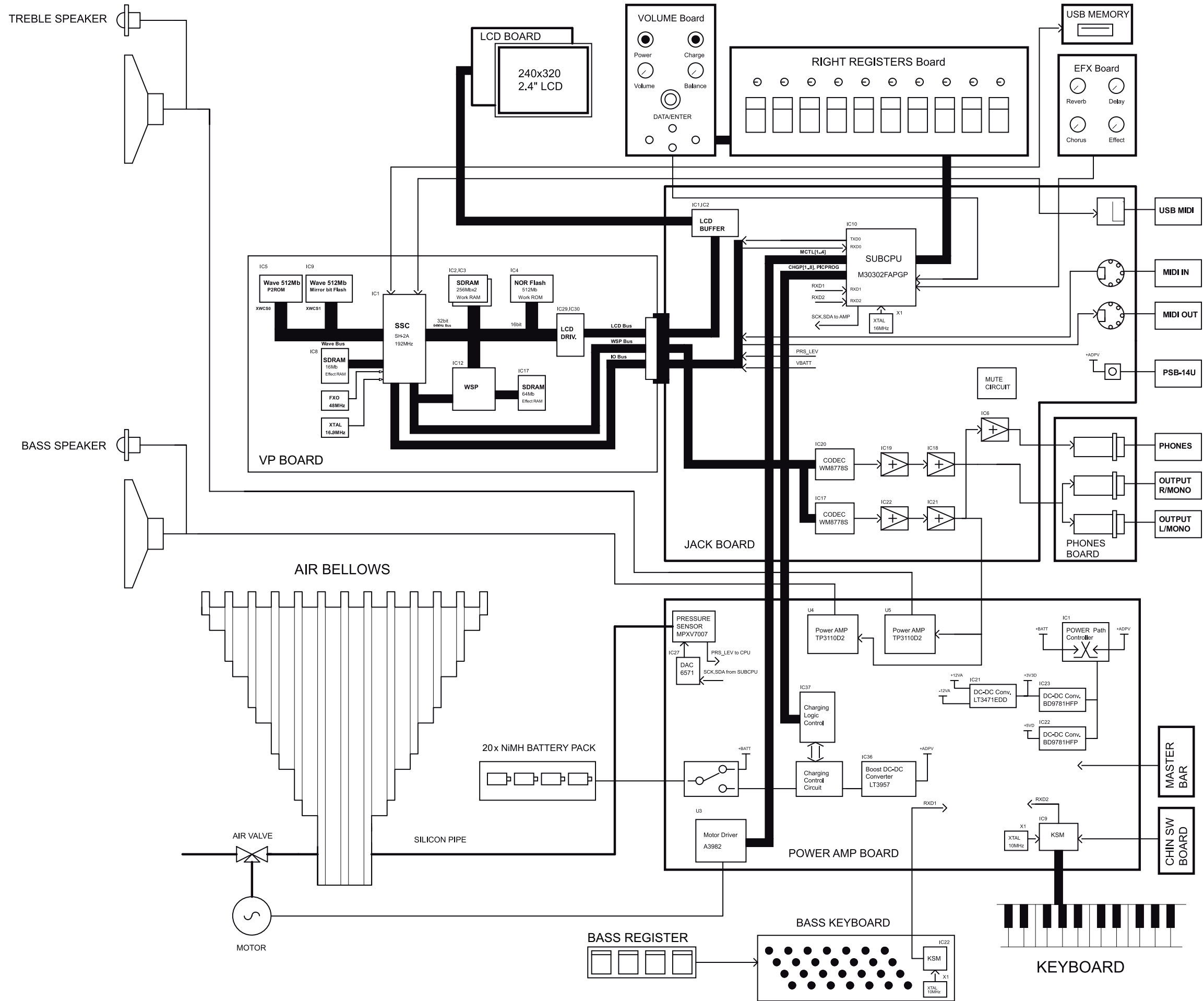
The display shows:



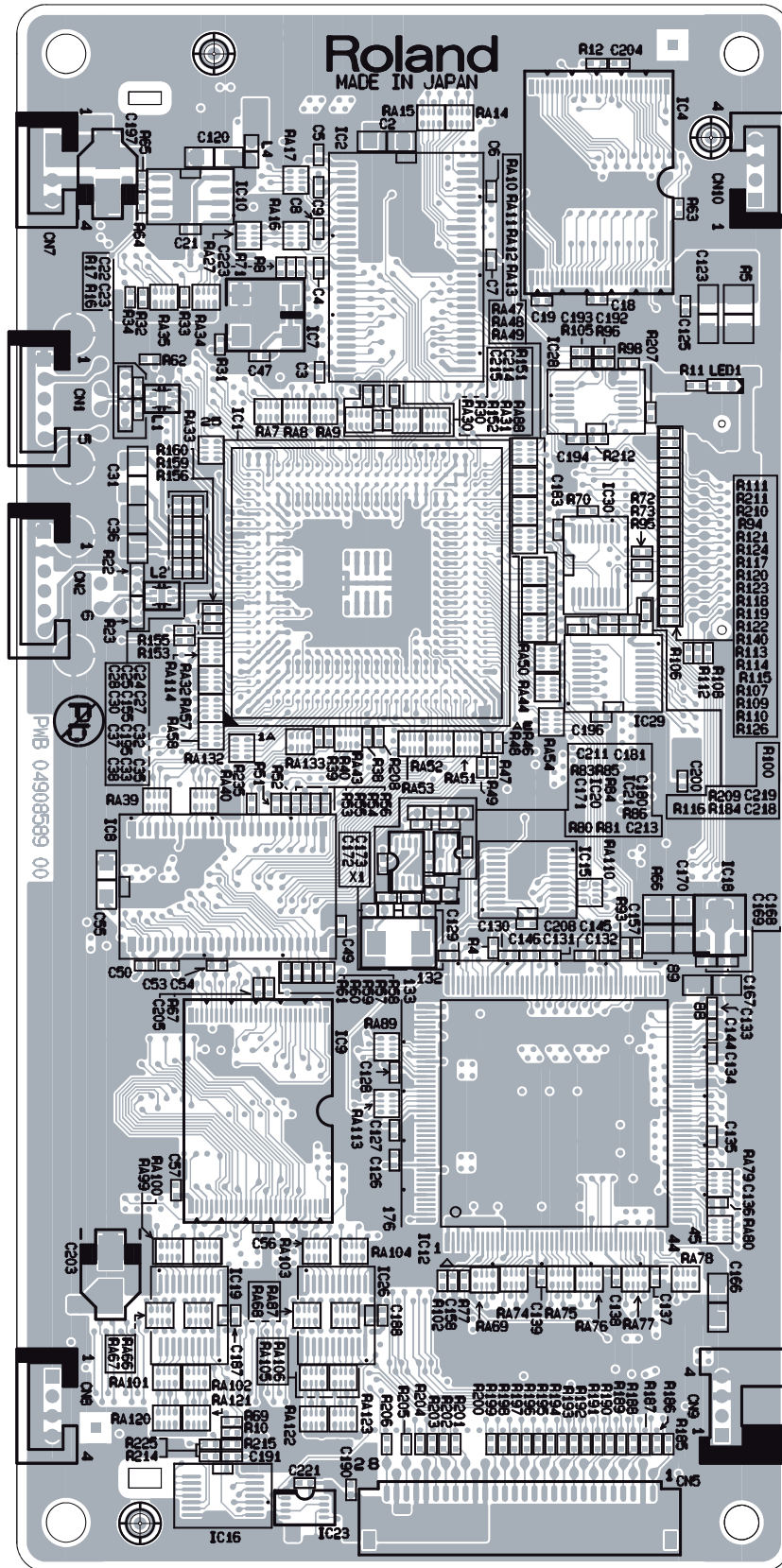
Press the [POWER] button.

PS: By pressing the [POWER] button you will also check the power off line.

BLOCK DIAGRAM

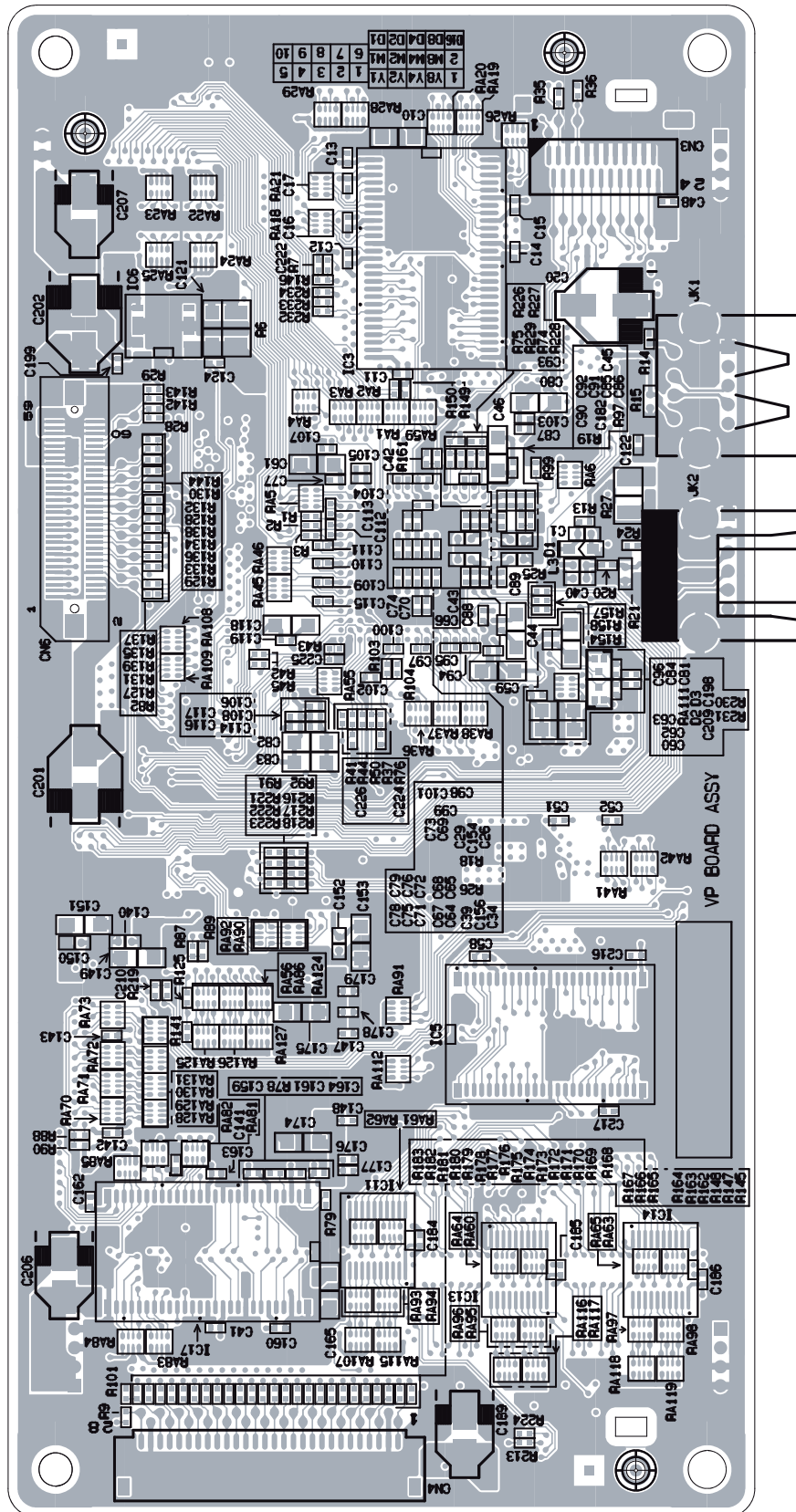


CIRCUIT BOARD ASSY 5100032238 (VP-BOARD) FR-8X
CIRCUIT BOARD ASSY 7784102000 (VP-BOARD) FR-8XD



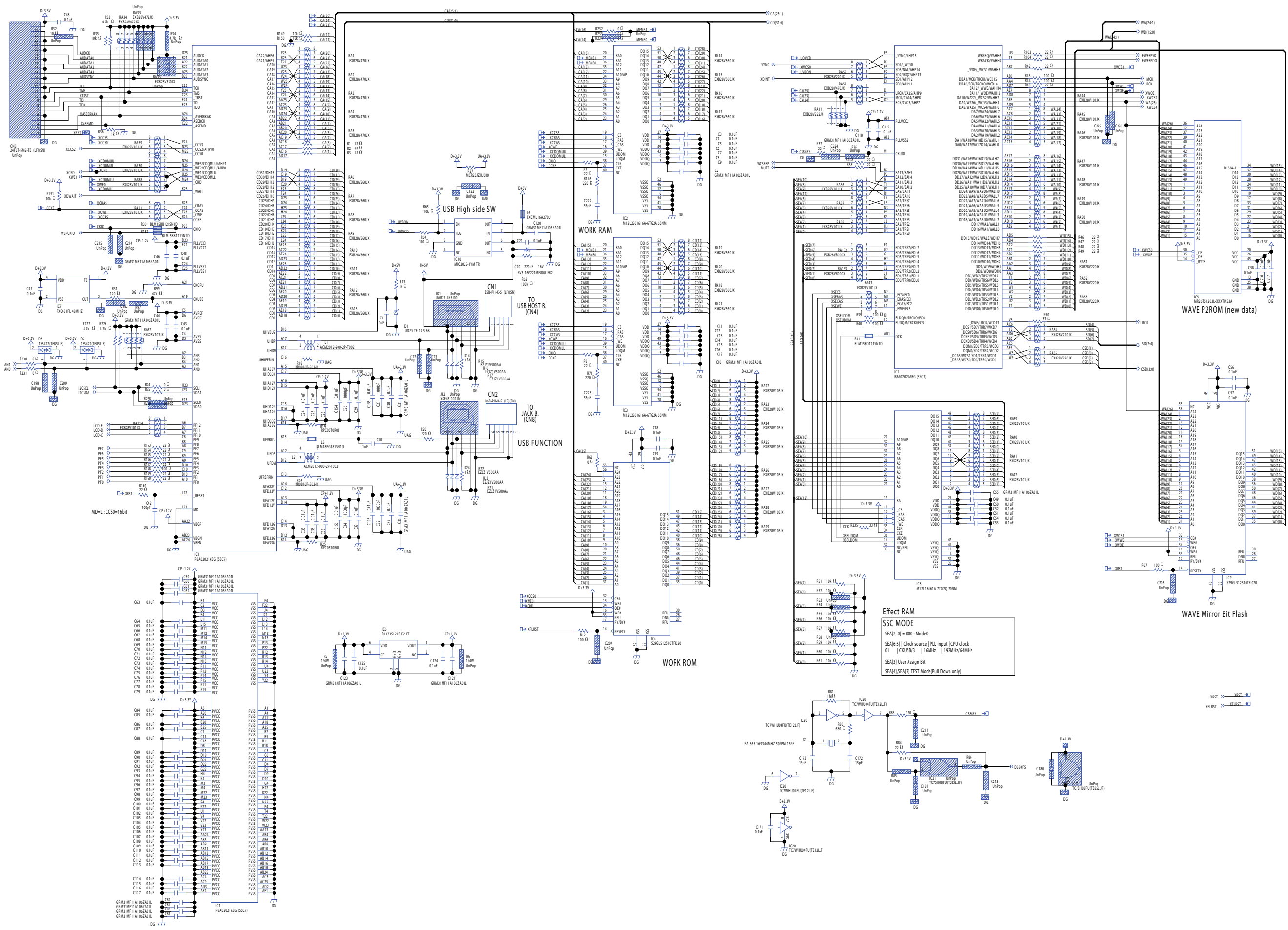
View from component side

CIRCUIT BOARD (VP-BOARD)

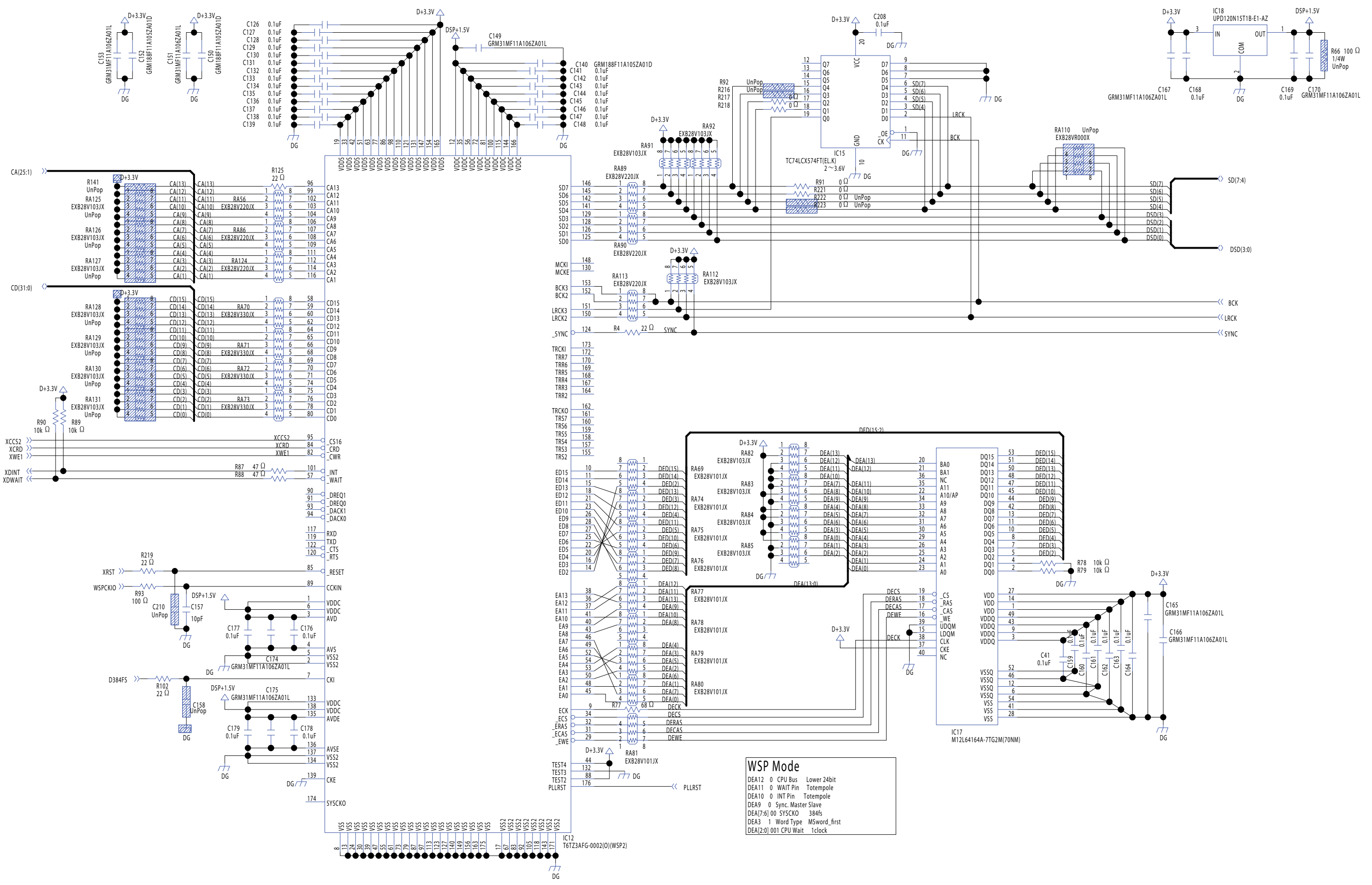


View from solder side

CIRCUIT DIAGRAM (VP-BOARD 1/3)



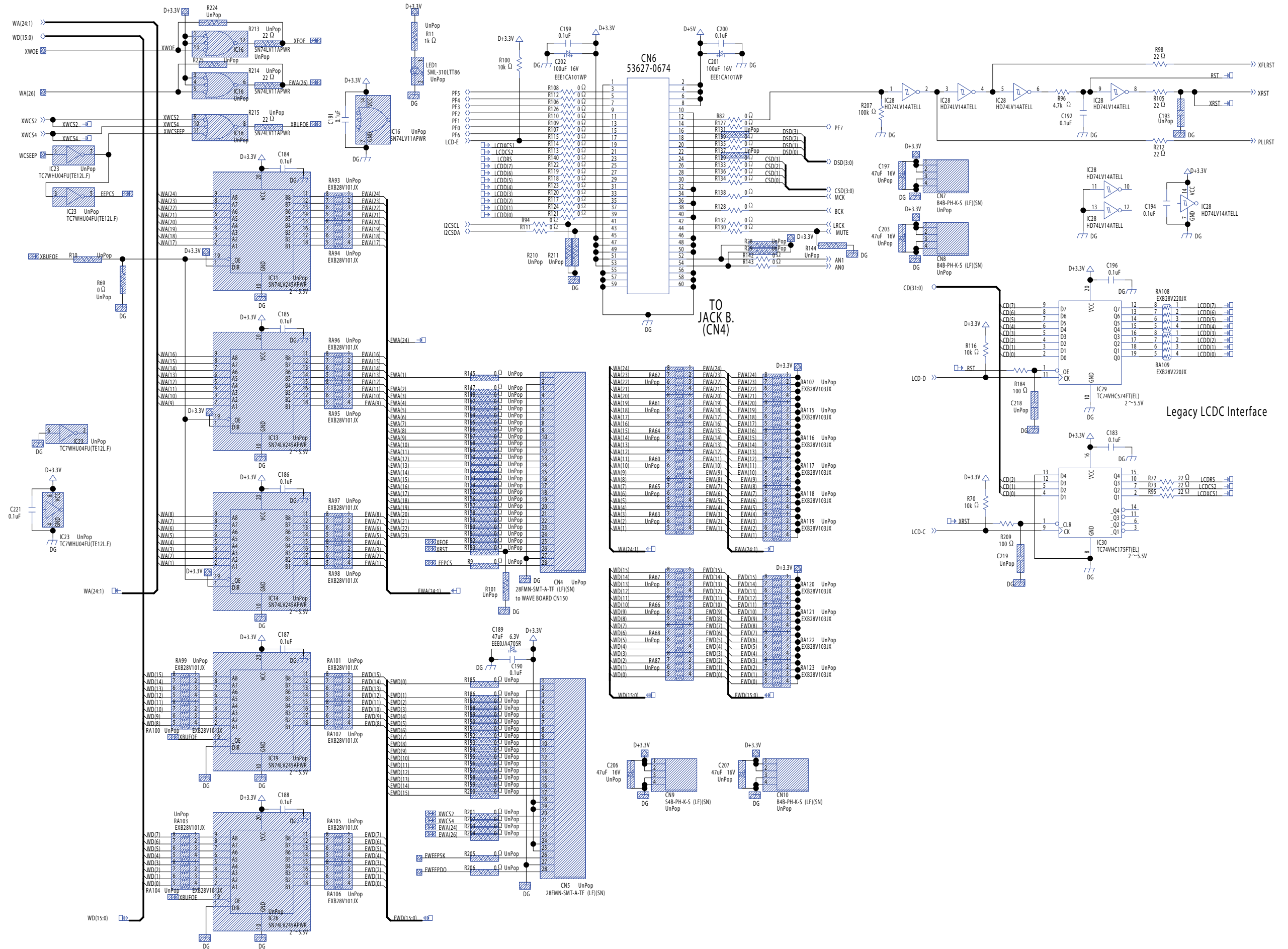
CIRCUIT DIAGRAM (VP-BOARD 2/3)



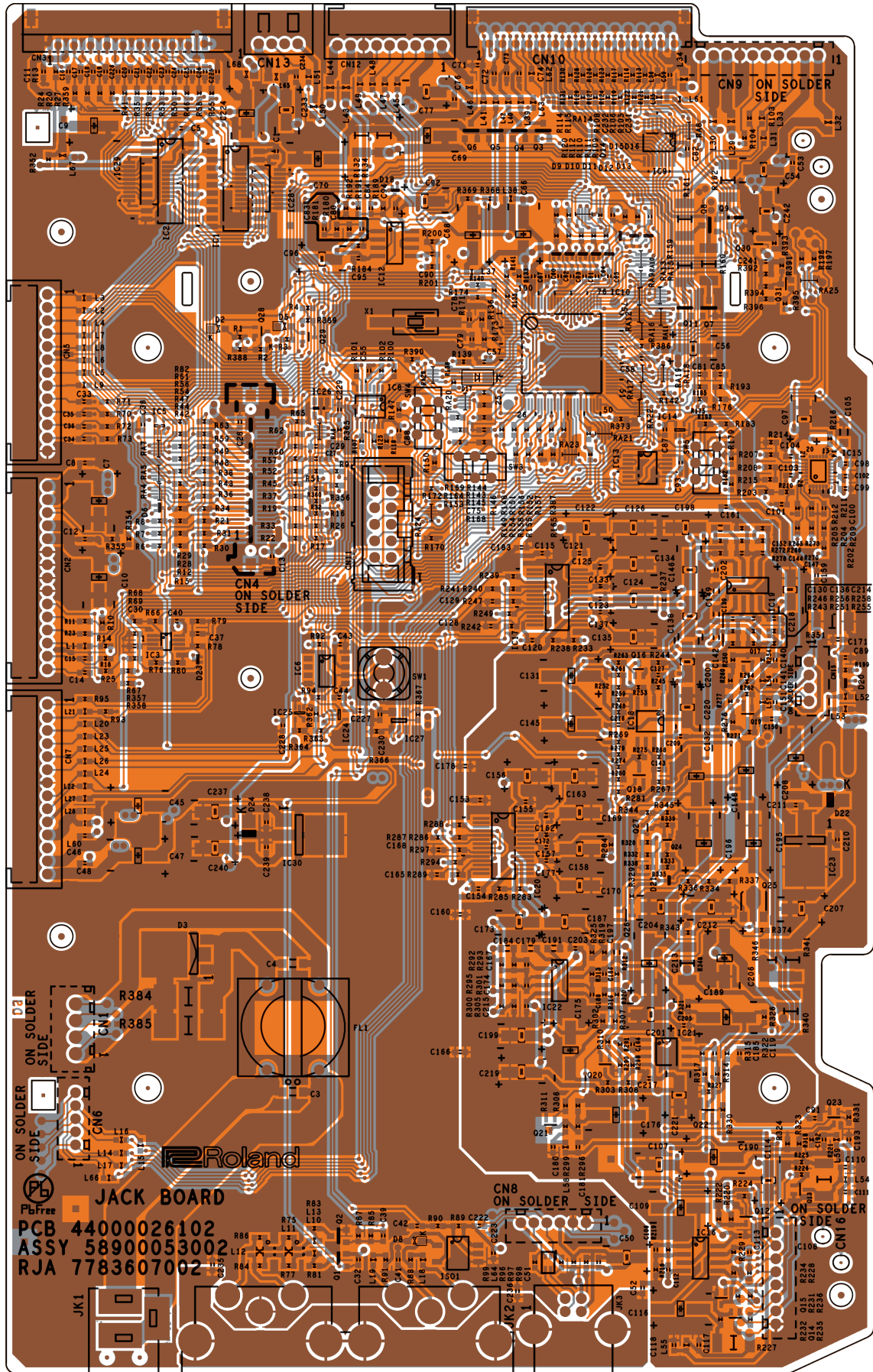
WSP Mode

DEA12 0 CPU Bus Lower 24bit
 DEA11 0 WAIT Pin Totempole
 DEA10 0 INT Pin Totempole
 DEA9 0 Sync. Master Slave
 DEA[7:6] 00 SYSCKO 384fs
 DEA3 1 Word Type MSword first
 DEA[2:0] 001 CPU Wait 1clock

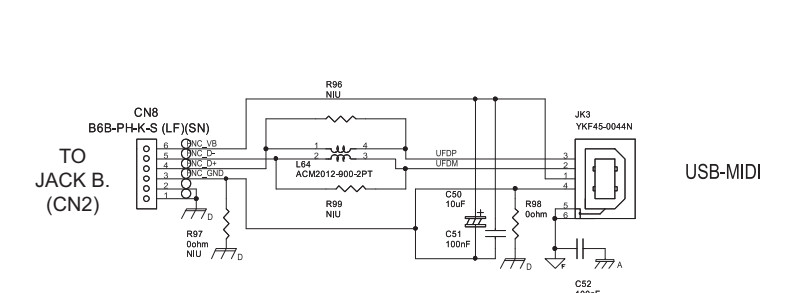
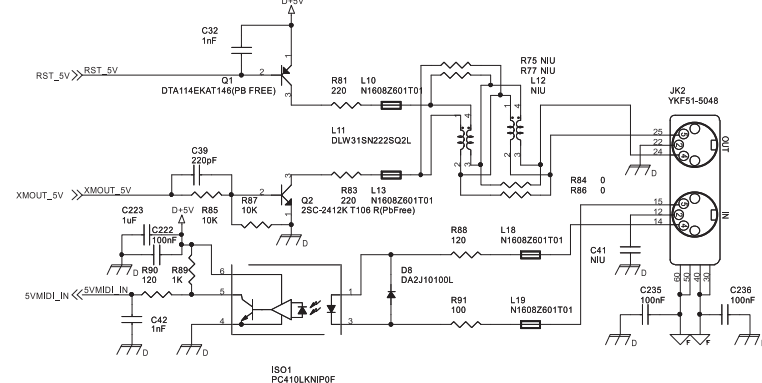
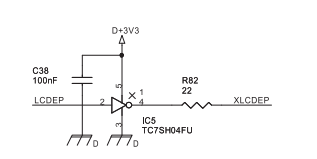
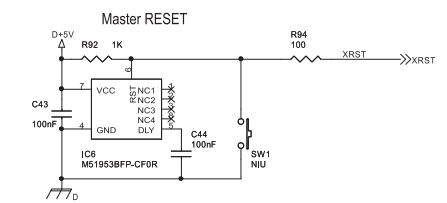
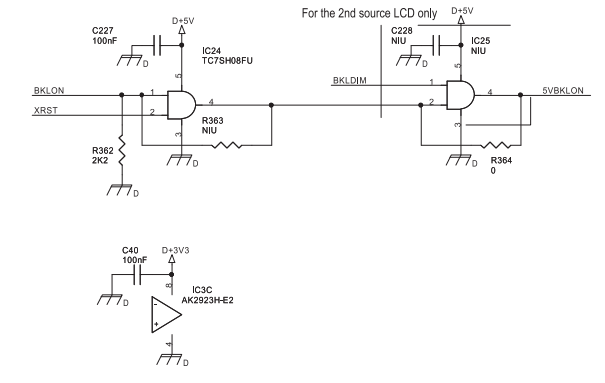
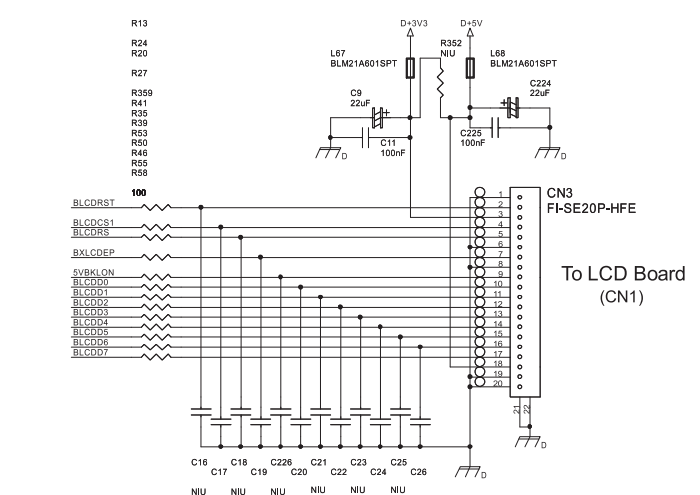
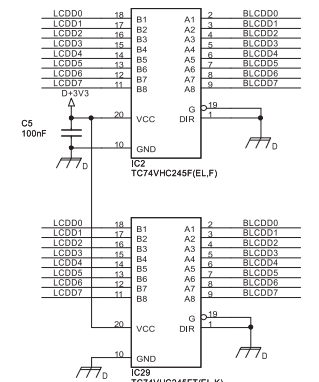
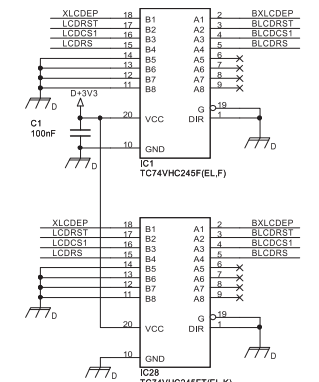
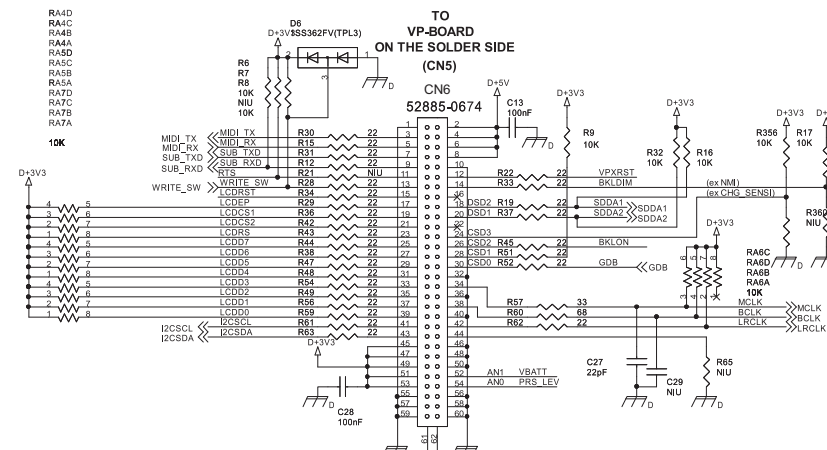
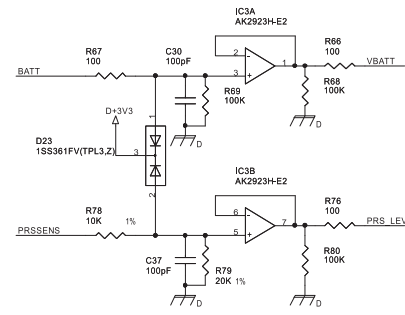
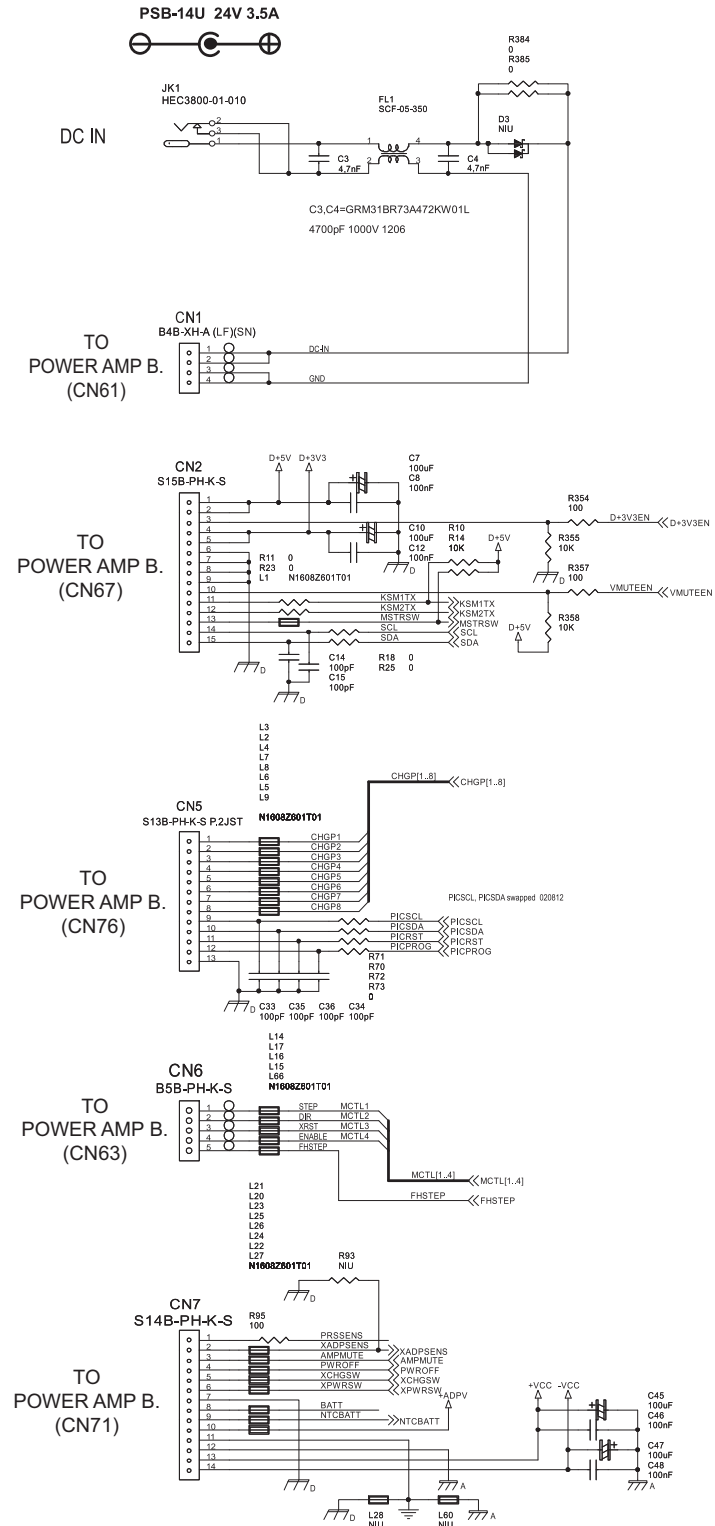
CIRCUIT DIAGRAM (VP-BOARD 3/3)



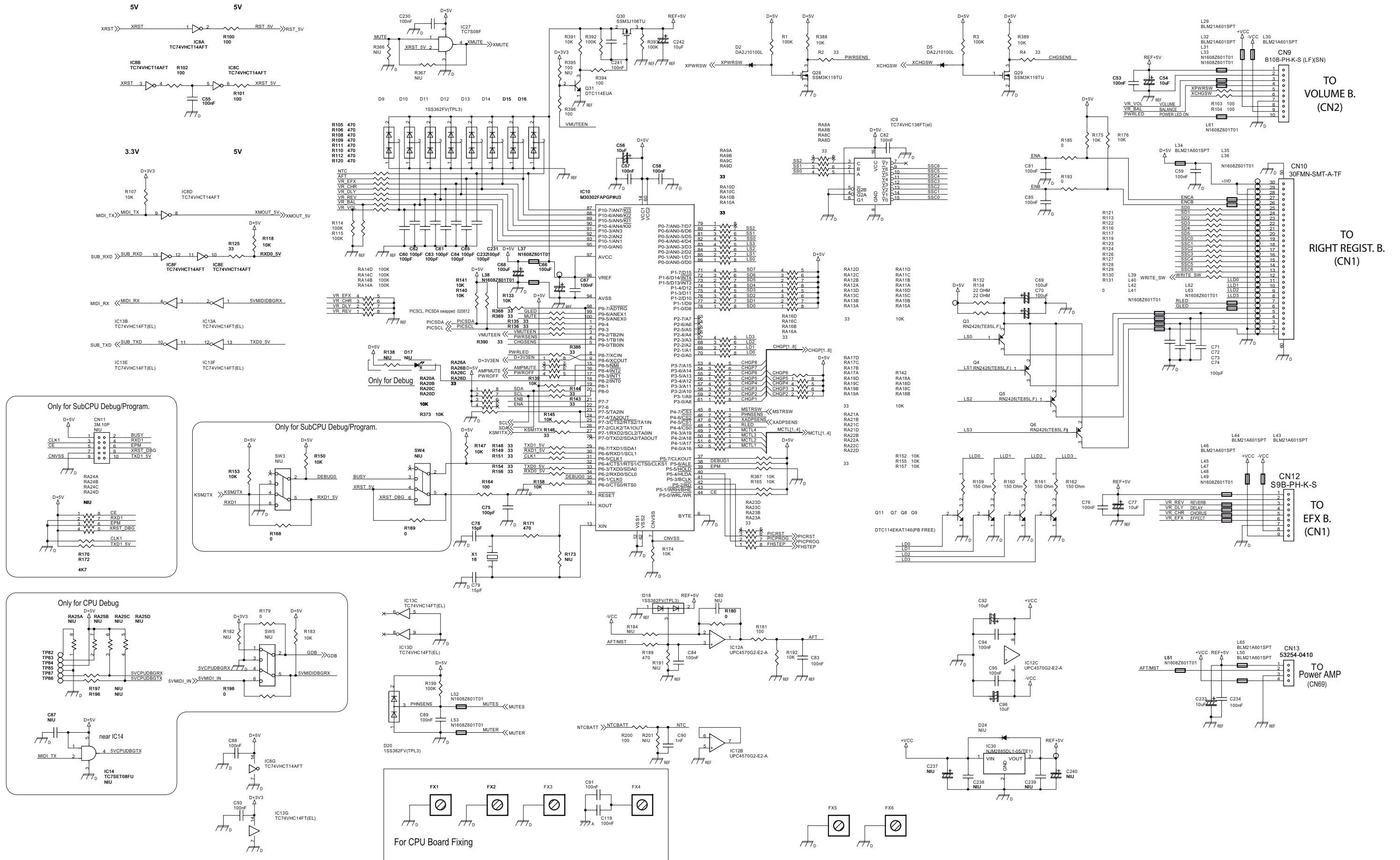
CIRCUIT BOARD ASSY 7783607002 (JACK B.)



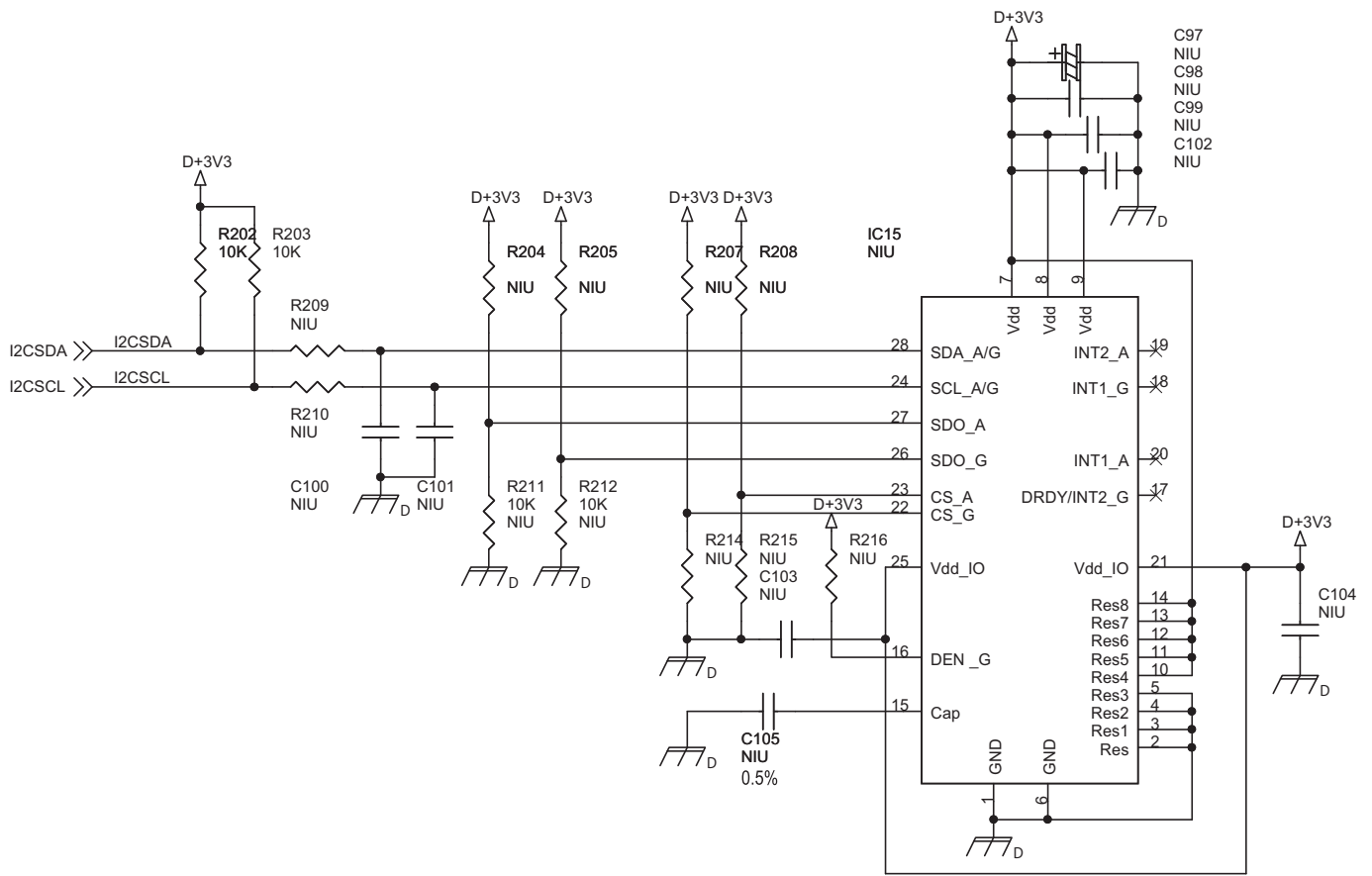
CIRCUIT DIAGRAM (JACK B. 1/4)



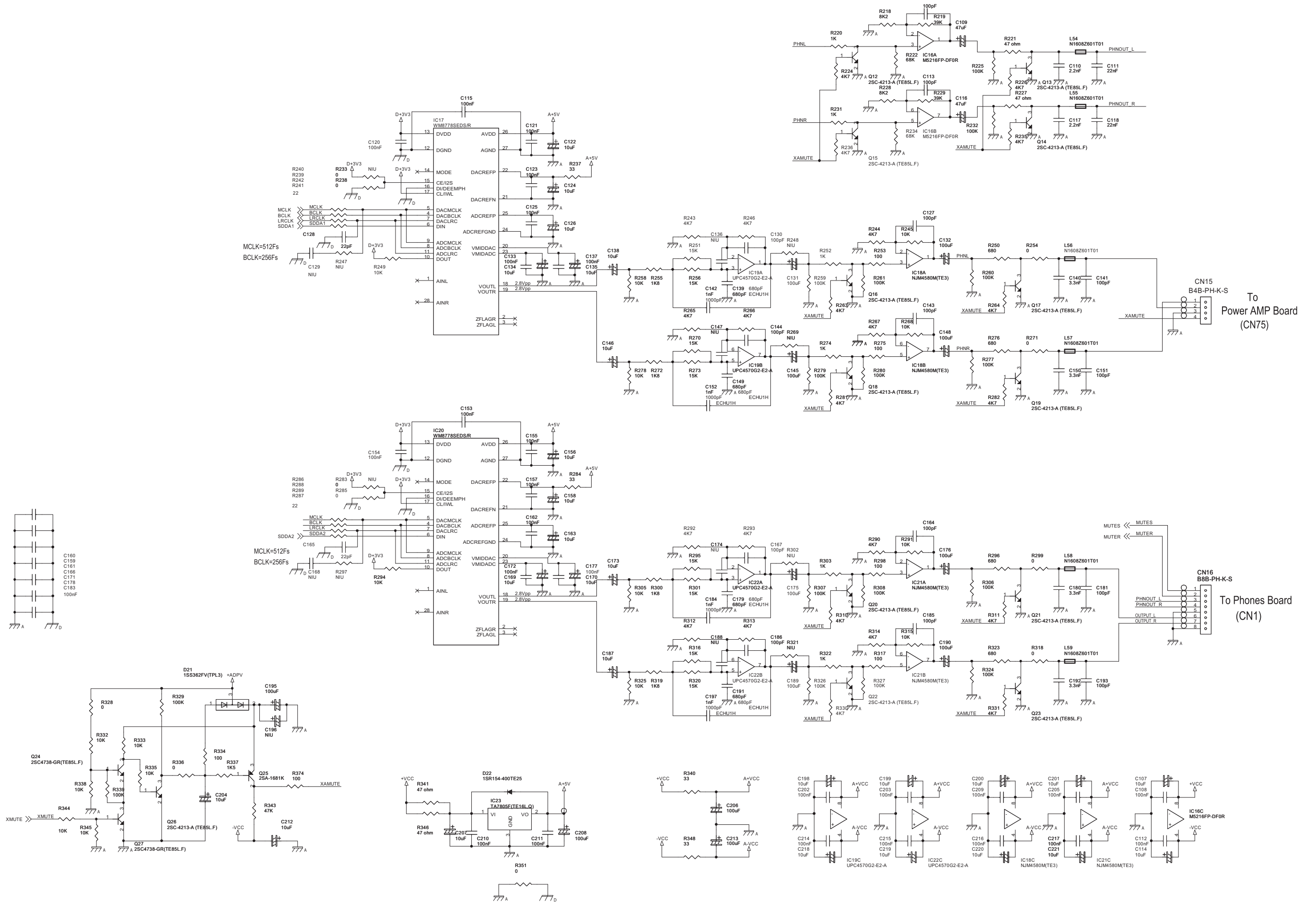
CIRCUIT DIAGRAM (JACK B. 2/4)



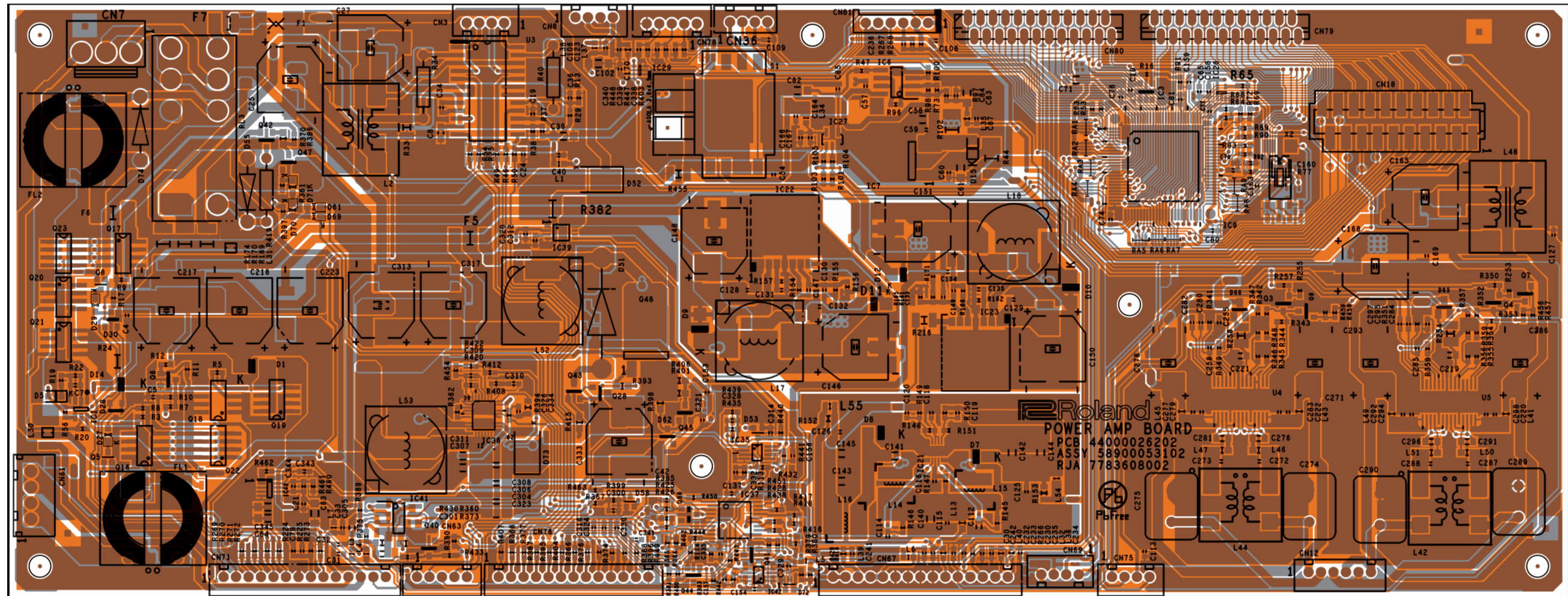
CIRCUIT DIAGRAM (JACK B. 3/4)



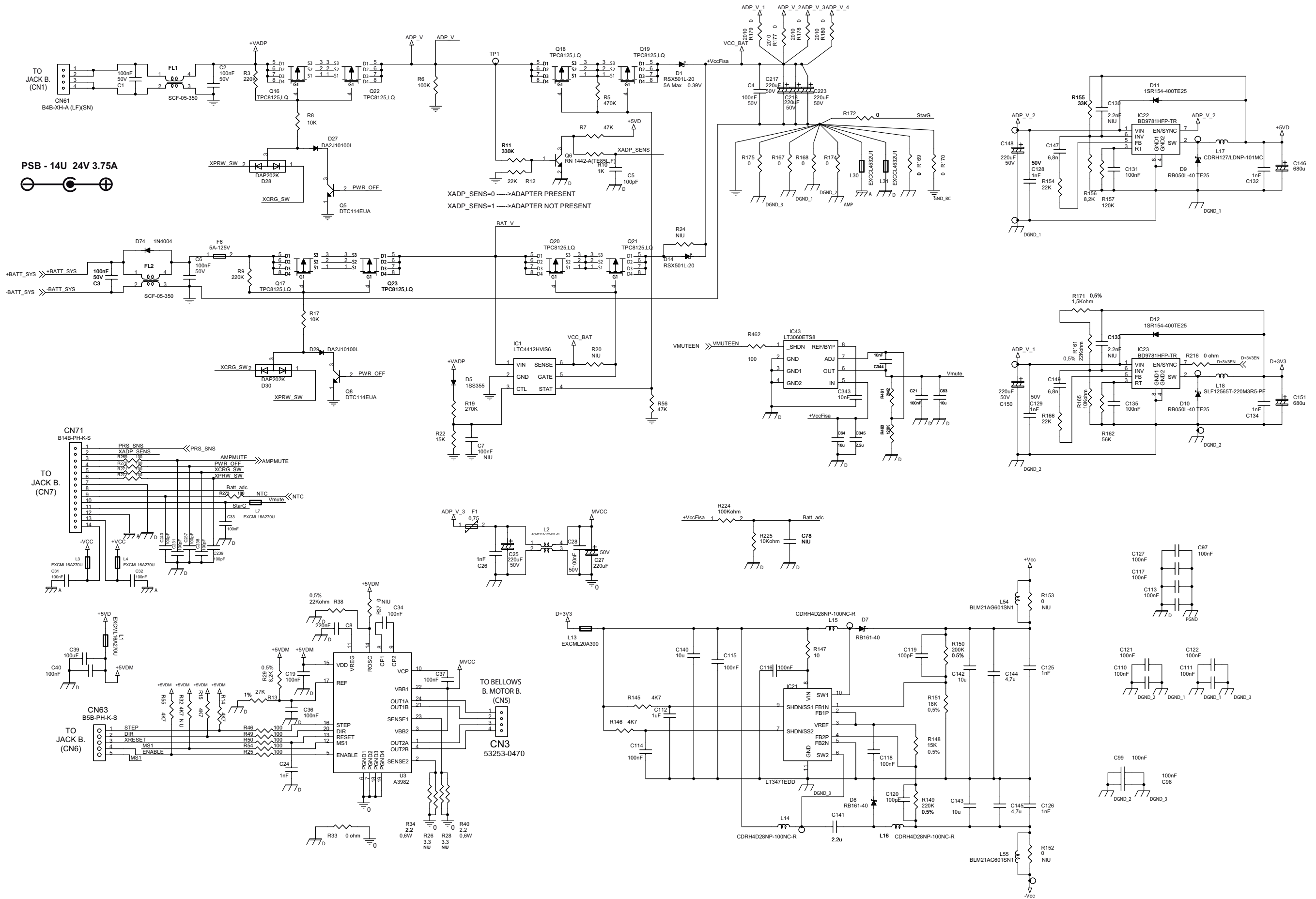
CIRCUIT DIAGRAM (JACK B. 4/4)



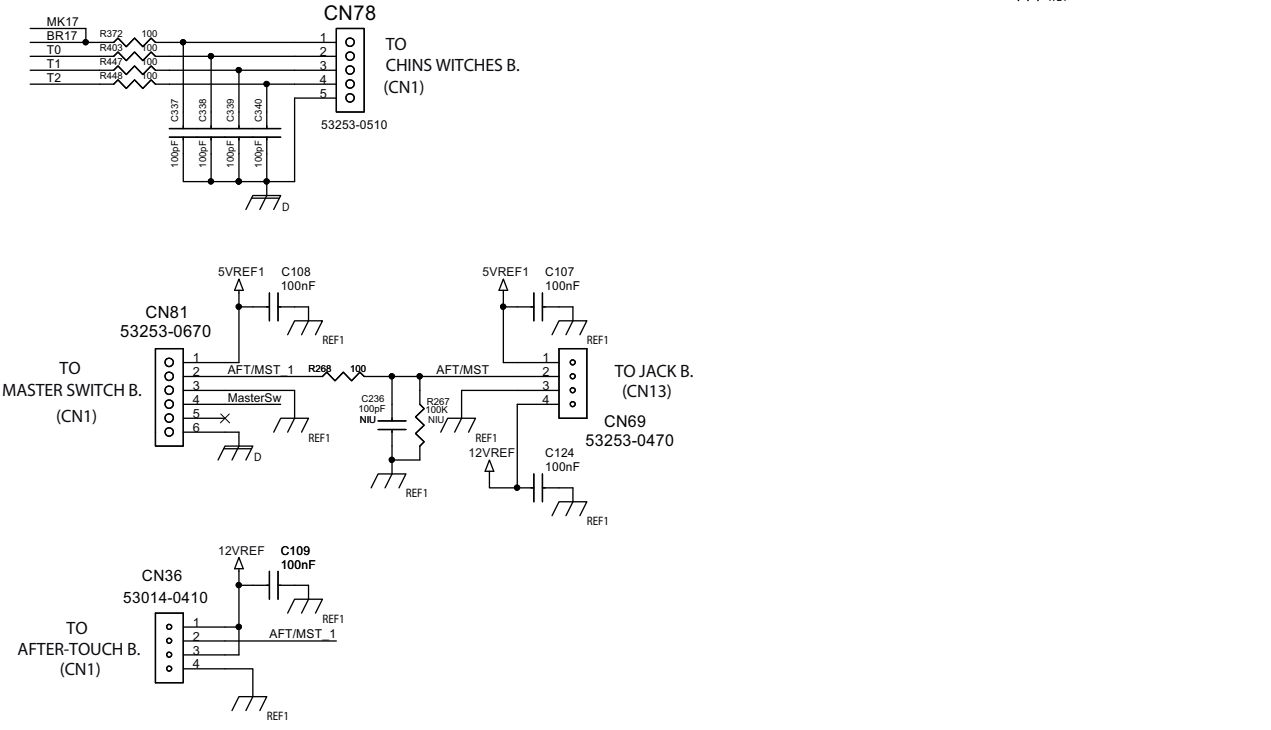
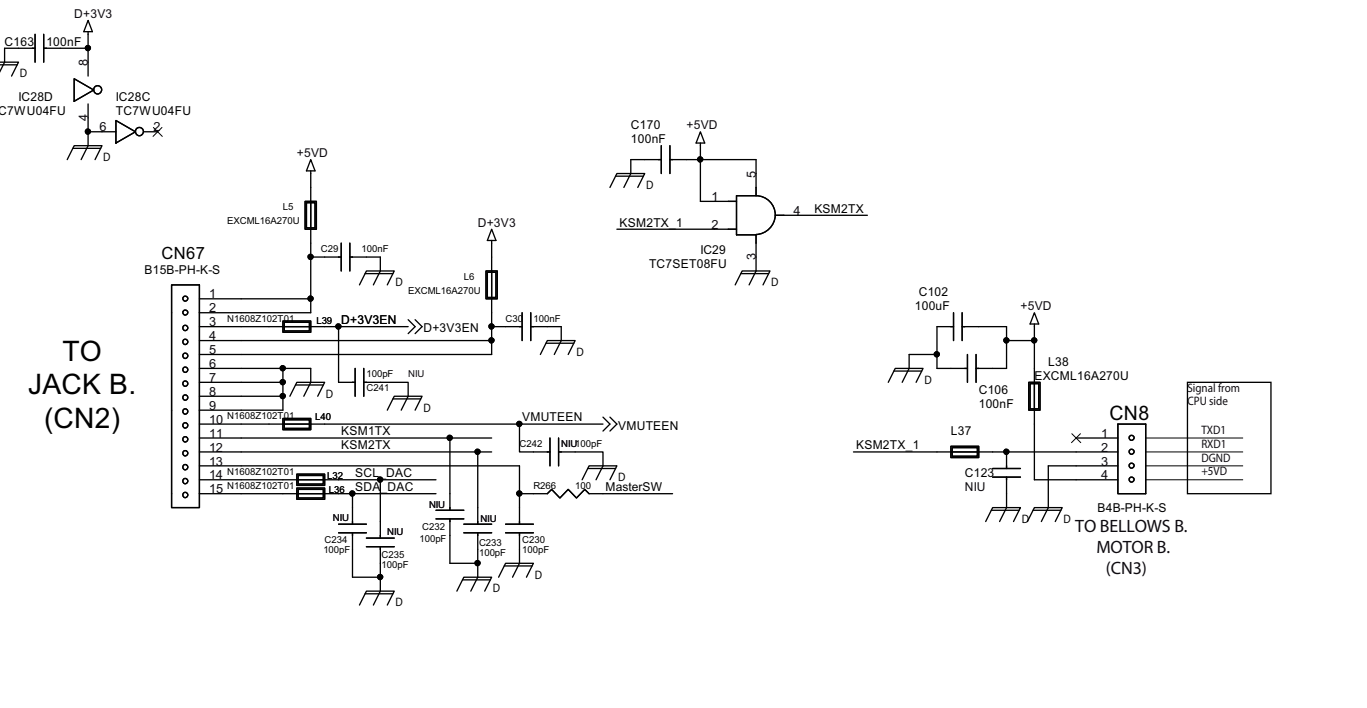
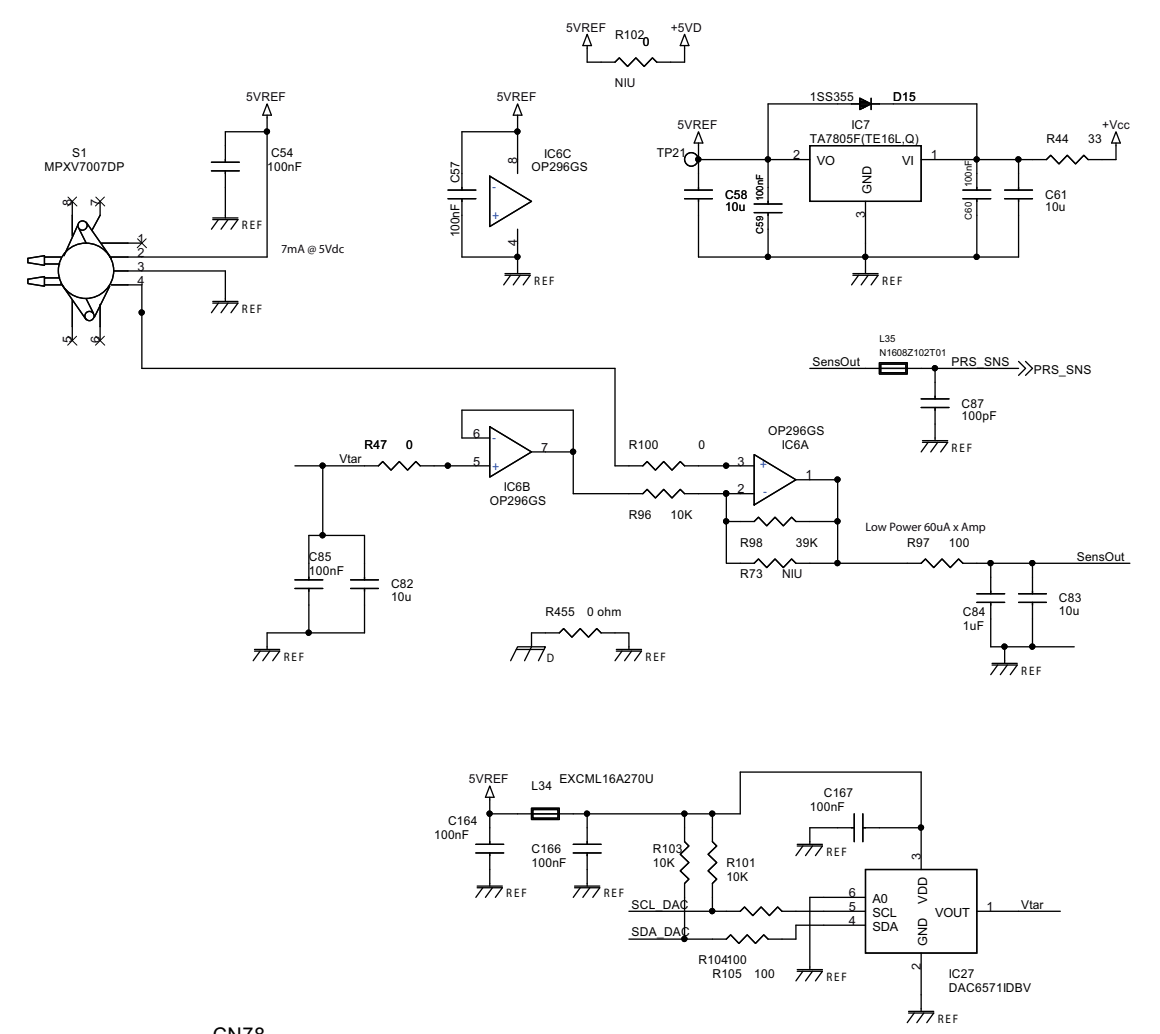
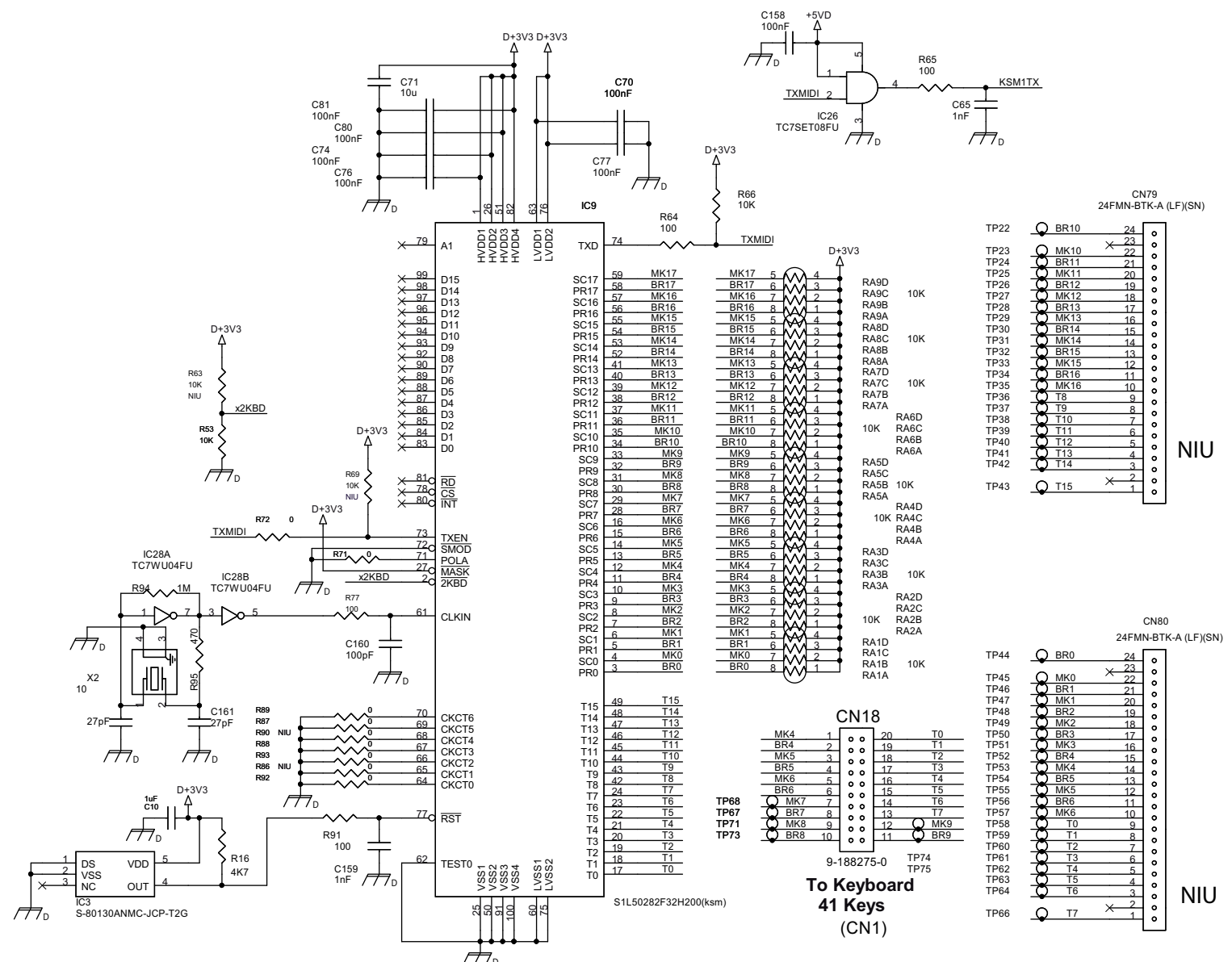
CIRCUIT BOARD ASSY 7783608002 (POWER AMP B.)



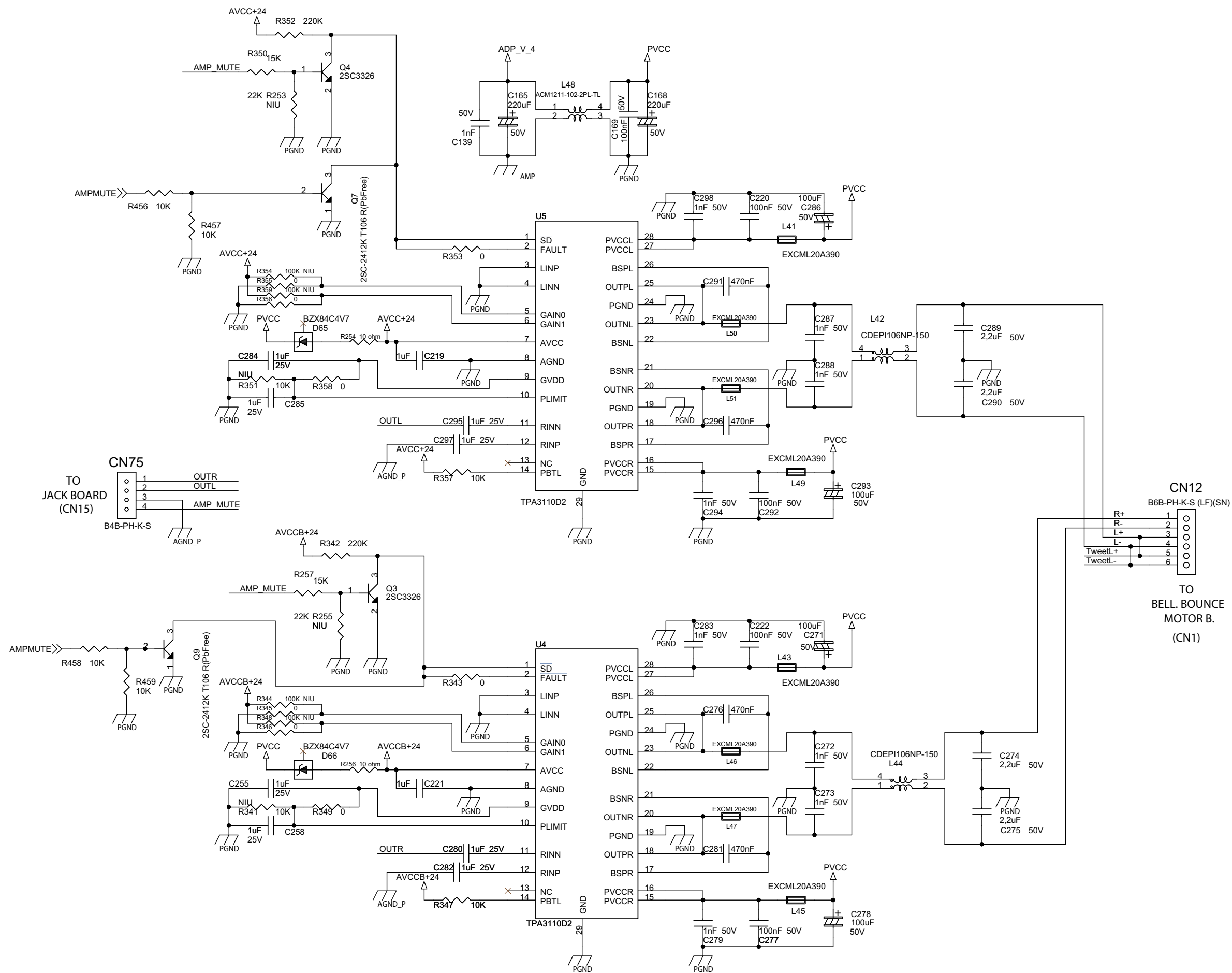
CIRCUIT DIAGRAM (POWER AMP B. 1/4)



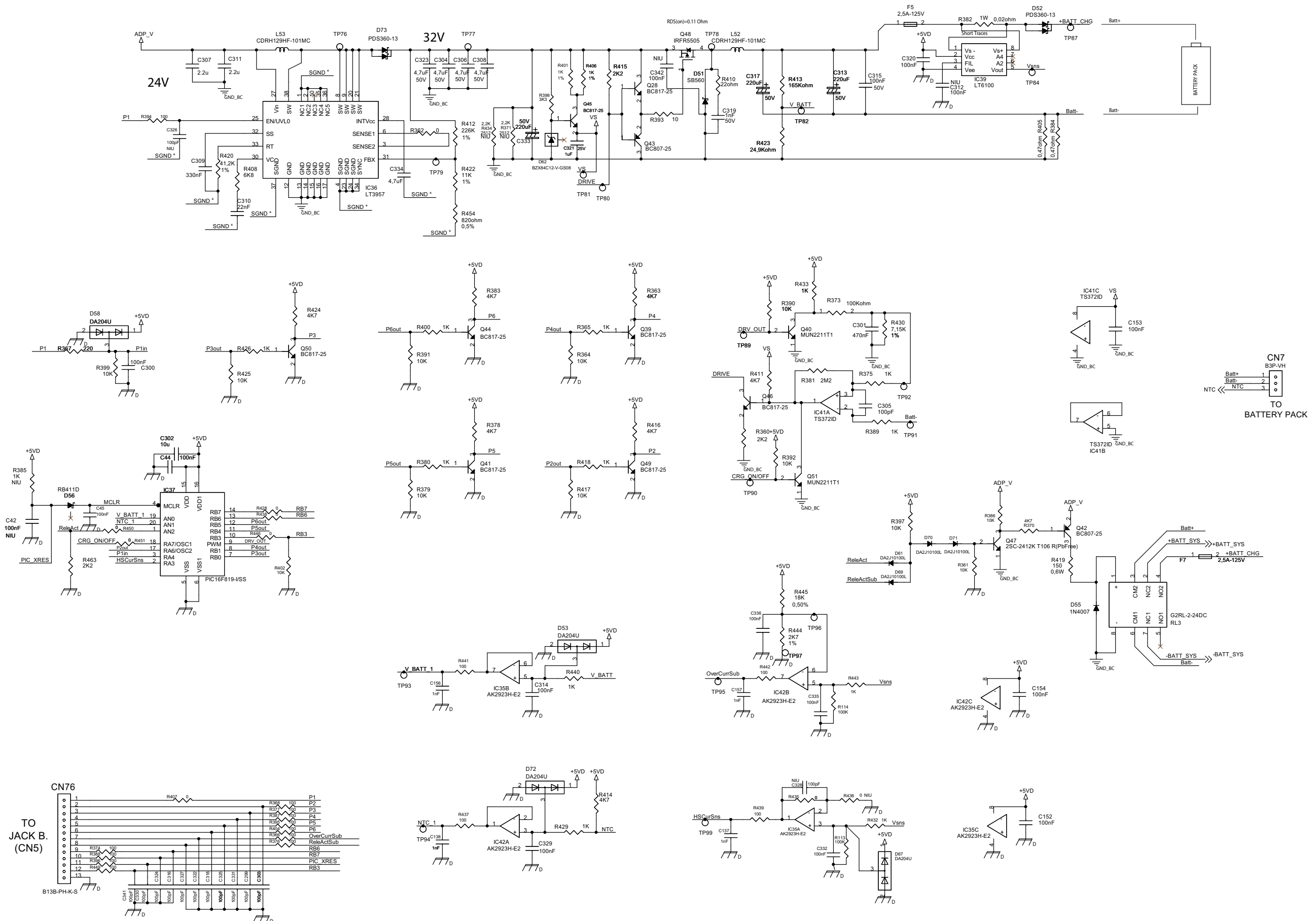
CIRCUIT DIAGRAM (POWER AMP B. 2/4)



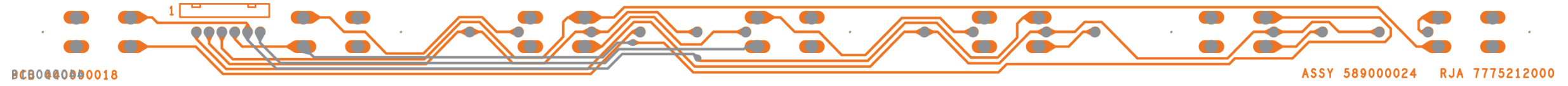
CIRCUIT DIAGRAM (POWER AMP B. 3/4)



CIRCUIT DIAGRAM (POWER AMP B. 4/4)

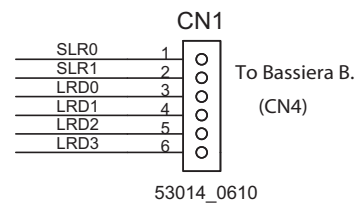
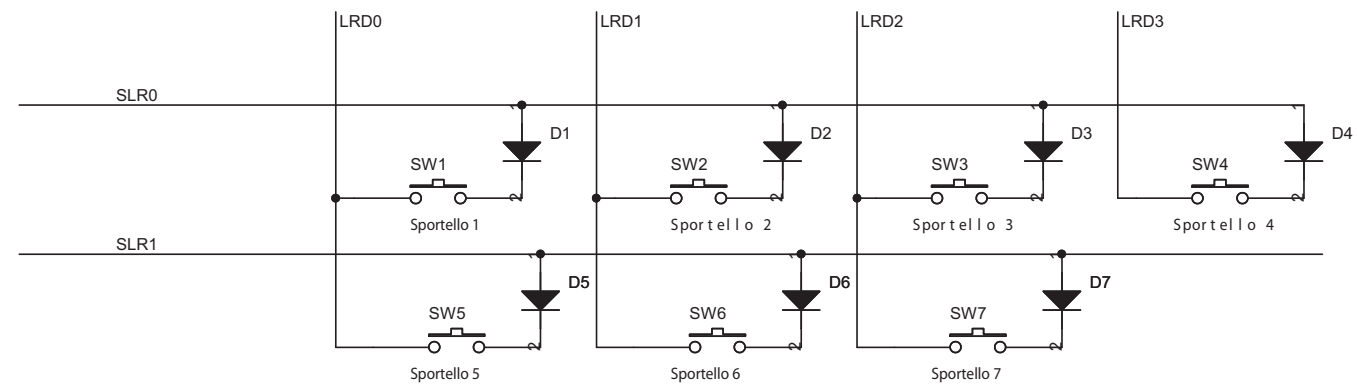


CIRCUIT BOARD ASSY 7775212000 (BASS REGISTERS)

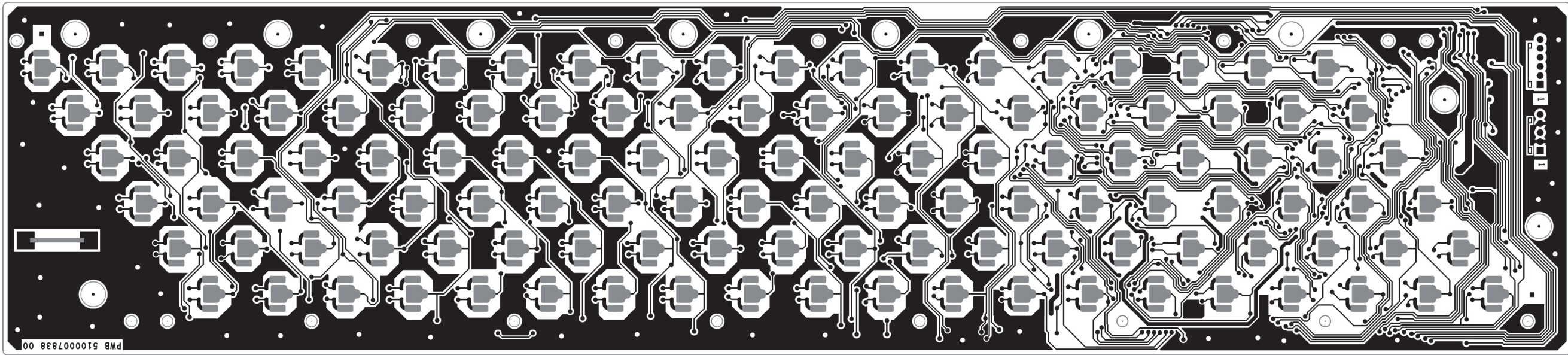


View from component side

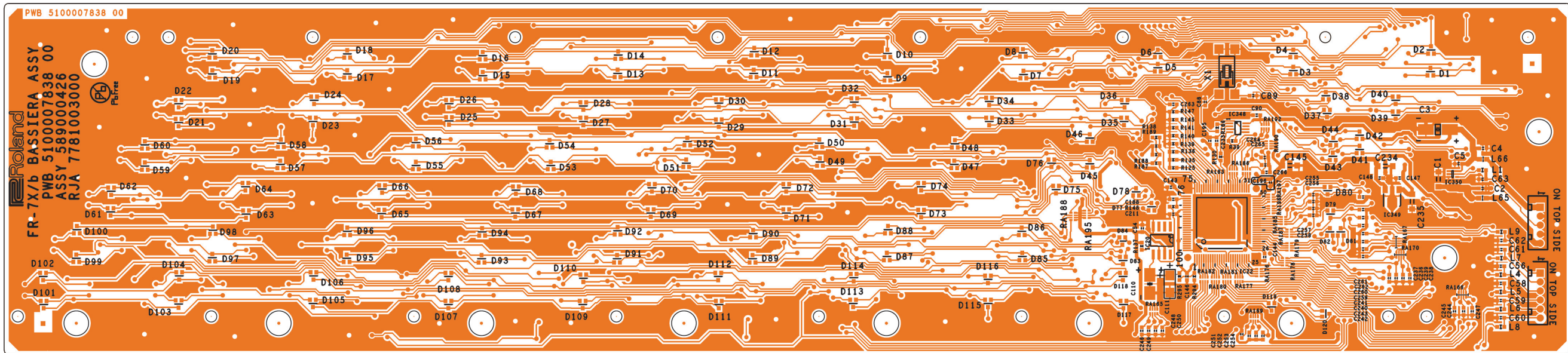
CIRCUIT DIAGRAM (BASS REGISTERS)



CIRCUIT BOARD ASSY 7781003000 (BASSIERA)

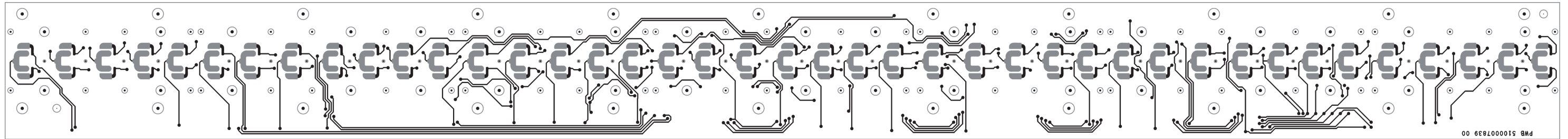


View from component side

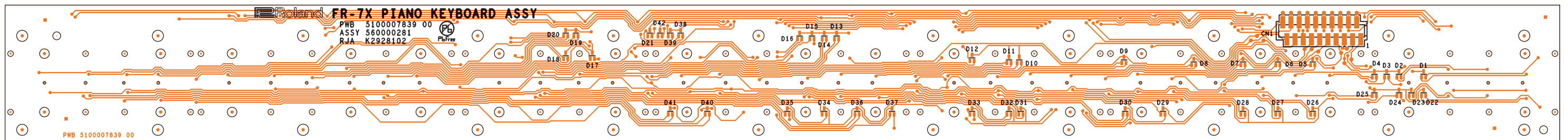


View from solder side

CIRCUIT BOARD ASSY K2928102 (CONTACT B.)

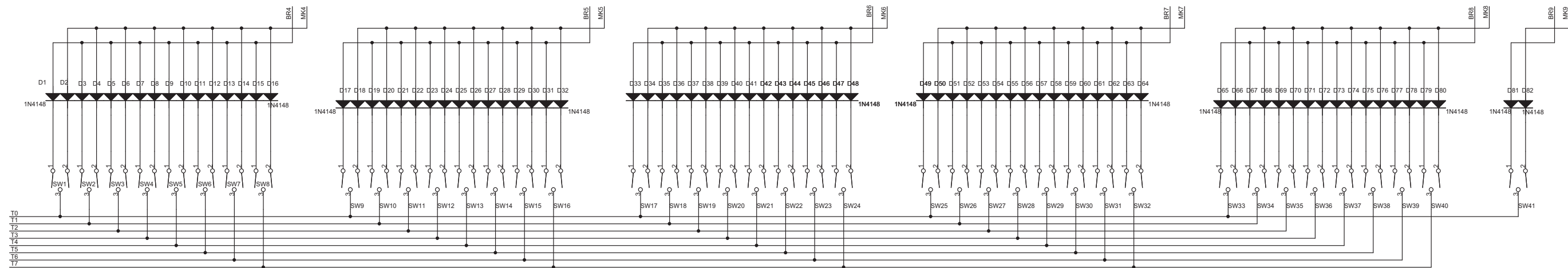


View from component side



View from solder side

CIRCUIT DIAGRAM (CONTACT B.)

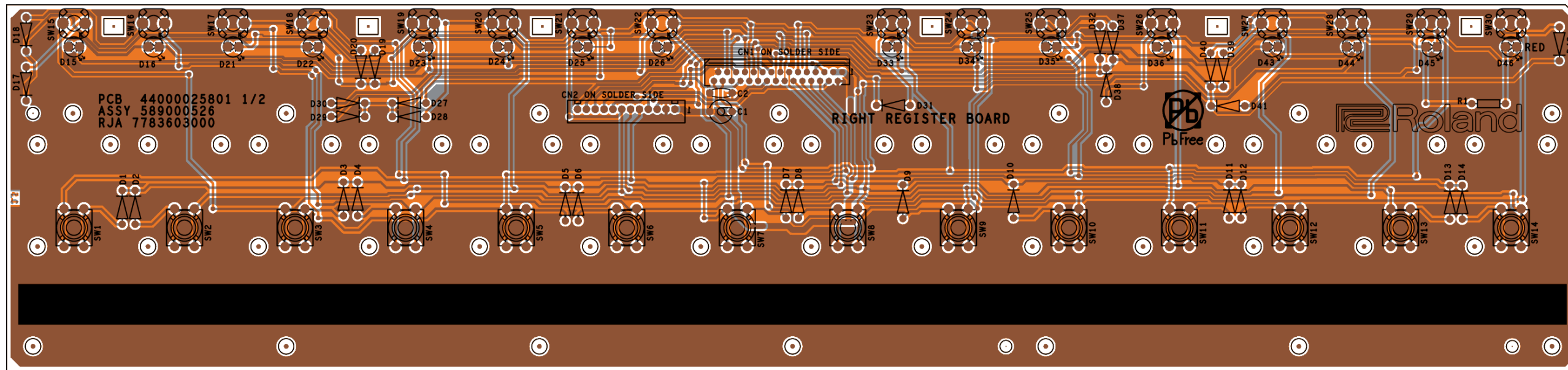


CN1		
MK4	1	20 T0
BR4	2	19 T1
MK5	3	18 T2
BR5	4	17 T3
MK6	5	16 T4
BR6	6	15 T5
MK7	7	14 T6
BR7	8	13 T7
MK8	9	12 MK9
BR8	10	11 BR9

TO POWER AMP (CN18)

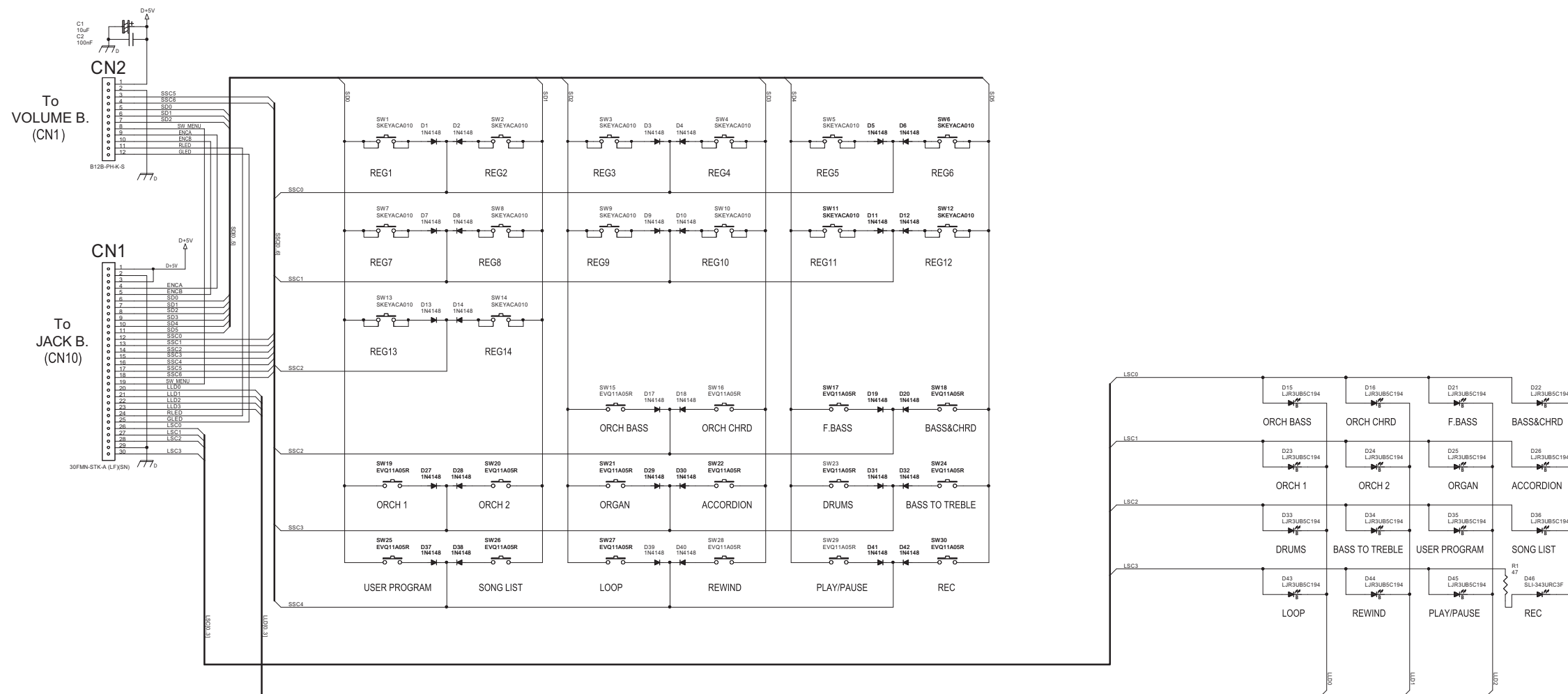
AMPC1.2720P

CIRCUIT BOARD ASSY 7783603000 (RIGHT REGISTER)

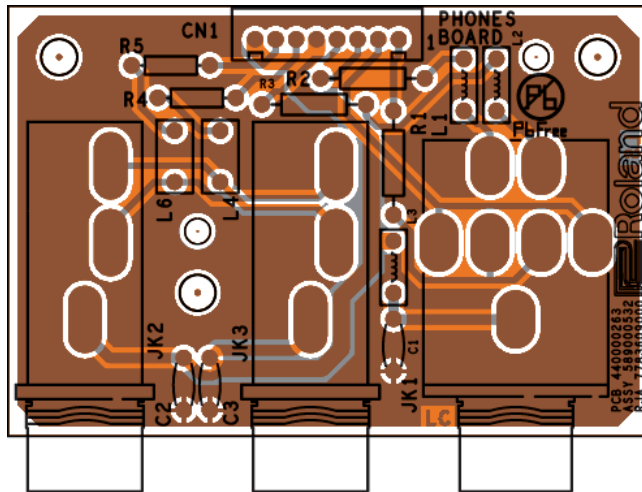


View from component side

CIRCUIT DIAGRAM (RIGHT REGISTER)

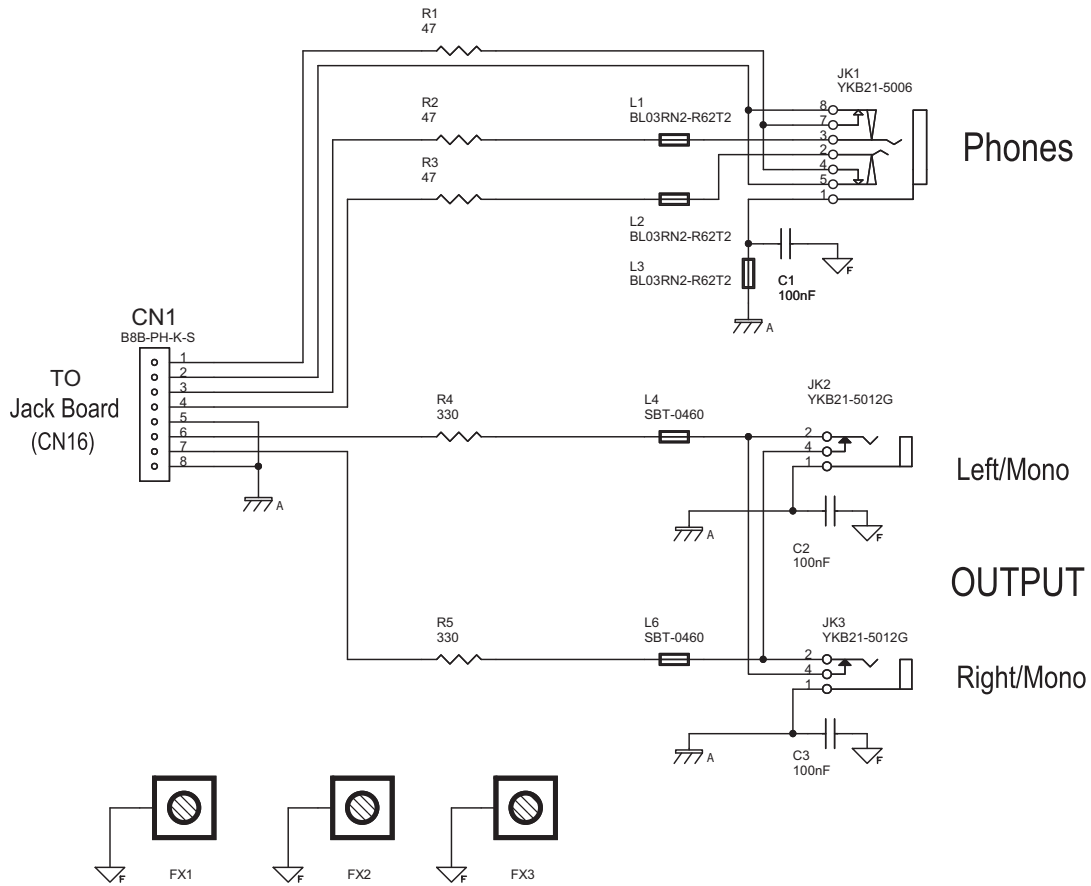


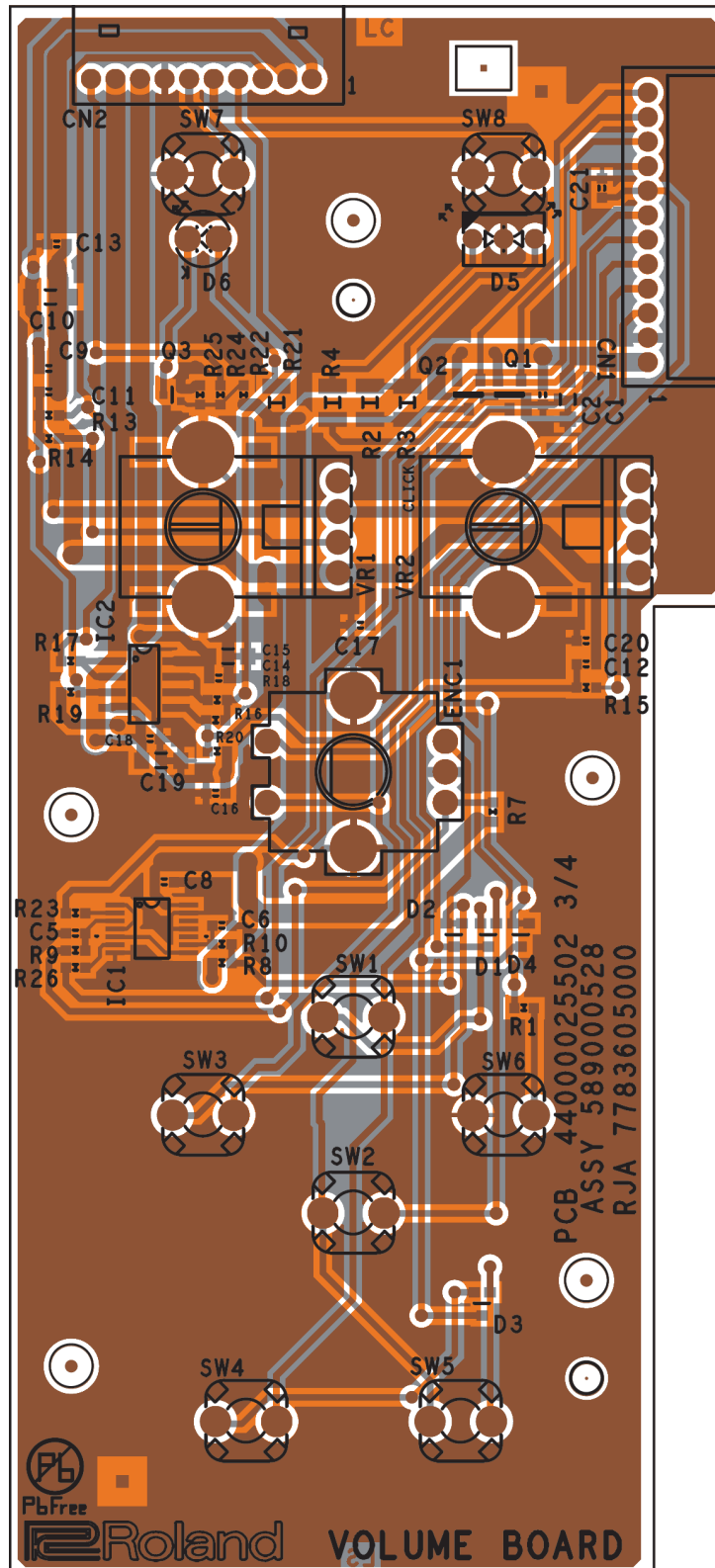
CIRCUIT BOARD ASSY 7783609000 (PHONES)



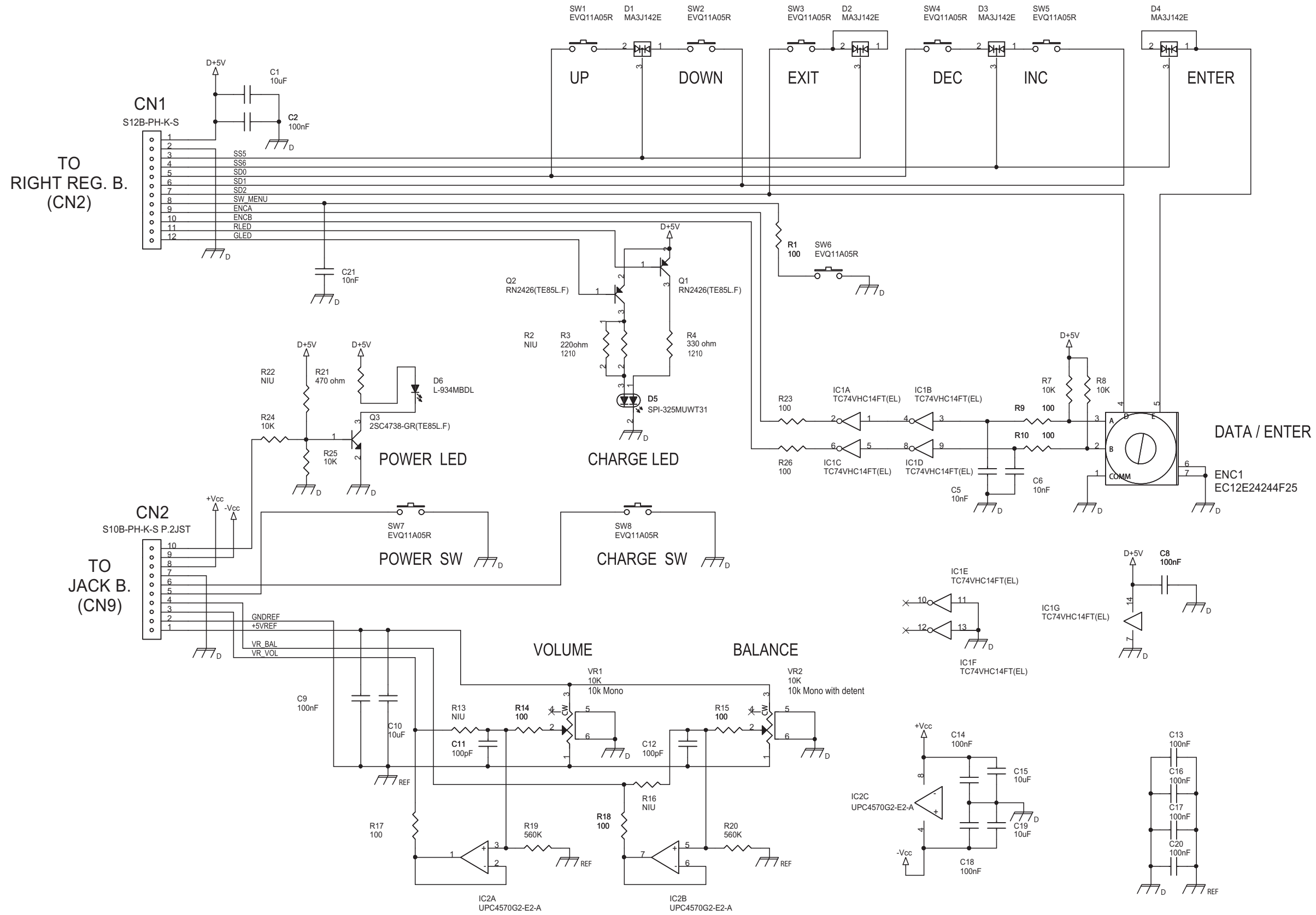
View from component side

CIRCUIT DIAGRAM (PHONES)

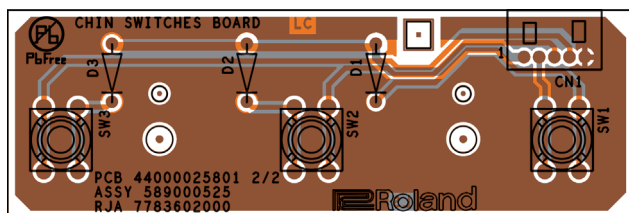


CIRCUIT BOARD ASSY 7783605000 (VOLUME)

CIRCUIT DIAGRAM (VOLUME)

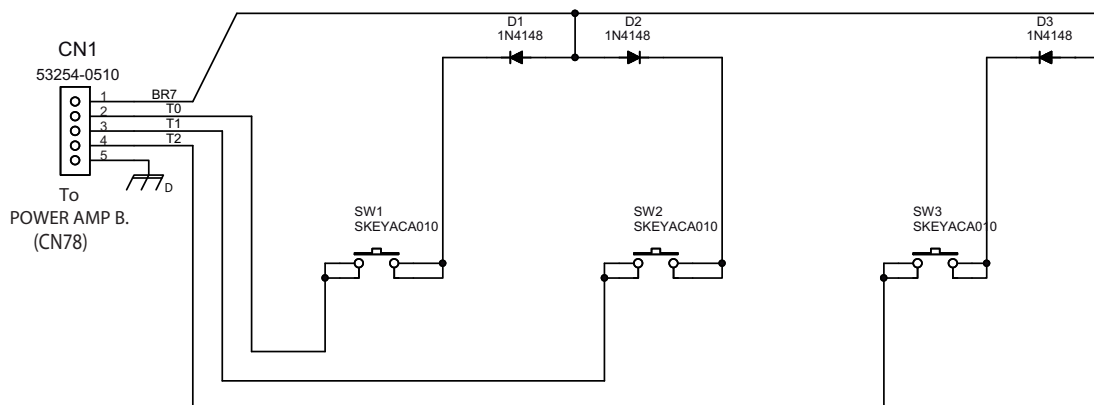


CIRCUIT BOARD ASSY 7783602000 (CHIN SWITCHES)

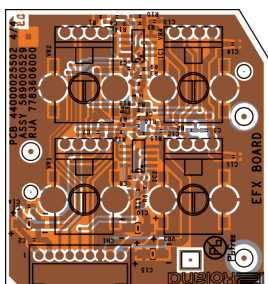


View from component side

CIRCUIT DIAGRAM (CHIN SWITCHES)

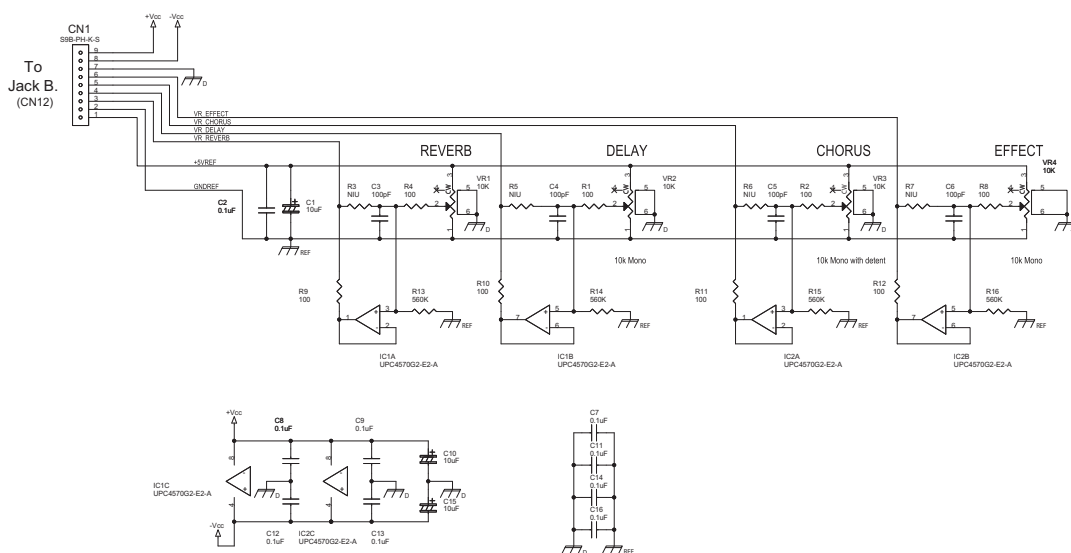


CIRCUIT BOARD ASSY 7783606000 (EFX)

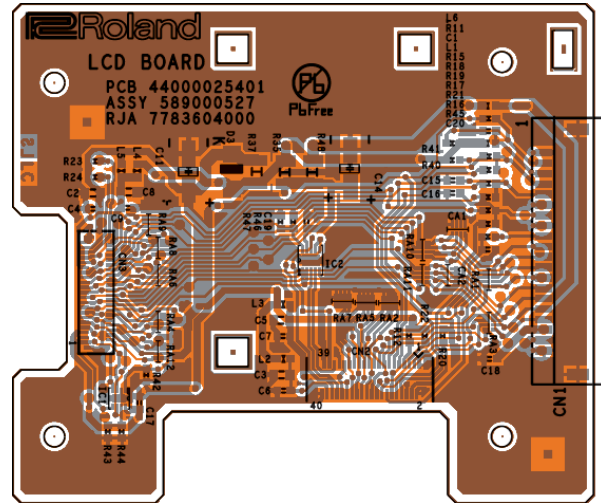


View from component side

CIRCUIT DIAGRAM (EFX)

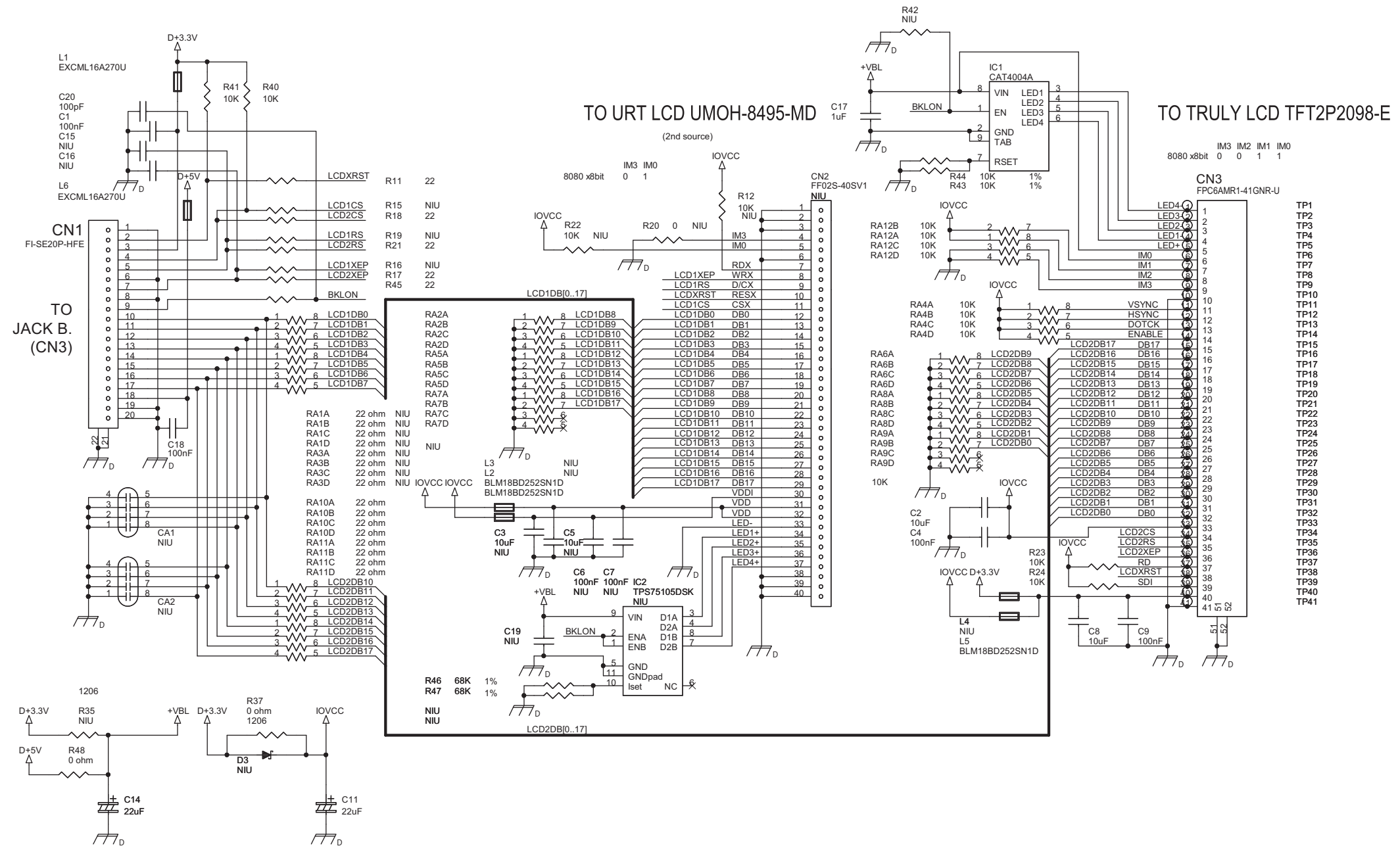


CIRCUIT BOARD ASSY 7783604000 (LCD)

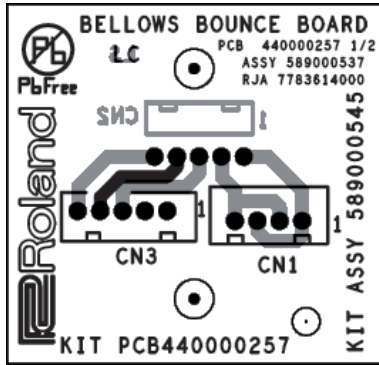


View from component side

CIRCUIT DIAGRAM (LCD)

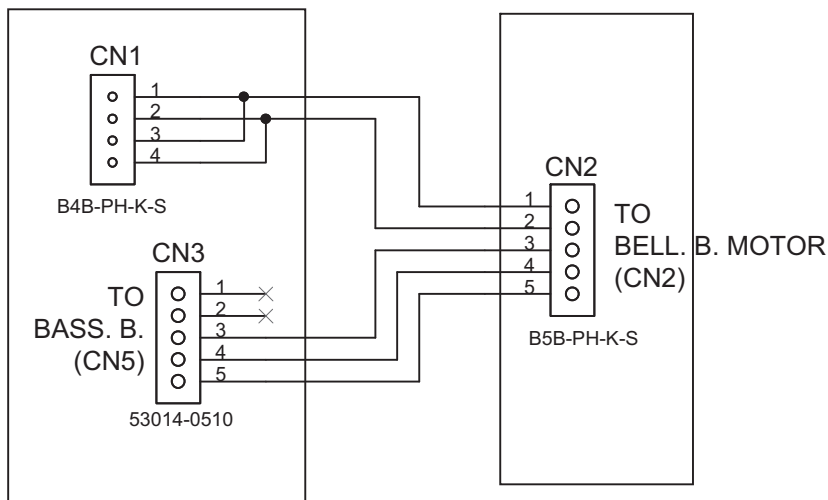


CIRCUIT BOARD ASSY 7783614000 (BELLOWS BOUNCE)

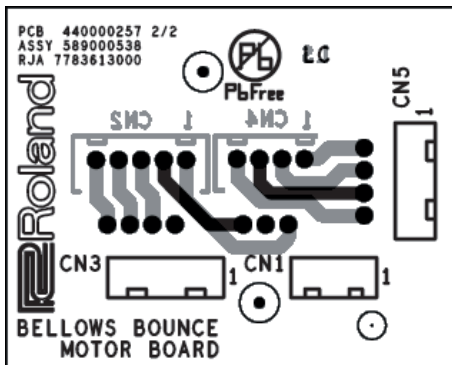


View from component side

CIRCUIT DIAGRAM (BELLOWS BOUNCE)



CIRCUIT BOARD ASSY 7783613000 (BELLOWS B. MOTOR)



CIRCUIT DIAGRAM (BELLOWS B. MOTOR)

