

D-E440/E441/E441SR/E443/E445/ E446CK/E449CK

SERVICE MANUAL

Ver 1.0 1999.02



Photo : D-E441

US Model

D-E441/E445/E446CK/E449CK

Canadian Model

D-E441/E445/E446CK

AEP Model

D-E440/E441/E441SR/E443/E445/E446CK

UK Model

D-E441/E441SR/E443/E445/E446CK

E Model

D-E441/E443/E445/E446CK

Australian Model

D-E441/E445/E446CK

Chinese Model

D-E441/E445

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2811EAA
Optical Pick-up Type	DAX-11E

SPECIFICATIONS

CD player

System

Compact disc digital audio system

Laser diode properties

Material: GaAlAs

Wavelength : $\lambda = 780$ nm

Emission duration: Continuous

Laser output : Less than 44.6 μ W (This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)

Error correction

Sony Super Strategy Cross Interleave Reed

Solomon Code

D-A conversion

1-bit quartz time-axis control

Frequency response

20 - 20,000 Hz $+1$ dB (measured by EIAJ CP-307)

Output (at 4.5 V input level)

Headphones (stereo minijack)

15 mW + 15 mW at 16 ohms

Line output (stereo minijack)

Output level 0.7 V rms at 47 kilohms

Recommended load impedance over 10 kilohms

General

Power requirements

For the area code of the model you purchased, check the upper left side of the bar code on the package.

- Sony BP-DM10 Rechargeable battery:

2.4 V DC, Ni-Cd, 650 mAh

- Sony BP-DM20 Rechargeable battery:

2.4 V DC, Ni-MH, 1,200 mAh

- Two LR6 (size AA) batteries: 3 V DC

- AC power adaptor (DC IN 4.5 V jack):

US, Canadian, Central and South America model: 120 V, 60 Hz

AEP, German, French, EE, E13 model:

220 - 230 V, 50/60 Hz

UK model: 230 - 240 V, 50 Hz

EA model: 110 - 240 V, 50/60 Hz

AUS model: 240 V, 50 Hz

E33 model: 100 - 240 V, 50/60 Hz

Hong Kong model: 220 V, 50/60 Hz

Chinese, Argentine model: 220 V, 50 Hz

- Sony CPM-300P mount plate for use on car battery : 4.5V DC

Dimensions (w/h/d) (without projecting parts and controls)

Approx. 129 x 28 x 146 mm
(5 1/8 x 1 1/8 x 5 3/4 in.)

Mass (without rechargeable battery)

Approx. 220 g (7.8 oz)

Operating temperature

5°C - 35°C (41°F - 95°F)

Supplied accessories

For the area code of the model you purchased, check the upper left side of the bar code on the package.

D-E440

Earphones (1)

D-E441

AC power adaptor (1)

Headphones (1)*1

Earphones (1)*2

AC plug adaptor (1)*3

*1 Supplied with US model

*2 Not supplied with US model

*3 Supplied with E33, E13 and EA models

— Continued on page 2 —



COMPACT DISC COMPACT PLAYER

SONY®

D-E441SR	AC power adaptor (1) Earphones (1) Active speaker system (1)
D-E443	AC power adaptor (1) Earphones (1) Rechargeable battery (1) AC plug adaptor (1)* * Supplied with E33, E13 and EA models
D-E445	AC power adaptor (1) Headphones with remote control (1) *1 Earphones with remote control (1) *2 Rechargeable battery (1) AC plug adaptor (1)*3 *1 Supplied with US model *2 Not supplied with US model *3 Supplied with E13 model
D-E446CK	AC power adaptor (1) Headphones (1) *1 Earphones (1) *2 Car battery cord (1) Car connecting pack (1) Velcro tape (2) Spare fuse (1) Spiral tube (1) AC plug adaptor (1)*3 *1 Supplied with US model *2 Not supplied with US model *3 Supplied with E33, E13 and EA models
D-E449CK	AC power adaptor (1) Rechargeable battery (1) Headphones with remote control (1) Car battery cord (1) Car connecting pack (1) Velcro tape (2) Spare fuse (1) Spiral tube (1)

Design and specifications are subject to change without notice.

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ANGER

Invisible laser radiation when open and interlock failed or defeated.
Avoid direct exposure to beam.

CAUTION

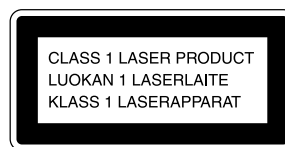
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.



This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1 SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts. The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

Before Replacing the Optical pick-up Block

Please be sure to check thoroughly the parameters as per the "Optical pick-up Block Checking Procedure" (Part No. : 9-960-027-11) issued separately before replacing the optical Pick-up block.

Note and specifications required to check are given below.

- FOK output : IC501 ⑫ pin
When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value : $1.2 \pm 0.3V_{p-p}$ IC501 ⑨ pin. (Connect pin ⑫ of IC501 (TP880) and ③ of IC501 (GND) with a jumper wire).
When checking S curve P-to-P value, remove the lead wire to disc motor.
- Adjusted part for focus gain adjustment : RV503
- RF signal P-to-P value : $0.8 - 1.2V_{p-p}$
- Traverse signal P-to-P value : $1.0 - 2.4V_{p-p}$
- The repairing grating holder is impossible.
- Adjusted part for tracking gain adjustment : RV502

Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the object lens in the optical pick-up so that the light focuses on the reflection surface of the disc. Therefore, be sure to keep your eyes more than 30cm apart from the object lens when you check the emission of laser diode.

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S801 (push switch type).

The following two checking methods for the laser diode are operable.

Method-1 (In the service mode or normal operation) : Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S801 as shown in Fig. 1.
3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up. During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

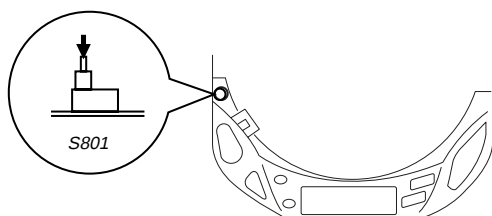
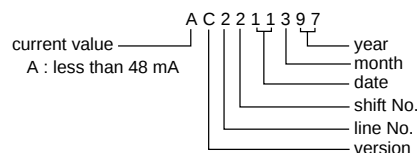


Fig.1 Method to push S801

Method-2 (In the service mode or normal operation) : Check the value of current flowing in the laser diode.

1. Remove the upper panel.
2. Read the current printed on the rear side of the optical pick-up.
(Print on the rear side of the optical pick-up)
3. Connect a level meter as shown in Fig. 2
4. Press the ► key.



5. Calculate the current value by the reading of the digital voltmeter.

Reading of the tester (V) $\div 4.7 (\Omega) =$ current value (A)

(Example) Reading of the digital voltmeter of 0.2256 V :

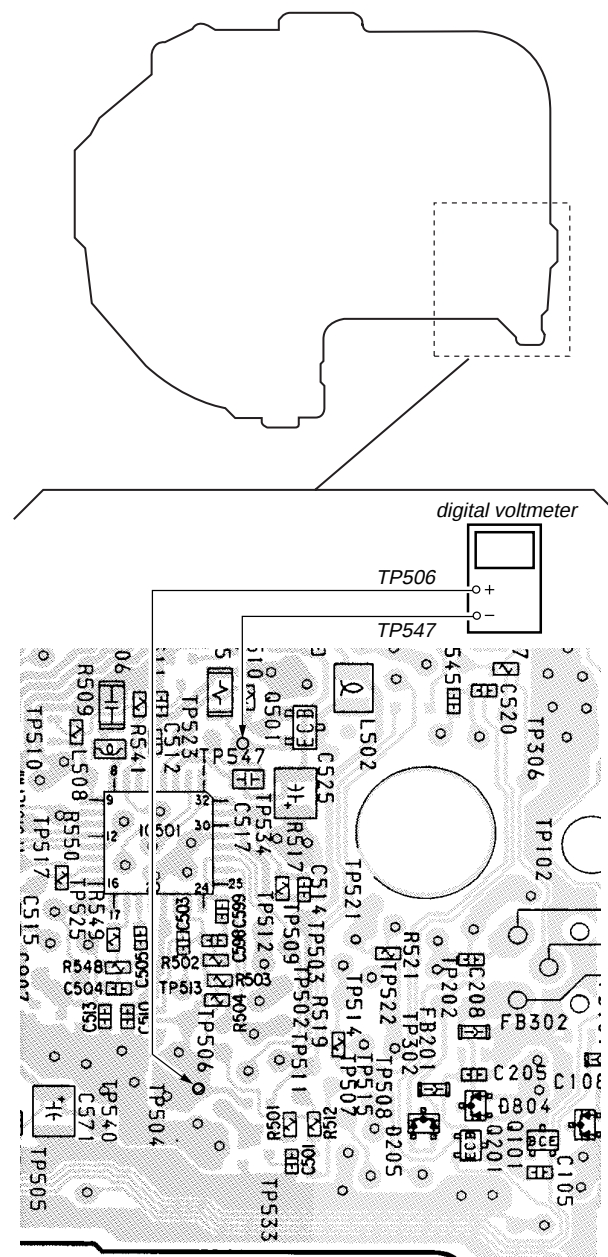
$$0.2256 V \div 4.7 \Omega = 0.048 (A) = 48 mA$$

6. Check that the current value is within the following range.

- Current value of the label $^{+5}_{-11} mA(25^{\circ}C)$
Variation by temperature : $0.4mA / ^{\circ}C$
Current increases with temperature increased.
Current decreases with temperature decreased.

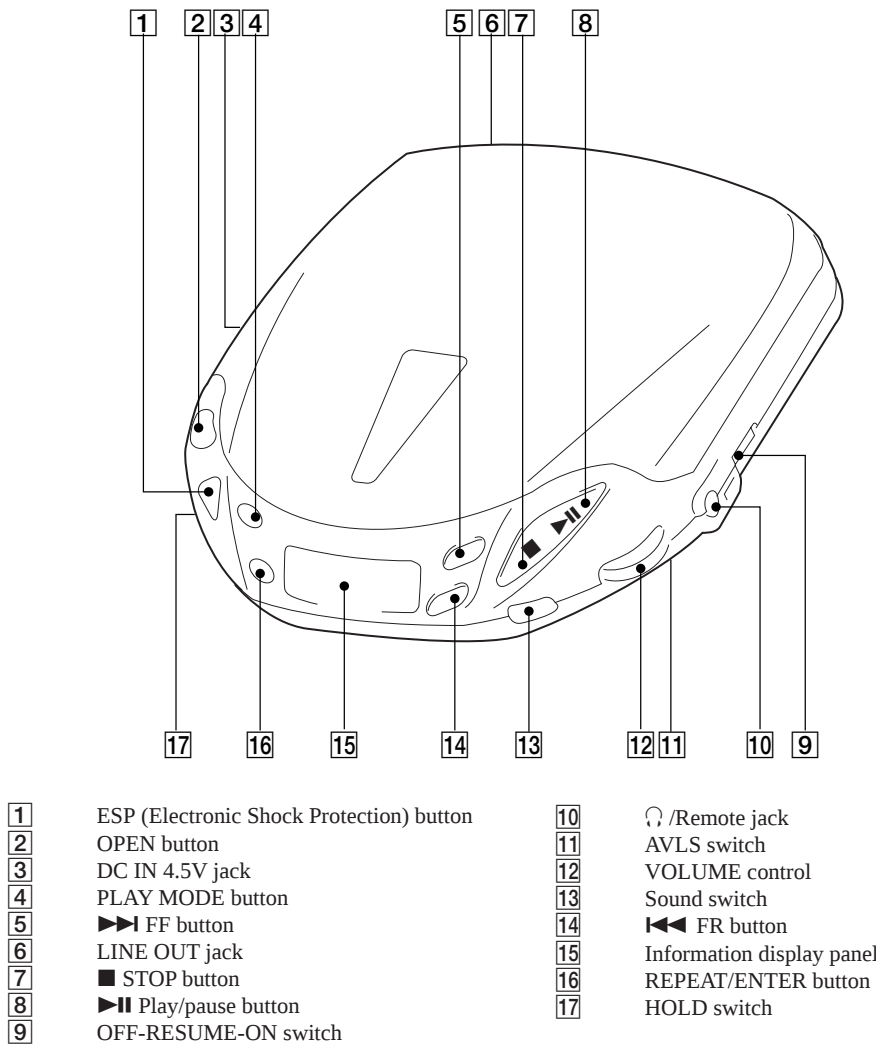
If the current is more than the range above, there is a trouble in the automatic power control circuit or the laser diode is in deterioration. If less than the range, a trouble exists in the automatic power control circuit or the optical pick-up.

[MAIN BOARD] (Conductor side)

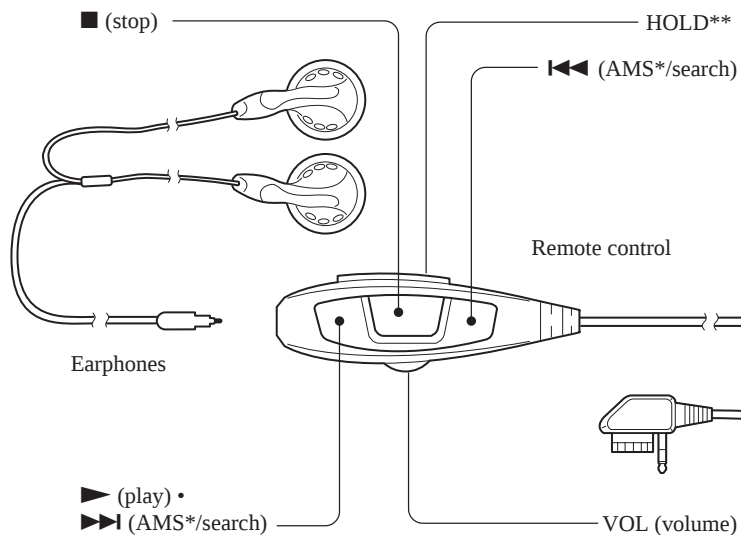


SECTION 2 GENERAL

LOCATION AND FUNCTION OF CONTROLS



Volume control RM-DM29 : (D-E445/E449CK)



* Automatic Music Sensor

** When you are not using the remote control, slide HOLD in the direction of the arrow to prevent any accidental operation. To unlock, slide HOLD back.

Note

- Use only the supplied remote control. You cannot operate this player with the remote control supplied with other models.

SECTION 3 DISASSEMBLY

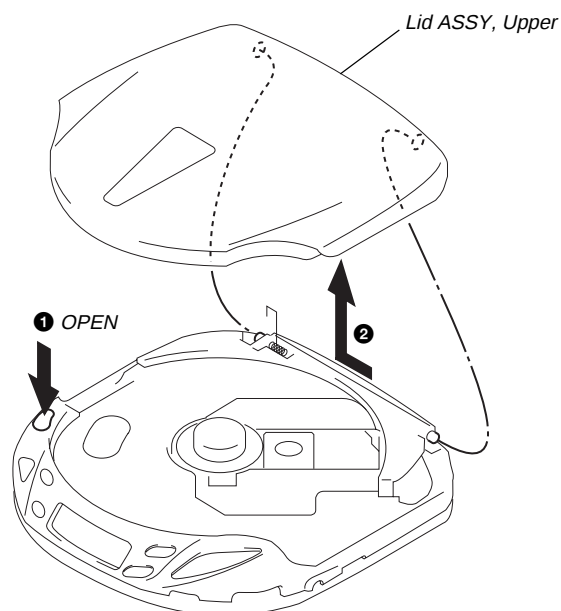
- The equipment can be removed using the following procedure.

Set

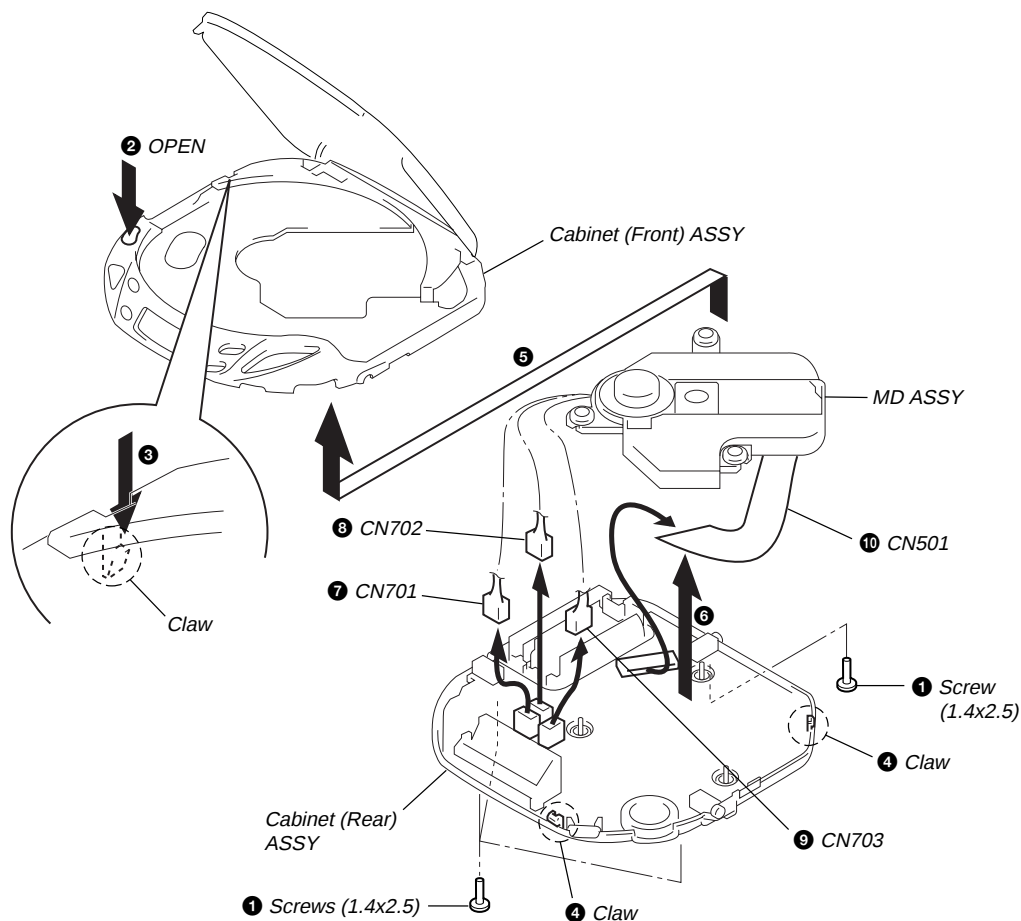
- Lid ASSY, Upper
- Cabinet (Front) ASSY
- Cabinet (Rear) ASSY, MD ASSY → Main board

Note : Follow the disassembly procedure in the numerical order given.

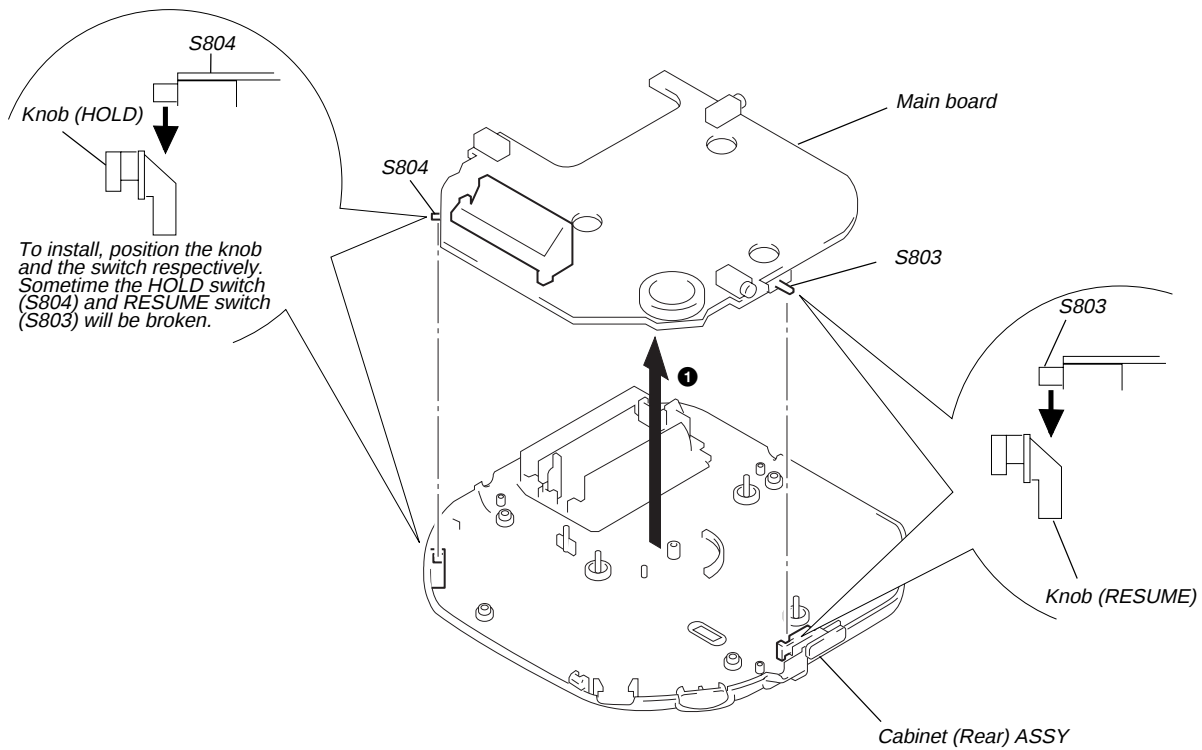
3-1. LID ASSY, UPPER



3-2. CABINET (FRONT) ASSY, CABINET (REAR) ASSY, MD ASSY



3-3. MAIN BOARD



SECTION 4

SERVICE MODE

Service Mode (service program)

The equipment is provided with a service program built in the microcomputer, like conventional models.

Service program operation methods are described in the following.

REPEAT/ENTER

Tracking gain-up mode while pressing

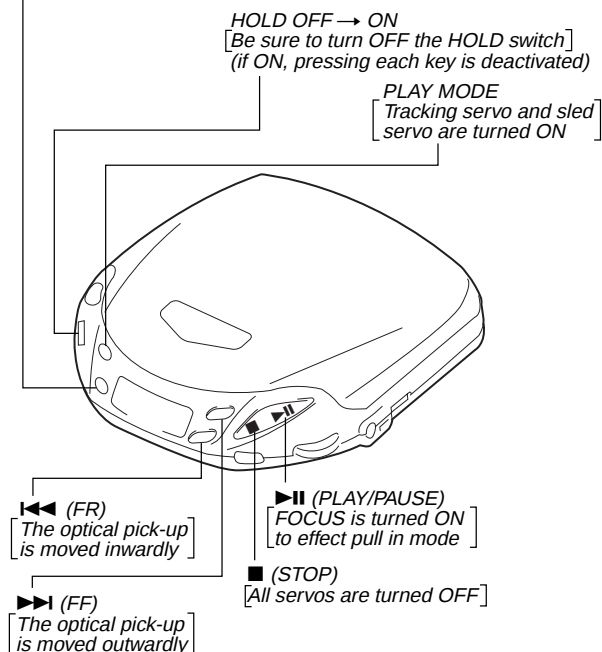


Fig. 3 Layout of each key

• Step 1 (Service mode setting method)

1. Turn OFF the HOLD switch the external power supply disconnected (power is not applied to the set).
2. Solder across the T802 (TEST) terminals (pin ⑤, IC801 (TEST) is grounded).
3. Connect an external power supply.
Thus, the set is switched to the service mode.

• Step 2 (Operation in the service mode)

1. Once the service mode is effected, the LCD displays 5 indications each of which is repeatedly displayed.
However, the following operations can be activated even if LCD indication is effected.
2. By pressing the ►► or ◄◄ key, the optical pick-up movable inwardly or outwardly. However, if this is activated, tracking servo and sled servo are turned OFF, so it can be turned ON by pressing the PLAY MODE key, if required.
3. By pressing the REPEAT/ENTER key, the tracking gain-up mode becomes active.
4. By pressing the ►|| key, focus is turned ON from focus searching while entering CLV-S (pull-in mode).
Without disc, focus searching is repeated continuously.
5. By pressing the PLAY MODE key, tracking servo, sled servo and CLV-A (servo in PLAY) are turned ON.
6. When 4. and 5. are performed, playing begins. No muting is ON in the service mode.
7. By pressing the ■ key, all servos (focus tracking and sled) are turned OFF. However, the disc motor revolves for a while by inertia.

• Step 3 (Resetting service mode)

1. Be sure to disconnect the external power supply and remove the solder bridge at the TEST terminals connected in setting.
2. The set thus becomes available for normal operation.

– MAIN BOARD – (Side A)

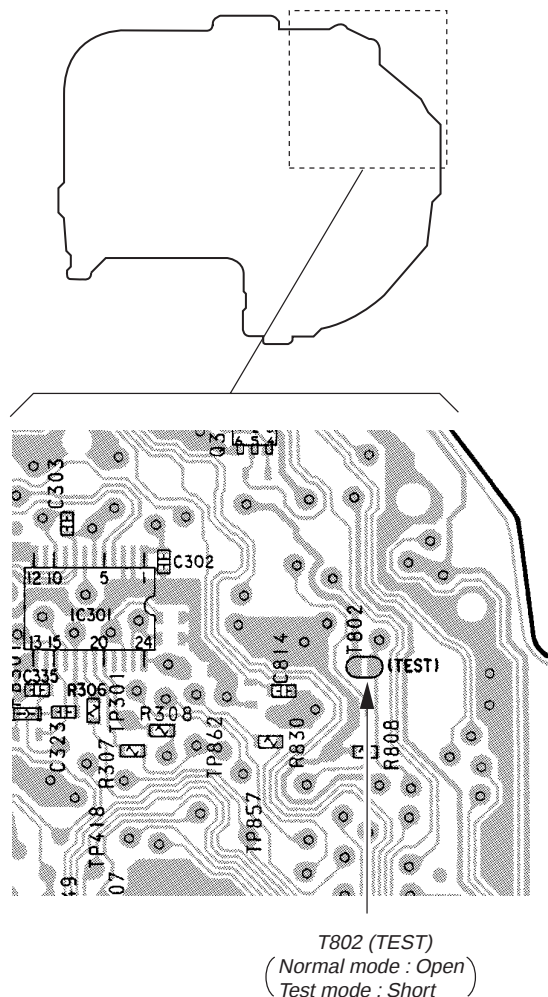


Fig. 4 Location of test terminal

SECTION 5 ADJUSTMENTS

CD SECTION

Precautions for Adjustment

- Before beginning adjustment, set the equipment to service mode. After the completion of adjustment, be sure to reset the service mode.
For more information, see "Service Mode (service program)" on page 7.
- Perform adjustments in the order given.
- Use the disc (YEDS-18. Part No. 3-702-101-01) unless otherwise indicated.
- Power supply voltage requirement : DC 4.5 V
HOLD switch : OFF
VOLUME : Minimum
SOUND switch : NORM
AVLS switch : OFF

Before Beginning Adjustment

Set the equipment to service mode (See page 7) and check the following.

If there is an error, repair the equipment.

- Checking of the sled motor
 - Open the upper panel.
 - Press the ►► and ◄◄ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery → outermost periphery → innermost periphery.
►► : The optical pick-up moves outwardly
◄◄ : The optical pick-up moves inwardly
- Checking of focus searching
 - Open the upper panel.
 - Press the ►|| key. (Focus searching operation is activated continuously).
 - Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
 - Press the ■ key.
Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

Focus Bias Check

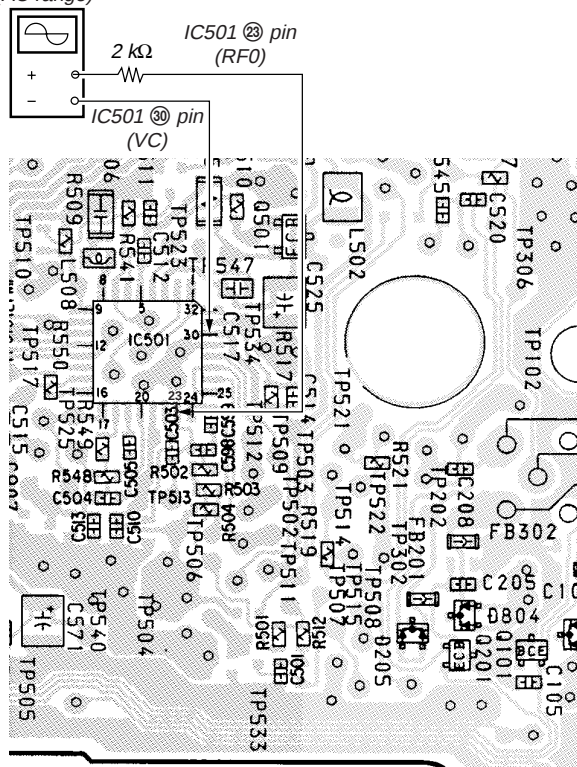
Condition :

- Hold the set in horizontal state.

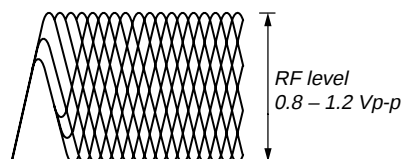
Procedure :

[MAIN BOARD] (Side B)

oscilloscope
(AC range)



- Set the equipment to service mode stop state (See page 7).
- Connect the oscilloscope between IC501 ②9 pin (RF0) and ③0 pin (VC) on the MAIN board.
- Move the optical pick-up by Pressing the ►► and ◄◄ keys.
- Put the disc (YEDS-18).
- Press the ►|| key.
(From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.)
- Press the PLAY MODE key. (Both tracking and sled are turned ON).
- Check the oscilloscope waveform is as shown below.
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.



- RF Signal Reference Waveform (eye pattern)
To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.
- 8. Stop removing of the motor by pressing the ■ key.
- 9. After the completion of adjustment, reset service mode. (See page 7)

Focus/Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

This adjustment has to be performed upon replacing any of the following parts :

- Optical pick-up
- RV503 (Focus gain)
- RV502 (Tracking gain)

Normally, be sure not to move RV503 (focus gain) and RV502 (tracking gain).

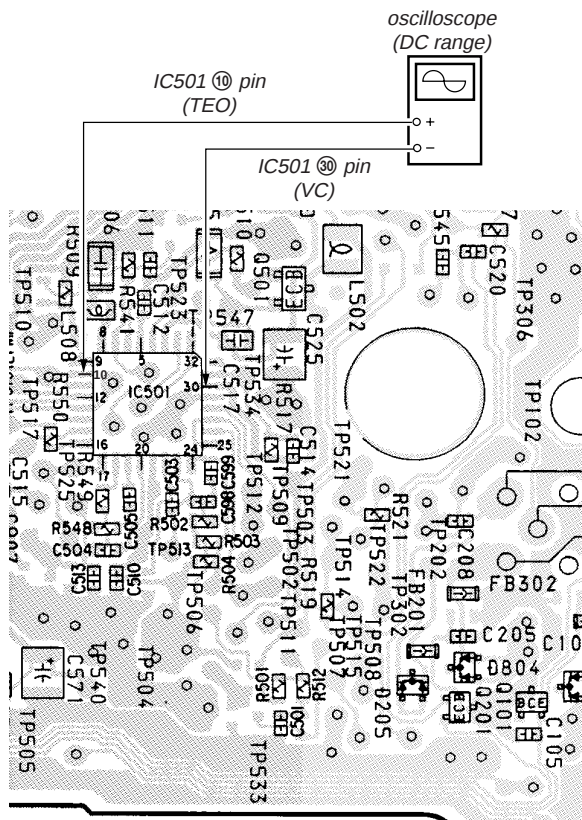
– Focus Gain Adjustment –

Procedure :

This adjustment is not performed. If focus gain RV503 is turned, set to mechanical center

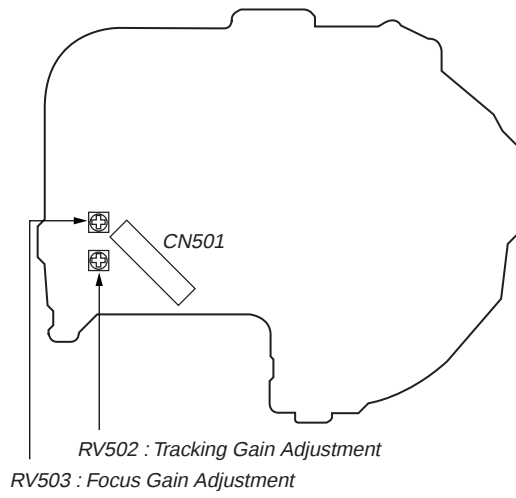
– Tracking Gain Adjustment – (perform at normal operation)

[MAIN BOARD] (Side B)



Adjustment Location :

MAIN BOARD] (Side A)



SECTION 6 DIAGRAMS

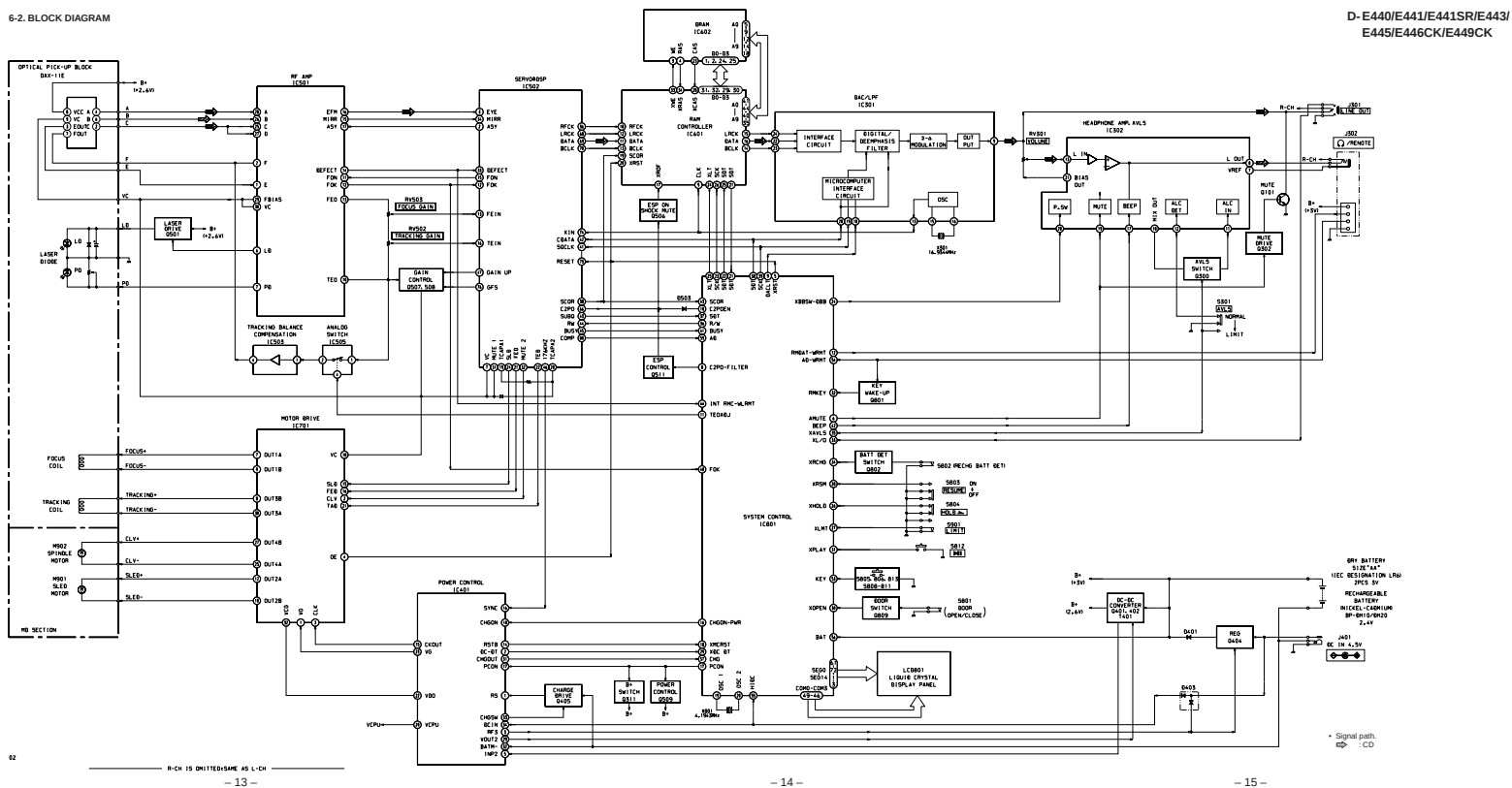
6-1. EXPLANATION OF IC TERMINALS

IC801 MC68HC05L15SC442718CPB (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1 – 3	SEG 12–14	O	LCD segment signal output terminal.
4	FP26	–	Not used (Open).
5	XRST– DSP	O	Reset output terminal.
6	AMUTE – HP	O	Audio mute output terminal.
7	XOE-ESP	O	ESP POWER ON control output.
8	C2PO FILTER	O	C2PO filter output.
9	DACL T–DAC	I/O	CPU serial data input, latch signal output (For DAC only).
10	C2POEN	O	C2PO signal control output. “ L ” : Stop “ H ” : Searching
11	TEOAJ – TEO	O	Tracking ADJ switch control output.
12	RMDAT–WRMT	O	Serial data output to LCD remote controller.
13	VLCD (GND)	–	Connect to ground.
14	VSS (GND)	–	Connect to ground.
15	NDLY (GND)	–	Connect to ground.
16	CHGON – PWR	O	Charge ON/OFF control output.
17	PCON–PWR	O	Power ON/OFF control output. “ L ” : ON “ H ” : OFF
18	XMCRST–PWR	I	System reset input terminal.
19	OSC 1	I	System clock oscillator input terminal (4.1943 MHz).
20	OSC 2	O	System clock oscillator output terminal (4.1943 MHz).
21	SDT–ESP	I	Serial data input from ESP control (IC601).
22	SDT–ESP	O	Serial data output to ESP control (IC601).
23	SCK–ESP	O	Serial clock output to ESP control (IC601).
24	XBBSW – DBB	O	DBB switch control output.
25	XLT–ESP	O	Latch signal output to ESP control (IC601).
26	HOLD–SW	I	Hold switch input terminal. “ L ” : HOLD ON “ H ” : HOLD OFF
27	XLMT–MD	I	Limit switch input terminal. “ L ” : Inside Track
28	XRSM–SW	I	RESUME switch input terminal. “ L ” : ON “ H ” : OFF
29	WP XDC–DT PWR	I	DC in voltage detection terminal.
30	WP XOPEN–SW	I	Door open switch input terminal. “ L ” : Close “ H ” : Open
31	WP XPLAY–SW	I	Play/pause key input terminal.
32	WP RMKEY WRMT	I	Remote control key input terminal.
33	XL/O DCT	I	LINE OUT jack detection terminal. “ L ” : Present “ H ” : No
34	XRCHG–SW	I	Rechargeable battery detection terminal. “ L ” : Present “ H ” : No
35	XAVLS–SW	I	AVLS switch input terminal.
36	R/W DSP	O	Read/Write switching signal output terminal. “ L ” : Read “ H ” : Write
37	SDT–DSP	I	SUB–Q signal input terminal.
38	SDT–DSP	O	Serial data output to DSP (IC502) and D/A C (IC301).
39	SCK–DSP	O	Clock signal to enter SUB–Q signal to DSP (IC502) and D/A C (IC301).
40	FOK–RF	I	FOK signal input terminal.
41	BUSY–DSP	I	BUSY signal input terminal from DSP (IC502).
42	BEEP–H/P	O	Beep sound output terminal.
43	INT SCOR–DSP	I	Sub code sync SO+SI input terminal.
44	INT DFCT RF	I	Wireless remote control signal input.
45	VDD (VCPU)	–	Power supply terminal.

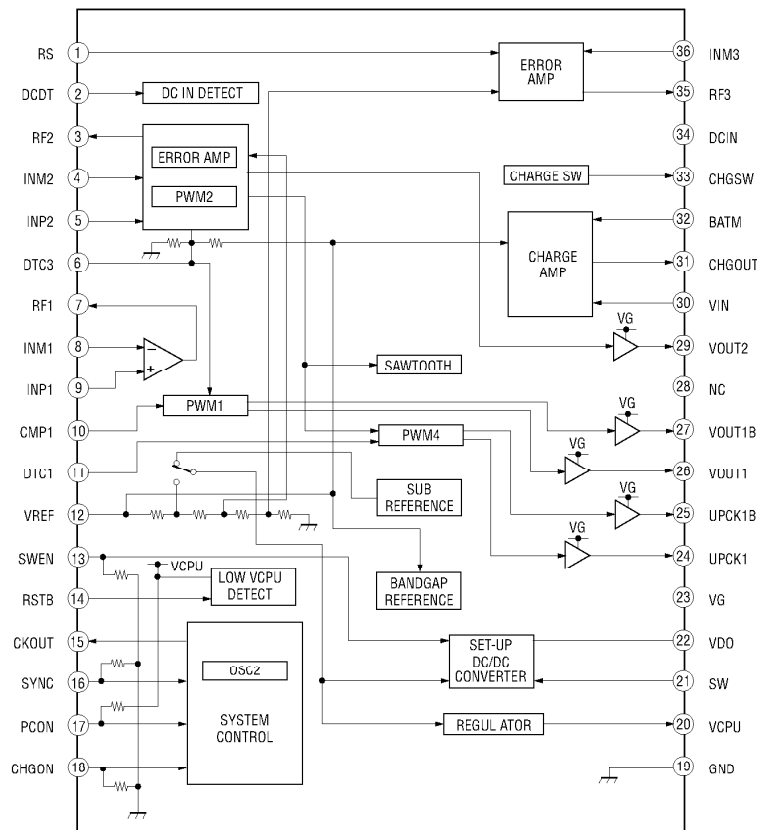
Pin No.	Pin name	I/O	Description
46 – 49	COM 3–0	O	LCD common signal output terminal.
50	VREFH	I	Reference voltage input terminal (connect to VDD).
51	VREFL	–	Connect to ground.
52	AD ESPSL/TEST	I	Test mode terminal. “ L ” : Test mode “ H ” : Nomal mode
53	AD–KEY	I	A/D input terminal for main unit key.
54	AD–WRMT	I	A/D input terminal for remote control key.
55	AD–HI DC	I	A/D input terminal for DC IN voltage detection.
56	AD – BAT	I	Rechargeable battery/dry cell detection input.
57	AD – CHGMNT	I	A/D input terminal for charging voltage monitor.
58	AD – VCC	I	A/D input terminal for VCC voltage monitor.
59	AD – DSP OFFSET	I	A/D input terminal for DSP off-set monitor.
60	FP10	–	Not used (Open).
61 – 72	SEG 0 – 11	O	LCD segment signal output terminal.

6-2. BLOCK DIAGRAM

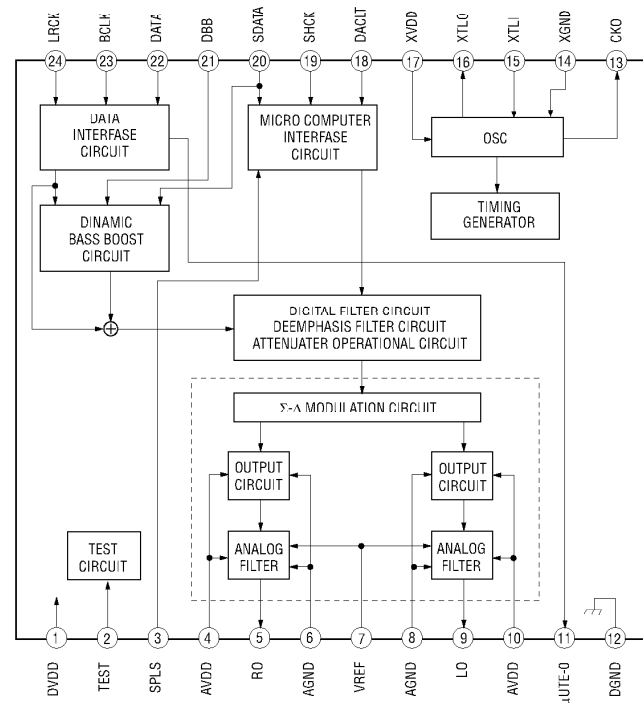




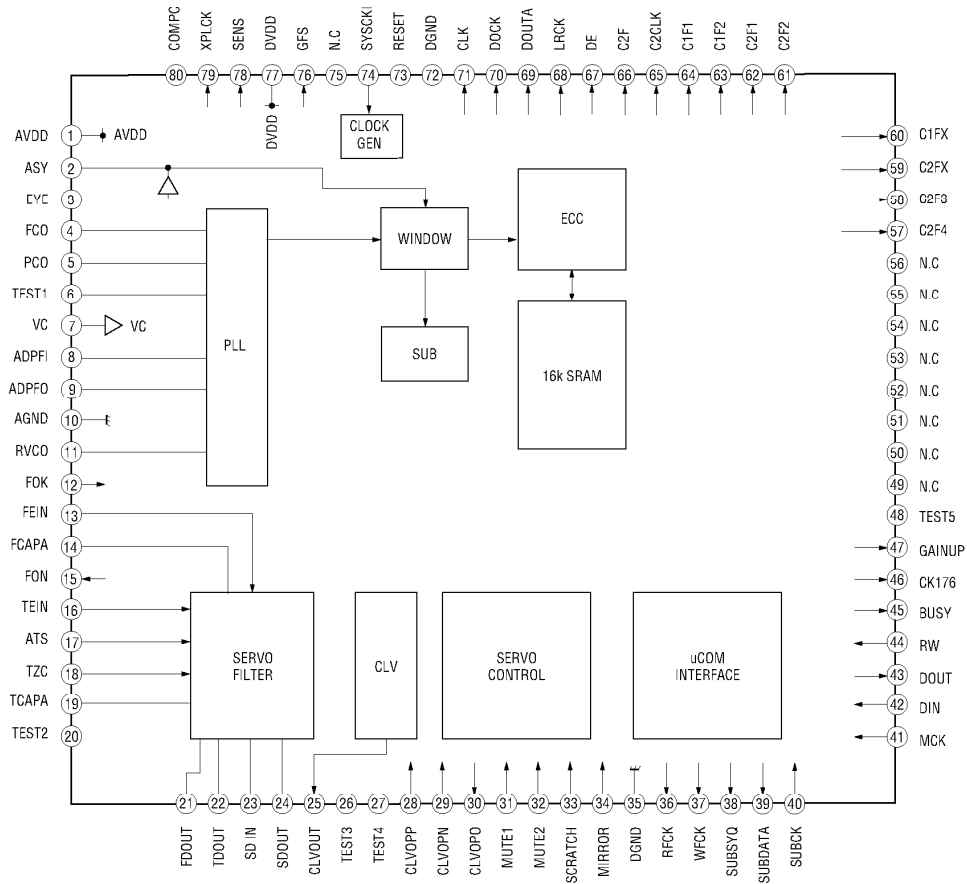
IC401 MPC18A26VMEL



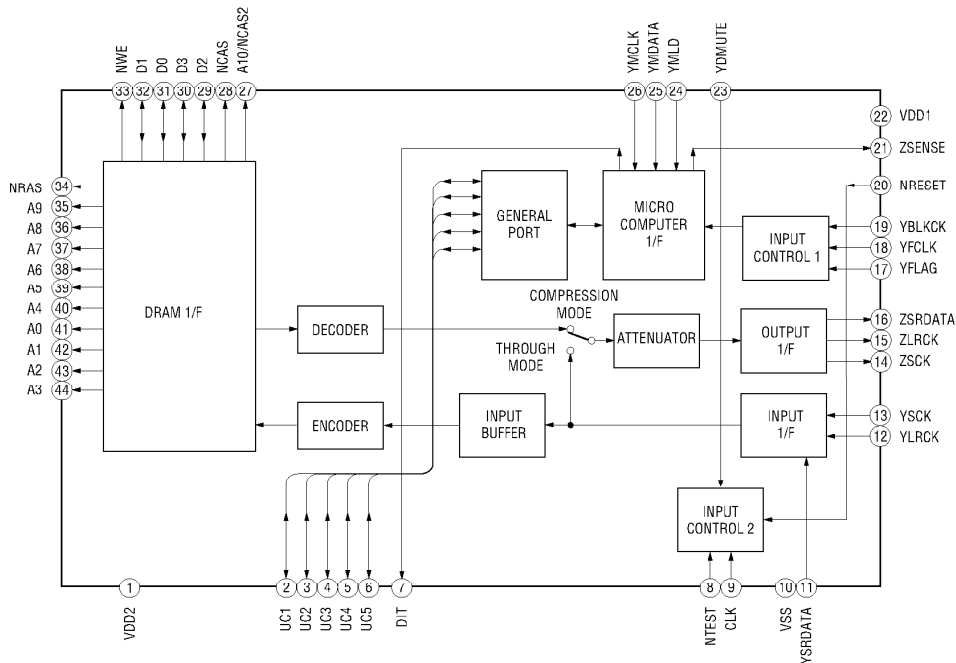
IC301 TC9438FNEL



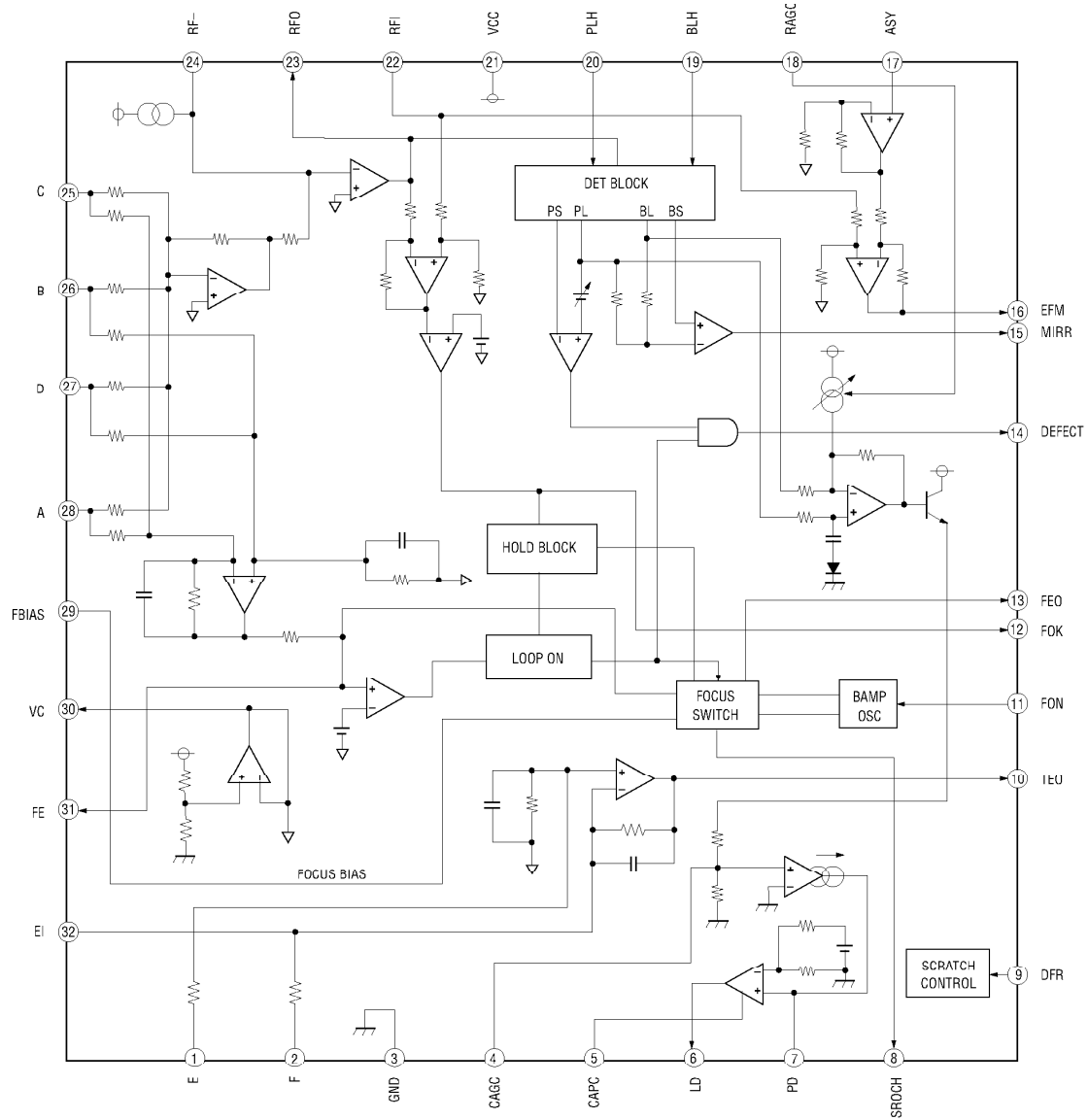
IC502 BU9326KS



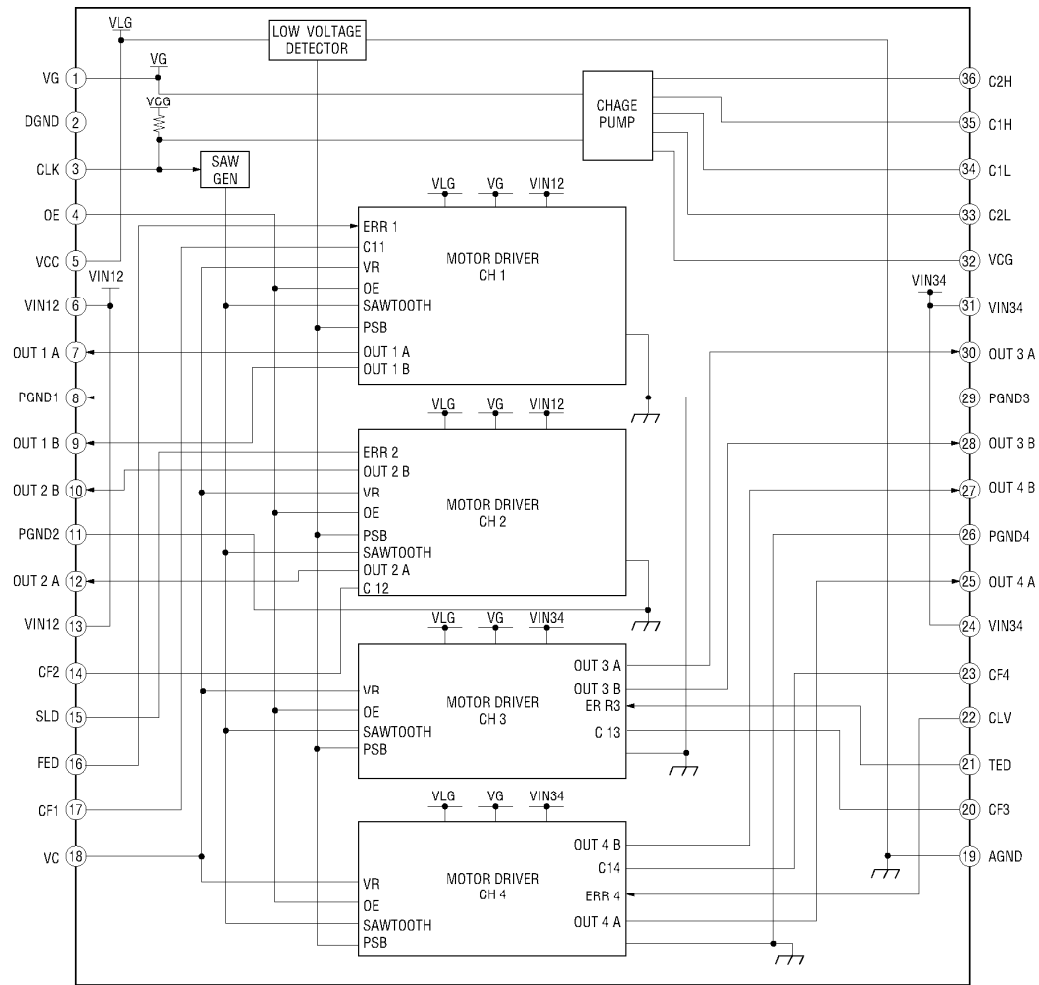
IC601 SM5902BF



IC501 BA6386K



IC701 MPC17A51VMEL



SECTION 7

EXPLODED VIEWS

NOTE :

- XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE) ••• (RED)

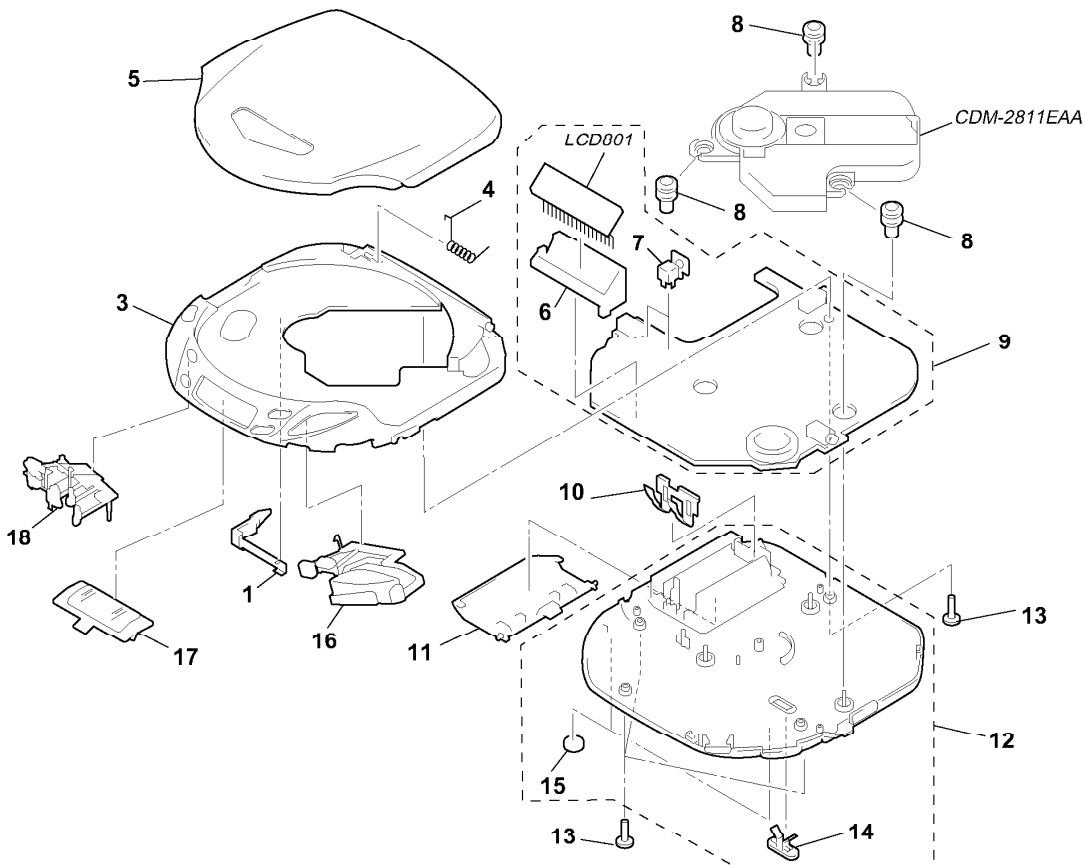
↑ ↑

Parts color Cabinet's color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
FR : French
G : German

The components identified by mark or dotted line with mark  are critical for safety.
Replace only with part number specified.

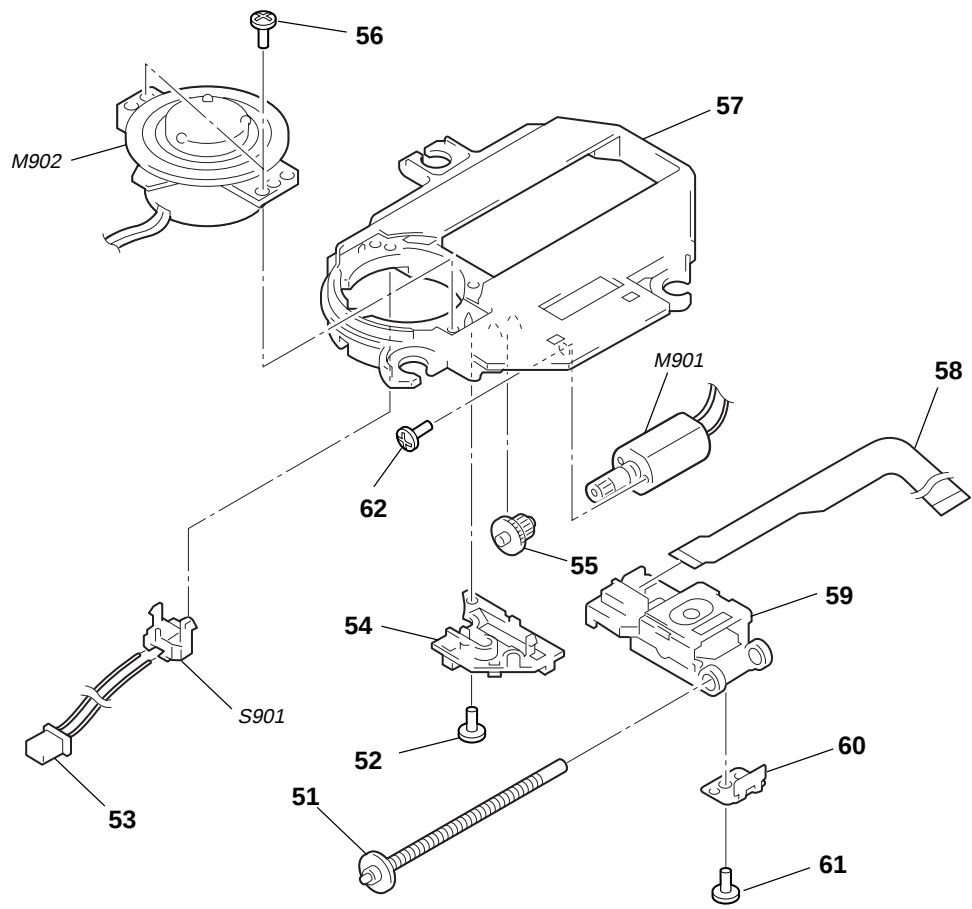
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. CABINET SECTION



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
1	X-4950-224-1	DETECTOR ASSY		5	X-4950-798-1	LID ASSY, UPPER(ORANGE)(E445)	
3	4-213-871-01	CABINET (FRONT)(BLUE)		5	X-4951-159-1	LID ASSY, UPPER(E441SR)	
3	4-213-871-41	CABINET (FRONT)(SILVER)		6	4-213-876-01	HOLDER (LCD)	
4	4-994-981-01	SPRING, TORSION		7	4-978-695-01	PLATE,TERMINAL,BATTERY	
5	X-4950-720-1	LID ASSY, UPPER(SILVER)(E445)		8	4-990-219-01	INSULATOR	
5	X-4950-721-1	LID ASSY, UPPER(BLUE)(E445)		9	A-3323-101-A	MAIN BOARD,COMPLETE(FR)	
5	X-4950-722-1	LID ASSY, UPPER(DARK BLUE)(E445)		9	A-3323-102-A	MAIN BOARD,COMPLETE(EXCEPT FR)	
5	X-4950-723-1	LID ASSY, UPPER(E446CK)		10	4-997-109-01	TERMINAL BOARD (RELAY),BATTERY	
5	X-4950-726-1	LID ASSY, UPPER(BLUE)(E443)		11	4-213-873-01	LID,BATTERY CASE	
5	X-4950-731-1	LID ASSY, UPPER(SILVER)(E440)		12	X-4950-730-1	CABINET (REAR) SUB ASSY	
5	X-4950-732-1	LID ASSY, UPPER(BLUE)(E440)		13	3-336-395-01	SCREW (B2X10) (G), TAPPING	
5	X-4950-733-1	LID ASSY, UPPER(SILVER)(E441)		14	4-213-879-01	KNOB(AVLS)	
5	X-4950-734-1	LID ASSY, UPPER(BLUE)(E441)		15	4-966-278-01	FOOT, RUBBER	
5	X-4950-735-1	LID ASSY, UPPER(ORANGE)(E441)		16	4-213-875-01	BUTTON (OPR)	
5	X-4950-736-1	LID ASSY, UPPER(WHITE)(E441)		17	4-213-877-01	WINDOW (LCD)	
5	X-4950-737-1	LID ASSY, UPPER(SILVER)(E443)		18	4-213-874-01	BUTTON (OPEN)	
5	X-4950-796-1	LID ASSY, UPPER(E449CK)		LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL	
5	X-4950-797-1	LID ASSY, UPPER(DARK BLUE)(E441)					

7-2. OPTICAL PICK-UP SECTION



The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--	--

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	A-3303-970-A	SCREW ASSY,FEED		$\triangle$ 59	X-4950-476-1	OPTICAL PICK-UP (DAX-11E RP)	
52	3-318-203-11	SCREW (B1.7), TAPPING		60	4-972-165-01	RACK	
53	1-690-530-81	LEAD (WITH CONNECTOR)		61	4-973-631-01	SCREW	
54	4-972-163-04	SPRING, SLED		62	7-627-850-17	SCREW,PRECISION +P 1.4X2.5	
55	4-974-003-01	GEAR(B)		M901	A-3303-403-A	MOTOR ASSY, SLED (SLED)	
56	3-719-401-11	SCREW (B1.7), TAPPING				(INCLUDING GEAR)	
* 57	4-984-320-01	CHASSIS		M902	A-3304-989-A	MOTOR ASSY,TURNTABLE (SPINDLE)	
58	1-660-965-11	PC BOARD, SLIDE FLEXIBLE		S901	1-571-099-21	SWITCH (1 KEY)(LIMIT)	

SECTION 8 ELECTRICAL PARTS LIST

MAIN

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE :Metal oxide-film resistor
F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• SEMICONDUCTORS

In each case, u : μ , for example :
uA..... : μ A..... , uPA..... : μ PA.....
uPB..... : μ PB..... , uPC..... : μ PC.....
uPD..... : μ PD.....

• CAPACITORS

uF : μ F

• COILS

uH : μ H

• Abbreviation

AR : Argentine	G : German
AUS : Australian	CND : Canadian
FR : French	HK : Hong Kong
EA : Saudi Arabia	CN : Chinese
EE : East European	
AEP : Manual of English is attached	
7AEP : Manual of 9 language is attached	
C&SA : Central and South America	
E13 : AC220-230V area model	
E33 : AC100-240V area model	

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
	A-3323-101-A	MAIN BOARD,COMPLETE (FR)	*****			C335	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
						C401	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C402	1-126-785-11	ELECT	47uF	20%	10V
	A-3323-102-A	MAIN BOARD,COMPLETE (EXCEPT FR)	*****			C403	1-127-485-00	ELECT	33uF	20%	6.3V
						C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
	4-213-876-01	HOLDER(LCD)				C405	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
	4-978-695-01	PLATE,TERMINAL, BATTERY				C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CAPACITOR >				C407	1-115-156-11	CERAMIC CHIP	1uF		10V
C101	1-126-794-11	ELECT	4.7uF	20%	50V	C408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C410	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C103	1-115-156-11	CERAMIC CHIP	1uF		10V	C411	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C104	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C414	1-115-156-11	CERAMIC CHIP	1uF		10V
C105	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C415	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
						C417	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C106	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C420	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C108	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	C421	1-124-635-00	ELECT	220uF	20%	6.3V
C201	1-126-794-11	ELECT	4.7uF	20%	50V	C424	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C425	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C203	1-115-156-11	CERAMIC CHIP	1uF		10V	C426	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
						C427	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C204	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C428	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C205	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C432	1-115-156-11	CERAMIC CHIP	1uF		10V
C206	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C437	1-115-156-11	CERAMIC CHIP	1uF		10V
C208	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C302	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C501	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
						C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C303	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C504	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C304	1-124-635-00	ELECT	220uF	20%	6.3V	C505	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C305	1-124-584-00	ELECT	100uF	20%	10V	C506	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C306	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C307	1-126-795-11	ELECT	10uF	20%	25V						
						C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C308	1-126-795-11	ELECT	10uF	20%	25V	C511	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C312	1-128-057-11	ELECT	330uF	20%	6.3V	C512	1-115-156-11	CERAMIC CHIP	1uF		10V
C313	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C513	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C314	1-115-156-11	CERAMIC CHIP	1uF		10V	C514	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C315	1-126-514-11	ELECT	22uF	20%	10V						
						C515	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C316	1-216-864-11	METAL CHIP	0	5%	1/16W	C516	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C317	1-115-156-11	CERAMIC CHIP	1uF		10V	C517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C323	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C518	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C324	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	C519	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C326	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V						

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C520	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	CN701	1-695-320-51	PIN, CONNECTOR (1.5MM)(SMD) 2P	
C521	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	CN702	1-695-320-31	PIN, CONNECTOR (1.5MM)(SMD) 2P	
C523	1-115-565-11	CERAMIC CHIP	2.2uF 10% 10V	CN703	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P	
C525	1-104-908-11	TANTAL. CHIP	47uF 20% 4V				
C526	1-164-360-11	CERAMIC CHIP	0.1uF 16V			< DIODE >	
C528	1-164-360-11	CERAMIC CHIP	0.1uF 16V	D101	8-719-069-54	DIODE UDZS-TE17-5.1B	
C529	1-126-513-11	ELECT	47uF 20% 4V	D105	8-719-039-99	DIODE UMZ8.2T	
C531	1-115-565-11	CERAMIC CHIP	2.2uF 10% 10V	D201	8-719-069-54	DIODE UDZS-TE17-5.1B	
C532	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D205	8-719-039-99	DIODE UMZ8.2T	
C534	1-162-921-11	CERAMIC CHIP	33PF 5% 50V	D302	8-719-069-54	DIODE UDZS-TE17-5.1B	
C535	1-115-156-11	CERAMIC CHIP	1uF 10V	D401	8-719-048-98	DIODE RB160L-40TE25	
C538	1-165-128-11	CERAMIC CHIP	0.22uF 16V	D402	8-719-072-70	DIODE MA2ZD14001S0	
C539	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	D403	8-719-049-10	DIODE 1SS374-TE85L	
C540	1-107-826-91	CERAMIC CHIP	0.1uF 10% 16V	D407	8-719-058-24	DIODE RB501V-40TE-17	
C549	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D416	8-719-048-98	DIODE RB160L-40TE25	
C550	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D417	8-719-017-58	DIODE MA8068	
C555	1-104-908-11	TANTAL. CHIP	47uF 20% 4V	D503	8-719-059-50	DIODE MA3J142D0LSO	
C557	1-115-156-11	CERAMIC CHIP	1uF 10V	D801	8-719-058-24	DIODE RB501V-40TE-17	
C560	1-107-826-91	CERAMIC CHIP	0.1uF 10% 16V	D803	8-719-069-54	DIODE UDZS-TE17-5.1B	
C561	1-126-513-11	ELECT	47uF 20% 4V	D804	8-719-039-99	DIODE UMZ8.2T	
C562	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	D805	8-719-039-99	DIODE UMZ8.2T	
C563	1-107-826-91	CERAMIC CHIP	0.1uF 10% 16V	D806	8-719-069-54	DIODE UDZS-TE17-5.1B	
C565	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D807	8-719-039-99	DIODE UMZ8.2T	
C571	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V			< FERRITE BEAD >	
C572	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB101	1-414-595-11	INDUCTOR CHIP	
C575	1-113-619-11	CERAMIC CHIP	0.47uF 10V	FB102	1-414-595-11	INDUCTOR CHIP	
C587	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	FB201	1-414-595-11	INDUCTOR CHIP	
C588	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	FB202	1-414-595-11	INDUCTOR CHIP	
C598	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	FB301	1-414-595-11	INDUCTOR CHIP	
C599	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V	FB302	1-414-595-11	INDUCTOR CHIP	
C601	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB303	1-216-295-00	METAL CHIP 0 5% 1/10W	
C602	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB304	1-414-595-11	INDUCTOR CHIP	
C611	1-124-778-00	ELECT CHIP	22uF 20% 6.3V	FB306	1-414-595-11	INDUCTOR CHIP	
C615	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB401	1-412-026-11	INDUCTOR CHIP 1uH	
C616	1-135-201-11	TANTALUM CHIP	10uF 20% 4V	FB402	1-414-398-11	INDUCTOR 10uH	
C619	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	FB501	1-414-595-11	INDUCTOR CHIP	
C702	1-107-826-91	CERAMIC CHIP	0.1uF 10% 16V	FB502	1-414-595-11	INDUCTOR CHIP	
C703	1-107-826-91	CERAMIC CHIP	0.1uF 10% 16V	FB601	1-414-595-11	INDUCTOR CHIP	
C704	1-164-360-11	CERAMIC CHIP	0.1uF 16V	FB603	1-216-295-00	METAL CHIP 0 5% 1/10W	
C705	1-162-955-11	CERAMIC CHIP	150PF 5% 50V	FB801	1-414-595-11	INDUCTOR CHIP	
C706	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	FB802	1-216-864-11	METAL CHIP 0 5% 1/16W	
C707	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	FB803	1-414-595-11	INDUCTOR CHIP	
C708	1-162-957-11	CERAMIC CHIP	220PF 5% 50V			< IC >	
C712	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	IC301	8-759-483-60	IC TC9438FNEL	
C716	1-164-346-11	CERAMIC CHIP	1uF 16V	IC302	8-759-522-87	IC TA2120FN(EL)	
C801	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	IC401	8-759-483-61	IC MPC18A26VMEL	
C802	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	IC501	8-759-432-83	IC BA6386K	
C804	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	IC502	8-759-563-54	IC BU9326KS	
C806	1-115-156-11	CERAMIC CHIP	1uF 10V	IC503	8-759-528-79	IC NJU7012F-TE2	
C807	1-115-156-11	CERAMIC CHIP	1uF 10V	IC505	8-759-082-60	IC TC7S66FU	
C808	1-115-156-11	CERAMIC CHIP	1uF 10V	IC601	8-759-581-80	IC SM5902BF	
C809	1-115-156-11	CERAMIC CHIP	1uF 10V	IC602	8-759-498-44	IC MSM51V4400D-70TSK	
C814	1-216-864-11	METAL CHIP	0 5% 1/16W	IC701	8-759-483-62	IC MPC17A51VMEL	
C879	1-115-156-11	CERAMIC CHIP	1uF 10V	IC801	8-759-575-14	IC MC68HC05L15SC442718CPB	
C907	1-164-360-11	CERAMIC CHIP	0.1uF 16V				
		< CONNECTOR >					
CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P					

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
		< JACK >				R103	1-218-901-11	RES,CHIP	180K	0.50%	1/16W (FR)
J301	1-778-696-11	JACK(LINE OUT)				R105	1-216-821-11	METAL CHIP	1K	5%	1/16W
J302	1-580-680-11	JACK(⌚)/REMOTE)				R107	1-216-793-11	RES,CHIP	4.7	5%	1/16W
J401	1-778-153-21	JACK,DC(POLARITY UNIFIED TYPE)			(DC IN 4.5V)	R201	1-216-813-11	METAL CHIP	220	5%	1/16W
		< JUMPER RESISTOR >				R202	1-216-845-11	METAL CHIP	100K	5%	1/16W
						R203	1-216-841-11	METAL CHIP	47K	5%	1/16W (EXCEPT FR)
JW304	1-216-864-11	METAL CHIP	0	5%	1/16W	R203	1-218-901-11	RES,CHIP	180K	0.50%	1/16W (FR)
JW401	1-216-296-00	METAL CHIP	0	5%	1/10W						
JW501	1-216-295-00	METAL CHIP	0	5%	1/10W	R205	1-216-821-11	METAL CHIP	1K	5%	1/16W
JW502	1-216-295-00	METAL CHIP	0	5%	1/10W	R207	1-216-793-11	RES,CHIP	4.7	5%	1/16W
		< COIL >				R304	1-216-803-11	METAL CHIP	33	5%	1/16W
L301	1-469-034-11	INDUCTOR	4.7uH			R306	1-216-864-11	METAL CHIP	0	5%	1/16W
L302	1-414-821-11	INDUCTOR	4.7uH			R307	1-216-821-11	METAL CHIP	1K	5%	1/16W
L303	1-414-821-11	INDUCTOR	4.7uH								
L304	1-414-821-11	INDUCTOR	4.7uH			R308	1-216-864-11	METAL CHIP	0	5%	1/16W
L401	1-414-267-11	INDUCTOR	10uH			R310	1-216-142-00	RES,CHIP	4.7	5%	1/8W
						R312	1-216-815-11	METAL CHIP	330	5%	1/16W
L402	1-414-404-11	INDUCTOR	100uH			R326	1-216-853-11	METAL CHIP	470K	5%	1/16W
L402	1-414-404-11	INDUCTOR	100uH			R401	1-218-911-11	RES,CHIP	470K	0.50%	1/16W
L502	1-414-267-11	INDUCTOR	10uH								
L504	1-414-267-11	INDUCTOR	10uH			R402	1-218-899-11	RES,CHIP	150K	0.50%	1/16W
L506	1-414-267-11	INDUCTOR	10uH			R403	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
						R404	1-216-799-11	METAL CHIP	15	5%	1/16W
L507	1-414-267-11	INDUCTOR	10uH			R406	1-216-304-11	METAL CHIP	3.3	5%	1/10W
L508	1-216-295-00	METAL CHIP	0	5%	1/10W	R408	1-216-809-11	METAL CHIP	100	5%	1/16W
L701	1-414-402-11	INDUCTOR	47uH								
L702	1-414-402-11	INDUCTOR	47uH			R409	1-216-837-11	METAL CHIP	22K	5%	1/16W
L801	1-414-916-11	FERRITE				R413	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< LIQUID CRYSTAL DISPLAY >				R414	1-216-845-11	METAL CHIP	100K	5%	1/16W
LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL				R415	1-216-815-11	METAL CHIP	330	5%	1/16W
		< TRANSISTOR >				R416	1-216-298-00	METAL CHIP	2.2	5%	1/10W
Q101	8-729-209-06	TRANSISTOR	2SC4213-A			R417	1-216-298-00	METAL CHIP	2.2	5%	1/10W
Q201	8-729-209-06	TRANSISTOR	2SC4213-A			R418	1-216-864-11	METAL CHIP	0	5%	1/16W
Q300	8-729-028-74	TRANSISTOR	DTA114TUA-T106			R419	1-216-849-11	METAL CHIP	220K	5%	1/16W
Q302	8-729-907-39	TRANSISTOR	IMD2			R421	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q311	8-729-422-51	TRANSISTOR	UN5110-QRS			R423	1-216-857-11	METAL CHIP	1M	5%	1/16W
Q401	8-729-044-09	TRANSISTOR	2SD2153T100V			R429	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
Q402	8-729-044-10	TRANSISTOR	MMBF0201NLT1			R430	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
Q404	8-729-921-93	TRANSISTOR	2SB1182F5-QR			R431	1-216-864-11	METAL CHIP	0	5%	1/16W
Q405	8-729-920-85	TRANSISTOR	2SD1664-QR			R433	1-216-821-11	METAL CHIP	1K	5%	1/16W
Q501	8-729-216-22	TRANSISTOR	2SA1162-G			R501	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
Q506	8-729-029-06	TRANSISTOR	DTC124EUA-T106			R502	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
Q507	8-729-028-74	TRANSISTOR	DTA114TUA-T106			R503	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
Q508	8-729-028-74	TRANSISTOR	DTA114TUA-T106			R504	1-216-839-11	METAL CHIP	33K	5%	1/16W
Q509	8-729-230-63	TRANSISTOR	2SC4116-YG			R505	1-216-142-00	RES,CHIP	4.7	5%	1/8W
Q511	8-729-029-06	TRANSISTOR	DTC124EUA-T106			R506	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q801	8-729-230-63	TRANSISTOR	2SC4116-YG			R507	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
Q802	8-729-231-74	TRANSISTOR	2SC4116-GL			R508	1-216-833-11	METAL CHIP	10K	5%	1/16W
Q809	8-729-231-74	TRANSISTOR	2SC4116-GL			R509	1-216-835-11	METAL CHIP	15K	5%	1/16W
		< RESISTOR >				R510	1-216-821-11	METAL CHIP	1K	5%	1/16W
R101	1-216-813-11	METAL CHIP	220	5%	1/16W	R511	1-216-833-11	METAL CHIP	10K	5%	1/16W
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W						
R103	1-216-841-11	METAL CHIP	47K	5%	1/16W (EXCEPT FR)	R512	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R513	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
						R517	1-216-835-11	METAL CHIP	15K	5%	1/16W
						R518	1-216-864-11	METAL CHIP	0	5%	1/16W
						R519	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
						R521	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
						R522	1-216-833-11	METAL CHIP	10K	5%	1/16W
						R525	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R830	1-216-864-11	METAL CHIP	0	5%	1/16W
R529	1-216-864-11	METAL CHIP	0	5%	1/16W	R879	1-216-857-11	METAL CHIP	1M	5%	1/16W
R531	1-216-833-11	METAL CHIP	10K	5%	1/16W	< VARIABLE RESISTOR >					
R533	1-216-841-11	METAL CHIP	47K	5%	1/16W	RV301	1-223-609-21	RES, VAR, CARBON 10K/10K(▲VOLUME)			
R534	1-216-833-11	METAL CHIP	10K	5%	1/16W	RV502	1-223-587-11	RES, ADJ, CARBON 22K(TRACKING GAIN)			
R535	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	RV503	1-223-587-11	RES, ADJ, CARBON 22K(FOCUS GAIN)			
R538	1-216-833-11	METAL CHIP	10K	5%	1/16W	< SWITCH >					
R539	1-216-864-11	METAL CHIP	0	5%	1/16W	S301	1-762-078-11	SWITCH, SLIDE(AVLS)			
R542	1-216-851-11	METAL CHIP	330K	5%	1/16W	S801	1-762-822-11	SWITCH, PUSH (1 KEY)(OPEN SW)			
R543	1-216-864-11	METAL CHIP	0	5%	1/16W	S802	1-571-754-31	SWITCH, PUSH (1 KEY)(RECHG BAT DET)			
R544	1-216-849-11	METAL CHIP	220K	5%	1/16W	S803	1-762-078-11	SWITCH, SLIDE(RESUME)			
R545	1-216-849-11	METAL CHIP	220K	5%	1/16W	S804	1-762-078-11	SWITCH, SLIDE(HOLD ➡)			
R546	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	S805	1-572-199-11	SWITCH, KEYBOARD(PLAY MODE)			
R547	1-216-843-11	METAL CHIP	68K	5%	1/16W	S806	1-572-199-11	SWITCH, KEYBOARD(ESP)			
R548	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	S808	1-572-199-11	SWITCH, KEYBOARD(■)			
R549	1-216-833-11	METAL CHIP	10K	5%	1/16W	S809	1-572-199-11	SWITCH, KEYBOARD(REPEAT/ENTER)			
R550	1-216-864-11	METAL CHIP	0	5%	1/16W	S810	1-572-199-11	SWITCH, KEYBOARD(◀▶)			
R555	1-216-845-11	METAL CHIP	100K	5%	1/16W	S811	1-572-199-11	SWITCH, KEYBOARD(▶▶)			
R563	1-216-845-11	METAL CHIP	100K	5%	1/16W	S812	1-572-199-11	SWITCH, KEYBOARD(▶▶)			
R569	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	S813	1-554-088-00	SWITCH, KEY BOARD(SOUND)			
R570	1-216-841-11	METAL CHIP	47K	5%	1/16W	< TRANSFORMER >					
R599	1-216-851-11	METAL CHIP	330K	5%	1/16W	T401	1-475-573-11	TRANSFORMER, DC-DC CONVERTER			
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W	< VIBRATOR >					
R604	1-216-864-11	METAL CHIP	0	5%	1/16W	X301	1-760-307-11	VIBRATOR, CERAMIC(16.9MHz)			
R605	1-216-821-11	METAL CHIP	1K	5%	1/16W	X801	1-577-101-11	VIBRATOR, CERAMIC(4.1943MHz)			
R606	1-216-821-11	METAL CHIP	1K	5%	1/16W	*****					
R607	1-216-821-11	METAL CHIP	1K	5%	1/16W	MISCELLANEOUS					
R608	1-216-821-11	METAL CHIP	1K	5%	1/16W	*****					
R609	1-216-864-11	METAL CHIP	0	5%	1/16W	53	1-690-530-81	LEAD(WITH CONNECTOR)			
R610	1-216-864-11	METAL CHIP	0	5%	1/16W	58	1-660-965-11	PC BOARD, SLIDE FLEXIBLE			
R630	1-216-864-11	METAL CHIP	0	5%	1/16W	△ 59	X-4950-476-1	OPTICAL PICK-UP (DAX-11E RP)			
R632	1-216-864-11	METAL CHIP	0	5%	1/16W	LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL			
R701	1-216-864-11	METAL CHIP	0	5%	1/16W	M901	A-3303-403-A	MOTOR ASSY, SLED (SLED)			
R702	1-216-825-11	METAL CHIP	2.2K	5%	1/16W			(INCLUDING GEAR)			
R801	1-216-821-11	METAL CHIP	1K	5%	1/16W	M902	A-3304-989-A	MOTOR ASSY,TURNTABLE (SPINDLE)			
R802	1-216-833-11	METAL CHIP	10K	5%	1/16W	S901	1-571-099-21	SWITCH (1 KEY)(LIMIT)			
R803	1-216-821-11	METAL CHIP	1K	5%	1/16W	*****					
R804	1-216-854-11	METAL CHIP	560K	5%	1/16W	ACCESSORIES & PACKING MATERIALS					
R805	1-216-861-11	METAL CHIP	2.2M	5%	1/16W	*****					
R806	1-216-821-11	METAL CHIP	1K	5%	1/16W	1-251-696-11	CONNECTING PACK, CAR(E446CK/E449CK)				
R807	1-216-821-11	METAL CHIP	1K	5%	1/16W	△ 1-467-007-22	ADAPTOR, AC (AC-E455)(AUS)				
R808	1-216-851-11	METAL CHIP	330K	5%	1/16W	△ 1-467-012-11	ADAPTOR, AC (AC-E455)(EA)				
R809	1-216-851-11	METAL CHIP	330K	5%	1/16W	△ 1-467-195-11	ADAPTOR, AC (AC-E455A)(US/CND/C&SA)				
R810	1-216-857-11	METAL CHIP	1M	5%	1/16W	△ 1-467-550-11	ADAPTOR, AC (AC-E455A)(E33)				
R811	1-216-857-11	METAL CHIP	1M	5%	1/16W	△ 1-473-115-11	ADAPTOR, AC (AC-E455D)(UK)				
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W	△ 1-473-116-35	ADAPTOR, AC (AC-E455D)(AEP/E13/EE/FR/G)				
R817	1-216-821-11	METAL CHIP	1K	5%	1/16W	1-475-603-11	REMOTE CONTROL UNIT(RM-DM29)				
R818	1-216-857-11	METAL CHIP	1M	5%	1/16W		(E445/E449CK)				
R819	1-216-821-11	METAL CHIP	1K	5%	1/16W	△ 1-475-622-12	ADAPTOR, AC (AC-E455)(CN)				
R820	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	△ 1-475-623-11	ADAPTOR, AC (AC-E455)(HK)				
R821	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	△ 1-475-969-11	ADAPTOR, AC (AC-E455)(AR)				
R822	1-216-827-11	METAL CHIP	3.3K	5%	1/16W						
R823	1-216-825-11	METAL CHIP	2.2K	5%	1/16W						
R824	1-216-823-11	METAL CHIP	1.5K	5%	1/16W						
R825	1-216-821-11	METAL CHIP	1K	5%	1/16W						
R826	1-216-821-11	METAL CHIP	1K	5%	1/16W						
R829	1-216-864-11	METAL CHIP	0	5%	1/16W						

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-528-444-11	BATTERY PACK (BP-DM10) (E443:E13,E33,EA/E445:AUS,CND,CN,E13,EE,HK)				G/E441:AEP,G/E441SR:AEP,G/E443:AEP,G/E445:AEP,G/E446CK:AEP,G)	
	1-528-444-31	BATTERY PACK (BP-DM10)(E445:US/E449CK)		3-865-543-81	MANUAL, INSTRUCTION(ITALIAN)(E440:7AEP/E441:AEP/E441SR:AEP/E443:AEP/E445:AEP/E446CK:AEP)		
	1-528-444-81	BATTERY PACK (BP-DM10)(E443:AEP,FR,G,UK/E445:AEP,FR,G,UK)		3-865-543-91	MANUAL, INSTRUCTION(FINNISH)(E440:7AEP/E441:AEP/E441SR:AEP/E443:AEP/E445:AEP/E446CK:AEP)		
△	1-532-452-99	FUSE, GLASS CYLINDRICAL (DIA.5)1A 125V (E446CK/E449CK)					
△	1-569-007-11	ADAPTOR, CONVERSION 2P(E33)		3-865-544-11	MANUAL, INSTRUCTION(ENGLISH)(E441:CN,E13/E443:E13/E445:CN,E13,HK/E446CK:E13)		
△	1-569-008-21	ADAPTOR, CONVERSION 2P(E13/EA)		3-865-544-21	MANUAL, INSTRUCTION(SIMPLIFIED CHINESE)(E441:CN/E445:CN)		
	1-784-619-11	CORD DCC-E2455//M SET(E446CK/E449CK)		3-865-544-31	MANUAL, INSTRUCTION(TRADITIONAL CHINESE)(E441:E13/E443:E13/E445:E13,HK/E446CK:E13)		
	3-856-479-11	MANUAL, INSTRUCTION(SPANISH) (FOR CAR KIT) (E446CK:AR,AEP,E33,C&SA)		3-865-545-11	MANUAL, INSTRUCTION(RUSSIAN)(E441:EE/E441SR:EE/E445:EE/E446CK:EE)		
	3-856-479-21	MANUAL, INSTRUCTION(ENGLISH) (FOR CAR KIT) (E446CK:AR,AEP,AUS,CND,E33,C&SA,EA,EE,FR,UK,US/E449CK)		3-865-545-21	MANUAL, INSTRUCTION(POLISH)(E441:EE/E441SR:EE/E445:EE/E446CK:EE)		
	3-856-479-31	MANUAL, INSTRUCTION(FRENCH) (FOR CAR KIT) (E446CK:AEP,CND,FR)		3-865-545-31	MANUAL, INSTRUCTION(CZECH)(E441:EE/E441SR:EE/E445:EE/E446CK:EE)		
	3-856-479-41	MANUAL, INSTRUCTION(DUTCH) (FOR CAR KIT) (E446CK:AEP,EE)		3-865-545-41	MANUAL, INSTRUCTION(MAGYAR)(E441:EE/E441SR:EE/E445:EE/E446CK:EE)		
	3-856-479-51	MANUAL, INSTRUCTION(SWEDISH) (FOR CAR KIT) (E446CK:AEP)		3-866-293-11	MANUAL, INSTRUCTION(RUSSIAN) (E446CK:EE)		
	3-856-479-61	MANUAL, INSTRUCTION(PORTUGUESE) (FOR CAR KIT) (E446CK:AR,AEP,C&SA)		3-866-293-21	MANUAL, INSTRUCTION(CZECH)(E446CK:EE)		
	3-856-479-71	MANUAL, INSTRUCTION(GERMAN) (FOR CAR KIT) (E446CK:AEP,G)		3-866-293-31	MANUAL, INSTRUCTION(MAGYAR) (E446CK:EE)		
	3-856-479-81	MANUAL, INSTRUCTION(ITALIAN) (FOR CAR KIT) (E446CK:AEP)		3-866-293-41	MANUAL, INSTRUCTION(POLISH)(E446CK:EE)		
	3-856-479-91	MANUAL, INSTRUCTION(FINNISH) (FOR CAR KIT) (E446CK:AEP)		8-953-187-90	HEADPHONE MDR-ED136//K SET(E440/E441:EXCEPT US/E441SR/E443/E446CK:EXCEPT US)		
	3-859-336-11	MANUAL, INSTRUCTION(TRADITIONAL CHINESE) (FOR CAR KIT)(E446CK:E13)		8-953-272-90	HEADPHONE MDR-ED136SP//K SET (E445:EXCEPT US)		
	3-859-336-21	MANUAL, INSTRUCTION(ENGLISH) (FOR CAR KIT) (E446CK:E13)		8-953-276-90	HEADPHONE MDR-24SP SET (E445:US/E449CK)		
	3-859-401-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,DUTCH,SPANISH, ITALIAN,PORTUGUESE,SWEDISH) (FOR SPEAKER SYSTEM) (E441SR:AEP,EE,FR,G,UK)		8-953-342-93	HEADPHONE MDR-24/1 SET (E441:US/E446CK:US)		
	3-865-543-11	MANUAL, INSTRUCTION(SPANISH) (E440:7AEP/E441:AEP,AR,E33,C&SA/E441SR:AEP/E443:AEP,E33/E445:AEP/E446CK:AR,AEP,E33,C&SA)					
	3-865-543-21	MANUAL, INSTRUCTION(ENGLISH)(E440:AEP,7AEP,FR/E441:AEP,7AEP,AR,AUS,CND,E33,C&SA,EA,EE,FR,UK,US/E441SR:AEP,EE,FR,UK/E443:AEP,E33,EA,FR,UK/E445:AEP,AUS,CND,EE,FR,UK,US/E446CK:AR,AEP,AUS,CND,E33,C&SA,EA,EE,FR,UK,US/E449CK)					
	3-865-543-31	MANUAL, INSTRUCTION(FRENCH)(E440:7AEP,FR/E441:AEP,CND,FR/E441SR:AEP,FR/E443:AEP,FR/E445:AEP,CND,FR/E446CK:AEP,CND,FR)					
	3-865-543-41	MANUAL, INSTRUCTION(DUTCH)(E440:7AEP/E441:AEP,EE/E441SR:AEP,EE/E443:AEP/E445:AEP,EE/E446CK:AEP,EE)					
	3-865-543-51	MANUAL, INSTRUCTION(SWEDISH)(E440:7AEP/E441:AEP/E441SR:AEP/E443:AEP/E445:AEP/E446CK:AEP)					
	3-865-543-61	MANUAL, INSTRUCTION(PORTUGUESE) (E440:7AEP/E441:AEP,AR1,C&SA/E441SR:AEP/E443:AEP/E445:AEP/E446CK:AR,AEP,C&SA)					
	3-865-543-71	MANUAL, INSTRUCTION(GERMAN)(E440:7AEP,					

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**D- E440/441/E441SR/E443/
E445/E446CK/E449CK**