

MUSIC PRODUCTION STUDIO

RS7000

SERVICE MANUAL



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 **YAMAHA**

HAMAMATSU, JAPAN

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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING : Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING : Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit (heavy gauge black wires connect to this bus.)

IMPORTANT : Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

LITHIUM BATTERY HANDLING

This product uses a lithium battery for memory back-up.

WARNING : Lithium batteries are dangerous because they can be exploded by improper handling. Observe the following precautions when handling or replacing lithium batteries.

- Leave lithium battery replacement to qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PC board by soldering, solder using the connection terminals provided on the battery cells.
- Never solder directly to the cells. Perform the soldering as quickly as possible.
- Never reverse the battery polarities when installing.
- Do not short the batteries.
- Do not attempt to recharge these batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig handling. Udskiftning må kun ske med batteri af samme fabrikat og type. lever det brugte batteri tilbage til leverandren.

VAROITUS

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.

Kassera anvant batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi rajahtaa, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Havita kaytetty paristo valmistajan ohjeiden mukaisesti.

The following information complies with Dutch official Gazette 1995. 45; ESSENTIALS OF ORDER ON THE COLLECTION OF BATTERIES.

- Please refer to the disassembly procedure for the removal of Back-up Battery.
- Leest u voor het verwijderen van de backup batterij deze beschrijving.

WARNING: CHEMICAL CONTENT NOTICE!


The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (Where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

IMPORTANT NOTICE FOR THE UNITED KINGDOM**Connecting the Plug and Cord**

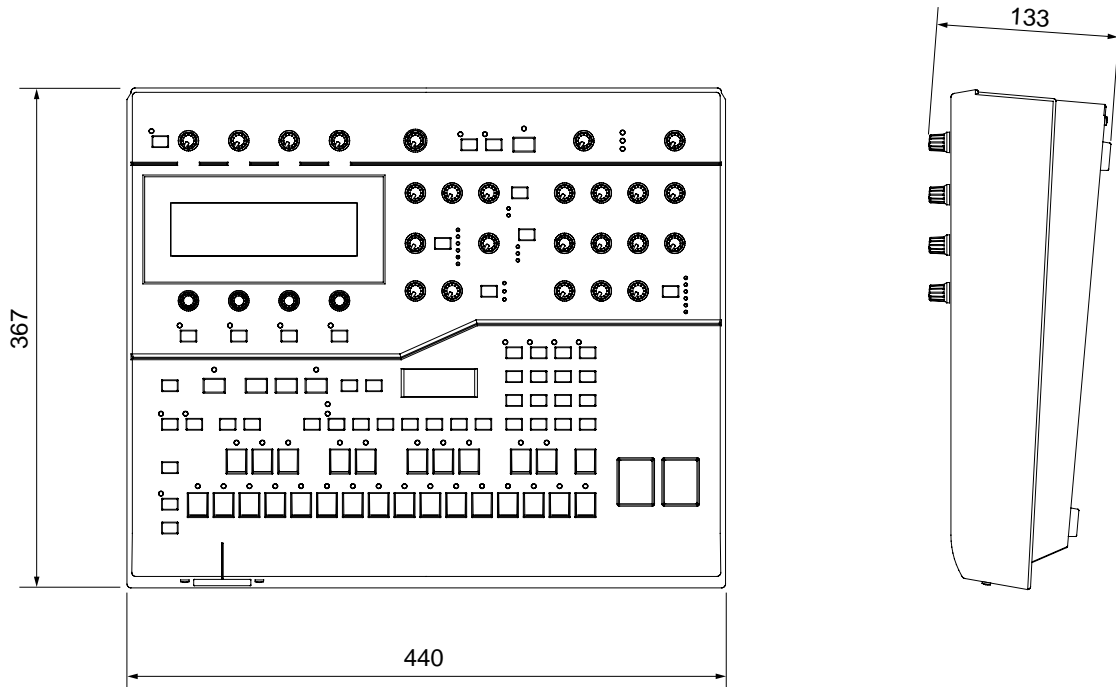
IMPORTANT. The wires in this main lead are coloured in accordance with the following code:
 BLUE: NEUTRAL
 BROWN: LIVE

As the colours of the wires in the main lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The BLUE wire must be connected to the terminal that is marked with the letter N (or coloured BLACK).

The BROWN wire must be connected to the terminal that is marked with the letter L (or coloured RED).

Be certain that neither core is connected to the earth terminal of the three pin plug.

■ DIMENSIONS

Units: mm

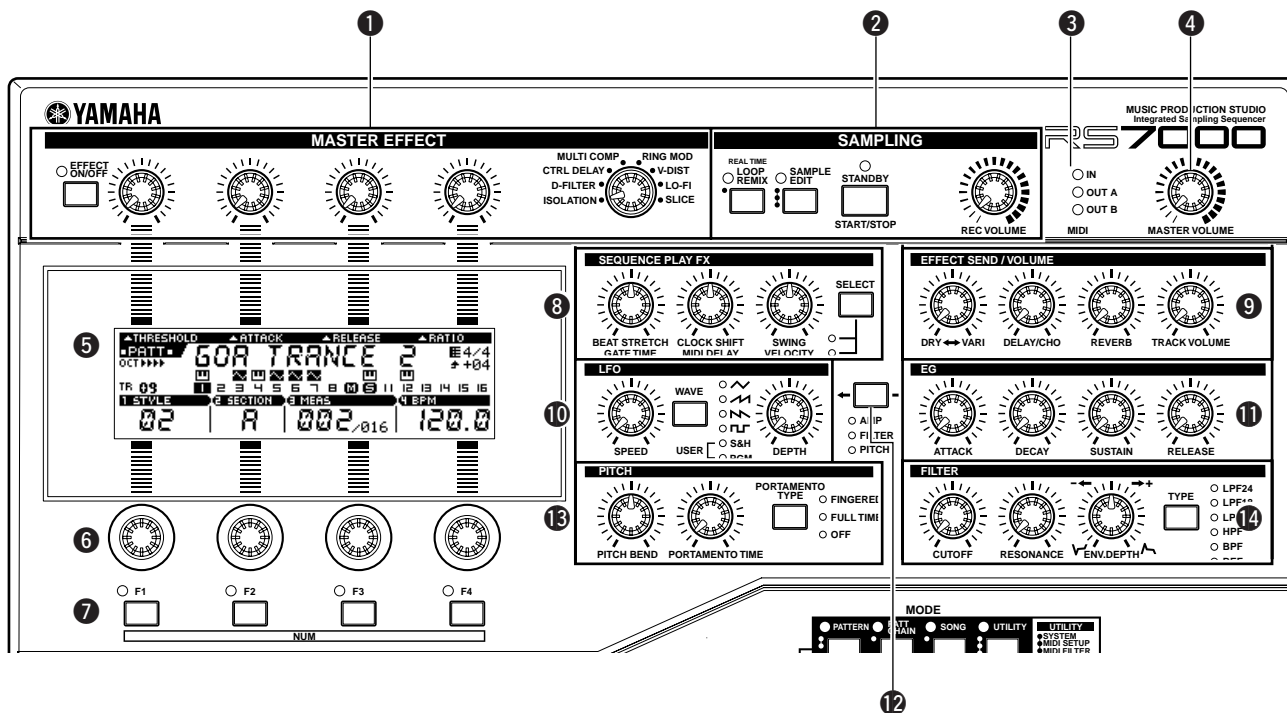
■ SPECIFICATIONS

Sequencer Section	Maximum Note Capacity	Approx. 259,000 notes	
	Note Resolution	Quarter note/480	
	Maximum Polyphony	124 notes	
	BPM (Tempo)	1.0 - 300.0	
	Record Modes	Real time replace Real time overdub (Pattern and Song modes only) Real time punch (Song mode only) Step (Pattern and Song modes only) Grid Step (Pattern and Song Modes only)	
	Tracks	Pattern Mode	: 16 phrase tracks
		Pattern Chain Mode	: Pattern track : BPM track : Scene/Mute track
		Song Mode	: 16 sequence tracks : BPM track : Scene/Mute track
		Patterns	Patterns : 1024 (64 styles x 16 sections)
		Measures	: 256 maximum
	Phrases	Preset Phrases	: 5980
		User Phrases	: 256 per style
	Pattern Chains	20 chains	
	Songs	20 songs	
	Edit	Phrase edit	
		Pattern Chain edit	
	Jobs	Song edit	
		Pattern Jobs	: 37
		Pattern Chain Jobs	: 9
		Song Jobs	: 30
Grid Groove	Note Offset, Clock Shift, Gate Time Offset, Velocity Offset		
Play Effects	Harmonize (Unison, Octaver, Harmonize 1 & 2)		
	Note (Note Offset, Gate Time, Velocity Offset)		
MIDI Delay	Timing (Beat Stretch, Clock Shift, Swing)		
	MIDI Delay Edit, Feedback Edit		
Arpeggio	Type (Up, Down, Alternate 1 & 2, Random), Sort, Hold, Octave Range		
Real Time Loop Remix			
Sequence Format	RS7000 original sequence format SMF format 0, 1 (Format 1 load only) RM1x format (PATT, SONG) (load only)		
Tone generator block	Type	AWM2 tone generator	
	Maximum polyphony	62 notes	
	Multi-timbral capability	16 timbres (with DVA)	
	Preset voices	Normal voices	1054 (except GM voices)
		Drum voices	63 kits (except GM kits)
	Effects	4 systems	
		Reverb	: 12 types
		Delay Chorus	: 25 types
		Variation	: 100 types
	Equalizer	Master	: 8 types
Master equalizer		4 Band parameteric equalizer	
Track equalizer		5 types	
Tone Generator Section	Sample Voice Types	Pitched Voice, Sample Kit Voice	
	Maximum Samples	256	
	Sampling Source	Analog inputs L/R	
		Stereo outputs L/R	
	A/D Conversion	Digital I/O (When optional AIEB2 I/O Expansion Board installed)	
		Optical I/O (When optional AIEB2 I/O Expansion Board installed)	
	D/A Conversion	20-bit, 64 x oversampling	
	Sampling Types	24-bit, 128 x oversampling	
	Sample Data Bits	Slice + Sequence, Kit, Kit + Note, Pitch, Pitch + Note	
		16	
	Sampling Frequency	: 44.1 kHz (MONO/STEREO), 22.05 kHz, 11.025 kHz, 5.5125 kHz	
		(LO-FI mode, MONO/STEREO)	
	Internal Sample Memory	Digital Inputs (When optional AIEB1 I/O Expansion Board installed)	
		: 48 kHz, 44.1 kHz, 32 kHz (STEREO only)	
		Standard	: 4 megabytes (onboard)
		Maximum	: 64 megabytes (32 megabyte SIMMs x 2) * 4 onboard megabytes unavailable after maximum expansion.
	Sampling Time	Max. Sample Length	: 32 megabytes mono : 64 megabytes stereo
		Max. Sample Time (Mono or Stereo)	: Approx. 6 min. 20 sec. (44.1 kHz)
	Sample Format	Original format	
		AIFF (load only), WAV (save and load)	
Sampling Jobs	A3000/4000/5000, SU700, (load only)		
	13		

Controls	<p>Power Switch (ON/OFF) Master Volume Control (MASTER VOLUME) Recording Level Control (REC VOLUME) Master Effect Selector Knob Master Effect Parameter Knobs (4) Multi-function knobs (4) Assignable Knobs (18) Contrast Control Mode Buttons Sub Mode Buttons</p> <p>Function Buttons Master Effect Button Sampling Buttons Play Effect Button Voice Edit Buttons Exit Button Sequencer Buttons Shift Button Arpeggio Button Mute/Scene Buttons Octave Buttons Keyboard Mode Buttons Keyboard Pads (x 26) Tap Button Velocity Pads (x 2)</p>	<p>[PATTERN], [PATT CHAIN], [SONG], [UTILITY] [GROOVE], [PLAY FX], [MIDI DELAY], [MIXER], [VOICE EDIT], [EFFECT], [SETUP], [MASTER], [SAVE], [LOAD], [JOB], [EDIT] [F1] - [F4] [EFFECT ON/OFF] [REALTIME LOOP REMIX], [SAMPLE EDIT], [STANDBY/START/STOP] [SELECT] [WAVE] (LFO), [AMP/FILTER/PITCH], [PORTAMENTO TYPE], [TYPE] (FILTER) [EXIT] [REC], [◀], [STOP], [PLAY], [◀◀], [▶▶] [SHIFT] [ARPEGGIO ON] [STORE], [MUTE/SCENE], [MEMORY 1] – [MEMORY 5] [OCT DOWN], [OCT UP] [KEYBOARD], [TRANPOSE], [MUTE], [TRACK SELECT] [TAP] [PAD 1], [PAD 2]</p>
Display (LCD)	64 x 240 dot graphic LCD with backlighting and contrast control	
LEDs	<p>MODE (x 4) (green) EFFECT ON/OFF (green) SAMPLING (REALTIME LOOP REMIX (green), SAMPLE EDIT (green), STANDBY/START/STOP (red)) SEQUENCE PLAY FX SELECT (x 2) (yellow) VOICE EDIT (x 18) (yellow) REC (red) PLAY (green) SECTION (x 10) (red) MUTE/SCENE (x 2) (red) TRACK (x 16) (red) KEYBOARD mode (KEYBOARD (green), MUTE (red)) ARPEGGIO ON (red) Function Buttons (x 4) (red) MIDI IN (red), MIDI OUT A (green), MIDI OUT B (green) 7-segment LED (4-digit)</p>	
Connectors	<p>PHONES (Standard stereo phone jack) OUTPUT (Standard phone jack x 2) (L/MONO, R) INPUT (Standard phone jack x 2) (L, R) FOOT SWITCH MIDI IN, MIDI OUT (2, A & B) CARD SLOT (3.3 V SmartMedia) SCSI (50-pin half-pitch) AC INLET (AC power)</p>	
Output Impedance	OUTPUT (L/MONO, R)	: 1.1kΩ
	PHONES	: 50Ω
Power Consumption (U, E, B)	27W	
Dimensions (W x D x H)	440 mm x 363 mm x 134 mm	
Weight	7 kg	
Supplied Accessories	<p>Power cord CD-ROM (x 2) SmartMedia (8 MB x 1) : Sound & Sequence data AS Angle Owner's Manual Set</p>	
Options	I/O Expansion Board	: AIEB2
	Expansion Memory (use a pair of Identical SIMMS conforming to the specifications below):	
	Type	: 72-pin SIMM (Fast page or EDO, JEDEC standard)
	Access Time	: 70 ns or faster
	Parity	: Parity or non-parity
	Capacity	: 4/8/16/32 megabytes

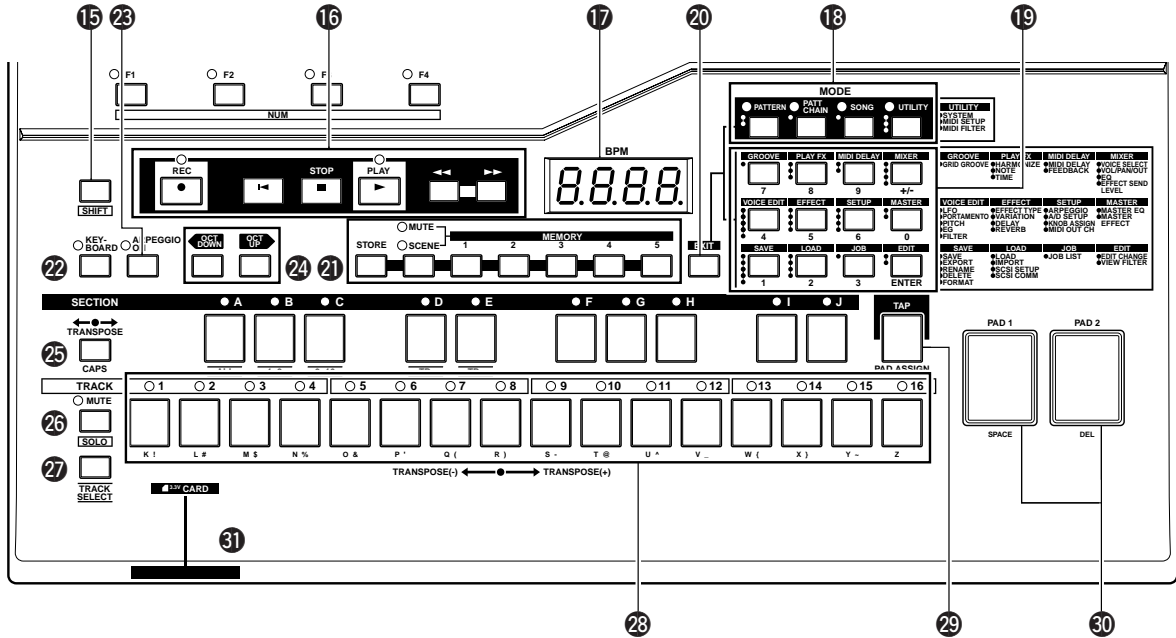
PANEL LAYOUT

• Top Panel (Upper Section)



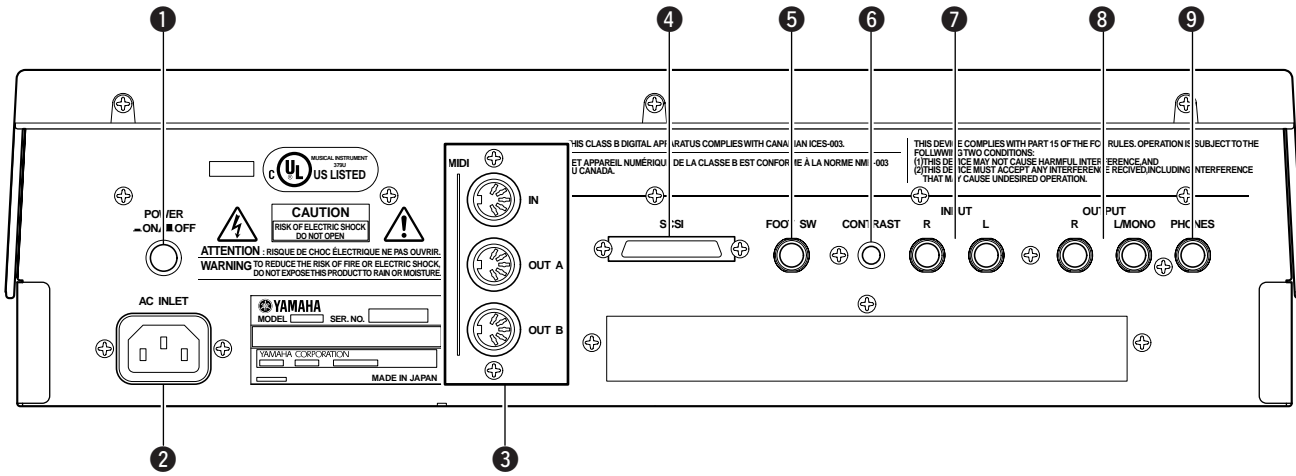
- ① MASTER EFFECT
([EFFECT ON/OFF] Button, Control Knob 1 ~ 4, Effect Type Selector)
- ② SAMPLING
([REAL TIME LOOP REMIX, SAMPLE EDIT, STANDBY/ START/STOP] Buttons, [REC VOLUME] Control)
- ③ [MIDI IN/OUT] Indicator
- ④ [MASTER VOLUME] Control
- ⑤ Display
- ⑥ Knob 1 ~ 4
- ⑦ [F1] ~ [F4] Function Buttons
- ⑧ SEQUENCE PLAY FX Controls
([BEAT STRETCH/GATE TIME, CLOCK SHIFT/MIDI DELAY, SWING/VELOCITY] Knobs, [SELECT] Button)
- ⑨ EFFECT SEND/VOLUME
([DRY ↔ VARI, DELAY/CHO, REVERB, TRACK VOLUME] Knobs)
- ⑩ LFO
([SPEED, DEPTH] Knobs, [WAVE] Button)
- ⑪ EG
([ATTACK, DECAY, SUSTAIN, RELEASE] Knobs)
- ⑫ [AMP/FILTER/PITCH] Button
- ⑬ PITCH
([PITCH BEND, PORTAMENTO TIME] Knobs, [PORTAMENTO TYPE] Button)
- ⑭ FILTER
([CUTOFF, RESONANCE, ENV. DEPTH] Knobs, [TYPE] Button)

• Top Panel (Lower Section)



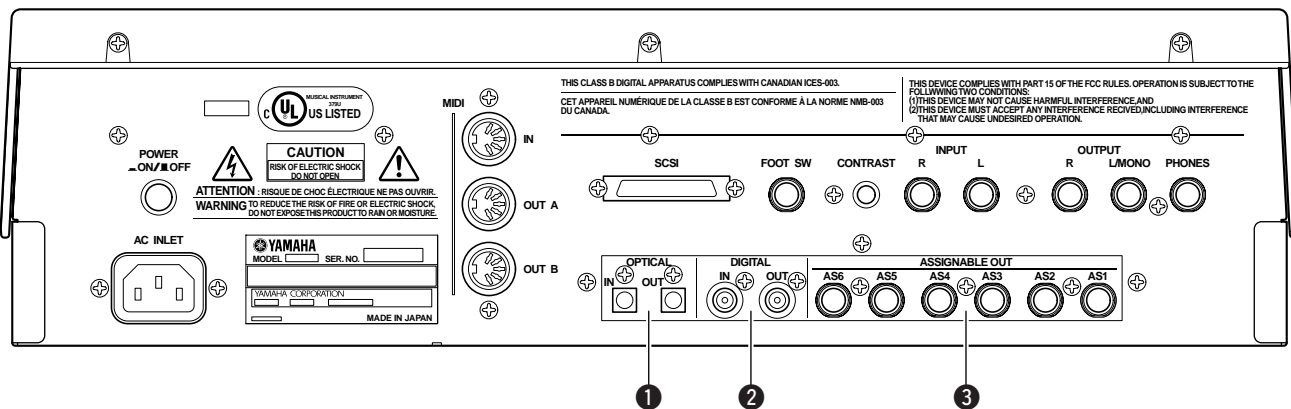
- 15 [SHIFT] Button
- 16 Sequencer Buttons
([●](REC), [◀](Top), [■](STOP), [◄](PLAY),
[◄◄](Fast Reverse), [▶▶](Fast Forward))
- 17 LED Display
- 18 MODE
([PATTERN], [PATT CHAIN], [SONG], [UTILITY]
Buttons)
- 19 SUB MODE
([GROOVE], [PLAY FX], [MIDI DELAY], [MIXER],
[VOICE EDIT], [EFFECT], [SETUP], [MASTER], [SAVE],
[LOAD], [JOB], [EDIT] Buttons)
- 20 [EXIT] Button
- 21 SCENE/MUTE
([STORE], [SCENE/MUTE], [MEMORY 1] - [MEMORY 5]
Buttons)
- 22 [KEYBOARD] Button
- 23 [ARPEGGIO ON] Button
- 24 [OCT DOWN] and [OCT UP] Buttons
- 25 [TRANPOSE] Button
- 26 [MUTE] Button
- 27 [TRACK SELECT] Button
- 28 Keyboard
- 29 [TAP] Button
- 30 [PAD 1] and [PAD 2]
- 31 CARD Slot

• Rear Panel



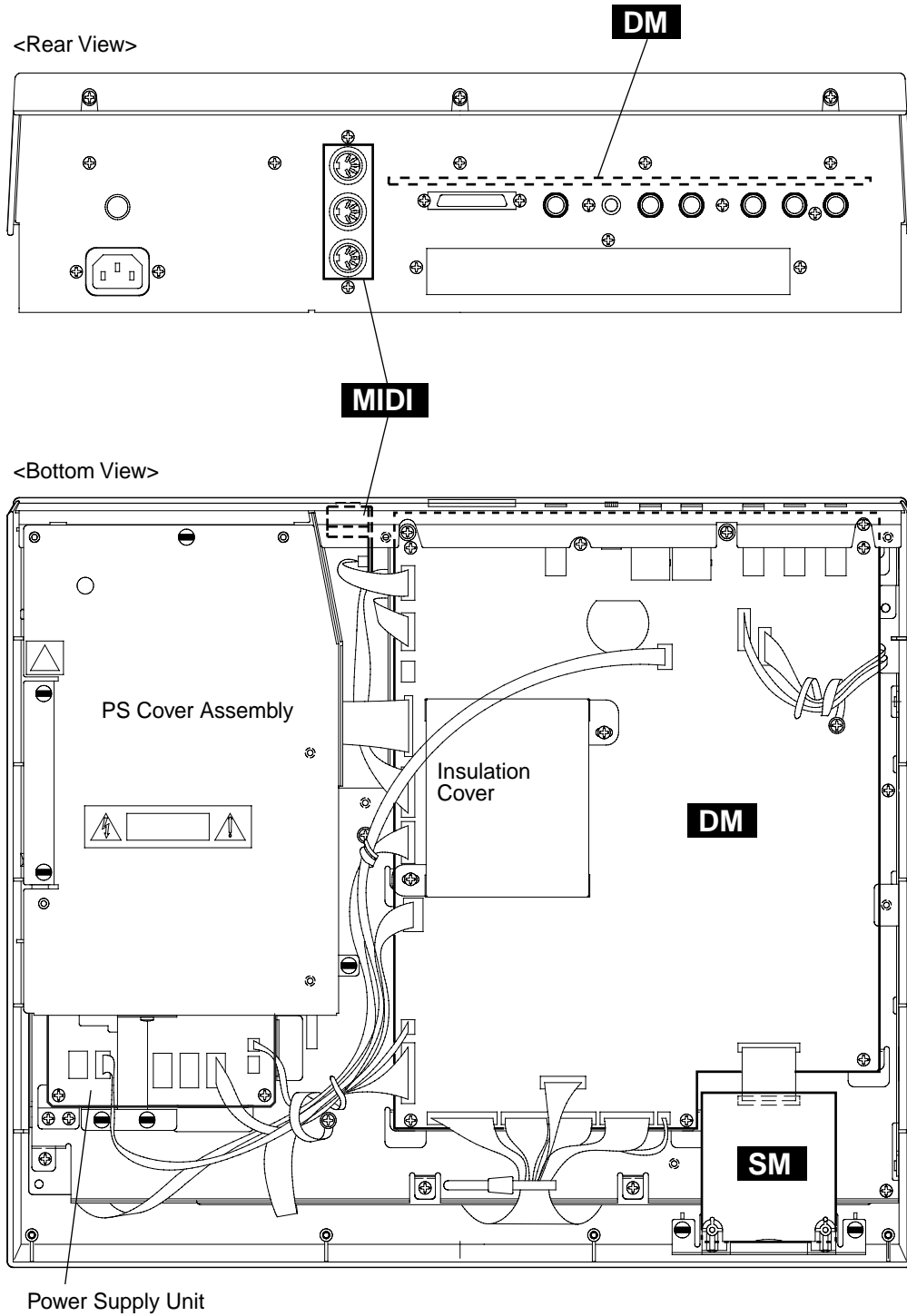
- ❶ [POWER] Switch
- ❷ [AC INLET]
- ❸ [MIDI IN], [MIDI OUT A], and [MIDI OUT B] Connectors
- ❹ [SCSI] Connector
- ❺ [FOOT SW] Jack
- ❻ [CONTRAST] Control
- ❼ [INPUT L] and [INPUT R] Jacks
- ❽ [OUTPUT L/MONO] and [OUTPUT R] Jacks
- ❾ [PHONES] Jack

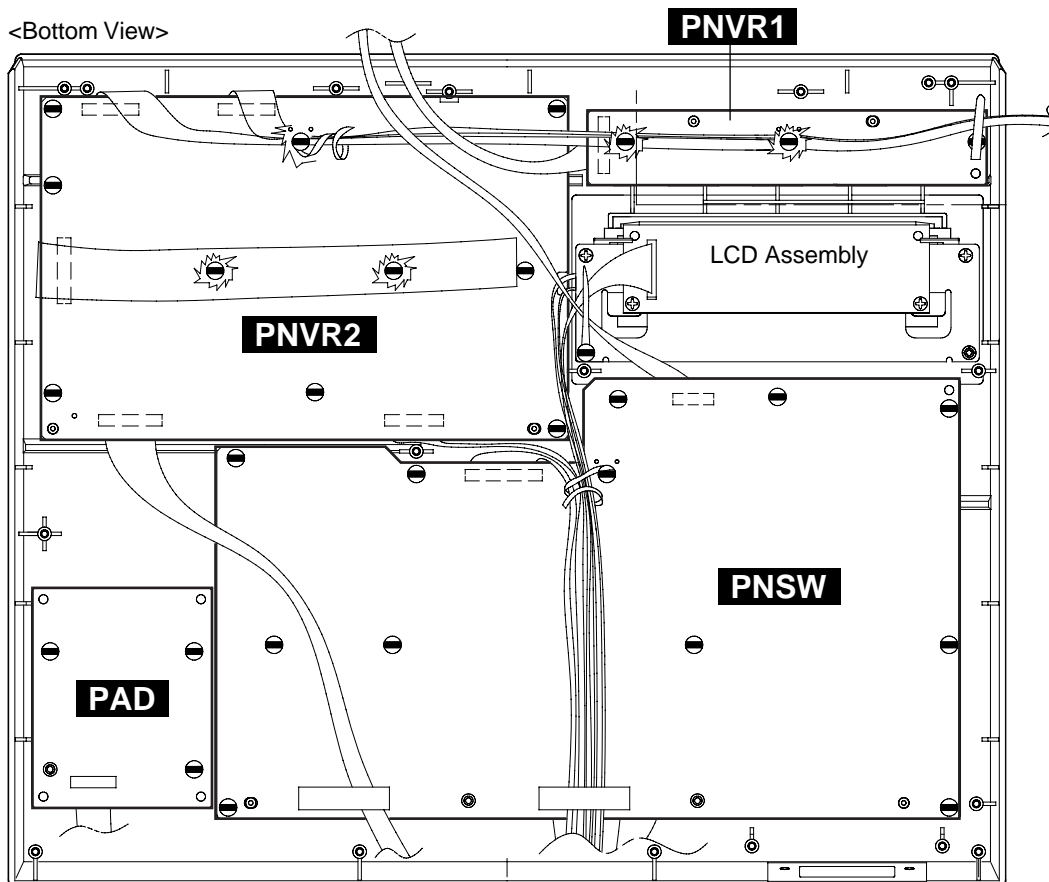
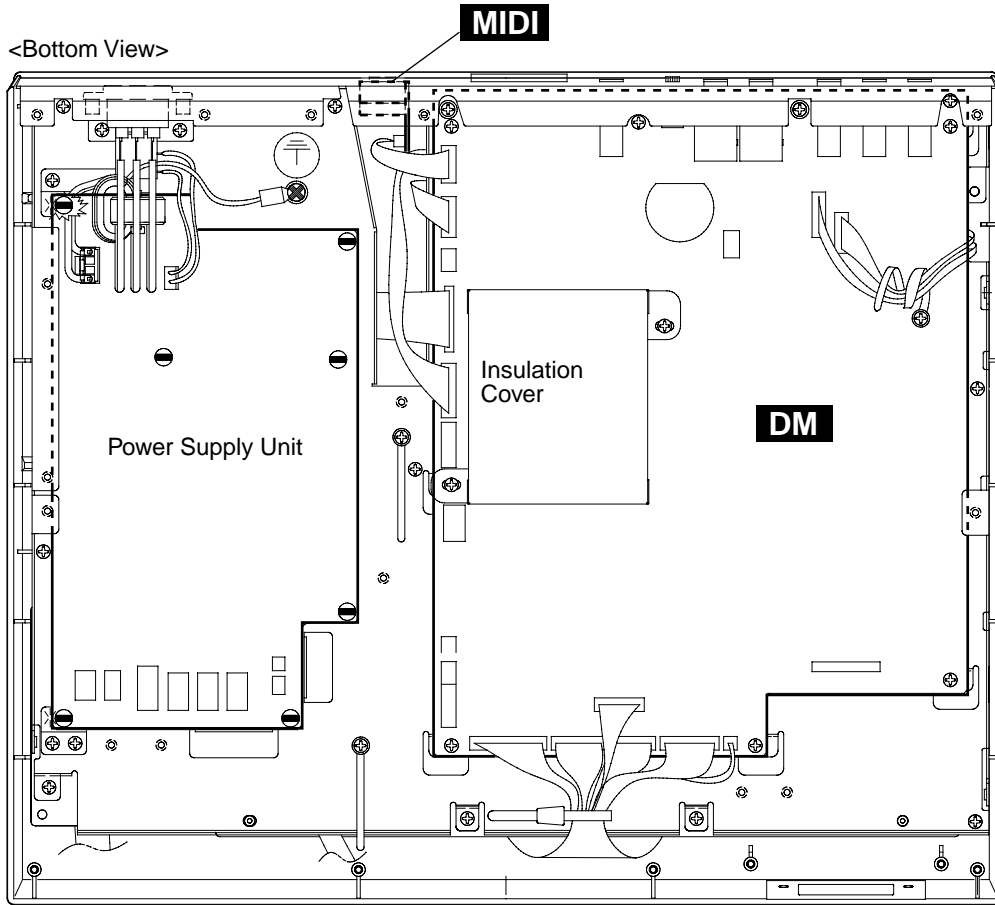
• Rear Panel with Optional AIEB2 I/O



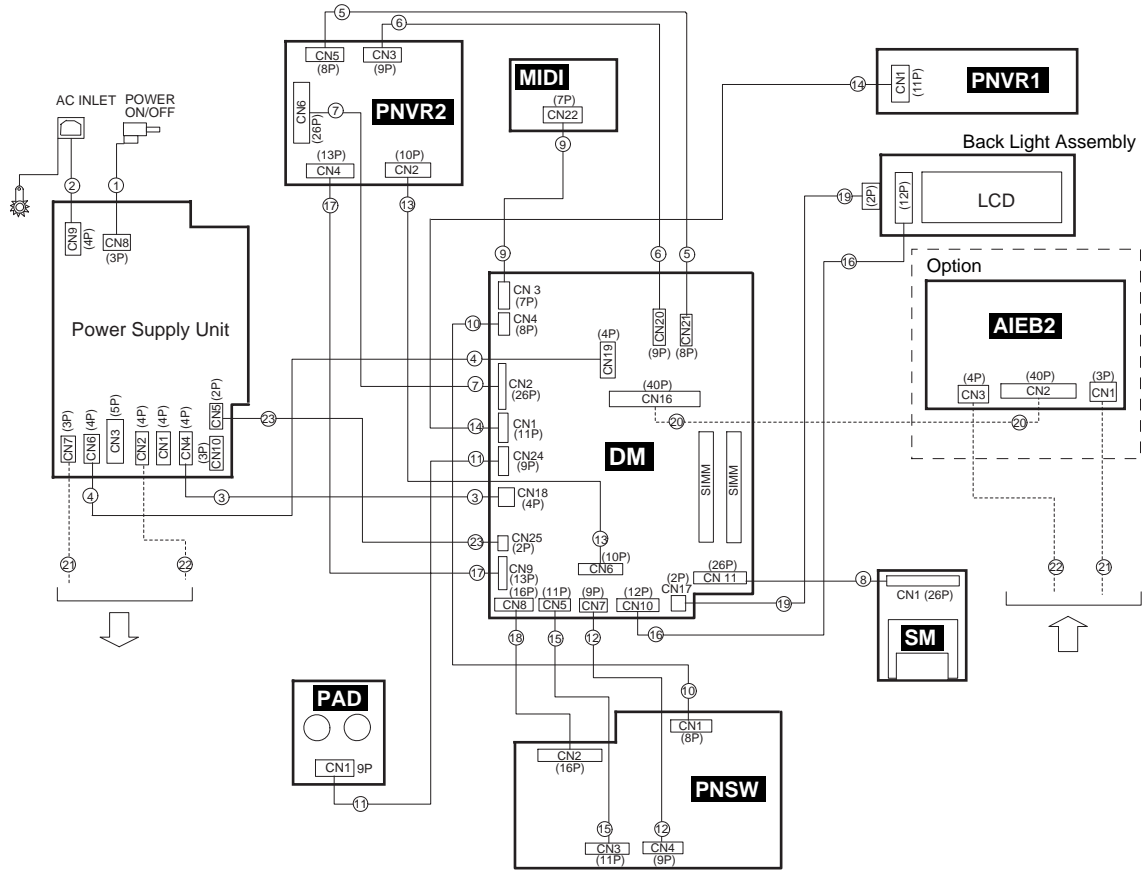
- ❶ [OPTICAL IN], [OPTICAL OUT] Connectors
- ❷ [DIGITAL IN], [DIGITAL OUT] Connectors
- ❸ [ASSIGNABLE OUT 1 ~ 6] Jacks

CIRCUIT BOARD LAYOUT





■ WIRING

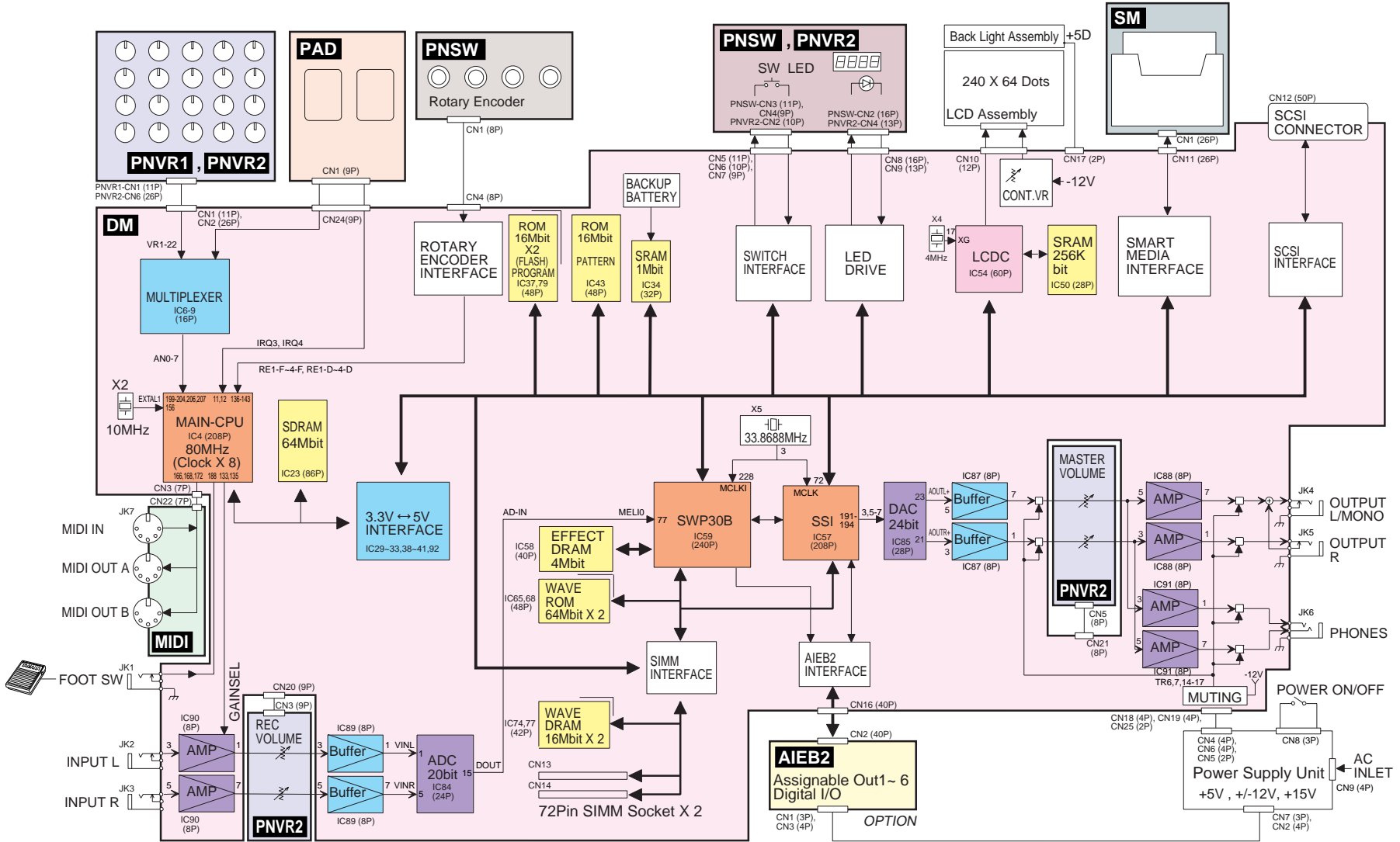


Location	Parts List Ref No.	Part No.	Connector Assembly	Destination		Remarks	Availability
①	490	(V701080)	PSW	POWER Switch	Power Supply Unit-CN8	3P	
②	470	(V701090)	ACIN	AC INLET	Power Supply Unit-CN9	4P	
③	650	(V701100)	D-POWER	Power Supply Unit-CN4	DM-CN18	4P	
④	660	(V701110)	A-POWER	Power Supply Unit-CN6	DM-CN19	4P	
⑤	180	(V712080)	MVR	PNVR2-CN5	DM-CN21	8P	
⑥	170	(V712090)	RVR	PNVR2-CN3	DM-CN20	9P	
⑦	190	MFA26250	CARD	PNVR2-CN6	DM-CN2	26P-250L	○
⑧	680	MFA26060	CARD	SM-CN1	DM-CN11	26P-60L	○
⑨	590	(VK09820)	KRD-KRD	MIDI-CN22	DM-CN3	7P-100L	
⑩	100	(VJ98180)	KRD-KRD	PNSW-CN1	DM-CN4	8P-250L	
⑪	250	VK106000	KRD-KRD	PAD-CN1	DM-CN24	9P-300L	○
⑫	120	VK098500	KRD-KRD	PNSW-CN4	DM-CN7	9P-100L	○
⑬	200	(VK10840)	KRD-KRD	PNVR2-CN2	DM-CN6	10P-350L	
⑭	280	VK102900	KRD-KRD	PNVR1-CN1	DM-CN1	11P-200L	○
⑮	130	(VK09870)	KRD-KRD	PNSW-CN3	DM-CN5	11P-100L	
⑯	70	(VK11010)	KRD-KRD	LCD	DM-CN10	12P-400L	
⑰	210	(VK10890)	KRD-KRD	PNVR2-CN4	DM-CN9	13P-350L	
⑱	110	(VK10670)	KRD-KRD	PNSW-CN2	DM-CN8	16P-300L	
⑲	40a	VT287000	B LIGHT	Back Light Assembly	DM-CN17	2P	○
㉓	665	(V765570)	LED-POWER	Power Supply Unit-CN5	DM-CN25	2P	

OPTION (AIEB2)

Location	Parts List Ref No.	Part No.	Connector Assembly	Destination		Remarks	Availability
⑳		VV336500		AIEB2-CN2	DM-CN16	40P	○
㉑		VV336700		AIEB2-CN1	Power Supply Unit-CN7	3P	○
㉒		VV336600		AIEB2-CN3	Power Supply Unit-CN2	4P	○

BLOCK DIAGRAM

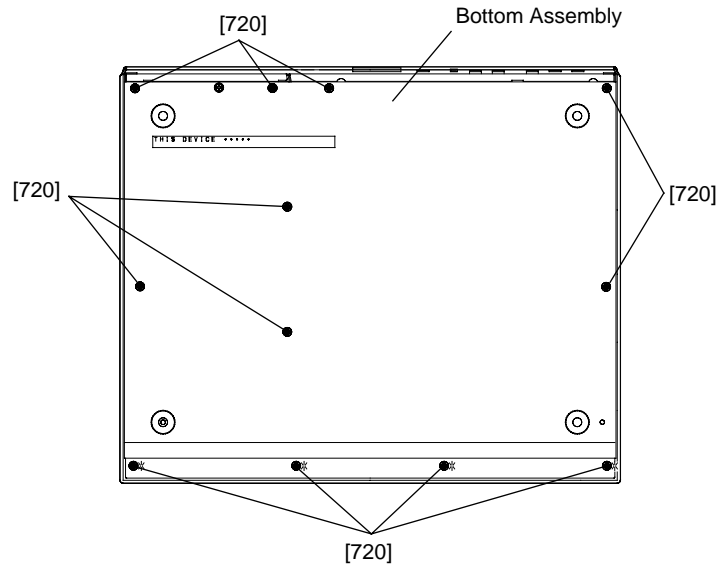


28CA1-8818690

■ DISASSEMBLY PROCEDURE

1. Bottom Assembly (Time required: About 5 minutes)

- 1-1 Remove the twelve (12) screws marked [720]. The bottom assembly can then be removed. (Fig.1)



[720]: Bonding Tapping Screw-B

3.0X10 MFZN2BL (VQ049800)

Fig.1

2. DM Circuit Board (Time required: About 10 minutes)

- 2-1 Remove the bottom assembly. (See procedure 1.)
 2-2 Remove the nine (9) screws marked [440A], the three (3) screws marked [440B] and the two (2) screws marked [450]. The insulation cover and the DM circuit board can then be removed. (Fig.2)

3. Replacing the Lithium Battery

(Time required: About 5 minutes)

- 3-1 Remove the bottom assembly. (See procedure 1.)
 3-2 You can replace the lithium battery from the DM circuit board. (Fig.2)

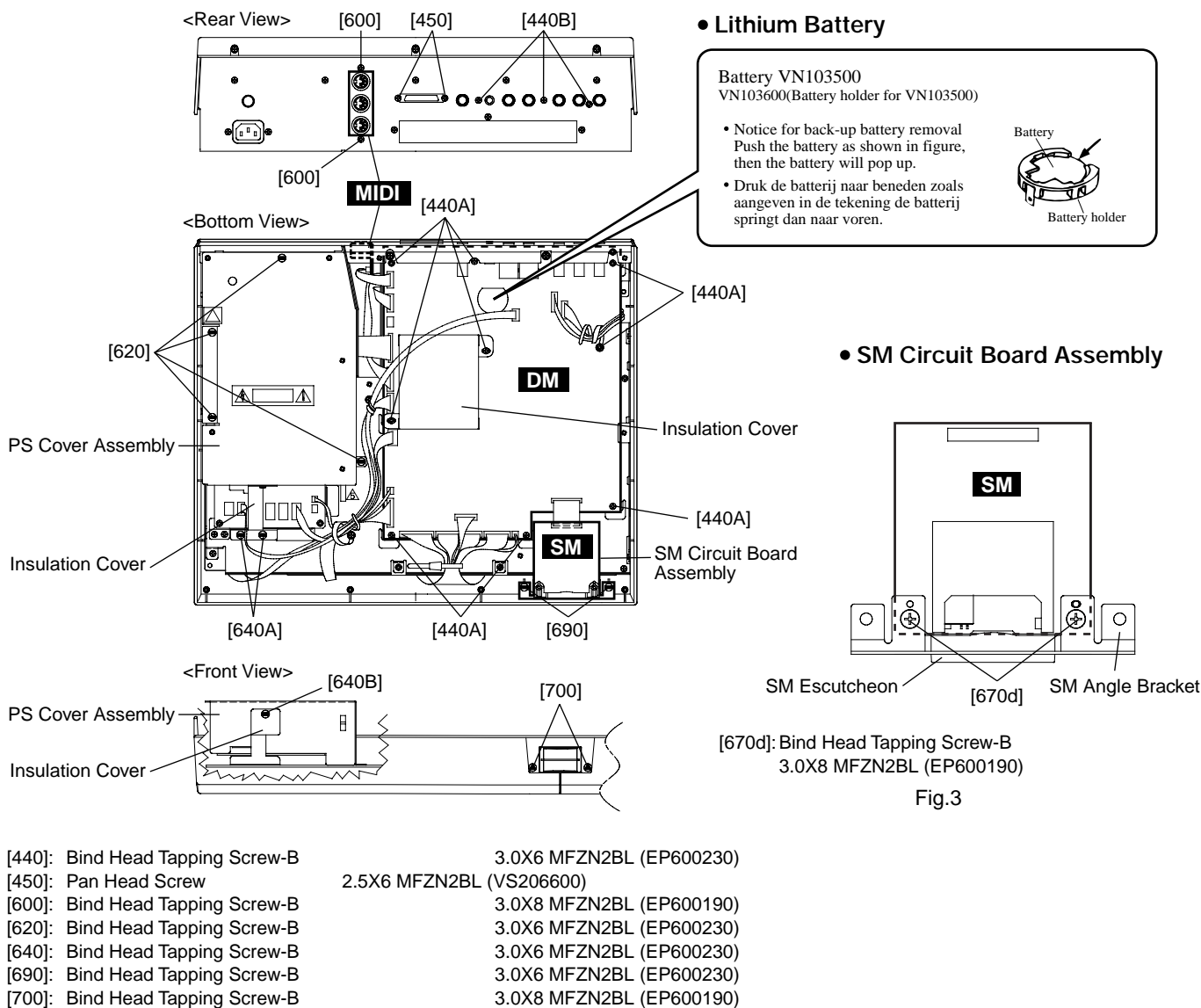
* The lithium battery is not part of the DM circuit board. When you replace the DM circuit board, you should remove the lithium battery from the board, and install in the holder on the new circuit board.

4. SM Circuit Board Assembly (Time required: About 10 min.)

- 4-1 Remove the bottom assembly. (See procedure 1.)
 4-2 Remove the two (2) screws marked [690] and the two (2) screws marked [700]. The SM circuit board assembly can then be removed. (Fig.2)
 4-3 Remove the two (2) screws marked [670d]. The SM escutcheon and the SM angle bracket can then be removed from the SM circuit board. (Fig.3)

5. MIDI Circuit Board (Time required: About 8 minutes)

- 5-1 Remove the bottom assembly. (See procedure 1.)
 5-2 Remove the two (2) screws marked [600]. The MIDI circuit board can then be removed. (Fig.2)



- [440]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [450]: Pan Head Screw 2.5X6 MFZN2BL (VS206600)
- [600]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)
- [620]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [640]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [690]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
- [700]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)

Fig.2

6. Power Supply Unit (Time required: About 20 minutes)

- 6-1 Remove the bottom assembly. (See procedure 1.)
- 6-2 Remove the four (4) screws marked [620], the two (2) screws marked [640A] and the screw marked [640B]. The insulation cover and the PS cover assembly can then be removed. (Fig.2)
- 6-3 Remove the seven (7) screws marked [560]. (Fig.4)
- 6-4 Remove the cord holder marked [A], and then remove the ferrite core of the AC-IN connector assembly. The power supply unit can then be removed. (Fig.4)

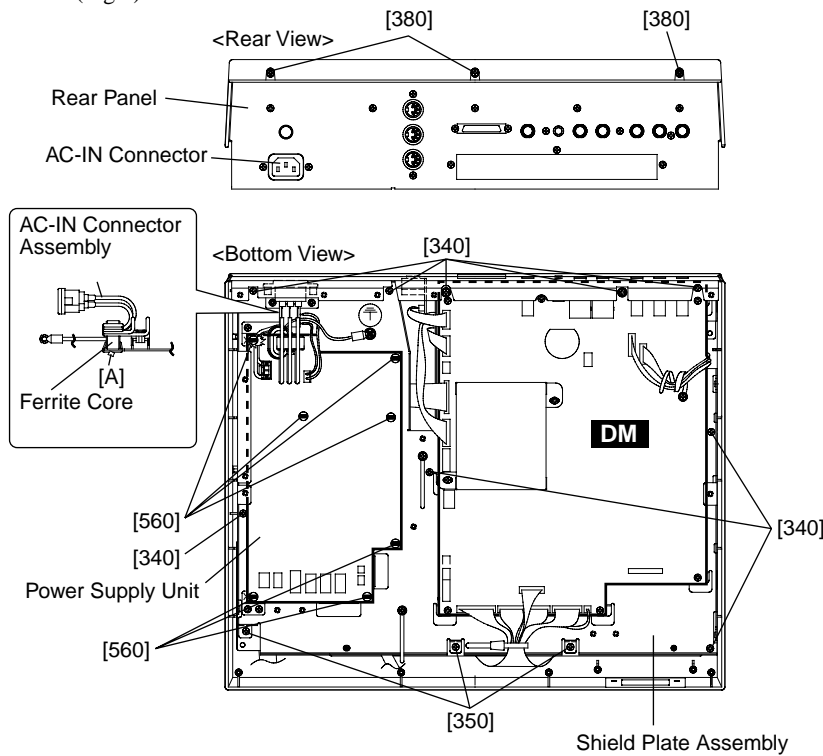
7. Power Switch Assembly (Time required: About 15 minutes)

- 7-1 Remove the bottom assembly. (See procedure 1.)
- 7-2 Remove the PS cover assembly. (See procedure 6-2.)
- 7-3 Remove the two (2) screws marked [505]. The power switch assembly can then be removed from the PS holder. (Fig.5)

8. Shield Plate Assembly (Time required: About 25 minutes)

* **You don't need to remove the DM circuit board, the power supply unit and the MIDI circuit board to remove the shield plate assembly.**

- 8-1 Remove the bottom assembly. (See procedure 1.)
- 8-2 Remove the SM circuit board assembly. (See procedure 4-2.)
- 8-3 Remove the PS cover assembly. (See procedure 6-2.)
- 8-4 Remove the nine (9) screws marked [340], the three (3) screws marked [350] and the three (3) screws marked [380]. The shield plate assembly can then be removed with the DM circuit board, the power supply unit, the MIDI circuit board and the rear panel. (Fig.4)



- | | |
|----------------------------------|--------------------------|
| [340]: Bind Head Tapping Screw-B | 3.0X6 MFZN2BL (EP600230) |
| [350]: Bind Head Tapping Screw-B | 3.0X8 MFZN2BL (EP600190) |
| [380]: Bind Head Tapping Screw-B | 3.0X8 MFZN2BL (EP600190) |
| [560]: Bind Head Tapping Screw-B | 3.0X6 MFZN2BL (EP600230) |

Fig.4

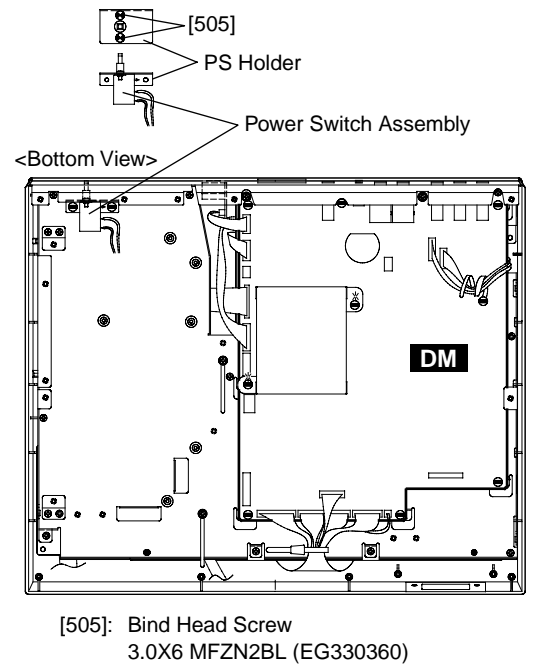


Fig.5

9. PNSW, PNVR1, PNVR2 and PAD Circuit Boards, LCD Assembly, Back-lit Assembly

(Time required: About 30 minutes each)

- 9-1 Remove the bottom assembly. (See procedure 1.)
- 9-2 Remove the SM circuit board assembly. (See procedure 4-2.)
- 9-3 Remove the PS cover assembly. (See procedure 6-2.)
- 9-4 Remove the shield plate assembly with the DM circuit board, the power supply unit, the MIDI circuit board and the rear panel. (See procedure 8.)

9-5 **PNSW Circuit Board:**

Pull out the four (4) encoder knobs marked [B] and remove the twelve (12) screws marked [150]. The Panel SW-Button assembly can then be removed. (Fig.6, 7)

Pull out the thirty (30) buttons from the PNSW circuit board.

9-6 **PNVR1 Circuit Board:**

Pull out the four (4) knobs marked [C] and remove the three (3) screws marked [300]. The PNVR1 circuit board can then be removed. (Fig.6, 7)

Pull out the function button from the PNVR1 circuit board.

9-7 **PNVR2 Circuit Board:**

Pull out the twenty-one (21) knobs marked [D] and remove the ten (10) screws marked [220]. The PNVR2 circuit board can then be removed. (Fig.6, 7)

Pull out the eight (8) buttons from the PNVR2 circuit board.

9-8 **PAD Circuit Board:**

Remove the three (3) screws marked [260]. The PAD circuit board can then be removed. (Fig.6)

9-9 **LCD Assembly, Back Light Assembly:**

Remove the six (6) screws marked [60]. The LCD assembly, the back light assembly, the spacer assembly and the LCD angle assembly can then be removed. (Fig.6, 8)

* When the LCD assembly is installed, be careful that a position to install it doesn't deviate.

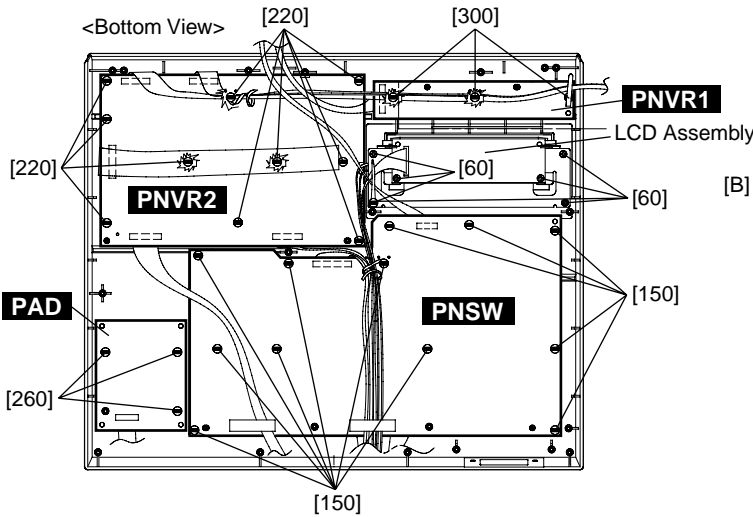


Fig.6

- [60]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)
- [150]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)
- [220]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)
- [260]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)
- [300]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)

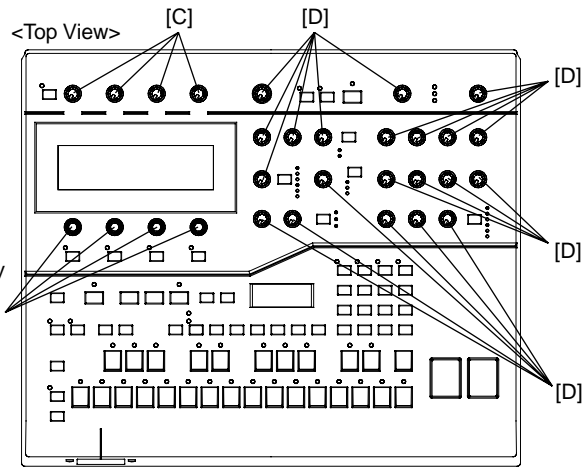
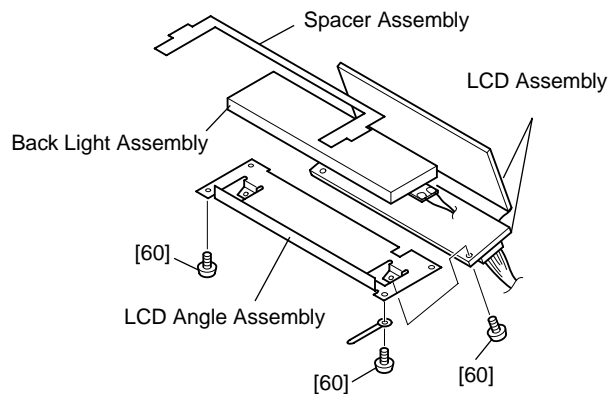


Fig.7



- [60]: Bind Head Tapping Screw-B
3.0X6 MFZN2BL (EP600230)

Fig.8

■ INSTALLING OPTIONAL EQUIPMENT

The RS7000 provides slots, connectors, and installation space that can accommodate a variety of options for enhancing its performance and functionality, such as SIMM expansion memory and I/O expansion boards.

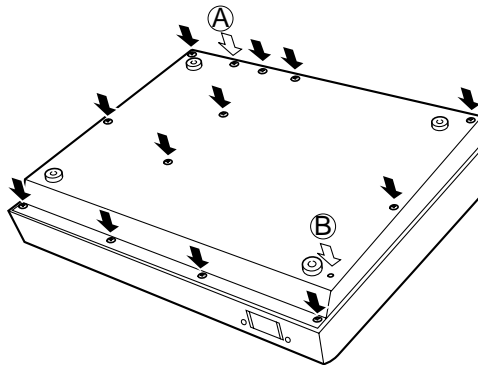
Removing the Bottom Cover

Procedure

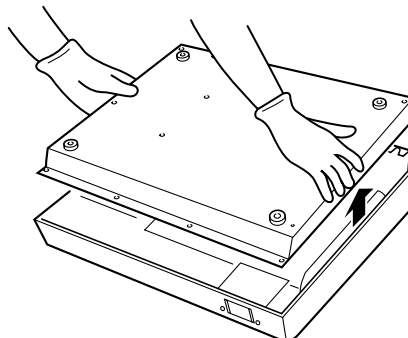
1. Be sure you have the following at hand before starting the installation.
 - **Phillips screwdriver:** Magnetic-tipped screwdriver is recommended.
 - **Workbench:** Please carry out all work on a stable workbench or table. Spreading a cloth over the work surface will prevent scratching.
 - **Gloves:** Be sure to wear gloves so that your hands are not scratched by the metal cover or other metal parts.
2. Switch off the RS7000 power, and unplug the power cord from the wall outlet.
3. Remove the screws holding the bottom cover in place.
 - Set the RS7000 upside down on the workbench and use a Phillips screwdriver to unscrew the 12 screws from the bottom (see illustration below).

⚠ CAUTION

Do not remove the screw marked **(A)** in the illustration below. This screw is not relevant to removing the bottom cover. Holes **(B)** in the diagram below have no connection with removing the bottom cover.



4. Holding both sides of the bottom cover with both hands, lift the bottom cover straight up to remove it.



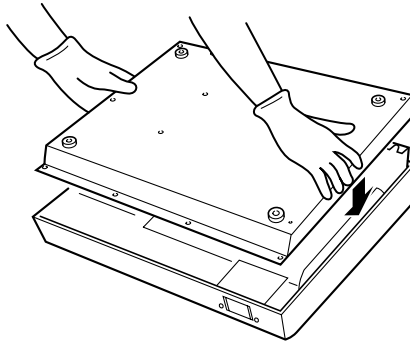
Replacind the Bottom Cover

IMPORTANT

When replacing the bottom cover, be sure that you do not get cables caught or pulled between the cover and main unit. This could cause broken connections or malfunctions.

Procedure

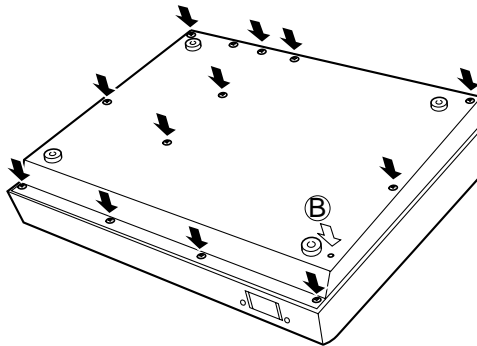
1. Holding both sides of the bottom cover with both hands, lower the cover straight down from above to its original position.



2. Use the original screws to re-attach the bottom cover.
 - Replace the twelve screws to fasten the bottom cover.

CAUTION

Do not use screws other than those removed in step 3. Other screws can damage the unit. Holes B in the diagram below are not screw holes. Be careful not to insert screws into these holes.

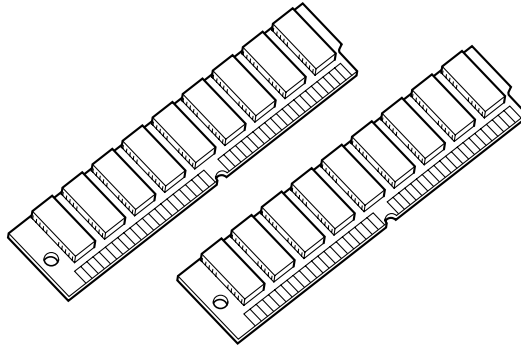


3. Carefully turn the unit right side up.

Installing SIMMs

You can increase the RS7000's memory by installing commercially available SIMMs (single in-line memory modules).

This section explains how to carry out the installation.



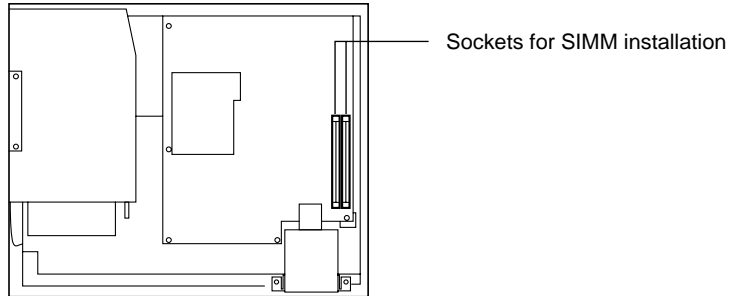
IMPORTANT

- You need to use 72-pin SIMMs with access times of 70ns or less. The SIMM module size may be 4, 8, 16, or 32 MB. The RS7000 is designed for use with 32 bit SIMMs, but can also accept installation of 36 bit (parity-type) SIMMs.
- When purchasing SIMMs, make sure that the SIMM design does not utilize more than 18 memory chips per module. (SIMMs comprised of more than 18 chips do not operate correctly on the RS7000.)
- SIMMs must be installed as a pair of the identical capacity. It is not possible to add just a single SIMM.
- The RS7000 ships with 4 MB of memory installed. This means that if, for example, you install a pair of 16 MB SIMMs, the sampling memory will be $4 + (16 \times 2) = 36$ MB. However, the maximum sampling memory is 64 MB. For this reason the original memory will effectively be disabled if you install a pair of 32 MB SIMMs (one pair: $32 \times 2 = 64$ MB).
- YAMAHA recommends that you purchase SIMMs that conform to the JEDEC* standard. Please be aware, however, that conformance to this standard does not guarantee that the SIMM will operate on the RS7000 even if it operates on a personal computer.

* JEDEC (Joint Electron Device Engineering Council) sets standards for terminal configurations within electronic devices.

Procedure

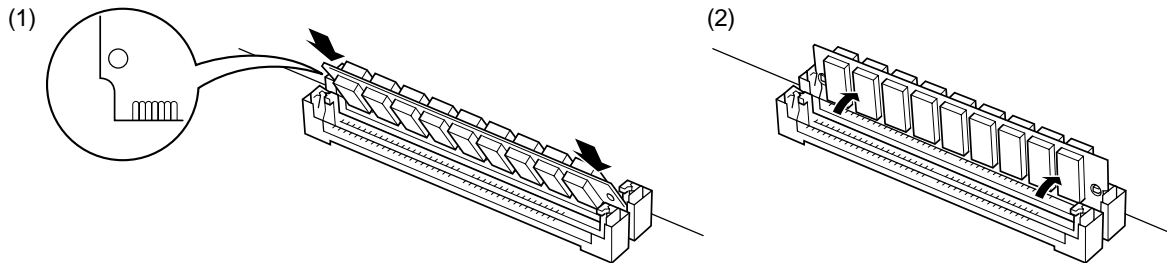
1. Be sure that you have the following at hand before starting the installation.
 - **SIMMs (one pair: 2 modules)**
 - **Phillips screwdriver:** Magnetic-tipped screwdriver is recommended.
 - **Workbench:** Please carry out all work on a stable workbench or table. Spreading a cloth over the work surface will help prevent scratching.
 - **Gloves:** Be sure to wear gloves so that your hands are not scratched by the metal cover or other metal parts.
2. Remove the bottom cover.
3. Insert the SIMM module into the socket on the circuit board.
 - First identify the sockets that you will install the SIMM into.



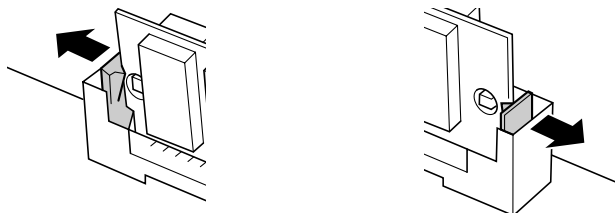
NOTE

When inserting SIMMs, always begin with the outer socket (i.e., the socket closest to the side of the RS7000 cover). SIMMs will not fit into the socket if you reverse this order.

- Hold the SIMM with its cutout part facing the rear panel, and set the SIMM into the socket at an angle as shown in the figure below (1). Then push the SIMM upright until it clicks into the position shown in figure (2), locking it into place.



- Repeat this step for the other SIMM.
- If you need to remove a SIMM from a socket, hold open the two hooks on the socket (one at each end), push on the SIMM to tilt it downward, and then pull it out.



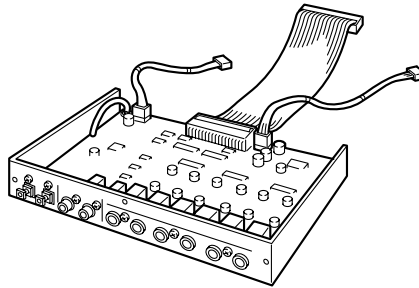
This completes the installation.

If you wish to install an I/O expansion board, continue with the I/O expansion board installation procedure.

4. Replace the bottom cover.
5. Plug in the power cord.
 - To verify that the installed SIMMs are detected correctly, hold down [SHIFT] and press [UTILITY] to access the FREE MEM-ORY display.

Installing the AIEB2 I/O Expansion Board

The optional AIEB2 Input/Output expansion board adds digital I/O (both optical and coaxial formats) and six assignable outputs to the RS7000.



IMPORTANT

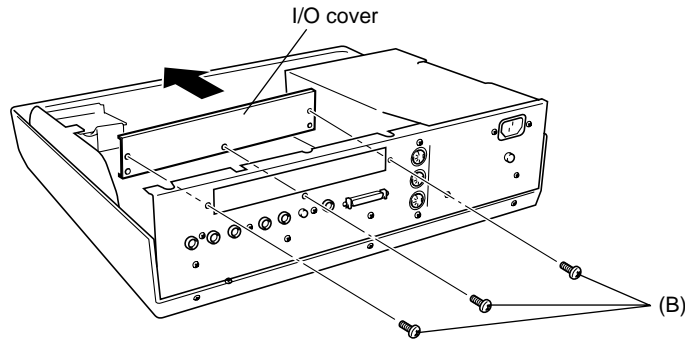
Please note that the AIEB1 cannot be used in the RS7000.

Procedure

1. Be sure that you have the following at hand before starting the installation.
 - **AIEB2 I/O expansion board:** Confirm that there are 3 cables extending from the board.
 - **Phillips screwdriver:** Magnetic-tipped screwdriver is recommended.
 - **Workbench:** Please carry out all work on a stable workbench or table. Spreading a cloth over the work surface will help prevent scratching.
 - **Gloves:** Be sure to wear gloves so that your hands are not scratched by the metal cover or other metal parts.
2. Remove the bottom cover.
3. Remove the three screws (B) from the rear panel, and remove the I/O cover.

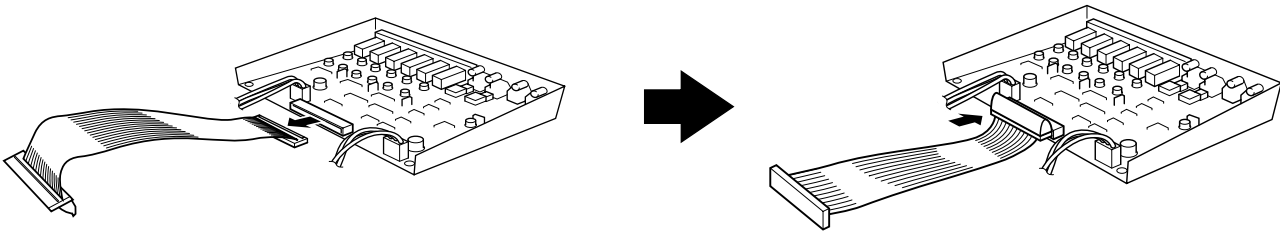
CAUTION

- The I/O cover may fall down when all three screws are removed, so be sure to hold the I/O cover with one hand while removing the screws.
- The I/O cover you removed will not be needed as long as the AIEB2 is installed, but the screws with which it was attached will be used to attach the AIEB2, so be careful not to misplace them.
- These screws (B) are of a different type than the twelve screws that fasten the bottom cover. Be careful not to confuse them with the bottom cover screws. The unit may be damaged if you use the incorrect screws.



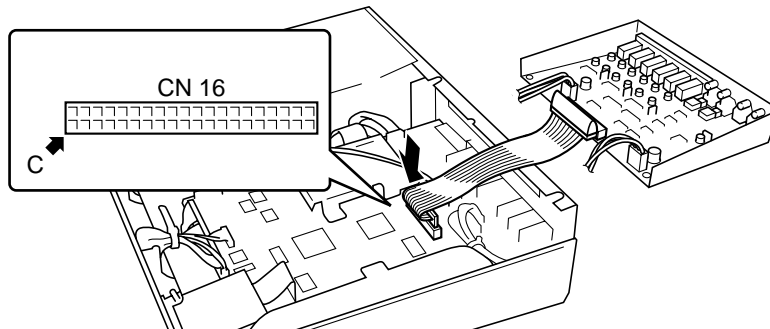
4. Plug in the flat cable backward.

- Disconnect the flat cable.
- Insert the opposite plug into the connector.
The connector has a cut-out that prevents it from being connected in an incorrect orientation.



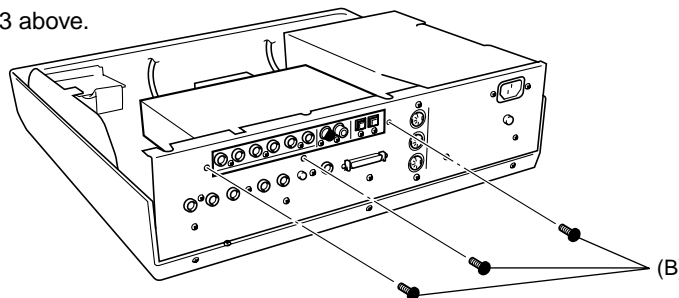
5. Connect the flat cable.

- Connect the flat cable from the I/O expansion board (the thin, flat cable) to the corresponding connector on the RS7000's circuit board (marked "C" in the illustration below: CN16).
The connector is "keyed" so that it will only go in one way.



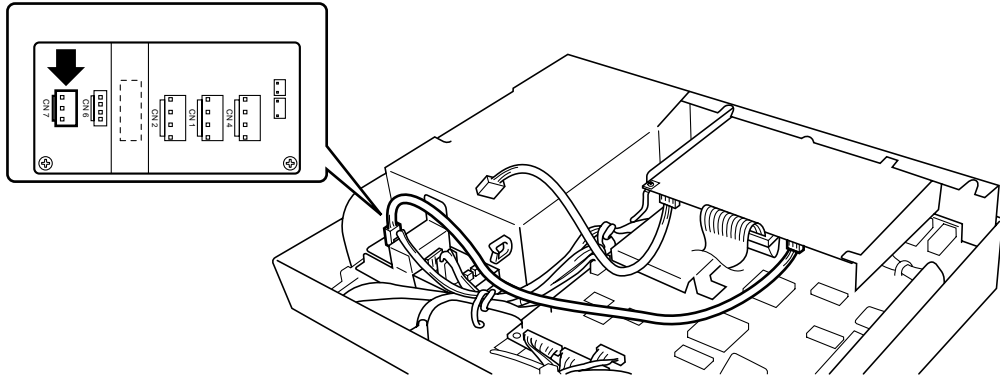
6. Insert the AIEB2 I/O expansion board.

- Support the I/O expansion board as shown in the illustration below, and fasten it to the rear panel by screwing in the three screws (B) that you removed at Step 3 above.



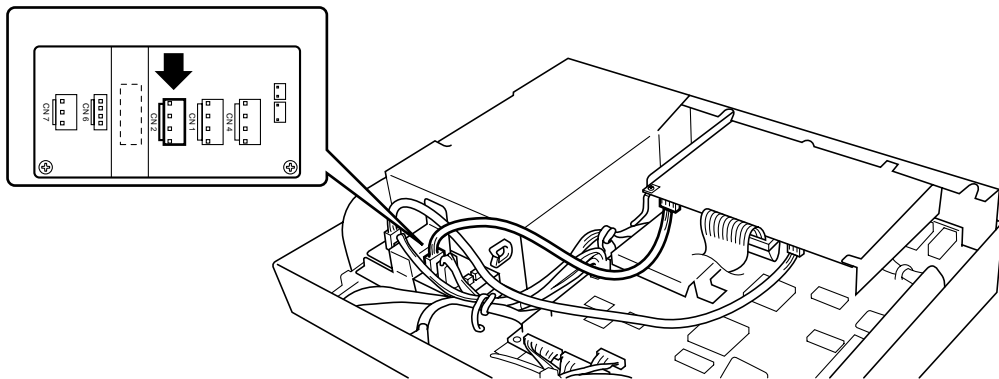
7. Connect the 3-wire red/white cable.

- Of the two red/white cables that extend from the I/O expansion board, first connect the 3-wire cable to the connector shown in the illustration below (CN7: 3-pin). Make sure that the direction is correct, and do not try to force the connection.



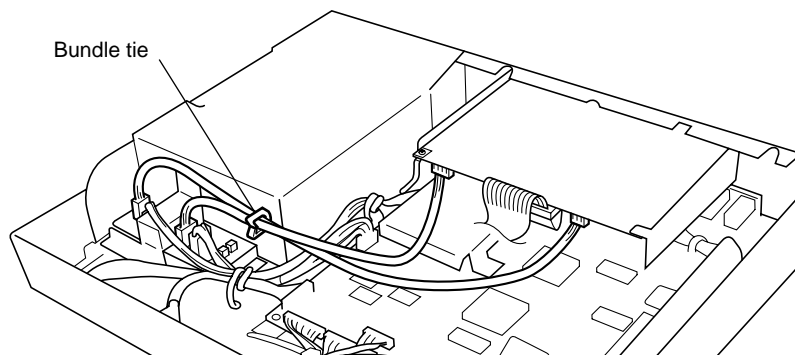
8. Connect the other red/white cable (4-wire) in the same way.

- Connect the cable to the connector shown below (CN2: 4-pin).

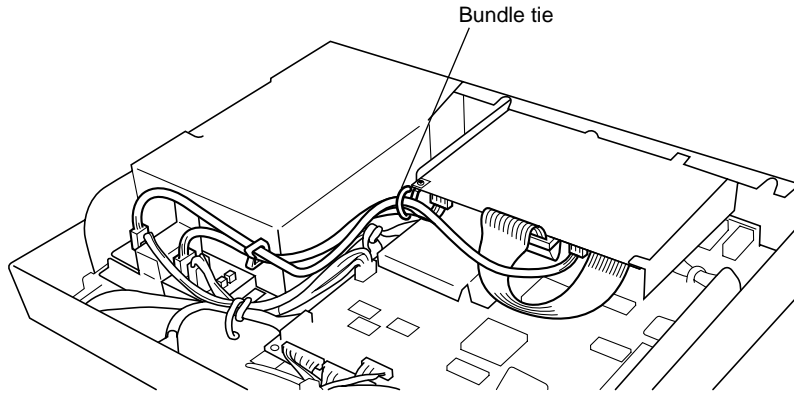


9. Secure the cables to the bundle tie.

- Run the 3-wire and 4-wire cables through the bundle tie (see illustration below), and secure them.

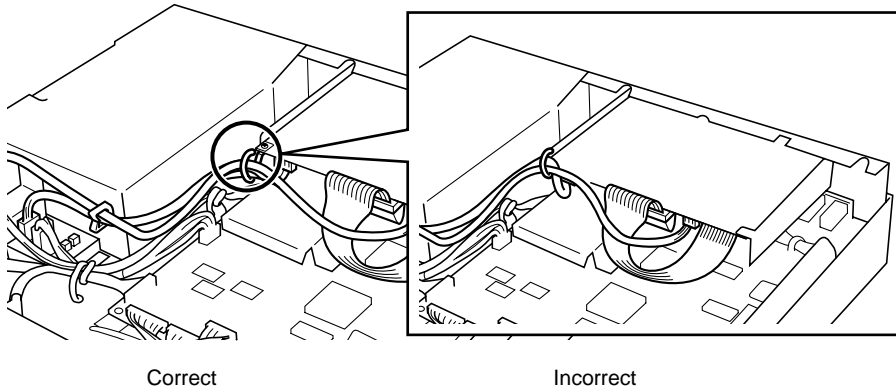


- Use the bundle tie to secure the 3-wire cable, and the 4-wire cable (see illustration below).



⚠ CAUTION

Make sure that the cables are bundled below the circuit board. If any cables are pinched between the cover and I/O expansion circuit board when the bottom cover is replaced, broken connections or malfunctions may occur.



10. Replace the bottom cover.
11. Plug in the power cord.

LSI PIN DESCRIPTION

• HD6417709F80B (XV250B00) CPU

DM: IC004

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	MD1	I	Mode control	105	CKE/PTK5	I/O	CK enable / Port K	
2	MD2	I		106	/RAS3L/PTJ0	I/O	3L Row address strobe / Port J	
3	Vcc(RTC)	-	Power supply +3.3V	107	/RAS2L/PTJ1	I/O	2L Row address strobe / Port J	
4	XTAL2	O	Crystal oscillator	108	/CASL/CAS/PTJ2	I/O	LL Column address strobe / Column address strobe / Port J	
5	EXTAL2	O		109	Vss	-	Ground	
6	Vss(RTC)	-	Ground	110	/CASLH/PTJ3	I/O	LH Column address strobe / Port J	
7	NMI	I	Non-maskable interrupt request	111	Vcc	-	Power supply +3.3V	
8	IRQ0/IRL0/PTH0	I	Interrupt request / Port H	112	/CASHL/PTJ4	I/O	HL Column address strobe / Port J	
9	IRQ1/IRL1/PTH1	I		113	/CASHH/PTJ5	I/O	HH Column address strobe / Port J	
10	IRQ2/IRL2/PTH2	I		114	DACK0/PTD5	I/O	DMA acknowledge / Port D	
11	IRQ3/IRL3/PTH3	I		115	DACK1/PTD7	I/O		
12	IRQ4/PTH4	I		116	CAS2L/PTE6	I/O		2L Column address strobe / Port E
13	D31/PTB7	I/O	Data bus / Port B	117	CAS2H/PTE3	I/O	2H Column address strobe / Port E	
14	D30/PTB6	I/O		118	/RAS3U/PTE2	I/O	3U Row address strobe / Port E	
15	D29/PTB5	I/O		119	/RAS2U/PTE1	I/O	2U Row address strobe / Port E	
16	D28/PTB4	I/O		120	PTE0	O	Port E	
17	D27/PTB3	I/O		121	/BACK	O	Bus acknowledgement	
18	D26/PTB2	I/O		122	/BREQ	O	Bus request	
19	Vss	-	Ground	123	/WAIT	I	Hardware wait request	
20	D25/PTB1	I/O	Data bus / Port B	124	/RESETM	I	Manual reset	
21	Vcc	-	Power supply +3.3V	125	PTH5/ADTRG	I	Port H / Analog trigger	
22	D24/PTB0	I/O	Data bus / Port B	126	IOIS16/PTG7	I	Write protect / Port G	
23	D23/PTA7	I/O	Data bus / Port A	127	PTG6	I	Port G	
24	D22/PTA6	I/O		128	PTG5	I		
25	D21/PTA5	I/O		129	PTG4	I		
26	D20/PTA4	I/O		130	PTG3	I		
27	Vss	-	Ground	131	PTG2	I	Ground	
28	D19/PTA3	I/O	Data bus / Port A	132	VSS	-		
29	Vcc	-	Power supply +3.3V	133	PTG1	I		
30	D18/PTA2	I/O	Data bus / Port A	134	Vcc	-	Power supply +3.3V	
31	D17/PTA1	I/O		135	PTG0	I	Port G	
32	D16/PTA0	I/O	Ground	136	PTF7/PINT15	I	Port F / Port interruption	
33	Vss	-	Ground	137	PTF6/PINT14	I		
34	D15	I/O	Data bus	138	PTF5/PINT13	I		
35	Vcc	-	Power supply +3.3V	139	PTF4/PINT12	I		
36	D14	I/O	Data bus	140	PTF3/PINT11	I		
37	D13	I/O		141	PTF2/PINT10	I		
38	D12	I/O		142	PTF1/PINT9	I		
39	D11	I/O		143	PTF0/PINT8	I		
40	D10	I/O		144	MD0	I	Mode control	
41	D9	I/O	Data bus	145	Vcc(PLL1)	-	Power supply +3.3V	
42	D8	I/O		146	CAP1	-	Capacitor	
43	D7	I/O		147	Vss(PLL1)	-	Ground	
44	D6	I/O		148	Vss(PLL2)	-	Ground	
45	Vss	-		Ground	149	CAP2	-	Capacitor
46	D5	I/O		Data bus	150	VCC(PLL2)	-	Power supply +3.3V
47	Vcc	-		Power supply +3.3V	151	PTH6	I	Port H
48	D4	I/O	Data bus	152	Vss	-	Ground	
49	D3	I/O		153	Vss	-		
50	D2	I/O		154	Vcc	-	Power supply +3.3V	
51	D1	I/O		155	XTAL1	O	Crystal oscillator	
52	D0	I/O	156	EXTAL1	O			
53	A0	O	Address bus	157	STATUS0/PTJ6	I/O	Processor status / Port J	
54	A1	O		158	STATUS1/PTJ7	I/O		
55	A2	O		159	TCLK/PTH7	I/O	Timer clock / Port H	
56	A3	O		160	/IRQOUT	O	Interrupt request output	
57	Vss	-		Ground	161	Vss	-	Ground
58	A4	O		Address bus	162	CKIO	I/O	System clock input / output
59	Vcc	-		Power supply +3.3V	163	Vcc	-	Power supply +3.3V
60	A5	O		Address bus	164	TXD0/SCPT0	O	Data transmission / SCI port
61	A6	O			165	SKC0/SCPT1	I/O	Serial clock / SCI port
62	A7	O			166	TXD1/SCPT2	O	Data transmission / SCI port
63	A8	O	167		SKC1/SCPT3	I/O	Serial clock / SCI port	
64	A9	O	168		TXD2/SCPT4	O	Data transmission / SCI port	
65	A10	O	169		SKC2/SCPT5	I/O	Serial clock / SCI port	
66	A11	O	170		RTS2/SCPT6	I/O	Transmit request / SCI port	
67	A12	O	171		RXD0/SCPT0	I	Data reception / SCI port	
68	A13	O	172	RXD1/SCPT2	I			
69	Vss	-	Ground	173	Vss	-	Ground	
70	A14	O	Address bus	174	RXD2/SCPT4	I	Data reception / SCI port	
71	Vcc	-	Power supply +3.3V	175	Vcc	-	Power supply +3.3V	
72	A15	O	Address bus	176	CTS2/IRQ5/SCPT7	I	Transmit request / Interrupt request / SCI port	
73	A16	O		177	PTC7/PINT7	I/O	Port C / Port interruption	
74	A17	O		178	PTC6/PINT6	I/O		
75	A18	O		179	PTC5/PINT5	I/O		
76	A19	O		180	PTC4/PINT4	I/O		
77	A20	O		Ground	181	Vss	-	
78	A21	O	182		/WAKEUP/PTD3	I/O	Standby mode Interrupt request output / port D	
79	Vss	-	Ground		183	Vcc	-	Power supply +3.3V
80	A22	O	Address bus	184	PTD2/RESETOUT	I/O	Port D / Reset output	
81	Vcc	-	Power supply +3.3V	185	PTC3/PINT3	I/O	Port C / Port interruption	
82	A23	O	Address bus	186	PTC2/PINT2	I/O		
83	Vss	-	Ground	187	PTC1/PINT1	I/O		
84	A24	O	Address bus	188	PTC0/PINT0	I/O		
85	Vcc	-	Power supply +3.3V	189	DRAK0/PTD1	I/O	DMA acknowledge / Port D	
86	A25	O	Address bus	190	DRAK1/PTD0	I/O		
87	/BS/PTK4	I/O	Bus cycle / Port K	191	/DREQ/PTD4	I	DMA request / Port D	
88	/RD	O	Read strobe	192	/DREQ1/PTD6	I		
89	/WE0/DQMLL	O	Read / Write	193	/RESETP	I	Power on reset	
90	/WE1/DQMLL//WE	O		194	/CA	I	Chip active	
91	/WE2/DQMLL//ICR0/PTK6	I/O		195	MD3	I	Mode control	
92	/WE3/DQMLL//ICR1/PTK7	I/O	196	MD4	I			
93	RD//WR	O	197	MD5	I			
94	PTE7	I/O	Port E	198	AVss	-	Analog ground	
95	Vss	-	Ground	199	AN0/PTL0	I	Analog input / Port L	
96	/CS0	O	Chip select	200	AN1/PTL1	I		
97	Vcc	-	Power supply +3.3V	201	AN2/PTL2	I		
98	/CS2/PTK0	I/O	Chip select / Port K	202	AN3/PTL3	I		
99	/CS3/PTK1	I/O		203	AN4/PTL4	I		
100	/CS4/PTK2	I/O		204	AN5/PTL5	I		
101	/CS5/CE1A/PTK3	I/O	Chip select / Chip enable / Port K	205	AVcc	-	Analog power supply +3.3V	
102	/CS6/CE1B	O	Chip select / Chip enable	206	AN6/DA1/PTL6	I/O	Analog input / Analog output / Port L	
103	/CE2A/PTE4	I/O	Chip enable / Port E	207	AN7/DA0/PTL7	I/O		
104	/CE2B/PTE5	I/O		208	AVss	-	Analog ground	

● XC9536-10VQ44C (XY110A00) CPLD

DM: IC071

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	I/O/GCK3	I/O	Global	23	I/O	I/O	Input/Output
2	I/O	I/O		24	TDO	-	
3	I/O	I/O	Input/Output	25	GND	-	Ground
4	GND	-		26	V _{CCIO} 3.3V/5V	-	
5	I/O	I/O	Input/Output	27	I/O	I/O	Input/Output
6	I/O	I/O		28	I/O	I/O	
7	I/O	I/O		29	I/O	I/O	
8	I/O	I/O		30	I/O	I/O	
9	TDI	-	JTAG port	31	I/O	I/O	Input/Output
10	TMS	-		32	I/O	I/O	
11	TCK	-		33	I/O/GSR	I/O	
12	I/O	I/O	Input/Output	34	I/O/GTS2	I/O	Global
13	I/O	I/O		35	V _{CCINT} 5V	-	
14	I/O	I/O	Input/Output	36	I/O/GTS1	I/O	Global
15	V _{CCINT} 5V	-		37	I/O	I/O	
16	I/O	I/O	Input/Output	38	I/O	I/O	Input/Output
17	GND	-		39	I/O	I/O	
18	I/O	I/O	Input/Output	40	I/O	I/O	Input/Output
19	I/O	I/O		41	I/O	I/O	
20	I/O	I/O		42	I/O	I/O	
21	I/O	I/O	Input/Output	43	I/O/GCK1	I/O	Global
22	I/O	I/O		44	I/O/GCK2	I/O	

● SED1335F0B (XQ595A00) LCDC (LCD Controller)

DM: IC054

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	VA5	O	VRAM address bus	31	XD2	O	Data bus output for 4 bit dot	
2	VA4	O		32	XD1	O		
3	VA3	O		33	XD0	O		
4	VA2	O		34	XECL	O		S driver enable, chain clock
5	VA1	O		35	XSCL	O		Data bus shift clock
6	VA0	O		36	V _{SS}	-		Ground
7	/VWR	O	VRAM read/write	37	LP	O	X driver latch pulse	
8	/VCE	O	Memory control	38	WF	O	Frame signal for X/Y driver	
9	/VRD	-	Not used	39	YDIS	O	Power down signal for displaying off mode	
10	/RES	I	Initial clear	40	YD	O	Scan start signal	
11	NC	-	Not used	41	YSCL	O	Scan shift clock	
12	NC	-	Not used	42	VD7	I/O	VRAM data bus	
13	/RD	I	Read strobe	43	VD6	I/O		
14	/WR	I	Write strobe	44	VD5	I/O		
15	SEL2	I	Bus select	45	VD4	I/O		
16	SEL1	I	Bus select	46	VD3	I/O		
17	OSC1	I	Clock	47	VD2	I/O		
18	OSC2	O	Clock	48	VD1	I/O		
19	/CS	I	Chip select	49	VD0	I/O		
20	A0	I	Data mode select	50	VA15	O	VRAM address bus	
21	V _{DD}	-	Power supply	51	VA14	O		
22	D0	I/O	Data bus	52	VA13	O		
23	D1	I/O		53	VA12	O		
24	D2	I/O		54	VA11	O		
25	D3	I/O		55	VA10	O		
26	D4	I/O		56	VA9	O		
27	D5	I/O		57	VA8	O		
28	D6	I/O		58	VA7	O		
29	D7	I/O	59	VA6	O			
30	XD3	O	Data bus output for 4 bit dot	60	NC	-	Not used	

● PCM1800E/2K (XU770A00) ADC (Analog to Digital Converter)

DM: IC084

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VINL	I	Analog input (L ch.)	13	LRCK	I/O	Sampling clock input/output
2	VREF1		Reference 1 decoupling cap.	14	BCK	I/O	Bit clock input/output
3	REFCOM		Reference decoupling common	15	DOUT	O	Audio data output
4	VREF2		Reference 2 decoupling cap.	16	SYSCK	I	System clock input
5	VINR	I	Analog input (R ch.)	17	DGND		Digital ground
6	RSTB	I	Reset input active "L"	18	Vdd		Power supply +5V
7	BYPAS	I	LCF bypass control	19	CINNR		Anti-aliasing filter cap. (-) R ch.
8	FMT0	I	Audio data format 0	20	CINPR		Anti-aliasing filter cap. (+) R ch.
9	FMT1	I	Audio data format 1	21	CINNL		Anti-aliasing filter cap. (-) L ch.
10	MODE0	I	Master/Slave mode selection 0	22	CINPL		Anti-aliasing filter cap. (+) L ch.
11	MODE1	I	Master/Slave mode selection 1	23	Vcc		Analog power supply
12	FSYNC	I/O	Frame sync. input/output	24	AGND		Analog ground

● SPC7214F0B (XY625A00) SCSI Control

DM: IC051

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	LVDD		Power supply +3.3V	51	LVDD		Power supply +3.3V	
2	EXCLK	I	External clock input	52	PD11	I/O	Port DMA data bus	
3	Vss		Ground	53	PD4	I/O		
4	OSCIN	I	Oscillator input	54	PD10	I/O		
5	OSCOU	O	Oscillator output	55	PD5	I/O		
6	LVDD		Power supply +3.3V	56	PD9	I/O		
7	CLKSEL0	I	Input clock select	57	PD6	I/O		
8	CLKSEL1	I	System clock select	58	PD8	I/O		
9	VC	O	Internal VCO control	59	PD7	I/O		
10	XPLLPD	I	PLL power down input	60	Vss			Ground
11	PLLCT0	I	PLL control	61	XSIO	I/O		SCSI I/O signal (Low active)
12	PLLCT1	I		62	HVDD		Power supply +5V	
13	TESTMON	O	Test monitor output	63	XSREQ	I/O	SCSI REQ signal (Low active)	
14	TESTEN	I	Test input	64	Vss		Ground	
15	DB0	I/O	Data bus	65	XSCD	I/O	SCSI C/D signal (Low active)	
16	DB1	I/O		66	XSSEL	I/O	SCSI SEL signal (Low active)	
17	DB2	I/O		67	Vss		Ground	
18	DB3	I/O		68	XSMMSG	I/O	SCSI MSG signal (Low active)	
19	HVDD		Power supply +5V	69	XSRST	I/O	SCSI RST signal (Low active)	
20	DB4	I/O	Data bus	70	Vss		Ground	
21	DB5	I/O		71	XSACK	I/O	SCSI ACK signal (Low active)	
22	DB6	I/O		72	HVDD		Power supply +5V	
23	DB7	I/O		73	XSBSY	I/O	SCSI BSY signal (Low active)	
24	AD0	I	Address bus	74	NC		Not used	
25	Vss		Ground	75	Vss		Ground	
26	LVDD		Power supply +3.3V	76	HVDD		Power supply +5V	
27	AD1	I	Address bus	77	XSATN	I/O	SCSI ATN signal (Low active)	
28	AD2	I		78	Vss		Ground	
29	AD3	I		79	XSDBP	I/O	SCSI data parity (Low active)	
30	AD4	I		80	HVDD		Power supply +5V	
31	XWR	I	Data write (Low active)	81	XSDB7	I/O	SCSI data bus (Low active)	
32	XRD	I	Data read (Low active)	82	Vss		Ground	
33	XRESET	I	System reset (Low active)	83	NC		Not used	
34	XINT	O	Interrupt request (Low active)	84	XSDB6	I/O	SCSI data bus (Low active)	
35	XCS	I	Chip select (Low active)	85	HVDD		Power supply +5V	
36	Vss		Ground	86	XSDB5	I/O	SCSI data bus (Low active)	
37	XPDACK	I/O	Port DMA acknowledge	87	Vss		Ground	
38	XPRD	I/O	Port read (Low active)	88	XSDB4	I/O	SCSI data bus (Low active)	
39	XPWR	I/O	Port write (Low active)	89	HVDD		Power supply +5V	
40	PDREQ	I/O	Port DMA request (Low active)	90	XSDB3	I/O	SCSI data bus (Low active)	
41	PD15	I/O	Port DMA data bus	91	Vss		Ground	
42	PD0	I/O		92	XSDB2	I/O	SCSI data bus (Low active)	
43	PD14	I/O		93	NC		Not used	
44	PD1	I/O		94	HVDD		Power supply +5V	
45	HVDD		Power supply +5V	95	XSDB1	I/O	SCSI data bus (Low active)	
46	PD13	I/O	Port DMA data bus	96	Vss		Ground	
47	PD2	I/O		97	XSDB0	I/O	SCSI data bus (Low active)	
48	PD12	I/O		98	HVDD		Power supply +5V	
49	PD3	I/O		99	NC		Not used	
50	Vss		Ground	100	Vss		Ground	

• AK4393-VF-E2 (XW029A00) DAC (Digital to Analog Converter)

DM: IC085

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DVSS	-	Digital ground	15	BVSS	-	Substrate ground
2	DVDD	-	Digital power supply	16	VREFL	I	Low level voltage reference
3	MCLK	I	Master clock	17	VREFH	I	High level voltage reference
4	/PD	I	Power down mode	18	AVDD	-	Analog power supply +5 V
5	BICK	I	Audio serial data clock	19	AVSS	-	Analog ground
6	SDATA	I	Audio serial data input	20	AOUTR-	O	Rch negative analog output
7	LRCK	I	L/R clock	21	AOUTR+	O	Rch positive analog output
8	SMUTE/CS	I	Soft mute	22	AOUTL-	O	Lch negative analog output
9	DFS	I	Double speed sampling mode	23	AOUTL+	O	Lch positive analog output
10	DEMO/CCLK	I	De-emphasis enable	24	VCOM	O	Common voltage output
11	DEM1/CDTI	I		25	P/S	I	Parallel/serial select
12	DIF0	I	Digital input format	26	CKS0	I	Master clock select
13	DIF1	I		27	CKS1	I	
14	DIF2	I		28	CKS2	I	

• D65621GF-028-3B9 (XS370A00) SMI

DM: IC063

PIN No.	NAME	I/O	FUNCTION	PIN No.	NAME	I/O	FUNCTION
1	LMA24	I	Low Memory Address	41	VDD	-	
2	LMA23	I	Low Memory Address	42	L1RAS2	O	RAS2 for LoMem SIMM 1
3	LMA22	I	Low Memory Address	43	L1RAS3	O	RAS3 for LoMem SIMM 1
4	LMA21	I	Low Memory Address	44	GND	-	
5	LMA20	I	Low Memory Address	45	HDRAS0	O	RAS for HiMem DRAM 0
6	LMA19	I	Low Memory Address	46	HDRAS1	O	RAS for HiMem DRAM 1
7	LMA18	I	Low Memory Address	47	GND	-	
8	HMA24	I	High Memory Address	48	VDD	-	
9	HMA23	I	High Memory Address	49	LDRAS0	O	RAS for LoMem DRAM 0
10	HMA22	I	High Memory Address	50	LDRAS1	O	RAS for LoMem DRAM 1
11	HMA21	I	High Memory Address	51	LMA1	I	Low Memory Address
12	GND	-	No.12	52	LMA0	I	Low Memory Address
13	HMA20	I	High Memory Address	53	GND	-	No.53
14	HMA19	I	High Memory Address	54	LMA1X	O	Low Memory Address Exchanged
15	HMA18	I	High Memory Address	55	LMA0X	O	Low Memory Address Exchanged
16	RASN	I	Row Address Strobe	56	GND	-	
17	H0RAS0	O	RAS0 for HiMem SIMM 0	57	VDD	-	
18	H0RAS1	O	RAS1 for HiMem SIMM 0	58	HMA1	I	High Memory Address
19	GND	-		59	HMA0	I	High Memory Address
20	H0RAS2	O	RAS2 for HiMem SIMM 0	60	HMA1X	O	High Memory Address Exchanged
21	H0RAS3	O	RAS3 for HiMem SIMM 0	61	HMA0X	O	High Memory Address Exchanged
22	GND	-		62	D0	I	Data Input
23	VDD	-		63	D1	I	Data Input
24	L0RAS0	O	RAS0 for LoMem SIMM 0	64	GND	-	
25	L0RAS1	O	RAS1 for LoMem SIMM 0	65	D2	I	Data Input
26	GND	-		66	D3	I	Data Input
27	L0RAS2	O	RAS2 for LoMem SIMM 0	67	D4	I	Data Input
28	L0RAS3	O	RAS3 for LoMem SIMM 0	68	D5	I	Data Input
29	GND	-		69	A2	I	Address
30	VDD	-		70	WRN	I	Write
31	H1RAS0	O	RAS0 for HiMem SIMM 1	71	GND	-	No.71
32	H1RAS1	O	RAS1 for HiMem SIMM 1	72	VDD	-	No.72
33	GND	-		73	CSN	I	Chip Select
34	VDD	-		74	A0	I	Address
35	H1RAS2	O	RAS2 for HiMem SIMM 1	75	A1	I	Address
36	H1RAS3	O	RAS3 for HiMem SIMM 1	76	MCLK	I	Clock (37MHz)
37	GND	-		77	SYI	I	Sync Clock (48kHz)
38	L1RAS0	O	RAS0 for LoMem SIMM 1	78	HBANK	O	HiMem Bank Select 01/23
39	L1RAS1	O	RAS1 for LoMem SIMM 1	79	LBANK	O	LoMem Bank Select 01/23
40	GND	-		80	REFRN	O	Refresh Timing

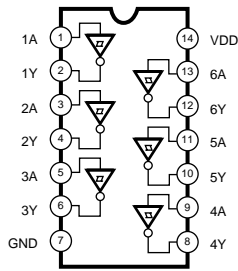
● TC203C760HF-002 (XS725A00)
SWP30B (AWM Tone Generator coped with MEG) Standard Wave Processor

DM: IC059

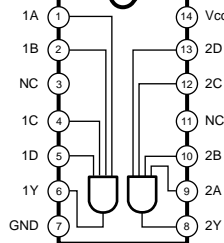
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS	I	(Ground)	121	VSS	I	(Ground)
2	CA0	I	Address bus internal register	122	HMD0	I/O	Wave memory data bus (Upper data memory)
3	CA1	I					
4	CA2	I					
5	CA3	I					
6	CA4	I					
7	CA5	I					
8	CA6	I					
9	CA7	I					
10	CA8	I					
11	CA9	I					
12	CA10	I					
13	CA11	I					
14	VSS	I	(Ground)	132	HMD10	I/O	
15	CD0	I/O	Data bus of internal register	133	HMD11	I/O	
16	CD1	I/O					
17	CD2	I/O					
18	CD3	I/O					
19	CD4	I/O					
20	CD5	I/O					
21	CD6	I/O					
22	CD7	I/O					
23	CD8	I/O					
24	CD9	I/O					
25	CD10	I/O					
26	CD11	I/O					
27	CD12	I/O					
28	CD13	I/O					
29	CD14	I/O					
30	VDD	I/O	(Power supply)	134	HMD12	I/O	
31	VSS	I	(Ground)	135	HMD13	I/O	
32	CD15	I/O	Chip select	136	HMD14	I/O	
33	/CS	I		Write strobe	137	HMD15	I/O
34	/WR	I		Read strobe	138	VSS	I
35	/RD	I		(Power supply)	139	HMA0	O
36	VDD5	I/O	NSYS/LNSYS upper 16 bits	140	HMA1	O	
37	SYSH0	O					
38	SYSH1	O					
39	SYSH2	O					
40	SYSH3	O					
41	SYSH4	O					
42	SYSH5	O					
43	SYSH6	O					
44	SYSH7	O					
45	KONO0	O		Key on data	141	HMA2	O
46	KONO1	O					
47	KONO2	O					
48	KONO3	O					
49	VSS	I	(Ground)	142	HMA3	O	
50	SYSL0	I/O	NSYS input/LNSYS output lower 8 bits	143	HMA4	O	
51	SYSL1	I/O					
52	SYSL2	I/O					
53	SYSL3	I/O					
54	SYSL4	I/O					
55	SYSL5	I/O					
56	SYSL6	I/O					
57	SYSL7	I/O					
58	KONI0	I	Key on data	144	HMA5	O	
59	KONI1	I					
60	VDD5	I/O		(Power supply)	145	HMA6	O
61	VSS	I		(Ground)	146	HMA7	O
62	KONI2	I	DAC output	147	HMA8	O	
63	KONI3	I					
64	DAC0	O					
65	DAC1	O					
66	WCLK	O					
67	MEL00	O					
68	MEL01	O					
69	MEL02	O					
70	MEL03	O					
71	MEL04	O					
72	MEL05	O					
73	MEL06	O					
74	MEL07	O					
75	VDD5	I/O		(Power supply)	148	HMA9	O
76	ADLR	O	ADC word clock	149	HMA10	O	
77	MELI0	I					
78	MELI1	I					
79	MELI2	I					
80	MELI3	I					
81	MELI4	I					
82	MELI5	I					
83	MELI6	I					
84	MELI7	I					
85	VSS	I		(Ground)	150	VSS	I
86	/RCAS	O	DRAM column address strobe	151	VDD	I/O	
87	RA8	O					
88	RA7	O					
89	RA6	O					
90	VDD	I/O		(Power supply)	152	HMA11	O
91	VSS	I		(Ground)	153	HMA12	O
92	RA5	O		DRAM address bus	154	HMA13	O
93	RA4	O					
94	RA3	O					
95	RA2	O					
96	RA1	O					
97	RA0	O					
98	/RRAS	O					
99	/RWE	O	DRAM row address strobe	155	HMA14	O	
100	VSS	I		(Ground)	156	HMA15	O
101	RD7	I/O					
102	RD6	I/O					
103	RD5	I/O					
104	RD4	I/O					
105	RD3	I/O					
106	RD2	I/O					
107	RD1	I/O					
108	RD0	I/O					
109	VSS	I	(Ground)	157	HMA16	O	
110	RD17	I/O	DRAM data bus	158	HMA17	O	
111	RD16	I/O					
112	RD15	I/O					
113	RD14	I/O					
114	RD13	I/O					
115	RD12	I/O					
116	RD11	I/O					
117	RD10	I/O					
118	RD9	I/O					
119	RD8	I/O					
120	VDD5	I/O	(Power supply)	159	HMA18	O	
				160	HMA19	O	
				161	HMA20	O	
				162	HMA21	O	
				163	HMA22	O	
				164	HMA23	O	
				165	HMA24	O	
				166	VSS	I	
				167	/MRAS	O	
				168	/MCAS	O	
				169	/MCE	O	
				170	/MWE	O	
				171	VSS	I	
				172	LMD0	I/O	
				173	LMD1	I/O	
				174	LMD2	I/O	
				175	LMD3	I/O	
				176	LMD4	I/O	
				177	LMD5	I/O	
				178	LMD6	I/O	
				179	LMD7	I/O	
				180	VDD5	I/O	
				181	VSS	I	
				182	LMD8	I/O	
				183	LMD9	I/O	
				184	LMD10	I/O	
				185	LMD11	I/O	
				186	LMD12	I/O	
				187	LMD13	I/O	
				188	LMD14	I/O	
				189	LMD15	I/O	
				190	VSS	I	
				191	LMA0	O	
				192	LMA1	O	
				193	LMA2	O	
				194	LMA3	O	
				195	LMA4	O	
				196	LMA5	O	
				197	LMA6	O	
				198	LMA7	O	
				199	LMA8	O	
				200	LMA9	O	
				201	LMA10	O	
				202	LMA11	O	
				203	VSS	I	
				204	LMA12	O	
				205	LMA13	O	
				206	LMA14	O	
				207	LMA15	O	
				208	LMA16	O	
				209	LMA17	O	
				210	VDD	I/O	
				211	VSS	I	
				212	LMA18	O	
				213	LMA19	O	
				214	LMA20	O	
				215	LMA21	O	
				216	LMA22	O	
				217	LMA23	O	
				218	LMA24	O	
				219	VSS	I	
				220	SYO	O	
				221	SYOD	O	
				222	QCLK	O	
				223	HCLK	O	
				224	CK256	O	
				225	SYSCCLK	O	
				226	VDD5	I/O	
				227	SYI	I	
				228	MCLK1	I	
				229	MCLK0	I	
				230	VDD	I/O	
				231	XIN	I	
				232	XOUT	O	
				233	VSS	I	
				234	/IC	I	
				235	CHIP2	I	
				236	SLAVE	I	
				237	/TESTO	I	
				238	/ACI	I	
				239	DCTEST	I	
				240	VDD5	I/O	

IC BLOCK DIAGRAM

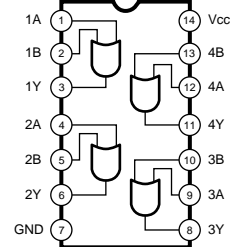
- **HD74HC14FPEL** (XL094A00)
TC74VHC14F-EL (XW876A00)
74VHC14SJX (XZ200A00)
Hex Inverter
DM: IC003,010,015,021,053



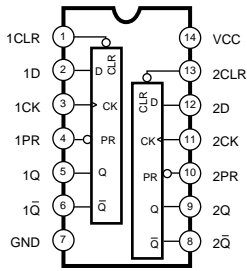
- **HD74LV21AFPEL** (IS002100)
Dual 4 Input AND
DM: IC033



- **HD74LV32AFPEL** (IS003200)
HD74LVC32FP (XS792A00)
TC74HCT32AF(EL) (XY096A00)
Quad 2 Input OR
DM: IC011,012,027,045,052,064

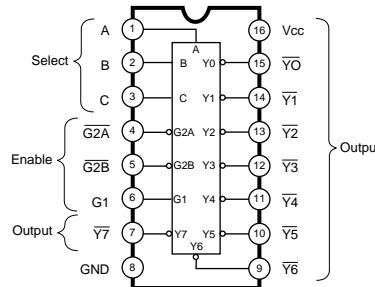


- **HD74LV74AFPEL** (IS007400)
Dual D-Type Flip-Flop
DM: IC014,016-019

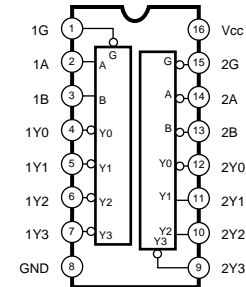


INPUTS				OUTPUTS	
PR	CLR	CLK	D	Q	Q
L	H	X	X	H	L
H	L	X	X	L	H
L	L	X	X	H	H
H	H	f	H	H	L
H	H	f	L	L	H
H	H	L	X	Q _o	Q _o

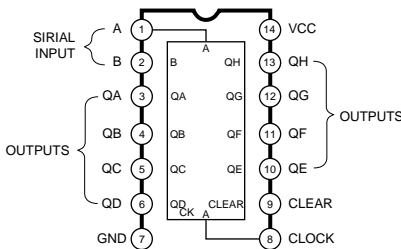
- **TC74VHCT138AFEL** (XZ137A00)
3 to 8 Demultiplexer
DM: IC038,039



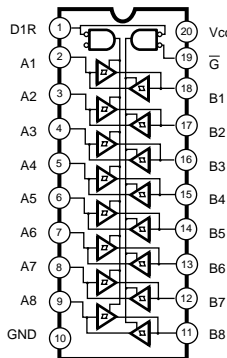
- **HD74LV139AFPEL** (IS013900)
Dual 2 to 4 Demultiplexer
DM: IC092



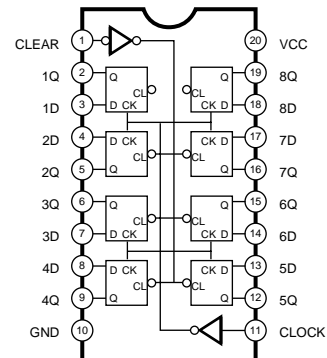
- **HD74LV164AFPEL** (IS016400)
8-Bit Shift Register
DM: IC083



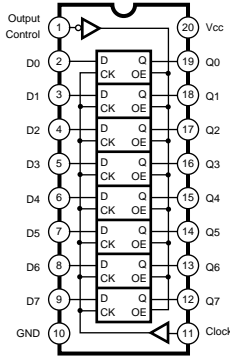
- **TC74VHCT245AFT** (XT744A00)
HD74LV245AT (XW744A00)
HD74LVC245A (XW148A00)
Octal 3-State Bus Transceiver
DM: IC028-032,047,066,067,069,
070,072,073,075,076,078,080,082



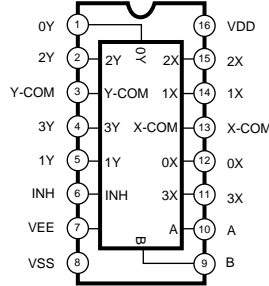
- **HD74LV273AFPEL** (IS027300)
Octal D-Type Flir Flop
DM: IC046



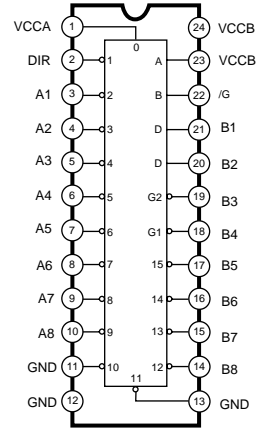
- **TC74VHCT574AFT** (XY059A00)
Octal D-Type Flip-Flop
DM: IC020,026,035,036,042,044,081



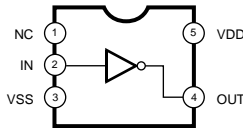
- **TC74HC4052AFT** (XV869A00)
Differential 4-Channel Multiplexer/Demultiplexer
DM: IC006-009



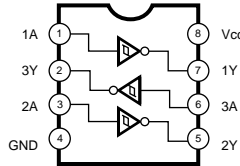
- **TC74LVX4245FS** (XU229A00)
Dual Supply Octal Bus Transceiver
DM: IC040,041,048



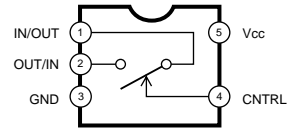
- **SC7SU04FEL** (XI348A00)
Inverter Gate
DM: IC094



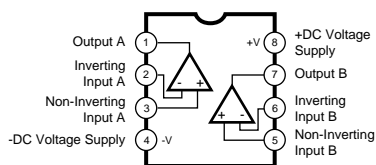
- **TC7W14F TE12L** (XR336A00)
Triple Inverter
DM: IC013
PAD: IC003



- **TC7S66F** (XR682A00)
Bilateral Switch
DM: IC022



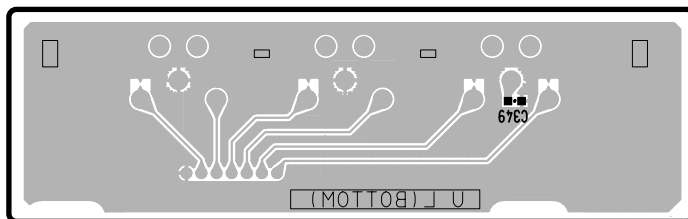
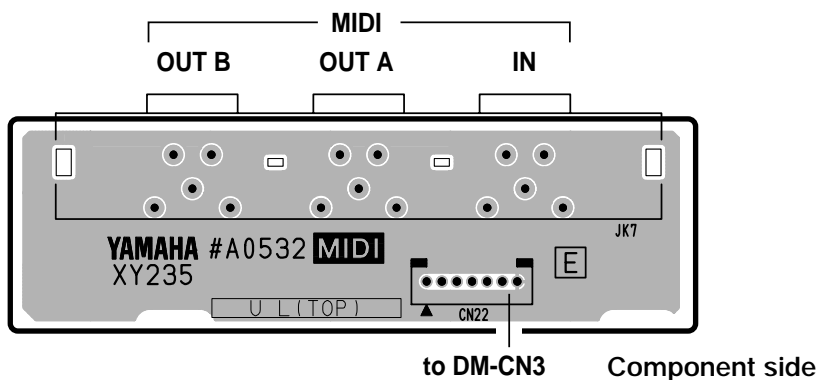
- **NJM3414AM(T1)** (XR294A00)
M5216FP-600C (XP263A00)
OP275GSR (XV763A00)
OPA2604AU (XT330A00)
Dual Operational Amplifier
DM: IC001,087-091
PAD: IC001,002



■ CIRCUIT BOARDS

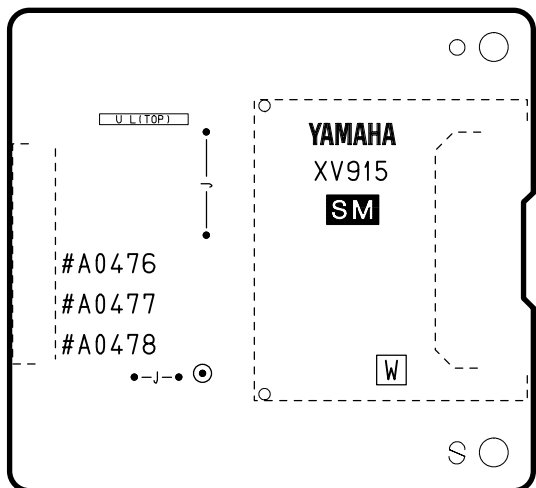
MIDI Circuit Board (XY235E0)	34
SM Circuit Board (XV915C0)	34
PNVR1 Circuit Board (XY237C0)	35
PAD Circuit Board (XZ136C0)	35
DM Circuit Board (XY235E0)	36,37/38,39
PNSW Circuit Board (XY236C0)	40,41/42,43
PNVR2 Circuit Board (XY237C0)	44/45

• MIDI Circuit Board

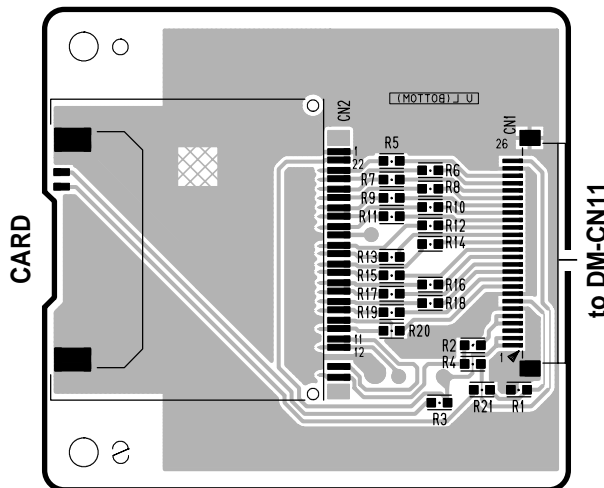


Pattern side

• SM Circuit Board



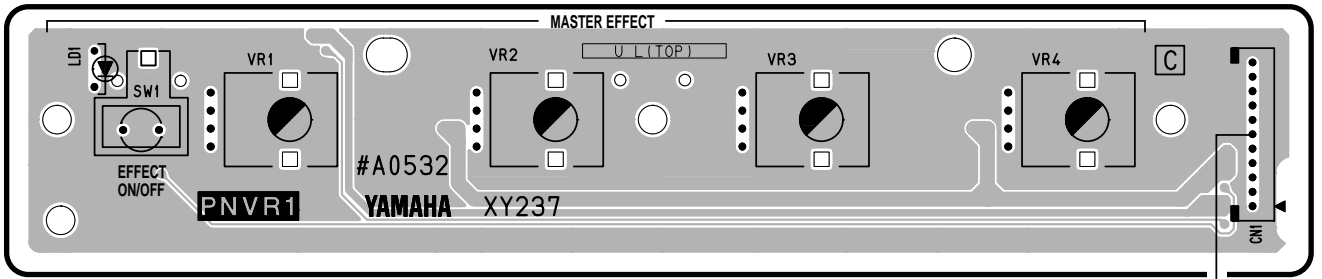
Component side



Pattern side

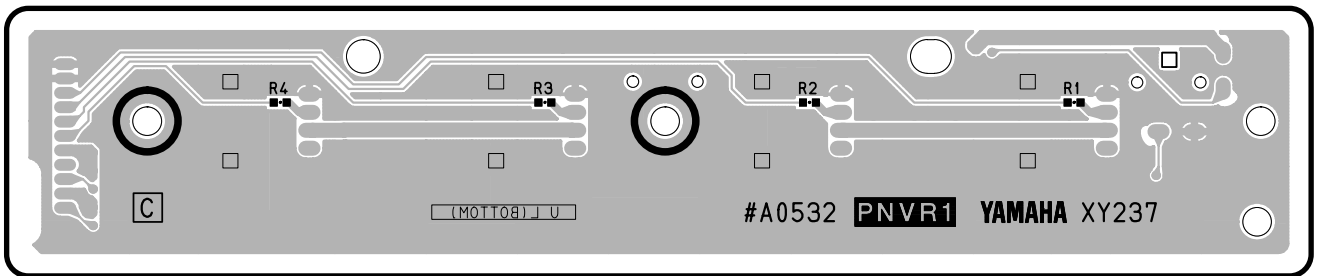
Note: See parts list for details of circuit board component parts.

• PNV R1 Circuit Board



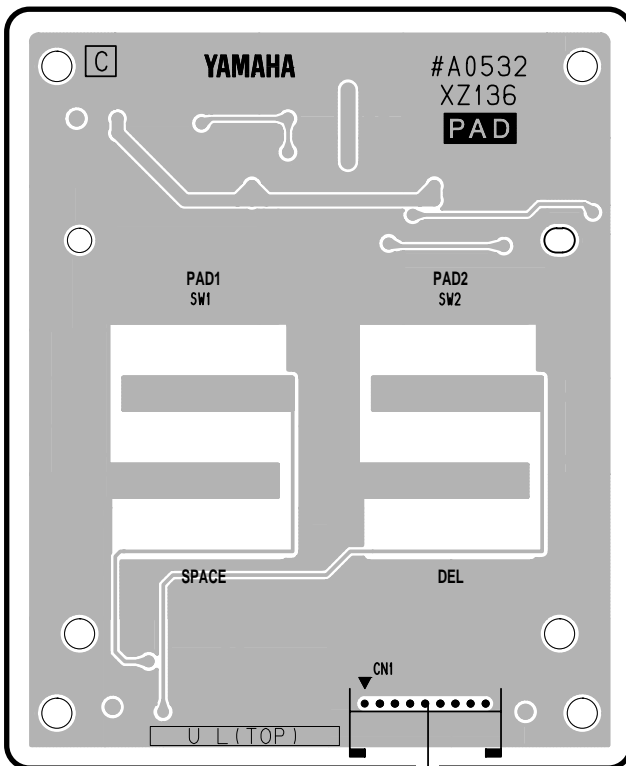
to DM-CN1

Component side



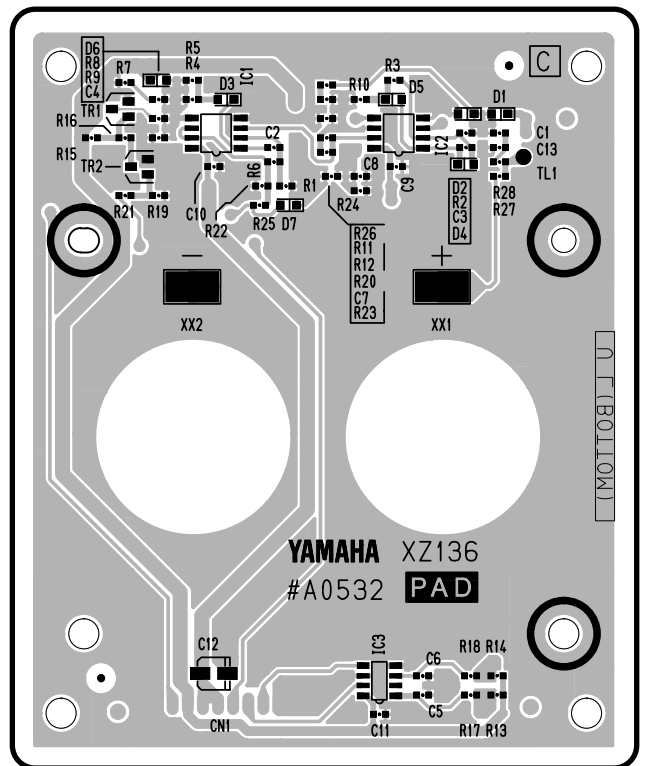
Pattern side

• PAD Circuit Board



to DM-CN24

Component side

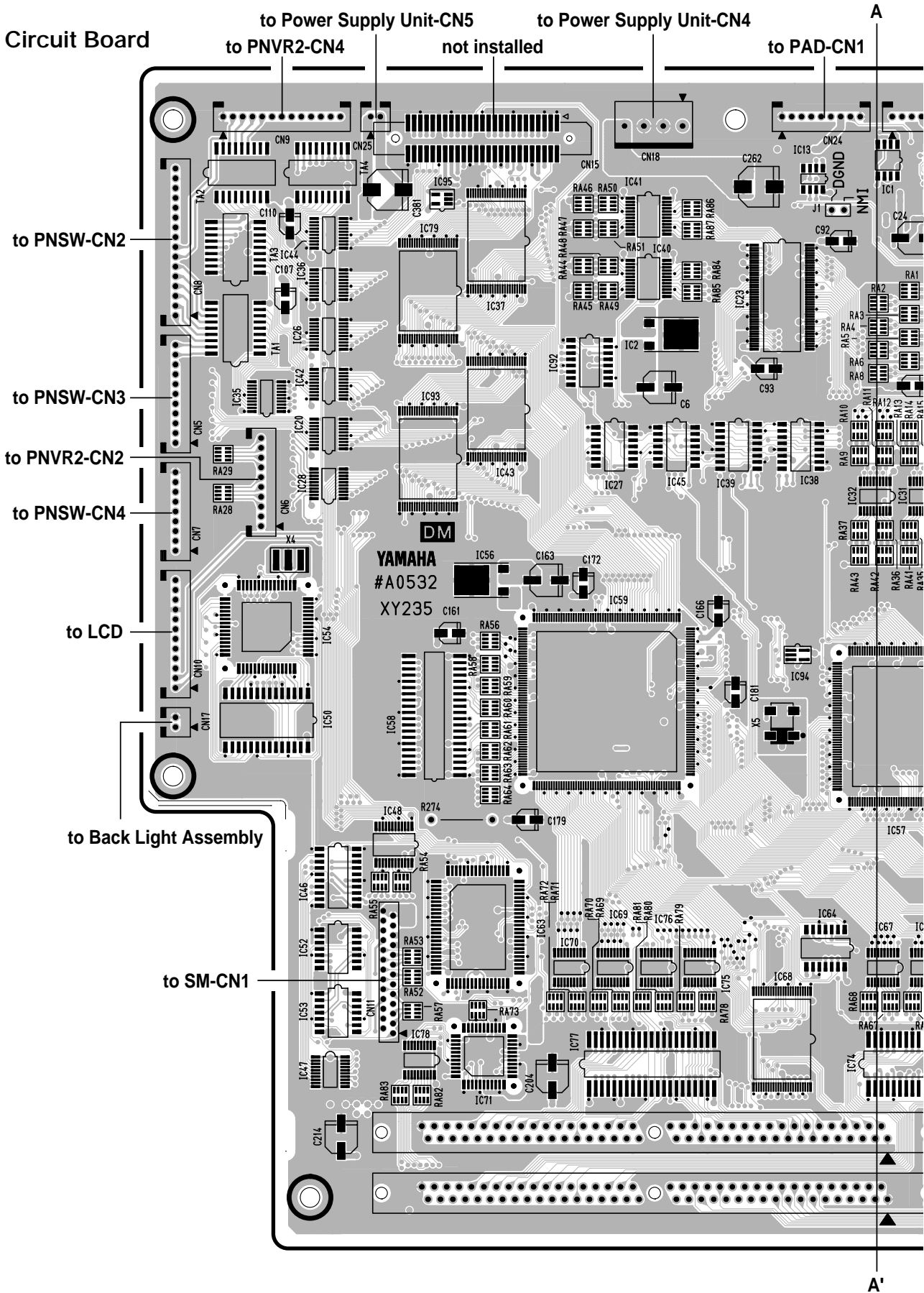


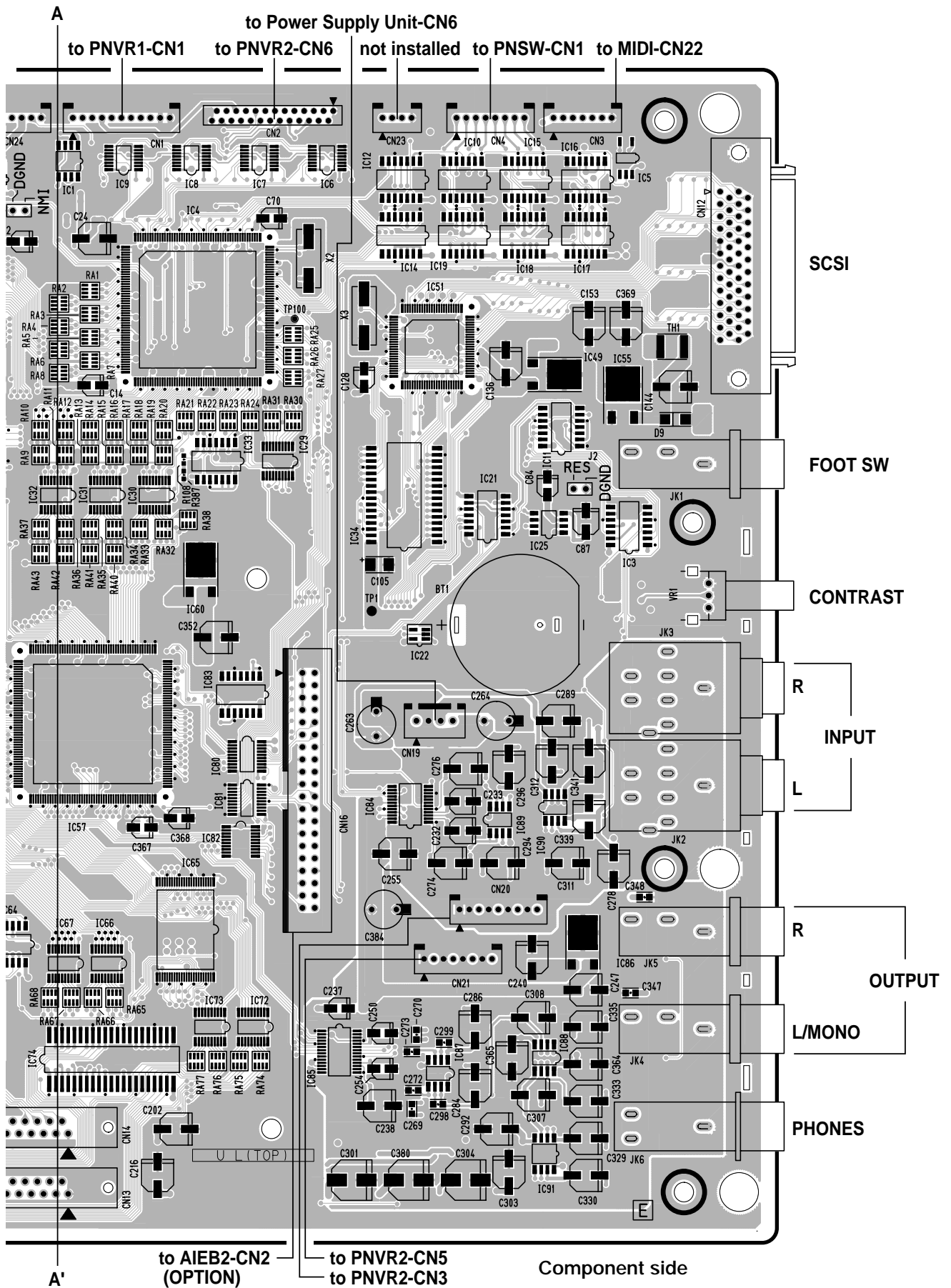
Pattern side

PNV R1: 2NA-V615490-1,2 ⚠

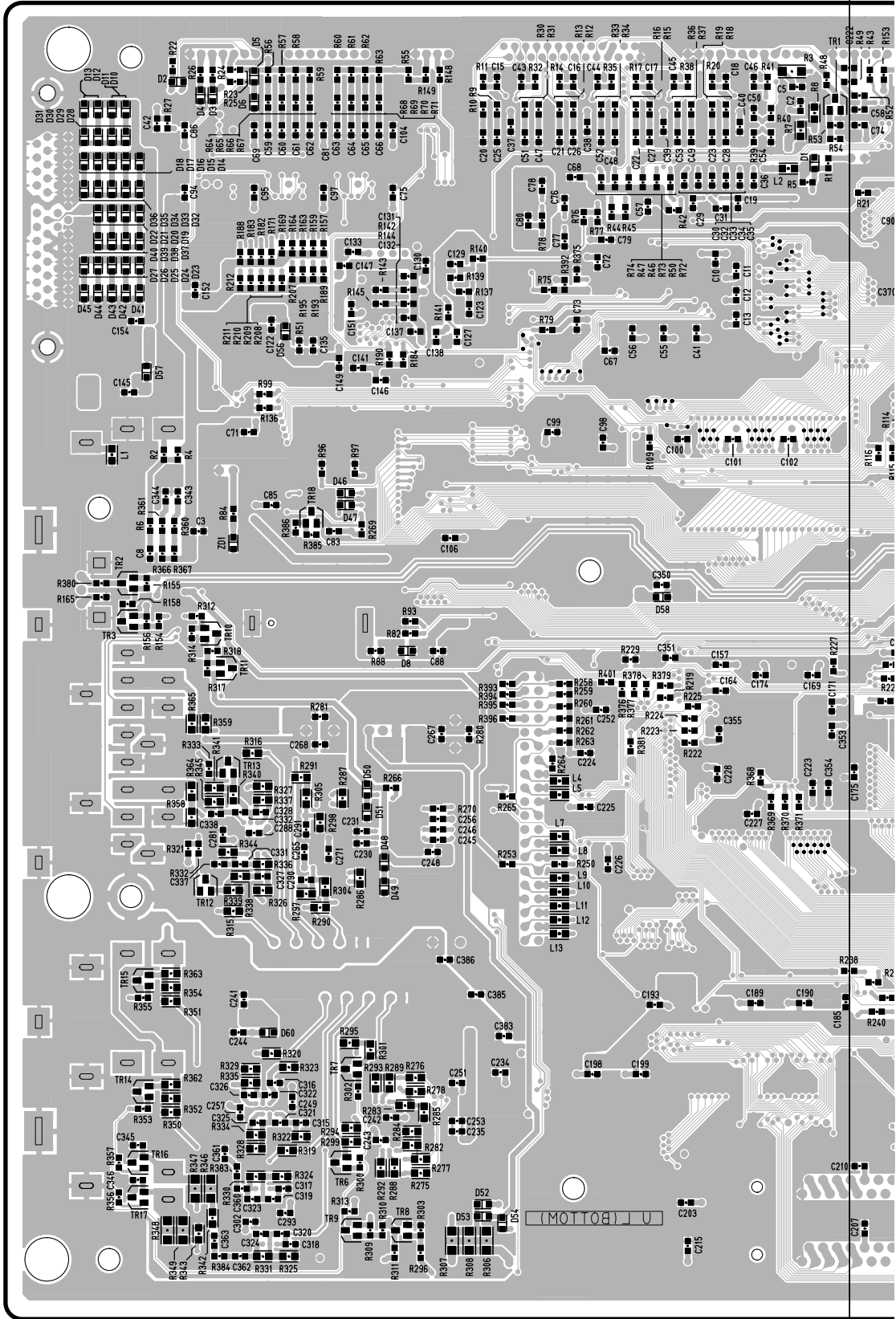
PAD: 2NA-V615510 ⚠

• DM Circuit Board



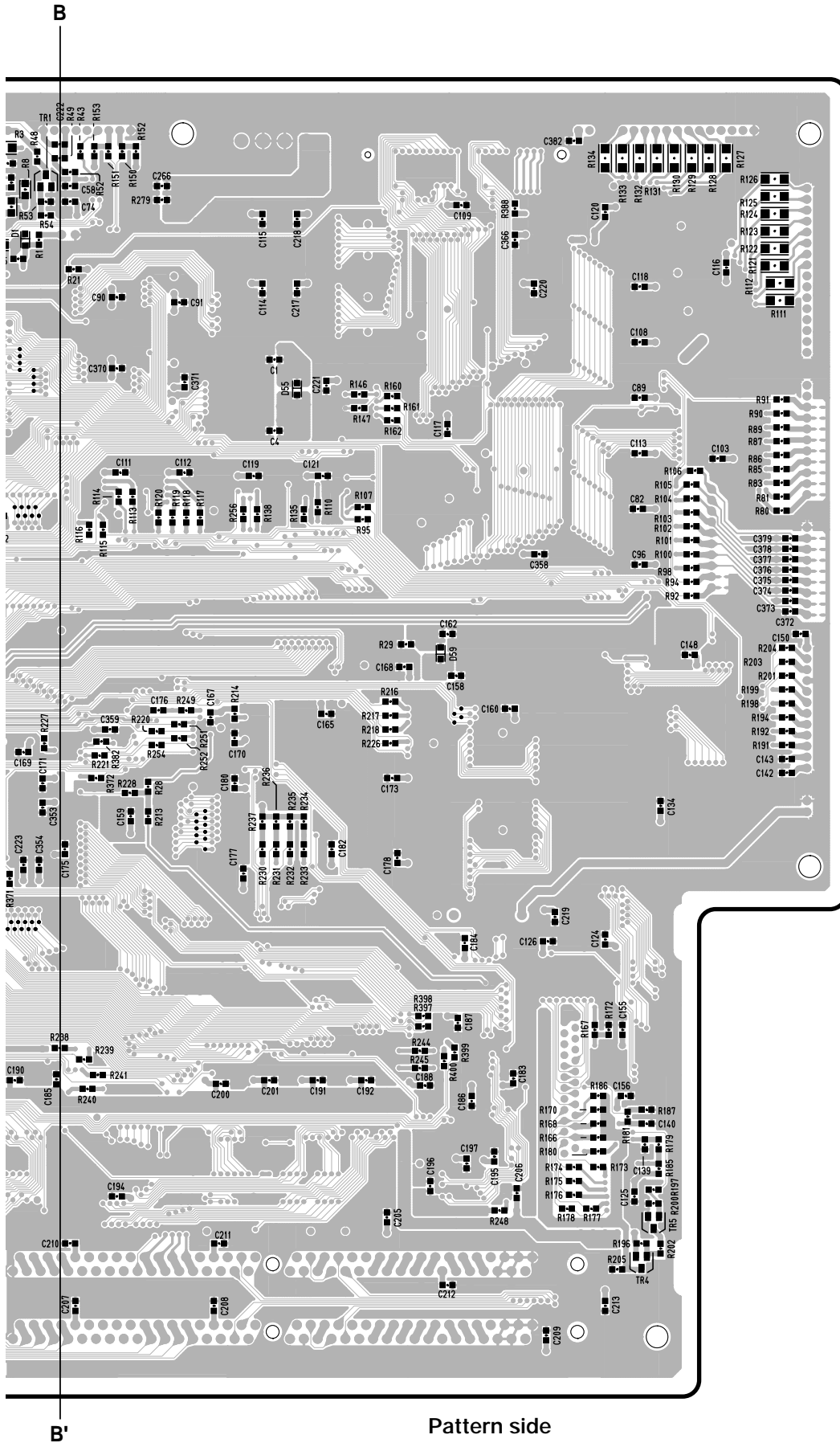


• DM Circuit Board

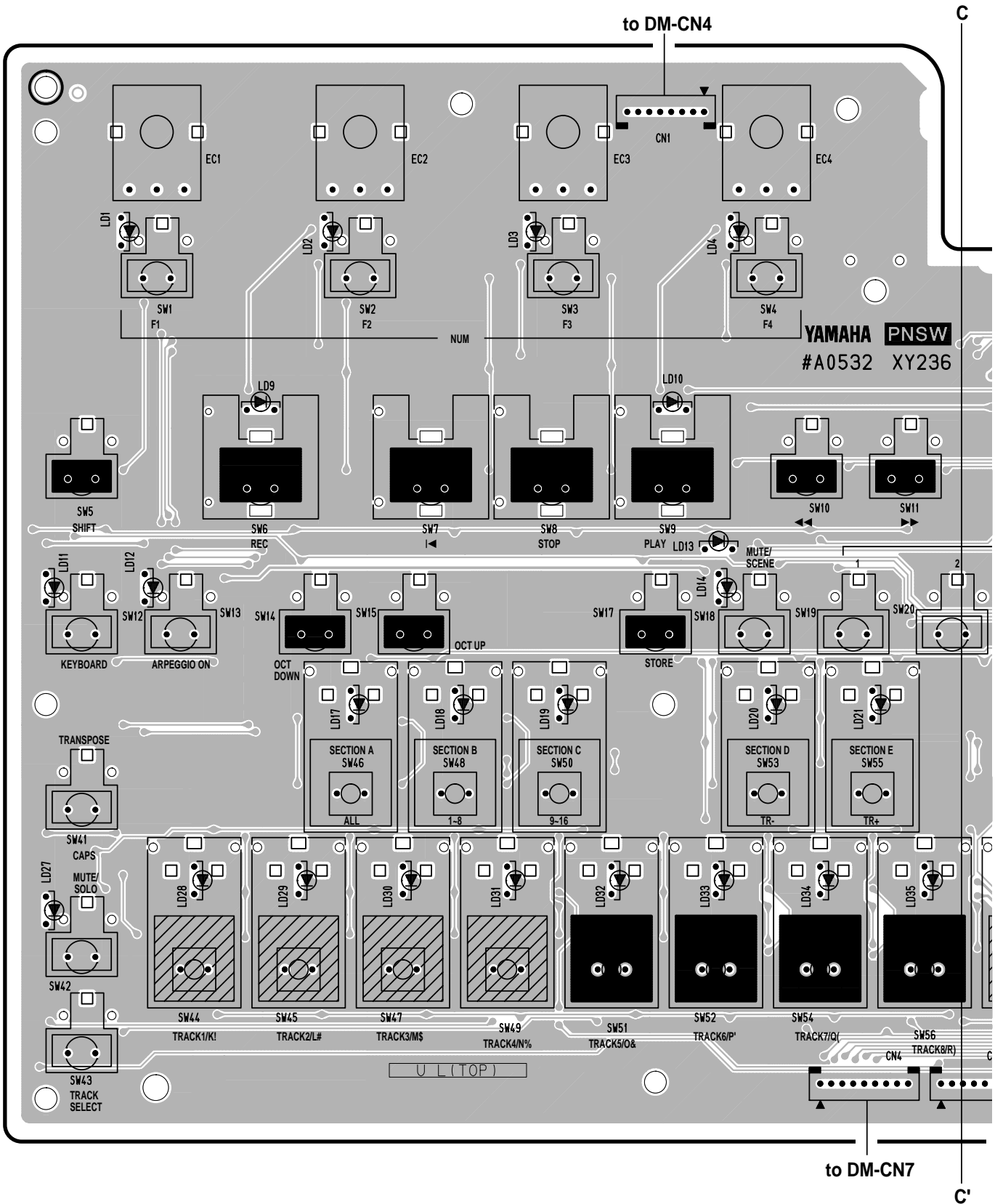


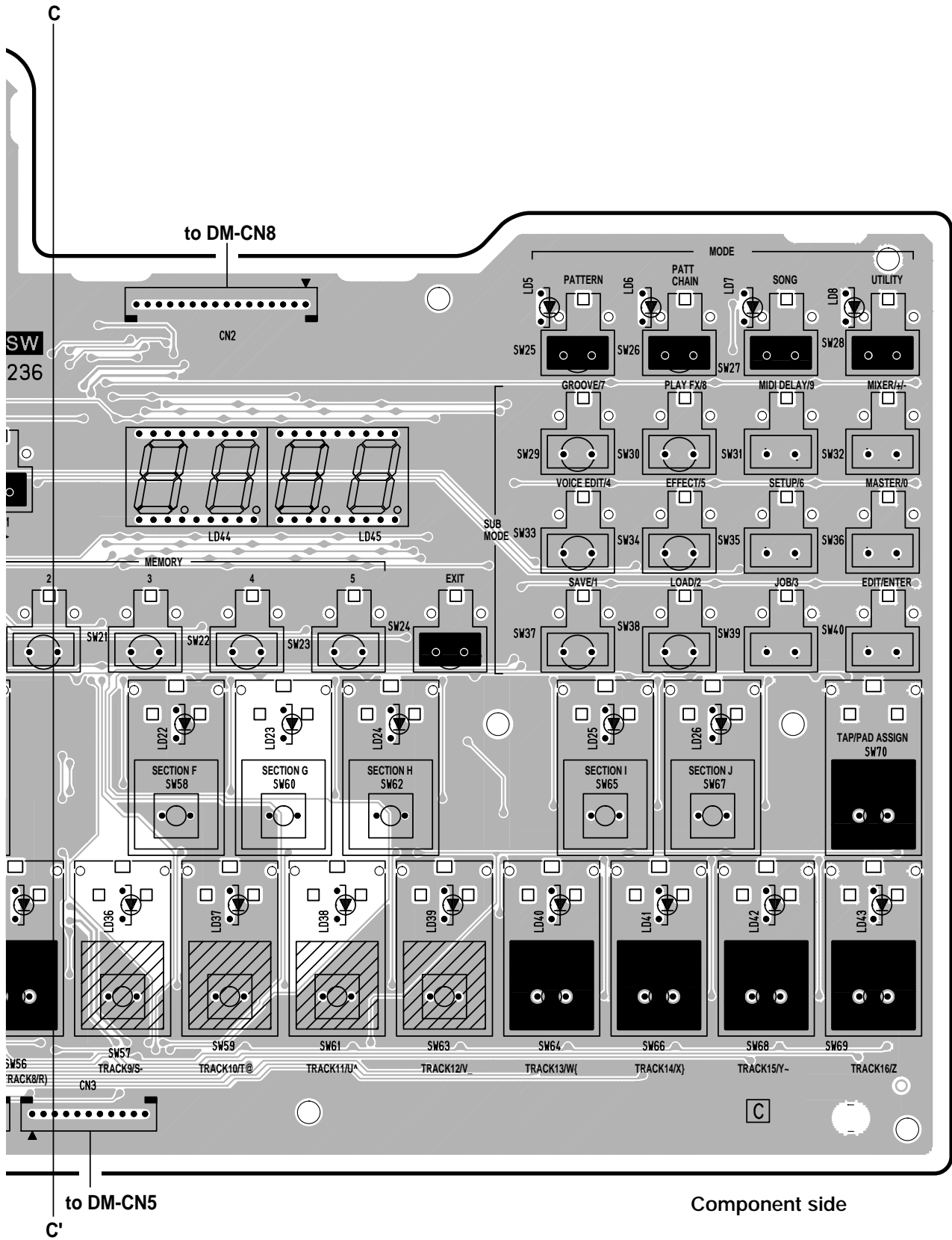
B

B'

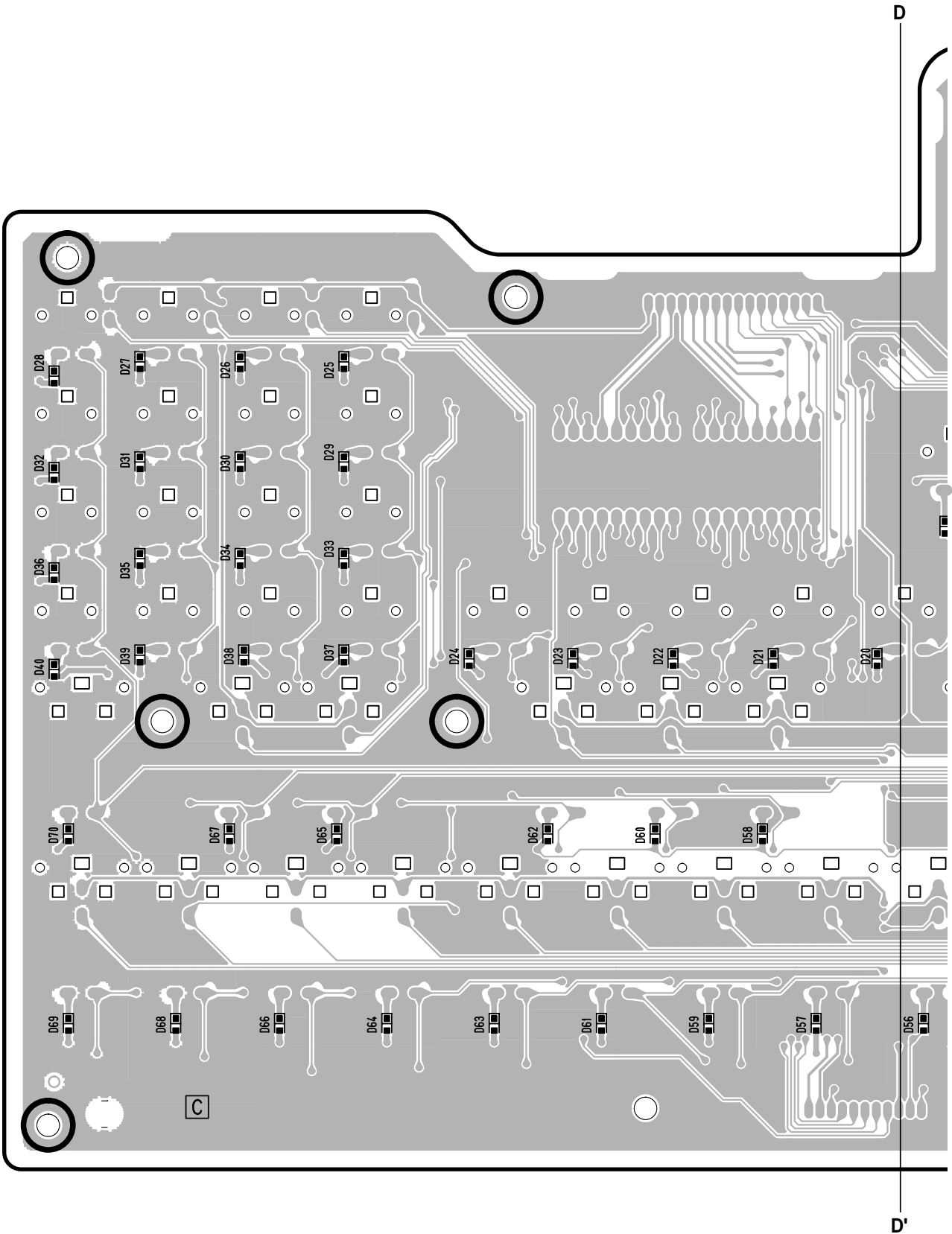


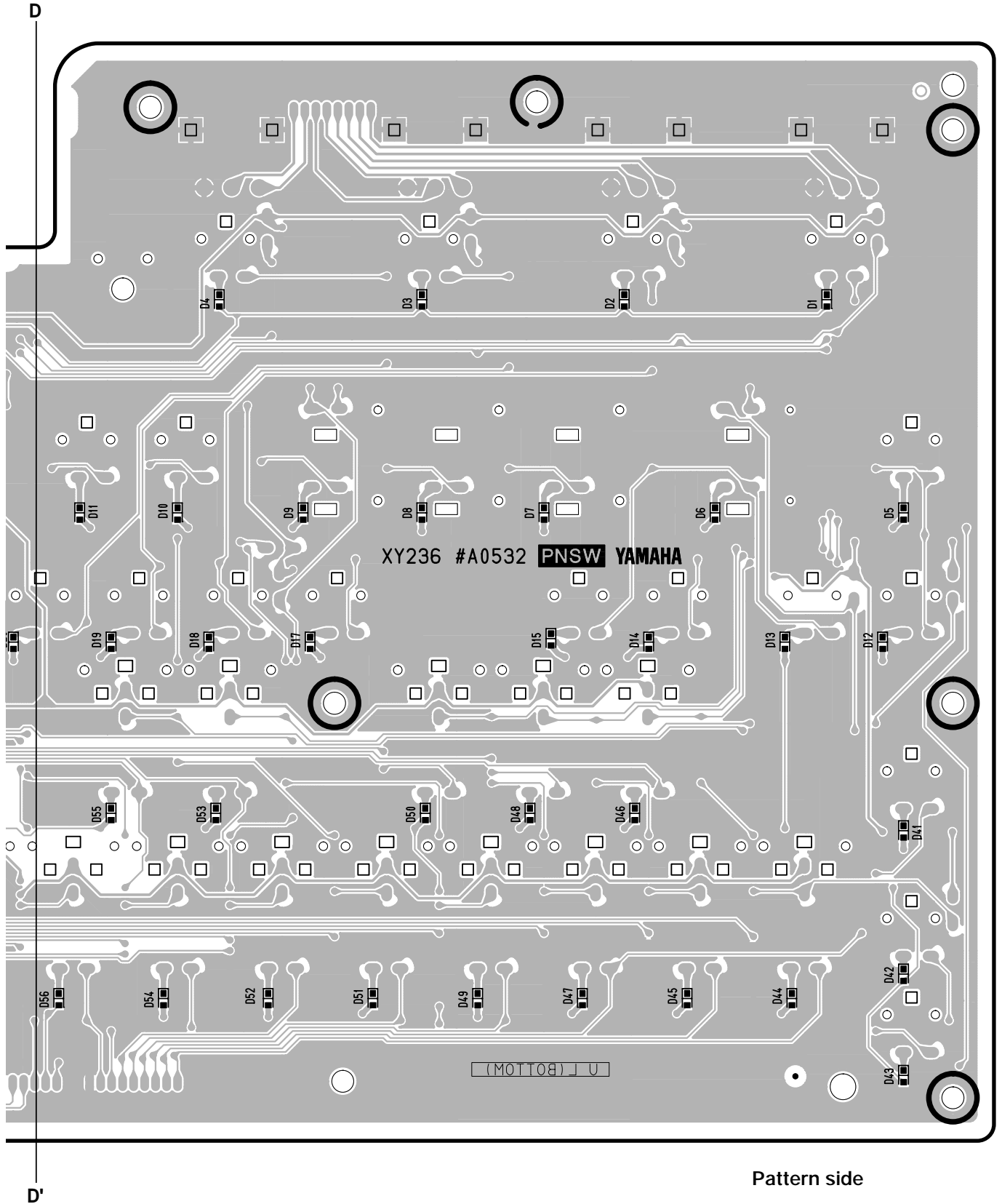
• PNSW Circuit Board



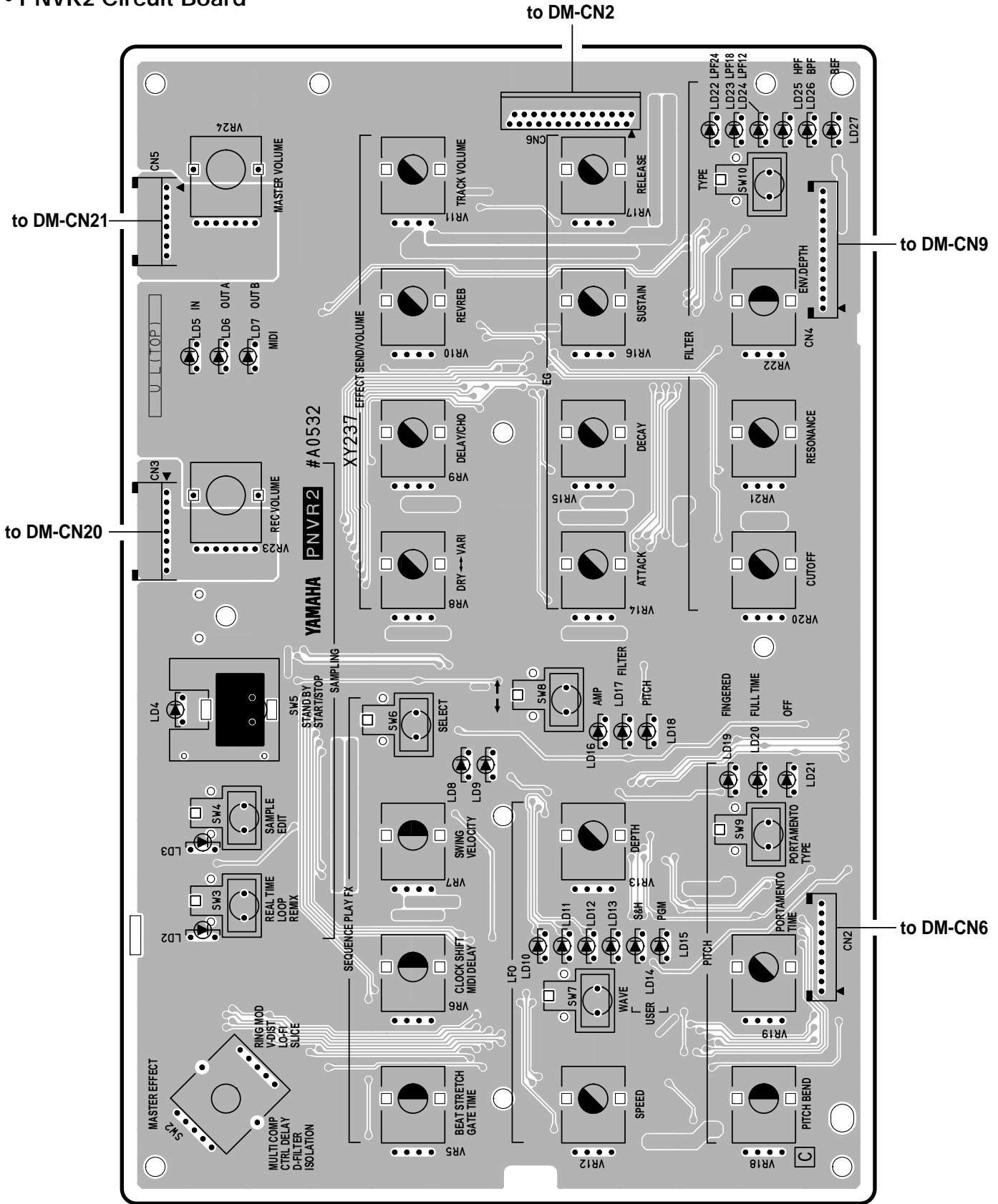


• PNSW Circuit Board

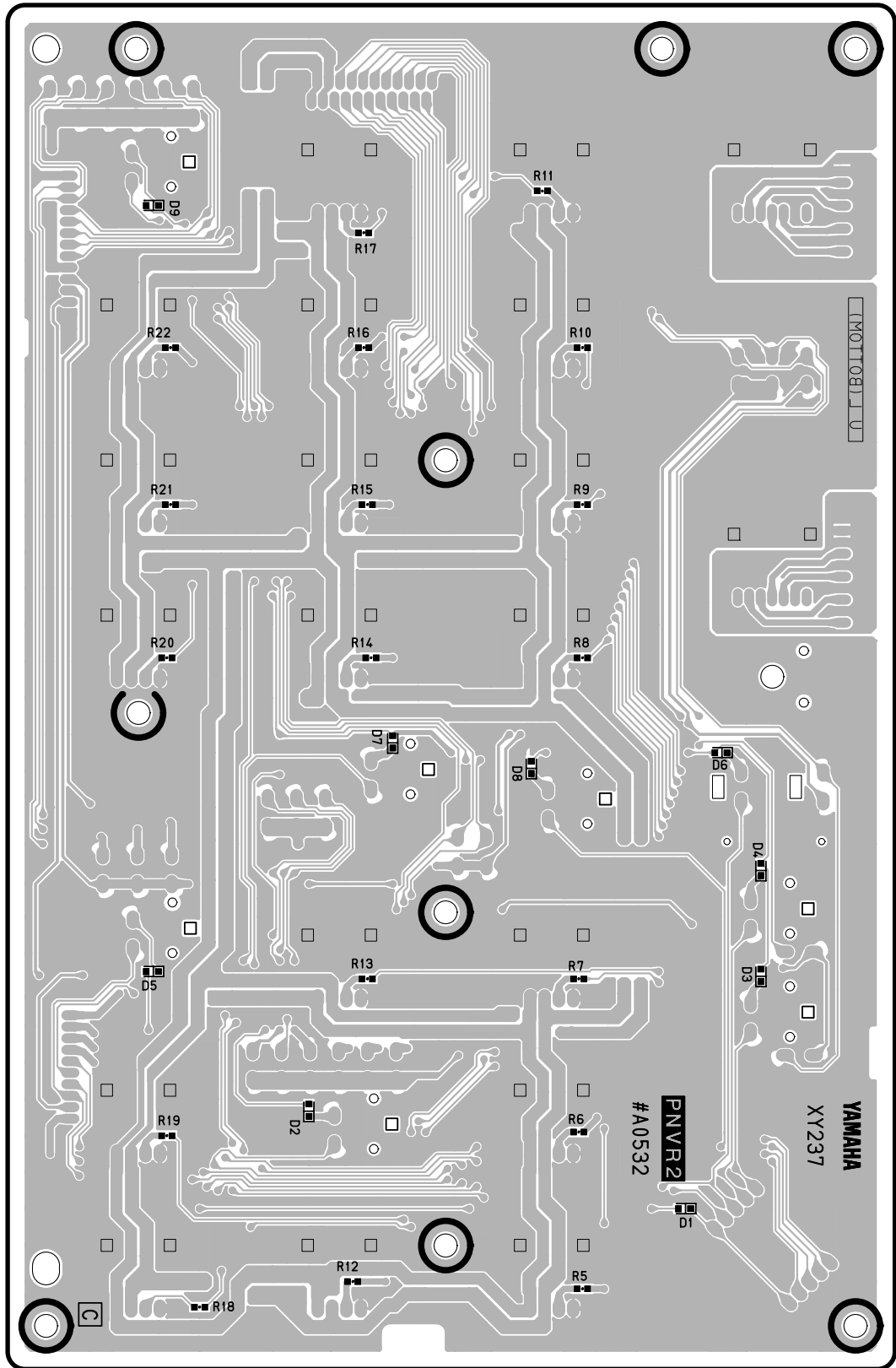




• PNVR2 Circuit Board



Component side



Pattern side

TEST PROGRAM

(A) Test program list

Test no.	Test item
1	RAM battery
2	LCD, LED blink
3	LED
4	Panel switches, rotary switches
5	Encoders 1--4
6	Knobs 1--22
7	Pads 1--2, foot switch
8	MIDI IN/OUT A
9	MIDI IN/OUT B
10	1 kHz OUTPUT L sound
11	1 kHz OUTPUT R sound
12	A/D -> D/A (MIC)
13	A/D -> D/A (LINE)
14	Card
15	SCSI
16	Digital In -> D/A
17	Optical In -> D/A
18	SIMM
19	SIMM (Full)
20	SYSTEM ROM, Wave ROM
21	SYSTEM RAM, Wave RAM
22	Factory set
23	Exit

(B) Preparation

The following test equipment and items are required in order to test the RS7000.

Test equipment: frequency counter, oscilloscope, level meter (JIS-C curve), distortion meter (flat), keyboard amplifier etc.

Other items: foot switch, MIDI cable, digital audio cable, AIEB2, SCSI (50 pin) hard disk drive etc.

(C) Entering the test program

While holding down the [PATTERN]+[PATT CHAIN]+[UTILITY] buttons, turn on the power. The following screen will appear in the LCD.



```

//// RS7000 Test Program ////
Firm Ver :x.xx
Kernel Ver :x.xx
Data Ver :x.xx

* [ENTER] :Test Start
* [STORE] :Factory Set
* [EXIT] :Exit
  
```

From this screen, press the [ENTER] button, and the test program will start up. If you press the [STORE] button from this

screen, the "22. Factory set" screen will appear, and if you press the [EXIT] button, the "23. Exit" screen will appear.

(D) Proceeding through the tests

When you enter the test program, the following screen will appear first.

```

//// RS7000 Test Program ////

01:Battery      :Press [ENTER]

                                [-1]  [+1]
  
```

Press the [F3] button (-1) to select and display the test item that precedes the currently selected test.

Press the [F4] button (+1) to select and display the test item that follows the currently selected test.

Press the [ENTER] key to execute the selected test.

Press the [EXIT] button to execute "23. Exit".

(E) Proceeding to the next test if a result is NG

If a test returns a result of NG (error), you can either press the [EXIT] button to return to the test item selection screen and perform the test again, or you can perform another test.

However, this method cannot be used for the [EXIT] button test in "4. Panel switches, rotary switches."

1. RAM battery

```

//// RS7000 Test Program ////

01:Battery      :Press [ENTER]

                                [-1]  [+1]
  
```

When you enter the test, the voltage of the RAM backup battery will be checked to see whether it is OK (2.95V and less than 3.50 V) or NG.

The result will be displayed in the LCD, the test will end, and you will be able to select another test item.

(Test result display)

```

OK

//// RS7000 Test Program ////

01:Battery      :OK      3.2v

                                [-1]  [+1]
  
```

NG

```

  /// RS7000 Test Program ///
01:Battery :Low NG 1.2v
                                [-1] [+1]
  /// RS7000 Test Program ///
01:Battery :Hi NG 4.2v
                                [-1] [+1]

```

2. LCD, LED blink

```

  /// RS7000 Test Program ///
02:LCD,LED :Press [ENTER]
                                [-1] [+1]

```

Visually confirm that the LCD is inverted (black/white) at intervals of approximately 0.5 seconds, and that all LEDs light / go dark. Also confirm that the LCD backlight is lit, and that contrast of the LCD can be adjusted by moving the [CONTRAST] knob. Press the [EXIT] button to end the test, and allow another test item to be selected.

3. LED

```

  /// RS7000 Test Program ///
03:LED :Press [ENTER]
                                [-1] [+1]

```

After the LCD screen shown below, the LEDs will light at intervals of approximately 0.3 seconds. Visually confirm that all LEDs are operating correctly and that their brightness is consistent.

```

  /// RS7000 Test Program ///
03:LED :Checking (xxxxxxx) xxxxxxx : LED Name

```

* The LED check will occur in the following order.
 (EFFECT ON/OFF), (LOOP REMIX), (SAMP EDIT), (STANDBY), (MIDI IN), (MIDI OUT A), (MIDI OUT B),

(<SELECT 1>), (<SELECT 2>), (<SINE>), (<TRI>), (<SAW>), (<PULSE>), (USER S&H), (USER PGM), (AMP), (FILTER), (PITCH), (FINGERD), (FULL TIME), (OFF), (LPF24), (LPF18), (LPF12), (HPF), (BPF), (BEF), (F1), (F2), (F3), (F4), (REC), (PLAY), (PATTERN), (PATT CHAIN), (SONG), (UTILITY), (KEYBOARD), (ARPEGGIO ON), (MUTE MEMORY), (SCENE MEMORY), (A), (B), (C), (D), (E), (F), (G), (H), (I), (J), (MUTE), (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (7SEG 1A), (7SEG 1B), (7SEG 1C), (7SEG 1D), (7SEG 1E), (7SEG 1F), (7SEG 1G), (7SEG1DT), (7SEG 2A), (7SEG 2B), (7SEG 2C), (7SEG 2D), (7SEG 2E), (7SEG 2F), (7SEG 2G), (7SEG2DT), (7SEG 3A), (7SEG 3B), (7SEG 3C), (7SEG 3D), (7SEG 3E), (7SEG 3F), (7SEG 3G), (7SEG3DT), (7SEG 4A), (7SEG 4B), (7SEG 4C), (7SEG 4D), (7SEG 4E), (7SEG 4F), (7SEG 4G), (7SEG4DT),

After the last LED goes dark, all LEDs will light. While the LEDs are being lit, a sine wave will be output. Press the [EXIT] button to end the test, and allow another test item to be selected.

4. Panel switch, rotary switch

```

  /// RS7000 Test Program ///
04:Panel SW :Press [ENTER]
                                [-1] [+1]

```

This test verifies that the panel switches and rotary switches are functioning correctly.

(Test method)

Turn all switches of the RS7000 on/off according to the LCD screen shown below.

For the rotary switches, turn each one from the far left toward the far right, one position at a time.

```

  /// RS7000 Test Program ///
04:Panel SW :Press [xxxxxxx] xxxxxxx : Switch Name

```

* The order of the switch check is as follows.

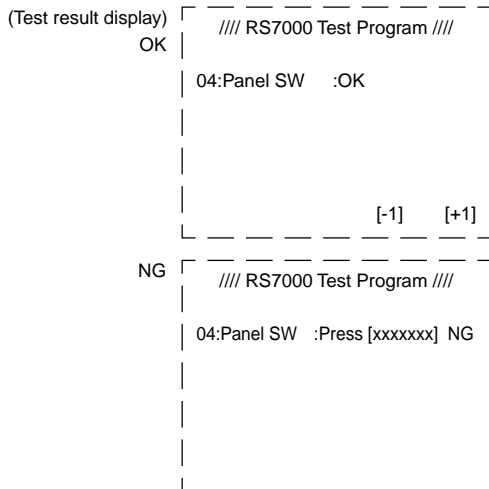
[EFFECT ON/OFF]
 8 positions of the rotary switch: [ISOLATION], [D-FILTER], [CTRL DELAY], [MULTI COMP], [RING MOD], [V-DIST], [LO-FI], [SLICE]

[LOOP REMIX], [SAMP EDIT], [STANDBY], [SELECT], [WAVE], [<AMP/FILTER/PITCH>], [PORTAMENTO TYPE], [TYPE], [F1], [F2], [F3], [F4], [SHIFT], [REC], [<], [STOP], [PLAY], [<<], [>>], [KEYBOARD], [ARPEGGIO ON], [OCT DOWN], [OCT UP], [STORE], [SCENE], [<MEMORY>1], [<MEMORY>2], [<MEMORY>3], [<MEMORY>4], [<MEMORY>5], [EXIT], [PATTERN], [PATT CHAIN], [SONG], [UTILITY], [GROOVE], [PLAY FX], [MIDI DELAY], [MIXER], [VOICE EDIT], [EFFECT], [SETUP], [MASTER], [SAVE], [LOAD], [JOB], [EDIT], [TRANSPOSE], [A], [B], [C], [D], [E], [F], [G], [H], [I], [J], [TAP], [MUTE], [TRACK SELECT], [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16]

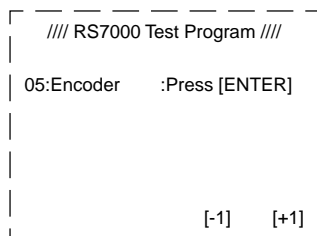
If the test result is satisfactory, a sine wave will be output while the switch is on, and you will proceed to the test for the next switch.

If a code is transmitted for a switch other than the one displayed in the LCD, the display will indicate NG, and no sound will be output. If the correct code is subsequently received, you will proceed to the test for the next switch.

If all switches are satisfactory, the LCD will indicate OK. The test will end, and you will be able to select a different test item. If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.



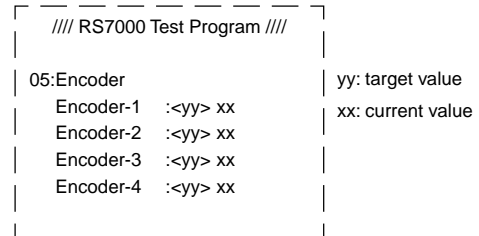
5. Encoders 1-4



This test verifies that the encoders operate correctly.

(Test method)

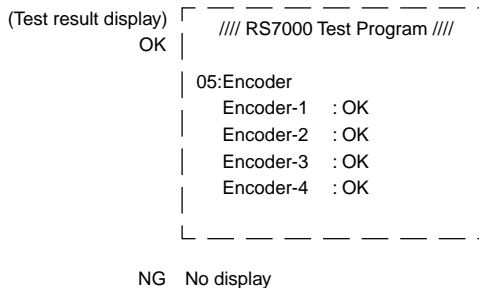
As directed by the following LCD screen, turn each encoder clockwise (value: +0 -> +8), and then counter-clockwise (value: -0 -> -8).



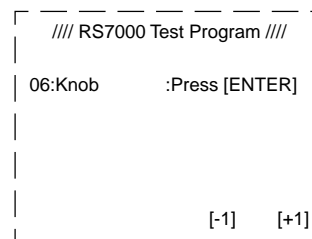
Verify that the number at the right of the screen increases smoothly from +0 to +8 when the encoder is turned clockwise, and decreases smoothly from -0 to -8 when the encoder is turned counter-clockwise.

If the operation is normal, a result of OK will be displayed in the LCD. The test will end, and you will be able to select a different test item.

If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.



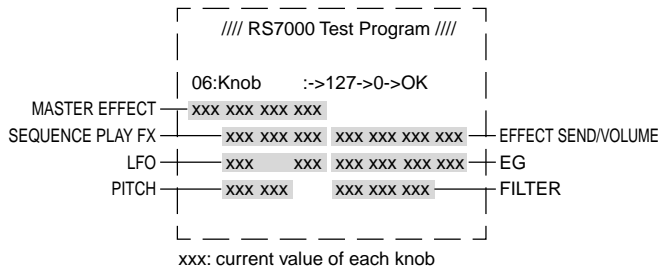
6. Knobs 1-22



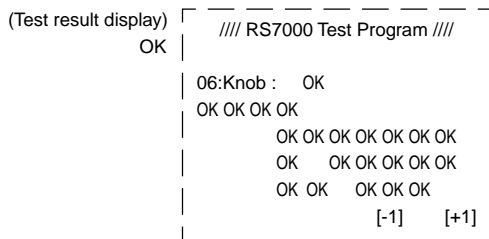
This checks whether the knobs operate correctly.

(Test method)

As directed by the following LCD screen, smoothly move each knob from right -- left (value: 127 (126-127) -- 0 (0-1)).

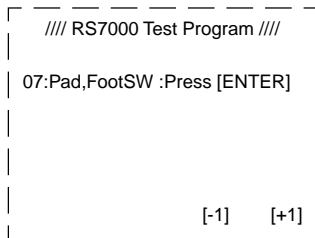


Verify that the knob does not "catch," and that the value changes smoothly.
 There is no prescribed order in which the knobs must be turned. If the knobs are functioning correctly, a result of OK will be displayed in the LCD screen. The test will end, and you will be able to select a different test item.
 If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.



NG No display

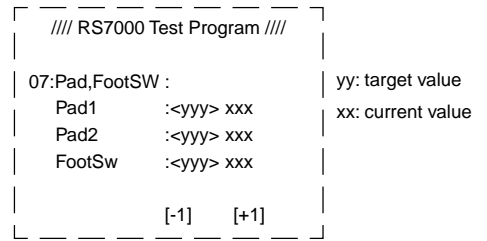
7. Pads 1-2, foot switch



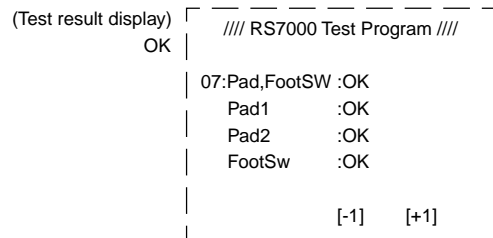
This checks whether pads 1-2 and the foot switch are operating correctly.

(Test method)

As directed by the following LCD screen, strike pads 1--2 softly (value: 10) or strongly (value: 110).
 Connect a foot switch to the [FOOT SW] connector, and turn it on (0) / off (1).

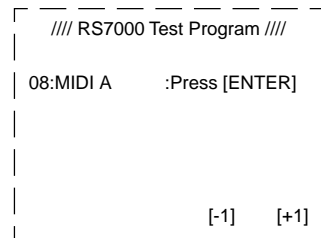


Verify that the numbers displayed in the LCD change for pads 1--2 and for the foot switch.
 There is no defined order in which these items need to be checked.
 If the pads and foot switch are functioning correctly, a result of OK will be displayed in the LCD screen. The test will end, and you will be able to select a different test item.
 If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.



NG No display

8. MIDI IN/OUT A



This checks the operation of MIDI IN/OUT A by using a test pattern (AA EF 00 55).

(Test method)

Before executing this test, use a MIDI cable to connect [MIDI IN] and [MIDI OUT A].

The result of the test will be displayed in the LCD screen. The test will end, and you will be able to select a different test item.

(Test result display)

OK
 //// RS7000 Test Program ////
 08:MIDI A :OK
 [-1] [+1]

NG

//// RS7000 Test Program ////
 08:MIDI A :NG
 [-1] [+1]

If the expected data was not received

//// RS7000 Test Program ////
 08:MIDI A :NG TIME OUT
 [-1] [+1]

If reception was not completed within a specific time

NG

//// RS7000 Test Program ////
 09:MIDI B :NG
 [-1] [+1]

If the expected data was not received

//// RS7000 Test Program ////
 09:MIDI B :NG TIME OUT
 [-1] [+1]

If reception was not completed within a specific time

10. 1 kHz OUTPUT L sound

//// RS7000 Test Program ////
 10:OUTPUT-L :Press [ENTER]
 [-1] [+1]

This checks whether the correct signal is output from the [OUTPUT L] and [PHONES (L)] jacks and the [AS1]--[AS6] jacks of the AIEB2 (option).

This also checks whether the effect DRAM operates correctly.

(Test method)

Use a frequency counter, oscilloscope, and level meter (with JIS-C filter) to measure the frequency, output waveform, and output level of the signals that are output from the [OUTPUT L], [OUTPUT R], [PHONES (L)], [PHONES (R)], and [AS1]--[AS6] jacks.

At this time, set the master volume to MAX.

While the sound is being output, the LCD screen will be as follows.

//// RS7000 Test Program ////
 10:OUTPUT-L :ON
 [-1] [+1]

(Items to check)

OUTPUT L: 1 kHz +/-1.5 Hz, sine wave, +5.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)

OUTPUT R: -75 dBm or less (10 k-ohm load)

PHONES (L): 1 kHz +/-1.5 Hz, sine wave, +5.0 +/-2 dBm (33 ohm load) (less than 0.1% distortion)

PHONES (R): -65 dBm or less (33 ohm load)

9. MIDI IN/OUT B

//// RS7000 Test Program ////
 09:MIDI B :Press [ENTER]
 [-1] [+1]

This checks the operation of MIDI IN/OUT B by using a test pattern (AA EF 00 55).

(Test method)

Before executing this test, use a MIDI cable to connect [MIDI IN] and [MIDI OUT B].

The result of the test will be displayed in the LCD screen. The test will end, and you will be able to select a different test item.

(Test result display)

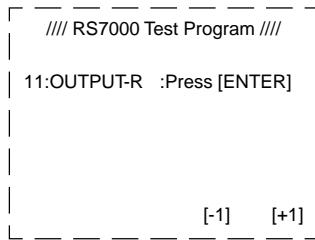
OK
 //// RS7000 Test Program ////
 09:MIDI B :OK
 [-1] [+1]

AIEB2 (option)

- AS1: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)
- AS2: -70 dBm or less (10 k-ohm load)
- AS3: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)
- AS4: -70 dBm or less (10 k-ohm load)
- AS5: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)
- AS6: -70 dBm or less (10 k-ohm load)

When you press the [EXIT] button the test will end, and you will be able to select another test item.

11. 1 kHz OUTPUT R sound



This checks whether the correct signal is output from the [OUTPUT R] and [PHONES (R)] jacks and the [AS1]--[AS6] jacks of the AIEB2 (option).

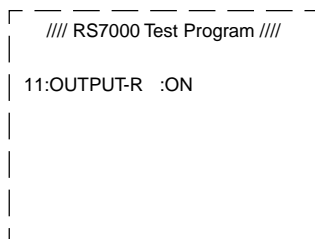
This also checks whether the effect DRAM operates correctly.

(Test method)

Use a frequency counter, oscilloscope, and level meter (with JIS-C filter) to measure the frequency, output waveform, and output level of the signals that are output from the [OUTPUT L], [OUTPUT R], [PHONES (L)], [PHONES (R)], and [AS1]--[AS6] jacks.

At this time, set the master volume to MAX.

While the sound is being output, the LCD screen will be as follows.



(Items to check)

- OUTPUT L: -75 dBm or less (10 k-ohm load)
- OUTPUT R: 1 kHz +/-1.5 Hz, sine wave, +5.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)
- PHONES (L): -65 dBm or less (33 ohm load)
- PHONES (R): 1 kHz +/-1.5 Hz, sine wave, +5.0 +/-2 dBm (33 ohm load) (less than 0.1% distortion)

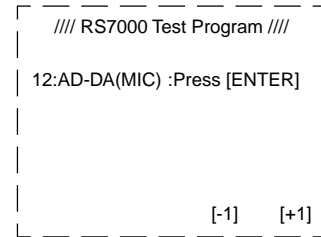
AIEB2 (option)

- AS1: -70 dBm or less (10 k-ohm load)
- AS2: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)
- AS3: -70 dBm or less (10 k-ohm load)
- AS4: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)
- AS5: -70 dBm or less (10 k-ohm load)
- AS6: 1 kHz +/-1.5 Hz, sine wave, -6.5 +/-2 dBm (10 k-ohm load) (less than 0.5% distortion)

When you press the [EXIT] button the test will end, and you will be able to select another test item.

12. A/D -> D/A (MIC)

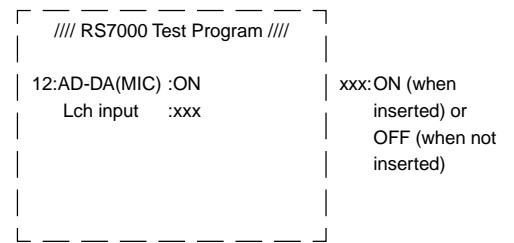
This tests the signal route from the A/D input to D/A output. (By default, the Gain is set to MIC.)



(Test method)

Use the following procedure to input a 1 kHz +/-5 Hz, -50.0 +/-0.2 dBm sine wave to the [INPUT L] jack, and verify that an output of the following level is obtained from the [OUTPUT L] and [OUTPUT R] jacks.

At this time, set the [REC VOLUME] and [MASTER VOLUME] to Max.



(Items to check)

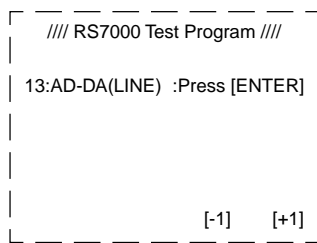
Move the [REC VOLUME] knob and verify that the volume changes.

Also verify that the LCD display ON/OFF indication changes as the jack is plugged in or unplugged.

- OUTPUT L: 1 kHz +/-5 Hz, sine wave, +4.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)
- OUTPUT R: -58 dBm or less (10 k-ohm load)

When you press the [EXIT] button the sound will stop, and you will be able to select another test item.

13. A/D -> D/A (LINE)

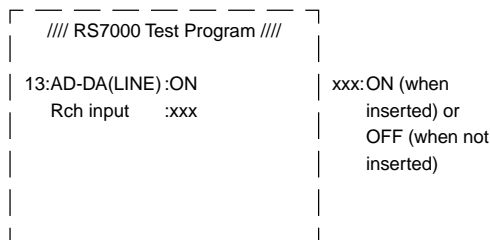


This tests the signal route from the A/D input to D/A output. (By default, the Gain is set to LINE.)

(Test method)

Use the following procedure to input a 1 kHz +/-5 Hz, -16.0 +/-0.2 dBm sine wave to the [INPUT R] jack, and verify that an output of the following level is obtained from the [OUTPUT L] and [OUTPUT R] jacks.

At this time, set the [REC VOLUME] and [MASTER VOLUME] to Max.



(Items to check)

Move the [REC VOLUME] knob and verify that the volume changes.

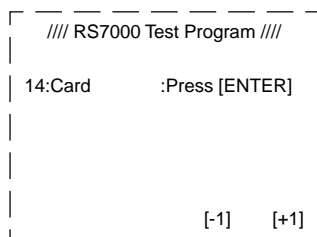
Also verify that the LCD display ON/OFF indication changes as the jack is plugged in or unplugged.

OUTPUT L: -68 dBm or less (10 k-ohm load)

OUTPUT R: 1 kHz +/-5 Hz, sine wave, +4.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)

When you press the [EXIT] button the sound will stop, and you will be able to select another test item.

14. Card



This checks whether the Smart Media is protected, and performs

a format/write/read/verify check on the Smart Media. It also check whether the Smart Media has been removed.

(Test method)

First insert the Smart Media with protect turned on, and execute the test.

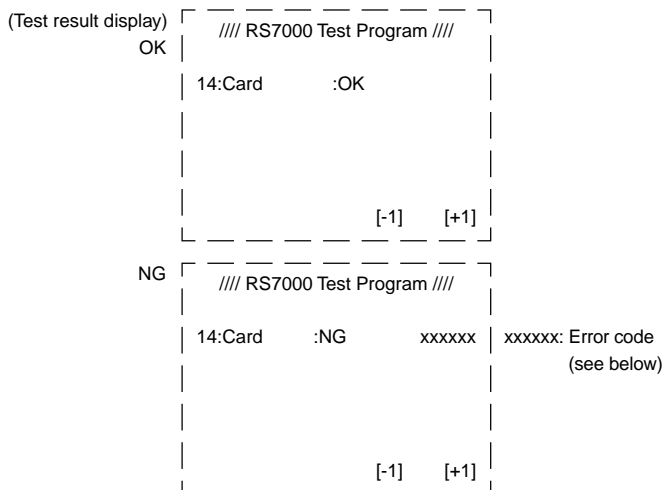
Next insert the Smart Media with protect turned off, and execute the test.

Finally execute the test without inserting Smart Media.

Verify that a WRPRT error is generated when the Smart Media is inserted with protect turned on, and that OK is displayed when the Smart Media is inserted with protect turned off.

The test result will be displayed in the LCD, the test will end, and you will be able to select another test item.

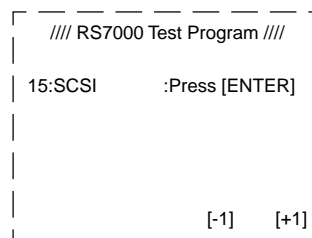
If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.



Error codes

- RD/WR : read/write error
- NOCARD : no card (no card is inserted)
- WRPRT : write protect

15. SCSI



When you enter this test, a 1 sector read/write will be performed on the hard disk connected to the [SCSI] connector. At this time, set the SCSI ID of the hard disk to 4.

The test result will be displayed in the LCD, the test will end,

and you will be able to select another test item.
 If a result of NG is returned during this test, refer to section "(E) Proceeding to the next test if a result is NG" for the actions to take.

```
(Test result display)
OK
  //// RS7000 Test Program ////
  15:SCSI      :OK
                                     [-1] [+1]

NG
  //// RS7000 Test Program ////
  15:SCSI      :NG
                                     [-1] [+1]
```

16. Digital In -> D/A

```
  //// RS7000 Test Program ////
  16:Digital In :Press [ENTER]
                                     [-1] [+1]
```

This tests the signal route from the AIEB2 Digital input to the D/A output.
 The AIEB2 Digital input/output are looped, and a sine wave is sounded from the Digital output.

(Items to check)

Verify the Ch Status in the LCD screen, and that an output of the following level is obtained from the [OUTPUT L] jack.
 OUTPUT L: 1 kHz +/-5 Hz, sine wave, -1.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)

```
  //// RS7000 Test Program ////
  16:Digital In :ON
  Ch Status    :xx (yyyyyyyyy)
                                     [-1] [+1]
  xx: OK or NG
  yy: Indicates the reason
      if an error occurs
      ( No Board,
        Unlock,
        Parity Error,
        Verify Error )
```

When you press the [EXIT] button the sound will stop, the test result will be displayed in the LCD, and you will be able to select another test item.

```
(Test result display)
NG
  //// RS7000 Test Program ////
  16:Digital In :ON
  Ch Status    :NG
                                     [-1] [+1]
```

17. Optical In -> D/A

```
  //// RS7000 Test Program ////
  17:Optical In :Press [ENTER]
                                     [-1] [+1]
```

This tests the signal route from the AIEB2 Optical input to the D/A output.
 The AIEB2 Optical input/output are looped, and a sine wave is sounded from the Optical output.

(Items to check)

Verify the Ch Status in the LCD screen, and that an output of the following level is obtained from the [OUTPUT R] jack.
 OUTPUT R: 1 kHz +/-5 Hz, sine wave, -1.0 +/-2 dBm (10 k-ohm load) (less than 0.1% distortion)

```
  //// RS7000 Test Program ////
  17:Optical In :ON
  Ch Status    :xx (yyyyyyyyy)
                                     [-1] [+1]
  xx: OK or NG
  yy: Indicates the reason
      if an error occurs
      ( No Board,
        Unlock,
        Parity Error,
        Verify Error )
```

When you press the [EXIT] button the sound will stop, the test result will be displayed in the LCD, and you will be able to select another test item.

```
(Test result display)
NG
  //// RS7000 Test Program ////
  17:Optical In :ON
  Ch Status    :NG
                                     [-1] [+1]
```

18. SIMM

```

//// RS7000 Test Program ////
18:SIMM      :Press [ENTER]

[-1]      [+1]
    
```

When you enter this test, a SIMM read/write/verify test will be performed.

The test result will be displayed in the LCD, the test will end, and you will be able to select another test item.

(Test result display) OK

```

//// RS7000 Test Program ////
18:SIMM      :OK

[-1]      [+1]
    
```

NG

```

//// RS7000 Test Program ////
18:SIMM      :NG

[-1]      [+1]
    
```

The display will indicate NG if any of the ICs are NG.

19. SIMM (Full)

```

//// RS7000 Test Program ////
19:SIMM(Full) :Press [ENTER]

[-1]      [+1]
    
```

When you enter this test, a SIMM full address read/write/verify test will be performed.

The test result will be displayed in the LCD, the test will end, and you will be able to select another test item.

(Test result display) OK

```

//// RS7000 Test Program ////
19:SIMM(Full) :OK

[-1]      [+1]
    
```

NG

```

//// RS7000 Test Program ////
19:SIMM(Full) :NG

[-1]      [+1]
    
```

The display will indicate NG if any of the ICs are NG.

20. SYSTEM ROM, Wave ROM

```

//// RS7000 Test Program ////
20:ROM       :Press [ENTER]

[-1]      [+1]
    
```

When you enter this test, an ID Read test will be performed on the MAIN CPU FLASH ROM. (IC-37 (Program 1), IC-79 (Program 2))

In addition, the check sum is calculated, and the contents of the data will be displayed. (IC-43 (Data ROM))

A data comparison will also be performed for the following address points of each wave ROM. (IC-68 (High), IC-65 (Low))

- 0x00000000, 0x00000004, 0x00000008, 0x00000010,
- 0x00000020, 0x00000040, 0x00000080, 0x00000100,
- 0x00000200, 0x00000400, 0x00000800, 0x00001000,
- 0x00002000, 0x00004000, 0x00008000, 0x00010000,
- 0x00020000, 0x00040000, 0x00080000, 0x00100000,
- 0x00200000, 0x00400000, 0x00800000

The test result will be displayed in the LCD, the test will end, and you will be able to select another test item.

(Test result display) OK

```

//// RS7000 Test Program ////
20:ROM       :OK
IC-37,IC-79,IC-43
OK OK OK
IC-68,IC-65
OK OK

[-1]      [+1]
    
```

NG

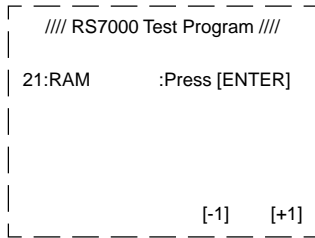
```

//// RS7000 Test Program ////
20:ROM       :NG
IC-37,IC-79,IC-43
OK OK OK
IC-68,IC-65
NG OK

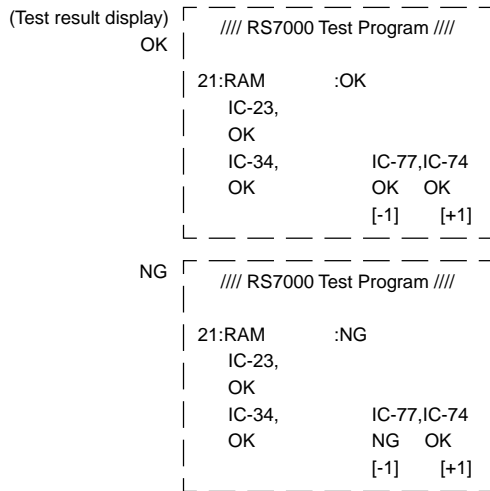
[-1]      [+1]
    
```

The display will indicate NG if any of the ICs are NG.

21. SYSTEM RAM, Wave RAM



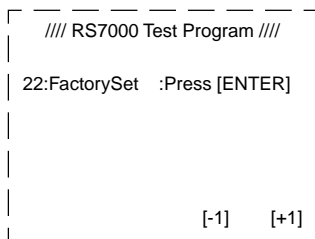
When you enter this test, a read/write/verify test will be performed on the MAIN CPU SDRAM (IC-23), a read/write/verify test on the MAIN CPU SRAM (IC-34), and a read/write verify test on the wave RAM (IC-77 (High), IC-74 (Low)). The test result will be displayed in the LCD, the test will end, and you will be able to select another test item.



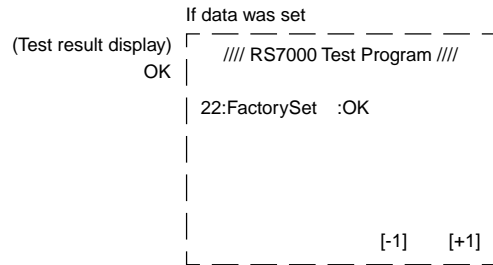
The display will indicate NG if any of the ICs are NG.

* All RAM data is preserved. In other words, the data will be saved immediately before the verify check, and returned immediately following it.

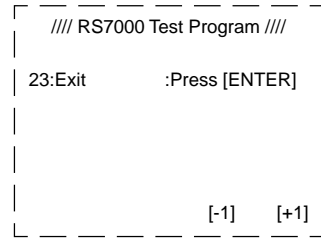
22. Factory set



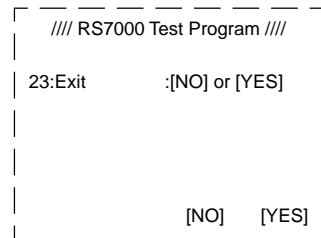
This sets the settings with which the RS7000 was shipped from the factory. When you enter the test and it is completed normally, a sine wave will be output for an instant.



23. Exit



This exits test mode. When you press the [ENTER] button, the following display will appear.



Press the [F4] button (YES) to execute test mode.
Press the [F3] button (NO) to return to the entry screen.

* When you exit test mode, the same sequence will be performed as at normal power-on.

* Verify that the click noise occurring when the power switch of the RS7000 is switched on/off meets the following conditions:

- OUTPUT L, R: less than 0.5 v-pp
- PHONES (L), R: less than 0.5 v-pp

* After the Factory Reset is performed and you exit test mode and enter PATTERN mode, verify that the following noise levels are satisfied when no note-on has yet occurred. (Test this using a level meter (with JIS-C filter).)

- OUTPUT L: -86 dBm or less (10 k-ohm load)
- OUTPUT R: -86 dBm or less (10 k-ohm load)
- PHONES (L): -86 dBm or less (33 ohm load)
- PHONES (R): -86 dBm or less (33 ohm load)

* Verify the SRAM backup power supply: With the power turned off, verify that that the voltage between TP1 and GND on the DM sheet is greater than 2.6 V and less than 3.2 V.

Perform this measurement before the power is turned on, or at least 30 seconds after the power is turned off. To make this measurement, use test equipment with an input impedance of 1 M-ohm or greater.

■ ERROR MESSAGE

● Operational Errors

No Data	When a job is executed, the selected track or range contains no data. Select an appropriate track or range.
Illegal Input	An unacceptable input or value has been specified. Check the input method or value.
Illegal Track Number	An unacceptable track number has been specified. Select the track again.
Illegal Phrase Number	An unacceptable phrase number has been specified. Select the phrase again.
Illegal Measure	An unacceptable measure number has been specified. Select the measure again.
Illegal Check Box	No check boxes have been checked in a track job which requires a check box selection. Check the appropriate check box.
Meter Mismatch	The meter values of the original and edited data are different.
No F7 (End Of Exc.)	Exclusive data has been entered or changed without the necessary "End Of Exclusive" byte (F7). Make sure F7 is included.
Preset Phrase	You have attempted to edit or record a preset phrase. Preset phrases must be copied to a user phrase before they can be edited.
Pattern Length Mismatch	A job will result in the length of a phrase being greater than 256 measures.
Phrase Length Mismatch	An edit operation will result in a phrase which is longer than 256 measures.
Phrase Number Overflow	The maximum number of phrases (256) has been exceeded when recording, executing a job, or editing.
Too Long Sample	A sample time stretch or other job has resulted in a sample being too long.
Too Short Sample	The sample length is too short and the Frequency Convert job cannot be executed.
Too Low Freq	The sampling frequency is too low and the Frequency Convert job cannot be executed.
Digital In Unlocked	The DIGITAL/OPTICAL input is unlocked. Check the connections and the output from the source device.

● System Errors

Backup Battery Low	The internal backup battery is running low.
Sequence Memory Full	The internal memory is full and recording, editing, job execution, MIDI reception/transmission, or loading from card or disk cannot continue. Try again after erasing unwanted song, pattern, or user phrase data.
Sample Number Overflow	A sampling operation, job, or load operation has exceeded the maximum allowable number of samples. Try again after erasing unnecessary samples.
Too Many Local Voices	The maximum number of samples allowable for a pattern or song (128) has been exceeded.
Too Many Common Voices	The maximum allowable number of common sample voices (128) has been exceeded.
Too Many Sample Voices	The maximum overall number of sample voices (256) has been exceeded.
Wave Memory Full	The wave memory is full and further sampling operations, jobs, or load operations cannot be executed. In some cases, the amount of remaining memory will be increased when you execute the Wave Memory Optimize operation.
Factory Set	This message appears when the RS7000 is restored to the initial factory settings. The data in internal memory can be corrupted when the backup battery voltage runs too low, for example, and all data will automatically be restored to the factory settings, causing this message to appear.

Memory Protected	Memory protection is turned on, and you have attempted to alter data using a record, job, or edit operation.
SIMM Error	An appropriate pair of expansion SIMMs is not properly installed, or the pair is not properly matched.

● **MIDI Errors**

MIDI Buffer Full	The MIDI receive buffer is full and processing cannot continue. Try receiving the data again.
-------------------------	---

● **Card/Disk Errors**

Card/Disk Full	The card or disk is full and no more data can be saved. Use a new card or disk, or make space by erasing unwanted data from the card or disk.
File Not Found	The specified file was not found on the card or disk during a load operation. Try again after re-inserting/re-connecting the card or disk.
Bad Card/Disk	The card or disk is unusable. Format the card or disk and try again.
Card/Disk Not Ready	A card or disk is not properly inserted in or connected to the RS7000.
Unformatted Card/Disk	The card or disk is not formatted, or the format is unusable by the RS7000. Check the card/disk contents.
Write Protected	The card or disk is write protected, or you have attempted to write to a read-only medium such as CD-ROM.
Bad File	An unusable file has been loaded.
Can't Change File Name	When executing a Rename operation, a file or folder with the same name already exists in the specified folder.
Illegal File	The file specified for loading is unusable by the RS7000.
No Data	When executing a save operation, the specified song or style contains no data and cannot be saved.
Too Long Sample	You have attempted to load a sample which is too long.
No Sample Files	The linked sample files cannot be found during a load operation.
Read/Write Error	An error has occurred while reading from or writing to the card or disk. Check card insertion, disk connections, or SCSI termination.
SCSI Error	A SCSI error has occurred. Check the SCSI connections and termination.
Copy Protected	You have attempted to export a copy-protected sample.
Illegal File Name	The specified file name is unacceptable.
Read Only File	You have attempted to delete, rename, or overwrite a read-only file.
Can't Make Folder	No more folders can be created below the current level because a folder having the same name exists on the card or disk.
Too Deep Folder	Folders below this level cannot be accessed.
Not Empty Folder	You have attempted to delete a folder that contains data.
Unsupported Disk	The connected disk drive cannot be used.

● Other Messages (Not Errors)

Are you sure? NO[F2]/ YES[F3]	Confirms that you want to execute a specified operation. Press [F2] or [F3] as required.
Can't Undo. Cancel [F2]/OK [F3]	When some jobs are executed the internal memory becomes full and undo cannot be used. Press [F3] if this is OK, or [F2] to abort the operation. Try again after erasing unwanted songs, patterns, or user phrases.
Completed	The specified load, save, format, or other job has been completed.
Executing ...	A format operation or job is being executed. Please wait.
Loading ... (xxxxxxx) Abort [F3]	Appears when a file is being loaded. Press [F3] to abort the load operation.
Overwrite? NO[F2]/YES[F3]	A save operation will overwrite data on the card or disk, and this message confirms whether it is OK to continue. Press [F2] or [F3] as required.
Overwrite Sample Voice? Cancel [F2]/OK [F3]	When executing Create after Realtime Loop Remix this message confirms whether it is OK to overwrite the sample voice in the current track. Press [F3] to overwrite, or [F2] to abort.
Saving ... (xxxxxxx) Abort [F3]	Appears when a file is being saved. Press [F3] to abort the save operation.
Same Common Sample Voice Number. Skip All [F2]/Renumber [F3]	Appears when a pattern or song which uses common sample voices is loaded and a common sample voice will be loaded into a number which already contains data. Press [F2] skip loading the common sample voice data, or [F3] load the data after renumbering the voice.
Sequence or Sample Voice Exists. Cancel [F2]/ Replace [F3]	Appears when sequence or sample data already exists in a track selected in the sampling setup display.

Function...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1-16 x	1-16 x	
Mode Default Messages Altered	x x *****	x x x	
Note Number : True voice	0-127 *****	0-127	
Velocity Note ON Note OFF	o 9nH,v=1-127 x 9nH,v=0	o v=1-127 x	
After Key's Touch Ch's	o o	o o	
Pitch Bend	o	o	
Control Change 0-121	o	o	
Prog Change : True #	o 0-127 *****	o 0-127	
System Exclusive	o	o	
Common : Song Pos. : Song Sel. : Tune	o *1 o *1 x	o *1 o *1 x	
System : Clock Real Time: Commands	o *2 o *1	o *3 o *1	
Aux :All Sound OFF :Reset All Cntrls :Local ON/OFF :All Notes OFF Mes- :Active Sense sages:Reset	o o o x x x	o o o x x x	
Notes: *1 if MIDI control in/out is enabled. send MMC (stop, differed play, locate) if sync mode is MITC. *2 if MIDI clock out is enabled. receive MITC quarter frame message if sync mode is MITC. *3 if MIDI sync is external.			

Mode 1 : OMNI ON , POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON ,MONO
Mode 4 : OMNI OFF,MONO

o : Yes
x : No

YAMAHA [Music Production Studio --- voice part]
Model RS7000 MIDI Implementation Chart

Date:04-APR-2001
Version : 1.0

Function...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1-16 x	1-16 x	
Mode Default Messages Altered	3 x *****	1 1-4 (m=1) *1 x	Memorized
Note Number : True voice	0-127 *****	0-127 0-127	Transpose
Velocity Note ON Note OFF	o 9nH,v=1-127 x 9nH,v=0	o v=1-127 x	
After Key's Touch Ch's	x x	x x	
Pitch Bend	o	o 0-24 semi	
Control Change	0 1,5-7,10-11 16-19 32 38 64 65,66 71-77 80-83 91,93,94,96,97 1-31 33-119	o o o o o o o o o o o o o o o o o o	Bank Select MSB Bank Select LSB Sustain Switch Assignable Knob Assignable Knob
Prog Change : True #	o 0 - 127 *****	o 0 - 127 0 - 127	
System Exclusive	o	o	
: Song Pos. Common : Song Sel. : Tune	x x x	x x x	
System : Clock Real Time: Commands	x x	x x	
Aux :All Sound OFF :Reset All Cntrls :Local ON/OFF :All Notes OFF Mes- :Active Sense sages:Reset	x x x x o x	o o x o (123-125) o x	
Notes: *1 m is always treated as "1" regardless of its value.			

Mode 1 : OMNI ON , POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON ,MONO
Mode 4 : OMNI OFF,MONO

o : Yes
x : No

■ OS UPDATE

[CAUTIONS]

Make sure you store your user data before executing the update.

- * Tools required for update — 8MB or larger smart media (3.3V)
Smart media floppy disk adaptor
- * Download the RS7000 updated program from the download page on the YSISS Homepage to the smart media.
(YSISS URL >> <http://plaza.yamaha.co.jp/ysiss/exindex.nsf>)
(Insert a smart media containing only the update program (0532os.pgm) into the card slot on the main unit.)

1. Insert the smart media containing the upgrade program into the slot on the front panel.
The correct direction of media is printed on the panel.
2. Turn the power on with "REC" button and "STOP" button pressed and held.
(The upgrade screen is displayed on LCD.)

```

//// RS7000 OS Updater ////
Current Version  Kernel : X.XX
                  Firm   : X.XX
Insert card including only one PGM
file, and press [ENTER] to load.
Or, play in Standard MIDI file
including the KERNEL SysEx Data.
  
```

3. Press "ENTER" button after the version check. The program is updated automatically and the process is displayed on LCD.
(It takes about 4 minutes.)

```

//// RS7000 OS Updater ////
==== UPDATE FROM CARD MODE====

Include : 2 block of OS.
block #1 *****          ( 39.0%)
  
```

```

//// RS7000 OS Updater ////
==== UPDATE FROM CARD MODE====

Erasing flash ROM.
DON'T SHUTDOWN RS7000!      *
                             * * *
                             *
block #1
  
```

4. If the program successfully updated, the message shown in appears to prompt to reboot the system. Turn the power off.

```

//// RS7000 OS Updater ////
==== UPDATE FROM CARD MODE====

Completed. Reboot RS7000.
  
```

5. Remove the smart media from the slot.
6. "Factory Set" is performed.
Turn the power on with "OCT DOWN" button and "OCT UP" button and "STORE" button pressed and held. The data is set to the factory default settings.

MUSIC SYNTHESIZER

RS7000

PARTS LIST


■ CONTENTS

OVERALL ASSEMBLY	2
PANEL SW-BUTTON ASSEMBLY	5
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PNVR2 CIRCUIT BOARD	6
ELECTRICAL PARTS	7

Notes : DESTINATION ABBREVIATIONS

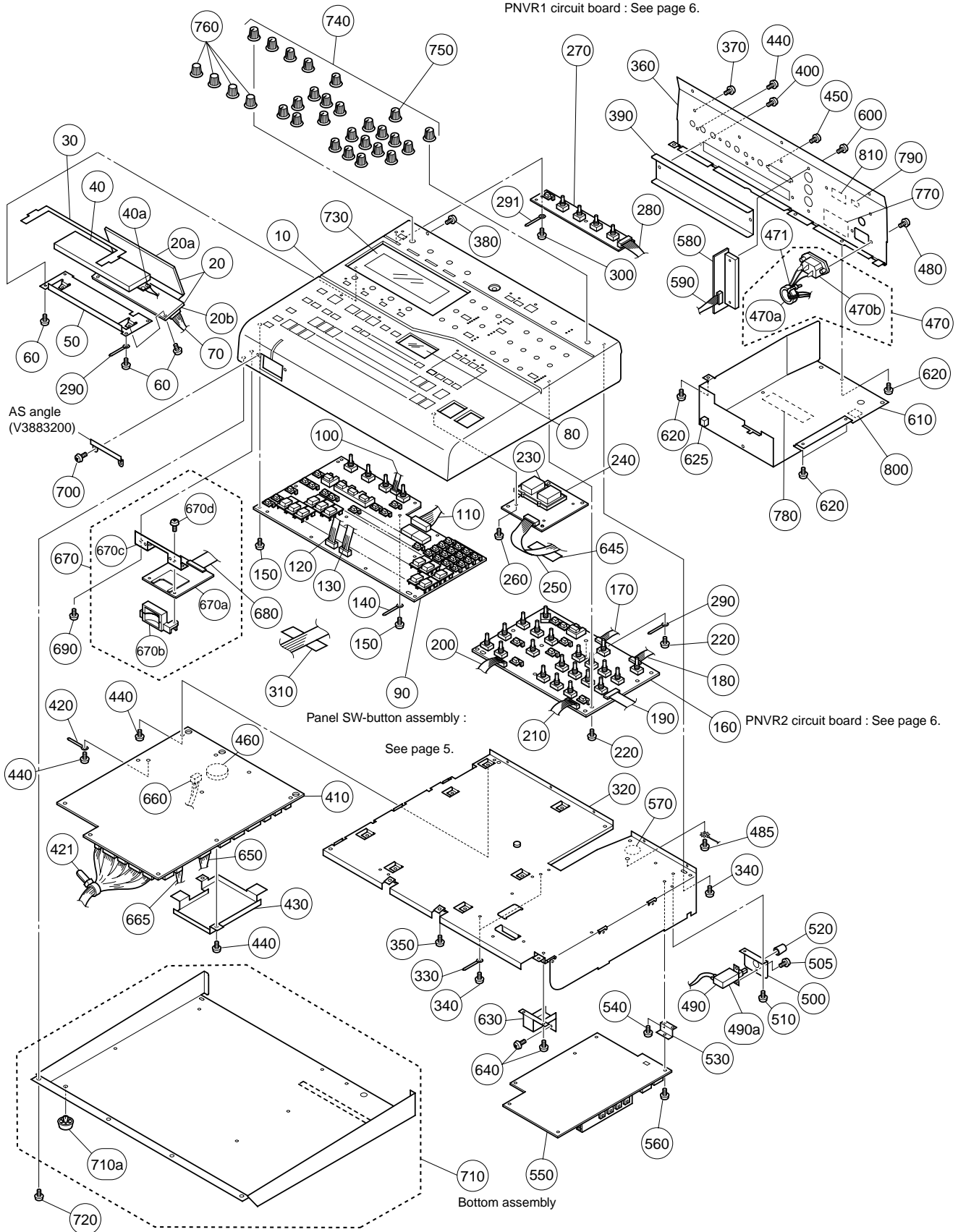
A : Australian model	M: South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220V)
I : Indonesian model	N,X: General export model
J : Japanese model	Y : Export model

■ WARNING

Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

- The numbers "QTY" show quantities for each unit.
- The parts with "--" in "PART NO." are not available as spare parts.
- This mark "}" in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded (■) part number is O, not zero.
- The second letter of the shaded (■) part number is I, not one.

OVERALL ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		OVERALL ASSEMBLY		RS7000		
	--	Overall Assembly		J (V640750)		
	--	Overall Assembly		U (V641220)		
	--	Overall Assembly		E,B (V641270)		
* 10	V6541600	Top Cover				
* 20	V7043600	LCD Assembly				
20a	VT282300	LCD	EDMMR03Y00			16
20b	VB390800	Connector Base Post	PH 12P TE			01
* 30	V7697900	Spacer Assembly				
40	VT210200	Back Light Assembly				14
40a	VT287000	Connector Assembly	B-LIGHT PH 2P			05
50	V3203300	LCD Angle Assembly	Y			06
60	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		6	01
70	--	Connector Assembly	KRD-KRD 12P-400	(VK11010)		
* 80	V7376400	LED Cover				
90	--	Panel SW-Button Assembly		(V703670)		
100	--	Connector Assembly	KRD-KRD 8P-250	(VJ98180)		
110	--	Connector Assembly	KRD-KRD 16P-300	(VK10670)		
120	VK098500	Connector Assembly	KRD-KRD 9P-100			05
130	--	Connector Assembly	KRD-KRD 11P-100	(VK09870)		
140	CB817510	Cord Binder	S-14B			03
150	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		12	01
* 160	V7010200	Circuit Board	PNVR2			
170	--	Connector Assembly	RVR 9P	(V712090)		
180	--	Connector Assembly	MVR 8P	(V712080)		
190	MFA26250	Cable	26P 250mm P=1.0			
200	--	Connector Assembly	KRD-KRD 10P-350	(VK10840)		
210	--	Connector Assembly	KRD-KRD 13P-350	(VK10890)		
220	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		10	01
* 230	V6542100	Rubber Contact		PAD 1/SPACE,PAD 2/DEL		
* 240	V7010300	Circuit Board	PAD			
250	VK106000	Connector Assembly	KRD-KRD 9P-300			05
260	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		3	01
* 270	V7010100	Circuit Board	PNVR1			
280	VK102900	Connector Assembly	KRD-KRD 11P-200			05
290	CB817510	Cord Binder	S-14B		2	03
291	CB502030	Cord Binder	M3.0			01
300	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		3	01
310	VA126100	Adhesive Tape	12X50		2	03
320	--	Shield Plate Assembly		(V755420)		
330	CB817510	Cord Binder	S-14B		2	03
340	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		11	01
350	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		3	01
* 360	V6541800	Rear Panel				
370	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		5	01
380	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		3	01
390	VU931300	IO Cover				06
400	V2134800	Bonding Tapping Screw-S	3.0X6 MFZN2BL		3	
* 410	V7009800	Circuit Board	DM			
420	CB817510	Cord Binder	S-14B			03
* 421	V2429600	Cord Holder	RF100			
* 430	V7079200	Insulation Cover				
440	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		12	01
450	VS206600	Pan Head Screw	2.5X6 MFZN2BL		2	
460	VN103500	Lithium Battery	CR2032			03
470	--	Connector Assembly	3P	(V701090)		
470a	VC362700	Ferrite Core	FR25/15/12-1400L			04
470b	VL785200	AC-IN Connector	AC-P01CR02	AC INLET		03
471	CB069250	Cord Holder	BK-1			01
480	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		2	01
485	EG340190	Bind Head Tapping Screw-B	4.0X8 MFZN2BL			01
490	--	Power Switch Assembly		(V701080)		
490a	VP184000	Push Switch	SDDL1	POWER ON/OFF		
500	--	Holder, Power Switch		(V654240)		
505	EG330360	Bind Head Screw	3.0X6 MFZN2BL	J,U	2	01
505	EG330360	Bind Head Screw	3.0X6 MFZN2BL	E,B	3	01
510	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		2	01
520	CB825380	Push Button		POWER ON/OFF		03
530	--	Angle Bracket		(V707900)		
540	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		2	01

*: New Parts

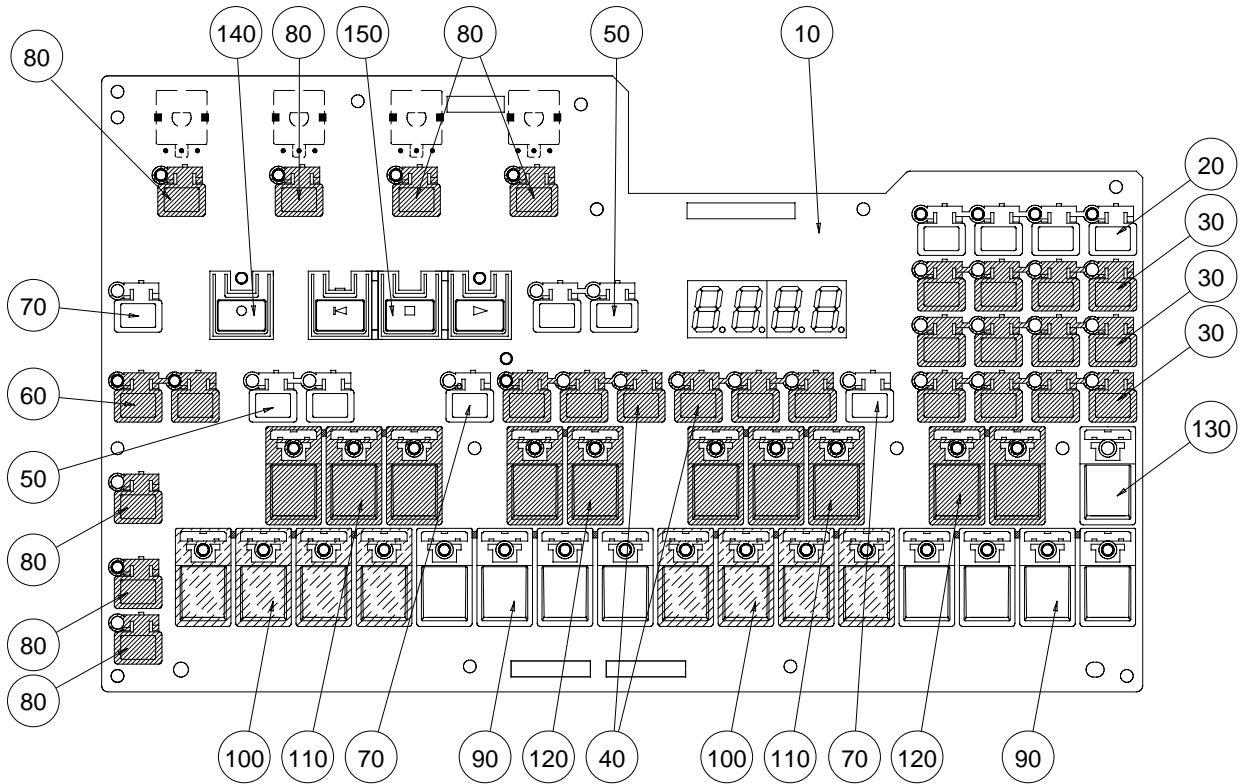
RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
△	550	V3612600	Power Supply Unit	B047	J,U	20
△	550	V3612700	Power Supply Unit	B048	E,B	21
	560	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		01
	570	CA060690	Earth Mark			01
*	580	V7010000	Circuit Board	MIDI		
	590	--	Connector Assembly	KRD-KRD 7P-100	(VK09820)	
	600	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		01
	610	--	PS Cover Assembly		(V756190)	
	620	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		01
	625	V7596400	Wire Clamp			01
*	630	V6542500	Insulation Cover			
	640	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		01
	645	VA126100	Adhesive Tape	12X50		03
	650	--	Connector Assembly	D-POWER 4P	(V701100)	
	660	--	Connector Assembly	A-POWER 4P	(V701110)	
	665	--	Connector Assembly	LED-POWER 2P	(V765570)	
	670	--	SM Circuit Board Assembly		(V704550)	
	670a	V3577200	Circuit Board	SM		07
	670b	V3882500	Escutcheon, Smart Media	K-CB		01
	670c	--	Angle Bracket, Smart Media		(V654230)	
	670d	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		01
*	680	MFA26060	Cable	26P 60mm P=1.0		
	690	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL		01
	700	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		01
*	710	V6980800	Bottom Assembly			
	710a	V4346500	Foot	FF-008		02
	720	VQ049800	Bonding Tapping Screw-B	3.0X10 MFZN2BL		12
*	730	V7376200	LCD Cover			
	740	V4765800	Knob	K-CB	MASTER EFFECT, MASTER VOLUME, SEQUENCE PLAY FX, EFFECT SEND/VOLUME, LFO,EG,PITCH,FILTER REC VOLUME	02
*	750	V6525700	Knob	K-CB	NUM F1-F4	03
	760	V2647700	Knob, Encoder			
	770	--	Name Plate	J	(V702470)	
	770	--	Name Plate	U	(V702490)	
	770	--	Name Plate	E,B	(V786870)	
	780	--	Caution Label	J	(V299720)	
	790	--	Label	U	(V229410)	
	800	--	Graphic Mark	U	(V229420)	
	810	--	Label	UL,C-UL	(V328100)	
		V3883200	ACCESSORIES			
*		V3883200	AS Angle	K-AA		03
*		XZ795B00	CD-ROM	74min 12cm	TOOLS for RS7000 CD-ROM	
*		V7025400	Smart Media			
*		X0288A00	CD-ROM	ACID	ACID for YAMAHA CD-ROM	
△		VT119800	AC Cord	J 7A 125V 3P 2.5m	J	06
△		VB927800	AC Cord	CSA	U	08
△		VB928000	AC Cord	VDE	E	08
△		VP204400	AC Cord	BS 3P	B	10
△		VQ240200	Adapter, AC Cord	KPR-24	J	06

*: New Parts

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PANEL SW-BUTTON ASSEMBLY

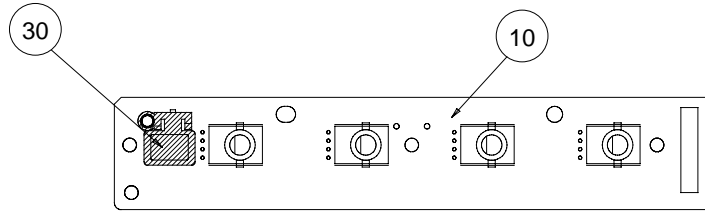


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	PANEL SW-BUTTON ASSEMBLY		RS7000 (V703670)		
* 10	V6155000	Circuit Board	PNSW			
* 20	V6976300	Function Button	x4 WHITE	PATTERN,PATT CHAIN,SONG, UTILITY		
* 30	V6576700	Function Button	x4 BLACK	GROOVE/7,PLAY FX/8, MIDI DELAY/9,MIXER/+/-, VOICE EDIT/4,EFFECT/5, SETUP/6,MASTER/0,SAVE/1, LOAD/2,JOB/3,EDIT/ENTER	3	
40	V6747300	Function Button	x3 BLACK	MUTE/SCENE, MEMORY 1-5	2	
* 50	V6976400	Function Button	x2 WHITE	<<,>>,OCT DOWN,OCT UP	2	
* 60	V6747400	Function Button	x2 BLACK	KEYBOARD,APPEGGIO ON		
* 70	V6976500	Function Button	x1 WHITE	SHIFT,STORE,EXIT	3	
* 80	V6747500	Function Button	x1 BLACK	NUM F1-F4,TRANPOSE/CAPS, MUTE/SOLO,TRACK SELECT	7	01
* 90	V6576800	Button	x4 WHITE	TRACK 5-8,13-16	2	
* 100	V6789000	Button	x4 GRAY	TRACK 1-4,9-12	2	
* 110	V6953000	Button	x3 BLACK	SECTION A-C,F-H	2	
* 120	V6788900	Button	x2 BLACK	SECTION D,E,I,J	2	
* 130	V6788800	Button	x1 WHITE	TAP/PAD ASSIGN		
* 140	V7042900	Button	x1 WHITE L1LGREC	REC		
* 150	V7042800	Button	x3 WHITE L3LGPLAY	<,STOP,PLAY		

*: New Parts

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PNVR1 CIRCUIT BOARD

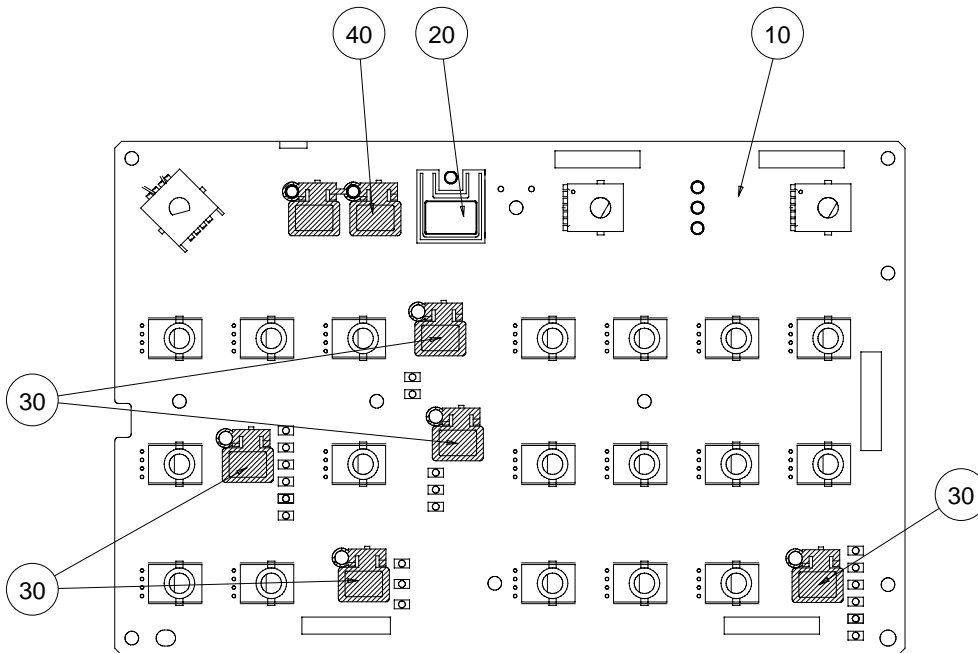


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* 10	V7010100	CIRCUIT BOARD	PNVR1	RS7000		
	--	Circuit Board	PNVR 1/2	(V615490)		
30	V6747500	Function Button	x1 BLACK	EFFECT ON/OFF		

*: New Parts

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PNVR2 CIRCUIT BOARD



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* 10	V7010200	CIRCUIT BOARD	PNVR2	RS7000		
	--	Circuit Board	PNVR 2/2	(V615490)		
* 20	V7178600	Button	x1 L1LG LIGHT GRAY	STANDBY START/STOP		
30	V6747500	Function Button	x1 BLACK	SELECT,WAVE,<- ->, PORTAMENTO TYPE,TYPE	5	
40	V6747400	Function Button	x2 BLACK	LOOP REMIX,SAMPLE EDIT		

*: New Parts

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ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		ELECTRICAL PARTS		RS7000		
*	V7009800	Circuit Board	DM	(XY235E0)		
*	V7010000	Circuit Board	MIDI	(XY235E0)		
*	V7010300	Circuit Board	PAD	(XZ136C0)		
*	V6155000	Circuit Board	PNSW	(XY236C0)		
*	V7010100	Circuit Board	PNVR1	(XY237C0)		
*	V7010200	Circuit Board	PNVR2	(XY237C0)		
	V3577200	Circuit Board	SM	(XV915C0)		07
*	V7009800	Circuit Board	DM	(XY235E0)		
*	V7010000	Circuit Board	MIDI	(XY235E0)		
	--	Angle Bracket, Jack		(V654220)		
BT001	VN103600	Battery Holder	CR2032			03
C0001	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0002	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0003	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0004	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0005	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0006	V4143000	Electrolytic Cap. (chip)	47 16V			
C0008	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0010	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0013	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0014	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0015	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0023	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0024	UF028100	Electrolytic Cap. (chip)	100 10V			01
C0025	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0028	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0029	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
-0036	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0037	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0040	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0041	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0042	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0054	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0055	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0058	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0059	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C0060	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0061	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C0062	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0063	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C0064	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0065	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C0066	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0069	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0070	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0071	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0075	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0076	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0077	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0078	US061220	Ceramic Capacitor-CH(chip)	22P 50V J			01
C0079	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0080	US061220	Ceramic Capacitor-CH(chip)	22P 50V J			01
C0081	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0083	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0084	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0085	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0086	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0087	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C0088	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0089	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0091	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0092	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0093	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0094	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0104	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0105	VD989700	Tantalum Cap.	4.70 16V M			03
C0106	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0107	UF037100	Electrolytic Cap. (chip)	10 16V			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C0108	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0109	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0110	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0111	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0115	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0116	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0117	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0119	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0120	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0121	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0122	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0124	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0126	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0127	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0128	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0130	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0134	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0135	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0136	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0137	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0138	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0139	US063100	Ceramic Capacitor-B (chip)	1000P 50V K			01
C0140	US063100	Ceramic Capacitor-B (chip)	1000P 50V K			01
C0141	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0142	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0143	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0144	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0145	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0146	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0147	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0148	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0149	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0150	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0151	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0152	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0153	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0154	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0155	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0157	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0158	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0159	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0160	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0161	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0162	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0163	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0164	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0165	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0166	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0167	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0171	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0172	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0173	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0175	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0177	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0178	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0179	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0180	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0181	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0182	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0201	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0202	UF028100	Electrolytic Cap. (chip)	100 10V			01
C0203	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0204	UF028100	Electrolytic Cap. (chip)	100 10V			01
C0205	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0212	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0213	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0214	UF028100	Electrolytic Cap. (chip)	100 10V			01
C0215	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0216	UF028100	Electrolytic Cap. (chip)	100 10V			01
C0217	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
-0221	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0222	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0223	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0228	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0230	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0231	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0232	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C0233	UF066470	Electrolytic Cap. (chip)	4.7 50V			01
C0234	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0235	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0237	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0238	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0240	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0241	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0244	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0245	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0246	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0247	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0248	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0249	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0250	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0251	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0252	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0253	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0254	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0255	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0256	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0257	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0262	UF128470	Electrolytic Cap. (chip)	470.00 10.0V			01
C0263	UU138470	Electrolytic Cap.	470.00 16.0V			01
C0264	UU138470	Electrolytic Cap.	470.00 16.0V			01
C0265	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0268	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0269	VR329600	Mylar Capacitor (chip)	0.0027 50V J			01
C0270	VR329600	Mylar Capacitor (chip)	0.0027 50V J			01
C0271	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0272	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0273	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0274	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0276	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0278	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0281	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0284	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0286	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0288	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0289	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0290	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0291	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0292	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0293	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0298	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0299	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0301	UF157470	Electrolytic Cap. (chip)	47 35V			01
C0302	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0303	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0304	UF157470	Electrolytic Cap. (chip)	47 35V			01
C0300	7F037470	Electrolytic Cap. (chip)	47 16V			01
C0308	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0311	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0312	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0315	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
-0328	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0329	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0330	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0331	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0332	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0333	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0335	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0337	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0338	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C0339	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0341	UF037470	Electrolytic Cap. (chip)	47 16V			01
C0343	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0346	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0347	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0348	VR329100	Mylar Capacitor (chip)	0.0010 50V J			01
C0349	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0350	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0351	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0352	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0353	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-0355	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0358	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0359	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0360	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
-0363	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C0364	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0365	UF038100	Electrolytic Cap. (chip)	100 16V			01
C0367	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0368	UF037100	Electrolytic Cap. (chip)	10 16V			01
C0369	V4143000	Electrolytic Cap. (chip)	47 16V			01
C0370	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0371	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C0372	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
-0379	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0380	UF157470	Electrolytic Cap. (chip)	47 35V			01
C0381	UF128470	Electrolytic Cap. (chip)	470.00 10.0V			01
C0382	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0383	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0384	UU138470	Electrolytic Cap.	470.00 16.0V			01
CN001	VB390700	Connector Base Post	PH 11P TE			01
CN002	V3532100	Connector	HLW 26P TE			02
CN003	VB390300	Connector Base Post	PH 7P TE			01
CN004	VB390400	Connector Base Post	PH 8P TE			01
CN005	VB390700	Connector Base Post	PH 11P TE			01
CN006	VB390600	Connector Base Post	PH 10P TE			01
CN007	VB390500	Connector Base Post	PH 9P TE			03
CN008	VF283400	Connector Base Post	PH-16P TE			01
CN009	VF283100	Connector Base Post	PH 13P TE			01
CN010	VB390800	Connector Base Post	PH 12P TE			01
CN011	V3532100	Connector	HLW 26P TE			02
CN012	VT890000	SCSI Connector-L	NHS050-022-BS2	SCSI		05
CN013	VV345900	SIMM Socket	SX3LB-72S-1.27DSA	SIMM		04
CN014	VV345900	SIMM Socket	SX3LB-72S-1.27DSA	SIMM		04
CN016	VK270300	Connector Header	HIF3FC40PA-2.54DSA			05
CN017	VB389800	Connector Base Post	PH 2P TE			01
CN018	LB932040	Base Post Connector	VH 4P TE			01
CN019	LB918040	Base Post Connector	XH 4P TE			01
CN020	VB390500	Connector Base Post	PH 9P TE			03
CN021	VB390400	Connector Base Post	PH 8P TE			01
CN022	VB390300	Connector Base Post	PH 7P TE			01
CN024	VB390500	Connector Base Post	PH 9P TE			03
CN025	VB389800	Connector Base Post	PH 2P TE			01
D0002	VT332900	Diode	1SS355 TE-17			01
-0006	VT332900	Diode	1SS355 TE-17			01
D0008	VT332900	Diode	1SS355 TE-17			01
D0009	VS597600	Diode	RB160L-40 TE25			01
D0010	VT332900	Diode	1SS355 TE-17			01
-0060	VT332900	Diode	1SS355 TE-17			01
IC001	XR294A00	IC	NJM3414AM(T1)	OP AMP		02
IC002	XS516A00	IC	UPC2933T-E1	REGULATOR +3.3V		03
IC003	XW876A00	IC	TC74VHC14F-EL	INVERTER		01
IC003	XZ200A00	IC	74VHC14SJX			
* IC004	XV250B00	IC	HD6417709F80B	CPU		
IC005	VR903700	Photo Coupler	HCPL-M600			04
* IC006	XV869A00	IC	TC74HC4052AFT	MULTIPLEXER		
* -009	XV869A00	IC	TC74HC4052AFT	MULTIPLEXER		
IC010	XL094A00	IC	HD74HC14FPEL	INVERTER		02
IC011	XY096A00	IC	TC74HCT32AF(EL)	OR		01
IC012	IS003200	IC	HD74LV32AFPEL	OR		01

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
IC013	XR336A00	IC	TC7W14F TE12L		02
IC014	IS007400	IC	HD74LV74AFPEL		01
IC015	XL094A00	IC	HD74HC14FPEL		02
IC016	IS007400	IC	HD74LV74AFPEL		01
	-019	IS007400	HD74LV74AFPEL		01
IC020	XY059A00	IC	TC74VHCT574AFT		04
IC021	XL094A00	IC	HD74HC14FPEL		02
IC022	XR682A00	IC	TC7S66F		01
* IC023	XY781A00	IC	HY57V653220B-10		01
IC025	XI686A00	IC	M62021FP		04
IC026	XY059A00	IC	TC74VHCT574AFT		04
IC027	IS003200	IC	HD74LV32AFPEL		01
IC028	XT744A00	IC	TC74VHCT245AFT		07
* IC029	XW744A00	IC	HD74LV245AT		07
IC030	XT744A00	IC	TC74VHCT245AFT		07
	-032	XT744A00	TC74VHCT245AFT		07
* IC033	IS002100	IC	HD74LV21AFPEL		07
IC034	XV976A00	IC	M5M51008CFP-70H		07
IC034	XT138A00	IC	UPD431000AGW-70LL		07
IC035	XY059A00	IC	TC74VHCT574AFT		04
IC036	XY059A00	IC	TC74VHCT574AFT		04
* IC037	XZ811B00	IC	MBM29F160BE-90TN		01
IC038	XZ137A00	IC	TC74VHCT138AFEL		02
IC039	XZ137A00	IC	TC74VHCT138AFEL		02
IC040	XU229A00	IC	TC74LVX4245FS		04
IC041	XU229A00	IC	TC74LVX4245FS		04
IC042	XY059A00	IC	TC74VHCT574AFT		04
IC044	XY059A00	IC	TC74VHCT574AFT		04
IC045	IS003200	IC	HD74LV32AFPEL		01
IC046	IS027300	IC	HD74LV273AFPEL		02
* IC047	XW744A00	IC	HD74LV245AT		04
IC048	XU229A00	IC	TC74LVX4245FS		04
IC049	XS516A00	IC	UPC2933T-E1		03
IC050	XW433A00	IC	CY62256LL-70SNCT		05
IC051	XY625A00	IC	SPC7214F0B		08
IC052	IS003200	IC	HD74LV32AFPEL		01
IC053	XW876A00	IC	TC74VHC14F-EL		01
IC053	XZ200A00	IC	74VHC14SJX		01
IC054	XQ595A00	IC	SED1335F0B		08
IC055	XN028A00	IC	MC34268DTRK		04
IC056	XS516A00	IC	UPC2933T-E1		03
* IC057	XY989B00	IC	SLA512TH		07
IC058	XV077A00	IC	MSM514260C-60JS		07
IC058	XV077B00	IC	MSM514260C-60JS		07
IC059	XS725A00	IC	TC203C760HF-002		19
IC060	XS516A00	IC	UPC2933T-E1		03
IC063	XS370A00	IC	D65621GF-028-3B9		06
IC064	XS792A00	IC	HD74LVC32FP		01
* IC065	XZ814100	IC	MX23C6410TC-10		02
IC066	XW148A00	IC	HD74LVC245A		02
IC067	XW148A00	IC	HD74LVC245A		02
* IC068	XZ815100	IC	MX23C6410TC-10		02
IC069	XW148A00	IC	HD74LVC245A		02
IC070	XW148A00	IC	HD74LVC245A		02
IC071	XY110A00	IC	XC9536-10VQ44C		08
IC072	XW148A00	IC	HD74LVC245A		02
IC073	XW148A00	IC	HD74LVC245A		02
IC074	XV932A00	IC	MSM5118160D-60J		12
IC075	XW148A00	IC	HD74LVC245A		02
IC076	XW148A00	IC	HD74LVC245A		02
IC077	XV932A00	IC	MSM5118160D-60J		12
IC078	XW148A00	IC	HD74LVC245A		02
* IC079	XZ812B00	IC	MBM29F160BE-90TN		02
* IC080	XW744A00	IC	HD74LV245AT		02
IC081	XY059A00	IC	TC74VHCT574AFT		04
* IC082	XW744A00	IC	HD74LV245AT		04
IC083	IS016400	IC	HD74LV164AFPEL		02
IC084	XU770A00	IC	PCM1800E/2K		07
IC085	XW029A00	IC	AK4393-VF-E2		07
IC086	XS534A00	IC	NJM78M05DLA		02

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
IC087	XV763A00	IC	OP275GSR		05
IC088	XT330A00	IC	OPA2604AU		
IC089	XV763A00	IC	OP275GSR		05
IC090	XV763A00	IC	OP275GSR		05
IC091	XP263A00	IC	M5216FP-600C		03
* IC092	IS013900	IC	HD74LV139AFPEL		
* IC093	XZ813100	IC	MBM29F160BE-90TN		
IC094	XI348A00	IC	SC7SU04FEL		01
JK001	VB312600	Phone Jack	YKB21-5012 BLACK		02
JK002	V2349300	Phone Jack	HLJ4416		03
JK003	V2349300	Phone Jack	HLJ4416		03
JK004	VB312600	Phone Jack	YKB21-5012 BLACK		02
JK005	VB312600	Phone Jack	YKB21-5012 BLACK		02
JK006	VE382300	Phone Jack	YKB21-5010 BLACK		01
JK007	VI466400	DIN Connector	x3 DIN YKF51-5046		04
L0001	VR579900	Chip Inductance	BK2125HS601-T		01
L0002	VR579900	Chip Inductance	BK2125HS601-T		01
L0004	VR579900	Chip Inductance	BK2125HS601-T		01
L0005	VR579900	Chip Inductance	BK2125HS601-T		01
L0007	VR579900	Chip Inductance	BK2125HS601-T		01
-0010	VR579900	Chip Inductance	BK2125HS601-T		01
L0012	VR579900	Chip Inductance	BK2125HS601-T		01
L0013	VR579900	Chip Inductance	BK2125HS601-T		01
R0002	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0003	RD154470	Carbon Resistor (chip)	47.0 1/4 J		01
R0004	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0005	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0006	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0007	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D		01
R0008	VI195700	Metal Film Resistor (chip)	2.2K 1/10 D		01
R0009	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
-0020	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0021	RD356470	Carbon Resistor (chip)	4.7K 63M J		01
R0022	RD355220	Carbon Resistor (chip)	220 63M J		01
-0026	RD355220	Carbon Resistor (chip)	220 63M J		01
R0027	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0028	RD354470	Carbon Resistor (chip)	47 63M J		01
R0029	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0030	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
-0041	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0042	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0043	RD355100	Carbon Resistor (chip)	100 63M J		01
R0044	RD357100	Carbon Resistor (chip)	10K 63M J		01
-0047	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0048	RD355330	Carbon Resistor (chip)	330 63M J		01
R0049	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0050	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0051	RD357470	Carbon Resistor (chip)	47K 63M J		01
R0052	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0053	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0054	RD356470	Carbon Resistor (chip)	4.7K 63M J		01
R0055	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0056	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0057	RD358220	Carbon Resistor (chip)	220K 63M J		01
R0058	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0059	RD358220	Carbon Resistor (chip)	220K 63M J		01
R0060	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0061	RD358220	Carbon Resistor (chip)	220K 63M J		01
R0062	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0063	RD358220	Carbon Resistor (chip)	220K 63M J		01
R0064	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0065	RD357470	Carbon Resistor (chip)	47K 63M J		01
R0066	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0067	RD357470	Carbon Resistor (chip)	47K 63M J		01
R0068	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0069	RD357470	Carbon Resistor (chip)	47K 63M J		01
R0070	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0071	RD357470	Carbon Resistor (chip)	47K 63M J		01
R0072	RD355100	Carbon Resistor (chip)	100 63M J		01
R0073	RD357100	Carbon Resistor (chip)	10K 63M J		01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
-0075	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0076	RD354470	Carbon Resistor (chip)	47 63M J			01
R0077	RD354470	Carbon Resistor (chip)	47 63M J			01
R0078	RD355330	Carbon Resistor (chip)	330 63M J			01
R0079	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0080	RD355220	Carbon Resistor (chip)	220 63M J			01
R0081	RD355220	Carbon Resistor (chip)	220 63M J			01
R0082	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0083	RD355220	Carbon Resistor (chip)	220 63M J			01
R0085	RD355220	Carbon Resistor (chip)	220 63M J			01
-0087	RD355220	Carbon Resistor (chip)	220 63M J			01
R0088	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0089	RD355220	Carbon Resistor (chip)	220 63M J			01
-0092	RD355220	Carbon Resistor (chip)	220 63M J			01
R0093	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0094	RD355220	Carbon Resistor (chip)	220 63M J			01
R0095	RD355100	Carbon Resistor (chip)	100 63M J			01
R0096	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0097	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0098	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0099	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0100	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
-0106	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0107	RD355100	Carbon Resistor (chip)	100 63M J			01
R0108	RD350000	Carbon Resistor (chip)	0 63M J			01
R0109	RD355100	Carbon Resistor (chip)	100 63M J			01
R0110	RD355100	Carbon Resistor (chip)	100 63M J			01
R0111	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01
R0112	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01
R0113	RD355100	Carbon Resistor (chip)	100 63M J			01
-0115	RD355100	Carbon Resistor (chip)	100 63M J			01
R0117	RD355100	Carbon Resistor (chip)	100 63M J			01
-0120	RD355100	Carbon Resistor (chip)	100 63M J			01
R0121	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01
-0134	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01
R0135	RD355100	Carbon Resistor (chip)	100 63M J			01
R0136	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0138	RD355100	Carbon Resistor (chip)	100 63M J			01
R0140	RD350000	Carbon Resistor (chip)	0 63M J			01
R0141	RD356680	Carbon Resistor (chip)	6.8K 63M J			01
R0142	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0145	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0146	RD350000	Carbon Resistor (chip)	0 63M J			01
R0147	RD355100	Carbon Resistor (chip)	100 63M J			01
R0150	RD355100	Carbon Resistor (chip)	100 63M J			01
R0151	RD355100	Carbon Resistor (chip)	100 63M J			01
R0152	RD357100	Carbon Resistor (chip)	10K 63M J			01
-0156	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0157	V4266800	Carbon Resistor (chip)	110 63M F			01
R0158	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0159	V4266800	Carbon Resistor (chip)	110 63M F			01
R0160	RD355100	Carbon Resistor (chip)	100 63M J			01
-0162	RD355100	Carbon Resistor (chip)	100 63M J			01
R0163	V4266800	Carbon Resistor (chip)	110 63M F			01
R0164	V4266800	Carbon Resistor (chip)	110 63M F			01
R0165	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
R0166	RD358470	Carbon Resistor (chip)	470K 63M J			01
R0167	RD355100	Carbon Resistor (chip)	100 63M J			01
R0168	RD358470	Carbon Resistor (chip)	470K 63M J			01
R0169	V4266800	Carbon Resistor (chip)	110 63M F			01
R0170	RD358470	Carbon Resistor (chip)	470K 63M J			01
R0171	V4266800	Carbon Resistor (chip)	110 63M F			01
R0172	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0173	RD355100	Carbon Resistor (chip)	100 63M J			01
-0178	RD355100	Carbon Resistor (chip)	100 63M J			01
R0179	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0180	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0181	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0182	V4266800	Carbon Resistor (chip)	110 63M F			01
R0183	V4266800	Carbon Resistor (chip)	110 63M F			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R0184	RD357100	Carbon Resistor (chip)	10K 63M J			01
-0187	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0188	V4266800	Carbon Resistor (chip)	110 63M F			
R0189	V4266800	Carbon Resistor (chip)	110 63M F			
R0190	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0191	RD355100	Carbon Resistor (chip)	100 63M J			01
R0192	RD355100	Carbon Resistor (chip)	100 63M J			01
R0193	V4266800	Carbon Resistor (chip)	110 63M F			
R0194	RD355100	Carbon Resistor (chip)	100 63M J			01
R0195	V4266800	Carbon Resistor (chip)	110 63M F			
R0196	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0197	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0198	RD355100	Carbon Resistor (chip)	100 63M J			01
R0199	RD355100	Carbon Resistor (chip)	100 63M J			01
R0200	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0201	RD355100	Carbon Resistor (chip)	100 63M J			01
R0202	RD355470	Carbon Resistor (chip)	470 63M J			01
R0203	RD355100	Carbon Resistor (chip)	100 63M J			01
R0204	RD355100	Carbon Resistor (chip)	100 63M J			01
R0205	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0207	V4266800	Carbon Resistor (chip)	110 63M F			
-0212	V4266800	Carbon Resistor (chip)	110 63M F			
R0213	RD354470	Carbon Resistor (chip)	47 63M J			01
R0214	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0216	RD354680	Carbon Resistor (chip)	68 63M J			01
-0227	RD354680	Carbon Resistor (chip)	68 63M J			01
R0228	RD354470	Carbon Resistor (chip)	47 63M J			01
R0229	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0230	RD354680	Carbon Resistor (chip)	68 63M J			01
-0233	RD354680	Carbon Resistor (chip)	68 63M J			01
R0234	RD357470	Carbon Resistor (chip)	47K 63M J			01
-0237	RD357470	Carbon Resistor (chip)	47K 63M J			01
R0238	RD354680	Carbon Resistor (chip)	68 63M J			01
-0241	RD354680	Carbon Resistor (chip)	68 63M J			01
R0244	RD354680	Carbon Resistor (chip)	68 63M J			01
R0245	RD354680	Carbon Resistor (chip)	68 63M J			01
R0248	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0249	RD354680	Carbon Resistor (chip)	68 63M J			01
R0250	RD355100	Carbon Resistor (chip)	100 63M J			01
R0251	RD354680	Carbon Resistor (chip)	68 63M J			01
R0252	RD354680	Carbon Resistor (chip)	68 63M J			01
R0253	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0254	RD354680	Carbon Resistor (chip)	68 63M J			01
R0256	RD355100	Carbon Resistor (chip)	100 63M J			01
R0258	RD357470	Carbon Resistor (chip)	47K 63M J			01
-0263	RD357470	Carbon Resistor (chip)	47K 63M J			01
R0264	RD355100	Carbon Resistor (chip)	100 63M J			01
R0265	RD355100	Carbon Resistor (chip)	100 63M J			01
R0266	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0269	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0270	RD354680	Carbon Resistor (chip)	68 63M J			01
R0274	VC741300	Metal Oxide Film Resistor	3.3 1W J			01
R0275	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
-0278	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0279	RD357470	Carbon Resistor (chip)	47K 63M J			01
-0281	RD357470	Carbon Resistor (chip)	47K 63M J			01
R0282	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
-0285	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0286	V1192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0287	V1192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0288	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0289	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0290	V1192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0291	V1192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0292	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0293	V1195700	Metal Film Resistor (chip)	2.2K 1/10 D			01
R0294	V1199000	Metal Film Resistor (chip)	47.0K 1/10 D			01
R0295	V1199000	Metal Film Resistor (chip)	47.0K 1/10 D			01
R0296	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0297	V1198200	Metal Film Resistor (chip)	22.0K 1/10 D			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R0298	VI198200	Metal Film Resistor (chip)	22.0K 1/10 D			01
R0299	VI194100	Metal Film Resistor (chip)	470.0 1/10 D			01
R0300	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0301	VI194100	Metal Film Resistor (chip)	470.0 1/10 D			01
R0302	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0303	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0304	VI194100	Metal Film Resistor (chip)	470.0 1/10 D			01
R0305	VI194100	Metal Film Resistor (chip)	470.0 1/10 D			01
R0306	RD156100	Carbon Resistor (chip)	1.0K 1/4 J			
-0308	RD156100	Carbon Resistor (chip)	1.0K 1/4 J			
R0309	RD357470	Carbon Resistor (chip)	47K 63M J			01
R0310	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0311	RD355100	Carbon Resistor (chip)	100 63M J			01
R0312	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0313	RD358220	Carbon Resistor (chip)	220K 63M J			01
R0314	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0315	VI199000	Metal Film Resistor (chip)	47.0K 1/10 D			01
R0316	VI199000	Metal Film Resistor (chip)	47.0K 1/10 D			01
R0317	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0318	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0319	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0320	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0321	RD358220	Carbon Resistor (chip)	220K 63M J			01
R0322	VI198200	Metal Film Resistor (chip)	22.0K 1/10 D			01
R0323	VI198200	Metal Film Resistor (chip)	22.0K 1/10 D			01
R0324	VI195100	Metal Film Resistor (chip)	1.2K 1/10 D			01
R0325	VI195100	Metal Film Resistor (chip)	1.2K 1/10 D			01
R0326	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0327	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0328	VI196100	Metal Film Resistor (chip)	3.3K 1/10 D			01
R0329	VI196100	Metal Film Resistor (chip)	3.3K 1/10 D			01
R0330	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0331	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0332	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0333	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0334	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
-0337	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0338	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0339	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0340	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0341	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
-0345	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0346	RD155100	Carbon Resistor (chip)	100.0 1/4 J			01
-0349	RD155100	Carbon Resistor (chip)	100.0 1/4 J			01
R0350	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0351	VI197400	Metal Film Resistor (chip)	10.0K 1/10 D			01
R0352	VI194900	Metal Film Resistor (chip)	1.0K 1/10 D			01
R0353	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0354	VI194900	Metal Film Resistor (chip)	1.0K 1/10 D			01
R0355	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
-0357	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0358	VK582600	Metal Film Resistor (chip)	470.0K 1/10 D			01
R0359	VK582600	Metal Film Resistor (chip)	470.0K 1/10 D			01
R0360	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0361	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0362	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
-0365	VI192500	Metal Film Resistor (chip)	100.0 1/10 D			01
R0366	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0367	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0368	RD354680	Carbon Resistor (chip)	68 63M J			01
-0372	RD354680	Carbon Resistor (chip)	68 63M J			01
R0375	RD350000	Carbon Resistor (chip)	0 63M J			01
R0377	RD354680	Carbon Resistor (chip)	68 63M J			01
-0379	RD354680	Carbon Resistor (chip)	68 63M J			01
R0380	RD355330	Carbon Resistor (chip)	330 63M J			01
R0381	RD355100	Carbon Resistor (chip)	100 63M J			01
R0382	RD355100	Carbon Resistor (chip)	100 63M J			01
R0383	RD355220	Carbon Resistor (chip)	220 63M J			01
R0384	RD355220	Carbon Resistor (chip)	220 63M J			01
R0385	RD356470	Carbon Resistor (chip)	4.7K 63M J			01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R0386	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0392	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R0393	RD355220	Carbon Resistor (chip)	220 63M J			01
-0396	RD355220	Carbon Resistor (chip)	220 63M J			01
R0397	RD354680	Carbon Resistor (chip)	68 63M J			01
-0400	RD354680	Carbon Resistor (chip)	68 63M J			01
R0401	RD350000	Carbon Resistor (chip)	0 63M J			01
RA001	RE047470	Resistor Array	47KX4			01
-009	RE047470	Resistor Array	47KX4			01
RA010	RE045100	Resistor Array	100X4			01
RA011	RE047470	Resistor Array	47KX4			01
RA012	RE045100	Resistor Array	100X4			01
RA013	RE047470	Resistor Array	47KX4			01
RA014	RE045100	Resistor Array	100X4			01
RA015	RE047470	Resistor Array	47KX4			01
RA016	RE045100	Resistor Array	100X4			01
RA017	RE047470	Resistor Array	47KX4			01
RA018	RE045100	Resistor Array	100X4			01
RA019	RE047470	Resistor Array	47KX4			01
RA020	RE045100	Resistor Array	100X4			01
-027	RE045100	Resistor Array	100X4			01
RA028	RE047100	Resistor Array	10KX4			01
RA029	RE047100	Resistor Array	10KX4			01
RA030	RE045100	Resistor Array	100X4			01
RA031	RE045100	Resistor Array	100X4			01
RA032	RE044470	Resistor Array	47X4			01
RA033	RE044470	Resistor Array	47X4			01
RA034	RE044220	Resistor Array	22X4			01
-037	RE044220	Resistor Array	22X4			01
RA038	RE044470	Resistor Array	47X4			01
RA040	RE047470	Resistor Array	47KX4			01
-047	RE047470	Resistor Array	47KX4			01
RA048	RE044470	Resistor Array	47X4			01
-051	RE044470	Resistor Array	47X4			01
RA052	RE047100	Resistor Array	10KX4			01
RA053	RE047100	Resistor Array	10KX4			01
RA054	RE045100	Resistor Array	100X4			01
RA055	RE045100	Resistor Array	100X4			01
RA056	RE044680	Resistor Array	68X4			01
RA057	RE047100	Resistor Array	10KX4			01
RA058	RE044680	Resistor Array	68X4			01
-083	RE044680	Resistor Array	68X4			01
RA084	RE045100	Resistor Array	100X4			01
-087	RE045100	Resistor Array	100X4			01
TA001	VT943400	Transistor Array	TD62785F(TP1)			04
TA002	VT943400	Transistor Array	TD62785F(TP1)			04
TA003	XN153A00	Transistor Array	TD62083F-TP1			04
TA004	XN153A00	Transistor Array	TD62083F-TP1			04
TH001	VV111600	Protector Switch	SMD100-2018-2 SMD			03
TR001	VJ927100	Transistor	2SC2712 Y			01
TR002	VJ927100	Transistor	2SC2712 Y			01
TR003	VJ927200	Transistor	2SA1162 O,Y			01
TR004	VJ927200	Transistor	2SA1162 O,Y			01
TR005	VJ927100	Transistor	2SC2712 Y			01
TR006	VD303700	Transistor	2SC3326 A,B TE85R			01
TR007	VD303700	Transistor	2SC3326 A,B TE85R			01
TR008	VJ927100	Transistor	2SC2712 Y			01
TR009	VJ927200	Transistor	2SA1162 O,Y			01
TR010	VJ927100	Transistor	2SC2712 Y			01
TR011	VJ927200	Transistor	2SA1162 O,Y			01
TR012	VD303700	Transistor	2SC3326 A,B TE85R			01
-017	VD303700	Transistor	2SC3326 A,B TE85R			01
TR018	VJ927100	Transistor	2SC2712 Y			01
VR001	VM755200	Rotary Variable Resistor	B 1.0K RK09K111	CONTRAST		01
X0002	VR870700	Quartz Crystal Unit	10MHz SMD-49			04
X0004	VV905100	Ceramic Resonator	CSTCC4.00MG0H6-TC			01
X0005	VV335600	Quartz Crystal Unit	33.8688MHz DSO751S			06
ZD001	VU171500	Zener Diode	UDZ 3.6BTE-17 3.6V			01
*	V7010300	Circuit Board	PAD	(XZ136C0)		

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	Cable Kit		(V707850)		
	VL472400	Piezoelectric Element	7BB-20-3A7			01
	VL035600	Adhesive Tape	M20			02
C0001	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0002	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0003	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0004	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0006	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0007	US061220	Ceramic Capacitor-CH(chip)	22P 50V J			01
C0008	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0011	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0012	UF037100	Electrolytic Cap. (chip)	10 16V			01
CN001	VB858800	Connector Base Post	PH 9P SE			01
D0001	VT332900	Diode	1SS355 TE-17			01
-0007	VT332900	Diode	1SS355 TE-17			01
IC001	XR294A00	IC	NJM3414AM(T1)	OP AMP		02
IC002	XR294A00	IC	NJM3414AM(T1)	OP AMP		02
IC003	XR336A00	IC	TC7W14F TE12L	INVERTER		02
R0002	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0003	RD357220	Carbon Resistor (chip)	22K 63M J			01
R0004	RD355100	Carbon Resistor (chip)	100 63M J			01
R0005	RD355100	Carbon Resistor (chip)	100 63M J			01
R0006	RD350000	Carbon Resistor (chip)	0 63M J			01
R0007	RD350000	Carbon Resistor (chip)	0 63M J			01
R0008	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R0010	RD357220	Carbon Resistor (chip)	22K 63M J			01
R0011	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0012	RD358220	Carbon Resistor (chip)	220K 63M J			01
-0014	RD358220	Carbon Resistor (chip)	220K 63M J			01
R0017	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
R0018	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
R0020	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0022	RD357100	Carbon Resistor (chip)	10K 63M J			01
R0023	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0024	RD358220	Carbon Resistor (chip)	220K 63M J			01
R0025	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0026	RD358100	Carbon Resistor (chip)	100K 63M J			01
R0027	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R0028	RD350000	Carbon Resistor (chip)	0 63M J			01
* CN001	V6155000	Circuit Board	PNSW	(XY236C0)		
CN002	VB390400	Connector Base Post	PH 8P TE			01
CN003	VF283400	Connector Base Post	PH-16P TE			01
CN003	VB390700	Connector Base Post	PH 11P TE			01
CN004	VB390500	Connector Base Post	PH 9P TE			03
D0001	VT332900	Diode	1SS355 TE-17			01
-0015	VT332900	Diode	1SS355 TE-17			01
D0017	VT332900	Diode	1SS355 TE-17			01
-0070	VT332900	Diode	1SS355 TE-17			01
EC001	VR101400	Encoder	EC16B24204 L=15	NUM F1		04
EC002	VR101400	Encoder	EC16B24204 L=15	NUM F2		04
EC003	VR101400	Encoder	EC16B24204 L=15	NUM F3		04
EC004	VR101400	Encoder	EC16B24204 L=15	NUM F4		04
LD001	VT022800	LED Red	SEL2210R TP8	NUM F1		01
LD002	VT022800	LED Red	SEL2210R TP8	NUM F2		01
LD003	VT022800	LED Red	SEL2210R TP8	NUM F3		01
LD004	VT022800	LED Red	SEL2210R TP8	NUM F4		01
LD005	VT022900	LED Green	SEL2410G TP8	PATTERN		01
LD006	VT022900	LED Green	SEL2410G TP8	PATT CHAIN		01
LD007	VT022900	LED Green	SEL2410G TP8	SONG		01
LD008	VT022900	LED Green	SEL2410G TP8	UTILITY		01
LD009	VT022800	LED Red	SEL2210R TP8	REC		01
LD010	VT022900	LED Green	SEL2410G TP8	PLAY		01
LD011	VT022900	LED Green	SEL2410G TP8	KEYBOARD		01
LD012	VT022900	LED Green	SEL2410G TP8	APPEGGIO ON		01
LD013	VT022800	LED Red	SEL2210R TP8	MUTE		01
LD014	VT022800	LED Red	SEL2210R TP8	SCENE		01
LD017	VT022800	LED Red	SEL2210R TP8	SECTION A		01
LD018	VT022800	LED Red	SEL2210R TP8	SECTION B		01
LD019	VT022800	LED Red	SEL2210R TP8	SECTION C		01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
LD020	VT022800	LED Red	SEL2210R TP8	SECTION D		01
LD021	VT022800	LED Red	SEL2210R TP8	SECTION E		01
LD022	VT022800	LED Red	SEL2210R TP8	SECTION F		01
LD023	VT022800	LED Red	SEL2210R TP8	SECTION G		01
LD024	VT022800	LED Red	SEL2210R TP8	SECTION H		01
LD025	VT022800	LED Red	SEL2210R TP8	SECTION I		01
LD026	VT022800	LED Red	SEL2210R TP8	SECTION J		01
LD027	VT022800	LED Red	SEL2210R TP8	MUTE		01
LD028	VT022800	LED Red	SEL2210R TP8	TRACK 1		01
LD029	VT022800	LED Red	SEL2210R TP8	TRACK 2		01
LD030	VT022800	LED Red	SEL2210R TP8	TRACK 3		01
LD031	VT022800	LED Red	SEL2210R TP8	TRACK 4		01
LD032	VT022800	LED Red	SEL2210R TP8	TRACK 5		01
LD033	VT022800	LED Red	SEL2210R TP8	TRACK 6		01
LD034	VT022800	LED Red	SEL2210R TP8	TRACK 7		01
LD035	VT022800	LED Red	SEL2210R TP8	TRACK 8		01
LD036	VT022800	LED Red	SEL2210R TP8	TRACK 9		01
LD037	VT022800	LED Red	SEL2210R TP8	TRACK 10		01
LD038	VT022800	LED Red	SEL2210R TP8	TRACK 11		01
LD039	VT022800	LED Red	SEL2210R TP8	TRACK 12		01
LD040	VT022800	LED Red	SEL2210R TP8	TRACK 13		01
LD041	VT022800	LED Red	SEL2210R TP8	TRACK 14		01
LD042	VT022800	LED Red	SEL2210R TP8	TRACK 15		01
LD043	VT022800	LED Red	SEL2210R TP8	TRACK 16		01
LD044	V3280000	LED Display	HDSP-5521(G,H)	BPM (7seg. x2)		05
LD045	V3280000	LED Display	HDSP-5521(G,H)	BPM (7seg. x2)		05
SW001	VV439800	Tact Switch	SKQNAJ H=7mm	NUM F1		01
SW002	VV439800	Tact Switch	SKQNAJ H=7mm	NUM F2		01
SW003	VV439800	Tact Switch	SKQNAJ H=7mm	NUM F3		01
SW004	VV439800	Tact Switch	SKQNAJ H=7mm	NUM F4		01
SW005	VV439800	Tact Switch	SKQNAJ H=7mm	SHIFT		01
SW006	VZ085500	Tact Switch	SKQNAM004A H=9.5mm	REC		01
SW007	VZ085500	Tact Switch	SKQNAM004A H=9.5mm	<		01
SW008	VZ085500	Tact Switch	SKQNAM004A H=9.5mm	STOP		01
SW009	VZ085500	Tact Switch	SKQNAM004A H=9.5mm	PLAY		01
SW010	VV439800	Tact Switch	SKQNAJ H=7mm	<<		01
SW011	VV439800	Tact Switch	SKQNAJ H=7mm	>>		01
SW012	VV439800	Tact Switch	SKQNAJ H=7mm	KEYBOARD		01
SW013	VV439800	Tact Switch	SKQNAJ H=7mm	APPEGGIO ON		01
SW014	VV439800	Tact Switch	SKQNAJ H=7mm	OCT DOWN		01
SW015	VV439800	Tact Switch	SKQNAJ H=7mm	OCT UP		01
SW017	VV439800	Tact Switch	SKQNAJ H=7mm	STORE		01
SW018	VV439800	Tact Switch	SKQNAJ H=7mm	MUTE/SCENE		01
SW019	VV439800	Tact Switch	SKQNAJ H=7mm	MEMORY 1		01
SW020	VV439800	Tact Switch	SKQNAJ H=7mm	MEMORY 2		01
SW021	VV439800	Tact Switch	SKQNAJ H=7mm	MEMORY 3		01
SW022	VV439800	Tact Switch	SKQNAJ H=7mm	MEMORY 4		01
SW023	VV439800	Tact Switch	SKQNAJ H=7mm	MEMORY 5		01
SW024	VV439800	Tact Switch	SKQNAJ H=7mm	EXIT		01
SW025	VV439800	Tact Switch	SKQNAJ H=7mm	PATTERN		01
SW026	VV439800	Tact Switch	SKQNAJ H=7mm	PATT CHAIN		01
SW027	VV439800	Tact Switch	SKQNAJ H=7mm	SONG		01
SW028	VV439800	Tact Switch	SKQNAJ H=7mm	UTILITY		01
SW029	VV439800	Tact Switch	SKQNAJ H=7mm	GROOVE/7		01
SW030	VV439800	Tact Switch	SKQNAJ H=7mm	PLAY FX/8		01
SW031	VV439800	Tact Switch	SKQNAJ H=7mm	MIDI DELAY/9		01
SW032	VV439800	Tact Switch	SKQNAJ H=7mm	MIXER/+/-		01
SW033	VV439800	Tact Switch	SKQNAJ H=7mm	VOICE EDIT/4		01
SW034	VV439800	Tact Switch	SKQNAJ H=7mm	EFFECT/5		01
SW035	VV439800	Tact Switch	SKQNAJ H=7mm	SETUP/6		01
SW036	VV439800	Tact Switch	SKQNAJ H=7mm	MASTER/0		01
SW037	VV439800	Tact Switch	SKQNAJ H=7mm	SAVE/1		01
SW038	VV439800	Tact Switch	SKQNAJ H=7mm	LOAD/2		01
SW039	VV439800	Tact Switch	SKQNAJ H=7mm	JOB/3		01
SW040	VV439800	Tact Switch	SKQNAJ H=7mm	EDIT/ENTER		01
SW041	VV439800	Tact Switch	SKQNAJ H=7mm	TRANSPPOSE/CAPS		01
SW042	VV439800	Tact Switch	SKQNAJ H=7mm	MUTE/SOLO		01
SW043	VV439800	Tact Switch	SKQNAJ H=7mm	TRACK SELECT		01
* SW044	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 1/K !		01
* SW045	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 2/L #		01

*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* SW046	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION A/ALL		
* SW047	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 3/M \$		
* SW048	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION B/1-8		
* SW049	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 4/N %		
* SW050	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION C/9-16		
* SW051	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 5/O &		
* SW052	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 6/P '		
* SW053	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION D/TR-		
* SW054	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 7/Q (
* SW055	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION E/TR+		
* SW056	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 8/R)		
* SW057	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 9/S -		
* SW058	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION F		
* SW059	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 10/T @		
* SW060	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION G		
* SW061	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 11/U ^		
* SW062	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION H		
* SW063	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 12/V _		
* SW064	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 13/W {		
* SW065	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION I		
* SW066	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 14/X }		
* SW067	V5914900	Push Switch	SKPDADD010 H=9.5mm	SECTION J		
* SW068	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 15/Y ~		
* SW069	V5914900	Push Switch	SKPDADD010 H=9.5mm	TRACK 16/Z		
* SW070	V5914900	Push Switch	SKPDADD010 H=9.5mm	TAP/PAD ASSIGN		
* V7010100		Circuit Board	PNVR1	(XY237C0)		
* V7010200		Circuit Board	PNVR2	(XY237C0)		
* V7178600		Switch Knob	x1 L1LG LIGHT GRAY	STANDBY START/STOP		
* V6747500		Function Button	x1 BLACK	EFFECT ON/OFF,SELECT,WAVE	6	
	V6747400	Function Button	x2 BLACK	<->,PORTAMENTO TYPE,TYPE		
CN001	VB390700	Connector Base Post	PH 11P TE	LOOP REMIX,SAMPLE EDIT		01
CN002	VB390600	Connector Base Post	PH 10P TE			01
CN003	VB858800	Connector Base Post	PH 9P SE			01
CN004	VF283100	Connector Base Post	PH 13P TE			01
CN005	VB858700	Connector Base Post	PH 8P SE			01
* CN006	V6274900	Connector	HLW 26P SE			
D0001	VT332900	Diode	1SS355 TE-17			01
-0009	VT332900	Diode	1SS355 TE-17			01
LD001	VT022900	LED Green	SEL2410G TP8	EFFECT ON/OFF		01
LD002	VT022900	LED Green	SEL2410G TP8	LOOP REMIX		01
LD003	VT022900	LED Green	SEL2410G TP8	SAMPLE EDIT		01
LD004	VT022800	LED Red	SEL2210R TP8	STANDBY START/STOP		01
LD005	VT022800	LED Red	SEL2210R TP8	MIDI IN		01
LD006	VT022900	LED Green	SEL2410G TP8	MIDI OUT A		01
LD007	VT022900	LED Green	SEL2410G TP8	MIDI OUT B		01
* LD008	V6791600	LED Yellow	LN482YPX-(TA-8)	SELECT		
* LD009	V6791600	LED Yellow	LN482YPX-(TA-8)	SELECT		
* LD010	V6791600	LED Yellow	LN482YPX-(TA-8)	WAVE		
* LD011	V6791600	LED Yellow	LN482YPX-(TA-8)	WAVE		
* LD012	V6791600	LED Yellow	LN482YPX-(TA-8)	WAVE		
* LD013	V6791600	LED Yellow	LN482YPX-(TA-8)	WAVE		
* LD014	V6791600	LED Yellow	LN482YPX-(TA-8)	USER S&H		
* LD015	V6791600	LED Yellow	LN482YPX-(TA-8)	USER PGM		
* LD016	V6791600	LED Yellow	LN482YPX-(TA-8)	AMP		
* LD017	V6791600	LED Yellow	LN482YPX-(TA-8)	FILTER		
* LD018	V6791600	LED Yellow	LN482YPX-(TA-8)	PITCH		
* LD019	V6791600	LED Yellow	LN482YPX-(TA-8)	FINGERED		
* LD020	V6791600	LED Yellow	LN482YPX-(TA-8)	FULL TIME		
* LD021	V6791600	LED Yellow	LN482YPX-(TA-8)	OFF		
* LD022	V6791600	LED Yellow	LN482YPX-(TA-8)	LPF24		
* LD023	V6791600	LED Yellow	LN482YPX-(TA-8)	LPF18		
* LD024	V6791600	LED Yellow	LN482YPX-(TA-8)	LPF12		
* LD025	V6791600	LED Yellow	LN482YPX-(TA-8)	HPF		
* LD026	V6791600	LED Yellow	LN482YPX-(TA-8)	BPF		
* LD027	V6791600	LED Yellow	LN482YPX-(TA-8)	BEF		
R0001	RD355220	Carbon Resistor (chip)	220 63M J			01
-0022	RD355220	Carbon Resistor (chip)	220 63M J			01
SW001	VV439800	Tact Switch	SKQNAJ H=7mm	EFFECT ON/OFF		01

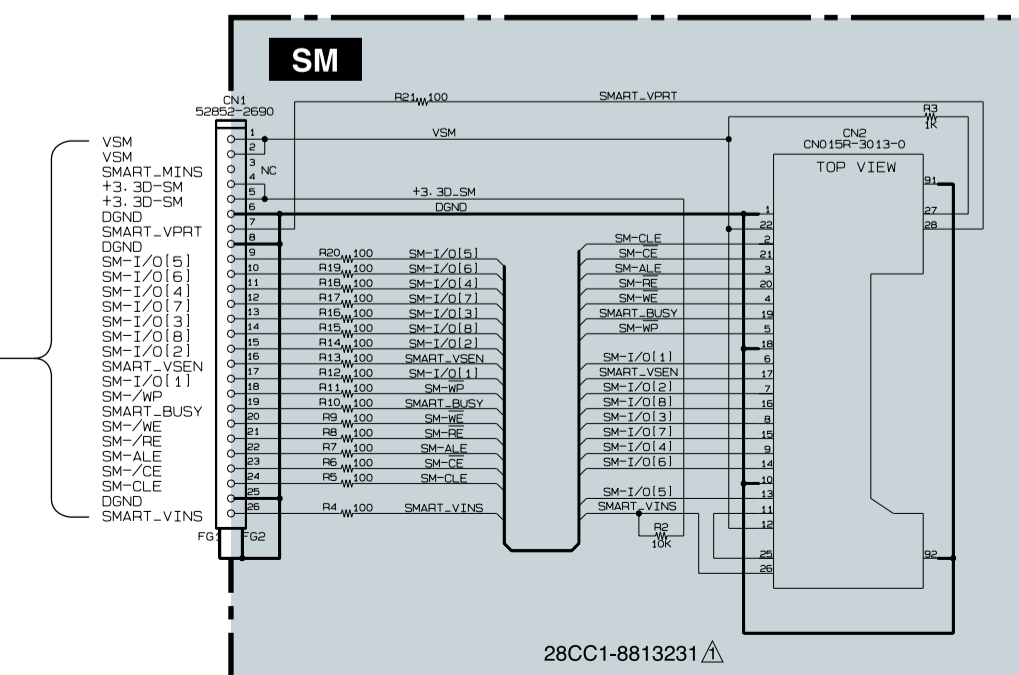
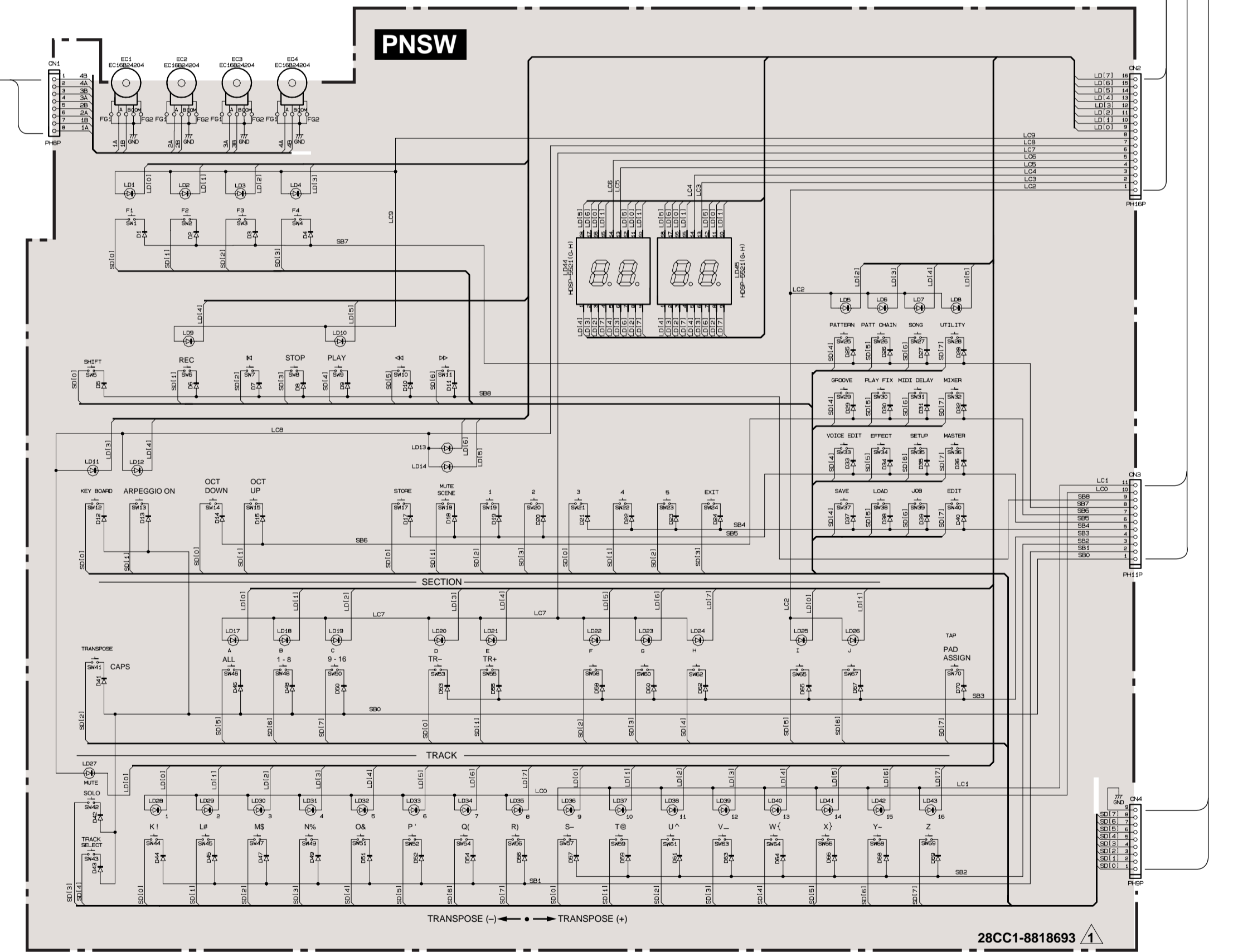
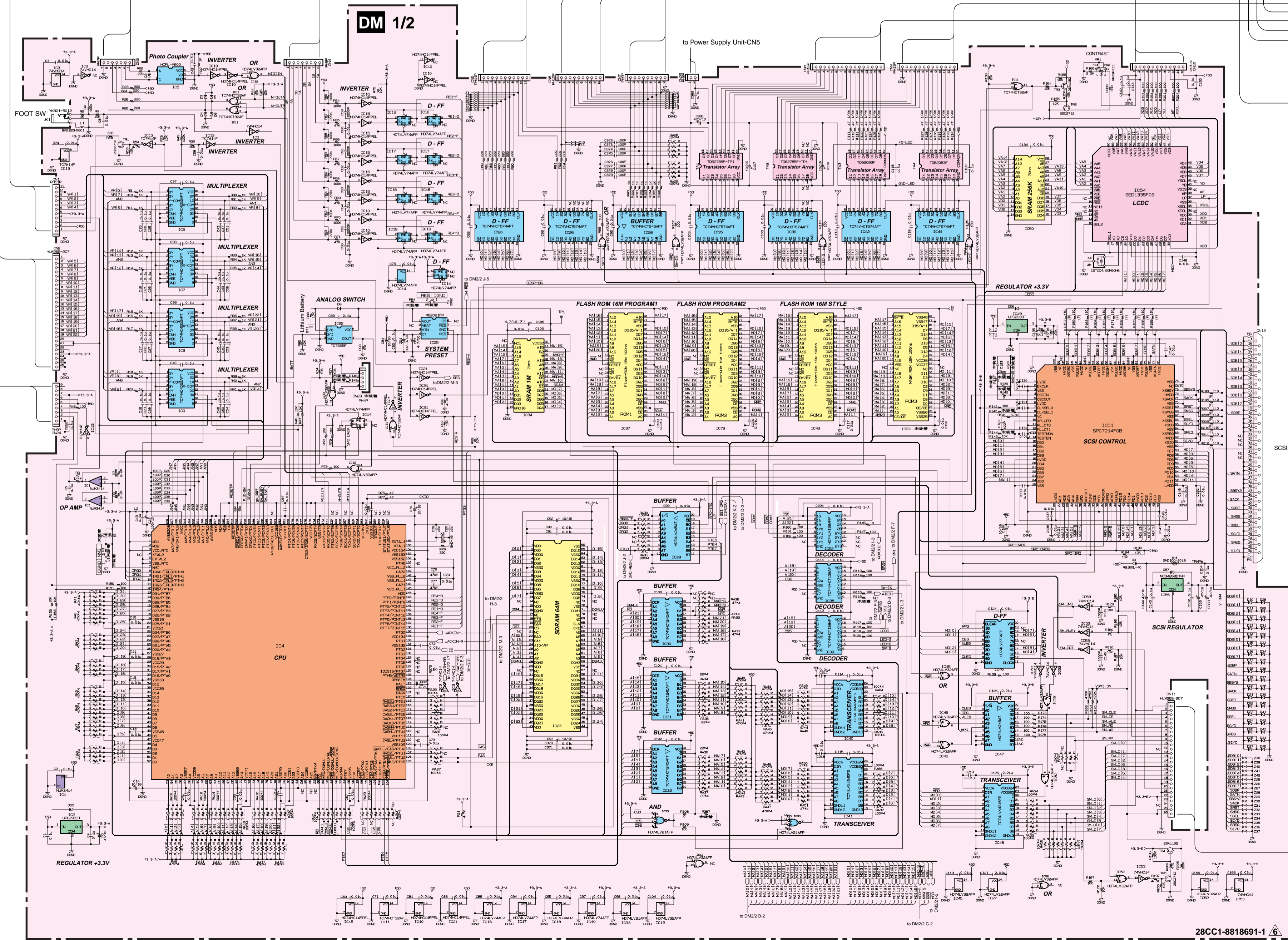
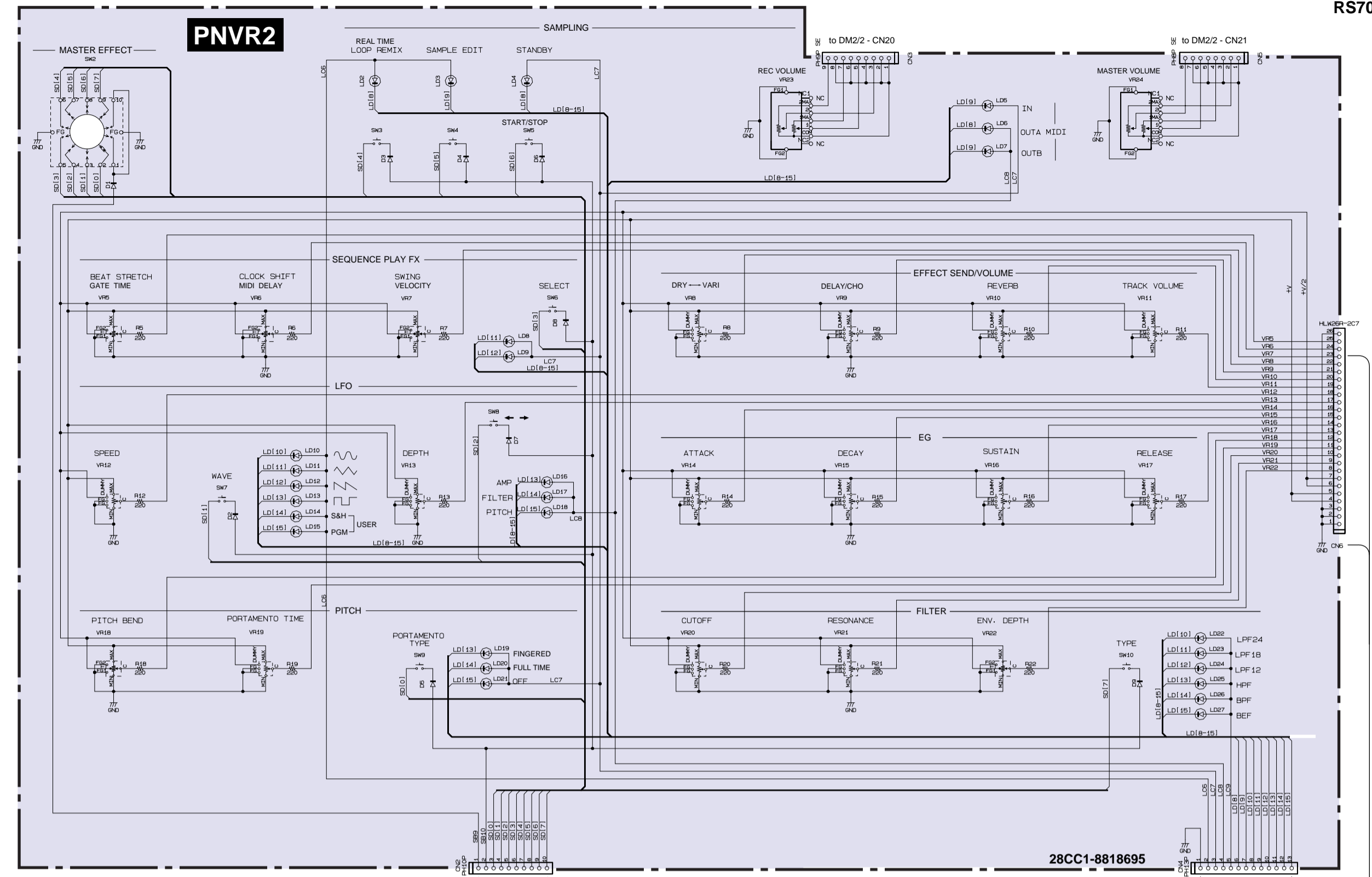
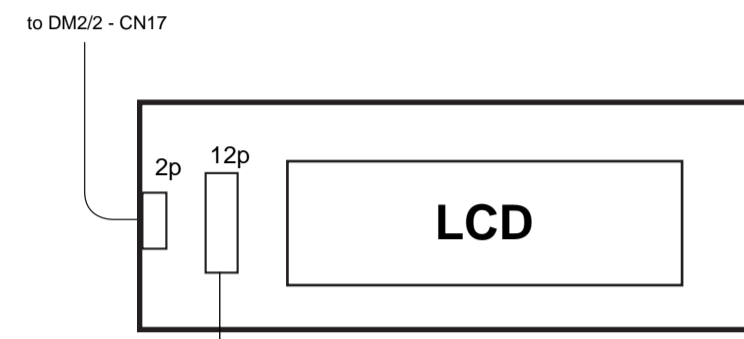
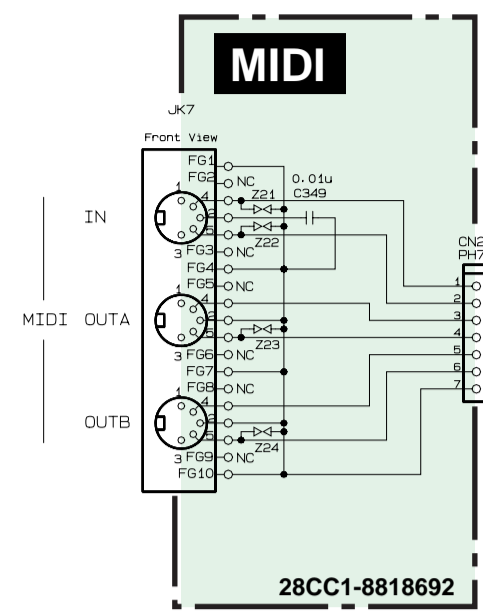
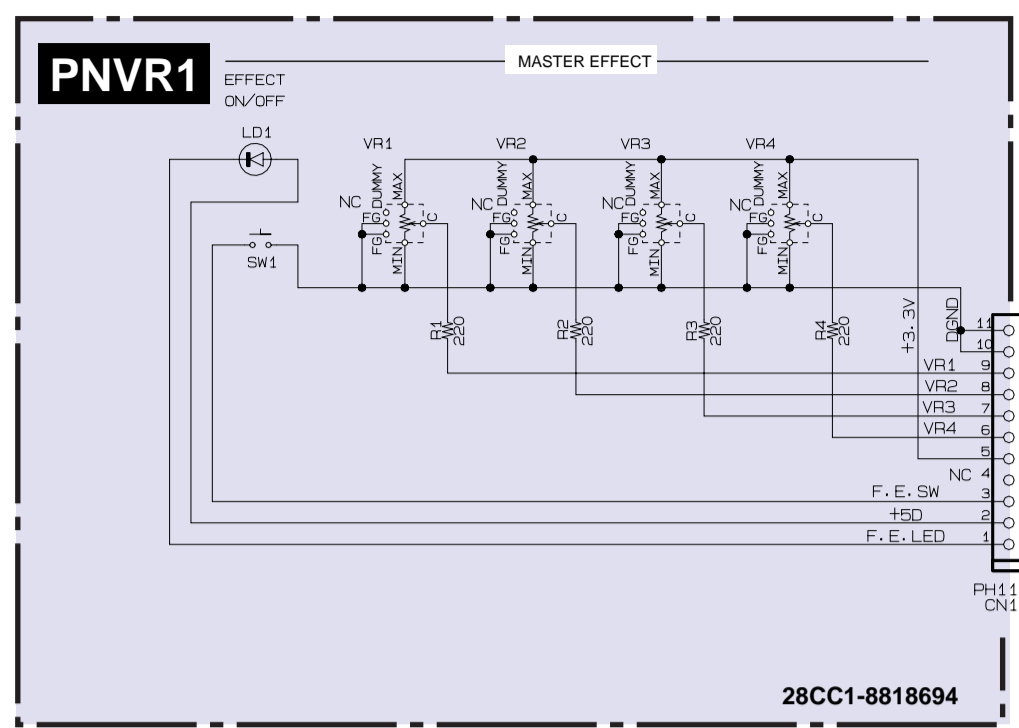
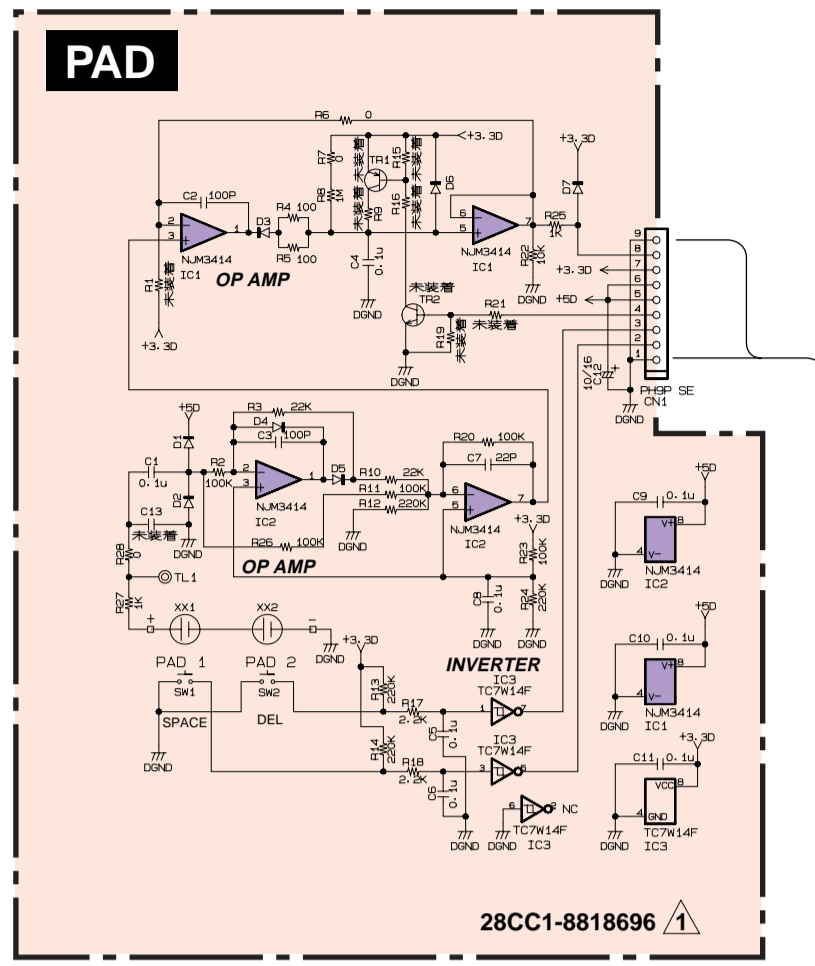
*: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
* SW002	V5915000	Rotary Switch	SRBV18	MASTER EFFECT switch		
SW003	VV439800	Tact Switch	SKQNAJ H=7mm	REAL TIME LOOP REMIX		01
SW004	VV439800	Tact Switch	SKQNAJ H=7mm	SAMPLE EDIT		01
SW005	VZ085500	Tact Switch	SKQNAM004A H=9.5mm	STANDBY START/STOP		01
SW006	VV439800	Tact Switch	SKQNAJ H=7mm	SELECT		01
SW007	VV439800	Tact Switch	SKQNAJ H=7mm	WAVE		01
SW008	VV439800	Tact Switch	SKQNAJ H=7mm	<- ->		01
SW009	VV439800	Tact Switch	SKQNAJ H=7mm	PORTAMENTO TYPE		01
SW010	VV439800	Tact Switch	SKQNAJ H=7mm	TYPE		01
VR001	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	MASTER EFFECT		02
VR002	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	MASTER EFFECT		02
VR003	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	MASTER EFFECT		02
VR004	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	MASTER EFFECT		02
VR005	V4102900	Rotary Variable Resistor	B10.0K RK11K114D0F	BEAT STRETCH GATE TIME		03
VR006	V4102900	Rotary Variable Resistor	B10.0K RK11K114D0F	CLOCK SHIFT MIDI DELAY		03
VR007	V4102900	Rotary Variable Resistor	B10.0K RK11K114D0F	SWING VELOCITY		03
VR008	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	DRY<->VARI		02
VR009	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	DELAY/CHO		02
VR010	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	REVREB		02
VR011	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	TRACK VOLUME		02
VR012	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	SPEED		02
VR013	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	DEPTH		02
VR014	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	ATTACK		02
VR015	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	DECAY		02
VR016	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	SUSTAIN		02
VR017	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	RELEASE		02
VR018	V4102900	Rotary Variable Resistor	B10.0K RK11K114D0F	PITCH BEND		03
VR019	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	PORTAMENTO TIME		02
VR020	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	CUTOFF		02
VR021	VT838300	Rotary Variable Resistor	B 10.0K RK11K114	RESONANCE		02
VR022	V4102900	Rotary Variable Resistor	B10.0K RK11K114D0F	ENV,DEPTH		03
VR023	VR464500	Rotary Variable Resistor	A 10.0K RK14K12D0	REC VOLUME		03
VR024	VR464500	Rotary Variable Resistor	A 10.0K RK14K12D0	MASTER VOLUME		03
	V3577200	Circuit Board	SM	(XV915C0)		07
	--	Jumper Wire	0.55	(VA07890)		
CN1	V4574900	Connector, FFC	52793 26P SE			02
CN2	V3962800	Connector	CN015R-3013-0	CARD		05
R2	RD257100	Carbon Resistor (chip)	10.0K 0.1 J			01
R3	RD256100	Carbon Resistor (chip)	1.0K 0.1 J			01
R4	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
-21	RD255100	Carbon Resistor (chip)	100.0 0.1 J			01
	VT282300	LCD	EDMMR03Y00			16
	VT210200	Back Light Assembly				14
	VN103500	Lithium Battery	CR2032			03
	VL785200	AC-IN Connector	AC-P01CR02	AC INLET		03
	VP184000	Push Switch	SDDL1	POWER ON/OFF		
	V3612600	Power Supply Unit	B047	J,U		20
	V3612700	Power Supply Unit	B048	E,B		21
	VT119800	AC Cord	J 7A 125V 3P 2.5m	J		06
	VB927800	AC Cord	CSA	U		08
	VB928000	AC Cord	VDE	E		08
	VP204400	AC Cord	BS 3P	B		10
	VQ240200	Adapter, AC Cord	KPR-24	J		06

*: New Parts

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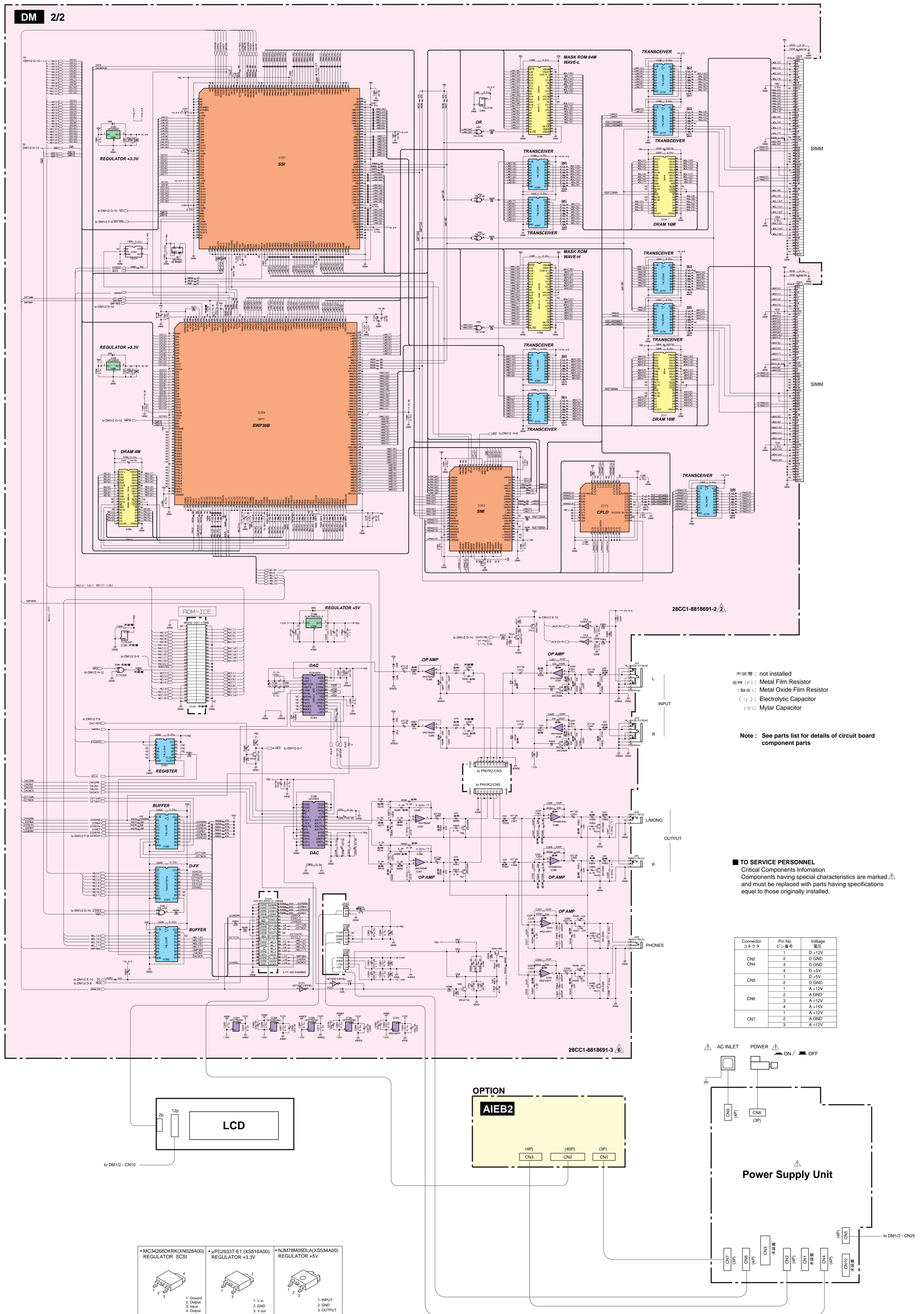
未実装 : not installed
 金線 (F) : Metal Film Resistor
 (C) : Tantalum Capacitor

Lithium Battery
 Battery VN103500
 VN103600(Battery holder for VN103500)

- Notice for back-up battery removal
 Push the battery as shown in figure, then the battery will pop up.
- Druk de batterij naar beneden zoals aangegeven in de tekening de batterij springt dan naar voren.

Battery
 Battery holder

Note : See parts list for details of circuit board component parts



未装着 : not installed
 金膜 (F) : Metal Film Resistor
 (酸化) : Metal Oxide Film Resistor
 (1) : Electrolytic Capacitor
 (マ) : Mylar Capacitor

Note : See parts list for details of circuit board component parts

■ TO SERVICE PERSONNEL
 Critical Components Information
 Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

Connector コネクタ	Pin No. ピン番号	Voltage 電圧
CN2	1	D +12V
	2	D GND
	3	D GND
CN4	1	D +5V
	2	D GND
	3	D GND
CN5	1	A +12V
	2	A GND
	3	A +12V
CN6	1	A +15V
	2	A GND
	3	A +15V
CN7	1	A +12V
	2	A GND
	3	A +12V

