JUNO-D
SYNTHESIZER KEYBOARD

SERVICE NOTES
Issued by RJA

Second Edition

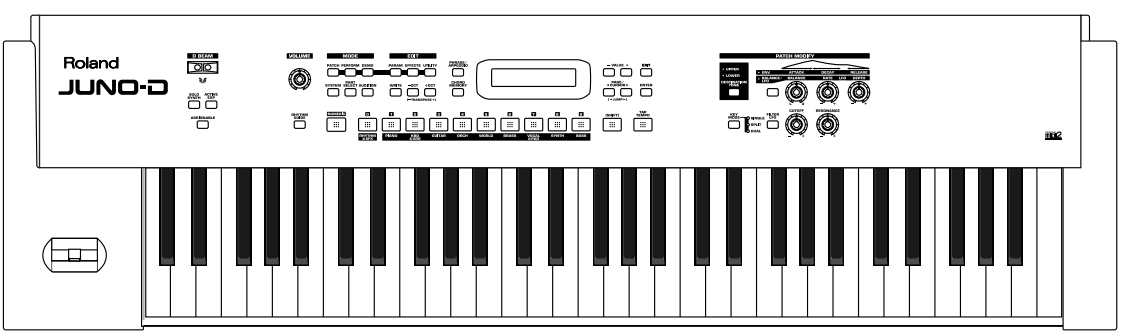
TABLE OF CONTENTS

Full-scale revision

There were many mistakes in the Service Note issued in September,2004.
So, we correct all the mistakes and issue the Service Note as Second Edition.
Please dispose of the old one and use the Second Edition.

REVISION INFORMATION

2006/10/30 P.8-9 Types of screws were revised.



Roland 17058273E1 Printed in Japan (0450) (TP)

CAUTIONNARY NOTES

User data status

User data status after each of the following processes is described below. Whenever carrying out procedures that involve deleting or erasing user data, always be sure to back up the user data to some form of external media (refer to Saving and Loading Data).

Process	User Data
Backup Version	Preserved
Factory Reset	Deleted
System Update	Preserved
Test Mode	Preserved

* Executing Test Mode during Factory Reset deletes the user data.

PARTS LIST

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

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

SPECIFICATIONS

JUNO-D: Synthesizer Keyboard (conforms to General MIDI 2 System)

- Keyboard
  61 keys (with velocity)

[Sound Generator]

- Maximum Polyphony
  64 voices

- Parts
  16
  * Two Tones can be assigned to each part (Patch), and can be split or layered.

- Wave Memory
  32M bytes (16-bit linear equivalent)

- Preset Memory
  Original Tones: 640
  Patches: 640 (JUNO-D original: 384, General MIDI 2: 256)
  Rhythm Sets: 20 (JUNO-D original: 11, General MIDI 2: 9)
  Performances: 32

- User Memory
  Patches: 128
  * Two Tones can be assigned to each Patch.
  Rhythm Sets: 2
  Performances: 8

- Effects
  Multi-Effects: 47 types
  Reverb: 8 types
  Chorus: 8 types

- Rhythm Guide
  Preset Patterns: 32
  Tempo: 5ñ300 BPM (with tap tempo function)

- Multi-Chord Memory
  Preset Chord Sets: 16
  * 12 chord forms are assigned to each set.
  User Chord Sets: 8
  * 12 chord forms can be assigned to each set.

- Phrase/Arpeggio
  Templates: 342
  User Templates: 8
  Styles (Variations): 473

- Controllers
  D Beam Controller: 1
  Pitch Bend/Modulation Lever: 1
  Control Knobs: 5

- Display
  20 characters, 2 lines (Backlit LCD)

- Connectors
  Output Jacks (L/MONO, R)
  Headphones Jack
  MIDI Connectors (IN, OUT)
  Hold Pedal Jack
  Control Pedal Jack

- Power Supply
  DC 9 V (AC Adaptor)

- Current draw
  1000 mA

- Dimensions
  1021 (W) x 292 (D) x 103 (H) mm
  40-1/4 (W) x 11-1/2 (D) x 4-1/16 (H) inches

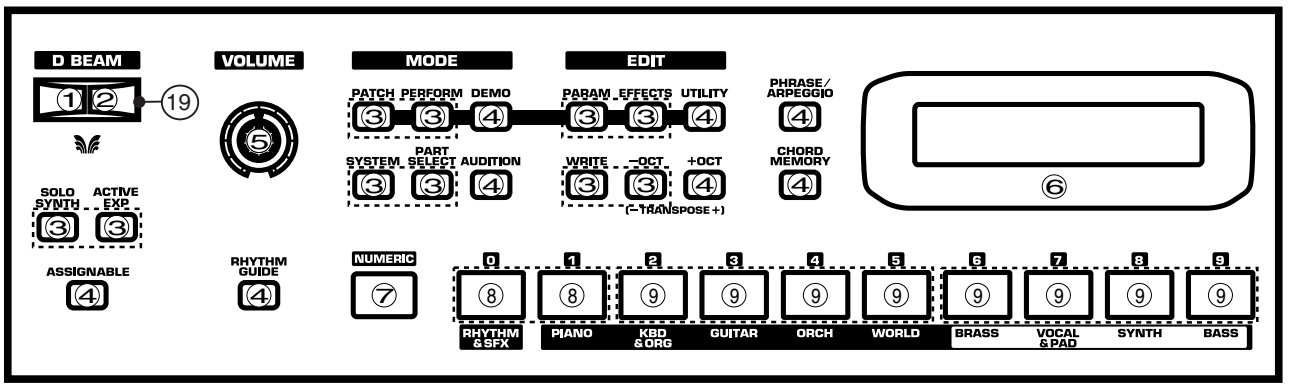
- Weight
  5.0 kg/11 lbs 1 oz (excluding AC adaptor)

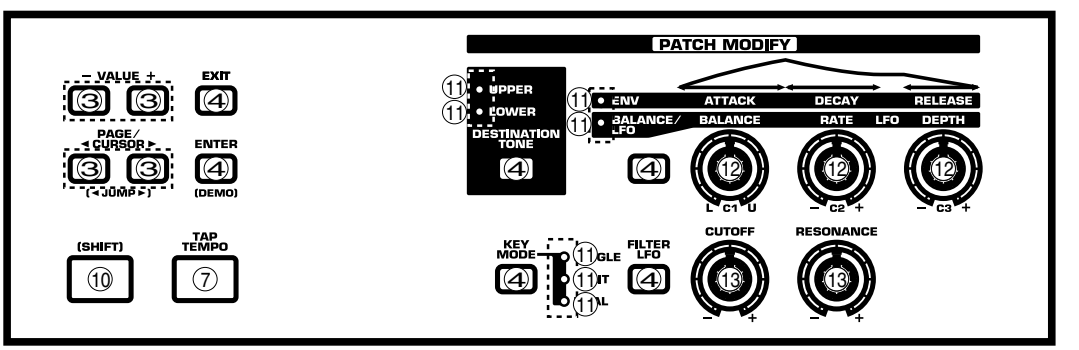
- Accessories
  Owner's Manual English (#03675101)
  Owner's Manual Japanese (#03675090)
  AC Adaptor ACI-120C (#00905767)
  AC Adaptor ACI-230C (#01018312)
  AC Adaptor PSB-1U(R) (#03017356)
  AC Cord 230V for PSB-1U(R) (#01903356)
  AC Cord 230V for PSB-1U(R) (#01903367)
  EURO Converter Plug ECP01-5A (PLUG for 230V) (#00905234)
  CD-ROM (Editor program for PC/Mac) (#03672656)

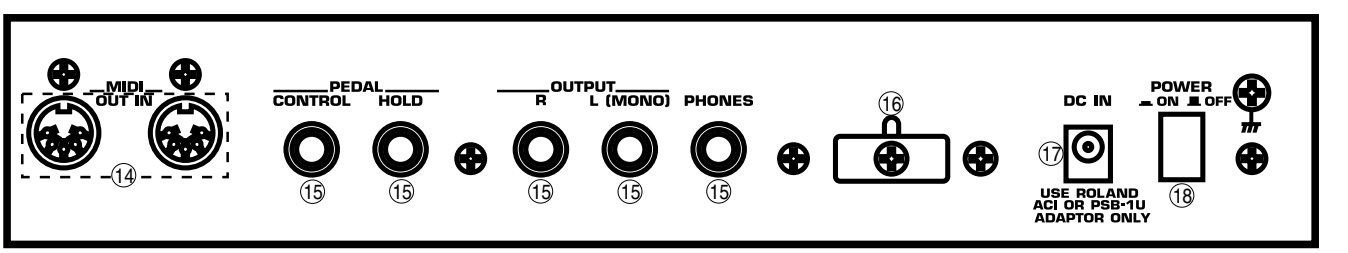
- Options
  Pedal Switch: DP-2, DP-8
  Foot Switch: BOSS FS-5U
  Expression Pedal: EV-5
  MIDI Implementation English (#17041498)
  MIDI Implementation Japanese (#17041499)

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

LOCATION OF CONTROLS



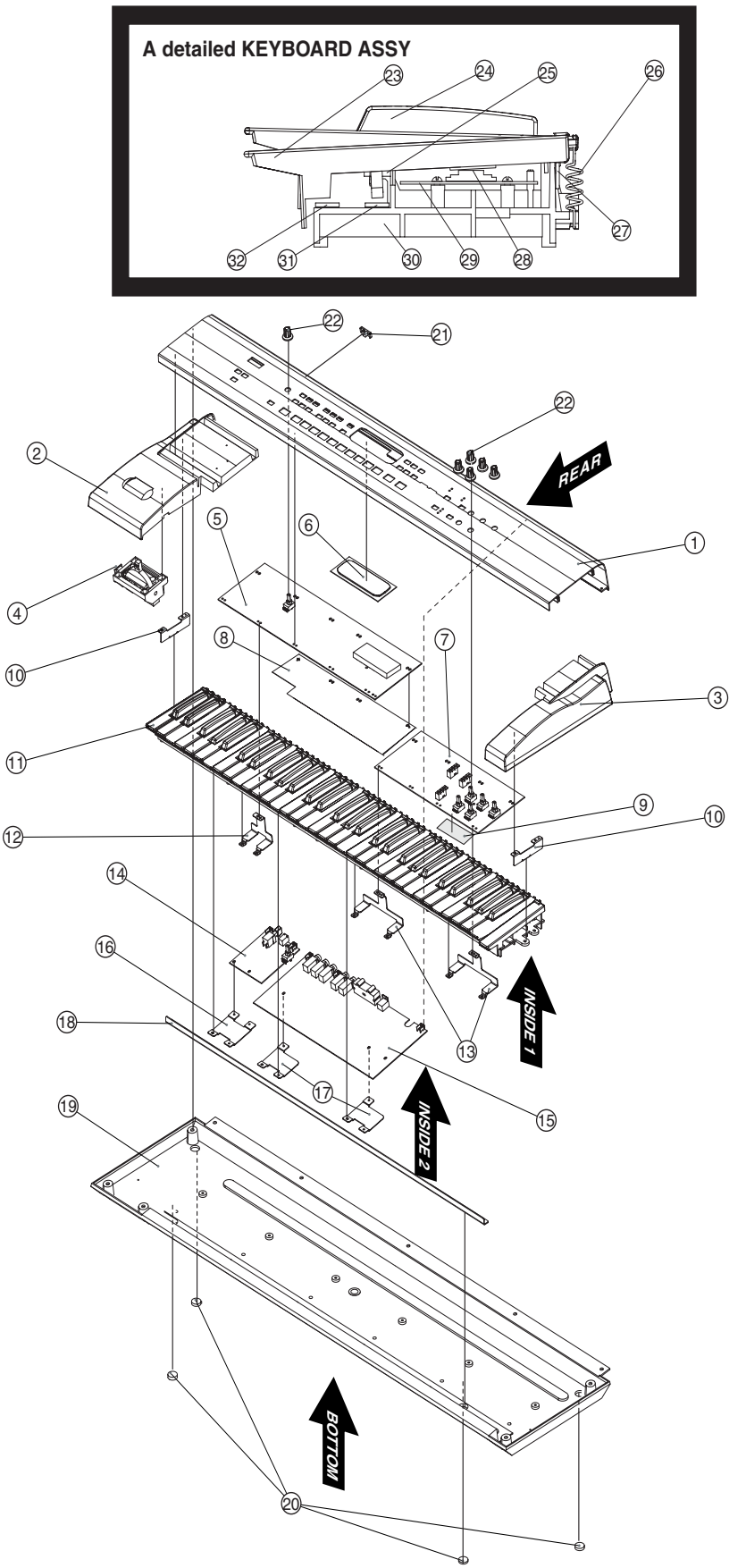




LOCATION OF CONTROLS PARTS LIST

No	PART CODE	CATEGORY	PART NAME	DESCRIPTION	Q'TY
1	03126134	DIODE	LED(INFRARED)	TLN233	1
	02230578	MISCELLANEOUS	LED SPACER	LDS-50R	1
2	01900612	DIODE	DIODE	TPS611	1
	12169368	MISCELLANEOUS	LED SPACER	LDS-40B	1
3	03671756	KNOB, BUTTON	DS-KEYTOP	SX2H-B GRS BY MOONPO	7
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	14
4	03120890	KNOB, BUTTON	D S-KEYTOP	SX1H-B GRS	14
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	14
5	02455234	POTENTIOMETER	12M/M ROTARY POT.	EVJY15F02B14	1
	02452912	KNOB, BUTTON	J R-KNOB	SF-A BLK/LCG	1
6	03784489	CASING	DISPLAY COVER		1
	02453345	MISCELLANEOUS	LCD HOLDER		1
	02908834	MISCELLANEOUS	LEAF REFLECTOR		1
7	01783923	KNOB, BUTTON	N S-KEYTOP	MD1H	2
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	2
8	01783934	KNOB, BUTTON	N S-KEYTOP	MD2H	1
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	2
9	01783956	KNOB, BUTTON	N S-KEYTOP	MD4H	2
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	8
10	03671767	KNOB, BUTTON	N S-KEYTOP	MX1H	1
	02891789	SWITCH	TACT SWITCH	SKRGADD010 H=5.0	1
11	01343090	MISCELLANEOUS	LED SPACER		3
12	02891889	POTENTIOMETER	9M/M ROTARY POT.	EVUFEKFK3B14 10KB CC	3
	02452912	KNOB, BUTTON	J R-KNOB	SF-A BLK/LCG	3
13	01787545	POTENTIOMETER	9M/M ROTARY POT.	EVUF2KFK3B14 10KB	2
	02452912	KNOB, BUTTON	J R-KNOB	SF-A BLK/LCG	2
14	02568867	JACK, EXT TERMINAL	MIDI CONNECTOR	HDC-052A-12	1
15	03347067	JACK, EXT TERMINAL	6.5MM JACK	LGR4609-7000	5
16	22365714	MISCELLANEOUS	CORD HOOK	236-714	1
17	02341634	JACK, EXT TERMINAL	DC JACK	HTJ-020-05A	1
18	12499175	KNOB, BUTTON	BUTTON	JSPUE001A	1
	01676512	SWITCH	PUSH SWITCH	SDKLA10200	1
19	01343089	CASING	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK	1

EXPLODED VIEW 1



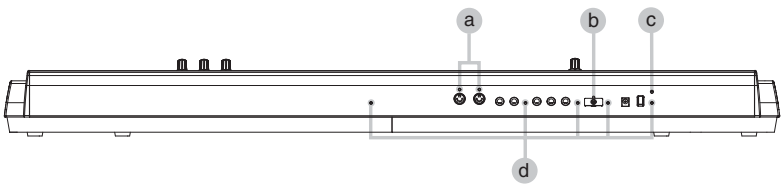
EXPLODED VIEW PARTS LIST 1

[Parts]

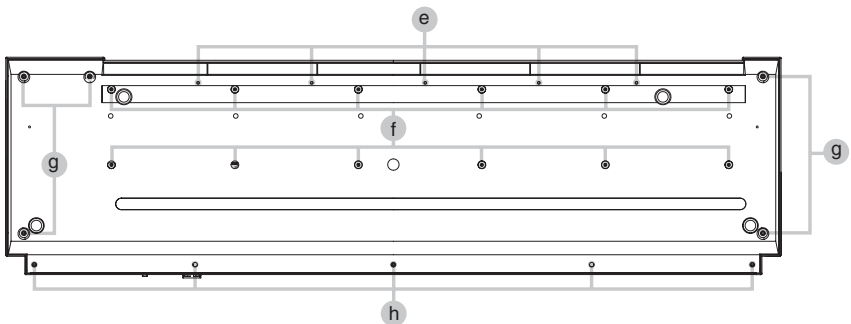
No	PART CODE	PART NAME	DESCRIPTION	Q'TY
1	03670890	TOP PANEL		1
2	03671012	SIDE PANEL L		1
3	03671023	SIDE PANEL R		1
4	03234723	BENDER UNIT	PB-H0204	1
5	03784923	PANEL L BOARD ASSY	for SERVICE	1
6	03784489	DISPLAY COVER		1
7	03784934	PANEL R BOARD ASSY	for SERVICE	1
8	03784534	INSULATING SHEET		1
9	40122812	NITTO ACETATE TAPE #5 BLACK	W15MM 30M (CM)	10
10	03671278	METAL HOLDER SIDE PANEL		2
11	03784545	KEYBOARD ASSY		1
	NOTE: 'KEYBOARD ASSY' includes the following parts.			
23	03786378	NATURAL KEY C	for MSK-2	5
	03786389	NATURAL KEY D	for MSK-2	5
	03786390	NATURAL KEY E	for MSK-2	5
	03786401	NATURAL KEY F	for MSK-2	5
	03786412	NATURAL KEY G	for MSK-2	5
	03786423	NATURAL KEY A	for MSK-2	5
	03786434	NATURAL KEY B	for MSK-2	5
	03786445	NATURAL KEY C'	for MSK-2	1
24	03786456	SHARP KEY	for MSK-2	25
25	03786312	KEY FELT A	MSK-2 HOOK T2.5MM L870XW5.5	1
26	03456967	COILED SPRING	MSK-1 NATURAL KEY	36
	03456978	COILED SPRING	MSK-1 SHARP KEY	25
27	03786301	KEY FELT B	MSK-2 BACK T3.0MM L840XW6.0	1
28	03456856	RUBBER SW KETBOARD 12P	for MSK-1	4
	03456867	RUBBER SW KETBOARD 13P	for MSK-1	1
29	03786356	PWB KEYBOARD HI ASSY	for MSK-2	1
	03786345	PWB KEYBOARD LOW ASSY	for MSK-2	1
30	*******	CHASSIS KEYBOARD	for MSK-2	1
31	03786334	KEY FELT C	MSK-2 BOTTOM M T2.5MM L840XW10	1
32	03786323	KEY FELT D	MSK-2 BOTTOM L T2.5MM L840XW15	1
12	03671734	METAL HOLDER KEY BRACKET B		1
13	03671723	METAL HOLDER KEY BRACKET A		2
14	03784945	PS BOARD ASSY	for SERVICE	1
15	03784912	MAIN BOARD ASSY	for SERVICE	1
16	03784501	METAL CONNECT PLATE	for PS BOARD	1
17	03671090	METAL CONNECT PLATE	for MAIN BOARD	2
18	03671290	REINFORCE BAR		1
19	03670901	BOTTOM CASE	W/FOOT	1
20	12359137	FOOT		4
21	22365714	CORD HOOK		1
22	02452912	J R-KNOB	SF-A BLK/LCG	6

EXPLODED VIEW 2

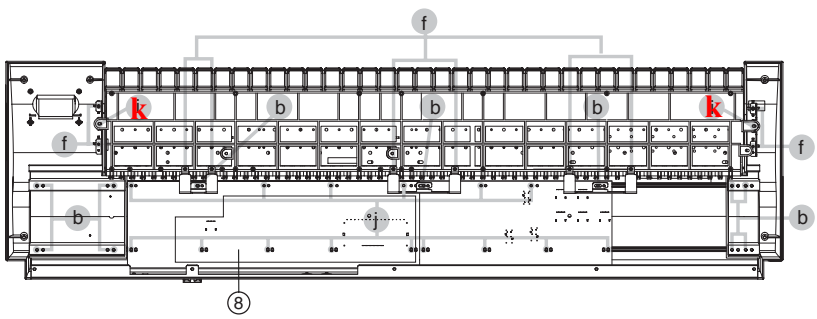
REAR



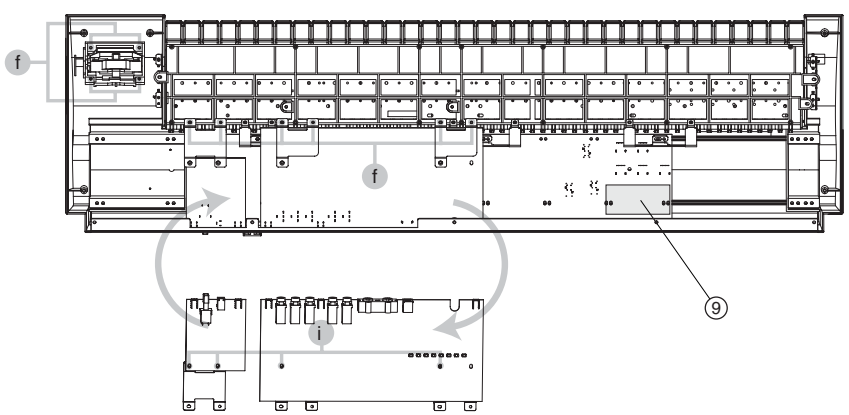
BOTTOM



INSIDE 1



INSIDE 2



EXPLODED VIEW PARTS LIST 2

[Screws]

No	PART CODE	PART NAME	DESCRIPTION	Q'TY
a	40011190	SCREW 3x6	PAN TAPTITE P BZC	2
b	40011101	SCREW 3x8	BINDING TAPTITE B BZC	12
c	40454856	SCREW M4x10	BINDING NI	1
~~d~~	~~40011490~~	~~SCREW M3x6~~	~~PAN MACHINE W/SW BZC~~	~~5~~
e	40011501	SCREW M3x8	PAN MACHINE W/SW BZC	5
f	40011312	SCREW 3x8	BINDING TAPTITE P BZC	32
g	40567034	SCREW 4x20	BINDING TAPTITE P BZC	5
h	40012345	SCREW 4x10	BINDING TAPTITE B BZC	5
i	40011423	SCREW M3x6	PAN MACHIN W/SW ZC	~~6~~ 4
j	40011090	SCREW 3x6	BINDING TAPTITE B BZC	15

d 40342712 SCREW M3X6, PAN MACHINE W/SW+SMALL PW BZC 5

k 40237101 SCREW M3X8, PAN MACHINE W/SW+SMALL PW BZC 2

PARTS LIST

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

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

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

NOTE: The parts marked # are new. (initial parts)

The description "Q'TY" means a necessary number of the parts per one product.

CASING					**Q'TY**
#	03670901	BOTTOM CASE	W/FOOT		1
#	03784489	DISPLAY COVER			1
#	03671012	SIDE PANEL L			1
#	03671023	SIDE PANEL R			1
#	03670890	TOP PANEL			1
CHASSIS					
#	03671090	METAL CONNECT PLATE	for MAIN BOARD		2
#	03784501	METAL CONNECT PLATE	for PS BOARD		1
#	03671723	METAL HOLDER	KEY BRACKET A		2
#	03671734	METAL HOLDER	KEY BRACKET B		1
#	03671278	METAL HOLDER	SIDE PANEL		2
KNOB, BUTTON					
	02452912	SF-A BLK/LCG	J R-KNOB		6
	12499175	BUTTON	JSPUE001A		1
SWITCH					
	02891789	SKRGADD010	TACT SWITCH	SW20,SW21,SW22,SW23,SW24,SW25,SW26,SW27,SW28,SW29,SW30,SW31,SW32,SW33,SW34,SW35,SW37,SW38,SW39,SW40,SW41,SW42,SW44,SW45,SW46,SW47,SW48,SW49,SW50 on PANEL L BOARD	29
	02891789	SKRGADD010	TACT SWITCH	SW2,SW3,SW4,SW7,SW8,SW9,SW10,SW13,SW14,SW15,SW16,SW19 on PANEL R BOARD	12
	01676512	SDKLA10200	PUSH SWITCH	SW1 on PS BOARD	1
JACK, EXT TERMINAL					
	03347067	LGR4609-7000	6.5MM JACK	JK2,JK3,JK4,JK5,JK6 on MAIN BOARD	5
	02568867	HDC-052A-12	MIDI CONNECTOR	JK1 on MAIN BOARD	1
	02341634	HTJ-020-05A	DC JACK	JK1 on PS BOARD	1
BENDER UNIT					
	03234723	PB-H0204	BENDER UNIT		1
KEYBOARD ASSY					
#	03784545	KEYBOARD ASSY	for SERVICE		1
PCB ASSY					
#	03784912	MAIN BOARD ASSY	for SERVICE		1
	NOTE: 'MAIN BOARD ASSY' includes the following parts.				
	12199584	GROUDING TERMINAL	PCB-12(M3x0.5)	TER1,TER2,TER3 on MAIN BOARD	3
#	03784923	PANEL L BOARD ASSY	for SERVICE		1
	NOTE: 'PANEL L BOARD ASSY' includes the following parts.				
	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK		1
#	03671756	D S-KEYTOP	SX2H-B GRS BY MOONPO		5
	03120890	D S-KEYTOP	SX1H-B GRS		8
	01783923	N S-KEYTOP	MD1H		1
	01783934	N S-KEYTOP	MD2H		1
	01783956	N S-KEYTOP	MD4H		2
	02908834	LEAF REFLECTOR			1
	12169368	LED SPACER	LDS-40B		1
	02230578	LED SPACER	LDS-50R		1
	02453345	LCD HOLDER			1

PCB ASSY

#	03784934	PANEL R BOARD ASSY	for SERVICE		1
	NOTE: 'PANEL R BOARD ASSY' includes the following parts.				
#	03671756	D S-KEY TOP	SX2H-B GRS		2
	03120890	D S-KEYTOP	SX1H-B GRS		6
	01783923	N S-KEY TOP	MD1H		1
	03671767	N S-KEY TOP	MX1H		1
	01343090	LED SPACER			3
#	03784945	PS BOARD ASSY	for SERVICE		1
	NOTE: 'PS BOARD ASSY' includes the following parts.				
	40011501	SCREW 3x8	PAN MACHINE W/SW BZC		1
	12199584	GROUDING TERMINAL	PCB-12(M3x0.5)	TER1,TER2 on PS BOARD	2
	22465224	HEATSINK	for REGULATOR IC HEATSINK	HS1 on PS BOARD	1

DIODE

01900612	TPS611	DIODE	Q17 on PANEL L BOARD	1
03126134	TLN233	LED(INFRARED)	LED44 on PANEL L BOARD	1

POTENTIOMETER

02455234	EVJY15F02B14	ROTARY POT.	VR6 on PANEL L BOARD	1
01787545	EVUF2KFK3B14 10KB	ROTARY POT.	VR1,VR5 on PANEL R BOARD	2
02891889	EVUFEKFK3B14 10KB CC	ROTARY POT.	VR2,VR3,VR4 on PANEL R BOARD	3

WIRING, CABLE

02342034	4x300-P2.0-PHR-PHR-F	WIRING	1
02343545	8x150-P2.0-PHR-PHR-F	WIRING	1
02343812	10x150-P2.0-PHR-PHR-F	WIRING	1
02231789	14PIN P=1.25MM L=120MM	FFC	1
03236078	20PIN P=1.25MM L=140MM	FFC	1
03236089	22PIN P=1.25MM L=380MM	FFC	1
03236056	18PIN P=1.25MM L=280MM	(W/SHIELDED FFC)	1

SCREW

40011090	SCREW 3x6	BINDING TAPTITE B BZC	15
40011190	SCREW 3x6	PAN TAPTITE P BZC	2
40011490	SCREW M3x6	PAN MACHINE W/SW BZC	5
40011423	SCREW M3x6	PAN MACHINE W/SW ZC	6
40011101	SCREW 3x8	BINDING TAPTITE B BZC	12
40011312	SCREW 3x8	BINDING TAPTITE P BZC	32
40011501	SCREW M3x8	PAN MACHINE W/SW BZC	4
40012345	SCREW 4x10	BINDING TAPTITE P BZC	5
40454856	SCREW M4x10	BINDING NI	1
40567034	SCREW 4x20	BINDING TAPTITE P BZC	5

PACKING

#	03784523	PACKING CASE		1
	02561501	PAD SIDE L		1
	02561512	PAD SIDE R		1
	02561523	PAD LOWER CENTER		1
	02561534	PAD UPPER CENTER		1

MISCELLANEOUS

	22365714	CORD HOOK		1
	12359137	FOOT		4
#	03784534	INSULATING SHEET		1
	40122812	NITTO ACETATE TAPE #5 BLACK	W15MM 30M (CM)	1
	40122901	NITTO DUBLE-SIDE TAPE #501F	W10MM 20M 20P (CM)	1
#	03671290	REINFORCE BAR		1

ACCESSORIES (STANDARD)

#	03675090	OWNER'S MANUAL	JAPANESE	1
#	03675101	OWNER'S MANUAL	ENGLISH	1
⚠	00905756	AC ADAPTOR	ACI-100C	1
⚠	00905767	AC ADAPTOR	ACI-120C	1
⚠	01018312	AC ADAPTOR	ACI-230C	1
⚠	03017356	AC ADAPTOR	PSB-1U(R)	1
⚠	01903356	AC CORD SET 230V	1.0M for PSB-1U	1
⚠	01903367	AC CORD SET 240V	1.0M for PSB-1U	1
⚠	00905234	EURO CONVERTER PLUG	ECP01-5A(PLUG for 230V)	1
#	03672656	CD-ROM (EDITOR)	V1.00	1
	********	REGISTRATION CARD	LEAFLET USER TOUROKU ANNNAI	1
	40232334	WARRANTY CARD	(JAPAN ONLY)	1

CHECKING THE VERSION NUMBER

1. While holding down the [SYSTEM] button, turn on the power.
   The following screen will appear. (Continue holding down the [SYSTEM] button until the following screen appears.)
2. The CPU and ROM version numbers will be displayed.
3. Please turn off the power, if the version of CPU and ROM is checked.

```
JUNO-D    VERSION
CPU:1.00  ROM:1.01
```

USERS DATA SAVE AND LOAD

Required items

- A sequencer that can record and play back SMF (e.g., MC-80)
- MIDI cable

USERS DATA SAVE

Here's how to back up (save) all settings of the JUNO-D on an external MIDI sequencer.

Procedure

1. Use a MIDI cable to connect the JUNO-D's MIDI OUT to the MIDI IN of your sequencer.
2. Press the [PATCH] button to make it light, entering Patch mode.
3. Press the [UTILITY] button to make it light.
4. Use the [PAGE/CURSOR <] / [PAGE/CURSOR >] buttons to select "4:XFER to MIDI."

```
UTIL MENU:      [ENT]
4:XFER to MIDI
```

5. Press the [ENTER] button.
6. Use the [VALUE -] / [VALUE +] buttons to select "DUMP ALL."

```
XFER to MIDI    [ENT]
What:        DUMP ALL
```

7. Start recording on your sequencer.
8. Press the [ENTER] button.

```
XFER to MIDI
Sending[            ]
```

9. When "COMPLETED" appears, the process is complete.
   Stop recording on your sequencer.

USERS DATA LOAD

Here's how to return the backed-up data from your sequencer into the JUNO-D.

Procedure

1. Use a MIDI cable to connect the JUNO-D's MIDI IN to your sequencer's MIDI OUT.
2. Press the [PATCH] button to make it light, selecting Patch mode.
3. On your sequencer, play back the file that you want to load.

Do not operate the JUNO-D while it is receiving the data.

4. When the file has finished playing back, loading has been completed.

TEST MODE

Required items

- Noise meter
- Headphones
- Monitor speakers (e.g., MA-10D) x 2
- Expression pedal
- Hold pedal
- Audio cables x 2
- MIDI cable x 1

Test items

The JUNO-D has the following tests. For details on each test, refer to the corresponding item.

0.Test Mode Top Page
1.SHOCK Test
2.MEMORY Test
3.MIDI Test
4.SOUND Test
5.LCD Test
6.A/D Test 1 (Bender, Modulation)
7.A/D Test 2 (Control Knob)
8.A/D Test 3 (Hold Pedal, Expression Pedal)
9.D BEAM ADJUSTMENT
10.D BEAM Test
11.SWITCH & LED Test
12.KEYBOARD Test
13.NOISE Test
14.Factory Reset

Caution before you begin the test

- Even when you enter Test mode, the user data will not be erased until you execute "14.Factory Reset."
  You will need to store the user data to an external sequencer beforehand only if you only want to execute "14.Factory Reset." (See "Saving and loading data")

- Some of the test items will produce a test tone.
  Connect headphones and monitor speakers before you start.

Entering Test Mode

While holding down the three buttons [DESTINATION TONE] + [ENV or BALANCE/LFO] + [TAP TEMPO], turn on the power of the JUNO-D.
The top page of Test mode will appear. (Continue holding down the buttons until the top page of Test mode appears.)

Quitting Test Mode

In the "0 Test Mode Top Page," press the [SHIFT] button + [EXIT] button.

Skipping Test Mode

Use the [SHIFT] button + [PAGE/CURSOR <] button to move to the preceding test, or the [SHIFT] button + [PAGE/CURSOR >] button to move to the next test.

Test mode details

0.Test Mode Top page (JUNO-D PD Test)

```
JUNO-D     PD Test
CPU:1.00   ROM:1.01
```

1. Here you can check the CPU and Program ROM versions.
   If the version is inappropriate, please perform the update. (Refer to "Updating the system")
2. Verify that the LCD backlight is lit evenly.
   If it is not lit correctly, check the following locations.

   MAIN BOARDL52,CN5
   PWB PANEL L ASSY
   R55,R57,R61,R63,R65,LED45,LED47,LED49,LED51,LED53,CN7
   WIRING BNCD-P=1.25-K-20-140

3. Press the [ENTER] button to begin Test mode.

1.SHOCK Test

1. The demo song will play.
   Verify that the VOLUME control produces no static etc.
2. Verify that the audio output is muted while you hold down the [TAP TEMPO] button.
3. Press the [ENTER] button to proceed to the next test.

2.MEMORY Test

```
MEMORY Test 1:
CPU:OK     ROM:OK
```

1. This test checks the CPU and FLASH ROM (program memory).
2. If no problems are found, the display will indicate OK, and you will automatically proceed to MEMORY Test 2.
   If the result is "NG", check the following locations.

   CPU NG: MAIN BOARD IC7,IC401,X1,
   ROM NG: MAIN BOARD IC2

3. Press the [SHIFT] button + [ENTER] button to proceed to the next test.

```
MEMORY Test 2:
DRAM:OK    EEPROM:OK
```

4. This test checks DRAM and EEPROM.
5. If no problems are found, the display will indicate "OK", and you will automatically proceed to MEMORY Test 3.
   If the result is "NG", check the following locations.

   DRAM NG: MAIN BOARD IC10
   EEPROM NG: MAIN BOARD IC16,R24,R25

6. Press the [SHIFT] button + [ENTER] button to proceed to Memory Test 3.

```
MEMORY Test 3:
WAVE:OK    DSP:OK
```

7. This test checks WAVE ROM and DSP.
8. If no problems are found, the display will indicate "OK", and you will automatically proceed to the next test.
   If the result is "NG", check the following locations.

   WAVE NG: MAIN BOARD IC21
   DSP NG: MAIN BOARD IC24,X2,IC30

9. Press the [SHIFT] button + [ENTER] button to proceed to the next test.

3.MIDI Test

```
MIDI Test:
           Connect:--
```

1. Use a MIDI cable to connect MIDI IN and MIDI OUT.
2. If the connection is correct, you will automatically proceed to the next test.

4.SOUND Test

```
SOUND Test:
Left >>>>>
```

1. Verify that a sine wave is output from Output-L and from the left side of the headphones.
2. Press the [ENTER] button to proceed to the R-ch test.

```
SOUND Test:
           <<<< Right
```

3. Verify that a triangle wave is output from Output-R and from the right side of the headphones.
4. Press the [ENTER] button to proceed to the L/R-ch test.

```
SOUND Test:
Left >>>>><<<< Right
```

5. Verify that a sine wave is output from Output-L and from the left side of the headphones, and that a triangle wave is output from Output-R and from the right side of the headphones.
6. Press the [ENTER] button to proceed to the next test.

5.LCD Test

1. Verify that all pixels of the LCD are lit.
2. Press the [ENTER] button to proceed to the All LCD Pixels Unlit test.
3. Verify that all pixels of the LCD are unlit.
4. Press the [ENTER] button to proceed to the LCD Contrast Test.

(LCD Contrast Test)

```
LCD Test:
     LCD Contrast: 5
```

5. Verify that you can adjust the contrast by pressing (holding) the VALUE [-] / [+] buttons.
   The contrast value (from 1 to 10) will be displayed in the LCD.
6. Press the [ENTER] button to proceed to the next test.

6.A/D Test 1 (Bender, Modulation)

Verify that bender and modulation operate correctly.

NOTE

Make sure that the bender is not being touched when you enter this test. (The A/D value at the moment you enter the test is read as the center voltage.)

```
A/D Test 1:
BEND:  0  MOD:  0
```

1. Move the bender all the way to the left; if a value of "-128" is reached, a click will sound.
2. Move the bender all the way to the right; if a value of "127" is reached, a click will sound.
3. When left and right movements are completed, the display will indicate "OK".
4. Move the modulation lever fully away from yourself; if a value of "127" is reached, a click will sound.
5. Return the modulation lever toward yourself; if a value of "0" is reached, a click will sound, the display will indicate "OK", and you will proceed to the next test.
   (The "OK" indication will not appear unless you perform the tests in the order of Bender Left, Bender Right, and Modulation.)

7.A/D Test 2 (Control Knob)

```
A/D   A--- D--- R---
Tst2: C--- R---
```

A: ATTACK or BALANCE
D: DECAY or RATE
R: RELEASE or DEPTH
C: CUTOFF
R: RESONANCE

NOTE

Perform this test in the order of A, D, R (RELEASE), C, R (RESONANCE).

1. Turn the knob all the way toward the left; if "0" is reached, a click will sound.
2. Turn the knob all the way toward the right; if "127" is reached, a click will sound.
3. Turn the knob to the center; if "63/64" is reached, a click will sound and the display will indicate "OK."
   If all knobs are "OK", you will automatically proceed to the next test.

8.A/D Test 3 (Hold Pedal, Expression Pedal)

```
A/D Test 3:
HOLD:  0  CTL:  0
```

1. Connect a hold pedal to the rear panel HOLD jack, and an expression pedal to the rear panel CONTROL jack.
2. Press the hold pedal; a click will sound when the display indicates "127."
3. Release the hold pedal; a click will sound when the display indicates "0", and "OK" will appear.
4. Advance the expression pedal; a click will sound when the display indicates "127."
5. Return the expression pedal; a click will sound when the display indicates "0", and "OK" will appear.
6. If both HOLD and CTL are "OK", you will automatically proceed to the next test.

9.D BEAM ADJUSTMENT

```
D BEAM ADJUSTMENT:
LOW:  0  HIGH: ---
```

Here you will make D BEAM settings.

NOTE

Before you begin this test, verify that there are no objects within 50 cm of the JUNO-D. (If any such objects are within this range, the settings cannot be made correctly.)

NOTE

Do not perform this test in direct sunlight.

1. Place your hand 5 cm above the D BEAM and press the [ENTER] button.
   If the setting was made correctly, the display will indicate "OK."
2. Place your hand 45 cm above the D BEAM and press the [ENTER] button.
   If the setting was made correctly, the display will indicate OK and you will automatically proceed to the next test.

10.D BBEAM Test

```
D-BEAM Test:
                    0
```

This checks the operation of the D BEAM.

1. Move your hand in a range from 5 to 40 cm above the D BEAM, and verify that the value increases and decreases.
2. Place your hand 5 cm above the D BEAM and verify that a value of "127" is displayed.
3. Place your hand 45 cm above the D BEAM and verify that a value of "0" is displayed.
4. Place your hand 30 cm above the D BEAM and verify that a value greater than "1" is displayed.
5. Press [ENTER] to proceed to the next test.

11.SWITCH & LED Test

```
SWITCH & LED Test:46
```

This checks switches and LEDs.
When you enter this test, all LEDs will light.

1. When you press a switch that has an LED, the LED will go dark.
   The number of switches you have not yet pressed is shown in the upper right of the screen.
   The lower line of the LCD shows the name of the switch you pressed.
   If more than one LED corresponds to one switch (button), press that switch the corresponding number of times.

<UPPER>, <LOWER>LED = [DESTINATION TONE] switch (button)
<ENV>, <BALANCE/LFO>LED = [ENV or BALANCE/LFO] switch (button)
<SINGLE>, <SPLIT>, <DUAL>LED = [KEY MODE] switch (button)

2. Verify that the TAP TEMPO LED changes from "red" -> "green" -> "unlit."
3. When all switches have been pressed, you will automatically proceed to the next test.

NOTE

If you press more than one switch at once, the bottom line of the LCD will indicate "WARNING!!"
If this occurs, use the [SHIFT] button + [PAGE/CURSOR <], [PAGE/CURSOR >] buttons to re-select the SWITCH & LED Test item, and perform the test again.

12.KEYBOARD Test

```
KEYBOARD Test:
                PIANO
```

1. Press each key and verify that sound is produced.
   Also verify that the volume changes depending on the strength with which you press the key.
2. Press the [ENTER] button to change the sound from PIANO to ORGAN.

```
KEYBOARD Test:
                ORGAN
```

3. Press each key and verify that sound is produced.
4. Press the [ENTER] button to proceed to the next test.

13.NOISE Test

```
NOISE Test:
```

1. Use a noise meter to measure the residual noise.
2. Set the input filter of your noise meter to "DIN- AUDIO."
3. Verify that the measured value is "- 83.0 dBm" or less.
4. Press the [ENTER] button to proceed to the next test.

14.Factory Reset

```
Factory Reset:
      [ENTER]/[EXIT]
```

1. Press the [ENTER] button to execute Factory Reset. (Do not turn off the power while the screen indicates "KEEP POWER ON !")
   Factory Reset will be completed within 30 seconds.
2. If you press the [EXIT] button, you will return to "13.NOISE Test."
3. If you press the [SHIFT] + [EXIT] button, you will return to "0.Test Mode" Top Page.

```
    COMPLETED
 Test Mode End
```

4. When this screen appears, the procedure has been completed.
   Turn off the power.

FACTORY RESET INSTRUCTIONS

If there is important data you've created that's stored in the JUNO-D's internal memory, you must note that all such data will be discarded when a Factory Reset is performed.
If you want to keep the existing data, save it on a disk (Saving the entire user memory).
Be sure not to turn off the power while Factory Reset is being performed.
If the power is turned off or interrupted while data is being written to memory, the internal data may become corrupted, and you may not be able to turn the power back on.

Procedure

1. Press [PATCH] button so it is lit and you are in Patch mode.
2. Press [UTILITY] button so it is lit.
3. Use PAGE/CURSOR [<]/[>] button to select "5.FACTORY RESET."

```
UTIL MENU:      [ENT]
5:FACTORY RESET
```

4. Press [ENTER] button.

```
FACTORY RESET  [ENT]
    Are you sure?
```

5. Press [ENTER] button again to execute the Factory Reset.
   Factory Reset will be completed within 30 seconds.
6. Do not turn off the power while the screen indicates "KEEP POWER ON !"
   The operation will be completed in less than five minutes.

```
  KEEP POWER ON !
```

7. When the display indicates "COMPLETED", the factory reset operation has been completed.

SYSTEM SOFTWARE UPDATING INSTRUCTIONS

The JUNO-D uses 16 Mbit flash memory to store its program.
The flash memory updater (control program) is stored in the updater block of the flash memory.

The data for the update is normally provided as SMF data.
Connect a sequencer that is able to play back SMF data (e.g., the MC-80) to the JUNO-D, and load the data into the JUNO-D to update its program.

After you update the system, you will need to perform the Factory Reset.
Since this will also reset the user data, you must back up the user data beforehand. (Refer to "Saving and loading data")
Turnaround time of updating about 20 minutes.

Required items

- Sequencer that is able to play back SMF data (e.g., MC-80; a sequencer that has Chain Play capability is ideal)
- MIDI cable
- Disks containing the SMF update data 2HD x 2 (P/No.17041512)

The disks are named as follows.
JUNO-D SMF Update Disk #1(1/2)
JUNO-D SMF Update Disk #2(2/2)

The two disks contain files named p000XX.mid, where XX is a consecutive number starting from "01". (The number of files will depend on the version.)
Play back these files in their numerical order.

Procedure

1. Connect the MIDI from your external sequencer's MIDI OUT to the JUNO-D's MIDI IN.
If you are using a sequencer with Chain Play capability, make settings so that you can chain-play the SMF files.

2. While holding down the [KEY MODE] button and [ENV or BALANCE/LFO] button, turn on the power. (Continue holding down the buttons until the following screen appears.)

```
Select Menu:
        1:MIDI 2:SUM
```

3. Press the [1](PIANO) button.
The display will indicate "Preparing..." for several seconds, then "Waiting...", and will wait to receive MIDI data.

```
Waiting...
 [__________________]
```

4. When the JUNO-D indicates that it is waiting to receive MIDI data, play back all of the ".mid" files from the JUNO-D SMF Update Disks in numerical order.

NOTE

While the JUNO-D is receiving MIDI data, the "Waiting" indication will change to "Receiving."
When the data of one file has been received, the indication will change to "Waiting"; you can then play back the next file.

MEMO

The update process will be easier if you use a sequencer that has Chain Play capability, such as the MC-80.

5. When the update is completed, the following screen will appear and the [1](PIANO) and [2](KBD&ORG) LEDs will blink.

```
INT:160B (160B 160B)
EXT:**** (****) xxxx
```

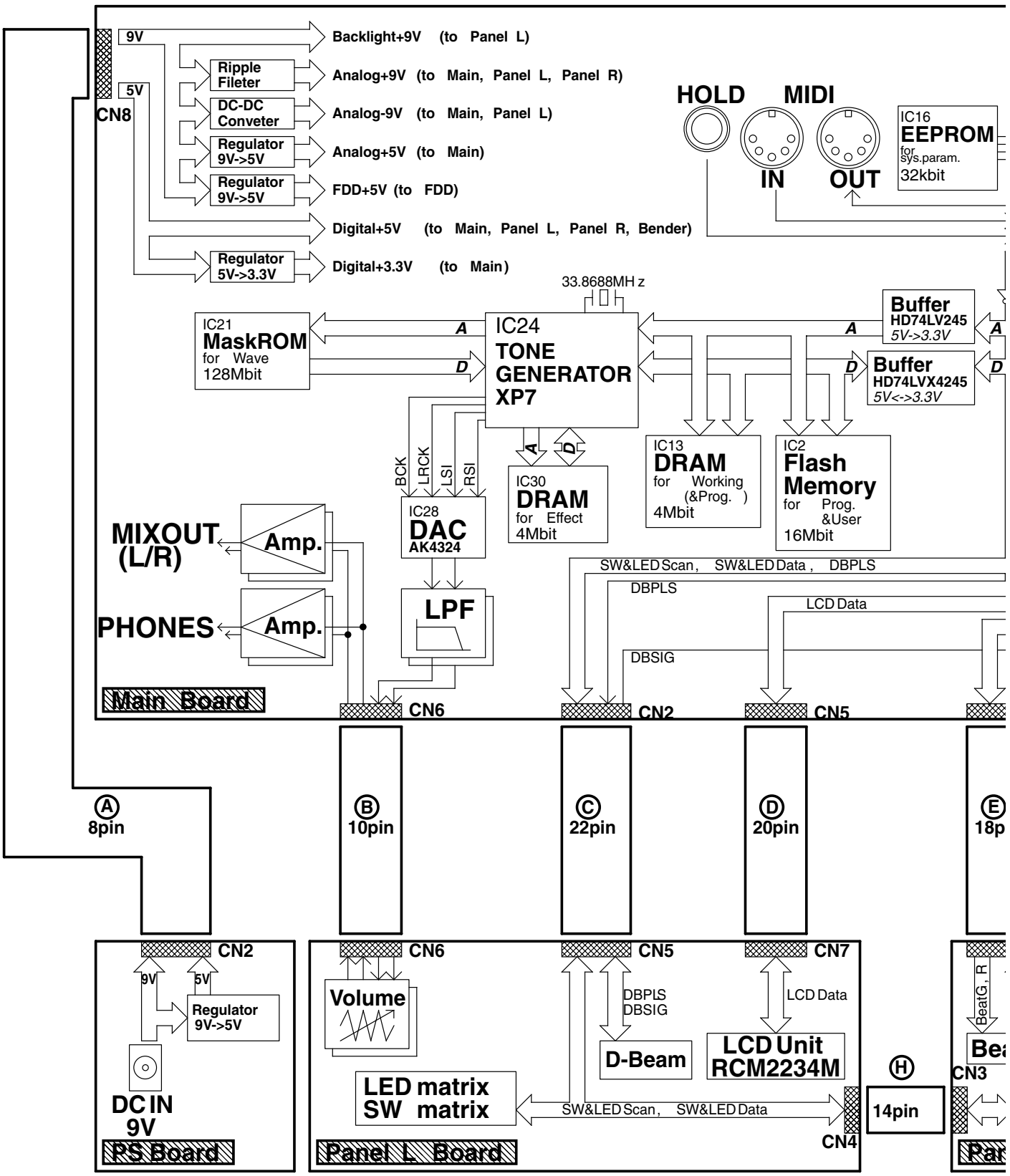
6. Verify that "****" matches the checksum of the version to which you updated.

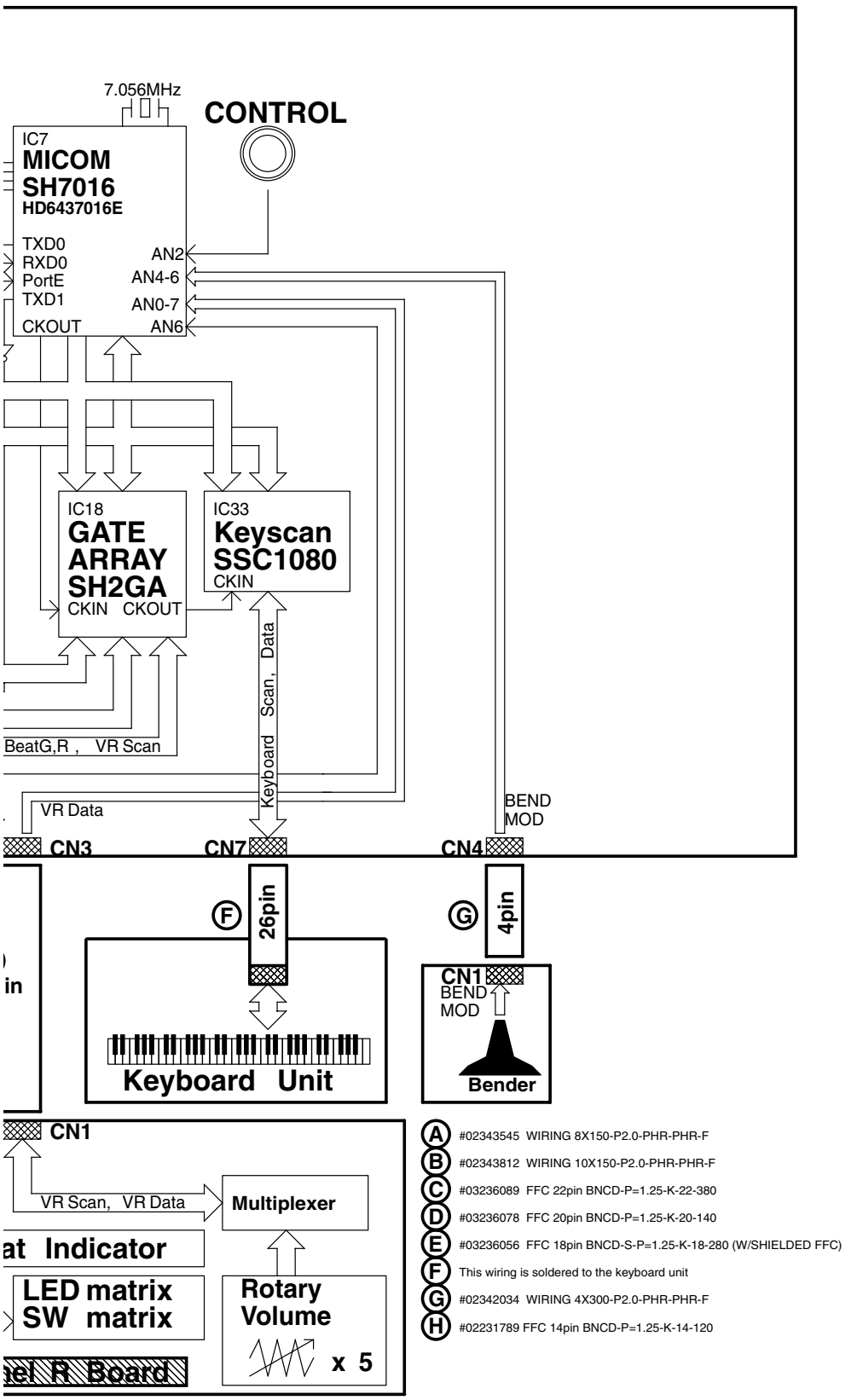
7. Turn off the power of the JUNO-D.
Then turn the power on again and perform the Factory Reset operation. (Refer to "Factory reset")

NOTE

If the update failed, perform it once again from step 1.

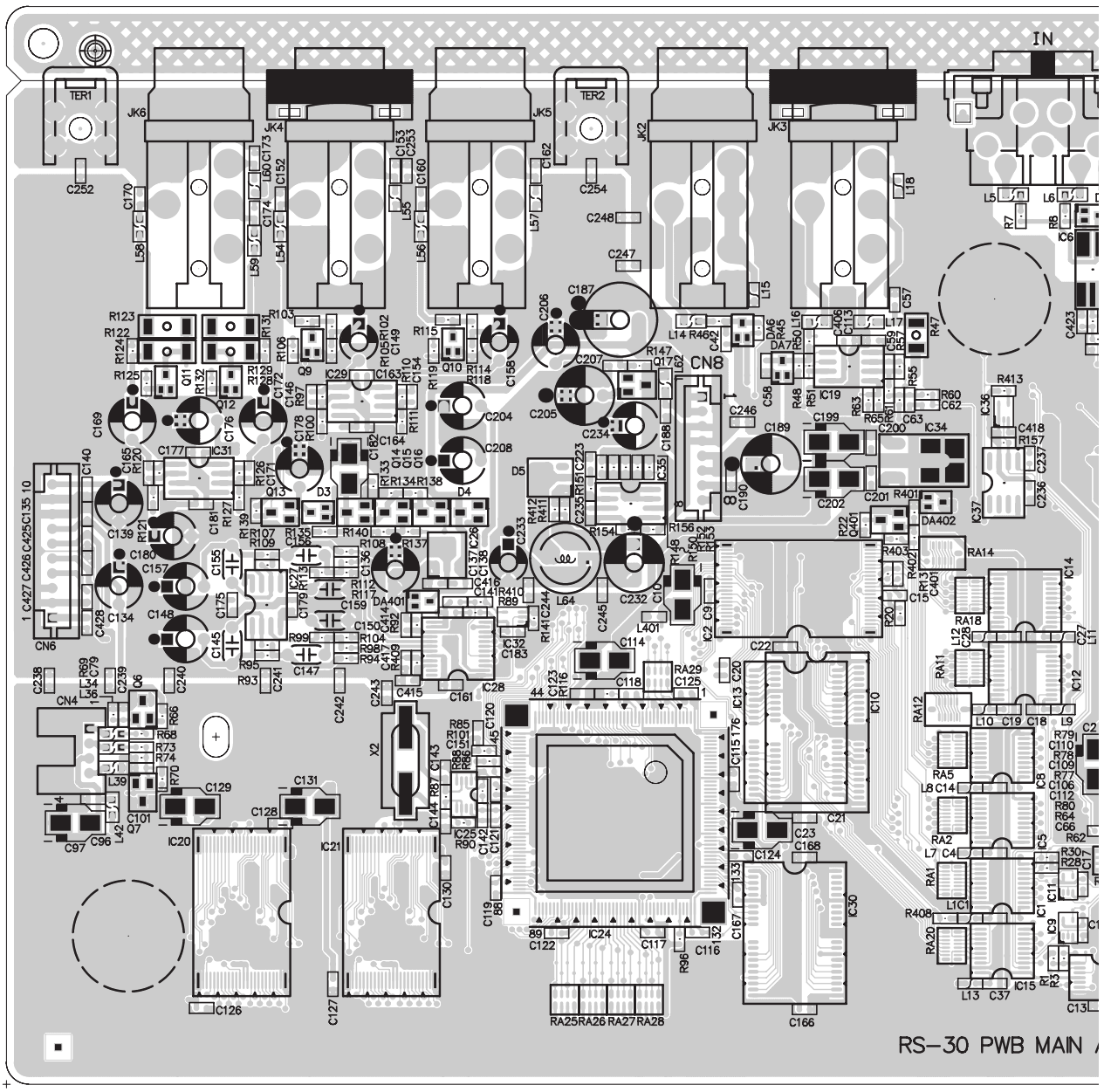
BLOCK DIAGRAM

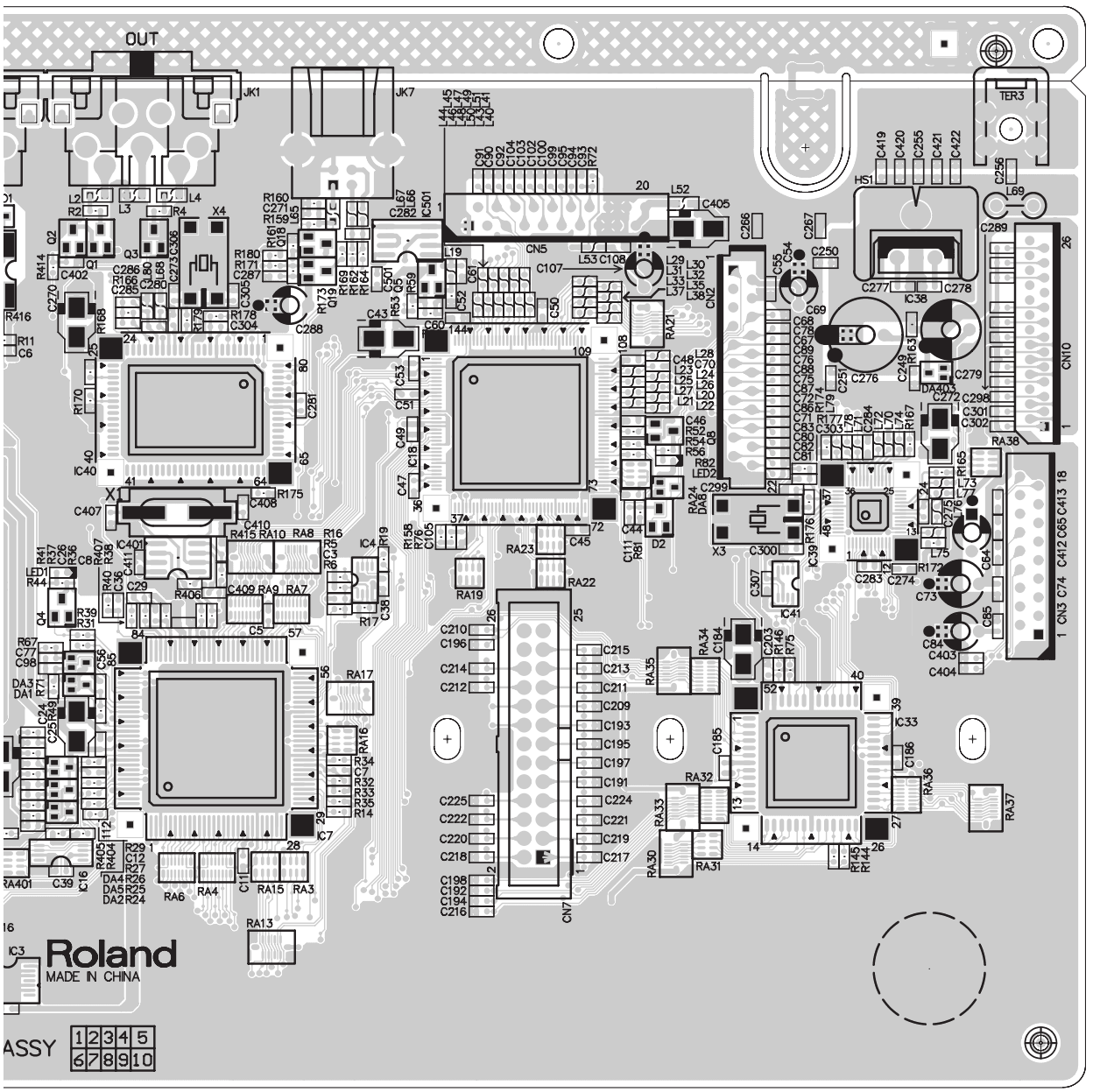




Ⓐ #02343545 WIRING 8X150-P2.0-PHR-PHR-F
Ⓑ #02343812 WIRING 10X150-P2.0-PHR-PHR-F
Ⓒ #03236089 FFC 22pin BNCD-P=1.25-K-22-380
Ⓓ #03236078 FFC 20pin BNCD-P=1.25-K-20-140
Ⓔ #03236056 FFC 18pin BNCD-S-P=1.25-K-18-280 (W/SHIELDED FFC)
Ⓕ This wiring is soldered to the keyboard unit
Ⓖ #02342034 WIRING 4X300-P2.0-PHR-PHR-F
Ⓗ #02231789 FFC 14pin BNCD-P=1.25-K-14-120

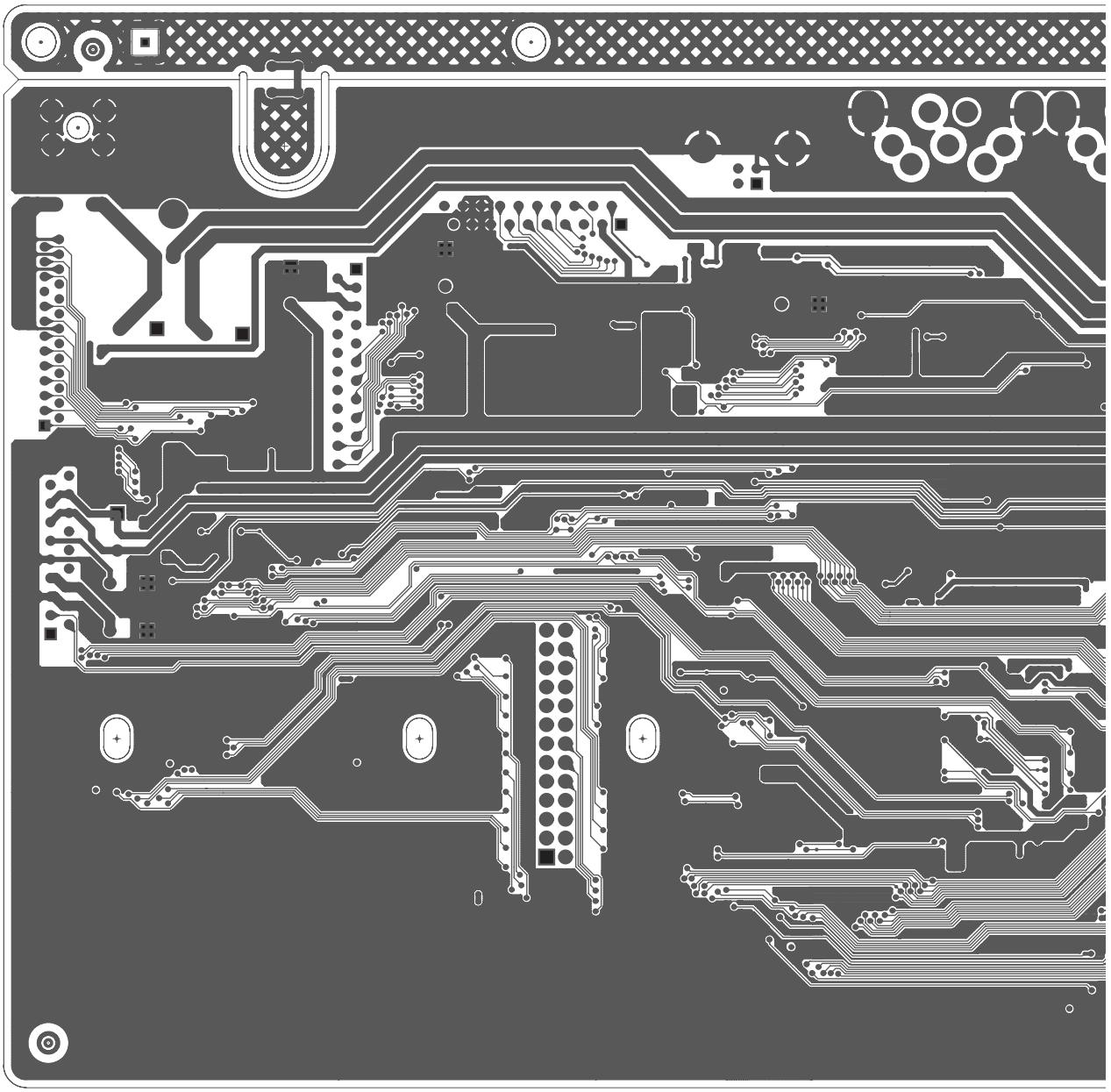
CIRCUIT BOARD (MAIN)

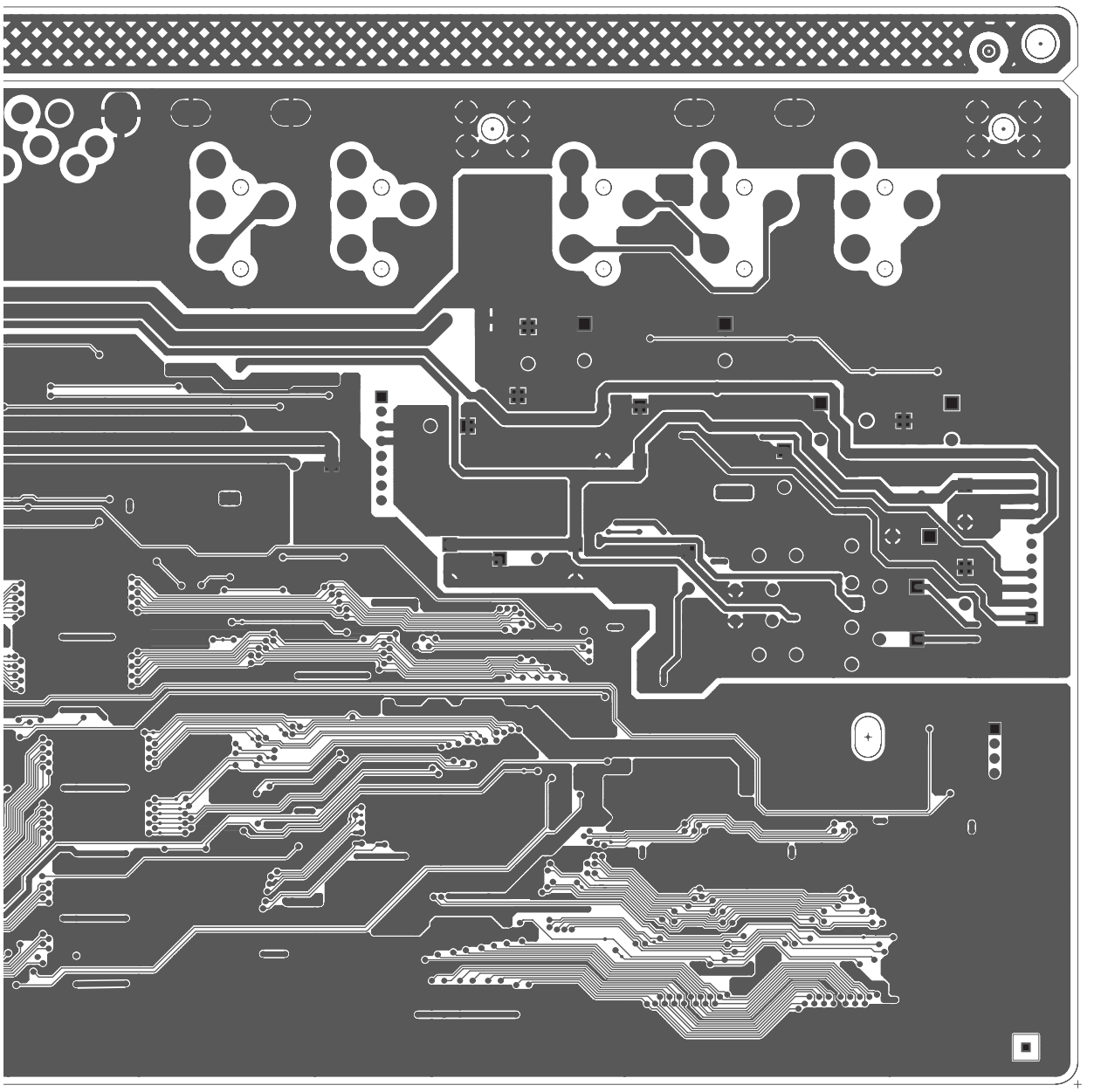




View from components side

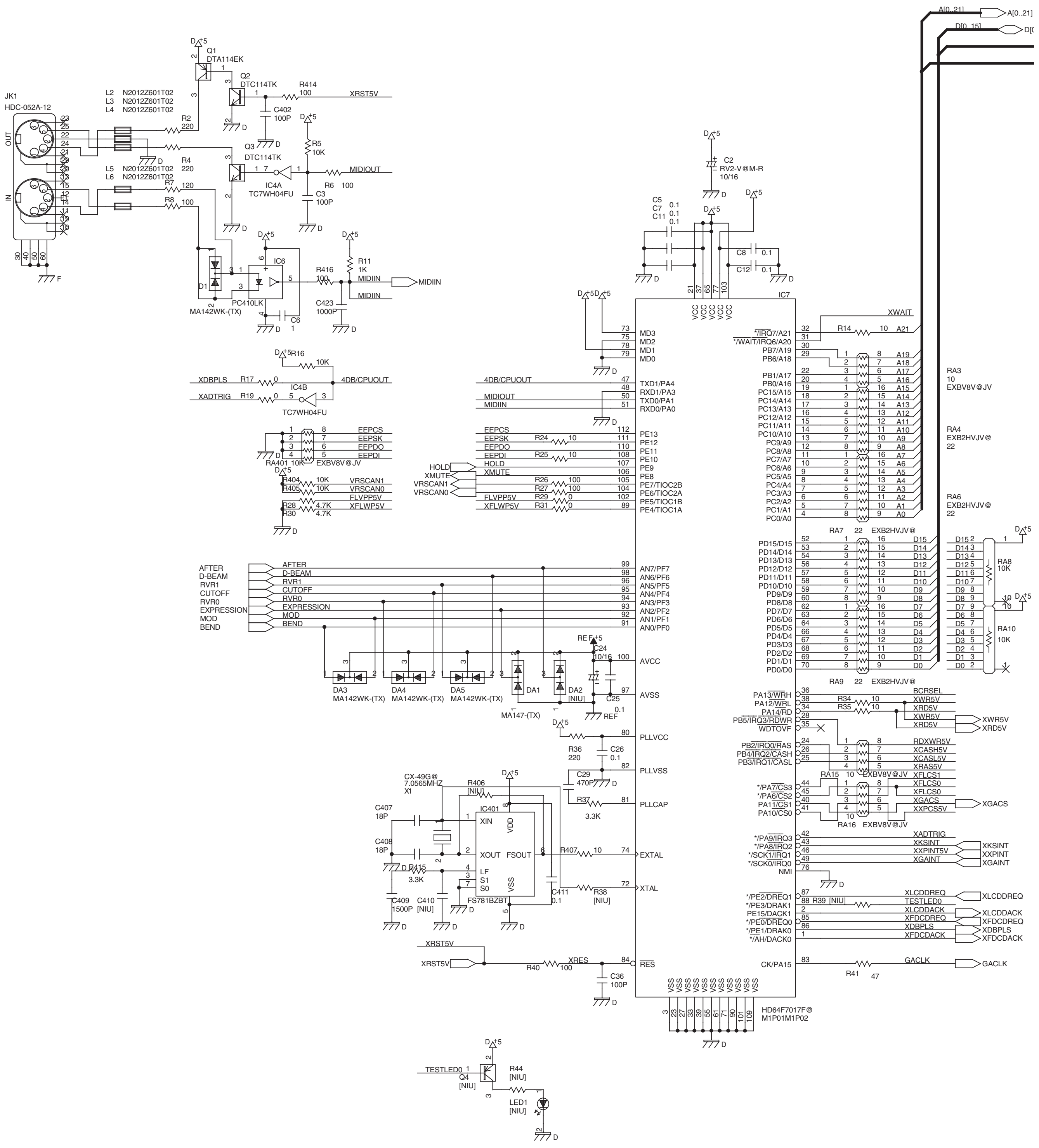
CIRCUIT BOARD (MAIN)

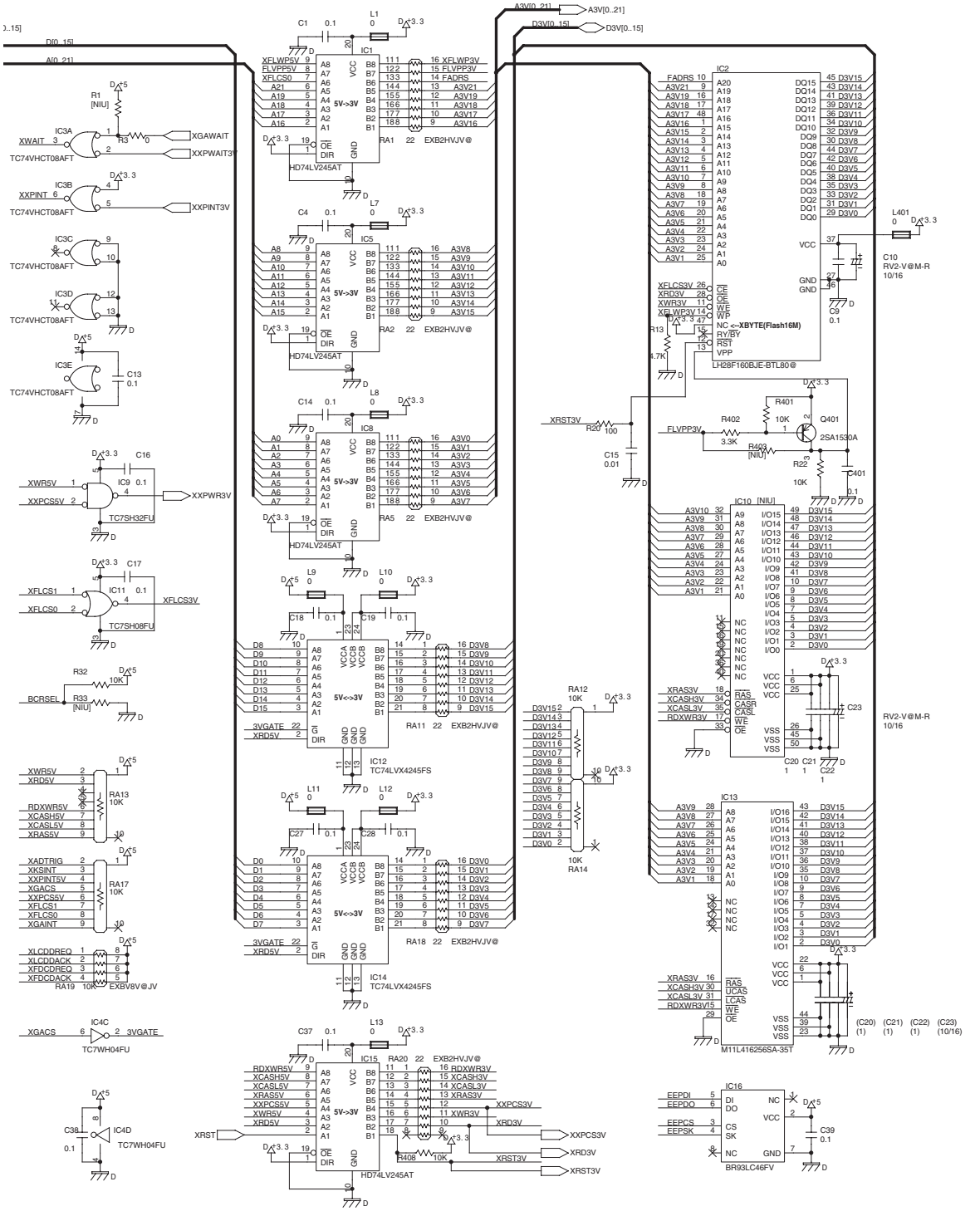




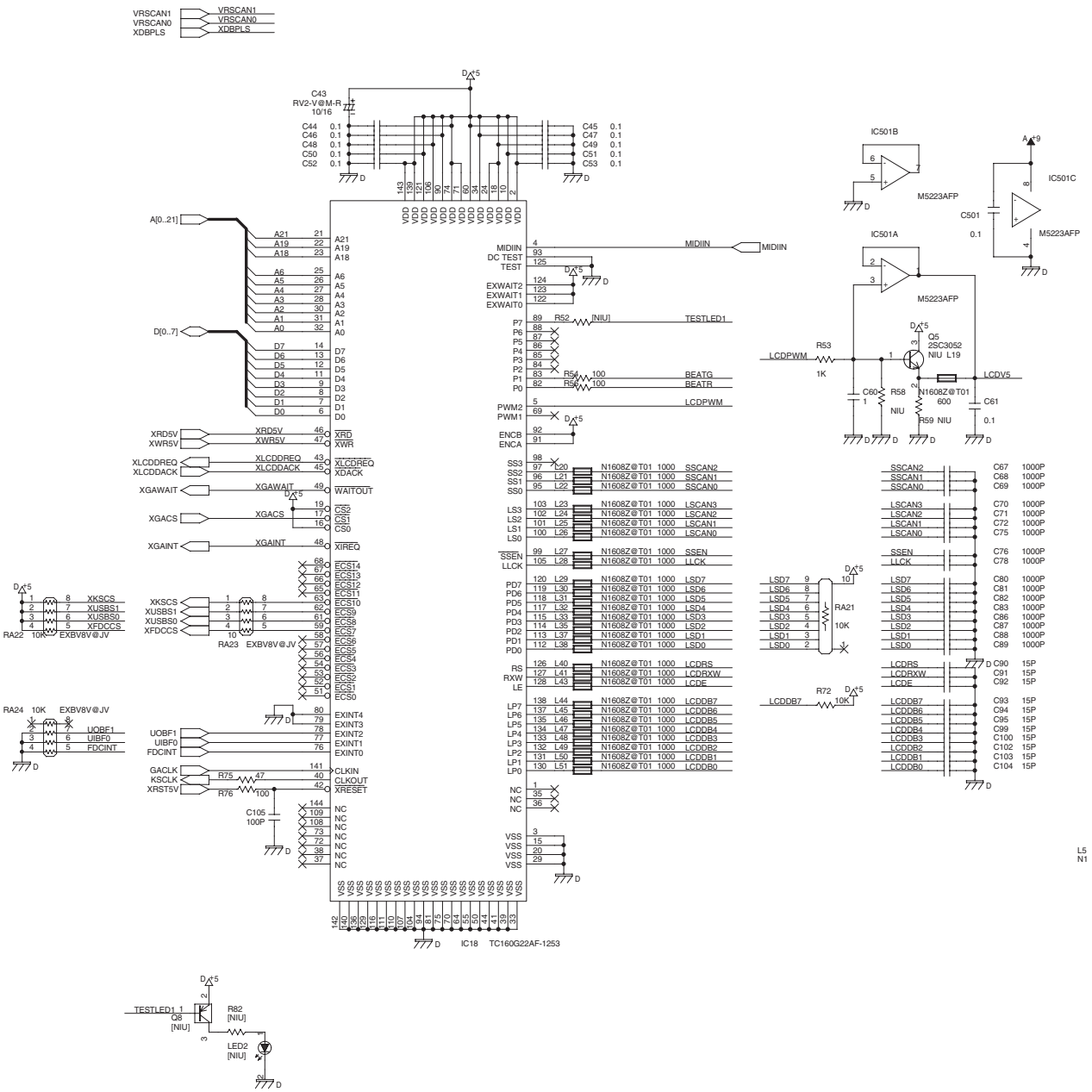
View from foil side

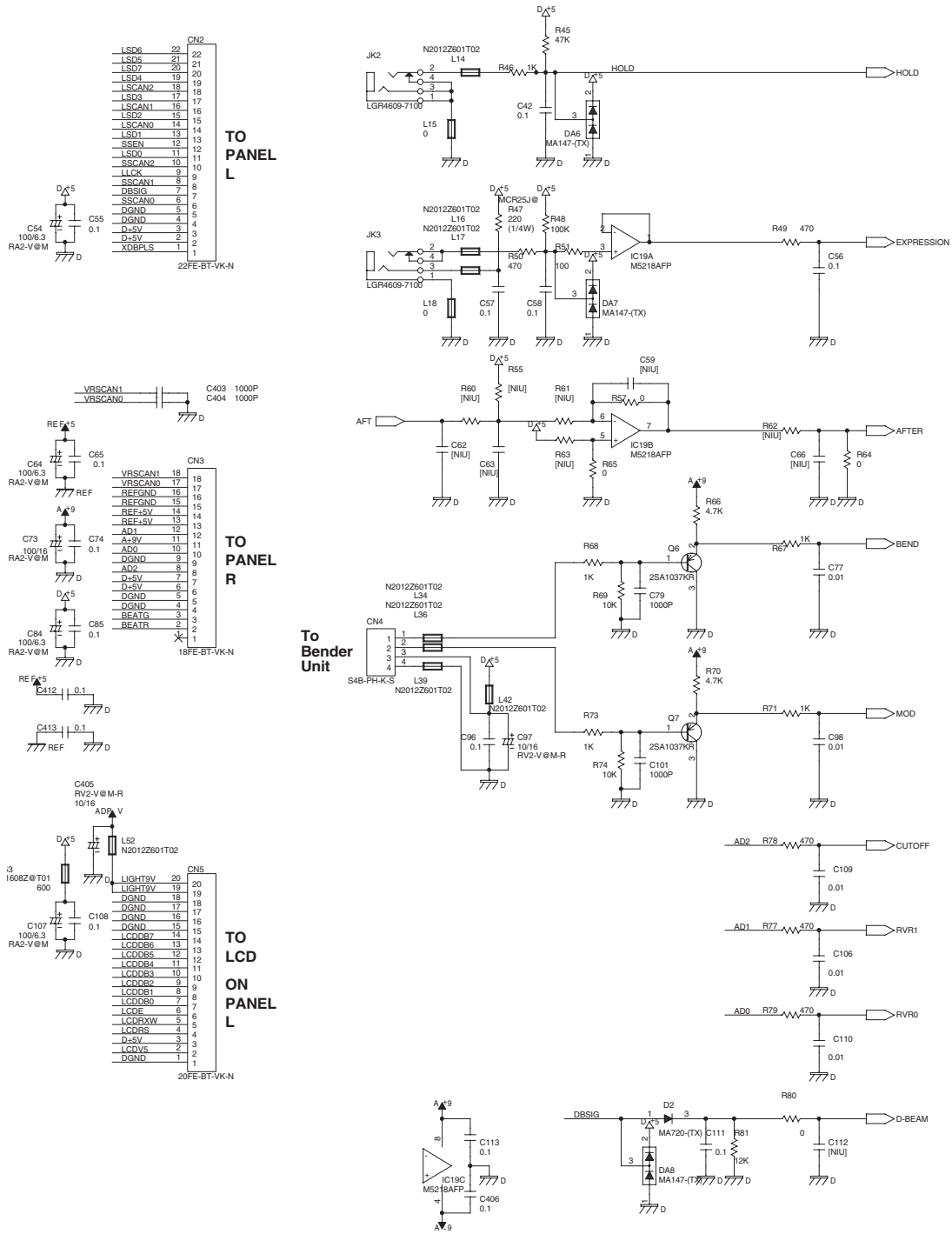
CIRCUIT DIAGRAM (MAIN 1/4)



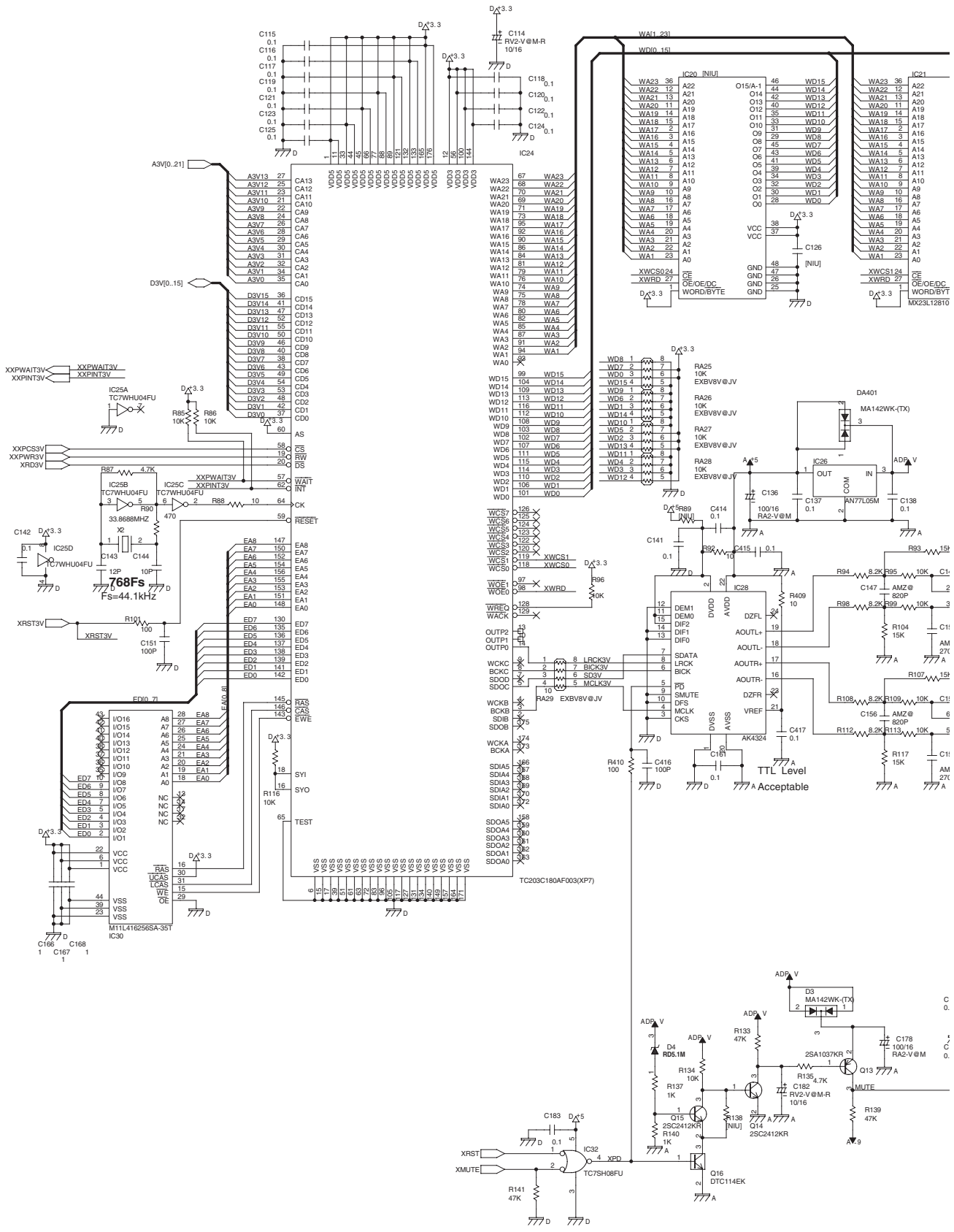

A3V[0..21]
D3V[0..15]
IC1
IC2
IC5
IC8
IC10 [NIU]
IC12
IC13
IC14
IC15
IC16
RA1 22 EXB2HVJV@
RA2 22 EXB2HVJV@
RA5 22 EXB2HVJV@
RA11 22 EXB2HVJV@
RA18 22 EXB2HVJV@
RA20 22 EXB2HVJV@
HD74LV245AT
TC74LVX4245FS
LH28F160BJE-BTL80@
M11L416256SA-35T
BR93LC46FV
TC74VHCT08AFT
TC74WH04FU
TC7SH32FU
TC7SH08FU
EXBV8V@JV
XGAWAIT
XXPWAIT3V
XXPINT3V
XXPWR3V
XFLCS3V
XXPCS3V
XRD3V
XRST3V
XGACS
3VGATE
BCRSEL
XBYTE(Flash16M)

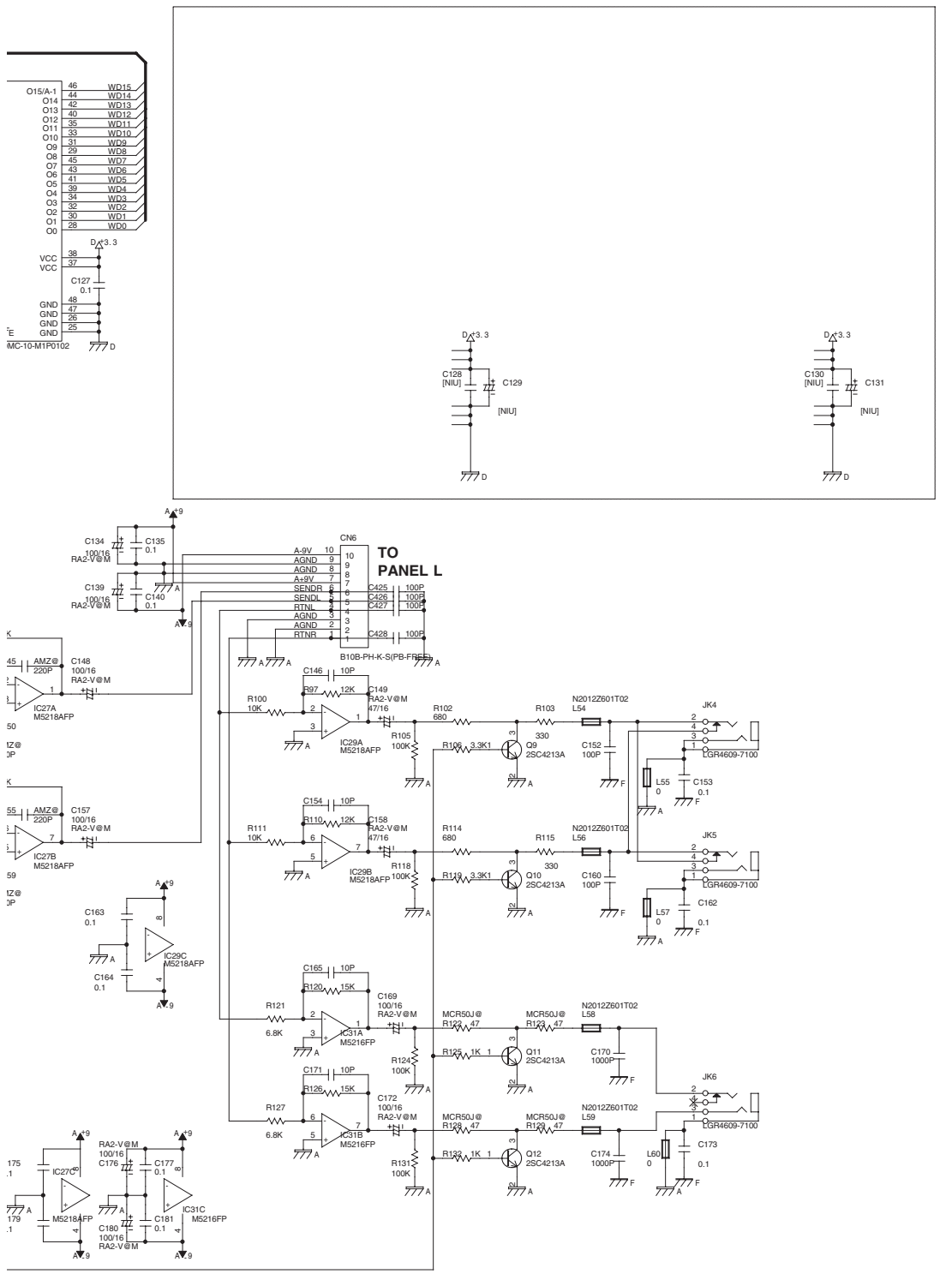
CIRCUIT DIAGRAM (MAIN 2/4)



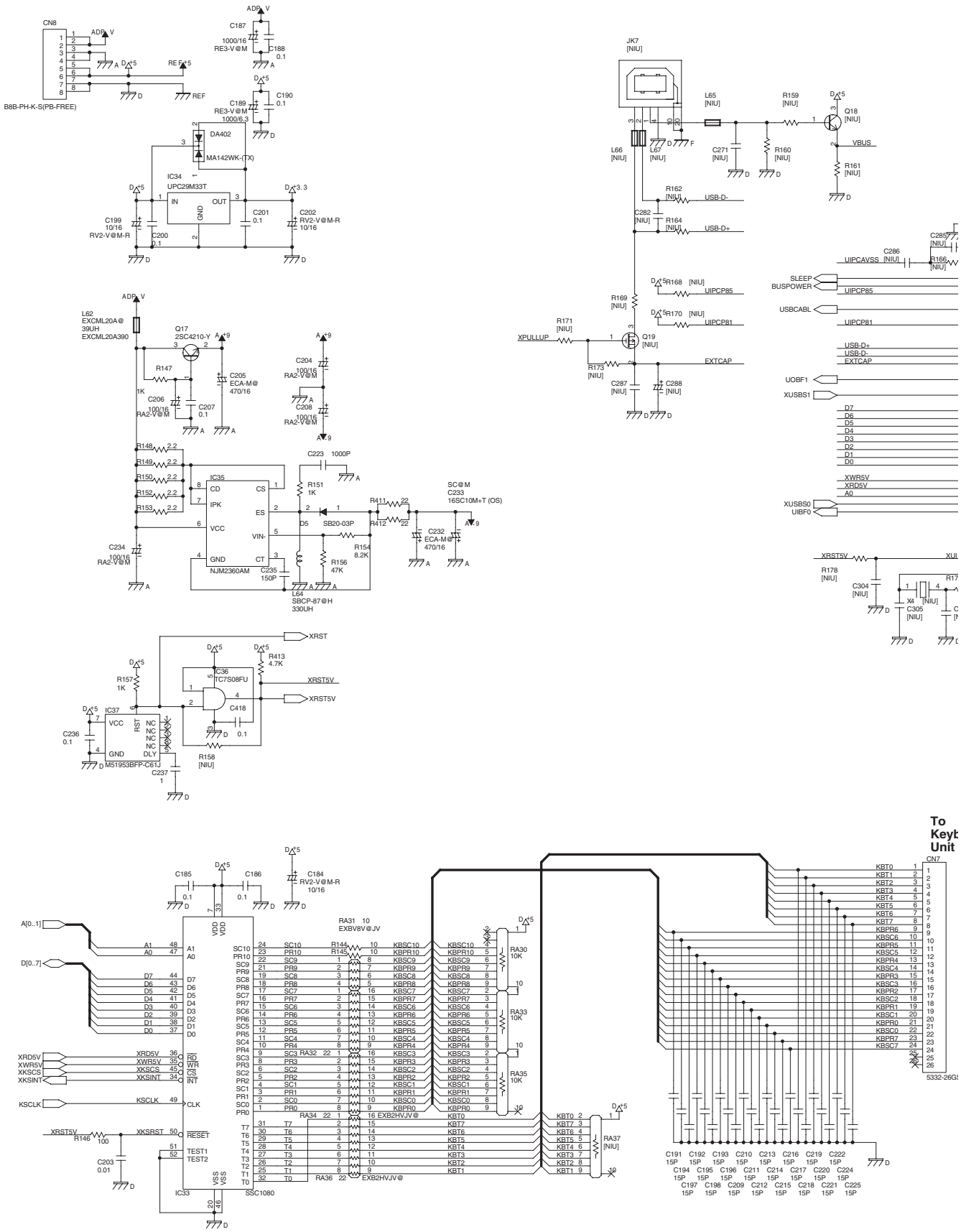

CN2
LSD6 22
LSD5 21
LSD7 20
LSD4 19
LSCAN2 18
LSD3 17
LSCAN1 16
LSD2 15
LSCAN0 14
LSD1 13
SSEN 12
LSD0 11
SSCAN2 10
LLCK 9
SSCAN1 8
DBSIG 7
SSCAN0 6
DGND 5
DGND 4
D+5V 3
D+5V 2
XDBPLS 1
22FE-BT-VK-N
TO PANEL L
JK2
N2012Z601T02 L14
LGR4609-7100
R46 1K
R45 47K
HOLD
C42 0.1
L15 0
DA6 MA147-(TX)
JK3
N2012Z601T02 L16
N2012Z601T02 L17
LGR4609-7100
R47 220 (1/4W)
MCR25J@
R48 100K
R50 470
R51 100
IC19A M5218AFP
R49 470
EXPRESSION
C56 0.1
L18 0
C57 0.1
C58 0.1
DA7 MA147-(TX)
C54 100/6.3 RA2-V@M
C55 0.1
VRSCAN1
VRSCAN0
C403 1000P
C404 1000P
C64 100/6.3 RA2-V@M
C65 0.1
REF
C73 100/16 RA2-V@M
C74 0.1
C84 100/6.3 RA2-V@M
C85 0.1
CN3
VRSCAN1 18
VRSCAN0 17
REFGND 16
REFGND 15
REF+5V 14
REF+5V 13
AD1 12
A+9V 11
AD0 10
DGND 9
AD2 8
D+5V 7
D+5V 6
DGND 5
DGND 4
BEATG 3
BEATR 2
18FE-BT-VK-N
TO PANEL R
C412 0.1
C413 0.1
R55 [NIU]
C59 [NIU]
R60 [NIU]
R61 [NIU]
R57 0
AFT
C62 [NIU]
C63 [NIU]
R63 [NIU]
R65 0
IC19B M5218AFP
R62 [NIU]
AFTER
C66 [NIU]
R64 0
R66 4.7K
R68 1K
Q6 2SA1037KR
R67 1K
BEND
C77 0.01
R69 10K
C79 1000P
To Bender Unit
CN4
S4B-PH-K-S
N2012Z601T02 L34
N2012Z601T02 L36
N2012Z601T02 L39
L42 N2012Z601T02
C96 0.1
C97 10/16 RV2-V@M-R
R70 4.7K
R73 1K
Q7 2SA1037KR
R71 1K
MOD
C98 0.01
R74 10K
C101 1000P
C405 RV2-V@M-R 10/16
ADP-V
L52 N2012Z601T02
C107 100/6.3 RA2-V@M
C108 0.1
CN5
LIGHT9V 20
LIGHT9V 19
DGND 18
DGND 17
DGND 16
DGND 15
LCDDB7 14
LCDDB6 13
LCDDB5 12
LCDDB4 11
LCDDB3 10
LCDDB2 9
LCDDB1 8
LCDDB0 7
LCDE 6
LCDRXW 5
LCDRS 4
D+5V 3
LCDV5 2
DGND 1
20FE-BT-VK-N
TO LCD ON PANEL L
AD2 R78 470
CUTOFF
C109 0.01
AD1 R77 470
RVR1
C106 0.01
AD0 R79 470
RVR0
C110 0.01
R80
DBSIG
D2 MA720-(TX)
C111 0.1
R81 12K
D-BEAM
C112 [NIU]
DA8 MA147-(TX)
C113 0.1
IC19C M5218AFP
C406 0.1

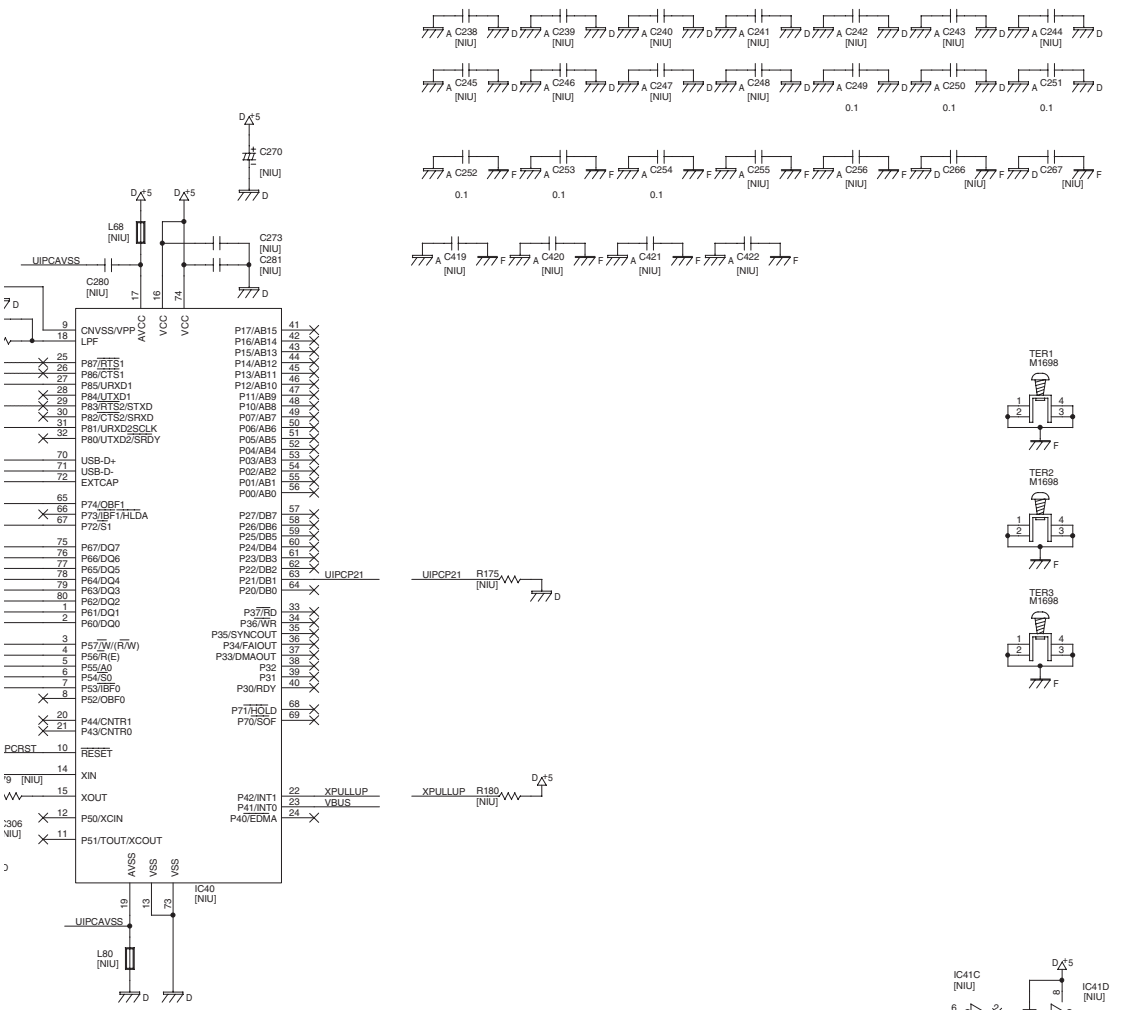
CIRCUIT DIAGRAM (MAIN 3/4)

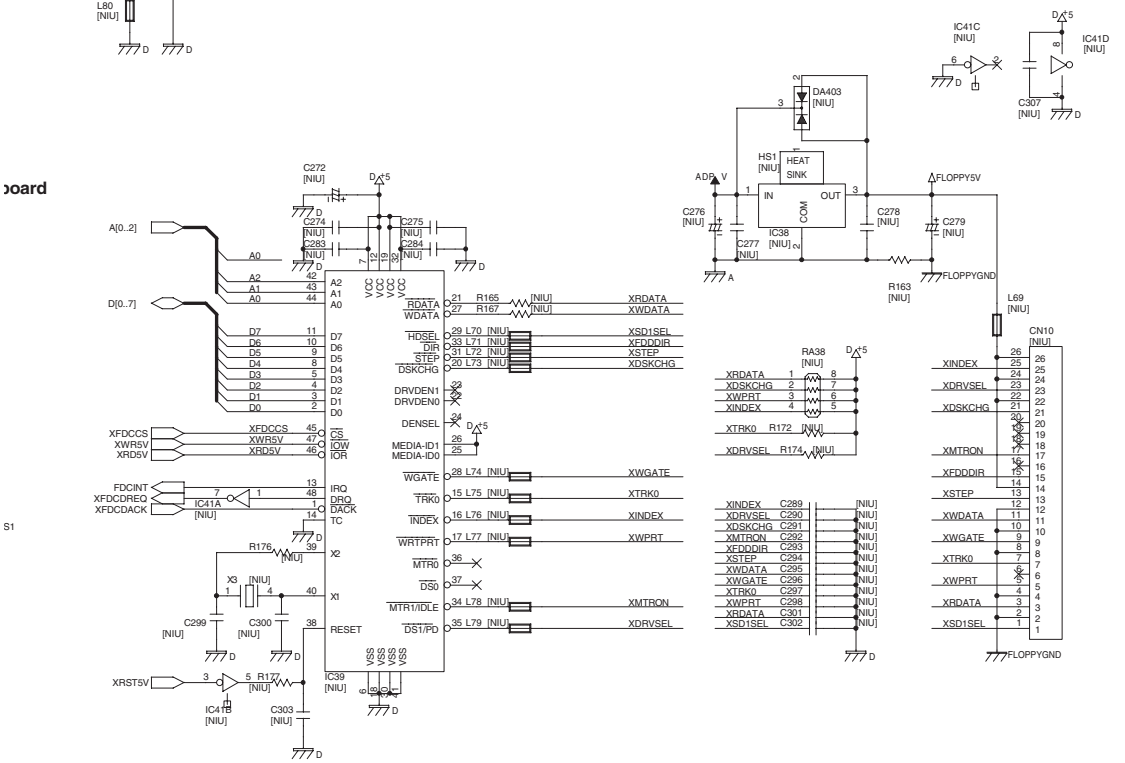



TO
PANEL L
CN6
B10B-PH-K-S(PB-FREE)
IC27A
M5218AFP
IC27B
M5218AFP
IC27C
M5218AFP
IC29A
M5218AFP
IC29B
M5218AFP
IC29C
M5218AFP
IC31A
M5216FP
IC31B
M5216FP
IC31C
M5216FP
Q9
2SC4213A
Q10
2SC4213A
Q11
2SC4213A
Q12
2SC4213A
JK4
JK5
JK6
LGR4609-7100
[NIU]
D+3.3
A+9
AGND
A-9V
SENDR
SENDL
RTNL
RTNR

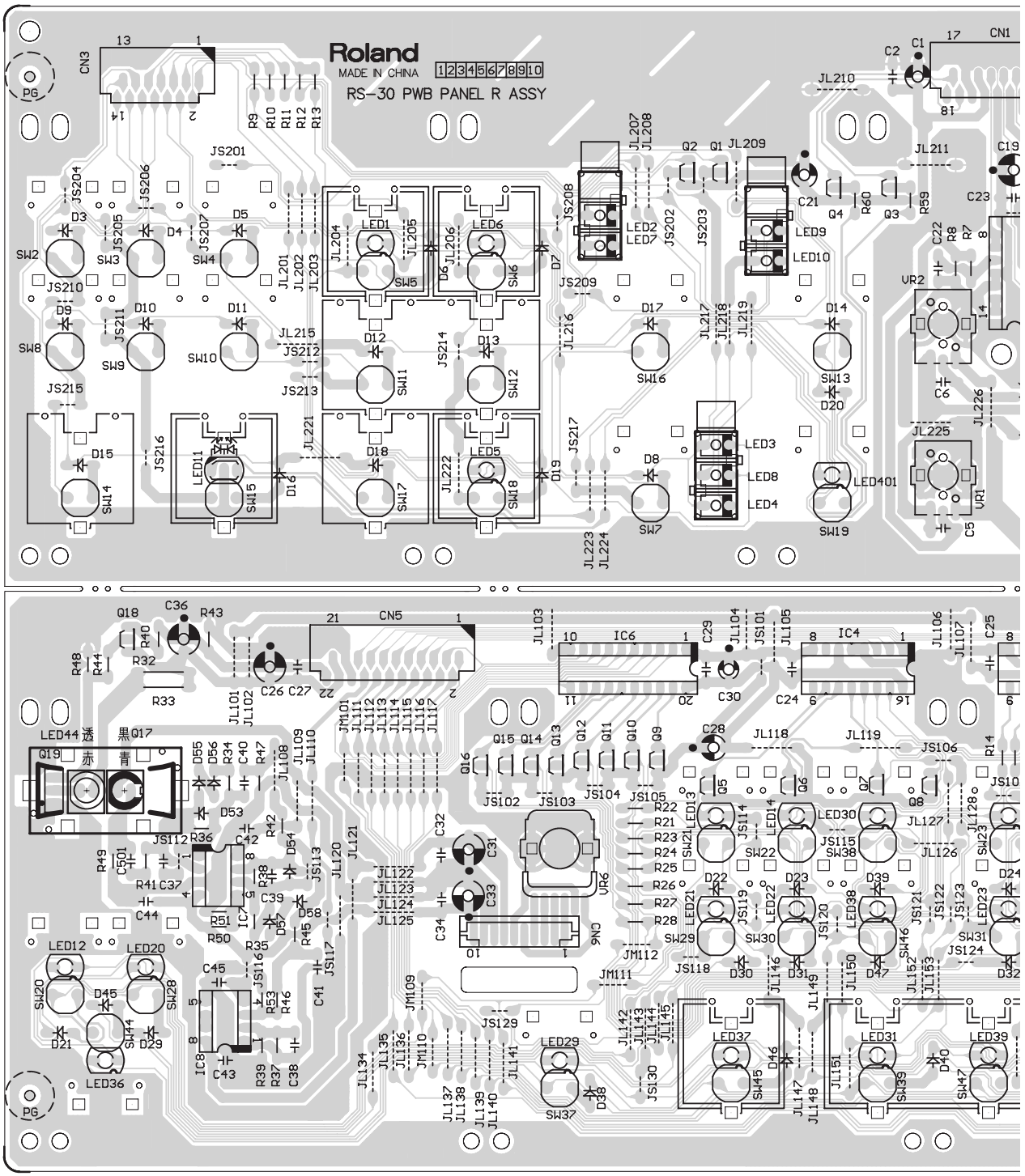
CIRCUIT DIAGRAM (MAIN 4/4)

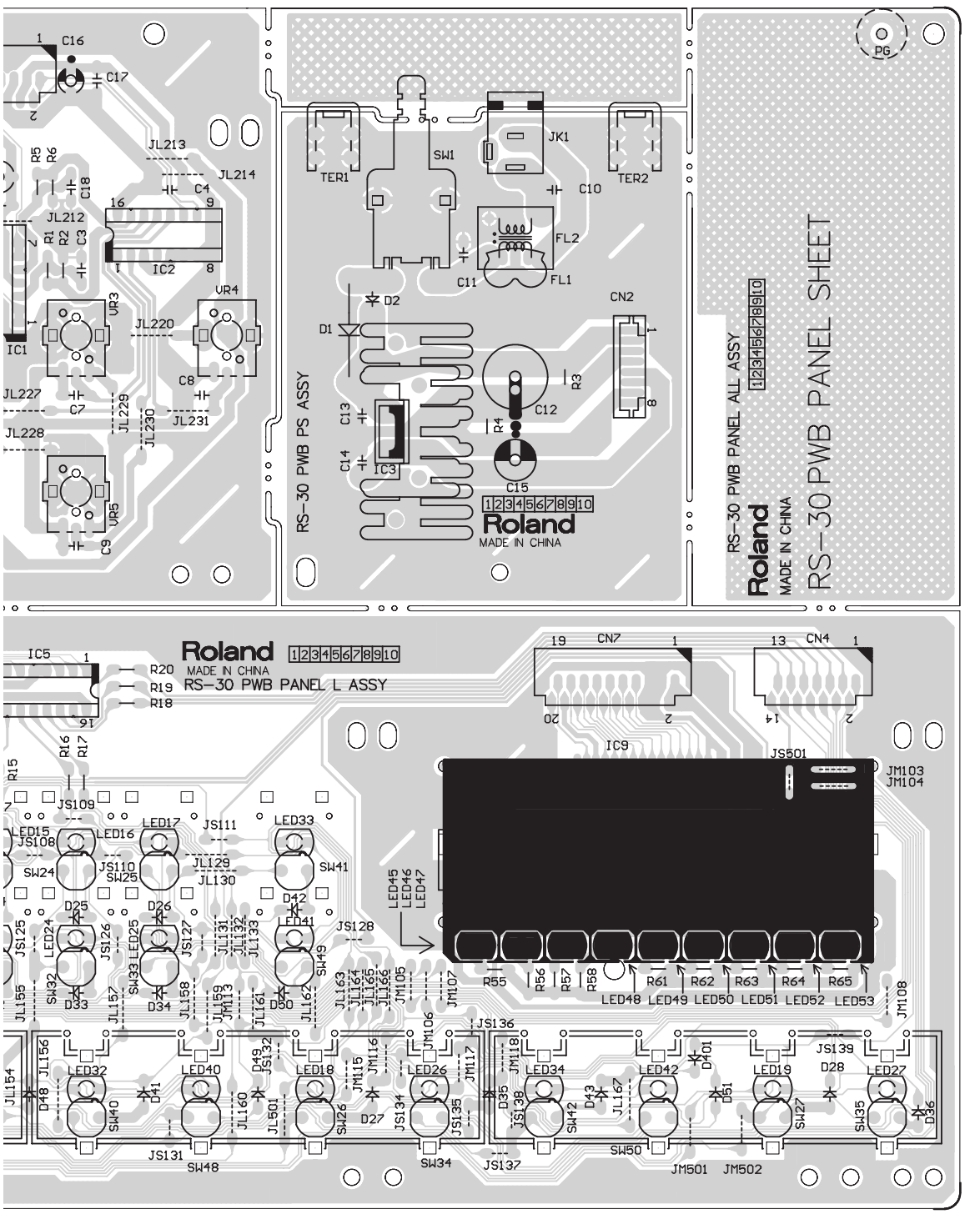



C238 [NIU]
C239 [NIU]
C240 [NIU]
C241 [NIU]
C242 [NIU]
C243 [NIU]
C244 [NIU]
C245 [NIU]
C246 [NIU]
C247 [NIU]
C248 [NIU]
C249
C250
C251
0.1
C252
C253
C254
C255 [NIU]
C256 [NIU]
C266 [NIU]
C267 [NIU]
C419 [NIU]
C420 [NIU]
C421 [NIU]
C422 [NIU]
C270 [NIU]
L68 [NIU]
C273 [NIU]
C281 [NIU]
C280 [NIU]
UIPCAVSS
IC40 [NIU]
CNVSS/VPP
LPF
P87/RTS1
P86/CTS1
P85/URXD1
P84/UTXD1
P83/RTS2/STXD
P82/CTS2/SRXD
P81/URXD2/SCLK
P80/UTXD2/SRDY
USB-D+
USB-D-
EXTCAP
P74/OBF1
P73/IBF1/HLDA
P72/S1
P67/DQ7
P66/DQ6
P65/DQ5
P64/DQ4
P63/DQ3
P62/DQ2
P61/DQ1
P60/DQ0
P57/W/(R/W)
P56/R/(E)
P55/A0
P54/S0
P53/IBF0
P52/OBF0
P44/CNTR1
P43/CNTR0
RESET
XIN
XOUT
P50/XCIN
P51/TOUT/XCOUT
P17/AB15
P16/AB14
P15/AB13
P14/AB12
P13/AB11
P12/AB10
P11/AB9
P10/AB8
P07/AB7
P06/AB6
P05/AB5
P04/AB4
P03/AB3
P02/AB2
P01/AB1
P00/AB0
P27/DB7
P26/DB6
P25/DB5
P24/DB4
P23/DB3
P22/DB2
P21/DB1
P20/DB0
P37/RD
P36/WR
P35/SYNCOUT
P34/FAIOUT
P33/DMAOUT
P32
P31
P30/RDY
P71/HOLD
P70/SOF
P42/INT1
P41/INT0
P40/EDMA
UIPCP21
UIPCP21 R175 [NIU]
XPULLUP
XPULLUP R180 [NIU]
XPULLUP
VBUS
L80 [NIU]
TER1 M1698
TER2 M1698
TER3 M1698


IC41C [NIU]
IC41D [NIU]
C307 [NIU]
DA403 [NIU]
HS1 [NIU]
HEAT SINK
IC38 [NIU]
IN
OUT
COM
ADJ.V
FLOPPY5V
FLOPPYGND
C276 [NIU]
C277 [NIU]
C278 [NIU]
C279 [NIU]
R163 [NIU]
L69 [NIU]
CN10 [NIU]
C272 [NIU]
C274 [NIU]
C275 [NIU]
C283 [NIU]
C284 [NIU]
A[0..2]
D[0..7]
IC39 [NIU]
XRST5V
C299 [NIU]
C300 [NIU]
C303 [NIU]
R176 [NIU]
R177 [NIU]
X3 [NIU]
IC41A [NIU]
FDCINT
XFDCDREQ
XFDCDACK
XFDCCS
XWR5V
XRD5V
RDATA
WDATA
HDSEL
DIR
STEP
DSKCHG
DRVDEN1
DRVDEN0
DENSEL
MEDIA-ID1
MEDIA-ID0
WGATE
TRK0
INDEX
WRTPRT
MTR0
DS0
MTR1/IDLE
DS1/PD
R165 [NIU]
R167 [NIU]
L70 [NIU]
L71 [NIU]
L72 [NIU]
L73 [NIU]
L74 [NIU]
L75 [NIU]
L76 [NIU]
L77 [NIU]
L78 [NIU]
L79 [NIU]
XRDATA
XWDATA
XSD1SEL
XFDDDIR
XSTEP
XDSKCHG
XWGATE
XTRK0
XINDEX
XWPRT
XMTRON
XDRVSEL
RA38 [NIU]
R172 [NIU]
R174 [NIU]
XINDEX C289
XDRVSEL C290
XDSKCHG C291
XMTRON C292
XFDDDIR C293
XSTEP C294
XWDATA C295
XWGATE C296
XTRK0 C297
XWPRT C298
XRDATA C301
XSD1SEL C302

CIRCUIT BOARD (PANEL R/PANEL L/PS)

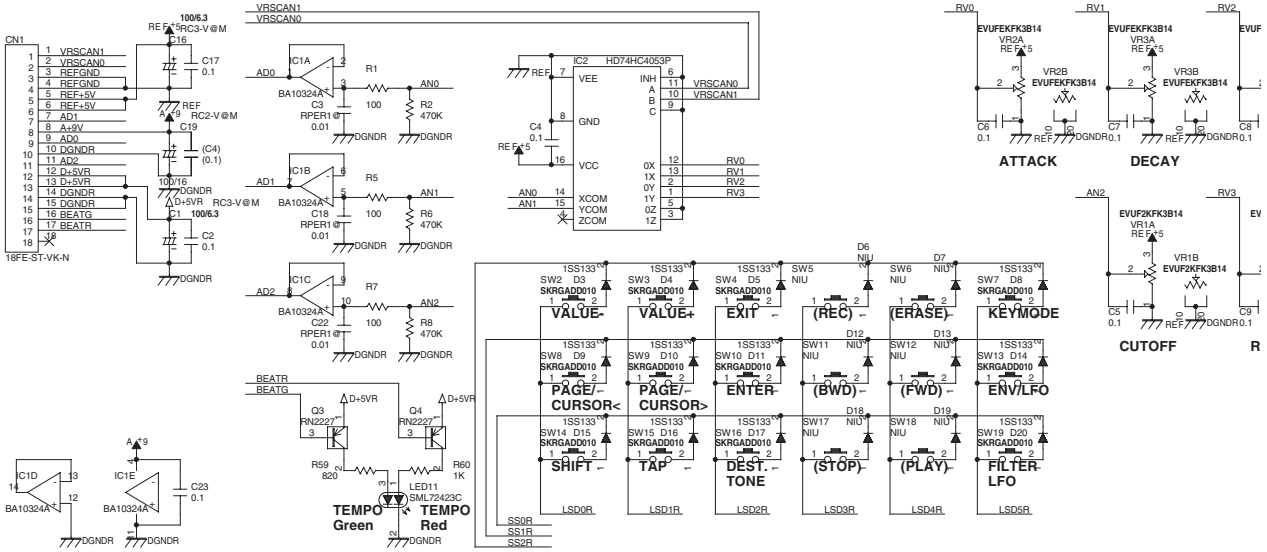




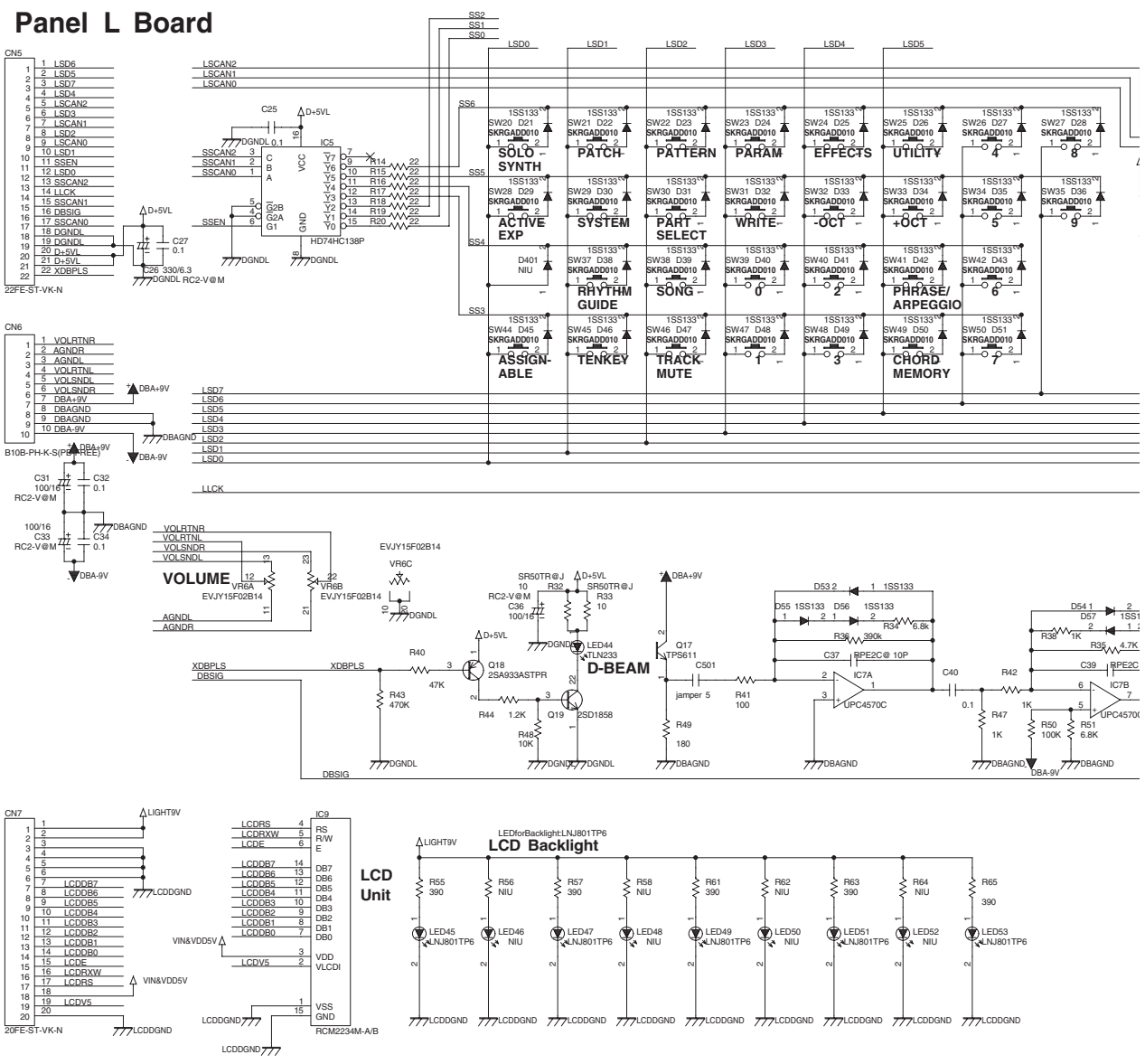
View from components side

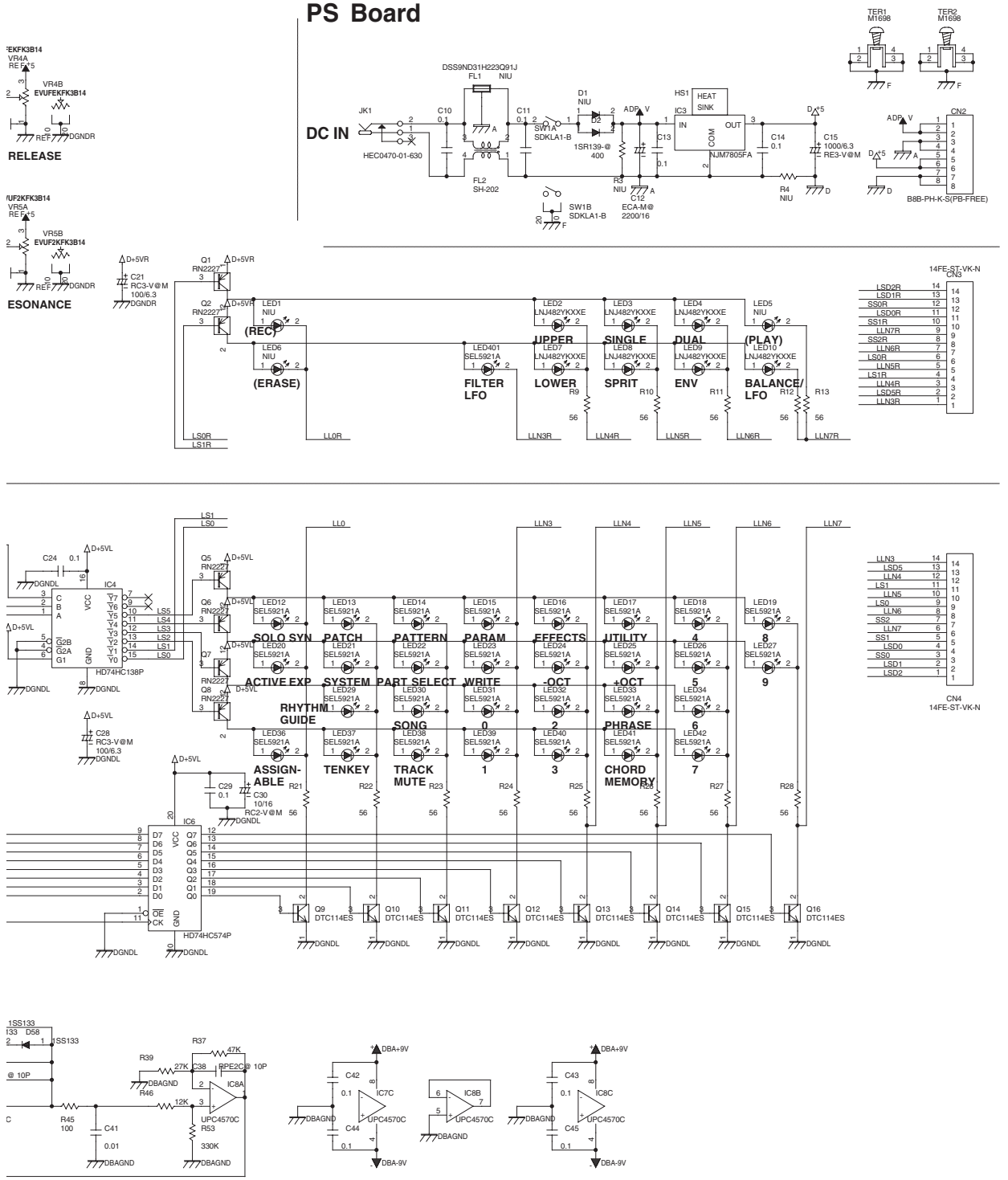
CIRCUIT DIAGRAM (PANEL R/PANEL L/PS)

Panel R Board



Panel L Board




PS Board
DC IN
RELEASE
ESONANCE
(REC)
(ERASE)
(PLAY)
UPPER
SINGLE
DUAL
LOWER
SPRIT
ENV
FILTER LFO
BALANCE/ LFO
SOLO SYN
PATCH
PATTERN
PARAM
EFFECTS
UTILITY
ACTIVE EXP
SYSTEM
PART SELECT
WRITE
-OCT
+OCT
RHYTHM GUIDE
SONG
PHRASE
ASSIGN-ABLE
TENKEY
TRACK MUTE
CHORD MEMORY
HEC0470-01-630
SW1A SDKLA1-B
SW1B SDKLA1-B
1SR139-@ 400
NJM7805FA
HEAT SINK
B8B-PH-K-S(PB-FREE)
14FE-ST-VK-N
HD74HC138P
HD74HC574P
UPC4570C
DTC114ES

ERROR MESSAGES

Checksum Error

Meaning: The checksum of a received System Exclusive message was incorrect.

Action: Set the correct checksum value.

MIDI Buffer Full

Meaning: Due to an inordinate volume of MIDI messages received, the JUNO-D has failed to process them properly.

Action: Reduce the amount of MIDI messages to be transmitted.

MIDI Communication Error

Meaning: A problem has occurred with the MIDI cable connections.

Action: Check that MIDI cables are not broken or pulled out.

Receive Data Error

Meaning: A MIDI message was received incorrectly.

Action: If the same error message is displayed repeatedly, the problem lies with the MIDI messages that are being transmitted to the JUNO-D.

User Memory Damaged

Meaning: The data in user memory has been lost.

Action: Use the Factory Reset function to initialize the memory to the factory settings.

CANCELED

Meaning: Processing is canceled. (This is not an error message.)

Action: ---

SERVICE INFORMATION

The names of the internal sound were changed from the 5 LOT products.

NOTE

This change is only for the names. There is no change in the output sound.

The followings are the details of the change.

Tone

No.	Before change	After change
0023	60's Rhodes	60's EP
0024	JUNO-D Rhodes	JUNO-D EP
0025	Touch Rhodes	Touch EP
0027	Dyno Rhodes	Dyno EP
0028	MKS20Rhodes	MKS20 EP
0029	StageRhodes1	Stage EP 1
0030	StageRhodes2	Stage EP 2
0033	Sine Rhodes	Sine EP
0034	Phase EP	Phase EP 1
0035	Phase Rhodes	Phase EP 2
0043	FM Rhodes 1	FM EP 1
0044	FM Rhodes 2	FM EP 2

Patch

No.	Before change	After change
013	JUNO-D Rhds	JUNO-D EP
014	ChorusRhodes	Chorus EP
016	Dyno Rhodes	Dyno EP
019	TremoloRhods	Tremolo EP
021	MKS20 Rhds 1	MKS20 EP 1
022	MKS20 Rhds 2	MKS20 EP 2
023	Touch Rhodes	Touch EP
024	Phase Rhodes	Phase EP 1
025	Phase Rhds 2	Phase EP 2
026	Phase EP	Phase EP 3
027	Psycho Rhds	Psycho EP
028	StageRhds/Bs	Stage EP/Bs
030	Sine Rhodes	Sine EP
031	FM EP	FM EP 1
034	FM Rhodes	FM EP 2
049	60's Rhodes	60's EP

Performance

No.	Before change	After change
06	JUNO-D Rhds	JUNO-D EP