DIGITAL WORKSTATION

Tyros2 / TRS-MS02

MONITOR SPEAKER

SERVICE MANUAL



Tyros2



TRS-MS02

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PK 001740

YAMAHA

HAMAMATSU, JAPAN

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IMPORTANT NOTICE

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

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

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

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

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

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

WARNING: CHEMICAL CONTENT NOTICE!

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

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

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

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

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured makings identifying the terminals in your plug proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Making sure that neither core is connected to the earth terminal of the three pin plug.

■ 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 data of the types listed below are lost when you turn off the power to the instrument.
Save the data to the User drive or appropriate external media.

■ SPECIFICATIONS (Tyros2)

Sound Source			AWM Dynamic Stereo Sampling
Keyboard			61 keys (C1 – C6) Initial touch/Aftertouch
LCD Display			640 x 480 dots VGA Color LCD
	Music Score, Lyrics		Yes
	Text		Yes
	RAM Capacity per a text		approx. 60 KB
	Wallpaper Customize		Yes
Voice	Polyphony (max)		128
	Voice Selection		504 voices (486 Normal + 18 Mega) + 10 Organ Flute + 480 XG voices + 256 GM2 Voices + 23 Drum kits + 6 SFX Kits (And GS Voices for GS Song playback)
		MegaVoices	(18 voices) Small Strings, Large Strings, Brass, Tenor Sax, Trumpet, Nylon Guitar, Solid Guitar 1/2, Steel Guitar, Hi String Guitar, 12Strings Guitar, Clean Guitar, Overdrive, Distortion, Acoustic Bass, Finger Bass, Pick Bass, Fretless Bass
		Sweet! Voices	(23 voices) Jazz/Pop/Ballad TenorSax, Growl Sax, Tenor Sax, Alto Sax, Soprano Sax, Jazz/Silver/Golden Trumpet, Cornet, Trumpet, Mute Trumpet, Flugel Horn, Trombone, Violin, Harmonica, Mandolin, Oboe, Clarinet, Flute, Pan Flute, Classical Flute
		Live! Voices	(58 voices) Dynamic Strings, Spiccato, Dynamic Brass, Power Brass, French Horn, Sax Section, Dynamic Steel Guitar, Grand Piano, Dynamic Nylon Guitar, Gospel Choir, etc.
		Live! Drums	(9 drum kits) Live! PowerKit 1/2, Live! Studio, Live! Standard 1/2, Live! Brush, Live! Symphony, Live! PopLatin, Live! Cuban
		Cool! Voices	(39 voices) Sparkle Stack, Curved Bars, Slide Solid, Clean Guitar, Jazz Guitar, Power Lead, etc.
		Organ Flutes!	10 presets
Super Articulation Voices			(42 voices) Concert Strings, Tremolo Bowing 1/2, Big Band Brass, Brass Fall f/mf, Trumpet, Trumpet Shake1/2, Saxophone, Concert Guitar, Flamenco Guitar, Steel Guitar, Warm Solid, Guitar Hero, Feedbacker, Magic Bell, etc.
Orchestration	Upper		Right 1 – 3
	Lower		Left
	Split		Left (default point: F#2) Style (default point: F#2) Right 3 (default point: G2)
Voice Expandability	Function		Voice setting Editor / Voice Creator with Wave Assign
	Pre- Installed Memory size		4 MB
	Additional Memory	Maximum size	1024 MB (Optional)
		Slot	168 pin DIMM x 2
Hard Disk Recorder	Control		PLAY, PAUSE, STOP, REC, PREV, NEXT
	Playlist		Repeat, Sort, Shuffle, Marking
	File format		Wave (16-bit, 44.1 kHz, stereo)
Effects	Effect Blocks	Reverb/Chorus/DSP	6
		Microphone	1
	Effect Types	Reverb/Chorus/DSP	Reverb: 34 presets + 3 users Chorus: 30 presets + 3 users DSP Effect For Style: 189 presets + 3 users DSP Effect For R1/R2/R3/Left: 189 presets + 10 users DSP Effect For Mic: 189 presets + 10 users
		Mic Effects	Noise Gate x 1, Compressor x 1, 3Band EQ x 1
		Master EQ (5 band)	5 presets + 2 users
		Master Compressor	5 presets + 5 users
		Part EQ (2 band)	29 Parts (R1, R2, R3, Left, MultiPad, Style x 8, Song x 16)
	Poly/Mono		ON/OFF
	Vocal Harmony		60 presets + 10 users
	Harmony/Echo		17 presets
	Upper Octave		-1, 0, +1
	Part Octave		-2, -1, 0, +1, +2
	Pitch Bend Wheel		Available
	Modulation Wheel		Available

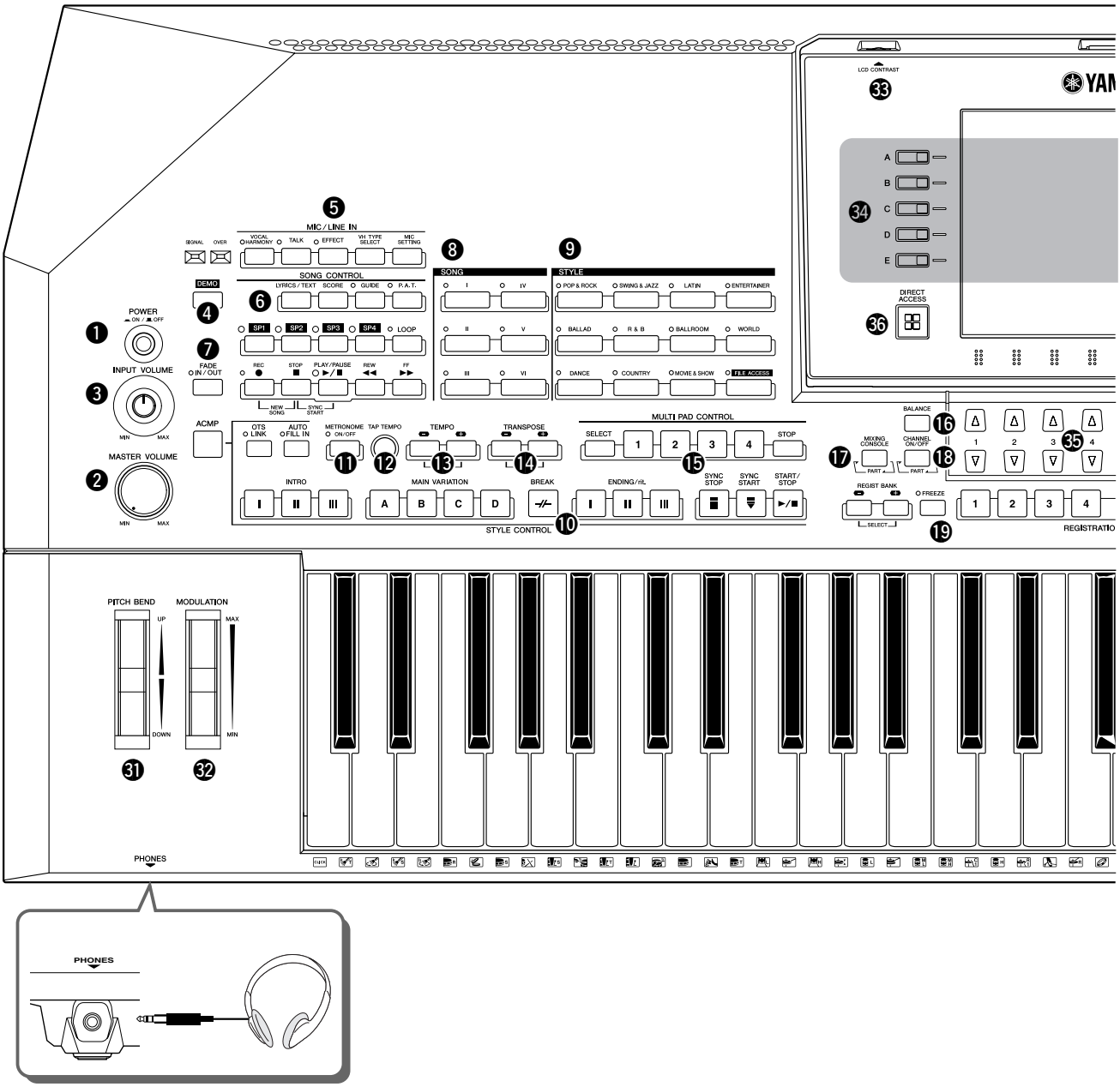
Accompaniment Style	Accompaniment Styles		400 (11 categories)
		Pro Styles	357
		Session Styles	43
	MegaVoice Styles		(Using by preset styles)
	Fingering		Single Finger, Fingered, Fingered On Bass, Multi Finger, AI Fingered, Full Keyboard, AI Full Keyboard
	Control		Intro x 3, Fill In x 4, Main x 4, Break x 1, Ending x 3, Fade In/Out, Tap Tempo
	Style Creator		YES
	OTS (One Touch Setting)		4 for Each Style (Programmable)
	OTS Link		YES
	Music Finder	Preset	1,835 records
		Edit	Programmable. Up to 2,500 records.
	RAM Capacity per a style		approx. 120 KB
Song	Preset Songs		5
	Control		PLAY, PAUSE, STOP, REC, FF, REW
	Song Position Jump		4 point / Loop
	Tracks		16
	Guide		Follow Lights, Any Key, Karao-Key, Vocal CueTIME
	Performance assistant Technology		YES
	Recording		Quick Recording, Multi Recording, Step Recording, Song Editing
	Record Channels		16
	RAM Capacity per a song		approx. 300 KB
Multi Pad	Preset		120
	Control		Pad 1 – 4, Stop, Select
Tempo			5 – 500, Tap Tempo
Transpose			-12 – 0 – 12 (Assignable Keyboard/Song/Master)
Tuning			414.8 – 440 – 466.8 Hz
Internet Direct Connection			External Adapter (via USB to DEVICE)
Memory Device	Internal Flash Memory for user drive		3.2 MB
	Hard Disk Drive (Internal)		2.5-inch IDE (Optional)
	Storage devices (via USB to DEVICE)		USB Flash Memory, USB Hard Disk Drive, etc.
Registration Memory	Buttons		8
	Control		Bank +/-, Regist Sequence, Freeze
Others	Demo		YES
	Language for Display		5 Languages (English, German, French, Spanish, Italian)
	Direct Access		YES
	Scale Type		9 presets
	Metronome		YES
Terminals	USB to HOST		YES
	USB to DEVICE		YES (2 terminals: Front / Back)
	MIDI		MIDI A (IN/OUT), MIDI B (IN/OUT)
	Control		Foot Pedal 1 (Sustain) / 2 (S. Articulation) / 3 (Volume) Function Assignable
	Video Out		NTSC / PAL Composite
	RGB Out		YES
	Audio		PHONES
			Main Line Output (L/L+R, R)
			Sub Output 1, Sub Output 2
			Loop Send (L/L+R, R) / AUX Out (Level Fixed): Selectable
			Loop Return (L/L+R, R) / Aux In
			MIC / LINE IN (Stereo)
	For Option Speaker		To Satellite Speaker (L/R), To Sub Woofer (L/R)
	Power Supply		AC (Inlet)
Dimensions [W x D x H] (with the Music Rest)			1,140 x 450 x 137 mm (1,140 x 536 x 371 mm)
Weight (with the Music Rest)			14.5 kg (15.5 kg)
Packing List	AC Power cord X 1 Music rest and brackets CD-ROM Owner's Manual, Data List, Installation Guide Screws for installing the optional hard disk drive		
Optional Accessories	Speaker		TRS-MS02
	Headphones		HPE-150/HPE-160/HPE-170
	Foot Switch		FC4/FC5
	Foot Controller		FC7
	MIDI Foot Controller		MFC-10
	Floppy Disk Drive		UD-FD01
	Keyboard Stand		L-7/L-7S

■ SPECIFICATIONS (TRS-MS02)

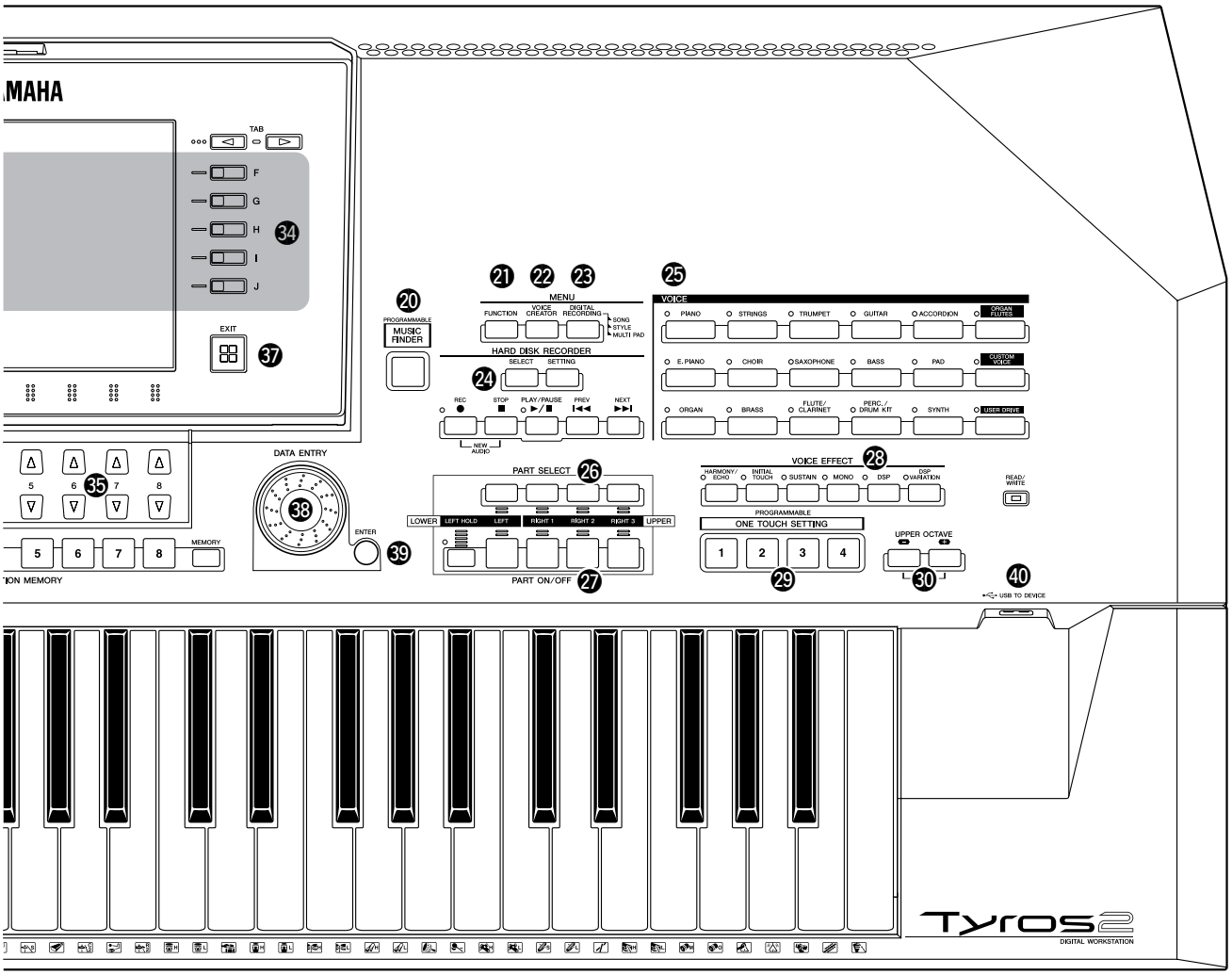
Type	Advanced Active Servo Technology
Output power	Satellite speakers..... 20 W + 20 W (1 kHz, 4 Ω at T.H.D.=10%) Subwoofer..... 40 W (100 Hz, 5 Ω at T.H.D.=10%)
Frequency response	32 Hz to 20 kHz
Speaker unit	Satellite speakers Tweeter..... 1.9 cm (3/4") dome, magnetic shielding Midrange..... 8 cm (3") cone, magnetic shielding Subwoofer..... 16 cm (6.5") cone, magnetic shielding
Power consumption	65W
Power supply	U.S.A. and Canada models.....AC 120 V, 60 Hz Australia model.....AC 240 V, 50 Hz U.K. and Europe models.....AC 230 V, 50 Hz
Dimensions (W x H x D)	Satellite speakers.....97 (3.8") x 174 (6.9") x 178 (7")mm Subwoofer.....350 (13.8") x 210 (8.3") x 321 (12.6") mm
Weight	Satellite speakers.....0.7 kg (1 lb. 9 oz.) x 2 Subwoofer.....8.0 kg (17 lbs. 10 oz.)
Accessories	Speaker brackets x 2, RCA pin cables x 2, RCA pin/8-pin combination cable x 1

■ PANEL LAYOUT(Tyros2)

● FRONT PANEL

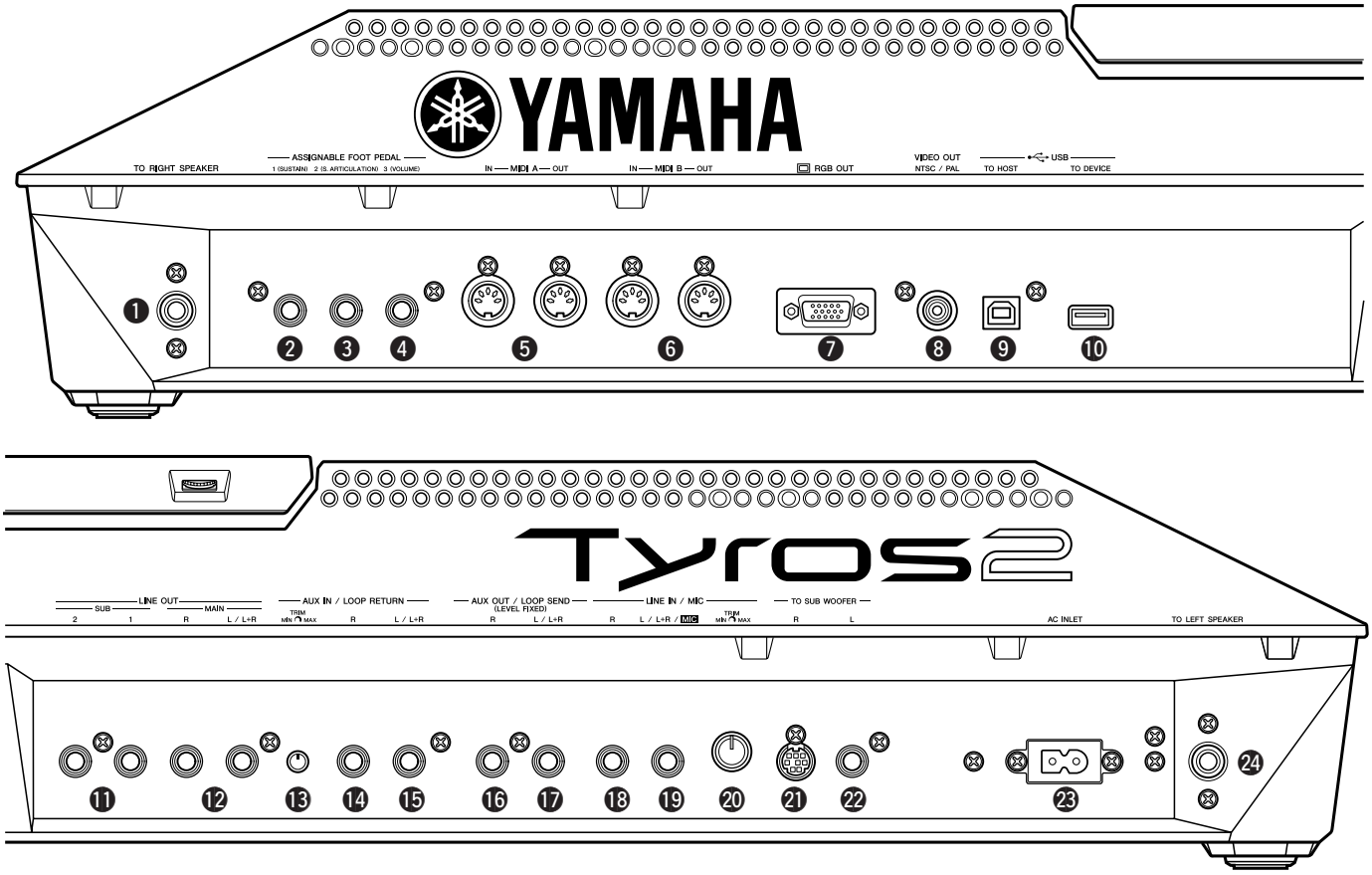


❶ POWER ON/OFF switch
❷ MASTER VOLUME control
❸ INPUT VOLUME control
❹ DEMO button
❺ MIC/LINE IN buttons
❻ SONG CONTROL buttons
❼ FADE IN/OUT buttons
❽ SONG buttons
❾ STYLE buttons
❿ STYLE CONTROL buttons
⓫ METRONOME button
⓬ TAP TEMPO button
⓭ TEMPO buttons
⓮ TRANSPOSE buttons
⓯ MULTIPAD CONTROL buttons
⓰ BALANCE button
⓱ MIXING CONTROL button
⓲ CHANNEL ON/OFF button
⓳ REGISTRATION MEMORY buttons
⓴ PROGRAMMABLE MUSIC FINDER button



21 FUNCTION button
22 VOICE CREATOR button
23 DIGITAL RECORDING button
24 HARD DISK RECORDER buttons
25 VOICE buttons
26 PART SELECT buttons
27 PART ON/OFF buttons
28 VOICE EFFECT buttons
29 PROGRAMMABLE ONE TOUCH SETTING buttons
30 USER OCTAVE buttons
31 PITCH BEND wheel
32 MODULATION wheel
33 LCD CONTRAST
34 LCD A-J buttons
35 LCD 1-8 up/down buttons
36 DIRECT ACCESS button
37 EXIT button
38 DATA ENTRY dial
39 ENTRY button
40 USB TO DEVICE terminal

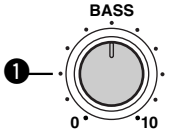
● REAR PANEL



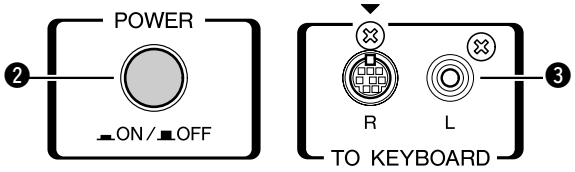
❶ TO RIGHT SPEAKER jack
❷ ASSIGNABLE FOOT PEDAL [SUSTAIN] jack
❸ ASSIGNABLE FOOT PEDAL [S.ARTICULATION] jack
❹ ASSIGNABLE FOOT PEDAL [VOLUME] jack
❺ MIDI A [IN],[OUT] jack
❻ MIDI B [IN],[OUT] jack
❼ RGB OUT jack
❽ VIDEO OUT jack
❾ USB jack (TO HOST)
❿ USB jack (TO DEVICE)
⓫ LINE OUT SUB [1], [2] jack
⓬ LINE OUT MAIN [R],[L/L+R] jack
⓭ AUX IN / LOOP RETURN TRIM control
⓮ AUX IN / LOOP RETURN [R] jack
⓯ AUX IN / LOOP RETURN [L/L+R] jack
⓰ AUX OUT / LOOP SEND [R] jack
⓱ AUX OUT / LOOP SEND [L/L+R] jack
⓲ LINE IN / MIC [R] jack
⓳ LINE IN / MIC [L/L+R/MIC] jack
⓴ LINE IN / MIC TRIM control
㉑ TO SUB WOOFER [R] jack
㉒ TO SUB WOOFER [L] jack
㉓ AC INLET
㉔ TO LEFT SPEAKER jack

■ PANEL LAYOUT (TRS-MS02)

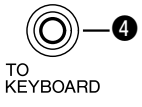
SUBWOOFER FRONT



SUBWOOFER REAR



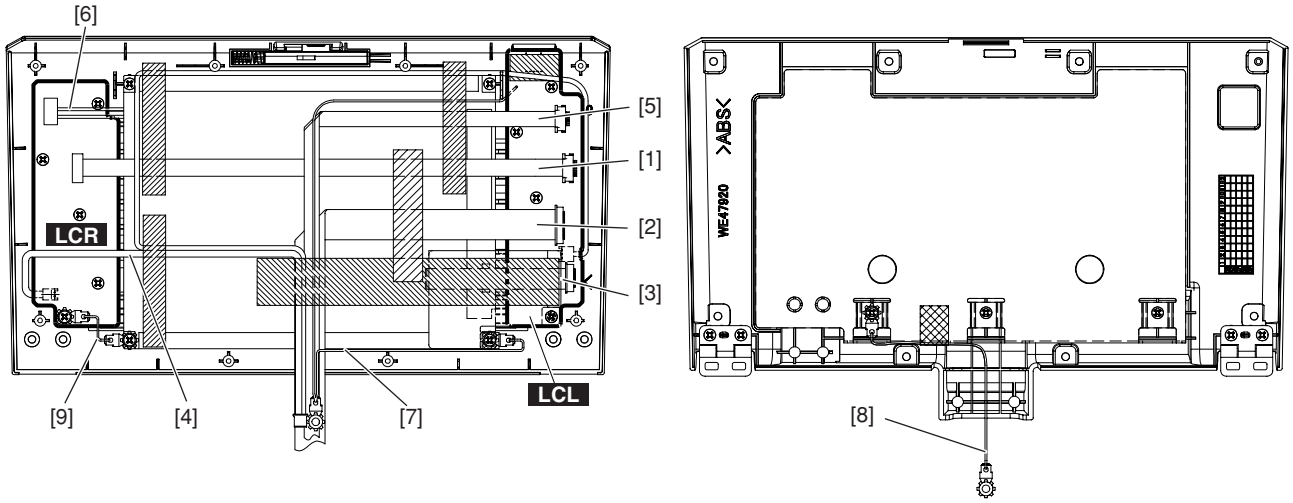
SATELLITE SPEAKER REAR



❶ BASS control knob
❷ Main POWER switch
❸ TO KEYBOARD L,R jack (WOOFER)
❹ TO KEYBOARD jack (Satellite)

■ CIRCUIT BOARD LAYOUT

●LCD Panel Assembly

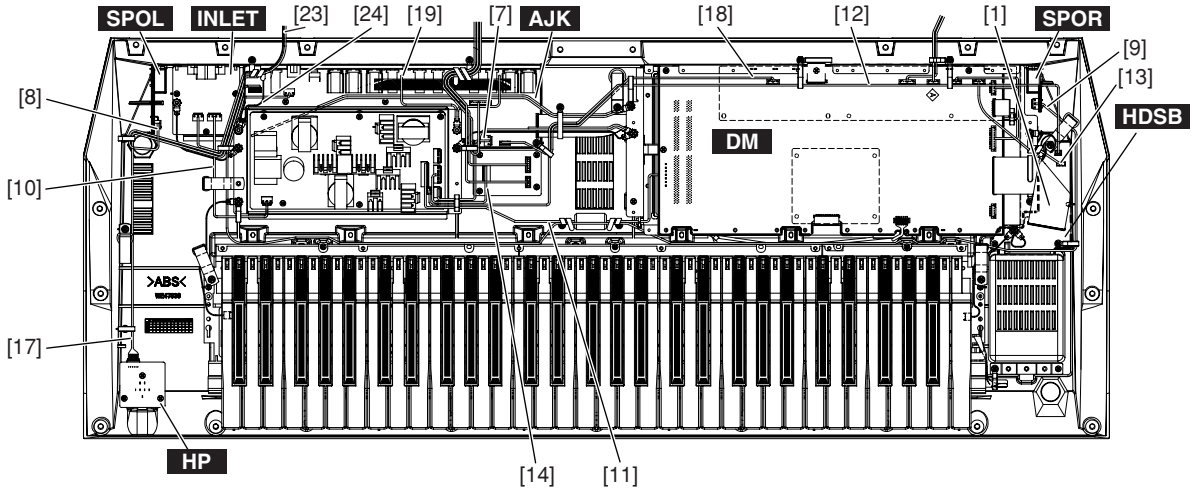


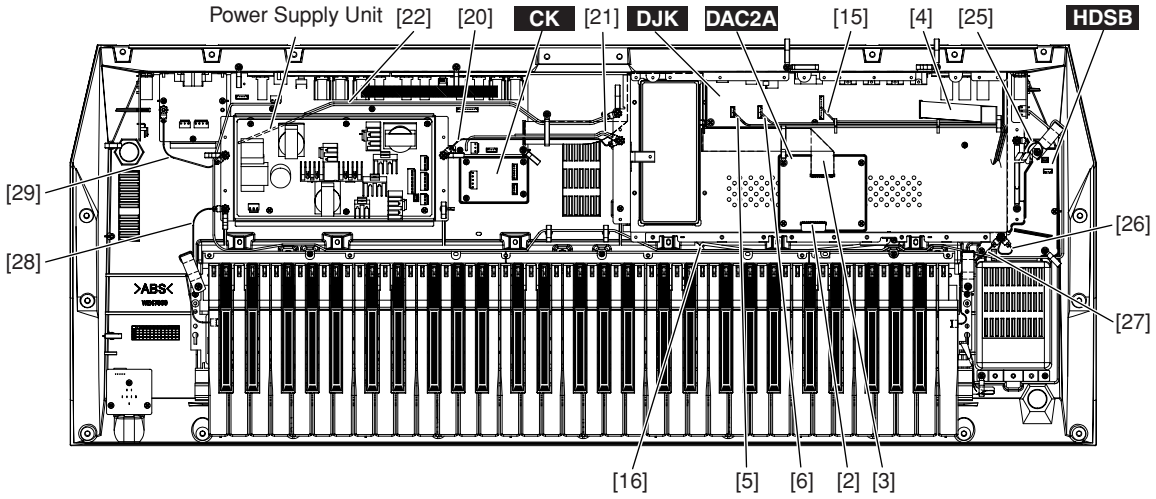
●LCD Panel Assembly

No.	Location	Part No.	Connector Assembly	Discription		Remarks
				Source	Destination	
1	130	WE844800	FFC(LCLR)	LCL-CN3	LCR-CN5	9P L=260
2	140	WF761300	FFC(LCD-B)	LCL-CN1	DM-CN2	30P L=950
3	150	WG168600	FFC(LCD)	LCL-CN2	LCD-CN1	20P L=120
4	160	(WE84640)	LC-PWR	LCR-CN7	CK-CN92	5P - 2P,3P
				LCL-CN8		
5	170	WE844700	FFC(PNL-LCL)	LCL-CN4	PNL-CN1	8P L=550
6	60	--------	LCD	LCD Backlight	LCR-CN6	
7	LCL-W1	(WG26430)	EPB1	LCL circuit board	Panel holder (R side of PNC)	GND wire
				LCD		
8	300	(WG26440)	EPC1	LCD support stay		
					PNC circuit board	
9	340	(WG26470)	EPSS1	LCL circuit board	LCD	

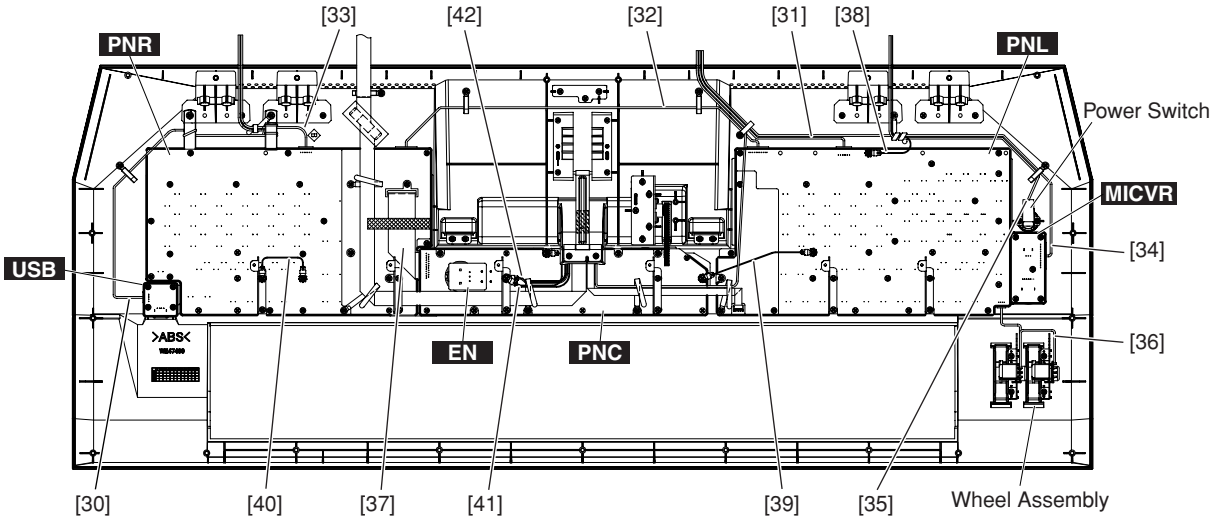
* The parts with "( )" in "**Part No.**" are not available as spare parts.

● Lower Case Side





● Upper Case Side



●Lower Case Side

No.	Location	Part No.	Connector Assembly	Discription		Remarks
				Source	Destination	
1	300	WF761200	FFC1	HDSB-CN5	DM-CN32	40P L=180
2	310	WE844400	FFC(DAC)	DAC2A-CN101	DM-CN406	26P L=70
3	320	WE844500	FFC(AJK)	AJK-CN1	DAC2A-CN801	24P L=550
4	330	WE844600	FFC(DJK)	DJK-CN10	DM-CN1	17P L=150
5	340	(WE84520)	USB(DR)	DJK-CN60	DM-CN902	5P L=400
6	350	(WE84530)	USB(H)	DJK-CN70	DM-CN8	6P L=350
7	360	(WE84540)	AJK-PWR	Power supply unit-CN3	AJK-CN2	3P L=130
8	AJK-W1	(WE84550)	SPL	AJK-W1-R/W1-W	SPOL-CN303	2P L=250
9	380	(WE84560)	SPR	SPOR- CN302	AJK-CN5	3P L=1500
10	390	(WE84570)	INLET	Power supply unit-CN1	INLET-CN301	4,2P L=290
11	400	WE845800	DM-PWR1	Power supply unit-CN2	DM-CN36	7P L=370
12	420	(WE84610)	REG-PWR	Power supply unit-CN6	HDSB-CN1	2P L=900
13	430	(WE84620)	USB-PWR	HDSB-CN2	DM-CN35	4P L=160
14	450	(WF50110)	CK-PWR	Power supply unit-CN5	CK-CN90	5P L=130
15	500	(WE84670)	VIDEO	DJK-CN80	DM-CN6	12P L=300
16	510	(WF51230)	EBUSK-LF	EMKS-FD-CN4	DM-CN30	7P L=550
17	520	(WF51240)	HP-LF	HP-CN100	AJK-CN6	6P L=600
18	570	(WF51250)	JKDET-LF	AJK-CN7	DM-CN407	5P L=550
19	AJK-W4	(WG23500)	EPA1	AC lower frame assembly	AJK W3,W4	GND wire
20	650	(WG26480)	EPSS2	AC lower frame assembly	Shield lower cover	GND wire
21	AJK-W2	(WG23510)	EPA2	AJK-W2,W10	Shield lower cover	GND wire
22	AJK-W6	(WG23520)	EPA3	AJK-W6,W9	Shield lower cover	GND wire
23	870	(WG26490)	EPSS3	Upper case assembly	AC lower frame assembly	GND wire
24	AJK-W3	(WG23490)	EP70	AJK-W3	AC lower frame assembly	GND wire
25	HDSB-W2	(WG23480)	EP50	HDSB-W2	Shield lower cover	GND wire
26	HDSB-W1	(WG23480)	EP50	HDSB-W1	Shield lower cover	GND wire
27	660	(WG26500)	EPPH1	FSX keyboard(MKH)-CN5	Shield lower cover	GND wire
28	660	(WG26500)	EPPH1	FSX keyboard(MK61L)-CN2	AC lower frame assembly	GND wire
29	680	(WG26460)	EPLS2	INLET circuit board	AC lower frame assembly	GND wire

●Upper Case Side

No.	Location	Part No.	Connector Assembly	Discription		Remarks
				Source	Destination	
30	420	(WG27700)	USB-LF	USB-CN4	DM-CN901	5P L=600
31	430	(WE84600)	PNL-PWR	PNL-CN3	CK-CN91	6P L=450
32	440	(WE84650)	PNLR	PNL-CN5	PNR-CN1	11P L=500
33	450	WF512600	EBUSP-LF	PNR-CN2	DM-CN31	7P L=400
34	510	(WE84860)	VOL	MICVR-CN200	AJK-CN3	11P L=700
35	520	(WE84690)	PSW	Power switch	INLET-CN300	2P L=500
36	WHEEL-70	(WE84700)	WHEEL	Wheel assembly	PNL-CN2	4P L=170
37	900	WG168900	FFC(PNR-PNC)	PNC-CN1	PNR-CN3	23P L=140
38	870	(WG26490)	EPSS3	PNL circuit board	AC lower frame assembly	GND wire
39	880	(WG26460)	EPLS2	PNL circuit board	PNC circuit board	GND wire
40	890	(WG26450)	EPLS1	PNR circuit board	Panel holder	GND wire
41	LCL-W1	(WG26430)	EPB1	LCL-W1	Panel holder	GND wire
				LCD frame		
42	LCD-300	(WG26440)	EPC1	LCD support stay	Panel holder	GND wire
					PNC circuit board	

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

■ DISASSEMBLY PROCEDURE

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Tyros2

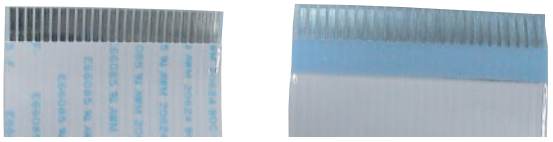
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TRS-MS02

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2. AC Power Cord 24

NOTES

- When installing the unit, attach the filament tapes and the cord binders as before.
- Attention : Flat cable (FFC cable)
  You can see the contact points from the back side.
  Take care not to insert the flat cable into the connector in the reverse direction. (Fig.A1)



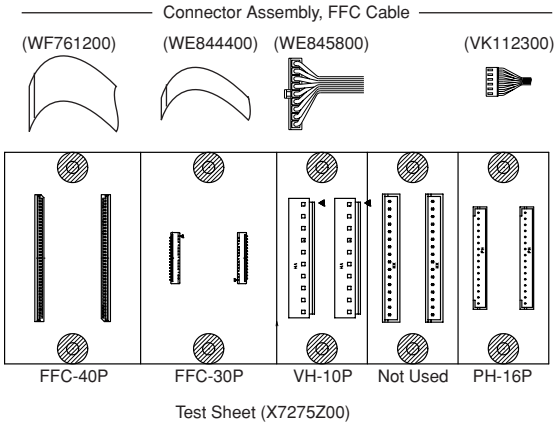
(Fig.A1)

Electrical Check After Disassembling

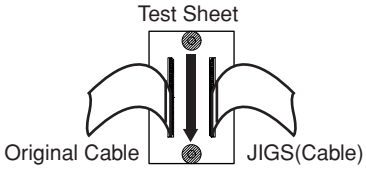
The DM circuit board is installed upside down, using some screws.
Also, the DJK and DAC2A circuit boards are installed under the DM circuit board.
When testing these circuit boards, you can perform the electrical check by using a test sheet (X7275Z00) and four connector assemblies supplied as service parts. (Fig.A2)
The connection procedure is as follows.

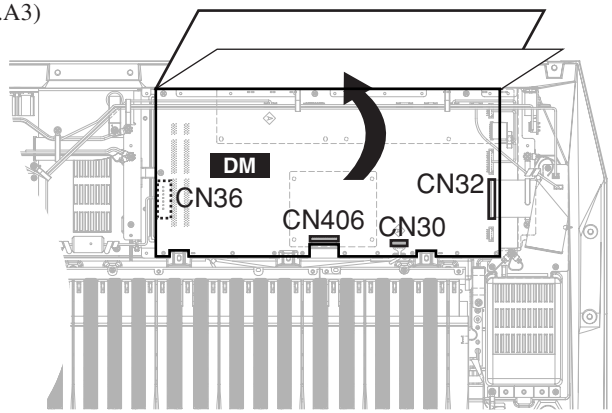
A-1 Remove all the screws on the DM circuit board.
A-2 Extend the length of the original connector assemblies and the FFC cable by using the test sheet and the connector assemblies as service parts.
Then, raise the DM circuit board vertically and check it. (Fig.A3)

* As for the number of pins of the connectors on the test sheet, it is different from that of the original cables.
When connecting each original cable to the test sheet, connect the cable so that the edge of it can match the edge of the connector. (Fig.A3)



(Fig.A2)





CONNECTOR	JIGS(Cable + Test Sheet)
CN30	VK112300 Connector Assembly + Test Sheet PH-16P
CN32	WE844400 Connector Assembly+ Test Sheet FFC-40P
CN36	WE845800 Connector Assembly + Test Sheet VH-10P
CN406	WF761200 Connector Assembly + Test Sheet FFC-30P

(Fig.A3)

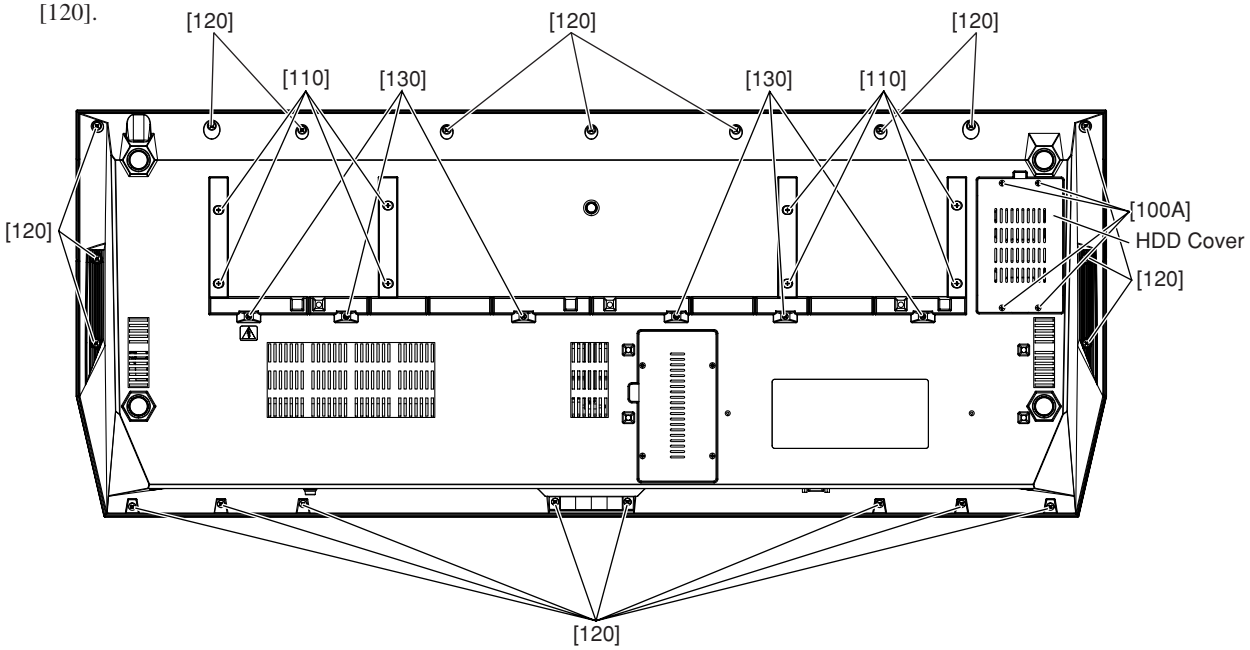
1. Separating the Unit into the Upper Case Assembly and the Lower Case Assembly (Time required: About 3 minutes)

1-1 Remove the twenty one (21) screws marked [120]. (Fig.1)

1-2 Remove the six (6) screws marked [130]. (Fig.1)

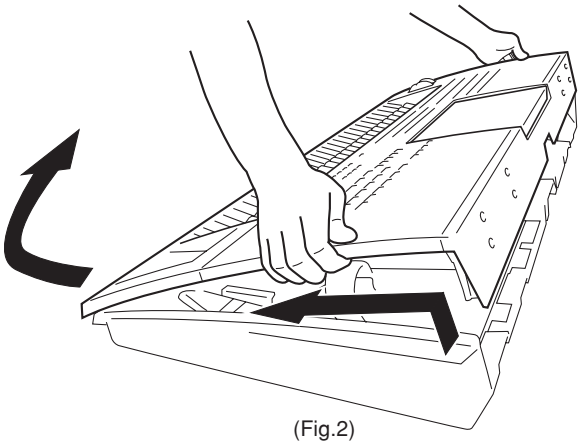
1-3 Lay the unit right side up, lift the rear of the upper case assembly and pull it diagonally downward to remove. (Fig.2)

* When installing the unit, tighten the six (6) screws marked [130] first, and then tighten the screws marked [120].



[100]: Bonding Screw 3.0X8 MFZN2B3 (WE997500)
[110]: Truss Head Tapping Screw-B 4.0X12 MFZN2B3 (WF010600)
[120]: Bind Head Tapping Screw-B 4.0X12 MFZN2B3 (WE998600)
[130]: Bind Head Tapping Screw-B 3.0X12 MFZN2B3 (WE998100)

(Fig.1)



(Fig.2)

2. DM Circuit Board (Time required: About 7 minutes)

2-1 Separate the main into the upper case assembly and the lower case assembly. (See procedure 1.)

2-2 Remove the thirty one (31) screws marked [240]. The shield upper cover can then be removed. (Fig.3)

* There are some products for which the shield upper cover has not been used.

2-3 Remove the four (4) screws marked [610]. The DM circuit board can then be removed. (Fig.4)

* When installing the shield upper cover, insert the two projections of the shield lower cover into the positioning holes of the DM circuit board first. (Fig.4)

3. DJK Circuit Board (Time required: About 9 minutes)

3-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

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

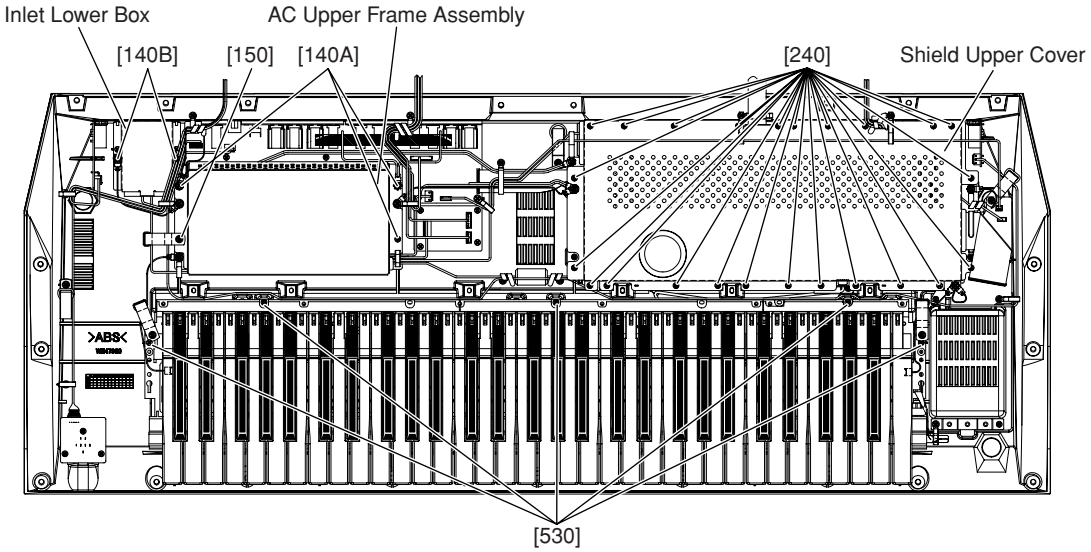
3-3 Remove the three (3) screws marked [530E], the eight (8) screws marked [540A] and the two (2) hexagonal locking screws marked [130].
The DJK circuit board can then be removed. (Fig.4, Fig.5)

4. DAC2 Circuit Board (Time required: About 8 minutes)

4-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

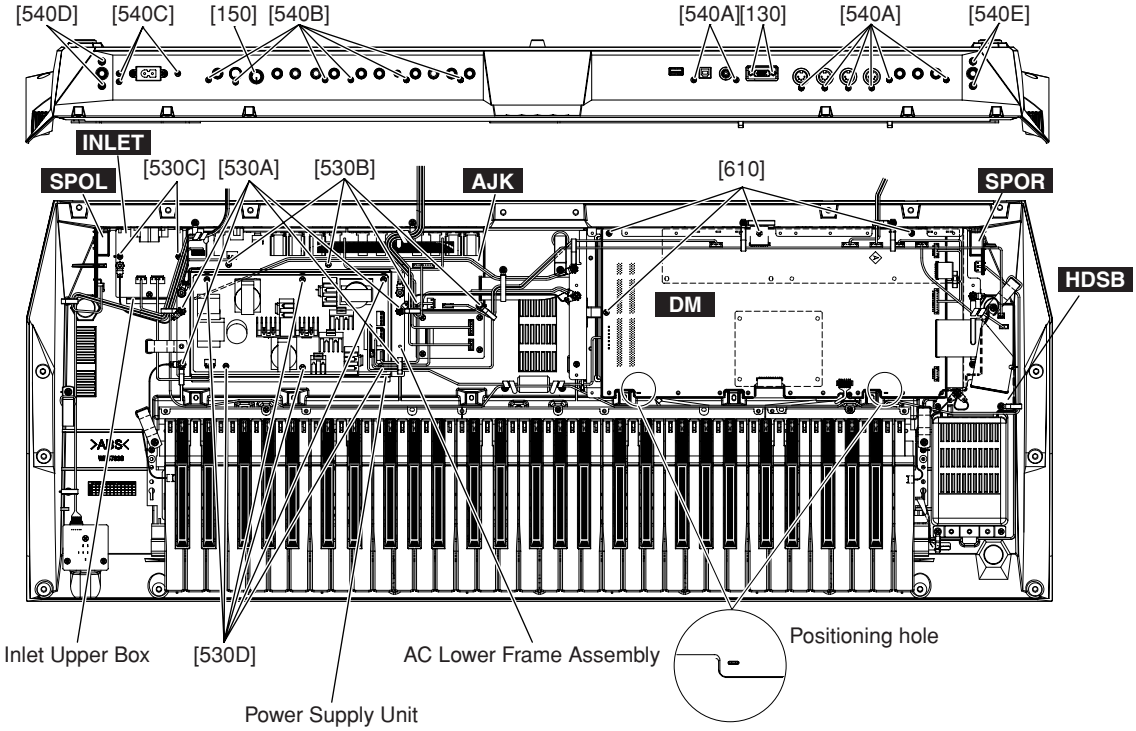
4-2 Remove the DM circuit board. (See procedure 2.)

4-3 Remove the four (4) screws marked [530E]. The DAC2 circuit board can then be removed. (Fig.5)



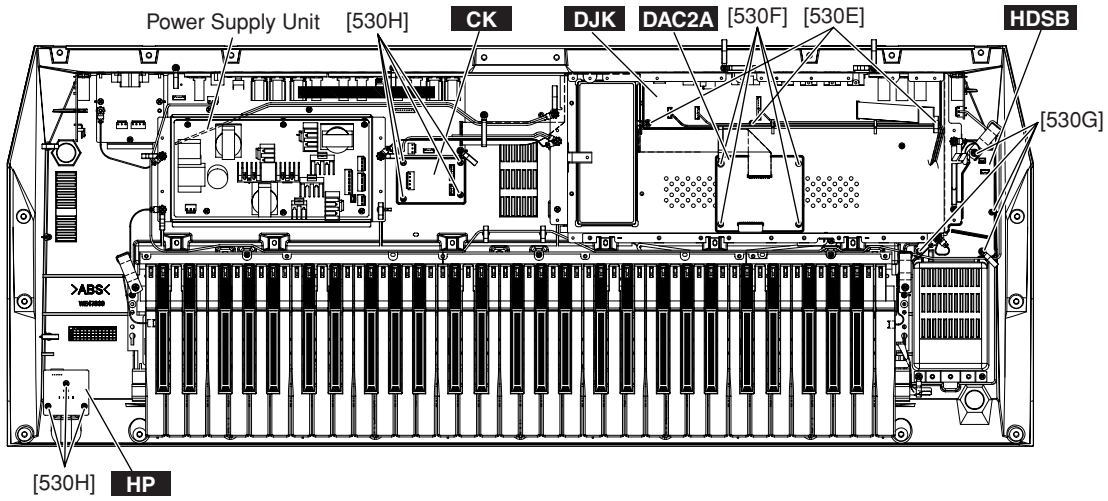
[140]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)
[150]: PW Head Tapping Screw-B 3.0X12 MFZN2W3 (WF002100)
[240]: Bind Head Machine Screw 3.0X8 MFZN2B3 (WE983600)
[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)
[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)

(Fig.3)



[130]: Hex. Locking Screw HFS-4S-B1W (V6706600)
[150]: Knob (V2300100)
[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)
[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)
[540]: Bind Head Tapping Screw-B 3.0X8 MFZN2B3 (WE774400)
[610]: Bind Head Machine Screw 3.0X8 MFZN2B3 (WE983600)

(Fig.4)



[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)
[530]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)
(Fig.5)

5-A. 2.5" HDD (Option) (Time required: About 1 minute)

5-A-1 Remove the four (4) screws marked [100A]. The HDD cover can then be removed. (Fig.1)

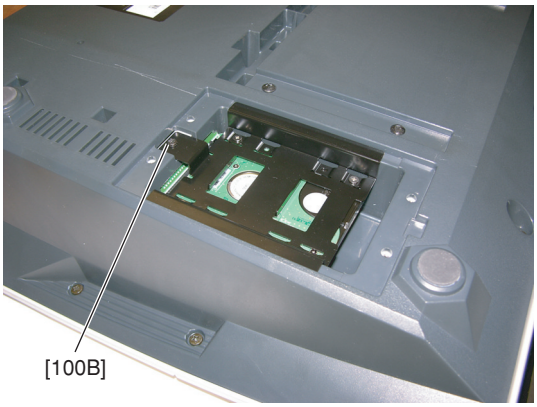
5-A-2 Remove the screw marked [100B]. The HDD with the support can then be removed. (Fig.5A, Fig.5B)

5-B. HDSB Circuit Board (Time required: About 4 minutes)

5-B-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

5-B-2 In case that the HDD has been installed, remove the HDD first. (See procedure 5-A.)

5-B-3 Remove the four (4) screws marked [530G]. The HDSB circuit board can then be removed. (Fig.5)



(Fig.5A)



(Fig.5B)

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

6-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

6-2 Remove the three (3) screws marked [140A] and the screw marked [150]. The AC upper frame assembly can then be removed. (Fig.3)

6-3 Remove the six (6) screws marked [530D]. The power supply unit can then be removed. (Fig.4)

7. AJK Circuit Board (Time required: About 6 minutes)

7-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

7-2 Remove the four (4) screws marked [530A]. The AC lower frame cover assembly can then be removed. (Fig.4)

7-3 Remove the knob(MIC.TRIM) marked [150]. (Fig.4)

7-4 Remove the four (4) screws marked [530B] and the six (6) screws marked [540B]. The AJK circuit board can then be removed. (Fig.4)

8. INLET Circuit Board (Time required: About 6 minutes)

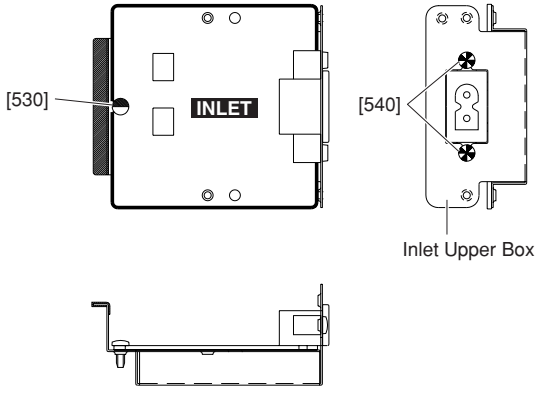
8-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

8-2 Remove the two (2) screws marked [140B]. The inlet lower box can then be removed. (Fig.3,Fig.4)

8-3 Remove the two (2) screws marked [530C] and the three (3) screws marked [540C]. The inlet upper box can then be removed. (Fig.4)

8-4 Remove the screw marked [530] and the two (2) screws marked [540]. The INLET circuit board can then be removed. (Fig.6)

* When installing the inlet upper box, tighten the three (3) screws marked [540C] first, and then tighten the two (2) screws marked [530C]. (Fig.4)



(Fig.6)

9. CK Circuit Board (Time required: About 4 minutes)

9-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

9-2 Remove the four (4) screws marked [530H]. The CK circuit board can then be removed. (Fig.5)

10. SPOL Circuit Board (Time required: About 4 minutes)

10-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

10-2 Remove the two (2) screw marked [540D]. The SPOL circuit board can then be removed. (Fig.4)

11. SPOR Circuit Board (Time required: About 4 minutes)

11-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

11-2 Remove the two (2) screw marked [540E]. The SPOR circuit board can then be removed. (Fig.4)

12. HP Circuit Board (Time required: About 4 minutes)

12-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

12-2 Remove the three (3) screws marked [530H]. The HP circuit board can then be removed. (Fig.5)

13. FSX Keyboard Assembly (Time required: About 5 minutes)

13-1 Remove the eight (8) screws marked [110]. (See procedure 1.)

13-2 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

13-3 Remove the five (5) screws marked [530]. The FSX keyboard assembly can then be removed. (Fig.3)

14. White (Black) Key

14-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

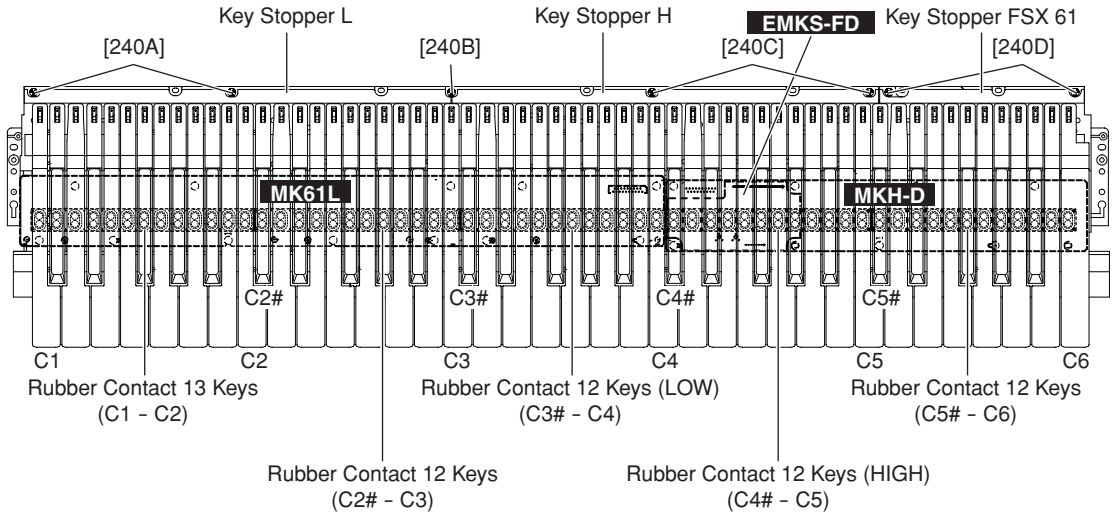
14-2 Depending on the key to be replaced, remove only the necessary key stopper such as L, H or 61. (Fig.7)
The key stopper L can be removed by the two (2) screws marked [240A] and the screw marked [240B]. (Fig.7)
The key stopper H can be removed by the screw marked [240B] and the two (2) screws marked [240C]. (Fig.7)
The key stopper 61 can be removed by the two (2) screws marked [240D]. (Fig.7)

14-3 White Key

14-3-1 While pressing the white key backward keeping it in a horizontal position, lift and remove it. (Fig.7A)

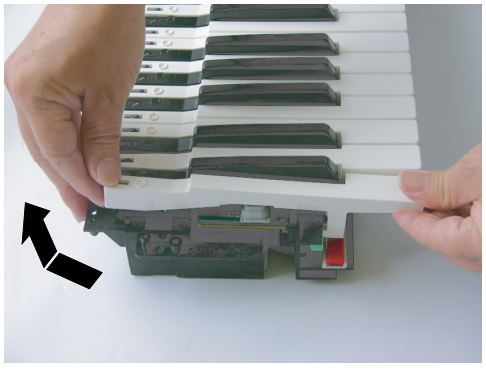
* At that time, the key guide cap may come off. Be careful of it. (Fig.7C)

	Rubber Contact 13 Keys	Rubber Contact 12Keys	Rubber Contact 12Keys (LOW)	Rubber Contact 12Keys (HIGH)	Rubber Contact 12 Keys
Application Circuit Board	MK61	MK61	MK61	MK61	MKH-D
Remove Key Stopper	L	L, H	L, H	H	FSX61
Remove Key	C1 - C2	C2# - C3	C3# - C4	C4# - C5	C5# - C6

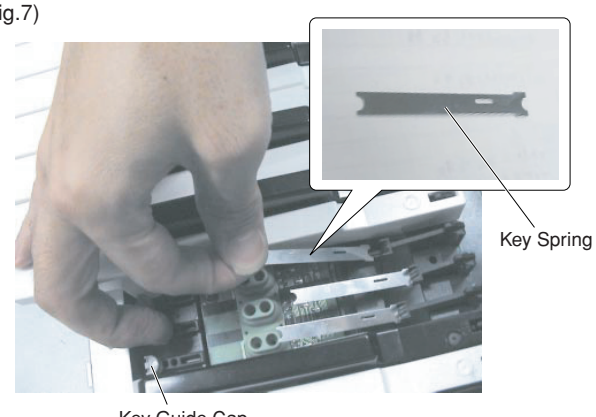


[240]: Bind Head Tapping Screw-P 3.0X16 MFZN2B3 (WE983200)

(Fig.7)



(Fig.7A)

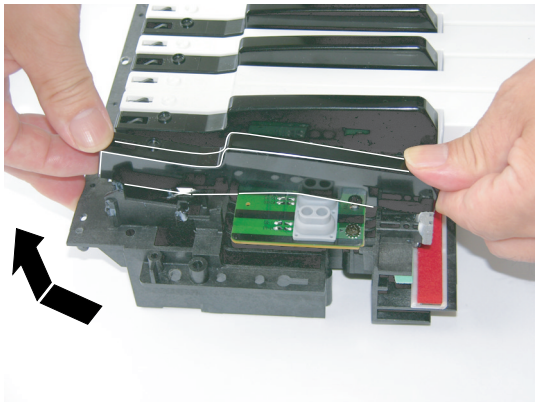


(Fig.7C)

14-4 Black Key

14-4-1 Remove both adjacent white keys first. (Fig.7A)

14-4-2 While pressing the black key backward keeping it in a horizontal position, lift and remove it. (Fig.7B)



(Fig.7B)

15. Assembling White (Black) Key

15-1 White Key

15-1-1 While pressing the white key backward keeping it in a horizontal position, lower and insert it into the frame. (Fig.7A)

* At that time, do not lower the near side of the white key too much and take care not to bend the key guide cap. (Fig.7C)

* Install the black key first, and then install both adjacent white keys.

15-2 Black Key

15-2-1 Install the black key in the same manner as the white key. (See procedure 15-1-1.)(Fig.7B)

15-2-2 Install the removed key stoppers L, H and 61. (Fig.7)

16. Rubber Contact

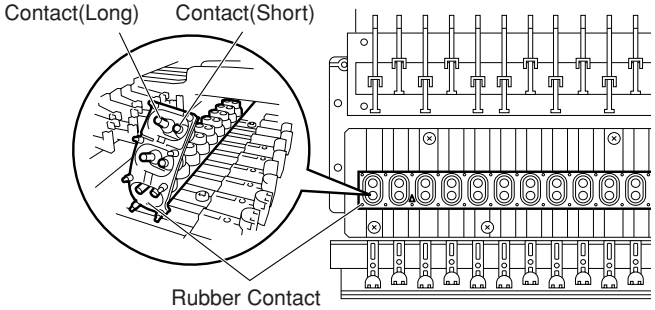
16-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

16-2 Remove the necessary key stopper and the key referring to the table in Fig.7. (Fig.7)

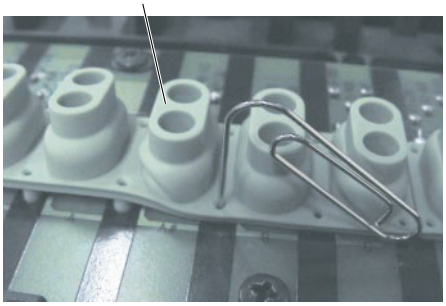
16-3 Pull and remove the rubber contact. (Fig.9)

* As for the rubber contact, the direction of the installation is specified. Take care not to install the rubber contact reversly. (Fig.9)

* When installing the rubber contact, confirm that a dust does not adhere to the contact points first. Then, push the rubber contact using the tip of clip and install it. (Fig.7D)



(Fig.9)



(Fig.7D)

17. MK61L Circuit Board (Time required: About 7 minutes)

17-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

17-2 Remove the key stoppers L and H. (See procedure 14-2.)

17-2 Remove the keys and the key springs from C1 to C4. (See procedure 14.)

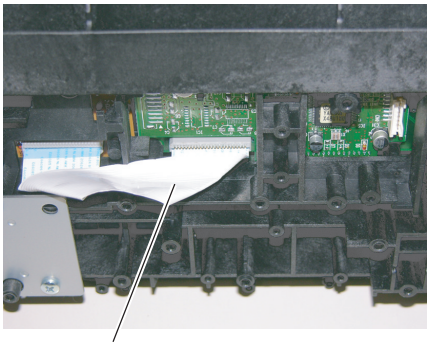
17-3 Remove the thirteen (13) screws marked [250A], and remove the FFC cable for CN1 from the back side of the keyboard assembly.

The MK61 circuit board can then be removed. (Fig.8, Fig.7E)

* When installing the MK61 circuit board, put the circuit board under the positioning ribs first, and then tighten the screws. (Fig.8)

* As for the service parts, the rubber contact is not included in the MK61L circuit board.

When replacing the MK61L circuit board, remove all the rubber contacts from the circuit board to be replaced, and install them to new circuit board.



(Fig.7E)

18. MKH-D and EMKS-FD Circuit Boards (Time required: About 6 minutes)

18-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

18-2 Remove the key stoppers H and 61. (See procedure 14-2.)

18-3 Remove the keys and the key springs from C#4 to C6. (See procedure 15.)

18-4 Remove the nine (9) screws marked [250B]. (Fig.8)

18-5 Remove the FFC cable (for CN4) from the back side of the keyboard assembly. The MKH-D and EMKS-FD circuit boards can then be removed. (Fig.8, Fig.7E)

* The EMKS-FD circuit board has been soldered to the MKH-D circuit board by connectors.
When replacing one of them, use a soldering iron.

* MKH-D Circuit Board
When installing the MKH-D circuit board, put the circuit board under the positioning ribs first, and then tighten the screws. (Fig.8)

* As for the service parts, the rubber contact is not included in the MKH-D circuit board.
When replacing the MKH-D circuit board, remove all the rubber contacts from the circuit board to be replaced, and install them to new circuit board.

19. PNL Circuit Board (Time required: About 7 minutes)

19-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

19-2 Remove the four (4) screws marked [480A]. The two panel holders A can then be removed. (Fig.10)

19-3 Remove the twenty six (26) screws marked [480B]. The PNL circuit board can then be removed. (Fig.10)

* When installing the PNL circuit board, place the vibration-proof sheet L in between the circuit board and the panel buttons.
Also, place the protection sheet L on the reverse side of the circuit board. Then, tighten the screws. (Fig.14)

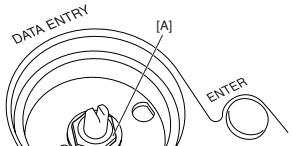
20. PNR Circuit Board (Time required: About 7 minutes)

20-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

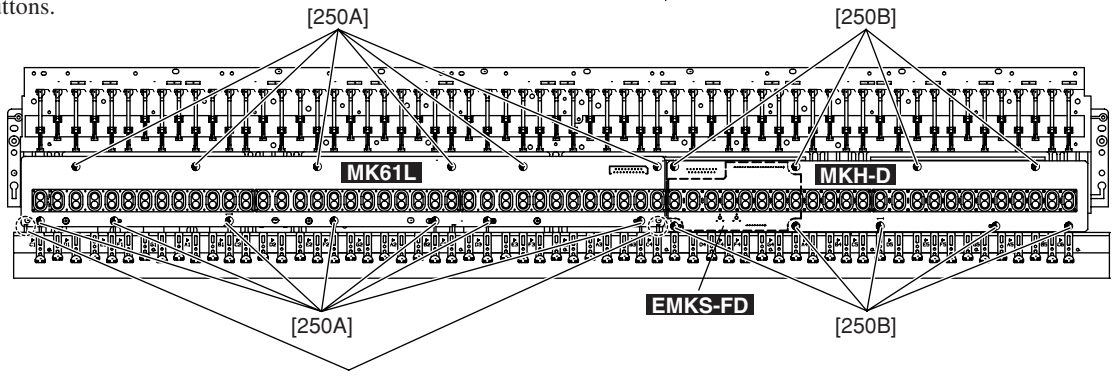
20-2 Remove the four (4) screws marked [480C]. The two panel holders B can then be removed. (Fig.10)

20-3 Remove the twenty six (26) screws marked [480D]. The PNR circuit board can then be removed. (Fig.10)

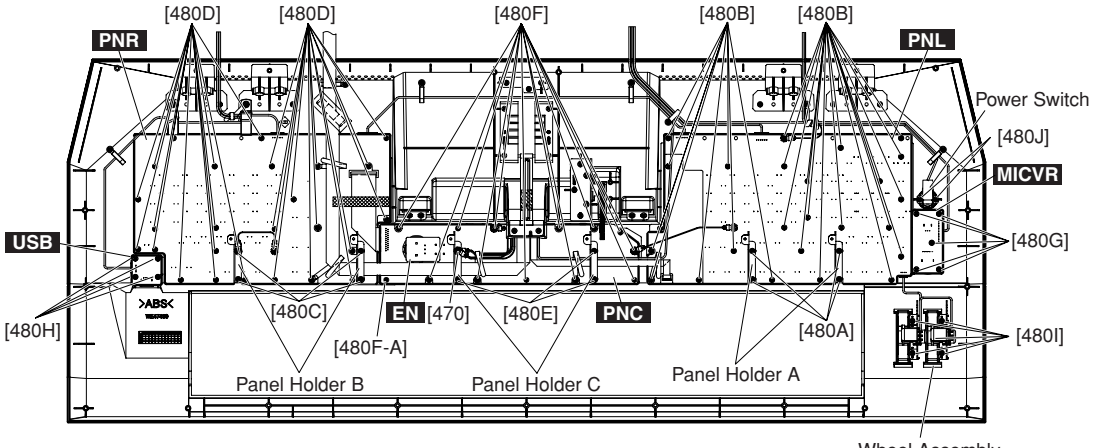
* When installing the PNR circuit board, place the vibration-proof sheet R in between the circuit board and the panel buttons.
Also, place the protection sheet L on the reverse side of the circuit board. Then, tighten the screws. (Fig.14)



(Fig.13)



Circuit Board bobber prevention rib
[250]: Bind Head Tapping Screw-P 3.0X8 MFZN2B3 (WF266600)
(Fig.8)



[470]: PW Head Tapping Screw-B 3.0X12 MFZN2W3 (WF002100)
[480]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)
[480]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)
(Fig.10)

21. PNC and EN Circuit Boards

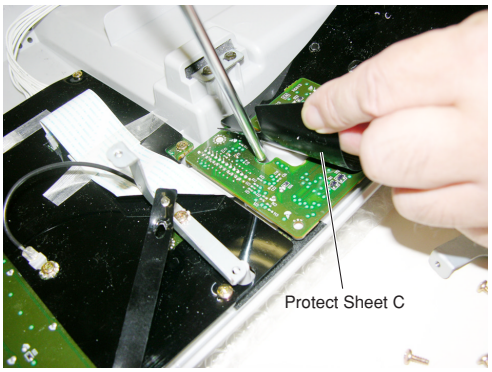
21-A EN Circuit Board (Time required: About 6 minutes)

21A-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

21A-2 Remove the screw marked [480F-A] and bend the protection sheet C so that you can see the hole on the EN circuit board.
Insert a screw driver (which is not sharp-edged) into the hole, and push out the encoder knob marked [60]. (Fig.10,Fig.12,Fig.14A)
(It may damage the encoder knob to push continuously the same point on it. So push out the encoder knob little by little rotating it.)

21A-3 Remove the hexagonal nut marked [A]. The EN circuit board can then be removed. (Fig.10,Fig.13)

* The EN circuit board has been soldered to the PNC circuit board by ribbon cables. When replacing it, use a soldering iron.



(Fig.14A)

21-B PNC Circuit Board (Time required: About 7 minutes)

21B-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

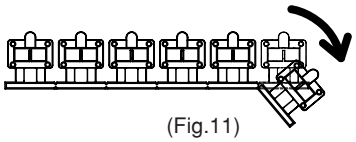
21B-2 Remove the EN circuit board. (See procedure 21-A.)

21B-3 Remove the three (3) screws marked [480E] and the screw marked [470]. The two panel holders C can then be removed. (Fig.10)

21B-4 Remove the twelve (12) screws marked [480F]. The PNC circuit board can then be removed.

* Note for the panel button replacement
The replacement part of the panel button marked [660] is sixfold.
When replacing these buttons, separate an unnecessary piece from the replacement part. (Fig.11)
As for the location of the multifold button, do not arrange and use some single buttons.

* When installing the PNC circuit board, place the vibration-proof sheet C in between the circuit board and the panel buttons.
Also, place the protection sheet C on the reverse side of the circuit board. Then, tighten the screws. (Fig.14)



(Fig.11)

22. MICVR Circuit Board (Time required: About 5 minutes)

22-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

22-2 Remove the VR knob marked [40] and the VR knob marked [50]. (Fig.12)

22-3 Remove the five (5) screws marked [480G]. The MICVR circuit board can then be removed. (Fig.10)

23. USB Circuit Board (Time required: About 4 minutes)

23-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

23-2 Remove the four (4) screws marked [480H]. The USB circuit board can then be removed. (Fig.10)

24. Wheel Assembly (Time required: About 4 minutes)

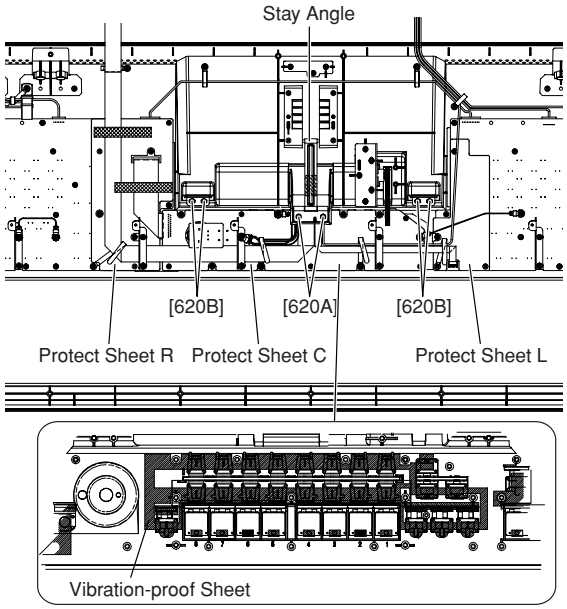
24-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

24-2 Remove the four (4) screws marked [480I]. The wheel assembly can then be removed. (Fig.10)

25. Power Switch (Time required: About 4 minutes)

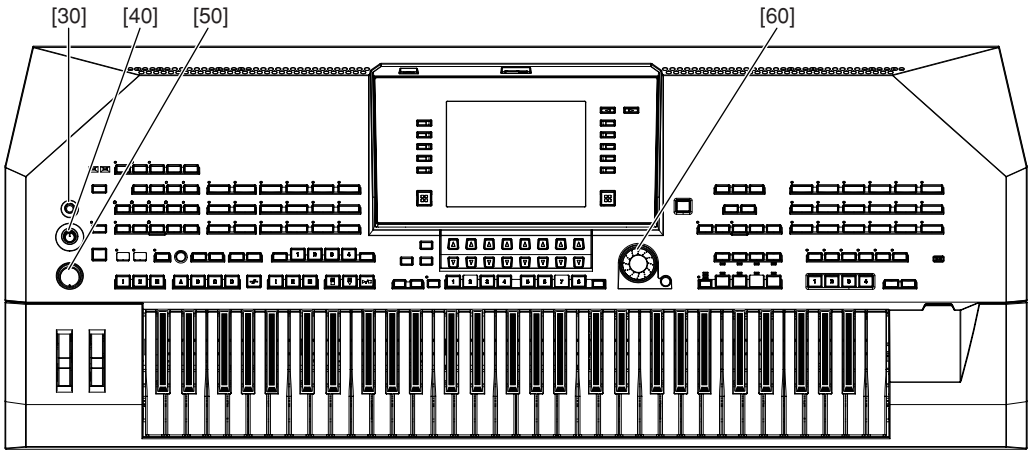
25-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

25-2 Remove the two (2) screws marked [480J]. The power switch can then be removed. (Fig.10)



[620]: Bind Head Tapping Screw-B 3.0X12 MFZN2B3 (WE998100)

(Fig.14)



[30]: Push Knob BLACK (V7151200)
[40]: Knob (V2300100)
[50]: Knob PSR-310 (VQ218900)
[60]: Encoder Knob SILVER (V7761500)

(Fig.12)

26. LCD Panel Assembly (Time required: About 6 minutes)

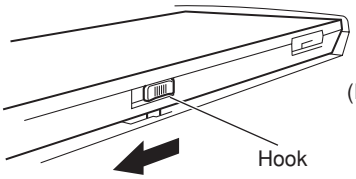
26-1 Separate the unit into the upper case assembly and the lower case assembly. (See procedure 1.)

26-2 Remove the two (2) screws marked [620A] to remove the stay bar. (Fig.14)

26-3 Remove the four (4) screws marked [620B]. (Fig.14)

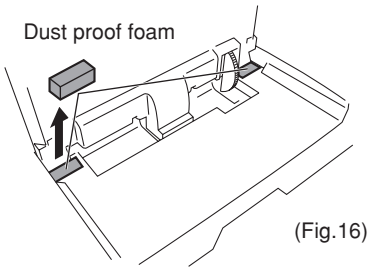
26-4 Remove the screw marked [470]. The two GND wires can then be removed. (Fig.10)

26-5 Lay the upper case assembly right side up, unlock the hook of LCD panel assembly and raise the LCD unit upright. (Fig.15)



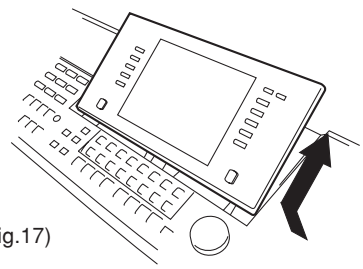
(Fig.15)

26-6 Remove the two (2) dust proof foams. (Fig.16)



(Fig.16)

26-7 Pull out the LCD panel assembly to remove. (Fig.17)



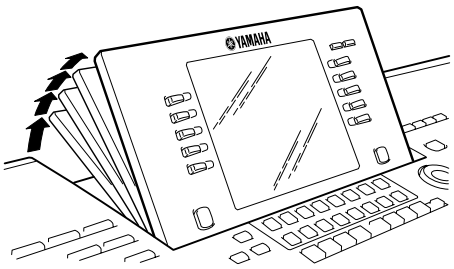
(Fig.17)

* After removing the LCD panel assembly, take care not to lose the two dust proof foams.

* After installing the LCD panel assembly, follow the procedure below and confirm that its angle can be adjusted correctly.

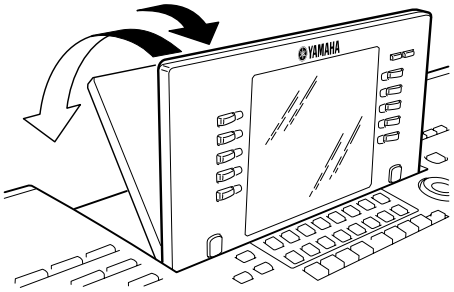
(1) Lay the upper case assembly right side up.

(2) Unlock the hook, raise the panel forward, and confirm that the panel can be steadied at four notches. (Fig.18)



(Fig.18)

(3) After raising the panel assembly completely, confirm that it can be laid down smoothly. (Fig.19)



(Fig.19)

27. Disassembling the LCD Panel Assembly

27a. Gear (Time required: About 7 minutes)

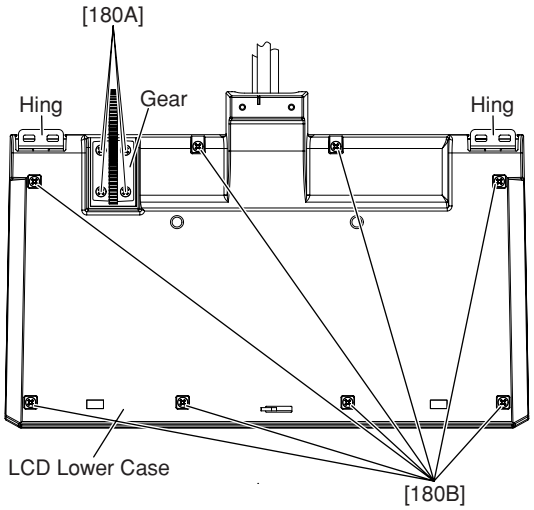
27a-1 Remove the LCD panel assembly. (See procedure 26.)

27a-2 Remove the four (4) screws marked [180A]. The gear can then be removed. (Fig.20)

27b. Hinge (Time required: About 7 minutes)

27b-1 Remove the LCD panel assembly. (See procedure 26.)

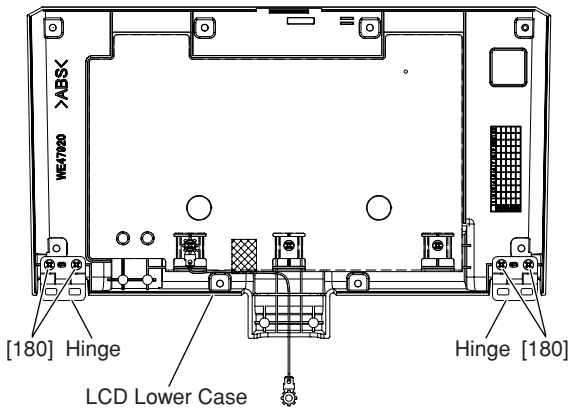
27b-2 Remove the eight (8) screws marked [180B]. The LCD lower case can then be removed. (Fig.20)



[180]: Bind Head Tapping Screw-B 3.0X12 MFZN2B3 (WE998100)

(Fig.20)

27b-3 Remove the two (2) screws marked [180] . The hinges can then be removed. (Fig.21)



[180]: Bind Head Tapping Screw-B 3.0X12 MFZN2B3 (WE998100)

(Fig.21)

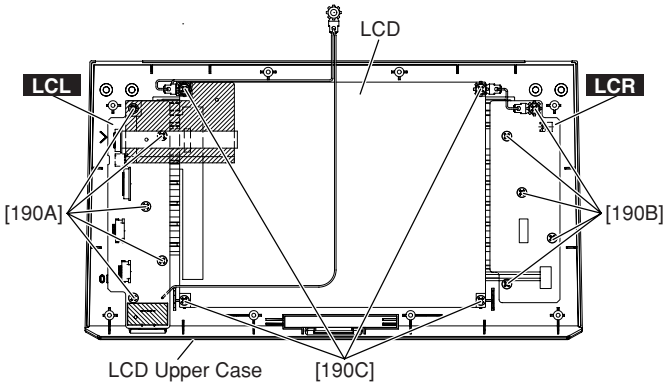
27c. LCL Circuit Board (Time required: About 12 minutes)

27c-1 Remove the LCD panel assembly. (See procedure 26.)

27c-2 Remove the LCD lower case. (See procedure 27b-2.)

27c-3 Remove the five (5) screws marked [190A]. The LCL circuit board can then be removed. (Fig.22)

* When removing the FFC cable connected to CN1,CN2,CN3 and CN4, release the lock of the connector first.
Also, after connecting it, do not forget to lock it.



[190]: Bind Head Tapping Screw-B 3.0X8 MFZN2W3 (WE774300)

(Fig.22)

27d. LCR Circuit Board (Time required: About 12 minutes)

⚠ ***There may be high voltage components. Make sure to disassemble the components after turning the power switch off.***

27d-1 Remove the LCD panel assembly. (See procedure 26.)

27d-2 Remove the LCD lower case. (See procedure 27b-2.)

27d-3 Remove the five (5) screws marked [190B]. The LCR circuit board can then be removed. (Fig.22)

* When removing the FFC cable connected to CN5, release the lock of the connector first.
Also, after connecting it, do not forget to lock it.

27e LCD (Time required: About 12 minutes)

27e-1 Remove the LCD panel assembly. (See procedure 26.)

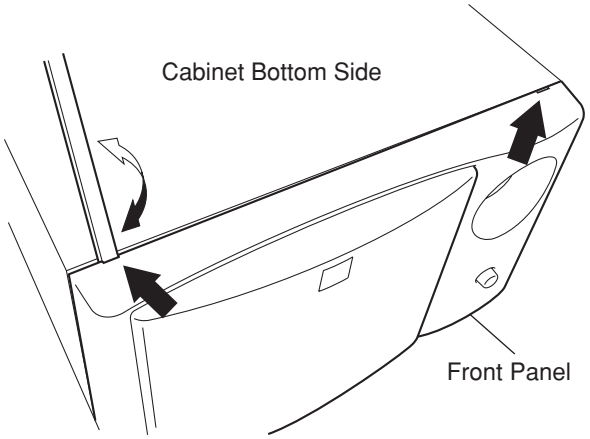
27e-2 Remove the LCD lower case. (See procedure 27b-2.)

27e-3 Remove the four (4) screws marked [190C]. The LCD can then be removed. (Fig.22)

■ DISASSEMBLY PROCEDURE (TRS-MS02)

1. Grille Assembly (Time required: About 2 minutes)

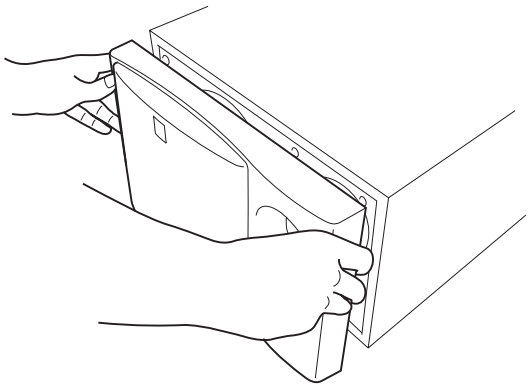
1-1 Lay the unit upside down, insert a thin plate such as a ruler into the two slits on the bottom, then unclench slightly the front panel. (Fig.1)



(Fig.1)

* Take great care not to damage the cabinet. Stop unclenching when a small clearance is formed.

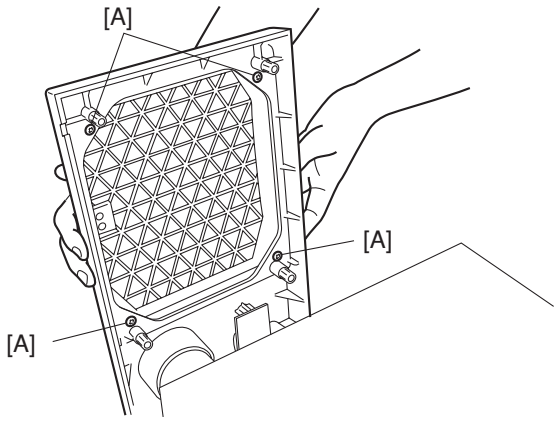
1-2 Pull the front panel forward to remove. (Fig.2)



(Fig.2)

* The front panel is fixed on the cabinet by six dowels, so take care not to force diagonally too much.

1-3 Remove the four (4) screws marked [A]. The grille assembly can then be removed. (Fig.3)



(Fig.3)

2. AC Power Cord (Time required: About 3 minutes)

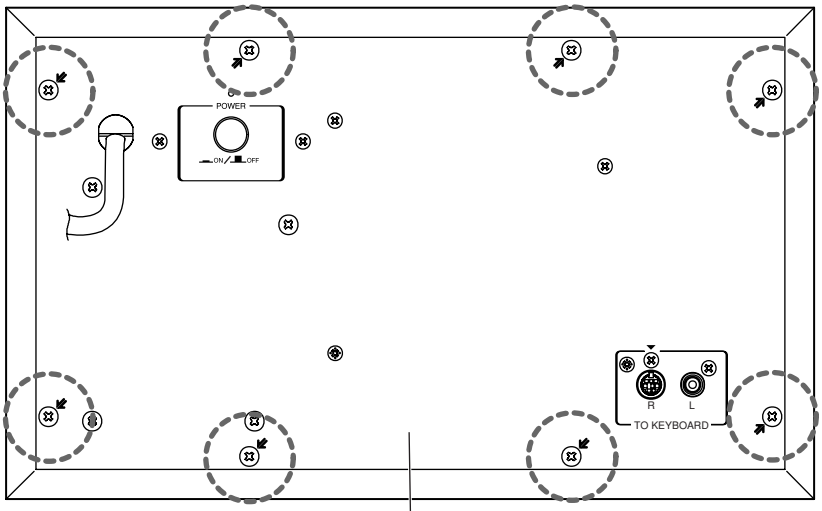
2-1 Remove the eight (8) screws marked [B]. The rear panel can then be removed.
(The screws to be removed are indicated by arrows '->' on the rear panel.) (Fig.4)

* When reinstalling the rear panel, confirm that the packing is not damaged to avoid air leakage. (Fig.5)

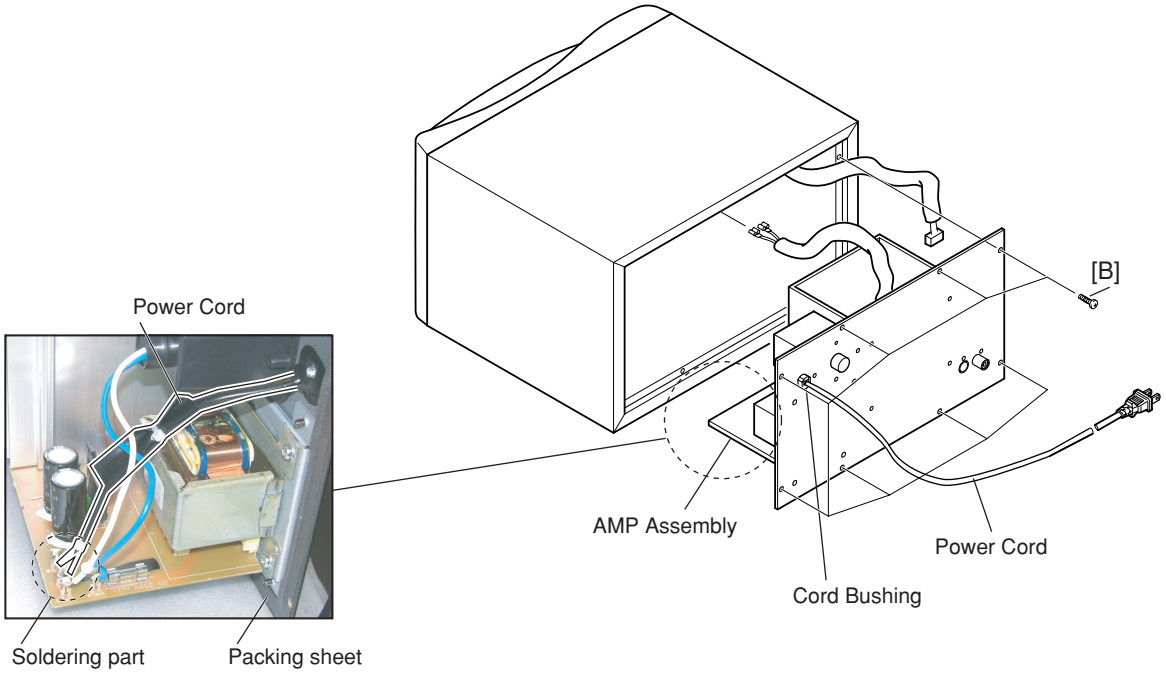
2-2 Remove the soldering portions of the AC power cord from the AMP assembly. (Fig.5)

2-3 Remove the cord bushing from the rear panel. The AC power cord can then be removed. (Fig.5)

* When reinstalling the rear panel, confirm that the packing is not damaged to avoid air leakage. (Fig.5)


POWER
ON
OFF
R
L
TO KEYBOARD
Rear Panel

(Fig.4)


Power Cord
[B]
AMP Assembly
Power Cord
Cord Bushing
Soldering part
Packing sheet

(Fig.5)

■ LSI PIN DESCRIPTION

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● **HD6417727F160CV** (X2890B00) **CPU**

DM: IC6

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	Vcc-RTC	-	Power supply for RTC (1.9V)	121	PTM[4]/PINT[4]/AFE_RDET_/USB1d_TXDMNS	I	Not in use
2	XTAL2	-	Not in use (XTAL for internal RTC)	122	Reserved/USB1d_SUSPEND	O	
3	EXTAL2	-		123	USB1_ovr_crnt/USBF_VBUS	I	USB function VBUS
4	Vss-RTC	-	Power supply for RTC (0V)	124	USB2_ovr_crnt_	-	USB2_HOST2 over current detection
5	MD1	-	Clock mode setting	125	RTS2_/USB1d_TXENL	O	Not in use
6	MD2	-		126	PTE[2]/USB1_pwr_en	O	USB1 voltage control
7	NMI	-	Not in use (Non-maskable interrupt request)	127	PTE[1]/USB2_pwr_en	O	USB2 voltage control
8	IRQ0/IRL0_/PTH[0]	I	External interrupt request	128	CKE/PTK[5]	O	Enable (SDRAM)
9	IRQ1/IRL1_/PTH[1]	I		129	/RAS3/PTJ[0]	O	RAS for SDRAM
10	IRQ2/IRL2_/PTH[2]	I		130	Reserved/PTJ[1]	O	Not in use
11	IRQ3/IRL3_/PTH[3]	I		131	Reserved//CAS/PTJ[2]	O	CAS for SDRAM
12	IRQ4/PTH[4]	I		132	VssQ	-	VssQ
13	VEPWC	O	VEE control pin for LCD panel	133	Reserved/PTJ[3]	O	Output port (DAC Reset)
14	VCPWC	-	VCC control pin for LCD panel	134	VccQ	-	VccQ
15	MD5	-	Big endian setting	135	Reserved/PTJ[4]	O	Output port (SIO Reset)
16	/BREQ	-	Not in use (bus request)	136	Reserved/PTJ[5]	O	Output port (DAC Mute)
17	/BACK	-	Bus acknowledge	137	Vss	-	Vss
18	VssQ	-	VssQ	138	PTD[5]/CL1	O	LCD line clock
19	CKIO2	-	System clock output	139	Vcc	-	Vcc
20	VccQ	-	VccQ	140	PTD[7]/DON	O	LCD DISPLAY ON
21	D31/PTB[7]	I/O	Data bus	141	PTE[6]/M_DISP	O	LCD alternater
22	D30/PTB[6]	I/O		142	PTE[3]/FLM	O	LCD frame line marker
23	D29/PTB[5]	I/O		143	PTE[0]/TDO	O	JTAG (test data output)
24	D28/PTB[4]	I/O		144	PCC0RESET/DRACK0	O	DMA request acceptance
25	D27/PTB[3]	I/O		145	PCC0DRV_/DACK0_	O	DMA acknowledge
26	D26/PTB[2]	I/O		146	/WAIT	-	Hardware wait request
27	D25/PTB[1]	I/O		147	/RESETM	-	Manual reset request
28	D24/PTB[0]	I/O		148	/ADTRG/PTH[5]	I	Analog A/D trigger
29	VssQ	-	VssQ	149	/IOIS16/PTG[7]	I	Not in use
30	D23/PTA[7]	I/O	Data bus	150	/ASEMD0	-	
31	VccQ	-	VccQ	151	PTG[5]/ASEBRKAK_		
32	D22/PTA[6]	I/O	Data bus	152	PTG[4]	I	
33	D21/PTA[5]	I/O		153	PCC0BVD2/PTG[3]/AUDATA[3]	I	
34	D20/PTA[4]	I/O		154	PCC0BVD1/PTG[2]/AUDATA[2]	I	
35	Vss	-	Vss	155	Vss	-	Vss
36	D19/PTA[3]	I/O	Data bus	156	PCC0CD2/PTG[1]/AUDATA[1]	I	Not in use
37	Vcc	-	Vcc	157	Vcc	-	Vcc
38	D18/PTA[2]	I/O		158	PCC0CD1/PTG[0]/AUDATA[0]	I	Not in use
39	D17/PTA[1]	I/O		159	VssQ	-	VssQ
40	D16/PTA[0]	I/O		160	PTF[7]/PINT[15]/TRST_	I	Not in use
41	D15	-		161	VccQ	-	VccQ
42	VssQ	-	VssQ	162	PTF[6]/PINT[14]/TMS	I	Not in use
43	D14	-	Data bus	163	PTF[5]/PINT[13]/TDI	I	
44	VccQ	-	VccQ	164	PTF[4]/PINT[12]/TCK	I	
45	D13	-	Data bus	165	PTF[3]/PINT[11]/Reserved	I	
46	D12	-		166	PCCREG_/PTF[2]/Reserved	I	
47	D11	-		167	PCC0VS1_/PTF[1]/Reserved	I	
48	D10	-		168	PCC0VS2_/PTF[0]/Reserved	I	
49	D9	-		169	MD0	-	Clock mode setting
50	D8	-		170	Vcc-PLL1	-	Power supply for Vcc_PLL1 - PLL1(1.9V)
51	D7	-		171	CAP1	-	External capacitance for CAP1 _ PLL1
52	D6	-		172	Vss-PLL1	-	Power supply for Vss_PLL1 _ PLL1(0V)
53	VssQ	-	VssQ	173	Vss-PLL2	-	Power supply for Vss_PLL2 _ PLL2 (0V)
54	D5	-	Data bus	174	CAP2	-	External capacitance for CAP2 _ PLL2
55	VccQ	-	VccQ	175	Vcc-PLL2	-	Power supply for Vcc_PLL2 _ PLL2 (1.9V)
56	D4	-	Data bus	176	PCC0WAIT_/PTH[6]/AUDCK	I	Not in use
57	D3	-		177	Vss	-	Vss
58	D2	-		178	Vcc	-	Vcc
59	D1	-		179	XTAL	-	Clock oscillator
60	D0	-		180	EXTAL	-	External clock
61	A0	-	Address bus	181	LCD15/PTM[3]/PINT[10]	I	Not in use
62	A1	-		182	LCD14/PTM[2]/PINT[9]	I	
63	A2	-		183	LCD13/PTM[1]/PINT[8]	I	
64	VssQ	-	VssQ	184	LCD12/PTM[0]	I	Input port (Flash ROM RY/BY)
65	A3	-	Address bus	185	STATUS0/PTJ[6]	O	Output port (Flash ROM write protect)
66	VccQ	-	VccQ	186	STATUS1/PTJ[7]	O	Output port (Flash ROM ACC)
67	A4	-	Address bus	187	CL2/PTH[7]	O	LCD clock output
68	A5	-		188	VssQ	-	VssQ
69	A6	-		189	CKIO	-	System clock input/output (for SDRAM)
70	A7	-		190	VccQ	-	VccQ
71	A8	-		191	TxD0/SCPT[0]	O	Output port for SCI
72	A9	-		192	SCK0/SCPT[1]	O	Not in use
73	A10	-		193	TxD_SIO/SCPT[2]	O	
74	A11	-		194	SIOMCLK/SCPT[3]	O	
75	VssQ	-	VssQ	195	TxD2/SCPT[4]	O	Output port for SCI
76	A12	-	Address bus	196	SCK_SIO/SCPT[5]	O	Not in use
77	VccQ	-	VccQ	197	SIOFSYNC/SCPT[6]	O	
78	A13	-	Address bus	198	RxD0/SCPT[0]	i	Receiving data 0
79	A14	-		199	RxD_SIO/SCPT[2]	i	Not in use
80	A15	-		200	Vss	-	Vss
81	A16	-		201	RxD2/SCPT[4]	i	Receiving data 2
82	A17	-		202	Vcc	-	Vcc
83	A18	-		203	SCPT[7]/CTS2_/IRQ5	I	Not in use
84	A19	-		204	LCD11/PTC[7]/PINT[3]	O	Output port (PLG CLOCK ON/OFF)
85	A20	-		205	LCD10/PTC[6]/PINT[2]	O	Not in use
86	VssQ	-	VssQ	206	LCD9/PTC[5]/PINT[1]	O	
87	A21	-	Address bus	207	VssQ	-	VssQ
88	VccQ	-	VccQ	208	LCD8/PTC[4]/PINT[0]	O	Not in use
89	A22	-	Address bus	209	VccQ	-	VccQ
90	A23	-		210	LCD7/PTD[3]	O	LCD DATA7
91	Vss	-	Vss	211	LCD6/PTD[2]	O	LCD DATA6
92	A24	-	Address bus	212	LCD5/PTC[3]	O	LCD DATA5
93	Vcc	-	Vcc	213	LCD4/PTC[2]	O	LCD DATA4
94	A25	-	Address bus	214	LCD3/PTC[1]	O	LCD DATA3
95	BS_/PTK[4]	O	Not connected (bus cycle start signal)	215	LCD2/PTC[0]	O	LCD DATA2
96	RD_	-	Read strobe	216	LCD1/PTD[1]	O	LCD DATA1
97	WE0_/DQMLL	O	Write 0 signal	217	LCD0/PTD[0]	O	LCD DATA0
98	WE1_/DQMLU/WE	O	Write 1 signal	218	DREQ0_/PTD[4]	I	DMA request
99	WE2_/DQMUL/ICIORD_/PTK[6]	O	Write 2 signal	219	LCK/UCLK/PTD[6]	I	USB clock
100	VssQ	-	VssQ	220	/RESETP	-	Power on reset request
101	WE3_/DQMUU/ICIOWR_/PTK{7}	O	Write 3 signal	221	CA	-	Hardware standby request
102	VccQ	-	VccQ	222	MD3	-	Bus width setting for area0
103	RD/WR_	O	Read/Write	223	MD4	-	
104	PTE[7]/PCC0RDY/AUDSYNC_	O	I/O	224	/Scan_testen	-	Test pin (fixed to 3.3V)
105	/CS0	-	Chip Select 0	225	Avcc_USB	-	USB analog power supply (3.3V)
106	/CS2	-	Chip Select 2	226	USB1_P	IO	USB1 data input/output (+)
107	/CS3	-	Chip Select 3	227	USB1_M	IO	USB1 data input/output (-)
108	/CS4/PTK[2]	O	Chip Select 4	228	Avss_USB	-	USB analog power supply (0V)
109	/CS5/CE1A_/PTK[3]	O	Chip Select 5	229	USB2_P	IO	USB2 data input/output (+)
110	/CS6/CE1B_	O	Chip Select 6	230	USB2_M	IO	USB2 data input/output (-)
111	CE2A_/PTE[4]	O	Output port (SWP50 Reset)	231	Avcc_USB	-	USB analog power supply (3.3V)
112	CE2B_/PTE[5]	O	Output port (PLG Board Reset)	232	Avss	-	A/D analog power supply (0V)
113	AFE_HC1/USB1d_DPLS/PTK[0]	O	SPD DATA	233	AN[2]/PTL[2]	I	AD converter input
114	AFE_RLYCNT_/USB1d_DMNS/PTK[1]	O	SPD CL	234	AN[3]/PTL[3]	I	
115	VssQ	-	VssQ	235	AN[4]/PTL[4]	I	
116	AFE_SCLK/USB1d_TXDPLS	I	Not in use (USB1 D+ transmission)	236	AN[5]/PTL[5]	I	
117	VccQ	-	VccQ	237	Avcc	-	A/D analog power supply (3.3V)
118	PTM[7]/PTINT[7]/AFE_FS/USB1d_RCV	I	Not in use	238	AN[6]/PTL[6]/DA[1]	I	AD converter input
119	PTM[6]/PTINT[6]/AFE_RXIN/USB1d_SPEED	I		239	AN[7]/PTL[7]/DA[0]	O	DA converter output (LCD contrast)
120	PTM[5]/PTINT[5]/AFE_TXOUT/USB1d_TXSE0	I		240	Avss	-	A/D analog power supply (0V)

● **HD6417709SHF200BV** (X2687B00) **CPU** (SH3)

DM: IC407

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	MD1	I	Mode control	105	CKE/PTK5	I/O	CK enable / Port K
2	MD2	I		106	RAS3L/PTJ0	I/O	RAS address bus / Port J
3	Vcc(RTC)	-	Power supply +2.0 V	107	PTJ1	I/O	Port J
4	XTAL2	O	Crystal oscillator	108	CASL/PTJ2	I/O	CAS address bus / Port J
5	EXTAL2	I		109	VssQ	-	Ground
6	Vss(RTC)	-	Ground	110	CASU/PTJ3	I/O	CAS address bus / Port J
7	NMI	I	Non-maskable interrupt request	111	VccQ	-	Power supply +3.3 V
8	IRQ0/IRL0/PTH0	I	Interrupt request / Port H	112	PTJ4	I/O	Port J
9	IRQ1/IRL1/PTH1	I		113	PTJ5	I/O	
10	IRQ2/IRL2/PTH2	I		114	DACK0/PTD5	I/O	DMA acknowledge / Port D
11	IRQ3/IRL3/PTH3	I		115	DACK1/PTD7	I/O	
12	IRQ4/PTH4	I		116	PTE6	I/O	Port E
13	D31/PTB7	I/O	Data bus / Port B	117	PTE3	I/O	
14	D30/PTB6	I/O		118	RAS3U/PTE2	I/O	RAS address bus / Port E
15	D29/PTB5	I/O		119	PTE1	I/O	Port E
16	D28/PTB4	I/O		120	TDO/PTE0	I/O	Test data / Port E
17	D27/PTB3	I/O		121	BACK	O	Bus acknowledge
18	D26/PTB2	I/O		122	BREQ	I	Bus request
19	VssQ	-	Ground	123	WAIT	I	Hardware wait request
20	D25/PTB1	I/O	Data bus / Port B	124	RESETM	I	Manual reset
21	VccQ	-	Power supply +3.3 V	125	ADTRG/PTH5	I	Analog trigger / Port H
22	D24/PTB0	I/O	Data bus / Port B	126	IOIS16/PTG7	I	Write protect / Port G
23	D23/PTA7	I/O	Data bus / Port A	127	ASEMD0/PTG6	I	ASE mode / Port G
24	D22/PTA6	I/O		128	ASEBRKAK/PTG5	I/O	ASE break acknowledge / Port G
25	D21/PTA5	I/O		129	PTG4/CKIO2	I/O	Port G / Clock output
26	D20/PTA4	I/O		130	AUDATA3/PTG3	I/O	AUD data / Port G
27	Vss	-	Ground	131	AUDATA2/PTG2	I/O	
28	D19/PTA3	I/O	Data bus / Port A	132	Vss	-	Ground
29	Vcc	-	Power supply +1.8 V	133	AUDATA1/PTG1	I/O	AUD data / Port G
30	D18/PTA2	I/O	Data bus / Port A	134	Vcc	-	Power supply +2.0 V
31	D17/PTA1	I/O		135	AUDATA0/PTG0	I/O	AUD data / Port G
32	D16/PTA0	I/O		136	TRST/PTF7/PINT15	I	Test reset / Port F / Port interruption
33	VssQ	-	Ground	137	TMS/PTF6/PINT14	I	Test mode switch / Port F / Port interruption
34	D15	I/O	Data bus	138	TDI/PTF5/PINT13	I	Test data / Port F / Port interruption
35	VccQ	-	Power supply +3.3 V	139	TCK/PTF4/PINT12	I	Test clock / Port F / Port interruption
36	D14	I/O	Data bus	140	IRLS3/PTF3/PINT11	I	Interrupt request / Port F / Port interruption
37	D13	I/O		141	IRL2/PTF2/PINT10	I	
38	D12	I/O		142	IRLS1/PTF1/PINT9	I	
39	D11	I/O		143	IRLS0/PTF0/PINT8	I	
40	D10	I/O		144	MD0	I	Mode control
41	D9	I/O		145	Vcc(PLL1)	-	Power supply +2.0 V
42	D8	I/O		146	CAP1	-	Capacitor
43	D7	I/O		147	Vss(PLL1)	-	Ground
44	D6	I/O		148	Vss(PLL2)	-	Ground
45	VssQ	-	Ground	149	CAP2	-	Capacitor
46	D5	I/O	Data bus	150	VCC(PLL2)	-	Power supply +2.0 V
47	VccQ	-	Power supply +3.3 V	151	AUDCK/PTH6	I	AUD clock / Port H
48	D4	I/O	Data bus	152	Vss	-	Ground
49	D3	I/O		153	Vss	-	
50	D2	I/O		154	Vcc	-	Power supply +2.0 V
51	D1	I/O		155	XTAL	O	Crystal oscillator
52	D0	I/O		156	EXTAL	I	
53	A0	O	Address bus	157	STATUS0/PTJ6	I/O	Processor status / Port J
54	A1	O		158	STATUS1/PTJ7	I/O	
55	A2	O		159	TCLK/PTH7	I/O	Timer clock / Port H
56	A3	O		160	/IRQOUT	O	Interrupt request output
57	VssQ	-	Ground	161	VssQ	-	Ground
58	A4	O	Address bus	162	CKIO	I/O	System clock input / output
59	VccQ	-	Power supply +3.3 V	163	VccQ	-	Power supply +3.3 V
60	A5	O	Address bus	164	TXD0/SCPT0	O	Data transmission / SCI port
61	A6	O		165	SCK0/SCPT1	I/O	Serial clock / SCI port
62	A7	O		166	TXD1/SCPT2	O	Data transmission / SCI port
63	A8	O		167	SCK1/SCPT3	I/O	Serial clock / SCI port
64	A9	O		168	TXD2/SCPT4	O	Data transmission / SCI port
65	A10	O		169	SCK2/SCPT5	I/O	Serial clock / SCI port
66	A11	O		170	RTS2/SCPT6	I/O	Transmit request / SCI port
67	A12	O		171	RXD0/SCPT0	I	Data reception / SCI port
68	A13	O		172	RXD1/SCPT2	I	
69	VssQ	-	Ground	173	Vss	-	Ground
70	A14	O	Address bus	174	RXD2/SCPT4	I	Data reception / SCI port
71	VccQ	-	Power supply +3.3 V	175	Vcc	-	Power supply +2.0 V
72	A15	O	Address bus	176	CTS2/IRQ5/SCPT7	I	Transmit clear / Interrupt request / SCI port
73	A16	O		177	MCS7/PTC7/PINT7	I/O	Mask ROM chip select / Port C / Port interruption
74	A17	O		178	MCS6/PTC6/PINT6	I/O	
75	A18	O		179	MCS5/PTC5/PINT5	I/O	
76	A19	O		180	MCS4/PTC4/PINT4	I/O	
77	A20	O		181	VssQ	-	Ground
78	A21	O		182	WAKEUP/PTD3	I/O	Standby mode Interrupt request output / Port D
79	Vss	-	Ground	183	VccQ	-	Power supply +3.3 V
80	A22	O	Address bus	184	RESETOUT/PTD2	I/O	Reset output / Port D
81	Vcc	-	Power supply +2.0 V	185	MCS3/PTC3/PINT3	I/O	Mask ROM chip select / Port C / Port interruption
82	A23	O	Address bus	186	MCS2/PTC2/PINT2	I/O	
83	VssQ	-	Ground	187	MCS1/PTC1/PINT1	I/O	
84	A24	O	Address bus	188	MCS0/PTC0/PINT0	I/O	
85	VccQ	-	Power supply +3.3 V	189	DRAK0/PTD1	I/O	DMA acknowledge / Port D
86	A25	O	Address bus	190	DRAK1/PTD0	I/O	
87	BS/PTK4	I/O	Bus cycle / Port K	191	DREQ0/PTD4	I	DMA request / Port D
88	RD	O	Read strobe	192	DREQ1/PTD6	I	
89	WE0/DQMLL	O	Select signal (D7-D0) / D QM (SDRAM)	193	RESETP	I	Power on reset
90	WE1/DQMLU/WE	O	Select signal (D15-D8) / D QM (SDRAM) / Write enable	194	CA	I	Chip active
91	WE2/DQMUL/ICIORD/PTK6	I/O	Select signal (D23-D16) / D QM (SDRAM) / I/O read / Port K	195	MD3	I	Mode control
92	WE3/DQMUU/IISIOWR/PTK7	I/O	Select signal (D31-D24) / D QM (SDRAM) / I/O write / Port K	196	MD4	I	
93	RD/WR	O	Read / Write	197	MD5	I	
94	AUDSYNC/PTE7	I/O	AUD cycle / Port E	198	AVss	-	Analog ground
95	VssQ	-	Ground	199	AN0/PTL0	I	Analog input / Port L
96	CS0/MCS0	O	Chip select / Mask ROM chip select	200	AN1/PTL1	I	
97	VccQ	-	Power supply +3.3V	201	AN2/PTL2	I	
98	CS2/PTK0	I/O	Chip select / Port K	202	AN3/PTL3	I	
99	CS3/PTK1	I/O		203	AN4/PTL4	I	
100	CS4/PTK2	I/O		204	AN5/PTL5	I	
101	CS5/CE1A/PTK3	I/O	Chip select / Chip enable / Port K	205	AVcc	-	Analog power supply +3.3 V
102	CS6/CE1B	O	Chip select / Chip enable	206	AN6/DA1/PTL6	I/O	Analog input / Analog output / Port L
103	CE2A/PTE4	I/O	Chip enable / Port E	207	AN7/DA0/PTL7	I/O	
104	CE2B/PTE5	I/O		208	AVss	-	Analog ground

● **M38869M8A-112GPUO** (XZ878100) **CPU** (EBUS HOST) DM: IC51

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	P60/AN0	I/O	CMOS 8Bit Input Output Port	41	P15	I/O	
2	P77/SCL	I/O		42	P14	I/O	
3	P76/SDA	I/O		43	P13	I/O	CMOS 8Bit Input Output Port
4	P75/INT41	I/O		44	P12	I/O	
5	P74/INT31	I/O	CMOS 8Bit Input Output Port	45	P11	I/O	
6	P73/SRDY2/INT21	I/O		46	P10	I/O	
7	P72/SCLK2	I/O		47	P07	I/O	
8	P71/SOUT2	I/O		48	P06	I/O	
9	P70/SIN2	I/O		49	P05	I/O	
10	P57/DA2/PW/M11	I/O		50	P04	I/O	CMOS 8Bit Input Output Port
11	P56/DA1/PW/M01	I/O		51	P03	I/O	
12	P55/CNTR1	I/O		52	P02	I/O	
13	P54/CNTR0	I/O	CMOS 8Bit Input Output Port	53	P01	I/O	
14	P53/INT40/W	I/O		54	P00/P3REF	I/O	
15	P52/INT30/R	I/O		55	P37	I/O	
16	P51/INT20/So	I/O		56	P36	I/O	
17	P50/A0	I/O		57	P35	I/O	
18	P47/SRDY1/S1	I/O		58	P34	I/O	CMOS 8Bit Input Output Port
19	P46/SCLK1/OBF10	I/O		59	P33	I/O	
20	P45/TxD	I/O	CMOS 8Bit Input Output Port	60	P32	I/O	
21	P44/RxD	I/O		61	P31/PWM10	I/O	
22	P43/INT1/OBF01	I/O		62	P30/PWM00	I/O	
23	P42/INT0/OBF00	I/O		63	P87/DQ7	I/O	
24	CNVSS	I	Change Processor Mode	64	P86/DQ6	I/O	
25	RESET	I	Reset Input	65	P85/DQ5	I/O	
26	P41/XCIN	I/O	CMOS 8Bit Input Output Port	66	P84/DQ4	I/O	CMOS 8Bit Input Output Port
27	P40/XCOUT	I/O	CMOS 8Bit Input Output Port	67	P83/DQ3	I/O	
28	XIN	I	Main Clock Input	68	P82/DQ2	I/O	
29	XOUT	O	Main Clock Output	69	P81/DQ1	I/O	
30	VSS		Power Supply	70	P80/DQ0	I/O	
31	P27	I/O		71	VCC		Power Supply
32	P26	I/O		72	VREF	I	A/D D/A Power Supply input
33	P25	I/O		73	AVss	I	Analog Power Supply input
34	P24	I/O	CMOS 8Bit Input Output Port	74	P67/AN7	I/O	
35	P23	I/O		75	P66/AN6	I/O	
36	P22	I/O		76	P65/AN5	I/O	
37	P21	I/O		77	P64/AN4	I/O	CMOS 8Bit Input Output Port
38	P20	I/O		78	P63/AN3	I/O	
39	P17	I/O	CMOS 8Bit Input Output Port	79	P62/AN2	I/O	
40	P16	I/O		80	P61/AN1	I/O	

● **AK5381VT-E2** (X5219A00) **A/D CONVERTER** DAC2A: IC401

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	AINR	I	Rch Analog input pin	9	SDTO	O	Audio serial data output pin
2	AINL	I	Lch Analog input pin	10	LRCK	I/O	Output channnel clock pin
3	CKS1	I	Mode select 1 pin	11	MCLK	I	Master clock input pin
4	VCOM	O	Common voltage output pin	12	SCLK	I/O	Audio serial data clock pin
5	AGND	-	Analog ground	13	PDN	I	Power down mode pin
6	VA	-	Analog power supply	14	DIF	I	Audio interface format pin
7	VD	-	Digital power supply	15	CKS2	I	Mode select 2 pin
8	DGND	-	Digital ground	16	CKS0	I	Mode select 0 pin

● **UPD780031AYGK-N05** (XZ916200) **CPU** (LED DRIVER/SWITCH SCAN)

PNL: IC2, PNR: IC2

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	P50/A8	I/O	Port 5 / Higher address bus	33	P10/ANI0	I	Port 1 / A/D converter analog input
2	P51/A9	I/O		34	AVREF	I	A/D converter reference voltage input
3	P51/A10	I/O		35	AVDD	-	Analog power supply
4	P53/A11	I/O		36	RESET	I	System reset input
5	P54/A12	I/O		37	XT2	-	Subsystem clock oscillation
6	P55/A13	I/O		38	XT1	I	
7	P56/A14	I/O		39	IC	-	Internally connected
8	P57/A15	I/O		40	X2	-	Main system clock oscillation
9	Vss0	-	Ground	41	X1	I	
10	VDD0	-	Power supply	42	Vss1	-	Ground
11	P30	I/O	Port 3	43	P00/INTP0	I/O	Port 0 / External interrupt request input
12	P31	I/O		44	P01/INTP1	I/O	
13	P32/SDA0	I/O	Port 3 / Serial data input/output	45	P02/INTP2	I/O	
14	P33/SCL0	I/O	Port 3 / Serial clock input/output	46	P03/INTP3/ADTRG	I/O	Port 0 / External interrupt request input / Trigger signal input
15	P34	I/O	Port 3	47	P70/TI00/TO0	I/O	Port 7 / External count clock input / 16-bit timer/event counter 0 output
16	P35	I/O		48	P71/TI01	I/O	Port 7 / Capture trigger input
17	P36	I/O		49	P72/TI50/TO50	I/O	Port 7 / External count clock input / 8-bit timer/event counter 50 output
18	P20/SI30	I/O	Port 2 / Serial data input	50	P73/TI51/TO51	I/O	Port 7 / External count clock input / 8-bit timer/event counter 51 output
19	P21/SO30	I/O	Port 2 / Serial data output	51	P74/PCL	I/O	Port 7 / Clock output
20	P22/SCK30	I/O	Port 2 / Serial clock input/output	52	P75/BUZ	I/O	Port 7 / Buzzer output
21	P23RxD0	I/O	Port 2 / Serial data input	53	P64/RD	I/O	Port 6 / Strobe signal output for reading
22	P24/TxD0	I/O	Port 2 / Serial data output	54	P65/WR	I/O	Port 6 / Strobe signal output for writing
23	P25/ASCK0	I/O	Port 2 / Serial clock input/output	55	P66/WAIT	I/O	Port 6 / Wait insertion
24	VDD1	-	Power supply	56	P67/ASTB	I/O	Port 6 / Strobe output
25	AVss	-	Ground	57	P40/AD0	I/O	Port 4 / Lower address/data bus
26	P17/ANI7	I	Port 1 / A/D converter analog input	58	P41/AD1	I/O	
27	P16/ANI6	I		59	P42/AD2	I/O	
28	P15/ANI5	I		60	P43/AD3	I/O	
29	P14/ANI4	I		61	P44/AD4	I/O	
30	P13/ANI3	I		62	P45/AD5	I/O	
31	P12/ANI2	I		63	P46/AD6	I/O	
32	P11/ANI1	I		64	A47/AD7	I/O	

● **HD6433693B14HV** (X4801200) **CPU**

EMKS-FD: IC005

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	NC		Not used	33	NC		Not used
2	NC			34	NC		
3	AVCC	-	Power supply	35	NMI	I	Non maskable interrupt
4	X2	O	Crystal resonator	36	P80/FTCI	I/O	8-bit I/O port / External event input
5	X1	I		37	P81/FTIOA	I/O	8-bit I/O port / Output compare
6	VCL	-	Power supply	38	P82/FTIOB	I/O	8-bit I/O port / Output / input capture
7	RES	I	Reset pin	39	P83/FTIOC	I/O	8-bit I/O port / Input PWM
8	TEST	I	Test pin	40	P84/FTIOD	I/O	8-bit I/O port / Output
9	Vss	-	Ground	41	P85	I/O	8-bit I/O port
10	OSC2	O	Crystal or ceramic resonator	42	P86	I/O	
11	OSC1	I		43	P87	I/O	
12	VCC	-	Power supply	44	P20/SCK3	I/O	3-bit I/O port / Clock
13	P50/WKP0	I/O	8-bit I/O port / Interrupt request	45	P21/RXD	I/O	3-bit I/O port / Receive data input
14	P51/WKP1	I/O		46	P22/TXD	I/O	3-bit I/O port / Transmit data output
15	NC		Not used	47	NC		Not used
16	NC			48	NC		
17	NC			49	NC		
18	NC			50	NC		
19	P52/WKP2	I/O	8-bit I/O port / Interrupt request	51	P14/IRQ0	I/O	7-bit I/O port / Interrput request
20	P53/WKP3	I/O		52	P15/IRQ1	I/O	
21	P54/WKP4	I/O		53	P16/IRQ2	I/O	
22	P55/WKP5/ADTRG	I/O	8-bit I/O port / Interrupt request / A/D converter trigger	54	P17/IRQ3/TRGV	I/O	7-bit I/O port / Interrput request / Trigger input
23	P10/TMOW	I/O	7-bit I/O port	55	PB4/AN4	I/O	8-bit I/O port / Analog input
24	P11	I/O		56	PB5/AN5	I/O	
25	P12	I/O		57	PB6/AN6	I/O	
26	P56/SDA	I/O	IIC data I/O pin	58	PB7/AN7	I/O	
27	P57/SCL	I/O		59	PB3/AN3	I/O	
28	P74/TMRIV	I/O	3-bit I/O port / Timer	60	PB2/AN2	I/O	
29	P75/TMCIV	I/O		61	PB1/AN1	I/O	
30	P76/TMOV	I/O		62	PB0/AN0	I/O	
31	NC		Not used	63	NC		Not used
32	NC			64	NC		

● M34519M6-521FP (X5646200) CPU(LSC)

PNC: IC1, PNR: IC1

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	LB12	I/O	4-bit I/O port P1	22	VDD	-	Power supply
2	LB11	I/O		23	VDCE	I	Voltage drop detection circuit enable
3	LB10	I/O		24	L0	I/O	INT0 } Interrupt input
4	LB09	I/O		25	L1	I/O	INT1 }
5	LB08	I/O	1-bit I/O port D	26	L2	I/O	4-bit I/O port P3
6	LB07	I/O	Input is examined by skip decision.	27	L3	I/O	
7	LB06	I/O		28	L4	I/O	4-bit I/O port P6 AIN0
8	LB05	I/O	CNTR0 } Timer input/output	29	NC		
9	LB04	I/O	CNTR1 }	30	NC		Not used
10	LB03	I/O		31	NC		
11	LB02	I/O		32	D0	I/O	AIN4 } Analog input
12	LB01	I/O	4-bit I/O port P5	33	D1	I/O	4-bit I/O port P4 AIN5
13	LB00	I/O		34	D2	I/O	AIN6
14	NC			35	D3	I/O	AIN7
15	NC		Not used	36	LB19	I/O	
16	NC			37	LB18	I/O	4-bit I/O port P0
17	$\overline{\text{RESET}}$	I/O	Reset input /output	38	LB17	I/O	
18	CNVSS	-	Connect CNVss to Vss and apply "L"(0V) to CNCss certainly.	39	LB16	I/O	
				40	LB15	I/O	
19	XOUT	O	Main clock output	41	LB14	I/O	4-bit I/O port P1
20	XIN	I	Main clock input	42	LB13	I/O	
21	VSS	-	Ground				

● AK4393VF-E2 (XW029A00) D/A CONVERTER

DAC2A: IC201,IC301

PIN No.	NAME	I/O	FUNCTION	PIN No.	NAME	I/O	FUNCTION
1	DVSS	-	Digital Ground Pin	15	BVSS	I	Substrate Ground Pin, 0V
2	DVDD	-	Digital Power Supply Pin, 3.3V or 5.0V	16	VREFL	I	Low Level Voltage Reference Input Pin
3	MCLK	I	Master Clock Input Pin	17	VREFH	-	High Level Voltage Reference Input Pin
4	$\overline{\text{PD}}$	I	Power-Down Mode Pin When at "L",the Ak4393 is in power-down mode and is held in reset. The AK4393 should always be reset upon power-up.	18	AVDD	-	Analog Power Supply Pin,5V
5	BICK	I	Audio Serial Data Clock Pin The clock of 64fs or more than is	19	AVSS	O	Analog Ground Pin, 0V
6	SDATA	I	recommended to be input on this pin. Audio Serial Data Input Pin 2's complement MSB-first data is input on this pin.	20	AOUTR-	O	Rch Negative analog output Pin
7	LRCK	I	L/R Clock Pin	21	AOUTR+	O	Rch Positive analog output Pin
8	SMUTE	I	Soft Mute Pin When this pin goes "H", soft mute cycle is initiated. When returning "L",the output mute releases.	22	AOUTL-	O	Lch Negative analog output Pin
	$\overline{\text{CS}}$	I	Chip Select Pin in serial mode				
9	DFS	I	Doubla speed sampling mode Pin (Internal pull-down pin) "L":Normal Speed, "H":Double Speed	23	AOUTL+	O	Lch Positive analog output Pin
10	DEM0	I	De-emphasis Enable pin	24	VCOM	O	Common Voltage Output Pin,2.6V
	CCLK	I	Control Data Clock Pin in serial mode				
11	DEM1	I	De-emphasis Enable pin	25	P/$\overline{\text{S}}$	I	Parallel/Serial Select Pin(Internal pull-up pin)
	CDTI	I	Control Data Input Pin in serial mode				"L":Serial control mode,"H": Parallel control mode
12	DIF0	I		26	CKS0	I	
13	DIF1	I	Digital Input Format Pin	27	CKS1	I	Master Clock Select Pin
14	DIF2	I		28	CKS2	I	

● **LC4256V-75TN100 CP** (X6046B00) **CPLD** (MEL) DM:IC53

PinNo.	NAME	I/O	FUNCTION/CONNECTION	PinNo.	NAME	I/O	FUNCTION/CONNECTION
1	GND	-	DGND	51	GND	-	DGND
2	TDI	I	for CPLD data writing (JTAG pin)	52	TMS		for CPLD data communication (JTAG pin)
3	DGA_AUDIO_IN	O	Digital audio signal output	53	MELO_0	O	Data for Playback tracks1 and 2
4	I/O		(to +3.3VD)	54	I/O		(to +3.3VD)
5	DGA_OUT	I	Digital audio signal input	55	MELO_2	O	Data for PLAYBACK tracks 3 and 4
6	I/O		(to +3.3VD)	56	MELI_0	I	Data for RECORD tracks 1 and 2
7	GND	-	DGND	57	GND	-	DGND
8	I/O		(to +3.3VD)	58	I/O		
9	IDERD_O	I	IDE READ signal (active-low)	59	I/O		
10	IDEWR_O	I	IDE WRITE signal (active-low)	60	I/O		(to +3.3VD)
11	IDEMACK_O	I	DMA ACKNOWLEDGE signal (active-low)	61	I/O		
12	CLOCK_INPUT	I	DMA REQUEST signal(active-low)	62	I		
13	VCCO	-	Power supply +3.3VD	63	VCCO	-	Power supply +3.3VD
14	DMACLR	I	DMA CLEAR signal (active-low)	64	I/O		
15	I/O			65	I/O		(to +3.3VD)
16	I/O		(to +3.3VD)	66	I/O		
17	I/O			67	DGAMCLK	O	System master clock (22.5792MHz)
18	GND	-	DGND	68	GND	-	DGND
19	HDIRQ	I	INTERRUPT signal (HDD to CPU) (active-high)	69	DGAWCLK	O	System word clock (44.1kHz)
20	XHDIRQ	O	INTERRUPT signal (HDD to CPU) (active-low)	70	I/O		(to +3.3VD)
21	I/O		(to +3.3VD)	71	IDEMARQ512D	O	IDE DMA request
22	I/O			72	DMAERR	O	(Not used)
23	FS64DGA	I	Bit clock for data between DGA and MAT	73	I	I	(to DGND)
24	TCK	I	Clock for CPLD data communication (JTAG pin)	74	TDD	O	for CPLD data communication
25	VCC		Power supply +3.3VD	75	VCCO	-	Power supply +3.3VD
26	GND	-	DGND	76	GND		DGND
27	I			77	I		(to +3.3VD)
28	I/O			78	I/O		(to DGND)
29	I/O		(to +3.3VD)	79	WCLK1	O	Word clock for DAC (Not used)
30	I/O			80	I/O		(to DGND)
31	I/O			81	WCLK0	O	Word clock for DAC (Not used)
32	GND	-	DGND	82	GND	-	DGND
33	VCCO	-	Power supply +3.3VD	83	VCCO	-	Power supply +3.3VD
34	I/O			84	ADLR	O	LR signal for DAC (Not used)
35	I/O		(to +3.3VD)	85	I/O		(to DGND)
36	I/O			86	FS640UT	O	Maste clock for DAC (Not used)
37	I/O			87	I/O/GOE1		(to DGND)
38	CK512	I	Master clock (22.5792KHz)	88	FS	I	Sampling frequency (44.1kHz)
39	FS128	I	Bit clock for data between SWP50 and MAT (11.2894MHz)	89	FS256	I	256FS (11.2896MHz)
40	I/O			90	VCCO	-	Powe supply +3.3VD
41	I/O			91	I/O/GOE0		
42	I/O		(to +3.3VD)	92	I/O		(to +3.3VD)
43	I/O			93	I/O		
44	I/O			94	I/O		
45	VCCO	-	Power supply +3.3VD	95	VCCO	-	Power supply +3.3VD
46	GND	-	DGND	96	GND	-	Ground
47	I/O			97	I/O		
48	I/O		(to +3.3VD)	98	I/O		(to +3.3VD)
49	I/O			99	I/O		
50	I/O			100	IDMARQ_0512HDL	O	Output in case that the DMA request signal is negated by the rising or falling edge of 512FS. (Not used.)

● **M4A3-64/64-10VNC** (X2987A00) **CPLD** PNL: IC1

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	GND		Ground	51	GND		Ground
2	TDI	I	Test data in	52	ENABLE		Program
3	A1	I/O	Data bus block A	53	C1	I/O	Data bus block C
4	A3	I/O	Data bus block A	54	C3	I/O	Data bus block C
5	A5	I/O	Data bus block A	55	C5	I/O	Data bus block C
6	A7	I/O	Data bus block A	56	C7	I/O	Data bus block C
7	A9	I/O	Data bus block A	57	C9	I/O	Data bus block C
8	A11	I/O	Data bus block A	58	C11	I/O	Data bus block C
9	A13	I/O	Data bus block A	59	C13	I/O	Data bus block C
10	A15	I/O	Data bus block A	60	C15	I/O	Data bus block C
11	I0/CLK1	I		61	I3/CLK2		
12	VCC		Power supply	62	VCC		Power supply
13	GND		Ground	63	GND		Ground
14	I1/CLK1	I		64	I4/CLK3		
15	B15	I/O	Data bus block B	65	D15	I/O	Data bus block D
16	B13	I/O	Data bus block B	66	D13	I/O	Data bus block D
17	B11	I/O	Data bus block B	67	D11	I/O	Data bus block D
18	B9	I/O	Data bus block B	68	D9	I/O	Data bus block D
19	B7	I/O	Data bus block B	69	D7	I/O	Data bus block D
20	B5	I/O	Data bus block B	70	D5	I/O	Data bus block D
21	B3	I/O	Data bus block B	71	D3	I/O	Data bus block D
22	B1	I/O	Data bus block B	72	D1	I/O	Data bus block D
23	TMS		Test mode select	73	TRST		Test reset
24	TCK		Test clock	74	TDO	O	Test data out
25	GND		Ground	75	GND		Ground
26	GND		Ground	76	GND		Ground
27	GND		Ground	77	GND		Ground
28	B14	I/O	Data bus block B	78	D14	I/O	Data bus block D
29	B12	I/O	Data bus block B	79	D12	I/O	Data bus block D
30	B10	I/O	Data bus block B	80	D10	I/O	Data bus block D
31	B8	I/O	Data bus block B	81	D8	I/O	Data bus block D
32	B6	I/O	Data bus block B	82	D6	I/O	Data bus block D
33	B4	I/O	Data bus block B	83	D4	I/O	Data bus block D
34	B2	I/O	Data bus block B	84	D2	I/O	Data bus block D
35	B0	I/O	Data bus block B	85	D0	I/O	Data bus block D
36	I2	I		86	I5	I	
37	VCC		Power supply	87	VCC		Power supply
38	GND		Ground	88	GND		Ground
39	GND		Ground	89	GND		Ground
40	VCC		Power supply	90	VCC		Power supply
41	C0	I/O	Data bus block C	91	A0	I/O	Data bus block A
42	C2	I/O	Data bus block C	92	A2	I/O	Data bus block A
43	C4	I/O	Data bus block C	93	A4	I/O	Data bus block A
44	C6	I/O	Data bus block C	94	A6	I/O	Data bus block A
45	C8	I/O	Data bus block C	95	A8	I/O	Data bus block A
46	C10	I/O	Data bus block C	96	A10	I/O	Data bus block A
47	C12	I/O	Data bus block C	97	A12	I/O	Data bus block A
48	C14	I/O	Data bus block C	98	A14	I/O	Data bus block A
49	GND		Ground	99	GND		Ground
50	GND		Ground	100	GND		Ground

● **S1L52502F24J000** (X2688A00) **Gate Array**(DGA)

DM: IC25

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	LV_{DD}		Power supply +3.3V	105	HV_{DD}		Power supply +5V
2	XDACK	I	CPU DMA acknowledge	106	LEDD0	O	Port/Test output
3	XDRAK	I	CPU DREQ request acknowledge	107	LEDD1	O	
4	XDREQ	O	CPU DMA request	108	LEDD2	O	
5	ATPGEN	I	ATPG test input	109	LEDD3	O	
6	Vss		Ground	110	Vss		Ground
7	ENCA0	I	Encoder0 A input	111	LV_{DD}		Power supply +3.3V
8	ENCB0	I	Encoder0 B input	112	XTA22I	I	XTAL input terminal
9	ENCA1	I	Encoder1 A input	113	Vss		Ground
10	ENCB1	I	Encoder1 B input	114	XTA22O	O	XTAL output terminal
11	HV_{DD}		Power supply +5V	115	LV_{DD}		Power supply +3.3V
12	ENCA2	I	Encoder2 A input	116	HV_{DD}		Power supply +5V
13	ENCB2	I	Encoder2 B input	117	LEDD4	O	Port/Test output
14	ENCA3	I	Encoder3 A input	118	LEDD5	O	
15	ENCB3	I	Encoder3 B input	119	LEDD6	O	
16	Vss		Ground	120	LEDD7	O	
17	ENCA4	I	Encoder4 A input	121	Vss		Ground
18	ENCB4	I	Encoder4 B input	122	VCOI	I	VCO clock input
19	ENCA5	I	Encoder5 A input	123	HV_{DD}		Power supply +5V
20	ENCB5	I	Encoder5 B input	124	PDOUT	O	PLL phase comparator output
21	HV_{DD}		Power supply +5V	125	Vss		Ground
22	TSTEN	I	Test mode change	126	XRESET	I	Reset signal input
23	XIDCS0	O	IDE chip select	127	EXTWCI	I	External synchronization WC input
24	XIDCS1	O		128	SDIN	I	Digital sound input
25	XIDDOE	O	IDE bus buffer DIR signal	129	SDOUT	O	Digital sound output
26	Vss		Ground	130	HV_{DD}		Power supply +5V
27	HV_{DD}		Power supply +5V	131	XDSPCS0	O	DSP6 chip select
28	XIDWR	O	IDE write signal	132	XDSPCS2	O	DSP chip select (reserve)
29	XIDRD	O	IDE read signal	133	XDSPCS1	O	DSP7 chip select
30	XIDMACK	O	IDE DMA acknowledge	134	Vss		Ground
31	IDMARQ	I	IDE DMA request	135	AUDIOIN0	I	Audio data input
32	Vss		Ground	136	AUDIOIN1	I	
33	IDD0	I/O	IDE data bus	137	AUDIOUT0	O	Audio data output
34	IDD1	I/O		138	LV_{DD}		Power supply +3.3V
35	IDD2	I/O		139	AUDIOUT1	O	Audio data output
36	IDD3	I/O		140	AUDIOUT2	O	
37	HV_{DD}		Power supply +5V	141	AUDIOUT3	O	
38	IDD4	I/O	IDE data bus	142	Vss		Ground
39	IDD5	I/O		143	AUDIOUT4	O	Audio data output
40	IDD6	I/O		144	AUDIOUT5	O	
41	IDD7	I/O		145	AUDIOUT6	O	
42	Vss		Ground	146	LV_{DD}		Power supply +3.3V
43	IDD8	I/O	IDE data bus	147	HV_{DD}		Power supply +5V
44	IDD9	I/O		148	CK512	O	FS512 clock
45	IDD10	I/O		149	FS256	O	FS256 clock
46	IDD11	I/O		150	FS128	O	FS128 clock
47	HV_{DD}		Power supply +5V	151	Vss		Ground
48	IDD12	I/O	IDE data bus	152	XFS64	O	FS64 clock (reverse)
49	IDD13	I/O		153	ALRCK	O	System WC (FS)
50	IDD14	I/O		154	XSSYNC	O	DSP synchronizing signal output
51	IDD15	I/O		155	HV_{DD}		Power supply +5V
52	Vss		Ground	156	Vss		Ground
53	LV_{DD}		Power supply +3.3V	157	LV_{DD}		Power supply +3.3V
54	SDRD0	I/O	SDRAM data bus	158	HV_{DD}		Power supply +5V
55	SDRD1	I/O		159	XDLCS	O	Data buffer enable
56	SDRD2	I/O		160	XLCDCS0	O	LCD driver chip select
57	SDRD3	I/O		161	XLCDCS1	O	
58	Vss		Ground	162	Vss		Ground
59	SDRD4	I/O	SDRAM data bus	163	CD0	I/O	CPU data bus
60	SDRD5	I/O		164	CD1	I/O	
61	SDRD6	I/O		165	CD2	I/O	
62	SDRD7	I/O		166	CD3	I/O	
63	LV_{DD}		Power supply +3.3V	167	LV_{DD}		Power supply +3.3V
64	SDRD8	I/O	SDRAM data bus	168	CD4	I/O	CPU data bus
65	SDRD9	I/O		169	CD5	I/O	
66	SDRD10	I/O		170	CD6	I/O	
67	SDRD11	I/O		171	CD7	I/O	
68	Vss		Ground	172	Vss		Ground
69	SDRD12	I/O	SDRAM data bus	173	CD8	I/O	CPU data bus
70	SDRD13	I/O		174	CD9	I/O	
71	SDRD14	I/O		175	CD10	I/O	
72	SDRD15	I/O		176	CD11	I/O	
73	LV_{DD}		Power supply +3.3V	177	LV_{DD}		Power supply +3.3V
74	SDRA0	O	SDRAM address output	178	CD12	I/O	CPU data bus
75	SDRA1	O		179	CD13	I/O	
76	SDRA2	O		180	CD14	I/O	
77	SDRA3	O		181	CD15	I/O	
78	Vss		Ground	182	Vss		Ground
79	LV_{DD}		Power supply +3.3V	183	LV_{DD}		Power supply +3.3V
80	SDRA4	O	SDRAM address output	184	CA1	I	CPU address input
81	SDRA5	O		185	CA2	I	
82	SDRA6	O		186	CA3	I	
83	SDRA7	O		187	CA4	I	
84	Vss		Ground	188	Vss		Ground
85	SDRA8	O	SDRAM address output	189	CA5	I	CPU address input
86	SDRA9	O		190	CA6	I	
87	SDRA10	O		191	CA7	I	
88	SDRA11	O		192	CA12	I	
89	LV_{DD}		Power supply +3.3V	193	LV_{DD}		Power supply +3.3V
90	SDRA12	O	SDRAM address output	194	CA13	I	CPU address input
91	SDRA13	O		195	CA16	I	
92	XSDRWE	O	SDRAM write signal	196	XCCS5	I	CPU chip select
93	XSDRRAS	O	SDRAM row address strobe	197	XCCS6	I	
94	Vss		Ground	198	Vss		Ground
95	XSDRCAS	O	SDRAM column address strobe	199	XCRD	I	CPU read signal
96	XSDRCS0	O	SDRAM chip select	200	XCWR	I	CPU write signal
97	XSDRCS1	O		201	XCIRQ	O	CPU interrupt request
98	SDRDQM	O	SDRAM data enable	202	XFTMIRQ1	O	
99	LV_{DD}		Power supply +3.3V	203	LV_{DD}		Power supply +3.3V
100	SDRCLK	O	SDRAM clock	204	XFTMIRQ2	O	CPU interrupt request
101	XTCLR	I	Test counter clear	205	XFTMIRQ3	O	
102	HV_{DD}		Power supply +5V	206	FSPLAY	O	FS count signal
103	TESTRAM	I	RAM test mode	207	SCANEN	I	Scan enable input
104	Vss		Ground	208	Vss		Ground

● **S1L50553F21Y000** (X4195A00) **Gate Array**(MCI)

DM: IC406

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	CLKI	I	Clock	41	VDD	-	Power supply
2	CLKO	O		42	RESET	I	Reset
3	VDD	-	Power supply	43	VSS	-	Ground
4	SCANENB	I/O	Scan enable	44	OUT4	O	Output
5	ATPGENB	I/O		45	OUT3	O	
6	VSS	-	Ground	46	INP2	I	Input
7	PLLTEST	I	Test	47	INP1	I	
8	$\overline{\text{PLLRES}}$	I	Reset	48	INP0	I	
9	PLLVSS	-	Ground	49	TESTENB	I/O	Test enable
10	MVDD	-	Power supply	50	VSS	-	Ground
11	PLLVSS	-	Ground	51	OSCO		
12	AVDD	-	Analog power supply	52	VDD	-	Power supply
13	CHG0			53	OSCI		
14	LPVSS	-	Ground	54	VSS	-	Ground
15	VSS	-		55	SIRQ	I/O	Interrupt request
16	MIRQ	I/O	Interrupt request	56	SCS	I	Control port
17	MCS	I	Control port	57	SWR	I	Write
18	MWR	I	Write	58	SRD	I	Read
19	MRD	I	Read	59	SA		
20	MA			60	VSS	-	Ground
21	VDD	-	Power supply	61	VDD	-	Power supply
22	MD0	I/O	DRAM data bus	62	SD0	I/O	Serial data
23	MD1	I/O		63	SD1	I/O	
24	MD2	I/O		64	SD2	I/O	
25	MD3	I/O		65	SD3	I/O	
26	MD4	I/O		66	SD4	I/O	
27	MD5	I/O		67	SD5	I/O	
28	MD6	I/O		68	SD6	I/O	
29	MD7	I/O		69	SD7	I/O	
30	VSS	-	Ground	70	VSS	-	Ground
31	MD8	I/O	DRAM data bus	71	SD8	I/O	Serial data
32	VDD	-	Power supply	72	VDD	-	Power supply
33	MD9	I/O	DRAM data bus	73	SD9	I/O	Serial data
34	MD10	I/O		74	SD10	I/O	
35	MD11	I/O		75	SD11	I/O	
36	MD12	I/O		76	SD12	I/O	
37	MD13	I/O		77	SD13	I/O	
38	MD14	I/O		78	SD14	I/O	
39	MD15	I/O		79	SD15	I/O	
40	VSS	-	Ground	80	VSS	-	Ground

● YGV628-VZ (X6356A00) RGB CONTROLLER

DM: IC302

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	A23	I	Address bus	89	SA13	O	Address bus output pin for video memories
2	A22	I		90	VDD	-	Power supply +3.3V
3	A21	I		91	SA11	O	Address bus output pins for video memories
4	A20	I		92	SA12	O	
5	VDD	-	Power supply +3.3V	93	SA9	O	
6	A19	I	Address bus	94	SA10	O	
7	VSS	-	Ground	95	SA8	O	
8	A18	I	Address bus	96	SA0	O	
9	A17	I		97	VSS	-	Ground
10	A16	I		98	SA1	O	Address bus output pins for video memories
11	A15	I		99	SA6	O	
12	A14	I		100	SA7	O	
13	A13	I		101	VDD	-	Power supply +3.3V
14	A12	I		102	SA2	O	Address bus output pins for video memories
15	A11	I		103	SA5	O	
16	A10	I		104	SA3	O	
17	A9	I		105	SA4	O	
18	A8	I		106	VSS	-	Ground
19	VDD	-	Power supply +3.3V	107	GCK2OUT	O	Dot clock output
20	VSS	-	Ground	108	VDD	-	Power supply +3.3V
21	A7	I	Address bus	109	DRO0	O	Digital RGB input
22	A6	I		110	DRO1	O	
23	A5	I		111	DRO2	O	
24	A4	I		112	DRO3	O	
25	A3	I		113	DRO4	O	
26	A2	I		114	DRO5	O	
27	A1	I		115	DGO0	O	
28	WRH_N	I	Write pulse input (a write strobe for D15-8 pins)	116	DGO1	O	
29	WRL_N	I	Write pulse input (a write strobe for D7-0 pins)	117	VSS	-	Ground
30	RD_N	I	Read pulse input	118	DGO2	O	Digital RGB input
31	RESET_N	I	Reset (schmitt trigger type input)	119	DGO3	O	
32	VSS	-	Ground	120	VDD	-	
33	CS_N	I	Chip selection input	121	DGO4	O	Digital RGB input
34	VDD	-	Power supply +3.3V	122	DGO5	O	
35	DREQ_N	O	DMA request signal output	123	DBO0	O	
36	INT_N	O	Interrupt signal output	124	DBO1	O	
37	READY_N	O	CPU bus ready (3-state output)	125	DBO2	O	
38	WAIT_N	O	CPU bus wait (3-state output)	126	DBO3	O	
39	D15	I/O	Data bus	127	VSS	-	Ground
40	D14	I/O		128	DBO4	O	Digital RGB input
41	D13	I/O		129	DBO5	O	
42	D12	I/O		130	YS_N	O	YS signal output
43	VSS	-	Ground	131	BRANK_N	O	Display timing output
44	D11	I/O	Data bus	132	VDD	-	Power supply +3.3V
45	D10	I/O		133	DACVSS	-	Power supply for built-in PLL, +3.3V
46	VDD	-	Power supply +3.3V	134	R	O	Analog R, G and B output
47	D9	I/O	Data bus	135	G	O	
48	D8	I/O		136	B	O	
49	D7	I/O		137	IREF	-	Analog: Reference current input pin for RGB DAC
50	D6	I/O		138	DACVDD	-	Analog power supply pin for built-in DAC, +3.3V
51	D5	I/O		139	TEST2_N	I	Test mode setting pins for a device test
52	D4	I/O		140	TEST1_N	I	
53	VSS	-	Ground	141	TEST0_N	I	
54	D3	I/O	Data bus	142	CSYNC_N	O	Horizontal synchronization/compound synchronization signal output
55	D2	I/O		143	VSYNC_N	O	Vertical synchronization signal output
56	D1	I/O		144	GCK1OUT	O	Dot clock output
57	D0	I/O		145	VDD	-	Power supply +3.3V
58	VDD	-	Power supply +3.3V	146	GCK2IN	I	Input pin of dot clock and capture clock
59	SDQ0	I/O	Data input/output bus pins for video memories	147	DRI0	I	Digital RGB input
60	SDQ15	I/O		148	VSS	-	Ground
61	VSS	-	Ground	149	DRI1	I	Digital RGB input
62	SDQ1	I/O	Data input/output bus pins for video memories	150	DRI2	I	
63	SDQ14	I/O		151	DRI3	I	
64	SDQ2	I/O		152	DRI4	I	
65	SDQ13	I/O		153	DRI5	I	
66	SDQ3	I/O		154	DGI0	I	
67	VSS	-	Ground	155	DGI1	I	
68	SDQ12	I/O	Data input/output bus pin for video memories	156	DGI2	I	
69	VDD	-	Power supply +3.3V	157	DGI3	I	
70	SDQ4	I/O	Data input/output bus pins for video memories	158	VDD	-	Power supply +3.3V
71	SDQ11	I/O		159	DGI4	I	Digital RGB input
72	SDQ5	I/O		160	VSS	-	Ground
73	SDQ10	I/O		161	DGI5	I	Digital RGB input
74	VSS	-	Ground	162	DBI0	I	
75	SDQ6	I/O	Data input/output bus pins for video memories	163	DBI1	I	
76	SDQ9	I/O		164	DBI2	I	
77	SDQ7	I/O		165	DBI3	I	
78	SDQ8	I/O		166	DBI4	I	
79	VDD	-	Power supply +3.3V	167	DBI5	I	
80	LDQM	O	Data mask signal output for video memories (for SDQ15-8)	168	HSIN_N	I	Horizontal synchronized signal input
81	VSS	-	Ground	169	VSIN_N	I	Vertical synchronized signal input
82	WE_N	O	Write strobe output to the video memories	170	VDD	-	Power supply +3.3V
83	UDQM	O	Data mask signal output for video memories (for SDQ7-0)	171	VSS	-	Ground
84	CAS_N	O	Column address strobe output pin to the video memories	172	GCK1IN	I	Input pin of dot clock and capture clock
85	SDCKOUT	O	Clock output pin for video memories	173	SYCKIN	I	Input pin for system clock
86	RAS_N	O	Row address strobe output pin to video memories	174	PLLVDD	-	Analog power supply pin for built-in PLL, +3.3V
87	VSS	-	Ground	175	PLLVSS	-	Analog power supply pin for built-in PLL, Ground
88	SCS_N	O	Chip selection output pin to video memories	176	FILTER	-	Analog: Filter connection pin for built-in PLL

● MB3516APF-G-BND (X2314A00) RGB ENCODER

DM: IC306

PIN No.	NAME	I/O	FUNCTION	PIN No.	NAME	I/O	FUNCTION
1	GND1	-	Ground Pin for circuits other than 75Ω output driver	13	N.C.	-	Unused pin
2	R-IN	I	Analog RGB input pins	14	N.C.	-	Unused pin
3	G-IN	I	With CSYNC-IN at the "L" level, the R-IN,	15	CROMA-OUT	O	Chroma signal output pin
4	B-IN	I	G-IN and B-IN pins are clamped. During the				Capable of directly driving a 75Ω load.
			"L" level period, the R-IN,G-IN and B-IN pins	16	Y-OUT	O	Y-signal output pin
			input pedestal levels. (100% = 1 Vp-p)				Capable of directly driving a 75Ω load.
5	N.C.	-	Unused pin	17	Y-TRAP	-	Luminance signal band control pin
6	fsc-IN	I	Subcarrier input pin				Capable of adjusting the frequency characteristic of the luminance signal at the composite video signal output pin by connecting a capacitor or a capacitor and an inductor in series to GND1.
			Inputs sine wave of 1.0 to 5.0 Vp-p or a pulse carrier.				
7	NTSC/PAL-IN	I	NTSC/PAL sector pin				
			"H" level: Selects the NTSC mode.	18	N.C.	-	Unused pin
			"L" level: Selects the PAL mode.	19	Vcc2	-	Power-supply pin for the 75Ω output driver circuit
8	N.C.	-	Unused pin	20	VIDEO-OUT	O	Composite video signal output pin
9	N.C.	-	Unused pin				Capable of directly driving a 75Ω load.
10	CSYNC-N	I	Composite sync signal input pin	21	B-OUT	O	Analog RGB signal output pins
			CSYNC-IN = "L" level : Outputs a composite	22	G-OUT		Capable of directly driving a 75Ω load.
			sync signal while clamping R-IN,G-IN and B-IN.	23	R-OUT		
11	N.C.	-	Unused pin	24	GND2	-	Ground pin for 75Ω output driver circuit
12	Vcc1	-	Power-supply pin for circuits other than 75Ω output driver.				

● TUSB2046BVF (X4704A00) 4-PORT USB HUB

DM: IC901

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	DP0	I/O	Differential data plus	17	PWRON3	O	Power-on/-off control signal
2	DM0	I/O	Differential data minus	18	OVRCUR3	I	Over-current input
3	Vcc	-	Power supply	19	DM3	I/O	Differential data minus
4	RESET	I	Reset	20	DP3	I/O	Differential data plus
5	EECLK	O	EEPROM serial clock	21	PWRON4	O	Power-on/-off control signal
6	EEDATA/GANGED	I/O	EEPROM serial data / Power management mode indicator	22	OVRCUR4	I	Over-current input
7	GND	-	Ground	23	DM4	I/O	Differential data minus
8	BUSPWR	I	Power source indicator	24	DP4	I/O	Differential data plus
9	PWRON1	O	Power-on/-off control signal	25	Vcc	-	Power supply
10	OVRCUR1	I	Over-current input	26	EXTMEM	I	EEPROM read enable
11	DM1	I/O	Differential data minus	27	TSTPLL	I/O	Test pin
12	DP1	I/O	Differential data plus	28	GND	-	Ground
13	PWRON2	O	Power-on/-off control signal	29	XTAL2	O	Crystal oscillator
14	OVRCUR2	I	Over-surrent input	30	XTAL1	I	
15	DM2	I/O	Differential data minus	31	TSTMODE	I	Test pin
16	DP2	I/O	Differential data plus	32	SUSPND	O	Suspend status

● **T8F02TB-0102** (X0060A00) **SWP50** (Tone Generator)

DM: IC404,IC405

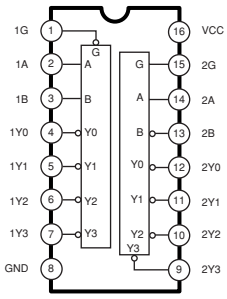
PIN NO.	OUTER NO.	NAME	I/O	FUNCTION	PIN NO.	OUTER NO.	NAME	I/O	FUNCTION
1	E5	VSS2	-	Ground	106	E22	VSS2	-	Ground
2	D4	VDDC	-	Power supply +1.5 V	107	D23	VDDC	-	Power supply +1.5 V
3	C3	CD15	I/O	Data bus of internal register	108	C24	HMA15	O	Wave memory address bus
4	B2	CD13	I/O		109	B25	HMA16	O	
5	A1	CD14	I/O		110	A26	HMA22	O	
6	D5	CD6	I/O		111	E23	HMA25	O	
7	E6	CD2	I/O		112	F22	VDDS	-	Power supply +3 V
8	C4	CD9	I/O		113	D24	HMA27	O	Wave memory address bus
9	B3	CD11	I/O		114	C25	HMA0	O	
10	A2	CD12	I/O		115	B26	HMA23	O	
11	A3	CD10	I/O		116	C26	HMA24	O	
12	D6	CD1	I/O		117	F23	VDDS	-	Power supply +3 V
13	E7	VSS	-	Ground	118	G22	HMA26	O	Wave memory address bus
14	C5	CD5	I/O	Data bus of unternal register	119	E24	HMA30	O	
15	B4	CD8	I/O		120	D25	HMA28	O	
16	A4	CD7	I/O		121	D26	HMA29	O	
17	D7	VSS2	-	Ground	122	G23	LMA17	O	Wave memory address bus (Lower data memory)
18	C6	CD0	I/O	Data bus of unternal register	123	F24	LMA19	O	
19	E8	VSS	-	Ground	124	H22	VSS	-	Ground
20	D8	VDDS	-	Power supply +3 V	125	H23	VDDS	-	Power supply +3 V
21	B5	CD4	I/O	Data bus of internal register	126	E25	LMA20	O	Wave memory address bus (Lower data memory)
22	A5	CD3	I/O		127	E26	LMA21	O	
23	C7	CA2	I	Address bus of internal regisuter	128	G24	LMA9	O	
24	B6	CA0	I		129	F25	LMA18	O	
25	E9	CA8	I		130	J22	LMA12	O	
26	D9	CA9	I		131	J23	LMA4	O	
27	C8	CA5	I		132	H24	LMA6	O	
28	A6	CA1	I		133	F26	LMA8	O	
29	B7	CA3	I		134	G25	LMA7	O	
30	A7	CA4	I		135	G26	LMA10	O	
31	E10	VSS2	-	Ground	136	K22	VSS2	-	Ground
32	D10	VDDC	-	Power supply +1.5 V	137	K23	VDDC	-	Power supply +1.5 V
33	C9	CA10	I	Address bus of internal regisuter	138	J24	LMA13	O	Wave memory address bus (Lower data memory)
34	B8	CA6	I		139	H25	LMA11	O	
35	A8	CA7	I		140	H26	LMA5	O	
36	B9	CA11	I		141	J25	LMA3	O	
37	E11	CA14	I		142	L22	LMA16	O	
38	D11	CA15	I		143	L23	LMA0	O	
39	C10	CA13	I		144	K24	LMA2	O	
40	A9	CA12	I		145	J26	LMA14	O	
41	B10	CSN0	I	Chip select	146	K25	LMA15	O	
42	A10	CSN1	I		147	K26	LMA1	O	
43	E12	VSS	-	Ground	148	M22	VSS	-	Ground
44	D12	VDDS	-	Power supply +3 V	149	M23	VDDS	-	Power supply +3 V
45	C11	WRN	I	Write strobe	150	L24	LMA22	O	Wave memory address bus (Lower data memory)
46	B11	RDN	I	Read strobe	151	L25	LMA23	O	
47	A11	WAIT0	O	Hardware wait request	152	L26	LMA24	O	
48	C12	IRQ0	O	Interrupt request	153	M24	LMA27	O	
49	B12	DREQ0	O		154	M25	LMA28	O	
50	E13	TCK	I	Test pin	155	N22	LMA25	O	
51	D13	TRST	I		156	N23	LMA26	O	
52	C13	VSS	-	Ground	157	N24	LMA30	O	
53	A12	XO	O	Crystal osc. output	158	M26	LMA29	O	
54	B13	XI	I	Crystal osc. input	159	N25	MOEN	O	Wave memory output enable
55	A13	VDDS	-	Power supply +3 V	160	N26	MWEN	O	Wave memory write enable
56	A14	SLAVE	I	Master/Slave select	161	P26	LMD15	I/O	Wave memory data bus (Lower 16 bit)
57	E14	TMS	I	Test pin	162	P22	VSS	-	Ground
58	D14	TDO	O		163	P23	VDDS	-	Power supply +3 V
59	C14	ICN	I	Initial clear	164	P24	LMD13	I/O	Wave memory data bus (Lower 16 bit)
60	B14	RFCLK0	O	PLL Clock	165	P25	LMD14	I/O	
61	B15	PLL_TSTN	I	Power supply	166	R25	LMD11	I/O	
62	C15	PLL_BP	I		167	R24	LMD10	I/O	
63	D15	VDDS	-	Power supply +3 V	168	R23	VDDS	-	Power supply +3 V
64	E15	VSS	-	Ground	169	R22	VSS	-	Ground
65	A15	RFCLK1	I	PLL Clock	170	R26	LMD12	I/O	Wave memory data bus (Lower 16 bit)
66	A16	VDDC	-	Power supply +1.5 V	171	T26	LMD9	I/O	
67	B16	TMODE	I	Test pin	172	T25	LMD8	I/O	
68	C16	PLL_AVD	-	Power supply (PLL)	173	T24	LMD7	I/O	
69	D16	NC	-	Not used	174	T23	VSS2	-	Ground
70	E16	NC	-	Not used	175	T22	VSS	-	Ground
71	A17	PLL_AVS	-	Power supply (PLL)	176	U26	LMD6	I/O	Wave memory data bus (Lower 16 bit)
72	B17	TEST1	I	Test pin	177	U25	LMD5	I/O	
73	A18	VSS	-	Ground	178	V26	LMD3	I/O	
74	C17	SY1	I	Sync. clock	179	U24	LMD4	I/O	
75	D17	VDDC	-	Power supply +1.5 V	180	U23	VDDC	-	Power supply +3 V
76	E17	VSS2	-	Ground	181	U22	VSS2	-	Ground
77	B18	KONTRG0	O	Key on data	182	V25	LMD2	I/O	Wave memory data bus (Lower 16 bit)
78	A19	KONTRG1	I		183	W26	LMD0	I/O	
79	C18	CK512	O		184	V24	LMD1	I/O	
80	B19	CK128	O	Master clock (256 Fs)	185	W25	DCSL0	O	
81	D18	BCLK	O	Master clock (64 Fs)	186	V23	VDDS	-	Power supply +3 V
82	E18	SY0	O	Sync. clock	187	V22	VDDC	-	Power supply +1.5 V
83	C19	HMA20	O	Wave memory address bus	188	W24	DCSL1	O	
84	A20	HMA21	O		189	Y26	DQML3	O	MASK signal
85	B20	HMA19	O		190	Y25	DQML1	O	
86	C20	HMA18	O		191	Y24	DMAL14	O	Address bus (DIMM, SDRAM)
87	D19	VDDS	-	Power supply +1.5 V	192	W23	VDDS	-	Power supply +3 V
88	E19	VSS	-	Ground	193	W22	VSS	-	Ground
89	A21	HMA9	O	Wave memory address bus	194	AA26	DMAL13	O	Address bus (DIMM, SDRAM)
90	B21	HMA7	O		195	AA25	DMAL12	O	
91	A22	HMA6	O		196	AB26	DMAL9	O	
92	D20	HMA8	O		197	Y23	VSS	-	Ground
93	C21	HMA10	O		198	AA24	DMAL11	O	Address bus (DIMM, SDRAM)
94	E20	HMA17	O		199	Y22	VSS	-	Ground
95	D21	VDDS	-	Power supply +1.5 V	200	AA23	DMAL10	O	Address bus (DIMM, SDRAM)
96	B22	HMA11	O	Wave memory address bus	201	AB25	DMAL8	O	
97	A23	HMA4	O		202	AC26	DMAL6	O	
98	C22	HMA5	O		203	AB24	DMAL7	O	
99	B23	HMA13	O		204	AC25	DMAL5	O	
100	E21	VSS	-	Ground	205	AA22	VSS2	-	Ground
101	D22	HMA12	O	Wave memory address bus	206	AB23	VSS	-	Ground
102	C23	HMA3	O		207	AC24	DMAL4	O	Address bus (DIMM, SDRAM)
103	A24	HMA14	O		208	AD26	DMAL3	O	
104	B24	HMA2	O		209	AD25	DMAL2	O	
105	A25	HMA1	O		210	AE26	DMAL0	O	

PIN NO.	OUTER NO.	NAME	I/O	FUNCTION
211	AB22	VSS2	-	Ground
212	AC23	VDDC	-	Power supply +1.5 V
213	AD24	DMAL1	O	Address bus (DIMM, SDRAM)
214	AE25	DCSL2	O	
215	AF26	DRAS0	O	
216	AC22	DCAS0	O	
217	AB21	VDDS	-	Power supply +3 V
218	AD23	DCLKIN	I	
219	AE24	DQML2	O	MASK signal
220	AF25	DCSL3	O	
221	AF24	DQML0	O	MASK signal
222	AC21	VDDS	-	Power supply +3 V
223	AB20	VSS	-	Ground
224	AD22	DWEN0	O	
225	AE23	DCLK0	O	
226	AF23	DCLK1	O	
227	AC20	DCLKE	O	
228	AD21	HMD13	I/O	Wave memory data bus (Upper data memory)
229	AB19	VSS	-	Ground
230	AC19	VDDS	-	Power supply +3 V
231	AE22	HMD15	I/O	Wave memory data bus (Upper data memory)
232	AF22	HMD14	I/O	
233	AD20	HMD10	I/O	
234	AE21	HMD12	I/O	
235	AB18	VDDC	-	Power supply +1.5 V
236	AC18	VDDS	-	Power supply +3 V
237	AD19	HMD7	I/O	Wave memory data bus (Upper data memory)
238	AF21	HMD11	I/O	
239	AE20	HMD9	I/O	
240	AF20	HMD8	I/O	
241	AB17	VSS2	-	Ground
242	AC17	VDDC	-	Power supply +1.5 V
243	AD18	HMD4	I/O	Wave memory data bus (Upper data memory)
244	AE19	HMD6	I/O	
245	AF19	HMD5	I/O	
246	AE18	HMD3	I/O	
247	AB16	VSS	-	Ground
248	AC16	VSS2	-	Ground
249	AD17	HMD1	I/O	Wave memory data bus (Upper data memory)
250	AF18	HMD2	I/O	
251	AE17	HMD0	I/O	
252	AF17	DCSH0	O	
253	AB15	VSS	-	Ground
254	AC15	VDDS	-	Power supply +3 V
255	AD16	DCSH1	O	
256	AE16	DQMH3	O	MASK signal
257	AF16	DQMH1	O	
258	AD15	DMAH14	O	Address bus (DIMM, SDRAM)
259	AE15	DMAH13	O	
260	AB14	VSS	-	Ground
261	AC14	VSS2	-	Ground
262	AD14	DMAH11	O	Address bus (DIMM, SDRAM)
263	AF15	DMAH12	O	
264	AE14	DMAH10	O	
265	AF14	DMAH9	O	
266	AF13	DMAH8	O	
267	AB13	VDDS	-	Power supply +3 V
268	AC13	VDDS	-	Power supply +3 V
269	AD13	DMAH6	O	Address bus (DIMM, SDRAM)
270	AE13	DMAH7	O	
271	AE12	DMAH4	O	
272	AD12	DMAH3	O	
273	AC12	VDDS	-	Power supply +1.5 V
274	AB12	VSS	-	Ground
275	AF12	DMAH5	O	Address bus (DIMM, SDRAM)
276	AF11	DMAH2	O	
277	AE11	DMAH1	O	
278	AD11	DMAH0	O	
279	AC11	VSS	-	Ground
280	AB11	VSS	-	Ground
281	AF10	DRAS1	O	
282	AE10	DCSH2	O	
283	AF9	DQMH2	O	MASK signal
284	AD10	DCSH3	O	
285	AC10	VDDC	-	Power supply +1.5 V
286	AB10	VSS2	-	Ground
287	AE9	DQMH0	O	MASK signal
288	AF8	DWEN1	O	
289	AD9	DCAS1	O	
290	AE8	DCLK2	O	
291	AC9	VDDS	-	Power supply +3 V
292	AB9	VDDC	-	Power supply +1.5 V
293	AD8	DCLK3	O	
294	AF7	MELO0	O	MEL wave data output
295	AE7	MELO1	O	
296	AD7	MELO2	O	
297	AC8	VDDS	-	
298	AB8	VSS	-	Ground
299	AF6	MELO3	O	MEL wave data output
300	AE6	MELO4	O	
301	AF5	MELO5	O	
302	AC7	MELO6	O	
303	AD6	MELO7	O	
304	AB7	WCLK0	O	For DAC LR clock
305	AC6	WCLK1	O	
306	AE5	EIRQ	O	
307	AF4	EICN	O	
308	AD5	ESDA	I/O	
309	AE4	ESCL	I/O	
310	AB6	MELI0	I	MEL wave data input
311	AC5	MELI1	I	
312	AD4	MELI2	I	
303	AF3	MELI3	I	
314	AE3	MELI4	I	
315	AF2	MELI5	I	
316	AB5	VSS2	-	Ground
317	AC4	VDDC	-	Power supply +1.5 V
318	AD3	MELI6	I	MEL wave data input
319	AE2	MELI7	I	
320	AF1	ADLR	O	Power supply +3 V
321	AB4	DITO	O	
322	AA5	VSS	-	Ground
323	AC3	AFRM	I/O	
324	AD2	ACLK	I/O	
325	AE1	ADIR	O	
326	AD1	ADAT0	I/O	Data bus (ABUS)
327	AA4	VDDS	-	Power supply +3 V
328	Y5	ADAT9	I/O	Data bus (ABUS)
329	AB3	ADAT3	I/O	
330	AC2	ADAT1	I/O	
331	AC1	ADAT2	I/O	
332	Y4	ADAT10	I/O	
333	AA3	ADAT6	I/O	
334	W5	VSS	-	Ground
335	W4	VDDS	-	Power supply +3 V
336	AB2	ADAT4	I/O	Data bus (ABUS)
337	AB1	ADAT5	I/O	
338	Y3	ADAT11	I/O	
339	AA2	ADAT7	I/O	
340	V5	ADAT14	I/O	
341	V4	ADAT15	I/O	
342	W3	ADAT13	I/O	
343	AA1	ADAT8	I/O	
344	Y2	ADAT12	I/O	
345	Y1	TDI	I	
346	U5	VSS2	-	Ground
347	U4	VDDC	-	Power supply +1.5 V
348	V3	HRD13	I/O	DRAM data bus
349	W2	HRD15	I/O	
350	W1	HRD14	I/O	
351	V2	HRD12	I/O	
352	T5	HRD7	I/O	
353	T4	HRD6	I/O	
354	U3	HRD10	I/O	
355	V1	HRD11	I/O	
356	U2	HRD9	I/O	
357	U1	HRD8	I/O	
358	R5	VSS	-	Ground
359	R4	VDDS	-	Power supply +3 V
360	T3	HRD5	I/O	DRAM data bus
361	T2	HRD4	I/O	
362	T1	HRD3	I/O	
363	R3	HRD2	I/O	
364	R2	HRD1	I/O	
365	P5	VDDS	-	Power supply +3 V
366	P4	HRD0	I/O	DRAM data bus
367	P3	RWEN	O	DRAM write enable
368	R1	RQML	O	
369	P2	RCAS	O	DRAM column address strobe (RAS signal)
370	P1	RRAS	O	DRAM row address strobe (RAS signal)
371	N1	RA13	O	DRAM address bus
372	N5	VDDS	-	Power supply +3 V
373	N4	VDDS	-	Power supply +3 V
374	N3	RA10	O	DRAM address bus
375	N2	RA12	O	
376	M2	RA1	O	
377	M3	RA2	O	
378	M4	VDDS	-	Power supply +3 V
379	M5	VSS	-	Ground
380	M1	RA0	O	DRAM address bus
381	L1	RA3	O	
382	L2	RA4	O	
383	L3	RA5	O	
384	L4	VSS2	-	Ground
385	L5	VSS	-	Ground
386	K1	RA6	O	DRAM address bus
387	K2	RA7	O	
388	J1	RA9	O	
389	K3	RA8	O	
390	K4	VDDC	-	Power supply +1.5 V
391	K5	VSS2	-	Ground
392	J2	RA11	O	DRAM address bus
393	H1	RCLK	O	
394	J3	RCLKE	O	
395	H2	RCLKIN	I	
396	J4	VDDS	-	Power supply +3 V
397	J5	VDDC	-	Power supply +1.5 V
398	H3	RQMH	O	
399	G1	LRD15	I/O	DRAM data bus (Lower data)
400	G2	LRD14	I/O	
401	G3	LRD13	I/O	
402	H4	VDDS	-	Power supply +3 V
403	H5	VSS	-	Ground
404	F1	LRD12	I/O	DRAM data bus (Lower data)
405	F2	LRD11	I/O	
406	E1	LRD8	I/O	
407	G4	VDDS	-	Ground
408	F3	LRD10	I/O	DRAM data bus (Lower data)
409	G5	VDDS	-	Ground
410	F4	LRD9	I/O	DRAM data bus (Lower data)
411	E2	LRD7	I/O	
412	D1	LRD5	I/O	
413	E3	LRD6	I/O	
414	D2	LRD4	I/O	
415	F5	VSS2	-	Ground
416	E4	VSS	-	Ground
417	D3	LRD3	I/O	DRAM data bus (Lower data)
418	C1	LRD2	I/O	
419	C2	LRD1	I/O	
420	B1	LRD0	I/O	

■ IC BLOCK DIAGRAM

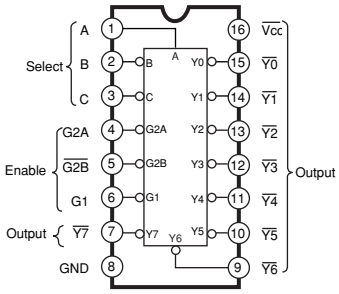
● **HD74LVC139FPEL** (XS048A00)
Dual 2 to 4 Demultiplexer

DM: IC32



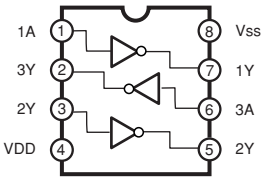
● **HD74LVC138FPEL-E** (XS963A00)
3 to 8 Demultiplexer

DM: IC30,IC401



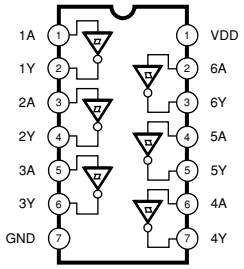
● **TC7W04FU** (XQ805A00)
Inverter

DM: IC300,IC301



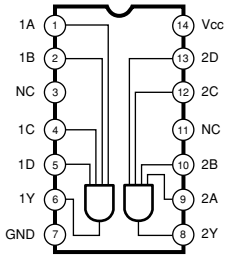
● **TC74VHC14FT(EL,K)** (XV890B00)
Hex Inverter

DM: IC4,IC5,IC10,IC49,IC410



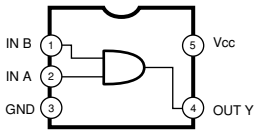
● **HD74LV21AFPEL-E** (IS002100)
Dual 4 Input AND

DM: IC23,IC419



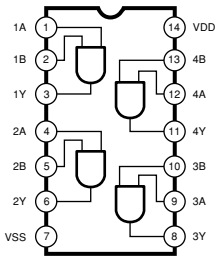
● **TC7SH08FU** (XR680A00)
2 Input AND Gate

DM: IC55



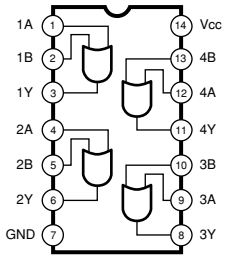
● **HD74LVC08FPEL** (XU720A00)
Quad 2 Input AND

DM: IC33



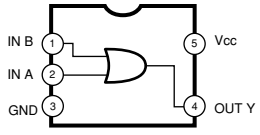
● **HD74LV32AFPEL-E** (IS003200)
Quad 2 Input OR

DM:IC1

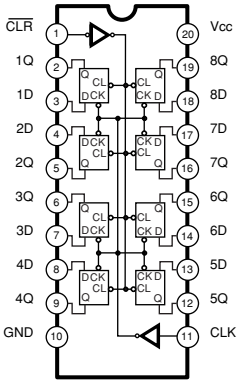


● **TC7SH32FU** (XW633A00)
2 Input OR Gate

DM: IC56

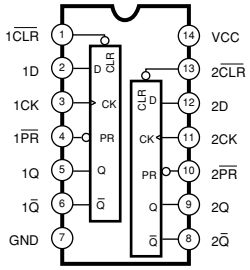


● **HD74LV273AFPEL-E** (IS027300)
Octal 3-State D-Type Flip Flop
DM: IC37



● **TC74ACT74FT(EL)** (X6536A00)
Dual D-Type Flip-Flop

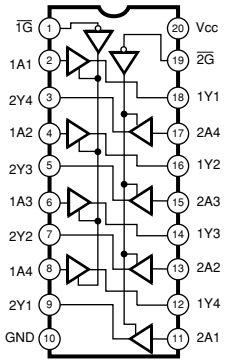
DM: IC303



INPUTS				OUTPUTS	
CLR	PR	D	CK	Q	Q
L	H	X	X	L	H
H	L	X	X	H	L
L	L	X	X	H	H
H	H	L	↑	L	H
H	H	H	↑	H	L
H	H	X	↓	Q n	Q n

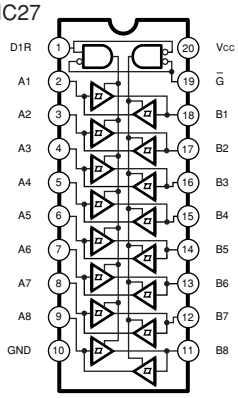
● **TC74ACT244FT(EL)** (X6537A00)
Octal 3-State Bus Buffer

DM: IC305

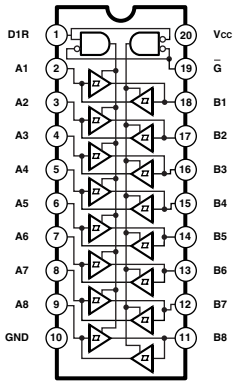


● **TC74VHC245FT** (XU797A00)
● **TC74VHCT245AFT** (XT744B00)
Octal 3-State Bus Transceiver

DM: IC54
DM: IC27

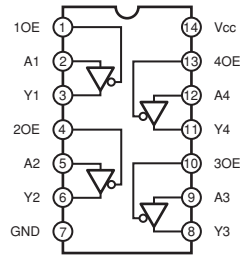


● **HD74LVC245A** (XW148A00)
TRANSCEIVER
DM: IC19,IC20,IC21,IC22,IC28,IC29,
IC46,IC421,IC422,IC423,IC424



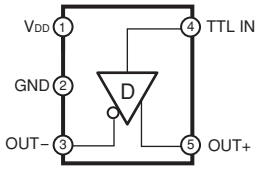
● **HD74LV126ATELL** (X3123A00)
Quad 3-State Bus Buffer

DM: IC9



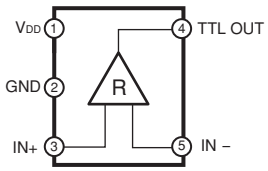
● **DS90LV011ATMF/NOPB** (X6788A00)
LVDS Driver

DM: IC42



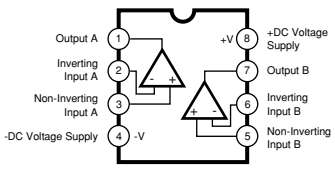
● **DS90LV012ATMF/NOPB** (X6789A00)
LVDS Receiver

LCL: IC2



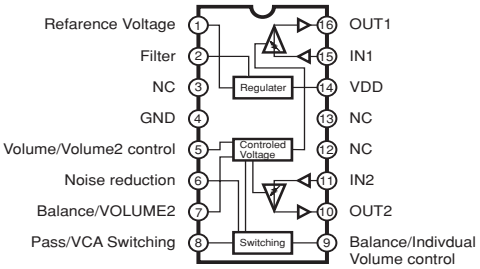
● **NJM4580E(TE2)** (X2331A00)
● **NJM2100V(TE2)** (X2538A00)
● **UPC4570G2-T1-A** (XF291A00)
Dual Operational Amplifier

AJK: IC2,IC4,IC5,IC7,IC8
EMKS-FD: IC002
DAC2A: IC202,IC302,IC402,IC403,IC404



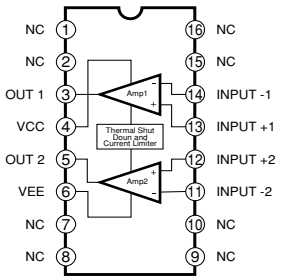
● **M51132L** (XE470A00)
VCA

AJK: IC3



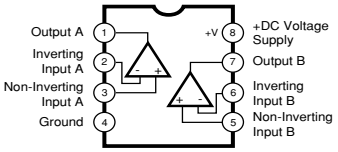
● **LA6517M** (XT131A00)
Dual Power Operational Amplifier

AJK: IC6



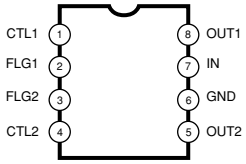
● **NJM12904M(TE1)** (X5475A00)
Dual Operational Amplifier

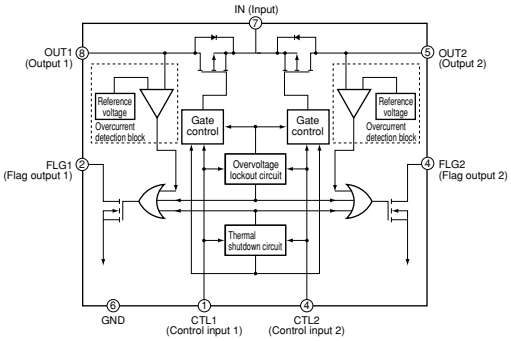
LCL: IC1



● **UPD16875G-E2-A** (X4722A00)
USB Power switch

DM: IC904,IC906





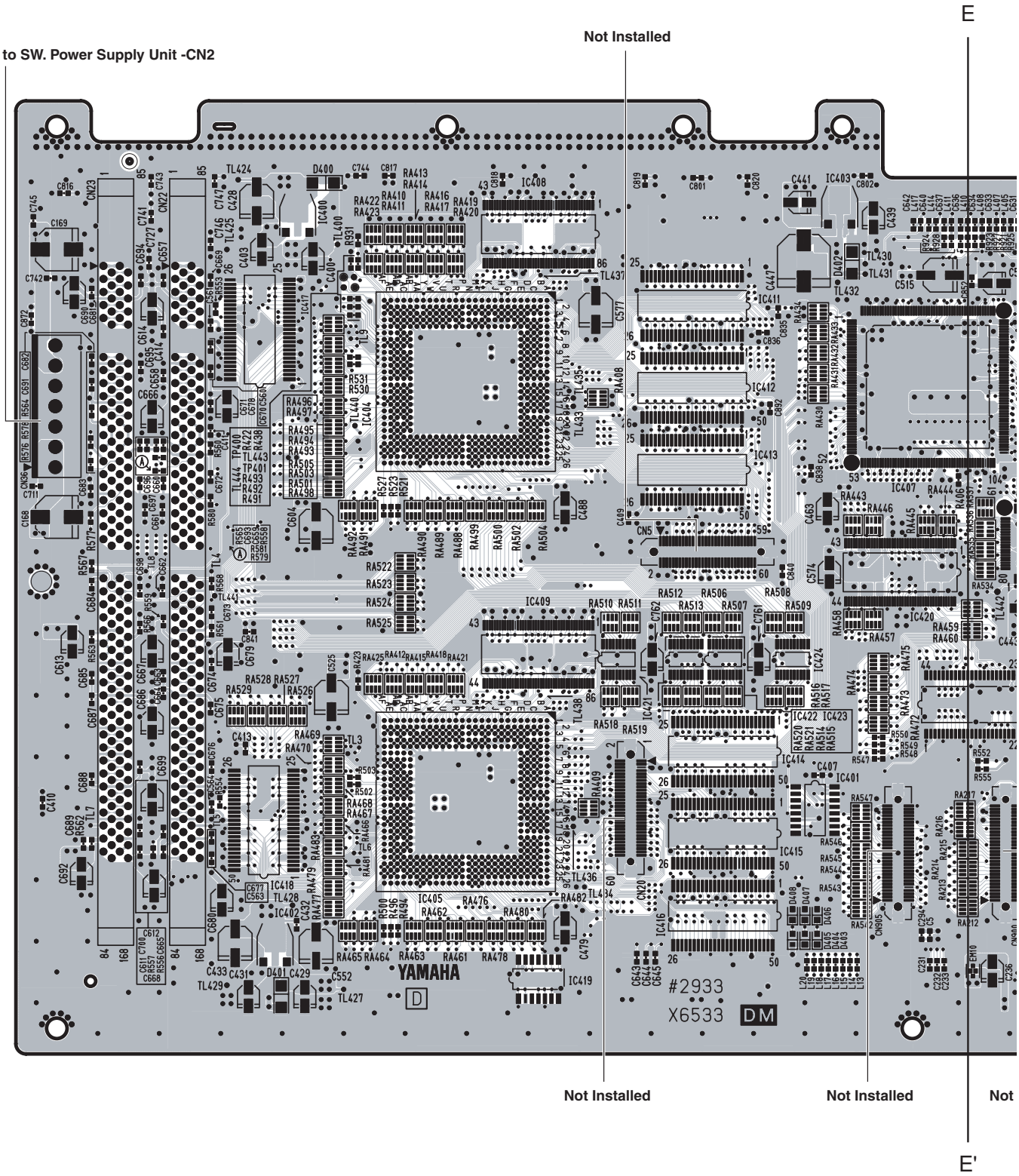
Pin No.	Pin Name	Pin Function
1/4	CTL1/CTL2	Control input: Active-low, TTL input
2/3	FLG1/FLG2	Detection flag (output): Active-low,Nch open-drain
6	GND	Ground
7	IN	Power input: Source of MOSFET for output. Power supply to internal circuitry of IC.
8/5	OUT1/OUT2	Switch output: Drain of MOSFET for output. Usually, connected to load.

■ CIRCUIT BOARDS

CONTENTS

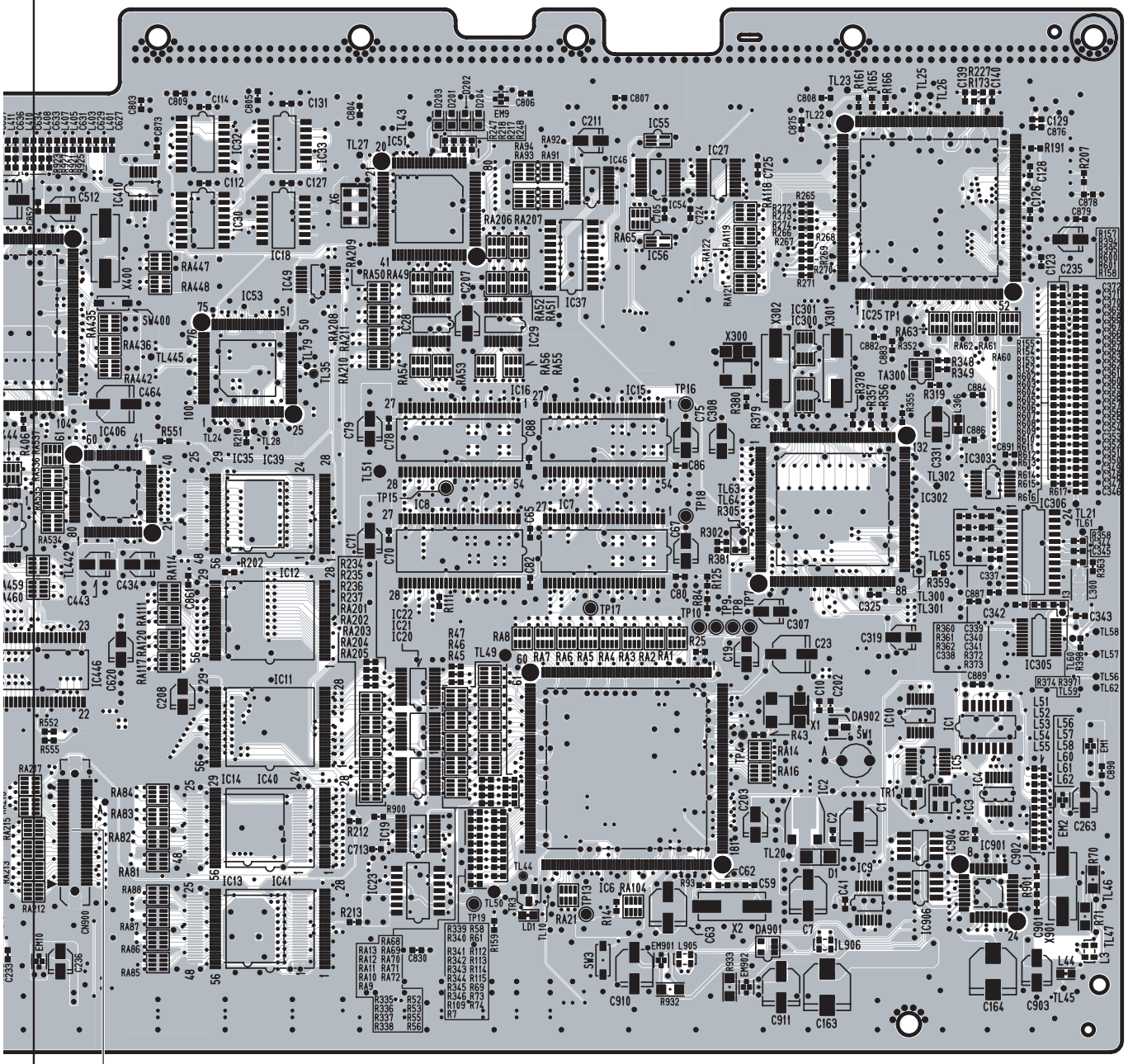
- **AJK Circuit Board** (X6041C0) 48
- **CK Circuit Board** (X6042C0) 74
- **DAC2A Circuit Board** (X5175C0) 70
- **DJK Circuit Board** (X6042C0) 50
- **DM Circuit Board** (X6533D0) 44
- **EMKS-FD Circuit Board** (X6577A0) 75
- **EN Circuit Board** (X6013C0) 72
- **HDSB Circuit Board** (X6800B0) 71
- **HP Circuit Board** (X6042C0) 73
- **INLET Circuit Board** (X6042C0) 74
- **LCL Circuit Board** (X6232C0) 72
- **LCR Circuit Board** (X6232C0) 73
- **MICVR Circuit Board** (X6042C0) 76
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- **MKH-D Circuit Board** (X6579B0) 68
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- **SPOR Circuit Board** (X6042C0) 76
- **USB Circuit Board** (X6015C0) 75

• DM Circuit Board



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

E



Not Installed

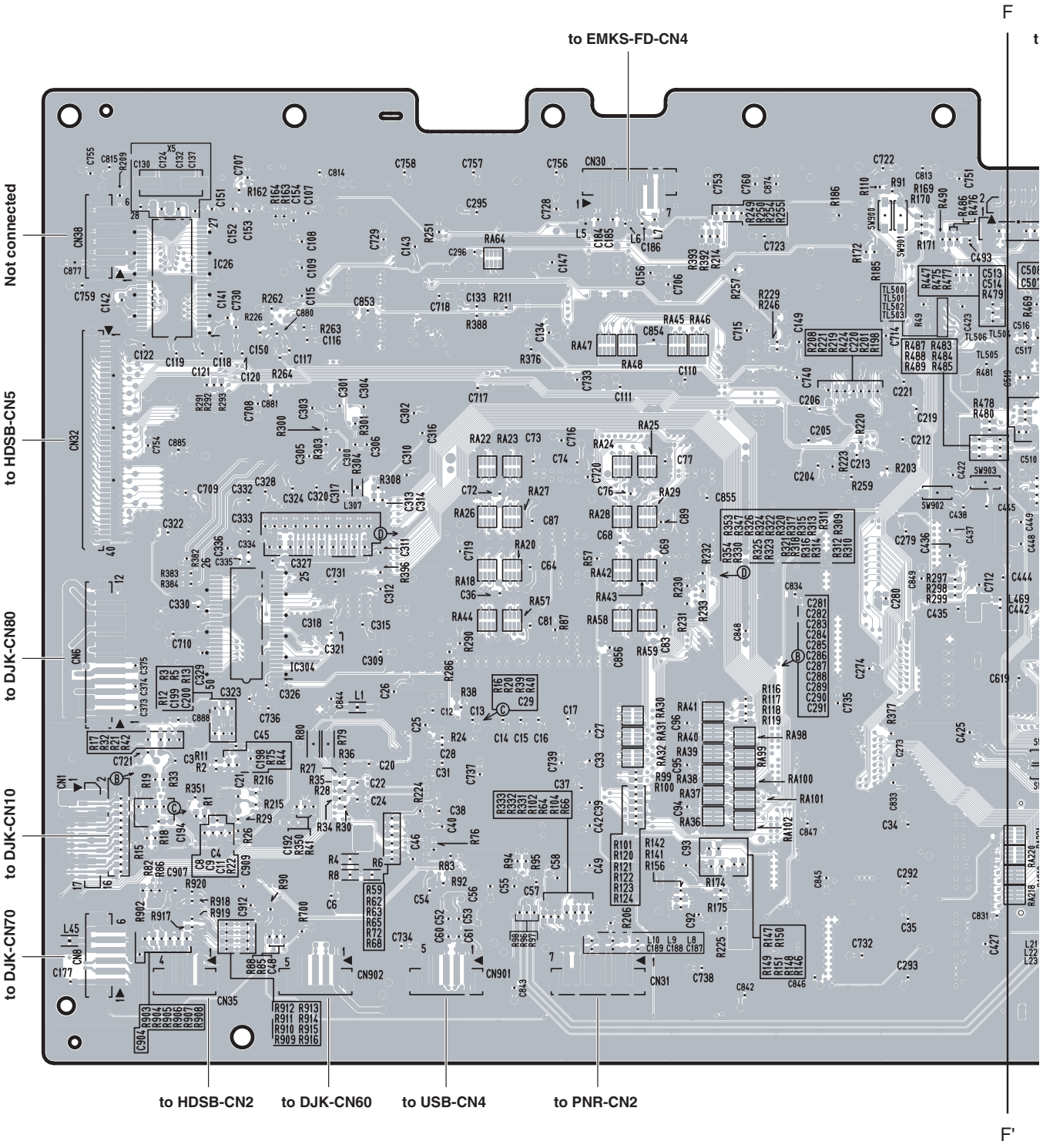
E'

Component Side

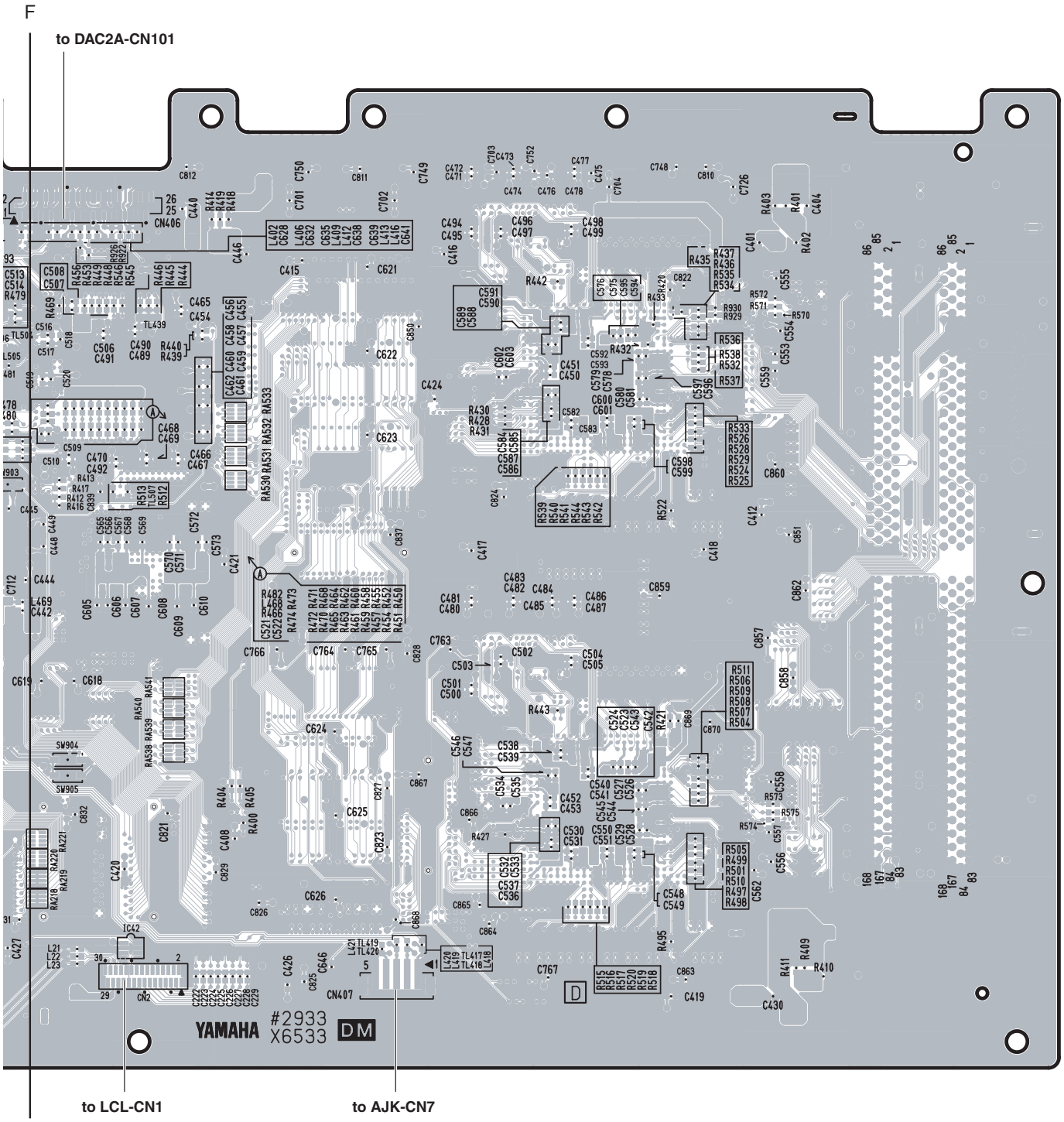
2NA-WE34370-1 ⚠4

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

• DM Circuit Board



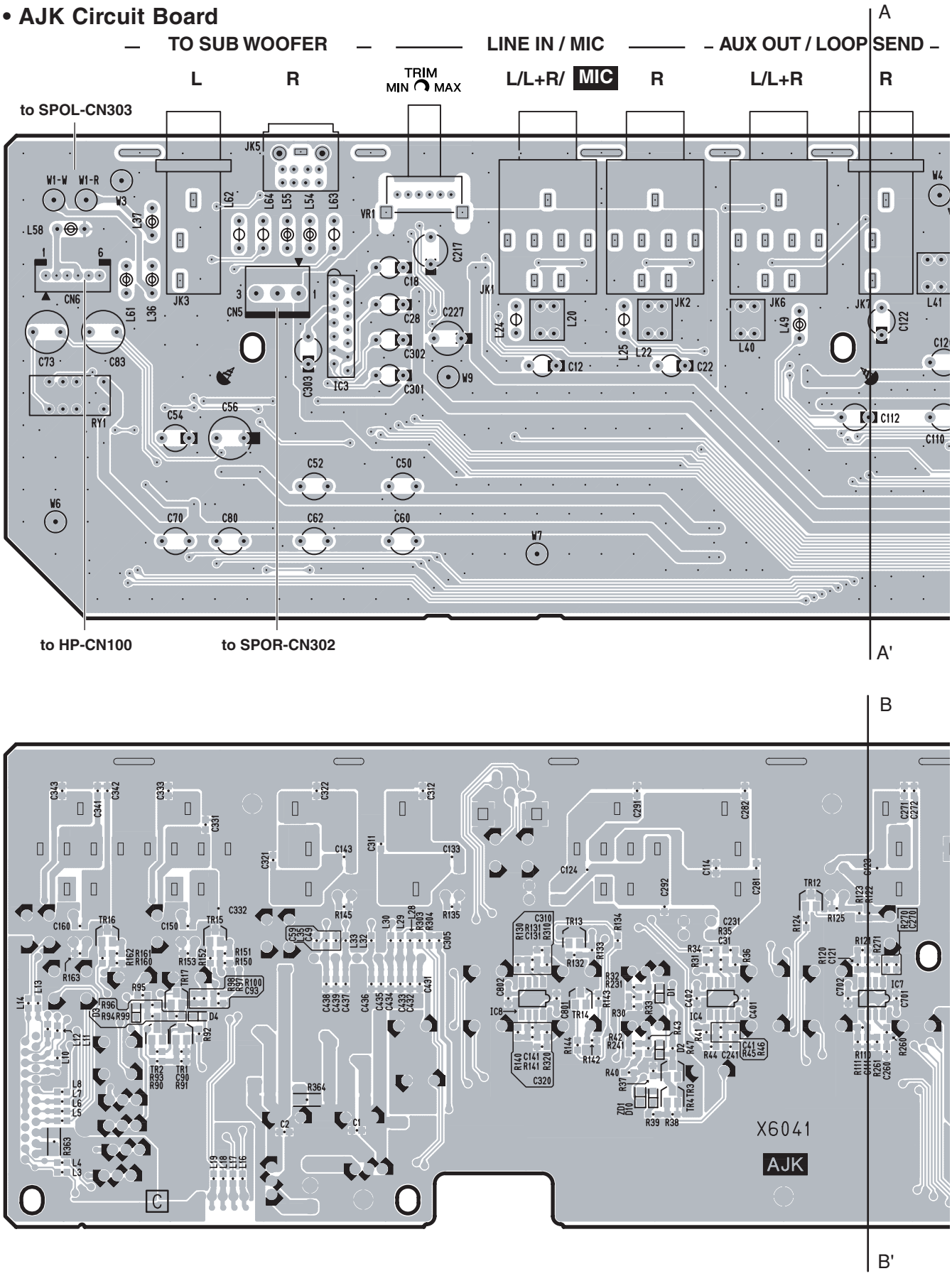
Note: See parts list for details of circuit board component parts.



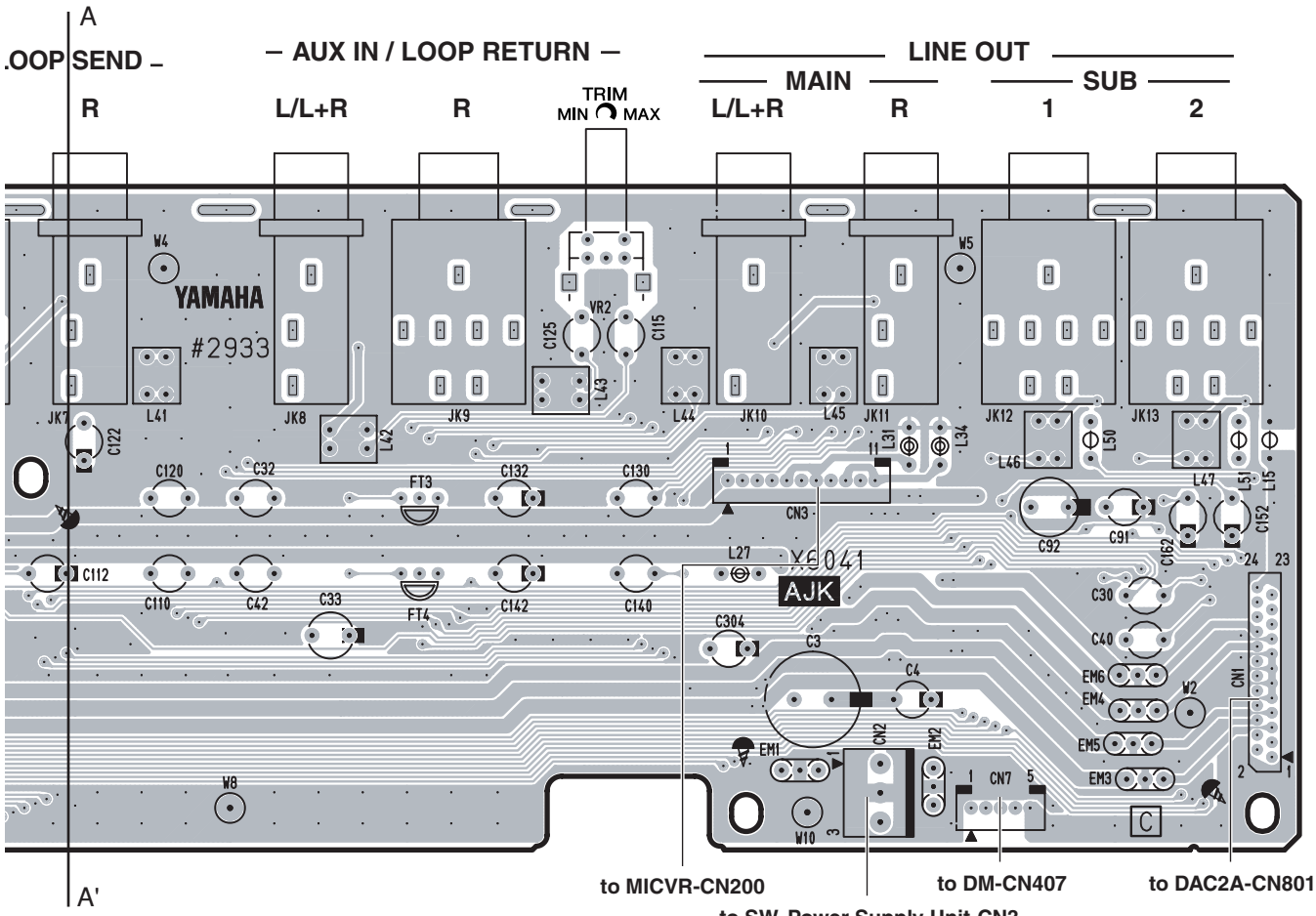
Pattern Side

2NA-WE84370-2 2

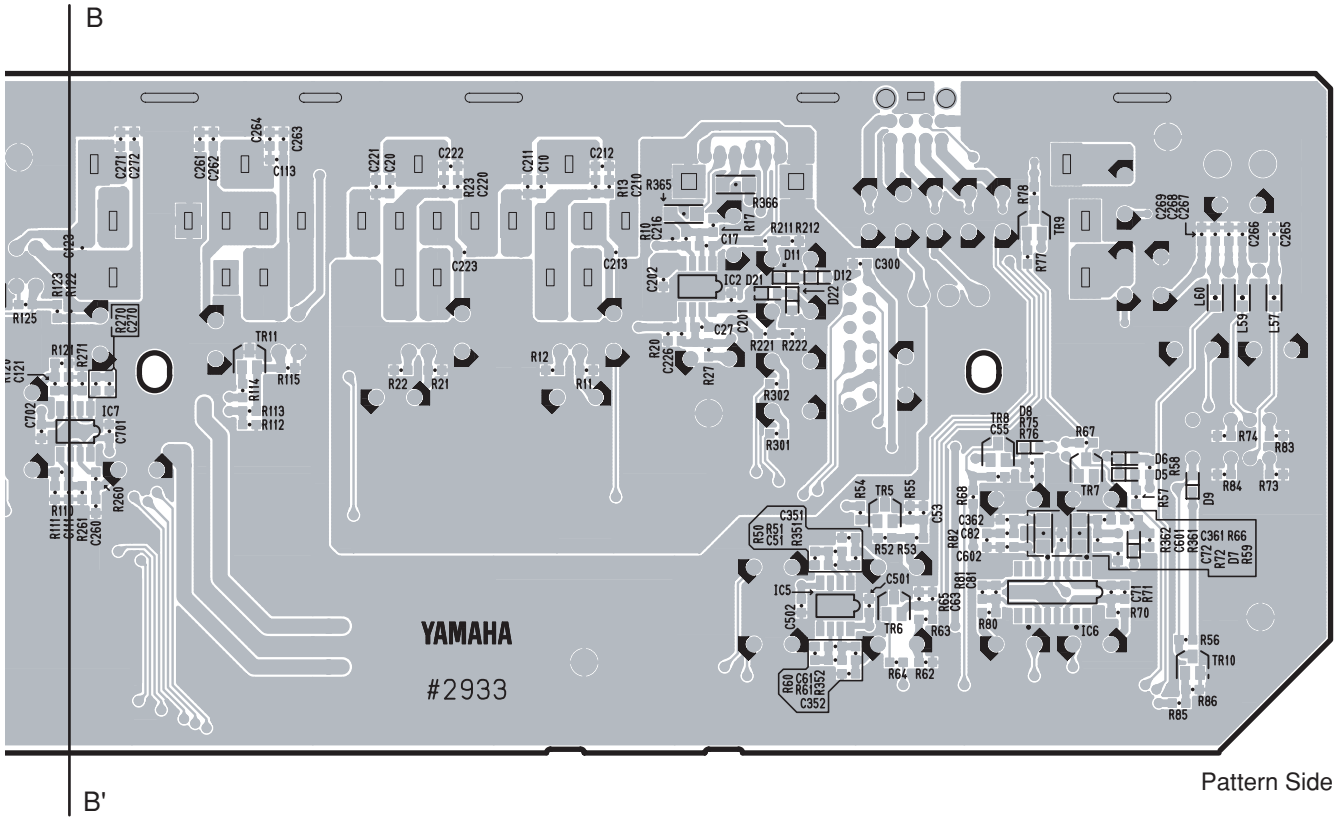
• AJK Circuit Board



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



Component Side

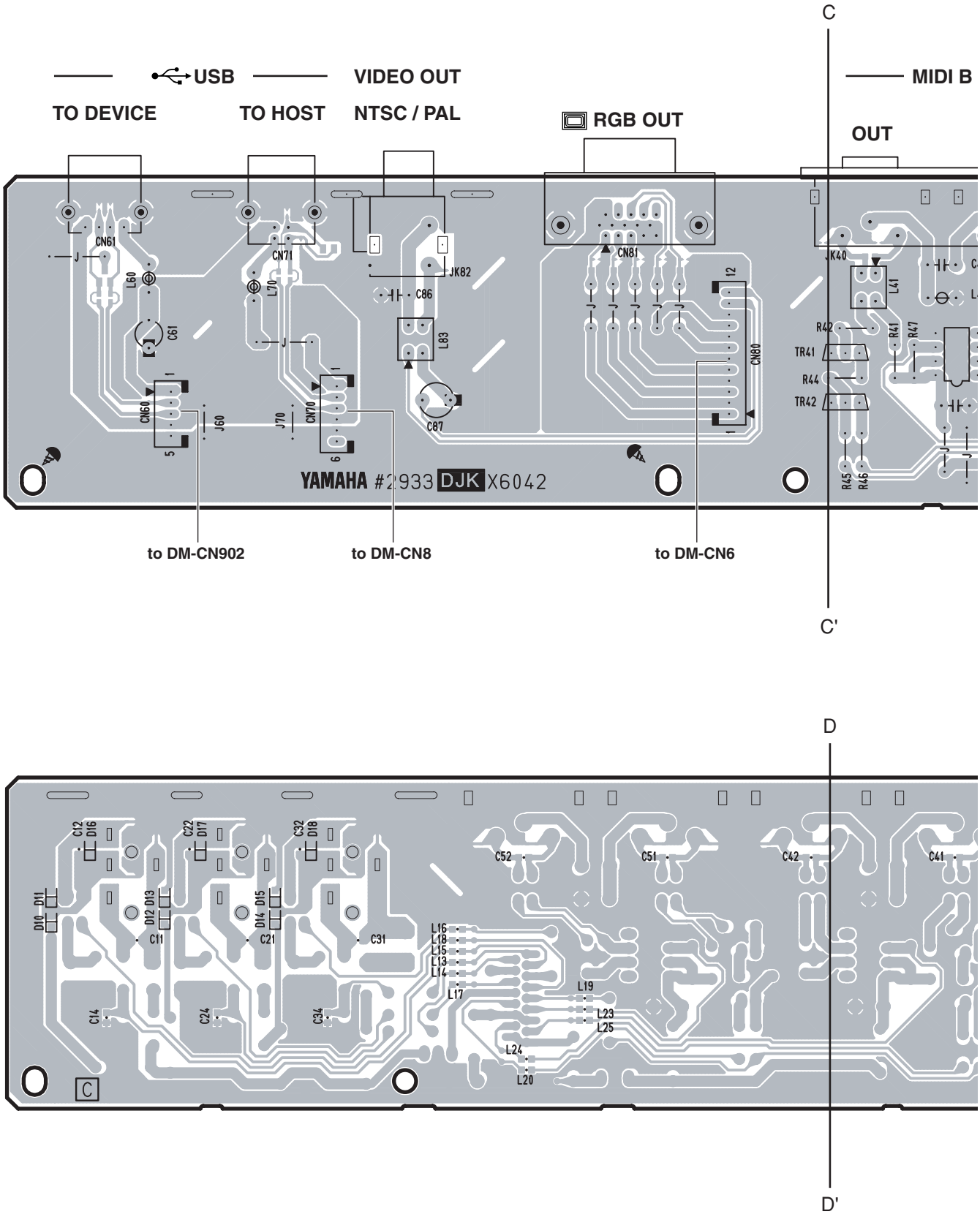


Pattern Side

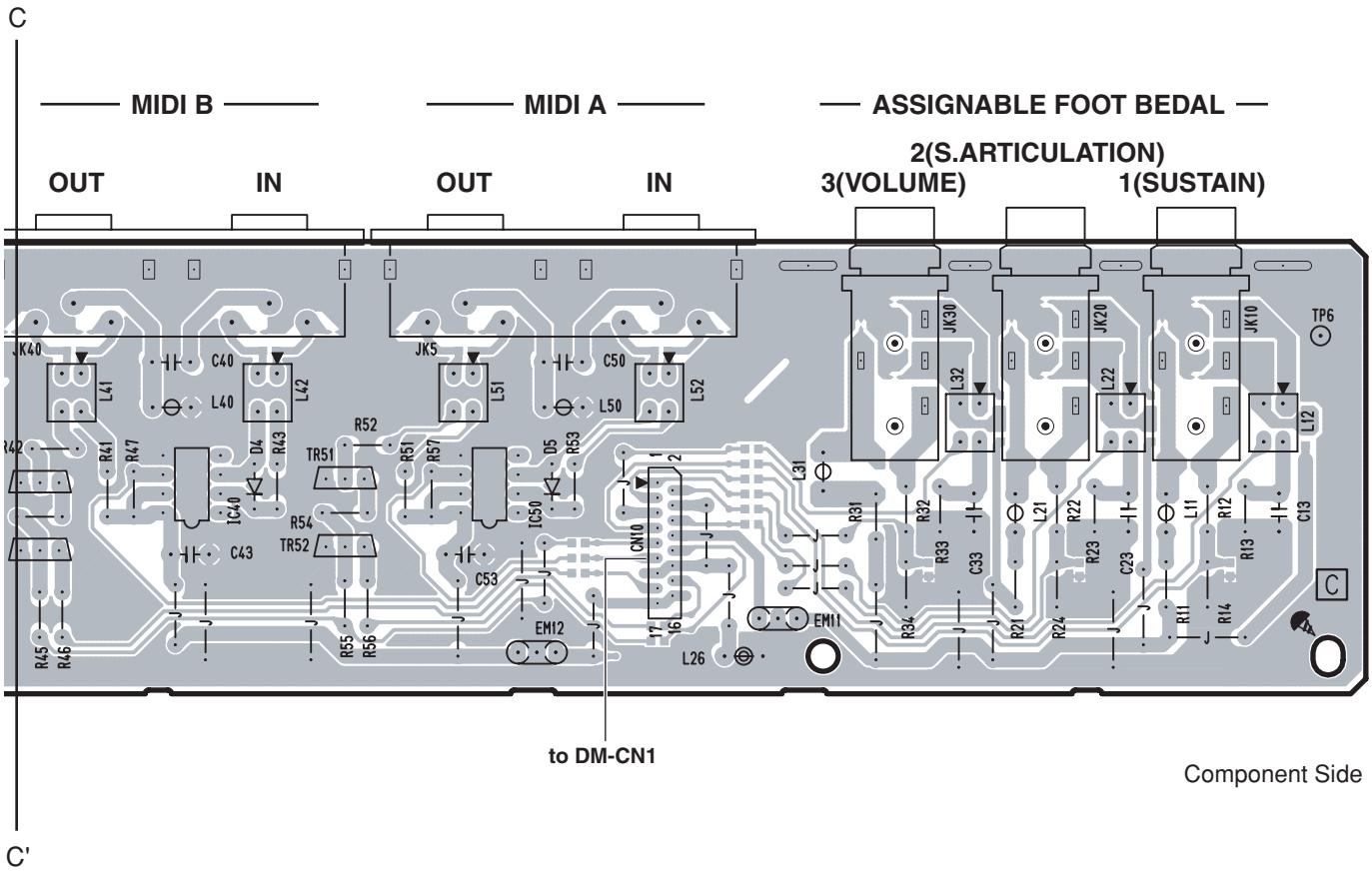
2NA-WF32870 ⚠2

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

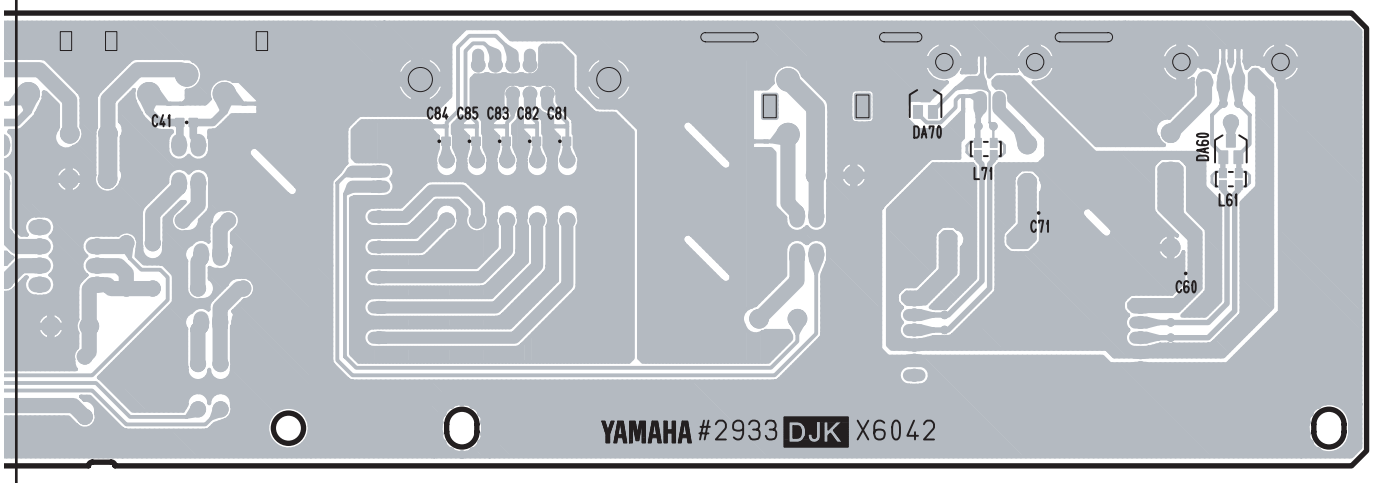
• DJK Circuit Board



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



Component Side

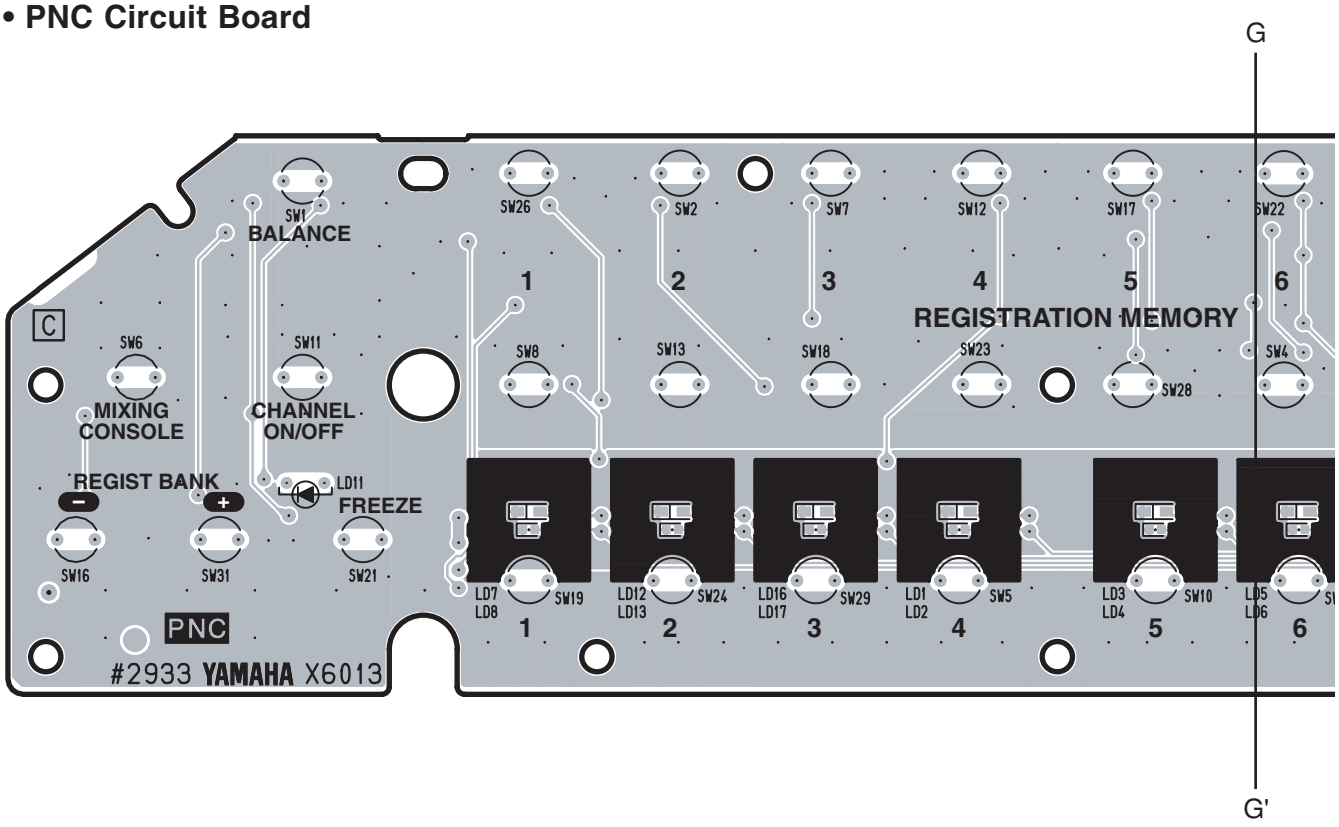


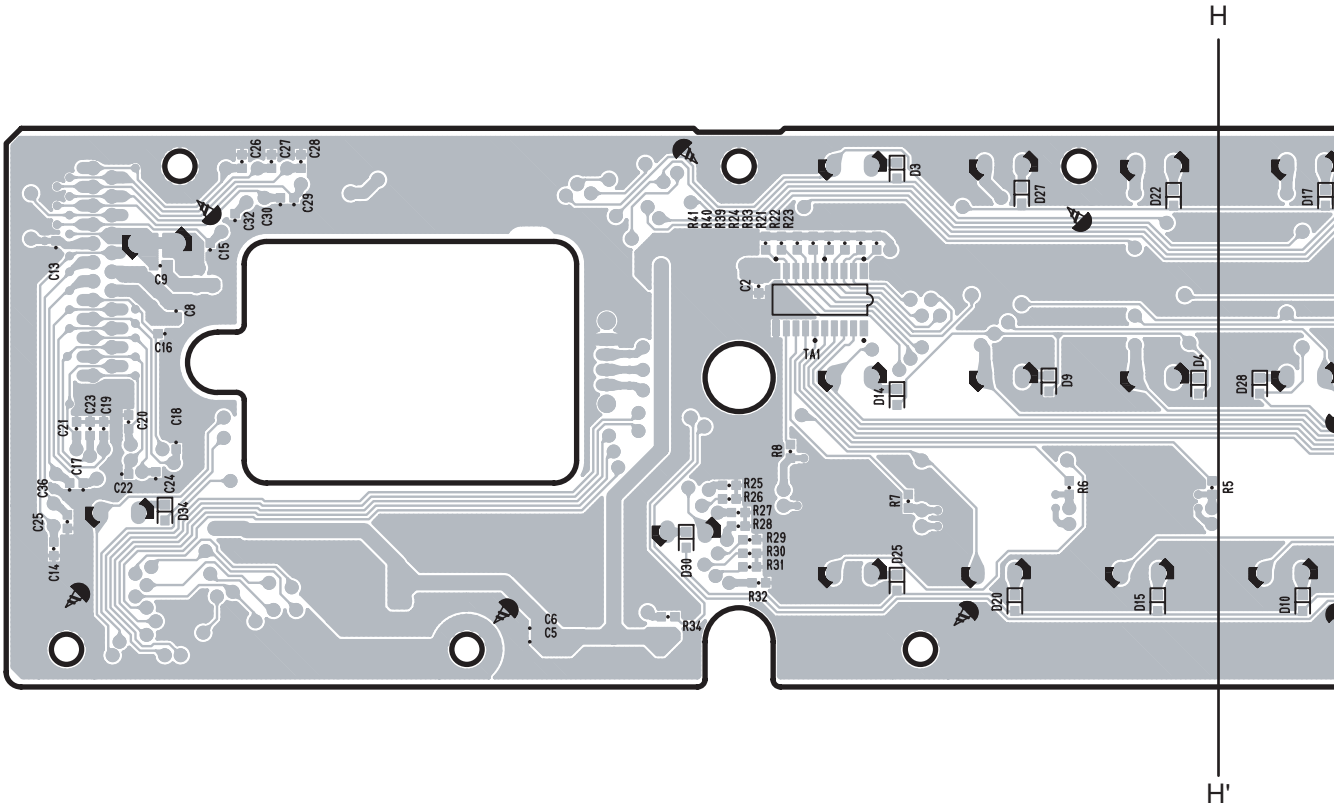
Pattern Side

2NA-WE81600 ⚠1

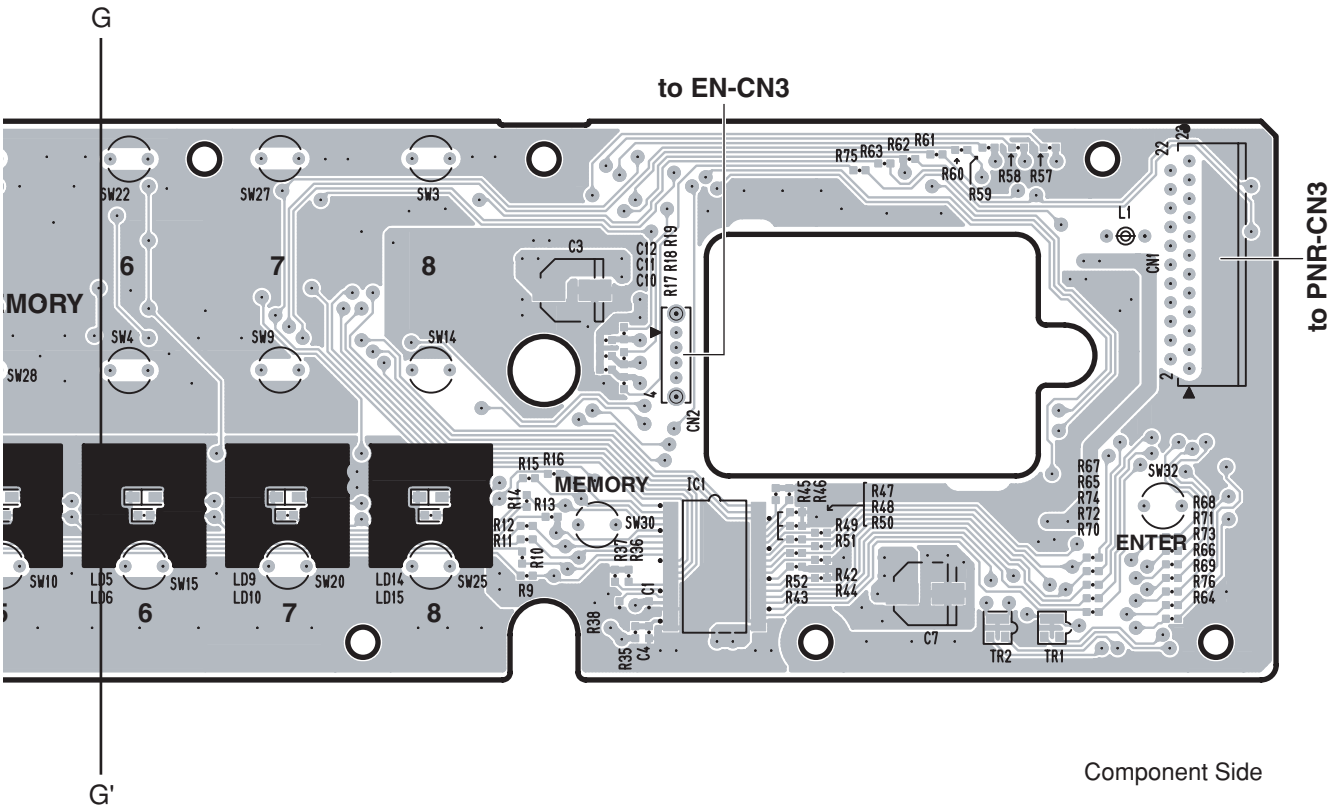
Note: See parts list for details of circuit board component parts.

• PNC Circuit Board

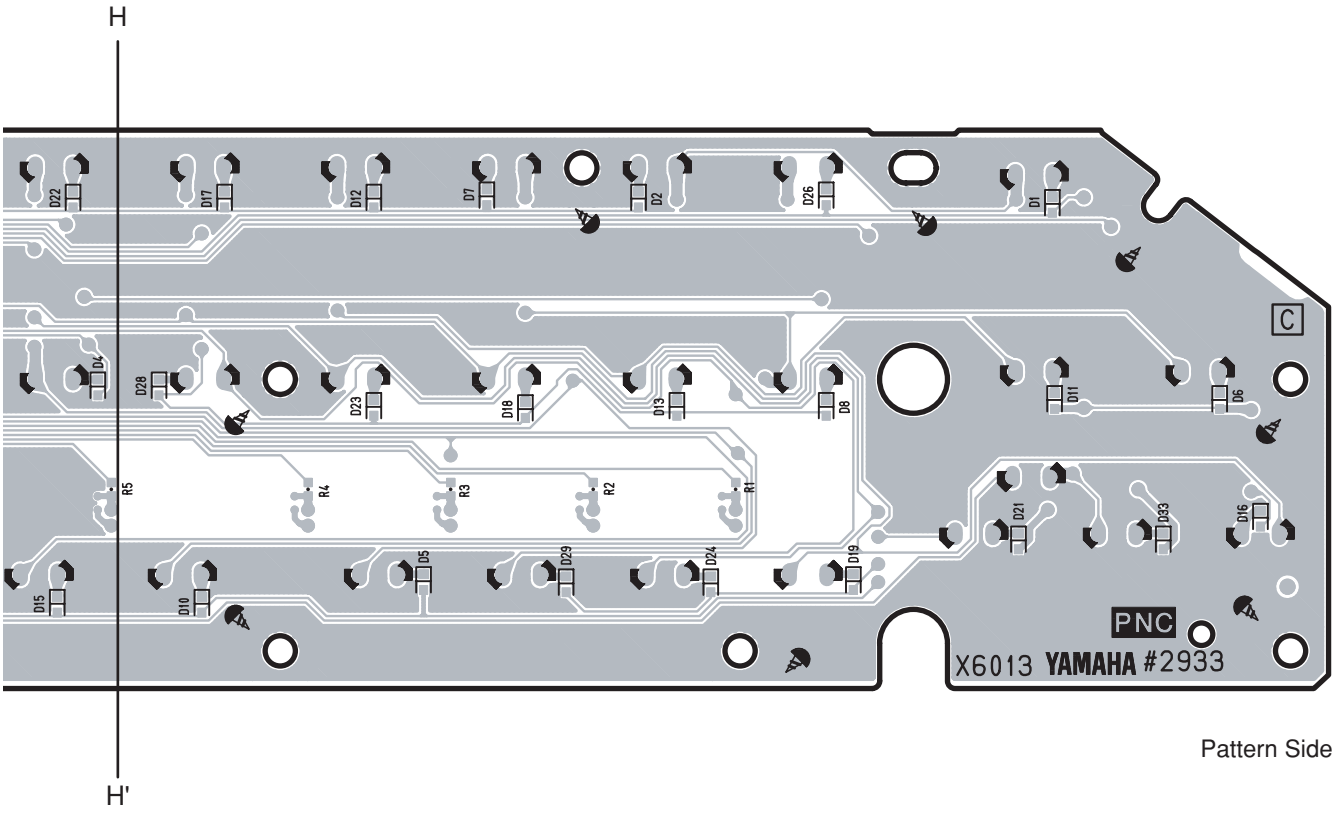




Note: See parts list for details of circuit board component parts.



Component Side

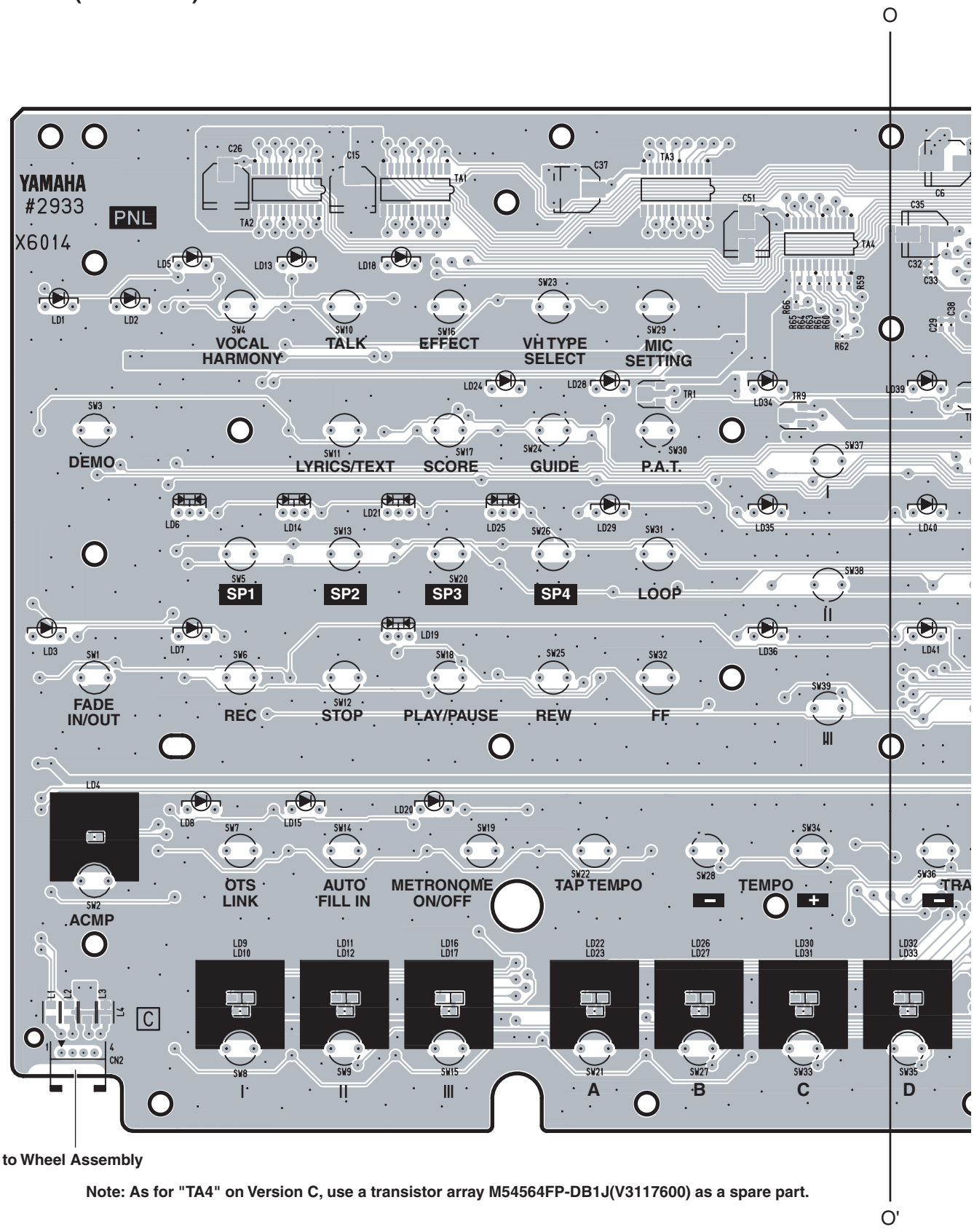


Pattern Side

2NA-WF32840 ⚠2

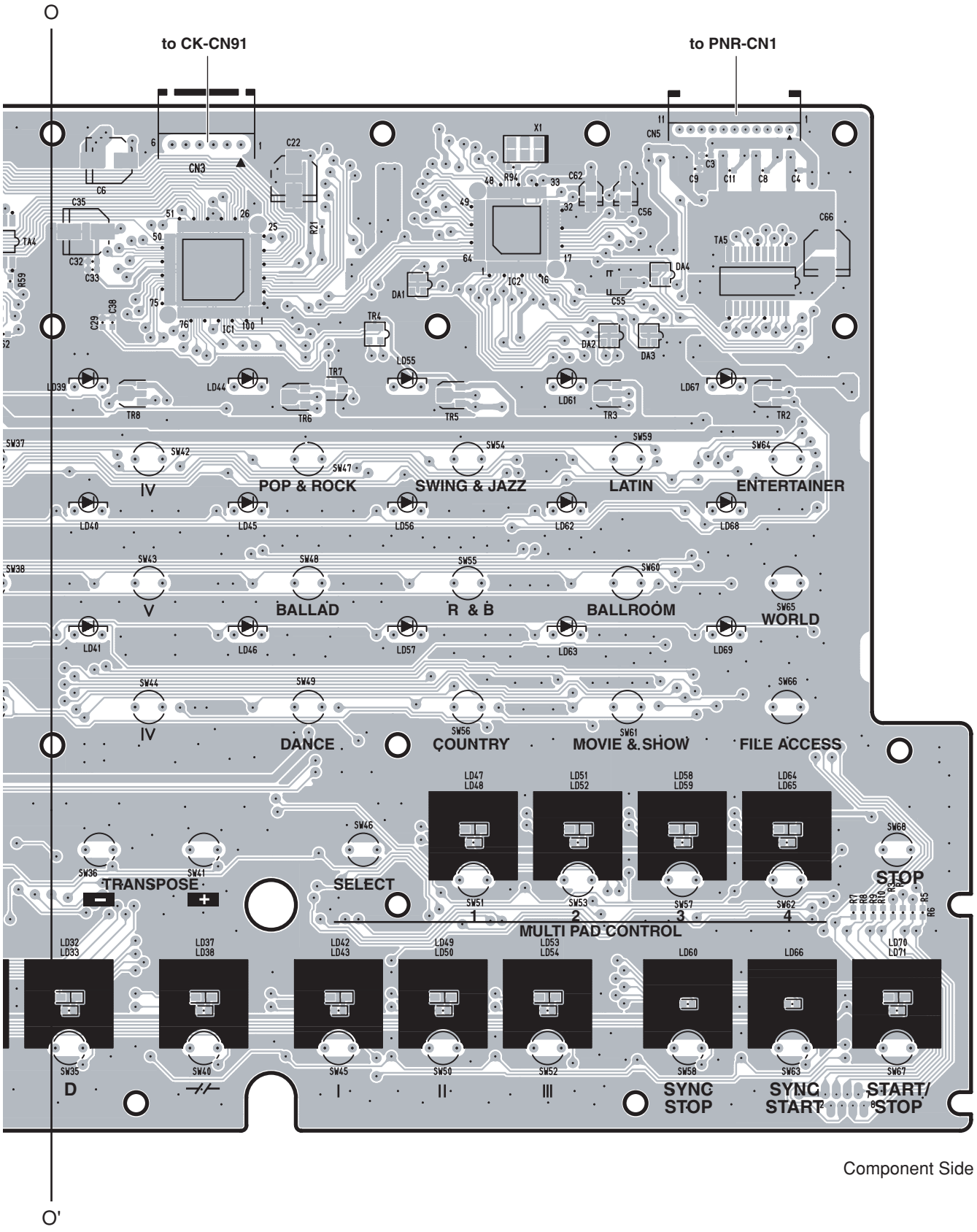
Note: See parts list for details of circuit board component parts.

• PNL(Version C) Circuit Board



Note: As for "TA4" on Version C, use a transistor array M54564FP-DB1J(V3117600) as a spare part.

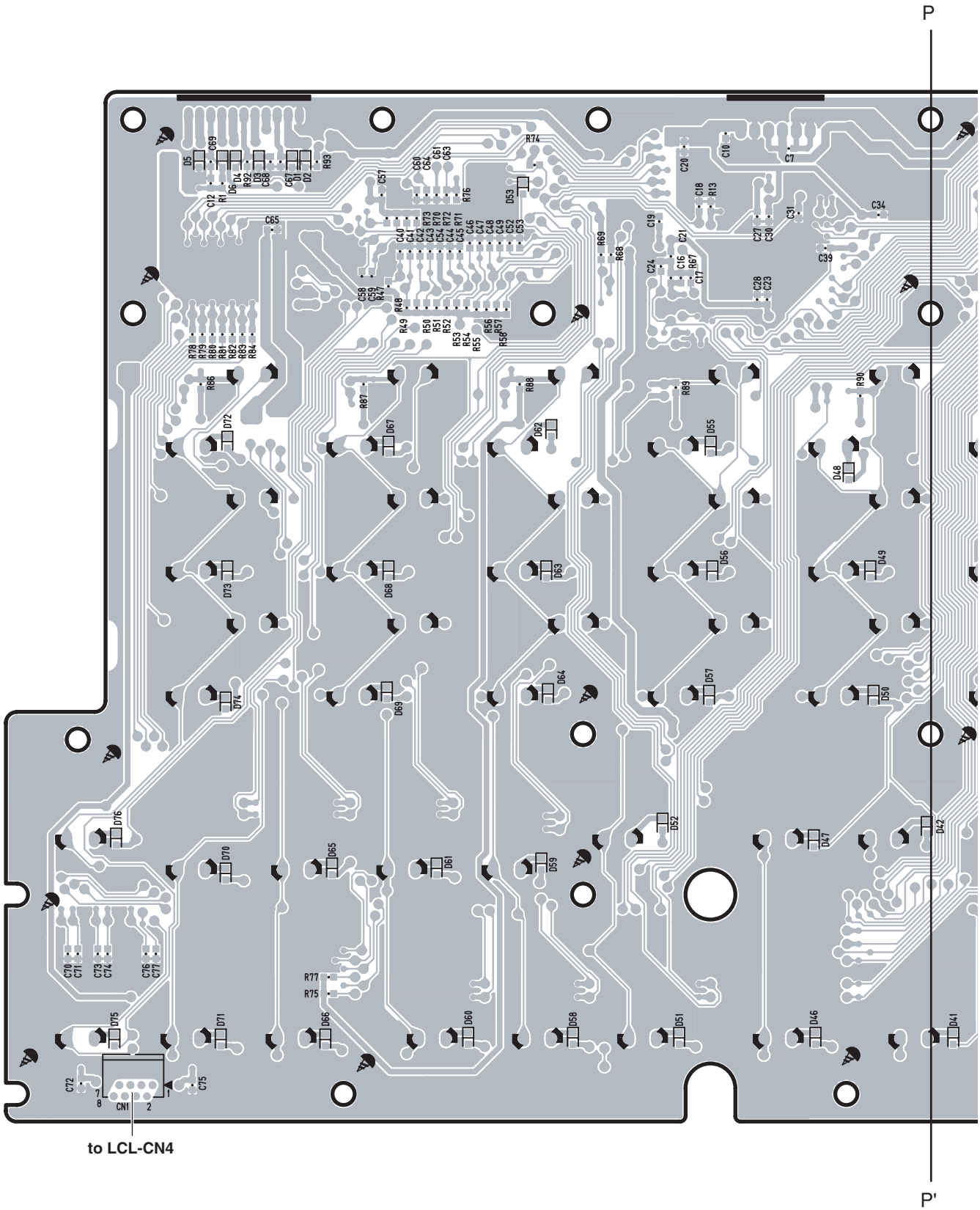
Note: See parts list for details of circuit board component parts.



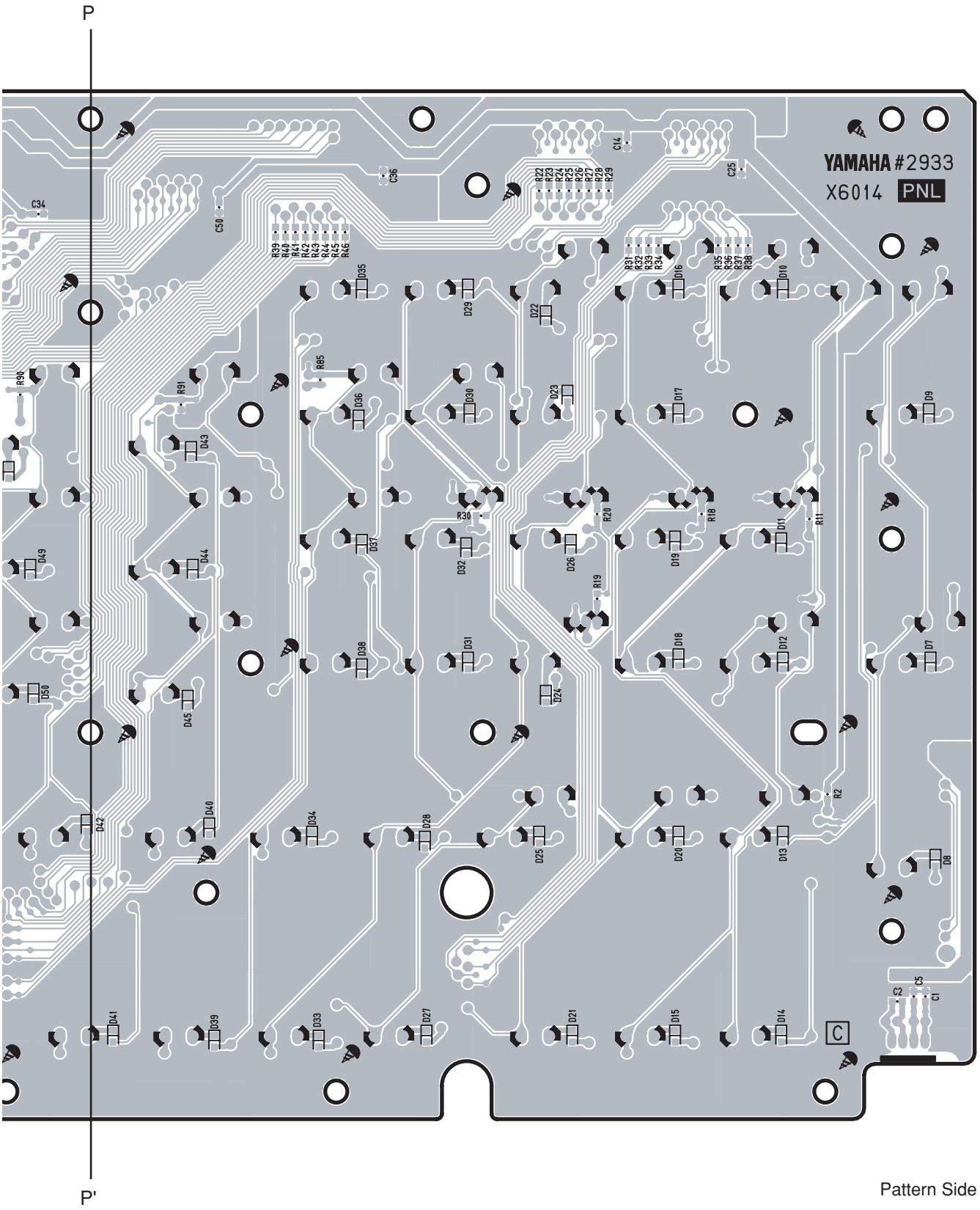
Component Side

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

• PNL(Version C) Circuit Board



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

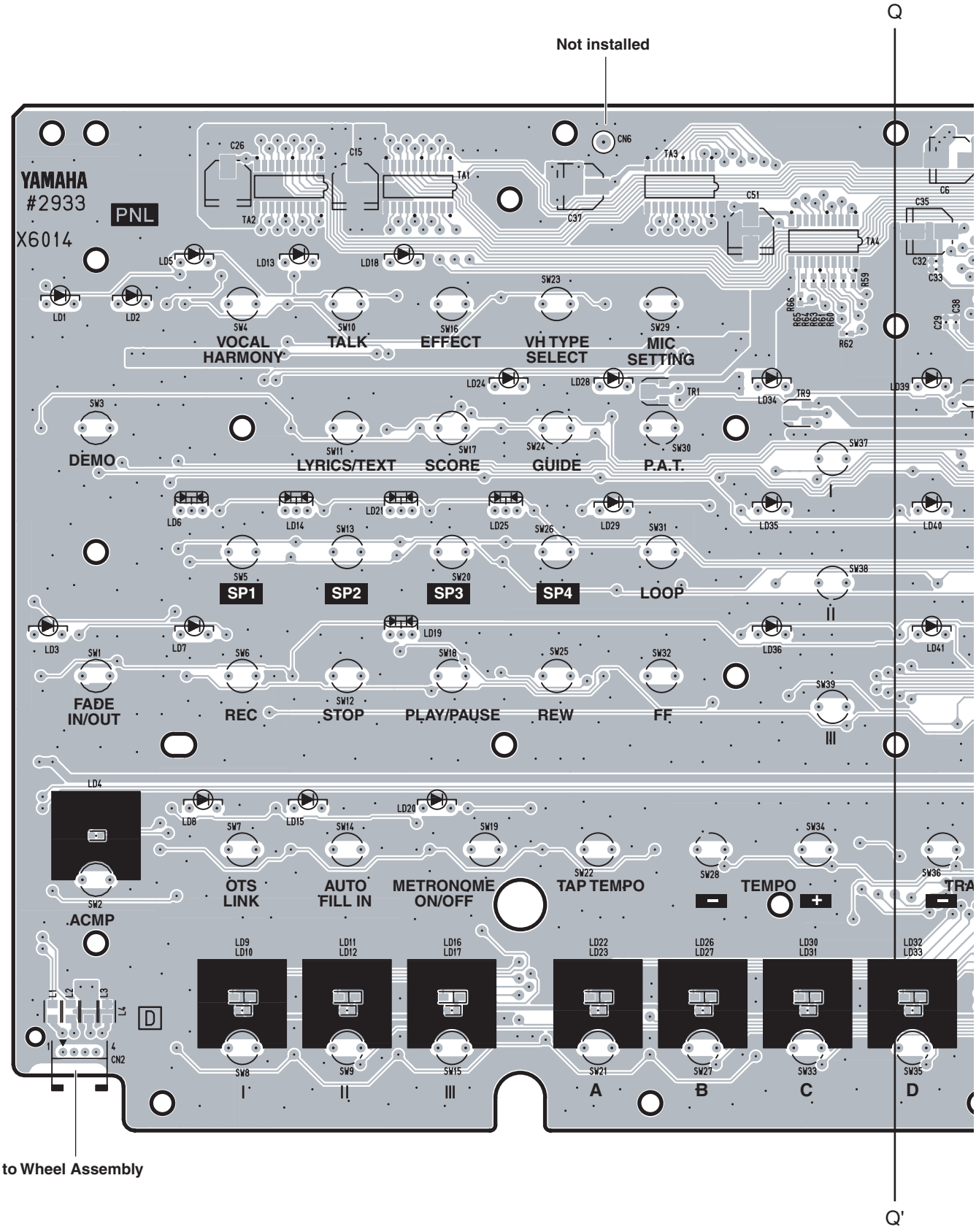


Pattern Side

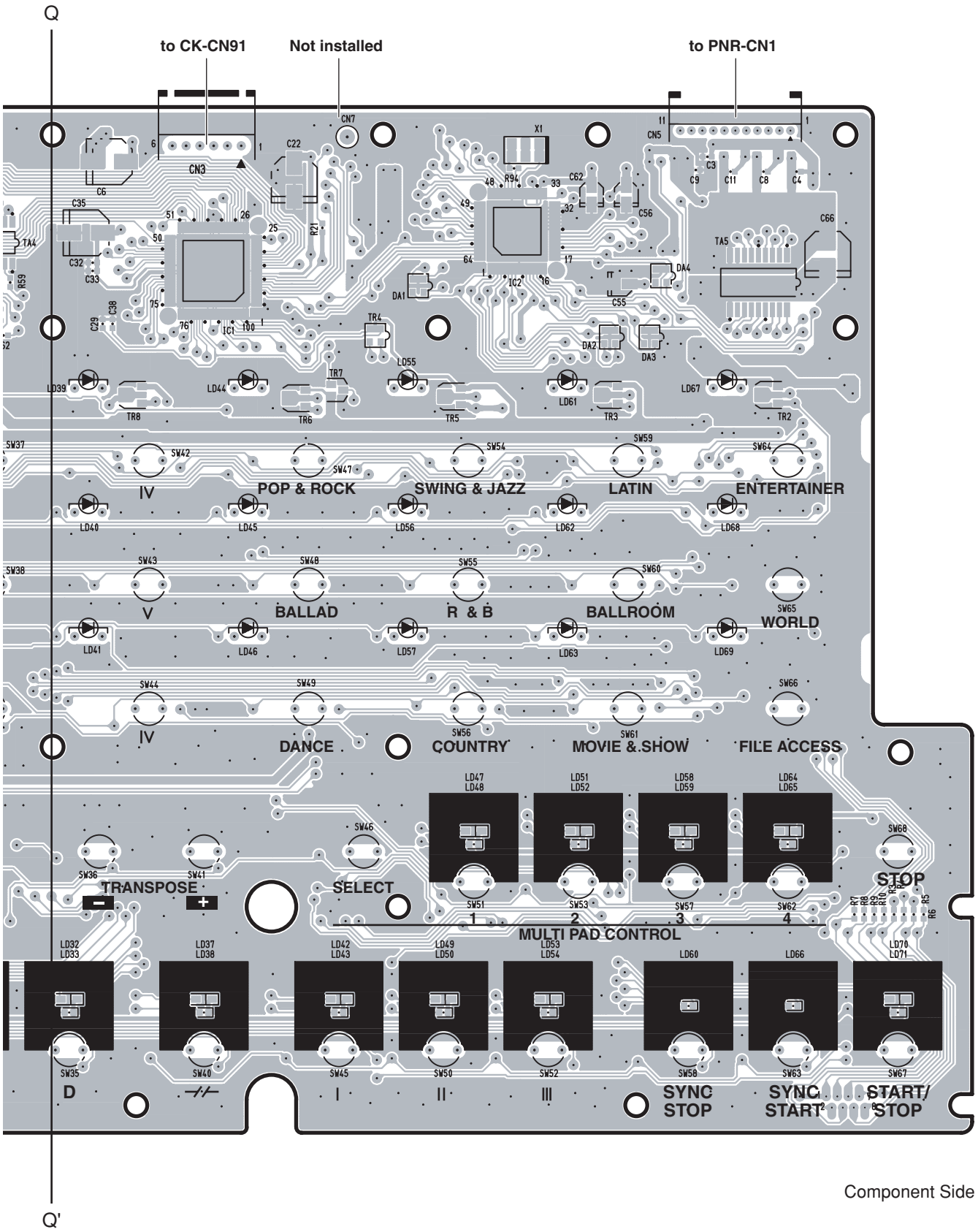
2NA-WE81690 ⚠4

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

• PNL(Version D) Circuit Board



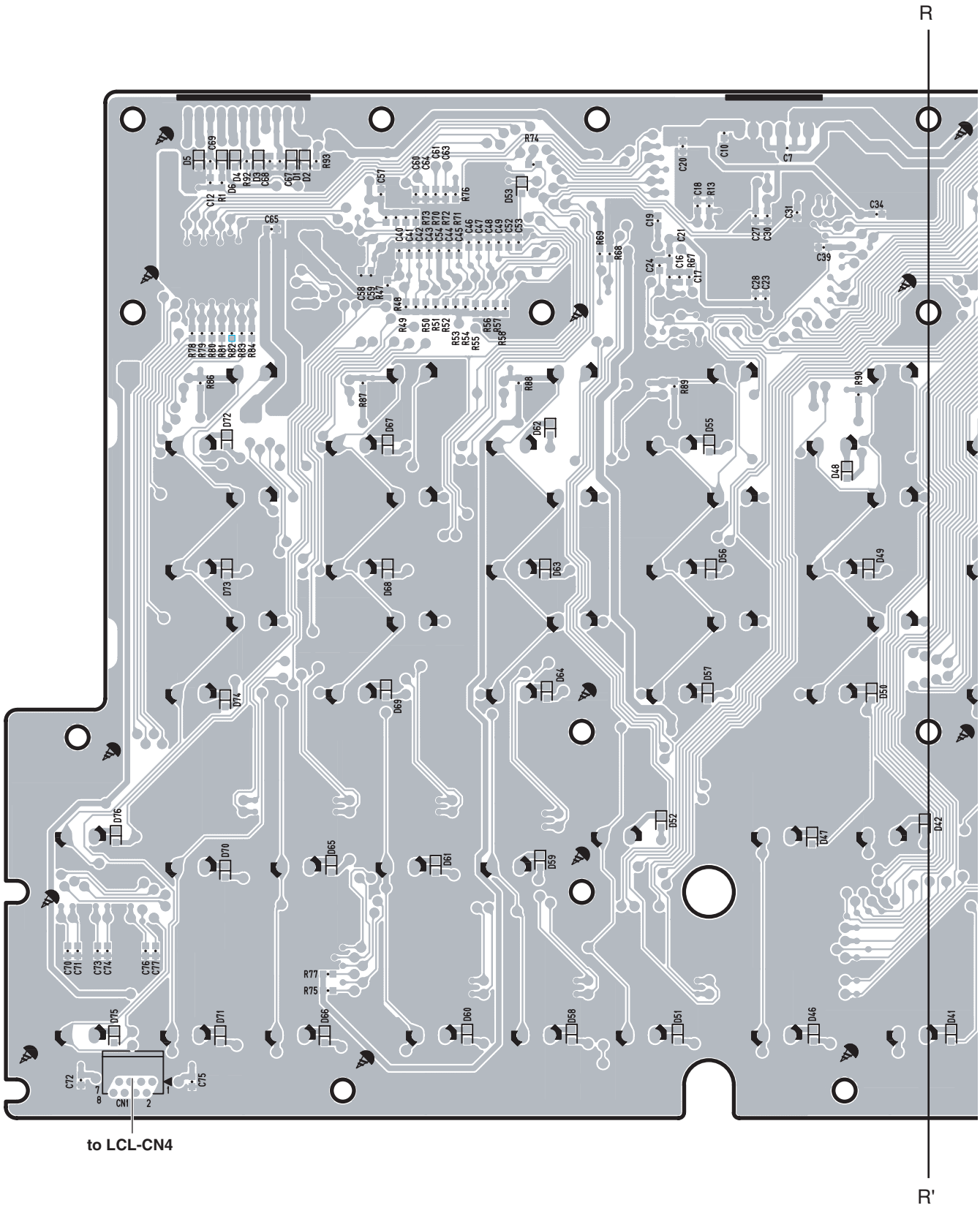
Note: See parts list for details of circuit board component parts.



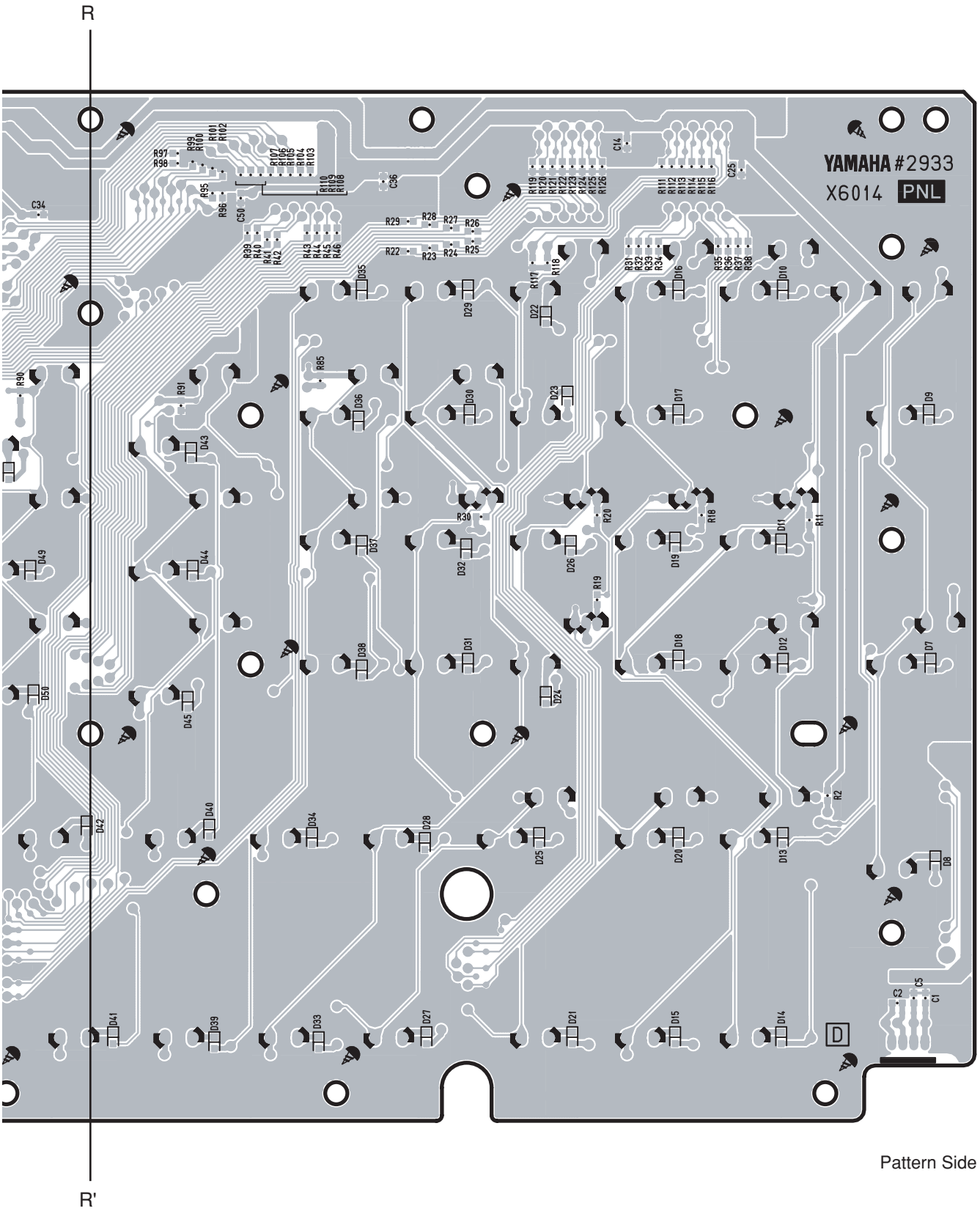
Component Side

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

• PNL(Version D) Circuit Board



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

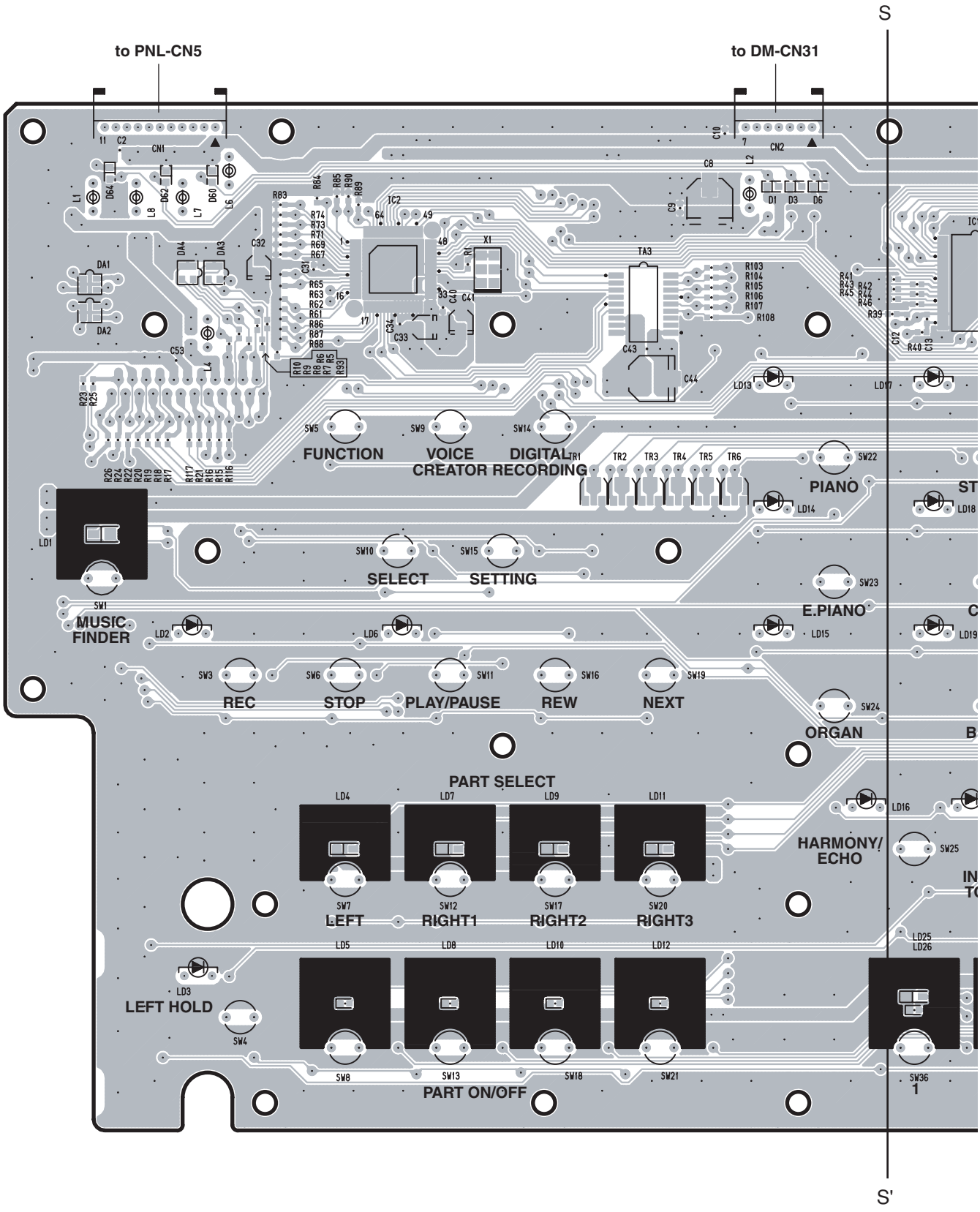


Pattern Side

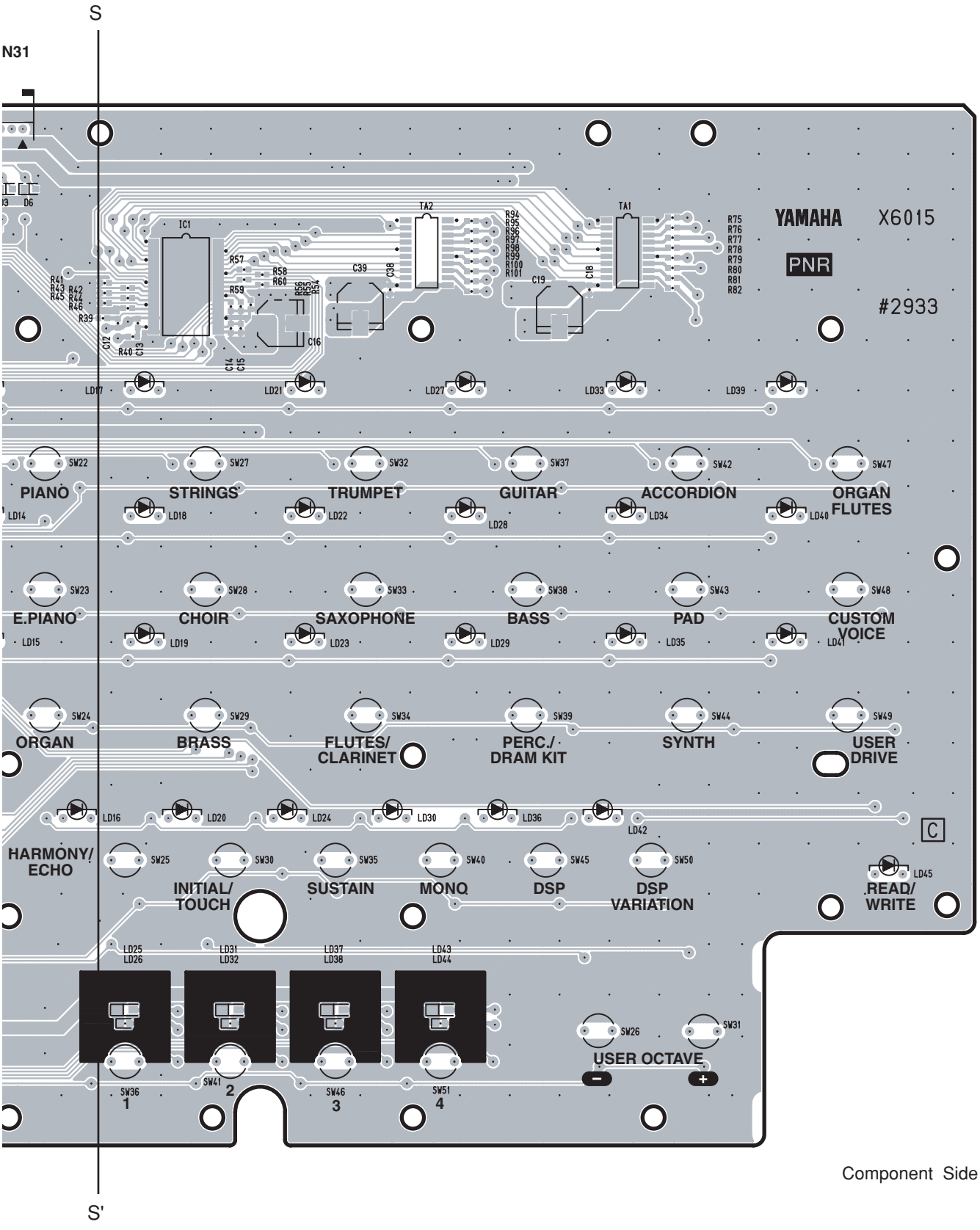
2NA-WE81690 ⚠4

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

• PNR Circuit Board



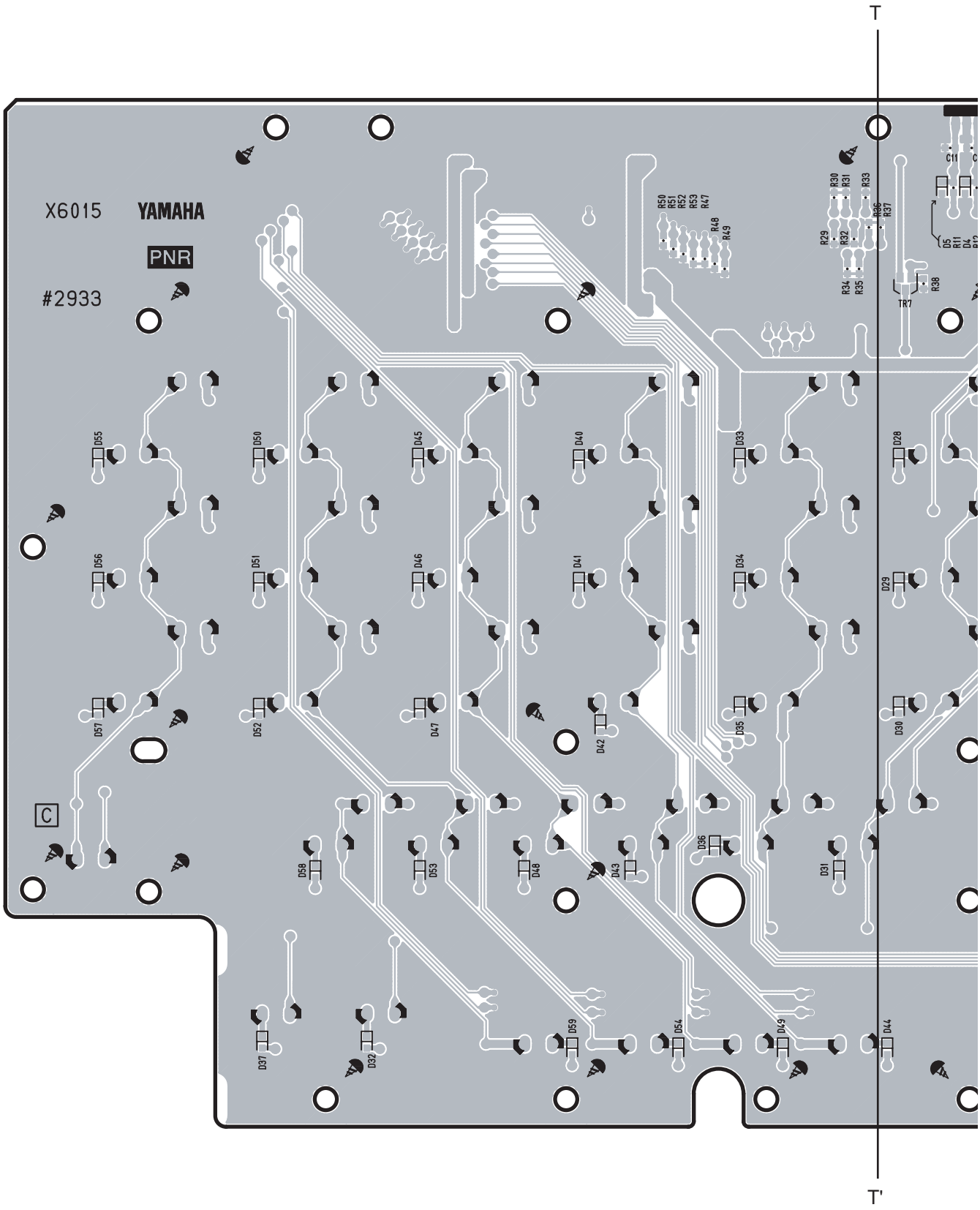
Note: See parts list for details of circuit board component parts.



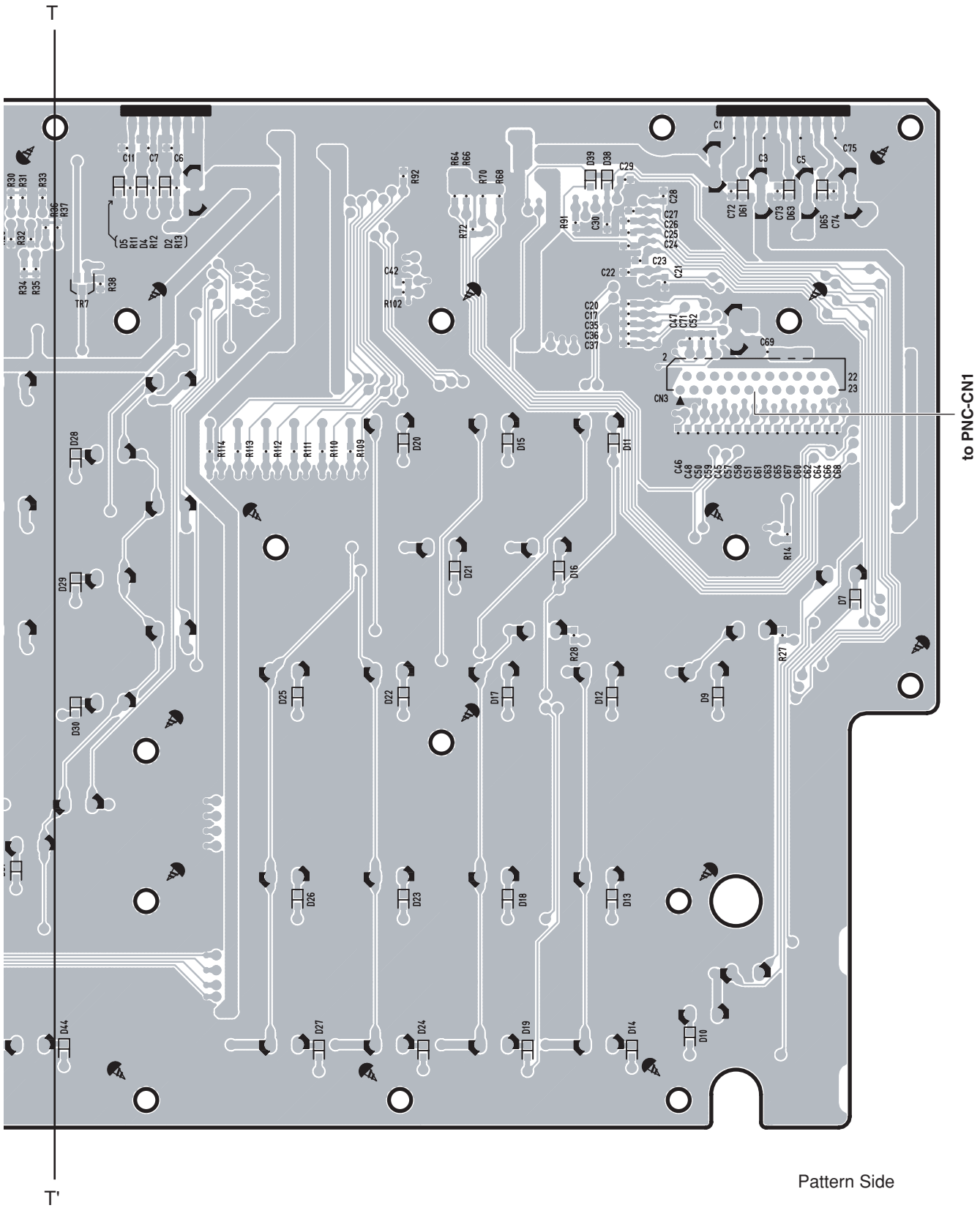
Component Side

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

• PNR Circuit Board



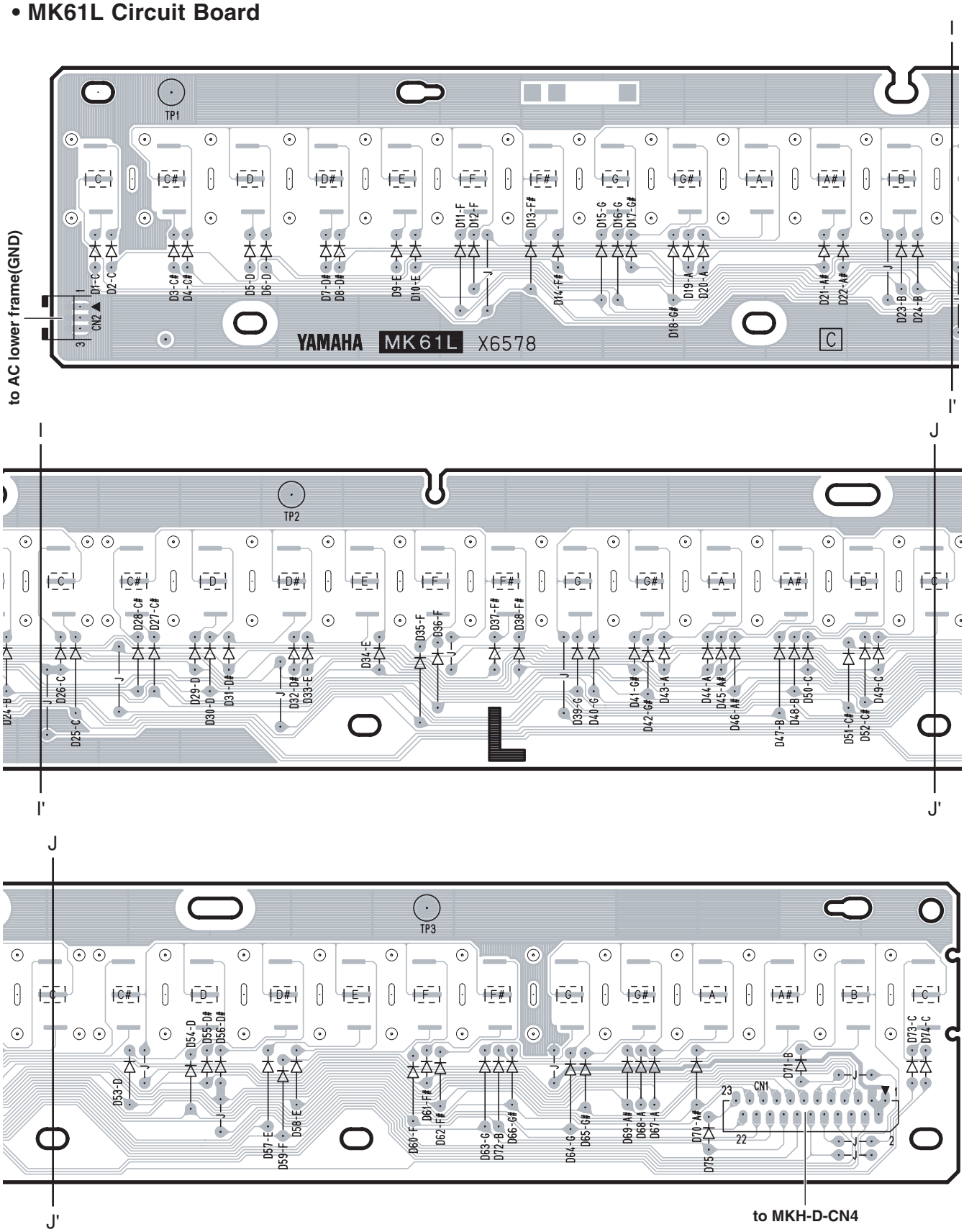
Note: See parts list for details of circuit board component parts.



2NA-WE81730 ⚠2

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

• MK61L Circuit Board



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

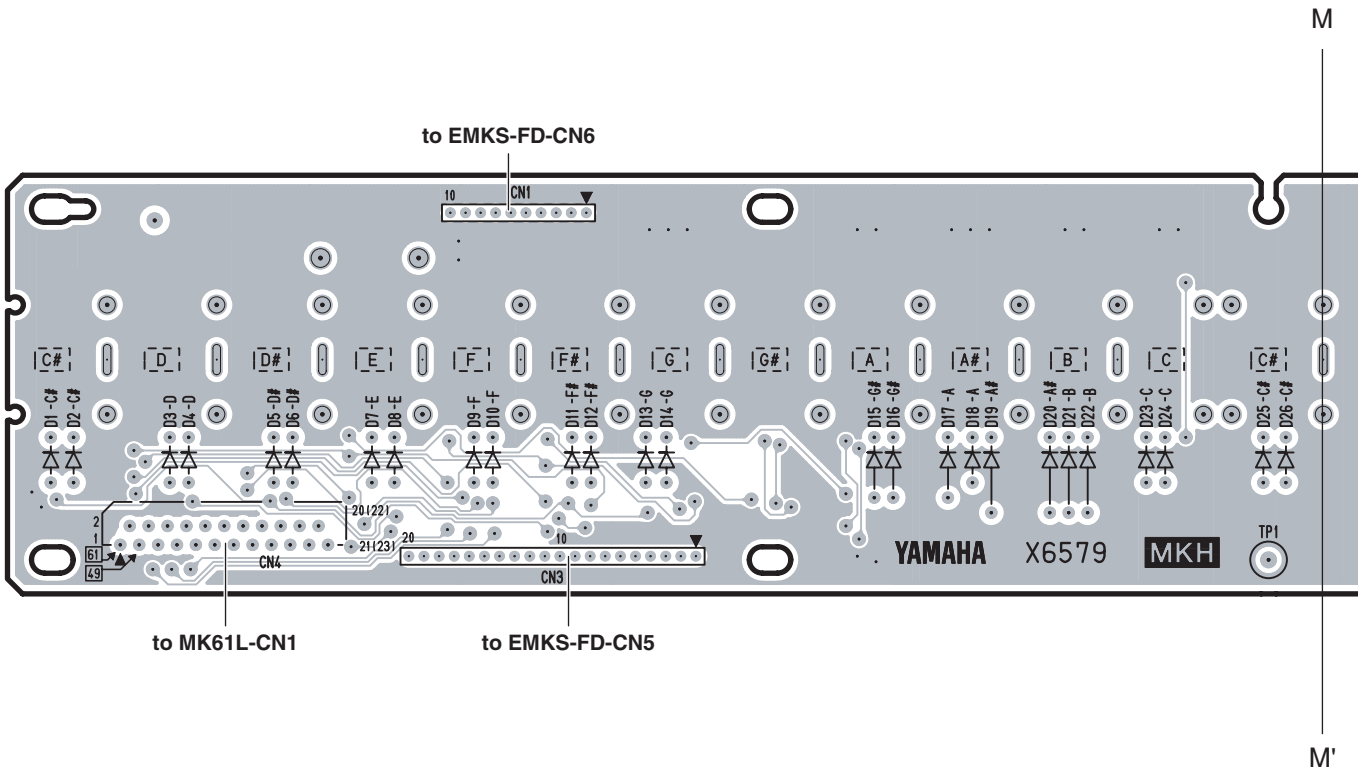


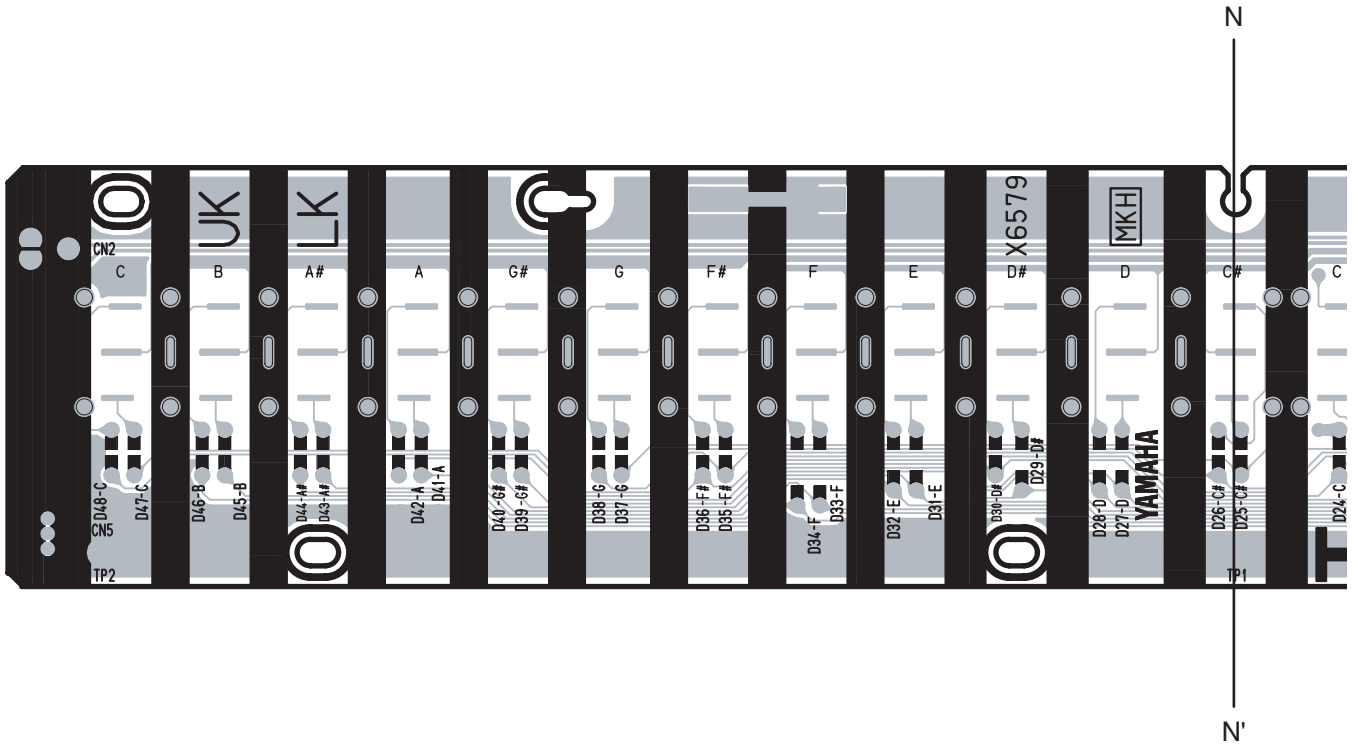
Pattern Side

2NAKZ-WD80020 3

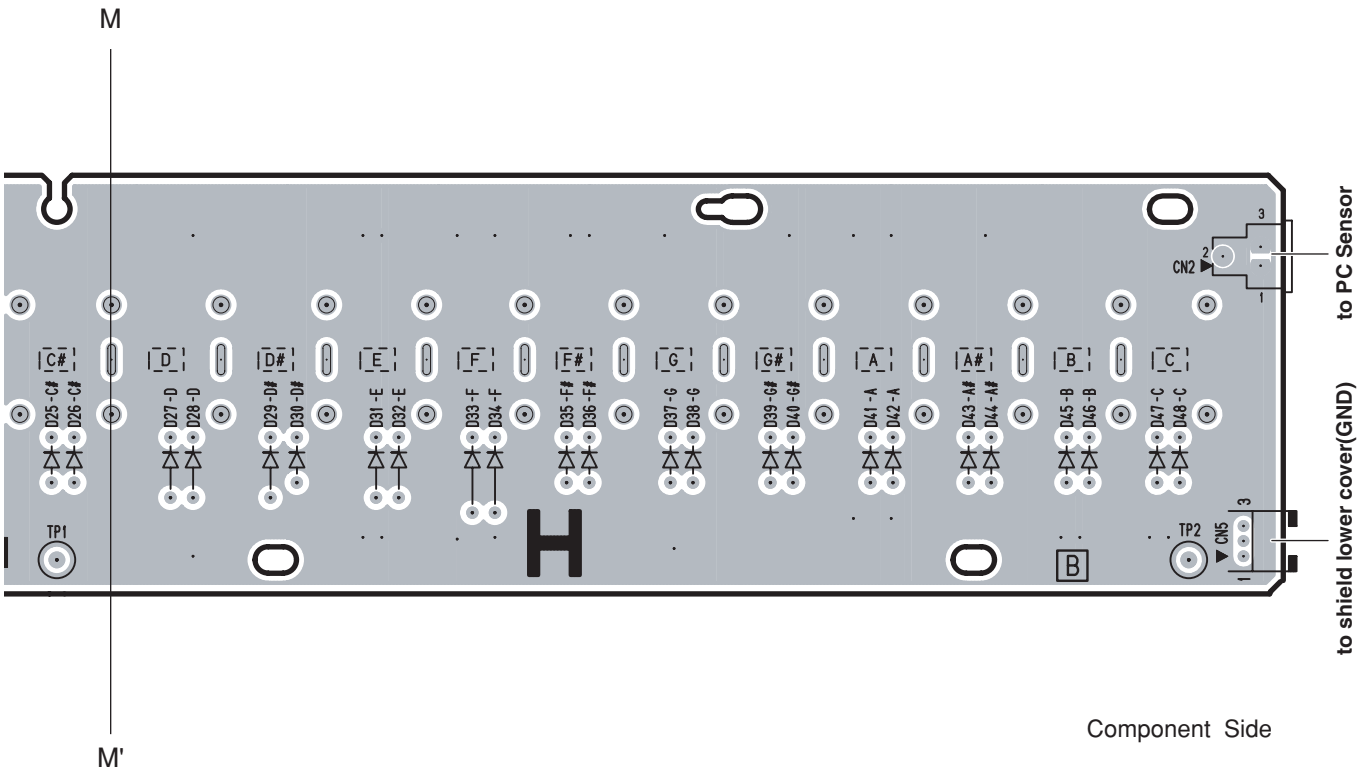
Note: See parts list for details of circuit board component parts.

• MKH-D Circuit Board

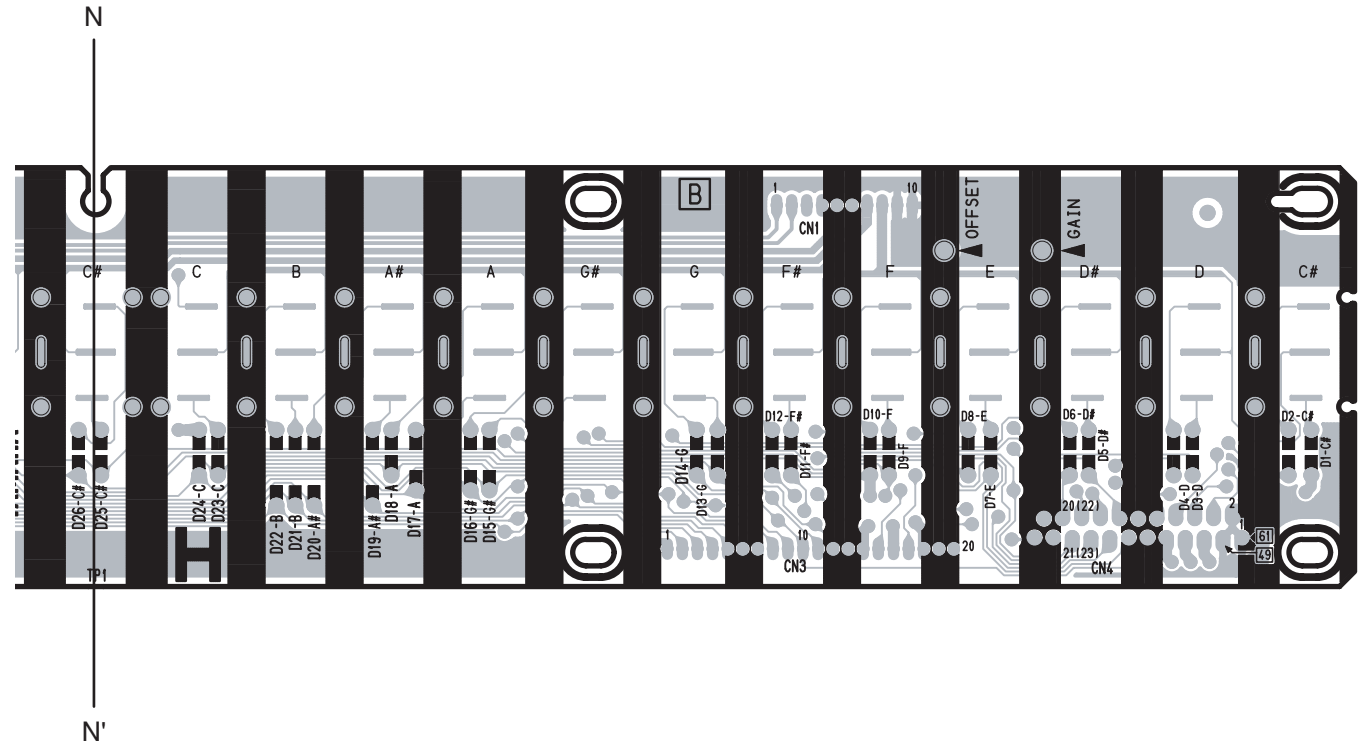




Note: See parts list for details of circuit board component parts.



Component Side

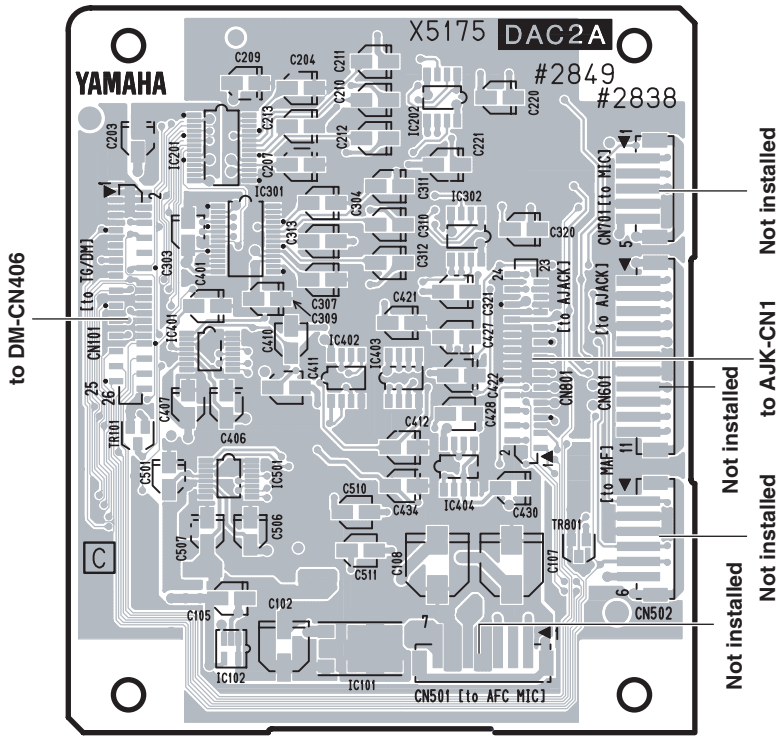


Pattern Side

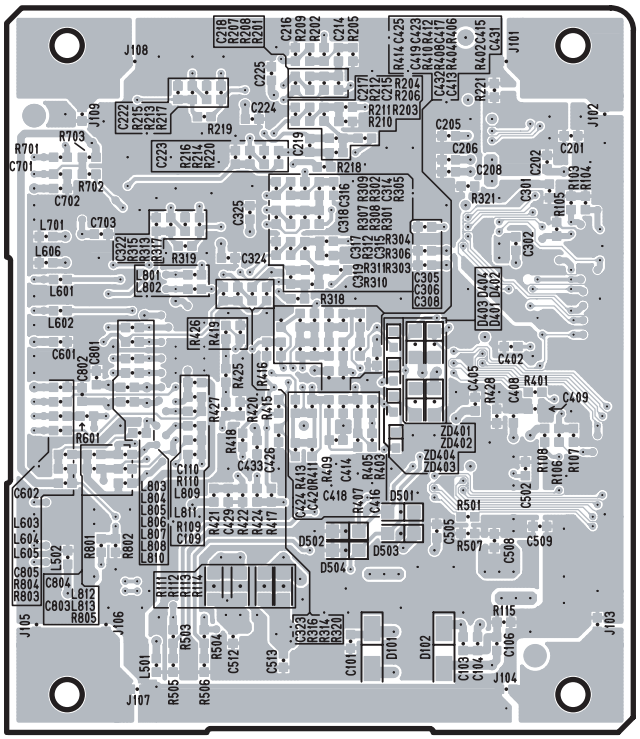
2NAKZ-WD78540 ⚠2

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

• DAC2A Circuit Board



Component Side

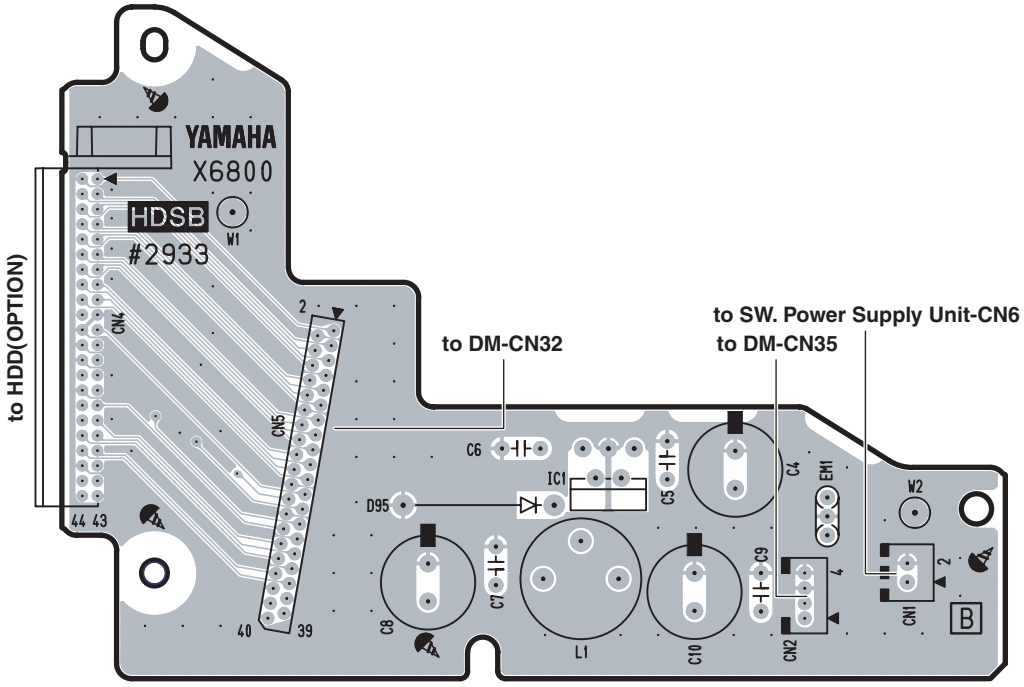


Pattern Side

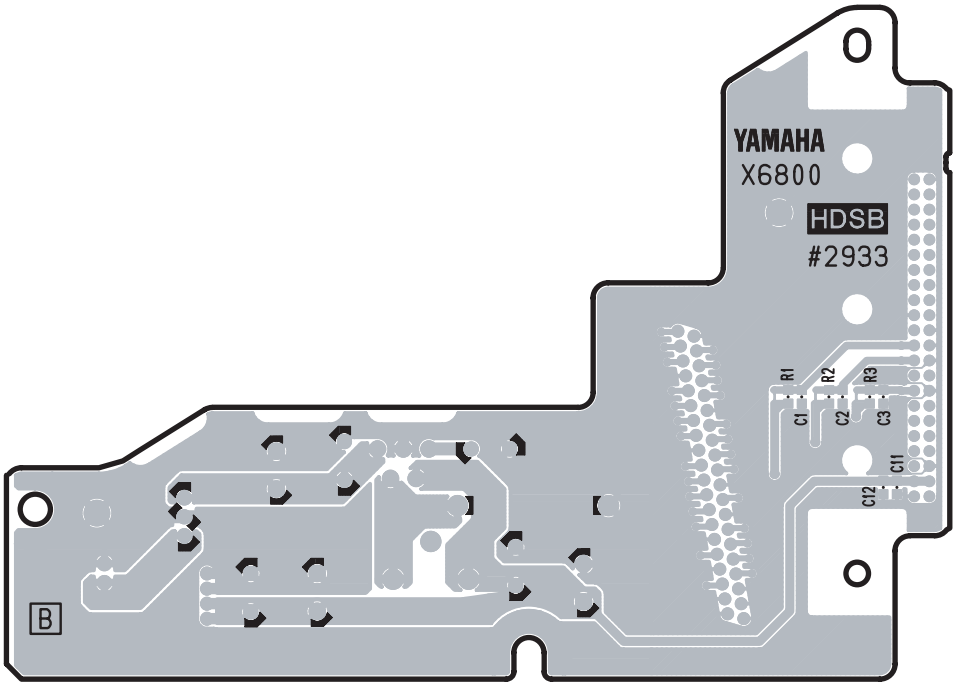
Note: See parts list for details of circuit board component parts.

2NA-WC74890 /2

• HDSB Circuit Board



Component Side

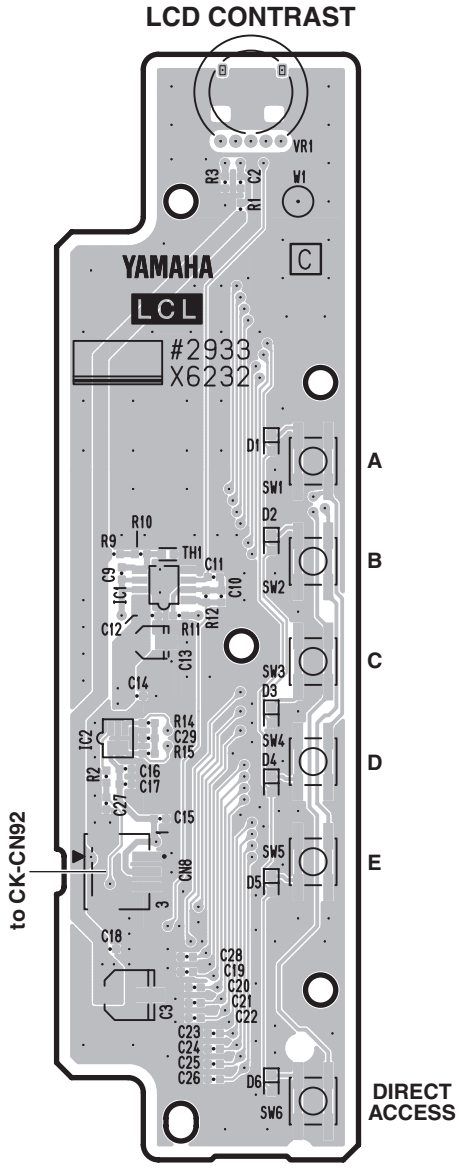


Pattern Side

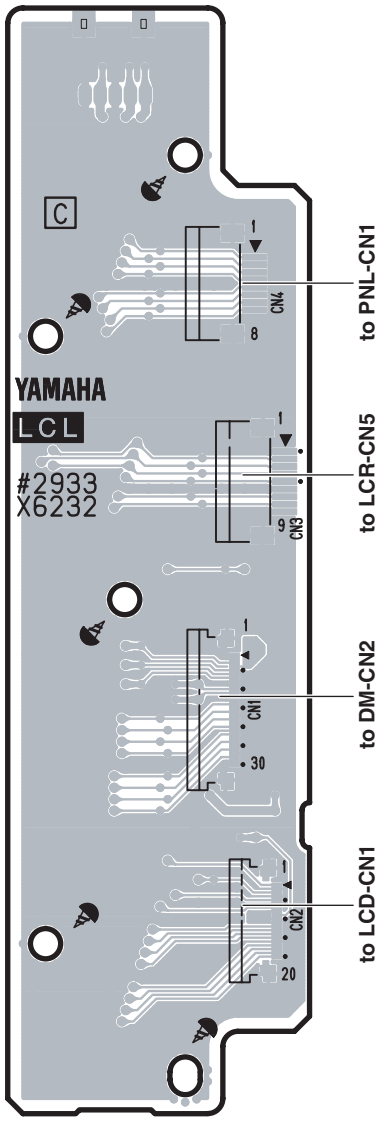
2NA-WF46820 ⚠1

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

• LCL Circuit Board

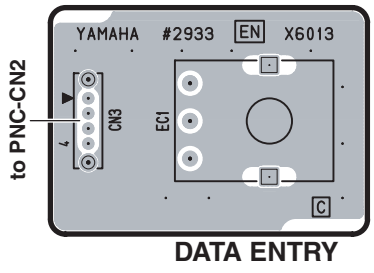


Component Side

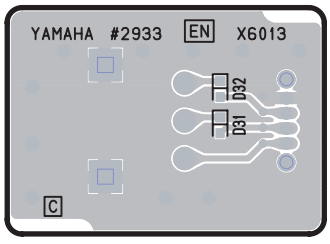


Pattern Side

• EN Circuit Board



Component Side

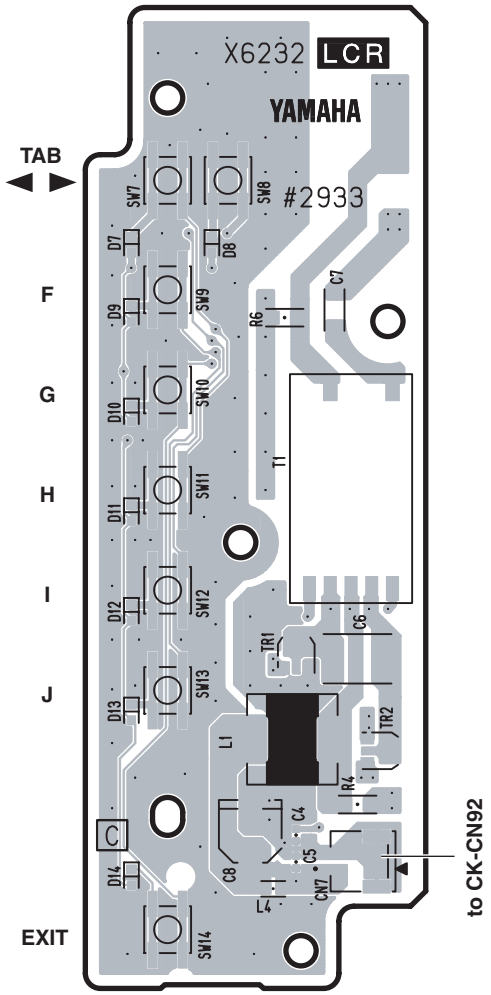


Pattern Side

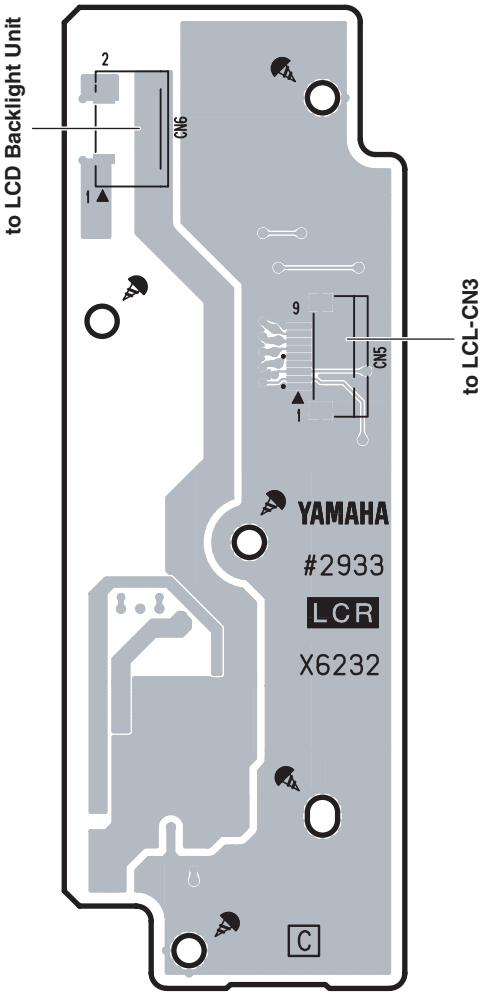
LCL: 2NA-WE81760 ⚠1
EN: 2NA-WF32840 ⚠2

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

• LCR Circuit Board

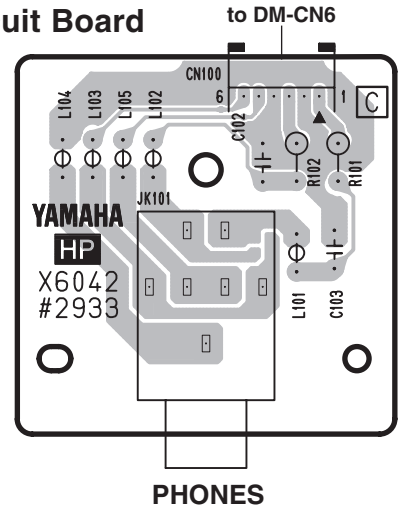


Component Side

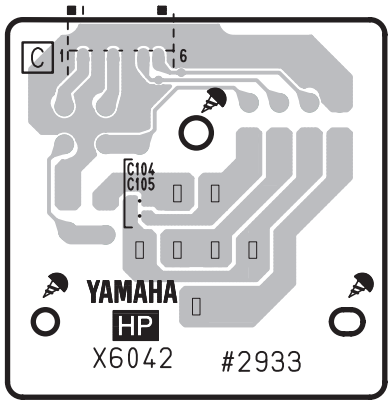


Pattern Side

• HP Circuit Board



Component Side

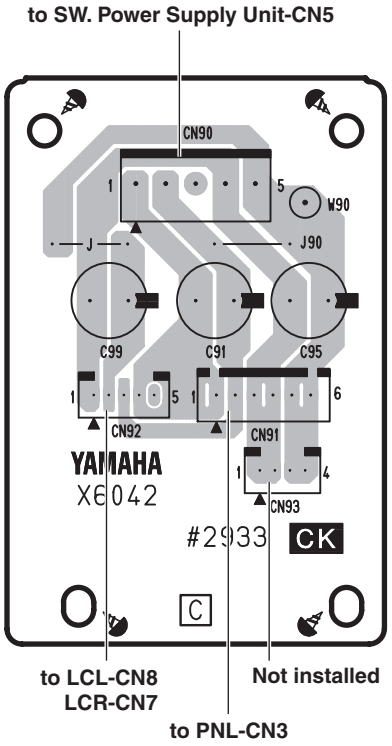


Pattern Side

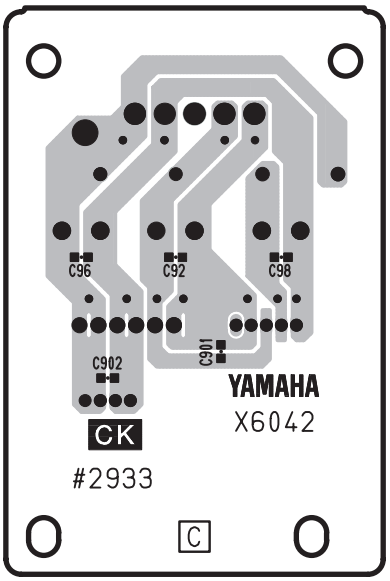
LCR: 2NA-WE81760 ⚠1
HP: 2NA-WE81600 ⚠1

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

• CK Circuit Board

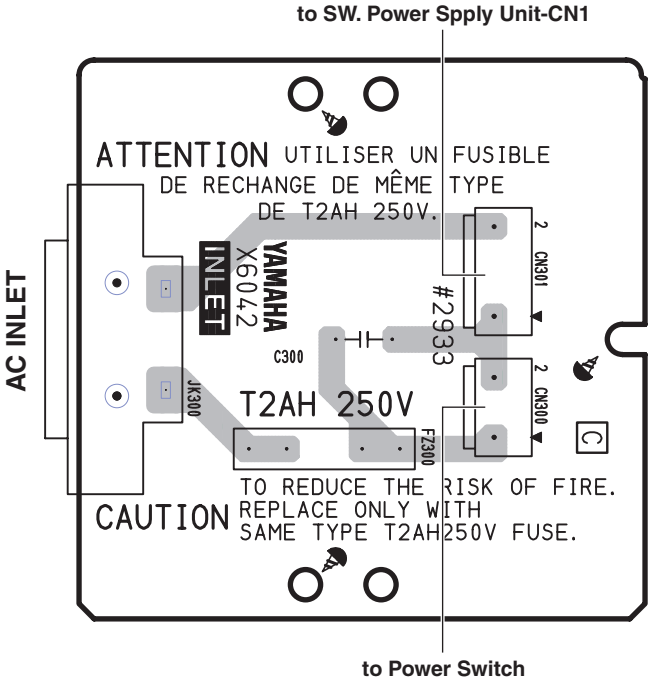


Component Side

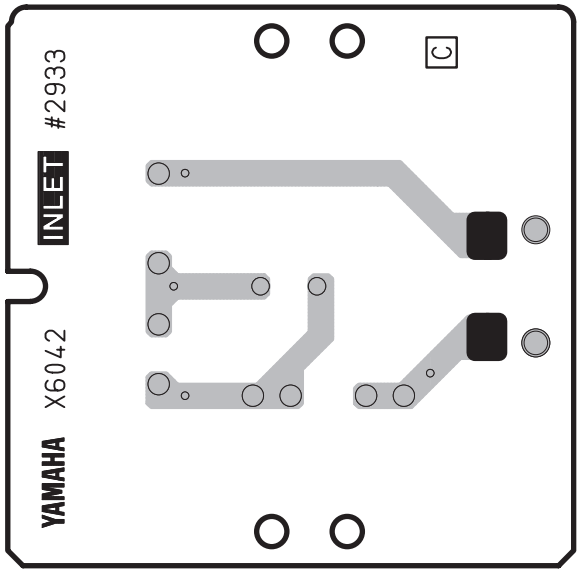


Pattern Side

• INLET Circuit Board



Component Side

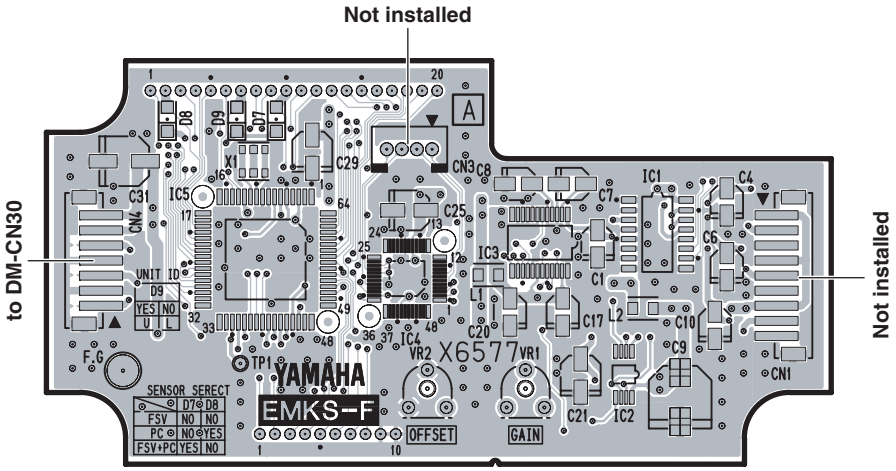


Pattern Side

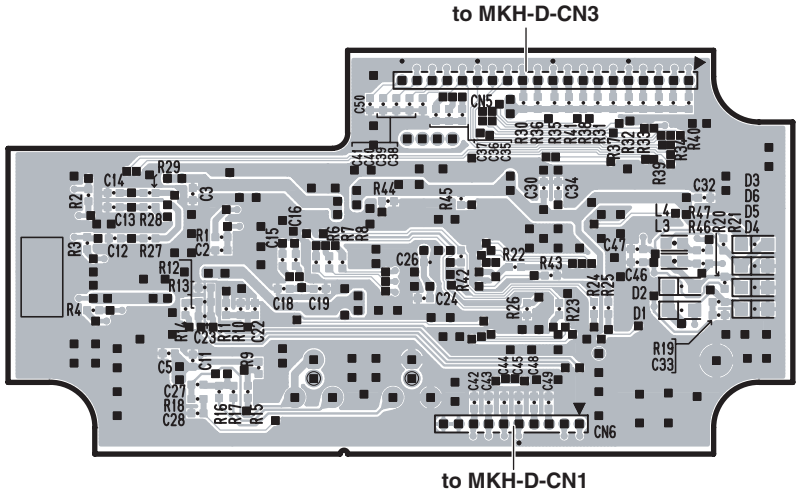
CK: 2NA-WE81600 ⚠1
INLET: 2NA-WE81600 ⚠1

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

• EMKS-FD Circuit Board

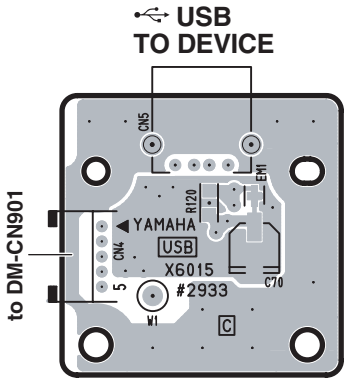


Component Side

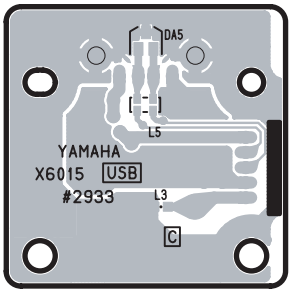


Pattern Side

• USB Circuit Board



Component Side

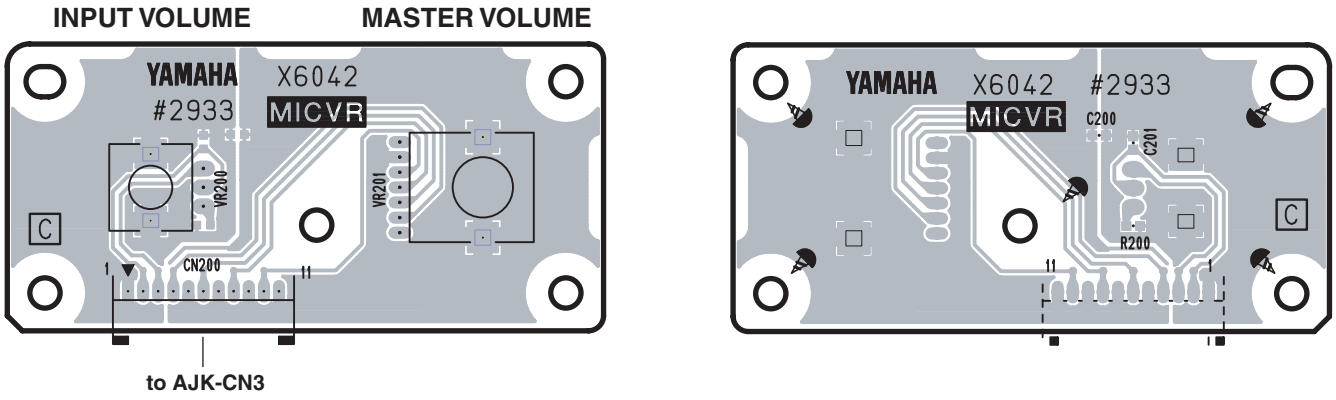


Pattern Side

EMKS-FD: 2NAKZ-WE62240
USB: 2NA-WE81730 △2

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

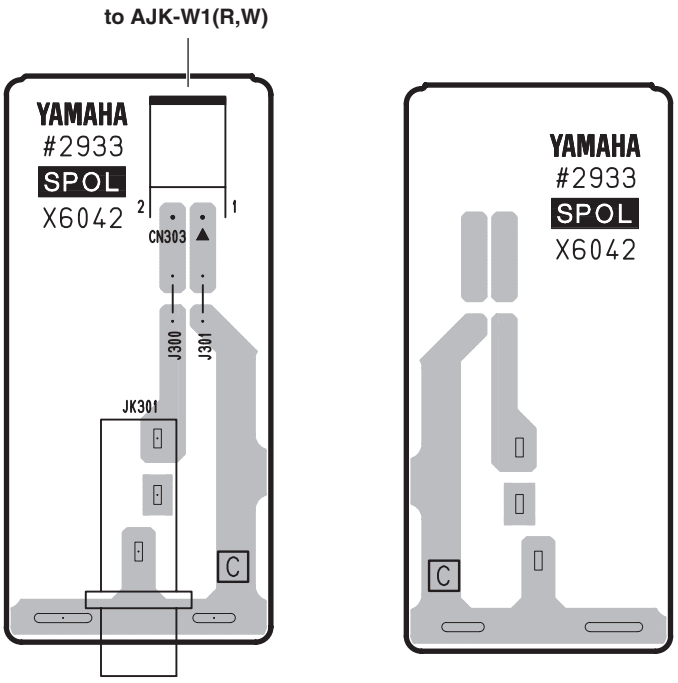
• MICVR Circuit Board



Component Side

Pattern Side

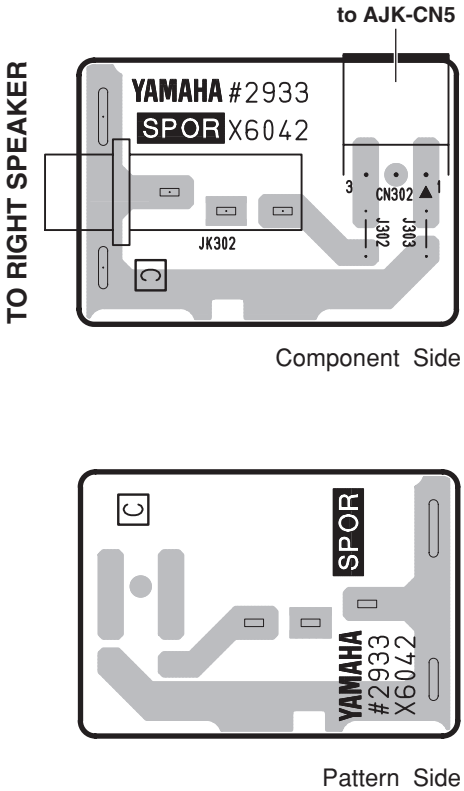
• SPOL Circuit Board



Component Side

Pattern Side

• SPOR Circuit Board



Component Side

Pattern Side

MICVR: 2NA-WE81600 ⚠1
SPOL: 2NA-WE81600 ⚠1
SPOR: 2NA-WE81600 ⚠1

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

■ TEST PROGRAM

1. Preparation

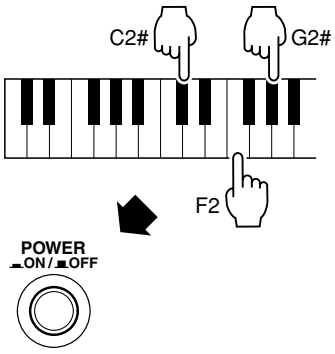
To check the unit, the following measuring instruments and jigs are required.

Measuring instruments:

Frequency counter (with accuracy of two decimal point digits or more)
Level meter (with JIS-C filter)
Oscillator (for balance/unbalance)

Note: Unless otherwise specified, use a stereo plug with a load of 33 ohms and measure at the [PHONES] jack.

Jigs: Stereo phone Jack cable (33 ohm load or 30 ohm load)
Monaural phone Jack cable (10k ohm load) (x 2)
Mini DIN8PIN cable (470 ohm load)
Foot volume (FC-7)
MIDI cable (x 2)
Microphone, Headphones
Computer
USB cable (A - B type)
Color CRT monitor for RGB input (NTSC,PAL)
Video cable (75 ohm, coaxial)
RGB cable (Mini D-Sub15 pin)
Optional speaker (TRS-MS02 or equivalent)
2.5" Hard disk drive (1-137GB, Formatted with Tyros2)
DIMM (Transcend TS64ML64V6 (512MB) or equivalent) (x2)
USB storage device



(Fig.1)

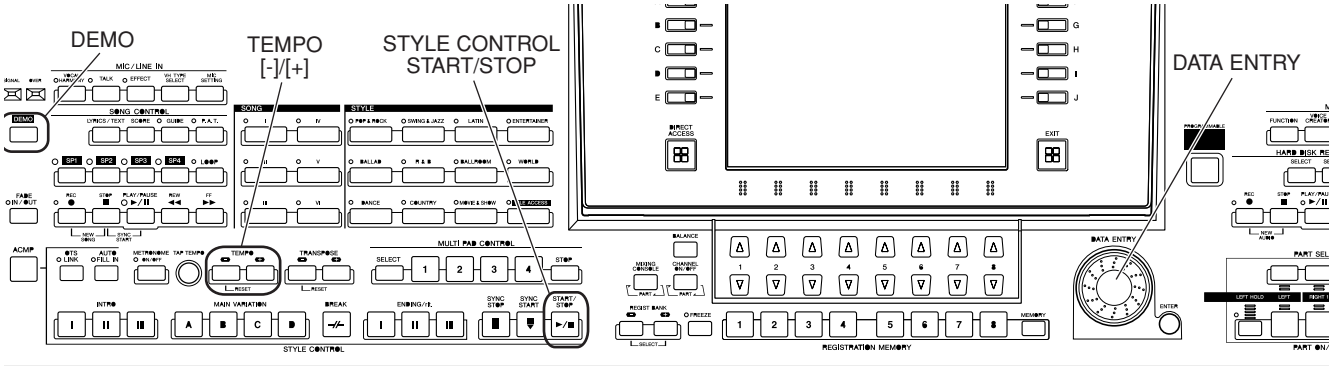
2. How to Enter the Test Program

While pressing the [C#2], [F2] and [G#2] keys, turn the power on. (Fig.1)

3. Test Procedure

1) When the test program starts to run, the LCD shows **"TEST"**.
2) Press the [TEMPO–] / [TEMPO+] button or turn the [DATA ENTRY] dial to select test item.
3) Press the [STYLE CONTROL START/STOP] button to execute the current test item.

If the test result is OK, press the [STYLE CONTROL START/STOP] button or the lowest key(C1) to return to the wait state.
If the test result is NG, press the lowest key(C1) or the [DEMO] button to return to the wait state.



4. Test Items

No.	LCD display	Test Function and Judgment Criteria
	---: Device Connection Check	Checks the device connections. Install two DIMMs and a hard disk drive. Confirm that the LCD shows **"DIMM:Device Found"** and **"HDD:Device Found"**. In case of NG, the following messages are indicated on the LCD. **"SwErr"** (The panel switch is pressed.) **"DIMM:No Device"** or **"HDD:No Device"**
	---:	LCD Contrast Check. Confirm that the LCD contrast can be adjusted by turning the LCD CONTRAST knob.
1	**001:Version**	Displays each ROM version. ROM versions are displayed alternately on the LCD. Press the TAB[<] or TAB[>] to switch the version pages. The first page **Model Name : Tyros2(E)** **Main Program : X.XX** **Sub Program : X.XX** **BitMap : X.XX** **Contents1 : X.XX** **Contents2 : X.XX** **Wave1 : X.XX** The second page **Main Boot : X.XX** **Sub1 Boot : X.XX** In case of NG, the LCD shows **"0.00"**. (X.XX: Version)
2	**002:ROM Chk1**	Checks all ROMs connected to the CPU bus. Confirm that the LCD shows **"OK"**. In case of NG, the following messages are indicated on the LCD. **"xxxxxx NG"** or **"xxxxxx No Card"** (xxxxxx: ROM's name)
3	**003:RAM Chk1**	Checks all RAMs connected to the CPU bus. Confirm that the LCD shows **"OK"**. In case of NG, the following messages are indicated on the LCD. **"xxxxxx NG"** or **"xxxxxx No Card"** (xxxxxx: RAM's name)
4	**004:Flash Chk1**	Checks all the flash memories connected to the CPU bus. (It takes about 15 seconds.) Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"NG"**. **** Never turn off the product while executing the test.***
5	**005:Wave ROM Chk1**	Checks all wave ROMs. Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"NG"**.
6	**006:Wave RAM(SDRAM) Chk1**	Checks all wave RAMs(SDRAM). Confirm that the LCD shows **"OK"**. In case of NG, the following messages are indicated on the LCD. **"xxxxxx NG"** or **"xxxxxx No Card"** (xxxxxx: SDRAM's name)

7	**007:Wave RAM(DIMM) Chk1**	Checks all wave RAMs(DIMM). Confirm that the LCD shows the memory capacity of DIMM as follows. (The capacity is not checked automatically.). **"OK(DIMM H:512MB.L:512MB)"** In case of NG, the LCD shows **"NG(DIMM H:512MB,L:512MB)xxxxxx NG"**. (xxxxxx: DIMM's name)
8	**008:Effect RAM Chk1**	Checks all effect RAMs. Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"xxxxxx NG"**.(xxxxxx:RAM's name)
9	**009:TG 1 Chk**	Checks the tone generator 1. The sine waves from C2 to G4 automatically sound in order. Confirm that no noise or no abnormal sound is generated. When the test is finished, the LCD shows **"End"**.
10	**010:TG2 Chk**	Checks the tone generator 2. The sine waves from C2 to G4 automatically sound in order. Confirm that no noise or no abnormal sound is generated. When the test is finished, the LCD shows **"End"**.
14	**014:Pitch Chk**	Checks pitch. Connect a frequency counter to the [PHONES] jack (either L or R) with a load of 33 ohm and set the [MASTER VOLUME] knob to maximum. Confirm that the frequency counter shows "441.43 ±0.22Hz".
15	**015:Output R Chk**	Checks the output level of R channel. 1) Connect a level meter to the [PHONES] jack (L, R) with a load of 33 ohm and set the [MASTER VOLUME] knob to maximum. Confirm the output levels are as follows. L: -55.0 dBu or less R: +1.0 ±2 dBu 2) Connect a level meter to the [LINE OUT] jack (MAIN L/L+R, R) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. (using two monaural jacks at the same time) Confirm the output levels are as follows. L: -75.0dBu or less R: +9.5 ±2dBu 3) Connect a level meter to the [AUX OUT/LOOP SEND] jack (L/L+R, R) with a load of 10k ohm and set the [MASTER VOLUME] knob to any position. (using two monaural jacks). Confirm the output levels are as follows. L: -75.0dBu or less R: +5.0 ±2dBu 4) Connect a level meter to the [WOOFER] jack (R) with a load of 470 ohm and set the [MASTER VOLUME] knob to maximum. (L: Pin6-Pin3, R: Pin5-Pin3, Pin3: GND) Confirm the output levels are as follows. L: -65.0dBu or less R: +5.5 ±2dBu 5) Connect optional speakers and disconnect the plug from the [PHONES] jack. Confirm that only the speaker of R channel generates sound.

16	**016:Output L Chk**	Output L Check. 1) Connect a level meter to the [PHONES] jack (L, R) with a load of 33 ohm and set the [MASTER VOLUME] knob to maximum. Confirm the output levels are as follows. L: +1.0 ±2dBu R: -55.0dBu or less 2) Connect a level meter to the [LINE OUT] jack (MAIN L/L+R, R) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. (using two monaural jacks at the same time) Confirm the output levels are as follows. L: +9.5 ±2dBu R: -75.0dBu or less 3) Connect a level meter to the [AUX OUT/LOOP SEND] jack (L/L+R, R) with a load of 470 ohm and set the [MASTER VOLUME] knob to any position. (using two monaural jacks). Confirm the output levels are as follows. L: +5.0 ±2dBu R: -75 dBu or less 4) Connect a level meter to the [WOOFER] jack (R) with a load of 470 ohm and set the [MASTER VOLUME] knob to maximum. (L: Pin6-Pin3, R: Pin5-Pin3, Pin3: GND) Confirm the output levels are as follows. L: +5.5 ±2dBu R: -65 dBu or less 5) Connect optional speakers and disconnect the plug from the [PHONES] jack. Confirm that only the speaker of L channel generates sound.
17	**017:Output Sub-1 Chk**	Checks the output level of LINE OUT SUB1. Connect a level meter to the [LINE OUT] jack (SUB1, SUB2) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. Confirm the output levels are as follows. SUB1: +3.0 ±2dBu SUB2: -75.0dBu or less
18	**018:Output Sub-2 Chk**	Checks the output level of LINE OUT SUB2. Connect a level meter to the [LINE OUT] jack (SUB1, SUB2) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. Confirm the output levels are as follows. SUB1: -75.0dBu or less SUB2: +3.0 ±2dBu
-	**Noise Level Check**	1) Connect a level meter to the [PHONES] jack (L, R) with a load of 33 ohm and set the [MASTER VOLUME] knob to maximum. Confirm the noise levels are as follows. L: -80.0dBu or less R: -80.0dBu or less 2) Connect a level meter to the [LINE OUT] jack (MAIN L/L+R, R) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. (using two monaural jacks at the same time) Confirm the noise levels are as follows. L: -75.0dBu or less R: -75.0dBu or less

		3) Connect a level meter to the [WOOFER] jack (R) with a load of 470 ohm and set the [MASTER VOLUME] knob to maximum. (L: Pin6-Pin3, R: Pin5-Pin3, Pin3: GND) Confirm the noise levels are as follows. L: -80.0dBu or less R: -80.0dBu or less 4) Connect a level meter to the [LINE OUT] jack (SUB1) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. Confirm that the noise leve is -80.0 dBu or less. 5) Connect a level meter to the [LINE OUT] jack (SUB2) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. Confirm that the noise leve is -80.0 dBu or less.
19	**019:EQ Low Chk**	Checks the frequency of EQ LOW. The sine wave of about 65.4Hz is output from the [LINE OUT] jack (MAIN L/L+R, MAIN R, SUB1, SUB2).
20	**020:EQ Mid Chk**	Checks the frequency of EQ MID. The sine wave of about 523Hz is output from the [LINE OUT] jack (MAIN L/L+R, MAIN R, SUB1, SUB2).
21	**021:EQ High Chk**	Checks the frequency of EQ HIGH. The sine wave of about 4186Hz is output from the [LINE OUT] jack (MAIN L/L+R, MAIN R, SUB1, SUB2).
22	**022:SP MUTE Chk**	Checks the SP mute. When the test is executed, the sine wave of about 4186Hz is output from the [LINE OUT] jack (MAIN L/L+R, MAIN R). Confirm that the 'ON' and 'OFF' of SP MUTE can be toggled by pressing the TAB[<] button or the TAB[>] button.
23	**023:Mute Chk**	Checks the mute. When the test is executed, the sine wave of about 4186Hz is output from the [LINE OUT] jack (MAIN L/L+R, MAIN R). Confirm that the 'ON' and 'OFF' of MUTE can be toggled by pressing the TAB[<] button or the TAB[>] button.
25	**025:MIC L Chk**	Checks the input levels of MIC/LINE IN L. Connect a level meter to the [AUX OUT/LOOP SEND] jack (L/L+R, R) with a load of 10k ohm. Apply a 1kHz sine wave at -45dBu to the [MIC/LINE IN L/L+R] jack with a load of 10k ohm, and set the [INPUT VOLUME] and [MIC/LINE IN TRIM] knobs to maximum. Confirm that the level meter reads the following value. L: +13.0 ±2dBu
26	**026:MIC R Chk**	Checks the input levels of MIC/LINE IN R. Connect a level meter to the [AUX OUT/LOOP SEND] jack (L/L+R, R) with a load of 10k ohm. Apply a 1kHz sine wave at -45dBu to the [MIC/LINE IN R] jack with a load of 10k ohm, and set the [INPUT VOLUME] and [MIC/LINE IN TRIM] knobs to maximum. Confirm that the level meter reads the following value. R: +13.0 ±2dBu

-	**AUX IN/LOOP RETURN Chk**	Checks the input levels of AUX IN/LOOP RETURN. Connect a level meter to the [LINE OUT] jack (MAIN L/L+R) with a load of 10k ohm. Apply a 1kHz sine wave at -20dBu to the [AUX IN/LOOP RETURN] jack (L/L+R,R), and set the [AUX IN/LOOP RETURN TRIM VOLUME] and [MASTER VOLUME] knobs to maximum. Confirm that the level meter reads the following value. L: +2.0 ±2dBu R: +2.0 ±2dBu
27	**027:SW,LED Chk**	Checks all switches and LEDs on the panel. When the test is executed, the LCD shows the name of switches in order. Press the switch indicated on the LCD. When it is normal, the note corresponding to the switch sounds. (See Page 87 TABLE1.) If it is a LED-attached switch, the LED lights. (In case of dual-colour LED, the LED illuminates red.) In case of NG, the following messages are indicated on the LCD. 1) **"NG(ID 0:***,X:***)"** O:***: ID of the switch to be pressed X:***: ID of the pressed switch 2) **"OverTwoSW"** (When plural switches are pressed at the same time.) After all the switch tests are finished, the LCD shows **"DIAL DOWN 50"**. Turn the [DATA ENTRY] dial counterclockwise. At that time, confirm that the value on the LCD decreases. Then the LCD shows **"DIAL UP 0"**. So turn the [DATA ENTRY] dial clockwise. At that time, confirm that the value on the LCD increases. When the value reaches **"100"**, confirm that the LCD shows **"END"**.
28	**028:All LED On**	All LEDs light up. Confirm that all LEDs on the panel light up. The lighting area is divided into two. The area can be switched by pressing the TAB[<] or TAB[>] button. *In case of dual-colour LED, the LED illuminates orange.
29	**029:Red LED On**	All of red LEDs light up. Confirm that all of red LEDs on the panel light up. The lighting area is divided into two. The area can be switched by pressing the TAB[<] or TAB[>] button. * In case of dual-colour LED, the LED illuminates red.
30	**030:Green LED On**	All of green LEDs light up. Confirm that all of green LEDs on the panel light up. The lighting area is divided into two. The area can be switched by pressing the TAB[<] or TAB[>] button. * In case of tri-color LED, the LED illuminates green.
31	**031:Other LED On**	Checks all the LEDs other than red and green. Confirm that the following LEDs light up. LED(orange): PLAY/PAUSE of HARD DISK RECORDER LED(white): MUSIC FINDER.
33	**033:All LCD On**	Chk All dots of the LCD turn on Confirm that all dots of the LCD turn on. (The whole screen turns to black.)
34	**034:All LCD Off Chk**	All dots of the LCD turn off Confirm that all dots of the LCD turn off. (The whole screen turns to white.)

37	**037:LCD Pattern Chk**	Checks the three LCD patterns. Confirm that the RGB colour bar pattern (Red, Green and Blue) appears on the LCD correctly. The three patterns (RGB, rainbow and flicker noise patterns) can be switched by pressing the TAB[<] or TAB[>] button.
41	**041:Pitch Bend Wheel Chk**	Checks the pitch bend wheel. When the test is executed, the LCD shows **"Pitch Bend Down"**. Turn the pitch bend wheel toward 'DOWN' and confirm that the value on the LCD changes from 64 to 0. When the wheel reaches the 'DOWN' position, confirm that the note of C3 sounds and the LCD shows **"Pitch Bend Wheel Up"**. Then, turn the wheel backward 'UP' and confirm that the value changes from 0 to127. When the wheel reaches the 'UP' position, confirm that the note of G3 sounds and the LCD shows **"Pitch Bend Wheel Center"**. Bring back the wheel to the center, and confirm that the value changes to 64, the note of C4 sounds and the LCD shows **"OK"**.
42	**042:Modulation Wheel Chk**	Checks the modulation wheel. Turn the modulation wheel forward fully 'MIN' and execute the test. The LCD shows **"Modulation Up"**, so turn the wheel backward 'MAX' and confirm that the value on the LCD changes from 0 to127. When the wheel reaches the 'MAX' position, confirm that the note of C3 sounds and the LCD shows **"Modulation Down"**. Then, turn the wheel forward 'MIN' and confirm that the value changes from 127 to 0. When the wheel reaches the 'MIN' position, confirm that the note of C4 sounds and the LCD shows **"OK"**.
47	**047:Pedal 1 Chk**	Checks the pedal 1. When the test is executed, the LCD shows **"No Pedal"**. Connect the FC-7 to the [ASSIGNABLE FOOT PEDAL] jack (1) and execute the test with the pedal completely released. Confirm that the LCD shows **"Pedal 1 Up"** at that time. When the pedal is depressed, confirm that the LCD shows **"Pedal 1 Down"** and the note of C3 sounds. When the pedal is released, confirm that the LCD shows **"Pedal 1 Out"** and the note of G3 sounds. Disconnect the pedal from the jack and confirm that the LCD shows **"OK"** and the note of C4 sounds.
48	**048:Pedal 2 Chk**	Checks the pedal 2. When the test is executed, the LCD shows **"No Pedal"**. Connect the FC-7 to the [ASSIGNABLE FOOT PEDAL] jack (2) and execute the test with the pedal completely released. Confirm that the LCD shows **"Pedal 2 Up"** at that time. When the pedal is depressed, confirm that the LCD shows **"Pedal 2 Down"** and the note of C3 sounds. When the pedal is released, confirm that the LCD shows **"Pedal 2 Out"** and the note of G3 sounds.Disconnect the pedal from the jack and confirm that the LCD shows "OK" and the note of C4 sounds.

49	**049:Pedal 3 Chk**	Checks the pedal 3. When the test is executed, the LCD shows **"No Pedal"**. Connect the FC-7 to the [ASSIGNABLE FOOT PEDAL] jack (3) and execute the test with the pedal completely released. Confirm that the LCD shows **"Pedal 3 Up"** at that time. When the pedal is depressed, confirm that the LCD shows **"Pedal 3 Down"** and the note of C3 sounds. When the pedal is released, confirm that the LCD shows **"Pedal 3 Out"** and the note of G3 sounds. Disconnect the pedal from the jack and confirm that the LCD shows **"OK"** and the note of C4 sounds.
54	**054:MIDI Chk**	Checks the MIDI. Connect 'IN' and 'OUT' of the [MIDI A] jack, 'IN' and 'OUT' of the [MIDI B] jack respectively via a MIDI cable and execute the test. Confirm that the LCD shows **"MIDI-A Check OK"** and the note of C3 sounds. Also, confirm that the LCD shows **"MIDI-B Check OK"** and the note of C4 sounds.
55	**055:Loop Send/Return Chk**	Checks the Loop Send/Return. Connect a level meter to the [LINE OUT] jack (MAIN L/L+R, R) with a load of 10k ohm and set the [MASTER VOLUME] knob to maximum. At that time, confirm that the LCD shows **"LOOP SEND NOT Inserted"** and the level meter reads the following value. L+L/R: +9.5 ±2dBu Then, connect a plug to the [AUX OUT/ LOOP SEND L/L+R] jack. At that time, confirm that the LCD shows **"LOOP SEND Inserted"** and the level meter reads the following value. L+L/R: -75.0dBu or less
56	**056:Sub Out Chk**	Detects a plug insertion at the Sub Out When executing the test, confirm that the LCD shows **"No Sub1,No SUB2"**. Insert a plug into the [LINE OUT] jack (SUB1) and confirm that the note of C3 sounds and the LCD shows **"Sub1 In"**. Disconnect the plug from the [LINE OUT] jack (SUB1) and confirm that the note of C4 sounds and the LCD shows **"Sub1 OK"**. Insert a plug into the [LINE OUT] jack (SUB2) and confirm that the note of C3 sounds and the LCD shows **"Sub2 In"**. Disconnect the plug from the [LINE OUT] jack (SUB2) and confirm that the note of C4 sounds and the LCD shows **"OK"**.
57	**057:VIDEO OUT NTSC RGB**	Checks VIDEO OUT(NTSC RGB). Connect the video input jack of a TV set and the [VIDEO OUT] jack of the product, and execute the test. Confirm the red, blue and green bars are displayed on the monitor.
58	**058:VIDEO OUT PAL RGB**	Checks VIDEO OUT(PAL RGB). Connect the video input jack of a TV set and the [VIDEO OUT] jack of the product, and execute the test. Confirm the red, blue and green bars are displayed on the monitor.
59	**059:RGB Chk**	Checks RGB OUT. Connect the video input jack of a RGB monitor and the [RGB OUT] jack of the product, and execute the test. Confirm the red, blue and green bars are displayed on the monitor.

60	**060:USB Connect Chk**	Checks the USB connections. Start testing without connecting a USB cable. Connect the [USB TO HOST] terminal and the [USB TO DEVICE] on the rear panel. Confirm that the LCD shows **"Device-Host1 Chk OK"**. Also, connect a USB storage device to the [USB TO DEVICE] terminal on the front panel. Confirm that the LCD shows **"Device-Host2 Chk OK"**. In case of NG, the LCD shows **"NG"**.
61	**061:USB Strage Chk**	Checks the USB storage device. Connect the USB storage device to the [USB TO DEVICE] terminal on the front panel. Confirm that the LCD shows **"OK"** at that time. In case of NG, the following messages are indicated on the LCD. **"NG"**: (Read/Write error) **"NO DISK"**: (Media not ready) **"UNFOTMAT DISK"**: (Media unformatted) **"PROTECT DISK"**: (Media write protected)
63	**063:DGA(HDD) Chk**	Checks DGA(HDD). Confirm that the LCD shows **"DGA(HDD) Chk OK"**. In case of NG, the following messages are indicated on the LCD. **"NG(DGA SDRAM)"**: SDRAM wire connection error **"NG(HDD CONNECT)"**: HDD connection error **"NG(HDD READ)"**: HDD read error **"NG(HDD WRITE)"**: HDD write error **"NG(HDD-DGA)"**: DMA transfer error between HDD and DGA **"NG(HDD-CPU)"**: DMA transfer error between HDD and CPU **"NG(DGA IRQ*)"**: IRQ* wire connection error (*: 0,4,5)
64	**064:DGA(TG) Chk**	Checks DGA(TG). Connect the headphones to the [PHONES] jack and confirm that the specified note sounds as follows. Switch the two signal lines (LINE-A and LINE-B) by pressing the TAB[<] or TAB[>] button. LINE-A: The note of A3 is heard from the center. LINE-B: The note of A7 is heard from the right. (It sounds for three seconds, stops for 0.5 seconds, and repeats it.)
65	**065:Keybord Type Chk**	Checks the keyboard type. Confirm that the LCD shows **"OK(FSX61)"**. In case of NG, the LCD shows **"NG(******)"**. (******: Keyboard name)
69	**069:After Touch Chk**	Checks the after touch. After the LCD shows **"After Touch Chk Start"**, press any key. Confirm that the note of C3 sounds at that time. Confirm that the value on the LCD increases according to the pressed strength. Confirm that the note of C4 sounds and the LCD shows **"OK"** when the value reaches 127 (maximum). *At this test, pressing the leftmost key does not make the system return to the wait state. Press the [STYLE START/STOP] button to return to the wait state.
71	**071:ROM Chk2**	Checks all ROMs connected to the CPU bus. (It takes about 30 seconds.) Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"****** NG"**. (******: ROM's name)

72	**072:RAM Chk2**	Checks all RAMs connected to the CPU bus. Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"****** NG"**. (******:RAM's name)
73	**073:Flash Chk2**	Checks all the flash memories connected to the CPU bus. (It takes about 4 minutes.) **** Never turn off the product while executing the test.*** Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"NG"**.
74	**074:Wave ROM Chk2**	Checks all wave ROMs. (It takes about 2 minutes.) Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"NG"**.
75	**075:Wave RAM(SDRAM) Chk2**	Checks all wave RAMs(SDRAM). Confirm that the LCD shows **"OK"**. In case of NG, the LCD shows **"****** NG"** or **"****** No Card"**. (******: SDRAM's name)
76	**076:Wave RAM(DIMM) Chk2**	Checks all wave RAMs(DIMM). Confirm that the LCD shows the memory capacity of DIMM as follows. (The capacity is not checked automatically.) **"OK(DIMM H:512MB.L:512MB)"** In case of NG, the LCD shows **"NG(DIMM:512MB.L:512MB)******"**. (******: DIMM's name)
77	**077:Effect RAM Chk2**	Checks all effect RAMs. (It takes about 20 seconds.) Confirm that the LCD shows the following messages. **"Effect Chk2 OK"** In case of NG, the LCD shows **"****** NG"** (******: RAM's name)
94	**094:Factory Set**	Factory set The data of flash ROM is initialized to factory preset when the power is turned on again. Confirm that the LCD shows **"OK"**.
95	**095:Test Exit**	Test Exit The system exits the test program and returns to the play mode.

* 0dBu=0.775Vrms

* If a 30 ohm load is used instead of a 33 ohm load, the actual value becomes -0.6dB lower than the value written in this test item list.

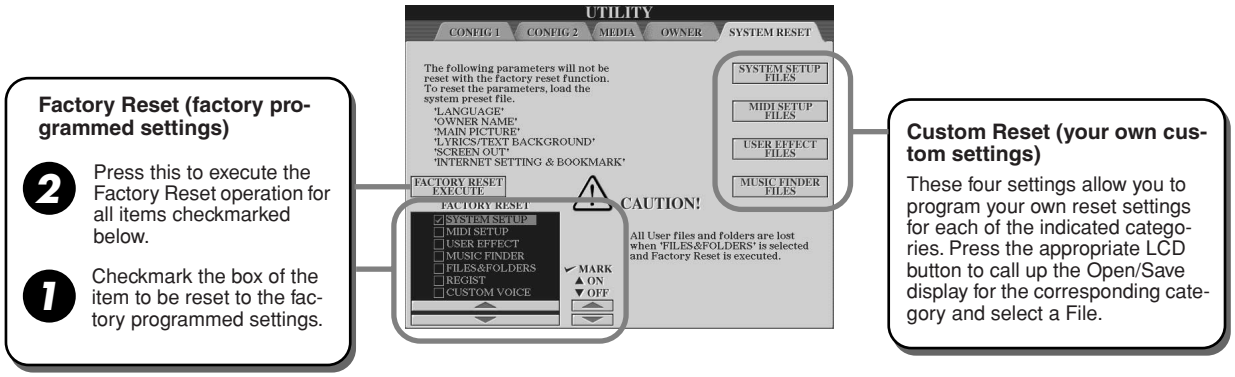
■ **TABLE 1**

Order No.	Switch Name	LED	Note	Order No.	Switch Name	LED	Note
1	VOCAL HARMONY	VOCAL HARMONY	C2	50	MULTI PAD 1	MULTI PAD 1	C2
2	TALK	TALK	C#2	51	MULTI PAD 2	MULTI PAD 2	C#2
3	EFFECT	EFFECT	D2	52	MULTI PAD 3	MULTI PAD 3	D2
4	VH TYPE SELECT	-	D#2	53	MULTI PAD 4	MULTI PAD 4	D#2
5	MIC SETTING	-	E2	54	STOP	-	E2
6	DEMO	-	F2	55	INTRO 1	INTRO 1	F2
7	LYRICS/TEXT	-	F#2	56	INTRO 2	INTRO 2	F#2
8	SCORE	-	G2	57	INTRO 3	INTRO 3	G2
9	GUIDE	GUIDE	G#2	58	MAIN A	MAIN A	G#2
10	P.A.T.	PERFORMANCE ASSISTANT	A2	59	MAIN B	MAIN B	A2
11	SP1	SP1	A#2	60	MAIN C	MAIN C	A#2
12	SP2	SP2	B2	61	MAIN D	MAIN D	B2
13	SP3	SP3	C3	62	BAEAK	BREAK	C3
14	SP4	SP4	C#3	63	ENDING 1	ENDING 1	C#3
15	LOOP	LOOP	D3	64	ENDING 2	ENDING 2	D3
16	FADE IN/OUT	FADE IN/OUT	D#3	65	ENDING 3	ENDING 3	D#3
17	REC	REC	E3	66	SYNC STOP	SYNC STOP	E3
18	STOP	-	F3	67	SYNC START	SYNC START	F3
19	PLAY/PAUSE	PLAY/PAUSE	F#3	68	START/STOP	START/STOP	F#3
20	REW	-	G3	69	A	-	G3
21	FF	-	G#3	70	B	-	G#3
22	SONG1	SONG1	A3	71	C	-	A3
23	SONG4	SONG4	A#3	72	D	-	A#3
24	SONG2	SONG2	B3	73	E	-	B3
25	SONG5	SONG5	C4	74	DIRECT ACCESS	-	C4
26	SONG3	SONG3	C#4	75	TAB <	-	C#4
27	SONG6	SONG6	D4	76	TAB >	-	D4
28	POP & ROCK	POP&ROCK	D#4	77	F	-	D#4
29	SWING & JAZZ	SWING & JAZZ	E4	78	G	-	E4
30	LATIN	LATIN	F4	79	H	-	F4
31	ENTERTAINER	ENTERTAINER	F#4	80	I	-	F#4
32	BALLAD	BALLAD	G4	81	J	-	G4
33	R & B	R & B	G#4	82	EXIT	-	G#4
34	BALLROOM	BALLROOM	A4	83	BALANCE	-	A4
35	WORLD	WORLD	A#4	84	1-U	-	A#4
36	DANCE	DANCE	B4	85	2-U	-	B4
37	COUNTRY	COUNTRY	C5	86	3-U	-	C5
38	MOVIE & SHOW	MOVIE & SHOW	C#5	87	4-U	-	C#5
39	FILE ACCESS	FILE ACCESS	D5	88	5-U	-	D5
40	ACMP	ACMP	D#5	89	6-U	-	D#5
41	OTS LINK	OTS LINK	E5	90	7-U	-	E5
42	AUTO FILL IN	AUTO FILL IN	F5	91	8-U	-	F5
43	METRONOME ON/OFF	METRONOME ON/OFF	F#5	92	MIXING CONSOLE	-	F#5
44	TAP TEMPO	-	G5	93	CHANNEL ON/OFF	-	G5
45	TEMPO-	-	G#5	94	1-L	-	G#5
46	TEMPO+	-	A5	95	2-L	-	A5
47	TRANSPOSE-	-	A#5	96	3-L	-	A#5
48	TRANSPOSE+	-	B5	97	4-L	-	B5
49	SELECT	-	C6	98	5-L	-	C6

Order No.	Switch Name	LED	Note	Order No.	Switch Name	LED	Note
99	6-L	-	C2	132	PART ON/OFF R1	PART ON/OFF R1	A4
100	7-L	-	C#2	133	PART ON/OFF R2	PART ON/OFF R2	A#4
101	8-L	-	D2	134	PART ON/OFF R3	PART ON/OFF R3	B4
102	REGIST -	-	D#2	135	PIANO	PIANO	C5
103	REGIST +	-	E2	136	STRINGS	STRINGS	C#5
104	FREEZE	FREEZE	F2	137	TRUMPET	TRAMPET	D5
105	REGIST 1	REGIST 1	F#2	138	GUITAR	GUITAR	D#5
106	REGIST 2	REGIST 2	G2	139	ACCORDION	ACCORDION	E5
107	REGIST 3	REGIST 3	G#2	140	ORGAN FLUTES	ORGAN FLUTES	F5
108	REGIST 4	REGIST 4	A2	141	E.PIANO	E.PIANO	F#5
109	REGIST 5	REGIST 5	A#2	142	CHOIR	CHOIR	G5
110	REGIST 6	REGIST 6	B2	143	SAXOPHONE	SAXOPHONE	G#5
111	REGIST 7	REGIST 7	C3	144	BASS	BASS	A5
112	REGIST 8	REGIST 8	C#3	145	PAD	PAD	A#5
113	MEMORY	-	D3	146	CUSTOM VOICE	CUSTOM VOICE	B5
114	ENTER	-	D#3	147	ORGAN	ORGAN	C6
115	FUNCTION	-	E3	148	BRASS	BRASS	C2
116	VOICE CREATOR	-	F3	149	FLUTE/CLARINET	FLUTE/CLARINET	C#2
117	DIGITAL RECORDING	-	F#3	150	PERC./DRUM KIT	PERC./DRUM KIT	D2
118	MUSIC FINDER	MUSIC FINDER	G3	151	SYNTH	SYNTH	D#2
119	HDR SELECT	-	G#3	152	USER DRIVE	USER DRIVE	E2
120	HDR SETTING	-	A3	153	HARMONY/ECHO	HARMONY/ECHO	F2
121	REC	REC	A#3	154	INITIAL TOUCH	INITIAL TOUCH	F#2
122	STOP	-	B3	155	SUSTAIN	SUSTAIN	G2
123	PLAY/PAUSE	PLAY/PAUSE	C4	156	POLY/MONO	POLY/MONO	G#2
124	REW	-	C#4	157	DSP	DSP	A2
125	FF	-	D4	158	DSP VARIATION	DSP VARIATION	A#2
126	PART SELECT LEFT	PART SELECT LEFT	D#4	159	OTS 1	OTS 1	B2
127	PART SELECT R1	PART SELECT R1	E4	160	OTS 2	OTS 2	C3
128	PART SELECT R2	PART SELECT R2	F4	161	OTS 3	OTS 3	C#3
129	PART SELECT R3	PART SELECT R3	F#4	162	OTS 4	OTS 4	D3
130	LEFT HOLD	LEFT HOLD	G4	163	UPPER OCTAVE -	-	D#3
131	PART ON/OFF LEFT	PART ON/OFF LEFT	G#4	164	UPPER OVTAVE +	-	E3

■ SYSTEM RESET

The explanations here apply to the [FUNCTION] → UTILITY → SYSTEM RESET display.



Factory Reset – Restoring the factory programmed settings

This function lets you restore the status of the Tyros2 to the original factory settings. You can set whether or not each of the following six items is to be restored to its original factory settings before executing the operation.

SYSTEM SETUP	Restores the System Setup parameters to the original factory settings. You can also restore only the System Setup settings by simultaneously holding down the highest key on the keyboard (C7) and turning on the power. Refer to the separate Data List booklet for details about which parameters belong to the System Setup.
MIDI SETUP	Restores the MIDI settings including the MIDI templates on the User drive to the original factory status.
USER EFFECT	Restores the User Effect settings including the user effect types, user master EQ types, user compressor types, and user vocal harmony types created via the Mixing Console display to the original factory settings.
MUSIC FINDER	Restores the Music Finder data (all records) to the original factory settings.
FILES & FOLDERS	Deletes all files and folders stored in the User drive.
REGIST	Temporarily deletes the current Registration Memory settings of the selected Bank. The same can be done also by turning the [POWER] switch ON while holding the B6 key (right-most B key on the keyboard).
CUSTOM VOICE	Deletes all Custom Voices on the Preset drive.

Custom Reset – Recalling your own custom settings

The four categories of settings below allow you to call up your own custom reset settings from files saved to the User drive.

SYSTEM SETUP FILES	Parameters set on the various displays such as the [FUNCTION] → UTILITY and microphone setting display are handled as a single System Setup file. Refer to the separate Data List booklet for details about which parameters belong to the System Setup.
MIDI SETUP FILES	The MIDI settings including the MIDI templates on the User drive are handled as a single file.
USER EFFECT FILES	The User Effect settings including the user effect types, user master EQ types, user compressor types, and user vocal harmony types created via the Mixing Console displays are managed as a single file.
MUSIC FINDER FILES	All the preset and created records of the Music Finder are handled as a single file.

■ OS UPDATE

CAUTIONS

- While updating the program software, do not turn off the power or do not pull out the USB memory.
- It takes about 5 minutes to update the program software.

1. Preparation

Download the Tyros2 updated program from the download page on the YSISS home page to the USB memory.
(YSISS URL>>http://plaza.yamaha.co.jp/ysiss/exindex.nsf)
(Insert the USB memory containing only the update program into the USB terminal of the Tyros2.)

Tools required for update:
USB memory
(containing only the update program to be installed)

The program software in the USB memory
- Installer:
  INSTALL.PRG
- The main body of the program data (Boot part):
  TYROS2MAINBOOT.PRG
- The main body of the program data:
  TYROS2mainprg1.prg - TYROS2mainprg4.prg

2. Executing the software update

2-1 Connect the USB memory to the Tyros2.
Connect the USB memory containing only the update program data to the [USB TO DEVICE] terminal on the front panel.
CAUTIONS: Make sure of the direction of the USB memory before inserting it.
(The reverse insertion may cause the damage on the [USB TO DEVICE] terminal.)



2-2 Installing the update program

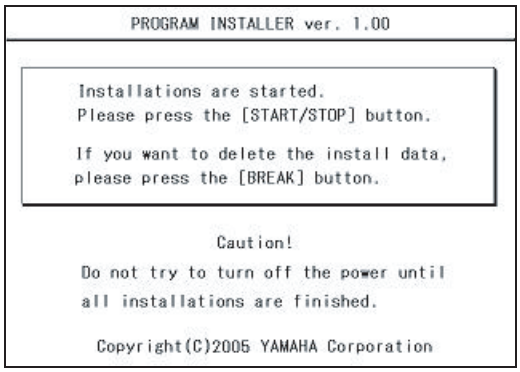
2-2-1 Turn the power on with the [START/STOP] button pressed and held.



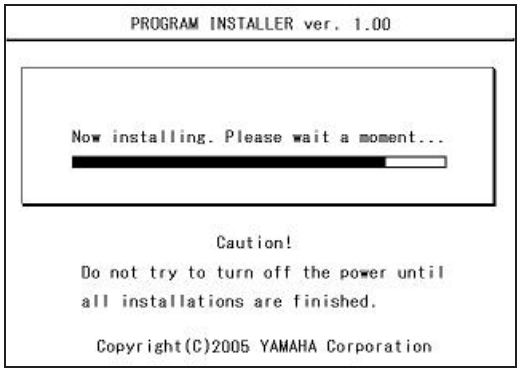
2-2-2 Keep pressing the [START/STOP] button until the following screen is displayed on the LCD.



2-2-3 After a while, the following screen is displayed. (Occasionally, it might take more time.)



2-2-4 Press the [START/STOP] button to start the installation.



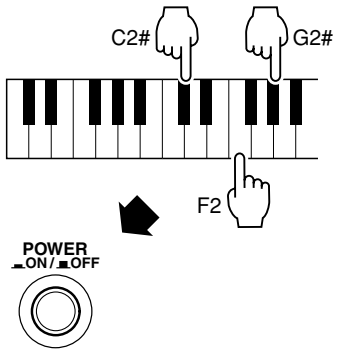
2-2-5 When the installations are finished, the following screen is displayed on the LCD.



2-2-6 Turn the power off.

3. Verifying the program version

3-1 Turn the power on with the [C2#], [F2] and [G2#] keys (C2# major chord) pressed and held.



3-2 **"TEST"** display appears, and the test mode starts.

3-3 Turn the DATA ENTRY dial clockwise to display **"001: Version"**.

3-4 Press the [START/STOP] button to display the version of each data.

3-5 Confirm that the version of the main program is the same as the version installed this time.

3-6 Press the [START/STOP] button again to return to the wait state for test number.

4. Executing the factory set

4-1 Turn the [DATA ENTRY] dial counterclockwise to display **"094:Factory Set"**.

4-2 Press the [START/STOP] button to execute the factory set.

4-3 **"Factory Set OK"** appears on the LCD.

4-4 Press the [START/STOP] button again to return to the wait state for test number.

4-5 Turn the [DATA ENTRY] dial clockwise to display **"095:Test Exit"**.

4-6 Press the [START/STOP] button to reboot the Tyros2.

4-7 When the main screen appears normally, the factory set is completed.
(Occasionally, it might take a few minutes.)

4-8 Turn the power off.

5. Ending the program installation

The program installation is completed here.

■ DATA BACKUP

- The backup function provides a convenient backup if the internal memory is damaged.
- Contents of the backup include the settings of the instrument and the data contained in the USER drive, and can be saved to a USB storage device as one file (Tyros2.bup).

PREPERATION

Tool required for data backup: USB Memory

To back up the data

1. Connect the optional USB storage device to the instrument.
2. Press the [BACKUP] LCD button ([D] button) in the OWNER display above.

To load the backup file to the instrument (restore)

1. Connect the device that contains the backup data to the instrument.
2. Press the [RESTORE] LCD button ([E] button) in the OWNER display.

■ MIDI IMPLEMENTATION CHART

YAMAHA [Digital Workstation] Date:21-June-2005
Model Tyros2 MIDI Implementation Chart Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Default	1 - 16	1 - 16	
Channel Changed	1 - 16	1 - 16	
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	o	
Touch Ch's	o	o	
Pitch Bend	o	o 0-24 semi	
0,32	o	o	Bank Select
1,5,7,10,11	o	o	
6,38	o	o	Data Entry
64,65,66,67	o	o	
Control 71,72,73,74	o	o	Sound Controller
Change 84	o	o	Portamento Cntrl
91,93,94	o	o	Effect Depth
96,97	x	o	RPN Inc,Dec
98,99	o	o	NRPN LSB,MSB
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	
Notes:			

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

Many MIDI messages listed in the MIDI Data Format are expressed in decimal numbers, binary numbers and hexadecimal numbers.
Hexa-decimal numbers may include the letter "H" as a suffix. Also, "n" can freely be defined as any whole number.
To enter data/values, refer to the table below.

Decimal	Hexadecimal	Binary
0	00	0000 0000
1	01	0000 0001
2	02	0000 0010
3	03	0000 0011
4	04	0000 0100
5	05	0000 0101
6	06	0000 0110
7	07	0000 0111
8	08	0000 1000
9	09	0000 1001
10	0A	0000 1010
11	0B	0000 1011
12	0C	0000 1100
13	0D	0000 1101
14	0E	0000 1110
15	0F	0000 1111
16	10	0001 0000
17	11	0001 0001
18	12	0001 0010
19	13	0001 0011
20	14	0001 0100
21	15	0001 0101
22	16	0001 0110
23	17	0001 0111
24	18	0001 1000
25	19	0001 1001
26	1A	0001 1010
27	1B	0001 1011
28	1C	0001 1100
29	1D	0001 1101
30	1E	0001 1110
31	1F	0001 1111

Decimal	Hexadecimal	Binary
32	20	0010 0000
33	21	0010 0001
34	22	0010 0010
35	23	0010 0011
36	24	0010 0100
37	25	0010 0101
38	26	0010 0110
39	27	0010 0111
40	28	0010 1000
41	29	0010 1001
42	2A	0010 1010
43	2B	0010 1011
44	2C	0010 1100
45	2D	0010 1101
46	2E	0010 1110
47	2F	0010 1111
48	30	0011 0000
49	31	0011 0001
50	32	0011 0010
51	33	0011 0011
52	34	0011 0100
53	35	0011 0101
54	36	0011 0110
55	37	0011 0111
56	38	0011 1000
57	39	0011 1001
58	3A	0011 1010
59	3B	0011 1011
60	3C	0011 1100
61	3D	0011 1101
62	3E	0011 1110
63	3F	0011 1111

Decimal	Hexadecimal	Binary
64	40	0100 0000
65	41	0100 0001
66	42	0100 0010
67	43	0100 0011
68	44	0100 0100
69	45	0100 0101
70	46	0100 0110
71	47	0100 0111
72	48	0100 1000
73	49	0100 1001
74	4A	0100 1010
75	4B	0100 1011
76	4C	0100 1100
77	4D	0100 1101
78	4E	0100 1110
79	4F	0100 1111
80	50	0101 0000
81	51	0101 0001
82	52	0101 0010
83	53	0101 0011
84	54	0101 0100
85	55	0101 0101
86	56	0101 0110
87	57	0101 0111
88	58	0101 1000
89	59	0101 1001
90	5A	0101 1010
91	5B	0101 1011
92	5C	0101 1100
93	5D	0101 1101
94	5E	0101 1110
95	5F	0101 1111

Decimal	Hexadecimal	Binary
96	60	0110 0000
97	61	0110 0001
98	62	0110 0010
99	63	0110 0011
100	64	0110 0100
101	65	0110 0101
102	66	0110 0110
103	67	0110 0111
104	68	0110 1000
105	69	0110 1001
106	6A	0110 1010
107	6B	0110 1011
108	6C	0110 1100
109	6D	0110 1101
110	6E	0110 1110
111	6F	0110 1111
112	70	0111 0000
113	71	0111 0001
114	72	0111 0010
115	73	0111 0011
116	74	0111 0100
117	75	0111 0101
118	76	0111 0110
119	77	0111 0111
120	78	0111 1000
121	79	0111 1001
122	7A	0111 1010
123	7B	0111 1011
124	7C	0111 1100
125	7D	0111 1101
126	7E	0111 1110
127	7F	0111 1111

• Except the table above, for example 144-159(decimal)/9nH/10010000-1001 1111(binary) denotes the Note On Message for each channel (1-16). 176-191/BnH/1011 0000-1011 1111 denotes the Control Change Message for each channel (1-16). 192-207/CnH/ 1100 0000-1100 1111 denotes the Program Change Message for each channel (1-16). 240/F0H/1111 0000 denotes the start of a System Exclusive Message. 247/F7H/1111 0111 denotes the end of a System Exclusive Message.

• aaH (hexidecimal)/0aaaaaaa (binary) denotes the data address. The address contains High, Mid, and Low.
• bbH/0bbbbbbb denotes the byte count.
• ccH/0ccccccc denotes the check sum.
• ddH/0ddddddd denotes the data/value.

MIDI CHANNEL MESSAGE (1)

[MIDI] [Song Creator]

MIDI Events	Status byte	1st Data byte			2nd Data byte			Voice		MIDI Reception					MIDI Transmission						PLAY	REC	
	Status	Data	(HEX)	Parameter	Data	(HEX)	Parameter	Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower				From panel (Right1/ Right2/ Left)
Key Off [GM1] [GM2]	8nH (n:Channel Number)	kk		Key no. (0-127)	vv		Velocity(0-127)	O	O (Harmony Channel/ Melody Channel)	O	O	O	O	O	X	X	O	O	X	O	X	X
Key On [GM1] [GM2]	9nH (n:Channel Number)	kk		Key no. (0-127)	vv		Key On : vv=1-127 Key Off : vv=0	O	O (Harmony Channel/ Melody Channel)	O	O	O	O	O	●	O	O	O	●	O	X	O
Control Change	BnH	0	(00H)	Bank Select MSB [GM2]	0 8 8 62 63 64 120 121 126 127	(00H) (08H) (08H) (3EH) (3FH) (40H) (78H) (79H) (7EH) (7FH)	Normal MegaVoice S.Articulation Voice Drum Custom Voice Custom Voice SFX voice GM2 Rhythm GM2 Normal SFX kit Drum kit	O	X	O	O	O (Regist)	O	O	●	O	●	●	X	O	O	O
		1	(01H)	Modulation [GM1] [GM2]	0-127	(00H...7FH)	Data	O	X	O	O	O (All Keyboard parts)	O	O	●	O	O	O	●	O	O	O
		5	(05H)	Portamento Time [GM2]	0-127	(00H...7FH)	Data	O (Except Organ Flutes)	X	O	O	O (All Keyboard parts)	X	O	●	O	X	O	X	O	O	O
		6	(06H)	Data Entry MSB [GM2]	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	X	O
		7	(07H)	Main Volume [GM1] [GM2]	0-127	(00H...7FH)	Data	O	O (A/D Part Receive Channel)	O	O	O (All Keyboard parts)	O	O	●	O	●	●	X	O	O	O
		10	(0AH)	Panpot [GM1] [GM2]	0-127	(00H...7FH)	L64...C...R63	O	O (A/D Part Receive Channel)	O	O	O (All Keyboard parts)	O	O	●	O	●	●	X	O	O	O
		11	(0BH)	Expression [GM1] [GM2]	0-127	(00H...7FH)	Data	O	X	O	O	O (All Keyboard parts)	O	O	●	●	●	●	●	O	O	O
		32	(20H)	Bank Select LSB [GM2]	0-127	(00H...7FH)	Data	O	X	O	O	O (Regist)	O	O	●	O	●	●	X	O	O	O
		38	(26H)	Data Entry LSB [GM2]	0-127	(00H...7FH)	Data	O	X	O	O	O (All Keyboard parts)	X	O	●	O	X	O	X	O	X	O
		64	(40H)	Sustain (Damper) [GM1] [GM2]	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	X	O	●	O	X	O	●	O	O	O
		65	(41H)	Portamento [GM2]	0-127	(00H...7FH)	0...63, 64...127 (OFF, ON)	O (Except Organ Flutes)	X	O	O	O (All Keyboard parts)	X	O	●	O	X	O	●	O	O	O
		66	(42H)	Sostenuto [GM2]	0-127	(00H...7FH)	0...63, 64...127 (OFF, ON)	O	X	O	O	O (All Keyboard parts)	X	O	●	O	X	O	●	O	O	O
		67	(43H)	Soft Pedal [GM2]	0-127	(00H...7FH)	0...63, 64...127 (OFF, ON)	O	X	O	O	O (All Keyboard parts)	X	O	●	O	X	O	●	O	O	O
		71	(47H)	Harmonic Content [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	●	O	●	●	X	O	O	O
		72	(48H)	Release Time [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
		73	(49H)	Attack Time [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
		74	(4AH)	Brightness [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	●	O	●	●	X	O	O	O
		75	(4BH)	Decay Time [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	X	X	X	O	X	O	O	X
		76	(4CH)	Vibrato Rate [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	X	X	X	O	X	O	O	X
		77	(4DH)	Vibrato Depth [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	X	X	X	O	X	O	O	X
		78	(4EH)	Vibrato Delay [GM2]	0-127	(00H...7FH)	-64...0...+63	O	X	O	O	O (All Keyboard parts)	O	O	X	X	X	O	X	O	O	X
		84	(54H)	Portamento Control	0-127	(00H...7FH)	Key no. (0-127)	O	X	O	O	X	O	O	O	O	●	O	X	O	X	O
		91	(5BH)	Effect1 Depth (Reverb Send Level) [GM2]	0-127	(00H...7FH)	Data	O	O (A/D Part Receive Channel)	O	O	O (All Keyboard parts)	O	O	●	●	●	●	X	O	O	O
		93	(5DH)	Effect3 Depth (Chorus Send Level) [GM2]	0-127	(00H...7FH)	Data	O	O (A/D Part Receive Channel)	O	O	O (All Keyboard parts)	O	O	●	●	●	●	X	O	O	O
		94	(5EH)	Effect4 Depth (Variation Send Level)	0-127	(00H...7FH)	Data	O	X	O	O	O (All Keyboard parts)	O	O	O	O	●	●	X	O	O	X

[MIDI] [Song Creator]

MIDI Events	Status byte	1st Data byte			2nd Data byte			Voice		MIDI Reception					MIDI Transmission					PLAY		REC
	Status	Data	(HEX)	Parameter	Data	(HEX)	Parameter	Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
		96	(60H)	RPN Increment	-	-	The data byte is ignored.	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	X	O	X	O	X	O	X	X
		97	(61H)	RPN Decrement	-	-	The data byte is ignored.	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	X	O	X	O	X	O	X	X
		98	(62H)	NRPN LSB	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	●	O	O	O	X	O	O	O
		99	(63H)	NRPN MSB	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	●	O	O	O	X	O	O	O
		100	(64H)	RPN LSB [GM2]	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
		101	(65H)	RPN MSB [GM2]	0-127	(00H...7FH)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
Mode Message	BnH (n:Channel Number)	120	(78H)	All Sound Off [GM2]	0	(00H)	Data	O	X	O	O	O (All Keyboard parts)	O	O	X	O	X	O	X	O	X	X
		121	(79H)	Reset All Controllers [GM1] [GM2]	0	(00H)	Data	O	X	O	X	X	X	X	X	O	X	O	X	O	X	X
		122	(7AH)	Local Control	0 127	(00H) (7FH)	OFF ON	-	-	O					X	X	X	X	X	X	X	X
		123	(7BH)	All Note Off [GM1] [GM2]	0	(00H)	Data	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	X	O	X	O	X	O	X	X
		124	(7CH)	Omni Off [GM2]	0	(00H)	Data	O	X	O	X	X	X	X	X	O	X	O	X	O	X	X
		125	(7DH)	Omni On [GM2]	0	(00H)	Data	O	X	O	X	X	X	X	X	O	X	O	X	O	X	X
		126	(7EH)	Mono [GM2]	0-16	(00H...10H)	Data	O	X	O	X	X	X	X	X	O	X	O	X	O	X	X
		127	(7FH)	Poly [GM2]	0	(00H)	Data	O	X	O	X	X	X	X	X	O	X	O	X	O	X	X
Program Change [GM1] [GM2]	CnH (n:Channel Number)	pp	(00H... 7FH)	Voice Number (0-127)	-	-	-	O	X	O	O	O (Regist)	O	O	●	O	●	●	X	O	O	O
Channel After Touch [GM1] [GM2]	DnH (n:Channel Number)	vv	(00H... 7FH)	Data	-	-	-	O	X	O	O	O (All Keyboard parts)	X	O	X	O	X	O	X	O	X	O
Polyphonic After Touch	AnH (n:Channel Number)	kk	(00H... 7FH)	Key no. (0-127)	vv	(00H...7FH)	Data	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
Pitch Bend Change [GM1] [GM2]	EnH (n:Channel Number)	cc	(00H... 7FH)	LSB	dd	(00H...7FH)	MSB	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	●	O	O	O	●	O	O	O
Realtime Message	F8H MIDI Clock	-	-	-	-	-	-	-	-	O (Received when the Clock is set to MIDI A, MIDI B, USB1, or USB2.)					O (Transmitted when the Clock is set to Internal and the Transmit Clock is set to on.)					-	-	-
	FAH Start	-	-	-	-	-	-	-	-	O (Received when the Clock is set to MIDI A, MIDI B, USB1, or USB2.)					O (Transmitted when the Transmit Clock is set to on.)					-	-	-
	FBH Continue	-	-	-	-	-	-	-	-	X					X					-	-	-
	FCH Stop	-	-	-	-	-	-	-	-	O (Received when the Clock is set to MIDI A, MIDI B, USB1, or USB2.)					O (Transmitted when the Transmit Clock is set to on.)					-	-	-
	FEH Active Sense [GM2]	-	-	-	-	-	-	-	-	O					O					-	-	-
	FFH System Reset	-	-	-	-	-	-	-	-	X					X					-	-	-

● : Transmitted via panel operations and keyboard/controller performances. O: Available

About Mic/Vocal Harmony column:
Harmony Channel/Melody Channel: The relevant parameters are received by the song part designated by the Effect's Harmony Channel Parameter or Melody Channel Parameter.
A/D Part Receive Channel: The relevant parameters are received by the song part designated by the AD Part Receive Channel of the XG format.

[GM1]...GM Required Parameter
[GM2]...GM Leve2 Required Parameter

MIDI CHANNEL MESSAGE (2)

NRPN

NRPN		Data Entry		Parameter	Data Range	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
MSB	LSB	MSB	LSB			Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
01H	08H	mmH	--	Vibrato Rate	mm : 00H-40H-7FH (-64...0...+63)	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	●	O	O	O	X	O	O	O
01H	09H	mmH	--	Vibrato Depth	mm : 00H-40H-7FH (-64...0...+63)	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	●	O	O	O	X	O	O	O
01H	0AH	mmH	--	Vibrato Delay	mm : 00H-40H-7FH (-64...0...+63)	O	O (Harmony Channel/ Melody Channel)	O	O	X	O	O	●	O	O	O	X	O	O	O
01H	20H	mmH	--	Low Pass Filter Cutoff Frequency	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	O	X	O	X	O	O	X
01H	21H	mmH	--	Low Pass Filter Resonance	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	O	X	O	X	O	O	X
01H	30H	mmH	--	EQ Bass Gain	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	X	X	O	X	O	O	X
01H	31H	mmH	--	EQ Treble Gain	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	X	X	O	X	O	O	X
01H	34H	mmH	--	EQ Bass Frequency	mm : 04H-28H (32...2.0k[Hz])	O	X	O	X	X	X	X	X	X	X	O	X	O	O	X
01H	35H	mmH	--	EQ Treble Frequency	mm : 1CH-3AH (500...16.0k[Hz])	O	X	O	X	X	X	X	X	X	X	O	X	O	O	X
01H	63H	mmH	--	EG Attack Time	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	O	X	O	X	O	O	X
01H	64H	mmH	--	EG Decay Time	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	O	X	O	O	●	O	O	O	X	O	O	O
01H	66H	mmH	--	EG Release	mm : 00H-40H-7FH (-64...0...+63)	O	X	O	X	X	O	X	X	O	X	O	X	O	O	X
14H	rrH	mmH	--	Drum Low Pass Filter Cutoff Frequency	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
15H	rrH	mmH	--	Drum Low Pass Filter Resonance	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
16H	rrH	mmH	--	Drum EG Attack Rate	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
17H	rrH	mmH	--	Drum EG Decay Rate	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
18H	rrH	mmH	--	Drum Pitch Coarse	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
19H	rrH	mmH	--	Drum Pitch Fine	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
1AH	rrH	mmH	--	Drum Level	rr : drum instrument note number mm : 00H-7FH (0...127)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
1CH	rrH	mmH	--	Drum Pan	rr : drum instrument note number mm : 00H, 01H-40H-7FH (RND, L63...C...R63)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
1DH	rrH	mmH	--	Drum Reverb Send Level	rr : drum instrument note number mm : 00H-7FH (0...127)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
1EH	rrH	mmH	--	Drum Chorus Send Level	rr : drum instrument note number mm : 00H-7FH (0...127)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
1FH	rrH	mmH	--	Drum Variation Send Level	rr : drum instrument note number mm : 00H-7FH (0...127) (Variation Connection= SYSTEM) mm : 00H, 01H-7FH (OFF, ON) (Variation Connection= INSERTION)	O (Drum Only)	X	O	X	X	X	X	X	X	O	O	X	O	X	X
30H	rrH	mmH	--	Drum EQ Bass Gain	rr : drum instrument note number mm : 00H-7FH (0...127)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
31H	rrH	mmH	--	Drum EQ Treble Gain	rr : drum instrument note number mm : 00H-7FH (0...127)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
34H	rrH	mmH	--	Drum EQ Bass Frequency	rr : drum instrument note number mm : 04H-28H (32...2.0[Hz])	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
35H	rrH	mmH	--	Drum EQ Treble Frequency	rr : drum instrument note number mm : 1CH-3AH (500...16.0[Hz])	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

● : Transmitted via panel operations and keyboard/controller performances. O: Available

NRPN MSB: 14H-35H (for drums) message is accepted as long as the channel is set with a drum voice.
Data Entry LSB: Ignored.

NRPN (VocalHarmony)

[MIDI] [Song Creator]

NRPN		Data Entry		Parameter	Data Range	Voice		MIDI Reception					MIDI Transmission					PLAY		REC
MSB	LSB	MSB	LSB			Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
00H	00H	mmH	--	Harmony Mute	mm : 00H-3FH, 40H-7FH (Off, On)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	O	X	O	X	X
01H	1AH	mmH	--	Detune Modulation	mm : 00H-7FH (0...127)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	O	X	O	X	X
02H	10H	mmH	--	Harmony1 Volume	mm : 00H-7FH (0...127)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	11H	mmH	--	Harmony2 Volume	mm : 00H-7FH (0...127)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	12H	mmH	--	Harmony3 Volume	mm : 00H-7FH (0...127)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	20H	mmH	--	Harmony1 Pan	mm : 00H, 01H-40H-7FH (RND, L63...C...R63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	21H	mmH	--	Harmony2 Pan	mm : 00H, 01H-40H-7FH (RND, L63...C...R63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	22H	mmH	--	Harmony3 Pan	mm : 00H, 01H-40H-7FH (RND, L63...C...R63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	30H	mmH	--	Harmony1 Detune	mm : 00H-40H-7FH (-64...0...+63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	31H	mmH	--	Harmony2 Detune	mm : 00H-40H-7FH (-64...0...+63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X
02H	32H	mmH	--	Harmony3 Detune	mm : 00H-40H-7FH (-64...0...+63)	X	O (Harmony Channel)	X	X	X	X	X	X	X	X	●	X	O	X	X

● : Transmitted via panel operations and keyboard/controller performances. O: Available

Data Entry LSB: Ignored.

RPN

[MIDI] [Song Creator]

RPN		Data Entry		Parameter	Data Range	Voice		MIDI Reception					MIDI Transmission					PLAY		REC
MSB	LSB	MSB	LSB			Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3m Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
00H	00H	mmH	--	Pitch Bend Sensitivity [GM1][GM2]	mm : 00H-18H (0...+24 [semitones])	O	O (Harmony Channel/ Melody Channel)	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
00H	01H	mmH	llH	Fine Tune [GM1][GM2]	mm ll : 00H 00H -100[cent] ... mm ll : 40H 00H 0[cent] ... mm ll : 7FH 7FH 100[cent]	O	X	O	O	O (All Keyboard parts)	O	O	●	O	O	O	X	O	O	O
00H	02H	mmH	--	Coarse Tune [GM1][GM2]	mm : 28H-40H-58H (-24...0...+24[semitones])	O	X	O	O	O (All Keyboard parts)	O	O	X	O	O	O	X	O	O	X
00H	05H	mmH	llH	Modulation Sensitivity [GM2]	mm : Specified in semitone steps ll : Specified in 100/128 cent steps	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
7FH	7FH	--	--	Null [GM2]	-	O	O	O	O	O (All Keyboard parts)	O	O	X	O	O	O	X	O	X	X

● : Transmitted via panel operations and keyboard/controller performances. O: Available

About Mic/Vocal Harmony column:
The relevant parameters are received by the song part designated by the Effect's Harmony Channel Parameter or Melody Channel Parameter.

[GM1]...GM Required Parameter
[GM2]...GM Leve2 Required Parameter

XG PARAMETER CHANGE TABLE

* Not received when Receive System Exclusive Message Parameters is set to off.
* Not transmitted when Transmit System Exclusive Message Parmeters is set to off.

MIDI Parameter Change table (XG SYSTEM)

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/ Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
00	00	00	4	00-0F	MASTER TUNE	-102.4...0...+102.3[cent]	*Panel setting value	O	O	O					●					O	X	X
		01		00-0F		1st bit3-0 bit15-12																
		02		00-0F		2nd bit3-0 bit11-8																
		03		00-0F		3rd bit3-0 bit7-4																
						4th bit3-0 bit3-0																
		04	1	00-7F	MASTER VOLUME	0...127	7F	O	X	O (Available for extra parts of a song)					O					O	O	X
		05	1	00-7F	MASTER ATTENUATOR	0...127	00	X	X	X					X					X	X	X
		06	1	28-58	TRANSPOSE	-24...0...+24 [semitones]	40	O	O	O (Available for extra parts of a song)					O					O	O	X
		7D	1	N	DRUM SETUP RESET	N:Drum setup number	-	O (Drum Only)	X	O (Available for extra parts of a song)					O					O	X	X
		7E	1	00	XG SYSTEM ON	00=XG system ON	-	O	X	O (Available for extra parts of a song)					O					O	X	O
		7F	1	00	ALL PARAMETER RESET	00=ON	-	O	X	O (Available for extra parts of a song)					O					O	X	X

TOTAL SIZE 07

● : Transmitted via panel operations O: Available

MIDI Parameter Change table (SYSTEM INFORMATION)

Address (H)			Size (H)	Data (H)	Parameter	Description	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
							Regular/ Drum/ Natural/ Organ Voice	Mic/ Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
01	00	00	E	20-7F	Model Name 1	32...127(ASCII CHATACTER)	-		-					O (Available only when receiving requests via MIDI)					-	-	-
		...		...	...	...															
		0D		20-7F	Model Name 14	32...127(ASCII CHATACTER)															
		0E	1		NOT USED																
		0F	1		NOT USED																

TOTAL SIZE 10

Transmitted in response to Dump Request. Not received.

MIDI Parameter Change table (EFFECT1)

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper	PLAY	REW	From panel (Right1/ Right2/ Left)
02	01	00	2	00-7F	REVERB TYPE MSB	Refer to Effect Parameter List	01(=HALL1)	O	O	O					●					O	O	O
				00-7F	REVERB TYPE LSB	Refer to Effect Parameter List	00															
		02	1	00-7F	REVERB PARAMETER 1	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		03	1	00-7F	REVERB PARAMETER 2	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		04	1	00-7F	REVERB PARAMETER 3	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		05	1	00-7F	REVERB PARAMETER 4	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		06	1	00-7F	REVERB PARAMETER 5	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		07	1	00-7F	REVERB PARAMETER 6	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		08	1	00-7F	REVERB PARAMETER 7	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		09	1	00-7F	REVERB PARAMETER 8	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		0A	1	00-7F	REVERB PARAMETER 9	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		0B	1	00-7F	REVERB PARAMETER 10	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		0C	1	00-7F	REVERB RETURN	- dB...0dB...+6dB (0...64...127)	40	O	O	O					●					O	O	O
		0D	1	01-7F	REVERB PAN	L63...C...R63	40	O	O	O					O					O	O	X

TOTAL SIZE 0E

02	01	10	1	00-7F	REVERB PARAMETER 11	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		11	1	00-7F	REVERB PARAMETER 12	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		12	1	00-7F	REVERB PARAMETER 13	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		13	1	00-7F	REVERB PARAMETER 14	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		14	1	00-7F	REVERB PARAMETER 15	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O
		15	1	00-7F	REVERB PARAMETER 16	Refer to Effect Parameter List	Depends on Reverb Type	O	O	O					●					O	O	O

TOTAL SIZE 06

● : Transmitted via panel operations O: Available

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
02	01	20	2	00-7F	CHORUS TYPE MSB	Refer to Effect Parameter List	41(=CHORUS1)	O	O		O						●			O	O	O
				00-7F	CHORUS TYPE LSB	Refer to Effect Parameter List	00															
		22	1	00-7F	CHORUS PARAMETER 1	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		23	1	00-7F	CHORUS PARAMETER 2	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		24	1	00-7F	CHORUS PARAMETER 3	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		25	1	00-7F	CHORUS PARAMETER 4	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		26	1	00-7F	CHORUS PARAMETER 5	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		27	1	00-7F	CHORUS PARAMETER 6	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		28	1	00-7F	CHORUS PARAMETER 7	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		29	1	00-7F	CHORUS PARAMETER 8	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		2A	1	00-7F	CHORUS PARAMETER 9	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		2B	1	00-7F	CHORUS PARAMETER 10	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		2C	1	00-7F	CHORUS RETURN	- dB...0dB...+6dB (0...64...127)	40	O	O		O						●			O	O	O
		2D	1	01-7F	CHORUS PAN	L63...C...R63	40	O	O		O						O			O	O	X
		2E	1	00-7F	SEND CHORUS TO REVERB	- dB...0dB...+6dB (0...64...127)	00	O	O		O						O			O	O	X

TOTAL SIZE 0F

02	01	30	1	00-7F	CHORUS PARAMETER 11	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		31	1	00-7F	CHORUS PARAMETER 12	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		32	1	00-7F	CHORUS PARAMETER 13	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		33	1	00-7F	CHORUS PARAMETER 14	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		34	1	00-7F	CHORUS PARAMETER 15	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O
		35	1	00-7F	CHORUS PARAMETER 16	Refer to Effect Parameter List	Depends on Chorus Type	O	O		O						●			O	O	O

TOTAL SIZE 06

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
02	01	40	2	00-7F	VARIATION TYPE MSB	Refer to Effect Parameter List	05(=DELAY L,C,R)	O	O		O						●			O	O	O
				00-7F	VARIATION TYPE LSB	Refer to Effect Parameter List	00															
		42	2	00-7F	VARIATION PARAMETER 1 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 1 LSB	Refer to Effect Parameter List																
		44	2	00-7F	VARIATION PARAMETER 2 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 2 LSB	Refer to Effect Parameter List																
		46	2	00-7F	VARIATION PARAMETER 3 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 3 LSB	Refer to Effect Parameter List																
		48	2	00-7F	VARIATION PARAMETER 4 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 4 LSB	Refer to Effect Parameter List																
		4A	2	00-7F	VARIATION PARAMETER 5 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 5 LSB	Refer to Effect Parameter List																
		4C	2	00-7F	VARIATION PARAMETER 6 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 6 LSB	Refer to Effect Parameter List																
		4E	2	00-7F	VARIATION PARAMETER 7 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 7 LSB	Refer to Effect Parameter List																
		50	2	00-7F	VARIATION PARAMETER 8 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 8 LSB	Refer to Effect Parameter List																
		52	2	00-7F	VARIATION PARAMETER 9 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 9 LSB	Refer to Effect Parameter List																
		54	2	00-7F	VARIATION PARAMETER 10 MSB	Refer to Effect Parameter List	Depends on Variation Type	O	O		O						●			O	O	O
				00-7F	VARIATION PARAMETER 10 LSB	Refer to Effect Parameter List																
		56	1	00-7F	VARIATION RETURN	- dB...0dB...+6dB (0...64...127)	40	O	O		O						●			O	O	O
		57	1	01-7F	VARIATION PAN	L63...C...R63	40	O	O		O						O			O	O	X
		58	1	00-7F	SEND VARIATION TO REVERB	- dB...0dB...+6dB (0...64...127)	00	O	O		O						O			O	O	X
		59	1	00-7F	SEND VARIATION TO CHORUS	- dB...0dB...+6dB (0...64...127)	00	O	O		O						O			O	O	X
		5A	1	00-01	VARIATION CONNECTION	INSERTION, SYSTEM	00	O	O		O						●			O	O	O
		5B	1	00-7F	VARIATION PART NUMBER	Reception : Part1...16(0...15) Transmission : Part1...16(0...15) AD(64) OFF(127)	7F	O	O		O						●			O	O	O
		5C	1	00-7F	MW VARIATION CONTROL DEPTH	-64...0...+63	40	O	O		O						O			O	O	X
		5D	1	00-7F	BEND VARIATION CONTROL DEPTH	-64...0...+63	40	O	O		O						O			O	O	X
		5E	1	00-7F	CAT VARIATION CONTROL DEPTH	-64...0...+63	40	O	O		O						O			O	O	X
		5F	1	00-7F	AC1 VARIATION CONTROL DEPTH	-64...0...+63	40	O	O		O						O			O	O	X
		60	1	00-7F	AC2 VARIATION CONTROL DEPTH	-64...0...+63	40	O	O		O						O			O	O	X

TOTAL SIZE 21

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception						[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra		Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
02	01	70	1	00-7F	VARIATION PARAMETER 11	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O
		71	1	00-7F	VARIATION PARAMETER 12	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O
		72	1	00-7F	VARIATION PARAMETER 13	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O
		73	1	00-7F	VARIATION PARAMETER 14	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O
		74	1	00-7F	VARIATION PARAMETER 15	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O
		75	1	00-7F	VARIATION PARAMETER 16	Refer to Effect Parameter List	Depends on Variation Type	O	O			O						●			O	O	O

TOTAL SIZE 06

● : Transmitted via panel operations O: Available

MIDI Parameter Change table (MULTI EQ)

Address (H)			Size (H)	Data (H)	Parameter	Description	* The MULTI EQ Parameter cannot be reset to its factory setting with XG SYSTEM ON.	[MIDI] Voice		[MIDI] MIDI Reception						[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra		Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
02	40	00	1	00-04	EQ TYPE	flat, jazz, pops, rock, classic		O	O			O						O			O	X	X
		01	1	34-4C	EQ GAIN1	-12...0...+12[dB]		O	O			O						●			O	X	X
		02	1	04-28	EQ FREQUENCY1	32...2.0k[Hz]		O	O			O						●			O	X	X
		03	1	01-78	EQ Q1	0.1...12.0		O	O			O						●			O	X	X
		04	1	00-01	EQ SHAPE1	shelving, peaking		O	O			O						O			O	X	X
		05	1	34-4C	EQ GAIN2	-12...0...+12[dB]		O	O			O						●			O	X	X
		06	1	0E-36	EQ FREQUENCY2	100...10.0k[Hz]		O	O			O						●			O	X	X
		07	1	01-78	EQ Q2	0.1...12.0		O	O			O						●			O	X	X
		08	1		NOT USED			-	-			-						-			-	-	-
		09	1	34-4C	EQ GAIN3	-12...0...+12[dB]		O	O			O						●			O	X	X
		0A	1	0E-36	EQ FREQUENCY3	100...10.0k[Hz]		O	O			O						●			O	X	X
		0B	1	01-78	EQ Q3	0.1...12.0		O	O			O						●			O	X	X
		0C	1		NOT USED			-	-			-						-			-	-	-
		0D	1	34-4C	EQ GAIN4	-12...0...+12[dB]		O	O			O						●			O	X	X
		0E	1	0E-36	EQ FREQUENCY4	100...10.0k[Hz]		O	O			O						●			O	X	X
		0F	1	01-78	EQ Q4	0.1...12.0		O	O			O						●			O	X	X
		10	1		NOT USED			-	-			-						-			-	-	-
		11	1	34-4C	EQ GAIN5	-12...0...+12[dB]		O	O			O						●			O	X	X
		12	1	1C-3A	EQ FREQUENCY5	0.5k...16.0k[Hz]		O	O			O						●			O	X	X
		13	1	01-78	EQ Q5	0.1...12.0		O	O			O						●			O	X	X
		14	1	00-01	EQ SHAPE5	shelving, peaking		O	O			O						O			O	X	X

TOTAL SIZE 15

● : Transmitted via panel operations O: Available

MIDI Parameter Change table (EFFECT2)

Address (H)			Size (H)	Data (H)	Parameter	Description	* The EFFECT2 Parameter cannot be reset to its factory setting with XG SYSTEM ON.	[MIDI] Voice		[MIDI] MIDI Reception						[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra		Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
03	n	00	2	00-7F 00-7F	INSERTION EFFECT TYPE MSB INSERTION EFFECT TYPE LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O			O						●			O	O	O
		02	1	00-7F	INSERTION EFFECT PARAMETER 1	Refer to Effect Parameter List		O	O			O						●			O	O	O
		03	1	00-7F	INSERTION EFFECT PARAMETER 2	Refer to Effect Parameter List		O	O			O						●			O	O	O
		04	1	00-7F	INSERTION EFFECT PARAMETER 3	Refer to Effect Parameter List		O	O			O						●			O	O	O
		05	1	00-7F	INSERTION EFFECT PARAMETER 4	Refer to Effect Parameter List		O	O			O						●			O	O	O
		06	1	00-7F	INSERTION EFFECT PARAMETER 5	Refer to Effect Parameter List		O	O			O						●			O	O	O
		07	1	00-7F	INSERTION EFFECT PARAMETER 6	Refer to Effect Parameter List		O	O			O						●			O	O	O
		08	1	00-7F	INSERTION EFFECT PARAMETER 7	Refer to Effect Parameter List		O	O			O						●			O	O	O
		09	1	00-7F	INSERTION EFFECT PARAMETER 8	Refer to Effect Parameter List		O	O			O						●			O	O	O
		0A	1	00-7F	INSERTION EFFECT PARAMETER 9	Refer to Effect Parameter List		O	O			O						●			O	O	O
		0B	1	00-7F	INSERTION EFFECT PARAMETER 10	Refer to Effect Parameter List		O	O			O						●			O	O	O
		0C	1	00-7F	INSERTION EFFECT PART NUMBER	Reception : Part1...16(0...15) Transmission : Part1...16(0...15) AD(64) OFF(127)		O	O			O						●			O	O	O
		0D	1	00-7F	MW INSERTION CONTROL DEPTH	-64...0...+63		O	O			O						O			O	O	X
		0E	1	00-7F	BEND INSERTION CONTROL DEPTH	-64...0...+63		O	O			O						O			O	O	X
		0F	1	00-7F	CAT INSERTION CONTROL DEPTH	-64...0...+63		O	O			O						O			O	O	X
		10	1	00-7F	AC1 INSERTION CONTROL DEPTH	-64...0...+63		O	O			O						O			O	O	X
		11	1	00-7F	AC2 INSERTION CONTROL DEPTH	-64...0...+63		O	O			O						O			O	O	X

TOTAL SIZE 12

Address (H)			Size (H)	Data (H)	Parameter	Description	* The EFFECT2 Parameter cannot be reset to its factory setting with XG SYSTEM ON.	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission						[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
		20	1	00-7F	INSERTION EFFECT PARAMETER 11	Refer to Effect Parameter List		O	O		O						●			O	O	O
		21	1	00-7F	INSERTION EFFECT PARAMETER 12	Refer to Effect Parameter List		O	O		O						●			O	O	O
		22	1	00-7F	INSERTION EFFECT PARAMETER 13	Refer to Effect Parameter List		O	O		O						●			O	O	O
		23	1	00-7F	INSERTION EFFECT PARAMETER 14	Refer to Effect Parameter List		O	O		O						●			O	O	O
		24	1	00-7F	INSERTION EFFECT PARAMETER 15	Refer to Effect Parameter List		O	O		O						●			O	O	O
		25	1	00-7F	INSERTION EFFECT PARAMETER 16	Refer to Effect Parameter List		O	O		O						●			O	O	O

TOTAL SIZE 6

		30	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 1 MSB INSERTION EFFECT PARAMETER 1 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		32	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 2 MSB INSERTION EFFECT PARAMETER 2 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		34	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 3 MSB INSERTION EFFECT PARAMETER 3 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		36	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 4 MSB INSERTION EFFECT PARAMETER 4 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		38	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 5 MSB INSERTION EFFECT PARAMETER 5 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		3A	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 6 MSB INSERTION EFFECT PARAMETER 6 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		3C	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 7 MSB INSERTION EFFECT PARAMETER 7 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		3E	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 8 MSB INSERTION EFFECT PARAMETER 8 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		40	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 9 MSB INSERTION EFFECT PARAMETER 9 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O
		42	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 10 MSB INSERTION EFFECT PARAMETER 10 LSB	Refer to Effect Parameter List Refer to Effect Parameter List		O	O		O						●			O	O	O

TOTAL SIZE 14

● : Transmitted via panel operations O: Available

The second byte of the address is considered as an Insertion effect number.
n : insertion effect number (n=0-4)

For effect types that do not require MSB, the Parameters for Address 02-0B will be received and the Parameters for Address 30-42 will not be received.
For effect types that require MSB, the Parameters for Address 30-42 will be received and the Parameters for Address 02-0B will not be received.
When Bulk Dumps that include Effect Type data are transmitted, the Parameters for Address 02-0B will always be transmitted. But, effects that require MSB, when the bulk dump is received the Parameters for Address 02-0B will not be received.

MIDI Parameter Change table (SPECIAL EFFECT)

Address (H)			Size (H)	Data (H)	Parameter	Description	* The SPECIAL EFFECT Parameter cannot be reset to its factory setting with XG SYSTEM ON.	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission						[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
04	00	00	2	00-7F 00-7F	INSERTION EFFECT TYPE MSB INSERTION EFFECT TYPE LSB	Vocoder(89), Chordal(90), Detune(91), Chromatic(92), Thru(0...88, 93...127)		X	O		O						●			O	O	X
		02	1	00-7F	INSERTION EFFECT PARAMETER 1 Harmony Mode			X	O		O						●			O	O	X
		03	1	00-7F	INSERTION EFFECT PARAMETER 2 Harmony Gender Type	Off(0), Auto(1)		X	O		O						●			O	O	X
		04	1	00-7F	INSERTION EFFECT PARAMETER 3 Lead Gender Type	Off(0), Unison(1), Male(2), Female(3)		X	O		O						●			O	O	X
		05	1	00-7F	INSERTION EFFECT PARAMETER 4 Lead Gender Depth	-64...0...+63(0...127)		X	O		O						●			O	O	X
		06	1	00-7F	INSERTION EFFECT PARAMETER 5 Lead Pitch Correction	Free(0), Correct(1)		X	O		O						●			O	O	X
		07	1	00-7F	INSERTION EFFECT PARAMETER 6 Auto Upper Gender Threshold	0...12(0...12)		X	O		O						●			O	O	X

Address (H)			Size (H)	Data (H)	Parameter	Description	* The SPECIAL EFFECT Parameter cannot be reset to its factory setting with XG SYSTEM ON.	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
		08	1	00-7F	INSERTION EFFECT PARAMETER 7 Auto Lower Gender Threshold	0...12(0...12)		X	O		O				●					O	O	X
		09	1	00-7F	INSERTION EFFECT PARAMETER 8 Upper Gender Depth	-64...0+63(0...127)		X	O		O				●					O	O	X
		0A	1	00-7F	INSERTION EFFECT PARAMETER 9 Lower Gender Depth	-64...0...+63(0...127)		X	O		O				●					O	O	X
		0B	1	00-7F	INSERTION EFFECT PARAMETER 10	L63>H...L=H...L<H63 (1...64...127)		X	O		O				●					O	O	X
		0C	1	00-7F	INSERTION EFFECT PART NUMBER	AD(64), OFF(0...63, 65...127)		X	O		O				●					O	O	O
		0D	1	00-7F	MW INSERTION CONTROL DEPTH	-64...0...+63		X	X		X				X					X	X	X
		0E	1	00-7F	BEND INSERTION CONTROL DEPTH	-64...0...+63		X	X		X				X					X	X	X
		0F	1	00-7F	CAT INSERTION CONTROL DEPTH	-64...0...+63		X	X		X				X					X	X	X
		10	1	00-7F	AC1 INSERTION CONTROL DEPTH	-64...0...+63		X	X		X				X					X	X	X
		11	1	00-7F	AC2 INSERTION CONTROL DEPTH	-64...0...+63		X	X		X				X					X	X	X

TOTAL SIZE 12

		14	1	00-7F	UNIQUE INSERTION EFFECT EXTERNAL CONTROL CH1 (HARMONY CHANNEL)	1...16(0...15), OFF(127)		X	O		O				●					O	O	X
		15	1	00-7F	UNIQUE INSERTION EFFECT EXTERNAL CONTROL CH1 (MELODY CHANNEL)	1...16(0...15), OFF(127)		X	O		O				O					O	O	X

TOTAL SIZE 2

		20	1	00-7F	INSERTION EFFECT PARAMETER 11 Vibrato Depth	0...100cemt(0...127)		X	O		O				●					O	O	X
		21	1	00-7F	INSERTION EFFECT PARAMETER 12 Vibrato Rate	0Hz(0),0.1...12.7Hz(1...127)		X	O		O				●					O	O	X
		22	1	00-7F	INSERTION EFFECT PARAMETER 13 Vibrato Delay	0...2.54sec(0...127)		X	O		O				●					O	O	X
		23	1	00-7F	INSERTION EFFECT PARAMETER 14			X	X		X				X					X	X	X
		24	1	00-7F	INSERTION EFFECT PARAMETER 15			X	X		X				X					X	X	X
		25	1	00-7F	INSERTION EFFECT PARAMETER 16			X	X		X				X					X	X	X

TOTAL SIZE 6

● : Transmitted via panel operations O: Available

MIDI Parameter Change table (MULTI PART)

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
8	nn	00	1	00-20	ELEMENT RESERVE	0...32	part10,26=0, other parts=2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		01	1	00-7F	BANK SELECT MSB	0...127	part10=7F, other parts=00	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		02	1	00-7F	BANK SELECT LSB	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		03	1	00-7F	PROGRAM NUMBER	1...128	00	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		04	1	00-0F,7F	Rcv CHANNEL	1...16, OFF	Part No.	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
		05	1	00-01	MONO/POLY MODE	MONO, POLY	01	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
		06	1	00-02	SAME NOTE NUMBER KEY ON ASSIGN	SINGLE, MULTI, INST (for Drum)	01	O	X	O	X	X	O	X	X	X	X	O	X	O	X	X
		07	1	00-03	PART MODE	NORMAL, DRUM, DRUMS1...2	part10=02, other parts=00	O	X	O	X	X	X	X	●	X	●	●	X	O	X	O
		08	1	28-58	NOTE SHIFT	-24...0...+24[semitones]	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		09 0A	2	00-0F 00-0F	DETUNE	-12.8...0...+12.7[Hz] 1st bit3-0 bit7-4 2nd bit3-0 bit3-0	08 00	O	X	O	O	X	O	O	X	X	X	O	X	O	X	X
		0B	1	00-7F	VOLUME	0...127	64	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		0C	1	00-7F	VELOCITY SENSE DEPTH	0...127	40	O	X	O	O	X	X	O	●	O	X	O	X	O	O	O
		0D	1	00-7F	VELOCITY SENSE OFFSET	0...127	40	O	X	O	O	X	X	O	●	O	X	O	X	O	O	O
		0E	1	00-7F	PAN	RND,L63...C...R63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		0F	1	00-7F	NOTE LIMIT LOW	C-2...G8	00	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
		10	1	00-7F	NOTE LIMIT HIGH	C-2...G8	7F	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
		11	1	00-7F	DRY LEVEL	0...127	7F	O	X	O	O	X	O	O	X	O			X	O	O	O
		12	1	00-7F	CHORUS SEND	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		13	1	00-7F	REVERB SEND	0...127	28	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		14	1	00-7F	VARIATION SEND	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X	O	O	O
		15	1	00-7F	VIBRATO RATE	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		16	1	00-7F	VIBRATO DEPTH	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		17	1	00-7F	VIBRATO DELAY	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		18	1	00-7F	FILTER CUTOFF FREQUENCY	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		19	1	00-7F	FILTER RESONANCE	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		1A	1	00-7F	EG ATTACK TIME	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		1B	1	00-7F	EG DECAY TIME	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		1C	1	00-7F	EG RELEASE TIME	-64...0...+63	40	O	X	O	O	X	O	O	X	X	X	O	X	O	O	X
		1D	1	28-58	MW PITCH CONTROL	-24...0...+24[semitones]	40	O	X	O	O	X	X	O	X	X	X	O	X	O	X	X
		1E	1	00-7F	MW LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	O	X	X	O	●	O	X	O	X	O	O	O

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission						[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower		PLAY	REW	From panel (Right1/ Right2/ Left)
		1F	1	00-7F	MW AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		20	1	00-7F	MW LFO PMOD DEPTH	0...127	0A	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		21	1	00-7F	MW LFO FMOD DEPTH	0...127	00	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		22	1	00-7F	MW LFO AMOD DEPTH	0...127	00	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		23	1	28-58	BEND PITCH CONTROL	-24...0...+24[semitones]	42	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X
		24	1	00-7F	BEND LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X
		25	1	00-7F	BEND AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X
		26	1	00-7F	BEND LFO PMOD DEPTH	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X
		27	1	00-7F	BEND LFO FMOD DEPTH	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X
		28	1	00-7F	BEND LFO AMOD DEPTH	0...127	00	O	X	O	O	X	O	O	X	X	X	O	X		O	X	X

TOTAL SIZE 29

		30	1	00-01	Rcv PITCH BEND	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		31	1	00-01	Rcv CH AFTER TOUCH(CAT)	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		32	1	00-01	Rcv PROGRAM CHANGE	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		33	1	00-01	Rcv CONTROL CHANGE	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		34	1	00-01	Rcv POLY AFTER TOUCH(PAT)	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		35	1	00-01	Rcv NOTE MESSAGE	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		36	1	00-01	Rcv RPN	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		37	1	00-01	Rcv NRPN	OFF, ON	XGmode=01, GMmode=00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		38	1	00-01	Rcv MODULATION	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		39	1	00-01	Rcv VOLUME	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3A	1	00-01	Rcv PAN	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3B	1	00-01	Rcv EXPRESSION	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3C	1	00-01	Rcv HOLD1	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3D	1	00-01	Rcv PORTAMENTO	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3E	1	00-01	Rcv SOSTENUTO	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		3F	1	00-01	Rcv SOFT PEDAL	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		40	1	00-01	Rcv BANK SELECT	OFF, ON	01	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		41	1	00-7F	SCALE TUNING C	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		42	1	00-7F	SCALE TUNING C#	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		43	1	00-7F	SCALE TUNING D	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		44	1	00-7F	SCALE TUNING D#	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		45	1	00-7F	SCALE TUNING E	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		46	1	00-7F	SCALE TUNING F	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		47	1	00-7F	SCALE TUNING F#	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		48	1	00-7F	SCALE TUNING G	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		49	1	00-7F	SCALE TUNING G#	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		4A	1	00-7F	SCALE TUNING A	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		4B	1	00-7F	SCALE TUNING A#	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		4C	1	00-7F	SCALE TUNING B	-64...0...+63[cent]	40	O	X	O	O	X	O	O	●	X	●	O	X		O	O	O
		4D	1	28-58	CAT PITCH CONTROL	-24...0...+24[semitones]	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		4E	1	00-7F	CAT LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		4F	1	00-7F	CAT AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		50	1	00-7F	CAT LFO PMOD DEPTH	0...127	00	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		51	1	00-7F	CAT LFO FMOD DEPTH	0...127	00	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		52	1	00-7F	CAT LFO AMOD DEPTH	0...127	00	O	X	O	O	X	X	O	●	O	X	O	X		O	O	O
		53	1	28-58	PAT PITCH CONTROL	-24...0...+24[semitones]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		54	1	00-7F	PAT LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		55	1	00-7F	PAT AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		56	1	00-7F	PAT LFO PMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		57	1	00-7F	PAT LFO FMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		58	1	00-7F	PAT LFO AMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		59	1	00-5F	AC1 CONTROLLER NUMBER	0...95	10	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5A	1	28-58	AC1 PITCH CONTROL	-24...0...+24[semitones]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5B	1	00-7F	AC1 LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5C	1	00-7F	AC1 AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5D	1	00-7F	AC1 LFO PMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5E	1	00-7F	AC1 LFO FMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		5F	1	00-7F	AC1 LFO AMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		60	1	00-5F	AC2 CONTROLLER NUMBER	0...95	11	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		61	1	28-58	AC2 PITCH CONTROL	-24...0...+24[semitones]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		62	1	00-7F	AC2 LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		63	1	00-7F	AC2 AMPLITUDE CONTROL	-100...0...+100[%]	40	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		64	1	00-7F	AC2 LFO PMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		65	1	00-7F	AC2 LFO FMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		66	1	00-7F	AC2 LFO AMOD DEPTH	0...127	00	O	X	O	X	X	X	X	X	X	X	O	X		O	X	X
		67	1	00-01	PORTAMENTO SWITCH	OFF, ON	00	O (Except Organ Flutes)	X	O	O	X	X	O	X	X	X	O	X		O	O	X
		68	1	00-7F	PORTAMENTO TIME	0...127	00	O	X	O	O	X	X	O	X	X	X	O	X		O	O	X
		69	1	00-7F	PITCH EG INITIAL LEVEL	-64...0...+63	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		6A	1	00-7F	PITCH EG ATTACK TIME	-64...0...+63	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		6B	1	00-7F	PITCH EG RELEASE LEVEL	-64...0...+63	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		6C	1	00-7F	PITCH EG RELEASE TIME	-64...0...+63	40	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		6D	1	01-7F	VELOCITY LIMIT LOW	1...127	01	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X
		6E	1	01-7F	VELOCITY LIMIT HIGH	1...127	7F	O	X	O	O	X	X	O	X	X	X	O	X		O	X	X

TOTAL SIZE 3F

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
								Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
		70	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		71	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		72	1	00-7F	EQ BASS GAIN	-12dB...+12dB	40	O	X	O	O	X	O	O	●	●	●	●	X	O	O	O
		73	1	00-7F	EQ TREBLE GAIN	-12dB...+12dB	40	O	X	O	O	X	O	O	●	●	●	●	X	O	O	O
TOTAL SIZE 04																						
		74	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		75	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		76	1	04-28	EQ BASS FREQUENCY	32...2.0k[Hz]	0C	O	X	O	O	X	X	O	●	O	X	O	X	O	O	O
		77	1	1C-3A	EQ TREBLE FREQUENCY	500...16.0k[Hz]	36	O	X	O	O	X	X	O	●	O	X	O	X	O	O	O
		78	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		79	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7A	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7B	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7C	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7D	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7E	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7F	1		NOT USED		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SIZE 0C																						
0A	nn	40	1	00-7F	MW OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	O	X	X	O	●	O	X	O	X	O	O	O
		41	1	00-7F	BEND OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	X	X	X	X	X	X	X	O	X	O	O	X
		42	1	00-7F	CAT OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	O	X	X	O	●	O	X	O	X	O	O	O
		43	1	00-7F	PAT OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	X	X	X	X	X	X	X	O	X	O	O	X
		44	1	00-7F	AC1 OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	X	X	X	X	X	X	X	O	X	O	O	X
		45	1	00-7F	AC2 OFFSET LEVEL CONTROL	-100 - 100[%]	40	O	-	O	X	X	X	X	X	X	X	O	X	O	O	X

TOTAL SIZE 06

● : Transmitted via panel operations O: Available

nn : PART NUMBER

If there is a Drum Voice assigned to the part, the following parameters are ineffective.
- BANK SELECT LSB
- PORTAMENTO
- MONO/POLY
- SCALE TUNING
- POLY AFTER TOUCH
- PITCH EG

MIDI Parameter Change table (A/D PART)

Address (H)			Size (H)	Data (H)	Parameter	Description	[MIDI] Voice		[MIDI] MIDI Reception					[MIDI] MIDI Transmission					[Song Creator] PLAY		[Song Creator] REC
							Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel (Right1/ Right2/ Left)
10	0n	00	1	00-01	INPUT GAIN	MIC, LINE	X	X	X					X					X	X	X
		01	1	00-7F	BANK SELECT MSB	0...127	X	X	X					X					X	X	X
		02	1	00-7F	BANK SELECT LSB	0...127	X	X	X					X					X	X	X
		03	1	00-7F	PROGRAM NUMBER	1...128	X	X	X					X					X	X	X
		04	1	00-0F,7F	Rcv CHANNEL	1...16,OFF	X	O	O					O					O	X	X
		05	1		NOT USED		-	-	-					-					-	-	-
		06	1		NOT USED		-	-	-					-					-	-	-
		07	1		NOT USED		-	-	-					-					-	-	-
		08	1		NOT USED		-	-	-					-					-	-	-
		09	1		NOT USED		-	-	-					-					-	-	-
		0A	1		NOT USED		-	-	-					-					-	-	-
		0B	1	00-7F	VOLUME	0...127	X	O	O					●					O	X	X
		0C	1		NOT USED		-	-	-					-					-	-	-
		0D	1		NOT USED		-	-	-					-					-	-	-
		0E	1	01-7F	PAN	L63...C...R63	X	O	O					●					O	X	X
		0F	1		NOT USED		-	-	-					-					-	-	-
		10	1		NOT USED		-	-	-					-					-	-	-
		11	1	00-7F	DRY LEVEL	0...127	X	O	O					●					O	X	X
		12	1	00-7F	CHORUS SEND	0...127	X	O	O					●					O	X	X
		13	1	00-7F	REVERB SEND	0...127	X	O	O					●					O	X	X
		14	1	00-7F	VARIATION SEND	0...127	X	O	O					●					O	X	X

TOTAL SIZE 15

● : Transmitted via panel operations O: Available

n : A/D Part Number (0)

The A/D PART parameter cannot be reset to its factory setting with XG System On.

MIDI Parameter Change table (DRUM SETUP)

[MIDI] [Song Creator]

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	Voice		MIDI Reception					MIDI Transmission						PLAY	REC	
								Regular/ Drum/Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower		PLAY	REW	From panel (Right1/ Right2/ Left)
3n	rr	00	1	00-7F	PITCH COARSE	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		01	1	00-7F	PITCH FINE	-64...0...+63[cent]	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		02	1	00-7F	LEVEL	0...127	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		03	1	00-7F	ALTERNATE GROUP	OFF, 1...127	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		04	1	00-7F	PAN	RND, L63...C...R63	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		05	1	00-7F	REVERB SEND	0...127	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		06	1	00-7F	CHORUS SEND	0...127	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		07	1	00-7F	VARIATION SEND	0...127	7F	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		08	1	00-01	KEY ASSIGN	SINGLE, MULTI	00	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		09	1	00-01	Rcv NOTE OFF	OFF, ON	Depends on the note	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0A	1	00-01	Rcv NOTE ON	OFF, ON	01	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0B	1	00-7F	LOW PASS FILTER CUTOFF FREQUENCY	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0C	1	00-7F	LOW PASS FILTER RESONANCE	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0D	1	00-7F	EG ATTACK RATE	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0E	1	00-7F	EG DECAY1 RATE	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X
		0F	1	00-7F	EG DECAY2 RATE	-64...0...+63	40	O(Drum Only)	X	O(Available only for song parts)					O						O	X	X

TOTAL SIZE 10

[MIDI] [Song Creator]

Address (H)			Size (H)	Data (H)	Parameter	Description	XG Default (H)	Voice		MIDI Reception					MIDI Transmission						PLAY	REC	
								Regular/ Drum/Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower		PLAY	REW	From panel (Right1/ Right2/ Left)
		20	1	00-7F	EQ BASS GAIN	-12...+12[dB]	40	X	X	X					X						X	X	X
		21	1	00-7F	EQ TREBLE GAIN	-12...+12[dB]	40	X	X	X					X						X	X	X
		22	1		NOT USED		-	-	-	-					-						-	-	-
		23	1		NOT USED		-	-	-	-					-						-	-	-
		24	1	04-28	EQ BASS FREQUENCY	32...2.0k[Hz]	0C	X	X	X					X						X	X	X
		25	1	1C-3A	EQ TREBLE FREQUENCY	500...16.0k[Hz]	36	X	X	X					X						X	X	X
		26	1		NOT USED		-	-	-	-					-						-	-	-
		27	1		NOT USED		-	-	-	-					-						-	-	-
		28	1		NOT USED		-	-	-	-					-						-	-	-
		29	1		NOT USED		-	-	-	-					-						-	-	-
		2A	1		NOT USED		-	-	-	-					-						-	-	-
		2B	1		NOT USED		-	-	-	-					-						-	-	-
		2C	1		NOT USED		-	-	-	-					-						-	-	-
		2D	1		NOT USED		-	-	-	-					-						-	-	-

TOTAL SIZE 0E

n : Drum Setup Number (0-1)
rr : note number(0D-5B)

In the following cases, the instrument will initialize all Drum Setups.
- XG SYSTEM ON received
- GM SYSTEM ON received
- GM LEVEL2 SYSTEM ON received
- DRUM SETUP RESET received (only when in XG mode)

[Note]
- When a part to which a Drum Setup is assigned receives a program change, the assigned Drum Setup will be initialized.
- If the same Drum Setup is assigned to two or more parts, changes in Drum Setup parameters (including program changes) will apply to all parts to which it is assigned.

SYSTEM EXCLUSIVE MESSAGES (1)

[GM1]...GM Required Parameter
[GM2]...GM Leve2 Required Parameter

Not received when Receive System Exclusive Message Parameters is set to off.
Not transmitted when Transmit System Exclusive Message Parmeters is set to off.

System Exclusive Messages (Universal Real Time Messages)

[MIDI] [Song Creator]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission					PLAY	REC	
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel operations
Master Volume [GM2]	F0 7F XN 04 01 SS TT F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00000100 04 = Sub-ID #1=Device Control Message 00000001 01 = Sub-ID #2=Master Volume 0sssssss SS = Volume LSB 0ttttttt TT = Volume MSB 11110111 F7 = End of Exclusive	O	X	O (Available for extra parts of a song)					O					O	O	X
Master Fine Tuning [GM2]	F0 7F XN 04 03 SS TT F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00000100 04 = Sub-ID #1=Device Control Message 00000011 03 = Sub-ID #2=Master Fine Tuning 0sssssss SS = Fine Tuning LSB 0ttttttt TT = Fine Tuning MSB 11110111 F7 = End of Exclusive	O	X	O (Available for extra parts of a song)					O					O	X	X
Master Coase Tuning [GM2]	F0 7F XN 04 04 SS TT F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00000100 04 = Sub-ID #1=Device Control Message 00000100 04 = Sub-ID #2=Master Coarse Tuning 00000000 00 0ttttttt TT = Coarse Tuning MSB 11110111 F7 = End of Exclusive	O	X	O (Available for extra parts of a song)					O					O	X	X
Reverb Parameter [GM2]	F0 7F XN 04 05 01 01 01 01 PP VV ... F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00000100 04 = Sub-ID #1=Device Control Message 00000101 05 = Sub-ID #2=Global Parameter Control 00000001 01 = Slot path length = 1 00000001 01 = Parameter ID width = 1 00000001 01 = Value width = 1 00000001 01 = Slot path MSB = 1 00000001 01 = Slot path LSB = 1 (Reverb) 0ppppppp PP = Parameter to be controlled. 0vvvvvvv VV = Value for the Parameter. : : 11110111 F7 = End of Exclusive Parameter(pp) Value(vv) Display pp=0 Reverb Type 0...8 0:RoomS, 1:RoomM, 2:RoomL, 3:HallM, 4:HallL(default), 8:GM Plate pp=1 Reverb Time 0...127 0...11.0s	O	O	O					O					O	O	X
Chorus Parameter [GM2]	F0 7F XN 04 05 01 01 01 02 PP VV ... F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00000100 04 = Sub-ID #1=Device Control Message 00000101 05 = Sub-ID #2=Global Parameter Control 00000001 01 = Slot path length = 1 00000001 01 = Parameter ID width = 1 00000001 01 = Value width = 1 00000001 01 = Slot path MSB = 1 00000010 02 = Slot path LSB = 2 (Chorus) 0ppppppp PP = Parameter to be controlled. 0vvvvvvv VV = Value for the Parameter. : : 11110111 F7 = End of Exclusive Parameter(pp) Value(vv) Display pp=0 Chorus Type 0...5 0:GM Chorus1, 1:GM Chorus2, 2:GM Chorus3 (default), 3:GM Chorus4, 4:FB Chorus, 5:GM Flanger pp=1 Mod Rate 0...127 0...15.5Hz pp=2 Mod Depth 0...127 pp=3 Feedback 0...127 pp=4 Send to Reverb 0...127	O	O	O					O					O	O	X

[MIDI] [Song Creator]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission					PLAY		REC
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel operations
Channel Pressure (Aftertouch) [GM2]	F0 7F XN 09 01 0M PP RR ... F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001001 09 = Sub-ID #1=Controller Destination Setting 00000001 01 = Sub-ID #2=Controller Type:01(Channel Pressure) 0000mmmm 0M = MIDI Channel (00-0F) 0ppppppp PP = Controlled Parameter 0rrrrrrr RR = Data : : 11110111 F7 = End of Exclusive Make sure to set both the controlled parameter and the range. Parameters not set will be restored to their default values. Control Parameter(pp) Data(RR) Description Default Value pp=00 Pitch Control 28H-58H -24...0...+24semitones 40H pp=01 Filter Cutoff Control 00H-7FH -9600...0...+9450cents 40H pp=02 Amplitude Control 00H-7FH -100...0...+100% 40H pp=03 LFO Pitch Depth 00H-7FH 0...127 00H pp=04 LFO Filter Depth 00H-7FH 0...127 00H pp=05 LFO Amplitude Depth 00H-7FH 0...127 00H	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
Controller (Control Change) [GM2]	F0 7F XN 09 03 0M CC PP RR ... F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001001 09 = Sub-ID #1=Controller Destination Setting 00000011 03 = Sub-ID #2=Controller Type:03(Control Change) 0000mmmm 0M = MIDI Channel (00-0F) 0ccccccc CC = Controller Number (01H-1FH, 40H-5FH) 0ppppppp PP = Controlled Parameter 0rrrrrrr RR = Range : : 11110111 F7 = End of Exclusive Make sure to set both the controlled parameter and the range. Parameters not set will be restored to their default values. Control Parameter(pp) Data(RR) Description Default Value pp=00 Pitch Control 28H-58H -24...0...+24semitones 40H pp=01 Filter Cutoff Control 00H-7FH -9600...0...+9450cents 40H pp=02 Amplitude Control 00H-7FH -100...0...+100% 40H pp=03 LFO Pitch Depth 00H-7FH 0...127 00H pp=04 LFO Filter Depth 00H-7FH 0...127 00H pp=05 LFO Amplitude Depth 00H-7FH 0...127 00H	O	X	O	X	X	X	X	X	X	X	O	X	O	X	X
Key-Based Instrument Control [GM2]	F0 7F XN 0A 01 0M KK CC VV ... F7 11110000 F0 = Exclusive status 01111111 7F = Universal Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001010 0A = Sub-ID #1=Key-Based Instrument Control 00000001 01 = Sub-ID #2=Controller 0000mmmm 0M = MIDI Channel (00-0F) 0kkkkkkk KK = Key Number 0ccccccc CC = Controller Number 0vvvvvvv VV = Value : : 11110111 F7 = End of Exclusive Make sure to set both the controlled number and the value. Control Number(CC) Value(VV) Description Default Value CC=07H Volume 00H-7FH -100...0...+100% 40H CC=0AH Pan 00H-7FH (absolute) L63...C...R63 (Preset value) CC=5BH Reverb Send Level 00H-7FH (absolute) 0...Max (Preset value) CC=5DH Chorus Send Level 00H-7FH (absolute) 0...Max (Preset value)	O (Drum Only)	X	O	X	X	X	X	X	X	X	O	X	O	X	X

System Exclusive Messages (Universal Non-Real Time Messages)

[MIDI] [Song Creator]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission					PLAY	REC
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower	PLAY	REW	From panel operations
GM1 System On [GM1] [GM2]	F0 7E XN 09 01 F7 11110000 F0 = Exclusive status 01111110 7E = Universal Non-Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001001 09 = Sub-ID #1=General MIDI Message 00000001 01 = Sub-ID #2=General MIDI On 11110111 F7 = End of Exclusive	O	-	O					O					O	X	O
GM2 System On [GM2]	F0 7E XN 09 03 F7 11110000 F0 = Exclusive status 01111110 7E = Universal Non-Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001001 09 = Sub-ID #1=General MIDI Message 00000011 03 = Sub-ID #2=General MIDI2 On 11110111 F7 = End of Exclusive	O	-	O					O					O	X	X
General MIDI System Off [GM1] [GM2]	F0 7E XN 09 02 F7 11110000 F0 = Exclusive status 01111110 7E = Universal Non-Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001001 09 = Sub-ID #1=General MIDI Message 00000010 02 = Sub-ID #2=General MIDI Off 11110111 F7 = End of Exclusive	O	-	O					O					O	X	X
Scale/ Octave Tuning [GM2]	F0 7E XN 08 08 JJ GG MM SS ... F7 11110000 F0 = Exclusive status 01111110 7E = Universal Non-Real Time 0xxxnnnn XN = When N is received N=0-F,whichever is received. X=ignored 00001000 08 = Sub-ID #1=MIDI Tuning Standard 00001000 08 = Sub-ID #2=scale/octave tuning 1byte form 0jjjjjjj JJ = Channel/option byte1 bits 0 to 1 = channel 15 to 16 bits 2 to 6 = reserved 0ggggggg GG = Channel byte2 - bits0 to 6 = channel 8 to 14 0mmmmmmm MM = Channel byte2 - bits0 to 6 = channel 1 to 7 0sssssss SS = 12byte tuning offset of 12 semitones from C to B 00H means -64cent 40H means 0cent 7FH means +63cent : : 11110111 F7 = End of Exclusive	O	X	O (Available for song parts)					O					O	X	X

SYSTEM EXCLUSIVE MESSAGES (2)

* Not received when Receive System Exclusive Message Parameters is set to off.
* Not transmitted when Transmit System Exclusive Message Parmeters is set to off.

System Exclusive Messages (Style)

[MIDI]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission				
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower
Section Control	F0 43 7E 00 ss dd F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01111110 7E = Style 00000000 00 = 0sssssss ss = Switch No. 00H INTRO A 01H INTRO B 02H INTRO C 03H INTRO D 08H MAIN A 09H MAIN B 0AH MAIN C 0BH MAIN D 10H FILL IN AA 11H FILL IN BB 12H FILL IN CC 13H FILL IN DD 18H BREAK FILL 20H ENDING A 21H ENDING B 22H ENDING C 23H ENDING D 0ddddddd dd = Switch On/Off 00H(Off) 7FH(On) 11110111 F7 = End of Exclusive	-	-			O					●		
Tempo Control	F0 43 7E 01 t4 t3 t2 t1 F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01111110 7E = Style 00000001 01 = 0ttttttt t4 = tempo4 0ttttttt t3 = tempo3 0ttttttt t2 = tempo2 0ttttttt t1 = tempo1 11110111 F7 = End of Exclusive	-	-			O					●		
Chord Control	F0 43 7E tt d1 d2 d3 d4 F7 Type1 (tt=02) 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01111110 7E = Style 00000010 02 = type 1 0ddddddd d1 = chord root(cr) 0ddddddd d2 = chord type(ct) 0ddddddd d3 = bass note(bn) 0ddddddd d4 = bass type(bt) 11110111 F7 = End of Exclusive cr : Chord Root 0fffnnnn fff: b or #, nnnn: note(root) 0000nnnn 0n bbb 0001nnnn 1n bb 0010nnnn 2n b 0011nnnn 3n natural 0100nnnn 4n # 0101nnnn 5n ## 0110nnnn 6n ### 0fff0000 x0 reserved 0fff0001 x1 C 0fff0010 x2 D 0fff0011 x3 E 0fff0100 x4 F 0fff0101 x5 G 0fff0110 x6 A 0fff0111 x7 B ct : Chord Type 0 - 34,127 00000000 00 0 Maj 00000001 01 1 Maj6 00000010 02 2 Maj7 00000011 03 3 Maj7(#11) 00000100 04 4 Maj(9) 00000101 05 5 Maj7(9) 00000110 06 6 Maj6(9) 00000111 07 7 aug 00001000 08 8 min 00001001 09 9 min6 00001010 0A 10 min7 00001011 0B 11 min7b5 00001100 0C 12 min(9) 00001101 0D 13 min7(9) 00001110 0E 14 min7(11) 00001111 0F 15 minMaj7 00010000 10 16 minMaj7(9) 00010001 11 17 dim 00010010 12 18 dim7 00010011 13 19 7th 00010100 14 20 7sus4 00010101 15 21 7b5 00010110 16 22 7(9) 00010111 17 23 7(#11) 00011000 18 24 7(13) 00011001 19 25 7(b9) 00011010 1A 26 7(b13) 00011011 1B 27 7(#9) 00011100 1C 28 Maj7aug 00011101 1D 29 7aug 00011110 1E 30 1+8 00011111 1F 31 1+5 00100000 20 32 sus4 00100001 21 33 1+2+5 00100010 22 34 cc bn : On Bass Note Same as Chord root 127:No bass chord bt : Bass Chord Same as Chord type 127:No bass chord * Not received when Receive Chord System Exclusive Message Parameters is set to off. * Not transmitted when Transmit Chord System Exclusive Message Parameters is set to off.	-	-			O					●		
	Type2 (tt=03) 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01111110 7E = Style 00000011 03 = type 2 0ddddddd dd = note1 0ddddddd dd = note2 0ddddddd dd = note3 : : 0ddddddd dd = note10 11110111 F7 = End of Exclusive	-	-			O					X		

● : Transmitted via panel operations O: Available

System Exclusive Messages (XG)

[MIDI]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission				
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower
XG Parameter Changes	F0 43 1n 4C hh mm ll dd ... F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 0001nnnn 1n = Device Number n=always 0(when transmit), n=0-F(when recieve) 01001100 4C = Model ID 0hhhhhhh hh = Address High 0mmmmmmm mm= Address Mid 0lllllll ll = Address Low 0ddddddd dd = Data : : 11110111 F7 = End of Exclusive	* Refer to XG Parameter Change Table.		O * Refer to XG Parameter Change Table.					O * Refer to XG Parameter Change Table.				
XG Bulk Dump	F0 43 0n 4C aa bb hh mm ll dd ... dd cc F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 0000nnnn 0n = Device Number n=always 0(when transmit), n=0-F(when recieve) 01001100 4C = Model ID 0aaaaaaa aa = Byte Count MSB 0bbbbbbb bb = Byte Count LSB 0hhhhhhh hh = Address High 0mmmmmmm mm= Address Mid 0lllllll ll = Address Low 0ddddddd dd = Data : : 0ddddddd dd = Data 0ccccccc cc = Checksum 11110111 F7 = End of Exclusive	* Refer to XG Parameter Change Table.		O * Refer to XG Parameter Change Table.					O * Refer to XG Parameter Change Table.				
XG Prameter Request	F0 43 3n 4C hh mm ll F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 0011nnnn 3n = Device Number n=always 0(when transmit), n=0-F(when recieve) 01001100 4C = Model ID 0hhhhhhh hh = Address High 0mmmmmmm mm= Address Mid 0lllllll ll = Address Low 11110111 F7 = End of Exclusive	-	-	O * Refer to XG Parameter Change Table.					O * Refer to XG Parameter Change Table.				
XG Dump Request	F0 43 2n 4C hh mm ll F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 0010nnnn 2n = Device Number n=always 0(when transmit), n=0-F(when recieve) 01001100 4C = Model ID 0hhhhhhh hh = Address High 0mmmmmmm mm= Address Mid 0lllllll ll = Address Low 11110111 F7 = End of Exclusive	-	-	O * Refer to XG Parameter Change Table.					O * Refer to XG Parameter Change Table.				

System Exclusive Messages (Hard Disk Recorder Control)

[MIDI]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission				
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower
Hard Disk Recorder Control	F0 43 73 01 50 19 00 00 dd F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01110011 73 = Tyros ID 00000001 01 = Model ID 01010000 50 = SubID 00011001 19 = SubID (Hard Disk Recorder Control) 00000000 00 = SubID 00000000 00 = SubID (Start/Stop Control) 0ddddddd dd = data dd=00H:Start, 01H:Stop, 02H:Pause 11110111 F7 = End of Exclusive Controls start/stop of the audio song, but this is not synchronized with the MIDI song.	X	X	O					X	X	X	O	X

System Exclusive Messages Special Operators (Vocal Harmony Additional Parameters)

[MIDI]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission				
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower
Vocal Harmony Pitch to Note ON/OFF	F0 43 73 01 11 0n 50 00 dd F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01110011 73 = Tyros ID 00000001 01 = Model ID 00010001 11 = Special Operators 0000nnnn 0n = Channel No. (Always 00) 01010000 50 = Vocal Harmony Additional Parameter Control No. 00000000 00 = Pitch to Note Parameter No. 0ddddddd dd = data (00H : Off, 01H : On) 11110111 F7 = End of Exclusive	X	O			O					●		
Vocal Harmony Pitch to Note Part	F0 43 73 01 11 0n 50 01 dd F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01110011 73 = Tyros ID 00000001 01 = Model ID 00010001 11 = Special Operators 0000nnnn 0n = Channel No. (Always 00) 01010000 50 = Vocal Harmony Additional Parameter Control No. 00000001 01 = Pitch to Note Part Parameter No. 0ddddddd dd = data 00H : Right1 01H : Right2 02H : Left 03H : (not used) 04H : Upper 11110111 F7 = End of Exclusive	X	O			O					●		
Vocal Harmony Vocoder Part (Harmony Part(Panel))	F0 43 73 01 11 0n 50 10 dd F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 01110011 73 = Tyros ID 00000001 01 = Model ID 00010001 11 = Special Operators 0000nnnn 0n = Channel No. (Always 00) 01010000 50 = Vocal Harmony Additional Parameter Control No. 00010000 10 = Vocoder Part Parameter No. 0ddddddd dd = data 00H : Off 01H : Upper 02H : Lower 11110111 F7 = End of Exclusive	X	O			O					●		

● : Transmitted via panel operations O: Available

System Exclusive Messages (Others)

[MIDI]

MIDI Event	Data Format	Voice		MIDI Reception					MIDI Transmission				
		Regular/ Drum/ Natural/ Organ Voice	Mic/Vocal Harmony	Song	Right1 Right2 Right3 Left	Keyboard	Style	Extra	Right1 Right2 Right3 Left	M.Pad	Style	Song	Upper Lower
Internal Clock	F0 43 73 01 02 F7 00000001 01 = Model ID 00000010 02 = Internal Clock Substatus	-	-			O			X				
External Clock	F0 43 73 01 03 F7 00000001 01 = Model ID 00000011 03 = External Clock Substatus	-	-			O					X		
Organ Flutes data Bulk Dump	F0 43 73 01 06 0B 00 00 01 06 0n [Bulk Data] sum F7 01H Model ID 06H Bulk ID 0BH Bulk No. (Organ Flutes data Bulk Dump) 00H,00H,01H,06H Data Length :16bytes 1st Channel No. 0nH 2nd Footage [1'] 00 - 08H 3rd [1 1/3'] 00 - 08H 4th [1 3/5'] 00 - 08H 5th [2'] 00 - 08H 6th [2 2/3'] 00 - 08H 7th [4'] 00 - 08H 8th [5 1/3'] 00 - 08H 9th [8'] 00 - 08H 10th [16'] 00 - 08H 11th [Attack 2'] 00 - 08H 12th [Attack 2 2/3'] 00 - 08H 13th [Attack 4'] 00 - 08H 14th Settings [Attack Length] 00 - 08H 15th [Response] 00 - 08H 16th [Attack Mode] 00 - 01H 00H: Each, 01H: First 17th [Wave Variation] 00 - 01H 00H: Sine, 01H: Vintage 18th [Volume] 01 - 09H 19th [aux] 00H 20th [aux] 00H 21th [aux] 00H 22th [aux] 00H sum Check Sum = 0-sum(BULK DATA)	O (Organ Flute)	X	O	O	X	X	O	●	X	X	O	X
MIDI Master Tuning	F0 43 1n 27 30 00 00 0m 0l cc F7 11110000 F0 = Exclusive status 01000011 43 = YAMAHA ID 0001nnnn 1n n= always 0(when transmit), n=0-F(when receive) 00100111 27 = Model ID of TG100 00110000 30 = Address High 00000000 00 = Address Mid 00000000 00 = Address Low 0000mmmm 0m = Master Tune MSB 00001111 0l = Master Tune LSB 0ccccccc cc = don't care 11110111 F7 = End of Exclusive	O	O			O					X		

● : Transmitted via panel operations O: Available

Song System Exclusive Message List

Data Format	Parameter	Description	Note
Guide			
F0 43 73 01 1F 00 cc dd F7	Guide Mode	ccH = Part Select No 00H (RIGHT CH=ON, LEFT CH=ON) 01H (RIGHT CH=OFF, LEFT CH=ON) 02H (RIGHT CH=ON, LEFT CH=OFF) 03H (RIGHT CH=OFF, LEFT CH=OFF) ddH = Mode 00H=Guide OFF 01H=Follow Lights 02H=Any Key 03H=Karao-Key 04H=Vocal CueTIME	Entered to the song from the [SONG CREATOR]->CHANNEL->SETUP display.
Score			
F0 43 73 01 50 12 00 00 dd F7	Left Part indication On/Off	00H: OFF, 7FH:ON	Entered to the song from the [SONG CREATOR]->CHANNEL->SETUP display.
F0 43 73 01 50 12 00 01 dd F7	Right Part indication On/Off	00H: OFF, 7FH:ON	
F0 43 73 01 50 12 00 02 dd F7	Lyrics indication On/Off	00H: OFF, 7FH:ON	
F0 43 73 01 50 12 00 03 dd F7	Chord indication On/Off	00H: OFF, 7FH:ON	
F0 43 73 01 50 12 00 04 dd F7	N.Name indication On/Off	00H: OFF, 7FH:ON	
F0 43 73 01 50 12 00 05 dd F7	Size designation	00H:SMALL, 01H:MIDDLE, 02H:LARGE, 03H:X-LARGE	
F0 43 73 01 50 12 00 06 dd F7	Left Ch	00H-0FH=CH, 7EH=OFF, 7FH=AUTO	
F0 43 73 01 50 12 00 07 dd F7	Right Ch	00H-0FH=CH, 7EH=OFF, 7FH=AUTO	
F0 43 73 01 50 12 00 08 dd F7	Quantize triplet On/Off	00H: Triplet OFF, 7FH: Triplet ON	
F0 43 73 01 50 12 00 09 dd F7	Quantize	00H: quarter, 01H: eighth, 02H: sixteenth, 03H: thirty-second	
F0 43 73 01 50 12 00 0A dd F7	NoteName	00H:ABC, 01H:FixedDo, 02H:MovableDo	
F0 43 73 01 50 12 00 0B dd F7	Color Note	00H:OFF, 7FH:ON	
Style			
F0 43 73 01 51 00 00 00 03 10 00 dd F7	STYLE SPLIT POINT	dd=STYLE SPLIT POINT (Note Number)	Entered to the song from the [SONG CREATOR]->CHANNEL->SETUP display.
F0 43 73 01 51 05 00 03 04 00 00 dd dd F7	Style No.	dd dd = Style No.	Entered when recording.
F0 43 7E 00 ss dd F7	Section Control	Refer to the MIDI Data Format.	Entered when recording.
Hard Disk Recorder			
F0 43 73 01 50 19 00 00 dd F7	Hard Disk Recorder Control	Controls start/pause/stop of the audio song, but this is not synchronized with the MIDI song. 00H:Start, 01H:Stop.02H:Pause	Edited from the [SONG CREATOR]->SYS->EX display.

Song Meta Event List

Data Format	Parameter	Description	Note
FF 05 len [Data]	Lyrics	len=Data length, [Data]=Lyrics Data	-
FF 06 len [Data]	Marker	len=Data length, [Data]=Marker	Used as a Song Position Jump Marker.
FF 51 03 t1 t2 t3	Set Tempo	t1 t2 t3 =Tempo value B7 1B 00-01 D4 C0 (Tempo 5-500)	Entered when recording.
FF 58 04 nn dd cc bb	Beat	nn=Numerator, dd=Denominator (2n) cc=MIDI clock per metronome click, bb=Number of thirty-second notes in MIDI quarter note	Entered when recording.
FF 59 02 sf mi	Key Signature	sf=-7-7 mi=0: Major key, 1: minor key	Entered from the [Score] -> SETUP display.
YAMAHA META EVENT			
FF 7F 06 43 73 0A 00 07 dd	Score Start Bar	ddH: Start from this measure dd= -100-1, 1-100	Same as ScBar entered from the [SONG CREATOR] ->SYS/EX. Display
FF 7F len 43 73 0D 01 [Data]	Keyboard Voice	Voice settings for the RIGHT1-3 and LEFT	Entered to the song from the [SONG CREATOR]->CHANNEL ->SETUP display.
YAMAHA XF META EVENT			
FF 7F 07 43 7B 01 cr ct bn bt	Chord Name	Refer to ÒChord ControlÓ in the MIDI Data Format (System Exclusive Messages)	Entered when recording.
FF 7F 05 43 7B 03 dd 08	Phrase Mark	dd Phrase mark 0hfccccc bit6(h) 0:Right, 1:Left Right hand/Left hand bit5(f) 0:Channel available, 1:Channel not available Flag for whether channel information (bit 4-0) is valid or not Phrases common to all channels assigned to 1 bit4-0(ccccc) CH(0:1ch-31:32ch) Channel information whose phrase mark is available	Used when performing the Phrase Mark repeat playback.
FF 7F 04 43 7B 04 dd	Phrase Max	Max Phrase Number	Used when performing the Phrase Mark repeat playback.
FF 7F 05 43 7B 0C rr ll	Guide Track Flag	Sets the TRACK1 and TRACK2 parameters on the [FUNCTION]-> [SONG SETTING] display. rr = TRACK1 (0: OFF, 1-16CH) ll = TRACK2 (0: OFF, 1-16CH)	Entered when recording.
FF 7F len 43 7B 21 00 pp [Data]	Lyrics Bitmap	Specifies the background picture of the Lyrics display. pp=Display type (0: Center, 1: Tile) [Data]=File Path	Entered to the song from the [SONG CREATOR]->CHANNEL ->SETUP display.

DIGITAL WORKSTATION

Tyros2

PARTS LIST

■ **CONTENTS**

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Note) DESTINATION ABBREVIATIONS

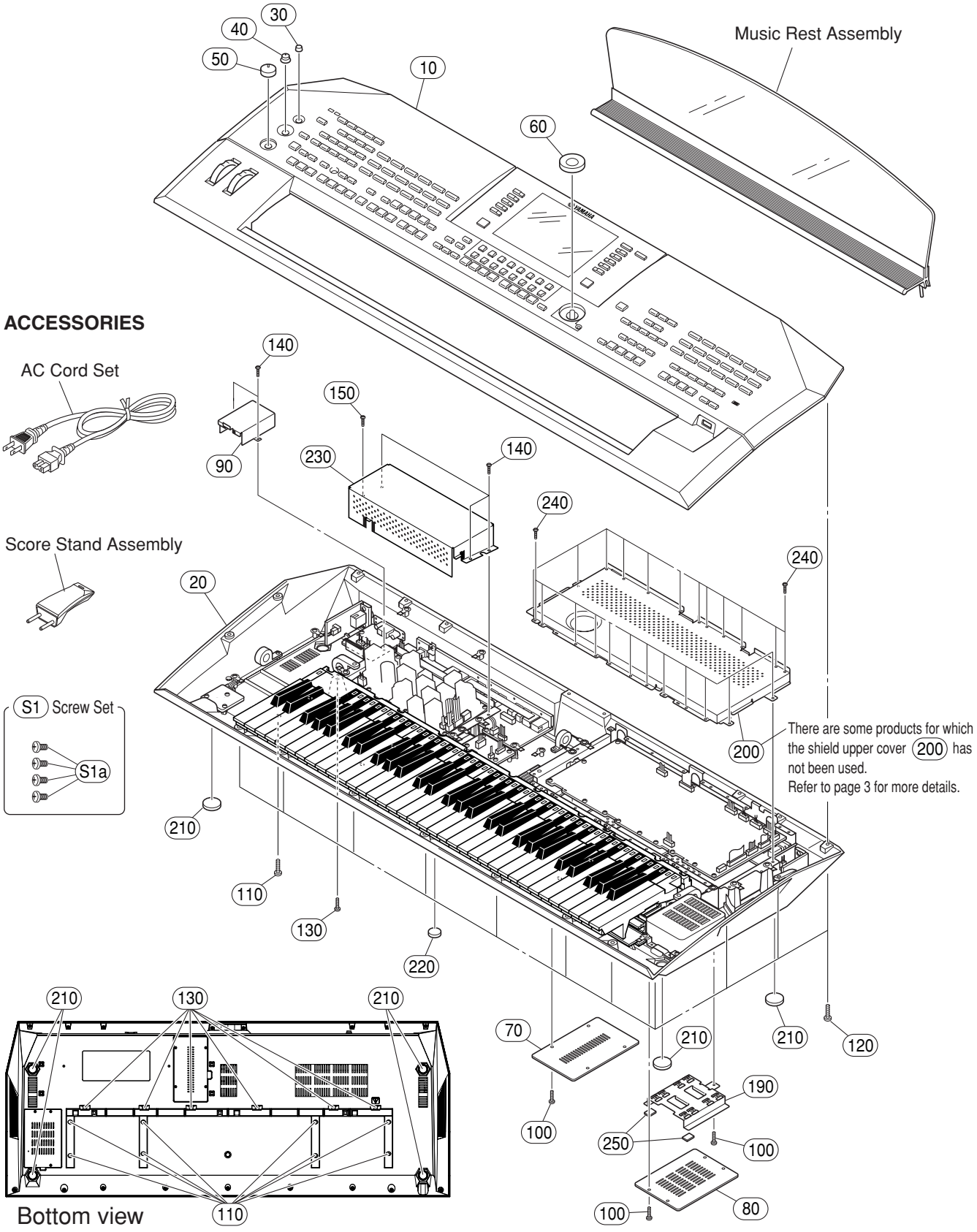
A:	Australian model	O:	Chinese model
B:	British model	Q:	South-east Asia model
C:	Canadian model	T:	Taiwan model
D:	German model	U:	U.S.A. model
E:	European model	V:	General export model (110V)
F:	French model	W:	General export model (220V)
H:	North European model	N,X:	General export model
I:	Indonesian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

■ WARNING

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

- ■ The numbers in “QTY” shows quantities for each unit.
- ■ The parts with “--” in “Part No.” are not available as spare parts.
- ■ The second letter of the shaded ( ) part number is I, not one.
- ■ The second letter of the shaded ( ) part number is O, not zero.

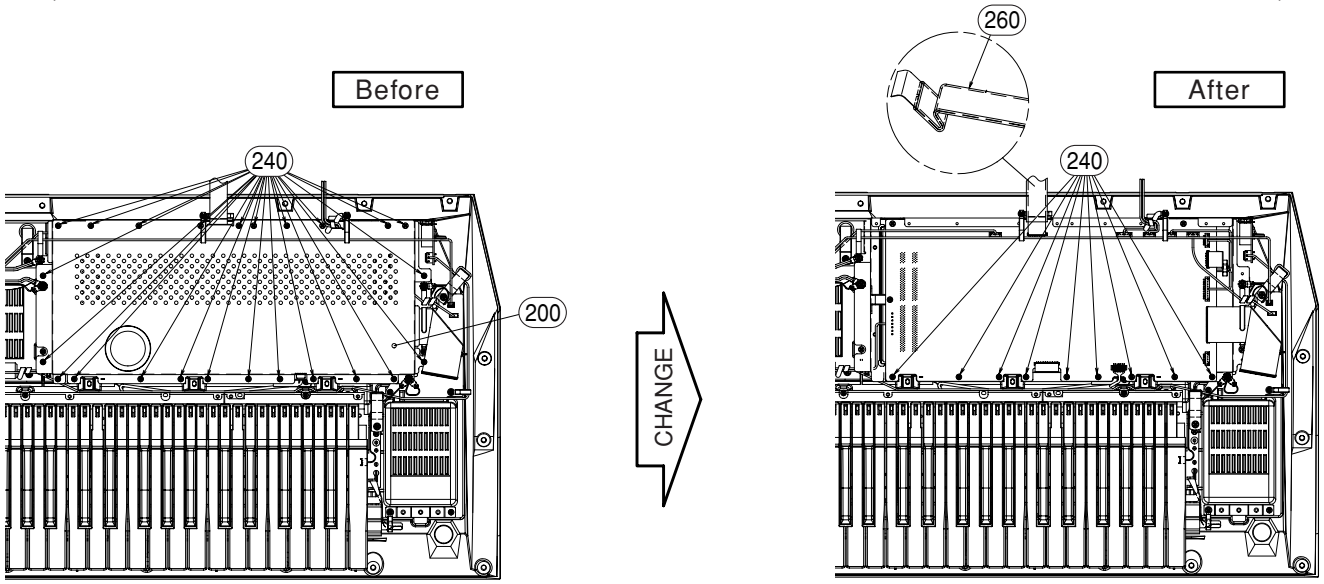
■ OVERALL ASSEMBLY



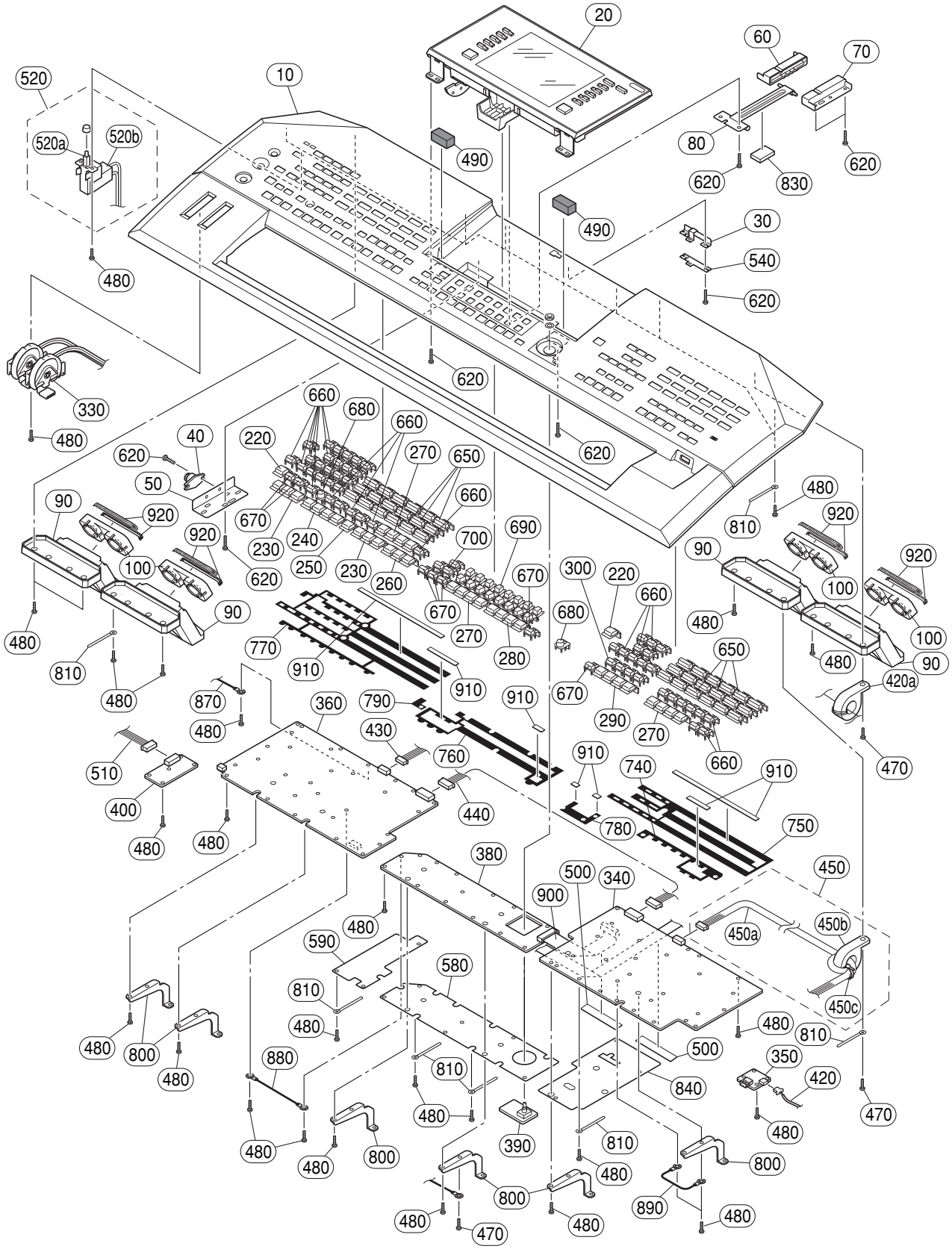
	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			OVERALL ASSEMBLY			TYROS2		
		--	Overall Assembly	PT		(WE47080)		
	10	--	Upper Case Assembly			(WE47090)		
	20	--	Lower Case Assembly			(WE47100)		
	30	**V7151200**	Push Knob	BLACK		POWER ON/OFF		01
	40	**V2300100**	Knob			INPUT VOLUME		04
	50	**VQ218900**	Knob	PSR-310		MASTER VOLUME		03
	60	**V7761500**	Encoder Knob	SILVER		DATA ENTRY		03
*	70	**WE806200**	Back Cover					
*	80	**WE621100**	HDD Cover					
	90	--	Inlet Lower Box			(WF32910)		
*	100	**WE997500**	Bonding Screw	3.0X8 MFZN2B3			9	
*	110	**WF010600**	Truss Head Tapping Screw-B	4.0X12 MFZN2B3			8	
*	120	**WE998600**	Bind Head Tapping Screw-B	4.0X12 MFZN2B3			21	
	130	**WE998100**	Bind Head Tapping Screw-B	3.0X12 MFZN2B3			6	01
	140	**WE774300**	Bind Head Tapping Screw-B	3.0X8 MFZN2W3			5	01
	150	**WF002100**	PW Head Tapping Screw-B	3.0X12 MFZN2W3				01
*	190	**WE806300**	HDD Support					
	200	--	Shield Upper Cover			(WG28280)		
	210	**V9281800**	Foot	T1.6			4	01
	220	**CB043750**	Foot	T1.6				01
	230	--	AC Upper Frame Assembly			(WF32810)		
	240	**WE983600**	Bind Head Machine Screw	3.0X8 MFZN2B3			24	
	250	--	Damper Sheet HDD			(WG21780)	2	
	260	--	Antivibration Foam	F-2		(WF75990)		
			ACCESSORIES					
*		**X6522A00**	CD-ROM	CD 12cm				
⚠		**V2917100**	AC Cord Set	E 2P 2.5m 2.5A		E		05
⚠		**V2917000**	AC Cord Set	U 2P 2.44m 7A		U		06
⚠		**VT016000**	AC Cord Set	B 2P 2.5m		B		08
		V8464700	Music Rest Assembly					15
*		**WF180100**	Score Stand Assembly				2	
*	S1	**WF328800**	Screw Set					
	S1a	**VG048000**	Bind Head Screw	3.0X4 MFNI33			4	01
			JIGS			TYROS2		
*		**X7275Z00**	Test Sheet					
		VK112300	Connector Assembly	KRD-KRD 7P--550				03
*		**WF761200**	Connector Assembly	FFC1				
		WE845800	Connector Assembly	DM-PWR1 7P-370				
*		**WE844400**	FFC Cable	26P- (DAC)				

＊: New part **（新規部品）**

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■ UPPER CASE ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			UPPER CASE ASSEMBLY			TYROS2		
		--	Upper Case Assembly			(WE47090)		
*	10	WE471500	Upper Case					
*	20	WE478900	LCD Panel Assembly					
	30	--	LCD Lock Plate			(WF30630)		
	40	V9287600	Rotary Damper	PT				06
	50	--	Damper Stay			(WF30600)		
	60	V9136600	Stay Guide Molding L	LEFT				02
	70	V9136700	Stay Guide Molding R	RIGHT				02
*	80	WF306100	Stay Angle					
*	90	WF106800	Shaft Holder				4	
*	100	WF110200	Stabilizer				4	
*	220	WF307300	Button Assembly	PT		ACMP,MUSIC FINDER	2	
*	230	WF307000	Button Assembly	PT		INTRO(I,II,III), ENDING/rit.(I,II,III)	2	
*	240	WF306900	Button Assembly	PT		MAIN VARIATION(A-D)		
*	250	WF307200	Button Assembly	PT		STYLE CONTROL(BREAK)		
*	260	WF307100	Button Assembly	PT		SYNC STOP,SYNC START START/STOP		
*	270	WF306700	Button Assembly	PT		REGISTRATION MEMORY(1-4), ONE TOUCH SETTING(1-4)	3	
*	280	WF306800	Button Assembly	PT		REGISTRATION MEMORY(5-8)		
*	290	WF306600	Button Assembly	PT		MULTI PAD CONTROL(1-4), PART ON/OFF (LEFT, RIGHT 1-3)		
*	300	WF307400	Button Assembly	PT		PART SELECT (LEFT, RIGHT 1-3)		
	330	--	Wheel Assembly			(WF33840)		
*	340	WE817400	Circuit Board	PNR		(WE81730)(X6015C0)		
*	350	WE817500	Circuit Board	USB		(WE81730)(X6015C0)		
*	360	WE816900	Circuit Board	PNL		(X6014D0)		
*	380	WE815900	Circuit Board	PNC		(WF32840)(X6013C0)		
*	390	WE853700	Circuit Board	EN		(WF32840)(X6013C0)		
*	400	WE816800	Circuit Board	MICVR		(WE81600)(X6042C0)		
	420	--	Connector Assembly	USB-LF 5P-600		(WG27700)		
	420a	V3122900	Data Line Filter	K1 NFT-13BK2				06
	420a	VD947800	Data Line Filter					05
	430	--	Connector Assembly	PNL-PWR 6P-450		(WE84600)		
	440	--	Connector Assembly	PNLR 11P-500		(WE84650)		
*	450	WF512600	Connector Assembly	EBUSP-LF 7P-400				
	450a	VK107900	Connector Assembly	KRD-KRD 7P-400				05
	450b	V3122900	Data Line Filter	K1 NFT-13BK2				06
	450b	VD947800	Data Line Filter	ESD-R-25D-B				05
	450c	CB069250	Cord Holder	BK-1				01
	450c	VV558400	Cord Binder	AZ-100				01
*	470	WF002100	PW Head Tapping Screw-B	3.0X12 MFZN2W3			3	
	480	WE774300	Bind Head Tapping Screw-B	3.0X8 MFZN2W3			91	01
	490	--	Dust Proof Cloth	F-2		(V929030)	2	
	500	VN195400	Adhesive Tape	12X70				03
	510	--	Connector Assembly	VOL 11P-700		(WE84680)		
	520	--	Connector Assembly	PSW 2P-500		(WE84690)		
⚠	520a	VC843500	Push Switch	SDDLB1 J.U.C.S.VD		POWER ON/OFF		03
	520b	V5800800	Switch Cover	IVORY,BLACK				01
	540	--	Lock Plate Cover			(WF30640)		
	580	--	Protect Sheet C	C		(WF33530)		
	590	--	Protect Sheet L	L		(WF33540)		
*	620	WE998100	Bind Head Tapping Screw-B	3.0X12 MFZN2B3		SONG(I,II,III,IV,V,VI),	18	
*	650	WF299100	Panel Button			STYLE (POP&ROCK,LATIN SWING&JAZZ,ENTERTAINER, BALLAD,R&B,BALLROOM, WORLD,DANCE,COUNTRY, MOVIE&SHOW,FILE ACCESS), VOICE (PIANO,STRINGS, TRUMPET,GUITAR,ACCORDION, ORGAN,FLUTE,E.PIANO,CHOIR, SAXOPHONE,BASS,PAD, CUSTOM,VOICE,OGRAN, BRASS,FLUTECLARINET, SYNTH,PERC./DRUM KIT USER DRIVE)	6	

＊: New part **（新規部品）**

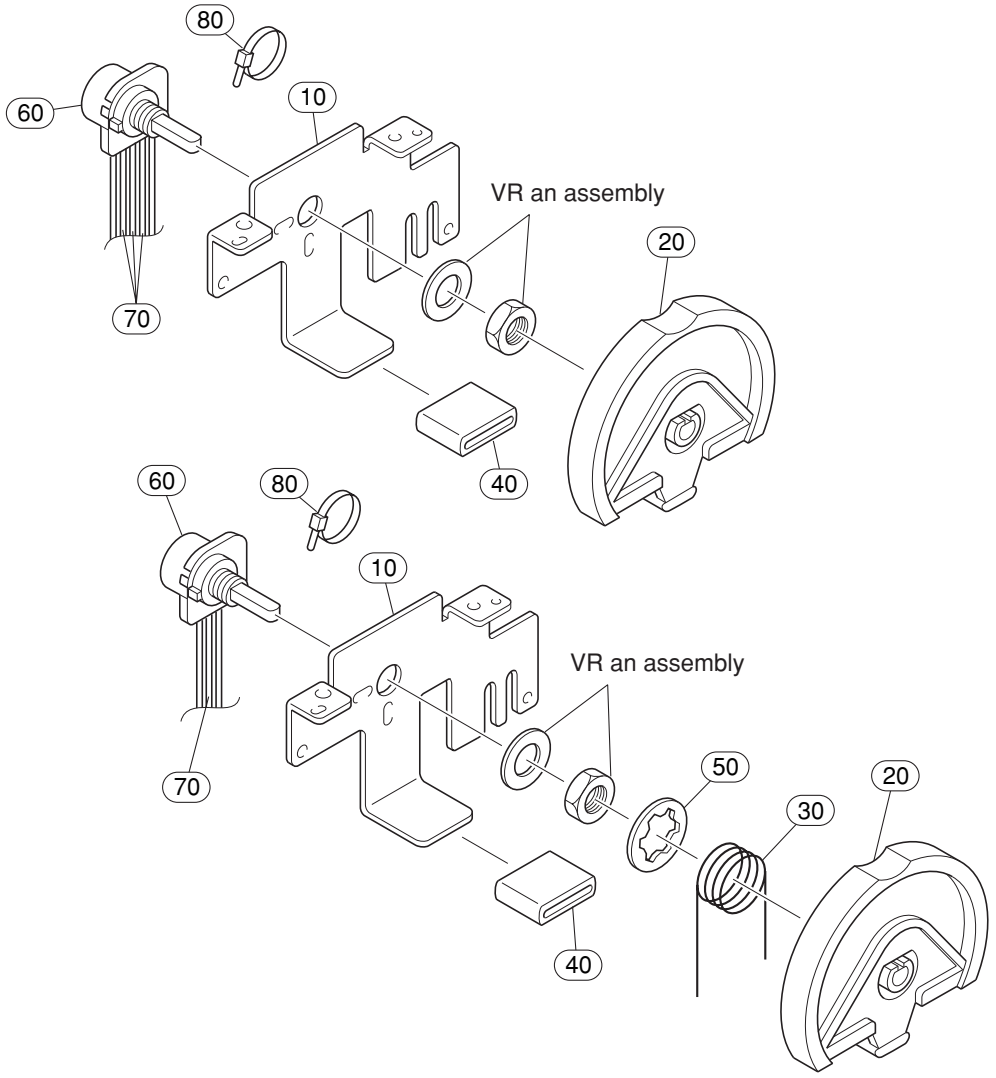
RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*	660	**WF273400**	Panel Button			MIC/LINE IN(MIC SETTING VOCAL HARMONY,TALK, EFFECT,VH TYPE SELECT) SONG CONTROL (LYRICS/ TEXT,SCORE,GUIDE,P.A.T.,	7	
						SP1,SP2,SP3,SP4,LOOP, REC STOP,PLAYPAUSE, REW,FF) DEMO,FADE IN/OUT METRONOME ON/OFF		
						TEMPO(-,+), TRANSPOSE(-,+), MULTI PAD CONTROL (STOP SELECT) MENU (DIGITAL RECORDING FUNCTION,VOICE CREATOR)		
						HARD DISK RECORDER(REC STOP,PLAY/PAUSE,PREV NEXT,SELECT,SETTING) VOICE EFFECT(SUSTAIN HARMONY/ECHO,MOMO,DSP		
						INITIAL TOUCH DSP VARIATION)		
*	670	**WF274200**	Panel Button			OTS LINK,AUTO FILL IN REGIST BANK(-,+), FREEZE,MEMORY	7	
						PART ON/OFF(LEFT HOLD)		
*	680	**WF275200**	Panel Button			TAP TEMPO,ENTER	2	
*	690	**WF274500**	Panel Button			UP(1-8),DOWN(1-8)		
*	700	**WF275000**	Panel Button			BALANCE,MIXING CONSOLE CHANNEL ON/OFF		
	740	**--**	Vibration-proof Sheet	L R		(WE80340)		
	750	**--**	Vibration-proof Sheet	U R		(WE80350)		
	760	**--**	Vibration-proof Sheet	C		(WE80380)		
	770	**--**	Vibration-proof Sheet	L		(WE80430)		
	780	**--**	Vibration-proof Sheet	S		(WE81120)		
	790	**--**	Vibration-proof Sheet	SS		(WE81130)		
	800	**--**	Panel Holder			(WE80660)	6	
	810	**CB817510**	Cord Binder	S-14B-E			13	03
	830	**--**	Vibration-proof Form	25X15		(WA52230)		
	840	**--**	Protect Sheet R	R		(WF53970)		
	870	**--**	Wiring Assembly EPSS3			(WG26490)		
	880	**--**	Wiring Assembly EPLS2			(WG26460)		
	890	**--**	Wiring Assembly EPLS1			(WG26450)		
*	900	**WG168900**	FFC Cable	23P-140 (PNR-PNC)				
	910	**--**	Damper Sheet BN Set			(WG29310)		
	920	**--**	Nonwoben Fablic Cloth	40X9X0.35		(WG40900)	8	

＊: New parts **（新規部品）**

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■ WHEEL ASSEMBLY

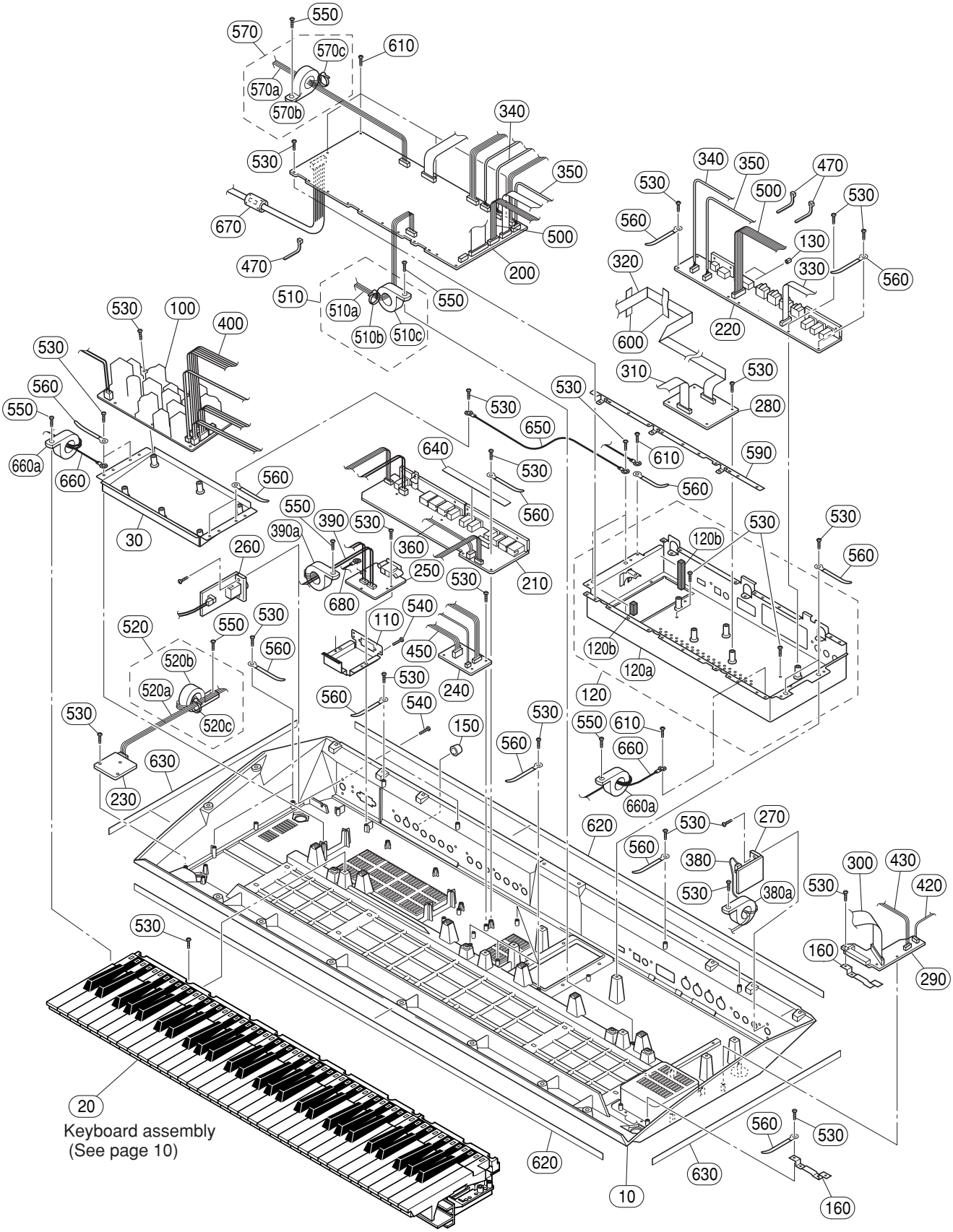


REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		WHEEL ASSEMBLY			TYROS2		
	--	Wheel Assembly			(WF33840)		
10	**VF536800**	Frame				2	02
20	**V4579900**	Wheel			PITCH BEND,MODULATION	2	04
30	**VC792800**	Spring					01
40	**CB819020**	Wheel Tube				2	04
50	**EW600110**	Stop Ring	12.0				01
60	**VT695100**	Rotary Variable Resistor	SP.10 RK1631110TJN		PITCH BEND,MODULATION	2	03
70	--	Connector Assembly	WHEEL 4P-170		(WE84700)		
80	**CB069250**	Cord Holder	BK-1			2	01

＊: New part **（新規部品）**

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■ LOWER CASE ASSEMBLY

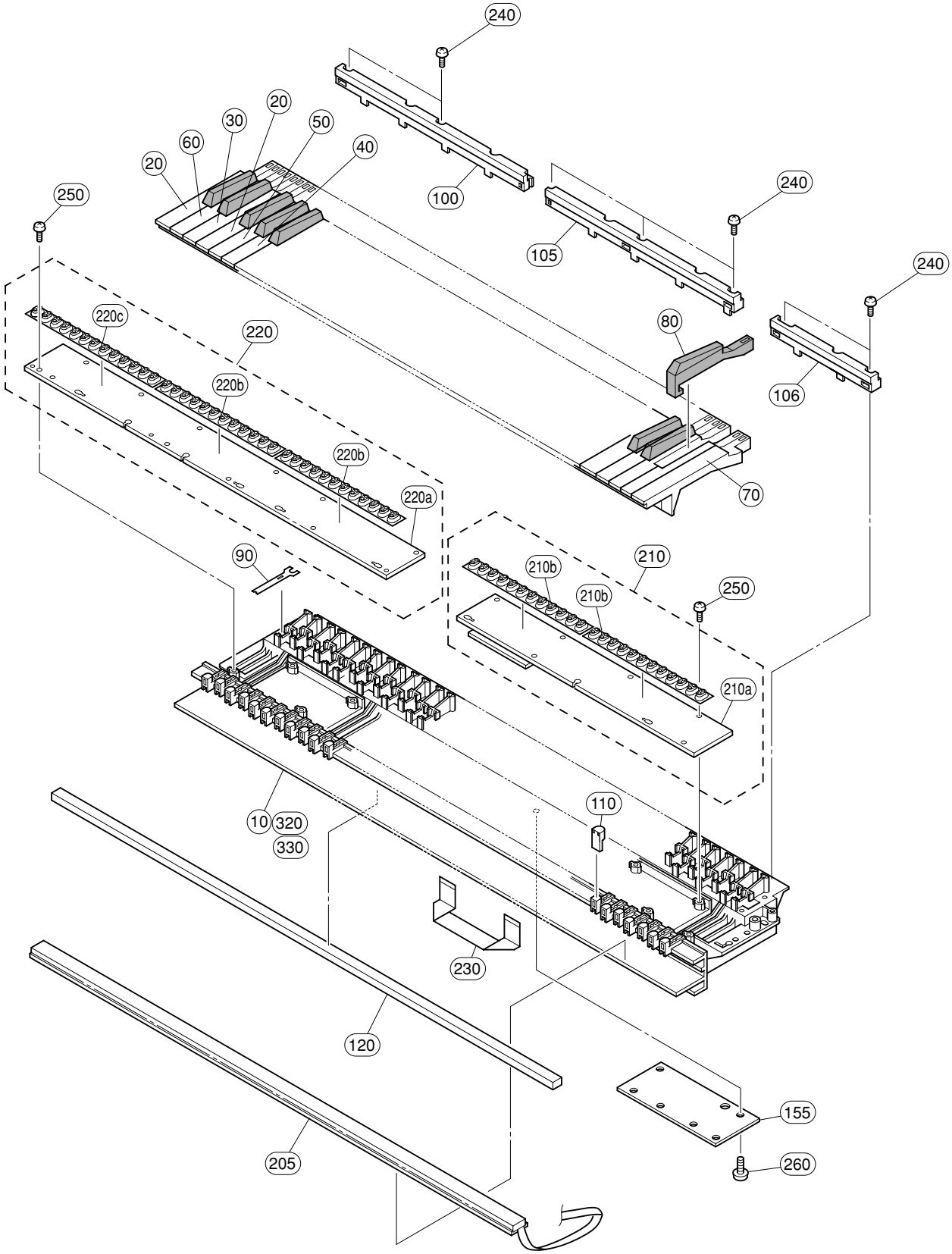


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			LOWER CASE ASSEMBLY			TYROS2		
		--	Lower Case Assembly			(WE47100)		
*	10	**WE479300**	Lower Case					
*	20	**WD534900**	Keyboard Assembly	FSX D C61 K6				
	30	--	AC Lower Frame Assembly			(WE48160)		
⚠	100	**WB501300**	Power Supply Unit					22
	110	--	Inlet Upper Box			(WF33010)		
	120	--	Shield Lower Cover			(WE47960)		
	120a	--	Shield Lower Cover			(WE48010)		
	120b	--	Adhesive Tape	ECT #590S W=15		(ZL35000)		
	130	**V6706600**	Hex. Locking Screw	HFS-4S-B1W			2	01
	150	**V2300100**	Knob			LINE IN/MIC(TRIM)		04
	160	--	HDD Stay			(WE80650)	2	
*	200	**WE843700**	Circuit Board	DM		(X6533D0)		
*	210	**WE815800**	Circuit Board	AJK		(WF32870)(X6041C0)		
*	220	**WE816100**	Circuit Board	DJK		(WE81600)(X6042C0)		
*	230	**WE816300**	Circuit Board	HP		(WE81600)(X6042C0)		
*	240	**WF468300**	Circuit Board	CK		(WE81600)(X6042C0)		
*	250	**WE816500**	Circuit Board	INLET		(WE81600)(X6042C0)		
*	260	**WE816600**	Circuit Board	SPOL		(WE81600)(X6042C0)		
*	270	**WE816700**	Circuit Board	SPOR		(WE81600)(X6042C0)		
*	280	**WE854300**	Circuit Board	DAC2A		(WE85420)(X5175C0)		
*	290	**WE817200**	Circuit Board	HDSB		(WF46820)(X6800B0)		
*	300	**WF761200**	Connector Assembly	FFC1 40P-180				
*	310	**WE844400**	FFC Cable	26P-70 (DAC)				
*	320	**WE844500**	FFC Cable	24P-550 (AJK)				
*	330	**WE844600**	FFC Cable	17P-150 (DJK)				
	340	--	USB Cable	5P-400 (R-TO DEVICE)		(WE84520)		
	350	--	USB Cable	6P-350 (R-TO HOST)		(WE84530)		
	360	--	Connector Assembly	AJK-PWR 3P-130		(WE84540)		
	380	--	Connector Assembly	SPR 3P-1500		(WE84560)		
	380a	**V3122900**	Data Line Filter	K1 NTF-13BK2				06
	380a	**VD947800**	Data Line Filter	ESD-R-25D-B				05
	390	--	Connector Assembly	INLET 4,2P-290		(WE84570)		
	390a	**V3122900**	Data Line Filter	K1 NTF-13BK2				06
	390a	**VD947800**	Data Line Filter	ESD-R-25D-B				05
*	400	**WE845800**	Connector Assembly	DM-PWR1 7P-370				
	420	--	Connector Assembly	REG-PWR 2P-900		(WE84610)		
	430	--	Connector Assembly	USB-PWR 4P-160		(WE84620)		
	450	--	Connector Assembly	CK-PWR 5P-130		(WF50110)		
	470	**CB069250**	Cord Holder	BK-1			3	01
	500	--	Connector Assembly	VIDEO 12P-300		(WE84670)		
	510	--	Connector Assembly	EBUSK-LF 7P-550		(WF51230)		
	510a	**VK112300**	Connector Assembly	KRD-KRD 7P-550				03
	510b	**V3122900**	Data Line Filter	K1 NFT-13BK2				06
	510b	**VD947800**	Data Line Filter	ESD-R-25D-B				05
	510c	**CB069250**	Cord Holder	BK-1				01
	510c	**VV558400**	Cord Binder	AZ-100				01
	520	--	Connector Assembly	HP-LF 6P-600		(WF51240)		
	520a	**VK115100**	Connector Assembly	KRD-KRD 6P-600				05
	520b	**V3122900**	Data Line Filter	K1 NFT-13BK2				06
	520b	**VD947800**	Data Line Filter	ESD-R-25D-B				05
	520c	**CB069250**	Cord Holder	BK-1				01
	520c	**VV558400**	Cord Binder	AZ-100				01
	530	**WE774300**	Bind Head Tapping Screw-B	3.0X8 MFZN2W3			53	01
	540	**WE774400**	Bind Head Tapping Screw-B	3.0X8 MFZN2B3			23	01
	550	**WF002100**	PW Head Tapping Screw-B	3.0X12 MFZN2W3			6	01
	560	**CB817510**	Cord Binder	S-14B-E			25	03
	570	--	Connector Assembly	JKDET-LF 5P-550		(WF51250)		
	570a	**VK113500**	Connector Assembly	KRD-KRD 5P-550				03
	570b	**V3122900**	Data Line Filter	K1 NFT-13BK2				06
	570b	**VD947800**	Data Line Filter	ESD-R-25D-B				05
	570c	**CB069250**	Cord Holder	BK-1				01
	570c	**VV558400**	Cord Binder	AZ-100				01
	590	--	GND Sheet	GND		(WF57530)		
	600	**VN195400**	Filament Tape	12X70			2	03
	610	**WE983600**	Bind Head Machine Screw	3.0X8 MFZN2B3			6	
	620	--	Cushion 1			(WG21760)	2	
	630	--	Cushion 2			(WG21770)	2	
	640	--	Damper Sheet JACK			(WG22740)		
	650	--	Wiring Assembly EPSS2			(WG26480)		
	660	--	Wiring Assembly EPPH1			(WG26500)	2	
	660a	**V3122900**	Data Line Filter	K1 NFT-13BK2				06
	660a	**VD947800**	Data Line Filter	ESD-R-25D-B				05
	670	**VV910300**	Ferrite Core	ZCAT2035-0930A				05
	680	--	Wiring Assembly EPLS2			(WG26460)		

＊: New part **（新規部品）**

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■ KEYBOARD ASSEMBLY

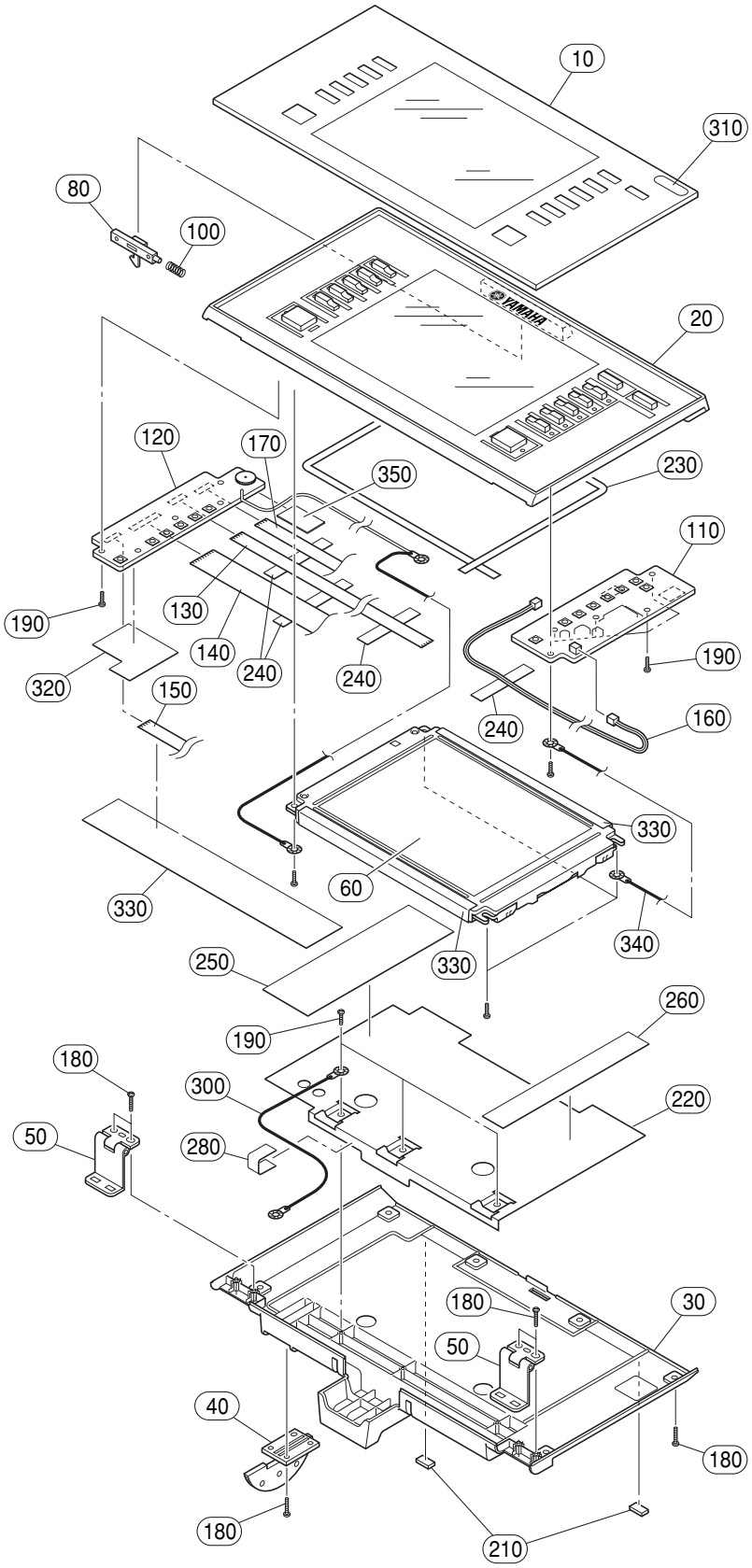


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			KEYBOARD ASSEMBLY			TYROS2		
*		**WD534900**	Keyboard Assembly	FSX D C61 K6				
	10	**--**	MK Frame			(WD80950)		
	20	**WB166800**	White Key Assembly	C,F			10	03
	30	**WB166900**	White Key Assembly	B,E			10	03
	40	**WB167000**	White Key Assembly	A			5	03
	50	**WB167100**	White Key Assembly	G			5	03
	60	**WB167200**	White Key Assembly	D			5	03
	70	**WB167300**	White Key Assembly	C'		C6		03
	80	**WB167400**	Black Key Assembly				25	03
	90	**WB167600**	Key Spring				61	01
	100	**WC436600**	Key Stopper L					03
	105	**WC436700**	Key Stopper H					03
*	106	**WD804200**	Key Stopper	FSX 61				
	110	**WB171100**	Key Guide Cap				61	01
*	120	**WD804500**	Stopper U	C61				
	155	**--**	Frame Holder			(WB18860)		
	205	**V3438000**	PC Sensor	YMHM-016				10
	210	**--**	MKH-D Assembly			(WD80060)		
*	210a	**WD801000**	Circuit Board	MKH-D		(WD78570)(X6579B0)		
	210b	**WB168800**	Rubber Contact	12KEY 2M		C4#-C5,C5#-C6	2	04
	220	**--**	MK61K Assembly	FSV-X		(WD53540)		
*	220a	**WD800100**	Circuit Board	MK61L		(WD80020)(X6578C0)		
	220b	**WB168800**	Rubber Contact	12KEY 2M		C2#-C3,C3#-C4	2	04
	220c	**WB168900**	Rubber Contact	13KEY 2M		C1-C2		04
*	230	**WF127500**	Cable	RELAY 23P				
*	240	**WE983200**	Bind Head Tapping Screw-P	3.0X16 MFZN2B3			7	
	250	**WF266600**	Bind Head Tapping Screw-P	3.0X8 MFZN2B3			26	01
*	260	**WE974400**	Bind Head Tapping Screw-P	4.0X12 MFZN2W3			7	
	320	**--**	Grease	G-1030Y		(WC77150)		
	330	**--**	Grease	HP-500		(WG23930)		

＊: New part **（新規部品）**

RANK : Japan only

■ LCD PANEL ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			LCD PANEL ASSEMBLY			TYROS2		
*		**WE478900**	LCD Panel Assembly					
*	10	**WE479000**	LCD Cover					
*	20	**WE479100**	LCD Upper Case					
*	30	**WE479200**	LCD Lower Case					
	40	**V9135400**	Gear					01
	50	**--**	Hinge			(WF30620)	2	
*	60	**WB911901**	LCD	MC75T03B				
	80	**--**	LCD Hook Holder			(WF25560)		
	100	**V9288200**	Return Spring					
*	110	**WE817800**	Circuit Board	LCR		(WE81760)(X6232C0)		
*	120	**WE817700**	Circuit Board	LCL		(WE81760)(X6232C0)		
*	130	**WE844800**	FFC Cable	9P-260 (LCLR)				
*	140	**WF761300**	Wiring Assembly FFC2	30P-950 (LCD-B)				
*	150	**WG168600**	FFC Cable	20P-120(LCD)				
	160	**--**	Connector Assembly	LC-PWR 5P-2P,3P		(WE84640)		
*	170	**WE844700**	FFC Cable	8P-550 (PNL-LCL)				
*	180	**WE998100**	Bind Head Tapping Screw-B	3.0X12 MFZN2B3			16	
	190	**WE774300**	Bind Head Tapping Screw-B	3.0X8 MFZN2W3			17	01
	210	**V9348100**	Foot	T2.0			2	01
	220	**--**	LCD Support Stay			(WF30650)		
	230	**--**	Dust Proof Cloth	LEX F-2		(V942430)		
	240	**--**	Adhesive Tape	FILAMENT 12X70		(VN19540)	4	
	250	**--**	Insulation Firm L	L		(V942440)		
	260	**--**	Insulation Firm R	R		(V942450)		
	280	**VA126100**	Adhesive Tape	12X50				03
	300	**--**	Wiring Assembly EPC1			(WG26440)		
	310	**--**	Label,LCD			(V218020)		
	320	**--**	LCD Sheet Assembly			(WG25320)		
	330	**--**	EL Adhesive Tape	25X20m		(V409520)		
	340	**--**	Wiring Assembly EPSS1			(WG26470)		
	350	**--**	Adhesive Tape	ECT W=15		(ZL35000)		

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■ ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			ELECTRICAL PARTS			TYROS2		
*		**WE815800**	Circuit Board	AJK		(WF32870)(X6041C0)		
*		**WE854300**	Circuit Board	DAC2A		(WE85420)(X5175C0)		
*		**WE816100**	Circuit Board	DJK		(WE81600)(X6042C0)		
*		**WF468300**	Circuit Board	CK		(WE81600)(X6042C0)		
*		**WE816300**	Circuit Board	HP		(WE81600)(X6042C0)		
*		**WE816500**	Circuit Board	INLET		(WE81600)(X6042C0)		
*		**WE816800**	Circuit Board	MICVR		(WE81600)(X6042C0)		
*		**WE816600**	Circuit Board	SPOL		(WE81600)(X6042C0)		
*		**WE816700**	Circuit Board	SPOR		(WE81600)(X6042C0)		
*		**WE843700**	Circuit Board	DM		(X6533D0)		
*		**WE817200**	Circuit Board	HDSB		(WF46820)(X6800B0)		
*		**WE817700**	Circuit Board	LCL		(WE81760)(X6232C0)		
*		**WE817800**	Circuit Board	LCR		(WE81760)(X6232C0)		
*		**WD800100**	Circuit Board	MK61L		(WD80020)(X6578C0)		
*		**WD801000**	Circuit Board	MKH-D		(WD78570)(X6579B0)		
		--	Circuit Board	EMKS-FD		(WE62270)(WE62310) (X6577A0)		
*		**AAX70980**	Circuit Board	PNC,EN		(WF32840)(X6013C0)		
		--	Circuit Board	PNC		(WF32840)(WE81590) (X6013C0)		
		--	Circuit Board	EN		(WF32840)(WE85370) (X6013C0)		
*		**WE816900**	Circuit Board	PNL		(X6014D0)		
*		**WE817400**	Circuit Board	PNR		(WE81730)(X6015C0)		
*		**WE817500**	Circuit Board	USB		(WE81730)(X6015C0)		
*		**WE815800**	Circuit Board	AJK		(WF32870)(X6041C0)		
	10	**--**	AML Jack Angle			(WE80690)		
	20	**--**	AMR Jack Angle			(WE81090)		
	C1	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	C2	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	C3	**UR839330**	Electrolytic Cap.	3300 16.0V RX TP				01
	C4	**UR838100**	Electrolytic Cap.	100.00 16.0V RX TP				01
	C10	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
*	C12	**VB639800**	Electric Capacitor	1.0 50.0V				
*	C12	**WA670400**	Electrolytic Cap.	1.0 50V				
	C17	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.				01
*	C18	**VB639800**	Electric Capacitor	1.0 50.0V				
	C20	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
*	C22	**VB639800**	Electric Capacitor	1.0 50.0V				
*	C22	**WA670400**	Electrolytic Cap.	1.0 50V				
	C27	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.				01
*	C28	**VB639800**	Electric Capacitor	1.0 50.0V				
*	C30	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C31	**US061270**	Ceramic Capacitor-CH(chip)	27P 50V J RECT.				01
*	C32	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C33	**VS490700**	Electric Capacitor	47.0 16.0V TP				01
*	C33	**WA668400**	Electrolytic Cap.	47.0 16V				
*	C40	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C41	**US061270**	Ceramic Capacitor-CH(chip)	27P 50V J RECT.				01
*	C42	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C49	**US063220**	Ceramic Capacitor-B (chip)	2200P 50V K RECT.				01
*	C50	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C51	**US061470**	Ceramic Capacitor-CH(chip)	47P 50V J RECT.				01
*	C52	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C53	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
*	C54	**VB640100**	Electric Capacitor	22.0 16.0V				
*	C54	**WA668200**	Electrolytic Cap.	22.0 16V				
	C55	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
*	C56	**WA668500**	Electrolytic Cap.	100.0 16V				
	C59	**US063220**	Ceramic Capacitor-B (chip)	2200P 50V K RECT.				01
*	C60	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C61	**US061470**	Ceramic Capacitor-CH(chip)	47P 50V J RECT.				01
*	C62	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C63	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
*	C70	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V				
	C71	**US062120**	Ceramic Capacitor-SL(chip)	120P 50V J RECT.				01
	C72	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	C73	**UN848100**	Electrolytic Cap.-BP	100.00 25.0V RX TP				01

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	REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	C80	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
	C81	**US062120**	Ceramic Capacitor-SL(chip)	120P 50V J RECT.			01
	C82	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C83	**UN848100**	Electrolytic Cap.-BP	100.00 25.0V RX TP			01
	C90	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C91	**UR865330**	Electrolytic Cap.	0.33 50.0V RX TP			
	C92	**UR848220**	Electrolytic Cap.	220.00 25.0V RX TP			01
	C93	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
*	C110	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
	C111	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.			01
	C112	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C113	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
	C114	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
*	C115	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
*	C120	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
	C121	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.			01
	C122	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C123	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
	C124	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
*	C125	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
*	C130	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
	C131	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.			01
	C132	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C133	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
*	C140	**VB639700**	Electrolytic Cap.-BP	4.7 25.0V			
	C141	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.			01
	C142	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C143	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
	C150	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
	C152	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C160	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.			01
	C162	**VB639900**	Electric Capacitor	4.7 50.0V			01
	C201	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C202	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C217	**VS490700**	Electric Capacitor	47.0 16.0V TP	}		01
*	C217	**WA668400**	Electric Capacitor	47.0 16V	}		
	C227	**VS490700**	Electric Capacitor	47.0 16.0V TP	}		01
*	C227	**WA668400**	Electric Capacitor	47.0 16V	}		
	C300	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
*	C301	**VB639800**	Electric Capacitor	1.0 50.0V	}		
*	C301	**WA670400**	Electrolytic Cap.	1.0 50V	}		
*	C302	**VB639800**	Electric Capacitor	1.0 50.0V	}		
*	C302	**WA670400**	Electrolytic Cap.	1.0 50V	}		
*	C303	**VB640100**	Electric Capacitor	22.0 16.0V	}		
*	C303	**WA668200**	Electrolytic Cap.	22.0 16V	}		
	C304	**UR865470**	Electrolytic Cap.	0.47 50.0V RX TP			01
	C305	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C401	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C402	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C501	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C502	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C601	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C602	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C701	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C702	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C801	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C802	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	CN1	**VZ479500**	Connector , FFC	52806 24P TE			01
	CN2	**LB932030**	Base Post Connector	VH 3P TE			01
	CN3	**VB390700**	Connector Base Post	PH 11P TE			01
	CN5	**LB932030**	Base Post Connector	VH 3P TE			01
	CN6	**VB390200**	Connector Base Post	PH 6P TE			01
	CN7	**VB390100**	Connector Base Post	PH 5P TE			01
	D1	**VR496500**	Diode	MA111 FLAT TP	}		
	D1	**VT332900**	Diode	1SS355 TE-17 TP	}		01
	D2	**VR496500**	Diode	MA111 FLAT TP	}		
	D2	**VT332900**	Diode	1SS355 TE-17 TP	}		01
	D3	**VR496500**	Diode	MA111 FLAT TP	}		
	D3	**VT332900**	Diode	1SS355 TE-17 TP	}		01
	D4	**VR496500**	Diode	MA111 FLAT TP	}		

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
D4	**VT332900**	Diode	1SS355 TE-17 TP				01
D5	**VR496500**	Diode	MA111 FLAT TP				
D5	**VT332900**	Diode	1SS355 TE-17 TP				01
D6	**VR496500**	Diode	MA111 FLAT TP				
D6	**VT332900**	Diode	1SS355 TE-17 TP				01
D7	**VR496500**	Diode	MA111 FLAT TP				
D7	**VT332900**	Diode	1SS355 TE-17 TP				01
D8	**VR496500**	Diode	MA111 FLAT TP				
D8	**VT332900**	Diode	1SS355 TE-17 TP				01
D9	**VR496500**	Diode	MA111 FLAT TP				
D9	**VT332900**	Diode	1SS355 TE-17 TP				01
D10	**VR496500**	Diode	MA111 FLAT TP				
D10	**VT332900**	Diode	1SS355 TE-17 TP				01
D11	**VR496500**	Diode	MA111 FLAT TP				
D11	**VT332900**	Diode	1SS355 TE-17 TP				01
D12	**VR496500**	Diode	MA111 FLAT TP				
D12	**VT332900**	Diode	1SS355 TE-17 TP				01
D21	**VR496500**	Diode	MA111 FLAT TP				
D21	**VT332900**	Diode	1SS355 TE-17 TP				01
D22	**VR496500**	Diode	MA111 FLAT TP				
D22	**VT332900**	Diode	1SS355 TE-17 TP				01
EM1	**VI243100**	LC Filter	DSS6NB32A271Q93A				01
-6	**VI243100**	LC Filter	DSS6NB32A271Q93A				01
FT3	**IE102620**	FET	2SK246 Y TP				01
FT4	**IE102620**	FET	2SK246 Y TP				01
IC2	**X2331A00**	IC	NJM4580E(TE2)OPAMP		OP AMP		01
IC3	**XE470A00**	IC	M51132L		VCA		04
IC4	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
IC5	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
IC6	**XT131A00**	IC	LA6517M		OP AMP		04
IC7	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
IC8	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
JK1	**LB101870**	Phone Jack	JACK YKB21-5006		LINE IN/MIC(L/L+R/MIC)		03
JK2	**LB101870**	Phone Jack	JACK YKB21-5006		LINE IN/MIC(R)		03
JK3	**VB312600**	Phone Jack	JACK YKB21-5012		TO SUB WOOFER(L)		02
JK5	**VV881000**	Mini Jack	CMS5008-0101		TO SUB WOOFER(R)		05
JK6	**LB101870**	Phone Jack	JACK YKB21-5006		AUX OUT/LOOP SEND(L/L+R)		03
JK7	**VB312600**	Phone Jack	JACK YKB21-5012		AUX OUT/LOOP SEND(R)		02
JK8	**VB312600**	Phone Jack	JACK YKB21-5012		AUX IN/LOOP RETURN(L/L+R)		02
JK9	**LB101870**	Phone Jack	JACK YKB21-5006		AUX IN/LOOP RETURN(R)		03
JK10	**VC687500**	Phone Jack	JACK YKB21-5014		LINE OUT MAIN(L/L+R)		01
JK11	**VB312600**	Phone Jack	JACK YKB21-5012		LINE OUT MAIN(R)		02
JK12	**LB101870**	Phone Jack	JACK YKB21-5006		LINE OUT SUB(1)		03
JK13	**LB101870**	Phone Jack	JACK YKB21-5006		LINE OUT SUB(2)		03
L3	**VY657200**	Chip Inductance	600 BK1608HM601				01
-8	**VY657200**	Chip Inductance	600 BK1608HM601				01
L10	**VY657200**	Chip Inductance	600 BK1608HM601				01
-14	**VY657200**	Chip Inductance	600 BK1608HM601				01
L15	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L16	**VY657200**	Chip Inductance	600 BK1608HM601				01
-19	**VY657200**	Chip Inductance	600 BK1608HM601				01
L20	**VF456600**	Coil	SBT-0180W RX				03
L22	**VF456600**	Coil	SBT-0180W RX				03
L24	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L25	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L27	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L28	**VY657200**	Chip Inductance	600 BK1608HM601				01
-30	**VY657200**	Chip Inductance	600 BK1608HM601				01
L31	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L32	**VY657200**	Chip Inductance	600 BK1608HM601				01
L33	**VY657200**	Chip Inductance	600 BK1608HM601				01
L34	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L35	**VY657200**	Chip Inductance	600 BK1608HM601				01
L36	**--**	Jumper Wire	0.55 TIN		(VA07890)		
L37	**--**	Jumper Wire	0.55 TIN		(VA07890)		
L40	**VF456600**	Coil	SBT-0180W RX				03
-47	**VF456600**	Coil	SBT-0180W RX				03
L49	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
-51	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
L54	**--**	Jumper Wire	0.55 TIN		(VA07890)		

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
L55	--	Jumper Wire	0.55 TIN		(VA07890)		
L57	VQ724900	Chip Inductance	BK2125HM601-T				01
L58	GE300670	Ferrite Bead	BL02RN2-R62T4				02
L59	VQ724900	Chip Inductance	BK2125HM601-T				01
L60	VQ724900	Chip Inductance	BK2125HM601-T				01
L61	GE300670	Ferrite Bead	BL02RN2-R62T4				02
L62	VB835000	Coil	FL5R200QNT RX TP				01
-64	VB835000	Coil	FL5R200QNT RX TP				01
R10	RD357470	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R11	RD357220	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R12	RD350000	Carbon Resistor (chip)	0 63M J RECT.				01
R13	RD350000	Carbon Resistor (chip)	0 63M J RECT.				01
R17	RD355220	Carbon Resistor (chip)	220.0 63M J RECT.				01
R20	RD357470	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R21	RD357220	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R22	RD350000	Carbon Resistor (chip)	0 63M J RECT.				01
R23	RD350000	Carbon Resistor (chip)	0 63M J RECT.				01
R27	RD355220	Carbon Resistor (chip)	220.0 63M J RECT.				01
R30	RD357330	Carbon Resistor (chip)	33.0K 63M J RECT.				01
R31	RD357820	Carbon Resistor (chip)	82.0K 63M J RECT.				01
R32	RD358560	Carbon Resistor (chip)	560.0K 63M J RECT.				01
R33	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R34	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R35	RD357820	Carbon Resistor (chip)	82.0K 63M J RECT.				01
R36	RD355100	Carbon Resistor (chip)	100.0 63M J RECT.				01
R37	RD357270	Carbon Resistor (chip)	27.0K 63M J RECT.				01
R38	RD357470	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R39	RD356470	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R40	RD357330	Carbon Resistor (chip)	33.0K 63M J RECT.				01
R41	RD357820	Carbon Resistor (chip)	82.0K 63M J RECT.				01
R42	RD358560	Carbon Resistor (chip)	560.0K 63M J RECT.				01
R43	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R44	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R45	RD357820	Carbon Resistor (chip)	82.0K 63M J RECT.				01
R46	RD355100	Carbon Resistor (chip)	100.0 63M J RECT.				01
R47	RD358560	Carbon Resistor (chip)	560.0K 63M J RECT.				01
R50	RD357150	Carbon Resistor (chip)	15.0K 63M J RECT.				01
R51	RD357270	Carbon Resistor (chip)	27.0K 63M J RECT.				01
R52	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R53	RD355330	Carbon Resistor (chip)	330.0 63M J RECT.				01
R54	RD356220	Carbon Resistor (chip)	2.2K 63M J RECT.				01
R55	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R56	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R57	RD356470	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R58	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R59	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R60	RD357150	Carbon Resistor (chip)	15.0K 63M J RECT.				01
R61	RD357270	Carbon Resistor (chip)	27.0K 63M J RECT.				01
R62	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R63	RD355330	Carbon Resistor (chip)	330.0 63M J RECT.				01
R64	RD356220	Carbon Resistor (chip)	2.2K 63M J RECT.				01
R65	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R66	RD355150	Carbon Resistor (chip)	150.0 63M J RECT.				01
R67	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R68	RD357120	Carbon Resistor (chip)	12.0K 63M J RECT.				01
R70	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R71	RD357180	Carbon Resistor (chip)	18.0K 63M J RECT.				01
R72	RD354330	Carbon Resistor (chip)	33.0 63M J RECT.				01
R73	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R74	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
-76	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R77	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R78	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R80	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R81	RD357180	Carbon Resistor (chip)	18.0K 63M J RECT.				01
R82	RD354330	Carbon Resistor (chip)	33.0 63M J RECT.				01
R83	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R84	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R85	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R86	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R90	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R91	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.				01
R92	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R93	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R94	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R95	**RD355150**	Carbon Resistor (chip)	150.0 63M J RECT.				01
R96	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R97	**RD355470**	Carbon Resistor (chip)	470.0 63M J RECT.				01
R98	**RD355470**	Carbon Resistor (chip)	470.0 63M J RECT.				01
R99	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.				01
R100	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.				01
R110	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R111	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R112	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R113	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R114	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R115	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R120	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R121	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R122	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R123	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R124	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R125	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R130	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R131	**RD357180**	Carbon Resistor (chip)	18.0K 63M J RECT.				01
R132	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R133	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R134	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R135	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R140	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R141	**RD357180**	Carbon Resistor (chip)	18.0K 63M J RECT.				01
R142	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R143	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R144	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R145	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R150	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R151	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R152	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R153	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R160	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R161	**RD355680**	Carbon Resistor (chip)	680.0 63M J RECT.				01
R162	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R163	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R211	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R212	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R221	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R222	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R231	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R241	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R260	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R270	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R301	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R302	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R303	**RD357330**	Carbon Resistor (chip)	33.0K 63M J RECT.				01
R304	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R310	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R320	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R351	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R352	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R361	**RD150000**	Carbon Resistor (chip)	0.0 1/4 J TP				01
R362	**RD150000**	Carbon Resistor (chip)	0.0 1/4 J TP				01
R365	**RD150000**	Carbon Resistor (chip)	0.0 1/4 J TP				01
R366	**RD150000**	Carbon Resistor (chip)	0.0 1/4 J TP				01
RY1	**V8245600**	Relay	DC ATXD203		}		04
RY1	**WB751900**	Relay	DC EC2-12NU-F		}		03
TR1	**VV556400**	Transistor	2412K Q,R,S TP		}		01
TR1	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/		}		
TR2	**VV556400**	Transistor	2412K Q,R,S TP		}		01
TR2	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/		}		
TR3	**VV556400**	Transistor	2412K Q,R,S TP		}		01

＊: New parts **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	TR3	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/				
	TR4	**VV556400**	Transistor	2412K Q,R,S TP				01
	TR4	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/				
	TR5	**VD303700**	Transistor	2SC2SC3326 -A,B(TE				01
	TR6	**VD303700**	Transistor	2SC2SC3326 -A,B(TE				01
	TR7	**VV556400**	Transistor	2412K Q,R,S TP				01
	TR7	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/				
	TR8	**VJ927200**	Transistor	2SA1162-Y(TE85R,F)				01
	TR8	**WC529500**	Transistor	KTA1504S-Y,GR-RTK/				
	TR9	**VV556400**	Transistor	2SC2412K Q,R,S TP				01
	TR10	**VV556400**	Transistor	2SC2412K Q,R,S TP				01
	TR11	**VD303700**	Transistor	2SC2SC3326 -A,B(TE				01
	-16	**VD303700**	Transistor	2SC2SC3326 -A,B(TE				01
	TR17	**VJ927200**	Transistor	2SA1162 O,Y _				01
*	VR1	**WG139000**	Rotary Variable Resistor	A 50.0K RK12L12A-F		LINE IN/MIC(TRIM)		
	VR2	**VV049200**	Rotary Variable Resistor	B 10K RK09K12A		AUX IN/LOOP RETURN(TRIM)		03
	W1	**--**	Connector Assembly	SPL 2P-250		(WE84550)		
	W2	**--**	Wiring Assembly EPA2			(WG23510)		
	W3	**--**	Wiring Assembly EP70			(WG23490)		
	W4	**--**	Wiring Assembly EPA1			(WG23500)		
	W6	**--**	Wiring Assembly EPA3			(WG23520)		
	ZD1	**VU172800**	Zener Diode	UDZS12B TE-17 12V				01
*		**WE854300**	Circuit Board	DAC2A		(WE85420)(X5175C0)		
	C101	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C102	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
	C103	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C104	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C105	**UF046470**	Electrolytic Cap. (chip)	4.7 25V UWX1E4				01
	C106	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C107	**UF138220**	Electrolytic Cap. (chip)	220 16V UUR1C2				01
	C108	**UF138220**	Electrolytic Cap. (chip)	220 16V UUR1C2				01
	C109	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C110	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C201	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	C202	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C203	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C204	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C205	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C206	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C207	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C208	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C209	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	-213	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C214	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C215	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C216	**US062180**	Ceramic Capacitor-SL(chip)	180P 50V J RECT.				01
	-219	**US062180**	Ceramic Capacitor-SL(chip)	180P 50V J RECT.				01
	C224	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C225	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C301	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	C302	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C303	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C304	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C305	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C306	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C307	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C308	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C309	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	-313	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C314	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C315	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C316	**US062180**	Ceramic Capacitor-SL(chip)	180P 50V J RECT.				01
	-319	**US062180**	Ceramic Capacitor-SL(chip)	180P 50V J RECT.				01
	C320	**UF046470**	Electrolytic Cap. (chip)	4.7 25V UWX1E4				01
	C321	**UF046470**	Electrolytic Cap. (chip)	4.7 25V UWX1E4				01
	C322	**US063820**	Ceramic Capacitor-B (chip)	8200P 50V K RECT.				01
	C323	**US063820**	Ceramic Capacitor-B (chip)	8200P 50V K RECT.				01
	C324	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C325	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01

＊: New part **（新規部品）**

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C401	**UF066220**	Electrolytic Cap. (chip)	2.2 50V UWX1H2				01
C402	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C405	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C406	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C407	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C408	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C409	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
C410	**UF266100**	Electrolytic Cap.-BP (chip	1.0 50V UWP				01
C411	**UF266100**	Electrolytic Cap.-BP (chip	1.0 50V UWP				01
C412	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C413	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.				01
C414	**US061560**	Ceramic Capacitor-CH(chip)	56P 50V J RECT.				01
C415	**US062330**	Ceramic Capacitor-SL(chip)	330P 50V J RECT.				01
C416	**US062330**	Ceramic Capacitor-SL(chip)	330P 50V J RECT.				01
C417	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
C418	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
C419	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
C420	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
C421	**UF046470**	Electrolytic Cap. (chip)	4.7 25V UWX1E4				01
C422	**UF046470**	Electrolytic Cap. (chip)	4.7 25V UWX1E4				01
C423	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
C424	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
C425	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
C426	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
C427	**UF266100**	Electrolytic Cap.-BP (chip	1.0 50V UWP				01
C428	**UF266100**	Electrolytic Cap.-BP (chip	1.0 50V UWP				01
C429	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C430	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C431	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
-433	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C434	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C801	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C802	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
C803	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C804	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C805	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
CN101	**V6478900**	Connector , FFC/FPC	52808 26P TE				01
CN801	**V9028300**	Connector , FFC/FPC	52808 24P TE				02
D101	**VS201100**	Diode	D1F60 1A 600V TP				01
D102	**VS201100**	Diode	D1F60 1A 600V TP				01
D401	**VV925900**	Diode	RLS-73 TE-11 TP				01
-404	**VV925900**	Diode	RLS-73 TE-11 TP				01
IC101	**X5826A00**	IC	UPC2905AT-E1-AZ		REGULATOR +5.0V		03
IC102	**XZ642A00**	IC	TAR5S33		REGULATOR +3.3V		
IC201	**XW029A00**	IC	AK4393VF-E2		D/A CONVERTER		07
IC202	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
IC301	**XW029A00**	IC	AK4393VF-E2		D/A CONVERTER		07
IC302	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
IC401	**X5219A00**	IC	AK5381VT-E2		A/D CONVERTER		05
IC402	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
-404	**XF291A00**	IC	UPC4570G2-T1-A		OP AMP		03
J102	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-104	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
J106	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
J107	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
L801	**V3063400**	Chip Inductance	BLM18BD601SN1D				01
-813	**V3063400**	Chip Inductance	BLM18BD601SN1D				01
R103	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R104	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R106	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.				01
R107	**RD357330**	Carbon Resistor (chip)	33.0K 63M J RECT.				01
R108	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R109	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R110	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R111	**WD075500**	Carbon Resistor (chip)	6.8 1/8W J				
-114	**WD075500**	Carbon Resistor (chip)	6.8 1/8W J				
R115	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R201	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.				01
-204	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.				01
R205	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.				01

＊: New parts **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	-207	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.			01
	R208	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R209	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R210	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.			01
	R211	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R212	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R219	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.			01
	R220	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.			01
	R221	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	R301	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.			01
	-304	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.			01
	R305	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.			01
	-307	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.			01
	R308	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R309	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R310	**RD357120**	Carbon Resistor (chip)	12.0K 63M J RECT.			01
	R311	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R312	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R313	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.			01
	R314	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.			01
	R315	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.			01
	R316	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.			01
	R317	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.			01
	R318	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.			01
	R321	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	R401	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.			01
	R402	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.			01
	R403	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.			01
	R404	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.			01
	-409	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.			01
	R410	**RD357330**	Carbon Resistor (chip)	33.0K 63M J RECT.			01
	R411	**RD357330**	Carbon Resistor (chip)	33.0K 63M J RECT.			01
	R412	**RD357820**	Carbon Resistor (chip)	82.0K 63M J RECT.			01
	R413	**RD357820**	Carbon Resistor (chip)	82.0K 63M J RECT.			01
	R414	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.			01
	R415	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.			01
	R416	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.			01
	R417	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.			01
	R418	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.			01
	R419	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.			01
	R420	**RD356330**	Carbon Resistor (chip)	3.3K 63M J RECT.			01
	R421	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R422	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.			01
	R424	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.			01
	R426	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	R427	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	R428	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	R801	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.			01
	-803	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.			01
	R804	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.			01
	R805	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.			01
	TR101	**VV556400**	Transistor	2412K Q,R,S TP	}		01
	TR101	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/	}		
	TR801	**VV556400**	Transistor	2412K Q,R,S TP	}		01
	TR801	**WC529400**	Transistor	KTC3875S-Y,GR-RTK/	}		
*		**WE816100**	Circuit Board	DJK	(WE81600)(X6042C0)		
*		**WF468300**	Circuit Board	CK	(WE81600)(X6042C0)		
*		**WE816300**	Circuit Board	HP	(WE81600)(X6042C0)		
*		**WE816500**	Circuit Board	INLET	(WE81600)(X6042C0)		
*		**WE816800**	Circuit Board	MICVR	(WE81600)(X6042C0)		
*		**WE816600**	Circuit Board	SPOL	(WE81600)(X6042C0)		
*		**WE816700**	Circuit Board	SPOR	(WE81600)(X6042C0)		
		--	Jumper Wire	0.55 TIN	(VA07890)		
	10	**--**	Holder, SP Jack		(WE81080)	2	
	20	**--**	Holder, DML Jack		(WE81100)		
	30	**--**	Holder, DMR Jack		(WE81110)		
	40	**WE774400**	Bind Head Tapping Screw-B	3.0X8 MFZN2B3			01
	C13	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP			01
	C14	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.			01

＊: New part **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	C23	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C24	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
	C33	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C34	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
	C40	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C43	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C50	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C53	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C60	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C61	**UR818100**	Electrolytic Cap.	100.00 6.3V RX TP				01
	C71	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C86	**FG613100**	Ceramic Capacitor-B	1000P 50V K RX TP				01
	C87	**UR838220**	Electrolytic Cap.	220.00 16.0V RX TP				01
	C91	**WB476900**	Electrolytic Capacitor-ZL	470.00 16.0V RX TP				01
	C92	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C95	**WB476900**	Electrolytic Capacitor-ZL	470.00 16.0V RX TP				01
	C96	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C98	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C99	**WB476900**	Electrolytic Capacitor-ZL	470.00 16.0V RX TP				01
	C102	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C103	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C104	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
	C105	**US062220**	Ceramic Capacitor-SL(chip)	220P 50V J RECT.				01
	C200	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C201	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
⚠	C300	**VY675000**	Capacitor	0.010 250V J.U.C.S				01
	C901	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
*	CN10	**V7687000**	FFC Connector	52806 17P TE				
	CN60	**VB390100**	Connector Base Post	PH 5P TE				01
	CN61	**WA245700**	USB Connector	YKF45 4P SE		USB(TO DEVICE)		02
	CN70	**VB390200**	Connector Base Post	PH 6P TE				01
	CN71	**V6802600**	Jack, USB	USB 4P SE		USB(TO HOST)		02
	CN80	**VB390800**	Connector Base Post	PH 12P TE				01
	CN81	**V6706500**	D-SUB Connector	KH 15P SE		RGB OUT		05
	CN90	**LB932050**	Base Post Connector	VH 5P TE				01
	CN91	**LB918060**	Base Post Connector	XH 6P TE				01
	CN92	**VB390100**	Connector Base Post	PH 5P TE				01
	CN100	**VB858500**	Connector Base Post	PH 6P SE				01
	CN200	**VB389600**	Connector Base Post	PH 11P SE				01
	CN300	**VZ365900**	Base Post Connector	VA 2P TE				01
	CN301	**VT807100**	Base Post Connector	VH B2P4 2P TE				01
	CN302	**LB933030**	Base Post Connector	VH 3P SE				01
	CN303	**LB933020**	Base Post Connector	VH 2P SE				01
	D4	**VB941200**	Diode	1SS133,1SS176 TE-				01
	D5	**VB941200**	Diode	1SS133,1SS176 TE-				01
	D10	**VR496500**	Diode	MA111 FLAT TP				
	D10	**VT332900**	Diode	1SS355 TE-17 TP				01
	D12	**VR496500**	Diode	MA111 FLAT TP				
	D12	**VT332900**	Diode	1SS355 TE-17 TP				01
	D14	**VR496500**	Diode	MA111 FLAT TP				
	D14	**VT332900**	Diode	1SS355 TE-17 TP				01
	D16	**VR496500**	Diode	MA111 FLAT TP				
	D16	**VT332900**	Diode	1SS355 TE-17 TP				01
	D17	**VR496500**	Diode	MA111 FLAT TP				
	D17	**VT332900**	Diode	1SS355 TE-17 TP				01
	D18	**VR496500**	Diode	MA111 FLAT TP				
	D18	**VT332900**	Diode	1SS355 TE-17 TP				01
	EM11	**VI243100**	LC Filter	DSS6NB32A271Q93A				01
	EM12	**VI243100**	LC Filter	DSS6NB32A271Q93A				01
⚠	F300	**VT942800**	Fuse	TH 2.00A S				01
⚠	F300	**WD018400**	Fuse	TH 2.00A S				01
⚠	FZ300	**WC050700**	Fuse Clip	CLIP EYF52BCY			2	01
	IC40	**VD473200**	Photo Coupler	6N137				05
	IC50	**VD473200**	Photo Coupler	6N137				05
	J300	**--**	Jumper Wire	0.55 TIN		(VA07890)		
	-303	**--**	Jumper Wire	0.55 TIN		(VA07890)		
	JK5	**VJ885500**	DIN Connector	JACK3P YKF51-5054N		MIDI A(IN,OUT)		04
	JK10	**VS115400**	Phone Jack	LGR4609-7100F		ASSIGNABLE FOOT PEDAL(1)		01
	JK20	**VS115400**	Phone Jack	LGR4609-7100F		ASSIGNABLE FOOT PEDAL(2)		01
	JK30	**VS115400**	Phone Jack	LGR4609-7100F		ASSIGNABLE FOOT PEDAL(3)		01

＊: New parts **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	JK40	**VJ885500**	DIN Connector	JACK3P YKF51-5054N		MIDI B(IN,OUT)		04
	JK82	**VI311100**	Pin Jack	YKC21-3017N		VIDEO OUT(NTSC/PAL)		01
	JK101	**LB101870**	Phone Jack	JACK YKB21-5006		PHONES		03
⚠	JK300	**VZ071000**	Inlet	CCT2302-0382F		AC INLET		02
	JK301	**VB312600**	Phone Jack	JACK YKB21-5012		TO LEFT SPEAKER		02
	JK302	**VB312600**	Phone Jack	JACK YKB21-5012		TO RIGHT SPEAKER		02
	L11	**VB835000**	Coil	FL5R200QNT RX TP				01
	L12	**VF456600**	Coil	SBT-0180W RX				03
	L13	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-20	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L21	**VB835000**	Coil	FL5R200QNT RX TP				01
	L22	**VF456600**	Coil	SBT-0180W RX				03
	L23	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-25	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L26	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	L31	**VB835000**	Coil	FL5R200QNT RX TP				01
	L32	**VF456600**	Coil	SBT-0180W RX				03
	L40	**VB835000**	Coil	FL5R200QNT RX TP				01
	L41	**VF456600**	Coil	SBT-0180W RX				03
	L42	**VF456600**	Coil	SBT-0180W RX				03
	L50	**VB835000**	Coil	FL5R200QNT RX TP				01
	L51	**VF456600**	Coil	SBT-0180W RX				03
	L52	**VF456600**	Coil	SBT-0180W RX				03
	L60	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	L70	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	L83	**VF456600**	Coil	SBT-0180W RX				03
	L101	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	-105	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	R11	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R12	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R13	**HF756100**	Carbon Resistor	1.0K 1/4 J AX TP				01
	R14	**HF757100**	Carbon Resistor	10.0K 1/4 J AX TP				01
	R21	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R22	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R23	**HF756100**	Carbon Resistor	1.0K 1/4 J AX TP				01
	R24	**HF757100**	Carbon Resistor	10.0K 1/4 J AX TP				01
	R31	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R32	**HF755100**	Carbon Resistor	100.0 1/4 J AX TP				01
	R33	**HF756100**	Carbon Resistor	1.0K 1/4 J AX TP				01
	R34	**HF757100**	Carbon Resistor	10.0K 1/4 J AX TP				01
	R41	**HF755220**	Carbon Resistor	220.0 1/4 J AX TP				01
	-43	**HF755220**	Carbon Resistor	220.0 1/4 J AX TP				01
	R44	**HF756150**	Carbon Resistor	1.5K 1/4 J AX TP				01
	R45	**HF757220**	Carbon Resistor	22.0K 1/4 J AX TP				01
	R46	**HF757220**	Carbon Resistor	22.0K 1/4 J AX TP				01
	R47	**HF756100**	Carbon Resistor	1.0K 1/4 J AX TP				01
	R51	**HF755220**	Carbon Resistor	220.0 1/4 J AX TP				01
	-53	**HF755220**	Carbon Resistor	220.0 1/4 J AX TP				01
	R54	**HF756150**	Carbon Resistor	1.5K 1/4 J AX TP				01
	R55	**HF757220**	Carbon Resistor	22.0K 1/4 J AX TP				01
	R56	**HF757220**	Carbon Resistor	22.0K 1/4 J AX TP				01
	R57	**HF756100**	Carbon Resistor	1.0K 1/4 J AX TP				01
	R101	**V9638900**	Carbon Resistor	68.0 1/2 J				01
	R102	**V9638900**	Carbon Resistor	68.0 1/2 J				01
	R200	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	TR41	**IC174020**	Transistor	2SC1740S R,S TP				01
	TR42	**IC174020**	Transistor	2SC1740S R,S TP				01
	TR51	**IC174020**	Transistor	2SC1740S R,S TP				01
	TR52	**IC174020**	Transistor	2SC1740S R,S TP				01
	VR200	**VJ789500**	Rotary Variable Resistor	B 10.0K RK09K113		INPUT VOLUME		01
	VR201	**VT683100**	Rotary Variable Resistor	A 10.0K RK14K12C		MASTER VOLUME		03
*		**WE843700**	Circuit Board	DM		(X6533D0)		
	C1	**UF038100**	Electrolytic Cap. (chip)	100 16V				01
	C2	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	-4	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	C5	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C6	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
	C7	**V9452200**	Electrolytic Cap. (chip)	150.00 4.0V REFLOW				03
	C8	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
-17	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C19	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C20	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-22	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C23	**UF038100**	Electrolytic Cap. (chip)	100 16V				01
C24	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C25	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-28	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C29	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C31	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C33	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C34	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C35	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C36	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-42	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C45	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C46	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C48	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C49	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C52	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C53	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C54	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-58	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C59	**US060500**	Ceramic Capacitor-CH(chip)	5P 50V C RECT.				01
C60	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C61	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C62	**US060500**	Ceramic Capacitor-CH(chip)	5P 50V C RECT.				01
C63	**V9452200**	Electrolytic Cap. (chip)	150.00 4.0V REFLOW				03
C64	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C65	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C68	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-70	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C72	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-74	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C75	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C76	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-78	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C79	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C80	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-83	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C86	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-89	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C92	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-96	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C107	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-109	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C110	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-112	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C114	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C115	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-124	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C126	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C127	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C128	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-130	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C131	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C132	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C133	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C134	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C137	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C139	**US061150**	Ceramic Capacitor-CH(chip)	15P 50V J RECT.				01
C140	**US061120**	Ceramic Capacitor-CH(chip)	12P 50V J RECT.				01
C141	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-143	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C147	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C149	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C150	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-154	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C156	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C163	**UF128470**	Electrolytic Cap. (chip)	470 10V UUR1A4				02

＊: New parts **（新規部品）**

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C164	**UF128470**	Electrolytic Cap. (chip)	470 10V UUR1A4				02
C168	**UF128470**	Electrolytic Cap. (chip)	470 10V UUR1A4				02
C169	**UF128470**	Electrolytic Cap. (chip)	470 10V UUR1A4				02
C184	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
-189	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
C194	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C198	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C199	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C200	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C202	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C203	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C204	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-206	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C207	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C208	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C211	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C212	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C213	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C219	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-221	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C222	**US061100**	Ceramic Capacitor-CH(chip)	10P 50V D RECT.				01
-229	**US061100**	Ceramic Capacitor-CH(chip)	10P 50V D RECT.				01
C231	**US061100**	Ceramic Capacitor-CH(chip)	10P 50V D RECT.				01
-233	**US061100**	Ceramic Capacitor-CH(chip)	10P 50V D RECT.				01
C235	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C236	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C263	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C273	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C274	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C279	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C280	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C292	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-294	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C295	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C296	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C300	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-302	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C303	**US061150**	Ceramic Capacitor-CH(chip)	15P 50V J RECT.				01
C304	**US061150**	Ceramic Capacitor-CH(chip)	15P 50V J RECT.				01
C305	**US061120**	Ceramic Capacitor-CH(chip)	12P 50V J RECT.				01
C306	**US061120**	Ceramic Capacitor-CH(chip)	12P 50V J RECT.				01
C307	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C308	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C309	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C310	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C311	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C312	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C313	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
C314	**US063150**	Ceramic Capacitor-B (chip)	1500P 50V K RECT.				01
C315	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-318	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C319	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C320	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-322	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C323	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C324	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-327	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C328	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C329	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C330	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C331	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C332	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-336	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C337	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C338	**US061470**	Ceramic Capacitor-CH(chip)	47P 50V J RECT.				01
C339	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-341	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C342	**US060500**	Ceramic Capacitor-CH(chip)	5P 50V C RECT.				01
C343	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C344	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01

＊: New part **（新規部品）**

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C345	**US061150**	Ceramic Capacitor-CH(chip)	15P 50V J RECT.				01
C346	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
C400	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C401	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C403	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C404	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C407	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C408	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-427	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C428	**V9452100**	Electrolytic Cap. (chip)	100.00 6.3V REFLOW				03
C429	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C430	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C431	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C432	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C433	**V9452100**	Electrolytic Cap. (chip)	100.00 6.3V REFLOW				03
C434	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C435	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-438	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C439	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C440	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C441	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C442	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C443	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C444	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C445	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C446	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C447	**V9454200**	Electrolytic Cap. (chip)	220.00 6.3V REFLOW				03
C448	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C449	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C450	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C451	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C452	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C453	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C454	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C455	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C456	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C457	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C458	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C459	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C460	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C461	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C462	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C463	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C464	**V9452100**	Electrolytic Cap. (chip)	100.00 6.3V REFLOW				03
C465	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C466	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C467	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C468	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C469	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C470	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C471	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C472	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C473	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C474	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C475	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C476	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C477	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C478	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C479	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C480	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C481	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C482	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C483	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C484	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C485	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C486	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C487	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C488	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C489	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C490	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C491	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C492	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-494	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C495	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C496	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C497	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C498	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C499	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C500	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C501	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C502	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C503	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C504	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C505	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C506	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C507	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C508	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C509	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C510	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C512	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C513	**US061180**	Ceramic Capacitor-CH(chip)	18P 50V J RECT.				01
C514	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				
C515	**V9452100**	Electrolytic Cap. (chip)	100.00 6.3V REFLOW				03
C516	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C517	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C518	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C519	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C520	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C521	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C522	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C523	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C524	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C525	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
C526	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C527	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C528	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C529	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C530	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C531	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C532	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C533	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C534	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C535	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C536	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C537	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C538	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C539	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C540	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C541	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C542	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C543	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C544	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C545	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C546	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C547	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C548	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C549	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C550	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C551	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C552	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
C553	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-565	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C566	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C567	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C568	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C569	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C570	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C571	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C572	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C573	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C574	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C575	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C576	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C577	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
C578	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C579	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C580	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C581	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C582	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C583	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C584	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C585	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C586	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C587	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C588	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C589	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C590	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C591	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C592	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C593	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C594	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C595	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C596	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C597	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C598	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C599	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C600	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C601	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C602	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C603	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C604	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
C605	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C606	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C607	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C608	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C609	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C610	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
C611	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C612	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
-614	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C618	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C619	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C620	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C621	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-626	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C643	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
-646	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
C657	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-665	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C666	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
-668	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C669	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-677	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C678	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
-680	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C681	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-685	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C686	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C687	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-689	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C690	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C691	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C692	**UF017220**	Electrolytic Cap. (chip)	22 6.3V				01
C693	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-700	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C701	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
-760	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01
C761	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C762	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
C763	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.				01

＊ : New parts **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	-766	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C767	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.			01
	C801	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	-870	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C872	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	-892	**US145100**	Ceramic Capacitor-F (chip)	0.1000 25V Z RECT.			01
	C901	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.			01
	C902	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.			01
	C903	**UF017470**	Electrolytic Cap. (chip)	47 6.3V			01
	C904	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.			01
	C907	**US135100**	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.			01
	C909	**US126100**	Ceramic Capacitor-F (chip)	1.0000 10V Z RECT.			01
	C912	**US126100**	Ceramic Capacitor-F (chip)	1.0000 10V Z RECT.			01
*	CN1	**WC199200**	Connector,FFC/FPC	52808 17P TE			
*	CN2	**WG139400**	Connector,FFC/FPC	FLT 30P TE			
	CN6	**VT389300**	Connector Base Post	PH 12P TE			02
	CN8	**VT388700**	Connector Base Post	PH 6P TE			01
	CN22	**V8429600**	Socket,DIMM	SX4EA-168S-1.27DSA			08
	CN23	**V8429600**	Socket,DIMM	SX4EA-168S-1.27DSA			08
	CN30	**VT388800**	Connector Base Post	PH 7P TE			
	CN31	**VT388800**	Connector Base Post	PH 7P TE			
	CN32	**WC199000**	Connector,FMN	FMN 40P TE			
	CN35	**VT388500**	Connector Base Post	PH 4P TE			01
	CN36	**LB932070**	Base Post Connector	VH 7P TE			01
	CN38	**VT388700**	Connector Base Post	PH 6P TE			01
	CN406	**V6478900**	Connector FFC/FPC	52808 26P TE			01
	CN407	**VT388600**	Connector Base Post	PH 5P TE			01
	CN901	**VT388600**	Connector Base Post	PH 5P TE			01
	CN902	**VT388600**	Connector Base Post	PH 5P TE			01
	D1	**VS201100**	Diode	D1F60 1A 600V TP			01
	D201	**VR496500**	Diode	MA111 FLAT TP			
	-204	**VR496500**	Diode	MA111 FLAT TP			
	D400	**VS201100**	Diode	D1F60 1A 600V TP			01
	-402	**VS201100**	Diode	D1F60 1A 600V TP			01
	D403	**VR496500**	Diode	MA111 FLAT TP			
	-408	**VR496500**	Diode	MA111 FLAT TP			
*	DA901	**WE297800**	Zener Diode	HZM6.2Z4MFA TR-E			
*	DA902	**WF468100**	Zener Diode	HZM6.2ZMWATR-E			
*	EM1	**WE945600**	EMI Filter (chip)	NFM21CC223R1H3D			
	EM2	**VZ144900**	EMI Filter (chip)	NFM21CC101U1H3D			01
*	EM9	**WE945600**	EMI Filter (chip)	NFM21CC223R1H3D			
*	EM10	**WE945600**	EMI Filter (chip)	NFM21CC223R1H3D			
*	EM901	**WE945600**	EMI Filter (chip)	NFM21CC223R1H3D			
*	EM902	**WE945600**	EMI Filter (chip)	NFM21CC223R1H3D			
	IC1	**IS003200**	IC	HD74LV32AFPEL-E	OR		01
	IC2	**X0609A00**	IC	LMS8117AMP-ADJ/NOP	REGULATOR(VARIABLE)		03
	IC3	**X4160A00**	IC	RN5VD29CA-TR-F	VOLTAGE DETECTOR		02
	IC4	**XV890B00**	IC	TC74VHC14FT(EL,K)	INVERTER		01
	IC5	**XV890B00**	IC	TC74VHC14FT(EL,K)	INVERTER		01
	IC6	**X2890B00**	IC	HD6417727F160CV	CPU		15
	IC9	**X3123A00**	IC	HD74LV126ATELL	TRANSCEIVER		01
	IC10	**XV890B00**	IC	TC74VHC14FT(EL,K)	INVERTER		01
*	IC11	**X6581D00**	IC	TC58FVM7B2ATG65	FLASH ROM 128M(MAIN PROG)		
	IC12	**X4696A00**	IC	TC58FVM6B2ATG65	FLASH ROM 64M(USER DATA)		18
*	IC13	**X6583100**	IC	MX23L12810TC-10G	MASK ROM 128M		
*	IC14	**X6582100**	IC	MX23L12810TC-10G	MASK ROM 128M		
	IC15	**X4943A00**	IC	W982516CH-75	SDRAM 256M		10
*	IC15	**X5987A00**	IC	NT5SV16M16BS-75B			
	IC16	**X4943A00**	IC	W982516CH-75	SDRAM 256M		10
*	IC16	**X5987A00**	IC	NT5SV16M16BS-75B			
	IC19	**XW148A00**	IC	HD74LVC245A	TRANSCEIVER		02
	-22	**XW148A00**	IC	HD74LVC245A	TRANSCEIVER		02
	IC23	**IS002100**	IC	HD74LV21AFPEL-E	AND		01
	IC25	**X2688A00**	IC	S1L52502F24J000	GATE ARRAY(DGA)		09
	IC26	**X2760B00**	IC	K4S641632H-UC75000	DRAM 64M		
	IC27	**XT744B00**	IC	TC74VHCT245AFT(E,K	TRANSCEIVER		02
	IC28	**XW148A00**	IC	HD74LVC245A	TRANSCEIVER		02
	IC29	**XW148A00**	IC	HD74LVC245A	TRANSCEIVER		02
	IC30	**XS963A00**	IC	HD74LVC138FPEL-E	DEMULTIPLEXER		02
	IC32	**XS048A00**	IC	HD74LVC139FPEL	DECODER		03

＊: New part **（新規部品）**

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	IC33	**XU720A00**	IC	HD74LVC08FPEL		AND		01
*	IC35	**X6584100**	IC	MX23L12810TC-10G		MASK ROM 128M		
	IC37	**IS027300**	IC	HD74LV273AFPEL-E		D FLIP-FLOP		02
*	IC42	**X6788A00**	IC	DS90LV011ATMF/NOPB		LVDS DRIVER		
	IC46	**XW148A00**	IC	HD74LVC245A		TRANSCEIVER		02
	IC49	**XV890B00**	IC	TC74VHC14FT(EL,K)		INVERTER		01
	IC51	**XZ878100**	IC	M38869M8A-112GPUO		CPU(EBUS HOST)		07
*	IC53	**X6046B00**	IC	LC4256V-75TN100 CP		CPLD(MEL)		
	IC54	**XU797A00**	IC	TC74VHC245FT BUFF		BUFFER		03
	IC55	**XR680A00**	IC	TC7SH08FU AND		AND		01
	IC56	**XW633A00**	IC	TC7SH32FU OR		OR		01
	IC300	**XQ805A00**	IC	TC7WU04FU		INVERTER		01
	IC301	**XQ805A00**	IC	TC7WU04FU		INVERTER		01
*	IC302	**X6356A00**	IC	YGV628-VZ		RGB CONTROLLER(AVDP7)		
*	IC303	**X6536A00**	IC	TC74ACT74FT(EL)		D FLIP-FLOP		
*	IC304	**X2360B00**	IC	K4S161622H-UC60000		SDRAM 16M		
*	IC305	**X6537A00**	IC	TC74ACT244FT(EL)		BUFFER		
	IC306	**X2314A00**	IC	MB3516APF-G-BND		COMPOSITE OUT		04
	IC400	**X0609A00**	IC	LMS8117AMP-ADJ/NOP		REGULATOR(VARIABLE)		03
	IC401	**XS963A00**	IC	HD74LVC138FPEL-E		DEMULTIPLEXER		02
	IC402	**X0609A00**	IC	LMS8117AMP-ADJ/NOP		REGULATOR(VARIABLE)		03
	IC403	**X0609A00**	IC	LMS8117AMP-ADJ/NOP		REGULATOR(VARIABLE)		03
	IC404	**--**	IC	T8F02TB-0102		TONE GENERATOR M(X0060A0)		
	IC405	**--**	IC	T8F02TB-0102		TONE GENERATOR S(X0060A0)		
	IC406	**X4195A00**	IC	S1L50553F21Y000		C-BUS GATE ARRAY(MCI)		05
	IC407	**X2687B00**	IC	HD6417709SHF200BV		SUB-CPU(SH3)		14
	IC408	**X0176B00**	IC	W9864G2EH-7		SDRAM		08
	IC409	**X0176B00**	IC	W9864G2EH-7		SDRAM		08
	IC410	**XV890B00**	IC	TC74VHC14FT(EL,K)		INVERTER		01
*	IC411	**X6693100**	IC	MR27T25603L-D85TM		MASK ROM 256M		
*	IC412	**X6694100**	IC	MR27T25603L-D86TM		MASK ROM 256M		
*	IC413	**X6695100**	IC	MR27T25603L-D87TM		MASK ROM 256M		
*	IC414	**X6696100**	IC	MR27T25603L-D88TM		MASK ROM 256M		
*	IC415	**X6697100**	IC	MR27T25603L-D89TM		MASK ROM 256M		
*	IC416	**X6698100**	IC	MR27T25603L-D90TM		MASK ROM 256M		
*	IC417	**X2360B00**	IC	K4S161622H-UC60000		SDRAM		
*	IC418	**X2360B00**	IC	K4S161622H-UC60000		SDRAM		
	IC419	**IS002100**	IC	HD74LV21AFPEL-E		AND		01
	IC420	**X0176B00**	IC	W9864G2EH-7		SDRAM		08
	IC421	**XW148A00**	IC	HD74LVC245A		TRANSCEIVER		02
	-424	**XW148A00**	IC	HD74LVC245A		TRANSCEIVER		02
	IC446	**X6588100**	IC	MR27V802F-0N1TPZ03		MASK ROM 8M		
	IC901	**X4704A00**	IC	TUSB2046BVF		USB-HUB		06
	IC904	**X4722A00**	IC	UPD16875G-E2-A		USB POWER SWITCH		05
	IC906	**X4722A00**	IC	UPD16875G-E2-A		USB POWER SWITCH		05
	L1	**VR579900**	Chip Inductance	BK2125HS601-T				01
	L3	**V5239100**	Common Mode Coil	DLP31SN121SL2L				03
	L5	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-10	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L13	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-23	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L44	**V8901200**	Chip Solid Inductance	BLM21PG221SN1D				01
	L45	**V8901200**	Chip Solid Inductance	BLM21PG221SN1D				01
	L51	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-58	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L60	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-62	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L306	**VR579900**	Chip Inductance	BK2125HS601-T				01
	L307	**VR579900**	Chip Inductance	BK2125HS601-T				01
	L401	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-403	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L405	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-414	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L416	**VY657200**	Chip Inductance	600 BK1608HM601				01
	-421	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L468	**V2747000**	Chip Inductance	BLM18PG600SN1				
	L469	**VY657200**	Chip Inductance	600 BK1608HM601				01
	L905	**V5239100**	Common Mode Coil	DLP31SN121SL2L				03
	L906	**V5239100**	Common Mode Coil	DLP31SN121SL2L				03
	R1	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R2	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R3	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R4	**VI194300**	Carbon Resistor (chip)	560.0 1/10 D RECT.				01
R5	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R6	**VI192300**	Carbon Resistor (chip)	82.0 1/10 D RECT.				01
R7	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R8	**VI193300**	Carbon Resistor (chip)	220.0 1/10 D RECT.				01
R9	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R11	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
-13	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R14	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R15	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.				01
R16	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.				01
R17	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
-20	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R21	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R24	**RD358470**	Carbon Resistor (chip)	470.0K 63M J RECT.				01
R25	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R27	**RD358470**	Carbon Resistor (chip)	470.0K 63M J RECT.				01
R28	**RD358470**	Carbon Resistor (chip)	470.0K 63M J RECT.				01
R30	**RD358470**	Carbon Resistor (chip)	470.0K 63M J RECT.				01
R32	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R33	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R34	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
-36	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R38	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R39	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R40	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R41	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R42	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R43	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R44	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R45	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-47	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R49	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R52	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R53	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R55	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R56	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R58	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R59	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R61	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R62	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
-64	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R65	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R68	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R69	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R70	**RD154270**	Carbon Resistor (chip)	27.0 1/4 J TP				01
R71	**RD154270**	Carbon Resistor (chip)	27.0 1/4 J TP				01
R72	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-74	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R75	**RD358100**	Carbon Resistor (chip)	100.0K 63M J RECT.				01
R76	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R79	**RD154270**	Carbon Resistor (chip)	27.0 1/4 J TP				01
R80	**RD154270**	Carbon Resistor (chip)	27.0 1/4 J TP				01
R82	**RD357150**	Carbon Resistor (chip)	15.0K 63M J RECT.				01
R83	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R85	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R86	**RD357150**	Carbon Resistor (chip)	15.0K 63M J RECT.				01
R88	**RD356150**	Carbon Resistor (chip)	1.5K 63M J RECT.				01
R90	**RD356150**	Carbon Resistor (chip)	1.5K 63M J RECT.				01
R91	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R93	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R94	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-98	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R99	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-101	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R102	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R104	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R109	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R110	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R112	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-116	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R117	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-119	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R120	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-124	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R125	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R142	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R146	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-152	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R153	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-155	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R156	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R157	**RD354100**	Carbon Resistor (chip)	10.0 63M J RECT.				01
R158	**RD354820**	Carbon Resistor (chip)	82.0 63M J RECT.				01
R159	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R161	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-165	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R166	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R169	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-172	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R173	**RD359100**	Carbon Resistor (chip)	1.0M 63M J RECT.				01
R174	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R175	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R185	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R186	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R191	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R198	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R201	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R202	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R203	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R207	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R208	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R209	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R210	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R211	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R212	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R213	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R214	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R215	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
R216	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-218	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R219	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R220	**RD356560**	Carbon Resistor (chip)	5.6K 63M J RECT.				01
R221	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R223	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R224	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
-226	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R227	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R229	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R234	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R235	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-237	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R246	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R247	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R248	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R249	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R250	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R254	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R255	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R257	**RD359100**	Carbon Resistor (chip)	1.0M 63M J RECT.				01
R259	**RD356560**	Carbon Resistor (chip)	5.6K 63M J RECT.				01
R262	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R263	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R264	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R265	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-271	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R272	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-274	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01

＊: New parts **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R286	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R290	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R292	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R297	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R298	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R299	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R300	**RD359100**	Carbon Resistor (chip)	1.0M 63M J RECT.				01
R301	**RD359100**	Carbon Resistor (chip)	1.0M 63M J RECT.				01
R302	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R303	**RD355330**	Carbon Resistor (chip)	330.0 63M J RECT.				01
R304	**RD355270**	Carbon Resistor (chip)	270.0 63M J RECT.				01
R305	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R308	**RF356680**	Carbon Resistor (chip)	6.8K D 1608				01
R309	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
-318	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R319	**RF354820**	Carbon Resistor (chip)	82.0 D 1608				01
R320	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
-326	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R330	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
-333	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R335	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
-347	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R348	**RF355100**	Carbon Resistor (chip)	100.0 D 1608				01
R349	**RF355100**	Carbon Resistor (chip)	100.0 D 1608				01
R350	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R351	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R352	**RF354820**	Carbon Resistor (chip)	82.0 D 1608				01
R353	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R354	**RD357470**	Carbon Resistor (chip)	47.0K 63M J RECT.				01
R355	**RD354750**	Carbon Resistor (chip)	75.0 63M J RECT.				01
-358	**RD354750**	Carbon Resistor (chip)	75.0 63M J RECT.				01
R359	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R360	**RD354750**	Carbon Resistor (chip)	75.0 63M J RECT.				01
-362	**RD354750**	Carbon Resistor (chip)	75.0 63M J RECT.				01
R363	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R372	**RD356220**	Carbon Resistor (chip)	2.2K 63M J RECT.				01
-374	**RD356220**	Carbon Resistor (chip)	2.2K 63M J RECT.				01
R376	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-380	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R381	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R382	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-384	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R388	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R392	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R393	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R394	**RD354100**	Carbon Resistor (chip)	10.0 63M J RECT.				01
R395	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R396	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R397	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R398	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R400	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R401	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R402	**RF354270**	Carbon Resistor (chip)	27.0 D 1608				01
R403	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R404	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R405	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R406	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R409	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R410	**RF354270**	Carbon Resistor (chip)	27.0 D 1608				01
R411	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R412	**RD354820**	Carbon Resistor (chip)	82.0 63M J RECT.				01
R413	**RD354820**	Carbon Resistor (chip)	82.0 63M J RECT.				01
R414	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R416	**RD354560**	Carbon Resistor (chip)	56.0 63M J RECT.				01
R417	**RD354560**	Carbon Resistor (chip)	56.0 63M J RECT.				01
R418	**RF354820**	Carbon Resistor (chip)	82.0 D 1608				01
R419	**RF355270**	Carbon Resistor (chip)	270.0 D 1608				01
R420	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-424	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R427	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R428	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R430	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R431	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R432	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R433	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R435	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R436	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-438	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R439	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R440	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R442	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R443	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R444	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-446	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R447	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R448	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-450	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R451	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R452	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R453	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R454	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R455	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R456	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R457	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R458	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R459	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R460	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R461	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R462	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R463	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R464	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R465	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R466	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R468	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R469	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R470	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R471	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R472	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R473	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R474	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R475	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R476	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-478	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R479	**RD355330**	Carbon Resistor (chip)	330.0 63M J RECT.				01
R480	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R481	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R482	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R483	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-485	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R486	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-489	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R490	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-493	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R494	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
-496	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
R497	**RD354180**	Carbon Resistor (chip)	18.0 63M J RECT.				01
R498	**RD354180**	Carbon Resistor (chip)	18.0 63M J RECT.				01
R499	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-501	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R502	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
-504	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
R505	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-509	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R510	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R511	**RD354270**	Carbon Resistor (chip)	27.0 63M J RECT.				01
R512	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R513	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R515	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-520	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R521	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01

＊: New parts **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
-523	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
R524	**RD354180**	Carbon Resistor (chip)	18.0 63M J RECT.				01
R525	**RD354180**	Carbon Resistor (chip)	18.0 63M J RECT.				01
R526	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-528	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R529	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R530	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
-532	**RD354390**	Carbon Resistor (chip)	39.0 63M J RECT.				01
R533	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R534	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R535	**RD354270**	Carbon Resistor (chip)	27.0 63M J RECT.				01
R536	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-538	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R539	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
-544	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R545	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R546	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R547	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-550	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R551	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R552	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R553	**RD355120**	Carbon Resistor (chip)	120.0 63M J RECT.				01
R554	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
R556	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-566	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R567	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R568	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R570	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
-575	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
R576	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
-581	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R600	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R601	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
R602	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
-617	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
R700	**RD357220**	Carbon Resistor (chip)	22.0K 63M J RECT.				01
R900	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R901	**RD356150**	Carbon Resistor (chip)	1.5K 63M J RECT.				01
R902	**RD356150**	Carbon Resistor (chip)	1.5K 63M J RECT.				01
R903	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-908	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R909	**RD354270**	Carbon Resistor (chip)	27.0 63M J RECT.				01
-912	**RD354270**	Carbon Resistor (chip)	27.0 63M J RECT.				01
R913	**RD357150**	Carbon Resistor (chip)	15.0K 63M J RECT.				01
-916	**RD357150**	Carbon Resistor (chip)	15.0K 63M J RECT.				01
R917	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-920	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R921	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-924	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
RA1	**RE044100**	Resistor Array	10X4				01
-8	**RE044100**	Resistor Array	10X4				01
RA9	**RE044470**	Resistor Array	47X4				01
-13	**RE044470**	Resistor Array	47X4				01
RA14	**RE044680**	Resistor Array	68X4				01
RA16	**RE044680**	Resistor Array	68X4				01
RA21	**RE044680**	Resistor Array	68X4				01
RA22	**RE044330**	Resistor Array	33X4				01
-32	**RE044330**	Resistor Array	33X4				01
RA36	**RE047470**	Resistor Array	47KX4				01
-41	**RE047470**	Resistor Array	47KX4				01
RA45	**RE047470**	Resistor Array	47KX4				01
-48	**RE047470**	Resistor Array	47KX4				01
RA49	**RE044330**	Resistor Array	33X4				01
-56	**RE044330**	Resistor Array	33X4				01
RA60	**RE047470**	Resistor Array	47KX4				01
-63	**RE047470**	Resistor Array	47KX4				01
RA64	**RE046330**	Resistor Array	3.3KX4				01
RA65	**RE044220**	Resistor Array	22X4				01
RA68	**RE044470**	Resistor Array	47X4				01
-72	**RE044470**	Resistor Array	47X4				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
RA81	**RE044680**	Resistor Array	68X4				01
-88	**RE044680**	Resistor Array	68X4				01
RA91	**RE045100**	Resistor Array	100X4				01
RA92	**RE045100**	Resistor Array	100X4				01
RA93	**RE047470**	Resistor Array	47KX4				01
RA94	**RE047470**	Resistor Array	47KX4				01
RA98	**RE044330**	Resistor Array	33X4				01
-102	**RE044330**	Resistor Array	33X4				01
RA104	**RE047100**	Resistor Array	10KX4				01
RA111	**RE044330**	Resistor Array	33X4				01
RA114	**RE044330**	Resistor Array	33X4				01
RA117	**RE044330**	Resistor Array	33X4				01
-122	**RE044330**	Resistor Array	33X4				01
RA201	**RE044330**	Resistor Array	33X4				01
-211	**RE044330**	Resistor Array	33X4				01
RA408	**RE047100**	Resistor Array	10KX4				01
RA409	**RE047100**	Resistor Array	10KX4				01
RA410	**RE048100**	Resistor Array	100KX4				01
RA411	**RE044680**	Resistor Array	68X4				01
RA412	**RE044680**	Resistor Array	68X4				01
RA413	**RE048100**	Resistor Array	100KX4				01
RA414	**RE044680**	Resistor Array	68X4				01
RA415	**RE044680**	Resistor Array	68X4				01
RA416	**RE048100**	Resistor Array	100KX4				01
RA417	**RE044680**	Resistor Array	68X4				01
RA418	**RE044680**	Resistor Array	68X4				01
RA419	**RE048100**	Resistor Array	100KX4				01
RA420	**RE044680**	Resistor Array	68X4				01
RA421	**RE044680**	Resistor Array	68X4				01
RA422	**RE048100**	Resistor Array	100KX4				01
RA423	**RE044680**	Resistor Array	68X4				01
RA425	**RE044680**	Resistor Array	68X4				01
RA430	**RE044470**	Resistor Array	47X4				01
-433	**RE044470**	Resistor Array	47X4				01
RA434	**RE046100**	Resistor Array	1KX4				01
RA435	**RE047100**	Resistor Array	10KX4				01
RA436	**RE047100**	Resistor Array	10KX4				01
RA442	**RE047100**	Resistor Array	10KX4				01
RA443	**RE044000**	Resistor Array (chip)	0X4				01
-446	**RE044000**	Resistor Array (chip)	0X4				01
RA447	**RE047100**	Resistor Array	10KX4				01
RA448	**RE047100**	Resistor Array	10KX4				01
RA457	**RE044000**	Resistor Array (chip)	0X4				01
-460	**RE044000**	Resistor Array (chip)	0X4				01
RA461	**RE044390**	Resistor Array	39X4				01
-470	**RE044390**	Resistor Array	39X4				01
RA472	**RE044330**	Resistor Array	33X4				01
-475	**RE044330**	Resistor Array	33X4				01
RA476	**RE044470**	Resistor Array	47X4				01
RA477	**RE044680**	Resistor Array	68X4				01
RA478	**RE044470**	Resistor Array	47X4				01
RA479	**RE044680**	Resistor Array	68X4				01
RA480	**RE044470**	Resistor Array	47X4				01
RA481	**RE044680**	Resistor Array	68X4				01
RA482	**RE044470**	Resistor Array	47X4				01
RA483	**RE044680**	Resistor Array	68X4				01
RA488	**RE044390**	Resistor Array	39X4				01
-497	**RE044390**	Resistor Array	39X4				01
RA498	**RE044470**	Resistor Array	47X4				01
RA499	**RE044470**	Resistor Array	47X4				01
RA500	**RE044470**	Resistor Array	47X4				01
-529	**RE044470**	Resistor Array	47X4				01
RA530	**RE044680**	Resistor Array	68X4				01
-533	**RE044680**	Resistor Array	68X4				01
RA534	**RE045100**	Resistor Array	100X4				01
-537	**RE045100**	Resistor Array	100X4				01
RA538	**RE044470**	Resistor Array	47X4				01
-541	**RE044470**	Resistor Array	47X4				01
* TA300	**V2731900**	Pair Transistor	IMX9				
X1	**WA244900**	Quartz Crystal Unit	48.000M DSO751SV				04

＊ : New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	X2	**VP864900**	Quartz Crystal Unit	16M SMD-49				04
	X5	**V3625600**	Quartz Crystal Unit	22.5792M SMD-49 TP				03
	X6	**VY681200**	Ceramic Resonator	CSTCC8M00G53-R0				01
*	X300	**WE945000**	Quartz Crystal Unit	25.175MHZ DSO751SV				
	X301	**V6074900**	Quartz Crystal Unit	17.734475MHZ30P				03
	X302	**V6074800**	Quartz Crystal Unit	14.31818MHZ30PP				03
	X400	**WB551700**	Quartz Crystal Unit	16.666M SMD-49 TE				03
	X901	**V4093500**	Quartz Crystal Unit	6M SMD-49				03
*		**WE817200**	Circuit Board	HDSB		(WF46820)(X6800B0)		
		WA626700	Pin Protector					
	C4	**WA458100**	Electrolytic Capacitor-PW	1000 25.0V TP				01
	C5	**VC694800**	Ceramic Semicon.Cap.	0.1000 25V Z RX TP				01
	C6	**FG644100**	Electrolytic Cap.	0.0100 50V Z RX TP				01
	C7	**VC694800**	Ceramic Semicon.Cap.	0.100 25V Z RX TP				01
	C8	**WA458100**	Electrolytic Capacitor-PW	1000 25.0V TP				01
	C9	**VC694800**	Ceramic Semicon.Cap.	0.1000 25V Z RX TP				01
	C10	**WA458100**	Electrolytic Capacitor-PW	1000 25.0V TP				01
	CN1	**LB918020**	Base Post Connector	XH 2P TE				01
	CN2	**VB390000**	Connector Base Post	PH 4P TE				01
*	CN4	**WE693800**	Pin Header Side	SFB203-2202A01 SE				
	CN5	**WB497000**	Connector , FFC	FMN 40P TE				
	D95	**V8107700**	Diode	RK46				
	EM1	**VI243100**	LC Filter	DSS6NB32A271Q93A				01
	IC1	**XT442A00**	IC	SI-8050S		SWITCHING REGULATOR +5V		05
	L1	**VZ060700**	Choke Coil	ELC15E221N				05
	W1	**--**	Wiring Assembly EP50			(WG23480)		
	W2	**--**	Wiring Assembly EP50			(WG23480)		
*		**WE817700**	Circuit Board	LCL		(WE81760)(X6232C0)		
*		**WE817800**	Circuit Board	LCR		(WE81760)(X6232C0)		
	C2	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C3	**UF038100**	Electrolytic Cap. (chip)	100 16V				01
	C4	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C5	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
*	C6	**WB488900**	Mylar Capacitor(Chip)	0.18 250V K				
*	C7	**WF078600**	Monolithic Ceramic Cap.	12P 3.15KV J KAKUT				
	C8	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C9	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C10	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C11	**US062100**	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C12	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C13	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C14	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C15	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C16	**US063100**	Ceramic Capacitor-B (chip)	1000P 50V K RECT.				01
	C17	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C18	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C19	**US061470**	Ceramic Capacitor-CH(chip)	47P 50V J RECT.				01
	-26	**US061470**	Ceramic Capacitor-CH(chip)	47P 50V J RECT.				01
	C27	**RD355150**	Carbon Film Resistor(chip)	150.0 63M J RECT.				01
*	CN1	**WG084400**	Connector , FFC/FPC	6212 30P SE				
*	CN2	**WF454900**	Connector , FFC/FPC	6210 20P SE				
	CN3	**V9006000**	Connector , FFC	52207 9P SE				03
	CN4	**VZ249200**	Connector	52207-0890 8PIN				02
	CN5	**V9006000**	Connector , FFC	52207 9P SE				03
	CN6	**WE260900**	Connector , BH	BH 2P SE				03
	CN7	**VT618800**	Connector Base Post	PH 2P SE				01
*	CN8	**V2915700**	Connector Base Post	S3B-PH-SM3-TB SE				
	D1	**VR496500**	Diode	MA111 FLAT TP				
	D1	**VT332900**	Diode	1SS355 TE-17 TP				01
	D2	**VR496500**	Diode	MA111 FLAT TP				
	D2	**VT332900**	Diode	1SS355 TE-17 TP				01
	D3	**VR496500**	Diode	MA111 FLAT TP				
	D3	**VT332900**	Diode	1SS355 TE-17 TP				01
	D4	**VR496500**	Diode	MA111 FLAT TP				
	D4	**VT332900**	Diode	1SS355 TE-17 TP				01
	D5	**VR496500**	Diode	MA111 FLAT TP				
	D5	**VT332900**	Diode	1SS355 TE-17 TP				01
	D6	**VR496500**	Diode	MA111 FLAT TP				

＊: New part **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	D6	**VT332900**	Diode	1SS355 TE-17 TP				01
	D7	**VR496500**	Diode	MA111 FLAT TP				
	D7	**VT332900**	Diode	1SS355 TE-17 TP				01
	D8	**VR496500**	Diode	MA111 FLAT TP				
	D8	**VT332900**	Diode	1SS355 TE-17 TP				01
	D9	**VR496500**	Diode	MA111 FLAT TP				
	D9	**VT332900**	Diode	1SS355 TE-17 TP				01
	D10	**VR496500**	Diode	MA111 FLAT TP				
	D10	**VT332900**	Diode	1SS355 TE-17 TP				01
	D11	**VR496500**	Diode	MA111 FLAT TP				
	D11	**VT332900**	Diode	1SS355 TE-17 TP				01
	D12	**VR496500**	Diode	MA111 FLAT TP				
	D12	**VT332900**	Diode	1SS355 TE-17 TP				01
	D13	**VR496500**	Diode	MA111 FLAT TP				
	D13	**VT332900**	Diode	1SS355 TE-17 TP				01
	D14	**VR496500**	Diode	MA111 FLAT TP				
	D14	**VT332900**	Diode	1SS355 TE-17 TP				01
	IC1	**X5475A00**	IC	NJM12904M(TE1)		OP AMP		02
*	IC2	**X6789A00**	IC	DS90LV012ATMF/NOPB		LVDS RECEIVER		
*	L1	**WB487300**	Coil	CDRH125-221 SMD				
	R1	**RD356560**	Carbon Resistor (chip)	5.6K 63M J RECT.				01
	R2	**VY657200**	Chip Inductance	600 BK1608HM601				01
	R3	**RD356470**	Carbon Resistor (chip)	4.7K 63M J RECT.				01
	R4	**RD156100**	Carbon Resistor (chip)	1.0K 1/4 J TP				
	R6	**RD150000**	Carbon Resistor (chip)	0.0 1/4 J TP				01
	R9	**RD356220**	Carbon Resistor (chip)	2.2K 63M J RECT.				01
	R10	**RD355220**	Carbon Resistor (chip)	220.0 63M J RECT.				01
	R11	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R12	**RD357270**	Carbon Resistor (chip)	27.0K 63M J RECT.				01
	R14	**RD355100**	Carbon Resistor (chip)	100.0 63M J RECT.				01
	R15	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	SW1	**V7446600**	Tact Switch	EVQQWS03W		A		01
	SW2	**V7446600**	Tact Switch	EVQQWS03W		B		01
	SW3	**V7446600**	Tact Switch	EVQQWS03W		C		01
	SW4	**V7446600**	Tact Switch	EVQQWS03W		D		01
	SW5	**V7446600**	Tact Switch	EVQQWS03W		E		01
	SW6	**V7446600**	Tact Switch	EVQQWS03W		DIRECT ACCESS		01
	SW7	**V7446600**	Tact Switch	EVQQWS03W		TAB(<)		01
	SW8	**V7446600**	Tact Switch	EVQQWS03W		TAB(>)		01
	SW9	**V7446600**	Tact Switch	EVQQWS03W		F		01
	SW10	**V7446600**	Tact Switch	EVQQWS03W		G		01
	SW11	**V7446600**	Tact Switch	EVQQWS03W		H		01
	SW12	**V7446600**	Tact Switch	EVQQWS03W		I		01
	SW13	**V7446600**	Tact Switch	EVQQWS03W		J		01
	SW14	**V7446600**	Tact Switch	EVQQWS03W		EXIT		01
*	T1	**WB487000**	Inverter Transformer	CEPH165				
*	TH1	**WF078700**	Thermistor (chip)	NCP18XW222J03RB 2.				
	TR1	**V9065800**	Transistor	2SC4672 T100 P,Q				01
	TR2	**V9065800**	Transistor	2SC4672 T100 P,Q				01
	VR1	**V8966200**	Rotary Variable Resistor	B 10K RK14J11A0A0Z		LCD CONTRAST		03
	W1	**--**	Wiring Assembly EPB1			(WG26430)		
*		**WD800100**	Circuit Board	MK61L		(WD80020)(X6578C0)		
		--	Jumper Wire	0.55 TIN		(VA07890)		
	CN001	**VM689000**	Connector , FFC	52045 23P TE				02
	CN002	**VB858200**	Connector Base Post	PH 3P SE				01
	D0001	**VB941200**	Diode	1SS133,1SS176 TE-				01
	-0075	**VB941200**	Diode	1SS133,1SS176 TE-				01
*		**WD801000**	Circuit Board	MKH-D		(WD78570)(X6579B0)		
		--	Circuit Board	EMKS-FD		(WE62270)(WE62310) (X6577A0)		
	CN002	**VL018400**	FFC Connector	FFC 3P SE				01
	CN004	**VM689000**	Connector , FFC	52045 23P TE				02
	CN005	**VB858200**	Connector Base Post	PH 3P SE				01
	D0001	**VB941200**	Diode	1SS133,1SS176 TE-				01
	-0048	**VB941200**	Diode	1SS133,1SS176 TE-				01
		--	Circuit Board	EMKS-FD		(WE62270)(WE62310) (X6577A0)		

＊: New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		--	Support, PCB	JIS R33 T=5		(WB72300)		
	C0005	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0009	UF118470	Electrolytic Cap. (chip)	470 6.3V UUR0J4				01
	C0011	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0021	UF017470	Electrolytic Cap. (chip)	47 6.3V				01
	C0022	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0023	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0027	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0028	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0029	UF017470	Electrolytic Cap. (chip)	47 6.3V				01
	C0030	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0031	UF018100	Electrolytic Cap. (chip)	100 6.3V				01
	C0032	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0033	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C0034	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z RECT.				01
	C0035	US062100	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	-0045	US062100	Ceramic Capacitor-SL(chip)	100P 50V J RECT.				01
	C0046	US061330	Ceramic Capacitor-CH(chip)	33P 50V J RECT.				01
	C0047	US061330	Ceramic Capacitor-CH(chip)	33P 50V J RECT.				01
	CN004	VT388800	Connector Base Post	PH 7P TE				
	CN005	WB249800	Terminal	20P PFA105-080A04				04
*	CN006	WE621400	Terminal	10P PFA105-1002A04				
	D0001	VV925900	Diode	RLS-73 TE-11 TP				01
	-0006	VV925900	Diode	RLS-73 TE-11 TP				01
	D0008	VV925900	Diode	RLS-73 TE-11 TP				01
	IC002	X2538A00	IC	NJM2100V(TE2)		OP AMP		02
*	IC005	X4801200	IC	HD6433693B14HV		CPU		
	L0002	V5848100	Chip Inductance	ELJFC560JF				01
	L0003	VR579900	Chip Inductance	BK2125HS601-T				01
	L0004	VR579900	Chip Inductance	BK2125HS601-T				01
	R0009	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0010	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0011	RD355150	Carbon Resistor (chip)	150.0 63M J RECT.				01
	R0012	RD356680	Carbon Resistor (chip)	6.8K 63M J RECT.				01
	R0013	RD355150	Carbon Resistor (chip)	150.0 63M J RECT.				01
	R0014	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0015	RD355150	Carbon Resistor (chip)	150.0 63M J RECT.				01
	R0016	RD357220	Carbon Resistor (chip)	22.0K 63M J RECT.				01
	R0017	RD357470	Carbon Resistor (chip)	47.0K 63M J RECT.				01
	R0018	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0019	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0020	RD354470	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R0021	RD354470	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R0022	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R0025	RD357100	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R0030	RD357330	Carbon Resistor (chip)	33.0K 63M J RECT.				01
	-0041	RD357330	Carbon Resistor (chip)	33.0K 63M J RECT.				01
	R0043	RD356100	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R0046	RD354470	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R0047	RD354470	Carbon Resistor (chip)	47.0 63M J RECT.				01
	VR001	VA788700	Trimmer Potentiometer	B 470.0K TE 3P RHE				01
	VR002	VA788600	Trimmer Potentiometer	B 330.0K TE 3P RHE				01
	X0001	V4584600	Ceramic Resonator	20.00M CSTCV20.00				01
*		AAX70980	Circuit Board	PNC,EN		(WF32840)(X6013C0)		
		--	Circuit Board	PNC		(WF32840)(WE81590)(X6013C0)		
		--	Circuit Board	EN		(WF32840)(WE85370)(X6013C0)		
	10	--	Cable	4P- (PNC)		(WE84310)		
	C1	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C2	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C3	UF118220	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C4	US061330	Ceramic Capacitor-CH(chip)	33P 50V J RECT.				01
	C5	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C6	US065100	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C7	UF118220	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C8	US065100	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C9	US065100	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	CN1	VQ045300	Connector , FFCr	52044 23P SE				01

* : New part **(新規部品)**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
CN2	**VI878200**	Cable Holder	51048 4P TE				01
CN3	**VI878200**	Cable Holder	51048 4P TE				01
D1	**VR496500**	Diode	MA111 FLAT TP				
D1	**VT332900**	Diode	1SS355 TE-17 TP				01
D2	**VR496500**	Diode	MA111 FLAT TP				
D2	**VT332900**	Diode	1SS355 TE-17 TP				01
D3	**VR496500**	Diode	MA111 FLAT TP				
D3	**VT332900**	Diode	1SS355 TE-17 TP				01
D4	**VR496500**	Diode	MA111 FLAT TP				
D4	**VT332900**	Diode	1SS355 TE-17 TP				01
D5	**VR496500**	Diode	MA111 FLAT TP				
D5	**VT332900**	Diode	1SS355 TE-17 TP				01
D6	**VR496500**	Diode	MA111 FLAT TP				
D6	**VT332900**	Diode	1SS355 TE-17 TP				01
D7	**VR496500**	Diode	MA111 FLAT TP				
D7	**VT332900**	Diode	1SS355 TE-17 TP				01
D8	**VR496500**	Diode	MA111 FLAT TP				
D8	**VT332900**	Diode	1SS355 TE-17 TP				01
D9	**VR496500**	Diode	MA111 FLAT TP				
D9	**VT332900**	Diode	1SS355 TE-17 TP				01
D10	**VR496500**	Diode	MA111 FLAT TP				
D10	**VT332900**	Diode	1SS355 TE-17 TP				01
D11	**VR496500**	Diode	MA111 FLAT TP				
D11	**VT332900**	Diode	1SS355 TE-17 TP				01
D12	**VR496500**	Diode	MA111 FLAT TP				
D12	**VT332900**	Diode	1SS355 TE-17 TP				01
D13	**VR496500**	Diode	MA111 FLAT TP				
D13	**VT332900**	Diode	1SS355 TE-17 TP				01
D14	**VR496500**	Diode	MA111 FLAT TP				
D14	**VT332900**	Diode	1SS355 TE-17 TP				01
D15	**VR496500**	Diode	MA111 FLAT TP				
D15	**VT332900**	Diode	1SS355 TE-17 TP				01
D16	**VR496500**	Diode	MA111 FLAT TP				
D16	**VT332900**	Diode	1SS355 TE-17 TP				01
D17	**VR496500**	Diode	MA111 FLAT TP				
D17	**VT332900**	Diode	1SS355 TE-17 TP				01
D18	**VR496500**	Diode	MA111 FLAT TP				
D18	**VT332900**	Diode	1SS355 TE-17 TP				01
D19	**VR496500**	Diode	MA111 FLAT TP				
D19	**VT332900**	Diode	1SS355 TE-17 TP				01
D20	**VR496500**	Diode	MA111 FLAT TP				
D20	**VT332900**	Diode	1SS355 TE-17 TP				01
D21	**VR496500**	Diode	MA111 FLAT TP				
D21	**VT332900**	Diode	1SS355 TE-17 TP				01
D22	**VR496500**	Diode	MA111 FLAT TP				
D22	**VT332900**	Diode	1SS355 TE-17 TP				01
D23	**VR496500**	Diode	MA111 FLAT TP				
D23	**VT332900**	Diode	1SS355 TE-17 TP				01
D24	**VR496500**	Diode	MA111 FLAT TP				
D24	**VT332900**	Diode	1SS355 TE-17 TP				01
D25	**VR496500**	Diode	MA111 FLAT TP				
D25	**VT332900**	Diode	1SS355 TE-17 TP				01
D26	**VR496500**	Diode	MA111 FLAT TP				
D26	**VT332900**	Diode	1SS355 TE-17 TP				01
D27	**VR496500**	Diode	MA111 FLAT TP				
D27	**VT332900**	Diode	1SS355 TE-17 TP				01
D28	**VR496500**	Diode	MA111 FLAT TP				
D28	**VT332900**	Diode	1SS355 TE-17 TP				01
D29	**VR496500**	Diode	MA111 FLAT TP				
D29	**VT332900**	Diode	1SS355 TE-17 TP				01
D30	**VR496500**	Diode	MA111 FLAT TP				
D30	**VT332900**	Diode	1SS355 TE-17 TP				01
D31	**VR496500**	Diode	MA111 FLAT TP				
D31	**VT332900**	Diode	1SS355 TE-17 TP				01
D32	**VR496500**	Diode	MA111 FLAT TP				
D32	**VT332900**	Diode	1SS355 TE-17 TP				01
D33	**VR496500**	Diode	MA111 FLAT TP				
D33	**VT332900**	Diode	1SS355 TE-17 TP				01
D34	**VR496500**	Diode	MA111 FLAT TP				
D34	**VT332900**	Diode	1SS355 TE-17 TP				01

＊: New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	EC1	**VU481300**	Encoder	REB161 PVB 15F		DATA ENTRY		03
*	IC1	**X5646200**	IC	M34519M6-521FP W4		CPU		
*	LD1	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(4)		
*	LD2	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(4)		
*	LD3	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(5)		
*	LD4	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(5)		
*	LD5	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(6)		
*	LD6	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(6)		
*	LD7	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(1)		
*	LD8	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(1)		
*	LD9	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(7)		
*	LD10	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(7)		
	LD11	**VD180000**	LED	SLZ-190B-03 RED		FREEZE		01
*	LD12	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(2)		
*	LD13	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(2)		
*	LD14	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(8)		
*	LD15	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(8)		
*	LD16	**WF301000**	LED (chip)	SML-012PT GREEN		REGISTRATION MEMORY(3)		
*	LD17	**WF300900**	LED (chip)	SML-512DW ORANGE		REGISTRATION MEMORY(3)		
	R1	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-R8	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R9	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
	R10	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
	-16	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
	R17	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	-19	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	R21	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-24	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R33	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R34	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R35	**RD356560**	Carbon Resistor (chip)	5.6K 63M J RECT.				01
	R39	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-41	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R45	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-48	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R49	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-52	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R57	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	-76	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	SW1	**V8889300**	Push Switch	EVQ 11Y 07K		BALANCE		01
	SW1	**VV439800**	Tact Switch	SKQNAJ				01
	SW2	**V8889300**	Push Switch	EVQ 11Y 07K		UP(2)		01
	SW2	**VV439800**	Tact Switch	SKQNAJ				01
	SW3	**V8889300**	Push Switch	EVQ 11Y 07K		UP(8)		01
	SW3	**VV439800**	Tact Switch	SKQNAJ				01
	SW4	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(6)		01
	SW4	**VV439800**	Tact Switch	SKQNAJ				01
	SW5	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(4)		01
	SW5	**VV439800**	Tact Switch	SKQNAJ				01
	SW6	**V8889300**	Push Switch	EVQ 11Y 07K		MIXING CONSOLE		01
	SW6	**VV439800**	Tact Switch	SKQNAJ				01
	SW7	**V8889300**	Push Switch	EVQ 11Y 07K		UP(3)		01
	SW7	**VV439800**	Tact Switch	SKQNAJ				01
	SW8	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(1)		01
	SW8	**VV439800**	Tact Switch	SKQNAJ				01
	SW9	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(7)		01
	SW9	**VV439800**	Tact Switch	SKQNAJ				01
	SW10	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(5)		01
	SW10	**VV439800**	Tact Switch	SKQNAJ				01
	SW11	**V8889300**	Push Switch	EVQ 11Y 07K		CHANNEL ON/OFF		01
	SW11	**VV439800**	Tact Switch	SKQNAJ				01
	SW12	**V8889300**	Push Switch	EVQ 11Y 07K		UP(4)		01
	SW12	**VV439800**	Tact Switch	SKQNAJ				01
	SW13	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(2)		01
	SW13	**VV439800**	Tact Switch	SKQNAJ				01
	SW14	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(8)		01
	SW14	**VV439800**	Tact Switch	SKQNAJ				01
	SW15	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(6)		01
	SW15	**VV439800**	Tact Switch	SKQNAJ				01
	SW16	**V8889300**	Push Switch	EVQ 11Y 07K		REGIST BANK(-)		01

* : New part **(新規部品)**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
SW16	**VV439800**	Tact Switch	SKQNAJ				01
SW17	**V8889300**	Push Switch	EVQ 11Y 07K		UP(5)		01
SW17	**VV439800**	Tact Switch	SKQNAJ				01
SW18	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(3)		01
SW18	**VV439800**	Tact Switch	SKQNAJ				01
SW19	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(1)		01
SW19	**VV439800**	Tact Switch	SKQNAJ				01
SW20	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(7)		01
SW20	**VV439800**	Tact Switch	SKQNAJ				01
SW21	**V8889300**	Push Switch	EVQ 11Y 07K		FREEZE		01
SW21	**VV439800**	Tact Switch	SKQNAJ				01
SW22	**V8889300**	Push Switch	EVQ 11Y 07K		UP(6)		01
SW22	**VV439800**	Tact Switch	SKQNAJ				01
SW23	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(4)		01
SW23	**VV439800**	Tact Switch	SKQNAJ				01
SW24	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(2)		01
SW24	**VV439800**	Tact Switch	SKQNAJ				01
SW25	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(8)		01
SW25	**VV439800**	Tact Switch	SKQNAJ				01
SW26	**V8889300**	Push Switch	EVQ 11Y 07K		UP(1)		01
SW26	**VV439800**	Tact Switch	SKQNAJ				01
SW27	**V8889300**	Push Switch	EVQ 11Y 07K		UP(7)		01
SW27	**VV439800**	Tact Switch	SKQNAJ				01
SW28	**V8889300**	Push Switch	EVQ 11Y 07K		DOWN(5)		01
SW28	**VV439800**	Tact Switch	SKQNAJ				01
SW29	**V8889300**	Push Switch	EVQ 11Y 07K		REGISTRATION MEMORY(3)		01
SW29	**VV439800**	Tact Switch	SKQNAJ				01
SW30	**V8889300**	Push Switch	EVQ 11Y 07K		MEMORY		01
SW30	**VV439800**	Tact Switch	SKQNAJ				01
SW31	**V8889300**	Push Switch	EVQ 11Y 07K		REGIST BANK(+)		01
SW31	**VV439800**	Tact Switch	SKQNAJ				01
SW32	**V8889300**	Push Switch	EVQ 11Y 07K		ENTER		01
SW32	**VV439800**	Tact Switch	SKQNAJ				01
TA1	**WC710000**	Transistor Array	M54562FP				
TR1	**V5005800**	Digital Transistor	FMG11A				01
TR2	**V5005800**	Digital Transistor	FMG11A				01
*	**WE816900**	Circuit Board	PNL		(X6014D0)	5	
	V9642100	LED Spacer	LH-5-9.5				01
C1	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C2	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C3	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
C4	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
C5	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C6	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C7	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
-11	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
C12	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
C14	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C15	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C16	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
-18	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
C19	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-21	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C22	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C23	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C24	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
C25	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C26	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C27	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
C28	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C29	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
C30	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C31	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
C32	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
-34	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C35	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C36	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
C37	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
C38	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01

* : New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	C39	**US061220**	Ceramic Capacitor-CH(chip)	22P 50V J RECT.				01
	C40	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	-49	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C50	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C51	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C52	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C53	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C54	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C55	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C56	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C57	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C58	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C59	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C60	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C61	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C62	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C63	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C64	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C65	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C66	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
*	CN1	**WF450400**	FFC Connector	52807 8P SE				
	CN2	**VB858300**	Connector Base Post	PH 4P SE				01
	CN3	**LB919060**	Base Post Connector	XH-L TYPE 6P SE				01
	CN5	**VB389600**	Connector Base Post	PH 11P SE				01
	D1	**VR496500**	Diode	MA111 FLAT TP				
	D1	**VT332900**	Diode	1SS355 TE-17 TP				01
	D2	**VR496500**	Diode	MA111 FLAT TP				
	D2	**VT332900**	Diode	1SS355 TE-17 TP				01
	D3	**VR496500**	Diode	MA111 FLAT TP				
	D3	**VT332900**	Diode	1SS355 TE-17 TP				01
	D4	**VR496500**	Diode	MA111 FLAT TP				
	D4	**VT332900**	Diode	1SS355 TE-17 TP				01
	D5	**VR496500**	Diode	MA111 FLAT TP				
	D5	**VT332900**	Diode	1SS355 TE-17 TP				01
	D6	**VR496500**	Diode	MA111 FLAT TP				
	D6	**VT332900**	Diode	1SS355 TE-17 TP				01
	D7	**VR496500**	Diode	MA111 FLAT TP				
	D7	**VT332900**	Diode	1SS355 TE-17 TP				01
	D8	**VR496500**	Diode	MA111 FLAT TP				
	D8	**VT332900**	Diode	1SS355 TE-17 TP				01
	D9	**VR496500**	Diode	MA111 FLAT TP				
	D9	**VT332900**	Diode	1SS355 TE-17 TP				01
	D10	**VR496500**	Diode	MA111 FLAT TP				
	D10	**VT332900**	Diode	1SS355 TE-17 TP				01
	D11	**VR496500**	Diode	MA111 FLAT TP				
	D11	**VT332900**	Diode	1SS355 TE-17 TP				01
	D12	**VR496500**	Diode	MA111 FLAT TP				
	D12	**VT332900**	Diode	1SS355 TE-17 TP				01
	D13	**VR496500**	Diode	MA111 FLAT TP				
	D13	**VT332900**	Diode	1SS355 TE-17 TP				01
	D14	**VR496500**	Diode	MA111 FLAT TP				
	D14	**VT332900**	Diode	1SS355 TE-17 TP				01
	D15	**VR496500**	Diode	MA111 FLAT TP				
	D15	**VT332900**	Diode	1SS355 TE-17 TP				01
	D16	**VR496500**	Diode	MA111 FLAT TP				
	D16	**VT332900**	Diode	1SS355 TE-17 TP				01
	D17	**VR496500**	Diode	MA111 FLAT TP				
	D17	**VT332900**	Diode	1SS355 TE-17 TP				01
	D18	**VR496500**	Diode	MA111 FLAT TP				
	D18	**VT332900**	Diode	1SS355 TE-17 TP				01
	D19	**VR496500**	Diode	MA111 FLAT TP				
	D19	**VT332900**	Diode	1SS355 TE-17 TP				01
	D20	**VR496500**	Diode	MA111 FLAT TP				
	D20	**VT332900**	Diode	1SS355 TE-17 TP				01
	D21	**VR496500**	Diode	MA111 FLAT TP				
	D21	**VT332900**	Diode	1SS355 TE-17 TP				01
	D22	**VR496500**	Diode	MA111 FLAT TP				
	D22	**VT332900**	Diode	1SS355 TE-17 TP				01
	D23	**VR496500**	Diode	MA111 FLAT TP				
	D23	**VT332900**	Diode	1SS355 TE-17 TP				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
D24	**VR496500**	Diode	MA111 FLAT TP				
D24	**VT332900**	Diode	1SS355 TE-17 TP				01
D25	**VR496500**	Diode	MA111 FLAT TP				
D25	**VT332900**	Diode	1SS355 TE-17 TP				01
D26	**VR496500**	Diode	MA111 FLAT TP				
D26	**VT332900**	Diode	1SS355 TE-17 TP				01
D27	**VR496500**	Diode	MA111 FLAT TP				
D27	**VT332900**	Diode	1SS355 TE-17 TP				01
D28	**VR496500**	Diode	MA111 FLAT TP				
D28	**VT332900**	Diode	1SS355 TE-17 TP				01
D29	**VR496500**	Diode	MA111 FLAT TP				
D29	**VT332900**	Diode	1SS355 TE-17 TP				01
D30	**VR496500**	Diode	MA111 FLAT TP				
D30	**VT332900**	Diode	1SS355 TE-17 TP				01
D31	**VR496500**	Diode	MA111 FLAT TP				
D31	**VT332900**	Diode	1SS355 TE-17 TP				01
D32	**VR496500**	Diode	MA111 FLAT TP				
D32	**VT332900**	Diode	1SS355 TE-17 TP				01
D33	**VR496500**	Diode	MA111 FLAT TP				
D33	**VT332900**	Diode	1SS355 TE-17 TP				01
D34	**VR496500**	Diode	MA111 FLAT TP				
D34	**VT332900**	Diode	1SS355 TE-17 TP				01
D35	**VR496500**	Diode	MA111 FLAT TP				
D35	**VT332900**	Diode	1SS355 TE-17 TP				01
D36	**VR496500**	Diode	MA111 FLAT TP				
D36	**VT332900**	Diode	1SS355 TE-17 TP				01
D37	**VR496500**	Diode	MA111 FLAT TP				
D37	**VT332900**	Diode	1SS355 TE-17 TP				01
D38	**VR496500**	Diode	MA111 FLAT TP				
D38	**VT332900**	Diode	1SS355 TE-17 TP				01
D39	**VR496500**	Diode	MA111 FLAT TP				
D39	**VT332900**	Diode	1SS355 TE-17 TP				01
D40	**VR496500**	Diode	MA111 FLAT TP				
D40	**VT332900**	Diode	1SS355 TE-17 TP				01
D41	**VR496500**	Diode	MA111 FLAT TP				
D41	**VT332900**	Diode	1SS355 TE-17 TP				01
D42	**VR496500**	Diode	MA111 FLAT TP				
D42	**VT332900**	Diode	1SS355 TE-17 TP				01
D43	**VR496500**	Diode	MA111 FLAT TP				
D43	**VT332900**	Diode	1SS355 TE-17 TP				01
D44	**VR496500**	Diode	MA111 FLAT TP				
D44	**VT332900**	Diode	1SS355 TE-17 TP				01
D45	**VR496500**	Diode	MA111 FLAT TP				
D45	**VT332900**	Diode	1SS355 TE-17 TP				01
D46	**VR496500**	Diode	MA111 FLAT TP				
D46	**VT332900**	Diode	1SS355 TE-17 TP				01
D47	**VR496500**	Diode	MA111 FLAT TP				
D47	**VT332900**	Diode	1SS355 TE-17 TP				01
D48	**VR496500**	Diode	MA111 FLAT TP				
D48	**VT332900**	Diode	1SS355 TE-17 TP				01
D49	**VR496500**	Diode	MA111 FLAT TP				
D49	**VT332900**	Diode	1SS355 TE-17 TP				01
D50	**VR496500**	Diode	MA111 FLAT TP				
D50	**VT332900**	Diode	1SS355 TE-17 TP				01
D51	**VR496500**	Diode	MA111 FLAT TP				
D51	**VT332900**	Diode	1SS355 TE-17 TP				01
D52	**VR496500**	Diode	MA111 FLAT TP				
D52	**VT332900**	Diode	1SS355 TE-17 TP				01
D53	**VR496500**	Diode	MA111 FLAT TP				
D53	**VT332900**	Diode	1SS355 TE-17 TP				01
D55	**VR496500**	Diode	MA111 FLAT TP				
D55	**VT332900**	Diode	1SS355 TE-17 TP				01
D56	**VR496500**	Diode	MA111 FLAT TP				
D56	**VT332900**	Diode	1SS355 TE-17 TP				01
D57	**VR496500**	Diode	MA111 FLAT TP				
D57	**VT332900**	Diode	1SS355 TE-17 TP				01
D58	**VR496500**	Diode	MA111 FLAT TP				
D58	**VT332900**	Diode	1SS355 TE-17 TP				01
D59	**VR496500**	Diode	MA111 FLAT TP				
D59	**VT332900**	Diode	1SS355 TE-17 TP				01

＊: New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	D60	**VR496500**	Diode	MA111 FLAT TP				
	D60	**VT332900**	Diode	1SS355 TE-17 TP				01
	D61	**VR496500**	Diode	MA111 FLAT TP				
	D61	**VT332900**	Diode	1SS355 TE-17 TP				01
	D62	**VR496500**	Diode	MA111 FLAT TP				
	D62	**VT332900**	Diode	1SS355 TE-17 TP				01
	D63	**VR496500**	Diode	MA111 FLAT TP				
	D63	**VT332900**	Diode	1SS355 TE-17 TP				01
	D64	**VR496500**	Diode	MA111 FLAT TP				
	D64	**VT332900**	Diode	1SS355 TE-17 TP				01
	D65	**VR496500**	Diode	MA111 FLAT TP				
	D65	**VT332900**	Diode	1SS355 TE-17 TP				01
	D66	**VR496500**	Diode	MA111 FLAT TP				
	D66	**VT332900**	Diode	1SS355 TE-17 TP				01
	D67	**VR496500**	Diode	MA111 FLAT TP				
	D67	**VT332900**	Diode	1SS355 TE-17 TP				01
	D68	**VR496500**	Diode	MA111 FLAT TP				
	D68	**VT332900**	Diode	1SS355 TE-17 TP				01
	D69	**VR496500**	Diode	MA111 FLAT TP				
	D69	**VT332900**	Diode	1SS355 TE-17 TP				01
	D70	**VR496500**	Diode	MA111 FLAT TP				
	D70	**VT332900**	Diode	1SS355 TE-17 TP				01
	D71	**VR496500**	Diode	MA111 FLAT TP				
	D71	**VT332900**	Diode	1SS355 TE-17 TP				01
	D72	**VR496500**	Diode	MA111 FLAT TP				
	D72	**VT332900**	Diode	1SS355 TE-17 TP				01
	D73	**VR496500**	Diode	MA111 FLAT TP				
	D73	**VT332900**	Diode	1SS355 TE-17 TP				01
	D74	**VR496500**	Diode	MA111 FLAT TP				
	D74	**VT332900**	Diode	1SS355 TE-17 TP				01
	D75	**VR496500**	Diode	MA111 FLAT TP				
	D75	**VT332900**	Diode	1SS355 TE-17 TP				01
	D76	**VR496500**	Diode	MA111 FLAT TP				
	D76	**VT332900**	Diode	1SS355 TE-17 TP				01
	IC1	**X2987A00**	IC	M4A3-64/64-10VNC		CPLD		08
	IC2	**XZ916200**	IC	UPD780031AYGK-N05		CPU		
	L1	**V5848100**	Chip Inductance	ELJFC560JF				01
	-4	**V5848100**	Chip Inductance	ELJFC560JF				01
	LD1	**VT361700**	LED	SLZ274B03T1 2X4 TP		SIGNAL		01
	LD2	**VT659100**	LED	SLZ-174B-03-T1 RED		OVER		01
	LD3	**VT425300**	LED	SLZ290B17T1 2H TP		FADE IN/OUT		01
*	LD4	**WF300900**	LED (chip)	SML-512DW ORANGE		ACMP		
	LD5	**VG778600**	LED	SLZ-290B-03-T2 TP		VOCAL HARMONY		01
	LD6	**VG197600**	LED	GL3ED8		SP1		01
	LD7	**VT425100**	LED	90B-17-T1 RED		REC		01
	LD8	**VT425100**	LED	90B-17-T1 RED		OTS LINK		01
*	LD9	**WF301000**	LED (chip)	SML-012PT GREEN		INTRO(I)		
*	LD10	**WF300900**	LED (chip)	SML-512DW ORANGE		INTRO(I)		
*	LD11	**WF301000**	LED (chip)	SML-012PT GREEN		INTRO(II)		
*	LD12	**WF300900**	LED (chip)	SML-512DW ORANGE		INTRO(II)		
	LD13	**VG778600**	LED	SLZ-290B-03-T2 TP		TALK		01
	LD14	**VG197600**	LED	GL3ED8		SP2		01
	LD15	**VT425100**	LED	90B-17-T1 RED		AUTO FILL IN		01
*	LD16	**WF301000**	LED (chip)	SML-012PT GREEN		INTRO(III)		
*	LD17	**WF300900**	LED (chip)	SML-512DW ORANGE		INTRO(III)		
	LD18	**VG778600**	LED	SLZ-290B-03-T2 TP		EFFECT		01
	LD19	**VG197600**	LED	GL3ED8		PLAY/PAUSE		01
	LD20	**VT425100**	LED	90B-17-T1 RED		METRONOME ON/OFF		01
	LD21	**VG197600**	LED	GL3ED8		SP3		01
*	LD22	**WF301000**	LED (chip)	SML-012PT GREEN		MAIN VARIATION(A)		
*	LD23	**WF300900**	LED (chip)	SML-512DW ORANGE		MAIN VARIATION(A)		
	LD24	**VT425100**	LED	90B-17-T1 RED		GUIDE		01
	LD25	**VG197600**	LED	GL3ED8		SP4		01
*	LD26	**WF301000**	LED (chip)	SML-012PT GREEN		MAIN VARIATION(B)		
*	LD27	**WF300900**	LED (chip)	SML-512DW ORANGE		MAIN VARIATION(B)		
	LD28	**VT425100**	LED	90B-17-T1 RED		P.A.T.		01
	LD29	**VT425300**	LED	SLZ290B17T1 2H TP		LOOP		01
*	LD30	**WF301000**	LED (chip)	SML-012PT GREEN		MAIN VARIATION(C)		
*	LD31	**WF300900**	LED (chip)	SML-512DW ORANGE		MAIN VARIATION(C)		
*	LD32	**WF301000**	LED (chip)	SML-012PT GREEN		MAIN VARIATION(D)		

＊: New part **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*	LD33	**WF300900**	LED (chip)	SML-512DW ORANGE		MAIN VARIATION(D)		
	LD34	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(I)		01
	LD35	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(II)		01
	LD36	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(III)		01
*	LD37	**WF301000**	LED (chip)	SML-012PT GREEN		BREAK		
*	LD38	**WF300900**	LED (chip)	SML-512DW ORANGE		BREAK		
	LD39	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(IV)		01
	LD40	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(V)		01
	LD41	**VT425300**	LED	SLZ290B17T1 2H TP		SONG(VI)		01
*	LD42	**WF301000**	LED (chip)	SML-012PT GREEN		ENDING/rit(I)		
*	LD43	**WF300900**	LED (chip)	SML-512DW ORANGE		ENDING/rit(I)		
	LD44	**VT425300**	LED	SLZ290B17T1 2H TP		POP & ROCK		01
	LD45	**VT425300**	LED	SLZ290B17T1 2H TP		BALLAD		01
	LD46	**VT425300**	LED	SLZ290B17T1 2H TP		DANCE		01
*	LD47	**WF301000**	LED (chip)	SML-012PT GREEN		MULTI PAD CONTROL(1)		
*	LD48	**WF300900**	LED (chip)	SML-512DW ORANGE		MULTI PAD CONTROL(1)		
*	LD49	**WF301000**	LED (chip)	SML-012PT GREEN		ENDING/rit(II)		
*	LD50	**WF300900**	LED (chip)	SML-512DW ORANGE		ENDING/rit(II)		
*	LD51	**WF301000**	LED (chip)	SML-012PT GREEN		MULTI PAD CONTROL(2)		
*	LD52	**WF300900**	LED (chip)	SML-512DW ORANGE		MULTI PAD CONTROL(2)		
*	LD53	**WF301000**	LED (chip)	SML-012PT GREEN		ENDING/rit(III)		
*	LD54	**WF300900**	LED (chip)	SML-512DW ORANGE		ENDING/rit(III)		
	LD55	**VT425300**	LED	SLZ290B17T1 2H TP		SWING & JAZZ		01
	LD56	**VT425300**	LED	SLZ290B17T1 2H TP		R & B		01
	LD57	**VT425300**	LED	SLZ290B17T1 2H TP		COUNTRY		01
*	LD58	**WF301000**	LED (chip)	SML-012PT GREEN		MULTI PAD CONTROL(3)		
*	LD59	**WF300900**	LED (chip)	SML-512DW ORANGE		MULTI PAD CONTROL(3)		
*	LD60	**WF300900**	LED (chip)	SML-512DW ORANGE		SYNC STOP		
	LD61	**VT425300**	LED	SLZ290B17T1 2H TP		LATIN		01
	LD62	**VT425300**	LED	SLZ290B17T1 2H TP		BALLROOM		01
	LD63	**VT425300**	LED	SLZ290B17T1 2H TP		MOVIE & SHOW		01
*	LD64	**WF301000**	LED (chip)	SML-012PT GREEN		MULTI PAD CONTROL(4)		
*	LD65	**WF300900**	LED (chip)	SML-512DW ORANGE		MULTI PAD CONTROL(4)		
*	LD66	**WF300900**	LED (chip)	SML-512DW ORANGE		SYNC START		
	LD67	**VT425300**	LED	SLZ290B17T1 2H TP		ENTERTAINER		01
	LD68	**VT425300**	LED	SLZ290B17T1 2H TP		WORLD		01
	LD69	**VT425300**	LED	SLZ290B17T1 2H TP		FILE ACCESS		01
*	LD70	**WF301000**	LED (chip)	SML-012PT GREEN		START/STOP		
*	LD71	**WF300900**	LED (chip)	SML-512DW ORANGE		START/STOP		
	R1	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R2	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
	R3	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	-6	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	R7	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
	-10	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
	R11	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R13	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R18	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	-20	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R21	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R22	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-25	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R26	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	-29	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	R30	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R31	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-33	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R34	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	-36	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	R37	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R38	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	R39	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-42	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R43	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	-46	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	R47	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-58	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R59	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-61	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R62	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01

＊: New parts **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
-64	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
R65	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R66	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
R67	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-74	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R75	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
R76	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R77	**RD355560**	Carbon Resistor (chip)	560.0 63M J RECT.				01
R78	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
-81	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
R82	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
R83	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
R84	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
R85	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-91	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R92	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
-94	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R95	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-126	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
SW1	**V8889300**	Push Switch	EVQ 11Y 07K		FADE IN/OUT		01
SW1	**VV439800**	Tact Switch	SKQNAJ				01
SW2	**V8889300**	Push Switch	EVQ 11Y 07K		ACMP		01
SW2	**VV439800**	Tact Switch	SKQNAJ				01
SW3	**V8889300**	Push Switch	EVQ 11Y 07K		DEMO		01
SW3	**VV439800**	Tact Switch	SKQNAJ				01
SW4	**V8889300**	Push Switch	EVQ 11Y 07K		VOCAL HARMONY		01
SW4	**VV439800**	Tact Switch	SKQNAJ				01
SW5	**V8889300**	Push Switch	EVQ 11Y 07K		SP1		01
SW5	**VV439800**	Tact Switch	SKQNAJ				01
SW6	**V8889300**	Push Switch	EVQ 11Y 07K		REC		01
SW6	**VV439800**	Tact Switch	SKQNAJ				01
SW7	**V8889300**	Push Switch	EVQ 11Y 07K		OTS LINK		01
SW7	**VV439800**	Tact Switch	SKQNAJ				01
SW8	**V8889300**	Push Switch	EVQ 11Y 07K		INTRO(I)		01
SW8	**VV439800**	Tact Switch	SKQNAJ				01
SW9	**V8889300**	Push Switch	EVQ 11Y 07K		INTRO(II)		01
SW9	**VV439800**	Tact Switch	SKQNAJ				01
SW10	**V8889300**	Push Switch	EVQ 11Y 07K		TALK		01
SW10	**VV439800**	Tact Switch	SKQNAJ				01
SW11	**V8889300**	Push Switch	EVQ 11Y 07K		LYRICS/TEXT		01
SW11	**VV439800**	Tact Switch	SKQNAJ				01
SW12	**V8889300**	Push Switch	EVQ 11Y 07K		STOP		01
SW12	**VV439800**	Tact Switch	SKQNAJ				01
SW13	**V8889300**	Push Switch	EVQ 11Y 07K		SP2		01
SW13	**VV439800**	Tact Switch	SKQNAJ				01
SW14	**V8889300**	Push Switch	EVQ 11Y 07K		AUTO FILL IN		01
SW14	**VV439800**	Tact Switch	SKQNAJ				01
SW15	**V8889300**	Push Switch	EVQ 11Y 07K		INTRO(III)		01
SW15	**VV439800**	Tact Switch	SKQNAJ				01
SW16	**V8889300**	Push Switch	EVQ 11Y 07K		EFFECT		01
SW16	**VV439800**	Tact Switch	SKQNAJ				01
SW17	**V8889300**	Push Switch	EVQ 11Y 07K		SCORE		01
SW17	**VV439800**	Tact Switch	SKQNAJ				01
SW18	**V8889300**	Push Switch	EVQ 11Y 07K		PLAY/PAUSE		01
SW18	**VV439800**	Tact Switch	SKQNAJ				01
SW19	**V8889300**	Push Switch	EVQ 11Y 07K		METRONOME ON/OFF		01
SW19	**VV439800**	Tact Switch	SKQNAJ				01
SW20	**V8889300**	Push Switch	EVQ 11Y 07K		SP3		01
SW20	**VV439800**	Tact Switch	SKQNAJ				01
SW21	**V8889300**	Push Switch	EVQ 11Y 07K		MAIN VARIATION(A)		01
SW21	**VV439800**	Tact Switch	SKQNAJ				01
SW22	**V8889300**	Push Switch	EVQ 11Y 07K		TAP TEMPO		01
SW22	**VV439800**	Tact Switch	SKQNAJ				01
SW23	**V8889300**	Push Switch	EVQ 11Y 07K		VH TYPE SELECT		01
SW23	**VV439800**	Tact Switch	SKQNAJ				01
SW24	**V8889300**	Push Switch	EVQ 11Y 07K		GUIDE		01
SW24	**VV439800**	Tact Switch	SKQNAJ				01
SW25	**V8889300**	Push Switch	EVQ 11Y 07K		REW		01
SW25	**VV439800**	Tact Switch	SKQNAJ				01
SW26	**V8889300**	Push Switch	EVQ 11Y 07K		SP4		01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
SW26	**VV439800**	Tact Switch	SKQNAJ				01
SW27	**V8889300**	Push Switch	EVQ 11Y 07K		MAIN VARIATION(B)		01
SW27	**VV439800**	Tact Switch	SKQNAJ				01
SW28	**V8889300**	Push Switch	EVQ 11Y 07K		TEMPO(-)		01
SW28	**VV439800**	Tact Switch	SKQNAJ				01
SW29	**V8889300**	Push Switch	EVQ 11Y 07K		MIC SETTING		01
SW29	**VV439800**	Tact Switch	SKQNAJ				01
SW30	**V8889300**	Push Switch	EVQ 11Y 07K		P.A.T.		01
SW30	**VV439800**	Tact Switch	SKQNAJ				01
SW31	**V8889300**	Push Switch	EVQ 11Y 07K		LOOP		01
SW31	**VV439800**	Tact Switch	SKQNAJ				01
SW32	**V8889300**	Push Switch	EVQ 11Y 07K		FF		01
SW32	**VV439800**	Tact Switch	SKQNAJ				01
SW33	**V8889300**	Push Switch	EVQ 11Y 07K		MAIN VARIATION(C)		01
SW33	**VV439800**	Tact Switch	SKQNAJ				01
SW34	**V8889300**	Push Switch	EVQ 11Y 07K		TEMPO(+)		01
SW34	**VV439800**	Tact Switch	SKQNAJ				01
SW35	**V8889300**	Push Switch	EVQ 11Y 07K		MAIN VARIATION(D)		01
SW35	**VV439800**	Tact Switch	SKQNAJ				01
SW36	**V8889300**	Push Switch	EVQ 11Y 07K		TRANSPOSE(-)		01
SW36	**VV439800**	Tact Switch	SKQNAJ				01
SW37	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(I)		01
SW37	**VV439800**	Tact Switch	SKQNAJ				01
SW38	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(II)		01
SW38	**VV439800**	Tact Switch	SKQNAJ				01
SW39	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(III)		01
SW39	**VV439800**	Tact Switch	SKQNAJ				01
SW40	**V8889300**	Push Switch	EVQ 11Y 07K		BREAK		01
SW40	**VV439800**	Tact Switch	SKQNAJ				01
SW41	**V8889300**	Push Switch	EVQ 11Y 07K		TRANSPOSE(+)		01
SW41	**VV439800**	Tact Switch	SKQNAJ				01
SW42	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(IV)		01
SW42	**VV439800**	Tact Switch	SKQNAJ				01
SW43	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(V)		01
SW43	**VV439800**	Tact Switch	SKQNAJ				01
SW44	**V8889300**	Push Switch	EVQ 11Y 07K		SONG(VI)		01
SW44	**VV439800**	Tact Switch	SKQNAJ				01
SW45	**V8889300**	Push Switch	EVQ 11Y 07K		ENDING/rit(I)		01
SW45	**VV439800**	Tact Switch	SKQNAJ				01
SW46	**V8889300**	Push Switch	EVQ 11Y 07K		SELECT		01
SW46	**VV439800**	Tact Switch	SKQNAJ				01
SW47	**V8889300**	Push Switch	EVQ 11Y 07K		POP & ROCK		01
SW47	**VV439800**	Tact Switch	SKQNAJ				01
SW48	**V8889300**	Push Switch	EVQ 11Y 07K		BALLAD		01
SW48	**VV439800**	Tact Switch	SKQNAJ				01
SW49	**V8889300**	Push Switch	EVQ 11Y 07K		DANCE		01
SW49	**VV439800**	Tact Switch	SKQNAJ				01
SW50	**V8889300**	Push Switch	EVQ 11Y 07K		ENDING/rit(II)		01
SW50	**VV439800**	Tact Switch	SKQNAJ				01
SW51	**V8889300**	Push Switch	EVQ 11Y 07K		MULTI PAD CONTROL(1)		01
SW51	**VV439800**	Tact Switch	SKQNAJ				01
SW52	**V8889300**	Push Switch	EVQ 11Y 07K		ENDING/rit(III)		01
SW52	**VV439800**	Tact Switch	SKQNAJ				01
SW53	**V8889300**	Push Switch	EVQ 11Y 07K		MULTI PAD CONTROL(2)		01
SW53	**VV439800**	Tact Switch	SKQNAJ				01
SW54	**V8889300**	Push Switch	EVQ 11Y 07K		SWING & JAZZ		01
SW54	**VV439800**	Tact Switch	SKQNAJ				01
SW55	**V8889300**	Push Switch	EVQ 11Y 07K		R & D		01
SW55	**VV439800**	Tact Switch	SKQNAJ				01
SW56	**V8889300**	Push Switch	EVQ 11Y 07K		COUNTRY		01
SW56	**VV439800**	Tact Switch	SKQNAJ				01
SW57	**V8889300**	Push Switch	EVQ 11Y 07K		MULTI PAD CONTROL(3)		01
SW57	**VV439800**	Tact Switch	SKQNAJ				01
SW58	**V8889300**	Push Switch	EVQ 11Y 07K		SYNC STOP		01
SW58	**VV439800**	Tact Switch	SKQNAJ				01
SW59	**V8889300**	Push Switch	EVQ 11Y 07K		LATIN		01
SW59	**VV439800**	Tact Switch	SKQNAJ				01
SW60	**V8889300**	Push Switch	EVQ 11Y 07K		BALLROOM		01
SW60	**VV439800**	Tact Switch	SKQNAJ				01
SW61	**V8889300**	Push Switch	EVQ 11Y 07K		MOVIE & SHOW		01

＊: New parts **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	SW61	**VV439800**	Tact Switch	SKQNAJ				01
	SW62	**V8889300**	Push Switch	EVQ 11Y 07K		MULTI PAD CONTROL(4)		01
	SW62	**VV439800**	Tact Switch	SKQNAJ				01
	SW63	**V8889300**	Push Switch	EVQ 11Y 07K		SYNC START		01
	SW63	**VV439800**	Tact Switch	SKQNAJ				01
	SW64	**V8889300**	Push Switch	EVQ 11Y 07K		ENTERTAINER		01
	SW64	**VV439800**	Tact Switch	SKQNAJ				01
	SW65	**V8889300**	Push Switch	EVQ 11Y 07K		WORLD		01
	SW65	**VV439800**	Tact Switch	SKQNAJ				01
	SW66	**V8889300**	Push Switch	EVQ 11Y 07K		FILE ACCESS		01
	SW66	**VV439800**	Tact Switch	SKQNAJ				01
	SW67	**V8889300**	Push Switch	EVQ 11Y 07K		START/STOP		01
	SW67	**VV439800**	Tact Switch	SKQNAJ				01
	SW68	**V8889300**	Push Switch	EVQ 11Y 07K		STOP		01
	SW68	**VV439800**	Tact Switch	SKQNAJ				01
	TA1	**WC710000**	Transistor Array	M54562FP				
	-4	**WC710000**	Transistor Array	M54562FP				
	TA4	**V3117600**	Transistor Array	M54564FP-DB1J		X6014C0 ONLY		04
	TA5	**V8566600**	Transistor Array	TD62785F-EL				05
	TR1	**WA013100**	Digital Transistor	DTDG23YP T100				01
	-3	**WA013100**	Digital Transistor	DTDG23YP T100				01
	TR4	**V5005800**	Digital Transistor	FMG11A				01
	TR5	**WA013100**	Digital Transistor	DTDG23YP T100				01
	TR6	**WA013100**	Digital Transistor	DTDG23YP T100				01
	TR7	**VY677600**	Digital Transistor	DTC123JKA TP				01
	TR8	**WA013100**	Digital Transistor	DTDG23YP T100				01
	TR9	**WA013100**	Digital Transistor	DTDG23YP T100				01
	X1	**V6150500**	Ceramic Resonator	8.38M EFOS8384E5				01
*		**WE817400**	Circuit Board	PNR		(WE81730)(X6015C0)		
*		**WE817500**	Circuit Board	USB		(WE81730)(X6015C0)		
	C1	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	-3	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C5	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C6	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
	C7	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
	C8	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C9	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C10	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C11	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
	C12	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C13	**US061330**	Ceramic Capacitor-CH(chip)	33P 50V J RECT.				01
	C14	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C15	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C16	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C17	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C18	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C19	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C20	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	-30	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C31	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C32	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C33	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C34	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C35	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	-37	**US062470**	Ceramic Capacitor-SL(chip)	470P 50V J RECT.				01
	C38	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C39	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C40	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C41	**UF037100**	Electrolytic Cap. (chip)	10 16V				01
	C42	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C43	**US064100**	Ceramic Capacitor-B (chip)	0.0100 50V K RECT.				01
	C44	**UF118220**	Electrolytic Cap. (chip)	220 6.3V UUR0J2				01
	C53	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C69	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	C70	**UF018100**	Electrolytic Cap. (chip)	100 6.3V				01
	C72	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
	-74	**US061680**	Ceramic Capacitor-SL(chip)	68P 50V J RECT.				01
	C75	**US065100**	Ceramic Capacitor-F (chip)	0.100 50V Z RECT.				
	CN1	**VB389600**	Connector Base Post	PH 11P SE				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
CN2	**VB858600**	Connector Base Post	PH 7P SE				01
CN3	**VM689000**	Connector , FFC	52045 23P TE				02
CN4	**VB858400**	Connector Base Post	PH 5P SE				01
CN5	**WA245700**	USB Connector	YKF45 4P SE				02
D1	**VR496500**	Diode	MA111 FLAT TP				
D1	**VT332900**	Diode	1SS355 TE-17 TP				01
D2	**VR496500**	Diode	MA111 FLAT TP				
D2	**VT332900**	Diode	1SS355 TE-17 TP				01
D3	**VR496500**	Diode	MA111 FLAT TP				
D3	**VT332900**	Diode	1SS355 TE-17 TP				01
D4	**VR496500**	Diode	MA111 FLAT TP				
D4	**VT332900**	Diode	1SS355 TE-17 TP				01
D5	**VR496500**	Diode	MA111 FLAT TP				
D5	**VT332900**	Diode	1SS355 TE-17 TP				01
D6	**VR496500**	Diode	MA111 FLAT TP				
D6	**VT332900**	Diode	1SS355 TE-17 TP				01
D7	**VR496500**	Diode	MA111 FLAT TP				
D7	**VT332900**	Diode	1SS355 TE-17 TP				01
D9	**VR496500**	Diode	MA111 FLAT TP				
D9	**VT332900**	Diode	1SS355 TE-17 TP				01
D10	**VR496500**	Diode	MA111 FLAT TP				
D10	**VT332900**	Diode	1SS355 TE-17 TP				01
D11	**VR496500**	Diode	MA111 FLAT TP				
D11	**VT332900**	Diode	1SS355 TE-17 TP				01
D12	**VR496500**	Diode	MA111 FLAT TP				
D12	**VT332900**	Diode	1SS355 TE-17 TP				01
D13	**VR496500**	Diode	MA111 FLAT TP				
D13	**VT332900**	Diode	1SS355 TE-17 TP				01
D14	**VR496500**	Diode	MA111 FLAT TP				
D14	**VT332900**	Diode	1SS355 TE-17 TP				01
D15	**VR496500**	Diode	MA111 FLAT TP				
D15	**VT332900**	Diode	1SS355 TE-17 TP				01
D16	**VR496500**	Diode	MA111 FLAT TP				
D16	**VT332900**	Diode	1SS355 TE-17 TP				01
D17	**VR496500**	Diode	MA111 FLAT TP				
D17	**VT332900**	Diode	1SS355 TE-17 TP				01
D18	**VR496500**	Diode	MA111 FLAT TP				
D18	**VT332900**	Diode	1SS355 TE-17 TP				01
D19	**VR496500**	Diode	MA111 FLAT TP				
D19	**VT332900**	Diode	1SS355 TE-17 TP				01
D20	**VR496500**	Diode	MA111 FLAT TP				
D20	**VT332900**	Diode	1SS355 TE-17 TP				01
D21	**VR496500**	Diode	MA111 FLAT TP				
D21	**VT332900**	Diode	1SS355 TE-17 TP				01
D22	**VR496500**	Diode	MA111 FLAT TP				
D22	**VT332900**	Diode	1SS355 TE-17 TP				01
D23	**VR496500**	Diode	MA111 FLAT TP				
D23	**VT332900**	Diode	1SS355 TE-17 TP				01
D24	**VR496500**	Diode	MA111 FLAT TP				
D24	**VT332900**	Diode	1SS355 TE-17 TP				01
D25	**VR496500**	Diode	MA111 FLAT TP				
D25	**VT332900**	Diode	1SS355 TE-17 TP				01
D26	**VR496500**	Diode	MA111 FLAT TP				
D26	**VT332900**	Diode	1SS355 TE-17 TP				01
D27	**VR496500**	Diode	MA111 FLAT TP				
D27	**VT332900**	Diode	1SS355 TE-17 TP				01
D28	**VR496500**	Diode	MA111 FLAT TP				
D28	**VT332900**	Diode	1SS355 TE-17 TP				01
D29	**VR496500**	Diode	MA111 FLAT TP				
D29	**VT332900**	Diode	1SS355 TE-17 TP				01
D30	**VR496500**	Diode	MA111 FLAT TP				
D30	**VT332900**	Diode	1SS355 TE-17 TP				01
D31	**VR496500**	Diode	MA111 FLAT TP				
D31	**VT332900**	Diode	1SS355 TE-17 TP				01
D32	**VR496500**	Diode	MA111 FLAT TP				
D32	**VT332900**	Diode	1SS355 TE-17 TP				01
D33	**VR496500**	Diode	MA111 FLAT TP				
D33	**VT332900**	Diode	1SS355 TE-17 TP				01
D34	**VR496500**	Diode	MA111 FLAT TP				
D34	**VT332900**	Diode	1SS355 TE-17 TP				01

＊: New parts **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
D35	**VR496500**	Diode	MA111 FLAT TP				
D35	**VT332900**	Diode	1SS355 TE-17 TP				01
D36	**VR496500**	Diode	MA111 FLAT TP				
D36	**VT332900**	Diode	1SS355 TE-17 TP				01
D37	**VR496500**	Diode	MA111 FLAT TP				
D37	**VT332900**	Diode	1SS355 TE-17 TP				01
D38	**VR496500**	Diode	MA111 FLAT TP				
D38	**VT332900**	Diode	1SS355 TE-17 TP				01
D39	**VR496500**	Diode	MA111 FLAT TP				
D39	**VT332900**	Diode	1SS355 TE-17 TP				01
D40	**VR496500**	Diode	MA111 FLAT TP				
D40	**VT332900**	Diode	1SS355 TE-17 TP				01
D41	**VR496500**	Diode	MA111 FLAT TP				
D41	**VT332900**	Diode	1SS355 TE-17 TP				01
D42	**VR496500**	Diode	MA111 FLAT TP				
D42	**VT332900**	Diode	1SS355 TE-17 TP				01
D43	**VR496500**	Diode	MA111 FLAT TP				
D43	**VT332900**	Diode	1SS355 TE-17 TP				01
D44	**VR496500**	Diode	MA111 FLAT TP				
D44	**VT332900**	Diode	1SS355 TE-17 TP				01
D45	**VR496500**	Diode	MA111 FLAT TP				
D45	**VT332900**	Diode	1SS355 TE-17 TP				01
D46	**VR496500**	Diode	MA111 FLAT TP				
D46	**VT332900**	Diode	1SS355 TE-17 TP				01
D47	**VR496500**	Diode	MA111 FLAT TP				
D47	**VT332900**	Diode	1SS355 TE-17 TP				01
D48	**VR496500**	Diode	MA111 FLAT TP				
D48	**VT332900**	Diode	1SS355 TE-17 TP				01
D49	**VR496500**	Diode	MA111 FLAT TP				
D49	**VT332900**	Diode	1SS355 TE-17 TP				01
D50	**VR496500**	Diode	MA111 FLAT TP				
D50	**VT332900**	Diode	1SS355 TE-17 TP				01
D51	**VR496500**	Diode	MA111 FLAT TP				
D51	**VT332900**	Diode	1SS355 TE-17 TP				01
D52	**VR496500**	Diode	MA111 FLAT TP				
D52	**VT332900**	Diode	1SS355 TE-17 TP				01
D53	**VR496500**	Diode	MA111 FLAT TP				
D53	**VT332900**	Diode	1SS355 TE-17 TP				01
D54	**VR496500**	Diode	MA111 FLAT TP				
D54	**VT332900**	Diode	1SS355 TE-17 TP				01
D55	**VR496500**	Diode	MA111 FLAT TP				
D55	**VT332900**	Diode	1SS355 TE-17 TP				01
D56	**VR496500**	Diode	MA111 FLAT TP				
D56	**VT332900**	Diode	1SS355 TE-17 TP				01
D57	**VR496500**	Diode	MA111 FLAT TP				
D57	**VT332900**	Diode	1SS355 TE-17 TP				01
D58	**VR496500**	Diode	MA111 FLAT TP				
D58	**VT332900**	Diode	1SS355 TE-17 TP				01
D59	**VR496500**	Diode	MA111 FLAT TP				
D59	**VT332900**	Diode	1SS355 TE-17 TP				01
D60	**VR496500**	Diode	MA111 FLAT TP				
D60	**VT332900**	Diode	1SS355 TE-17 TP				01
D61	**VR496500**	Diode	MA111 FLAT TP				
D61	**VT332900**	Diode	1SS355 TE-17 TP				01
D62	**VR496500**	Diode	MA111 FLAT TP				
D62	**VT332900**	Diode	1SS355 TE-17 TP				01
D63	**VR496500**	Diode	MA111 FLAT TP				
D63	**VT332900**	Diode	1SS355 TE-17 TP				01
D64	**VR496500**	Diode	MA111 FLAT TP				
D64	**VT332900**	Diode	1SS355 TE-17 TP				01
D65	**VR496500**	Diode	MA111 FLAT TP				
D65	**VT332900**	Diode	1SS355 TE-17 TP				01
EM1	**WE056200**	EMI Filter (chip)	NFM21PC105B1A3D				01
* IC1	**X5646200**	IC	M34519M6-521FP W4		LSC		
IC2	**XZ916200**	IC	UPD780031AYGK-N05		CPU		
L3	**VY657200**	Chip Inductance	600 BK1608HM601				01
L5	**V5239100**	Common Mode Coil	DLP31SN121SL2L				03
* LD1	**WF301100**	LED (chip)	WHITE		MUSIC FINDER		
LD2	**VT425100**	LED	90B-17-T1 RED		REC(HARD DISK RECORDER)		01
LD3	**VG778600**	LED	SLZ-290B-03-T2 TP		LEFT HOLD(PART ON/OFF)		01

＊: New part **（新規部品）**

RANK : Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*	LD4	**WF301000**	LED (chip)	SML-012PT GREEN		LEFT(PART SELECT)		
*	LD5	**WF300900**	LED (chip)	SML-512DW ORANGE		LEFT(PART ON/OFF)		
*	LD6	**WF301200**	LED	ORANGE MARU 2		PLAY/PAUSE(HARD DISK REC)		
*	LD7	**WF301000**	LED (chip)	SML-012PT GREEN		RIGHT1(PART SELECT)		
*	LD8	**WF300900**	LED (chip)	SML-512DW ORANGE		RIGHT1(PART ON/OFF)		
*	LD9	**WF301000**	LED (chip)	SML-012PT GREEN		RIGHT2(PART SELECT)		
*	LD10	**WF300900**	LED (chip)	SML-512DW ORANGE		RIGHT2(PART ON/OFF)		
*	LD11	**WF301000**	LED (chip)	SML-012PT GREEN		RIGHT3(PART SELECT)		
*	LD12	**WF300900**	LED (chip)	SML-512DW ORANGE		RIGHT3(PART ON/OFF)		
	LD13	**VT425300**	LED	SLZ290B17T1 2H TP		PIANO		01
	LD14	**VT425300**	LED	SLZ290B17T1 2H TP		E.PIANO		01
	LD15	**VT425300**	LED	SLZ290B17T1 2H TP		ORGAN		01
	LD16	**VT425300**	LED	SLZ290B17T1 2H TP		HARMONY/ECHO		01
	LD17	**VT425300**	LED	SLZ290B17T1 2H TP		STRINGS		01
	LD18	**VT425300**	LED	SLZ290B17T1 2H TP		CHOIR		01
	LD19	**VT425300**	LED	SLZ290B17T1 2H TP		BRASS		01
	LD20	**VT425300**	LED	SLZ290B17T1 2H TP		INITIAL TOUCH		01
	LD21	**VT425300**	LED	SLZ290B17T1 2H TP		TRUMPET		01
	LD22	**VT425300**	LED	SLZ290B17T1 2H TP		SAXOPHONE		01
	LD23	**VT425300**	LED	SLZ290B17T1 2H TP		FLUTE/CLARINET		01
	LD24	**VT425300**	LED	SLZ290B17T1 2H TP		SUSTAIN		01
*	LD25	**WF301000**	LED (chip)	SML-012PT GREEN		ONE TOUCH SETTING 1		
*	LD26	**WF300900**	LED (chip)	SML-512DW ORANGE		ONE TOUCH SETTING 1		
	LD27	**VT425300**	LED	SLZ290B17T1 2H TP		GUITAR		01
	LD28	**VT425300**	LED	SLZ290B17T1 2H TP		BASS		01
	LD29	**VT425300**	LED	SLZ290B17T1 2H TP		PERC./DRUM KIT		01
	LD30	**VT425300**	LED	SLZ290B17T1 2H TP		MONO		01
*	LD31	**WF301000**	LED (chip)	SML-012PT GREEN		ONE TOUCH SETTING 2		
*	LD32	**WF300900**	LED (chip)	SML-512DW ORANGE		ONE TOUCH SETTING 2		
	LD33	**VT425300**	LED	SLZ290B17T1 2H TP		ACCORDION		01
	LD34	**VT425300**	LED	SLZ290B17T1 2H TP		PAD		01
	LD35	**VT425300**	LED	SLZ290B17T1 2H TP		SYNTH		01
	LD36	**VT425300**	LED	SLZ290B17T1 2H TP		DSP		01
*	LD37	**WF301000**	LED (chip)	SML-012PT GREEN		ONE TOUCH SETTING 3		
*	LD38	**WF300900**	LED (chip)	SML-512DW ORANGE		ONE TOUCH SETTING 3		
	LD39	**VT425300**	LED	SLZ290B17T1 2H TP		ORGAN FLUTES		01
	LD40	**VT425300**	LED	SLZ290B17T1 2H TP		CUSTOM VOICE		01
	LD41	**VT425300**	LED	SLZ290B17T1 2H TP		USER DRIVE		01
	LD42	**VT425300**	LED	SLZ290B17T1 2H TP		DSP VARIATION		01
*	LD43	**WF301000**	LED (chip)	SML-012PT GREEN		ONE TOUCH SETTING 4		
*	LD44	**WF300900**	LED (chip)	SML-512DW ORANGE		ONE TOUCH SETTING 4		
	LD45	**VT361700**	LED	SLZ274B03T1 2X4 TP		READ/WRITE		01
	R1	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	R5	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
	-10	**RD354330**	Carbon Resistor (chip)	33.0 63M J RECT.				01
	R11	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	-13	**RD354470**	Carbon Resistor (chip)	47.0 63M J RECT.				01
	R14	**RD355470**	Carbon Resistor (chip)	470.0 63M J RECT.				01
	-28	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
	R29	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-38	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R39	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
	R40	**RD356560**	Carbon Resistor (chip)	5.6K 63M J RECT.				01
	R41	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-43	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R47	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-53	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R57	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-60	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R61	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-74	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R75	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-78	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R79	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	-82	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
	R83	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	-93	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
	R94	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	-97	**RD354680**	Carbon Resistor (chip)	68.0 63M J RECT.				01
	R98	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01

＊: New parts **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
-101	**RD355390**	Carbon Resistor (chip)	390.0 63M J RECT.				01
R102	**RD356100**	Carbon Resistor (chip)	1.0K 63M J RECT.				01
R103	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
-108	**RD354220**	Carbon Resistor (chip)	22.0 63M J RECT.				01
R109	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
-114	**RD357100**	Carbon Resistor (chip)	10.0K 63M J RECT.				01
R116	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
R117	**RD350000**	Carbon Resistor (chip)	0 63M J RECT.				01
SW1	**V8889300**	Push Switch	EVQ 11Y 07K		MUSIC FINDER		01
SW1	**VV439800**	Tact Switch	SKQNAJ				01
SW3	**V8889300**	Push Switch	EVQ 11Y 07K		REC(HARD DISK REC.)		01
SW3	**VV439800**	Tact Switch	SKQNAJ				01
SW4	**V8889300**	Push Switch	EVQ 11Y 07K		LEFT HOLD(PART ON/OFF)		01
SW4	**VV439800**	Tact Switch	SKQNAJ				01
SW5	**V8889300**	Push Switch	EVQ 11Y 07K		FUNCTION		01
SW5	**VV439800**	Tact Switch	SKQNAJ				01
SW6	**V8889300**	Push Switch	EVQ 11Y 07K		STOP(HARD DISK REC.)		01
SW6	**VV439800**	Tact Switch	SKQNAJ				01
SW7	**V8889300**	Push Switch	EVQ 11Y 07K		LEFT(PART SELECT)		01
SW7	**VV439800**	Tact Switch	SKQNAJ				01
SW8	**V8889300**	Push Switch	EVQ 11Y 07K		LEFT(PART ON/OFF)		01
SW8	**VV439800**	Tact Switch	SKQNAJ				01
SW9	**V8889300**	Push Switch	EVQ 11Y 07K		VOICE CREATOR		01
SW9	**VV439800**	Tact Switch	SKQNAJ				01
SW10	**V8889300**	Push Switch	EVQ 11Y 07K		SELECT(HARD DISK REC.)		01
SW10	**VV439800**	Tact Switch	SKQNAJ				01
SW11	**V8889300**	Push Switch	EVQ 11Y 07K		PLAY/PAUSE(HARD DISK REC)		01
SW11	**VV439800**	Tact Switch	SKQNAJ				01
SW12	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT1(PART SELECT)		01
SW12	**VV439800**	Tact Switch	SKQNAJ				01
SW13	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT1(PART ON/OFF)		01
SW13	**VV439800**	Tact Switch	SKQNAJ				01
SW14	**V8889300**	Push Switch	EVQ 11Y 07K		DIGITAL RECORDING		01
SW14	**VV439800**	Tact Switch	SKQNAJ				01
SW15	**V8889300**	Push Switch	EVQ 11Y 07K		SETTING(HARD DISK REC.)		01
SW15	**VV439800**	Tact Switch	SKQNAJ				01
SW16	**V8889300**	Push Switch	EVQ 11Y 07K		PREV(HARD DISK REC.)		01
SW16	**VV439800**	Tact Switch	SKQNAJ				01
SW17	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT2(PART SELECT)		01
SW17	**VV439800**	Tact Switch	SKQNAJ				01
SW18	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT2(PART ON/OFF)		01
SW18	**VV439800**	Tact Switch	SKQNAJ				01
SW19	**V8889300**	Push Switch	EVQ 11Y 07K		NEXT(HARD DISK REC.)		01
SW19	**VV439800**	Tact Switch	SKQNAJ				01
SW20	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT3(PART SELECT)		01
SW20	**VV439800**	Tact Switch	SKQNAJ				01
SW21	**V8889300**	Push Switch	EVQ 11Y 07K		RIGHT3(PART ON/OFF)		01
SW21	**VV439800**	Tact Switch	SKQNAJ				01
SW22	**V8889300**	Push Switch	EVQ 11Y 07K		PIANO		01
SW22	**VV439800**	Tact Switch	SKQNAJ				01
SW23	**V8889300**	Push Switch	EVQ 11Y 07K		E.PIANO		01
SW23	**VV439800**	Tact Switch	SKQNAJ				01
SW24	**V8889300**	Push Switch	EVQ 11Y 07K		ORGAN		01
SW24	**VV439800**	Tact Switch	SKQNAJ				01
SW25	**V8889300**	Push Switch	EVQ 11Y 07K		HARMONY/ECHO		01
SW25	**VV439800**	Tact Switch	SKQNAJ				01
SW26	**V8889300**	Push Switch	EVQ 11Y 07K		UPPER OCTAVE-		01
SW26	**VV439800**	Tact Switch	SKQNAJ				01
SW27	**V8889300**	Push Switch	EVQ 11Y 07K		STRINGS		01
SW27	**VV439800**	Tact Switch	SKQNAJ				01
SW28	**V8889300**	Push Switch	EVQ 11Y 07K		CHOIR		01
SW28	**VV439800**	Tact Switch	SKQNAJ				01
SW29	**V8889300**	Push Switch	EVQ 11Y 07K		BRASS		01
SW29	**VV439800**	Tact Switch	SKQNAJ				01
SW30	**V8889300**	Push Switch	EVQ 11Y 07K		INITIAL TOUCH		01
SW30	**VV439800**	Tact Switch	SKQNAJ				01
SW31	**V8889300**	Push Switch	EVQ 11Y 07K		UPPER OCTAVE+		01
SW31	**VV439800**	Tact Switch	SKQNAJ				01
SW32	**V8889300**	Push Switch	EVQ 11Y 07K		TRUMPET		01
SW32	**VV439800**	Tact Switch	SKQNAJ				01

＊: New part **（新規部品）**

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
SW33	**V8889300**	Push Switch	EVQ 11Y 07K		SAXOPHONE		01
SW33	**VV439800**	Tact Switch	SKQNAJ				01
SW34	**V8889300**	Push Switch	EVQ 11Y 07K		FLUTE/CLARINET		01
SW34	**VV439800**	Tact Switch	SKQNAJ				01
SW35	**V8889300**	Push Switch	EVQ 11Y 07K		SUSTAIN		01
SW35	**VV439800**	Tact Switch	SKQNAJ				01
SW36	**V8889300**	Push Switch	EVQ 11Y 07K		ONE TOUCH SETTING 1		01
SW36	**VV439800**	Tact Switch	SKQNAJ				01
SW37	**V8889300**	Push Switch	EVQ 11Y 07K		GUITAR		01
SW37	**VV439800**	Tact Switch	SKQNAJ				01
SW38	**V8889300**	Push Switch	EVQ 11Y 07K		BASS		01
SW38	**VV439800**	Tact Switch	SKQNAJ				01
SW39	**V8889300**	Push Switch	EVQ 11Y 07K		PERC./DRUM KIT		01
SW39	**VV439800**	Tact Switch	SKQNAJ				01
SW40	**V8889300**	Push Switch	EVQ 11Y 07K		MONO		01
SW40	**VV439800**	Tact Switch	SKQNAJ				01
SW41	**V8889300**	Push Switch	EVQ 11Y 07K		ONE TOUCH SETTING 2		01
SW41	**VV439800**	Tact Switch	SKQNAJ				01
SW42	**V8889300**	Push Switch	EVQ 11Y 07K		ACCORDION		01
SW42	**VV439800**	Tact Switch	SKQNAJ				01
SW43	**V8889300**	Push Switch	EVQ 11Y 07K		PAD		01
SW43	**VV439800**	Tact Switch	SKQNAJ				01
SW44	**V8889300**	Push Switch	EVQ 11Y 07K		SYNTH		01
SW44	**VV439800**	Tact Switch	SKQNAJ				01
SW45	**V8889300**	Push Switch	EVQ 11Y 07K		DSP		01
SW45	**VV439800**	Tact Switch	SKQNAJ				01
SW46	**V8889300**	Push Switch	EVQ 11Y 07K		ONE TOUCH SETTING 3		01
SW46	**VV439800**	Tact Switch	SKQNAJ				01
SW47	**V8889300**	Push Switch	EVQ 11Y 07K		ORGAN FLUTES		01
SW47	**VV439800**	Tact Switch	SKQNAJ				01
SW48	**V8889300**	Push Switch	EVQ 11Y 07K		CUSTOM VOICE		01
SW48	**VV439800**	Tact Switch	SKQNAJ				01
SW49	**V8889300**	Push Switch	EVQ 11Y 07K		USER DRIVE		01
SW49	**VV439800**	Tact Switch	SKQNAJ				01
SW50	**V8889300**	Push Switch	EVQ 11Y 07K		DSP VARIATION		01
SW50	**VV439800**	Tact Switch	SKQNAJ				01
SW51	**V8889300**	Push Switch	EVQ 11Y 07K		ONE TOUCH SETTING 4		01
SW51	**VV439800**	Tact Switch	SKQNAJ				01
TA1	**WC710000**	Transistor Array	M54562FP				
TA2	**WC710000**	Transistor Array	M54562FP				
TA3	**V8566600**	Transistor Array	TD62785F-EL				05
TR1	**WA013100**	Digital Transistor	DTDG23YP T100				01
-6	**WA013100**	Digital Transistor	DTDG23YP T100				01
TR7	**VY677600**	Digital Transistor	DTC123JKA TP				01
X1	**V6150500**	Ceramic Resonator	8.38M EFOS8384E5				01
⚠	**V2917100**	AC Cord Set	E 2P 2.5m 2.5A		E		05
⚠	**V2917000**	AC Cord Set	U 2P 2.44m 7A		U		06
⚠	**VT016000**	AC Cord Set	B 2P 2.5m		B		08
⚠	**VC843500**	Push Switch	SDDLB1 J.U.C.S.VD		POWER ON/OFF		03
⚠	**WB501300**	Power Supply Unit					22
	V3438000	PC Sensor	YMHM-016				10
	WB168800	Rubber Contact	12KEY 2M		C2#-C3,C3#-C4,C4#-C5 C5#-C6		04
	WB168900	Rubber Contact	13KEY 2M		C1-C2		04
*	**WB911901**	LCD	MC75T03B				
	VT695100	Rotary Variable Resistor	SP.10 RK1631110TJN		PITCH BEND,MODULATION		03

* : New parts **（新規部品）**

RANK : Japan only

MONITOR SPEAKER

TRS-MS02

PARTS LIST

■ **CONTENTS**

OVERALL ASSEMBLY 2

Note) DESTINATION ABBREVIATIONS

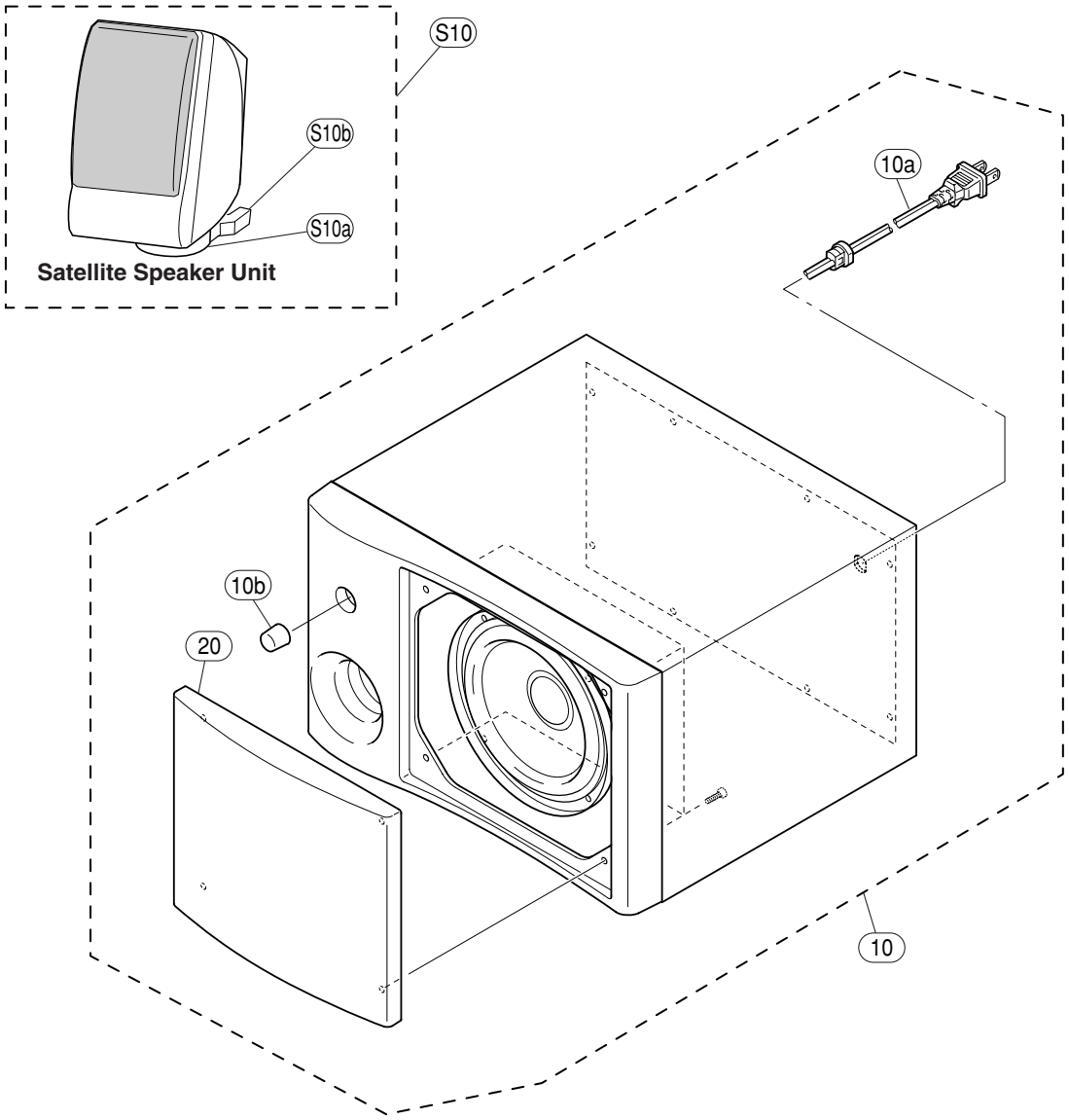
A:	Australian model	O:	Chinese model
B:	British model	Q:	South-east Asia model
C:	Canadian model	T:	Taiwan model
D:	German model	U:	U.S.A. model
E:	European model	V:	General export model (110V)
F:	French model	W:	General export model (220V)
H:	North European model	N,X:	General export model
I:	Indonesian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

■ WARNING

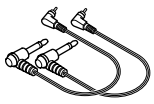
Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

■ The numbers in “QTY” shows quantities for each unit.
■ The parts with “--” in “Part No.” are not available as spare parts.
■ The second letter of the shaded ( ) part number is I, not one.
■ The second letter of the shaded ( ) part number is O, not zero.

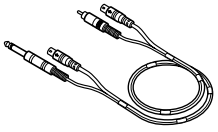
■ OVERALL ASSEMBLY



ACCESSORIES



Speaker Cable
(RCA pin cables)



Woofer Cable
(RCA pin/8-pin combination cable)



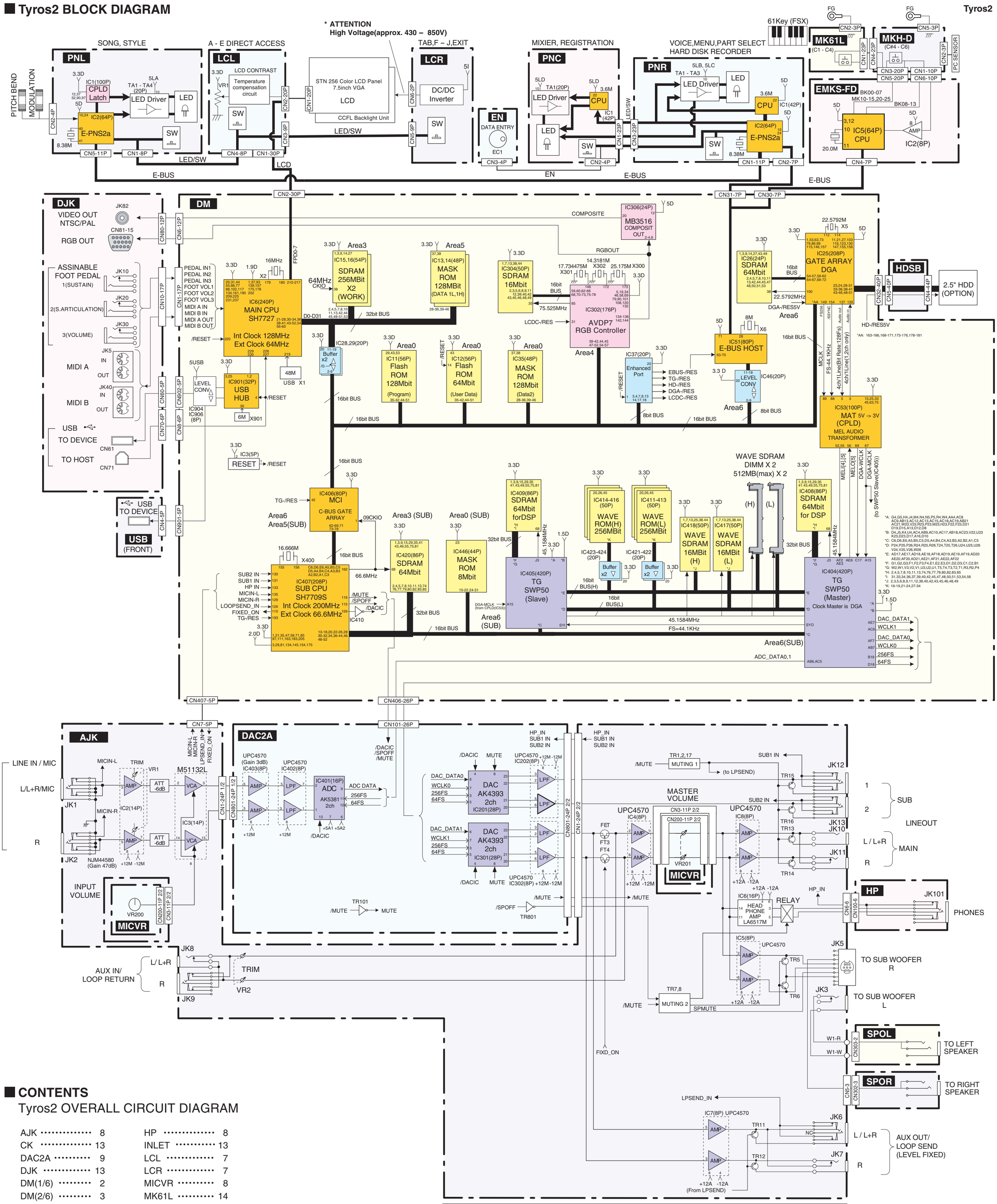
Speaker Stand Assembly
(Speaker brackets)

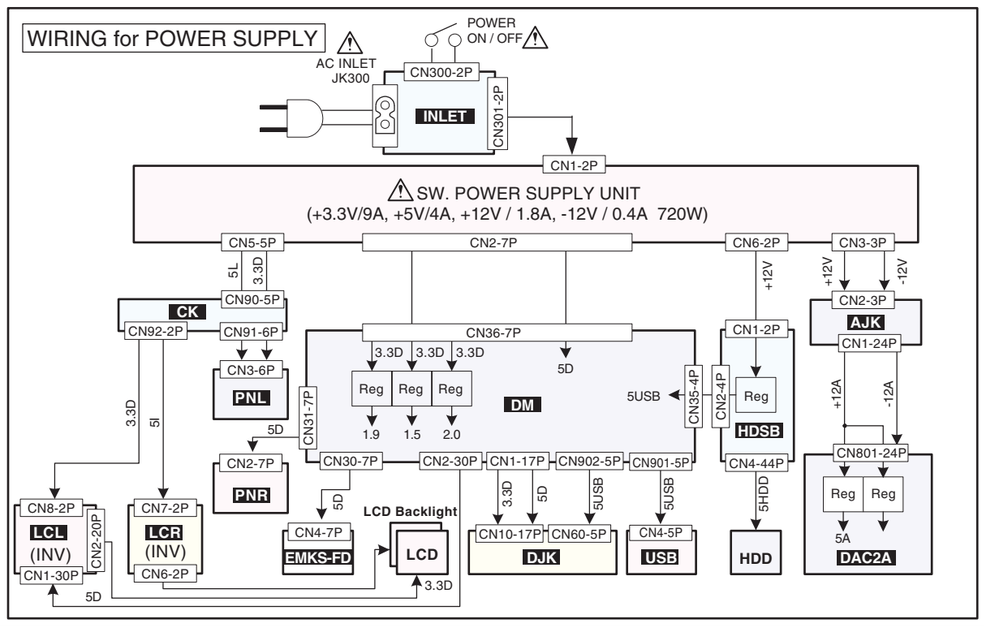
	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			WOOFER SPEAKER SYSTEM			TRS-MS02		
*	10	**WF886600**	Woofer Unit E			E		
*	10	**WF886700**	Woofer Unit U			U		
*	10	**WF886800**	Woofer Unit B			B		
*	10	**WF886900**	Woofer Unit A			A		
⚠	10a	**V8366400**	Power Cord			E		04
⚠	10a	**V8366300**	Power Cord			U		04
⚠ *	10a	**WF886300**	Power Cord			B		
⚠ *	10a	**WF886400**	Power Cord			A		
*	10b	**WF887500**	Knob VR			BASS		
*	20	**WG033100**	Grille Assembly					
*	S10	**WF887000**	Satellite SP				2	
*	S10a	**WF887300**	Table				2	
*	S10b	**WF887400**	Lever				2	
			ACCESSORIES			TRS-MS02		
*		**WF887200**	Woofer Cable					
*		**WF887100**	Speaker Cable				2	
*		**WF237400**	Speaker Stand Ass'y				2	

＊: New part **（新規部品）**

RANK : Japan only

Tyros2 BLOCK DIAGRAM





CONTENTS

Tyros2 OVERALL CIRCUIT DIAGRAM

AJK	8	HP	8
CK	13	INLET	13
DAC2A	9	LCL	7
DJK	13	LCR	7
DM(1/6)	2	MICVR	8
DM(2/6)	3	MK61L	14
DM(3/6)	4	MKH-D	14
DM(4/6)	5	PNC	12
DM(5/6)	6	PNL	10
DM(6/6)	7	PNR	11
EMKS-FD	14	SPOL	8
EN	12	SPOR	8
HDSB	7	USB	7

Notation for Circuit Diagrams

1. How to identify inter-sheet connectors.

Signal name — The 2-digit number indicates the destination page.

This indicates the location of the counter inter-sheet connector. (The alphabet indicates horizontal direction and the number indicates vertical direction.)

■ Tyros2 OVERALL CIRCUIT DIAGRAM 1/13 (DM 1/6)

DM 1/6

VOLTAGE DETECTOR

Manual Reset for Development

MAINROMICE-RES

INVERTER

INVERTER

INVERTER

OR

Not installed

Resistance 0.6

Not installed

to DJK-CN10 <P.13 I-2>

to LCL-CN1 <P.7 G-2>

Not installed

Not installed

Not installed

Not installed

Not installed

Not installed

Not Installed

Not Installed

Not

■ Tyros2 OVERALL CIRCUIT DIAGRAM 2/13 (DM 2/6)

DM 2/6

PROGRAM BOOT FLASH ROM 128Mbit

IC11 TC58FVM7B2AT065

FLASH ROM 128M

ICE-ON (SW51) Not installed

Not installed

AREA0 USER DATA FLASH 64Mbit

IC12 TC58FVM6B2AT065

FLASH ROM 64M

Not installed

PROGRAM DATA 2 FLASH 128Mbit

IC39 TC58FVM7B2ATG65

MASK ROM 128M

LEVEL CONVERTER

IC45 TC74VHC14FT

IC46 HD74LVC245A

CPU
EBUS HOST
IC51 M38869MBA-112GP
AREA6
Internal 8MHz
External 4MHz

INVERTER

IC49 TC74VHC14FT

Not installed

EBUS (KEYBOARD) to EMSK-F-CN4 <P14. D-4>

EBUS (PNL) to PNR-CN2 <P11. B-7>

CN30 B2B-PH-SM3-TB

CN31 B07B-PH-SM3-TB

- **MA111** (VR496500)
  DIODE
  DM:D201-D204
  1 : ANODE
  2 : CATHODE

bit0: /WP for Program ROM
bit1: /WP for DATA1 ROM
bit2: Reset for Sound generator CPU
bit3: Reset for AVDP7
bit4: Reset for EBUS-HOST
bit5: Reset for DGA
bit6: Reset for HD
bit7: No use

Reset for EBUS CPU

Reset for DGA

D-FF

IC37 TC74VHC273AFW

BUFFER

IC27 TC74VHC245FT

TRANSCEIVER

GATE ARRAY (DGA)
DGA
IDE I/F, SDRAM I/F, Address Dec.TIMER
IC25
S1L52502F24J000
AREA6

DRAM 64M

IC26 E-MEM1116

MAT
MEL AUDIO TRANSFORMER
IC53 LC4256V-75TN100
CPLD
CPLD (MEL)

PLD-64FS
PLD-ADLR
PLD-WCLK0
PLD-WCLK1

Not connected for CPLD writing

CN36 B06B-PH-SM3-TB

CN32 40PMN-SMT-A-TFT

to HDSB-CN5 <P7. I-6>

Not installed

Not installed

Not installed

28CC1-2000005325-2 ⚠3

(セ) : Ceramic Capacitor

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

■ Tyros2 OVERALL CIRCUIT DIAGRAM 3/13 (DM 3/6)

DM 3/6

to SW. Power Supply Unit-CN2 <P.13 E-7>

to HDSB-CN2 <P.7 I-7>

to DJK-CN80 <P.13 C-3>

ANALOG RGB OUT TO DJACK CN4

COMPOSITE

Not installed

INVERTER

INVERTER

D-FF

COMPOSITE OUT

BUFFER

AREA4

AVDP7

RGB CONTROLLER

IC302

YGV628

RGB CONTROLLER (AVDP7)

IC304 K4S161622H-UC60000

SDRAM 16M

- **IMX9** (V2731900) PAIR TRANSISTOR

DM:TA300

1 : Tr1-C
2 : Tr2-B
3 : Tr2-E
4 : Tr2-C
5 : Tr1-B
6 : Tr1-E

Notation for Circuit Diagrams
1. How to identify inter-sheet connectors.

Signal name — The 2-digit number indicates the distination page.

This indicates the location of the counter inter-sheet connector.
(The alphabet indicates horizontal direction and the number indicates vertical direction.)

（金被）：Metal Film Resistor
（セ）：Ceramic Capacitor

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

28CC1-2000005325-3/1

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 4/13 (DM 4/6)

DM 4/6

REGULATOR

REGULATOR

REGULATOR

C-BUS GATEARRAY (MCI)

SUB-CPU (SH3)

SDRAM 64M

SDRAM 64M

MASK ROM 8M

DEMULTIPLEXER

SDRAM 16M

SDRAM 16M

TONE GENERATOR SLAVE

TONE GENERATOR MASTER

SDRAM 64M

SDRAM 64M

TONE GENERATOR SLAVE

TONE GENERATOR MASTER

TONE GENERATOR SLAVE

TONE GENERATOR MASTER

Not installed

Not installed

Not installed

Not installed

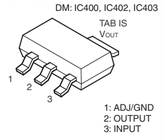
Not installed

Not installed

to DAC2A-CN101 <P9. B-3>

to AJK-CN7 <P8. B-6>

• **LMS8117AMP-ADJ** (X0609A00)
REGULATOR
DM: IC400, IC402, IC403



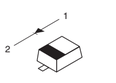
1: ADJ/GND
2: OUTPUT
3: INPUT

• **D1F60** (VS201100)
DIODE
DM:D1,D400-D402



1: ANODE
2: CATHODE

• **MA111** (VR496500)
DIODE
DM:D403-D408



1 : ANODE
2 : CATHODE

28CC1-2000005325-4 /2

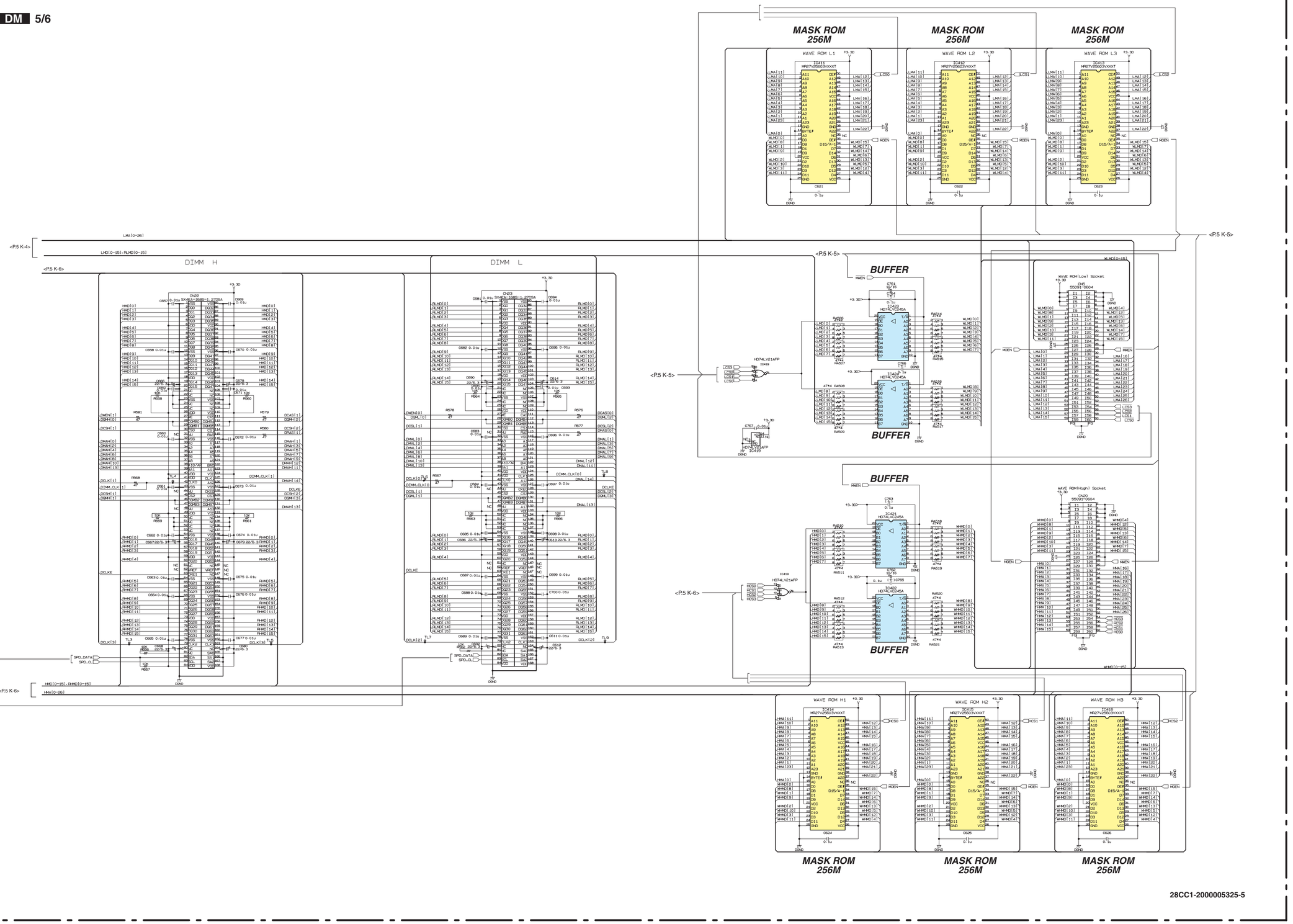
（金被）：Metal Film Resistor
（セ）：Ceramic Capacitor

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

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 5/13 (DM 5/6)

DM 5/6



28CC1-2000005325-5

（セ）：Ceramic Capacitor

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

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 6/13 (DM 6/6,LCL,LCR,HDSB,USB)

DM 6/6

USB POWER SWITCH

IC900 LPD1587S0
IC904 LPD1587S0
USB TO DEVICE (FRONT) CN901 B05B-PH-SM3-TB
USB TO DEVICE (REAR) CN902 B05B-PH-SM3-TB
Not installed
to DJK-CN60 <P.13 C-2>

USB-HUB

IC901 USB2514BI
<P.2 C-2> HUB-RES
<P.2 C-4> USB2_DM, USB2_DP

INVERTER

IC10 TC74VHC14FT
<P.2 F-7> USB1_PWR
<P.2 F-7> USB_VBAS
<P.2 C-4> USB1_DM, USB1_DP
IC9 HD74LV126ATELL
CN8 B06B-PH-SM3-TB
to DJK-CN70 <P.13 C-2>

28CC1-2000005325-6 /1

USB

CN4 PH5P
CN5 USB-AB-S8S-TH(LF)(SN)
EM1 NFM21PC105B1A3D
USB TO DEVICE
to DJK-CN70 <P.13 C-2>

28CC1-2000005326 /1

LCL

CN1 08-6212-030-340-B00+
CN2 08-6210-020-340-B00+
LCD-ON, LCD-FLM, LCD-MDSP, LCD-CP-, LCD-CP+
FPD[0]–FPD[7]
to DM-CN2 <P.2 F-2>

LVDS RECEIVER

DS90LV012ATMF/NOPB
IC2 BK1608HM601
12MHz Clock
Not installed

OP AMP

IC1 NJM12904M
IC1 NJM12904M
TH1 NCP18WX222J03RB

DIRECT ACCESS

SA[10-13], DA[0-3]
SW1 EVQ_QWS_03W
SW2 EVQ_QWS_03W
SW3 EVQ_QWS_03W
SW4 EVQ_QWS_03W
SW5 EVQ_QWS_03W
SW6 EVQ_QWS_03W
D1–D6 MA111
CN3 52207-0990
CN4 52207-0890
to PNL-CN1 <P.10 K-6>

LCD CONTRAST

VR1 RK14J11A
IC1 NJM12904M
IC2 DS90LV012ATMF
W1 834T-1100
to CK-CN92 <P.13 G-7>

28CC1-2000005329-1 /2

LCR

CN5 52207-0990
CN7 S02B-PH-SM3-TB
CN6 SM02B-BHS-1-TB
SB[12-13], DB[0-3]
TAB 〈, TAB 〉, F, G, H, I, J, EXIT
SW7–SW14 EVQ_QWS_03W
D7–D14 MA111
to CK-CN92 <P.13 G-7>

* ATTENTION
Hight Voltage(approx. 430 – 850V)

28CC1-2000005329-2 /1

LCD

CN1
LCD
LCD Backlight Unit

HDSB

CN5 40FMN-BTK-A-LF-SN
CN4 SFB20S-2S02A01
to DM-CN32 <P.3 K-6>
to HDD (OPTION)
to SW. Power Supply Unit-CN6 <P.13 E-7 >
to DM-CN35 <P.4 B-3>

SW. REGULATOR +5V

IC1 SI-8050S(LF1101)

28CC1-2000005332 /1

- **SI-8050S** (XT442A00) REGULATOR +5V — HDSB:IC1
  1: INPUT, 2: SW out, 3: GND, 4: OUTPUT, 5: S.S
- **HZM6.2MWATR-E** (WF468100) ZENER DIODE ARRAY — DM:DA902
  1: CATHODE1, 2: CATHODE2, 3: ANODE
- **HZM6.2Z4MFA** (WE297800) ZENER DIODE ARRAY — DM:DA901
  1: CATHODE1, 2: CATHODE2, 3: CATHODE3, 4: ANODE, 5: CATHODE4
- **1SS355 TE-17** (VT332900) **MA111** (VR496500) DIODE — LCL,LCR:D1-D14
  1 : ANODE, 2 : CATHODE

（マ）：Mylar Capacitor
（セ）：Ceramic Capacitor

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

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 7/13 (AJK,HP,MICVR,SPOL,SPOR)

MICVR

INPUT VOLUME

MASTER VOLUME

28CC1-2000005331 /1

AJK

MIC/LINE IN

L / L+R / MIC

LINE IN / MIC

R

OP AMP

Gain:+47dB
LPF:56.8kHz

Gain:-6dB

VCA

FG

TRIM

Input voltage
max:3.4Vrms

Input resistance
min:50kΩ

Not installed

to DAC2A-CN801
<P.9 K-1>

to DM-CN407
<P.5 B-6>

to SW. Power Supply Unit
CN3
<P.13 E-7>

MAIN OUT GATE CONTROL

MUTE CONTROL

PHONES & WOOFER CIRCUIT

LOOP SEND/RETERN

LINE OUT MAIN/SUB

TO SUB WOOFER L

TO SUB WOOFER R

SPOL

TO LEFT SPEAKER

28CC1-2000005331 /1

SPOR

TO RIGHT SPEAKER

28CC1-2000005331 /1

HP

PHONES

28CC1-2000005331 /1

AUX OUT/LOOP SEND (LEVEL FIXED)

AUX IN/LOOP RETURN

TRIM

MAIN

LINE OUT

SUB

28CC1-2000005330 /1

- **1SS355 TE-17** (VT332900)
  MA111 (VR496500)
  DIODE AJK:D1,D12,D21,D22

1 : ANODE
2 : CATHODE

- **UDZS12B** (VU172800)
  ZENER DIODE 12V
  AJK:ZD1

1 : ANODE
2 : CATHODE

(セ) : Ceramic Capacitor

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

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 8/13 (DAC2A)

Tyros2

DAC2A

to DM-CN406 <P.5 B-5>

to AJK-CN1 <P.8 B-5>

CN101 52808-2691

CN601 B11B-PH-SM3-TB

CN701 B05B-PH-SM3-TB

CN502 B06B-PH-SM3-TB

CN501 B07B-PH-SM3-TB

Not installed

Input resistance : Min. 10k

fc : 15.9Hz

Gain : +3dB

DAC IC201 AK4393

DAC IC301 AK4393

OP AMP IC202 IC302

OP AMP IC402 IC403 IC404

ADC IC401 AK5381VTP

IC501 AK5381

REGULATOR +3.3V IC102 TAR5S33

REGULATOR +5V IC101 UPC2905T

D101 D1F60

ZD401 ZD402 ZD403 ZD404 MA8062-H-TX1

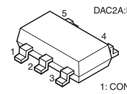
TR101 TR801

28CC1-2000005333 1

(セ) : Ceramic Capacitor

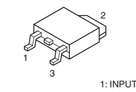
Note: See parts list for details of circuit board component parts.

- **TAR5S33** (XZ642A00) REGULATOR +3.3V
  DAC2A:IC102



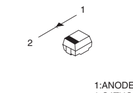
1: CONTROL
2: GND
3: NOISE
4: OUTPUT
5: INPUT

- **μPC2905T-E1** (X5826A00) REGULATOR +5V
  DAC2A: IC101



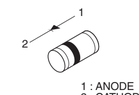
1: INPUT
2: COMMON
3: OUTPUT

- **D1F60** (VS201100) DIODE
  DAC2A:D101,102



1:ANODE
2:CATHODE

- **RLS-73 TE-11** (VV925900) DIODE
  DAC2A:D401-404



1 : ANODE
2 : CATHODE

■ Tyros2 OVERALL CIRCUIT DIAGRAM 9/13 (PNL)

PNL

MIC/LINE

SIGNAL · VOCAL HARMONY · TALK · EFFECT · VH TYPE SELECT · MIC SETTING

OVER · LYRICS/TEXT · SCORE · GUIDE · P.A.T.

DEMO

SP1 · SP2 · SP3 · SP4 · LOOP

FADE IN/OUT · REC · STOP · PLAY/PAUSE · REW · FF

ACMP · OTS LINK · AUTO FILL IN · METRONOME ON/OFF · TAP TEMPO · TEMPO − · TEMPO +

SONG 1 · SONG 4 · POP & ROCK · SWING & JAZZ · LATIN · ENTERTAINER

SONG 2 · SONG 5 · BALLAD · R & B · BALLROOM · WORLD

SONG 3 · SONG 6 · DANCE · COUNTRY · MOVIE & SHOW · FILE ACCESS

TRANSPOSE − · TRANSPOSE + · SELECT · MULTI PAD CONTROL 1 · MULTI PAD CONTROL 2 · MULTI PAD CONTROL 3 · MULTI PAD CONTROL 4 · STOP

INTRO 1 · INTRO 2 · INTRO 3 · VARIATION A · VARIATION B · VARIATION C · VARIATION D · BREAK · ENDING/rit. 1 · ENDING/rit. 2 · ENDING/rit. 3 · SYNC STOP · SYNC START · START/STOP

PITCH BEND · MODULATION

to CK-CN91 <P.13 G-7>

to PNR-CN1 <P.11 B-6>

Not installed

D1~D6: MA111

LED DRIVER

LED DRIVER

LED DRIVER

CPLD
IC1
M4A3-64/64-10VC
Dymamic-->Static Convert (CPLD)

CPU
IC2
UPD780031AYGK-N05-9ET
E-PNS2a

Specification of IC2
Device ID No.=1110
Switch: Low Active
LED: Low Active
Drive: D[0-7] High Active
D[8-9] Low Active
/D[8]: Latch Clear(IC1)

* M54564FP-DB1J(V3117600) is used in Version C.

to LCL-CN4 <P.7 K-3>

Not installed

Not installed

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

28CC1-2000005327 3

- **DTC123JKA TP** (VY677600) DIGITAL TRANSISTOR PNL : TR7
  1 : GND 2 : INPUT 3 : OUTPUT
- **DTDG23YP T100** (WA013100) DIGITAL TRANSISTOR PNL : TR1-3,5,6,8,9
  1 : INPUT 2 : OUTPUT 3 : GND
- **FMG11A** (V5005800) DIGITAL TRANSISTOR PNL : TR4
  1 : DTr1-C 2 : DTr2-C 3 : DTr2-B 4 : DTr1,2-E 5 : DTr1-B
- **1SS355 TE-17** (VT332900)
- **MA111** (VR496500) DIODE PNL:D1-76
  1 : ANODE 2 : CATHODE

■ Tyros2 OVERALL CIRCUIT DIAGRAM 10/13 (PNR)

PNR

FUNCTION | VOICE CREATOR | DIGITAL RECORDING | SELECT | SETTING

MUSIC FINDER | REC | STOP | PLAY/PAUSE | PREV | NEXT

PART SELECT LEFT | PART SELECT RIGHT 1 | PART SELECT RIGHT 2 | PART SELECT RIGHT 3

LEFT HOLD | PART ON/OFF LEFT | PART ON/OFF RIGHT 1 | PART ON/OFF RIGHT 2 | PART ON/OFF RIGHT 3

PIANO | STRINGS | TRUMPET | GUITER | ACCORDION | ORGAN FLUTES

E.PIANO | CHOIR | SAXOPHONE | BASS | PAD | COSTOM VOICE

ORGAN | BRASS | FLUTE / CLARINET | PERC / DRUM KIT | SYNTH | USER DRIVE

HARMONY/ECHO | INITIAL TOUCH | SUSTAIN | MONO | DSP | DSP VARIATION | READ/WRITE

UPPER OCTAVE − | UPPER OCTAVE + | ONE TOUCH SET 1 | ONE TOUCH SET 2 | ONE TOUCH SET 3 | ONE TOUCH SET 4

Not installed

to PNC-CN1 <P.12 B-5>

to PNL-CN5 <P.10 A-6>

to DM-CN31 <P.3 K-2>

LED DRIVER

CPU IC1 M34519M6-521FP

CPU IC2 UPD78003AYGK-N05-9ET

Specification of IC2
Device ID No.=1100
Switch: Low Active
LED: Low Active
Drive: D[0-7] High Active
D[8-9] Low Active

LED DRIVER TA3 TD62785P(EL)

- **DTC123JKA TP** (VY677600) DIGITAL TRANSISTOR PNR : TR7
  1 : GND 2 : INPUT 3 : OUTPUT
- **DTDG23YP T100** (WA013100) DIGITAL TRANSISTOR PNR:TR1-6
  1 : INPUT 2 : OUTPUT 3 : GND
- **1SS355 TE-17** (VT332900) **MA111** (VR496500) DIODE PNR:D1-65
  1 : ANODE 2 : CATHODE

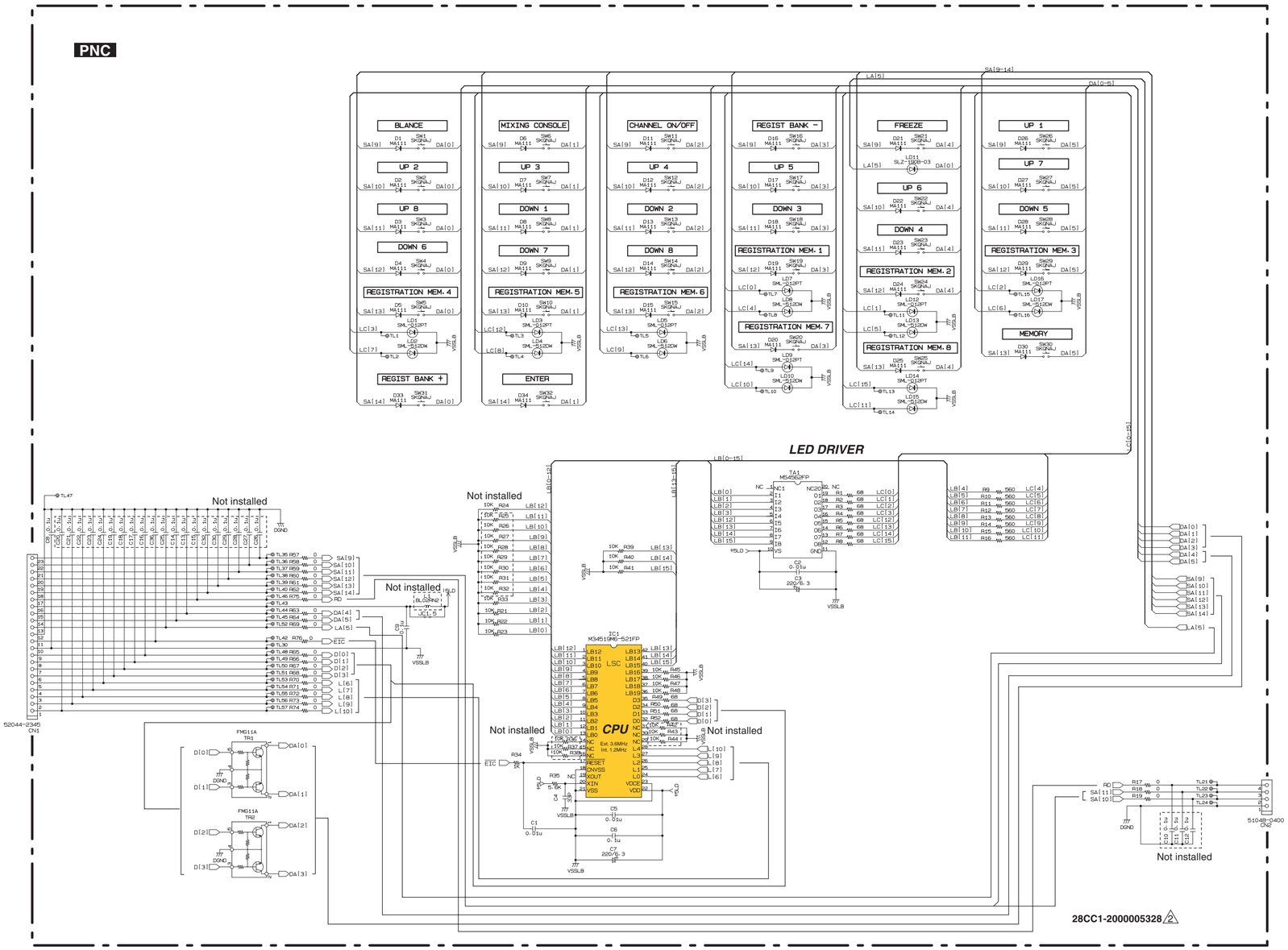
（セ）：Ceramic Capacitor

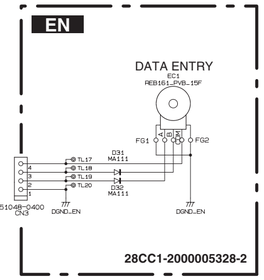
Note: See parts list for details of circuit board component parts.

28CC1-2000005326 2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 11/13 (PNC,EN)

PNC



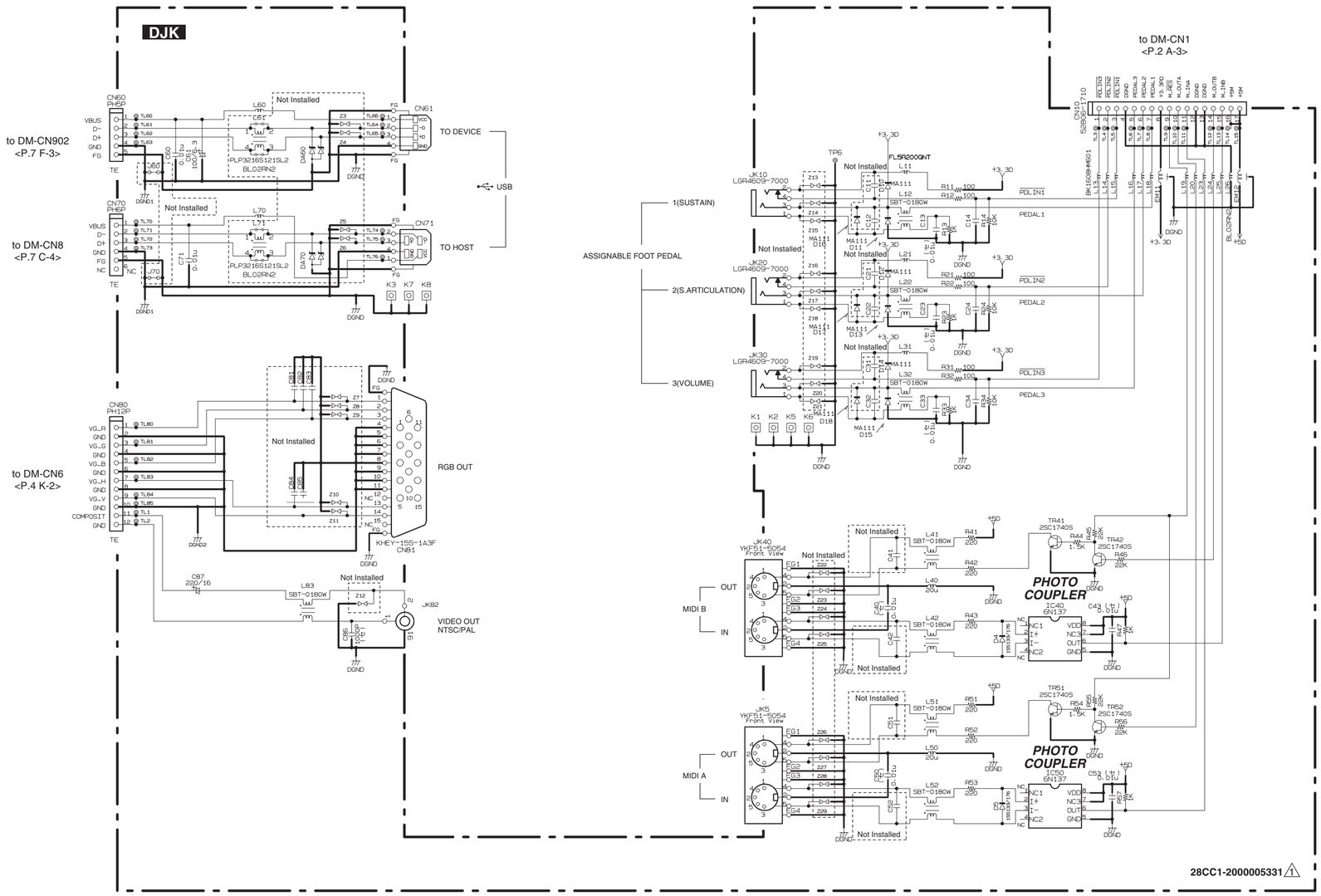


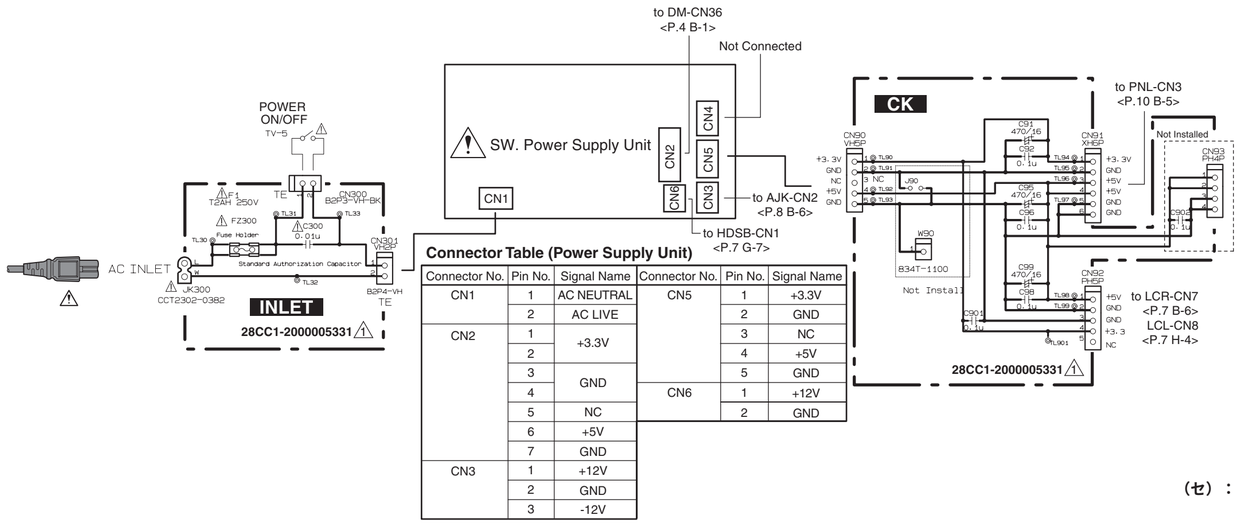
• **1SS355 TE-17** (VT332900) **MA111** (VR496500) DIODE PNC,EN:D1-34  1 : ANODE 2 : CATHODE	• **FMG11A** (V5005800) DIGITAL TRANSISTOR PNC:TR1,2  1 : DTr1-C 2 : DTr2-C 3 : DTr2-B 4 : DTr1,2-E 5 : DTr1-B

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

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 12/13 (DJK,CK,INLET)

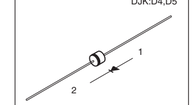




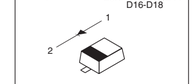
Connector Table (Power Supply Unit)

Connector No.	Pin No.	Signal Name	Connector No.	Pin No.	Signal Name
CN1	1	AC NEUTRAL	CN5	1	+3.3V
	2	AC LIVE		2	GND
CN2	1	+3.3V		3	NC
	2			4	+5V
	3	GND		5	GND
	4		CN6	1	+12V
	5	NC		2	GND
	6	+5V			
	7	GND			
CN3	1	+12V			
	2	GND			
	3	-12V			

•1SS133,1SS176 (VB941200)
DIODE
DJK:D4,D5



• 1SS355 TE-17 (VT332900)
MA111 (VR496500)
DIODE
DJK: D10,D12,D14
D16-D18



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

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

（セ）：Ceramic Capacitor

Tyros2

■ Tyros2 OVERALL CIRCUIT DIAGRAM 13/13 (EMKS-FD,MK61L,MKH-D)

EMKS-FD

Not installed

IC3 PCM1800

IC4 M44S-32/32

IC1 TC74HC4051AFEL

IC5 CPU HD6433693

OP AMP

IC2 NJM2100V

IC7 NJM2100V

VR1 470K GAIN

VR2 10K OFFSET

X1 20M

CN2 PJ-329

CN5 100P

CN4 PFA105-1002A04

CN6

TP1

28CC1-2000001485

to DM-CN30
<P.3 J-2>

MK61L (C1 - C4)

CN1 52045-2345

SW1 C1 · SW2 C#1 · SW3 D1 · SW4 D#1 · SW5 E1 · SW6 F1 · SW7 F#1 · SW8 G1 · SW9 G#1 · SW10 A1 · SW11 A#1 · SW12 B1 · SW13 C2

SW14 C#2 · SW15 D2 · SW16 D#2 · SW17 E2 · SW18 F2 · SW19 F#2 · SW20 G2 · SW21 G#2 · SW22 A2 · SW23 A#2 · SW24 B2 · SW25 C3 · SW26 C#3 · SW27 D3 · SW28 D#3 · SW29 E3 · SW30 F3 · SW31 F#3 · SW32 G3 · SW33 G#3 · SW34 A3 · SW35 A#3 · SW36 B3 · SW37 C4

CN2 PJ-329

TP1 · TP2 · TP3

28CC1-2000001484 /1

MKH-D (C#4 - C6)

D1 C#4 · D2 D4 · D3 D#4 · D4 E4 · D5 F4 · D6 F#4 · D7 G4 · D8 G#4 · D9 A4 · D10 A#4 · D11 B4 · D12 C5 · D13 C#5 · D14 D5 · D15 D#5 · D16 E5 · D17 F5 · D18 F#5 · D19 G5 · D20 G#5 · D21 A5 · D22 A#5 · D23 B5 · D24 C6

CN1 52045-2345

CN2 PJ-329

CN3

CN4 PFA105-1002A04

TP1 · TP2

28CC1-2000001483 /1

PC Sensor

•**RLS-73 TE-11** (VV925900)
DIODE
EMKS-FD:D0001-0006,0008

•**1SS133,1SS176** (VB941200)
DIODE
MKH-D:D0001-0048
MK61L:D0001-0074

1: ANODE
2: CATHODE

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

Tyros2