DRUM TRIGGER MODULE

DTXPRESS

SERVICE MANUAL

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YAMAHA
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IMPORTANT NOTICE

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

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

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

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

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

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

LITHIUM BATTERY HANDLING

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

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

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

ADVARSEL!
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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

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

WARNING: CHEMICAL CONTENT NOTICE!

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

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

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.

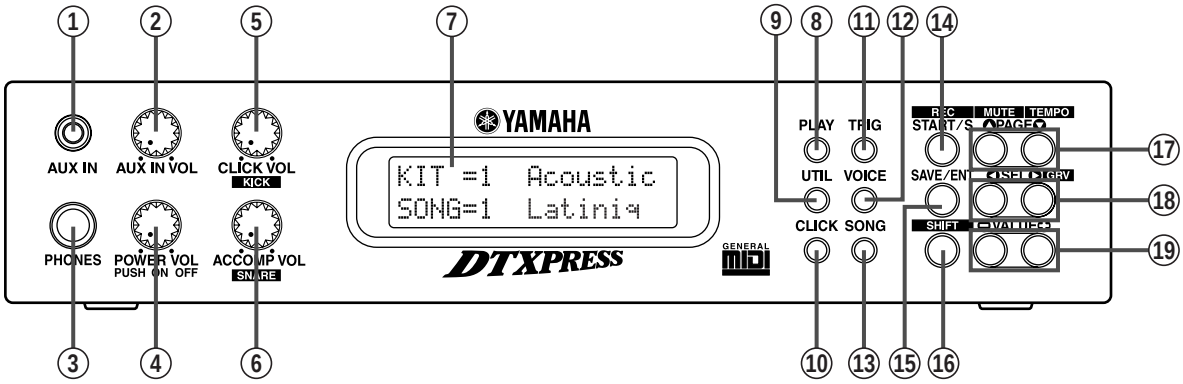
SPECIFICATIONS

Tone Generator	16 bit AWM2
Maximum polyphony	32
Voices	910 drum, percussion voices and effects
	128 keyboard voices (GM system level 1)
Drum kits	48 Preset
	32 User memory locations
Trigger setups	7 Preset
	4 User memory locations
Sequencer tracks	2 (TR1, TR2)
Song control	
Main song	Start/Stop, note chase
Pad song	3 songs can be played at the same time, Trigger Control
Other Sequencer Functions	MIDI sync play, Quantize (while recording, in Song Edit job mode),
	Mute (rhythm mute, drum instrument mute), Groove Check
Song	95 Preset
	32 User memory locations
Record modes	Real-time
Controls	
LED buttons	6 (PLAY, TRIGGER, UTILITY, VOICE, CLICK, SONG)
Buttons	9 (START/STOP, SAVE/ENTER, SHIFT, PAGEs/t, SELECT </>, VALUE–/+)
Knobs	MASTER VOLUME/POWER SW (push), ACCOMP. VOLUME, AUX VOLUME,
	CLICK VOLUME
Display	16 x 2 LCD display (w/Back light)
Connections	
Front Panel	Aux input (stereo mini jack)
	Head phone (stereo phone jack)
Rear Panel	MIDI input/output
	Foot controller (stereo phone jack)
	HOST SELECT SW
	TO HOST (mini DIN jack)
	Output L/MONO (mono phone jack)
	Output R (mono phone jack)
	Trigger Inputs 1 – 8 (stereo phone jackmL : trigger input, R : rim switch)
	Trigger Input 9/10 (stereo phone jackmL, R : trigger input)
	Trigger attenuation switch 1-6 (DIP SW)
Power supply	DC 12V/AC adaptor (PA-3B)
Power Requirement	4.8 Watt
Dimensions (W x H x D)	220 x 240 x 44 mm (8-11/16” x 9-3/16” x 1-5/16”)
Weight	1.6 kg (3 lbs 8 oz)
Accessories	Owner’s Manual
	AC adaptor (PA-3B)

* Specifications and descriptions avove are for information purposes only.
Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice.

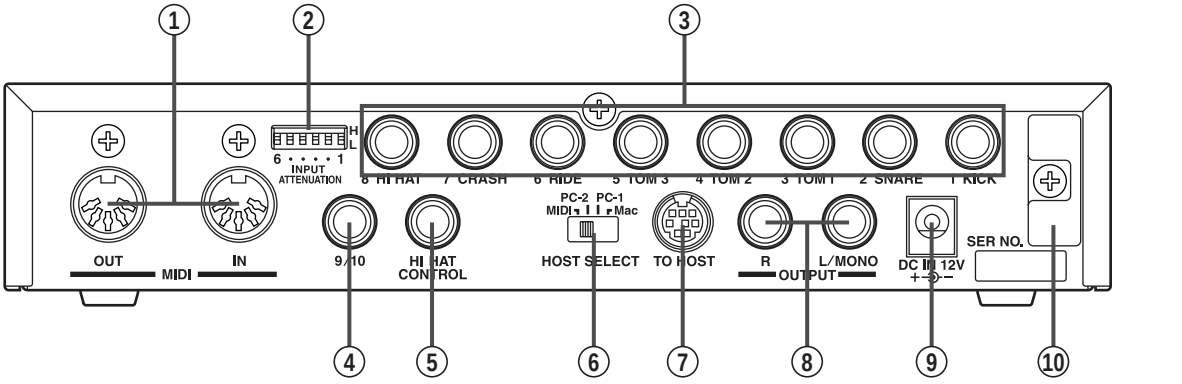
■ PANEL LAYOUT

• Rear Panel



① AUX IN Jack
② AUX IN Volume (AUX IN VOL)
③ Head Phone Jack (PHONES)
④ Power Switch/Master Volume (POWER/VOL)
⑤ Click Volume (CLICK VOL)
⑥ Accompaniment Volume (ACCOMP VOL)
⑦ LCD Display
⑧ Play Button (PLAY)
⑨ Utility Button (UTIL)
⑩ Click Button (CLICK)
⑪ Trigger Button (TRIG)
⑫ Voice Button (VOICE)
⑬ Song Button (SONG)
⑭ Start/Stop Button (START/S)
⑮ Save/Enter Button (SAVE/ENT)
⑯ Shift Button (SHIFT)
⑰ Page Button [PAGE▲, PAGE▼]
⑱ Select Button [SEL◄, SEL►]
⑲ Value Button (VALUE–, VALUE+)

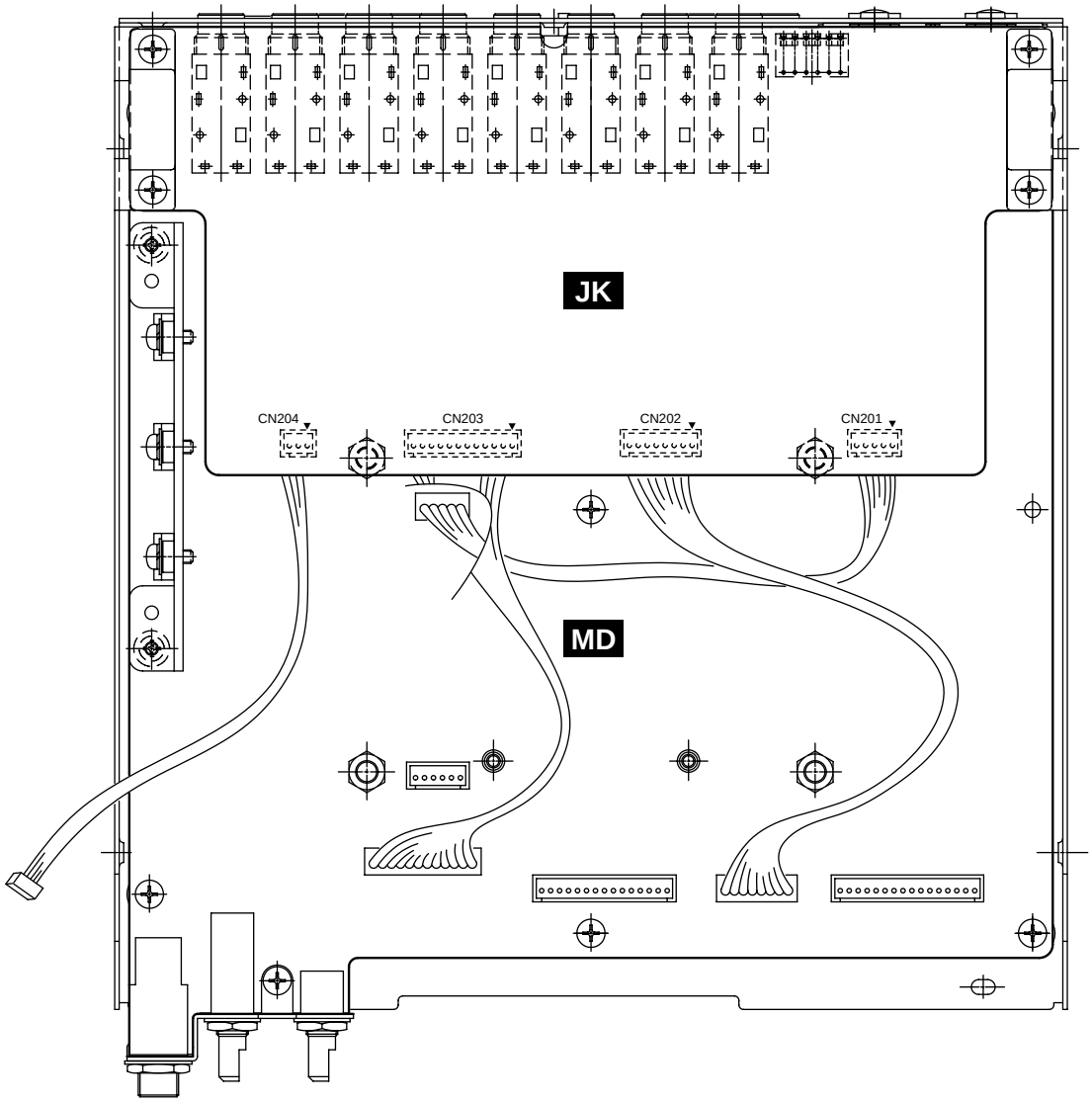
• Front Panel



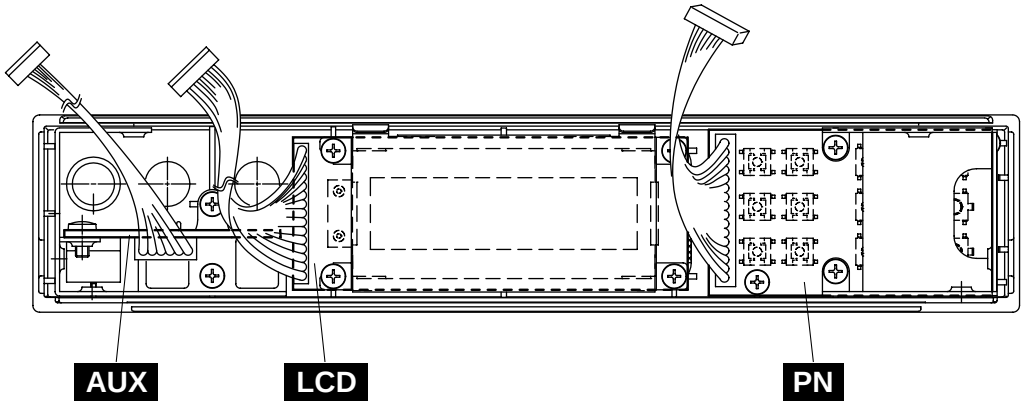
① MIDI IN/OUT Jack
② Input Attenuation Switch (INPUT ATTENUATION)
③ Trigger Input Jack (1 KICK-8HI HAT)
④ Trigger Input Jack (9/10)
⑤ Hi-Hat Controller Jack (HI HAT CONTROL)
⑥ Host Select Switch
(HOST SELECT Mac/PC-1/PC-2/MIDI)
⑦ TO HOST Jack
⑧ Output Jacks (OUTPUT L/MONO, R)
⑨ Power Supply Jack (DC IN 12V)
⑩ Cord Hook

■ CIRCUIT BOARD LAYOUT

• Chassis Unit



• Front Panel



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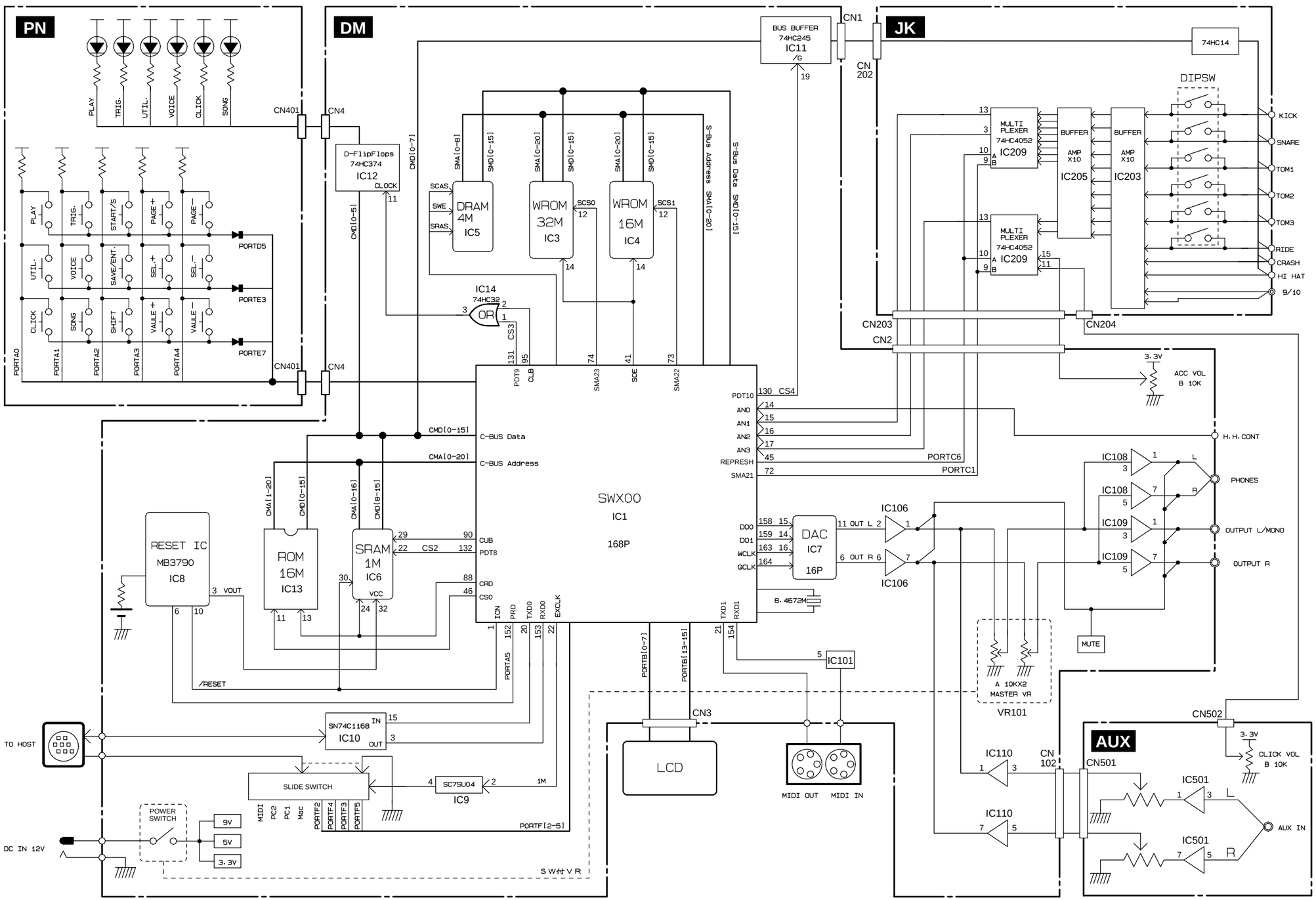
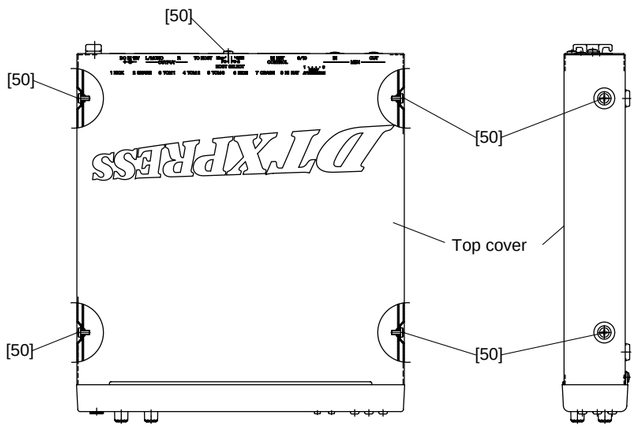
BLOCK DIAGRAM



■ DISASSEMBLY PROCEDURE

1 Top Cover

1-1 Remove the five (5) screws marked [50]. The top cover can then be removed. (Fig. 1)



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

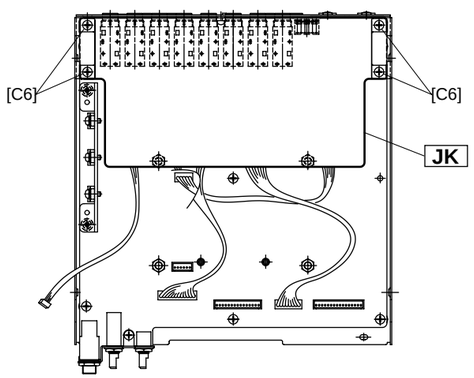
(Fig. 1)

2 Front Panel Unit

2-1 Remove the top cover. (See Procedure 1.)
2-2 Remove the four (4) screws marked [10c]. The front panel unit can then be removed. (Fig. 3)

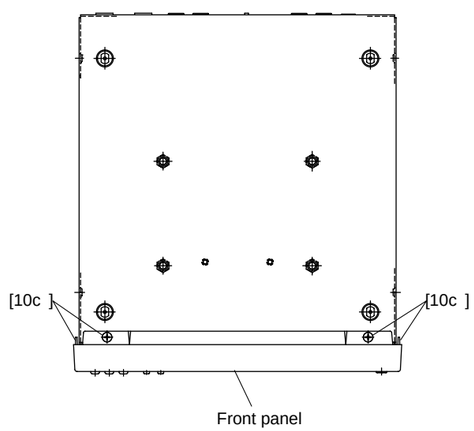
3 JK Circuit Board Assembly

3-1 Remove the top cover. (See Procedure 1.)
3-2 Remove the four (4) screws marked [C6]. The JK circuit board assembly can then be removed. (Fig. 2)



[C6]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)

(Fig. 2)

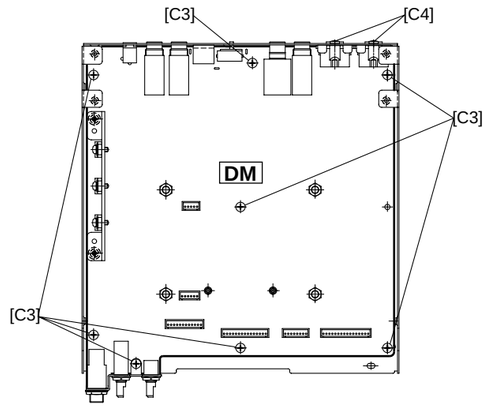


[10c]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)

(Fig. 3)

4 DM Circuit Board Assembly

4-1 Remove the top cover. (See Procedure 1.)
4-2 Remove the front panel unit. (See Procedure 2.)
4-3 Remove the JK circuit board assembly. (See Procedure 3.)
4-4 Remove the eight (8) screws marked [C3] and the two (2) screws marked [C4]. The DM circuit board assembly can then be removed. (Fig. 4)



[C3]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
[C4]: Bind Head Tapping Screw-B 3.0X8 MFZN2BL (EP600190)

(Fig. 4)

5 LCD Circuit Board Assembly

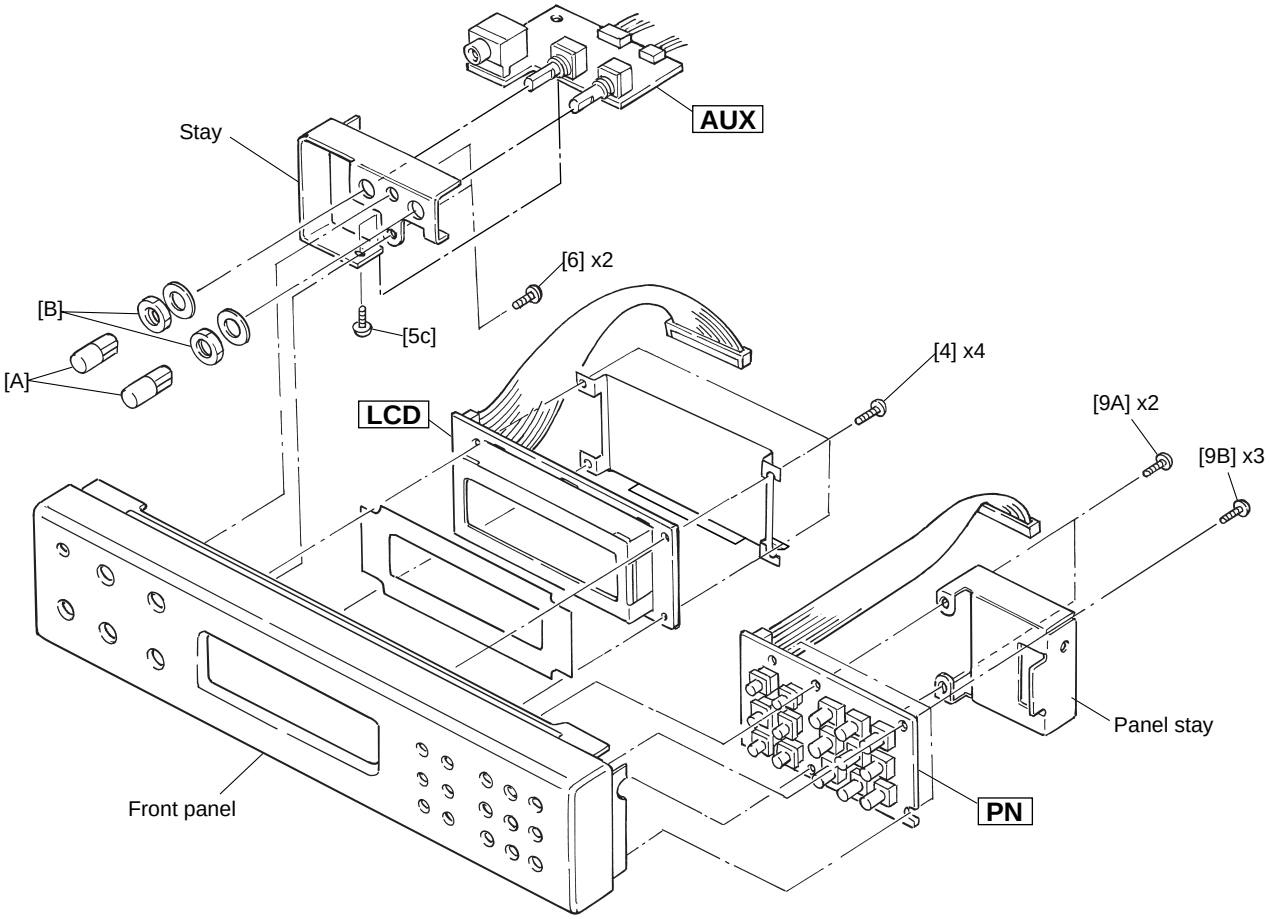
5-1 Remove the top cover. (See Procedure 1.)
5-2 Remove the front panel unit. (See Procedure 2.)
5-3 Remove the four (4) screws marked [4]. The LCD circuit board assembly can then be removed. (Fig. 5)

6 AUX Circuit Board Assembly

6-1 Remove the top cover. (See Procedure 1)
6-2 Remove the front panel unit. (See Procedure 2.)
6-3 Remove the two (2) screws marked [6]. The AUX circuit board assembly with AUX stay can then be removed. Remove the two (2) knobs marked [A], the two (2) hexagonal nuts marked [B] and the screw marked [5c]. The AUX circuit board can then be removed. (Fig. 5)

7 PN Circuit Board Assembly

7-1 Remove the top cover. (See Procedure 1)
7-2 Remove the front panel unit. (See Procedure 2.)
7-3 Remove the two (2) screws marked [A9], the panel stay and the three (3) screws marked [B9]. The PN circuit board assembly can then be removed. (Fig. 5)



[4]: Bind Head Tapping Screw-P 2.6X8 MFZN2Y (EP620100)
[5c]: Bind Head Tapping Screw-B 3.0X6 MFZN2BL (EP600230)
[6]: Bind Head Tapping Screw-B 2.6X8 MFZN2Y (EP620100)
[9]: Bind Head Tapping Screw-P 2.6X8 MFZN2BL (EP620100)

(Fig. 5)

LSI PIN DESCRIPTION

• HG73C205FD (XU947A00) SWX000 TONE GENERATOR DM IC001

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	VCA143		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

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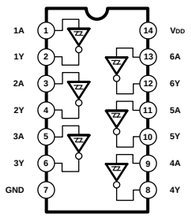
● **µPD63200GS-E1** (XP867A00) **DAC** (Digital to Analog Converter) DM IC007

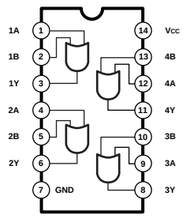
PIN No.	NAME	I/O	FUNCTION	PIN No.	NAME	I/O	FUNCTION
1	4/8FS	I	4/8 Fs selection	9	R. REF		Channel R voltage reference
2	D. GND		Digital ground	10	L. REF		Channel L voltage reference
3	16/8 BIT	I	16 bit/8 bit selection	11	L. OUT	O	Channel L output
4	D. VDD		Digital power supply	12	A. GND		Analog ground
5	A. GND		Analog ground	13	LRCX/WD	I	Left/right check, Word clock
6	R. OUT	O	Channel R output	14	LR/RSI	I	Left/right selection, Channel R series input
7	A. VDD		} Analog power supply	15	SI/LSI	I	Series input/Channel L series input
8	A. VDD			16	CLK	I	Clock

■ IC BLOCK DIAGRAM

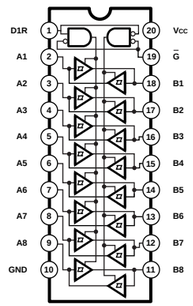
● **SN74HC14NSR** (XC725A00)
Inverter
AUX IC201,202



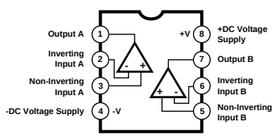
● **TC74HC32F-T1** (XD599A00)
OR
DM IC14



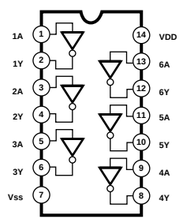
● **SN74HC245NSR** (XD838A00)
Buffer
DM IC11



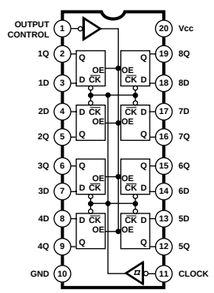
● **µPC4570G2** (XF291A00)
Dual Operational Amplifier
DM IC106,109,110, AUX IC501



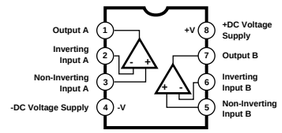
● **SC7SU04FEL** (XI348A00)
Hex Inverter
DM IC9,105



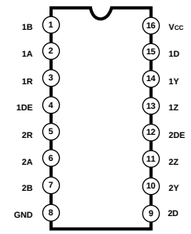
● **SN74HC374ANSR** (XQ042A00)
Octal 3-state D-Type Flip-Flop
DM IC12



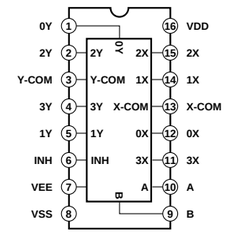
● **NJM4556AMT1** (XQ138A00)
Dual Operational Amplifier
DM IC108



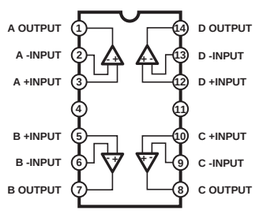
● **SN75C1168NSR** (XU073A00)
Line Driver
DM IC10



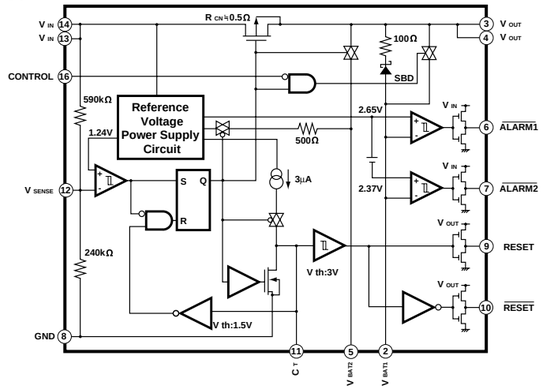
● **TC74HC4052AF** (XS790A00)
Multiplexer
AUX IC208,209



● **NJM2902M-T1** (XR562A00)
Quad Operational Amplifier
AUX IC203 to 207



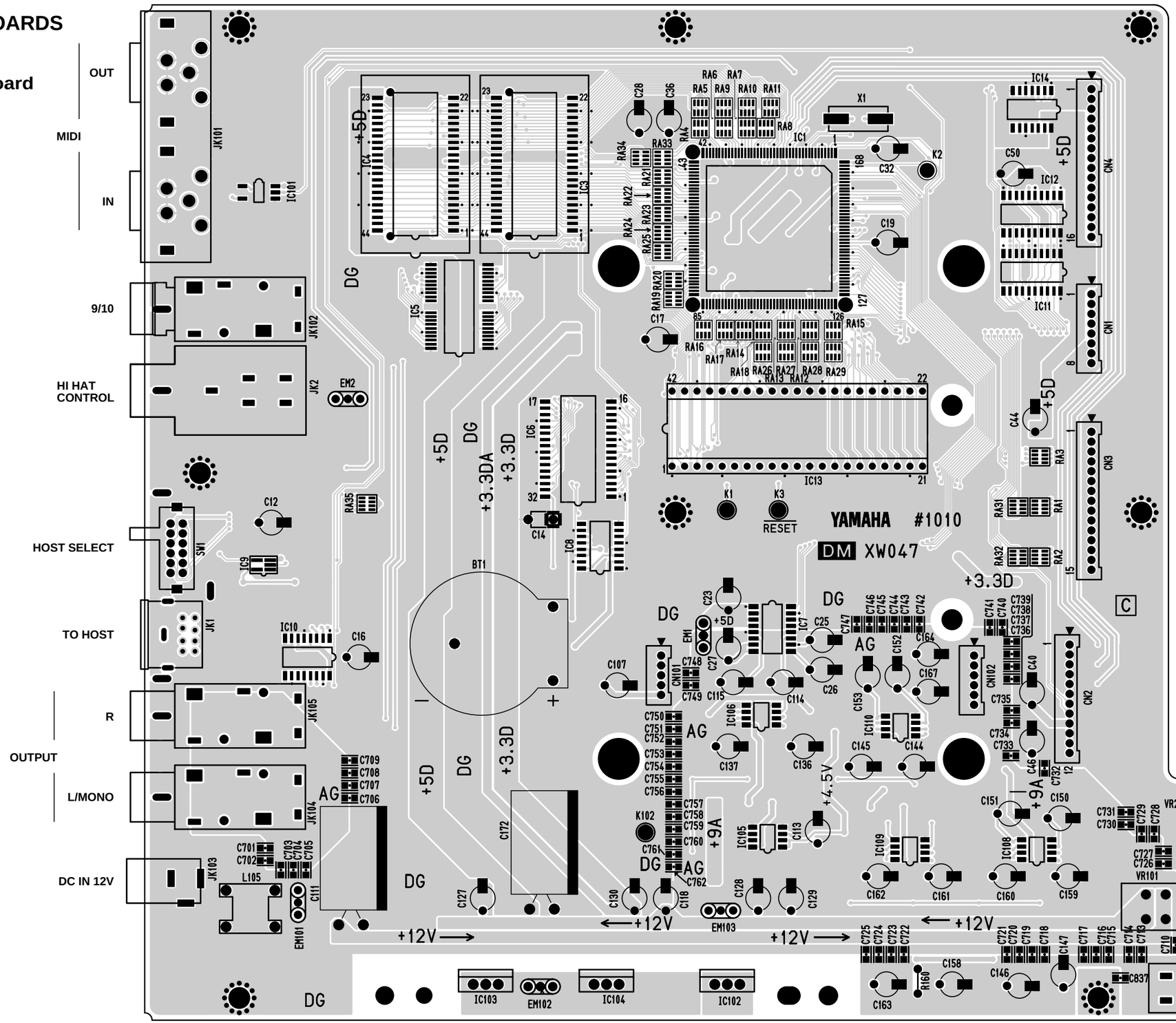
● **MB3790PF** (XR967A00)
ASSP
DM IC8



DTXPRESS

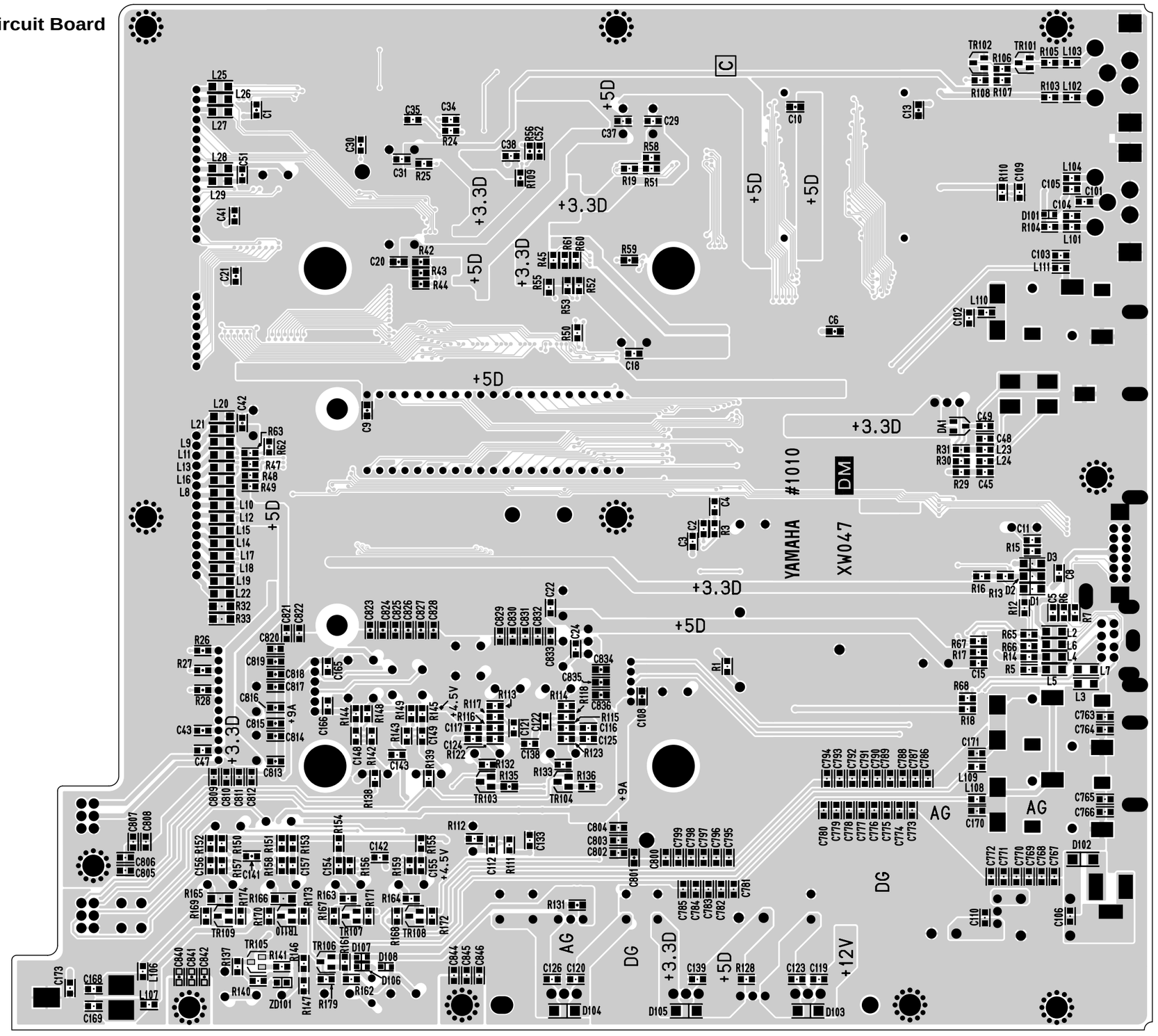
■CIRCUIT BOARDS

●DM Circuit Board



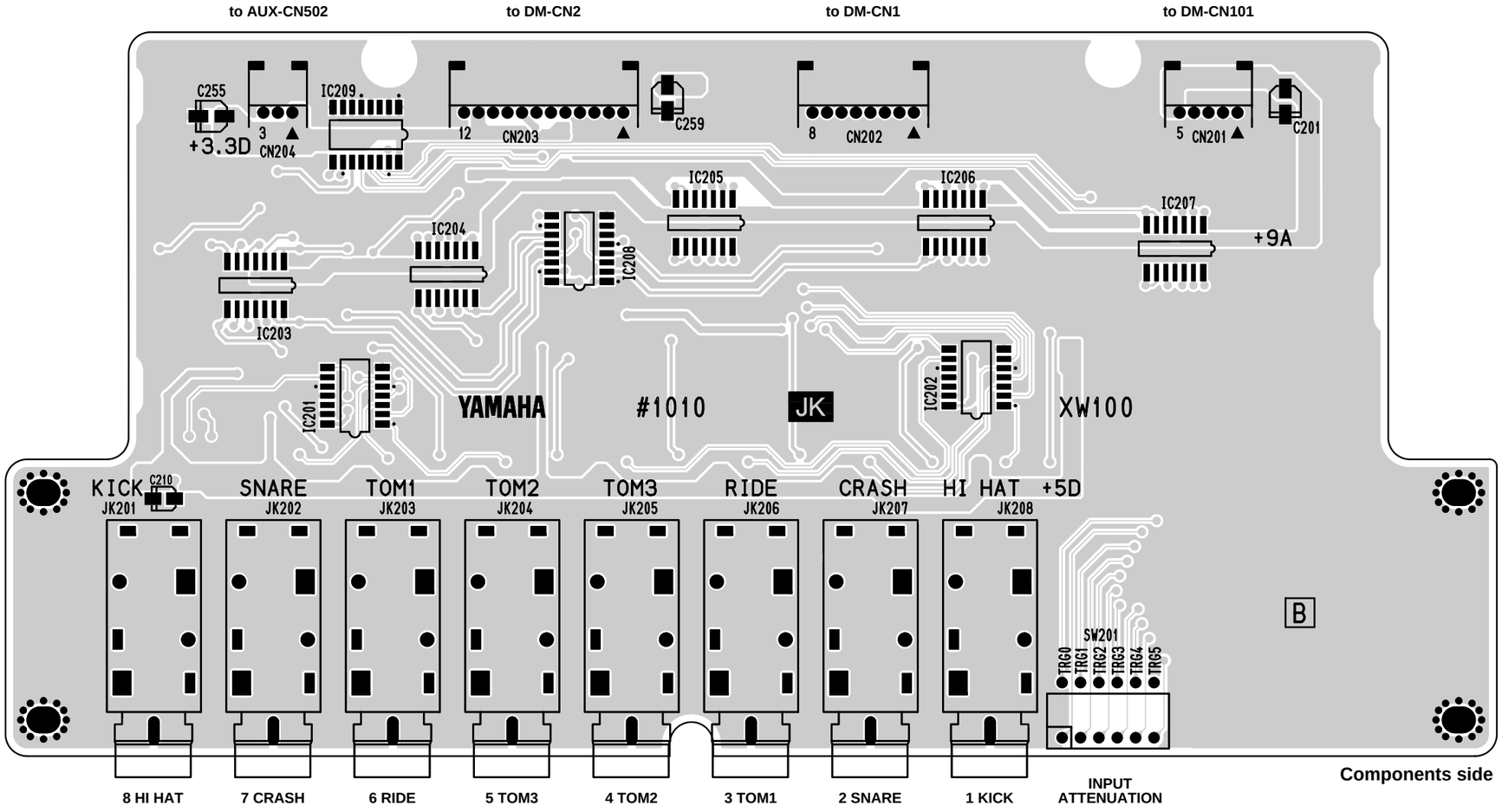
DTXPRESS

●DM Circuit Board

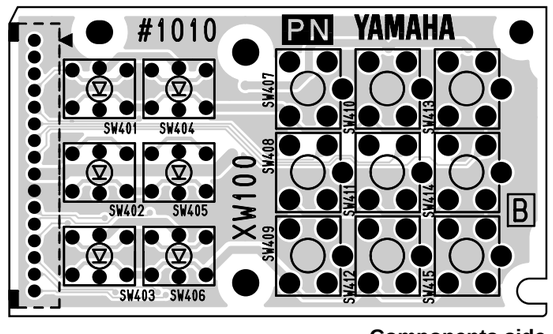


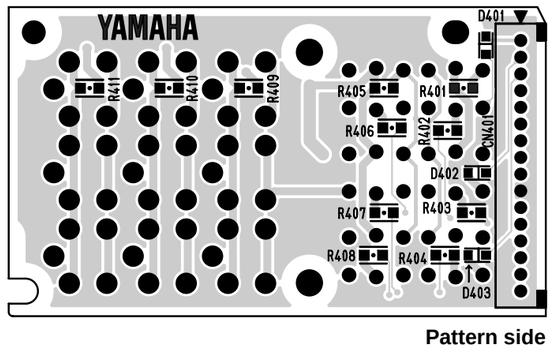
DTXPRESS

●JK Circuit Board



●PN Circuit Board



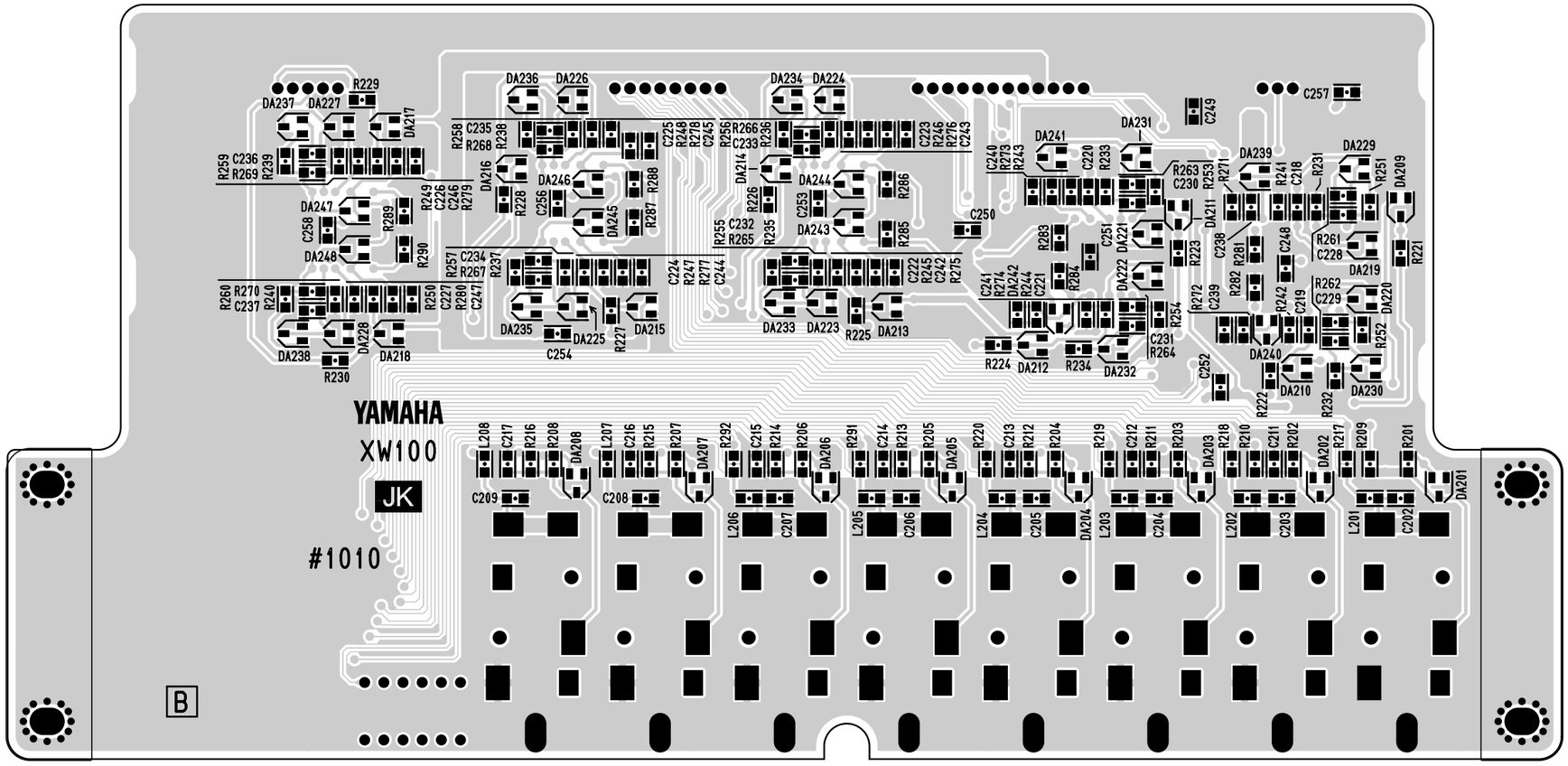


to DM CN4

JK, PN: ENA-V374810

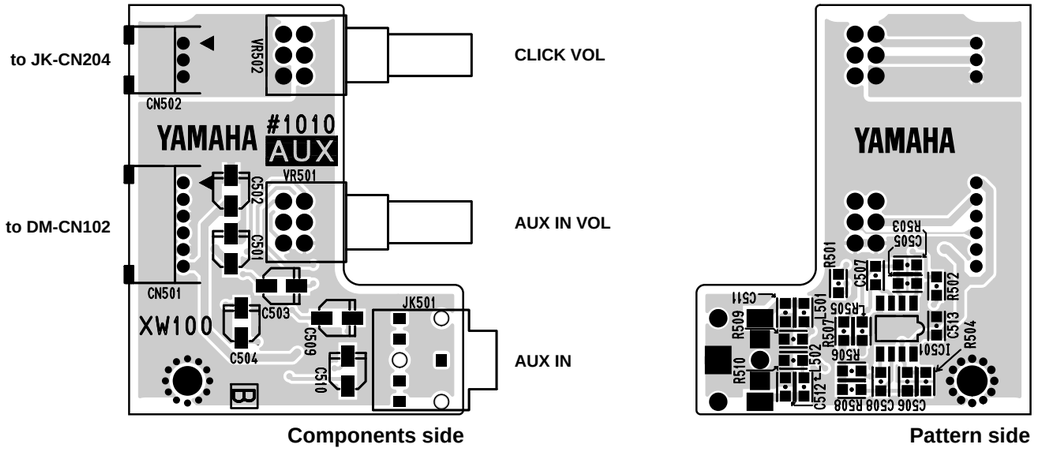
DTXPRESS

●JK Circuit Board



Pattern side

●AUX Circuit Board



Components side

Pattern side

JK, AUX: ENA-V374810

■TEST PROGRAM

Test No.	Items	Judgment Criteria
T–01.	SRAM	SRAM READ/WRITE (AutomaticTest)
T–02.	WAVE ROM	WAVE ROM READ (Automatic Test)
T–03.	EFFECT DRAM	DRAM READ/WRITE (Automatic Test)
T–04.	BATTERY	Automatic Test
T–05.	MIDI	MIDI IN to OUT Connect
T–06.	TO HOST	TO HOST Loop Back Cable Connect
T–07.	CLICK VOL	Maximum, Minimum
T–08.	ACCOMP VOL	Maximum, Minimum
T–09.	LCD	Display of each pattern of LCD, Contrast
T–10.	LED	LED ON/OFF
T–11.	PANEL SWITCH	Panel SW ON
T–12.	ATTENUATOR SW IN 01	The loop signal is input from PHONES.
T–13.	ATTENUATOR SW IN 02	The loop signal is input from PHONES.
T–14.	ATTENUATOR SW IN 03	The loop signal is input from PHONES.
T–15.	ATTENUATOR SW IN 04	The loop signal is input from PHONES.
T–16.	ATTENUATOR SW IN 05	The loop signal is input from PHONES.
T–17.	ATTENUATOR SW IN 06	The loop signal is input from PHONES.
T–18.	TRIGGER IN 1	The loop signal is input from PHONES.
T–19.	TRIGGER IN 2	The loop signal is input from PHONES.
T–20.	TRIGGER IN 3	The loop signal is input from PHONES.
T–21.	TRIGGER IN 4	The loop signal is input from PHONES.
T–22.	TRIGGER IN 5	The loop signal is input from PHONES.
T–23.	TRIGGER IN 6	The loop signal is input from PHONES.
T–24.	TRIGGER IN 7	The loop signal is input from PHONES.
T–25.	TRIGGER IN 8	The loop signal is input from PHONES.
T–26.	TRIGGER IN 9	The loop signal is input from PHONES.
T–27.	TRIGGER IN 10	The loop signal is input from PHONES.
T–28.	RIM SW IN 1	Switch ON/OFF Check
T–29.	RIM SW IN 2	Switch ON/OFF Check
T–30.	RIM SW IN 3	Switch ON/OFF Check
T–31.	RIM SW IN 4	Switch ON/OFF Check
T–32.	RIM SW IN 5	Switch ON/OFF Check
T–33.	RIM SW IN 6	Switch ON/OFF Check
T–34.	RIM SW IN 7	Switch ON/OFF Check
T–35.	RIM SW IN 8	Switch ON/OFF Check
T–36.	HOST SELECT SW	HOST SELECT Switch Check
T–37.	H.H. CONT.	Maximum, Minimum
T–38.	OUTPUT L 1 kHz	Measurement
T–39.	OUTPUT R 1 kHz	Measurement
T–40.	OUTPUT L 10 kHz	Measurement
T–41.	OUTPUT R 10 kHz	Measurement
T–42.	OUTPUT L 50 Hz	Measurement
T–43.	OUTPUT R 50 Hz	Measurement
T–44.	AUX INPUT	Measurement
T–45.	32ch OUT	Listening
T–46.	FACTORY SET	
T–47.	EXIT	

A. How to enter the Program

While pressing the [PLAY] and [START/S] buttons turn the power switch on. When the test program is initiated, the Program ROM version will appear on the LCD display.

```
XX   TEST MODE
     Ver #.##
```

Note: The Ver #.## means the program ROM version.

A few second later, the following display appears:

```
01   SRAM
```

B. Proceeding through the Test Program

When entering the test program, the following display will appear.

```
01   SRAM
```

To select a test program number, use the [◄ SEL.] or [SEL. ►] buttons. After making your selection, push the [SAVE/ENT.] button to begin the test program. It will proceed automatically.

If the test fails, the [FAIL] message is displayed on the LCD. To move on to another test program when the test has failed, depress the [SHIFT] button and select the new test program.

Exception: If test number T-11 fails, turn the power switch off and re-enter the test program.

T–01. SRAM
Initial Display

```
01   SRAM
```

Executes a write/read/verify test of SRAM (IC6).

Result Screens

OK: It proceeds to the next test automatically.

NG

```
01   SRAM
FAIL
```

Test End

OK: It proceeds to the next test automatically.

If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–02. WAVE ROM
Initial Display

```
02   WAVE ROM
```

Reads and verifies the WAVE ROMs (IC3, IC4) through the SWX00.

Result Screens

OK: It proceeds to the next test automatically.

NG

```
02   WAVE ROM
FAIL  WROM  IC3
```

Test End

OK: It proceeds to the next test automatically.

If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–03. EFFECT DRAM
Initial Display

```
03   EFFECT DRAM
```

Reads and verifies the DRAM (IC5) through the SWX00.

Result Screens

OK: It proceeds to the next test automatically.

NG

```
03   EFFECT DRAM
FAIL
```

Test End

OK: It proceeds to the next test automatically.

If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–04. BATTERY
Initial Display

```
04   BATTERY
```

Checks battery strength.

Result Screens

OK: It proceeds to the next test automatically.

NG

```
04   BATTERY
FAIL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–05. MIDI
Initial Display

```
05    MIDI
```

This test checks the MIDI IN and MIDI OUT operation. Before starting the test, connect the MIDI IN and MIDI OUT connectors using a MIDI cable.
Result Screens
OK: It proceds to the next test automatically.

NG

```
05    MIDI
FAIL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–06. TO HOST
Initial Display

```
06    TO HOST
```

The factory utilizes this test, and it is not intended for field service use.

T–07. CLICK VOL
Initial Display

```
07    CLICK VOL
            XX
```

Checks that the CLICK volume knob operates normally. The numbers 00 to 99 will be indicated on the MEASURE INPUT part of the LCD when turning the CLICK volume from minimum to maximum position or vice versa
Result Screens
OK: It proceds to the next test automatically

NG

```
07    CLICK VOL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–08. ACCOMP.VOL
Initial Display

```
08    ACCOMP VOL
            XX
```

Checks that the ACCOMP volume knob operates normally. The numbers 00 to 99 will be indicated on the MEASURE INPUT part the LCD when turning the ACCOMP volume from minimum to maximum position or vice versa.
Result Screens
OK: It proceds to the next test automatically

NG

```
08    ACCOMP VOL
FAIL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–09. LCD
Initial Display
Blank
Check that all dots of the LCD brink. After checking the backlight, press the [SAVE/ENT.] button.
Result Screens
Blank
Test End
OK: It proceeds to the next test automatically.

T–10. LED
Initial Display

```
10    LED
```

Use this test to visually confirm that all LEDs are producing appropriate brightness. Panel LEDs light the following order:

[PLAY]
[UTIL.]
[CLICK]
[TRIG.]
[KIT]
[SONG]

This test mode lights all LEDs, then ends.
Result Screens
Blank
Test End
Press the [SAVE/ENT.] button. The DTXPRESS will automatically proceed to the next test.

T–11. Panel Switch

Initial Display

```
11    SW
```

This test checks the panel switches.
Press the panel switches one by one from [PLAY] to [VALUE+] button in the order displayed on the LCD.
The test orders are as follows:

```
11    SW
[PLAY]
```

[PLAY], [UTIL.], [CLICK], [TRIG.], [VOICE]
[SONG], [START], [SAVE/], [SHIFT], [PAGE–]
[SEL <], [VAL–], [PAGE+], [SEL>], [VAL+]

Result Screens

OK: It proceds to the next test automatically

NG

```
11    SW
FAIL
```

Test End

OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–12. Attenuator Switch IN 01
T–13. Attenuator Switch IN 02
T–14. Attenuator Switch IN 03
T–15. Attenuator Switch IN 04
T–16. Attenuator Switch IN 05
T–17. Attenuator Switch IN 06

Initial Display

```
12    ATT. SW IN01
waiting          too Lo
```

Flip the attenuator switch to the down position. (Switch SW1-6 to the down position.)
Insert one end of, the stereo cable into the PHONES jack and the other into the 1.KICK jack. Then check whether there is signal leakage from any of the other inputs.

OK

```
13    ATT. SW IN02
waiting
```

When the next attenuator switch number appears in the display (e.g. IN02), insert the appropriate end of the stereo cable into the relevant jack (e.g. 2.SNARE). Repeat this process for all remaining switches.

Result Screens

OK: It proceds to the next test automatically

NG

```
12    ATT. SW IN01
FAIL
```

Test End

OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–18. TRIGGER IN 01: 1 KICK
T–19. TRIGGER IN 02: 2 SNARE
T–20. TRIGGER IN 03: 3 TOM1
T–21. TRIGGER IN 04: 4 TOM2
T–22. TRIGGER IN 05: 5 TOM3
T–23. TRIGGER IN 06: 6 RIDE
T–24. TRIGGER IN 07: 7 CRASH
T–25. TRIGGER IN 08: 8 HIHAT
T–26. TRIGGER IN 09: 9/10
T–27. TRIGGER IN 10: 9/10

Initial Display

```
18    TRIGGER   IN01
waiting          too Lo
```

Flip the attenuator switch to the down position. (Switch SW1-6 to the down position.)
Insert one end of, the stereo cable into the PHONES jack and the other into the 1.KICK jack. Then check whether there is signal leakage from any of the other inputs.

OK

```
19    TRIGGER   IN02
waiting          too Lo
```

When the next attenuator switch number appears in the display (e.g. IN02), insert the appropriate end of the stereo cable into the relevant jack (e.g. 9/10). Repeat this process for all remaining switches.

Result Screens

OK: It proceeds to the next test automatically.

NG

```
18    TRIGGER   IN01
FAIL XXXXX
```

(XXXXXX= too High; too Lo; XtalkIN 2; BAD curve)

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–28. RIM SW IN 1: 1 KICK
T–29. RIM SW IN 2: 2 SNARE
T–30. RIM SW IN 3: 3 TOM1
T–31. RIM SW IN 4: 4 TOM2
T–32. RIM SW IN 5: 5 TOM3
T–33. RIM SW IN 6: 6 RIDE
T–34. RIM SW IN 7: 7 CRASH
T–35. RIM SW IN 8: 8 HIHAT

Initial Display

```
 28    RIM  SW   IN01
waiting
```

The pad with the RIM switch must be connected to one of (1.KICK to 8.HI.HAT). Check for signal leakage.

```
 28    RIM  SW   IN01
waiting
```

OK

```
 29    RIM  SW  IN02
waiting
```

When the next attenuator switch number appears in the display (e.g. IN02), insert the appropriate end of the stereo cable into the relevant jack (e.g. 8.HI.HAT). Repeat this process for all remaining switches.

Result Screens
OK: It proceeds to the next test automatically.

NG

```
 28    RIM  SW  IN01
FAIL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–36. HOST SELECT SW
Initial Display

```
 36    HOST SELECT
 [XXXXX]
```

(XXXXXX= MAC; PC-1; PC-2; MIDI)
This test checks the HOST SELECT switch.
Set the HOST SELECT switch to match the display.

Result Screens
OK: It proceeds to the next test automatically.

NG

```
 36    HOST  SELECT
FAIL
```

Test End
OK: It proceeds to the next test automatically.
If an error is detected during the test, refer to section B, [PROCEEDING THROUGH THE TEST].

T–37. H.H. CONT
Initial Display

```
 37    H.H.  CONT
```

Insert the H. H. CONTROL plug and turn the potentiometer from maximum to minimum position.

Result Screens
OK: It proceeds to the next test automatically.

NG: Blank

Test End
OK: It proceeds to the next test automatically.

T–38. OUTPUT L 1kHz
Initial Display

```
 38    OUTPUT  L  1kHz
```

This test checks the OUTPUT (L/MONO) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R) jacks. Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
Check that the AUX IN jack is unplugged and that the input voltage is less than -90 dBm.

Check points
Check that the output meets the following specifications:
OUTPUT (L/MONO):
1 kHz +/-3 Hz, sine wave, +0.6 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)
OUTPUT (R):
Less than -65 dBm (w/ flat filter)
When the OUTPUT (R) is disconnected:
OUTPUT (L/MONO):
1 kHz +/-3 Hz, sine wave, -5.1 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)

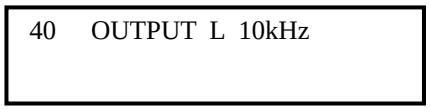
Test End
OK: It proceeds to the next test automatically.

T–39. OUTPUT R 1kHz
Initial Display

This test checks the OUTPUT (R) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R). Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
Check that the AUX IN jack is unplugged and that the input voltage is less than -90 dBm.

Check points
Check that the output meets the following specifications:
OUTPUT (L/MONO):
Less than -65 dBm (w/ flat filter)
OUTPUT (R):
1 kHz +/-3 Hz, sine wave, +0.6 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)
OUTPUT (R):
Less than -65 dBm (w/ flat filter)
Test End
OK: It proceeds to the next test automatically.

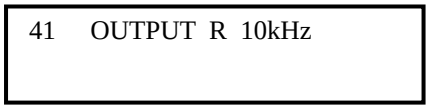
T–40. OUTPUT L 10kHz
Initial Display



This test checks the OUTPUT (L/MONO) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R). Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
In the AUX IN, check that the plug is not inserted, and the input voltage is less than -90 dBm.

Check points
OUTPUT(L/MONO):
10 kHz +/-3 Hz, sine wave, +3.0 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)
Test End
OK: It proceeds to the next test automatically.

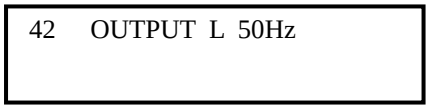
T–41. OUTPUT R 10kHz
Initial Display



This test checks the OUTPUT (R) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R). Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
In the AUX IN, check that the plug is not inserted, and the input voltage is less than -90 dBm.

Check points
OUTPUT(L/MONO):
10 kHz +/-3 Hz, sine wave, +3.0 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)
Test End
OK: It proceeds to the next test automatically.

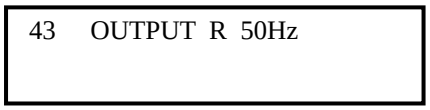
T–42. OUTPUT L 50Hz
Initial Display



This test checks the OUTPUT (R) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R) jacks. Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
Check that the AUX IN jack is unplugged and that the input voltage is less than -90 dBm.

Check points
OUTPUT(L/MONO):
50 Hz +/-3 Hz, sine wave, +2.7 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)
Test End
OK: It proceeds to the next test automatically.

T–43. OUTPUT R 50Hz
Initial Display



This test checks the OUTPUT (R) for the specified signal output level.
Insert the plugs into the OUTPUT (L/MONO and R) jacks. Set the MASTER volume to maximum and AUX IN volume to minimum. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.
Check that the AUX IN jack is unplugged and that the input voltage is less than -90 dBm.

Check points

OUTPUT(R):

50 Hz +/-3 Hz, sine wave, +2.7 +/-2 dBm (10 kohm lord)

Test End

OK: It proceeds to the next test automatically.

T–44. AUX INPUT

Initial Display

```
44    AUX  INPUT
```

This test checks the AUX IN signal output to the PHONES for the specified signal output level.
The sign wave is input from the low frequency oscillation machine to AUX IN (L). The sine wave to the AUX IN(L) should be shorted to ground.
Insert the stereo phone plugs into the OUTPUT (L/MONO and R) jacks. Use the frequency counter, oscilloscope, distortion meter and level meter (with flat filter) to measure frequency, waveform, distortion and output level.

Check points

Apply a -2.0 dBm sine wave(10 kHz, 1 kHz and 50 Hz) to the AUX IN (L). AUX IN (R) should be shorted to ground. Set the AUX IN volume to maximum. Make the AUX IN volume and the mastering volume Maximum.

OUTPUT (L/MONO):

+4.3 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %) AUX IN (L) should be shorted to ground. Set the AUX IN volume to maximum.

OUTPUT (R):

+4.3 +/-2 dBm (10 kohm lord and distortion is less than 0.3 %)

Apply a -2dBm sine wave (10 kHz, 1 kHz and 50 Hz) to the AUX IN (R). AUX IN (L) should be shorted to ground. Set the AUX IN volume to maximum.

Test End

OK: It proceeds to the next test automatically.

T–45. 32ch OUT

Initial Display

```
45    32 ch OUT
```

Checks that the correct sine wave signals are output from the unit. The signal from channels 1 to 16 is output from the left output jack, that from channels 17 to 32 is output from the right.
Press the [SAVE/ENT.] button. Then the signals are output 16 times (0.3 seconds on and 0.1 seconds off) for all 32 channels.
Set the MASTER volume to maximum.

```
45    32ch OUT
Lch=XX   Rch=XX
```

XX indicates the sound output channels.

Check points

Check that all 32signals are output.
Check that it is a sine wave with a normal output crimp. (Lch= 1 kHz, Rch= 700 Hz)

Test End

OK: It proceeds to the next test automatically.

T–46. FACTORY SET

Initial Display

```
46    FACTORY  SET
```

This test sets parameters back to their factory values.
To initiate this reset, press the [SAVE/ENT.] button.

Test End

Blank

T–47. EXIT

Initial Display

```
47    EXIT
```

Exit from test mode.
Press the [SAVE/ENT.] button to exit from TEST mode.
The system responds to the EXIT by executing the normal power-up sequence. The system will require a few seconds to enable itself for normal play.

Comments

1. Measure the click noise produced whenever the power switch is turned on and off and also that produced by disconnecting the DC adaptor. The click noise level must not exceed 0.1V-pp at the terminals of OUTPUT(L/MONO,R).
2. Factory Reset
   While depressing the [PAGE-] and [PAGE+] buttons, turn the power switch on.

MIDI DATA FORMAT

1. Channel Message

When the [2-2. Channel 10 Propgram Change/Channel Event Receive] in the utility mode is set to “10=off”, the DTXPRESS will not receive channel message for MIDI channel 10.

1.1 Key On Key Off

Sends and receives data.

Receive note range: C-2 to G8
Velocity range: 1 to 127 (note on only)

1.2 Control Change

All control change data for sequencer functions can be received and transmitted. The following lists the tone generator functions and drum trigger functions.

1.2.1 bank select MSB-0

Sends and receives data.

data=0:normal voice
data=127:drum voice

The data will not be processed unless program change data is received.

1.2.2 modulation (No. 1)

Receives only.

1.2.3 foot controller (No. 4)

Sends and receives data.

1.2.3 data entry (No. 6)

Receives only. Used to specify RPN data.

1.2.5 main volume (No. 7)

Sends and receives data.

1.2.6 pan (No. 10)

Sends and receives data.
0 is the far left of a stereo image and 127 is the far right of a stereo image.

1.2.7 expression (No. 11)

Receives only.

1.2.8 hold1 (No. 64)

Receives only.

1.2.9 harmonic content (No. 71)

Receives only.

1.2.10 release time (No. 72)

Receives only.

1.2.11 attack time (No. 73)

Receives only.

1.2.12 brightness (No. 74)

Receives only.

1.2.13 portamento control (No. 84)

Receives only.

1.2.14 effect 1 depth (No. 91)

Receives only. Only effects the reverb send level.

1.2.15 data increment/decrement (No. 100/101)

Receives only.

1.2.16 RPN

00/00 pitch bend sensitivity: Receive only.
00/01 fine tuning: Receive only.
00/02 coarse tuning: Receive only.
7F/7F NULL: Receive only.

1.3 Channel Mode Message

All channel mode messages are received only.

1.3.1 all sound off (No. 120)

Mutes all the sounds currently playing through the specified channel.

1.3.2 reset all controllers (No. 121)

Sets the following controller values back to its initial value:
pitch bend, modulation, expression, hold1, portament control, RPN number

1.3.3 all note off (No. 123)

Turns off all the notes of the specified channel currently on.
They will however, not be muted unless “hold 1” is turned off.

1.3.4 omni off (No. 124)

Executes the same process as “all note off”.

1.3.5 omni on (No. 125)

Executes the same process as “all note off”.

1.3.6 mono (No. 126)

Executes the same process as “all sound off”.

1.3.7 poly (No. 127)

Executes the same process as “all sound off”.

1.4 Program Change

When the [2-3. Receive Propgram Change/System Exclusive Messages] in the utility mode is set to “PC=off”, the DTXPRESS will not receive program change data.

When the [2-2. Channel 10 Propgram Change/Channel Event Receive] (P. 54) in the utility mode is set to “10PC=off”, the DTXPRESS will not receive MIDI channel 10 program change data.

1.5 Pitch Bend

Sends and receives data.

1.6 Channel Aftertouch

Does not sends or receive data.

1.7 Polyphonic Aftertouch

Does not sends or receive data.

2. System Exclusive Message

When the [2-3. Receive Propgram Change/System Exclusive Messages] in the utility mode is set to “SySex=off”, the DTXPRESS will not receive system exclusive messages.

The DTXPRESS will not receive system exclusive messages that do not match the device number set in the “DevNo=” of the [2-6. Device Number, Local Control] in the utility mode.

2.1 Parameter Change

2.1.1 GM system ON

F0 7E 7F 09 01 F7

Sets all the data except the MIDI master tuning data to its initial value.
Sends and receives data.

2.1.2 XG system ON

F0 43 1n 4C 00 00 7E 00 F7

"n" stands for device number.
Executes the same process as GM system ON.
Receives only.

2.1.3 identify request

F0 7E 0n 06 01 F7

"n" stands for device number.
After receiving, the identify reply is transmitted.
Receives only.

2.1.4 MIDI master volume

F0 7F 7F 04 01 XX mm F7

Ignores "XX". "mm" is the volume.
Receives only.

2.1.5 MIDI master tune

F0 43 1n 27 30 00 00 mm ll cc F7

"n" stands for device number.
The values of "mm(MSnible)" and "ll(LSnible)"—128 is used for 1 cent unit when tuning.
Receives only.

2.2 Bulk Dump

Sends and receives data. All the data except the system data is converted into 1 or 2 byte ASCII characters and transmitted.

• DTXPRESS bulk dump common message.

F0 43 7D Xn ss ss 44 54 58 4C("DTXL") tt tt tt tt ii ii jj jj dataBytes csum F7

tt tt tt tt	This displays the ID of the bulk type. 4 characters of ASCII code.
ss ss	data bytes (from model ID to data) MS7bit, LS7bit
ii ii	data packet index number MS7bit, LS7bit If the data size exceeds 4096, the total is divided into F0-F7 packets, the packet index number will start at 00 01 (0001) increasing by 1 for each successive packet. The last packet is 7F 7F (3FFF). When the data size is less than 4096, it will be 00 00 (0000).
jj jj	object number MS7bit, LS7bit Object number. In the DTXPRESS system only 1 article exists, that will become 7F 7F (3FFF).
csum	indicates the 7bit of the 2's complement of the sum of the data from the model ID (ss ss) to data Bytes.

2.2.1 system

F0 43 7D 0n ss ss 44 54 58 4C("DTXL") 53 59 53 54("SYST")
00 00 7F 7F data csum F7

2.2.2 map

F0 43 7D 0n ss ss 44 54 58 4C("DTXL") 55 4D 41 50("UMAP")
00 00 7F 7F data csum F7

2.2.3 drumkit

F0 43 7D 0n ss ss 44 54 58 4C("DTXL") 44 4B 49 54("DKIT")
00 00 jj jj data csum F7

jj jj	Indicated by MS7bit, LS7bit. This number derived from the user drum kit number by counting from "0". In the case of the edit buffer, it is 7F 7F (3FFF).

2.2.4 trigger

F0 43 7D 0n ss ss 44 54 58 4C("DTXL") 54 52 49 47("TRIG")
00 00 jj jj data csum F7

jj jj	The user trigger's number MS7bit, LS7bit. 7F 7F specifies the edit buffer

2.2.5 song

F0 43 7D 0n ss ss 44 54 58 4C("DTXL") 53 4F 4E 47("SONG")
ii ii jj jj data2 csum F7

jj jj	The user song number's MS7bit, LS7bit. 7F 7F specifies the current song.
data 2	Divides the original data into the 4 bits MSnibble, LSnibble, and converts 1 byte data to 2 bytes.

2.3 Dump Request

Receives only.
Transmits the corresponding bulk dump.

F0 43 7D 2n 44 54 58 4C("DTXL") tt tt tt tt jj jj F7

jj jj	object number MS7bit, LS7bit Object number. In the DTXPRESS system only 1 article exists, that will become 7F 7F (3FFF). The object number contains the number that specifies the drum kit number, etc. Only one article exists, system data or edit buffer data, etc., that appoints 7F 7F (3FFF). However, 7F 7F does not correspond in the case of song data.

3. System common message

3.1 Select a song

f3 nn

"nn" stands for song number.
Receives only.

4. Realtime message

Sends and receives data.

4.1 timing clock

Synchronizes with the timing clock received when the Sync mode in the utility mode's [3-6. Sync Mode] is set to "ext" or "auto".

4.2 start, continue, stop

When the [3-4. MIDI Control] in the utility mode is set to "MIDI Control=off", the DTXPRESS will not receive start, continue and stop.

4.3 active sensing

Once active sensing data has been received, if no MIDI data is subsequently received for longer than an interval of approximately 300 msec, the DTXPRESS will mute all the sounds.
Send the messages within an interval of approximately 300 msec.

ERROR MESSAGES

An Error Message will appear when incorrect settings or operation are detected, or abnormal operation occurs.
Check the Error Message below and make the appropriate corrections.

ERROR **Data Initialized**	This message appears just after the power is switched on and the device can not correctly read the data. The cause of the problem may be that the backup RAM data has been damaged or the backup battery power is low. Contact the nearest Yamaha Service Center or the dealer where you purchased the device.
WARNING **Battery Low**	The internal memory backup battery power is too low. User data may be deleted. Contact the nearest Yamaha Service Center or the dealer where you purchased the device.
ERROR **MIDI Buffer full**	Too much MIDI data is being received at one time and the device could not manage the data. Reduce the amount of data being sent at one time and try again.
ERROR **HOST is OffLine**	The computer connected to the device is either turned off or not correctly connected. Check cable connections and the power and try again.
ERROR **Check Sum**	The check sum for the data received is incorrect. Check the check sum of the data being transmitted.
ERROR **Illegal Data**	An error occurred while data was being received. There may be abnormalities in the data being sent. Check the data being transmitted.
CAN'T EDIT **PRESET SONG**	This message is displayed when you try to edit preset song. Preset song cannot be edited.
ERROR **SEQ is Running**	The operation can’t be performed while the sequencer is running. Stop the sequencer and try again.
ERROR **Data not Empty**	This message appears if you try to record to a track containing data. Select an empty track and try recording again.
ERROR **Memory Full**	You have exceeded the memory capacity of the user song. Delete unwanted songs to make more memory available and try recording again. At this time, use the bulk dump function to move any songs you wish to keep to an external MIDI device.

YAMAHA [Drum Trigger Module] **Date:5-Mar-1999**
Model DTXPRESS MIDI Implementation Chart **Version : 1.0**

Function ...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1 - 16 1 - 16	1 - 16 1 - 16	memorized
Default Mode Messages Altered	x x **********	3 3 x	
Note Number : True voice	0 - 127 0 - 127	0 - 127 0 - 127	
Velocity Note ON Note OFF	o 9nH,v=1-127 x 9nH,v=0	o v=1-127 x	
After Key's Touch Ch's	x x	x x	
Pitch Bender	x	o	7 bit resolution
0,4,7,10,32 1,6,11,64 71,72,73 74,84,91 100,101 Control Change	o x x x x	o o o o o	
Prog Change : True #	o 0 - 127 **********	o 0 - 127	
System Exclusive	o	o	
System : Song Pos. : Song Sel. Common : Tune	x x x	x o x	
System : Clock Real Time : Commands	o o	o o	
Aux : All Sound Off : Reset All Cntrls : Local ON/OFF : All Notes OFF Messages : Active Sense : Reset	x x o x o x	o o o o(123-127) o 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

DRUM TRIGGER MODULE

DTXPRESS

PARTS LIST

■ **CONTENTS**

Notes: DESTINATION ABBREVIATIONS

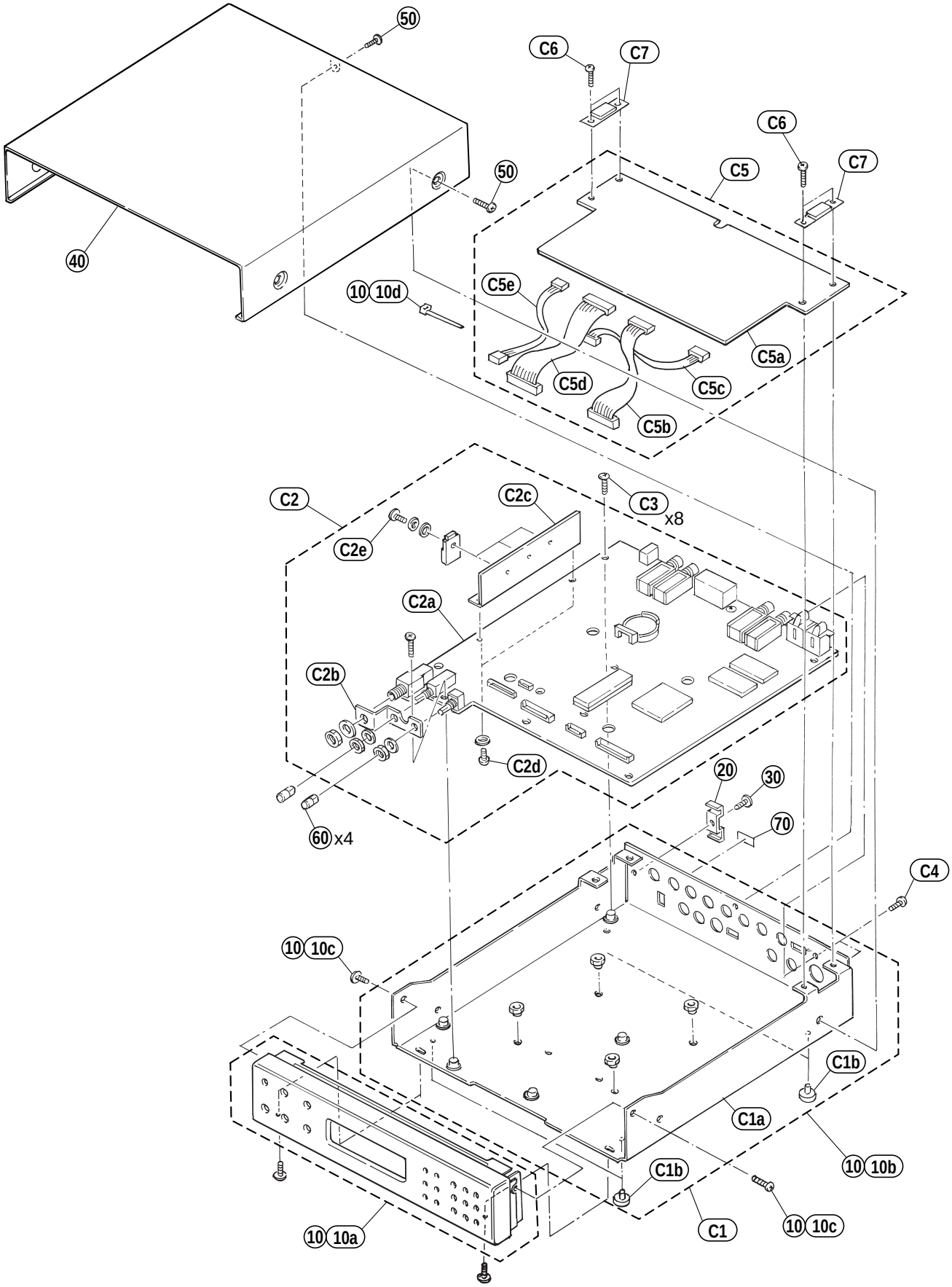
A :Australian model	J :Japanese model
B :British model	U :U.S. model
C :Canadian model	V :General export model (110V)
E :European model	W :General export model (220V)
H :North European model	X :General export model
I :Indonesian model	Y :Export model

- The numbers in "QTY" shows quantities for each unit.
- The parts with "--" in "Parts No." are not available as spare parts.
- The mark " } " in the remarks column indicates that these parts are interchangeable.
- The second letter of the shaded ( ) part number is I, not one.

■ **WARNING**

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

■ OVERALL ASSEMBLY

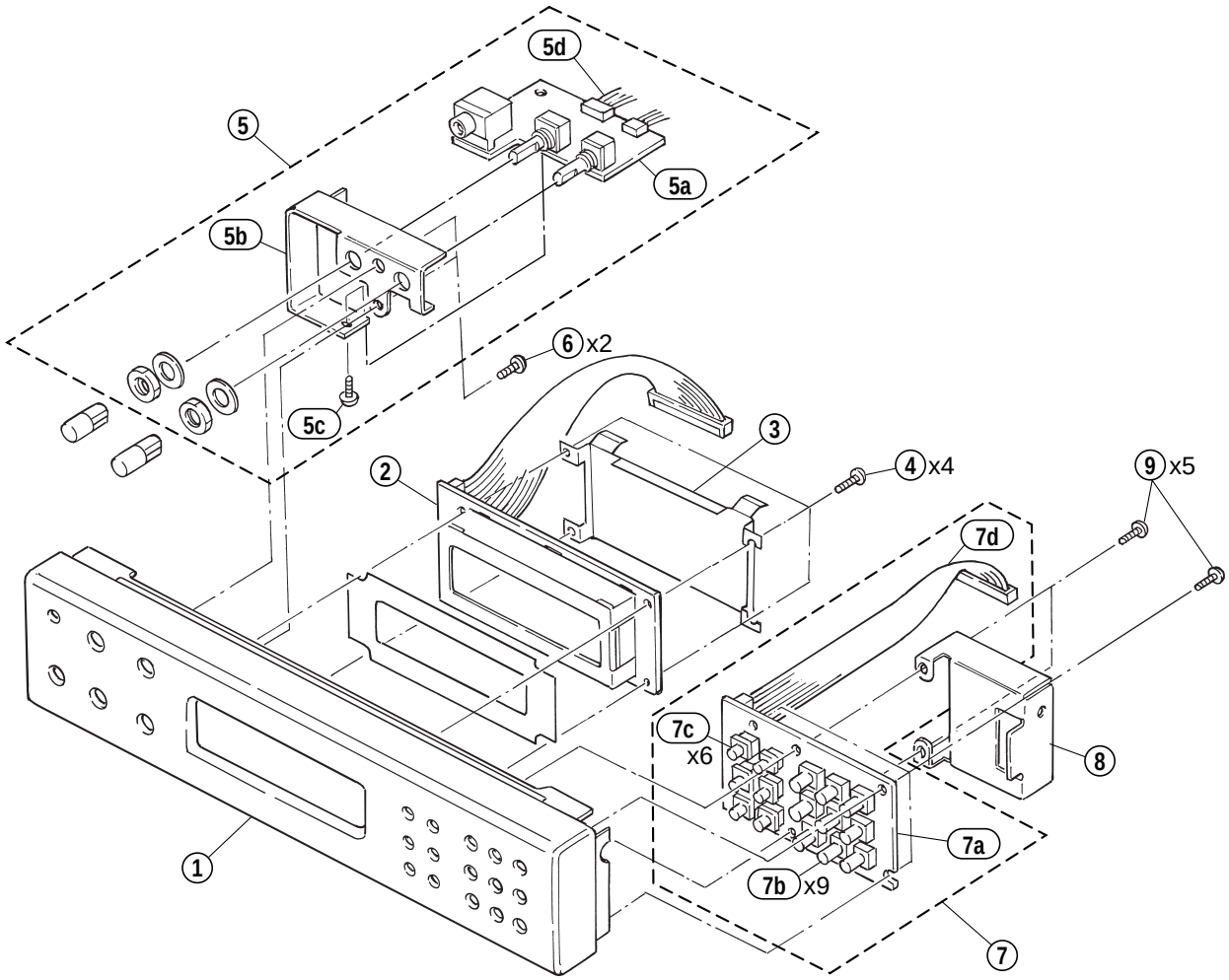


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			OVERALL ASSEMBLY			DTXPRESS J, U, C, N		
		--	Overall Assembly			(V360740)		
	10	--	Sub Assembly			(V360720)		
	10a	--	Front Panel Unit			(V360700)		
	10b	--	Chassis Unit			(V360710)		
	10c	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			4	01
	10d	**CB069250**	Cord Holder	BK-1			3	01
	20	**VC407100**	Cord Column					02
	30	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				01
*	40	**V3604800**	Top Cover					
	50	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			5	01
	60	**VM825600**	Input Knob				4	03
	70	--	Name Plate			(V360730)		
		--	Chassis Unit			(V360710)		
*	C1	**V3606300**	Chassis Assembly					
	C1a	--	Chassis			(V360460)		
*	C1b	**V3713700**	Foot	2K25			4	
	C2	--	Circuit Board Assembly	DM		(V360610)		
*	C2a	**V3555300**	Circuit Board	DM				
	C2b	--	Stay	VR		(V360550)		
	C2c	--	Heat Sink	DTXPRESS		(V360560)		
	C2d	**EK400500**	Pan Head Screw	SP 3.0X8 MFZN2Y			2	01
	C2e	**EK400500**	Pan Head Screw	SP 3.0X8 MFZN2Y			3	01
	C3	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			8	01
	C4	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
	C5	--	Circuit Board Assembly	JK		(V371380)		
*	C5a	**V3555200**	Circuit Board	JK				
	C5b	--	Connector Assembly	PH-PH 8P 160L		(V361010)		
	C5c	--	Connector Assembly	PH-PH 5P 130L		(V361030)		
	C5d	--	Connector Assembly	PH-PH 12P 120L		(V361040)		
	C5e	--	Connector assembly	PH-PH 3P 120L		(V361000)		
	C6	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			4	01
*	C7	**V3814600**	Shield terminal Assembly				2	
			ACCESSORY					
		VT368600	AC Adapter	PA-3B JP		J		09
		VT368700	AC Adapter	PA-3B UC		U,C		
		VT368800	AC Adapter	PA-3B CEE		N		08

*: New parts

RANK: Japan only

FRONT PANEL UNIT



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			FRONT PANEL UNIT			DTXPRESS		
		--	Front Panel Unit			(V360700)		
*	1	**V3605800**	Front Panel Assembly					
*	2	**V3610800**	Circuit Board Assembly	LCD				01
*	3	**V3605000**	Cover	LCD				
	4	**EP620100**	Bind Head Tapping Screw-P	2.6X8 MFZN2Y			4	01
	5	--	Circuit Board Assembly	AUX		(V360590)		
*	5a	**V3555500**	Circuit Board	AUX				
	5b	--	Stay			(V360510)	9	03
	5c	**EP600230**	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			6	03
	5d	--	Connector Assembly	PH-PH 6P 80L		(V361050)		
	6	**EP620100**	Bind Head Tapping Screw-P	2.6X8 MFZN2Y			2	
*	7	**V3606000**	Circuit Board Assembly	PN			5	01
*	7a	**V3555400**	Circuit Board	PN				
	7b	**VM825800**	OP Button	TG100			9	
	7c	**VM825700**	Mode Button	CBX-T3			6	
	7d	--		PH-PH 16P 90L		(V361020)		
*	8	**V3605200**	Panel Stay					
	9	**EP620100**	Bind Head Tapping Screw-P	2.6X8 MFZN2Y			5	

*: New parts

RANK: Japan only

ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			ELECTRICAL PARTS			DTXPRESS		
*		**V3555300**	Circuit Board	DM		(XW047A0)		
*		**V3555500**	Circuit Board	AUX		(XW100A0)		
*		**V3555200**	Circuit Board	JK		(XW100A0)		
*		**V3555400**	Circuit Board	PN		(XW100A0)		
*		**V3555300**	Circuit Board	DM		(XW047C0)		
*		**V3605400**	Cover					
		XT432A00	IC			ROM 8M		
		VS246400	Lithium Battery	CR2450				03
	BT001	**VS246300**	Battery Holder	CR2450BH				03
	C0001	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0003	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0005	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	C0006	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0008	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0011	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0012	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	C0013	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0014	**FP736470**	Tantalum Cap.	4.70 16V M				01
	C0015	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0016	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0017	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0018	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0019	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0020	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0022	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0023	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0024	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0025	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	-0028	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0029	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0030	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0031	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0032	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0034	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
	C0035	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
	C0036	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0037	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0038	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0040	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0041	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0043	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0044	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0045	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0046	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0047	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0048	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0049	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0050	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0051	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0052	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	C0101	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0102	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0103	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0104	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0105	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0106	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0107	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0108	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0110	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0111	**UR849100**	Electrolytic Cap.	1000 25.0V				01
	C0112	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0113	**UR837220**	Electrolytic Cap.	22.00 16.0V				01
	C0114	**UR866100**	Electrolytic Cap.	1.00 50.0V				01
	C0115	**UR866100**	Electrolytic Cap.	1.00 50.0V				01
	C0116	**UB013680**	Monolithic Ceramic Cap.	B 6800P 50V K				01
	C0117	**UB013680**	Monolithic Ceramic Cap.	B 6800P 50V K				01
	C0118	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C0119	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01

*: New parts

RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	C0120	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0121	**UB052120**	Monolithic Ceramic Cap.	SL 120P 50V J				01
	C0122	**UB052120**	Monolithic Ceramic Cap.	SL 120P 50V J				01
	C0123	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0124	**UB013680**	Monolithic Ceramic Cap.	B 6800P 50V K				01
	C0125	**UB013680**	Monolithic Ceramic Cap.	B 6800P 50V K				01
	C0126	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0127	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	-0130	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	C0133	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0136	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0137	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0138	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0143	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0144	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	-0147	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0148	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0149	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0150	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	-0153	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0154	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	-0157	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0158	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
	C0159	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	C0160	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
	C0161	**UR837220**	Electrolytic Cap.	22.00 16.0V				01
	C0162	**UR837220**	Electrolytic Cap.	22.00 16.0V				01
	C0163	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0164	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0165	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0166	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0167	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0168	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0169	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0170	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
	C0171	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
	C0172	**UR829220**	Electrolytic Cap.	2200 10.0V				01
	C0173	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0701	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0848	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	CN001	**VB390400**	Connector Base Post	PH- 8P TE				01
	CN002	**VB390800**	Connector Base Post	PH-12P TE				01
	CN003	**VF283300**	Connector Base Post	PH-15P TE				01
	CN004	**VF283400**	Connector Base Post	PH-16P TE				01
	CN101	**VB390100**	Connector Base Post	PH- 5P TE				01
	CN102	**VB390200**	Connector Base Post	PH- 6P TE				01
	D0001	**VV925900**	Diode	RLS-73 TE-11				01
	-0003	**VV925900**	Diode	RLS-73 TE-11				01
	D0101	**VT332900**	Diode	1SS355 TE-17				01
	D0102	**VT532500**	Diode	1SR154-400				01
	-0105	**VT532500**	Diode	1SR154-400				01
	D0106	**VT332900**	Diode	1SS355 TE-17				01
	-0108	**VT332900**	Diode	1SS355 TE-17				01
*	DA001	**V3749000**	Diode Array	DA204K 2A X2 T146				
	EM001	**FZ005920**	LC Filter	LS MT Y223NB				02
	EM002	**FZ005920**	LC Filter	LS MT Y223NB				02
	EM101	**VR193800**	LC Filter	STF-104ZB-TBM				01
	-103	**VR193800**	LC Filter	STF-104ZB-TBM				01
	IC001	**XU947A00**	IC	HG73C205FD		SWX00B		09
*	IC003	**XU164A00**	IC	MSM27C3202CZ-NGS-K		RAM 32M		
*	IC004	**XW376100**	IC	KM23C16000C		MASK ROM 16M		
	IC005	**XU462A00**	IC	MSM514260C-60TS-K		DRAM 4M		08
	IC006	**XV976A00**	IC	M5M51008CFP-70H-SR		SRAM		07
	IC007	**XP867A00**	IC	UPD63200GS-E1		D/A CONVERTER		07
	IC008	**XR967A00**	IC	MB3790PF		ASSP		05
	IC009	**XI348A00**	IC	SC7SU04FEL		INVERTER		01
	IC010	**XU073A00**	IC	SN75C1168NSR		LINE		05
	IC011	**XD838A00**	IC	SN74HC245NSR		BUFFER		04
	IC012	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC013	**VK863100**	IC Socket	DICF-42CS-E				03

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
IC014	**XD599A00**	IC	TC74HC32F-T1		OR		01
IC101	**VR903700**	Photo Coupler	HCPL-M600				04
IC102	**XM968B00**	IC	UPC24M09AHF		REGULATOR		03
IC103	**XL497A00**	IC	UPC7805AHF		REGULATOR +5V		02
IC104	**XT333A00**	IC	UPC29M33HF		REGULATOR +3.3V		03
IC105	**XQ138A00**	IC	NJM4556AMT1		SOP		03
IC106	**XF291A00**	IC	UPC4570G2		OP AMP		03
IC108	**XQ138A00**	IC	NJM4556AMT1		SOP		03
IC109	**XF291A00**	IC	UPC4570G2		OP AMP		03
IC110	**XF291A00**	IC	UPC4570G2		OP AMP		03
JK001	**VM761000**	DIN Connector	DIN JACK MD-S810		TO-HOST		03
JK002	**LB301920**	Phone Jack	HLJ4306		H.H.CONT		02
JK101	**VK519000**	DIN Connector	5P3 YKF51-50		MIDI IN, MIDI OUT		04
JK102	**VS056300**	Phone Jack	HLJ7001-01		9/10		01
JK103	**VJ207400**	DC-IN Jack	16V DC 3A HEC2305		DC IN 12V		01
JK104	**VS056400**	Phone Jack	HLJ7101-01		OUTPUT L/MONO		01
JK105	**VS056400**	Phone Jack	HLJ7101-01		OUTPUT R		01
JK107	**VZ338600**	Phone Jack	HLJ0544		PHONES		02
L0002	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
-0004	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
L0006	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
-0022	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
L0023	**VS740100**	Chip Inductance	BLM21B751S 2125				03
L0024	**VS740100**	Chip Inductance	BLM21B751S 2125				03
L0025	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
-0029	**VL139800**	Inductor	BLM31A700SPT 70ohm				01
L0101	**VS740100**	Chip Inductance	BLM21B751S 2125ohm				03
-104	**VS740100**	Chip Inductance	BLM21B751S 2125ohm				03
L0105	**VG238200**	LC Filter	PLT2003C				04
L0106	**VS740100**	Chip Inductance	BLM21B751S 2125				03
-111	**VS740100**	Chip Inductance	BLM21B751S 2125				03
R0001	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0006	**RD254560**	Carbon Resistor (chip)	56.0 0.1 J				01
R0007	**RD254560**	Carbon Resistor (chip)	56.0 0.1 J				01
R0012	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0013	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0014	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0015	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0016	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0018	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0019	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0024	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
R0025	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0026	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
-0029	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0030	**RD256270**	Carbon Resistor (chip)	2.7K 0.1 J				01
R0031	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0032	**RD154680**	Carbon Resistor (chip)	68.0 1/4 J				01
R0033	**RD154680**	Carbon Resistor (chip)	68.0 1/4 J				01
R0042	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0045	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0047	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0049	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0050	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0051	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0053	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0055	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0056	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
R0058	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0059	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0060	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0061	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0062	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
R0063	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
R0065	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0066	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0067	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0068	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0103	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
-0105	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R0106	**RD256220**	Carbon Resistor (chip)	2.2K 0.1 J				01
R0107	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0109	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0110	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0111	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0112	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0113	**RD257120**	Carbon Resistor (chip)	12.0K 0.1 J				01
R0114	**RD257120**	Carbon Resistor (chip)	12.0K 0.1 J				01
R0115	**RD257270**	Carbon Resistor (chip)	27.0K 0.1 J				01
R0116	**RD257270**	Carbon Resistor (chip)	27.0K 0.1 J				01
R0117	**RD256680**	Carbon Resistor (chip)	6.8K 0.1 J				01
R0118	**RD256680**	Carbon Resistor (chip)	6.8K 0.1 J				01
R0122	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0123	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0128	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0131	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0132	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0133	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0135	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0136	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0137	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
R0138	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0139	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0140	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
R0141	**RD255470**	Carbon Resistor (chip)	470.0 0.1 J				01
R0142	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
-0145	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
R0146	**RD256560**	Carbon Resistor (chip)	5.6K 0.1 J				01
R0147	**RD256560**	Carbon Resistor (chip)	5.6K 0.1 J				01
R0148	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
-0151	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
R0152	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
R0153	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
R0154	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0155	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0156	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
R0157	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0158	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0159	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
R0160	**HV754680**	Flame Proof C. Resistor	68.0 1/4 J				01
R0161	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0162	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
R0163	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0164	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0165	**RD154470**	Carbon Resistor (chip)	47.0 1/4 J				01
R0166	**RD154470**	Carbon Resistor (chip)	47.0 1/4 J				01
R0167	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0170	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0171	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
-0174	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0179	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
RA001	**RE045100**	Resistor Array	100X4				01
-004	**RE045100**	Resistor Array	100X4				01
RA005	**RE047100**	Resistor Array	10KX4				01
RA006	**RE045100**	Resistor Array	100X4				01
-008	**RE045100**	Resistor Array	100X4				01
RA009	**RE047100**	Resistor Array	10KX4				01
-011	**RE047100**	Resistor Array	10KX4				01
RA012	**RE045100**	Resistor Array	100X4				01
-025	**RE045100**	Resistor Array	100X4				01
RA026	**RE047100**	Resistor Array	10KX4				01
-032	**RE047100**	Resistor Array	10KX4				01
RA033	**RE045100**	Resistor Array	100X4				01
RA034	**RE047100**	Resistor Array	10KX4				01
RA035	**RE047100**	Resistor Array	10KX4				01
SW001	**VN210700**	Slide Switch	SSSF124-S06N-0		MIDI. PC2, PC1. Mac		03
TR101	**VV556400**	Transistor	2SC2412K Q,R,S				01
TR102	**VV556400**	Transistor	2SC2412K Q,R,S				01
TR103	**VD303700**	Transistor	2SC3326 A,B TE85R				01
TR104	**VD303700**	Transistor	2SC3326 A,B TE85R				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	TR105	**VV556400**	Transistor	2SC2412K Q,R,S				01
	TR106	**VJ927200**	Transistor	2SA1162 O,Y				01
	TR107	**VD303700**	Transistor	2SC3326 A,B TE85R				01
	-110	**VD303700**	Transistor	2SC3326 A,B TE85R				01
*	VR002	**V3059200**	Rotary Variable Resistor	B 10K RK0971220		ACCOMP VOL		
*	VR101	**V2904100**	Rotary Variable Resistor	SW 10KAX2 RK09712		POWER SW, MASTER VR		
	X0001	**VZ703600**	Quartz Crystal Unit	8.4672M SMD-49				03
	ZD101	**VU172600**	Zener Diode	UDZS10B TE-17 10V				01
*		**V3555500**	Circuit Board	AUX		(XW100A0)		
*		**V3555200**	Circuit Board	JK		(XW100A0)		
*		**V3555400**	Circuit Board	PN		(XW100A0)		
*		**V3605300**	Terminal	GND				
	C0201	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C0202	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	-0209	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0210	**UF056220**	Electrolytic Cap. (chip)	2.2 35V				01
	C0211	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0227	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0228	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	-0237	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	C0238	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0254	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0255	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C0256	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-0258	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C0259	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C0501	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C0502	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C0503	**UF066100**	Electrolytic Cap. (chip)	1 50V				01
	C0504	**UF066100**	Electrolytic Cap. (chip)	1 50V				01
	C0505	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0506	**UB052220**	Monolithic Ceramic Cap.	SL 220P 50V J				01
	C0507	**UB051390**	Monolithic Ceramic Cap.	SL 39P 50V J				01
	C0508	**UB051390**	Monolithic Ceramic Cap.	SL 39P 50V J				01
	C0509	**UF065100**	Electrolytic Cap. (chip)	0.1 50V				01
	C0510	**UF065100**	Electrolytic Cap. (chip)	0.1 50V				01
	C0511	**UB051100**	Monolithic Ceramic Cap.	SL 10P 50V D				01
	C0512	**UB051100**	Monolithic Ceramic Cap.	SL 10P 50V D				01
	C0513	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	CN201	**VB858400**	Connector Base Post	PH- 5P SE				01
	CN202	**VB858700**	Connector Base Post	PH- 8P SE				01
	CN203	**VC166500**	Connector Base Post	PH-12P SE				01
	CN204	**VB858200**	Connector Base Post	PH- 3P SE				01
	CN401	**VF283400**	Connector Base Post	PH-16P TE				01
	CN501	**VB858500**	Connector Base Post	PH- 6P SE				01
	CN502	**VB858200**	Connector Base Post	PH- 3P SE				01
	D0401	**VT332900**	Diode	1SS355 TE-17				01
	-0403	**VT332900**	Diode	1SS355 TE-17				01
*	DA201	**V3749000**	Diode Array	DA204K 2A X2 T146				
*	-238	**V3749000**	Diode Array	DA204K 2A X2 T146				
	DA239	**VZ182300**	Diode Array	DAP202K T146				01
	-248	**VZ182300**	Diode Array	DAP202K T146				01
	IC201	**XC725A00**	IC	SN74HC14NSR		INVERTER		03
	IC202	**XC725A00**	IC	SN74HC14NSR		INVERTER		03
	IC203	**XR562A00**	IC	NJM2902M-T1		OP AMP		02
	-207	**XR562A00**	IC	NJM2902M-T1		OP AMP		02
	IC208	**XS790A00**	IC	TC74HC4052AF		MPX		02
	IC209	**XS790A00**	IC	TC74HC4052AF		MPX		02
	IC501	**XF291A00**	IC	UPC4570G2		OP AMP		03
	JK201	**VS056300**	Phone Jack	HLJ7001-01		KICK, SNARE, TOM1, TOM2,		01
	-208	**VS056300**	Phone Jack	HLJ7001-01		TOM3, RIDE, CRASH, HIHAT		01
	JK501	**VM552100**	Phone Jack	ST–Δ HSJ0912-01-01		AUX IN		02
	L0201	**VS740100**	Chip Inductance	BLM21B751S 2125				03
	-208	**VS740100**	Chip Inductance	BLM21B751S 2125				03
	L0501	**VS740100**	Chip Inductance	BLM21B751S 2125				03
	L0502	**VS740100**	Chip Inductance	BLM21B751S 2125				03
	R0201	**RD257120**	Carbon Resistor (chip)	12.0K 0.1 J				01
	R0202	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	-0208	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	R0209	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	-0216	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0217	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	-0220	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	R0221	**RD257220**	Carbon Resistor (chip)	22.0K 0.1 J				01
	-0226	**RD257220**	Carbon Resistor (chip)	22.0K 0.1 J				01
	R0227	**RD258270**	Carbon Resistor (chip)	270.0K 0.1 J				01
	-0230	**RD258270**	Carbon Resistor (chip)	270.0K 0.1 J				01
	R0231	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
	-0240	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
	R0241	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	-0250	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	R0251	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
	-0260	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
	R0261	**RD257330**	Carbon Resistor (chip)	33.0K 0.1 J				01
	-0270	**RD257330**	Carbon Resistor (chip)	33.0K 0.1 J				01
	R0271	**RD258390**	Carbon Resistor (chip)	390.0K 0.1 J				01
	-0280	**RD258390**	Carbon Resistor (chip)	390.0K 0.1 J				01
	R0281	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	-0290	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	R0291	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	R0292	**RD258220**	Carbon Resistor (chip)	220.0K 0.1 J				01
	R0401	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0402	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	-0404	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	R0405	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0406	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	-0408	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	R0409	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	-0411	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0501	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	R0502	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	R0503	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0504	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0505	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	R0506	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	R0507	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0508	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0509	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	R0510	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	SW201	**VU710700**	Slide Switch	KYP06-1		INPUT ATTENUATION		05
	SW401	**VK701100**	Push Switch	SKHQFN GREEN		PLAY		02
	SW402	**VK701100**	Push Switch	SKHQFN GREEN		UTILITY		02
	SW403	**VK701100**	Push Switch	SKHQFN GREEN		CLICK		02
	SW404	**VK701100**	Push Switch	SKHQFN GREEN		TRIGG		02
	SW405	**VK701100**	Push Switch	SKHQFN GREEN		KIT		02
	SW406	**VK701100**	Push Switch	SKHQFN GREEN		SONG		02
	SW407	**VN121700**	Push Switch	SKHHPP		START/S		01
	SW408	**VN121700**	Push Switch	SKHHPP		ENTER		01
	SW409	**VN121700**	Push Switch	SKHHPP		SHIFT		01
	SW410	**VN121700**	Push Switch	SKHHPP		▼PAGE		01
	SW411	**VN121700**	Push Switch	SKHHPP		◀		01
	SW412	**VN121700**	Push Switch	SKHHPP		-		01
	SW413	**VN121700**	Push Switch	SKHHPP		▲PAGE		01
	SW414	**VN121700**	Push Switch	SKHHPP		▶		01
	SW415	**VN121700**	Push Switch	SKHHPP		+		01
	VR501	**VM778800**	Rotary Variable Resistor	A 10.0K RK097122		AUX IN VR		04
*	VR502	**V3059200**	Rotary Variable Resistor	B 10K RK0971220		CLICK VOL		
		VT368600	AC Adapter	PA-3B JP		J		09
		VT368700	AC Adapter	PA-3B UC		U, C		
		VT368800	AC Adapter	PA-3B CEE		N		08

*: New parts

RANK: Japan only

■OVERALL CIRCUIT DIAGRAM

DM

DRAM 4M

Wave ROM 32M 44PIN SOP

32M

Wave ROM 16M 44PIN SOP

16M

DIP Socket (YKB63101)

ROM 16M

SRAM 1M

SWX00B IC1

REGULATOR

DA CONVERTER

OR

LINE

BUFFER

Hex Inverter

D-FF

ASSP

OP AMP

SOP

INVERTER

MPX

AGND

S-DUS Power Supply

ACC VOL B10K

Contrast Adjustment

CONT OUT

LCD UNIT DMC16205U-LY YPB4450 LED CathYO09

H. H. CONT

HHCON

Shield

TO-HOST

MIDI IN

MIDI OUT

DC IN 12V

KICK

SNARE

TOM1

TOM2

TOM3

RIDE

CRASH

HI HAT

PHONES

OUTPUT L/MONO

OUTPUT R

AUX IN

AUX IN VR A10K*2

CLICK VOL B10K

POWER SW MASTER VR A10K*2

These 0.1 µF monolithic ceramic capacitor is a capacitor for the rabio wave measures.

C701~C837
C840~C842
C844~C846

KEC-54185 2

KEC-54186 1

KEC-54187

KEC-54188

PN

- µPC29M33HF (XT333A00) REGULATOR +3.3V

1: INPUT
2: GND
3: OUTPUT

- µPC24M09AHF (XM968B00) REGULATOR

1: INPUT
2: GND
3: OUTPUT

- µPC7805AHF (XL497A00) REGULATOR +5V

1: INPUT
2: COMMON
3: OUTPUT

(セ): Monolithic Ceramic Capacitor
(タ): Tantalum Capacitor

JK

AUX