DIGITAL KEYBOARD

YPT-410

SERVICE MANUAL



CONTENTS

SPECIFICATIONS....3
PANEL LAYOUT....4
CIRCUIT BOARD LAYOUT & WIRING....6
DISASSEMBLY PROCEDURE....7
LSI PIN DESCRIPTION....12
IC BLOCK DIAGRAM....15
CIRCUIT BOARDS....16
TEST PROGRAM....24
INITIALIZATION....27
USER DATA BACKUP....28
MIDI IMPLEMENTATION CHART....29
MIDI DATA FORMAT....30
PARTS LIST
BLOCK DIAGRAM
OVERALL CIRCUIT DIAGRAM

PK 001799

YAMAHA

HAMAMATSU, JAPAN

Copyright (c) Yamaha Corporation. All rights reserved. PDF KM '08.02

IMPORTANT NOTICE

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

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

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

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

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

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

WARNING: This product contains chemicals known to the State of California to cause cancer, 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.

■ SAVING DATA

Saving and backing up your data

The panel settings and some other types of data is lost when you turn off the power to the instrument. Save the data to the Registration Memory.

Saved data may be lost due to malfunction or incorrect operation.

Save important data to an external device such as a computer.

Backing up the external media

- To protect against data loss through media damage, we recommend that you save your important data onto two external media.

SPECIFICATIONS

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

Display
- LCD display (backlit)

Setup
- STANDBY/ON
- MASTER VOLUME: MIN–MAX

Panel Controls
- SONG, VOICE, STYLE, EASY SONG ARRANGER, PERFORMANCE ASSISTANT ON/OFF, ARPEGGIO ON/OFF, LESSON L/R, LESSON START, METRONOME ON/OFF, PORTABLE GRAND, DEMO, FUNCTION, MUSIC DATABASE, TOUCH ON/OFF, HARMONY ON/OFF, DUAL ON/OFF, SPLIT ON/OFF, TEMPO/TAP, [0]–[9], [+], [-], CATEGORY, Dial, ASSIGN,↻(ACMP ON/OFF), A-B REPEAT (SYNC STOP), PAUSE (SYNC START), START/STOP, REW (INTRO/ENDING/rit.), FF (MAIN/AUTO FILL), REGIST MEMORY ([●] (MEMORY/BANK), [1], [2]), SONG MEMORY (REC, [1]–[5], [A])

Realtime Control
- Pitch Bend Wheel
- Knobs A, B
  A: Cutoff, Reverb, Attack, Style Cutoff, Style Tempo
  B: Resonance, Chorus, Release, Style Resonance

Voice
- 116 panel voices + 12 drum/SFX kits + 361 XGlite voices + 15 arpeggio voices
- Polyphony: 32
- DUAL
- SPLIT

Style
- 155 Preset Styles + 1 User Style File
- Style Control: ACMP ON/OFF, SYNC STOP, SYNC START, START/STOP, INTRO/ENDING/rit., MAIN/AUTO FILL
- Fingering: Multi Finger
- Style Volume

Music Database
- 256

Education Feature
- Dictionary
- Lesson 1–3, Repeat & Learn

Registration Memory
- 8 banks x 2 types

Function
- VOLUME: Style Volume, Song Volume
- OVERALL: Tuning, Transpose, Split Point, Touch Sensitivity, Pitch Bend Range
- MAIN VOICE: Volume, Octave, Pan, Reverb Level, Chorus Level, Attack Time, Release Time, Filter Cutoff, Filter Resonance
- DUAL VOICE: Voice, Volume, Octave, Pan, Reverb Level, Chorus Level, Attack Time, Release Time, Filter Cutoff, Filter Resonance
- SPLIT VOICE: Voice, Volume, Octave, Pan, Reverb Level, Chorus Level, Attack Time, Release Time, Filter Cutoff, Filter Resonance
- EFFECT: Reverb Type, Chorus Type, Master EQ Type
- HARMONY: Harmony Type, Harmony Volume
- ARPEGGIO: Arpeggio Type, Arpeggio Velocity
- SFF Load: Style File Load
- PC: PC Mode
- MIDI: Local On/Off, External Clock, Initial Send, Keyboard Out, Style Out, Song Out
- METRONOME: Time Signature Numerator, Time Signature Denominator, Metronome Volume
- LESSON: Lesson Track (R), Lesson Track (L)
- UTILITY: Grade, Demo Cancel

Effects
- Reverb: 9 types
- Chorus: 4 types
- Harmony: 26 types
- Arpeggio: 50 types

Song
- 30 Preset Songs + 5 User Songs + Accessory CD-ROM Songs (70)
- Song Clear, Track Clear
- Song Volume
- Song Control: ↻, A-B REPEAT, PAUSE, REW, FF, START/STOP

Performance assistant technology

Recording
- Song
  User Song: 5 Songs
  Recording Tracks: 1, 2, 3, 4, 5, STYLE

MIDI
- Local On/Off
- Initial Send
- External Clock
- Keyboard Out
- Style Out
- Song Out

Auxiliary jacks
- PHONES/OUTPUT, DC IN 12V, USB, SUSTAIN

Amplifier
- 2.5 W + 2.5W

Speakers
- 12 cm x 2 + 3 cm x 2

Power Consumption
- 10 W

Power Supply
- Adaptor: Yamaha PA-130, or an equivalent
- Batteries: Six “D” size, R20P (LR20) or equivalent batteries

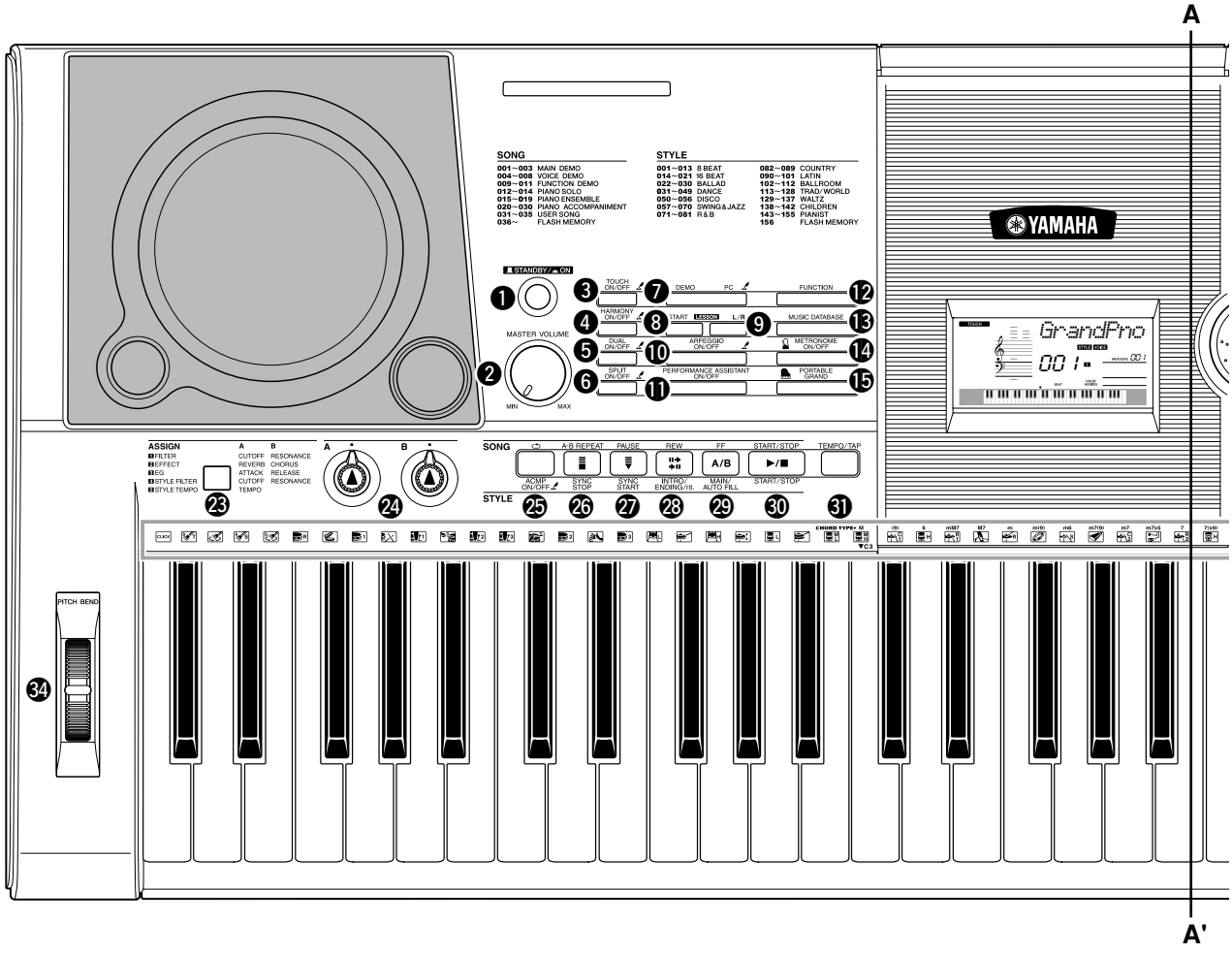
Dimensions (W x D x H)
- 952 x 388 x 146 mm (37-1/2" x 15-1/4" x 5-3/4")

Weight
- 7.0 kg (15 lbs. 7 oz.) (not including batteries)

Included Accessories
- Music Rest
- Accessory CD-ROM
- Owner’s Manual

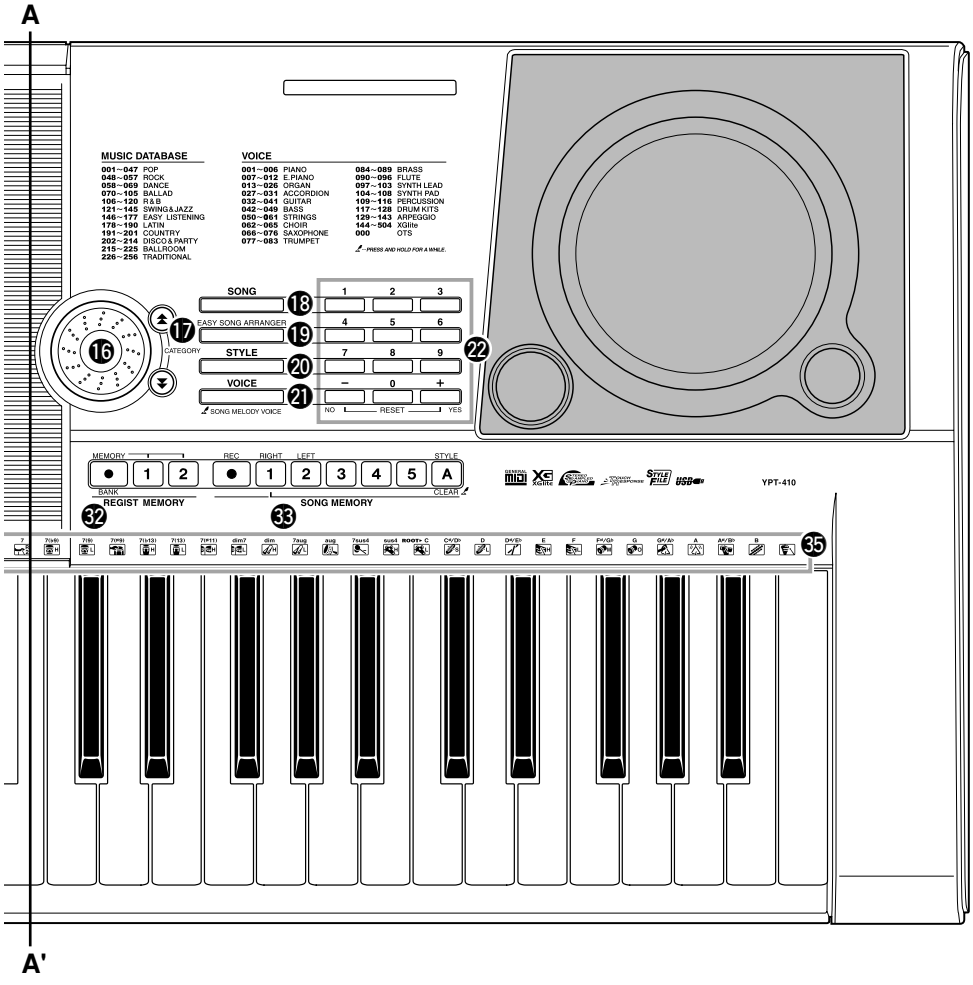
Optional Accessories
- AC Power Adaptor: PA-130, or an equivalent
- Footswitch: FC4/FC5
- Keyboard Stand: L-2C/L-2L
- Headphones: HPE-150

■ PANEL LAYOUT



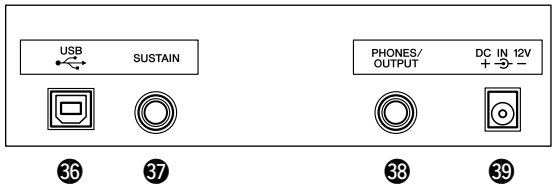
• Front Panel

❶ [STANDBY/ON] switch
❷ [MASTER VOLUME] control
❸ [TOUCH ON/OFF] button
❹ [HARMONY ON/OFF] button
❺ [DUAL ON/OFF] button
❻ [SPLIT ON/OFF] button
❼ [DEMO] button
❽ LESSON [START] button
❾ LESSON [L/R] button
❿ [ARPEGGIO ON/OFF] button
⓫ [PERFORMANCE ASSISTANT ON/OFF] button
⓬ [FUNCTION] button
⓭ [MUSIC DATABASE] button
⓮ [METRONOME ON/OFF] button
⓯ [PORTABLE GRAND] button
⓰ Dial
⓱ CATEGORY [▲] and [▼] buttons
⓲ [SONG] button
⓳ [EASY SONG ARRANGER] button
⓴ [STYLE] button
㉑ [VOICE] button
㉒ Number buttons [0]–[9], [+] and [–] buttons
㉓ [ASSIGN] button
㉔ [A] and [B] knobs
㉕ [↺](REPEAT & LEARN)/[ACMP ON/OFF] button
㉖ [A-B REPEAT]/[SYNC STOP] button
㉗ [PAUSE]/[SYNC START] button
㉘ [REW]/[INTRO/ENDING/rit.] button
㉙ [FF]/[MAIN/AUTO FILL] button
㉚ [START/STOP] button



31 [TEMPO/TAP] button
32 REGIST MEMORY [●] (MEMORY/BANK), [1], [2] buttons
33 SONG MEMORY [REC], [1]–[5], [A] buttons
34 PITCH BEND wheel
35 Drum Kit icons

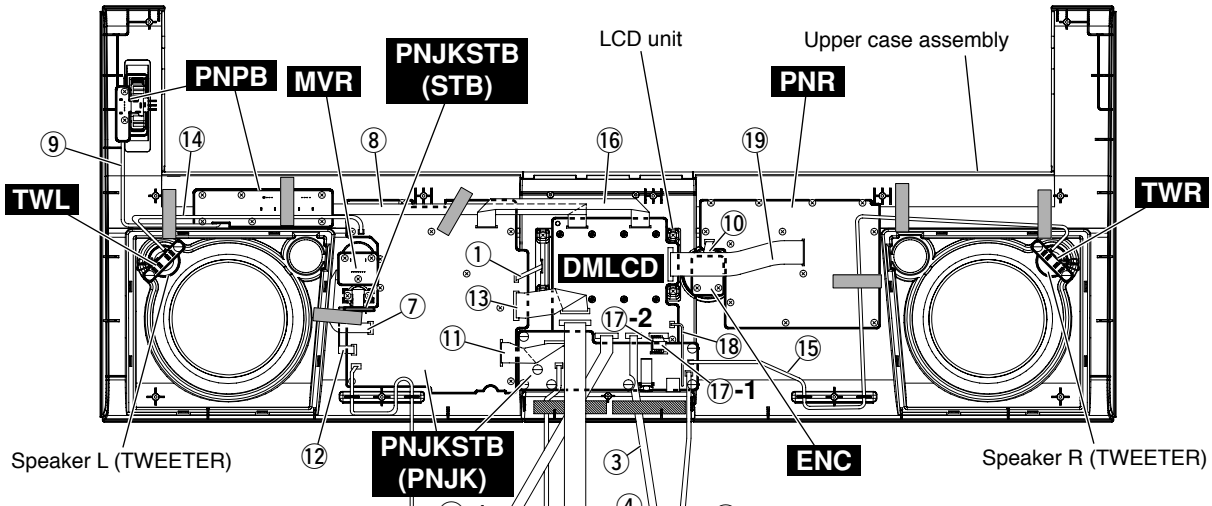
• Rear Panel



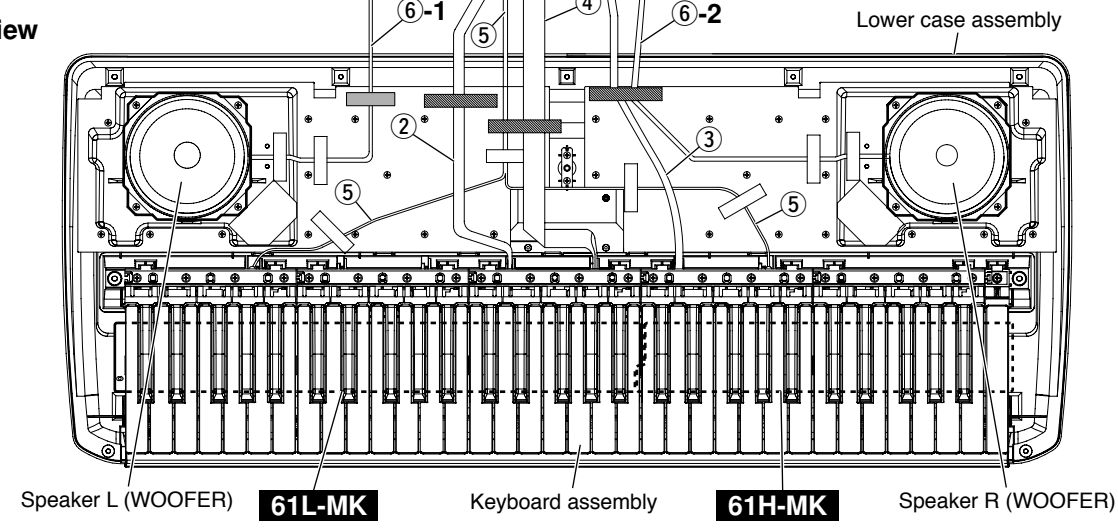
36 [USB] terminal
37 [SUSTAIN] jack
38 [PHONES/OUTPUT] jack
39 [DC IN 12V] jack

CIRCUIT BOARD LAYOUT & WIRING

• **Bottom view**



• **Top view**



No.	Unit Name	Location	Part No.	Connector assembly	Destination						Remarks
①	LCD Unit	L70	(WC60260)	BL	LCD unit	*2	*5	PNJKSTB(PNJK)-CN157	*1	*4	2P L=70
②	Lower Case Assembly	30	WC60120R	MK3	61L-MK-CN5	*1	*4	DMLCD-CN402	*1	*4	7P L=550
③		40	WG343000	MK2	61H-MK-CN2	*1	*4	DMLCD-CN403	*1	*4	5P L=500
④		50	WC60100R	MK1	61H-MK-CN1	*1	*4	DMLCD-CN401	*1	*4	12P L=600
⑤		130	(V873560)	BAT	Contact spring (+/–)	*2	*6	PNJKSTB(PNJK)-CN151	*1	*8	2P/3P
⑥-1		220	(WG32410)	SPL	Speaker L (WOOFER)	*2	*7	PNJKSTB(PNJK)-CN553	*1	*8	2P L=420
⑥-2					Speaker R (WOOFER)	*2	*7	PNJKSTB(PNJK)-CN556	*1	*8	
⑦	MVR Circuit Board	WH552	(WG33070)	VR1	MVR-CN552	*3	*4	PNJKSTB(PNJK)-CN551	*1	*4	5P L=160
⑧	PNPB Circuit Board	WH761	(WG33080)	VR2	PNPB-CN761	*3	*4	DMLCD-CN801	*1	*4	10P L=330
⑨		WH762	(WG33140)	PB1	PNPB-CN762	*3	*4	PNPB-CN763	*3	*4	3P L=200
⑩	ENC Circuit Board	WH764	(WG33130)	ENC	ENC-CN764	*3	*4	PNR-CN752	*1	*4	3P L=70
⑪	PNJKSTB(PNJK) Circuit Board	WH152	(WG33100)	AM	PNJKSTB(PNJK)-CN152	*3	*4	PNJKSTB(PNJK)-CN153	*3	*4	11P L=150
⑫		WH154	(WG33090)	STB1	PNJKSTB(PNJK)-CN154	*3	*4	PNJKSTB(STB)-CN155	*3	*4	4P L=170
⑬		WH156	(WG33120)	AMDM	PNJKSTB(PNJK)-CN156	*3	*4	DMLCD-CN101	*1	*4	13P L=120
⑭		WH554	(WG33040)	TWL	PNJKSTB(PNJK)-CN554	*3	*4	TWL (+/–)	*2	*5	2P L=300
⑮		WH555	(WG33050)	TWR	PNJKSTB(PNJK)-CN555	*3	*4	TWR (+/–)	*2	*5	2P L=550
⑯		WH753	(WG33180)	PN2	PNJKSTB(PNJK)-CN753	*3	*4	DMLCD-CN702	*1	*4	11P L=230
⑰-1		WH851	(WN06950)	JK6	PNJKSTB (2pin-6pin)	*3	*4	DMLCD-CN802 (2pin-6pin)	*1	*4	5P
⑰-2		WH853	(WH31900)	GND	(PNJK)-CN851 (1pin)			(1pin)			1P L=100
⑱		WH852	(WH47230)	GND2	PNJKSTB(PNJK)-TP1	*3		DMLCD-CN803 (2pin)	*1	*4	1P L=160/2P
⑲	PNR Circuit Board	WH751	(WG33170)	PN1	PNR-CN751	*3	*4	DMLCD-CN701	*1	*4	16P L=170

* The parts with "( )" in "**Part No.**" are not available as spare parts.

*1: Installation

*2: Manual soldering

*3: Dip soldering

*4: Edge mark is adjusted to Pin 1 mark (△ mark).

*5: Edge mark is adjusted to + mark.

*6: Red wire is connected to (+) terminal. Black wire is connected to (–) terminal.

*7: Red wire is connected to (+) terminal.

*8: Red wire is adjusted to Pin 1 mark (△ mark).

Caution: Be sure to attach the removed filament tape just as it was before removal.

DISASSEMBLY PROCEDURE

Caution: Be sure to attach the removed filament tape just as it was before removal.

1. Lower Case Assembly
(Time required: About 2 minutes)

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

1-2 Remove the nine (9) screws marked [360] and three (3) screws marked [370]. The lower case assembly can then be removed. (Fig.1)

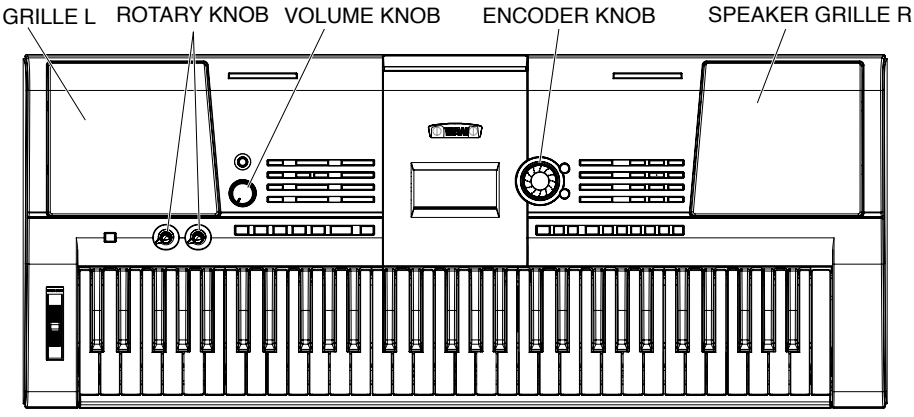
2. Spring Terminal
(Time required: About 2 minutes)

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

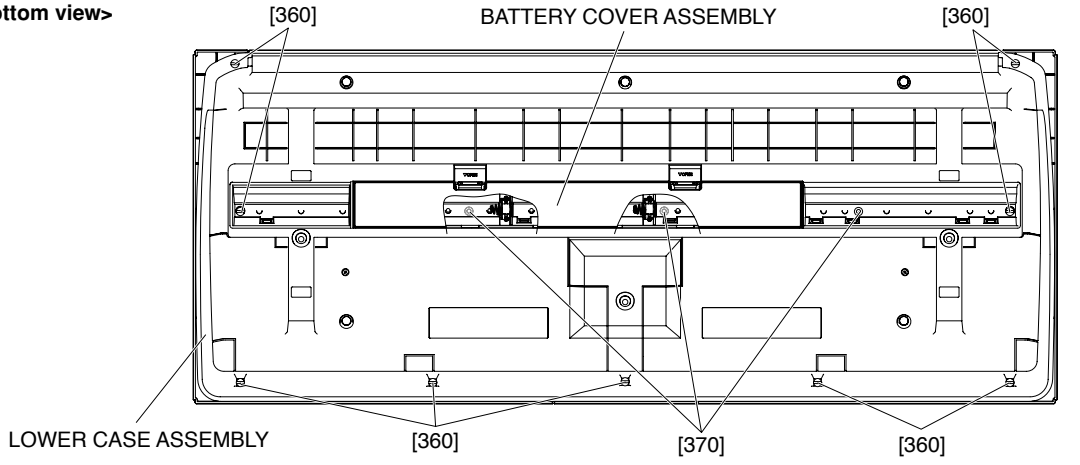
2-2 Remove the connector assemblies BAT (red/black) soldered to the spring terminals (+) and (–). (Fig.2)

2-3 Unhook two (2) each hooks (A) at the bottom of the lower case assembly and pull out the respective spring terminals. (Fig.3)

<Top view>



<Bottom view>



[360]: BIND HEAD TAPPING SCREW-B 3.0X12 MFZN2W3 (WE98740R)
[370]: BIND HEAD TAPPING SCREW-B 3.0X30 MFZN2W3 (WF49100R)

Fig. 1

<Top view (LOWER CASE ASSEMBLY) >

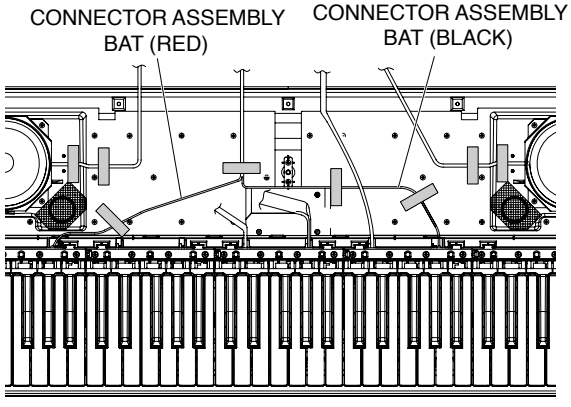


Fig. 2

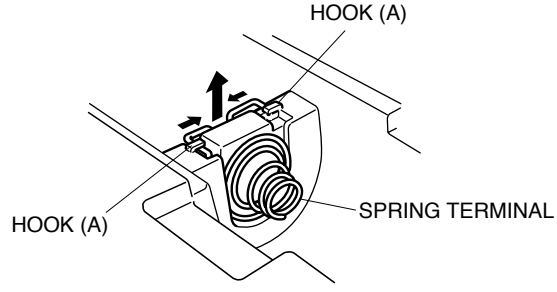


Fig. 3

3. MVR Circuit Board

(Time required: About 3 minutes)

3-1 Remove the "MASTER VOLUME" volume knob from the control panel as shown in Fig.5. (Fig.1, Fig.5)

3-2 Remove the lower case assembly. (See procedure 1.)

3-3 Remove the three (3) screws marked [210A]. The MVR circuit board can then be removed. (Fig.4)

4. PNJKSTB(PNJK+STB) Circuit Board

(Time required: About 7 minutes)

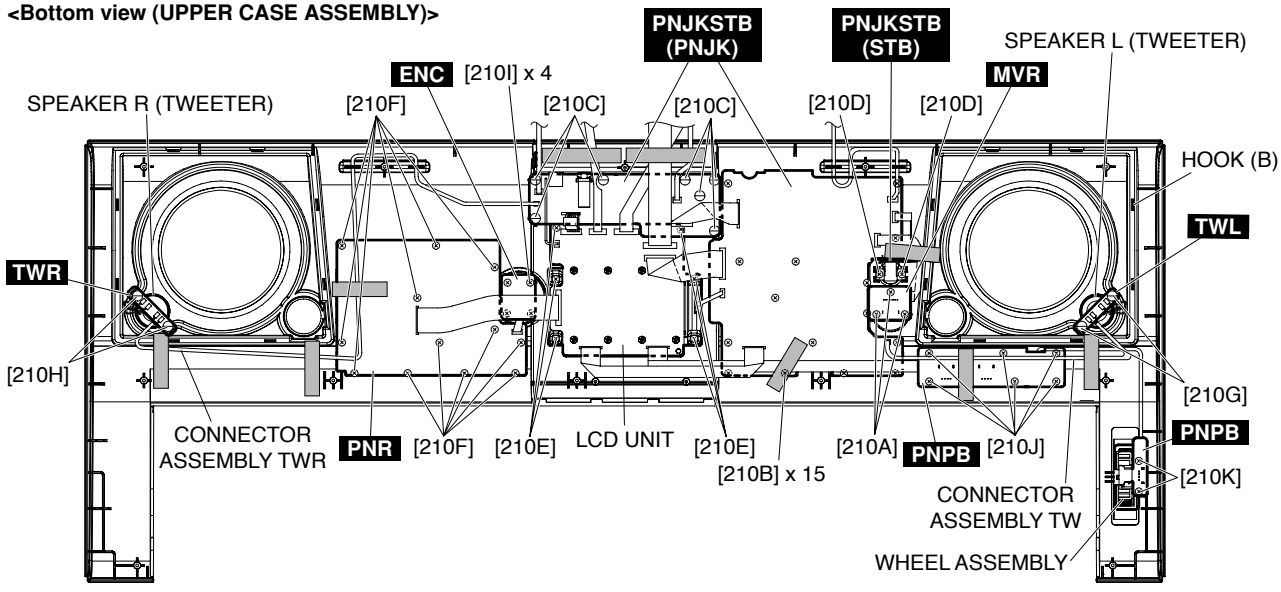
4-1 Remove the lower case assembly. (See procedure 1.)

4-2 Remove the MVR circuit board. (See procedure 3.)

4-3 Remove the connector assembly TWL soldered to the TWL circuit board and the connector assembly TWR soldered to the TWR circuit board. (Fig.4)

4-4 Remove the fifteen (15) screws marked [210B], seven (7) screws marked [210C] and two (2) screws marked [210D]. The PNJKSTB(PNJK+STB) circuit board can then be removed. (Fig.4)

4-5 Pull out the push knob from the PNJKSTB(STB) circuit board. (Fig.6)



[210]: BIND HEAD TAPPING SCREW-B 3.0X8 MFZN2W3 (WE774300)

Fig. 4

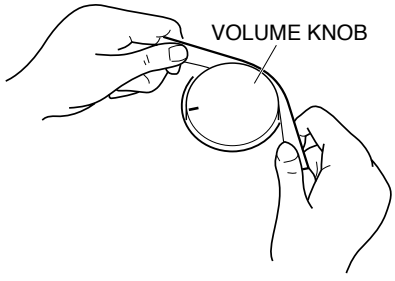


Fig. 5

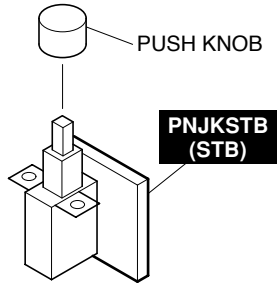


Fig. 6

5. LCD Unit (Time required: About 8 minutes)

5-1 Remove the lower case assembly. (See procedure 1.)
5-2 Remove the MVR circuit board. (See procedure 3.)
5-3 Remove the PNJKSTB(PNJK+STB) circuit board. (See procedure 4.)
5-4 Remove the six (6) screws marked [210E]. The LCD unit can then be removed. (Fig.4)

6. DMLCD Circuit Board, Back Light Assembly and LCD (Time required: About 10 minutes)

6-1 Remove the lower case assembly. (See procedure 1.)
6-2 Remove the MVR circuit board. (See procedure 3.)
6-3 Remove the PNJKSTB(PNJK+STB) circuit board. (See procedure 4.)
6-4 Remove the LCD unit. (See procedure 5.)
6-5 Remove the eight (8) screws marked [L50]. The DMLCD circuit board can then be removed from the LCD unit. (Fig.7)
6-6 Remove the LCD, back light assembly and rubber connectors from the LCD frame. (Fig.7)

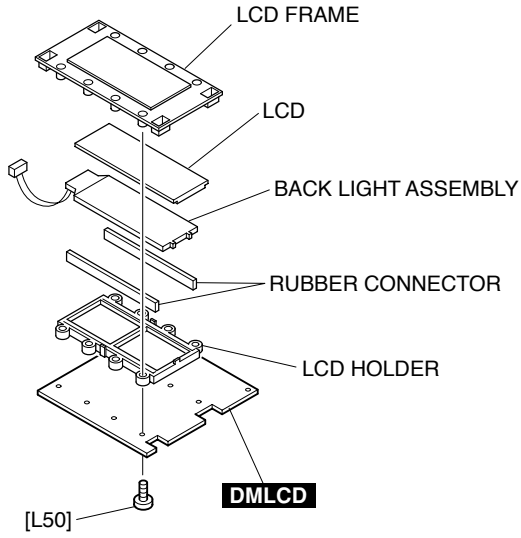
* **When attaching the rubber connector to the LCD frame, set the conductor side to face inward. (Fig.8)**

* **When installing the DMLCD circuit board, tighten the screws 1 through 8 in numerical order as shown in Fig.9. If the DMLCD circuit board is replaced, execute the "Factory Set" in the test program.**

7. PNR, TWL, TWR Circuit Boards, and Speakers (Tweeters)

(Time required: About 5 minutes each)

7-1 Remove the lower case assembly. (See procedure 1.)
7-2 Remove the PNR, TWL, and TWR circuit boards in the following way.
7-2-1 **PNR Circuit Board**
Remove the twelve (12) screws marked [210F]. The PNR circuit board can then be removed. (Fig.4)
7-2-2 **TWL Circuit Board and Speaker L (Tweeter)**
Remove the connector assembly TWL soldered to the TWL circuit board and two (2) screws marked [210G]. The TWL circuit board and speaker L (tweeter) can then be removed. (Fig.4)
7-2-3 **TWR Circuit Board and Speaker R (Tweeter)**
Remove the connector assembly TWR soldered to the TWR circuit board and two (2) screws marked [210H]. The TWR circuit board and speaker R (tweeter) can then be removed. (Fig.4)



[L50]: BIND HEAD TAPPING SCREW-B 3.0X12 MFZN2W3 (WE98740R)

Fig. 7

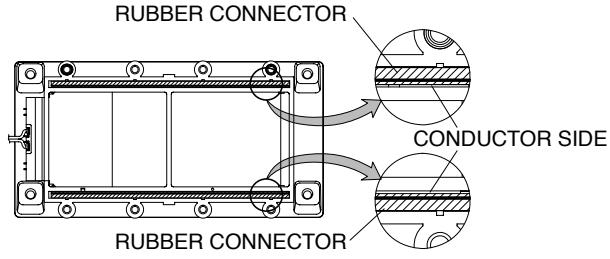


Fig. 8

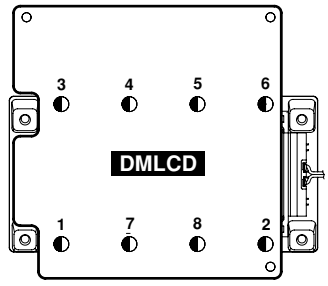


Fig. 9

8. Speaker Grilles L and R

(Time required: About 3 minutes each)

8-1 Remove the lower case assembly. (See procedure 1.)
8-2 Set the eight (8) hooks [B] parallel to the groove in the upper case assembly and remove the speaker grille L. (Fig.1, Fig.4)

* **The speaker grille R can be removed in the same manner.**

9. ENC Circuit Board

(Time required: About 3 minutes)

9-1 Pull out the "CATEGORY" encoder knob from the control panel as shown in Fig.10. (Fig.1, Fig.10)

9-2 Remove the lower case assembly. (See procedure 1.)

9-3 Remove the four (4) screws marked [210I]. The ENC circuit board can then be removed. (Fig.4)

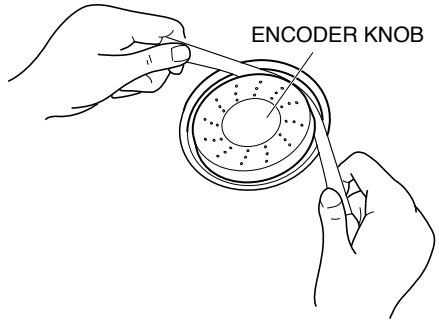


Fig. 10

10. PNPB Circuit Board and Wheel Assembly

(Time required: About 4 minutes)

10-1 Pull out the two (2) rotary knobs for "A" and "B" from the control panel. (Fig.1)

10-2 Remove the lower case assembly. (See procedure 1.)

10-3 Remove the six (6) screws marked [210J] and two (2) screws marked [210K]. The PNPB circuit board can then be removed with the wheel assembly. (Fig.4)

10-4 Pull out the wheel assembly from the PNPB circuit board. (Fig.11)

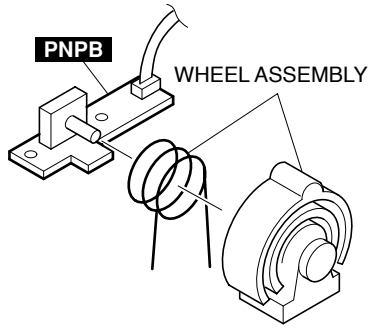


Fig. 11

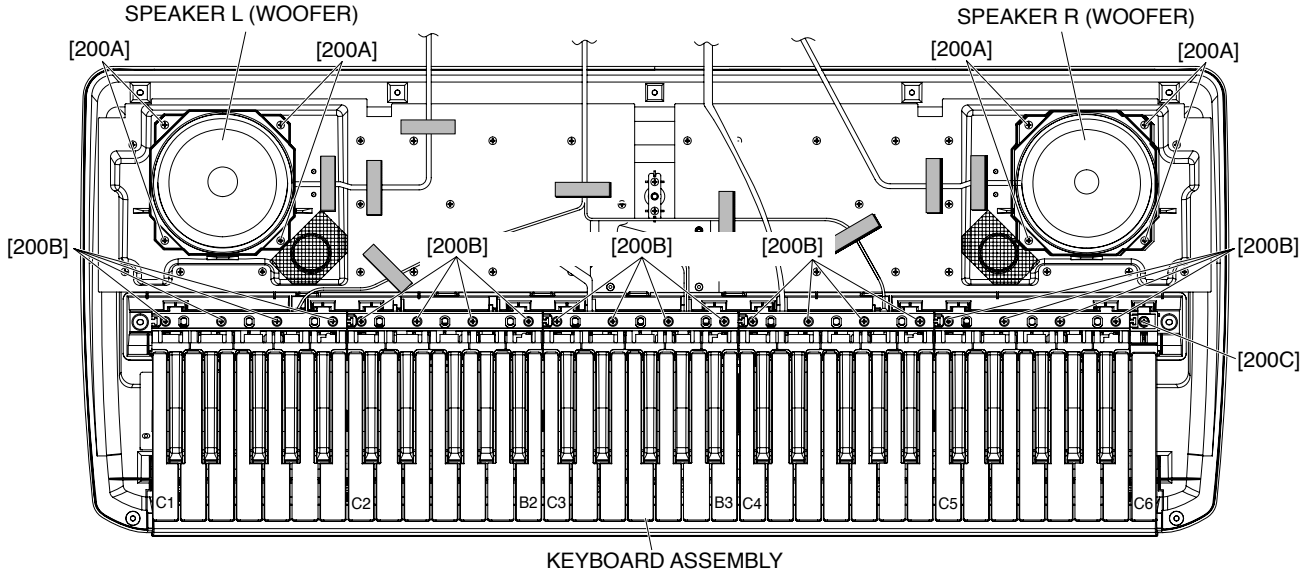
11. Speakers (Woofers)

(Time required: About 3 minutes each)

11-1 Remove the lower case assembly. (See procedure 1.)

11-2 Remove the four (4) each screws marked [200A] to the right and left. The speakers (woofers) to the right and left can then be removed. (Fig.12)

<Top view (LOWER CASE ASSEMBLY)>



[200A]: BIND HEAD TAPPING SCREW-B 4.0X10 MFZN2W3 (WE97450R)
[200B]: BIND HEAD TAPPING SCREW-P 3.0X20 MFZN2W3 (WF49200R)
[200C]: BIND HEAD TAPPING SCREW-P 3.0X20 MFZN2W3 (WF49200R)

Fig. 12

12. Disassembling Keyboard Assembly

(Time required: About 12 minutes)

12-1 Remove the lower case assembly. (See procedure 1.)

12-2 **White Keys and Black Keys**

12-2-1 White and black keys for one octave unit are integrated as a set. There are five sets in total. Only the C6 white key, unlike the other keys, is not integrated in a set. (Fig.12)

12-2-2 To remove a set, remove the four (4) each screws marked [200B]. The white and black keys in the set can then be removed. (Fig.12)
When removing, unfasten the two (2) hooks at the back of the black keys upward, and lift the white and black keys while pulling them toward you a little. (Photo 1)

12-2-3 To remove the white key C6, remove the screw marked [200C], unhook as described in Procedure 12-2-2, and pull out toward you. (Fig.12)

12-3 **Rubber Contact**

12-3-1 Remove the white and black keys corresponding to the rubber contacts to be removed. (See Fig.12 and Procedure 12-2.)

12-3-2 Remove the rubber contacts. (Photo 2, Fig.13)

12-4 **Circuit Board 61L-MK**

12-4-1 Remove the white and black keys from C1 to B3. (See Fig.12 and Procedure 12-2.)

12-4-2 Remove the four (4) screws marked [180A] and eight (8) screws marked [190A]. The circuit board 61L-MK can then be removed. (Fig.13)

* **When installing the circuit board 61L-MK, tighten the screws 1 through 12 in numerical order as shown in the figure "61L-MK" in Fig.14. (Fig.14)**

12-5 **Circuit Board 61H-MK**

12-5-1 Remove the white and black keys from C4 to C6. (See Fig.12 and Procedure 12-2.)

12-5-2 Remove the three (3) screws marked [180B] and five (5) screws marked [190B]. The circuit board 61H-MK can then be removed. (Fig.13)

* **When installing the circuit board 61H-MK, tighten the screws 1 through 8 in numerical order as shown in the figure "61H-MK" in Fig.14. (Fig.14)**

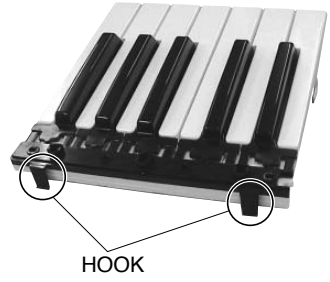
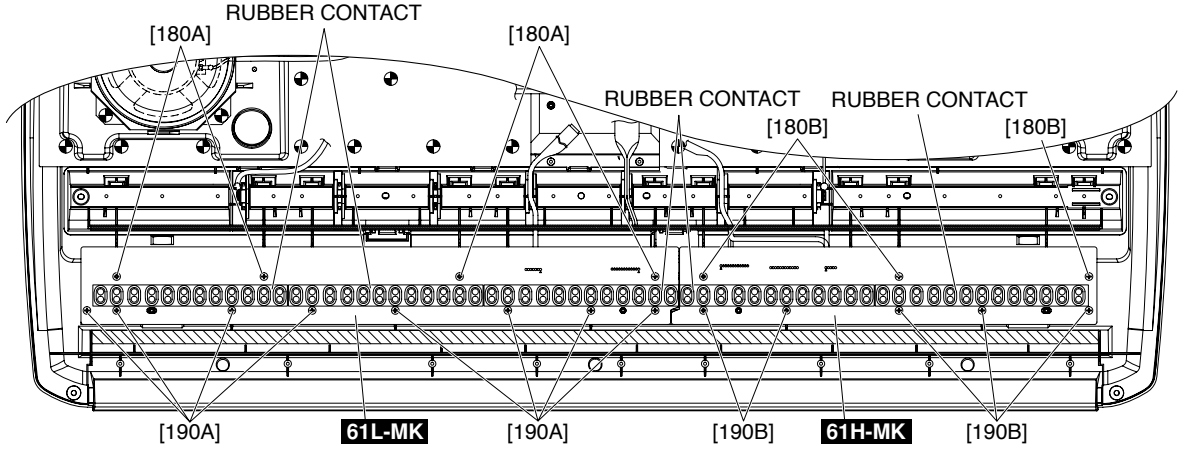


Photo 1



Photo 2

<Top view (LOWER CASE ASSEMBLY)>



[180]: BIND HEAD TAPPING SCREW-B 3.0X8 MFZN2W3 (WE774300)
[190]: BIND HEAD TAPPING SCREW-P 3.0X12 MFZN2W3 SP (WH899400)

Fig. 13

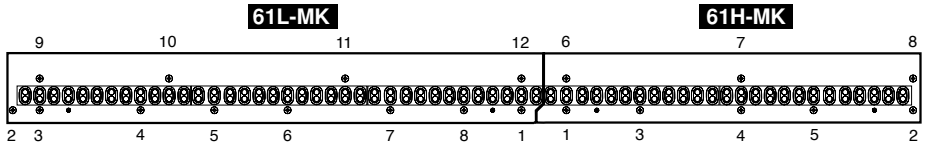


Fig. 14

LSI PIN DESCRIPTION

YMW767-VTZ (X6055A0R) **CPU** (SWL01T) **12**
M38K07M4L-307HP (X518610R) **CPU** (USB) **13**
ADC084S021CIMM (X6905A00) **ADC** (Analog to Digital Converter) **13**
AK4385ET (X6040A01) **DAC** (Digital to Analog Converter) **13**
NT3881DFG-01 (X3148A0R) **LCD DRIVER** **14**
ML9040A-B01GAZ03A (XZ987A0R) **LCD DRIVER** **14**

● **YMW767-VTZ** (X6055A0R) **CPU** (SWL01T)

DMLCD: IC301

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	Vss	-	Ground	65	Vss	-	Ground
2	TESTN	I	Input for TEST	66	IOV_{DD}	-	Power supply +3.3 V
3	PLLBPN	I	PLL bypass select	67	LBN/LWRN/PF6	O	External memory lower-byte enable / Port F
4	$PLLV_{DD}$	-	PLL Power supply +2.5 V	68	UBN/UWRN/PF7	O	External memory upper-byte enable / Port F
5	CIN	-	Capacitor terminal for PLL	69	RDN/PF4	O	External memory read enable / Port F
6	PLLVss	-	PLL Ground	70	MD00	I/O	External memory data bus
7	TRSTN	I	JTAG input	71	MD08	I/O	
8	TMS	I		72	MD01	I/O	
9	TCK	I		73	MD09	I/O	
10	TDI	I		74	MD02	I/O	
11	TDO	O	JTAG output	75	MD10	I/O	
12	XI	I	Crystal oscillator	76	MD03	I/O	
13	XO	O	Crystal oscillator	77	Vss	-	Ground
14	Vss	-	Ground	78	MD11	I/O	External memory data bus
15	V_{DD}	-	Power supply +2.5 V	79	MD04	I/O	
16	ICN	I	Hardware reset	80	MD12	I/O	
17	ECSN	I	CPU I/F chip select	81	MD05	I/O	
18	EWRN/PD5	I	CPU I/F write enable / Port D	82	MD13	I/O	
19	ERDN/PD4	I	CPU I/F read enable / Port D	83	MD06	I/O	
20	EA3/PD3	I	CPU I/F address bus / Port D	84	MD14	I/O	
21	EA2/PD2	I		85	MD07	I/O	
22	EA1/PD1	I		86	MD15	I/O	
23	EA0/PD0	I		87	WRN/PF5	O	
24	IOV_{DD}	-	Power supply +3.3 V	88	Vss	-	Ground
25	ED0/PC0	I/O	CPU I/F data bus / Port C	89	V_{DD}	-	Power supply +2.5 V
26	ED1/PC1	I/O		90	IOV_{DD}	-	Power supply +3.3 V
27	ED2/PC2	I/O		91	MA17	O	External memory address bus
28	ED3/PC3	I/O		92	MA16	O	
29	ED4/PC4	I/O		93	MA15	O	
30	ED5/PC5	I/O		94	MA14	O	
31	ED6/PC6	I/O		95	MA13	O	
32	ED7/PC7	I/O		96	MA12	O	
33	Vss	-	Ground	97	MA11	O	
34	IRQ0N/PH0	I	Interrupt input / Port H	98	MA10	O	
35	TxD0	O	Serial output	99	MA09	O	
36	RxD0	I	Serial input	100	MA08	O	
37	TxD1/PG2	O	Serial output / Port G	101	MA07	O	
38	RxD1/PH1	I	Serial input / Port H	102	MA06	O	
39	SCLK1/PH2	I	External synchronization clock / Port H	103	MA05	O	
40	SDO	O	Serial output	104	Vss	-	Ground
41	SDI/PH3	I	Serial input / Port H	105	MA04	O	External memory address bus
42	BCLK	O	Bit clock output	106	MA03	O	
43	WCLK/SYO	O	Word clock output	107	MA02	O	
44	SYSCLK/PG3	O	Clock output / Port G	108	MA01	O	
45	Vss	-	Ground	109	CS0N/PG0	O	External memory chip select / Port G
46	V_{DD}	-	Power supply +2.5 V	110	MA18	O	External memory address bus
47	IOV_{DD}	-	Power supply +3.3 V	111	MA19	O	
48	PA0	I/O	I/O port A	112	MA21/PF1	O	External memory address bus / Port F
49	PA1	I/O		113	MA22/PF2	O	
50	PA2	I/O		114	MA20	O	External memory address bus
51	PA3	I/O		115	MA23/PF3	O	External memory address bus / Port F
52	PA4	I/O		116	CSIN/PG1	O	External memory chip select / Port G
53	PA5	I/O		117	MA00/PF0	O	External memory address bus / Port F
54	PA6	I/O		118	Vss	-	Ground
55	PA7	I/O		119	V_{DD}	-	Power supply +2.5 V
56	Vss	-	Ground	120	IOV_{DD}	-	Power supply +3.3 V
57	PB0	I/O	I/O port B	121	CS2N/PE0	O	External memory chip select / Port E
58	PB1	I/O		122	CS3N/PE1	O	
59	PB2	I/O		123	CS4N/CASN/PE2	O	
60	PB3	I/O		124	CS5N/PE3	O	
61	PB4	I/O		125	CS50RDN/PE4	O	
62	PB5	I/O		126	CS51WRN/PE5	O	
63	PB6	I/O		127	CS52WRN/PE6	O	
64	PB7/SYI	I/O		128	CS53WRN/RASN/PE7	O	

● **M38K07M4L-307HP** (X518610R) **CPU** (USB)

DMLCD: IC802

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	$P1_2/DQ_2/AN_2$	I/O	Port P1 (In/output)/External bus interface/ A-D converter input	33	$P2_6$	I/O	Port P2 (In/output)
2	$P1_3/DQ_3/AN_3$	I/O		34	$P2_7$	I/O	
3	$P1_4/DQ_4/AN_4$	I/O		35	$P5_0/INT_0$	I/O	Port P5 (In/output)/Interrupt input
4	$P1_5/DQ_5/AN_5$	I/O		36	$P5_1/CNTR_0$	I/O	Port P5 (In/output)/Timer X
5	$P1_6/DQ_6/AN_6$	I/O		37	$P5_2/INT_1$	I/O	Port P5 (In/output)/Interrupt input
6	$P1_7/DQ_7/AN_7$	I/O		38	$P5_3$	I/O	Port P5 (In/output)
7	CNVss	I	Chip active	39	$P5_4$	I/O	
8	$\overline{RESET}$	I	System reset input	40	$P5_5$	I/O	
9	VccE	-	Analog power supply +3.3 V	41	$P5_6$	I/O	
10	V_{REF}	I	Reference voltage input	42	$P5_7$	I/O	
11	Vss	-	Ground	43	$P0_0$	I/O	Port P0 (In/output)
12	X_{IN}	I	Clock input	44	$P0_1$	I/O	
13	X_{OUT}	O	Clock output	45	$P0_2$	I/O	
14	Vcc	-	Power supply +3.3 V	46	$P0_3$	I/O	
15	CNVss2	I	Chip active	47	$P0_4$	I/O	
16	$P6_0(LED_0)$	I/O	Port P6 (In/output)	48	$P0_5$	I/O	
17	$P6_1(LED_1)$	I/O		49	$P0_6$	I/O	
18	$P6_2(LED_2)$	I/O		50	$P0_7$	I/O	
19	$P6_3(LED_3)$	I/O		51	$P4_0$/ExDREQ/RxD	I/O	Port P4 (In/output)/Serial I/O/External bus interface
20	PVss	-	Analog ground	52	$P4_1$/ExDACK/TxD	I/O	
21	PVcc	-	Analog power supply +3.3 V	53	$P4_2$/ExTC/S_{CLK}	I/O	
22	DVcc	-	Analog power supply +3.3 V	54	$P4_3$/ExA1/S_{RDY}	I/O	
23	$USBV_{REF}$	-	USB reference power supply +3.3 V	55	$P3_0$	I/O	Port P3 (In/output)
24	TrON	O	USB reference voltage output	56	$P3_1$	I/O	
25	D0+	I/O	USB upstream in/output	57	$P3_2$	I/O	
26	D0-	I/O		58	$P3_3$/ExINT	I/O	Port P3 (In/output)/External bus interface
27	$P2_0$	I/O	Port P2 (In/output)	59	$P3_4$/ExCS	I/O	
28	$P2_1$	I/O		60	$P3_5$/ExWR	I/O	
29	$P2_2$	I/O		61	$P3_6$/ExRD	I/O	
30	$P2_3$	I/O		62	$P3_7$/ExA0	I/O	
31	$P2_4$	I/O		63	$P1_0/DQ_0/AN_0$	I/O	Port P1 (In/output)/External bus interface/ A-D converter input
32	$P2_5$	I/O		64	$P1_1/DQ_1/AN_1$	I/O	

● **ADC084S021CIMM** (X6905A00) **ADC** (Analog to Digital Converter)

DMLCD: IC801

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	$\overline{CS}$	I	Chip select	6	AIN2	I/O	Analog input
2	VA	-	Power supply +3.3 V	7	AIN1	I/O	
3	GND	-	Ground	8	DIN	I	Digital data input
4	AIN4	I/O	Analog input	9	DOUT	O	Digital data output
5	AIN3	I/O		10	SCLK	I	Digital clock input

● **AK4385ET** (X6040A01) **DAC** (Digital to Analog Converter)

DMLCD: IC501

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	MCLK	I	Master Clock	9	AOUTR-	O	Rch Analog out(-)
2	BICK	I	Audio Serial Data Clock	10	AOUTR+	O	Rch Analog out(+)
3	SDTI	I	Audio Serial Date Input	11	AOUTL-	O	Lch Analog out(-)
4	LRCK	I	L/R Clock	12	AOUTL+	O	Lch Analog out(+)
5	PDN	I	Power Down mode	13	Vss	-	Ground
6	CSN	I	Chip Select	14	VDD	-	Power Supply
7	CCLK	I	Control Data Input	15	DZFR	O	Rch Data Zero Input Detect
8	CDTI	I	Control Data Input	16	DZFL	O	Lch Data Zero Input Detect

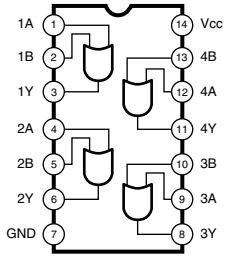
- **NT3881DFG-01** (X3148A0R) **LCD DRIVER**
- **ML9040A-B01GAZ03A** (XZ987A0R) **LCD DRIVER**

DMLCD: IC601

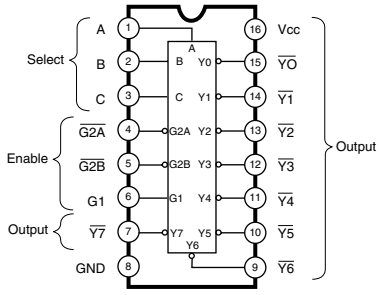
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	S22	O	Segment signal output for LCD driving	41	DB2	I/O	Data interface
2	S21	O		42	DB3	I/O	
3	S20	O		43	DB4	I/O	
4	S19	O		44	DB5	I/O	
5	S18	O		45	DB6	I/O	
6	S17	O		46	DB7	I/O	
7	S16	O		47	C1	O	Common signal output for LCD driving
8	S15	O		48	C2	O	
9	S14	O		49	C3	O	
10	S13	O		50	C4	O	
11	S12	O		51	C5	O	
12	S11	O		52	C6	O	
13	S10	O		53	C7	O	
14	S9	O		54	C8	O	
15	S8	O		55	C9	O	
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	Segment signal output for LCD driving
24	OSC1	I	Oscillator	64	S39	O	
25	OSC2	O	Oscillator	65	S38	O	
26	V1		Power supply	66	S37	O	
27	V2			67	S36	O	
28	V3			68	S35	O	
29	V4			69	S34	O	
30	V5			70	S33	O	
31	CLK1	O	Data latch clock	71	S32	O	
32	CLK2	O	Data shift clock	72	S31	O	
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	

IC BLOCK DIAGRAM

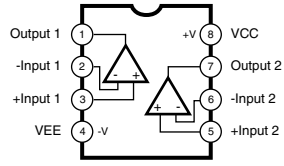
● **SN74LV32APWR** (X5647A00)
DMLCD: IC207
Quad 2 Input OR



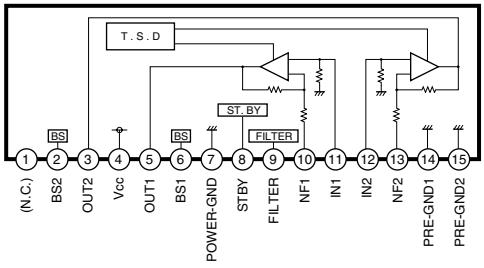
● **SN74LV138APWR** (X7284A00)
DMLCD: IC401, 402
3 to 8 Demultiplexer



● **BA4510F-E2** (X7300A00)
DMLCD: IC502
Dual Operational Amplifier



● **BA5417** (XV771A00)
PNJKSTB(PNJK): IC551
POWER AMP

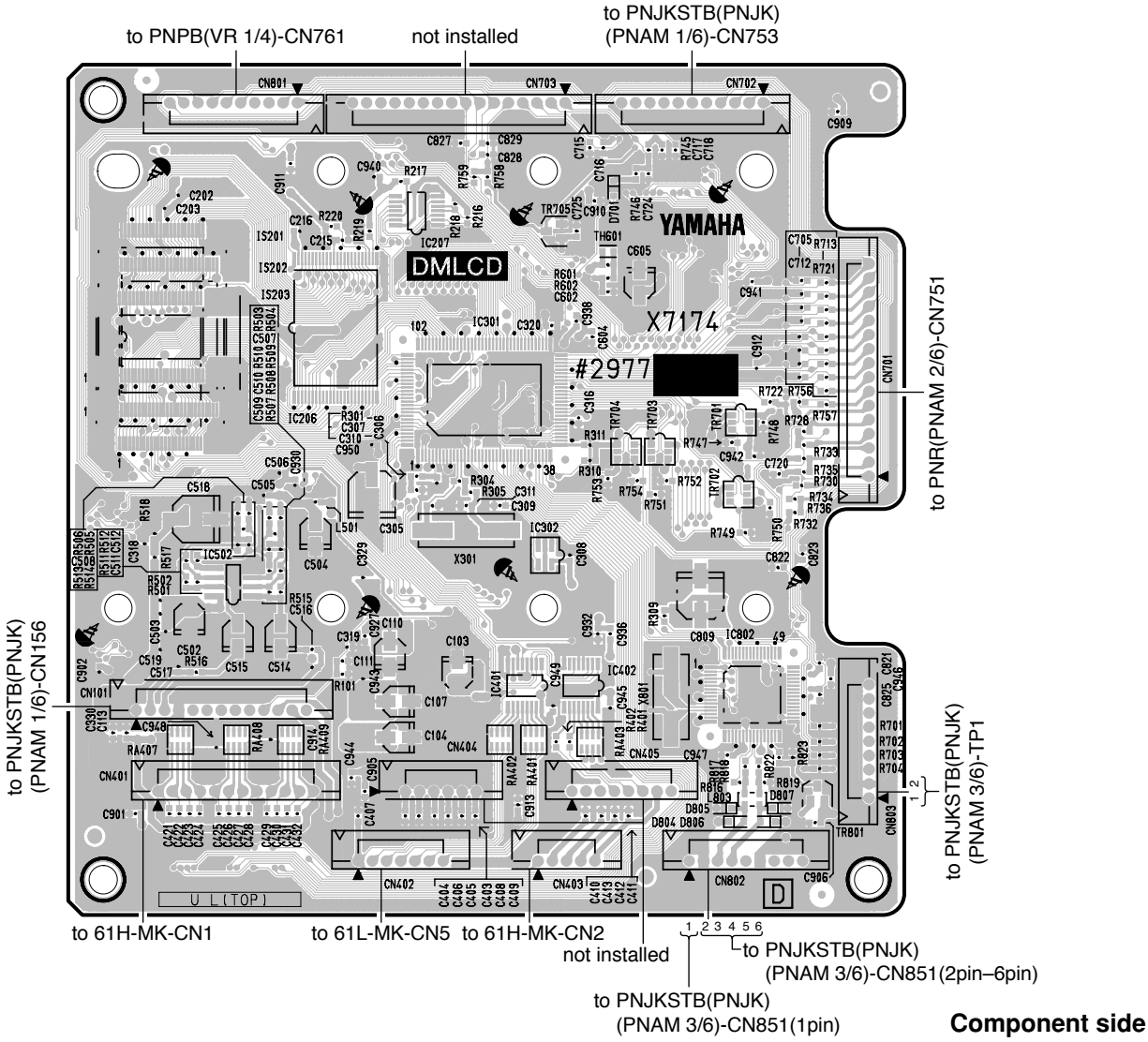


■ CIRCUIT BOARDS

DMLCD Circuit Board (X7174D0) **16/17**
ENC (VR 3/4) Circuit Board (X7175B0).....**22**
MVR (VR 2/4) Circuit Board (X7175B0) **18**
PNJKSTB(PNJK) (PNAM 1/6, 3/6) Circuit Board (X7173E0) **18/19/20/21**
PNJKSTB(STB) (PNAM 4/6) Circuit Board (X7173E0) **18**
PNPB (VR 1/4, 4/4) Circuit Board (X7175B0) **22**
PNR (PNAM 2/6) Circuit Board (X7173E0) **20/21**
TWL (PNAM 5/6, 6/6) Circuit Board (X7173E0) **19**
TWR (PNAM 5/6, 6/6) Circuit Board (X7173E0).....**19**
61H-MK Circuit Board (X2335C0) **23**
61L-MK Circuit Board (X2336B0).....**23**

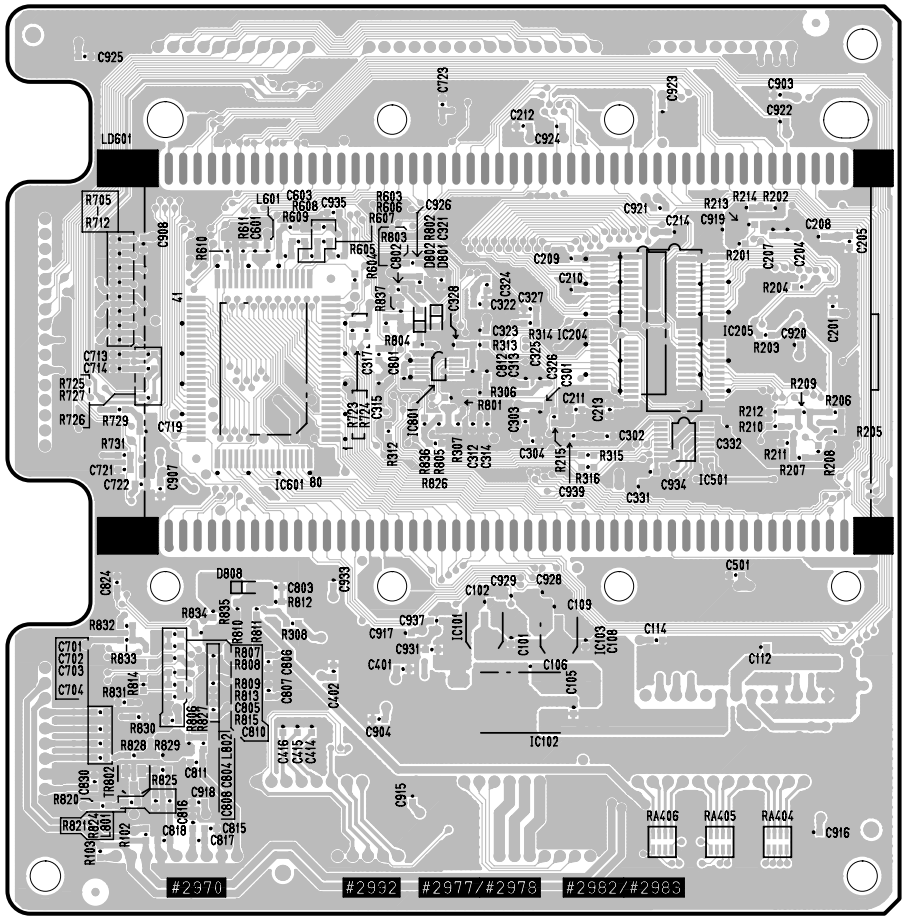
Note: See parts list for details of circuit board component parts.

● DMLCD Circuit Board



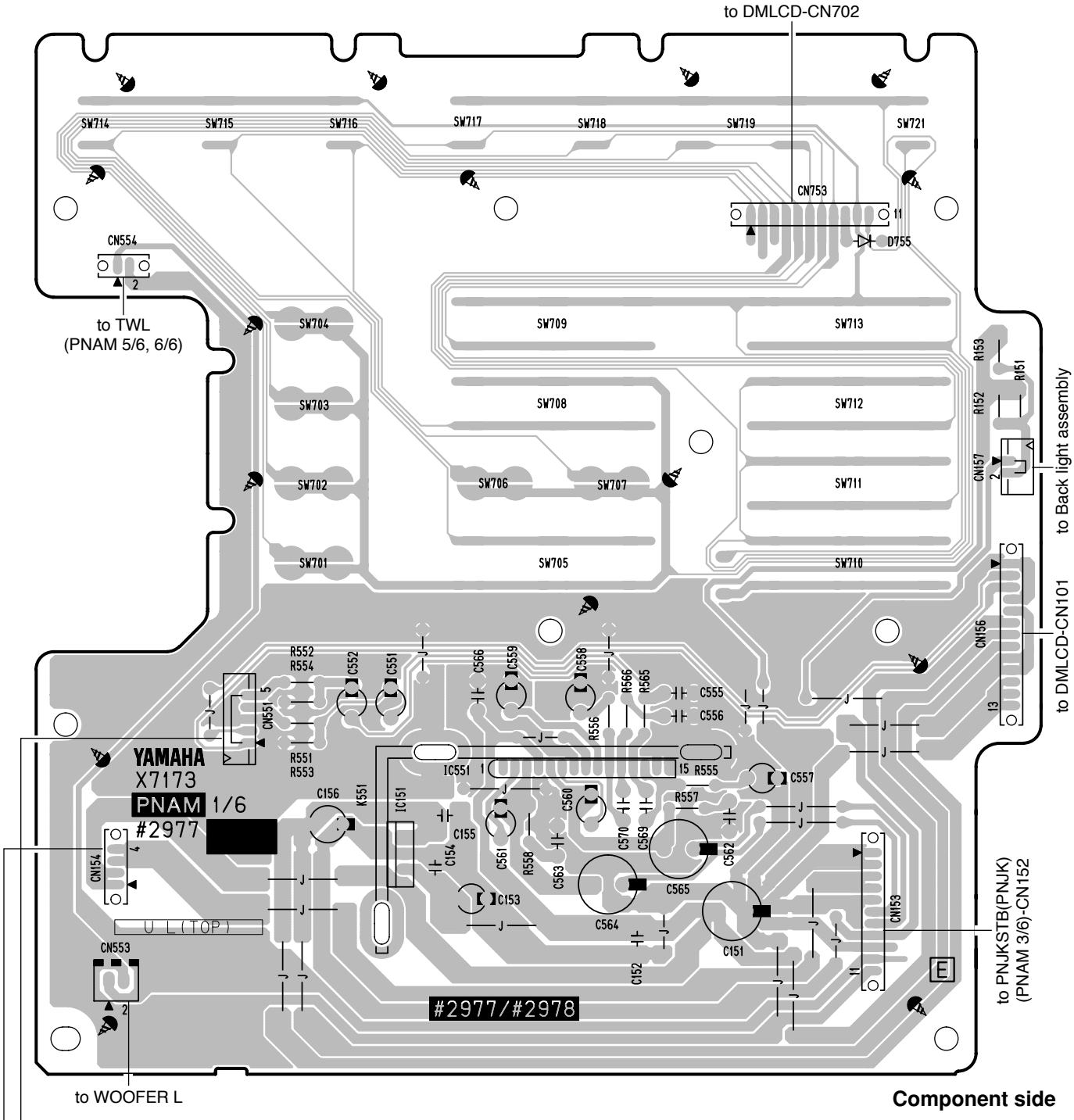
2NA-WG23540 ⚠

● DMLCD Circuit Board

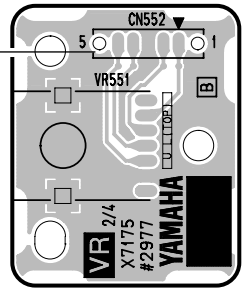


Pattern side

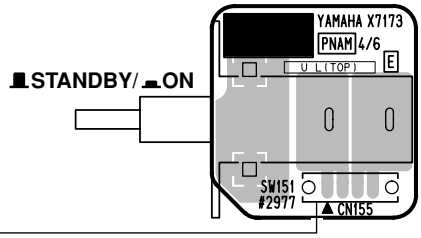
● PNJKSTB(PNJK) (PNAM 1/6) Circuit Board



● MVR (VR 2/4) Circuit Board

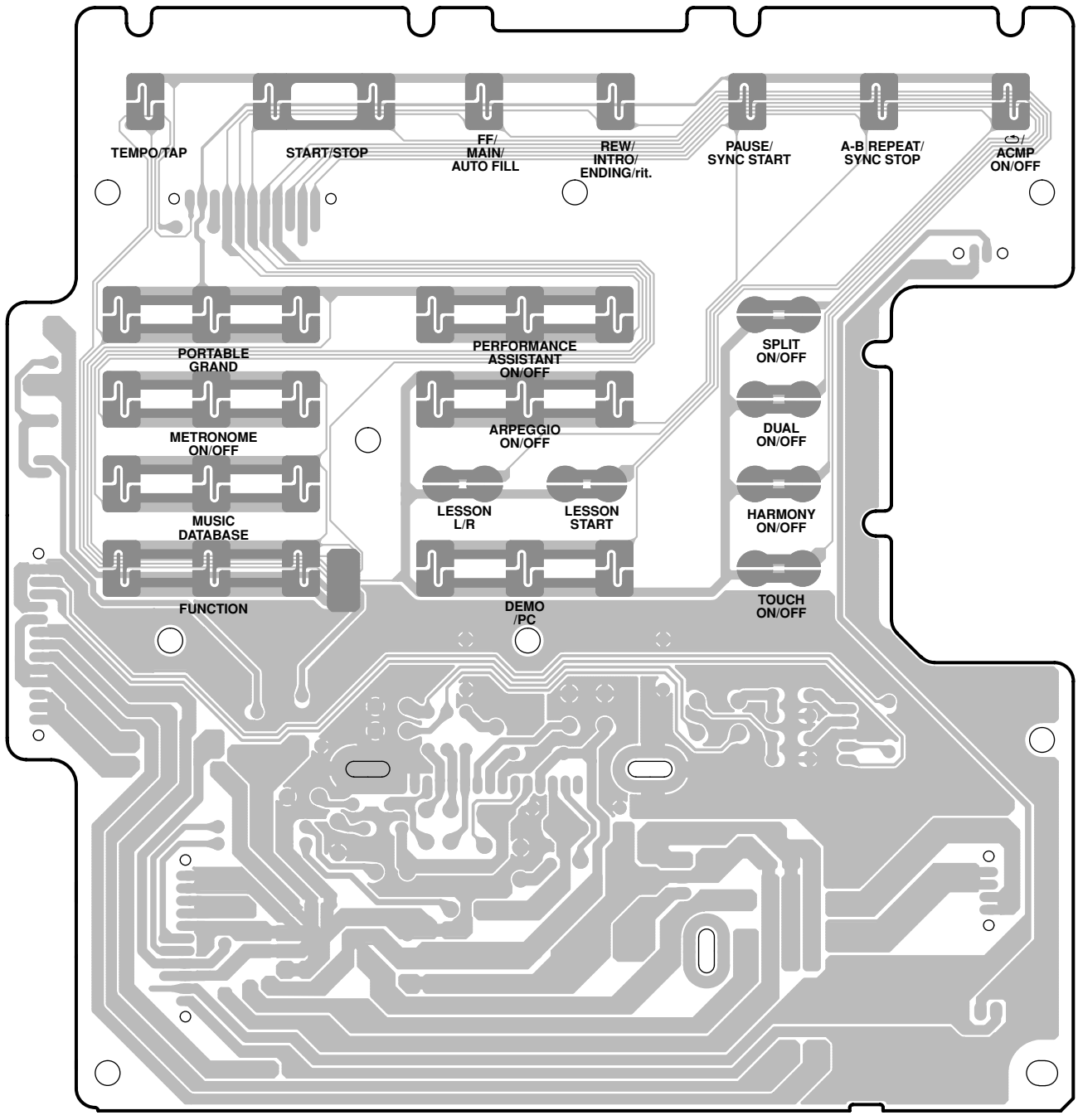


● PNJKSTB(STB) (PNAM 4/6) Circuit Board



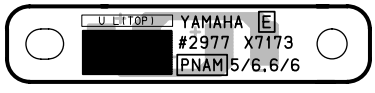
PNJKSTB(PNJK), PNJKSTB(STB): 2NA-WG23530 ⚠3
MVR: 2NA-WG23570

● PNJKSTB(PNJK) (PNAM 1/6) Circuit Board



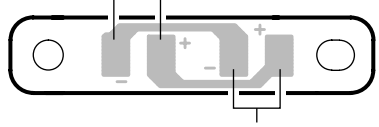
Pattern side

● TWL (PNAM 5/6, 6/6) Circuit Board
● TWR (PNAM 5/6, 6/6) Circuit Board



Component side

TWL: to PNJKSTB(PNJK) (PNAM 1/6)-CN554
TWR: to PNJKSTB(PNJK) (PNAM 3/6)-CN555

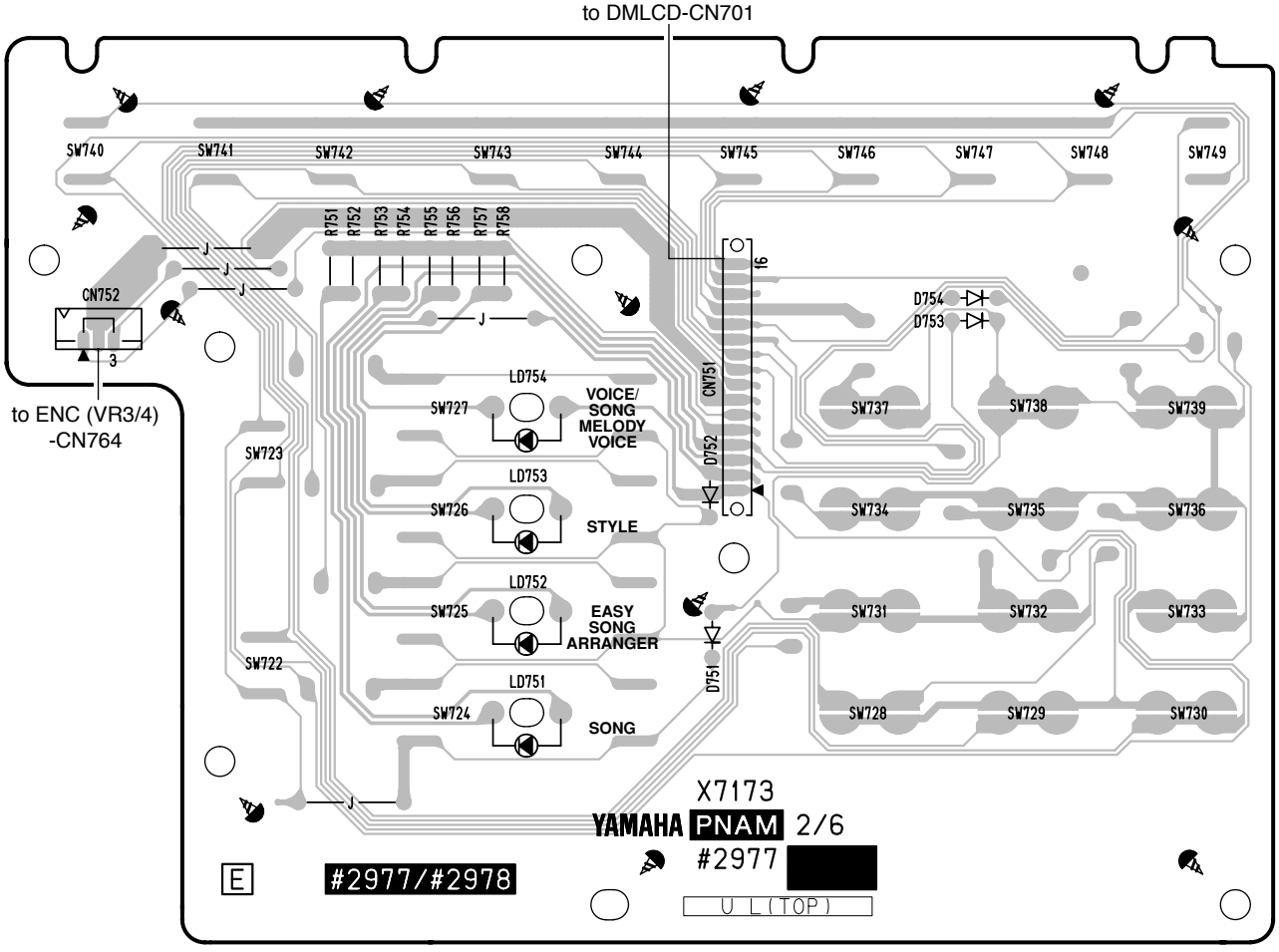


TWL: to TWEETER L
TWR: to TWEETER R

Pattern side

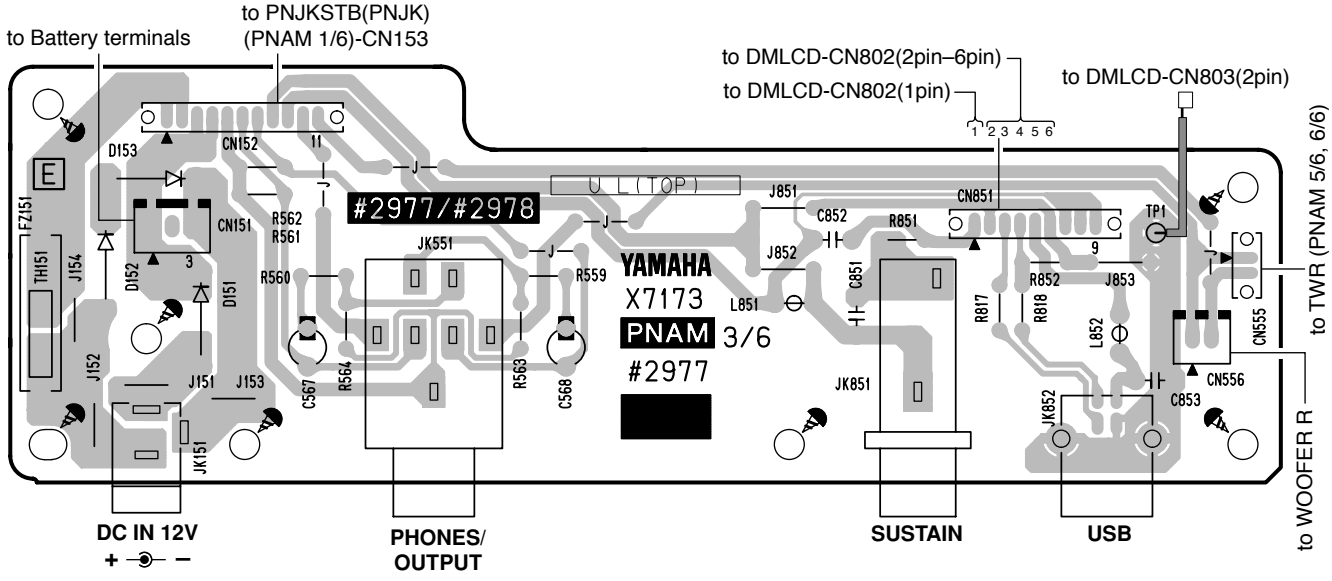
PNJKSTB(PNJK), PNJKSTB(STB): 2NA-WG23530 ⚠3
TWL, TWR: 2NA-WG23530 ⚠3

● PNR (PNAM 2/6) Circuit Board



Component side

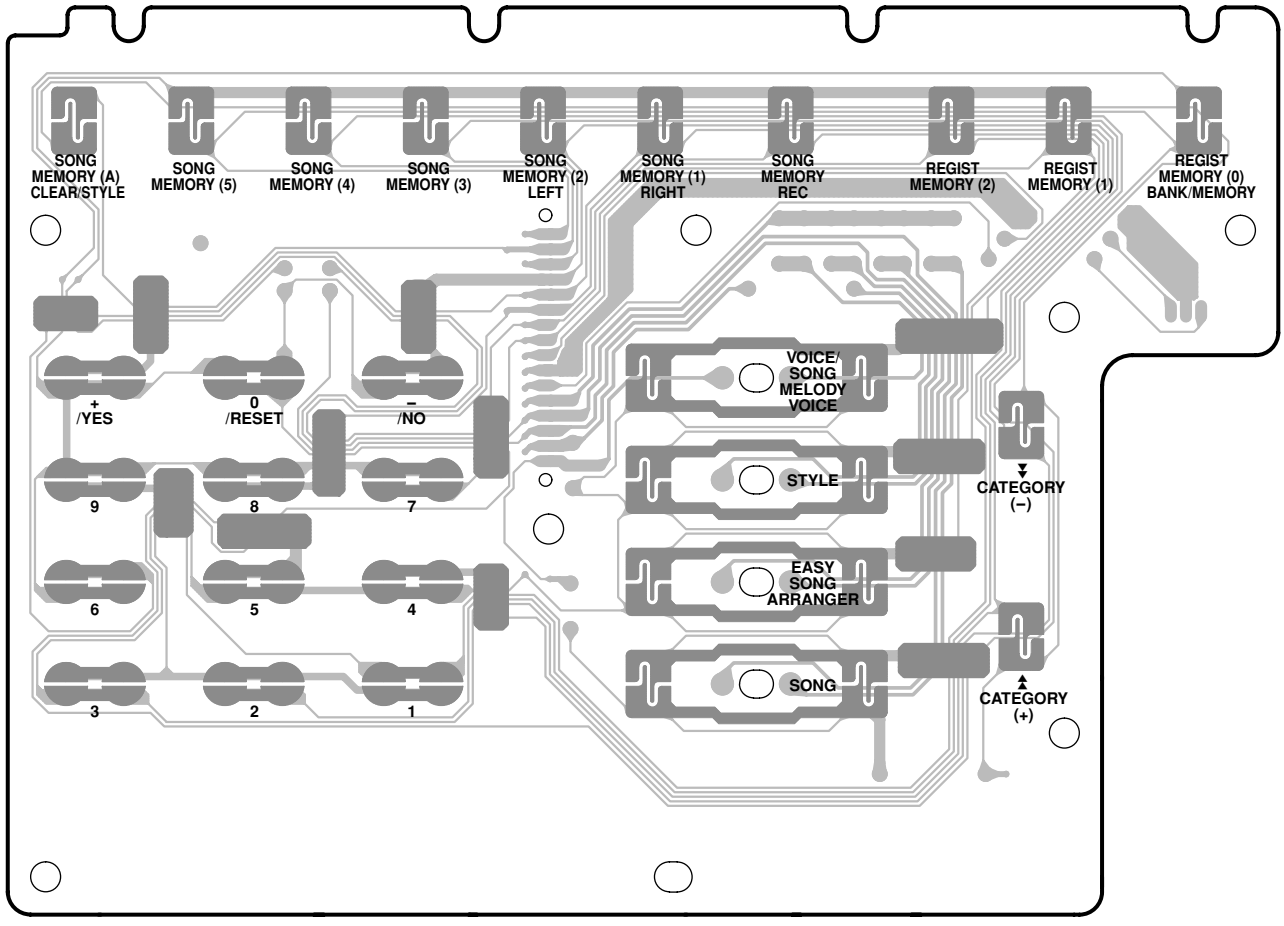
● PNJKSTB(PNJK) (PNAM 3/6) Circuit Board



Component side

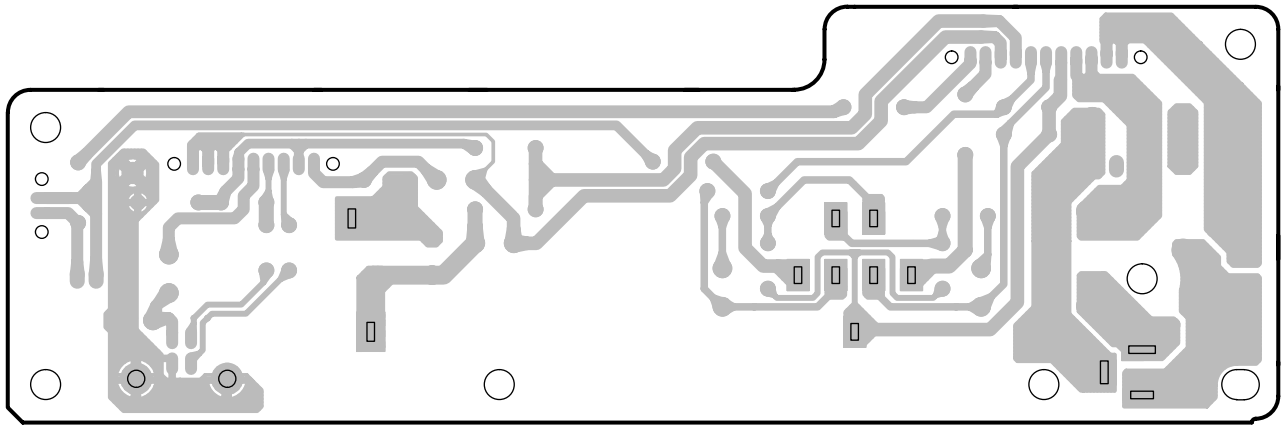
PNR: 2NA-WG23530 ⚠3
PNJKSTB(PNJK): 2NA-WG23530 ⚠3

● PNR (PNAM 2/6) Circuit Board



Pattern side

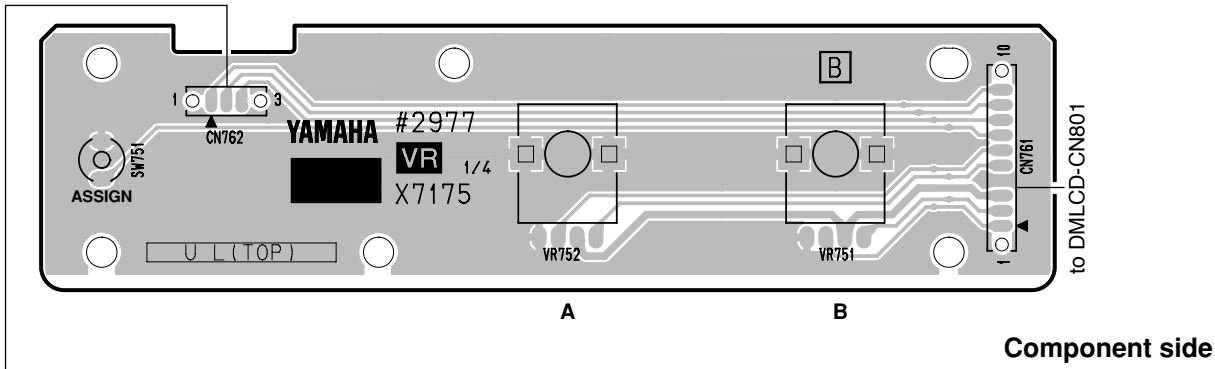
● PNJKSTB(PNJK) (PNAM 3/6) Circuit Board



Pattern side

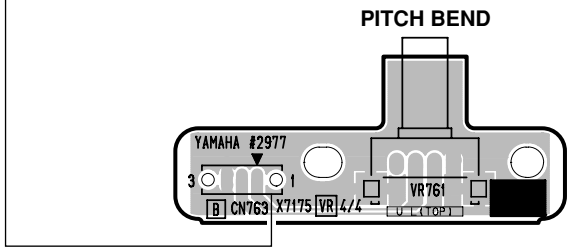
PNR: 2NA-WG23530 ⚠3
PNJKSTB(PNJK): 2NA-WG23530 ⚠3

● PNPB (VR 1/4) Circuit Board



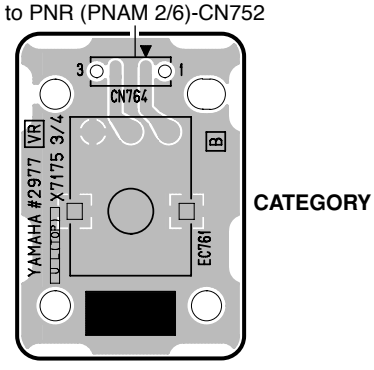
Component side

● PNPB (VR 4/4) Circuit Board



Component side

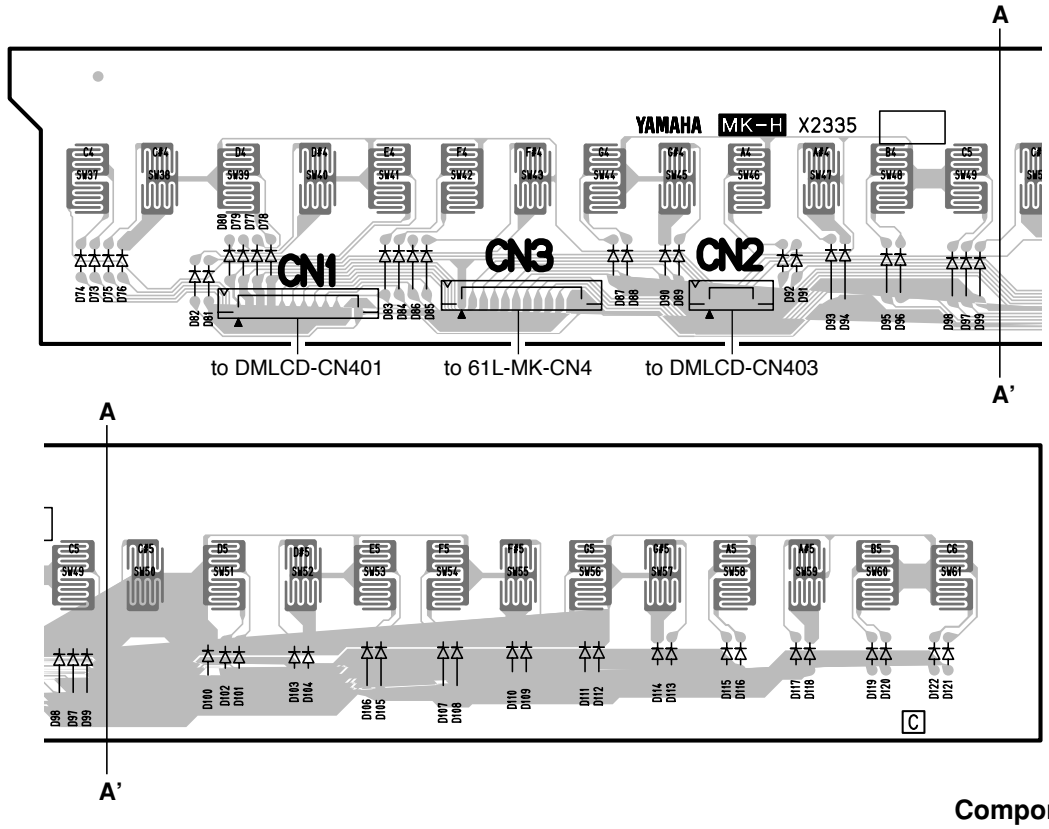
● ENC (VR 3/4) Circuit Board



Component side

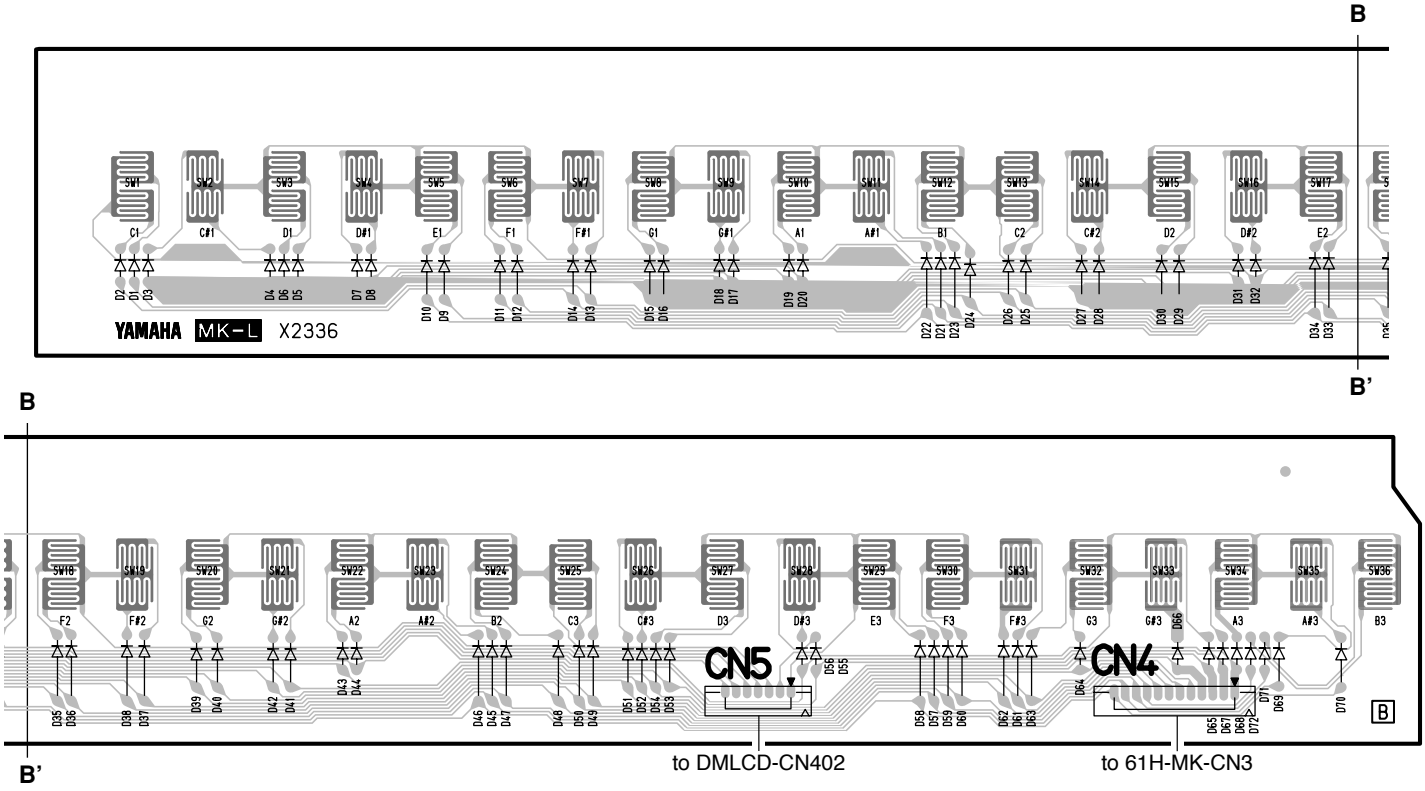
PNPB: 2NA-WG23570
ENC: 2NA-WG23570

● 61H-MK Circuit Board



Component side

● 61L-MK Circuit Board



Component side

61H-MK: 2NAKB-V869540
61L-MK: 2NAKB-V869520

TEST PROGRAM

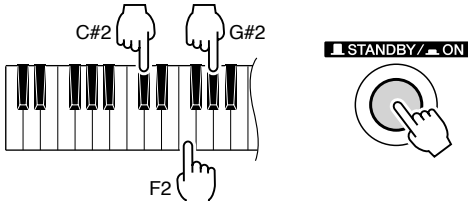
*** If the test number 47 "Factory Set" is executed, the data already set will be lost.**

1 Preparations

1) Use an AC adaptor PA-3C.
2) Measuring device: Frequency counter, which can detect thousandth value or more, Level meter (with JIS-C filter), Oscilloscope
   Note: Use a stereo plug and connect a load resistor of 33 Ω to the [PHONES/OUTPUT] jack for measurement unless otherwise specified. Input impedance of the measuring device should be 1 MΩ or more.
3) Jig: Foot switch (FC-4 or FC-5), USB cable

2 Starting up the Test Program

While holding down the keys [C#2], [F2] and [G#2] simultaneously, press the [STANDBY / ON] switch.



3 Test procedure

1) When the test program is started, "**TEST**" will be displayed on the LCD.
2) Press the [–] or [+] button of the number buttons to select a test program item.
3) Press the [START/STOP] button to execute the test.

If the result is OK or test item is completed, press the [START/STOP] button again to return to the item selection display.
Press the [–] or [+] button of the number buttons to select the next test item.
A cursor ("_") is shown below the first character of the item for which the test results are OK.

If the result is NG, press the lowest key (white key C1) to return to the item selection display.

4 Test Program List

(dBu=dBm)

TEST No	LCD display	Test descriptions, judging conditions, etc.
1	**Version** **001**	Displays version of the ROM. "**Prog** ∗∗∗" and "**USB** ∗∗∗" are displayed on the LCD alternately. ∗∗∗ : Version
2	**Rom Chk1** **002**	Checks the ROM connected to the CPU bus. Make sure that "**Rom OK**" is displayed on the LCD.
3	**Ram Chk1** **003**	Checks the RAM connected to the CPU bus. Make sure that "**Ram OK**" is displayed on the LCD.
6	**FRomChk1** **006**	Checks the FROM connected to the CPU bus. Make sure that "**FRom OK**" is displayed on the LCD.
11	**TG1 Chk** **011**	Plays each key automatically in the order of scale (auto-scaling). (32 notes from C2 to G4 will be played.) Make sure that there is no abnormal sounds or noise. When the auto-scaling is finished, "**TG1 End**" will be shown. Press a key to play a sound. (Single note, the key pressed first will be played)
13	**Pit Chk** **013**	Checks pitch accuracy. Connect the frequency counter to the [PHONES/OUTPUT] jack. (Either L or R) Make sure that the correct signal is output. (440.14 Hz ± 0.22 Hz)
14	**Output R** **014**	Connect the level meter (with JIS-C filter) to the L/R of the [PHONES/OUTPUT] jack. (33 Ω load) Set the [MASTER VOLUME] to the maximum level and check the output level. · PHONES L: –55.0 dBu or less · PHONES R: –5.0 dBu ± 2 dB
15	**Output L** **015**	Connect the level meter (with JIS-C filter) to the L/R of the [PHONES/OUTPUT] jack. (33 Ω load) Set the [MASTER VOLUME] to the maximum level and check the output level. · PHONES L: –5.0 dBu ± 2 dB · PHONES R: –55.0 dBu or less

20	**SW Chk** **020**	Checks the switches and LEDs on the panel. Press the switches as shown in the LCD. When a switch is pressed, a sound is played at the prescribed pitch. (Refer to the Switch Test Item List on the next page.) When a switch with LED is turned on, the LED will light up. Make sure that "**SW OK**" is displayed on the LCD when all the switches are pressed as indicated. For the Dial item, make sure that "**Up**" is indicated when the encoder knob is turned clockwise, and "**Dwn**" when turned counterclockwise. For the Knob item, make sure that "**Lo**" is indicated when the rotary knob is turned fully counterclockwise, "**Hi**" when turned fully clockwise, and "**C**" when set to the center. To cancel the operation halfway, press the lowest key (white key C1) to return to the item selection display.
21	**A. LedChk** **021**	Make sure that all the LEDs on the panel are turned on.
28	**LCD On** **028**	Make sure that all the dots on the LCD are turned on.
29	**LCD Off** **029**	Make sure that all the dots on the LCD are turned off.
31	**PD1 Chk** **031**	Connect a footswitch (FC-4 or FC-5) to the [SUSTAIN] jack. Press the [START/STOP] button to start the test and check that C3 is played when the pedal is de-pressed (ON), and C4 is played when the pedal is released (OFF). Make sure that"**PD1 OK**" is displayed on the LCD.
33	**PB Chk** **033**	C3 is played when the [PITCH BEND] wheel is turned toward you to the minimum position (DW), and C4 is played when the wheel is turned away from you to the maximum position (UP). Make sure that "**PB OK**" is displayed on the LCD.
37	**MIDI Chk** **037**	Connect a PC which has installed the driver and main unit [USB] terminal with a USB cable. Set the through mode on PC and execute the test. Confirm that the C4 note is output and "**MIDI OK**" is displayed on the LCD.
41	**Rom Chk2** **041**	Checks the ROM connected to the CPU bus. Make sure that "**Rom OK**" is displayed on the LCD. It will take about 15 seconds for the check.
42	**Ram Chk2** **042**	Checks the RAM connected to the CPU bus. Make sure that "**Ram OK**" is displayed on the LCD.
45	**FRomChk2** **045**	Checks the FROM connected to the CPU bus. Make sure that "**FRom OK**" is displayed on the LCD. It will take about 30 seconds for the check.
47	**Factory** **047**	Initializes the entire backup area to reset to the factory default. "**Fact**" is displayed on the LCD during the test. "**Fact End**" is displayed on the LCD when the test is finished.
48	**TestExit** **048**	This will leave the test program and change to the play mode.

• Other Tests

Popping Noise Check

Connect the oscilloscope to the L/R of the [PHONES/OUTPUT] jack and turn on and then off the [STANDBY/ON] switch. Make sure that popping noise level is 1.0 Vp-p or less, and that no abnormal sound or popping noise is output from the speakers.

Noise Level Check

Connect the level meter (with JIS-C filter) to the L/R of the [PHONES/OUTPUT] jack. (33 Ω load)
Set the [MASTER VOLUME] to the maximum level and check the noise level.
· PHONES L, R: –78 dBu or less

Switch test item list

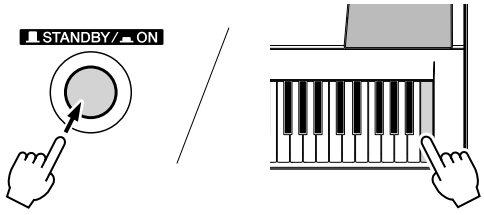
Turn	SW Name	LCD Display	Note Number
1	Encoder Knob	Dial Up	C2
2	Encoder Knob	Dial Dwn	C#2
3	TOUCH	Touch	D2
4	HARMONY	Harmony	D#2
5	DUAL	Dual	E2
6	SPLIT	Split	F2
7	DEMO/PC	Demo	F#2
8	LESSON SRTAT	LessonSt	G2
9	LESSON L/R	L/R	G#2
10	ARPEGGIO	Arpeggio	A2
11	PERFORMANCE ASSISTANT	P.A.T.	A#2
12	FUNCTION	Function	B2
13	MUSIC DATA BASE	M.D.B.	C3
14	METRONOME	Metro	C#3
15	PORTABLE GRAND	Piano	D3
16	CATEGORY ▲	Catego +	D#3
17	CATEGORY ▼	Catego –	E3
18	SONG	Song	F3
19	EASY SONG ARRANGER	E.S.A.	F#3
20	STYLE	Style	G3
21	VOICE	Voice	G#3
22	TENKEY 1	Tenkey 1	A3
23	TENKEY 2	Tenkey 2	A#3
24	TENKEY 3	Tenkey 3	B3
25	TENKEY 4	Tenkey 4	C4
26	TENKEY 5	Tenkey 5	C#4
27	TENKEY 6	Tenkey 6	D4
28	TENKEY 7	Tenkey 7	D#4
29	TENKEY 8	Tenkey 8	E4
30	TENKEY 9	Tenkey 9	F4
31	TENKEY –	Tenkey –	F#4
32	TENKEY 0	Tenkey 0	G4
33	TENKEY +	Tenkey +	G#4
34	ASSIGN	Assign	A4
35	ACMP	ACMP	A#4
36	SYNC STOP	S. Stop	B4
37	SYNC START	S. Start	C5
38	INTRO/ENDING/rit.	Intro	C#5
39	MAIN/AUTO FILL	Main/Fil	D5
40	START/SOTP	Str/Stp	D#5
41	TEMPO/TAP	Temp/TAP	E5
42	BANK/MEMORY	Memory	F5
43	REGIST MEMORY 1	Regist 1	F#5
44	REGIST MEMORY 2	Regist 2	G5
45	SONG MEMORY REC	Song REC	G#5
46	SONG MEMORY (1) RIGHT	Song 1	A5
47	SONG MEMORY (2) LEFT	Song 2	A#5
48	SONG MEMORY (3)	Song 3	B5
49	SONG MEMORY (4)	Song 4	C6
50	SONG MEMORY (5)	Song 5	C#6
51	SONG MEMORY (A) CLEAR/STYLE	Song A	D6
52	Rotary Knob A	Knob1 Lo	D#6
53	Rotary Knob A	Knob1 Hi	
54	Rotary Knob A	Knob1 C	
55	Rotary Knob B	Knob2 Lo	E6
56	Rotary Knob B	Knob2 Hi	
57	Rotary Knob B	Knob2 C	

INITIALIZATION

This function erases all backup data in the instrument's flash memory and restores the initial default settings. The following initialization procedures are provided.

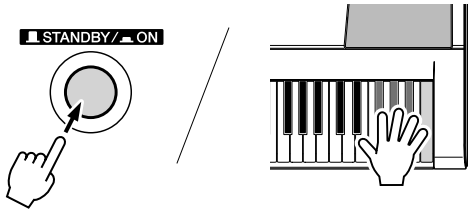
Backup Clear

To clear data backed up to the internal flash memory (DMLCD circuit board: IC206) – panel user setting, registration memory, user songs, style file 156 – turn the power on by pressing the [STANDBY/ON] switch while holding the highest white key on the keyboard. The backed up data will be erased and the default values restored.



Flash Clear

To clear song data and style files that have been transferred to the internal flash memory (DMLCD circuit board: IC206) from a computer, turn the power on by pressing the [STANDBY/ON] switch while simultaneously holding the highest white key on the keyboard and the three highest black keys.





• When you execute the Flash Clear operation, song data you have purchased will also be cleared. Be sure to save data you want to keep to a computer.

USER DATA BACKUP

To backup user data to external devices, use the "Musicsoft Downloader (bundled software)".
You can use the Musicsoft Downloader to transfer "Backup Files" including the five User Songs stored on the instrument, to a computer.

List of data that can be backed up

- User Songs
- Style Files
- Touch Response on/off
- Registration Memory
- FUNCTION Settings: Tuning, Split Point, Touch Sensitivity, Style Volume, Song Volume, Metronome Volume, Grade, Demo Cancel, Master EQ type, Arpeggio Velocity

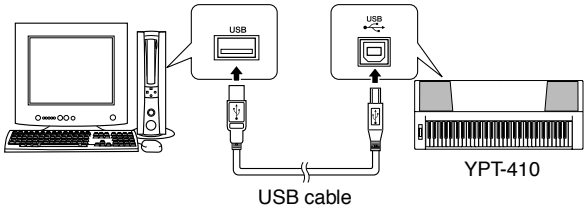
PREPARATION

PC (Personal Computer)
USB Cable (A - B Type)
MIDI-USB Driver *1
Musicsoft Downloader (MSD) *1

*1: Obtain these programs from CD-ROM (X9318A00) of the attachment for YPT-410 or Yamaha official website.

(URL>> http://www.yamahapkclub.com)

Install these software in PC beforehand.



BACKUP PROCEDURE

1. Turn off the power of YPT-410.
2. End all the application software.
3. Connect the YPT-410 to the PC with a USB cable.
4. Turn on the power of YPT-410.
5. Click the Control Panel on PC.
6. Click "USB-MIDI Driver" on the Control Panel to open the dialog box.
7. Remove the check from the check box next the word "Thru ON/OFF" in the dialog box.
8. Start up the Musicsoft Downloader.
9. If you click "Electronic Musical Instruments" in the Musicsoft Downloader display, and then "System Drive", a file named "06PK61.BUP" will appear in the lower right corner of the Musicsoft Downloader display.
   This is the backup file. For details about how to transmit backup file using the Musicsoft Downloader application, refer to the Online help in the application.

NOTE: Preset Song data cannot be transmitted from the instrument.

- We recommend that you use a power adaptor rather than batteries when transferring data. The data can be corrupted if the batteries fail during the transfer.
- Do not rename the backup file on the computer. If you do so, it will not be recognized when transferred to the instrument.

■ MIDI IMPLEMENTATION CHART

YAMAHA [Digital Keyboard] Date:23-JUL-2007
Model YPT-410 MIDI Implementation Chart Version : 1.0

Function...		Transmitted	Recognized	Remarks
Basic	Default	1 - 16	1 - 16	
Channel	Changed	x	x	
	Default	3	3	
Mode	Messages	x	x	
	Altered	**********	x	
Note		0 - 127	0 - 127	
Number :	True voice	**********	0 - 127	
Velocity	Note ON	o 9nH,v=1-127	o 9nH,v=1-127	
	Note OFF	x 9nH,v=0	x	
After	Key's	x	x	
Touch	Ch's	x	x	
Pitch Bend		o 0-24 semi	o 0-24 semi	
	0,32	o	o	Bank Select
	1,11,84	x *1	o	
	6,38	o	o	Data Entry
	7,10	o	o	
Control	64	o	o	Sustain
	71-74	o	o	Sound Controller
Change	91,93	o	o	Effect Depth
	96-97	x *1	o	RPN Inc,Dec
	100-101	o	o	RPN LSB,MSB
Prog		o 0 - 127	o 0 - 127	
Change :	True #	**********		
System Exclusive		o	o	
:	Song Pos.	x	x	
Common :	Song Sel.	x	x	
:	Tune	x	x	
System :	Clock	o	o	
Real Time:	Commands	o	o	
Aux :All Sound OFF		x	o(120,126,127)	
:Reset All Cntrls		x	o(121)	
:Local ON/OFF		x	o(122)	
:All Notes OFF		x	o(123-125)	
Mes- :Active Sense		o	o	
sages:Reset		x	x	

*1 Messages for these control change numbers cannot be transmitted from the instrument itself. However, they may be transmitted when playing the accompaniment, song or using the Harmony effect.

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO x : No

■ MIDI DATA FORMAT

■ Effect map

* When a Type LSB value is received that corresponds to no effect type, a value corresponding to the effect type (coming the closest to the specified value) is automatically set.
* The numbers in parentheses in front of the Effect Type names correspond to the number indicated in the display.

●REVERB

TYPE MSB	TYPE LSB								
	00	01	02	08	16	17	18	19	20
000	No Effect								
001	(01)Hall1				(02)Hall2	(03)Hall3			
002	Room					(04)Room1		(05)Room2	
003	Stage				(06)Stage1	(07)Stage2			
004	Plate				(08)Plate1	(09)Plate2			
005...127	No Effect								

●CHORUS

TYPE MSB	TYPE LSB								
	00	01	02	08	16	17	18	19	20
000...063	No Effect								
064	Thru								
065	Chorus		(02)Chorus2						
066	Celeste					(01)Chorus1			
067	Flanger			(03)Flanger1		(04)Flanger2			
068...127	No Effect								

DIGITAL KEYBOARD

YPT-410

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY 2
LOWER CASE ASSEMBLY.....5
KEYBOARD ASSEMBLY.....7
ELECTRICAL PARTS..... 8-14

Notes : DESTINATION ABBREVIATIONS

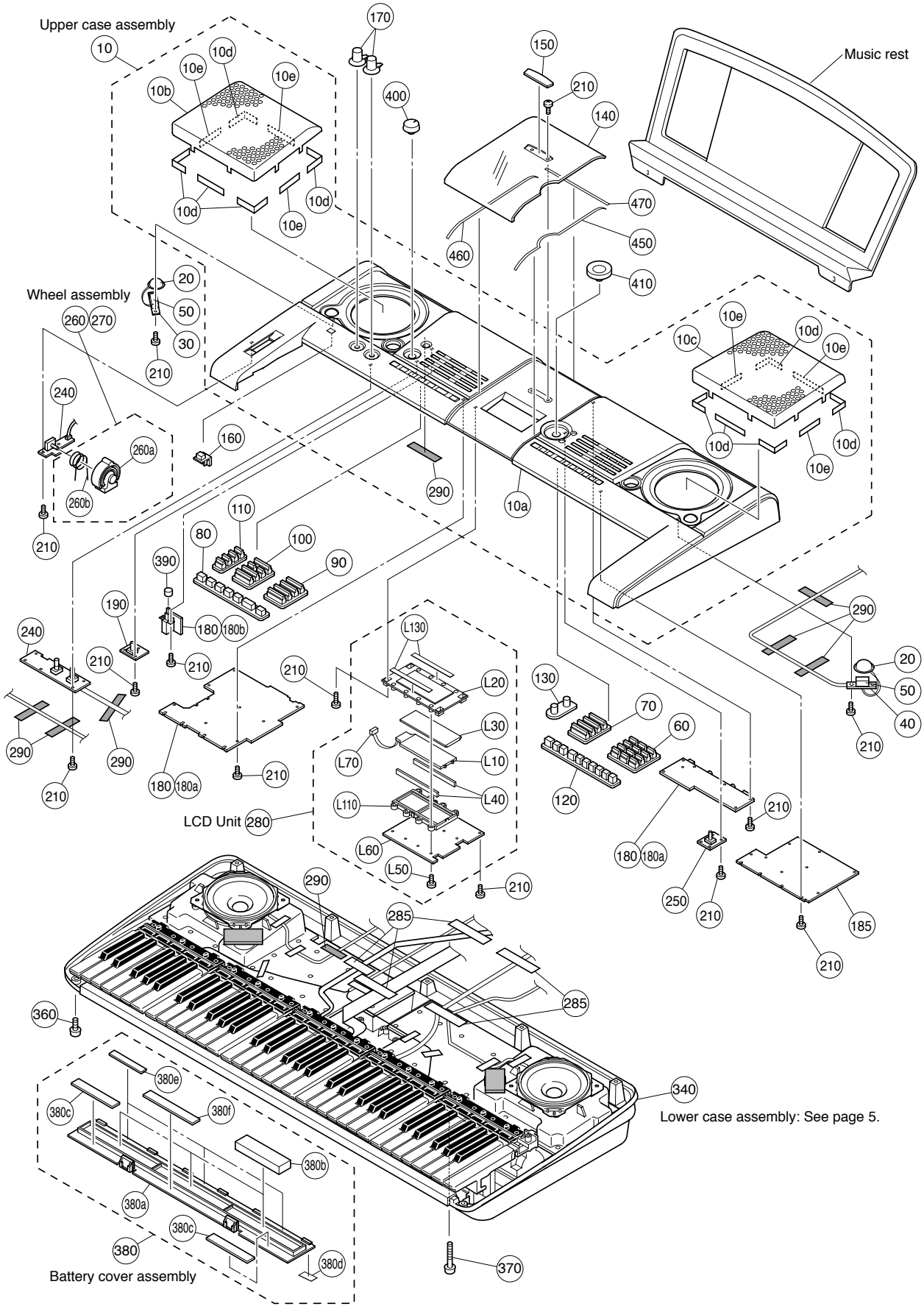
A : Australian model	M : South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220V)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

■ WARNING

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

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

OVERALL ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
		OVERALL ASSEMBLY		総組立	YPT-410		
	--	OVERALL ASSEMBLY		総組立	(WM24960)		
10	--	UPER CASE ASSEMBLY		上ケースAss'y	(WM25470)		
* 10a	**WM255500**	UPPER CASE		上ケース塗装印刷品			
10b	**WJ784200**	SPEAKER GRILLE L LEFT	LEFT	SPグリル塗装品L			05
10c	**WJ784300**	SPEAKER GRILLE R RIGHT	RIGHT	SPグリル塗装品R			05
10d	--	NONWOVEN FABRIC CLOTH	72X6X0.35	不織布SP-GRIL	(WD98240)	10	
10e	--	NONWOVEN FABRIC CLOTH	60X6X0.35	不織布SP-GRIL	(WD98250)	6	
20	**X0159A0R**	SPEAKER	3.0cm	スピーカ	TWEETER	2	01
30	**WG306000**	CIRCUIT BOARD	TWL (PNAM 5/6,6/6)	TWLシート			02
40	**WG306100**	CIRCUIT BOARD	TWR (PNAM 5/6,6/6)	TWRシート			02
50	**V3645500**	SPONGE	20X10X10	スポンジ		2	01
60	**WC34150R**	PANEL SWITCH MILK WHITE	x12	PNスイッチ	1,2,3,4,5,6,7,8,9,0,-/NO,+/YES		03
70	**WC34160R**	PANEL SWITCH MILK WHITE	x4	PNスイッチ	SONG,EASY SONG ARRANGER, STYLE,VOICE		03
80	**WG410900**	PANEL SWITCH BLACK	x7	PNスイッチ	⟲,A-B REPEAT,PAUSE,REW, FF,START/STOP,TEMPO/TAP		03
90	**WC34180R**	PANEL SWITCH MILK WHITE	x4	PNスイッチ	FUNCTION,MUSIC DATABASE, METRONOME ON/OFF, PORTABLE GRAND		03
100	**WC34190R**	PANEL SWITCH MILK WHITE	x5	PNスイッチ	DEMO PC,LESSON START, LESSON L/R,ARPEGGIO ON/OFF,PERFORMANCE ASSISTANT ON/OFF		03
110	**WC34200R**	PANEL SWITCH MILK WHITE	x4	PNスイッチ	TOUCH ON/OFF,HARMONY ON/OFF,DUAL ON/OFF, SPLIT ON/OFF		03
120	**WG411000**	PANEL SWITCH BLACK	x10	PNスイッチ	REGIST MEMORY,SONG MEMORY		03
130	**WG411100**	PANEL SWITCH BLACK	x2	PNスイッチ印刷品	CATEGORY ▲,▼		01
140	**WC58370R**	LCD PANEL		LCDパネル印刷品			04
150	**V766060R**	EMBLEM	YAMAHA	エンブレム			
160	**WG290800**	PANEL SWITCH BLACK	x1	PNスイッチ	ASSIGN		01
170	**V560380R**	ROTARY KNOB BLACK		ロータリーノブ	A,B	2	
180	**AAX75440**	CIRCUIT BOARD	PNJKSTB	PNJKSTBシート			
180a	--	CIRCUIT BOARD	PNJK (PNAM 1/6,3/6)	PNJKシート	(WG30570)		
180b	--	CIRCUIT BOARD	STB (PNAM 4/6)	STBシート	(WG30590)		
185	**WG305800**	CIRCUIT BOARD	PNR (PNAM 2/6)	PNRシート			07
190	**WG306800**	CIRCUIT BOARD	MVR (VR 2/4)	MVRシート			06
210	**WE774300**	BIND HEAD B-TIGHT SCREW	3.0X8 MFZN2W3	Bタイト十BIND		63	01
240	**WG306600**	CIRCUIT BOARD	PNPB (VR 1/4,4/4)	PNPBシート			08
250	**WG306700**	CIRCUIT BOARD	ENC (VR 3/4)	ENCシート			06
260	**VY79310R**	WHEEL ASSEMBLY		ホイールAss'y	PITCH BEND		04
260a	**VY75080R**	WHEEL		ホイール			03
260b	**VT44010R**	SPRING		ホイールバネ			03
270	**TX920280**	GREASE PK	G-31KA 50g	グリス	(VE96850)		10
280	--	LCD UNIT-07C		液晶ユニット-07C	(WM26180)		
285	--	ADHESIVE TAPE	12X90	粘着テープ	(V591240)	5	
290	**VA126101**	FILAMENT TAPE	12X50	粘着テープ		8	01
340	--	LOWER CASE ASSEMBLY		下ケースAss'y	(WG25360)		
360	**WE98740R**	BIND HEAD TAPPING SCREW	3.0X12 MFZN2W3	Bタイト十BIND		9	01
370	**WF49100R**	BIND HEAD TAPPING SCREW-B	3.0X30 MFZN2W3	Bタイト十BIND		3	01
380	**V925970R**	BATTERY COVER ASSEMBLY		バッテリーカバーAss'y			03
380a	--	BATTERY COVER		バッテリーカバー	(V704220)		
380b	--	BATTERY CUSHION WHITE		バッテリークッション	(V710060)	3	
380c	--	CUSHION(PE)	PE	クッション(PE)	(V796870)	2	
380d	--	NONWOVEN FABRIC CLOTH	15X3X0.5	不織布	(V925980)	6	
380e	--	CUSHION(PE)	PE 55X8X1	クッション(PE)	(WA10190)	3	
380f	--	CUSHION(PE)	PE 100X12X2	クッション(PE)	(WA21920)		
390	**V715120R**	PUSH KNOB BLACK		プッシュツマミクロ	■STANDBY/▂ON		01
400	**VU43240R**	KNOB,V BLACK		Vツマミ	MASTER VOLUME		01
410	**WG455700**	ENCODER KNOB BLACK		エンコーダツマミ	CATEGORY		01
450	--	DUST-PROOF CUSHION 1		防塵クッション1	(WC95140)		
460	--	DUST-PROOF CUSHION 2		防塵クッション2	(WC95150)		
470	--	DUST-PROOF CUSHION 3		防塵クッション3	(WC95130)		
	--	LCD UNIT-07C		液晶ユニット-07C	(WM26180)		
L10	**WB49110R**	BACK LIGHT ASSEMBLY	PT	バックライトAss'y			08
L20	**WC56820R**	LCD FRAME		LCDフレーム			01
L30	**WF817100**	LCD		液晶ディスプレイ			06
L40	**V783800R**	RUBBER CONNECTOR	ZTT-710	ゴムコネクター		2	03

*: New Parts

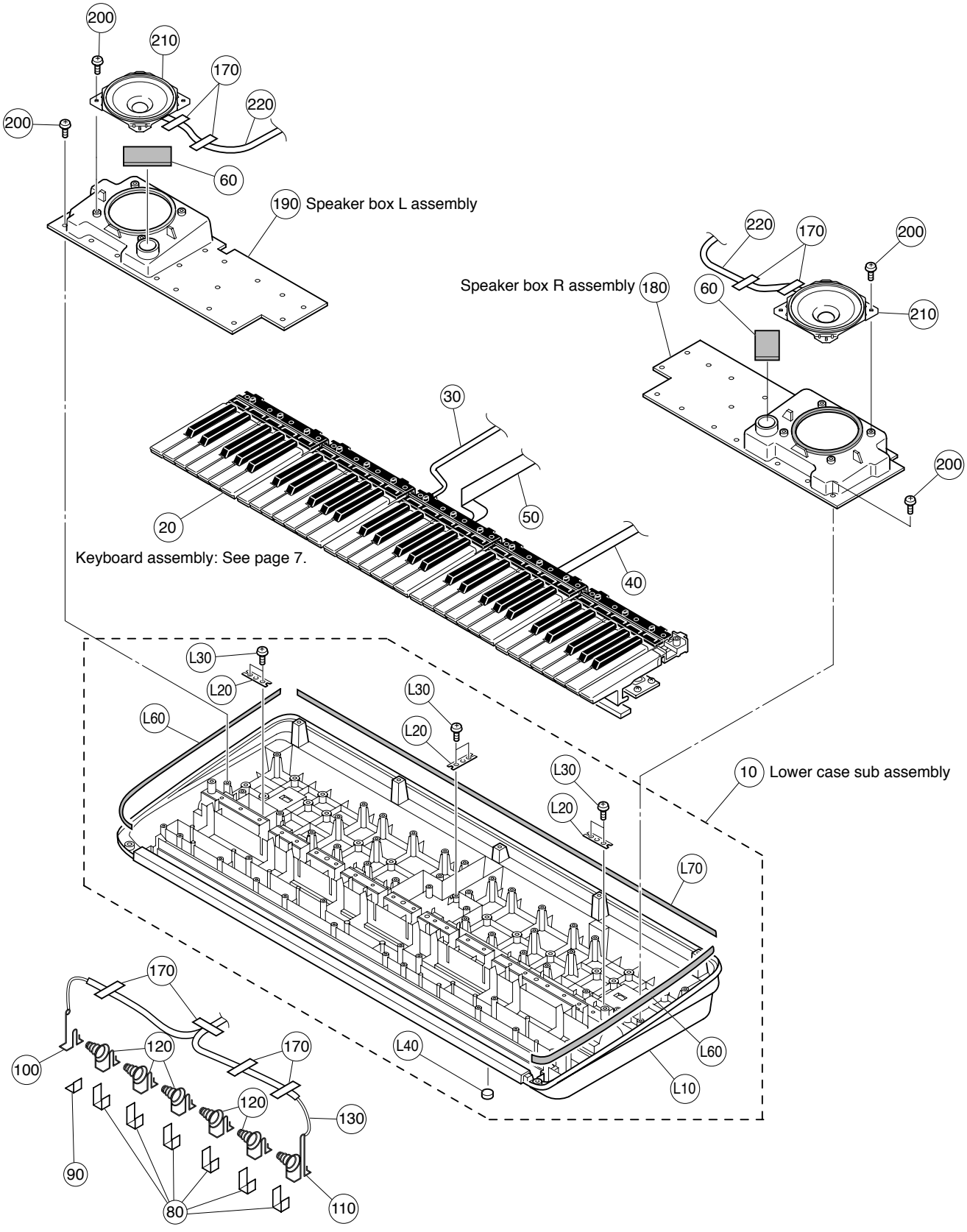
RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
	L50	**WE98740R**	BIND HEAD TAPPING SCREW	3.0X12 MFZN2W3	Bタイト十BIND		8	01
*	L60	**WM259900**	CIRCUIT BOARD	DMLCD	DMLCDシート			
	L70	**--**	CONNECTOR ASSEMBLY	BL 2P L=70	BL束線	(WC60260)		
	L110	**V867130R**	LCD HOLDER		LCDホルダー			01
	L130	**--**	NONWOVEN FABRIC CLOTH	5X8	不織布	(V706870)	2	
			ACCESSORIES		付属品			
		WG073800	MUSIC REST		譜面板			
		X9318A00	CD-ROM		CDーROM			

*: New Parts

RANK: Japan only

LOWER CASE ASSEMBLY

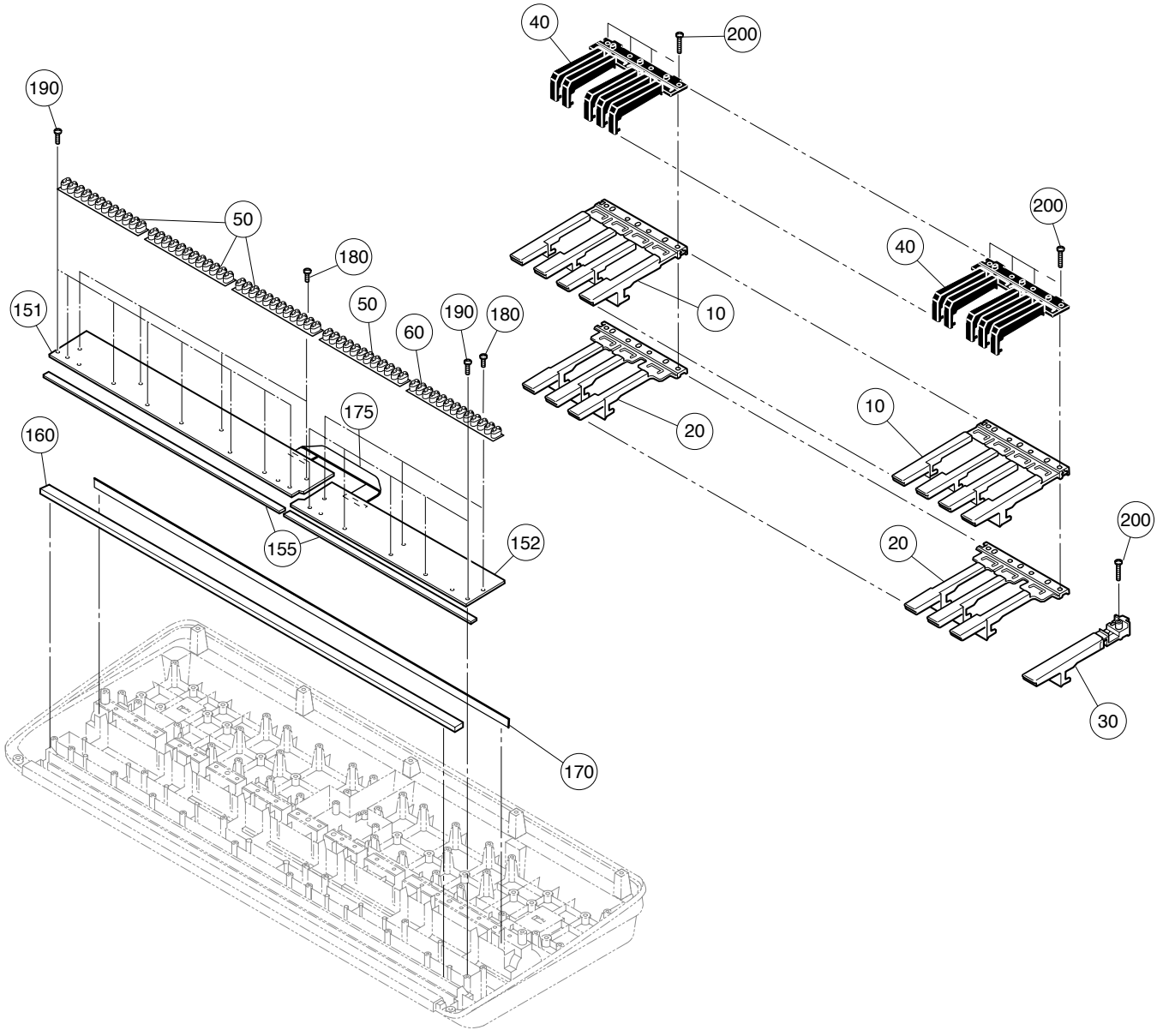


REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
		LOWER CASE ASSEMBLY		下ケースAss'y	YPT-410		
	--	LOWER CASE ASSEMBLY		下ケースAss'y	(WG25360)		
10	**WG074000**	LOWER CASE SUB ASSEMBLY		下ケースサブAss'y			10
20	**V869570R**	KEYBOARD ASSEMBLY	16N C61	16N-C61鍵盤			16
30	**WC60120R**	CONNECTOR ASSEMBLY	MK3 7P L=550	MK3束線			
40	**WG343000**	CONNECTOR ASSEMBLY	MK2 5P L=500	MK2束線			
50	**WC60100R**	CONNECTOR ASSEMBLY	MK1 12P L=600	MK1束線			
60	--	FILTER	GRAY	フィルター	(WC62030)	2	
80	--	NONWOVEN FABRIC CLOTH	40X13X0.5	不織布	(V771130)	6	
90	--	NONWOVEN FABRIC CLOTH	13X13X0.5	不織布	(V771140)		
100	**V706050R**	SPRING TERMINAL	(+)	接点バネ(十)			01
110	**V706070R**	SPRING TERMINAL	(-)	接点バネ(一)			01
120	**V706020R**	SPRING TERMINAL	(-/+)	接点バネ		5	01
130	--	CONNECTOR ASSEMBLY	BAT 2P/XH 3P (RED/BLACK)	BAT束線	(V873560)		
170	**VA126101**	FILAMENT TAPE	12X50	粘着テープ		8	01
180	**V874950R**	SPEAKER BOX R ASSEMBLY	RIGHT	SPボックスRAss'y			05
190	**V874940R**	SPEAKER BOX L ASSEMBLY	LEFT	SPボックスLAss'y			05
200	**WE97450R**	BIND HEAD TAPPING SCREW-B	4.0X10 MFZN2W3	Bタイト十BIND		40	01
210	**X2549A0R**	SPEAKER	12.0cm 4 ohm 8W	スピーカー	WOOFER	2	
220	--	CONNECTOR ASSEMBLY	SPL XH 2P L=420	SPL束線	(WG32410)	2	
	WG074000	LOWER CASE SUB ASSEMBLY		下ケースサブAss'y			10
L10	--	LOWER CASE		下ケース成形品	(WG07390)		
L20	**VI104400**	LEG HOLDER CH		脚取り付け金具天津製		3	
L30	**WE774300**	BIND HEAD B-TIGHT SCREW	3.0X8 MFZN2W3	Bタイト十BIND		6	01
L40	**CB043752**	RUBBER INSULATOR MP-1	T1.6	ゴム脚		5	
L60	--	CUSHION(PE)	380X15X1.0	クッション(PE)	(V881260)	2	
L70	--	CUSHION(PE)	885X15X1.0	クッション(PE)	(V642110)		

✻: New Parts

RANK: Japan only

KEYBOARD ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
		KEYBOARD ASSEMBLY	16N C61	16N－C61鍵盤	YPT-410		
	V869570R	KEYBOARD ASSEMBLY	16N C61	16N－C61鍵盤			16
10	**V3412600**	WHITE KEYS	CEGB	白鍵 C E G B		5	
10	**WB12520R**	WHITE KEY	CEGB	白鍵 C E G B		5	
20	**V3412700**	WHITE KEYS	DFA	白鍵 D F A		5	
20	**WB12530R**	WHITE KEY	DFA	白鍵 D F A		5	
30	**V476030R**	WHITE KEY	C'	白鍵 C '	C6		02
40	**VZ27170R**	BLACK KEYS 16N		黒鍵		5	
50	**V3413601**	RUBBER CONTACT	16N-2M OCT 2M	接点ゴム16N2M	C1-B1,C2-B2,C3-B3,C4-B4	4	04
60	**V747740R**	RUBBER CONTACT	16N-2M 13K 2M	接点ゴム16N2M	C5-C6		04
151	**V869530R**	CIRCUIT BOARD	61L-MK	シート61L			
152	**V869550R**	CIRCUIT BOARD	61H-MK	シート61H			06
155	**VZ302900**	FELT U	3.0X5X836	フェルトU			02
160	**VZ303000**	FELT L	11X827	フェルトL			02
170	**V710010R**	RUBBER SUPPORT	16N	サポートラバー			03
175	**V869620R**	CONNECTOR ASSEMBLY	16N-2M-C61 L=210	中継束線			01
180	**WE774300**	BIND HEAD B-TIGHT SCREW	3.0X8 MFZN2W3	Bタイト＋BIND		7	01
190	**WH899400**	BIND HEAD TAPPING SCREW	3.0X12 MFZN2W3 SP	Pタイト＋BIND		13	01
200	**WF49200R**	BIND HEAD TAPPING SCREW-P	3.0X20 MFZN2W3	Pタイト＋BIND		21	01

✻: New Parts

RANK: Japan only

■ ELECTRICAL PARTS

DMLCD

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
			ELECTRICAL PARTS		電気部品	YPT-410		
*		**WM259900**	CIRCUIT BOARD	DMLCD	DMLCDシート	(WM25970)(X7174D0)		
		WG306700	CIRCUIT BOARD	ENC (VR 3/4)	ENCシート	(WG23570)(X7175B0)		06
		WG306800	CIRCUIT BOARD	MVR (VR 2/4)	MVRシート	(WG23570)(X7175B0)		06
		WG306600	CIRCUIT BOARD	PNPB (VR 1/4,4/4)	PNPBシート	(WG23570)(X7175B0)		08
		AAX75440	CIRCUIT BOARD	PNJKSTB	PNJKSTBシート	(WG23530)(X7173E0)		
		--	CIRCUIT BOARD	PNJK (PNAM 1/6,3/6)	PNJKシート	(WG30570)(WG23530)(X7173E0)		
		--	CIRCUIT BOARD	STB (PNAM 4/6)	STBシート	(WG30590)(WG23530)(X7173E0)		
		WG305800	CIRCUIT BOARD	PNR (PNAM 2/6)	PNRシート	(WG23530)(X7173E0)		07
		WG306000	CIRCUIT BOARD	TWL (PNAM 5/6,6/6)	TWLシート	(WG23530)(X7173E0)		02
		WG306100	CIRCUIT BOARD	TWR (PNAM 5/6,6/6)	TWRシート	(WG23530)(X7173E0)		02
		V869550R	CIRCUIT BOARD	61H-MK	シート61H	(V869540)(X2335C0)		06
		V869530R	CIRCUIT BOARD	61L-MK	シート61L	(V869520)(X2336B0)		
*		**WM259900**	CIRCUIT BOARD	DMLCD	DMLCDシート	(WM25970)(X7174D0)		
	C101	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C102	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C103	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C104	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C105	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C106	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C107	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C108	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C109	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C110	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C111	**US063100**	CHIP MULTILAYER CERAMIC	1000P 50V K RECT.	チップセラ(B)			
	C112	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-114	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C201	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-205	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C207	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-216	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C301	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-304	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C305	**UF02810R**	ELECTROLYTIC CAP.	100 10V	チップケミコン			01
	C306	**US062220**	CERAMIC CAP.	220P 50V J RECT.	チップセラ(SL)			
	C307	**US063470**	CHIP CERAMIC CAP.	4700P 50V K RECT.	チップセラ(B)			01
	C308	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C309	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ(SL)			
	C310	**US061220**	CHIP MULTILAYER CERAMIC	22P 50V J RECT.	チップセラ(CH)			
	C311	**US061220**	CHIP MULTILAYER CERAMIC	22P 50V J RECT.	チップセラ(CH)			
	C312	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-326	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C327	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ(SL)			
	C328	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ(SL)			
	C329	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	-332	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C401	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C402	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C403	**US061470**	CHIP MULTILAYER CERAMIC	47P 50V J RECT.	チップセラ(CH)			
	-416	**US061470**	CHIP MULTILAYER CERAMIC	47P 50V J RECT.	チップセラ(CH)			
	C421	**US062180**	CERAMIC CAPACITOR-SL	180P 50V J RECT.	チップセラ(SL)			
	-432	**US062180**	CERAMIC CAPACITOR-SL	180P 50V J RECT.	チップセラ(SL)			
	C501	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C502	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C503	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C504	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
	C505	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C506	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C507	**US063150**	CHIP MULTILAYER CERAMIC	1500P 50V K RECT.	チップセラ(B)			
	C508	**US063150**	CHIP MULTILAYER CERAMIC	1500P 50V K RECT.	チップセラ(B)			
	C509	**US06256R**	CERAMIC CAPACITOR-SL(CHIP)	560P 50V J RECT.	チップセラ(SL)			01
	-512	**US06256R**	CERAMIC CAPACITOR-SL(CHIP)	560P 50V J RECT.	チップセラ(SL)			01
	C514	**UF06610R**	ELECTROLYTIC CAP.(CHIP)	1 50V	チップケミコン			01
	C515	**UF06610R**	ELECTROLYTIC CAP.(CHIP)	1 50V	チップケミコン			01
	C516	**US06322R**	CHIP MULTILAYER CERAMIC	2200P 50V K RECT.	チップセラ(B)			01
	C517	**US06322R**	CHIP MULTILAYER CERAMIC	2200P 50V K RECT.	チップセラ(B)			01
	C518	**UF02810R**	ELECTROLYTIC CAP.	100 10V	チップケミコン			01
	C519	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01
	C601	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ(F)			01

*: New Parts

RANK: Japan only

DMLCD

REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
-604	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
C605	**UF037100**	ELECTROLYTIC CAP.(CHIP)	10 16V	チップケミコン			
C701	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ（SL）			
-725	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ（SL）			
C801	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
C802	**US063100**	CHIP MULTILAYER CERAMIC	1000P 50V K RECT.	チップセラ（B）			
C804	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
C805	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ（SL）			
C806	**US061220**	CHIP MULTILAYER CERAMIC	22P 50V J RECT.	チップセラ（CH）			
C807	**US061220**	CHIP MULTILAYER CERAMIC	22P 50V J RECT.	チップセラ（CH）			
C808	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
C809	**UF02810R**	ELECTROLYTIC CAP.	100 10V	チップケミコン			01
C810	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
C812	**US062100**	CHIP MULTILAYER CERAMIC	100P 50V J RECT.	チップセラ（SL）			
C815	**US06127R**	CHIP MULTILAYER CERAMIC	27P 50V J RECT.	チップセラ（CH）			01
-817	**US06127R**	CHIP MULTILAYER CERAMIC	27P 50V J RECT.	チップセラ（CH）			01
C901	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
-950	**US14510R**	CERAMIC CAPACITOR-F (CHIP)	0.1000 25V Z RECT.	チップセラ（F）			01
CN101	**VK02570R**	WIRE TRAP	52147 13P TE	ワイヤートラップ			01
CN401	**VK02560R**	CONNECTOR, BASE PIN	52147 12P TE	ワイヤートラップ			01
CN402	**VK025100**	CONNECTOR, BASE PIN	52147 7P TE	ワイヤートラップ			
CN403	**VK024900**	BASE PIN	52147 5P TE	ワイヤートラップ			
CN701	**VJ86160R**	CONNECTOR	52147 16P TE	ワイヤートラップ			01
CN702	**VK025500**	BASE PIN	52147 11P TE	ワイヤートラップ			
CN801	**VF728200**	CONNECTOR BASE PIN	52147 10P TE	ワイヤートラップ			
CN802	**VK025300**	WIRE TRAP	52147 9P TE	ワイヤートラップ			
CN803	**VB38980R**	CONNECTOR EH TYPE,TOP	PH 2P TE	ベースポスト			01
D701	**VT332900**	DIODE	1SS355 TE-17 TP	ダイオード			
D804	**V2376600**	DIODE	RB500V-40 TAPING	ショットキダイオード			
-807	**V2376600**	DIODE	RB500V-40 TAPING	ショットキダイオード			
IC101	**X6959A00**	IC	RH5RZ50CA-T1-F	IC	REGULATOR +5V		02
IC102	**X5889A0R**	IC	BA33BC0FP	IC	REGULATOR +3.3V		03
IC103	**X3679A0R**	IC	RH5RZ25CA-T1-F	IC	REGULATOR +2.5V		03
* IC203	**X9349100**	IC	MR27T6402L-2EMTNZ0	IC	P2ROM 64M		
IC204	**X2726A0R**	IC	GLT440L16P-40TC	IC	DRAM 4M		05
IC204	**X6504B00**	IC	M11L416256SA-35TG	IC			
IC206	**X7130A0R**	IC	MX29LV400CBTC-70G	IC	FLASH ROM 4M		04
IC207	**X5647A00**	IC	SN74LV32APWR	IC	OR		01
IC301	**X6055A0R**	IC	YMW767-VTZ	IC	CPU (SWL01T)		07
IC302	**X4374A0R**	IC	S-80136ANMC-JCVT2G	IC	SYSTEM RESET		01
IC302	**X5888A0R**	IC	BD45365G	IC			01
IC401	**X7284A00**	IC	SN74LV138APWR	IC	DECODER		01
IC402	**X7284A00**	IC	SN74LV138APWR	IC	DECODER		01
IC501	**X6040A01**	IC	AK4385ET	IC	DAC		03
IC502	**X7300A00**	IC	BA4510F-E2	IC	OP AMP		
IC601	**X3148A0R**	IC	NT3881DFG-01	IC	LCD DRIVER		05
IC601	**XZ987A0R**	IC	ML9040A-B01GAZ03A	IC			05
IC801	**X6905A00**	IC	ADC084S021CIMM	IC	ADC		
IC802	**X518610R**	IC	M38K07M4L-307HP	IC	CPU (USB)		10
L501	**VY65720R**	CHIP INDUCTANCE	600 BK1608HM601-T	チップインダクタ			01
L601	**VY65720R**	CHIP INDUCTANCE	600 BK1608HM601-T	チップインダクタ			01
L801	**VY65720R**	CHIP INDUCTANCE	600 BK1608HM601-T	チップインダクタ			01
L802	**VY65720R**	CHIP INDUCTANCE	600 BK1608HM601-T	チップインダクタ			01
L803	**V523910R**	COIL	DLP31SN121ML2L	コモンモードコイル			03
R101	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
-103	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R205	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R208	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R209	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R211	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R212	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R213	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
-220	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R301	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R304	**RD359100**	CARBON RESISTOR (CHIP)	1.0M 63M J RECT.	チップ抵抗			
R305	**RD355470**	CARBON RESISTOR (CHIP)	470.0 63M J RECT.	チップ抵抗			
R306	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R307	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R308	**RD358100**	CARBON RESISTOR (CHIP)	100.0K 63M J RECT.	チップ抵抗			01
R309	**RD358100**	CARBON RESISTOR (CHIP)	100.0K 63M J RECT.	チップ抵抗			01

*: New Parts

RANK: Japan only

DMLCD

REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
R310	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R311	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R312	**RD354470**	CARBON RESISTOR (CHIP)	47.0 63M J RECT.	チップ抵抗			
R313	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R314	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R315	**RD354470**	CARBON RESISTOR (CHIP)	47.0 63M J RECT.	チップ抵抗			
R316	**RD354470**	CARBON RESISTOR (CHIP)	47.0 63M J RECT.	チップ抵抗			
R401	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R402	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R501	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R503	**RD356470**	CARBON RESISTOR (CHIP)	4.7K 63M J RECT.	チップ抵抗			
-514	**RD356470**	CARBON RESISTOR (CHIP)	4.7K 63M J RECT.	チップ抵抗			
R515	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R516	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R517	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R518	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R601	**RD356150**	CARBON RESISTOR (CHIP)	1.5K 63M J RECT.	チップ抵抗			
R602	**RD355220**	CARBON RESISTOR (CHIP)	220.0 63M J RECT.	チップ抵抗			
R603	**RD354680**	CARBON RESISTOR	68.0 63M J RECT.	チップ抵抗			
R604	**RF45791R**	CARBON RESISTOR	91.0K D RECT.	チップ抵抗			
R605	**RD356220**	CARBON RESISTOR (CHIP)	2.2K 63M J RECT.	チップ抵抗			01
-609	**RD356220**	CARBON RESISTOR (CHIP)	2.2K 63M J RECT.	チップ抵抗			01
R610	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R701	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
-704	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R705	**RD357330**	CARBON RESISTOR (CHIP)	33.0K 63M J RECT.	チップ抵抗			
-712	**RD357330**	CARBON RESISTOR (CHIP)	33.0K 63M J RECT.	チップ抵抗			
R713	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
-722	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R723	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R724	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R726	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R733	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
-736	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R746	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R747	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
-754	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R756	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R801	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R802	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R803	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R804	**RD355100**	CARBON RESISTOR (CHIP)	100.0 63M J RECT.	チップ抵抗			
R806	**RD358470**	CARBON RESISTOR (CHIP)	470.0K 63M J RECT.	チップ抵抗			01
-809	**RD358470**	CARBON RESISTOR (CHIP)	470.0K 63M J RECT.	チップ抵抗			01
R810	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R813	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R814	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R815	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R816	**RD356150**	CARBON RESISTOR (CHIP)	1.5K 63M J RECT.	チップ抵抗			
R817	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R818	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R819	**RD358100**	CARBON RESISTOR (CHIP)	100.0K 63M J RECT.	チップ抵抗			01
R820	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R821	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R822	**RD356100**	CARBON RESISTOR (CHIP)	1.0K 63M J RECT.	チップ抵抗			01
R823	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R824	**RD35627R**	CARBON RESISTOR	2.7K 63M J RECT.	チップ抵抗			01
R825	**RD356220**	CARBON RESISTOR (CHIP)	2.2K 63M J RECT.	チップ抵抗			01
R826	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R827	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
R828	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R829	**RD358100**	CARBON RESISTOR (CHIP)	100.0K 63M J RECT.	チップ抵抗			01
R830	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R831	**RD35747R**	CARBON RESISTOR (CHIP)	47.0K 63M J RECT.	チップ抵抗			01
R832	**RD350001**	CSRBON RESISTOR (CHIP)	0 63M J RECT.	チップ抵抗			01
R833	**RD358100**	CARBON RESISTOR (CHIP)	100.0K 63M J RECT.	チップ抵抗			01
R834	**RD358470**	CARBON RESISTOR (CHIP)	470.0K 63M J RECT.	チップ抵抗			01
R835	**RD358470**	CARBON RESISTOR (CHIP)	470.0K 63M J RECT.	チップ抵抗			01
R836	**RD357100**	CARBON RESISTOR (CHIP)	10.0K 63M J RECT.	チップ抵抗			01
RA401	**RE045100**	RESISTOR ARRAY 3216	100X4	抵抗アレイ			

✻: New Parts

RANK: Japan only

DMLCD and ENC/MVR/PNPB and PNJKSTB(PNJK)/PNJKSTB(STB)/PNR/TWL/TWR

REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
-403	**RE045100**	RESISTOR ARRAY 3216	100X4	抵抗アレイ			
RA401	**WG891500**	CHIP RESISTOR ARRAY	1608X4 100 J	チップ抵抗アレイ			
-403	**WG891500**	CHIP RESISTOR ARRAY	1608X4 100 J	チップ抵抗アレイ			
RA404	**RE04610R**	RESISTOR ARRAY	1KX4	抵抗アレイ			01
-406	**RE04610R**	RESISTOR ARRAY	1KX4	抵抗アレイ			01
RA404	**WG893900**	CHIP RESISTOR ARRAY	1608X4 1.0K J	チップ抵抗アレイ			
-406	**WG893900**	CHIP RESISTOR ARRAY	1608X4 1.0K J	チップ抵抗アレイ			
RA407	**RE047100**	RESISTOR ARRAY 3216	10KX4	抵抗アレイ			01
-409	**RE047100**	RESISTOR ARRAY 3216	10KX4	抵抗アレイ			01
RA407	**WG896300**	CHIP RESISTOR ARRAY	1608X4 10K J	チップ抵抗アレイ			
-409	**WG896300**	CHIP RESISTOR ARRAY	1608X4 10K J	チップ抵抗アレイ			
TH601	**V9140600**	THERMISTOR	ERTJ1VT152J 1.5K	チップサーミスタ			
TR701	**WB12320R**	TRANSISTOR ARRAY	IMB10A T110	トランジスタアレイ			05
-704	**WB12320R**	TRANSISTOR ARRAY	IMB10A T110	トランジスタアレイ			05
TR705	**VY67760R**	DIGITAL TRANSISTOR	DTC123JKA TP	デジタルトランジスタ			01
TR801	**VV556500**	TRANSISTOR	2SA1037AK Q,R,S TP	トランジスタ 2SA			
TR802	**VV556400**	TRANSISTOR	2SC2412K Q,R,S TP	トランジスタ 2SC			
X301	**WE19440R**	QUARTZ CRYSTAL UNIT	16.9344MHz HC-49S-SM	水晶振動子			01
X801	**V409350R**	QUARTZ CRYSTAL UNIT	6MHz SMD-49	水晶振動子			03
X801	**WG138100**	QUARTZ CRYSTAL UNIT	6.0000MHz HC-49S-SMD	水晶振動子			
	WG306700	CIRCUIT BOARD	ENC (VR 3/4)	ENCシート	(WG23570)(X7175B0)		06
	WG306800	CIRCUIT BOARD	MVR (VR 2/4)	MVRシート	(WG23570)(X7175B0)		06
	WG306600	CIRCUIT BOARD	PNPB (VR 1/4,4/4)	PNPBシート	(WG23570)(X7175B0)		08
CN552	**VI878300**	BASE PIN	51048 5P TE	ケーブルホルダー			
CN552	**VZ34170R**	CABLE HOLDER	51048 5P TE	ケーブルホルダー天津製			
CN761	**VI878800**	BASE PIN	51048 10P TE	ケーブルホルダー			
CN761	**VY66870R**	CABLE HOLDER	51048 10P TE	ケーブルホルダー天津製			
CN762	**VI878100**	BASE PIN	51048 3P TE	ケーブルホルダー			
-764	**VI878100**	BASE PIN	51048 3P TE	ケーブルホルダー			
CN762	**VZ34160R**	CABLE HOLDER	51048 3P TE	ケーブルホルダー天津製			
-764	**VZ34160R**	CABLE HOLDER	51048 3P TE	ケーブルホルダー天津製			
EC761	**VU48130R**	ENCODER	REB161(9X5)PVB15FH	16形エンコーダ	CATEGORY		03
SW751	**V8889300**	PUSH SWITCH	EVQ 11Y 07K	プッシュSW	ASSIGN		01
VR551	**WC70980R**	ROTARY VARIABLE RESISTOR	A 5.0K XV014111YGP	二連ロータリーVR	MASTER VOLUME		02
VR751	**VQ032500**	ROTARY VR	B 10.0K RK11K113	ロータリーVR	B		
VR752	**VQ032500**	ROTARY VR	B 10.0K RK11K113	ロータリーVR	A		
VR761	**VZ48630R**	ROTARY VR	B10K EVJ05DF20B14	ロータリーVR	PITCH BEND		
WH552	**--**	CONNECTOR ASSEMBLY	VR1 5P L=160	VR1束線	(WG33070)		
WH761	**--**	CONNECTOR ASSEMBLY	VR2 10P L=330	VR2束線	(WG33080)		
WH762	**--**	CONNECTOR ASSEMBLY	PB1 3P L=200	PB1束線	(WG33140)		
WH764	**--**	CONNECTOR ASSEMBLY	ENC 3P L=70	ENC束線	(WG33130)		
	AAX75440	CIRCUIT BOARD	PNJKSTB	PNJKSTBシート	(WG23530)(X7173E0)		
	--	CIRCUIT BOARD	PNJK (PNAM 1/6,3/6)	PNJKシート	(WG30570)(WG23530)(X7173E0)		
	--	CIRCUIT BOARD	STB (PNAM 4/6)	STBシート	(WG30590)(WG23530)(X7173E0)		
	WG305800	CIRCUIT BOARD	PNR (PNAM 2/6)	PNRシート	(WG23530)(X7173E0)		07
	WG306000	CIRCUIT BOARD	TWL (PNAM 5/6,6/6)	TWLシート	(WG23530)(X7173E0)		02
	WG306100	CIRCUIT BOARD	TWR (PNAM 5/6,6/6)	TWRシート	(WG23530)(X7173E0)		02
	--	JUMPER CABLE	0.55	ジャンパー線	(VA07890)		
	WE774300	BIND HEAD B-TIGHT SCREW	3.0X8 MFZN2W3	Bタイト＋BIND		2	01
	--	SILICON GREASE	G-746	シリコングリス	(0412125)		
	--	SILICON GREASE	X-113A G746	シリコングリス	(VA79810)		
C151	**UR849100**	ELECTROLYTIC CAP.	1000 25.0V RX TP	ケミコン			01
C151	**V351010R**	ELECTROLYTIC CAP.	1000.0 25.0V TP	ケミコン			
C152	**VC69480R**	CEAMIC CAPACITOR	0.1000 25V Z TATET	半導体セラコン			01
C153	**UR867100**	ELECTROLYTIC CAP	10.00 50.0V RX TP	ケミコン			
C154	**VC69480R**	CEAMIC CAPACITOR	0.1000 25V Z TATET	半導体セラコン			01
C155	**VC69480R**	CEAMIC CAPACITOR	0.1000 25V Z TATET	半導体セラコン			01
C156	**UR828220**	ELECTROLYTIC CAP.	220.00 10.0V RX TP	ケミコン			
C156	**V350740R**	ELECTROLYTIC CAP.	220.00 10.0V TP	ケミコン			01
C551	**UR866100**	ELECTROLYTIC CAP.	1.00 50.0V RX TP	ケミコン			
C551	**V351190R**	ELECTROLYTIC CAP.	1.00 50.0V TP	ケミコン			
C552	**UR866100**	ELECTROLYTIC CAP.	1.00 50.0V RX TP	ケミコン			
C552	**V351190R**	ELECTROLYTIC CAP.	1.00 50.0V TP	ケミコン			
C555	**FG61247R**	CERAMIC CAP.-B	470P 50V K RX TP	セラコン(B)			01
C555	**VR02580R**	CERAMIC CAPACITOR-2B	470P 63V K FORMING	セラコン2B 天津製			
C556	**FG61247R**	CERAMIC CAP.-B	470P 50V K RX TP	セラコン(B)			01
C556	**VR02580R**	CERAMIC CAPACITOR-2B	470P 63V K FORMING	セラコン2B 天津製			
C557	**UR837470**	ELECTROLYTIC CAP.	47.00 16.0V RX TP	ケミコン			

✻: New Parts

RANK: Japan only

PNJKSTB(PNJK)/PNJKSTB(STB)/PNR/TWL/TWR

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
	C557	**V350840R**	ELECTROLYTIC CAP.	47.00 16.0V TP	ケミコン			
	C558	**UR837470**	ELECTROLYTIC CAP.	47.00 16.0V RX TP	ケミコン			
	C558	**V350840R**	ELECTROLYTIC CAP.	47.00 16.0V TP	ケミコン			
	C559	**UR838100**	ELECTROLYTIC CAP.	100.00 16.0V RX TP	ケミコン			
	-561	**UR838100**	ELECTROLYTIC CAP.	100.00 16.0V RX TP	ケミコン			
	C559	**V350850R**	ELECTROLYTIC CAP.	100.00 16.0V TP	ケミコン			
	-561	**V350850R**	ELECTROLYTIC CAP.	100.00 16.0V TP	ケミコン			
	C562	**UA355150**	MYLAR CAP.	0.1500 50V J RX TP	マイラーコン			
	C562	**V551560R**	MYLAR CAPACITOR	0.1500 50V J	マイラーコン			
	C562	**VR168500**	POLYESTER MULTLAY CAP.	ECQ-V1H154JL3	積層マイラーコン			01
	C562	**VS886900**	MYLAR CAPACITOR	0.1500 100V K TE	マイラーコン			
	C563	**UA355150**	MYLAR CAP.	0.1500 50V J RX TP	マイラーコン			
	C563	**V551560R**	MYLAR CAPACITOR	0.1500 50V J	マイラーコン			
	C563	**VR168500**	POLYESTER MULTLAY CAP.	ECQ-V1H154JL3	積層マイラーコン			01
	C563	**VS886900**	MYLAR CAPACITOR	0.1500 100V K TE	マイラーコン			
	C564	**UR839100**	ELECTROLYTIC CAP.	1000 16.0V RX TP	ケミコン			
*	C564	**V3508900**	CAP ELECTRITIC	1000.0 16.0V TP	ケミコン			
	C565	**UR839100**	ELECTROLYTIC CAP.	1000 16.0V RX TP	ケミコン			
*	C565	**V3508900**	CAP ELECTRITIC	1000.0 16.0V TP	ケミコン			
	C566	**VC69480R**	CEAMIC CAPACITOR	0.1000 25V Z TATET	半導体セラコン			01
	C567	**UR837470**	ELECTROLYTIC CAP.	47.00 16.0V RX TP	ケミコン			
	C567	**V350840R**	ELECTROLYTIC CAP.	47.00 16.0V TP	ケミコン			
	C568	**UR837470**	ELECTROLYTIC CAP.	47.00 16.0V RX TP	ケミコン			
	C568	**V350840R**	ELECTROLYTIC CAP.	47.00 16.0V TP	ケミコン			
	C569	**FG65210R**	CERAMIC CAP.(SL)	100P 50V J RX TP	セラコン（ＳＬ）			01
	C569	**VR02500R**	CERAMIC CAPACITOR-2B	100P 63V K FORMING	セラコン２Ｂ　天津製			
	C569	**VR02820R**	CERAMIC CAPACITOR-SL	100P 63V J FORMING	セラコンＳＬ　天津製			
	C570	**FG65210R**	CERAMIC CAP.(SL)	100P 50V J RX TP	セラコン（ＳＬ）			01
	C570	**VR02500R**	CERAMIC CAPACITOR-2B	100P 63V K FORMING	セラコン２Ｂ　天津製			
	C570	**VR02820R**	CERAMIC CAPACITOR-SL	100P 63V J FORMING	セラコンＳＬ　天津製			
	C851	**FG65210R**	CERAMIC CAP.(SL)	100P 50V J RX TP	セラコン（ＳＬ）			01
	C851	**VR02500R**	CERAMIC CAPACITOR-2B	100P 63V K FORMING	セラコン２Ｂ　天津製			
	C851	**VR02820R**	CERAMIC CAPACITOR-SL	100P 63V J FORMING	セラコンＳＬ　天津製			
	CN151	**LB918030**	BASE PIN I-TYPE	XH 3P TE	ベースツキポスト			
	CN152	**VI878900**	CONNECTOR, BASE PIN	51048 11P TE	ケーブルホルダー			
	CN152	**VY66880R**	CABLE HOLDER	51048 11P TE	ケーブルホルダー天津製			
	CN153	**VI878900**	CONNECTOR, BASE PIN	51048 11P TE	ケーブルホルダー			
	CN153	**VY66880R**	CABLE HOLDER	51048 11P TE	ケーブルホルダー天津製			
	CN154	**VI878200**	CABLE HOLDER	51048 4P TE	ケーブルホルダー			
	CN154	**VY668400**	CABLE HOLDER	51048 4P TE	ケーブルホルダー天津製			
	CN155	**VI878200**	CABLE HOLDER	51048 4P TE	ケーブルホルダー			
	CN155	**VY668400**	CABLE HOLDER	51048 4P TE	ケーブルホルダー天津製			
	CN156	**VI879100**	BASE PIN	51048 13P TE	ケーブルホルダー			
	CN156	**VY669000**	CABLE HOLDER	51048 13P TE	ケーブルホルダー天津製			
	CN157	**VK024600**	CONNECTOR, BASE PIN	52147 2P TE	ワイヤートラップ			
	CN551	**VK024900**	BASE PIN	52147 5P TE	ワイヤートラップ			
	CN553	**LB918020**	BASE PIN I-TYPE	XH 2P TE	ベースツキポスト			
	CN554	**VI878000**	BASE PIN	51048 2P TE	ケーブルホルダー			
	CN554	**VY66830R**	CABLE HOLDER	51048 2P TE	ケーブルホルダー天津製			
	CN555	**VI878000**	BASE PIN	51048 2P TE	ケーブルホルダー			
	CN555	**VY66830R**	CABLE HOLDER	51048 2P TE	ケーブルホルダー天津製			
	CN556	**LB918020**	BASE PIN I-TYPE	XH 2P TE	ベースツキポスト			
	CN751	**VI87940R**	CABLE HOLDER	51048 16P TE	ケーブルホルダー			01
	CN751	**VY66910R**	CABLE HOLDER	51048 16P TE	ケーブルホルダー天津製			
	CN752	**VK024700**	BASE PIN	52147 3P TE	ワイヤートラップ			
	CN753	**VI878900**	CONNECTOR, BASE PIN	51048 11P TE	ケーブルホルダー			
	CN753	**VY66880R**	CABLE HOLDER	51048 11P TE	ケーブルホルダー天津製			
	CN851	**VI878700**	CABLE HOLDER	51048 9P TE	ケーブルホルダー			
	CN851	**VZ34190R**	CABLE HOLDER	51048 9P TE	ケーブルホルダー天津製			
⚠	D151	**V860310R**	DIODE	2A02G-01 X0 JI	ダイオード			
⚠	D151	**VV73140R**	DIODE	2A02-05 X0	ダイオード			01
⚠	D152	**WB88090R**	DIODE	10EDA40-TA1B2 26	ダイオード			01
⚠	D152	**WM881800**	DIODE	1A4-E 26	ダイオード			
⚠	D153	**WB88090R**	DIODE	10EDA40-TA1B2 26	ダイオード			01
⚠	D153	**WM881800**	DIODE	1A4-E 26	ダイオード			
	D751	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード			
	-755	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード			
	D751	**VV43780R**	DIODE	1N4148(DO-34)	ダイオード　天津製			01
	-755	**VV43780R**	DIODE	1N4148(DO-34)	ダイオード　天津製			01
	IC151	**X6980A00**	IC	BA60BC0T	IC	REGULATOR +6V 1.0A		03

*: New Parts

RANK: Japan only

PNJKSTB(PNJK)/PNJKSTB(STB)/PNR/TWL/TWR

	REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
	IC551	**XV771A00**	IC	BA5417	I C	POWER AMP. 2.5Wx2CH		03
	J151	**--**	JUMPER CABLE	0.55	ジャンパー線	(VA07890)		
	-153	**--**	JUMPER CABLE	0.55	ジャンパー線	(VA07890)		
	J853	**--**	JUMPER CABLE	0.55	ジャンパー線	(VA07890)		
⚠	JK151	**LB302260**	DC JACK	HEC0470-01-630	電源コネクタ	DC IN 12V		02
⚠	JK151	**V655760R**	CONNECTOR	HTJ-020-05AZ	電源コネクタ			
	JK551	**LB101870**	HEADPHONE JACK	YKB21-5006	ホーンコネクタ	PHONES/OUTPUT		03
	JK551	**VV943300**	PHONE JACK	HTJ064-04A	ホーンコネクタ			02
	JK851	**VC68750R**	PHONE JACK BLACK	YKB21-5014	ホーンコネクタ（黒）	SUSTAIN		01
	JK851	**WE24520R**	PHONE JACK BLACK	JY-6314-01-020	ホーンコネクタ（黒）			
	JK852	**V6802600**	USB JACK	USB 4P SE	USB ジャック	USB		02
	K551	**--**	HEAT SINK		放熱板	(V561400)		
	L851	**V763440R**	COIL	BD-FL20-03 20uH	コイル 20UH			
	L851	**VB835000**	COIL	FL05RD200AT 20uH	コイル 20U			01
	L851	**VT27920R**	COIL	FL5R200QN 20uH	コイル 20U 天津製			
	L852	**V763440R**	COIL	BD-FL20-03 20uH	コイル 20UH			
	L852	**VB835000**	COIL	FL05RD200AT 20uH	コイル 20U			01
	L852	**VT27920R**	COIL	FL5R200QN 20uH	コイル 20U 天津製			
	LD751	**WC76220R**	LED RED	BL-BJ33VIX-AV-FZ01	LED	SONG		
	LD752	**WC76220R**	LED RED	BL-BJ33VIX-AV-FZ01	LED	EASY SONG ARRANGER		
	LD753	**WC76220R**	LED RED	BL-BJ33VIX-AV-FZ01	LED	STYLE		
	LD754	**WC76220R**	LED RED	BL-BJ33VIX-AV-FZ01	LED	VOICE		
	R151	**HF455180**	CARBON RESISTOR	180.0 1/4 J AX TP	カーボン抵抗			
	R151	**V254830R**	CARBON RESISTOR	180.0 1/6J 26TP	カーボン抵抗			
	R152	**V2548200**	CARBON RESISTOR	150.0 1/6J 26TP	カーボン抵抗			01
	R153	**HF455150**	CARBON RESISTOR	150.0 1/4 J AX TP	カーボン抵抗			
	R551	**HF45710R**	CARBON RESISTOR	10.0K 1/6 J AX TP	カーボン抵抗			01
	R551	**V255040R**	CARBON RESISTOR	10.0K 1/6J 26TP	カーボン抵抗			
	R552	**HF45710R**	CARBON RESISTOR	10.0K 1/6 J AX TP	カーボン抵抗			01
	R552	**V255040R**	CARBON RESISTOR	10.0K 1/6J 26TP	カーボン抵抗			
	R553	**HF456180**	CARBON RESISTOR	1.8K 1/4 J AX TP	カーボン抵抗			
	R553	**V2549500**	CARBON RESISTOR	1.8K 1/6 J 26TP	カーボン抵抗			
	R554	**HF456180**	CARBON RESISTOR	1.8K 1/4 J AX TP	カーボン抵抗			
	R554	**V2549500**	CARBON RESISTOR	1.8K 1/6 J 26TP	カーボン抵抗			
	R555	**HF45547R**	CARBON RESISTOR	470.0 1/6 J AX TP	カーボン抵抗			01
	R555	**V254880R**	CARBON RESISTOR	470.0 1/6J 26TP	カーボン抵抗			
	R556	**HF45547R**	CARBON RESISTOR	470.0 1/6 J AX TP	カーボン抵抗			01
	R556	**V254880R**	CARBON RESISTOR	470.0 1/6J 26TP	カーボン抵抗			
	R557	**WD55670R**	RES FLAME PROOF	2.2 1/6 J TE-26	不燃化カーボン抵抗			01
	R558	**WD55670R**	RES FLAME PROOF	2.2 1/6 J TE-26	不燃化カーボン抵抗			01
	R559	**HF455120**	CARBON RESISTOR	120.0 1/4 J AX TP	カーボン抵抗			
	R559	**V2548100**	CARBON RESISTOR	120.0 1/6J 26TP	カーボン抵抗			01
	R560	**HF455120**	CARBON RESISTOR	120.0 1/4 J AX TP	カーボン抵抗			
	R560	**V2548100**	CARBON RESISTOR	120.0 1/6J 26TP	カーボン抵抗			01
	R561	**HF455330**	CARBON RESISTOR	330.0 1/4 J AX TP	カーボン抵抗			
	R561	**V254860R**	CARBON RESISTOR	330.0 1/6J 26TP	カーボン抵抗			
	R562	**HF455330**	CARBON RESISTOR	330.0 1/4 J AX TP	カーボン抵抗			
	R562	**V254860R**	CARBON RESISTOR	330.0 1/6J 26TP	カーボン抵抗			
	R565	**HF45610R**	CARBON RESISTOR	1.0K 1/6 J AX TP	カーボン抵抗			01
	R565	**V254920R**	CARBON RESISTOR	1.0K 1/6 J 26TP	カーボン抵抗			
	R566	**HF45610R**	CARBON RESISTOR	1.0K 1/6 J AX TP	カーボン抵抗			01
	R566	**V254920R**	CARBON RESISTOR	1.0K 1/6 J 26TP	カーボン抵抗			
	R751	**HF454560**	CARBON RESISTOR	56.0 1/4 J AX TP	カーボン抵抗			
	-758	**HF454560**	CARBON RESISTOR	56.0 1/4 J AX TP	カーボン抵抗			
*	R751	**V2547700**	RES CARBON FILM	56.0 1/6J 26TP	カーボン抵抗			
*	-758	**V2547700**	RES CARBON FILM	56.0 1/6J 26TP	カーボン抵抗			
	R817	**HF854270**	CARBON FILM RESISTOR	27.0 1/4 J ST	カーボン抵抗			
	R817	**V2547300**	CARBON RESISTOR	27.0 1/6J 26TP	カーボン抵抗			
	R818	**HF854270**	CARBON FILM RESISTOR	27.0 1/4 J ST	カーボン抵抗			
	R818	**V2547300**	CARBON RESISTOR	27.0 1/6J 26TP	カーボン抵抗			
	R851	**HF45610R**	CARBON RESISTOR	1.0K 1/6 J AX TP	カーボン抵抗			01
	R851	**V254920R**	CARBON RESISTOR	1.0K 1/6 J 26TP	カーボン抵抗			
⚠	SW151	**V9661700**	PUSH SWITCH	SY16-32-4(U99S2)/T	プッシュ SW	■STANDBY/▂ON		
⚠	SW151	**VY98040R**	PUSH SWITCH	SDDLB15700 J,UC,CE	プッシュ SW			03
⚠	TH151	**VV45780R**	PROTECTOR SWITCH	RUEF135 1.35A 30V	ポリスイッチ			02
	WH152	**--**	CONNECTOR ASSEMBLY	AM 11P L=150	AM 束線	(WG33100)		
	WH154	**--**	CONNECTOR ASSEMBLY	STB1 4P L=170	STB1 束線	(WG33090)		
	WH156	**--**	CONNECTOR ASSEMBLY	AMDM 13P L=120	AMDM 束線	(WG33120)		
	WH554	**--**	CONNECTOR ASSEMBLY	TWL 2P L=300	TWL 束線	(WG33040)		
	WH555	**--**	CONNECTOR ASSEMBLY	TWR 2P L=550	TWR 束線	(WG33050)		

*: New Parts

RANK: Japan only

PNJKSTB(PNJK)/PNJKSTB(STB)/PNR/TWL/TWR and 61H-MK and 61L-MK

REF NO.	PART NO.	DESCRIPTION		部品名	REMARKS	QTY	RANK
WH751	--	CONNECTOR ASSEMBLY	PN1 16P L=170	PN1束線	(WG33170)		
WH753	--	CONNECTOR ASSEMBLY	PN2 11P L=230	PN2束線	(WG33180)		
WH851	--	CONNECTOR ASSEMBLY	JK6 5P	JK6束線	(WN06950)		
WH852	--	CONNECTOR ASSEMBLY	GND2 1P L=160/PH 2P	GND2束線	(WH47230)		
WH853	--	GND WIRE	GND 1P L=100	GND線材	(WH31900)		
	V869550R	CIRCUIT BOARD	61H-MK	シート61H	(V869540)(X2335C0)		06
	--	ADHESIVE TAPE	W=15	マスキングテープ	(VQ76950)		
CN01	**VK02560R**	CONNECTOR, BASE PIN	52147 12P TE	ワイヤートラップ			01
CN02	**VK024900**	BASE PIN	52147 5P TE	ワイヤートラップ			
CN03	**VK02560R**	CONNECTOR, BASE PIN	52147 12P TE	ワイヤートラップ			01
D073	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード	C4-C6		
-122	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード			
	V869530R	CIRCUIT BOARD	61L-MK	シート61L	(V869520)(X2336B0)		
	--	ADHESIVE TAPE	W=15	マスキングテープ	(VQ76950)		
CN04	**VK02560R**	CONNECTOR, BASE PIN	52147 12P TE	ワイヤートラップ			01
CN05	**VK025100**	CONNECTOR, BASE PIN	52147 7P TE	ワイヤートラップ			
D001	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード	C1-B3		
-072	**VB941200**	DIODE	1SS133,1SS176 TE	ダイオード			
	X0159A0R	SPEAKER	3.0cm	スピーカ	TWEETER		01
	X2549A0R	SPEAKER	12.0cm 4 ohm 8W	スピーカー	WOOFER		
	WF817100	LCD		液晶ディスプレイ			06

✻: New Parts

RANK: Japan only

■ YPT-410 BLOCK DIAGRAM

YPT-410

TOUCH RESPONSE
Keyboard 61KEY (16N)

61L-MK (C1~B3) — PC0-5,PD0-5 — SW1-36 — B01-B07 — CN4 (12P) — CN5 (7P)

61H-MK (C4~C6) — PC0-5,PD0-5 — SW37-61 — B07-B11 — CN3 (12P) — CN2 (5P) — CN1 (12P)

PNR (PNAM2/6)
- SW MATRIX (SW 28PCS) SW722~749
- LED (LED:4PCS) LD751~754
- PA2-PA5
- EN/A, EN/B
- LED
- PB0-PB7
- CN752 (3P)
- CN751 (16P)

ENC (VR 3/4)
- CATEGORY
- CN764 (3P)
- EN/A
- EN/B
- EC761

DMLCD
- CN402 (7P) — CN403 (5P) — CN401 (12P)
- B01-B08 — DECODER 74LV138A IC401 (16P)
- +3.3D
- B09-B11 — DECODER 74LV138A IC402 (16P)
- 16 VCC 16 VCC
- PE3-6
- PC0-5,PD0-5
- EN/A, EN/B
- LED
- CN701 (16P)
- PB0-PB7
- PA0-PA2
- CN702 (11P)
- +3.3D
- +5D
- LED DRIVER TR701~704
- PA0-PA7
- VDD
- 33 LCD DRIVER IC601 (80P)
- RS, ENB
- 36,38
- LED DRIVER
- PF0
- TR705
- LED
- +6A
- REGULATOR +5V — IC101 (3P) — +5D, +5A
- REGULATOR +3.3V — IC102 (3P) — +3.3D
- REGULATOR +2.5V — IC103 (3P) — +2.5V
- CPU SWL01(T) YMW767-VTZ IC301 (128P)
  - VDD +2.5V — 15,46,89,119
  - IOVDD +3.3D — 24,47,66,90,120
  - 124~127
  - 117
  - 57~64 PB0-PB7
  - 48~55 PA0-PA7
  - 37,121 RS, ENB
  - 32
  - 40
  - 42~44
  - 41
  - RXD1 38 EN/A
  - SCLK1 39 EN/B
  - 34~36
  - 32
  - 67,68,123 /UWRN, /LWRN, /CASN
- +5D — IC302 (5P) — RESET +3.6V 50ms — 4 — 5 — 16
- X301 16.9344MHz Crystal SMD-49 F Tolerance±100PPM — 12 — 13
- +5A — 14
- PC7
- SD0
- BCLK WCLK SYSCK
- DAC 24bit IC501 (16P) — 5 3 1,2,4 — 11 12 9 10
- L
- R
- +6A — 8
- +V
- 2,3 BUFFER/ LPF IC502(8P) 5,6 — 1 7
- fC=27KHz
- CN101 (13P)
- +3.3D
- ADC 8bit IC801 (10P) — 2 — 1,10 — 9 — 7
- BCLK WCLK SDI
- PITBEND1 PITBEND2 PITBEND3
- RXD0 TXD0 IRQ0
- PC7
- MA01-22 MD00-15
- CPU USB IC802 (64P) — 29,51,52 — 8
- 6.0MHz Crystal SMD-49 F Tolerance±100PPM — X801 — 12 — 13
- 6,25,26,30 1,2,4,63,64
- VBUS D+ D– AN7
- AN0 AN1 AN2 AN3 AN5
- RESET
- MA01-22 MD00-15 — P2ROM 64M IC203 (48P) — 12 VDD — 37
- MA01-18 MD00-15 — FLASH ROM 4M IC206 (48P) — 12 VCC — 37
- MA01-09 MD00-15 — DRAM 4M IC204 (44P) — VCC — 1,6,22 — +3.3D
- /UCAS /LCAS — 30,31
- 1,4, 9,12 — +3.3D — 14 — 8,11 — OR 74LV32A — IC207 (14P)
- CN801 (10P)
- CN802 (9P)

LCD DISPLAY
- BACK LIGHT LED:2PCS(Blue)
- CN157 (2P)

PNJKSTB (PNJK) (PNAM1/6)
- CN753 (11P)
- PB0-PB7
- PA0-PA2
- SW MATRIX (SW 20PCS) SW701~719,721
- CN553 (2P) — SPEAKER L WOOFER 4Ω 12cm
- CN554 (2P) — TWL (PNAM 5/6,6/6) — SPEAKER L TWEETER
- REGULATOR +6V — IC151 (3P) — 2 — 1
- POWER AMP BA5417
  - +6A
  - +V
  - CN156 (13P)
  - IC551 (15P) — 12 — 11 — 4 — 3 — 5 — 7
  - OTL 2.5W x 2
  - AGND
  - CN153 (11P)
  - CN551 (5P)
  - CN154 (4P)

MVR (VR 2/4)
- CN552 (5P)
- A5kΩ — VR551
- MASTER VOLUME

PNJKSTB (STB) (PNAM 4/6)
- CN155 (4P)
- SW151 STANDBY/ON

PNJKSTB (PNJK) (PNAM3/6)
- CN555 (2P) — TWR (PNAM5/6,6/6) — SPEAKER R TWEETER
- CN556 (2P) — SPEAKER R WOOFER 4Ω 12cm
- CN152 (11P)
- PHONES / OUTPUT — JK551
- DC IN 12V + ⊖ – AC adaptor PA-3B/PA-3C/PA-32 — JK151
- CN151 (3P) — BATTERY 1.5V x 6 "D"size,SUM-1,R-20 or excluding batteries
- USB — VBUS, D+, D– — JK852
- SUSTAIN — AN7 — JK851
- DGND
- CN851 (9P)

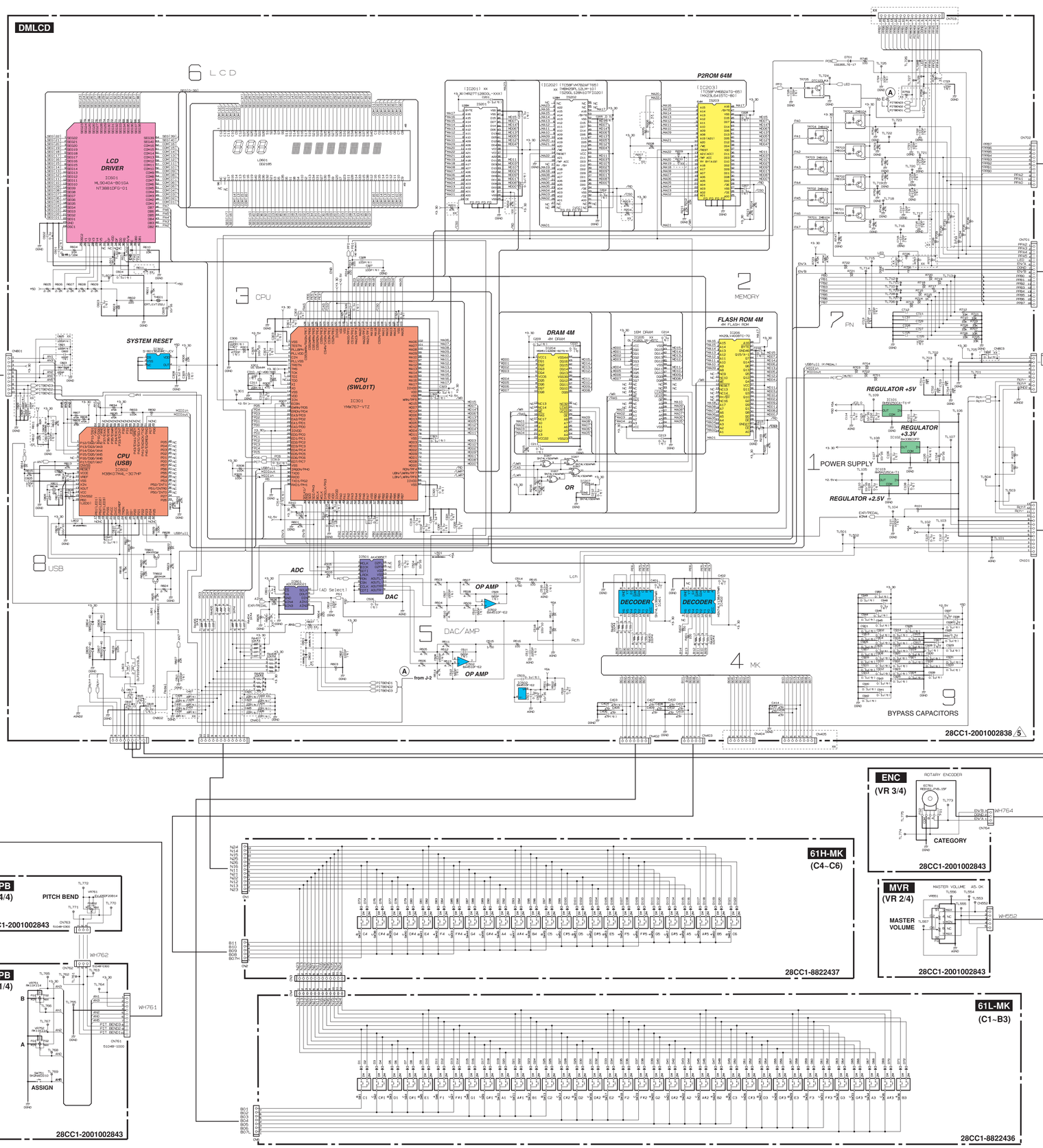
PNPB (VR 1/4)
- CN761 (10P)
- SW751 ASSIGN
- A — VR752 — AN2 AN0
- B — VR751 — AN3 AN1
- AN5
- CN762 (3P)

PNPB (VR 4/4)
- CN763 (3P)
- PITCH BEND — PITBEND1 PITBEND2 PITBEND3
- VR761

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

28CA1-2001002835

■ YPT-410 OVERALL CIRCUIT DIAGRAM (DMLCD, ENC, MVR, PNJK, PNPB, PNR, STB, TWL, TWR, 61H-MK, 61L-MK)



- RH5RZ25CA-T1-F (X3679A0R) REGULATOR +2.5V
  DMLCD: IC103
  1. GND 2. INPUT 3. OUTPUT
- BA33BC0FP (X5889A0R) REGULATOR +3.3V
  DMLCD: IC102
  1. INPUT 2. GND 3. OUTPUT
- RH5RZ50CA-T1-F (X6959A00) REGULATOR +5V
  DMLCD: IC101
  1. GND 2. INPUT 3. OUTPUT
- BA60BC0T (X6980A00) REGULATOR +6V
  PNJKSTB (PNJK): IC151
  1: INPUT 2: GND 3: OUTPUT
- 2SC2412K (VV556400) TRANSISTOR
  DMLCD: TR802
  1: EMITTER 2: BASE 3: COLLECTOR
- 2SA1037AK (VV556500) TRANSISTOR
  DMLCD: TR801
  1: BASE 2: EMITTER 3: COLLECTOR
- DTC123JKA (VY67760R) DIGITAL TRANSISTOR
  DMLCD: TR705
  1: GND 2: IN 3: OUT
- RB500V-40 (V2376600) DIODE
  DMLCD: D804-807
  1: ANODE 2: CATHODE
- 1SS355 TE-17 (VT332900) DIODE
  DMLCD: D701
  1: ANODE 2: CATHODE

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

(セ): Ceramic Capacitor
(マ): Mylar Capacitor
(半セ): Semiconductive Ceramic Capacitor
金皮: MetalFilmResistor

XX : Not installed

Note1 : See parts list for details of circuit board component parts.
Note2 : The large numbers with function are indicated the first digit of each parts reference number.