PORTATONE

DJX PSR-D1

# SERVICE MANUAL



■**CONTENTS**


SPECIFICATIONS ..... 3
PANEL LAYOUT ..... 4
CIRCUIT BOARD LAYOUT ..... 5
BLOCK DIAGRAM ..... 6
DISASSEMBLY PROCEDURE ..... 7
LSI PIN DESCRIPTION ..... 12
IC BLOCK DIAGRAM ..... 14
CIRCUIT BOARDS ..... 15
TEST PROGRAM & INITIALIZE ..... 18
CONNECTING CABLES ..... 19
MIDI IMPLEMENTATION CHART ..... 20
PARTS LIST
OVERALL CIRCUIT DIAGRAM



**PK** 001612

YAMAHA

HAMAMATSU,JAPAN
2.4K-773 Ⓘ Printed in Japan'98.06

## 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 per form 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 repre sentative.

**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, therefor, inevitable exist, please contact the distributor's Service Division.

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

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

## 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.

# SPECIFICATIONS

Keyboards
- 61 standard-size keys (C1 - C6), with Touch Response

Display
- Large multi-function LCD display

Setup
- Stand by/ON
- Master Volume : MIN - MAX

Panel Controls
- OVERALL (st , +,-), FUNCTION, SONG, VOICE, STYLE, [0]-[9], [+](YES/FF), [-](NO/BWD)

Demo Song
- 3 songs

Voice
- 140 panel voices + 15 Drum Kits + 128 GM Voices + Special DJX Demo Voice + Sampled Voice
- Polyphony : 32
- Voice Set
- Dual Voice Mode
- Split Voice Mode

Pattern
- 100 styles
- Pattern Control : PATTERN CONTROL, SYNC-START, START/STOP, LEAD IN/LEAD OUT, BEAT A/B (BREAK OUT)
- Beat Indicator
- Pattern Volume

Part Control
- Beat Reverse
- Part Select
  Style Mode : Bass, Kick, Phrase 1, Snare, Hi-hat, Phrase 2, Percussion, Phrase 3, Main Voice, Split Voice, Dual Voice
  Song Mode : Track 1, 2, 3, 4, 5, 6, Main Voice, Split Voice, Dual Voice
- Part On/Off
  Bass, Kick, Phrase 1, Snare, Hi-hat, Phrase 2, Percussion, Phrase 3

Realtime Controls
- Knobs : CUTOFF, RESONANCE, GROOVE, ASSIGN, BASS BOOST
- RIBBON CONTROLLER
- PITCH BEND wheel

Performance Setup
- Preset A and B
- User (4 setups x 4 banks)

Overall controls
- BPM (Tempo)
- Transpose
- Tuning
- Pattern/Song Volume
- Ribbon Controller Assign
- Knob Assign

Effects
- Reverb : 8 types
- Chorus : 4 types
- DSP : 33 types
- Arpeggiator : 16 types

Song
- 3 Preset Demo Songs + 3 User Songs
- Song Clear

Recording
- Song
  User Song : 3 Songs
  Real Time Recording/Step Recording
  Recording Tracks : SONG MEMORY 1, 2, 3, 4, 5, 6/CHORD
- PSU (Performance Setup)
  User : 4 setups x 4 banks

Digital Sampling
- 12 Samples
- Memory : 128 Kbyte (about 6 seconds)
- Editing : Loop, End Point

MIDI
- Transmit Settings
- Receive Settings
- Local Control
- Clock
- Bulk Send/Receive
- Sampling Send/Receive
- Initial Send

Auxiliary jacks
- PHONES/AUX OUT, DC IN 10-12V, MIDI IN/OUT, FOOT SWITCH, MIC, LINE IN

Amplifier
- 6.0 W + 6.0 W

Speakers
- 12 cm x 2

Power Consumption
- 20 W (when using PA-5C power adaptor)

Power Supply
- Adaptor : Yamaha PA-5B/5C AC power adaptor
- Batteries : Six "D" size, SUM-1, R-20 or equivalent batteries

Dimensions (W x D x H)
- 933 x 370 x 138 mm
  (36- 3/4" x 14-9/16" x 5-7/16")

Weight
- 6.8 kg (15 lbs.)

Supplied Accessories
- Owner´s Manual

---

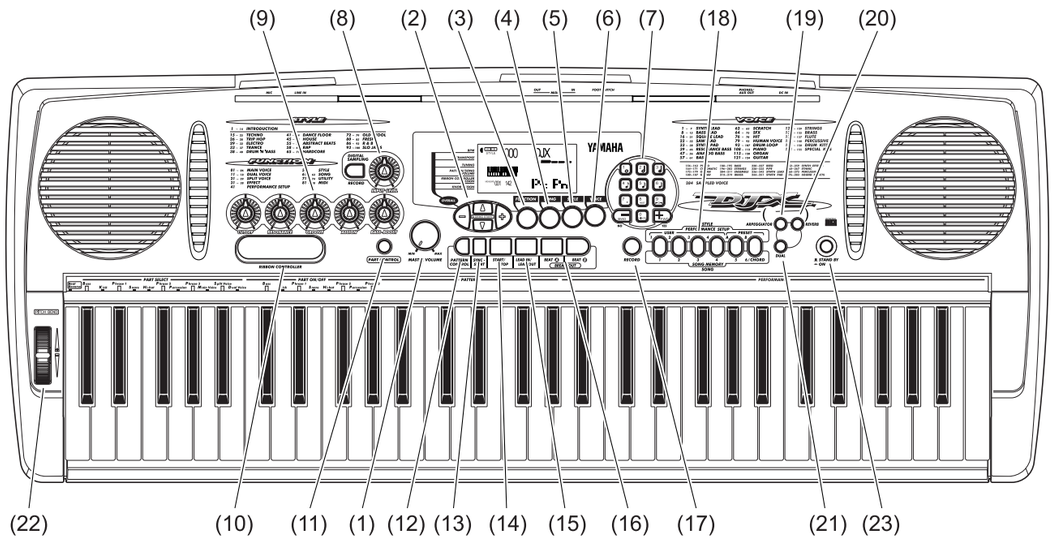
Optional Accessories
- Headphones : HPE-150, HPE-3
- AC power adaptor : PA-5B/5C
- Footswitch : FC4, FC5
- Keyboard stand : L-2L, L-2C

---

Output level
Refer to the TEST PROGRAM section of this manual.

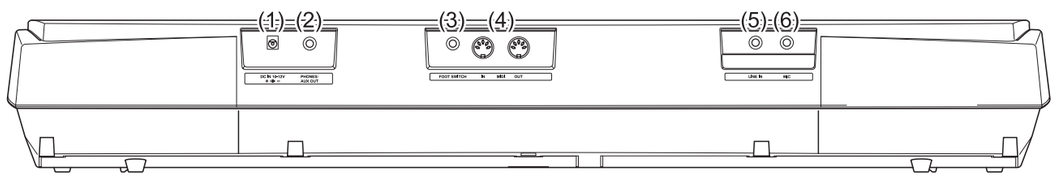
# ■ PANEL LAYOUT

- **Control Panel**



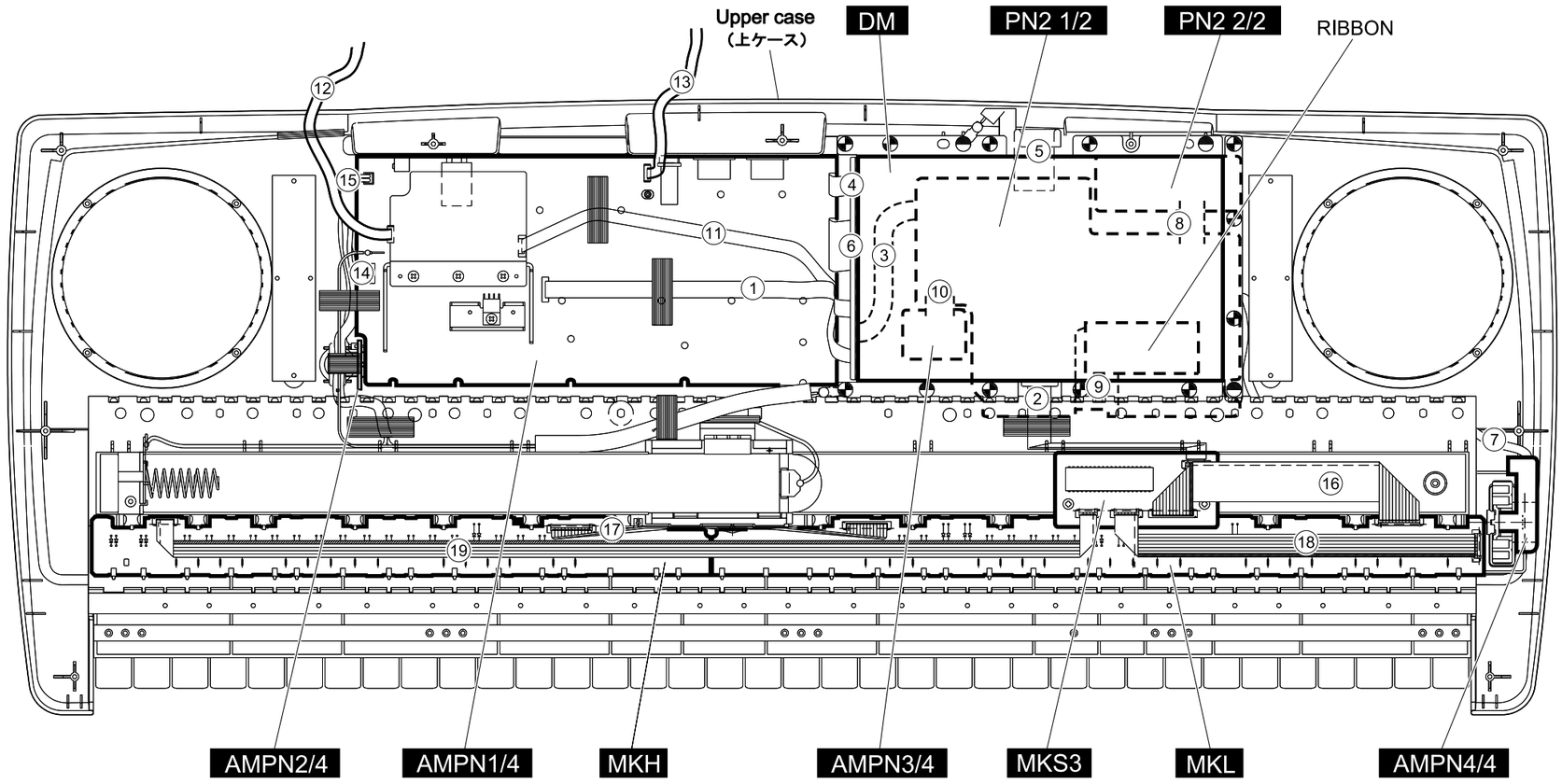

(1) MASTER VOLUME dial
(2) OVERALL, DEMO START buttons (▲, ▼, +,-)
(3) FUNCTION button
(4) SONG button
(5) STYLE button
(6) VOICE button
(7) Numeric keypad, +/- buttons
(8) DIGITAL SAMPLING section (RECORD button and INPUT LEVEL knob)
(9) Knobs (CUTOFF,RESONANCE,GROOVE, ASSIGN,BASS BOOST)
(10) RIBBON CONTROLLER
(11) PART CONTROL button
(12) PATTERN CONTROL button
(13) SYNC-START button
(14) START/STOP button
(15) LEAD IN/LEAD OUT button
(16) BEAT A/B (BREAK OUT) buttons
(17) RECORD button
(18) PERFORMANCE SETUP/SONG MEMORY buttons
(19) ARPEGGIATOR button
(20) REVERB button
(21) DUAL button
(22) PITCH BEND wheel
(23) STAND BY/ON switch

- **Rear Panel**



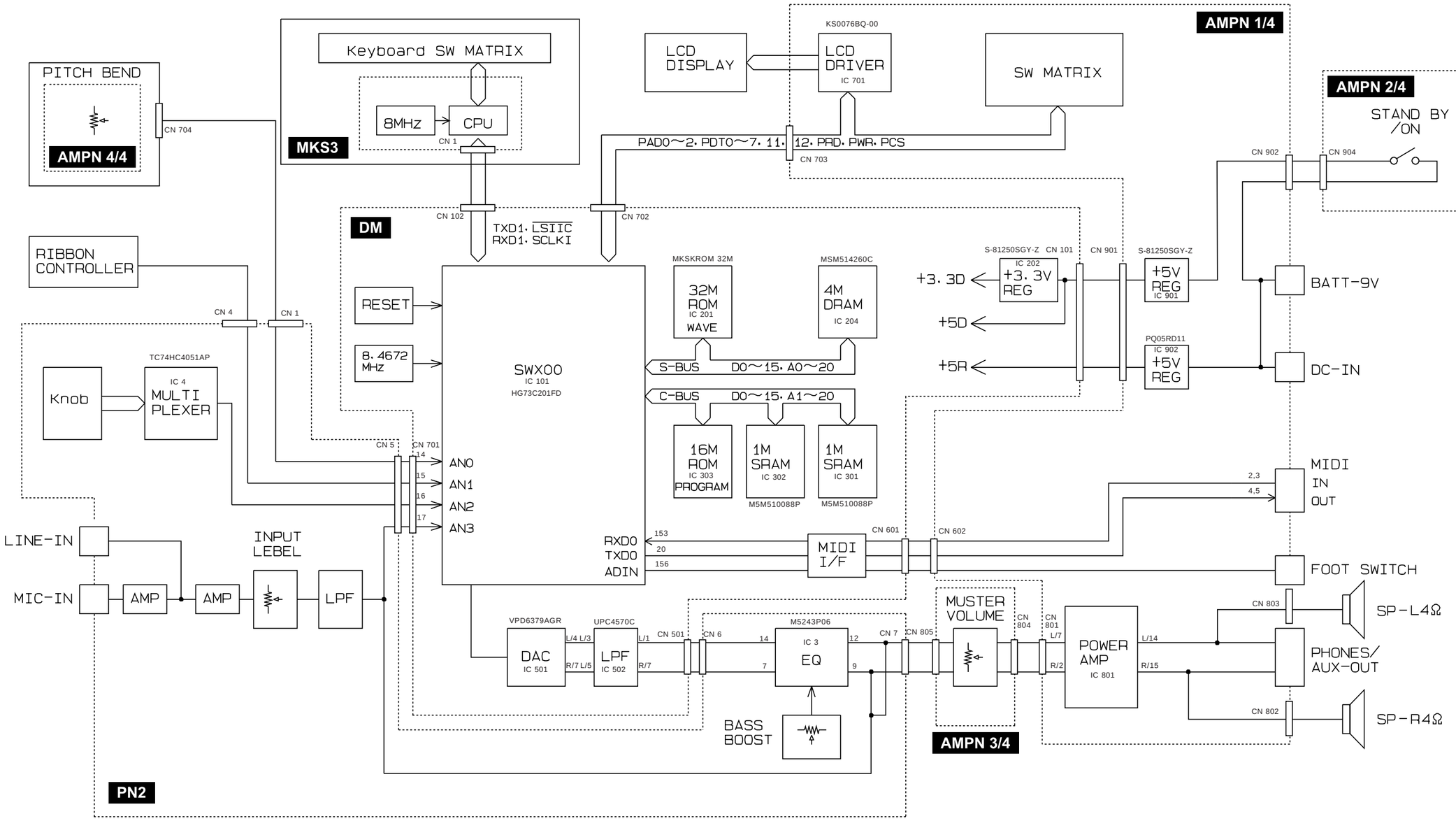

(1) DC IN 10-12V jack
(2) PHONES/AUX OUT jack
(3) FOOT SWITCH jack
(4) MIDI IN, OUT terminals
(5) LINE IN jack
(6) MIC jack

## ■ CIRCUIT BOARD LAYOUT




| REF. NO. | DESTINATION | | CONNECTOR ASSEMBLY | REMARKS | PART NO. | WIRE NO. |
|---|---|---|---|---|---|---|
| ① | AMPN-CN901 | DM-CN101 | VDD,AMVR | 5P/L280 | V229580 | W901 |
| ② | MKS3-CN1 | DM-CN102 | DM-MSK | 6P/220 | V221440 | 360 |
| ③ | PN2-CN6 | DM-CN501 | DM-PN2 | 4P/200 | V229570 | W6 |
| ④ | AMPN-CN602 | DM-CN601 | MIDI | 6P/L120 | V221400 | W602 |
| ⑤ | PN2-CN5 | DM-CN701 | PN2-DM | 12P/L120 | V221450 | W5 |
| ⑥ | AMPN-CN703 | DM-CN702 | PN-SW | 16P/L120 | V221410 | W703 |
| ⑦ | PB-CN704 | PN2-CN1 | PB-PN2 | 3P/L280 | V221420 | W704 |
| ⑧ | PN2-CN3 | PN2-CN2 | PN2-PN2 | 5P/L120 | V221470 | W2 |
| ⑨ | RIBBON CONT. | PN2-CN4 | - | 5P | - | |
| ⑩ | AMPN-CN805 | PN2-CN7 | PN2-VR | 5P/L70 | V221460 | W7 |
| ⑪ | AMPN-CN801 | AMPN-CN804 | VDD,AMVR | 5P/L280 | V229580 | W801 |
| ⑫ | AMPN-CN802 | SPEAKER (R) | SP-R | 2P/L350 | V225750 | 60 |
| ⑬ | AMPN-CN803 | SPEAKER (L) | SP-L | 2P/L700 | V225740 | 50 |
| ⑭ | AMPN-CN902 | AMPN-CN904 | PSW | 4P/L180 | V221360 | W902 |
| ⑮ | AMPN-CN903 | BATTERY | BATT | 2P/L380,510 | V221480 | 370 |
| ⑯ | MKS3-CN2 | MK-L | MK-A | 12P/190 | VV58310 | 160d |
| ⑰ | MK-H | MK-L | MK-B | 12P/215 | VV58360 | 160e |
| ⑱ | MKS3-CN3 | MK-L | MK-C | 7P/250 | VV58350 | 160f |
| ⑲ | MKS3-CN4 | MK-H | MK-D | 5P/L615 | VV58370 | 160g |

# ■ BLOCK DIAGRAM

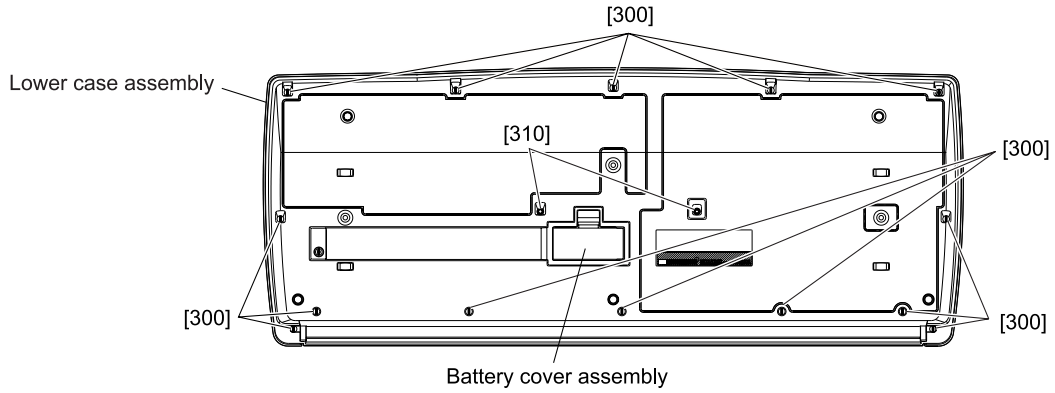


# ■ DISASSEMBLY PROCEDURE

**1 Lower Case Assembly**

1-1 Remove the battery cover assembly. (Fig. 1)

1-2 Remove the fourteen (14) screws marked [300] and the two (2) screws marked [310]. The lower case assembly can then be removed.




[300]: Bind Head Tapping Screw-P 3.0X12 MFZN2Y (EP600300)
[310]: Bind Head Tapping Screw-P 3.0X25 MFZN2Y (VK228100)

(Fig.1)

**2 DM Circuit Board**

2-1 Remove the lower case assembly. (See procedure 1)

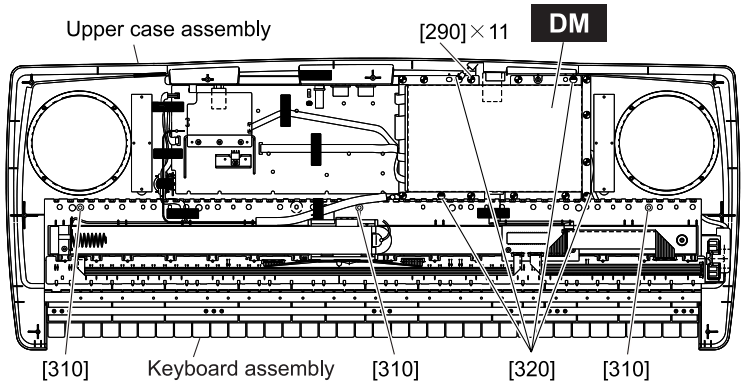
2-2 Remove the four (4) screws marked [320]. The DM circuit board with the shield box can then be removed. (Fig. 2)

2-3 Remove the eleven (11) screws marked [290]. The DM circuit board can then be removed. (Fig. 2)

**3 Keyboard Assembly**

3-1 Remove the lower case assembly. (See procedure 1)

3-2 Remove the three (3) screws marked [310]. The keyboard assembly can then be removed. (Fig. 2)




[290]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)
[310]: Bind Head Tapping Screw-P 3.0X25 MFZN2Y (VK228100)
[320]: Bind Head Tapping Screw-P 3.0X8 MFZN2Y (EP600280)

(Fig. 2)

**4 AMPN 4/4 Circuit Board**

4-1 Remove the lower case assembly. (See procedure 1)

4-4 Remove the two (2) screws marked [320A]. The AMPN 4/4 circuit board can then be removed. (Fig. 4)

**5 AMPN 3/4 Circuit Board**

5-1 Remove the MASTER VOLUME knob on the control panel. (See Fig. 3)

5-2 Remove the lower case assembly. (See procedure 1)

5-3 Remove the DM circuit board with the shield box. (See procedure 2)

5-4 Remove the three (3) screws marked [320B]. The AMPN 3/4 circuit board can then be removed. (Fig. 4)

**6 AMPN 2/4 Circuit Board**

6-1 Remove the lower caseassembly. (See procedure 1)

6-2 Remove the two (2) screws marked [320C]. The AMPN 2/4 circuit board with the knob can then be removed. (Fig. 4)

6-3 Pull off the knob from the AMPN 2/4 circuit board.

**7 AMPN 1/4 Circuit Board**

7-1 Remove the lower case assembly. (See procedure 1)

7-2 Remove the DM circuit board with the shield box. (See procedure 2)

7-3 Remove the AMPN 3/4 circuit board. (See procedure 5)

7-4 Remove the AMPN 2/4 circuit board. (See procedure 6)

7-5 Remove the twenty-five (25) screws marked [320D] . The AMPN 1/4 circuit board can then be removed. (Fig. 4)

**8 PN2 1/2 Circuit Board**

8-1 Remove the lower case assembly. (See procedure 1)

8-2 Remove the DM circuit board with the shield box. (See procedure 2)

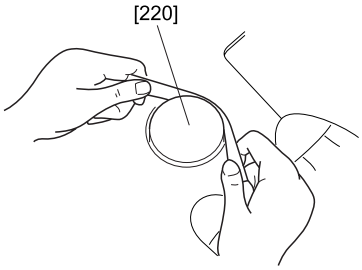
8-3 Remove the ten (10) screws marked [320E]. The PN2 1/2 circuit board can then be removed. (Fig. 4)

**9 PN2 2/2 Circuit Board**

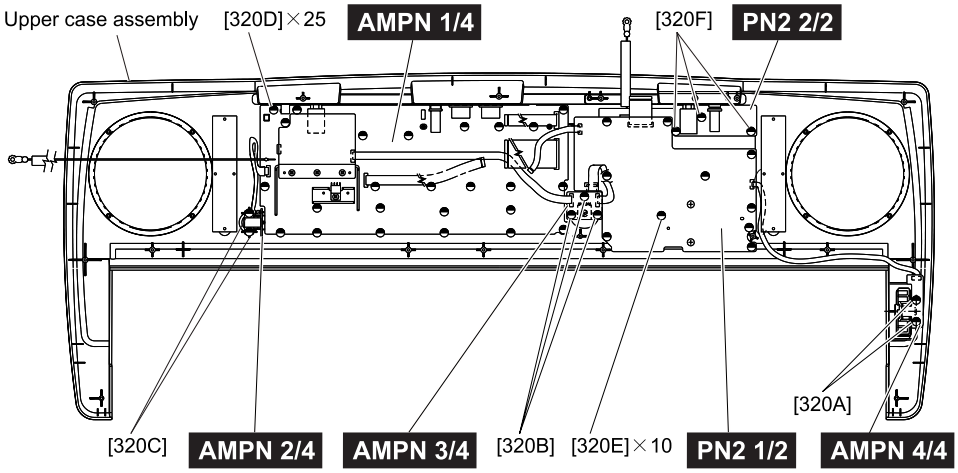
9-1 Remove the lower caseassembly. (See procedure 1)

9-2 Remove the DM circuit board with the shield box. (See procedure 2)

9-3 Remove the three (3) screws marked [320F]. The PN2 2/2 circuit board can then be removed. (Fig. 4)




(Fig. 3)




[320]: Bind Head Tapping Screw-P 3.0X8 MFZN2Y (EP600280)

(Fig. 4)

**10 LCD**

10-1 Remove the lower case assembly. (See procedure 1)

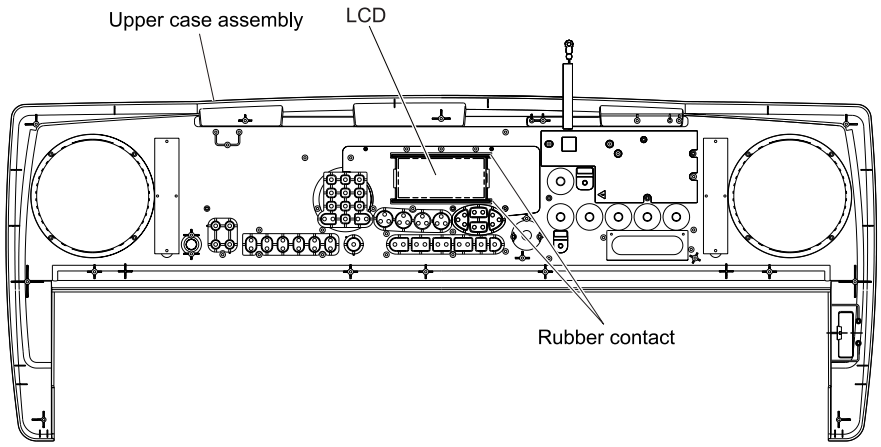
10-2 Remove the DM circuit board. (See procedure 2)

10-3 Remove the AMPN 3/4 circuit board. (See procedure 5)

10-4 Remove the AMPN 2/4 circuit board. (See procedure 6)

10-5 Remove the AMPN 1/4 circuit board. (See procedure 7)

10-6 Remove the two rubber contacts not to touch the conductive surface. The LCD can then be removed. (Fig. 5)

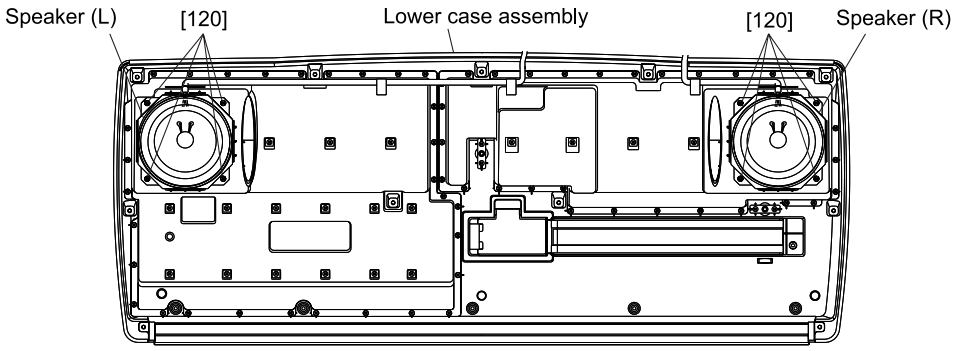



(Fig. 5)

## 8 Speakers

8-1 Remove the lower case assembly. (See procedure 1)

8-3 Remove the eight (8) screws marked [120]. The right and left speakers can then be removed. (Fig. 6)




[120]: Bind Head Tapping Screw-P 4.0X10 MFZN2Y (EP640500)

(Fig. 6)

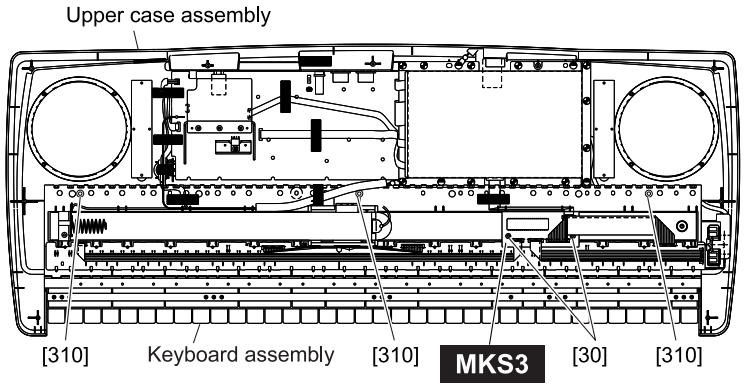
## 9 Disassembling the keyboard assembly

9-1 Remove the keyboard assembly. (See procedure 1)

9-2 Remove the two (2) screws marked [30]. The MKS3 circuit board can then be removed. (Fig. 7)

9-3 Remove the MK circuit board while pressing the fifteen (15) hooks (A) inward, and then remove the rubber contact. (Fig. 8)

9-4 Remove the twenty-one (21) screws marked [140], then the remove the black keys from the lower notes. Afterward, remove the white keys DFA and C' and then remove the white keys CEGB from the higher notes. At this time, lift the keys from the front and slide them towards you. The keys can then be removed from the assembly. (Fig. 9)




[30]: Bind Head Tapping Screw-P 3.0X8 MFZN2Y (EP600280)

[310]: Bind Head Tapping Screw-P 3.0X25 MFZN2Y (VK228100)

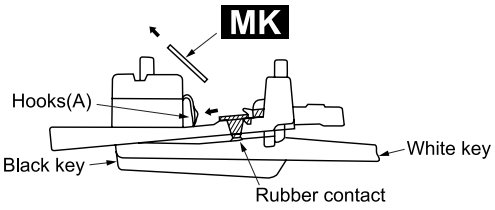
(Fig. 7)

**10 Assembling the keyboard assembly**

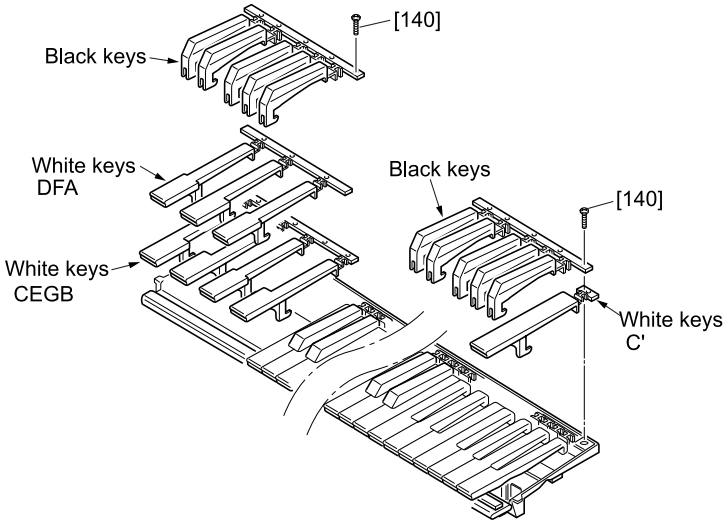
10-1 Install the white keys CEGB from the lower notes, and then DFA keys and C' key. Afterwards install the back keys from the higher notes, and tighten the twenty-one (21) screws marked [140]. (Fig. 9)

10-2 Install the rubber contacts in the assembly while pressing the keys as shown in Fig. 10. Check that the rubber contact has been firmly placed into position in the area indicated by the arrow in Fig.11. (Fig. 10, 11 and 12)

* When fitting the rubber contacts, raise both ends of the frame so that keys do not push the rubber contact up. Install the MK circuit board in the assembly so that the hooks (B) hold it as shown in Fig. 11.

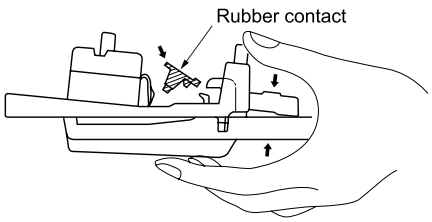



(Fig. 8)

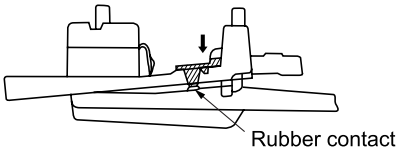



[140]: Bind Head Tapping Screw-P 3.0X16 MFZN2BL (VB205200)
[140]: Bind Head Tapping Screw-P 3.0X16 MFZN2B (VS756700)

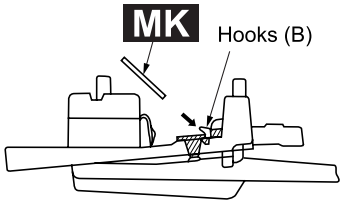
(Fig. 9)




(Fig.10)




(Fig.11)




(Fig.12)

# ■ LSI PIN DESCRIPTION

## ● HG73C201FD (XT890A00) SWX00 TONE GENERATOR

| PIN NO. | NAME | I/O | FUNCTION | PIN NO. | NAME | I/O | FUNCTION |
|---|---|---|---|---|---|---|---|
| 1 | ICN | I | Initial clear | 85 | CMA3 | O | Program address bus |
| 2 | RFCLKI | I | PLL Clock | 86 | CMA8 | O | Program address bus |
| 3 | TM2 | I | PLL Control | 87 | CMA2 | O | Program address bus |
| 4 | AVDD_PLL | | Power supply | 88 | CRD | O | read signal |
| 5 | AVSS_PLL | | Ground | 89 | CMA1 | O | Program address bus |
| 6 | MODE0 | I | SWX dual mode | 90 | CUB | O | high byte effective signal |
| 7 | VCC7 | | Power supply | 91 | VCC91 | | Power supply |
| 8 | GND8 | | Ground | 92 | GHND92 | | Ground |
| 9 | XIN | I | crystal oscillator | 93 | CS1 | O | CS signal |
| 10 | XOUT | O | crystal oscillator | 94 | CMA0 | O | Program address bus |
| 11 | MODE1 | I | SWX separate mode | 95 | CLB | O | low byte effective signal |
| 12 | TEST0 | I | TEST pin | 96 | CMA12 | O | Program address bus |
| 13 | TESTON | I | TEST pin | 97 | CMA11 | O | Program address bus |
| 14 | AN0-P40 | I | A/D converter | 98 | CMA10 | O | Program address bus |
| 15 | AN1-P41 | I | A/D converter | 99 | CMA9 | O | Program address bus |
| 16 | AN2-P42 | I | A/D converter | 100 | GND100 | | Ground |
| 17 | AN3-P43 | I | A/D converter | 101 | CWE | O | write signal |
| 18 | AVDD_AN | | Power supply | 102 | CMA16 | O | Program address bus |
| 19 | AVSS_AN | | Ground | 103 | CMA15 | O | Program address bus |
| 20 | TXD0 | O | for MIDI or TO-HOST | 104 | CMA14 | O | Program address bus |
| 21 | TXD1 | O | for MIDI | 105 | CMA13 | O | Program address bus |
| 22 | EXCLK | I | Crystal oscillator | 106 | CMD8 | I/O | Program memory Data bus |
| 23 | SMD11 | I/O | Wave memory data bus | 107 | CMD7 | I/O | Program memory Data bus |
| 24 | SMD4 | I/O | Wave memory data bus | 108 | CMD9 | I/O | Program memory Data bus |
| 25 | SMD3 | I/O | Wave memory data bus | 109 | CMD6 | I/O | Program memory Data bus |
| 26 | SMD12 | I/O | Wave memory data bus | 110 | CMD10 | I/O | Program memory Data bus |
| 27 | SMD10 | I/O | Wave memory data bus | 111 | CMD5 | I/O | Program memory Data bus |
| 28 | SMD5 | I/O | Wave memory data bus | 112 | CMD11 | I/O | Program memory Data bus |
| 29 | SMD2 | I/O | Wave memory data bus | 113 | CMD4 | I/O | Program memory Data bus |
| 30 | SMD13 | I/O | Wave memory data bus | 114 | CMD12 | I/O | Program memory Data bus |
| 31 | SMD9 | I/O | Wave memory data bus | 115 | CMD3 | I/O | Program memory Data bus |
| 32 | SMD6 | I/O | Wave memory data bus | 116 | CMD13 | I/O | Program memory Data bus |
| 33 | SMD1 | I/O | Wave memory data bus | 117 | CMD2 | I/O | Program memory Data bus |
| 34 | SMD14 | I/O | Wave memory data bus | 118 | CMD14 | I/O | Program memory Data bus |
| 35 | VCC35 | | Power supply | 119 | VCC119 | | Power supply |
| 36 | GND36 | | Ground | 120 | GND115 | | Ground |
| 37 | SMD8 | I/O | Wave memory data bus | 121 | CMD1 | I/O | Program memory Data bus |
| 38 | SMD7 | I/O | Wave memory data bus | 122 | CMD15 | I/O | Program memory Data bus |
| 39 | SMD0 | I/O | Wave memory data bus | 123 | CMD0 | I/O | Program memory Data bus |
| 40 | SMD15 | I/O | Wave memory data bus | 124 | CMA21 | O | Program address bus |
| 41 | SOE | O | read signal | 125 | PDT15 | I/O | SWX access data bus |
| 42 | SWE | O | write signal | 126 | PDT14 | I/O | SWX access data bus |
| 43 | SRAS | O | RAS signal | 127 | PDT13 | I/O | SWX access data bus |
| 44 | SCAS | O | CAS signal | 128 | PDT12 | I/O | SWX access data bus |
| 45 | REFRESH | O | REFRESH signal | 129 | PDT11 | I/O | SWX access data bus |
| 46 | CS0 | O | CS signal | 130 | PDT10 | I/O | SWX access data bus |
| 47 | SMA0 | O | Memory address bus | 131 | PDT9 | I/O | SWX access data bus |
| 48 | SMA16 | O | Memory address bus | 132 | PDT8 | I/O | SWX access data bus |
| 49 | VCC49 | | Power supply | 133 | VCC133 | | Power supply |
| 50 | GND50 | | Ground | 134 | GND134 | | Ground |
| 51 | SMA1 | O | Memory address bus | 135 | PDT7 | I/O | SWX access data bus |
| 52 | SMA15 | O | Memory address bus | 136 | PDT6 | I/O | SWX access data bus |
| 53 | SMA2 | O | Memory address bus | 137 | PDT5 | I/O | SWX access data bus |
| 54 | SMA14 | O | Memory address bus | 138 | PDT4 | I/O | SWX access data bus |
| 55 | SMA3 | O | Memory address bus | 139 | PDT3 | I/O | SWX access data bus |
| 56 | SMA13 | O | Memory address bus | 140 | PDT2 | I/O | SWX access data bus |
| 57 | SMA4 | O | Memory address bus | 141 | PDT1 | I/O | SWX access data bus |
| 58 | SMA12 | O | Memory address bus | 142 | PDT0 | I/O | SWX access data bus |
| 59 | SMA5 | O | Memory address bus | 143 | VCC143 | | Power supply |
| 60 | GND60 | | Ground | 144 | GND144 | | Ground |
| 61 | VCC61 | | Power supply | 145 | PAD2 | I | SWX access address bus |
| 62 | SMA11 | O | Memory address bus | 146 | PAD1 | I | SWX access address bus |
| 63 | SMA6 | O | Memory address bus | 147 | PAD0 | I | SWX access address bus |
| 64 | SMA10 | O | Memory address bus | 148 | VCC148 | | Power supply |
| 65 | SMA7 | O | Memory address bus | 149 | GND149 | | Ground |
| 66 | SMA9 | O | Memory address bus | 150 | PCS | I | Chip select |
| 67 | SMA17 | O | Memory address bus | 151 | PWR | I | write enable |
| 68 | SMA8 | O | Memory address bus | 152 | PRD | I | read enable |
| 69 | SMA18 | O | Memory address bus | 153 | RXD0 | I | for Midi or TO-HOST |
| 70 | SMA19 | O | Memory address bus | 154 | RXD1 | I | for Midi or Key scan |
| 71 | SMA20 | O | Memory address bus | 155 | SCLKI | I | EXT Clock |
| 72 | SMA21 | O | Memory address bus | 156 | ADIN | I | A/D converter |
| 73 | SMA22 | O | Memory address bus | 157 | ADLR | O | A/D converter LR clock |
| 74 | SMA23 | O | Memory address bus | 158 | DO0 | O | DAC |
| 75 | CMA20 | O | Program address bus | 159 | DO1 | O | DAC |
| 76 | CMA19 | O | Program address bus | 160 | SYSCLK | O | 1/2 clock |
| 77 | VCC77 | | Power supply | 161 | VCC161 | | Power supply |
| 78 | GND78 | O | Ground | 162 | GND162 | | Ground |
| 79 | CMA18 | O | Program address bus | 163 | WCLK | O | for DAC LR clock |
| 80 | CMA17 | O | Program address bus | 164 | QCLK | O | 1/12 clock |
| 81 | CMA5 | O | Program address bus | 165 | BCLK | O | IIS-DAC clock |
| 82 | CMA6 | O | Program address bus | 166 | SYI | I | Synch signal |
| 83 | CMA4 | O | Program address bus | 167 | IRQ0 | I | Interrupt request |
| 84 | CMA7 | O | Program address bus | 168 | NMI | I | Interrupt request |

## ● KS0076BQ-00 (XR793A00) LCD DRIVER

| PIN NO. | NAME | I/O | FUNCTION | PIN NO. | NAME | I/O | FUNCTION |
|---|---|---|---|---|---|---|---|
| 1 | S22 | O | | 41 | DB2 | I/O | |
| 2 | S21 | O | | 42 | DB3 | I/O | |
| 3 | S20 | O | | 43 | DB4 | I/O | Data interface |
| 4 | S19 | O | | 44 | DB5 | I/O | |
| 5 | S18 | O | | 45 | DB6 | I/O | |
| 6 | S17 | O | | 46 | DB7 | I/O | |
| 7 | S16 | O | | 47 | C1 | O | |
| 8 | S15 | O | | 48 | C2 | O | |
| 9 | S14 | O | | 49 | C3 | O | |
| 10 | S13 | O | | 50 | C4 | O | |
| 11 | S12 | O | Segment signal output for LCD | 51 | C5 | O | |
| 12 | S11 | O | driving | 52 | C6 | O | |
| 13 | S10 | O | | 53 | C7 | O | |
| 14 | S9 | O | | 54 | C8 | O | Common signal output for LCD |
| 15 | S8 | O | | 55 | C9 | O | driving |
| 16 | S7 | O | | 56 | C10 | O | |
| 17 | S6 | O | | 57 | C11 | O | |
| 18 | S5 | O | | 58 | C12 | O | |
| 19 | S4 | O | | 59 | C13 | O | |
| 20 | S3 | O | | 60 | C14 | O | |
| 21 | S2 | O | | 61 | C15 | O | |
| 22 | S1 | O | | 62 | C16 | O | |
| 23 | Vss | | Ground | 63 | S40 | O | |
| 24 | OSC1 | I | Oscillator | 64 | S39 | O | |
| 25 | OSC2 | O | Oscillator | 65 | S38 | O | |
| 26 | V1 | | | 66 | S37 | O | |
| 27 | V2 | | | 67 | S36 | O | |
| 28 | V3 | | Power supply | 68 | S35 | O | |
| 29 | V4 | | | 69 | S34 | O | |
| 30 | V5 | | | 70 | S33 | O | |
| 31 | CLK1 | O | Data latch clock | 71 | S32 | O | Segment signal output for LCD |
| 32 | CLK2 | O | Data shift clock | 72 | S31 | O | driving |
| 33 | Vdd | | Power supply (+5 V) | 73 | S30 | O | |
| 34 | M | O | Altamated signal for LCD driver outout | 74 | S29 | O | |
| 35 | D | O | Display data interface | 75 | S28 | O | |
| 36 | RS | I | | 76 | S27 | O | |
| 37 | R/W | I | Read/write | 77 | S26 | O | |
| 38 | E | I | Enable | 78 | S25 | O | |
| 39 | DB0 | I/O | Data interface | 79 | S24 | O | |
| 40 | DB1 | I/O | Data interface | 80 | S23 | O | |

## ● HD63B05V0F07P (XR951A00) CPU

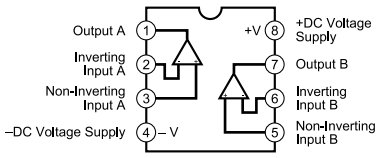
| PIN NO. | NAME | I/O | FUNCTION | PIN NO. | NAME | I/O | FUNCTION |
|---|---|---|---|---|---|---|---|
| 1 | /RES | I | Reset | 21 | C7 | I/O | |
| 2 | /INT | I | Interrupt request | 22 | C6 | I/O | |
| 3 | NUM | I | Non-maskable interrupt | 23 | C5 | I/O | |
| 4 | A7 | I/O | | 24 | C4 | I/O | Port C |
| 5 | A6 | I/O | | 25 | C3 | I/O | |
| 6 | A5 | I/O | | 26 | C2 | I/O | |
| 7 | A4 | I/O | Port A | 27 | C1 | I/O | |
| 8 | A3 | I/O | | 28 | C0 | I/O | |
| 9 | A2 | I/O | | 29 | D0 | I/O | |
| 10 | A1 | I/O | | 30 | D1 | I/O | Port D |
| 11 | A0 | I/O | | 31 | D2 | I/O | |
| 12 | B0 | I/O | | 32 | D3/TX | O | (Serial data output) |
| 13 | B1 | I/O | | 33 | D4/RX | I | (Serial data input) |
| 14 | B2 | I/O | | 34 | D5//CK | O | (Clock for serial operation) |
| 15 | B3 | I/O | Port B | 35 | D6//INT2 | I | (Interrupt request 2) |
| 16 | B4 | I/O | | 36 | /STBY | I | (Standby mode signal) |
| 17 | B5 | I/O | | 37 | TIMER | I | Timer |
| 18 | B6 | I/O | | 38 | XTAL | O | Clock |
| 19 | B7 | I/O | | 39 | EXTAL | I | |
| 20 | VSS | | Ground | 40 | VCC | | Power supply |

## ● UPD6379A (XR998A00) DAC (Digital to Analog Converter)

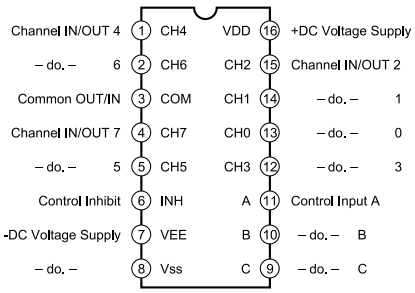
| PIN NO. | NAME | I/O | FUNCTION | PIN NO. | NAME | I/O | FUNCTION |
|---|---|---|---|---|---|---|---|
| 1 | ROUT | O | Rch analog output | 5 | LRCK | I | L/R Clock |
| 2 | REF | | Voltage reference | 6 | SI | I | Sirial data input |
| 3 | Vss | | Ground | 7 | CLK | I | Shift clock |
| 4 | LOUT | O | Lch analog output | 8 | Vdd | | Power supply +5A |

# ■ IC BLOCK DIAGRAM

## ● μ PC4570C (XC520A00)
Dual Operational Amplifier

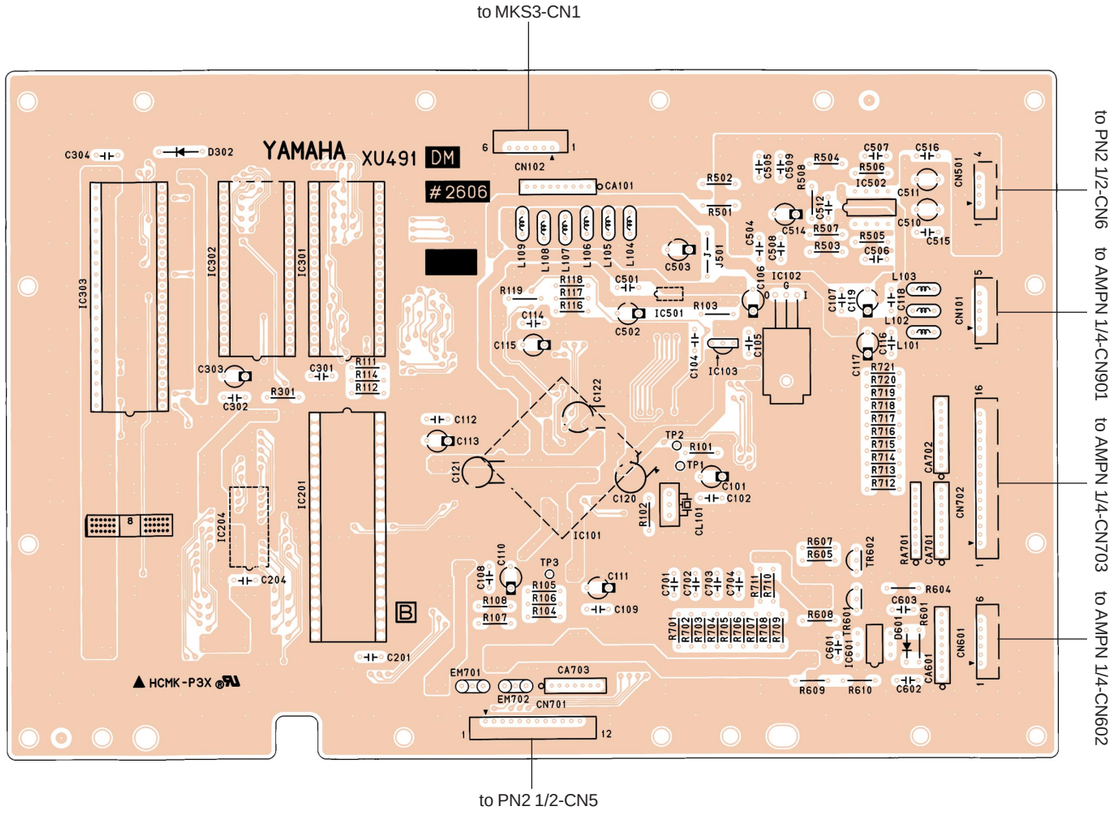



## ● TC74HC4051AP(XL493A00)
Multiplexer/Demultiplexer

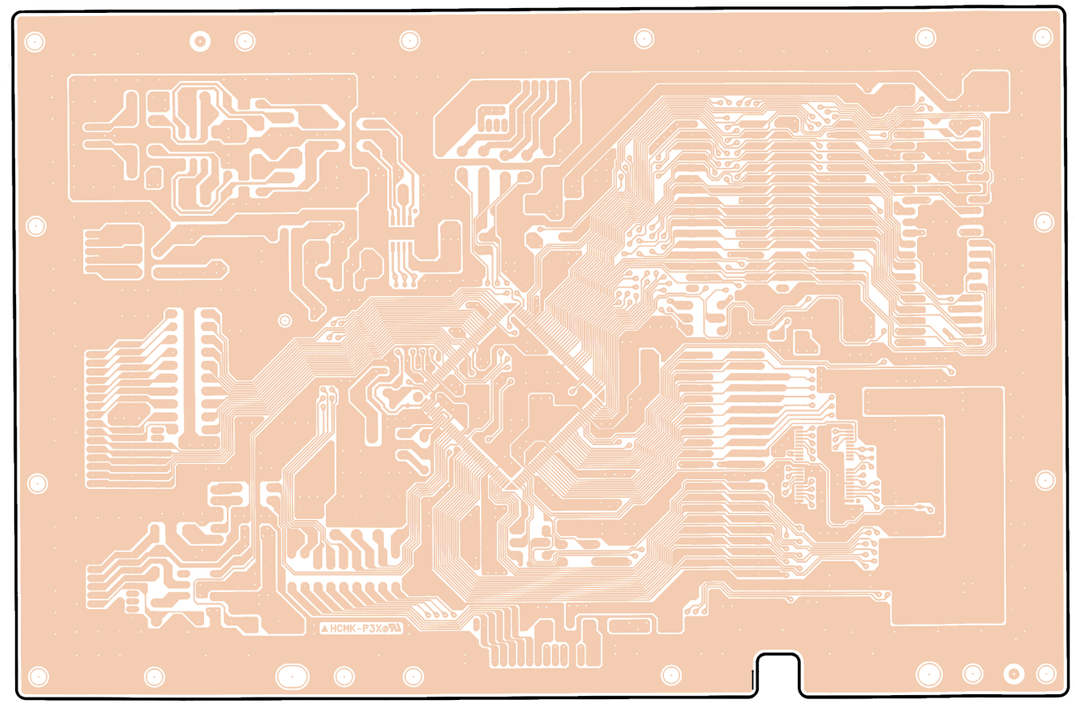


# ■ CIRCUIT BOARDS

- **DM Circuit Board**




Component side

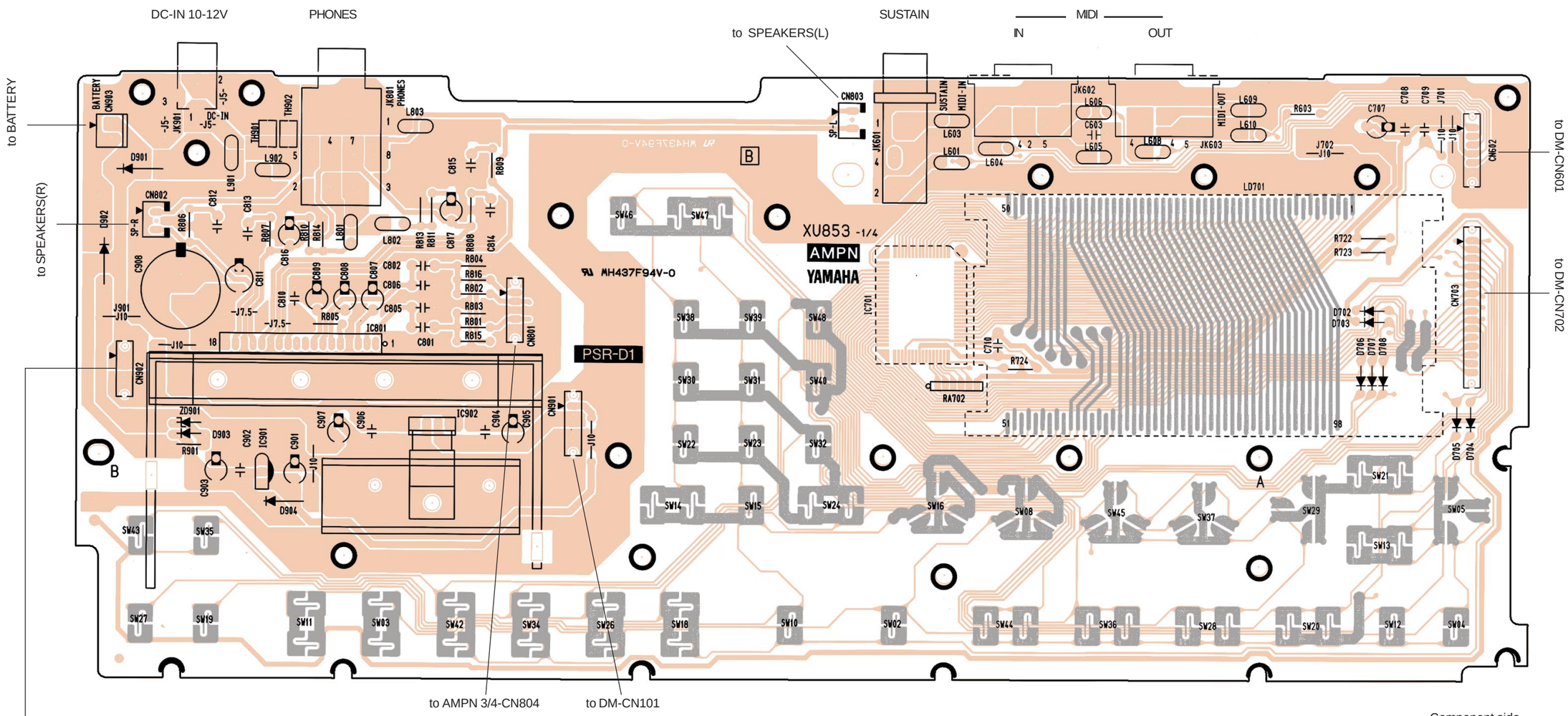



Patternside

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

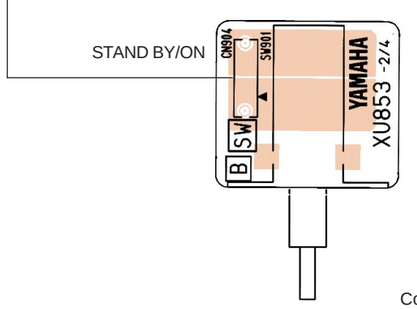
DM:2NA-V203640△1

- **AMPN 1/4Circuit Board**



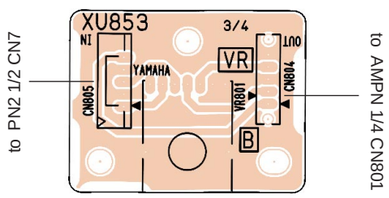

Component side

- **AMPN 2/4 Circuit Board**



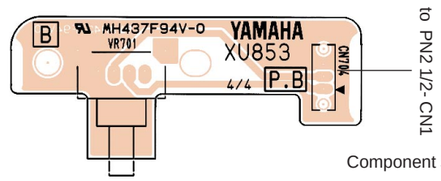

Component side

- **AMPN 3/4 Circuit Board**




Component side

- **AMPN 4/4 Circuit Board**

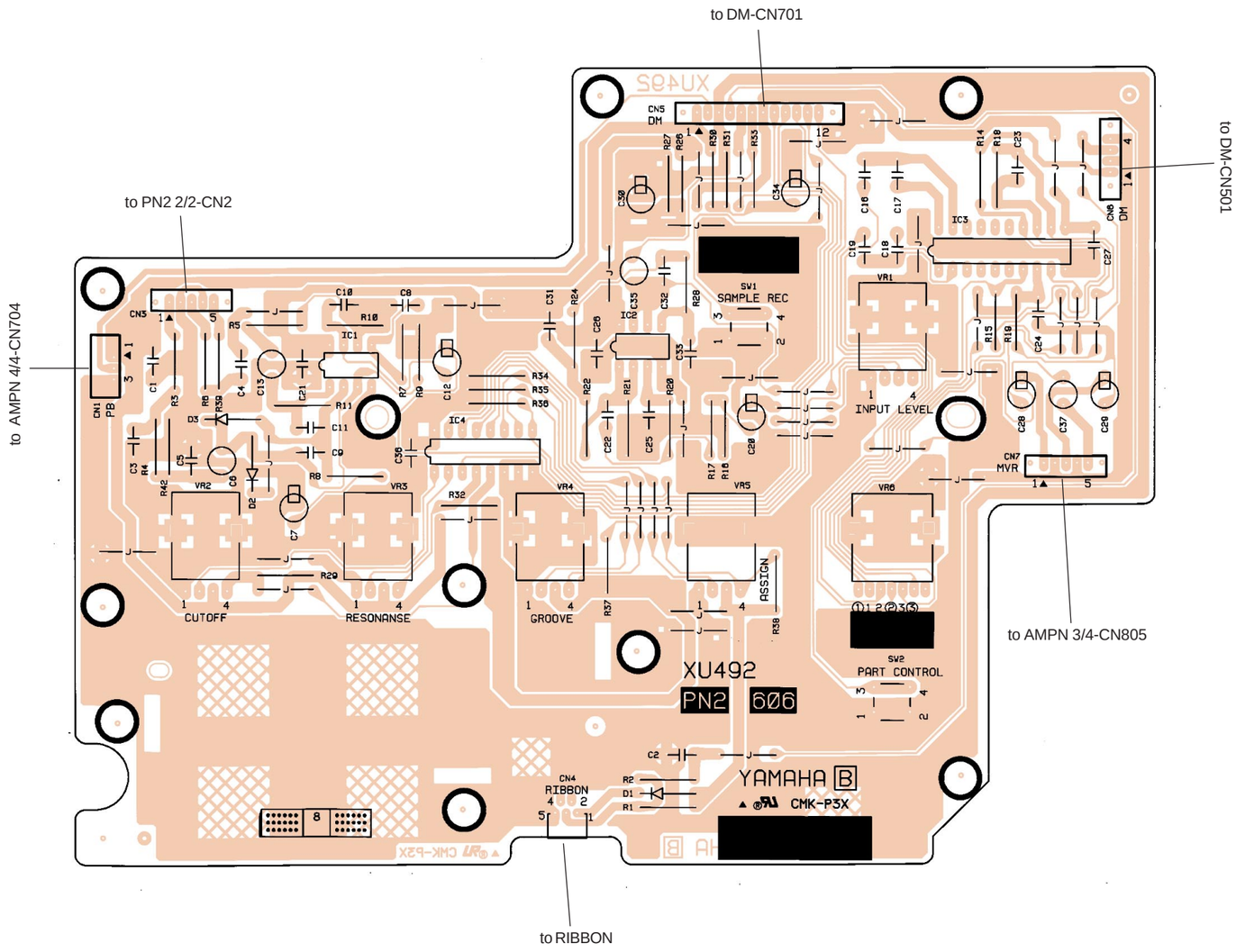



Component side

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

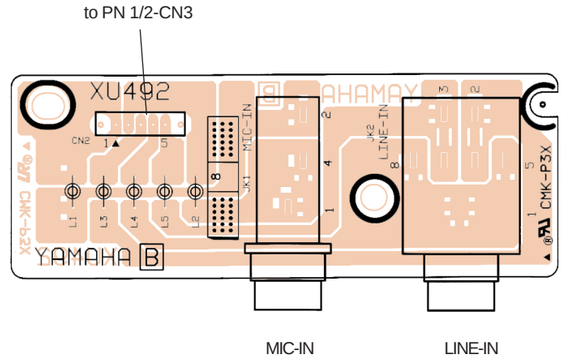
AMPN:2NA-V225710 0

- **PN2 1/2Circuit Board**




Component side

- **PN2 2/2Circuit Board**




Component side

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

PN2:2NA-V203650△2

# ■ TEST PROGRAM & INITIALIZE

## A. PREPARATION

1) AC adaptor equal to PA5B or PA5C.
2) The volume is usually moved to the use position when no volume change is required.
3) Measuing instruments:
   Frequency counter
   Level meter (with a JIS-C filter)
   Note: Use a stereo plug and connect the 33 ohm load to the [PHONES/AUX OUT] jack.
4) Jigs:
   Foot switch, MIDI cable

## B. HOW TO ENTER THE TEST PROGRAM

While depressing the C2# ,F2 and G2# keys, turn the [STAND BY/ON] switch on.

## C. PROCEEDING THROUGH THE TEST PROGRAM

The LCD will display " TEST " when entering the test program.

- To select the program number, use the [OVERALL +/-] button.
- To execute the test, press the [START/STOP] button.
- To proceed to the next test, press the [START/STOP] button again.

## D. TEST PROGRAM LIST

| TEST NO. | LCD (initial) | Test Functions and Judgment Criteria |
|---|---|---|
| 1 | 001:Version | Displays version for ROM<br>ROM (Program, Wave) versions are displayed alternately in the LCD. |
| 2 | 002:Rom Chk1 | Checks WAVE ROM. The test result appears on the LCD. |
| 3 | 003:Ram Chk1 | Checks all the RAMs which are connected to the CPU.<br>The test result appears on the LCD. |
| 4 | 004:WRom Chk1 | Checks WAVE ROM. The test result appears on the LCD. |
| 5 | 005:WRam Chk1 | Checks WAVE RAM. The test result appears on the LCD. |
| 11 | 011:TG1 Chk | Outputs the sine wave by changing the channels in sequence from C2 to G4.<br>After autoscaling is finished, individual keys can be played. (If playing two or more keys simultaneously, the final depressed key has priority to make a sound.) |
| 13 | 013:Pit Chk | Connect the frequency counter to the [PHONE/AUX OUT] jack.<br>Check that the 440 Hz +/- 1.76 Hz signal is output. |
| 14 | 014:Output R | Connect the level meter (with a JIS-C filter) to the [PHONS/AUX OUT] jack. (33 ohm load)<br>Set the [MASTER VOLUME] at maximum.<br>Check output level (1kHz).<br>Phones L: Less than -50dBm<br>Phones R: -6.0dBm +/- 2dB |
| 15 | 015:Output L | Connect the level meter (with a JIS-C filter) to the [PHONS/AUX OUT] jack. (33 ohm load)<br>Set the [MASTER VOLUME] at maximum.<br>Check output level (1kHz).<br>Phones L: -6.0dBm+/- 2dB<br>Phones R: Less than -50dBm |
| 19 | 019:Noise | Connect the level meter (with a JIS-C filter) to the [PHONS/AUX OUT] jack. (33 ohm load)<br>Set the [MASTER VOLUME] at maximum.<br>Phones L/R: Less than -80dBm |
| 20 | 020:SW Chk | Check switches on the panel.<br>Press the switches which are displayed on the LCD.<br>A pre-assigned note is output when depressing the switch.<br>The test result appears on the LCD. |
| 28 | 028:LCD On | Check that all LCD dots are on. |
| 29 | 029:LCD Off | Check that all LCD dots are off. The LCD becames white. |
| 31 | 031:PD1 Chk | Connect the foot switch to the [FOOT SWITCH] jack.<br>Check that the C3 note is output when starting the test program.<br>Check that the C4 note is output when pushing the pedel and that the tone is turned off when releasing the pedal.<br>The test result appears on the LCD. |
| 32 | 032:PB Chk | Check that the C3 note is output when rotating the [PITCH BAND] wheel to minimum and the C4 is output when rotating it to maximum, and the LCD displays OK. |
| 37 | 037:MIDI Chk | After connecting the [MIDI IN] jack and [MIDI OUT] jack with a MIDI cable, execute the test.<br>Check that the C4 note is output and the test result appears on the LCD. |
| 39 | 039:MIC Chk | Connect the microphon to [MIC] jack.<br>Input a sound to the microphone and check that the speaker sound has no distortion. |
| 41 | 041:ROM Chk2 | Checks the ROM. The test result appears on the LCD. |
| 42 | 042:RAM Chk2 | Checks the RAMs which are connected to CPU.<br>The test result appears on the LCD. |
| 43 | 043:WRom Chk2 | Checks WAVE ROM. The test result appears on the LCD. |
| 44 | 044:WRam Chk2 | Checks WAVE RAM. The test result appears on the LCD. |
| 46 | 046:Back Up 2 | Performs the RAM back-up check.<br>After checking that the beginning becomes NG, turn the power switch off.<br>Enter the test program and perform the RAM back-up and check again.<br>Check that the LCD displys OK.<br>Note: Do not turn the [STAND BY OB] switch on by normal mode during standing by. If this should happen, RAM data will be lost. |
| 47 | 047:Factory | All RAMs are initialized and set to the factory preset date when executing this test.<br>The result appears on the LCD. |
| 48 | 048:TestExit | Exit from the test program after executing this test. |

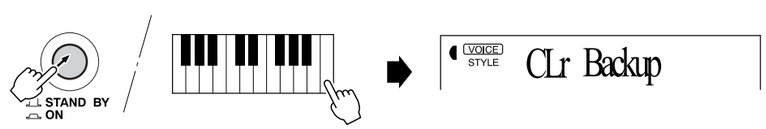
## 2. INITIALIZE

Except for the data listed below, all PSR-D1 panel settings are reset to their initial settings whenever the power is turned on. The data listed below are backed up — i.e. retained in memory — as long as an AC adaptor is connected or a set of batteries is installed.

- User Song Data
- User One Touch Setting Data
- One Touch Setting Bank Number
- EZ Chord Data
- EZ Chord Bank Number Data
- Smart Chord Number
- Metronome Volume
- Touch On/Off
- Touch Sensitivity
- Split Point
- Accompaniment Split Point
- Footswitch Assign Function

### Data Initialization

All data can be initialized and restored to the factory preset condition by turning on the power while holding the highest (rightmost) white key on the keyboard. "CLr Backup" will appear briefly on the display.




**CAUTION**

- All one touch setting (user) and song memory data, plus the other settings listed above, will be erased and/or changed when the data initialization procedure is carried out.
- Carrying out the data initialization procedure will usually restore normal operation if the PSR-D1 freezes or begins to act erratically for any reason.

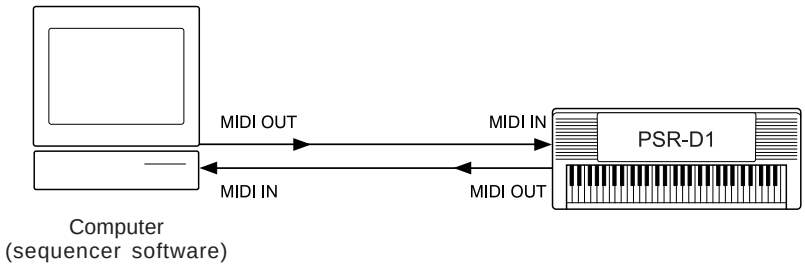
## CONNECTING CABLES

By connecting your PSR-D1's MIDI terminals to a personal computer, you can have access to a wide variety of music software.

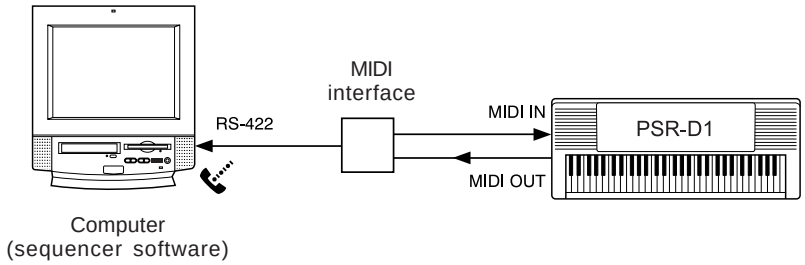
When using a MIDI interface device installed in the personal computer, connect the MIDI terminals of the personal computer and the PSR-D1.

Use only special MIDI cables when connecting MIDI devices.

• Connect the MIDI terminals of the PSR-D1 to the MIDI terminals of the personal computer.




• When using a MIDI interface with a Macintosh series computer, connect the RS-422 terminal of the computer (modem or printer terminal) to the MIDI interface, as shown in the diagram below.




**NOTE**

• When using a Macintosh series computer, set the MIDI interface clock setting in the application software to match the setting of the MIDI interface you are using. For details, carefully read the owner's manual for the software you are using.

# ■ MIDI IMPLEMENTATION CHART

YAMAHA [Portable Keyboard]
Model: DJX(PSR-D1)

MIDI Implementation Chart

Date:15-APR-1998
Version: 1.0

| Function | Transmitted | Recognized | Remarks |
|---|---|---|---|
| Basic Default | 1 - 16 | 1 - 16 *1 | |
| Channel Changed | 1 - 16 | 1 - 16 *1 | |
| Default | 3 | 3 | |
| Mode Messages | X | X | |
| Altered | ********** | X | |
| Note Number : True voice | 0 - 127<br>********** | 0 - 127<br>0 - 127 | |
| Velocity Note ON | O 9nH, v=1 - 127 | O 9nH, v=1 - 127 | |
| Velocity Note OFF | O 9nH, v=0 | O 9nH, v=0 or 8nH | |
| After Key's | X | X | |
| Touch Ch's | X | X | |
| Pitch Bender | O | O | |
| Control Change 0, 32 | O | O | Bank Select |
| 1 | O | O | Modulation |
| 7, 10 | O | O | |
| 11 | X *2 | O | Expression |
| 6, 38 | O *2 | O | Data Entry |
| 64 | O | O | Sustain |
| 71 - 74 | O | O | Sound Controller |
| 84 | X *2 | O | Portamento Control |
| 91, 93, 94 | O | O | Effect Depth |
| 96, 97 | X | O | Data Inc, Dec |
| 100, 101 | X *2 | O | RPN LSB, MSB |
| 120 | X | O | All Sound Off |
| 121 | X | O | Reset All Controllers |
| Program Change : True # | O 0 - 127<br>********** | O 0 - 127 | |
| System Exclusive | O *3 | O *3 | |
| System : Song Position | X | X | |
| : Song Select | X | X | |
| Common : Tune | X | X | |
| System : Clock | O | O *4 | |
| Real Time : Commands | O | *5 O | *5 |
| Aux : Local ON/OFF | X | X | |
| : All Notes OFF | X | O (123 - 127) | |
| Messages : Active Sense | O | O | |
| : Reset | X | X | |

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
O : Yes
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO
X : No

PORTATONE

PSR-D1

# PARTS LIST

■**CONTENTS**

OVERALL ASSEMBLY ..... 2
LOWER CASE ASSEMBLY ..... 4
KEYBOARD ASSEMBLY ..... 5
ELECTRICAL PARTS ..... 6

Note) DESTINATION ABBREVIATIONS

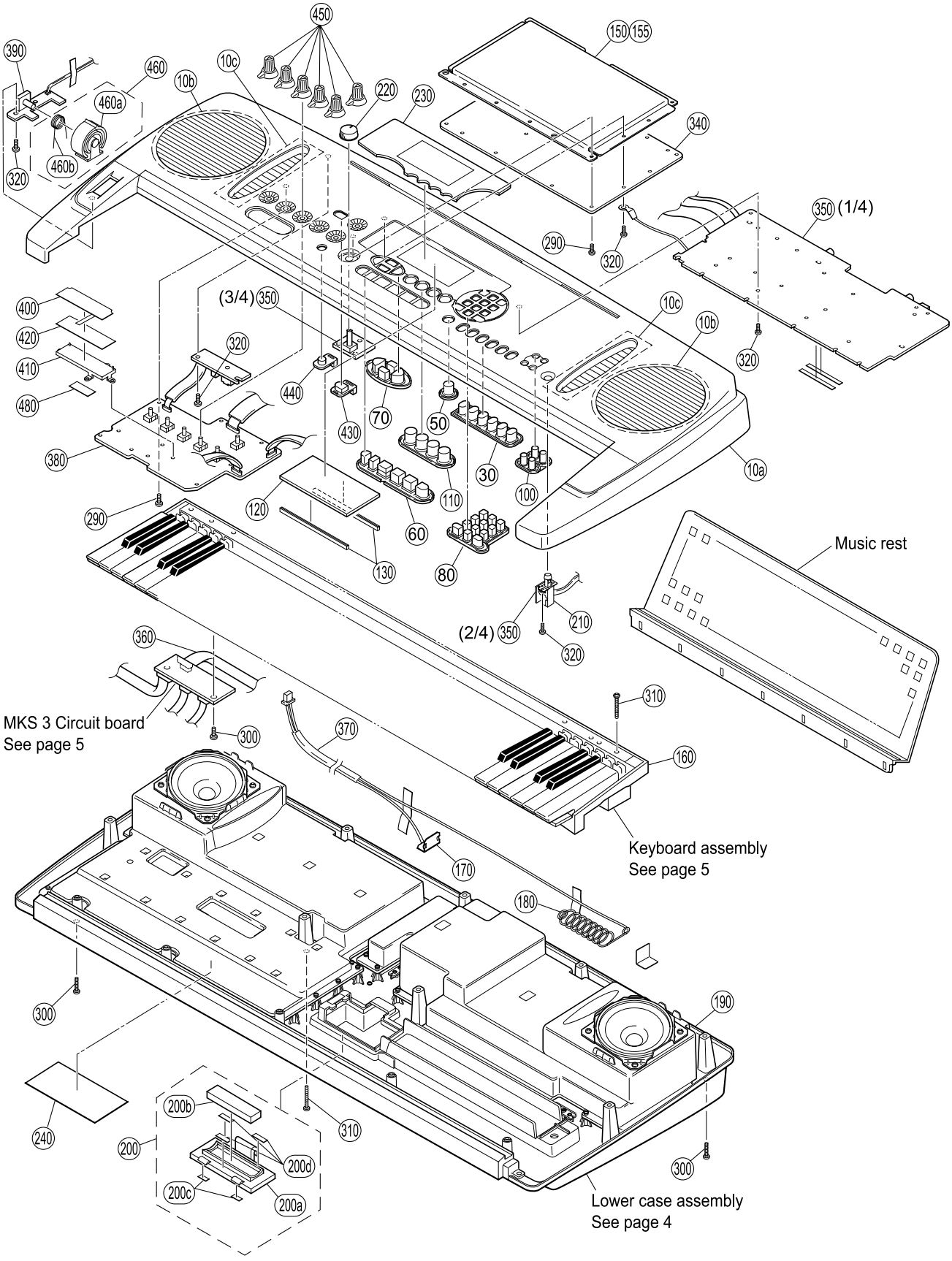
| | |
|---|---|
| J : Japanese model | A : Australian model |
| U : U.S. model | E : European model |
| C : Canadian model | D : German model |
| X : General model | B : British model |
| M : South African model | I : Indonesian model |
| H : North European model | |

■ WARNING

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

- The numbers in “QTY” shows quantities for each unit.
- The parts with “– –” in “Part No.” are not available as spare parts.

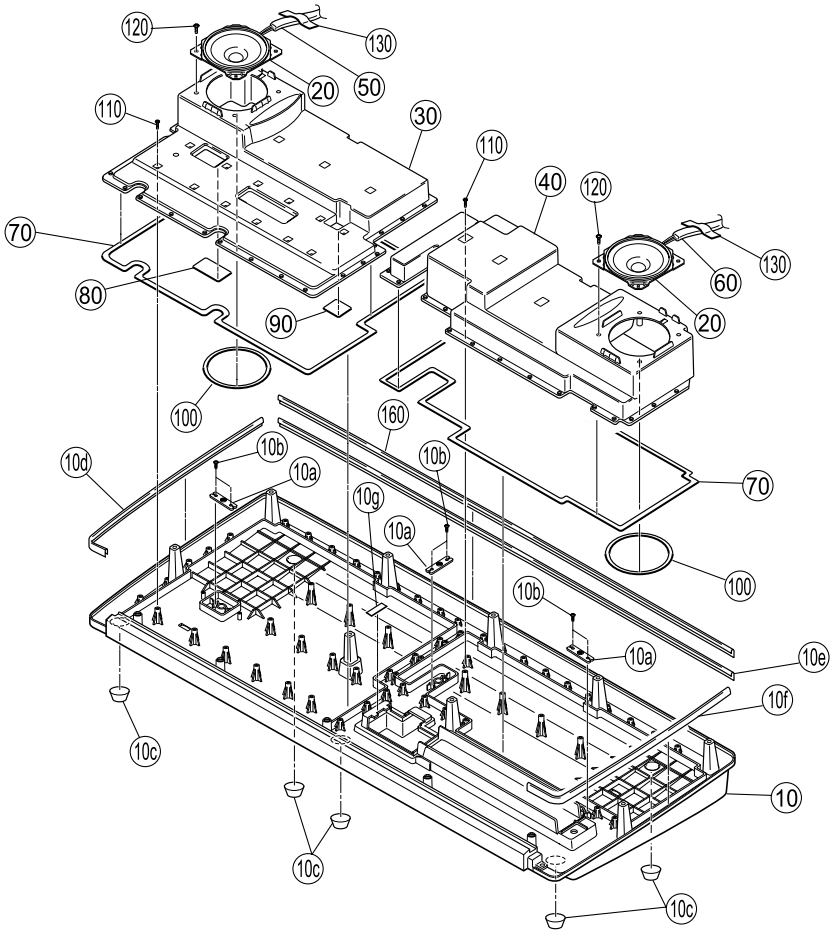
# ■ OVERALL ASSEMBLY



| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | | | OVERALL ASSEMBLY | | | PSRD1 J,X | | |
| | | -- | Overall Assembly | | | (V231750) | | |
| * | 10 | V2341200 | Upper Case Assembly | | | | | |
| | 10a | -- | Upper Case | | | (V234220) | | |
| | 10b | -- | Speaker Cloth | | | (V234230) | 2 | |
| | 10c | -- | Cloth | | | (V234240) | 2 | |
| | 10d | -- | Dust-proof Cloth | 10X5X0.5 | | (V236130) | 2 | |
| * | 30 | V2219100 | Rubber Contact | A | | SONG MEMORY(1,2,3,4,5,6) | | |
| * | 50 | V2219300 | Rubber Contact | C | | RECORD | | |
| * | 60 | V2219400 | Rubber Contact | D | | PATANE ON/OFF,SYNC-START, START/STOP,LEAD IN/LEAD OUT,BEAT A,BEAT B | | |
| * | 70 | V2219500 | Rubber Contact | E | | OVERALL(-,+,▲,▼) | | |
| * | 80 | V2219600 | Rubber Contact | F | | 1,2,3,4,5,6,7,8,-,0,+ | | |
| * | 100 | V2289800 | Rubber Contact | H2 | | ARPEGGIATOR,REVERB,DUAL | | |
| * | 110 | V2220200 | Rubber Contact | I | | FUNCTION,SONG,STYL,VOICE | | |
| * | 120 | V0054000 | LCD | TYPE-B-T | | | | |
| * | 120 | V2271100 | LCD | TYPE-B-R | | | | |
| | 130 | V2150800 | Rubber Connector | ZEE-510 | | | 2 | |
| | 150 | -- | Shield Box | L | | (V220160) | | |
| | 155 | -- | Shield Box | U | | (V220150) | | |
| * | 160 | V2386100 | Keyboard Assembly | 16M C61 MKS3 | | | | |
| | 170 | VI663700 | Terminal | | | | | |
| | 180 | VI865800 | Spring Terminal | | | | | |
| * | 190 | V2204600 | Lower Case Assembly | | | | | |
| | 200 | VM754600 | Battery Cover Assembly | | | | | |
| * | 200a | VI10500 | Battery Cover | BL | | | | |
| | 200b | VI107900 | Battery Cushion | WH | | | | |
| | 200c | -- | Vibration-proof Pad | WH | | (VI10510) | 2 | |
| | 200d | -- | Vibration-proof Tape | 6X 25X0.3 | | (VJ56490) | 3 | |
| | 210 | VQ218800 | Knob | | | POWER | | |
| | 220 | VU432400 | Knob | | | MASTER VOLUME | | |
| * | 230 | V2171700 | LCD Panel | | | | | |
| | 240 | -- | Label | | | (V234130) | | |
| | 290 | EP600250 | Bind Head Tapping Screw-B | 3.0X8 MFZN2Y | | | 13 | |
| | 300 | EP600300 | Bind Head Tapping Screw-P | 3.0X12 MFZN2Y | | | 15 | |
| | 310 | VK228100 | Bind Head Tapping Screw-P | 3.0X25 MFZN2Y | | | 5 | |
| | 320 | EP600280 | Bind Head Tapping Screw-P | 3.0X8 MFZN2Y | | | 51 | |
| * | 340 | V2036400 | Circuit Board | DM | | | | |
| * | 350 | V2257200 | Circuit Board | AMPN | | | | |
| | 360 | -- | Connector Assembly | DM-MKS | | (V221440) | | |
| | 370 | -- | Connector Assembly | BATT | | (V221480) | | |
| * | 380 | V2036500 | Circuit Board | PN2 | | | | |
| * | 390 | V2257300 | Circuit Board | PB | | | | |
| * | 400 | V2450100 | Ribbon Controler | 10K B | | | | |
| * | 410 | V2138700 | Ribbon Base | | | | | |
| | 420 | -- | Adhesive Tape | 80X24 | | (V233240) | | |
| * | 430 | V2204300 | Key Top | | | DIGITAL SAMPLING | | |
| * | 440 | V2204400 | Key Top | | | PAD CONTROL | | |
| * | 450 | V2138600 | Knob | | | INPUT LEVEL,CUT OFF | 6 | |
| | 460 | VY793100 | Wheel Assembly | | | RESONANCE,GROVE,ASSIGN BASS BOOST | | |
| | 460a | VY750800 | Wheel | | | | | |
| | 460b | VT440100 | Spring | | | | | |
| | 480 | -- | Dust-proof Cloth | 25X15X0.5 | | -2361400 | | |
| | | | | | | | | |
| | | | ACCESSORIES | | | | | |
| | | VZ239700 | Music Rest | | | | | |
| ⚠ | | VU113800 | AC Adapter | PA-5C J | | J | | |

*** : New parts**

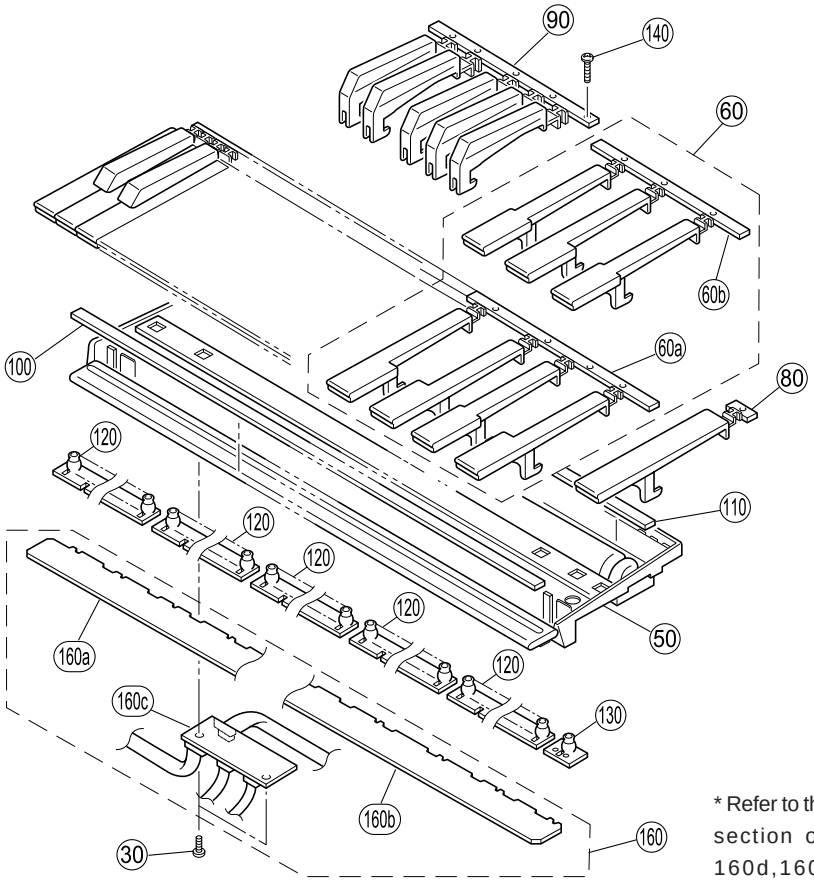
# ■ LOWER CASE ASSEMBLY




| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| * | | **V2204600** | Lower Case Assembly | | | PSRD1 | | |
| | 10 | -- | Lower Case | | | (V220450) | | |
| | 10a | **VI104400** | Holder,Leg | CH | | | 3 | |
| | 10b | **EP600280** | Bind Head Tapping Screw-P | 3.0X8 MFZN2Y | | | 6 | |
| | 10c | **CB043750** | Foot | BL T1.6 | | | 5 | |
| | 10d | -- | Dust-proof Cloth | 360X15X0.5 | | (V217840) | 4 | |
| | 10e | -- | Dust-proof Cloth | 885X15X0.5 | | (V217850) | | |
| | 10f | -- | Dust-proof Cloth | 290X20X0.5 | | (V217860) | | |
| | 10g | -- | Vibration-proof Tape | 12X32X0.5 | | (VU95430) | | |
| * | 20 | **XU670A00** | Speaker | 12.0cm 4ohm 8W | | | 2 | |
| | 30 | -- | Speaker Box | L | | (V213760) | | |
| | 40 | -- | Speaker Box | R | | (V213780) | | |
| | 50 | -- | Connector Assembly | SP-L | | (V225740) | | |
| | 60 | -- | Connector Assembly | SP-R | | (V225750) | | |
| | 70 | -- | Cushion | 1800X10X1.0 | | (V217950) | 2 | |
| | 80 | -- | Cushion | 50X40X1.0 | | (V217960) | | |
| | 90 | -- | Cushion | 30X30X1.0 | | (V217970) | | |
| | 100 | -- | Cushion | 360X10X1.0 | | (V217890) | 2 | |
| | 110 | **EP600300** | Bind Head Tapping Screw-P | 3.0X12 MFZN2Y | | | 78 | |
| | 120 | **EP640500** | Bind Head Tapping Screw-P | 4.0X10 MFZN2Y | | | 8 | |
| | 130 | **VA126100** | Adhesive Tape | 12X50 | | | 5 | |
| | 160 | -- | Dust-proof Cloth | 885X15X0.5 | | (V217850) | | |

*** : New parts**

# KEYBOARD ASSEMBLY




* Refer to the CIRCUIT BOARD LAYOUT section of this manual regarding 160d,160e,160f,160g connector assemblies.

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| * | | **V2386100** | Keyboard Assembly | 16M C61 | | PSRD1 | | |
| | 30 | **EP600280** | Bind Head Tapping Screw-P | 3.0X8 MFZN2Y | | | 2 | |
| | 30 | **EP630220** | Bind Head Tapping Screw-P | 3.0X8 MFZN2BL | | | 2 | |
| | 50 | **--** | Frame | C61 | | (VS15380) | | |
| | 60 | **VH1809C0** | White Keys | CEFGBDFA | | | 5 | |
| | 60a | **--** | White Keys | CEGB | | | 5 | |
| | 60b | **--** | White Keys | DFA | | | 5 | |
| | 80 | **VH181100** | White Keys | C' | | | | |
| | 90 | **VH181200** | Black Keys | | | | 5 | |
| | 100 | **VH181300** | Felt | | | | | |
| | 110 | **VH181400** | Rubber Sheet | | | | | |
| | 120 | **VU328400** | Rubber Contact | 16M OCT 2M 12KEYS | | | 5 | |
| | 130 | **VU328500** | Rubber Contact | 16M C' 2M 1KEY | | | | |
| | 140 | **EP600310** | Bind Head Tapping Screw-P | 3.0X16 MFZN2Y | | | 21 | |
| | 140 | **VB205200** | Bind Head Tapping Screw-P | 3.0X16 MFZN2BL | | | 21 | |
| | 140 | **VS756700** | Bind Head Tapping Screw-P | 3.0X16 MFZN2B | | | 21 | |
| | 150 | **TX920280** | Grease | G-31KA | | | | |
| | 160 | **--** | Circuit Board | KBD SW | | (V240470) | | |
| | 160a | **VV583800** | Circuit Board | MK-L | | | | |
| | 160b | **VV583900** | Circuit Board | MK-H | | | | |
| * | 160c | **V2404900** | Circuit Board | MKS3 | | | | |
| | 160d | **--** | Cable | MK-A 12P | | (VV58310) | | |
| | 160e | **--** | Cable | MK-B 12P | | (VV58360) | | |
| | 160f | **--** | Cable | MK-C 7P | | (VV58350) | | |
| | 160g | **--** | Cable | MK-D 5P | | (VV58370) | | |
| | 160h | **--** | Sponge | A 16M | | (VV61890) | 2 | |
| | 160i | **--** | Sponge | B 16M | | (VV61900) | 2 | |
| | 160j | **--** | Adhesive Tape | C 12 | | (VV61910) | | |
| | 160k | **--** | Adhesive Tape | D 12 | | (VV61920) | 3 | |

*** : New parts**

# ■ ELECTRICAL PARTS

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | | | ELECTRICAL PARTS | | | PSRD1 | | |
| * | | **V2257200** | Circuit Board | AMPN | | (XU853B0) | | |
| * | | **V2257300** | Circuit Board | PB | | (XU853B0) | | |
| * | | **V2036400** | Circuit Board | DM | | (XU491B0) | | |
| | | **VV583800** | Circuit Board | MK-L | | (XR564B0) | | |
| | | **VV583900** | Circuit Board | MK-H | | (XR565B0) | | |
| * | | **V2404900** | Circuit Board | MKS3 | | (XU878B0) | | |
| * | | **V2036500** | Circuit Board | PN2 | | (XU492B0) | | |
| | | | | | | | | |
| * | | **V2257200** | Circuit Board | AMPN | | (XU853B0) | | |
| * | | **V2257300** | Circuit Board | PB | | (XU853B0) | | |
| | | **EG330380** | Bind Head Screw | 3.0X10 MFZN2BL | | | | |
| | | **EP600190** | Bind Head Tapping Screw-B | 3.0X8 MFZN2BL | | | | |
| | | **ES200080** | Hexagonal Nut | 3.0 MFC2BL | | | | |
| * | | **V2586000** | Spacer | | | | | |
| | | **--** | Heat Sink | AMP1 | | (V258560) | | |
| | | **--** | Heat Sink | REG | | (V258580) | | |
| | | **--** | Heat Sink | AMP2 | | (V258570) | | |
| | | **--** | Jumper Wire | 0.55 | | (VA07890) | | |
| | C603 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C707 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C708 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | -710 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C801 | **VT757800** | Monolithic Ceramic Cap. | 1.000 25V Z | | | | |
| | C802 | **VT757800** | Monolithic Ceramic Cap. | 1.000 25V Z | | | | |
| | C805 | **FG612470** | Ceramic Capacitor-B | 470P 50V K | | | | |
| | C806 | **FG612470** | Ceramic Capacitor-B | 470P 50V K | | | | |
| | C807 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C808 | **UR827330** | Electrolytic Cap. | 33.00 10.0V | | | | |
| | C809 | **UR837220** | Electrolytic Cap. | 22.00 16.0V | | | | |
| | C810 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C811 | **UR848100** | Electrolytic Cap. | 100.00 25.0V | | | | |
| | C812 | **UA354470** | Mylar Capacitor | 0.047 50V J | | | | |
| | -815 | **UA354470** | Mylar Capacitor | 0.047 50V J | | | | |
| | C812 | **UA654470** | Mylar Capacitor | 0.047 50V J | | | | |
| | -815 | **UA654470** | Mylar Capacitor | 0.047 50V J | | | | |
| | C816 | **UR837470** | Electrolytic Cap. | 47.00 16.0V | | | | |
| | C817 | **UR837470** | Electrolytic Cap. | 47.00 16.0V | | | | |
| | C901 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C902 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C903 | **UR867100** | Electrolytic Cap. | 10.00 50.0V | | | | |
| | C904 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C905 | **UR867100** | Electrolytic Cap. | 10.00 50.0V | | | | |
| | C906 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C907 | **UR867100** | Electrolytic Cap. | 10.00 50.0V | | | | |
| | C908 | **VK373000** | Electrolytic Cap. | 4700 25.0V | | | | |
| | CN602 | **VI878400** | Cable Holder | 51048 6P TE | | | | |
| | CN703 | **VI879400** | Cable Holder | 51048 16P TE | | | | |
| | CN704 | **VI878100** | Cable Holder | 51048 3P TE | | | | |
| | CN801 | **VI878300** | Cable Holder | 51048 5P TE | | | | |
| | CN802 | **VB389900** | Connector Base Post | PH- 3P TE | | | | |
| | CN803 | **VB389900** | Connector Base Post | PH- 3P TE | | | | |
| | CN804 | **VI878300** | Cable Holder | 51048 5P TE | | | | |
| | CN805 | **VK024900** | Wire Trap | 52147 5P TE | | | | |
| | CN901 | **VI878300** | Cable Holder | 51048 5P TE | | | | |
| | CN902 | **VI878200** | Cable Holder | 51048 4P TE | | | | |
| | CN903 | **LB918020** | Base Post Connector | XH 2P TE | | | | |
| | CN904 | **VI878200** | Cable Holder | 51048 4P TE | | | | |
| | D702 | **VD631600** | Diode | 1SS133,176,HSS104 | | | | |
| | -708 | **VD631600** | Diode | 1SS133,176,HSS104 | | | | |
| ⚠ | D901 | **VL723600** | Diode | 20E1-FC4 | | | | |
| ⚠ | D902 | **VL723600** | Diode | 20E1-FC4 | | | | |
| | D903 | **VD631600** | Diode | 1SS133,176,HSS104 | | | | |
| | D904 | **VB481900** | Diode | 11ES4 | | | | |
| | IC701 | **XR793A00** | IC | KS0076BQ-00 | | LCD DRIVER | | |
| * | IC701 | **XV226A00** | IC | KS0066U-10B | | LCD DRIVER | | |
| | IC801 | **XQ619A00** | IC | LA4705NA | | POWER AMP 17W | | |
| | IC901 | **XT625A00** | IC | S-81250SGY-Z | | REGULATOR +5V | | |
| * | IC902 | **XU814A00** | IC | PQ05RD11 | | REGULATOR +5V | | |
| | J701 | **HF454680** | Carbon Resistor | 68.0 1/4 J | | | | |

*** : New parts**

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | JK601 | **VB312600** | Phone Jack | YKB21-5012 | | FOOT SW | | |
| | JK602 | **VJ107200** | DIN Connector | 5P YKF51-5050 | | MIDI IN | | |
| | JK603 | **VJ107200** | DIN Connector | 5P YKF51-5050 | | MIDI OUT | | |
| | JK801 | **LB101870** | Phone Jack | YKB21-5006 | | PHONES | | |
| | JK901 | **VC664500** | Connector | HEC2305 | | DC-IN | | |
| | L601 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L601 | **VF968800** | Coil | SBT-0260TF | | | | |
| | -606 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L603 | **VF968800** | Coil | SBT-0260TF | | | | |
| | -606 | **VF968800** | Coil | SBT-0260TF | | | | |
| | L608 | **VB835000** | Coil | FL5R200QNT | | | | |
| | -610 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L608 | **VF968800** | Coil | SBT-0260TF | | | | |
| | -610 | **VF968800** | Coil | SBT-0260TF | | | | |
| | L801 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L801 | **VF968800** | Coil | SBT-0260TF | | | | |
| | L802 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L802 | **VF968800** | Coil | SBT-0260TF | | | | |
| ⚠ | L901 | **GE901870** | Coil | SN3-205B | | | | |
| ⚠ | L902 | **GE901870** | Coil | SN3-205B | | | | |
| | R603 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R722 | **VR346900** | Thermistor | ERTD2FGJ801S 800 | | | | |
| | R723 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R724 | **HF457910** | Carbon Resistor | 91.0K 1/4 J | | | | |
| | R801 | **HF457330** | Carbon Resistor | 33.0K 1/4 J | | | | |
| | R802 | **HF457330** | Carbon Resistor | 33.0K 1/4 J | | | | |
| | R803 | **HF456680** | Carbon Resistor | 6.8K 1/4 J | | | | |
| | R804 | **HF456680** | Carbon Resistor | 6.8K 1/4 J | | | | |
| | R805 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R806 | **HF453220** | Carbon Resistor | 2.2 1/4 J | | | | |
| | -809 | **HF453220** | Carbon Resistor | 2.2 1/4 J | | | | |
| | R810 | **HF455100** | Carbon Resistor | 100.0 1/4 J | | | | |
| | R811 | **HF455100** | Carbon Resistor | 100.0 1/4 J | | | | |
| | R813 | **HF455330** | Carbon Resistor | 330.0 1/4 J | | | | |
| | R814 | **HF455330** | Carbon Resistor | 330.0 1/4 J | | | | |
| | R815 | **HF458220** | Carbon Resistor | 220.0K 1/4 J | | | | |
| | R816 | **HF458220** | Carbon Resistor | 220.0K 1/4 J | | | | |
| | R901 | **HF456100** | Carbon Resistor | 1.0K 1/4 J | | | | |
| | RA702 | **V0072900** | Resistor Array | EXB-Z6N222J | | | | |
| ⚠ | SW901 | **VY980400** | Push Switch | SDDLB1 J,UC,CEE | | STAND-BY/ON | | |
| ⚠ * | TH901 | **VV458000** | Protector Switch | RUE250 2.50A 30V | | | | |
| | VR701 | **VZ486300** | Rotary Variable Resistor | B10K EVJ05DF20B14 | | PITCH BEND | | |
| | VR801 | **VZ048400** | Rotary Variable Resistor | A10.0K XV0141GPVN2 | | MASTER VOLUME | | |
| | W602 | **--** | Connector Assembly | MIDI | | (V221400) | | |
| | W703 | **--** | Connector Assembly | PN-SW | | (V221410) | | |
| | W704 | **--** | Connector Assembly | PB-PN2 | | (V221420) | | |
| | W801 | **--** | Connector Assembly | VDD,AMVR | | (V229580) | | |
| | W901 | **--** | Connector Assembly | VDD,AMVR | | (V229580) | | |
| | W902 | **--** | Connector Assembly | PSW | | (V221360) | | |
| | ZD901 | **VG439500** | Zener Diode | MTZ J 10.0B 10.0V | | | | |
| | | | | | | | | |
| * | | **V2036400** | Circuit Board | DM | | (XU491B0) | | |
| | | **EP600190** | Bind Head Tapping Screw-B | 3.0X8 MFZN2BL | | | | |
| | | **--** | Jumper Wire | 0.55 | | (VA07890) | | |
| | C101 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C102 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C104 | **FG652100** | Ceramic Capacitor-SL | 100P 50V J | | | | |
| | C105 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C106 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C107 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | -109 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C110 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C111 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C112 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C113 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C114 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C115 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C116 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C117 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C118 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |

*** : New parts**

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | C119 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C120 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C201 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C204 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C301 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C302 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C303 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C304 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C501 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C502 | **UR837470** | Electrolytic Cap. | 47.00 16.0V | | | | |
| | C503 | **UR837470** | Electrolytic Cap. | 47.00 16.0V | | | | |
| | C504 | **FG613220** | Ceramic Capacitor-B | 2200P 50V K | | | | |
| | C505 | **FG613220** | Ceramic Capacitor-B | 2200P 50V K | | | | |
| | C506 | **FG612220** | Ceramic Cap.-B | 220P 50V K | | | | |
| | C507 | **FG612220** | Ceramic Cap.-B | 220P 50V K | | | | |
| | C508 | **FG612330** | Ceramic Cap.-B | 330P 50V K | | | | |
| | C509 | **FG612330** | Ceramic Cap.-B | 330P 50V K | | | | |
| | C510 | **UN837100** | Electrolytic Cap.-BP | 10.00 16.0V | | | | |
| | C511 | **UN837100** | Electrolytic Cap.-BP | 10.00 16.0V | | | | |
| | C512 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C514 | **UR837470** | Electrolytic Cap. | 47.00 16.0V | | | | |
| | C515 | **FG652100** | Ceramic Capacitor-SL | 100P 50V J | | | | |
| | C516 | **FG652100** | Ceramic Capacitor-SL | 100P 50V J | | | | |
| | C601 | **VC694800** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | C602 | **FG613100** | Ceramic Capacitor-B | 1000P 50V K | | | | |
| | C603 | **FG613470** | Ceramic Capacitor-B | 4700P 50V K | | | | |
| | C701 | **FG613100** | Ceramic Capacitor-B | 1000P 50V K | | | | |
| | -704 | **FG613100** | Ceramic Capacitor-B | 1000P 50V K | | | | |
| | CA601 | **VH484100** | Ceramic Capacitor Array | 100P 50V M | | | | |
| | -703 | **VH483900** | Ceramic Capacitor Array | 100P 50V M | | | | |
| * | CL101 | **V2192500** | Ceramic Resonator | 8.4672M CST8.46MT | | | | |
| | CN101 | **VK024900** | Wire Trap | 52147 5P TE | | | | |
| | CN102 | **VF728300** | Wire Trap | 52147 6P TE | | | | |
| | CN501 | **VK024800** | Wire Trap | 52147 4P TE | | | | |
| | CN601 | **VF728300** | Wire Trap | 52147 6P TE | | | | |
| | CN701 | **VK025600** | Wire Trap | 52147 12P TE | | | | |
| | CN702 | **VJ861600** | Wire Trap | 52147 16P TE | | | | |
| | D601 | **VD631600** | Diode | 1SS133,176,HSS104 | | | | |
| | EM701 | **VD542700** | LC Filter | DSS306-93F223Z1 | | | | |
| | EM702 | **VD542700** | LC Filter | DSS306-93F223Z1 | | | | |
| | IC101 | **XT890A00** | IC | HG73C201FD | | SWX00 | | |
| | IC102 | **XT333A00** | IC | UPC29M33HF | | REGULATOR +3.3V | | |
| | IC103 | **XR902A00** | IC | IC-PST591D-2 | | RESET | | |
| * | IC201 | **XU817100** | IC | | | WAVE ROM | | |
| | IC201 | **VK863100** | IC Socket | DICF-42CS-E | | | | |
| | IC204 | **XT810A00** | IC | MSM514260C-60TS-K | | DRAM 4M | | |
| | IC301 | **XT339A00** | IC | M5M51008BP-70LL | | SRAM 1M | | |
| * | IC301 | **XU711A00** | IC | M5M51008BP-55LL | | SRAM 1M | | |
| * | IC301 | **XU712A00** | IC | M5M51008BP-55L | | SRAM 1M | | |
| | IC302 | **XT339A00** | IC | M5M51008BP-70LL | | SRAM 1M | | |
| * | IC302 | **XU711A00** | IC | M5M51008BP-55LL | | SRAM 1M | | |
| * | IC302 | **XU712A00** | IC | M5M51008BP-55L | | SRAM 1M | | |
| * | IC303 | **XU818C00** | IC | PROGRAM | | EP ROM | | |
| | IC303 | **VK863100** | IC Socket | DICF-42CS-E | | | | |
| | IC501 | **XR998A00** | IC | UPD6379AGR | | DAC | | |
| | IC502 | **XC520A00** | IC | UPC4570C | | OP AMP | | |
| | IC601 | **VG181900** | Photo Coupler | PC-900V | | | | |
| | L101 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L101 | **VF968800** | Coil | SBT-0260TF | | | | |
| | L102 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L102 | **VF968800** | Coil | SBT-0260TF | | | | |
| | L105 | **VB835000** | Coil | FL5R200QNT | | | | |
| | -109 | **VB835000** | Coil | FL5R200QNT | | | | |
| | L105 | **VF968800** | Coil | SBT-0260TF | | | | |
| | -109 | **VF968800** | Coil | SBT-0260TF | | | | |
| | R102 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R103 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R104 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |
| | -108 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |
| | R111 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |

*** : New parts**

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | R112 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |
| | R114 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |
| | R116 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R117 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R118 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R119 | **HF454470** | Carbon Resistor | 47.0 1/4 J | | | | |
| | R301 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R501 | **HF456220** | Carbon Resistor | 2.2K 1/4 J | | | | |
| | R502 | **HF456220** | Carbon Resistor | 2.2K 1/4 J | | | | |
| | R503 | **HF457220** | Carbon Resistor | 22.0K 1/4 J | | | | |
| | -506 | **HF457220** | Carbon Resistor | 22.0K 1/4 J | | | | |
| | R507 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R508 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R601 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R604 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R605 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R607 | **HF457220** | Carbon Resistor | 22.0K 1/4 J | | | | |
| | R608 | **HF456270** | Carbon Resistor | 2.7K 1/4 J | | | | |
| | R609 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R610 | **HF456100** | Carbon Resistor | 1.0K 1/4 J | | | | |
| | R701 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | -704 | **HF457100** | Carbon Resistor | 10.0K 1/4 J | | | | |
| | R705 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | -709 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | R710 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R711 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R712 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | -721 | **HF455220** | Carbon Resistor | 220.0 1/4 J | | | | |
| | RA701 | **VG733700** | Resistor Array | EXB-Z09E 47K X 8 | | | | |
| | TR601 | **IC174070** | Transistor | 2SC1740S R,S | | | | |
| | TR602 | **IC174070** | Transistor | 2SC1740S R,S | | | | |
| | | | | | | | | |
| | | **VV583800** | Circuit Board | MK-L | | (XR564B0) | | |
| | | **VV437800** | Diode | 1N4148(DO-34) | | | | |
| | | **VK025600** | Wire Trap | 52147 12P TE | | | | |
| | | **VK025100** | Wire Trap | 52147 7P TE | | | | |
| | | | | | | | | |
| | | **VV583900** | Circuit Board | MK-H | | (XR565B0) | | |
| | | **VV437800** | Diode | 1N4148(DO-34) | | | | |
| | | **VK025600** | Wire Trap | 52147 12P TE | | | | |
| | | **VK024900** | Wire Trap | 52147 5P TE | | | | |
| | | | | | | | | |
| * | | **V2404900** | Circuit Board | MKS3 | | (XU878B0) | | |
| | | **--** | Vibration-proof Tape | 10X64X0.5 | | (VK34680) | | |
| | | **--** | Jumper Wire | 0.55 | | (VA07890) | | |
| | C1 | **FG651220** | Ceramic Capacitor-SL | 22P 50V J | | | | |
| | C1 | **VR027400** | Ceramic Capacitor | 22P 63V J | | | | |
| | C2 | **FG651220** | Ceramic Capacitor-SL | 22P 50V J | | | | |
| | C2 | **VR027400** | Ceramic Capacitor | 22P 63V J | | | | |
| | C3 | **UR828100** | Electrolytic Cap. | 100.00 10.0V | | | | |
| | C4 | **VD930900** | Semiconductive Cera. Cap. | 0.1 25V M | | | | |
| | C4 | **VM902400** | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| | CA1 | **VP755200** | Ceramic Capacitor Array | 100P 50V K | | | | |
| | CA2 | **VT487100** | Ceramic Capacitor Array | 470P X12 | | | | |
| | CL1 | **VN002100** | Ceramic Resonator | CST8.00MTW140 | | | | |
| | CL1 | **VQ305500** | Ceramic Resonator | 8.00M EFOEC8004T3 | | | | |
| | CN1 | **VF728300** | Wire Trap | 52147 6P TE | | | | |
| | CN2 | **VK025600** | Wire Trap | 52147 12P TE | | | | |
| | CN3 | **VK025100** | Wire Trap | 52147 7P TE | | | | |
| | CN4 | **VK024900** | Wire Trap | 52147 5P TE | | | | |
| | IC1 | **XR951A00** | IC | HD63B05V0F07P | | CPU | | |
| | R1 | **HF456470** | Carbon Resistor | 4.7K 1/4 J | | | | |
| | R1 | **VL631400** | Carbon Resistor | 4.7K 1/6 J | | | | |
| | R2 | **HF456470** | Carbon Resistor | 4.7K 1/4 J | | | | |
| | R2 | **VL631400** | Carbon Resistor | 4.7K 1/6 J | | | | |
| | R3 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R3 | **VL632600** | Carbon Resistor | 47.0K 1/6 J | | | | |
| | RA1 | **VH373200** | Resistor Array | RGLE12X473J | | | | |
| | | | | | | | | |
| * | | **V2036500** | Circuit Board | PN2 | | (XU492B0) | | |

*** : New parts**

| REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|
| | -- | Jumper Wire | 0.55 | | (VA07890) | | |
| C02 | FG613100 | Ceramic Capacitor-B | 1000P 50V K | | | | |
| C04 | UA354470 | Mylar Capacitor | 0.047 50V J | | | | |
| C04 | UA654470 | Mylar Capacitor | 0.047 50V J | | | | |
| C06 | VN283200 | Electrolytic Cap.-BP | 1.00 50.0V | | | | |
| C07 | UM415470 | Electrolytic Cap. | 0.47 50.0V | | | | |
| C10 | FG612680 | Ceramic Capacitor-B | 680P 50V K | | | | |
| C11 | FG612330 | Ceramic Cap.-B | 330P 50V K | | | | |
| C12 | UM416100 | Electrolytic Cap. | 1.00 50.0V | | | | |
| C13 | VN283200 | Electrolytic Cap.-BP | 1.00 50.0V | | | | |
| C16 | VE327100 | Monolithic Mylar Capacitor | 0.82 50V J | | | | |
| C16 | VR169500 | Monolithic Mylar Capacitor | ECQ-V1H824JL3 | | | | |
| C17 | UA354220 | Mylar Capacitor | 0.022 50V J | | | | |
| C17 | UA654220 | Mylar Capacitor | 0.022 50V J | | | | |
| C18 | UA354220 | Mylar Capacitor | 0.022 50V J | | | | |
| C18 | UA654220 | Mylar Capacitor | 0.022 50V J | | | | |
| C19 | VE327100 | Monolithic Mylar Capacitor | 0.82 50V J | | | | |
| C19 | VR169500 | Monolithic Mylar Capacitor | ECQ-V1H824JL3 | | | | |
| C20 | UM416100 | Electrolytic Cap. | 1.00 50.0V | | | | |
| C21 | VC694800 | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| C22 | FG613180 | Ceramic Capacitor-B | 1800P 50V K | | | | |
| C23 | FG613270 | Ceramic Capacitor-B | 2700P 50V K | | | | |
| C24 | FG613270 | Ceramic Capacitor-B | 2700P 50V K | | | | |
| C25 | FG612180 | Ceramic Cap.-B | 180P 50V K | | | | |
| C26 | VC694800 | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| C27 | VC694800 | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| C28 | UM416330 | Electrolytic Cap. | 3.3 50.0V | | | | |
| C29 | UM416330 | Electrolytic Cap. | 3.3 50.0V | | | | |
| C30 | UM388100 | Electrolytic Cap. | 100.00 6.3V | | | | |
| C31 | FG613560 | Ceramic Capacitor-B | 5600P 50V K | | | | |
| C32 | FG612680 | Ceramic Capacitor-B | 680P 50V K | | | | |
| C33 | FG612470 | Ceramic Capacitor-B | 470P 50V K | | | | |
| C34 | UM388100 | Electrolytic Cap. | 100.00 6.3V | | | | |
| C35 | VN283200 | Electrolytic Cap.-BP | 1.00 50.0V | | | | |
| C36 | VC694800 | Semiconductive Cera. Cap. | 0.1 25V Z | | | | |
| C37 | VN283200 | Electrolytic Cap.-BP | 1.00 50.0V | | | | |
| CN1 | VK024700 | Wire Trap | 52147 3P TE | | | | |
| CN2 | VI878300 | Cable Holder | 51048 5P TE | | | | |
| CN3 | VI878300 | Cable Holder | 51048 5P TE | | | | |
| CN4 | VU033600 | Connector | FM 5P SE | | | | |
| CN5 | VI879000 | Cable Holder | 51048 12P TE | | | | |
| CN6 | VI878200 | Cable Holder | 51048 4P TE | | | | |
| CN7 | VI878300 | Cable Holder | 51048 5P TE | | | | |
| D1 | VD631600 | Diode | 1SS133,176,HSS104 | | | | |
| D2 | VD631600 | Diode | 1SS133,176,HSS104 | | | | |
| D3 | VD631600 | Diode | 1SS133,176,HSS104 | | | | |
| IC1 | XC520A00 | IC | UPC4570C | | OP AMP | | |
| IC2 | XC520A00 | IC | UPC4570C | | OP AMP | | |
| * IC3 | XU911A00 | IC | M5243AP06 | | GEQ | | |
| IC4 | XL493A00 | IC | TC74HC4051AP | | MULTIPLEXER | | |
| JK1 | VB312600 | Phone Jack | YKB21-5012 | | MIC | | |
| JK2 | LB101870 | Phone Jack | YKB21-5006 | | LINE-IN | | |
| L1 | VB835000 | Coil | FL5R200QNT | | | | |
| L1 | VF968800 | Coil | SBT-0260TF | | | | |
| L3 | VB835000 | Coil | FL5R200QNT | | | | |
| L3 | VF968800 | Coil | SBT-0260TF | | | | |
| L5 | VB835000 | Coil | FL5R200QNT | | | | |
| L5 | VF968800 | Coil | SBT-0260TF | | | | |
| R01 | HF458100 | Carbon Resistor | 100.0K 1/4 J | | | | |
| R02 | HF457100 | Carbon Resistor | 10.0K 1/4 J | | | | |
| R03 | HF455470 | Carbon Resistor | 470.0 1/4 J | | | | |
| R04 | HF455470 | Carbon Resistor | 470.0 1/4 J | | | | |
| R05 | HF457150 | Carbon Resistor | 15.0K 1/4 J | | | | |
| R06 | HF457270 | Carbon Resistor | 27.0K 1/4 J | | | | |
| R07 | HF458100 | Carbon Resistor | 100.0K 1/4 J | | | | |
| R08 | HF456220 | Carbon Resistor | 2.2K 1/4 J | | | | |
| R09 | HF458100 | Carbon Resistor | 100.0K 1/4 J | | | | |
| R10 | HF457150 | Carbon Resistor | 15.0K 1/4 J | | | | |
| R11 | HF457330 | Carbon Resistor | 33.0K 1/4 J | | | | |
| R14 | HF456270 | Carbon Resistor | 2.7K 1/4 J | | | | |

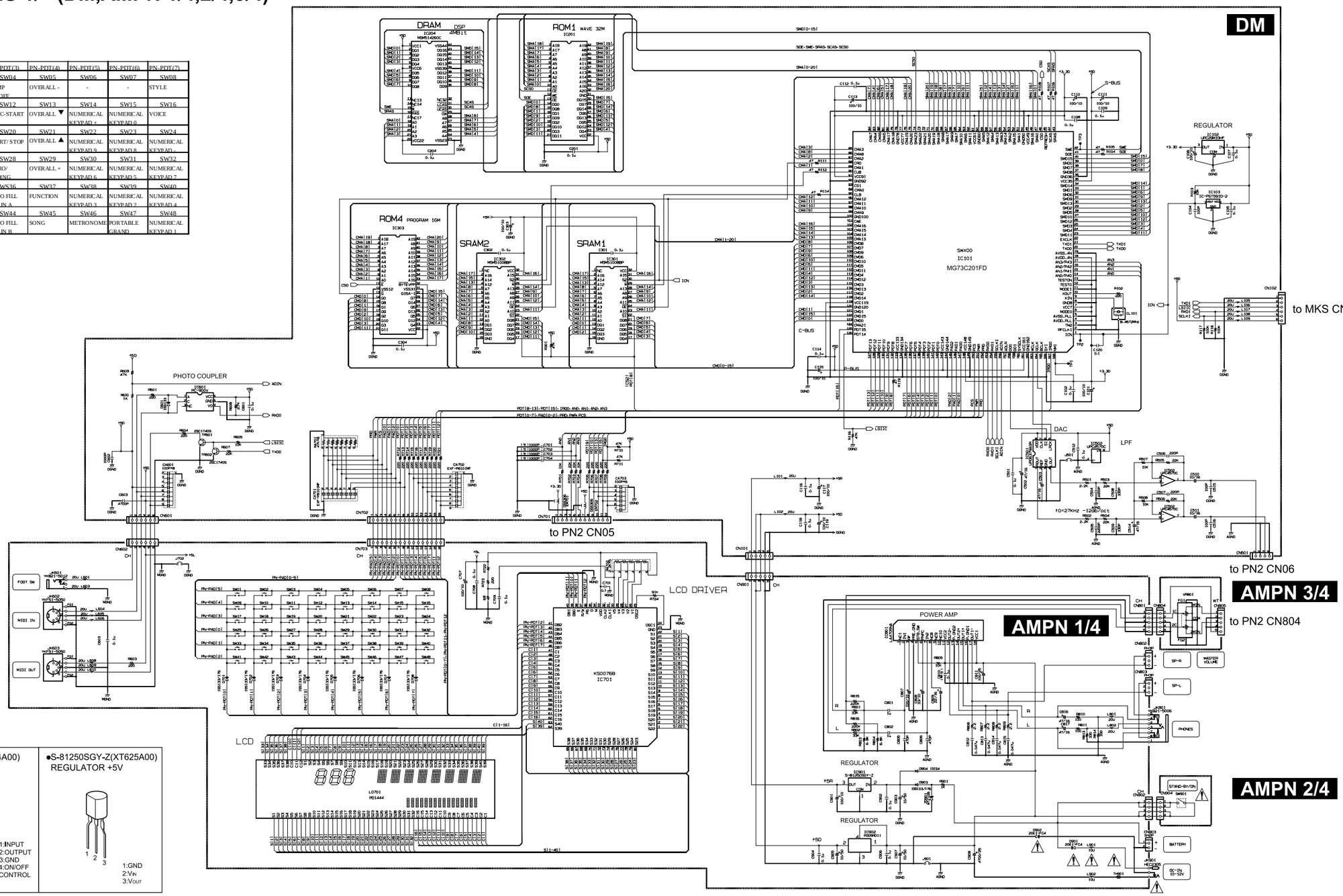
*** : New parts**

| | REF NO. | PART NO. | DESCRIPTION | | | REMARKS | QTY | |
|---|---|---|---|---|---|---|---|---|
| | R15 | **HF456270** | Carbon Resistor | 2.7K 1/4 J | | | | |
| | R16 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R17 | **HF457560** | Carbon Resistor | 56.0K 1/4 J | | | | |
| | R18 | **HF456270** | Carbon Resistor | 2.7K 1/4 J | | | | |
| | R19 | **HF456270** | Carbon Resistor | 2.7K 1/4 J | | | | |
| | R20 | **HF457560** | Carbon Resistor | 56.0K 1/4 J | | | | |
| | R21 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R22 | **HF456560** | Carbon Resistor | 5.6K 1/4 J | | | | |
| | R24 | **HF457560** | Carbon Resistor | 56.0K 1/4 J | | | | |
| | R26 | **HF456470** | Carbon Resistor | 4.7K 1/4 J | | | | |
| | R27 | **HF456470** | Carbon Resistor | 4.7K 1/4 J | | | | |
| | R28 | **HF457560** | Carbon Resistor | 56.0K 1/4 J | | | | |
| | R29 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R30 | **VP440600** | Metal Film Resistor | 4.7K 1/4 F | | | | |
| | R31 | **VP440600** | Metal Film Resistor | 4.7K 1/4 F | | | | |
| | R32 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R33 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R34 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R35 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R36 | **HF457470** | Carbon Resistor | 47.0K 1/4 J | | | | |
| | R37 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R38 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | R39 | **HF457270** | Carbon Resistor | 27.0K 1/4 J | | | | |
| | R42 | **HF458100** | Carbon Resistor | 100.0K 1/4 J | | | | |
| | SW1 | **VT415700** | Light Touch Switch | EVQ PKE 05B | | SAMPLE REC. | | |
| | SW2 | **VT415700** | Light Touch Switch | EVQ PKE 05B | | PART CONTROL | | |
| | VR1 | **VQ670500** | Rotary Pot. | B 10K RK11K1130 | | INPUT LEVEL | | |
| | VR2 | **VQ032500** | Rotary Variable Resistor | B 10.0K RK11K113 | | CUT-OFF | | |
| | VR3 | **VQ032500** | Rotary Variable Resistor | B 10.0K RK11K113 | | RESONANCE | | |
| | VR4 | **VQ032500** | Rotary Variable Resistor | B 10.0K RK11K113 | | GROOVE | | |
| | VR5 | **VQ032500** | Rotary Variable Resistor | B 10.0K RK11K113 | | ASSIGN | | |
| * | VR6 | **V2265600** | Rotary Variable Resistor | B 10.0K RK14K1230 | | BASS BOOST | | |
| | W2 | **--** | Connector Assembly | PN2-VR | | (V221460) | | |
| | W5 | **--** | Connector Assembly | PN2-DM | | (V221450) | | |
| | W6 | **--** | Connector Assembly | DM-PN2 | | (V229570) | | |
| | W7 | **--** | Connector Assembly | PN2-VR | | (V221460) | | |
| | | | | | | | | |
| * | | **V0054000** | LCD | TYPE-B-T | | | | |
| * | | **V2271100** | LCD | TYPE-B-R | | | | |
| * | | **XU670A00** | Speaker | 12.0cm 4ohm 8W | | | | |

*** : New parts**

# ■ CIRCUIT DIAGRAMS 1/2 (DM,AMPN 1/4,2/4,3/4)

| | PN-PDT(0) | PN-PDT(1) | PN-PDT(2) | PN-PDT(3) | PN-PDT(4) | PN-PDT(5) | PN-PDT(6) | PN-PDT(7) |
|---|---|---|---|---|---|---|---|---|
| PN-PAD(5) | SW01 - | SW02 CHORD GUID | SW03 PRESET A | SW04 ACMP ON/OFF | SW05 OVERALL - | SW06 - | SW07 - | SW08 STYLE |
| PN-PAD(4) | SW09 - | SW10 RECORD | SW11 PRESET B | SW12 SYNC-START | SW13 OVERALL ▼ | SW14 NUMERICAL KEYPAD + | SW15 NUMERICAL KEYPAD 0 | SW16 VOICE |
| PN-PAD(3) | SW17 - | SW18 USER 1 | SW19 DUAL | SW20 START/ STOP | SW21 OVERALL ▲ | SW22 NUMERICAL KEYPAD 9 | SW23 NUMERICAL KEYPAD 8 | SW24 NUMERICAL KEYPAD - |
| PN-PAD(2) | SW25 - | SW26 USER 2 | SW27 TOUCH | SW28 INTRO/ ENDING | SW29 OVERALL + | SW30 NUMERICAL KEYPAD 6 | SW31 NUMERICAL KEYPAD 5 | SW32 NUMERICAL KEYPAD 7 |
| PN-PAD(1) | SW33 - | SW34 USER 3 | SW35 REVERB | SW36 AUTO FILL MAIN A | SW37 FUNCTION | SW38 NUMERICAL KEYPAD 3 | SW39 NUMERICAL KEYPAD 2 | SW40 NUMERICAL KEYPAD 4 |
| PN-PAD(0) | SW41 - | SW42 USER 4 | SW43 HARMONY | SW44 AUTO FILL MAIN B | SW45 SONG | SW46 METRONOME | SW47 PORTABLE GRAND | SW48 NUMERICAL KEYPAD 1 |




| | | |
|---|---|---|
| • 29M33HF(XT333A00) REGULATOR +3.3V | ●PQ05RD11(XU814A00) REGULATOR +5V | ●S-81250SGY-Z(XT625A00) REGULATOR +5V |
| 1: INPUT<br>2: COMMON<br>3: OUTPUT | 1:INPUT<br>2:OUTPUT<br>3:GND<br>4:ON/OFF CONTROL | 1:GND<br>2:$V_{IN}$<br>3:$V_{OUT}$ |

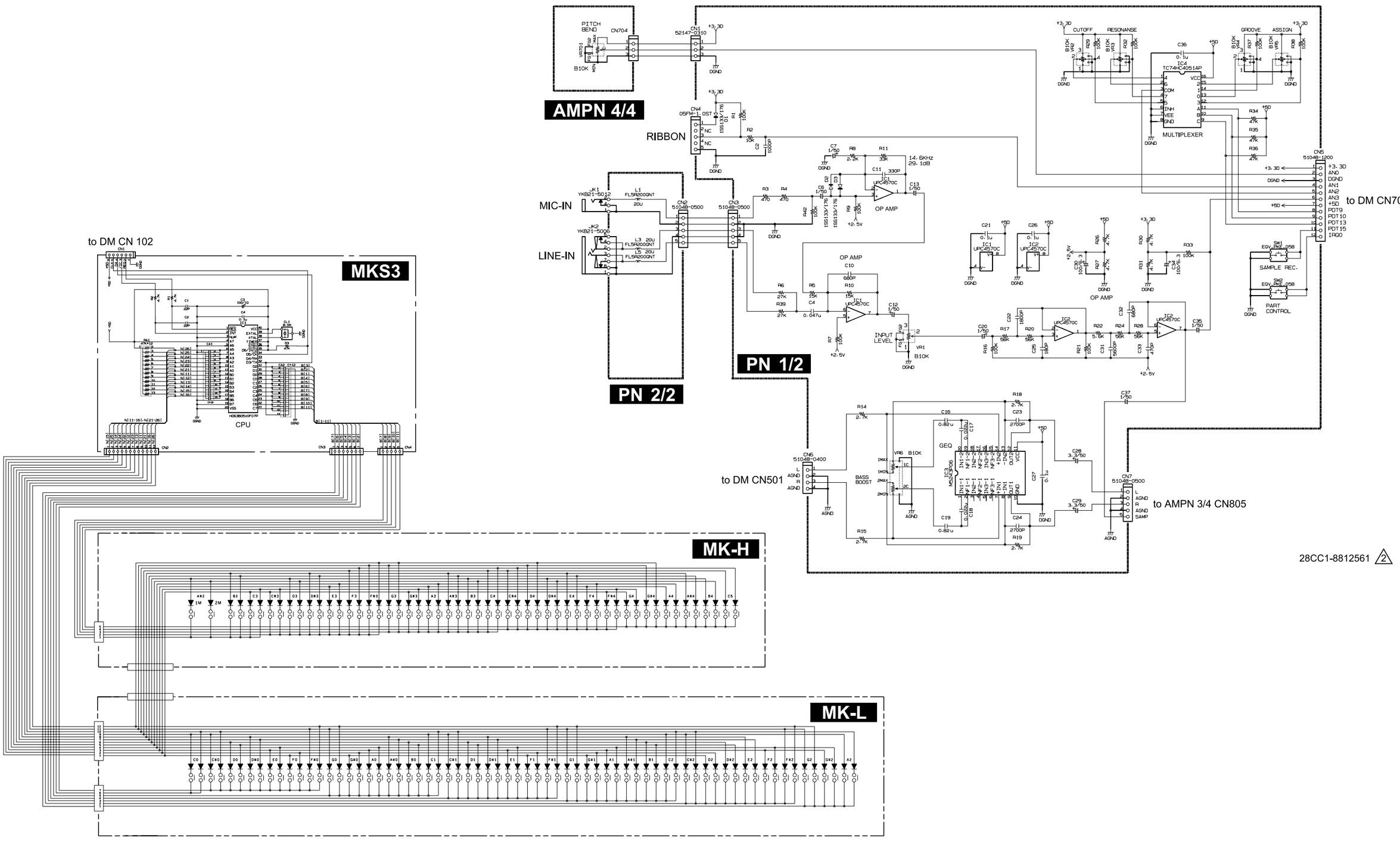
**Note: See parts list for details of circuit board component parts.**

■ **WARNING**

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

28CC1-8812560 10

# ■ CIRCUIT DIAGRAMS 2/2 (PN2 1/2,2/2,AMPN 4/4,MKS3,MK-H,MK-L)




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