

# D-421SP

## SERVICE MANUAL

US Model  
 Canadian Model  
 AEP Model  
 UK Model  
 E Model  
 Tourist Model

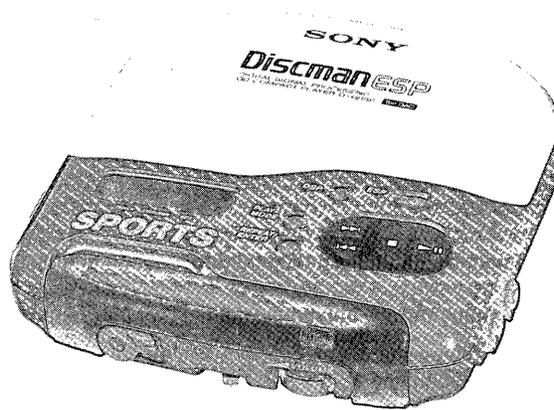


Photo : Except tourist model.

# Discman

Model Name Using Similar Mechanism	D-220
CD Mechanism Type	KSM-331CAN (S)

### SPECIFICATIONS

**System**  
 Laser diode properties  
 Compact disc digital audio system  
 Material: GaAlAs  
 Wavelength:  $\lambda = 780 \text{ nm}$   
 Emission duration: Continuous  
 Laser output: Less than  $44.6 \mu\text{W}$   
 (This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.)

**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  $\pm 1 \text{ dB}$   
 (measured by EIAJ CP-307)

**Output (at 4.5 V input level)**  
 Line output (stereo minijack)  
 Output level 0.8 V rms at 50 kilohms  
 Load impedance over 10 kilohms  
 Headphones (stereo minijack)  
 5 mW + 5 mW at  $16\Omega$

**Dimensions**  
 Approx. 142 × 36 × 158 mm ( $5\frac{5}{8} \times 1\frac{7}{16} \times 6\frac{1}{4}$  in.)  
 (w/h/d) incl. projecting parts and controls

**Mass**  
 Approx. 460 g (16.4 oz) incl. rechargeable battery

**Supplied accessories**  
 AC power adaptor (1)  
 Rechargeable battery (1)  
 Connecting cord (phono plug x 2 ↔ stereo miniplug) (1)  
 Stereo headphones (1) (Except Tourist)  
 Stereo headphones with remote commander (1) (Tourist)  
 Carrying case (1) (Tourist)

Design and specifications subject to change without notice.

#### Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

#### Accessories not supplied

Car connecting pack CPA-3, CPA-4  
 Car battery cord DCC-E145L  
 Active speaker system SRS-57  
 Rechargeable battery BP-DM10

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information about the accessories in your country.

#### General

**Power requirements**

Supplied:

- Rechargeable battery
- DC IN 4.5 V jack accepts the Sony AC power adaptor for use on:

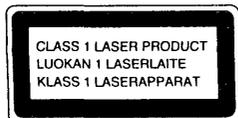
Where purchased	Operating voltage
European and Asian countries	220 – 230 V AC, 50 Hz
U.S.A., Canada, Central and South America	120 V AC, 60 Hz
Middle East	110 – 240 V AC, 50/60 Hz
United Kingdom, Australia	240 V AC, 50 Hz
Other countries	100 – 240 V AC, 50/60 Hz

Not supplied:

- DC IN 4.5 V accepts the Sony DCC-E145L car battery cord
- DC 3 V two size AA (LR6) alkaline batteries

COMPACT DISC COMPACT PLAYER  
**SONY**®

**For the Customers in the United Kingdom**



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

**For the Customers in Canada**

THIS APPARATUS COMPLIES WITH THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.

**MODEL IDENTIFICATION**

— COLOR —

- Gray : Tourist model.
- Yellow : Except Tourist model.

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**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK 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.

**SECTION 1  
SERVICE NOTE**

**Note on Optical Pick-up Block or Base Unit**

The laser diode within the optical pick-up may have potential difference due to electrostatic charge on a clothes or human body and is subjected to electrostatic destruction. When repairing, take fully care of the electrostatic destruction and follow the contents of the printed paper provided with the repair parts. Furthermore, take care of handling the flexible board since it can be damaged.

**Before Replacing Optical Pick-up**

Before replacing the optical pick-up, check each item using the separate-volume trouble shooting guide "OPTICAL BLOCK Checking Procedures (part No.: 9-960-027-01)". Specifications and notes needed for checking are described below.

- FOK output: IC601
- P-P value of S curve waveform: 1.5 to 3.5 Vp-p  
Remove the soldering jumper on FE pin (SCL501) before checking the P-P value of S curve waveform.
- Focus gain adjustment element: Not used.
- P-P value of RF signal: 0.7 to 1.1 Vp-p
- P-P value of traverse signal: 0.7 to 1.7 Vp-p
- The repair of grating holder can not be performed.
- Tracking gain adjustment element: Not used.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE 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.

**[Note on Laser Diode Emission Confirmation]**

The laser emission of the unit is focused on the reflecting surface of the disc by the objective lens within the optical pick-up. Be sure to keep your eyes apart from the objective lens more than 30 cm when checking the laser diode emission.

**[Laser Diode Checking]**

In normal operation of the unit, the laser diode does not emit unless the top panel is closed and S810 (push switch) is turned on.

However, in service mode, the laser diode always emits even if S810 is not turned on.

Checking the laser diode can be performed in two ways described below.

**• Checking Method 1**

**(service mode or normal operation):**

**Confirming the laser diode emission by visual inspection.**

1. Open the top panel.
2. Turn on S810 as shown in Fig. 1. (Not required in the service mode.)
3. Press ►|| key.
4. Observe the objective lens and confirm that the laser diode emits. If it does not emit, the auto power control circuit or optical pick-up is failure.

In normal operation, the laser diode is on for about 2.5 seconds to perform the focus search.

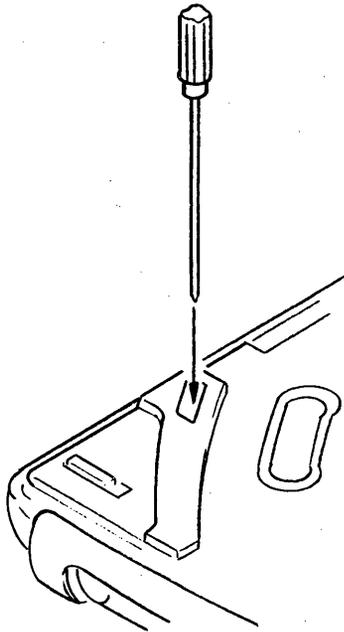


Fig. 1. Turning on S810.

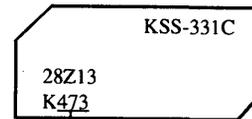
**• Checking Method 2**

**(service mode or normal operation)**

**Checking the current flowed to the laser diode.**

1. Remove the top panel.
2. Read the current value on the label stuck to the bottom of the optical pick-up.

(The label stuck to the bottom of the optical pick-up)



Represents the current value.  
In this case: current value=47.3 mA.

3. Connect the tester as shown in the Fig. 2. (R501, 1Ω at both ends)
4. Press ►|| key.
5. Calculate the current value using the reading on the tester.  
Reading on the tester (V)=current value (A)
6. Confirm that the current value is within the range described below.

**(Example)** When the reading on the tester is 0.047:

$$0.047 = 0.047 \text{ (A)} = 47 \text{ mA}$$

- The current value on the label  $\begin{matrix} +5 \\ -11 \end{matrix}$  mA (25 °C)

Changing rate to temperature : 0.4 mA/°C

Current increases with increasing in temperature.

Current decreases with decreasing in temperature.

If the current value is more than the range, the auto power control circuit is failure or laser diode deteriorates. If, less than the range, the auto power control circuit or optical pick-up is failure.

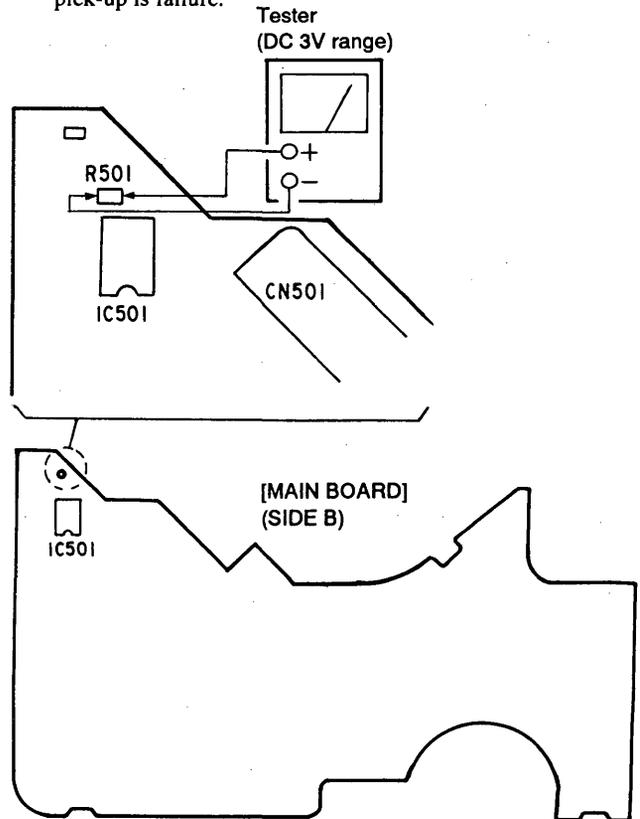
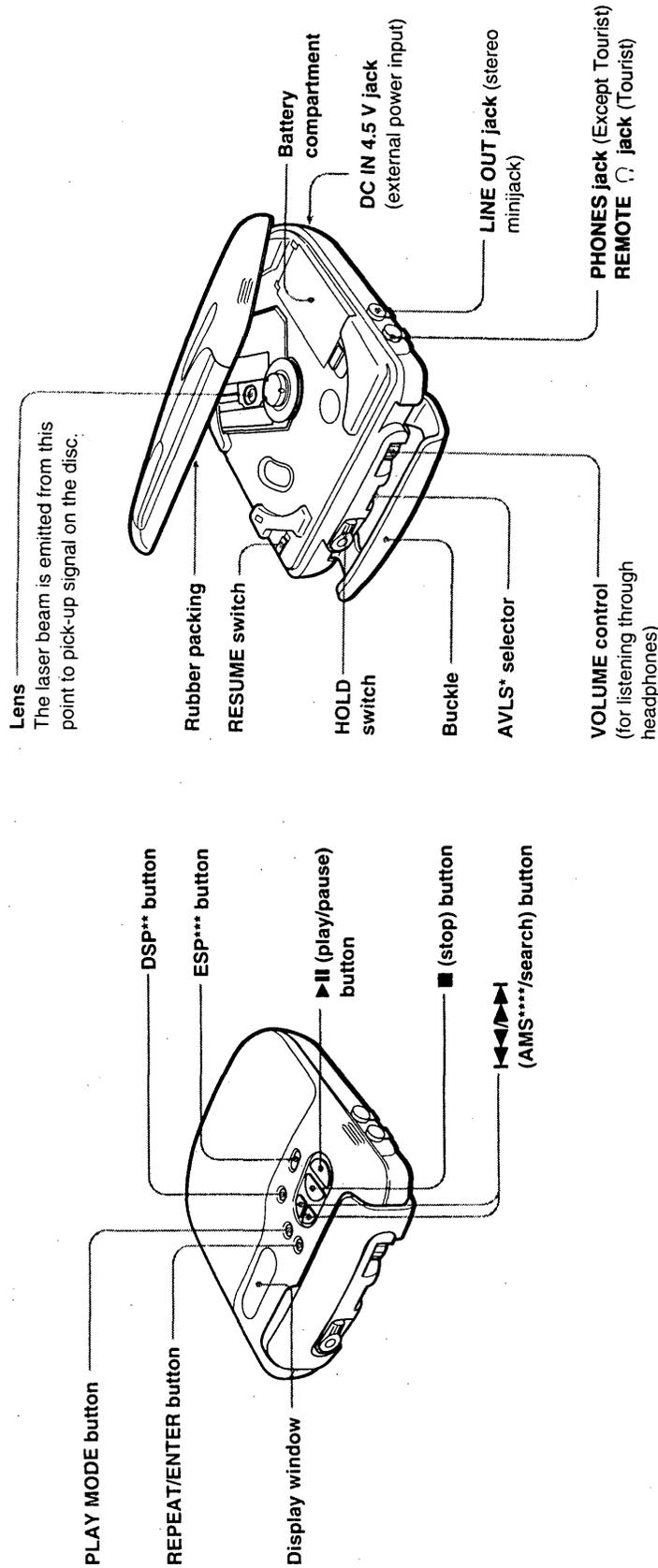


Fig. 2. Tester connecting point

## SECTION 2 GENERAL

This section is extracted from instruction manual.

### Location and Function of Controls



\*AVLS: Automatic Volume Limiter System

\*\*DSP: Digital Signal Processing

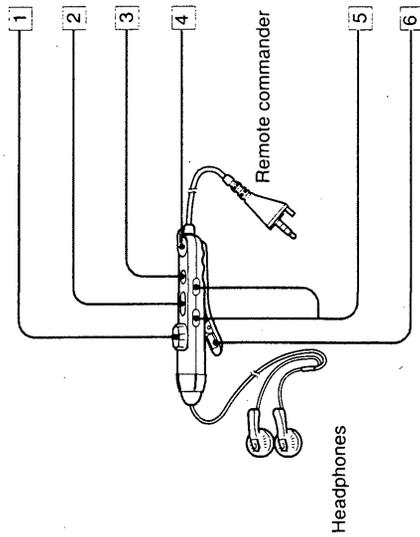
\*\*\*ESP: Electronic Shock Protection

\*\*\*\*AMS: Automatic Music Sensor

## (Tourist model only)

Headphones with remote commander is supplied with your unit.

### Location and Function of Controls



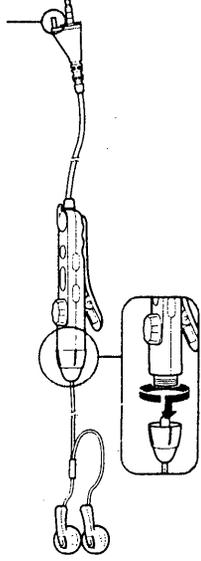
- 1 Volume control
- 2 (play/pause) button
- 3 (stop) button
- 4 HOLD switch

Slide the switch in the direction of arrow to avoid accidental pressing of the buttons on the remote commander.

This switch and the HOLD switch on the D-421SP work independently of each other. You can operate the buttons even when the other HOLD switch is set to the direction of arrow.

- 5 (AMS/search) button
- 6 Clip

This tip detects the remote control signals. Do not break it.



Fasten the screw securely. If it is loose, water may enter the remote commander.

### Notes

- This remote commander is to be used only with the D-421SP.
- Other models than the D-421SP cannot be operated with this remote commander. Also the D-421SP cannot be operated with other remote control units even though they may have the same plugs as this remote commander has.
- The cord of the headphones can be detached from the remote commander. You can attach optional headphones with micro plug. But in this case, the water resistance cannot be assured.
- Headphones with stereo miniplug can also be used instead of the supplied headphones with remote commander. But in this case, the water resistance cannot be assured.

## SECTION 3

### SERVICE MODE (SERVICE PROGRAM)

Like a conventional model, this model has the service program in the micro-computer.  
Operating the service program is described below.

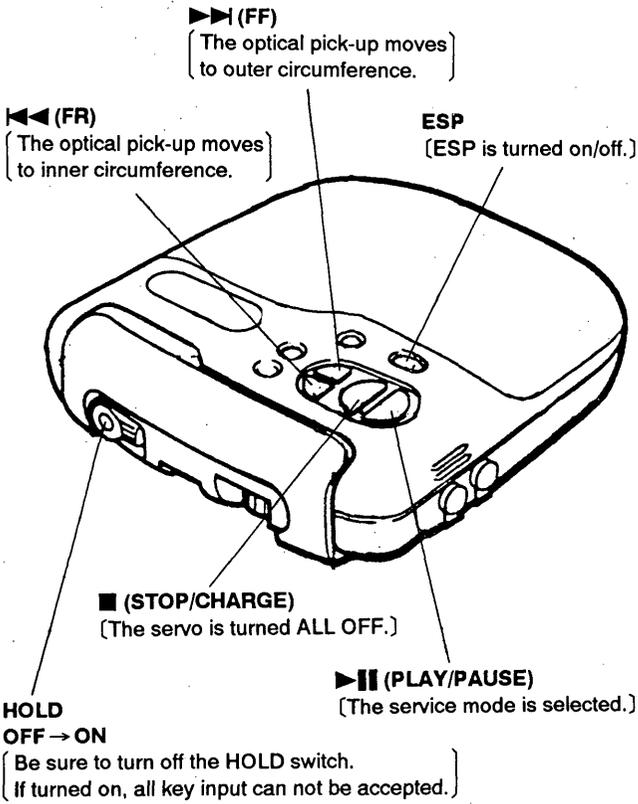


Fig. 1. Key arrangement

- **Step 1 (Service mode setting method)**
    1. Disconnect the external power supply (Not applying power to the unit), and turn OFF the HOLD switch.
    2. Make a soldering jumper on the test pin (SCL801).  
(Test pin (IC801 ⑧) is grounded.)
    3. Make a soldering jumper on the open pin (SCL401).  
(Open pin (IC801 ②) is grounded.)
    4. Connect the external power supply.
- After the completion of these procedures, the unit is set to the service mode.

Soldering jumper points of the test pin (SCL801) and open pin (SCL401) in the service mode.  
[Be sure to remove the soldering jumper after the completion of the check and adjustment in the service mode.]

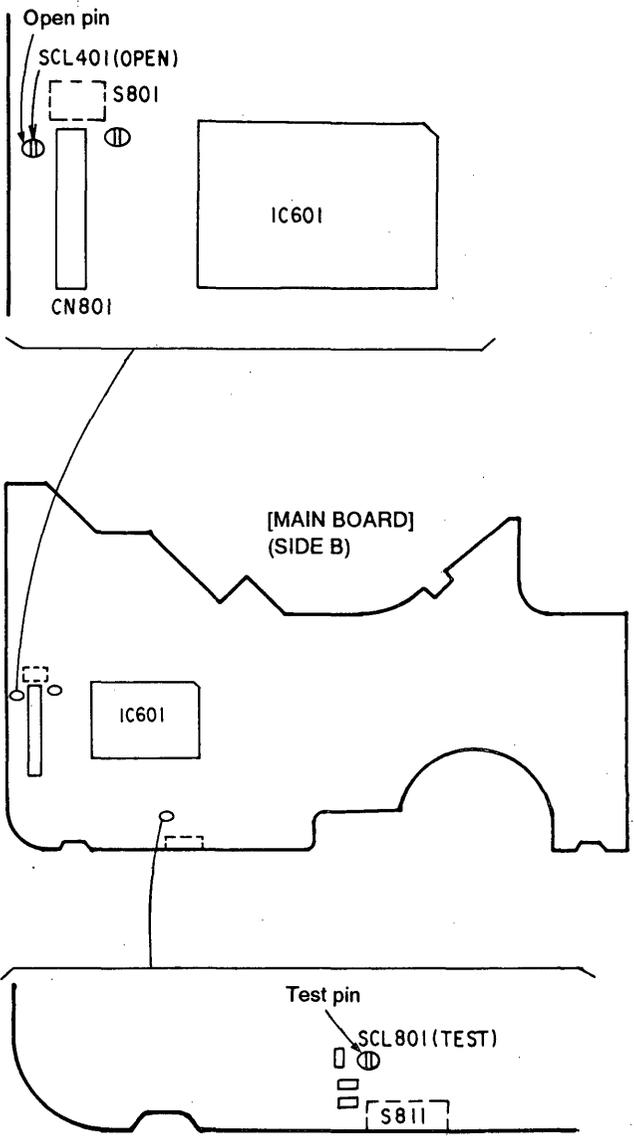


Fig. 2. Test and open pin position

• **Step 2 (Service mode operation)**

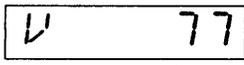
1. LCD indication check mode  
This mode is set immediately after set to the service mode. In this mode, there are six LCD indications, and the indication (mode) is changed as required. When pressing the ESP key in this mode, the ESP is on. (LCD  mark lights up continuously.)
2. Mode is changed as described below by each pressing  key.

① LCD indication check mode

Press  key.

① Auto voltage adjustment mode

The PWM output data (the PWM signal duty ratio output from IC801 ④) for controlling the output voltage of the servo system power supply DC/DC converter (IC401, Q404, Q405, Q421 and T401) appears on the LCD.



The data appeared are "77" in ESP off and "9F" in ESP on. If data is "00" or "FF", the DC/DC converter may be failure.

From this mode and after, the optical pick-up can be moved.

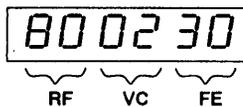
Optical pick-up moving:

- Pressing  key moves the optical pick-up to the outer circumference.
- Pressing  key moves the optical pick-up to the inner circumference.

Press  key.

② Auto average adjustment mode

The DC offset values of RF voltage (IC601 ② input), VC voltage (IC601 ③ input) and FE voltage (IC601 ④ input) to 1/2 VCC appear on the LCD.

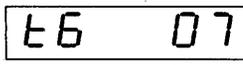


If the indication is "00 00 00" or "FF FF FF", failure occurs. Failure also occurs if the lower two digits (FE voltage) is less than "20".

Press  key.

③ Auto tracking balance adjustment mode

When the disc is on the turn table, the focus search is carried out and focus is on to rotate the disc motor, and the auto tracking balance adjustment mode is set. The 4-bit tracking balance data appears on the LCD. At this time, the optical pick-up can be moved by pressing  and  keys.



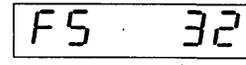
If the indication is "00" or "0F", failure occurs.

When the disc is not on the turn table, the focus search is repeated.

After this, place the disc on the turn table to check.

④ Auto focus gain adjustment mode

The focus gain appears on the LCD.

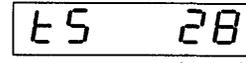


Focus gain

Press  key.

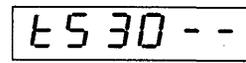
⑤ Auto tracking adjustment mode

The tracking gain appears on the LCD.



Tracking gain

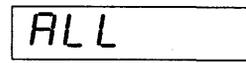
If the tracking servo is failure, " -- " appears on the LCD as shown below.



Press  key.

⑥ Audio signal output

"ALL" appears on the LCD.



Press  key.

① LCD indication check mode

3. When  key is pressed, all servos (focus, tracking and sled) are turned off, and the LCD check mode is returned. Note that the disc motor rotates for a certain periods due to inertia.

• **Step 3 (Service mode cancellation)**

1. Never fail to disconnect the external power supply and remove the soldering jumper on the test pin and open pin connected in the setting. The normal operation of the unit can be performed.

## SECTION 4

### ELECTRICAL ADJUSTMENTS

#### [Note on adjustment]

1. Perform adjustment in the service mode. Be sure to cancel the service mode after the completion of the adjustment. (Refer to "Section 3. SERVICE MODE (SERVICE PROGRAM)" on page 6.)
2. Adjustment should be performed in order described.
3. Disc (YEDS-18, Parts No.: 3-702-101-01) should be used only when specified.
4. Power supply voltage: DC4.5 V  
 HOLD button: OFF  
 VOLUME control: minimum  
 ESP button: OFF (⏏ mark: light-out)  
 RESUME button: OFF  
 DSP button: OFF

#### [Before adjustment]

Set the unit to the service mode (Refer to page 6.), perform the checks below. If failure is found, repair it.

#### • Sled motor check.

1. Press ▶▶ key once and press ▶▶ and ◀◀ keys to confirm that the optical pick-up moves correctly (inner most circumference->outer most circumference->inner most circumference) without being caught or noise.
  - ▶▶ key: The optical pick-up moves to the outer circumference.
  - ◀◀ key: The optical pick-up moves to the inner circumference.

#### • Focus search check

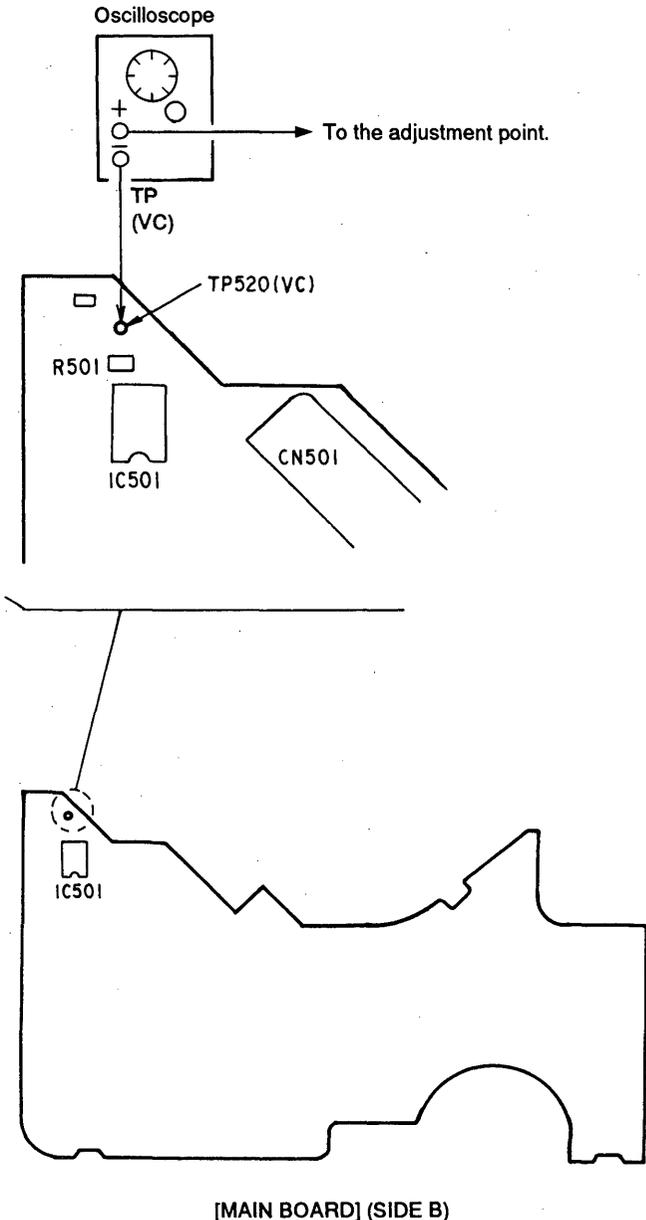
1. Press ▶▶ key three times. (The focus search is continuously operated.)
2. Confirm that the objective lens of the optical pick-up moves up and down correctly without being caught or noise. (However, it is correct operation that the objective lens stops momentarily during moving up.)
3. Press ■ key.  
 Confirm that the focus search operation stops. If not, keep pressing ■ key for a longer period.

#### • VC(1/2 Vcc) connecting point

Focus bias adjustment

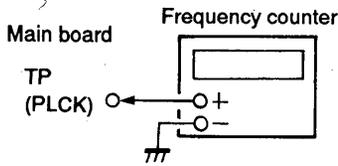
Tracking balance adjustment

When performing these adjustments, connect ( - ) of the oscilloscope to the point (VC) as shown below.



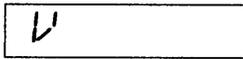
**[PLL free-running frequency confirmation and adjustment]**

**Confirmation/adjustment method:**



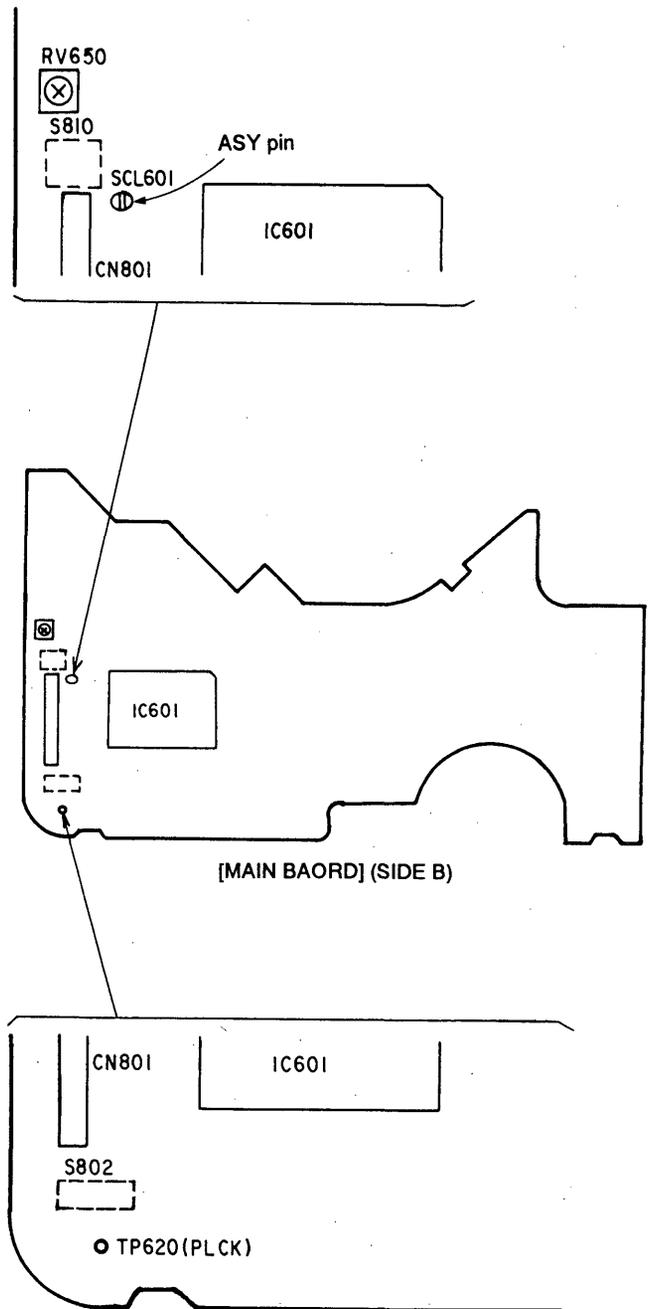
1. Make soldering jumper on the ASY pin (SCL601) (IC601 ㉞) on the main board.
2. Connect the frequency counter to the test point TP (PLCK) (IC601 ㉞) on the main board.
3. Set the unit to the auto voltage adjustment mode in the service mode. (Refer to page 6.)

LCD indication



4. Confirm that the reading on the frequency counter is  $4.3218 \pm 0.01$  MHz. If the reading is out of the specification, turn the RV650 to meet the specification.
5. After the completion of the adjustment, cancel the service mode. (Refer to page 6.)
6. Disconnect the external power supply and remove the soldering jumper on the ASY pin (SCL601).

**Confirmation/adjustment point: Main board (side B)**

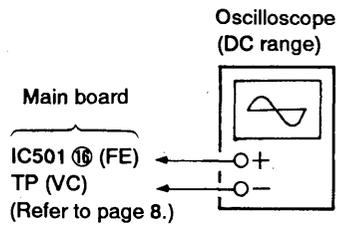


## [S curve confirmation]

Condition:

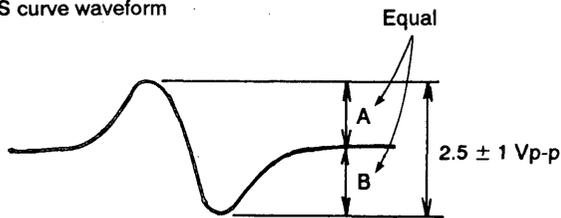
- Place the unit horizontally.

Confirmation method:

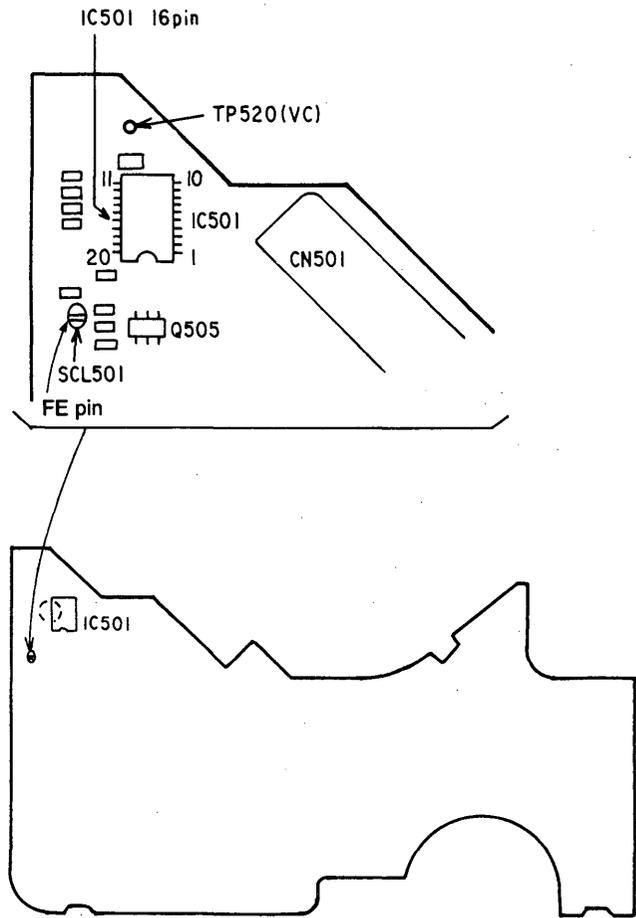


1. Remove the soldering jumper on the FE pin (SL501)(IC501 ⑩) on the main board.
2. Disconnect the connector (CN502) of the disc motor.
3. Connect the oscilloscope to IC501 ⑩ on the main board.
4. Insert the disc (YEDS-18).
5. Press ► key to perform the focus search operation.
6. Confirm that A and B of the oscilloscope waveform are equal and that P-P value is  $2.5 \pm 1$  Vp-p.

S curve waveform



Confirmation point: Main board (side B)



[MAIN BOARD] (SIDE B)

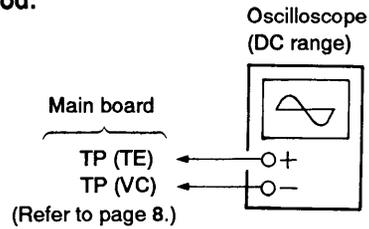
7. After the completion of the confirmation, make the soldering jumper on the FE pin (SLC501) and connect the connector (CN502) of the disc motor.

## [Tracking balance adjustment]

Condition:

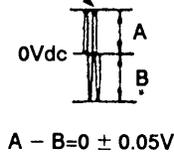
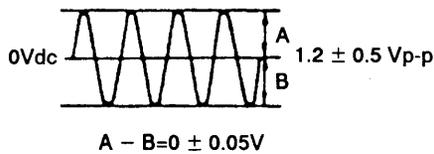
- Place the unit horizontally.

Confirmation method:



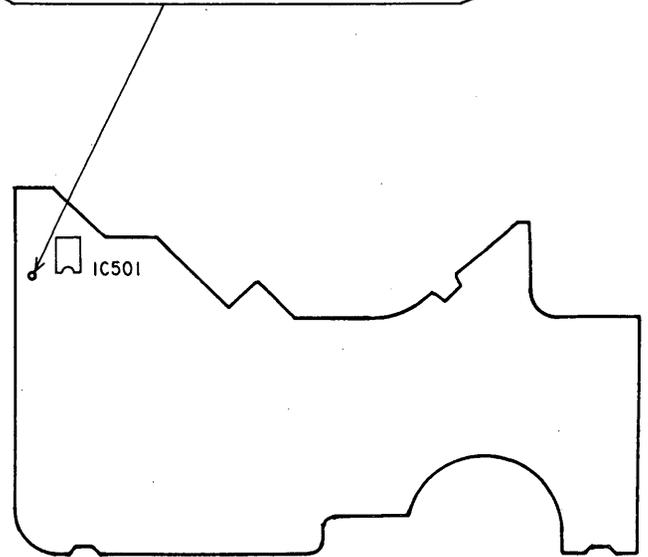
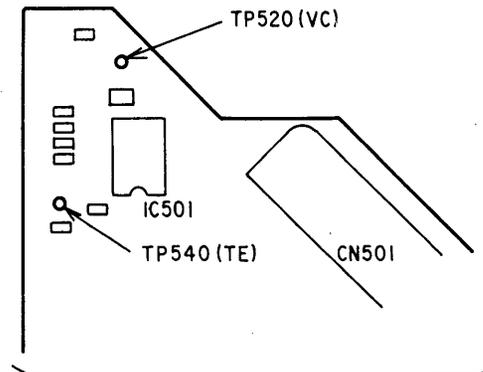
1. Connect the oscilloscope to TP (TE) on the main board.
2. Set the unit to the service mode stop condition. (Refer to page 3.)
3. Press **▶||** key once.
4. Press **▶▶|**, **||◀◀** key to move the optical pick-up to the center.
5. Insert the disc (YEDS-18).
6. Press the **▶||** key twice.  
The focus search is carried out and focus is on, then the CLV drawing mode is set. Tracking and sled is off.
7. Confirm that the waveform on the oscilloscope is symmetric vertically with respect to 0 Vdc.

Prolong the sweep time makes the waveform easy to observe.



8. Press **■** key to stop the disc motor rotation.
9. After the completion of the adjustment, cancel the service mode. (Refer to page 3.)

Confirmation point: Main board (side B)



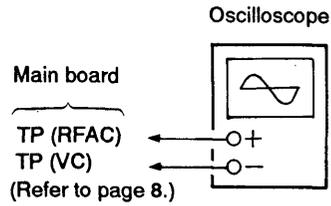
[MAIN BOARD] (SIDE B)

## [Focus bias confirmation]

Condition:

- Place the unit horizontally.

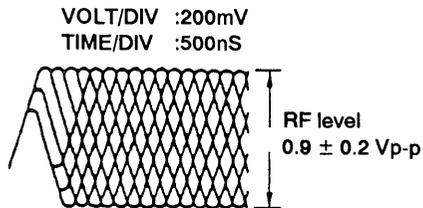
Confirmation method:



1. Set the unit to the normal mode. (The service mode is canceled.)
2. Connect the oscilloscope to the test point TP (RFAC) on the main board.
3. Insert the disc (YEDS-18) and play back.
4. Turn off the ESP. (ESP mark lights-out)
5. Confirm that the waveform on the oscilloscope is correct.

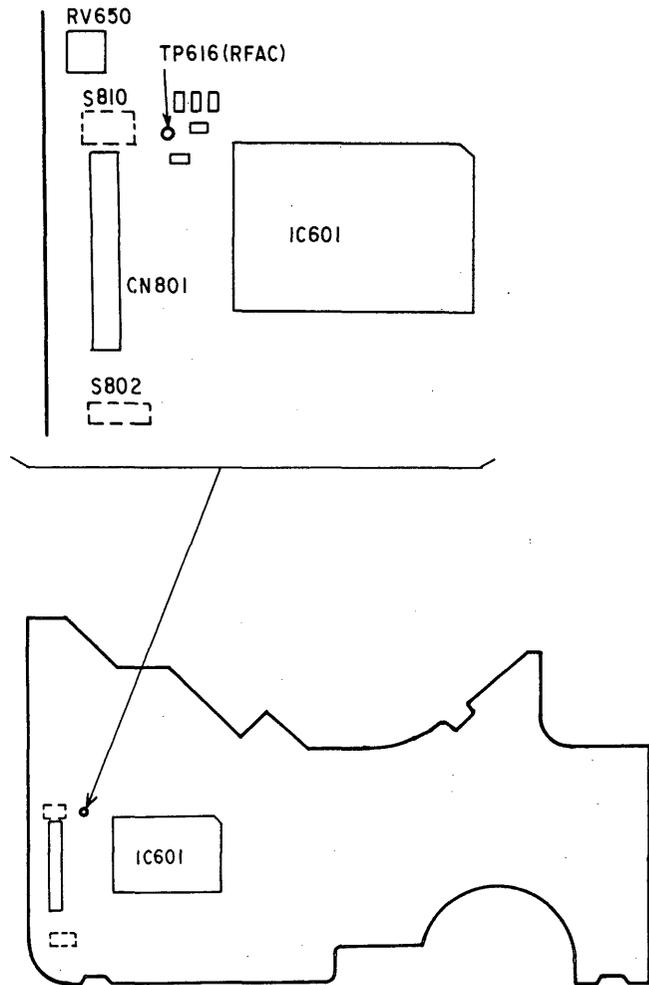
**Note:** Recognizing  $\diamond$  shape of the RF waveform clearly means that the eye pattern is correct.

### • An example of RF waveform (eye-pattern)



The eye-pattern becomes easier to observe by setting the oscilloscope to AC range to improve the vertical response.

Confirmation point: Main board (side B)



[MAIN BOARD] (SIDE B)

## SECTION 5 IC PIN FUNCTIONS

### IC601 CXD2515Q

No.	Pin Name	I/O	Description
1	SRON	O	Sled drive output (not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (not used)
12	VCOO	O	VCO output for analog EFM PLL
13	VCOI	I	VCO output for analog EFM PLL
14	TEST	I	TEST pin connected normally to GND
15	DV <sub>ss</sub>	—	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL
19	VPCO	O	Charge-pump output for variable pitch PLL (not used)
20	VCKI	I	Clock input from variable pitch external VCO
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADII	I	Input pin for A/D converter
25	ADIO	O	Operational amplifier output pin
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	—	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry compare voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply
41	DV <sub>DD</sub>	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input (to GND)
44	WDCK	O	48-bit slot D/A interface. Word clock

No.	Pin Name	I/O	Description
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL = 1. 48-bit slot serial data when PSSL = 0
47	BCLK	O	DA 15 output when PSSL = 1. 48-bit slot data when PSSL = 0
48	64DATA	O	DA 14 output when PSSL = 1. 64-bit slot data when PSSL = 0 (not used)
49	64BCLK	O	DA 13 output when PSSL = 1. 64-bit slot data when PSSL = 0 (not used)
50	64LRCK	O	DA 12 output when PSSL = 1. 64-bit slot data when PSSL = 0 (not used)
51	GTOP	O	DA 11 output when PSSL = 1. GTOP output when PSSL = 0 (not used)
52	XUGF	O	DA 10 output when PSSL = 1. XUGF output when PSSL = 0 (not used)
53	XPLCK	O	DA 09 output when PSSL = 1. XPLCK output when PSSL = 0
54	GFS	O	DA 08 output when PSSL = 1. GFS output when PSSL = 0 (not used)
55	PFCK	O	DA 07 output when PSSL = 1. RFCK output when PSSL = 0
56	C2PO	O	DA 06 output when PSSL = 1. C2PO output when PSSL = 0
57	XRAOF	O	DA 05 output when PSSL = 1. XRAOF output when PSSL = 0 (not used)
58	MNT3	O	DA 04 output when PSSL = 1. MNT3 output when PSSL = 0
59	MNT2	O	DA 03 output when PSSL = 1. MNT2 output when PSSL = 0
60	MNT1	O	DA 02 output when PSSL = 1. MNT1 output when PSSL = 0
61	MNT0	O	DA 01 output when PSSL = 1. MNT0 output when PSSL = 0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (not used)
64	XTSL	I	X'tal selection input pin (to GND)
65	DVss	—	Digital GND
66	FSTI	I	2/3 divider output of pins 62,63
67	FSTO	O	2/3 divider output of pins 62,63
68	C4M	O	4.2336MHz output (not used)
69	C16M	O	16.9344MHz output (not used)
70	MD2	I	Digital-out ON/OFF control pin (to GND)
71	DOUT	O	Digital-out output pin (not used)
72	EMPH	O	Playback disc output in emphasis mode (not used)
73	WFCK	O	WFCK output (not used)
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (not used)
76	EXCK	I	Clock input for SBSO read-out (to GND)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQSO read-out
79	MUTE	I	Muting selection pin (to GND)
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (to GND)
85	ATSK	I	Input pin for anti-shock (to GND)
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU

No.	Pin Name	I/O	Description
89	COUT	O	Numbers of track counted signal output (not used)
90	DVDD	—	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter (not used)
95	MON	O	Output to control ON/OFF of spindle motor (not used)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo
98	LOCK	O	GFS is sampled by 460Hz. H when GFS is H.
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

**IC801 CXP83916-603Q SYSTEM CONTROL IC**

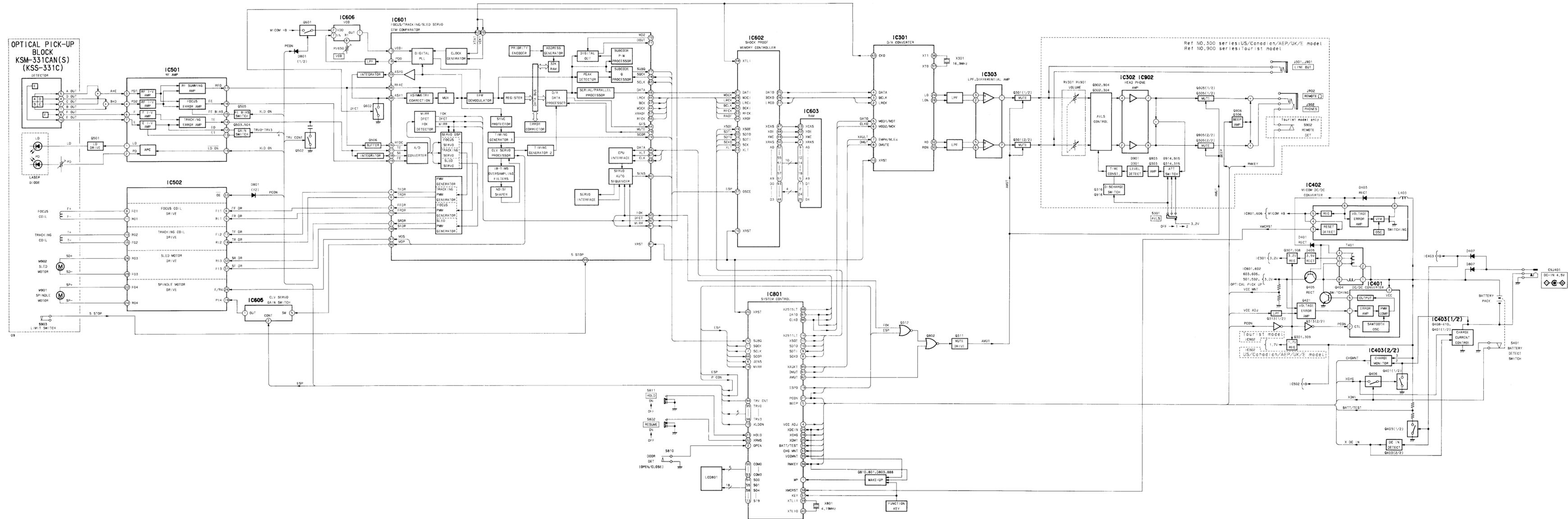
Pin Name	Signal Name	I/O	Function
1	WP	I	Input pin for cancelling the system stop condition. Cancels the system stop condition at falling (  ).
2	OPEN	I	Door switch input. Cancels the system stop condition at rising (  ). "H": OPEN, "L": CLOSE.
3	RMC	I	Infrared remote commander signal input.
4	VCCADJ	O	PWM output pin for adjusting servo power supply. Approx. 2 KHz.
5	BEEP	O	Beep sound pulse output.
6	SENS	I	CXD2515Q SENS signal input.
7	SCLK	O	Clock signal output pin for reading CXD2515Q SENS serial data.
8	SCKO	O	Serial clock output pin to CXD2511R.
9	SDTI	I	Serial data input pin from CXD2511R.
10	SDTO	O	Serial data output pin to CXD2511R.
11	SQCK	O	Clock output pin for SUB-Q signal input from CXD2515Q.
12	SUBQ	I	Pin for SUB-Q signal input from CXD2515Q.
13	XBUSY	—	Not used.
14	X2511LT	O	Latch signal output pin during serial data transfer to CXD2511R.
15	XLDON	O	Laser diode control output. "L": ON, "H": OFF.
16	MIRR	I	CXD2515Q MIRR signal input.
17	XSOE	O	CXD2511R serial data enable signal output.
18	TEST	I	Becomes test mode when "L" during system reset.
19	ESP	O	ESP condition output. "H": ESP ON, "L": ESP OFF.
20	XRST	O	Reset signal output pin to CXD2515Q, CXD2511R and SM5853BF. ICs are reset when "L".
21	PCON	O	Controls the power supply. "L": Power is ON, "H": Power is OFF.
22	XRSM	I	RESUME switch input pin. "L": RESUME is ON, "H": RESUME is OFF.
23	XHOLD	I	HOLD switch input pin. "L": HOLD is ON, "H": HOLD is OFF (canceled).
24	XDCIN	I	Detects DC-IN. "L": DC-IN, "H": No DC-IN.
25	XDM1	I	Pin for detecting battery charger (BP-DM10) connection. "L": Battery charger connected, "H": Battery charger disconnected.
26	XORG	I	Pin for DSPILM and SRRILM output switching. "L": Orange, "H": Green.
27	XESP	I	ESP switch input pin. "L": ESP ON, "H": ESP OFF.
28	XCHG	O	Pin for controlling the charging condition of the battery charger (BP-DM10). "L": Charging.
29	RMDTO	O	Serial data output pin to LCD remote commander.
30	AGSL	I	A/D input pin for setting CXD2515Q auto gain control.
31	TCXSL	I	A/D input pin for selecting model.
32	VCCSL	I	A/D input pin for setting the servo system power supply voltage.
33	CHGMNT	I	A/D input pin for detecting the charging current voltage of the battery charger (BP-DM10).
34	BATTMNT	I	A/D input pin for detecting the voltage of the battery charger (BP-DM10/AM-3) and external power supply.
35	VCCMNT	I	A/D input pin for detecting the servo system power supply voltage.
36	RMKEY	I	A/D input pin for the headphone remote commander FR, FF, PLAY/PAUSE, DSP and STOP switch.
37	KEY	I	A/D input pin for PLAY/PAUSE, STOP, FF, FR, REPEAT/ENTER, PLAY MODE, DSP, ESP and SURROUND switch.
38	XMCRST	I	System reset input. "L": Reset.
39	XLT11	—	Clock oscillation circuit connection. 4.19 MHz.
40	XLTO1	—	

Pin Name	Signal Name	I/O	Function
41	Vss	—	GND.
42	XLTO2	—	Not used.
43	XLT12	—	Not used. (GND).
44	AVREF	—	A/D converter reference voltage input.
45	AVss	—	A/D converter GND.
46	VL	O	Cuts off the current sent to the external LCD bias resistor during stand by.
47	VLC3	—	} Supplies the LCD bias power supply voltage.
48	VLC2	—	
49	VLC1	—	
50	COM0	O	} LCD common signal output.
51	COM1	O	
52	COM2	O	
53	COM3	O	
54	S00	O	} LCD segment signal output.
55	S01	O	
56	S02	O	
57	S03	O	
58	S04	O	
59	S05	O	
60	S06	O	
61	S07	O	
62	S08	O	
63	S09	O	
64	S10	O	
65	S11	O	
66	S12	O	
67	S13	O	
68	S14	O	
69	S15	O	
70	S16	O	
71	S17	O	
72	S18	O	
73	S19	O	
74	LIGHT	—	Not used.
75	DSPILM	—	Not used.
76	SRRILM	—	Not used.
77	OPNILM	—	Not used.
78	STNBYILM	—	Not used.
79	PLYILM	—	Not used.
80	SRR0	—	Not used.
81	SRR1	—	Not used.
82	AMUT	O	Mute control output. "H": Mute.
83	DMUT	O	SM5853BF mute control output. "H": Mute.
84	DEMP	—	Not used.
85	XAULT	O	Latch signal output during serial data transfer to SM5853BF.

Pin Name	Signal Name	I/O	Function
86	CLKO	O	Serial clock output pin to CXD2515Q and SM5853BF.
87	DATO	O	Serial data output pin to CXD2515Q and SM5853BF.
88	X2515LT	O	Latch signal output pin during serial data transfer to CXD2515Q.
89	VDD	–	Power supply.
90	NC	–	Not used. (Connected to VDD).
91	Vss	–	GND.
92	TX	–	Not used.
93	TEX	–	Not used. (GND).
94	TRVCNT	–	LPF switch for adjusting tracking balance. "H": LPF ON.
95	TRV0	O	} Resistor select switch for adjusting tracking balance. "H": Select.
96	TRV1	O	
97	TRV2	O	
98	TRV3	O	
99	SCOR	I	CXD2515Q SCOR signal input.
100	RMCKI	I	Clock signal (for data output) input from LCD remote commander. Data is updated when the falling (  ) is detected.

6-1. BLOCK DIAGRAM

SECTION 6  
DIAGRAMS



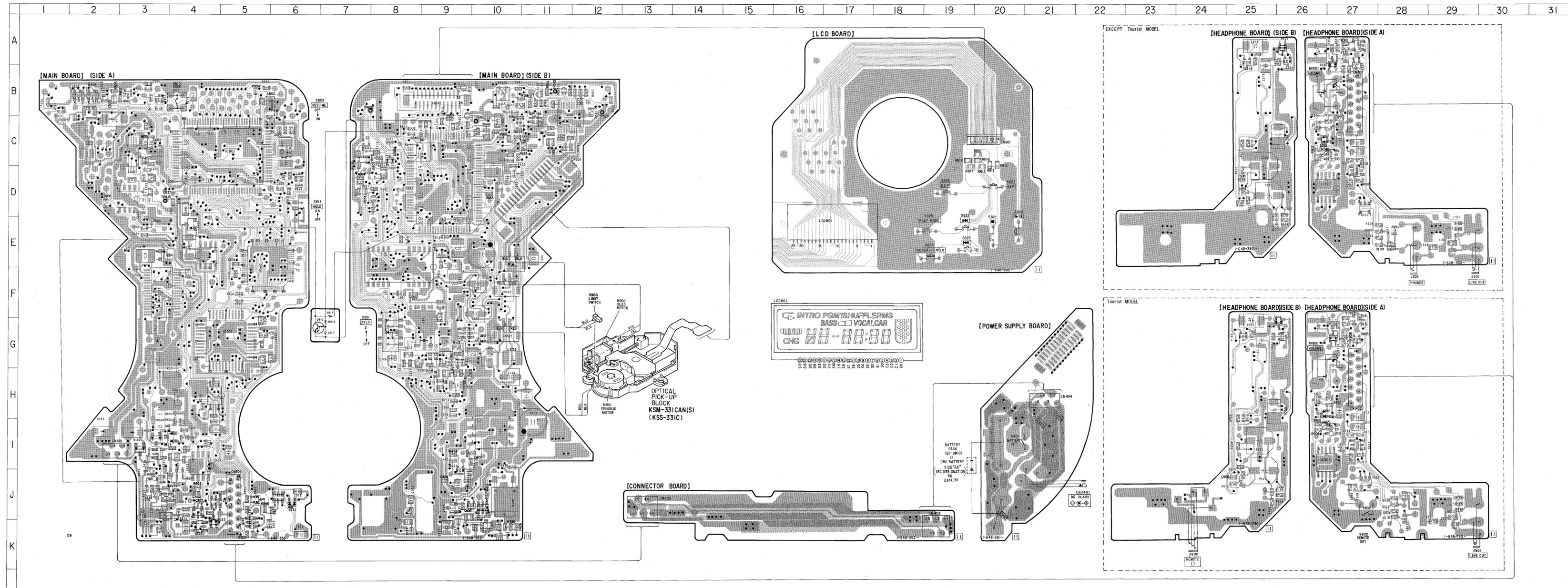
6-2. PRINTED WIRING BOARD  
 • See page 31 for Semiconductor Lead Layouts.

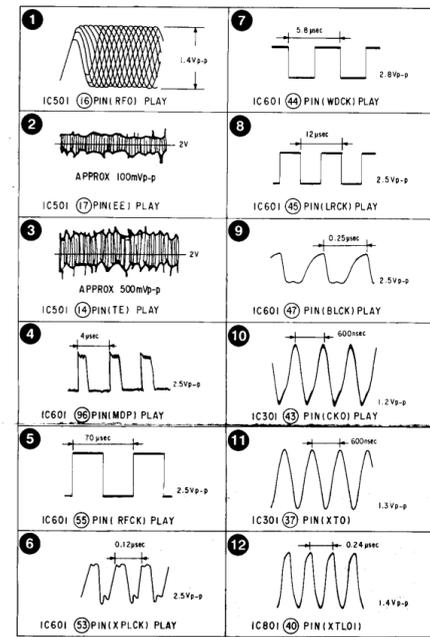
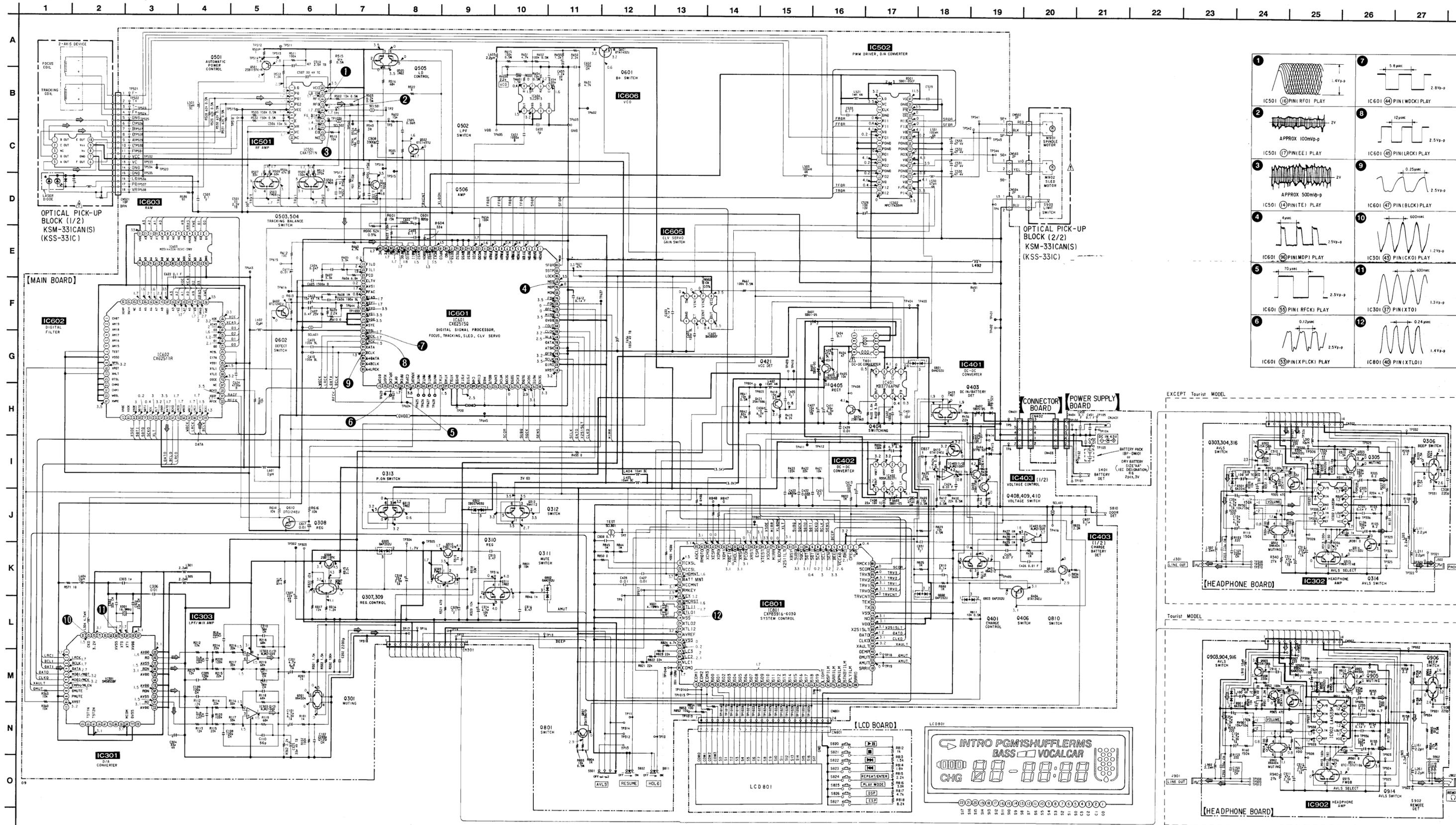
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	C-26	Q305	D-27
D302	J-6	Q306	D-27
D303	K-4	Q307	J-4
D304	A-26	Q308	J-9
D305	A-26	Q309	K-4
D401	I-3	Q310	K-10
D402	I-3	Q311	J-5
D403	E-4	Q312	G-9
D404	I-2	Q313	J-4
D405	I-3	Q314	B-25
D501	E-3	Q315	A-27
D801	G-10	Q316	B-26
D802	J-5	Q401	J-10
D803	C-7	Q403	I-3
D807	I-3	Q404	J-4
D888	C-8	Q405	H-3
D901	H-26	Q406	J-9
D904	G-27	Q408	J-10
D905	G-25	Q409	J-3
		Q410	J-3
IC301	G-4	Q421	I-9
IC302	D-26	Q501	B-1
IC303	H-4	Q502	B-2
IC401	I-4	Q503	B-1
IC402	F-4	Q504	B-2
IC403	J-3	Q505	C-11
IC501	B-11	Q506	C-10
IC502	F-3	Q601	D-3
IC601	D-9	Q602	B-3
IC602	F-5	Q801	D-6
IC603	F-8	Q810	C-7
IC605	D-2	Q902	I-26
IC606	C-2	Q903	G-27
IC801	C-5	Q904	H-26
IC902	I-26	Q905	I-27
		Q906	J-27
Q301	K-5	Q914	G-24
Q302	C-26	Q915	G-27
Q303	B-27	Q916	G-26
Q304	C-26		

**Note on Mounting Diagram:**  
 • — : parts extracted from the component side.  
 • — : parts extracted from the conductor side.  
 • — : Through hole.  
 • — : Pattern on the side which is seen.  
 • — : Pattern of the rear side.

**Caution:**  
 Conductor side: Parts on the Conductor side seen from the are indicated.  
 Component side: Parts on the Component side seen from the component side are indicated.





**Note on Schematic Diagram:**

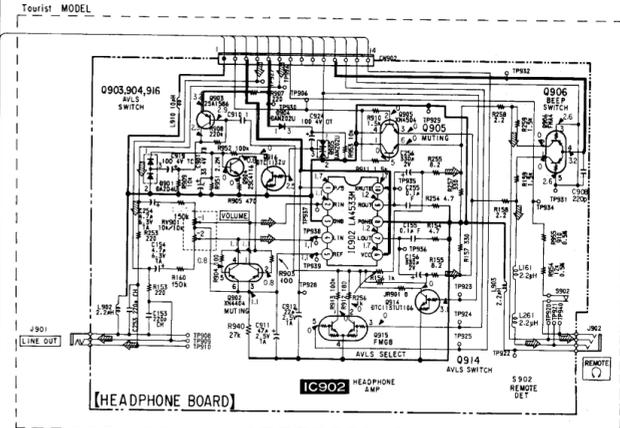
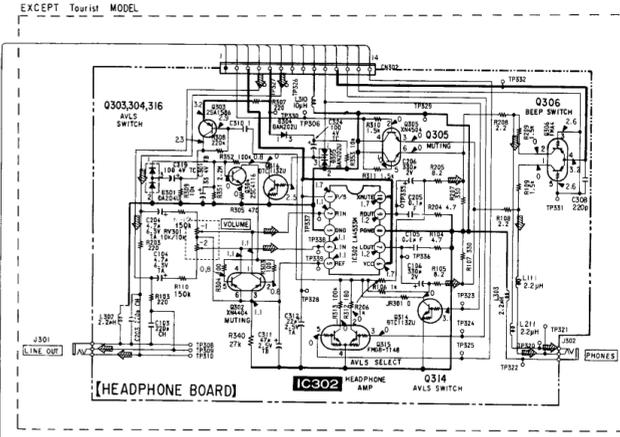
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ ,  $\text{mF}$ ,  $50\text{WV}$  or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- % : indicates tolerance.
- $\Delta$  : internal component.
- $\square$  : Panel designation.

**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:** Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

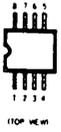
— : B+ Line  
 □ : adjustment for repair.

Voltage and waveforms are dc with respect to ground under ESP ON (S827) conditions.  
 no mark: PLAY  
 Voltages are taken with a VOM (Input impedance  $10\text{M}\Omega$ ).  
 Voltage variations may be noted due to normal production tolerances.  
 Waveforms are taken with an oscilloscope.  
 Voltage variations may be noted due to normal production tolerances.  
 Circled numbers refer to waveforms.  
 Signal path.  
 $\Rightarrow$  : CD  
 Power voltage is dc 4.5V and fed with regulated dc power supply from external voltage jack (CNJ401).



## 6-4. SEMICONDUCTOR LEAD LAYOUTS

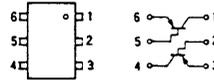
**BA3890F**  
**MB3776APNF-G-SNY-ER**  
**NJM2100V**  
**RS5RJ32271**  
**TLC2931DB-ELL1000**



**MPC17A38VMEL**



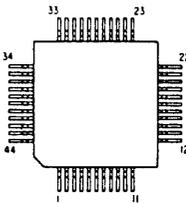
**XN4112**  
**XN4404**



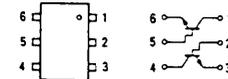
**SB007W03Q**



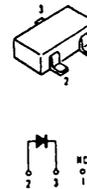
**SM5853BF**



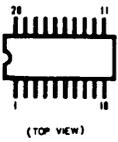
**XN4212**  
**XN4504**



**SB01-05CP**  
**SB05-05CP**



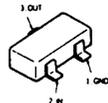
**CXA1571N**



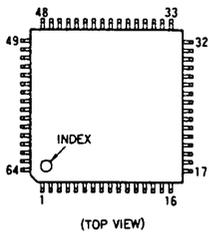
**2SA1586-YG**  
**2SB1197K-Q**  
**2SB1197K-R**  
**2SC1623-L5L6**  
**2SC4116-GL**



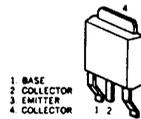
**DTA124EU**  
**DTA143ZU**  
**DTC113ZU**  
**DTC124EU**  
**DTC143TU**



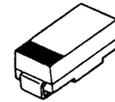
**CXD2511R**



**2SD1758F5-QR**



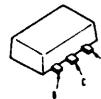
**SFPB-52**



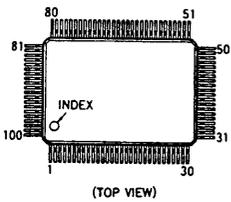
**FMA4**



**2SC3650-TD**  
**2SD1963-R**



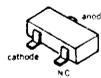
**CXD2515Q**  
**CXP83916-603Q**



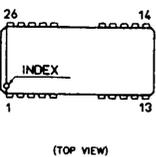
**FMG1**  
**FMG8**  
**FMW1**



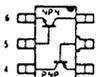
**DA204U**  
**DAN202U**



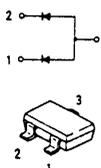
**CXK414400TM-12U**



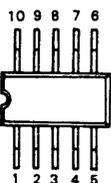
**IMD2**



**DAP202U**



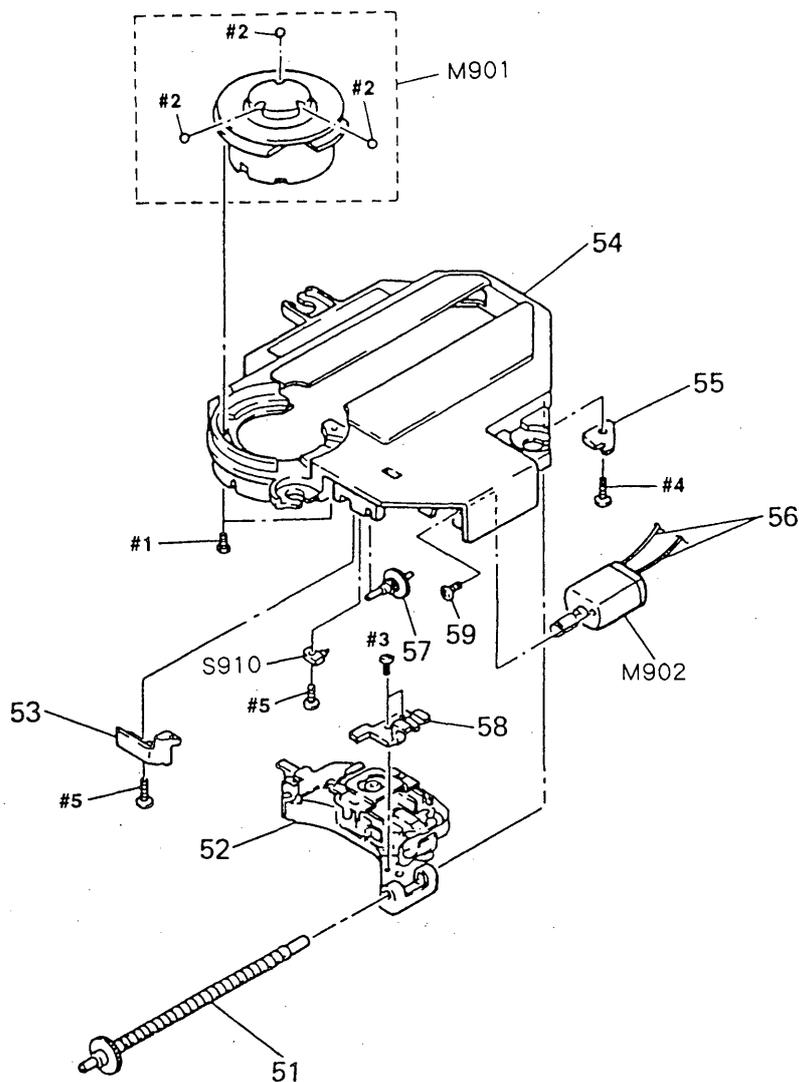
**LA4533M**







## 7-2. OPTICAL DEVICE (KSM-331CAN (S))

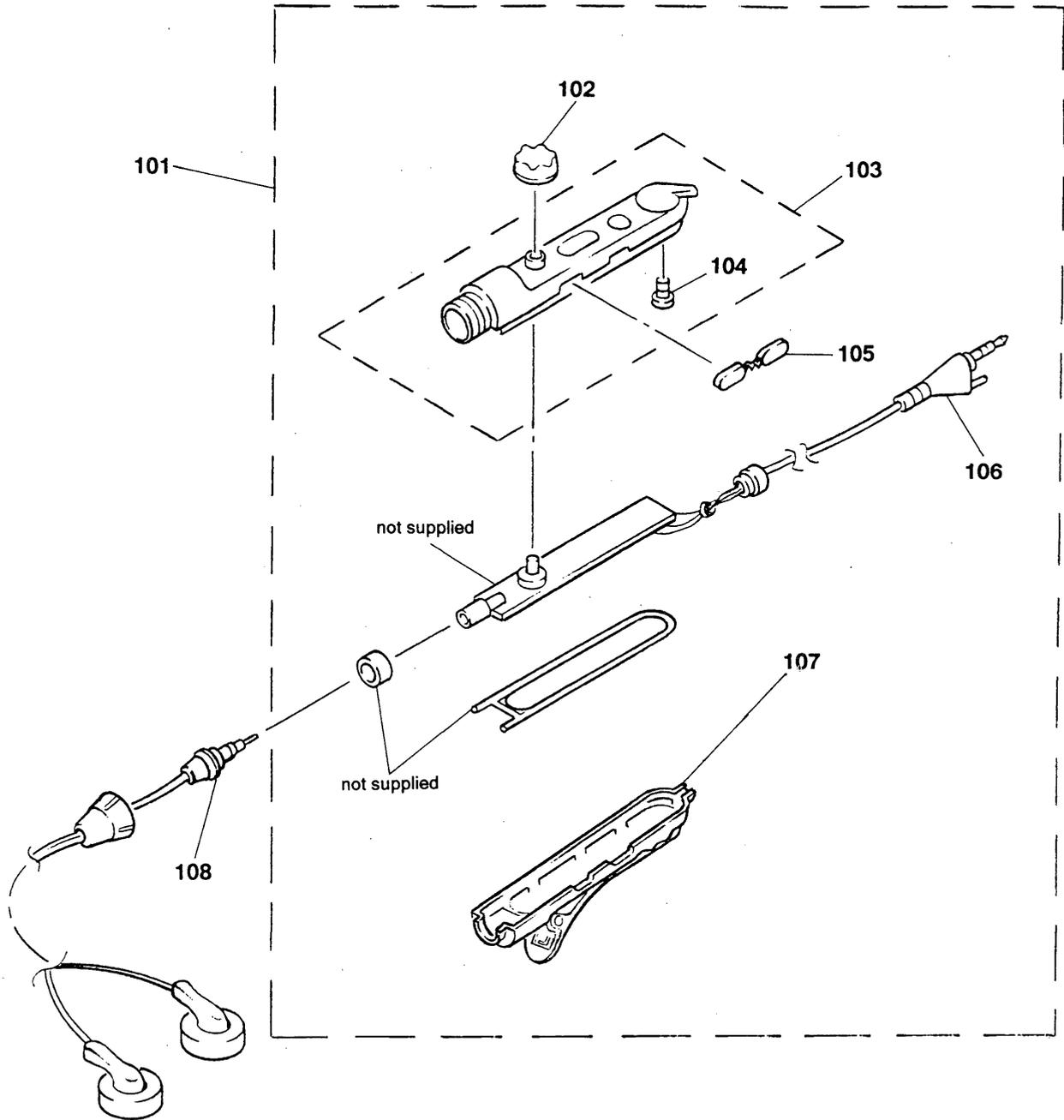


The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-2625-483-1	SCREW, SLED ASSY		57	2-625-410-01	GEAR (B)	
 52	8-848-295-21	DEVICE, OPTICAL KSS-331C		58	2-625-414-02	RACK	
53	2-625-412-02	SPRIN, SLED		59	3-732-988-01	SCREW (M2X2.5)	
54	2-625-415-02	CHASSIS, MD		M901	X-2625-485-1	T. T. MOTOR ASSY	
55	2-625-411-01	RETAINER, GEAR		M902	X-2625-171-2	MOTOR, SLED ASSY	
56	1-948-418-21	HARNESS		S910	1-570-771-11	SWITCH (LIMIT SW)	

### 7-3. REMOTE CONTROL 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>
101	A-3263-855-A	REMOTE CONTROL ASSY (Tourist)		106	1-690-214-11	CORD, CONNECTION (WITH PLUG) (Tourist)	
102	3-370-926-01	KNOB (VOL) (Tourist)		107	X-4943-835-1	CASE (B) ASSY (Tourist)	
103	X-4943-834-1	CASE (A) ASSY (Tourist)		108	8-953-454-90	HEADPHONE MDR-E560MPS SET (Tourist)	
104	3-318-382-01	SCREW (1.7X3), TAPPING (Tourist)		108	8-953-580-90	HEADPHONE MDR-W07G SET	
105	4-959-570-01	BUTTON (F/R) (Tourist)				(US, Canadian, AEP, UK, E)	

# CONNECTOR

# HEADPHONE

## SECTION 8

## ELECTRICAL PARTS LIST

**NOTE:**

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

Les composants identifiés par une marque  $\Delta$  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 name.

- 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
- Color Indication of Appearance Parts Example:  
KNOB, BALANCE (WHITE) ... (RED)  

$\uparrow$   
Parts color

$\uparrow$   
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.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA...,  
uPB...:  $\mu$  PB..., uPC...:  $\mu$  PC...,  
uPD...:  $\mu$  PD...
- CAPACITORS  
uF:  $\mu$  F
- COILS  
uH:  $\mu$  H
- Hardware (# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-648-362-11	CONNECTOR BOARD ***** < CONNECTOR >				< JACK >	
J301	1-563-298-31	JACK (SMALL TYPE) (DIA. 3.5) (LINE OUT)		J302	1-563-298-11	JACK (SMALL TYPE) (DIA. 3.5) (PHONES)	
* CN402	1-580-712-21	CONNECTOR, BOARD TO BOARD 5P				< JUMPER RESISTOR >	
* CN403	1-580-712-21	CONNECTOR, BOARD TO BOARD 5P		JR301	1-216-864-11	METAL CHIP 0 5% 1/16W	
*****							
*	A-3264-722-A	HEADPHONE BOARD, COMPLETE ***** (US, Canadian, AEP, UK, E)				< COIL >	
	3-318-201-21	SCREW (B) (1.4X5), TAPPING		L103	1-543-949-11	BEAD, FERRITE (CHIP)	
	4-959-012-01	JOINT (VOL A)		L111	1-410-997-31	INDUCTOR CHIP 2.2uH	
		< CAPACITOR >		L203	1-543-949-11	BEAD, FERRITE (CHIP)	
C103	1-162-957-11	CERAMIC CHIP 220PF 5% 50V		L211	1-410-997-31	INDUCTOR CHIP 2.2uH	
C104	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V		L302	1-410-997-31	INDUCTOR CHIP 2.2uH	
C105	1-164-360-11	CERAMIC CHIP 0.1uF 16V		L303	1-410-997-31	INDUCTOR CHIP 2.2uH	
C106	1-126-608-11	ELECT 330uF 20% 2V		L310	1-412-006-31	INDUCTOR CHIP 10uH	
C203	1-162-957-11	CERAMIC CHIP 220PF 5% 50V				< TRANSISTOR >	
C204	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V		Q302	8-729-422-39	TRANSISTOR XN4404	
C205	1-164-360-11	CERAMIC CHIP 0.1uF 16V		Q303	8-729-230-60	TRANSISTOR 2SA1586-YG	
C206	1-126-608-11	ELECT 330uF 20% 2V		Q304	8-729-231-74	TRANSISTOR 2SC4116-GL	
C301	1-135-162-21	TANTALUM CHIP 33uF 20% 6.3V		Q305	8-729-425-18	TRANSISTOR XN4504	
C308	1-162-957-11	CERAMIC CHIP 220PF 5% 50V		Q306	8-729-902-90	TRANSISTOR FMA4	
C310	1-164-346-11	CERAMIC CHIP 1uF 16V		Q314	8-729-924-62	TRANSISTOR DTC113ZU	
C311	1-107-493-91	TANTAL. CHIP 47MF 2.5V		Q315	8-729-924-79	TRANSISTOR FMG8	
C312	1-135-316-11	TANTAL. CHIP 22uF 20% 2.5V		Q316	8-729-924-62	TRANSISTOR DTC113ZU	
C319	1-104-848-91	TANTAL. CHIP 100uF 20% 4V				< RESISTOR >	
C324	1-135-335-11	TANTAL. CHIP 100uF 20% 4V		R104	1-216-793-11	METAL GLAZE 4.7 5% 1/16W	
		< CONNECTOR >		R105	1-216-796-11	METAL GLAZE 8.2 5% 1/16W	
CN302	1-575-364-11	CONNECTOR, FPC/FFC 14P		R106	1-216-821-11	METAL CHIP 1K 5% 1/16W	
		< DIODE >		R107	1-216-815-11	METAL CHIP 330 5% 1/16W	
D301	8-719-941-23	DIODE DA204U		R108	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
D304	8-719-941-86	DIODE DAN202U		R109	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
D305	8-719-941-86	DIODE DAN202U		R110	1-216-847-11	METAL CHIP 150K 5% 1/16W	
		< IC >		R204	1-216-793-11	METAL GLAZE 4.7 5% 1/16W	
IC302	8-759-802-75	IC LA4533M		R205	1-216-796-11	METAL GLAZE 8.2 5% 1/16W	
				R206	1-216-821-11	METAL CHIP 1K 5% 1/16W	
				R207	1-216-815-11	METAL CHIP 330 5% 1/16W	
				R208	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
				R209	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
				R210	1-216-847-11	METAL CHIP 150K 5% 1/16W	
				R303	1-216-809-11	METAL CHIP 100 5% 1/16W	

# HEADPHONE

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R304	1-216-809-11	METAL CHIP	100 5% 1/16W			< JACK >	
R305	1-216-817-11	METAL CHIP	470 5% 1/16W				
R307	1-216-813-11	METAL CHIP	220 5% 1/16W	J901	1-563-298-31	JACK (SMALL TYPE) (DIA. 3.5) (LINE OUT)	
R308	1-216-849-11	METAL CHIP	220K 5% 1/16W	J902	1-569-487-21	JACK 4P (REMOTE Ⓞ )	
R309	1-216-833-11	METAL CHIP	10K 5% 1/16W			< JUMPER RESISTOR >	
R310	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	JR901	1-216-864-11	METAL CHIP 0 5% 1/16W	
R311	1-216-823-11	METAL CHIP	1.5K 5% 1/16W			< COIL >	
R312	1-216-812-11	METAL CHIP	180 5% 1/16W	L153	1-543-949-11	BEAD, FERRITE (CHIP)	
R313	1-216-845-11	METAL CHIP	100K 5% 1/16W	L161	1-410-997-31	INDUCTOR CHIP 2.2uH	
R340	1-216-838-11	METAL CHIP	27K 5% 1/16W	L253	1-543-949-11	BEAD, FERRITE (CHIP)	
R351	1-216-861-11	METAL CHIP	2.2M 5% 1/16W	L261	1-410-997-31	INDUCTOR CHIP 2.2uH	
R352	1-216-845-11	METAL CHIP	100K 5% 1/16W	L902	1-410-997-31	INDUCTOR CHIP 2.2uH	
R353	1-216-833-11	METAL CHIP	10K 5% 1/16W	L903	1-410-997-31	INDUCTOR CHIP 2.2uH	
		< VARIABLE RESISTOR >		L910	1-412-006-31	INDUCTOR CHIP 10uH	
RV301	1-241-017-21	RES, VAR, CARBON 10K/10K (VOLUME)				< TRANSISTOR >	
*****							
*	A-3264-725-A	HEADPHONE BOARD, COMPLETE (Tourist)		Q902	8-729-422-39	TRANSISTOR XN4404	
		*****		Q903	8-729-230-60	TRANSISTOR 2SA1586-YG	
	3-318-201-01	SCREW (B) (1.4X3), TAPPING		Q904	8-729-231-74	TRANSISTOR 2SC4116-GL	
		< CAPACITOR >		Q905	8-729-425-18	TRANSISTOR XN4504	
C153	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	Q906	8-729-902-90	TRANSISTOR FMA4	
C154	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	Q914	8-729-924-62	TRANSISTOR DTC113ZU	
C155	1-164-360-11	CERAMIC CHIP	0.1uF 16V	Q915	8-729-924-79	TRANSISTOR FMG8	
C156	1-126-608-11	ELECT	330uF 20% 2V	Q916	8-729-924-62	TRANSISTOR DTC113ZU	
C253	1-162-957-11	CERAMIC CHIP	220PF 5% 50V			< RESISTOR >	
C254	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	R154	1-216-793-11	METAL GLAZE 4.7 5% 1/16W	
C255	1-164-360-11	CERAMIC CHIP	0.1uF 16V	R155	1-216-796-11	METAL GLAZE 8.2 5% 1/16W	
C256	1-126-608-11	ELECT	330uF 20% 2V	R156	1-216-821-11	METAL CHIP 1K 5% 1/16W	
C901	1-135-162-21	TANTALUM CHIP	33uF 20% 6.3V	R157	1-216-815-11	METAL CHIP 330 5% 1/16W	
C908	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	R158	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
C910	1-164-346-11	CERAMIC CHIP	1uF 16V	R159	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
C911	1-107-493-11	TANTAL. CHIP	47MF 2.5V	R160	1-216-847-11	METAL CHIP 150K 5% 1/16W	
C912	1-135-316-11	TANTAL. CHIP	22uF 20% 2.5V	R254	1-216-793-11	METAL GLAZE 4.7 5% 1/16W	
C919	1-104-848-91	TANTAL. CHIP	100uF 20% 4V	R255	1-216-796-11	METAL GLAZE 8.2 5% 1/16W	
C924	1-135-335-11	TANTAL. CHIP	100uF 20% 4V	R256	1-216-821-11	METAL CHIP 1K 5% 1/16W	
		< CONNECTOR >		R257	1-216-815-11	METAL CHIP 330 5% 1/16W	
CN902	1-575-364-11	CONNECTOR, FPC/FFC 14P		R258	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
		< DIODE >		R259	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
D901	8-719-941-23	DIODE DA204U		R260	1-216-847-11	METAL CHIP 150K 5% 1/16W	
D904	8-719-941-86	DIODE DAN202U		R903	1-216-809-11	METAL CHIP 100 5% 1/16W	
D905	8-719-941-86	DIODE DAN202U		R904	1-216-809-11	METAL CHIP 100 5% 1/16W	
		< IC >		R905	1-216-817-11	METAL CHIP 470 5% 1/16W	
IC902	8-759-802-75	IC LA4533M		R907	1-216-813-11	METAL CHIP 220 5% 1/16W	
				R908	1-216-849-11	METAL CHIP 220K 5% 1/16W	
				R909	1-216-833-11	METAL CHIP 10K 5% 1/16W	
				R910	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
				R911	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	

# HEADPHONE

# LCD

# MAIN

Ref.No.	Part No.	Description	Remark
R912	1-216-812-11	METAL CHIP 180 5% 1/16W	
R913	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R940	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R951	1-216-861-11	METAL CHIP 2.2M 5% 1/16W	
R952	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R953	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R954	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R955	1-218-457-11	METAL CHIP 910 0.50% 1/16W	
< VARIABLE RESISTOR >			
RV901	1-241-017-21	RES, VAR, CARBON 10K/10K (VOLUME)	
< SWITCH >			
S902	1-572-126-21	SWITCH, PUSH (1 KEY) (REMOTE DET)	
*****			
*	1-648-885-11	LCD BOARD *****	
< CONNECTOR >			
CN801	1-691-388-11	CONNECTOR, FFC/FPC (ZIF) 24P	
< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-146-11	LCD	
< RESISTOR >			
R812	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R813	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R814	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R815	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R816	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R817	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R818	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
< SWITCH >			
S820	1-572-473-11	SWITCH, TACTIL (▶▶▶)	
S821	1-572-473-11	SWITCH, TACTIL (■)	
S822	1-572-473-11	SWITCH, TACTIL (▶▶▶)	
S823	1-572-473-11	SWITCH, TACTIL (◀◀◀)	
S824	1-572-473-11	SWITCH, TACTIL (REPEAT/ENTER)	
S825	1-572-473-11	SWITCH, TACTIL (PLAY MODE)	
S826	1-572-473-11	SWITCH, TACTIL (DSP)	
S827	1-572-473-11	SWITCH, TACTIL (ESP)	
*****			

Ref.No.	Part No.	Description	Remark
*	A-3264-719-A	MAIN BOARD, COMPLETE *****	
< CAPACITOR >			
C101	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C102	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C107	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C108	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C109	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C110	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C111	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C201	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C202	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C207	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C208	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C209	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C210	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C211	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C302	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C303	1-164-346-11	CERAMIC CHIP 1uF 16V	
C304	1-135-318-11	TANTAL. CHIP 33uF 20% 4V	
C306	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C307	1-135-202-21	TANTAL. CHIP 22uF 20% 4V	
C309	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C314	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C315	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C316	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C318	1-135-316-11	TANTAL. CHIP 22uF 20% 2.5V	
C322	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C323	1-135-318-11	TANTAL. CHIP 33uF 20% 4V	
C401	1-135-208-11	TANTAL. CHIP 1uF 20% 10V	
C402	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C403	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C404	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C405	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C406	1-135-157-21	TANTALUM CHIP 10uF 20% 6.3V	
C407	1-135-216-11	TANTALUM CHIP 10uF 20% 10V	
C408	1-135-161-21	TANTALUM CHIP 22uF 10% 10V	
C409	1-128-393-11	ELECT 100uF 20% 10V	
C411	1-127-485-00	ELECT(SOLID) 33uF 20% 6.3V	
C413	1-135-202-21	TANTAL. CHIP 22uF 20% 4V	
C421	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C422	1-164-373-11	CERAMIC CHIP 0.033uF 25V	
C423	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C424	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C425	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C426	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C427	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C428	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C429	1-162-974-11	CERAMIC CHIP 0.01uF 50V	

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C501	1-135-317-11	TANTAL. CHIP	33uF 20%	2.5V	* CN502	1-695-320-11	PIN, CONNECTOR (1.5MM) (SMD) 2P
C503	1-164-360-11	CERAMIC CHIP	0.1uF	16V	* CN503	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD) 2P
C504	1-162-944-11	CERAMIC CHIP	18PF	5% 50V	* CN504	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD) 2P
C505	1-164-344-11	CERAMIC CHIP	0.068uF	10% 25V	CN801	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P
C506	1-162-941-11	CERAMIC CHIP	10PF	0.5PF 50V	< DIODE >		
C507	1-135-162-21	TANTALUM CHIP	33uF	20% 6.3V	D302	8-719-988-78	DIODE SB007W03Q
C508	1-164-173-11	CERAMIC CHIP	0.0039uF	10% 50V	D303	8-719-941-09	DIODE DAP202U
C510	1-107-493-11	TANTAL. CHIP	47uF	20% 2.5V	D401	8-719-938-72	DIODE SB01-05CP
C520	1-164-360-11	CERAMIC CHIP	0.1uF	16V	D402	8-719-938-75	DIODE SB05-05CP
C528	1-128-393-11	ELECT	100uF	20% 10V	D403	8-719-938-72	DIODE SB01-05CP
C529	1-164-346-11	CERAMIC CHIP	1uF	16V	D404	8-719-313-73	DIODE SFPB-52
C530	1-126-607-11	ELECT CHIP	47uF	20% 4V	D405	8-719-938-75	DIODE SB05-05CP
C531	1-126-607-11	ELECT CHIP	47uF	20% 4V	D501	8-719-938-72	DIODE SB01-05CP
C532	1-126-607-11	ELECT CHIP	47uF	20% 4V	D801	8-719-941-86	DIODE DAN202U
C533	1-126-607-11	ELECT CHIP	47uF	20% 4V	D802	8-719-941-86	DIODE DAN202U
C534	1-162-974-11	CERAMIC CHIP	0.01uF	50V	D803	8-719-941-09	DIODE DAP202U
C535	1-164-373-11	CERAMIC CHIP	0.033uF	25V	D807	8-719-313-73	DIODE SFPB-52
C601	1-164-473-11	CERAMIC CHIP	820PF	5% 50V	D888	8-719-941-09	DIODE DAP202U
C602	1-164-357-11	CERAMIC CHIP	1000PF	5% 50V	< IC >		
C603	1-164-360-11	CERAMIC CHIP	0.1uF	16V	IC301	8-759-177-67	IC SM5853BF
C604	1-164-361-11	CERAMIC CHIP	0.047uF	16V	IC303	8-759-097-92	IC NJM2100V
C605	1-162-965-11	CERAMIC CHIP	0.0015uF	10% 50V	IC401	8-759-097-95	IC MB3776APNF-G-SNY-ER
C606	1-162-953-11	CERAMIC CHIP	100PF	5% 50V	IC402	8-759-176-73	IC RS5RJ32271
C607	1-135-145-11	TANTALUM CHIP	0.47uF	10% 35V	IC403	8-759-097-92	IC NJM2100V
C609	1-162-953-11	CERAMIC CHIP	100PF	5% 50V	IC501	8-752-059-39	IC CXA1571N
C610	1-162-953-11	CERAMIC CHIP	100PF	5% 50V	IC502	8-759-179-60	IC MPC17A38VMEL
C611	1-162-974-11	CERAMIC CHIP	0.01uF	50V	IC601	8-752-351-94	IC CXD2515Q
C612	1-164-360-11	CERAMIC CHIP	0.1uF	16V	IC602	8-752-346-14	IC CXD2511R
C613	1-135-201-11	TANTALUM CHIP	10uF	20% 4V	IC603	8-752-360-59	IC CXK414400TM-12U
C617	1-162-974-11	CERAMIC CHIP	0.01uF	50V	IC605	8-759-179-64	IC BA3890F
C622	1-164-360-11	CERAMIC CHIP	0.1uF	16V	IC606	8-759-177-71	IC TLC2931IDB-ELL1000
C624	1-162-968-11	CERAMIC CHIP	0.0047uF	10% 50V	IC801	8-752-845-09	IC CXP83916-603Q
C630	1-164-360-11	CERAMIC CHIP	0.1uF	16V	< JUMPER RESISTOR >		
C650	1-164-346-11	CERAMIC CHIP	1uF	16V	JR610	1-216-864-11	METAL CHIP 0 5% 1/16W
C651	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	< COIL >		
C652	1-164-217-11	CERAMIC CHIP	150PF	5% 50V	L301	1-410-997-31	INDUCTOR CHIP 2.2uH
C653	1-135-187-21	TANTAL. CHIP	2.2uF	20% 4V	L304	1-412-002-31	INDUCTOR CHIP 4.7uH
C654	1-162-927-11	CERAMIC CHIP	100PF	5% 50V	L305	1-410-997-31	INDUCTOR CHIP 2.2uH
C655	1-162-953-11	CERAMIC CHIP	100PF	5% 50V	L402	1-412-622-51	INDUCTOR 10uH
C656	1-135-168-21	TANTAL. CHIP	100uF	20% 4V	L403	1-412-630-51	INDUCTOR 47uH
C801	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	L404	1-412-029-11	INDUCTOR CHIP 10uH
C807	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L405	1-412-029-11	INDUCTOR CHIP 10uH
C808	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L492	1-543-813-21	FILTER, EMI
C810	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L501	1-412-029-11	INDUCTOR CHIP 10uH
C831	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L503	1-412-039-51	INDUCTOR CHIP 100uH
C837	1-162-638-11	CERAMIC CHIP	1uF	16V	< CONNECTOR >		
CN301	1-575-368-11	CONNECTOR, FPC/FPC	14P				
CN501	1-566-534-11	CONNECTOR, FPC (ZIF)	18P				

**MAIN**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L521	1-410-980-51	INDUCTOR CHIP	1mH	R201	1-216-821-11	METAL CHIP	1K 5% 1/16W
L530	1-412-630-51	INDUCTOR	47uH	R202	1-216-845-11	METAL CHIP	100K 5% 1/16W
L531	1-412-039-51	INDUCTOR CHIP	100uH	R212	1-216-075-00	METAL CHIP	12K 5% 1/10W
L601	1-414-135-11	INDUCTOR CHIP	0uH	R213	1-216-075-00	METAL CHIP	12K 5% 1/10W
L602	1-414-135-11	INDUCTOR CHIP	0uH	R214	1-216-837-11	METAL CHIP	22K 5% 1/16W
L603	1-410-997-11	INDUCTOR CHIP	2. 2uH	R215	1-216-837-11	METAL CHIP	22K 5% 1/16W
L604	1-414-135-11	INDUCTOR CHIP	0uH	R216	1-216-839-11	METAL CHIP	33K 5% 1/16W
< TRANSISTOR >				R217	1-216-839-11	METAL CHIP	33K 5% 1/16W
Q301	8-729-425-18	TRANSISTOR	XN4504	R218	1-216-843-11	METAL CHIP	68K 5% 1/16W
Q307	8-729-903-10	TRANSISTOR	FMW1	R219	1-216-843-11	METAL CHIP	68K 5% 1/16W
Q308	8-729-904-86	TRANSISTOR	2SB1197K-Q	R220	1-216-846-11	METAL CHIP	120K 5% 1/16W
Q309	8-729-903-10	TRANSISTOR	FMW1	R301	1-216-823-11	METAL CHIP	1. 5K 5% 1/16W
Q310	8-729-904-86	TRANSISTOR	2SB1197K-Q	R302	1-216-823-11	METAL CHIP	1. 5K 5% 1/16W
Q311	8-729-907-39	TRANSISTOR	IMD2	R315	1-216-825-11	METAL CHIP	2. 2K 5% 1/16W
Q312	8-729-402-99	TRANSISTOR	XN4112	R316	1-216-822-11	METAL CHIP	1. 2K 5% 1/16W
Q313	8-729-907-39	TRANSISTOR	IMD2	R317	1-216-834-11	METAL CHIP	12K 5% 1/16W
Q401	8-729-403-02	TRANSISTOR	XN4212	R318	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q403	8-729-920-56	TRANSISTOR	FMG1	R319	1-216-821-11	METAL CHIP	1K 5% 1/16W
Q404	8-729-923-39	TRANSISTOR	2SD1963-R	R320	1-216-834-11	METAL CHIP	12K 5% 1/16W
Q405	8-729-022-67	TRANSISTOR	2SC3650-TD	R321	1-216-817-11	METAL CHIP	470 5% 1/16W
Q406	8-729-905-57	TRANSISTOR	DTA124EU	R322	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q408	8-729-922-34	TRANSISTOR	2SD1758F5-QR	R360	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q409	8-729-231-74	TRANSISTOR	2SC4116-GL	R361	1-216-825-11	METAL CHIP	2. 2K 5% 1/16W
Q410	8-729-905-57	TRANSISTOR	DTA124EU	R362	1-216-825-11	METAL CHIP	2. 2K 5% 1/16W
Q421	8-729-230-60	TRANSISTOR	2SA1586-YG	R363	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q501	8-729-904-87	TRANSISTOR	2SB1197K-R	R402	1-216-827-11	METAL CHIP	3. 3K 5% 1/16W
Q502	8-729-922-94	TRANSISTOR	DTC143TU	R403	1-216-824-11	METAL CHIP	1. 8K 5% 1/16W
Q503	8-729-924-79	TRANSISTOR	FMG8	R404	1-216-805-11	METAL CHIP	47 5% 1/16W
Q504	8-729-924-79	TRANSISTOR	FMG8	R405	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q505	8-729-907-39	TRANSISTOR	IMD2	R409	1-218-720-11	METAL CHIP	15K 0. 50% 1/16W
Q506	8-729-231-74	TRANSISTOR	2SC4116-GL	R410	1-218-724-11	METAL CHIP	22K 0. 50% 1/16W
Q601	8-729-924-23	TRANSISTOR	DTA143ZU	R411	1-216-821-11	METAL CHIP	1K 5% 1/16W
Q602	8-729-905-61	TRANSISTOR	DTC124EU	R412	1-218-330-11	METAL CHIP	11K 0. 50% 1/16W
Q610	8-729-905-61	TRANSISTOR	DTC124EU	R413	1-216-806-11	METAL GLAZE	56 5% 1/16W
Q801	8-729-230-60	TRANSISTOR	2SA1586-YG	R414	1-217-671-11	METAL CHIP	1 5% 1/10W
Q810	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R415	1-217-671-11	METAL CHIP	1 5% 1/10W
< RESISTOR >				R418	1-216-835-11	METAL CHIP	15K 5% 1/16W
R101	1-216-821-11	METAL CHIP	1K 5% 1/16W	R419	1-216-832-11	METAL CHIP	8. 2K 5% 1/16W
R102	1-216-845-11	METAL CHIP	100K 5% 1/16W	R421	1-216-833-11	METAL CHIP	10K 5% 1/16W
R112	1-216-075-00	METAL CHIP	12K 5% 1/10W	R422	1-216-839-11	METAL CHIP	33K 5% 1/16W
R113	1-216-075-00	METAL CHIP	12K 5% 1/10W	R423	1-216-846-11	METAL CHIP	120K 5% 1/16W
R114	1-216-837-11	METAL CHIP	22K 5% 1/16W	R424	1-218-734-11	METAL CHIP	56K 0. 50% 1/16W
R115	1-216-837-11	METAL CHIP	22K 5% 1/16W	R425	1-218-724-11	METAL CHIP	22K 0. 50% 1/16W
R116	1-216-839-11	METAL CHIP	33K 5% 1/16W	R427	1-216-857-11	METAL CHIP	1M 5% 1/16W
R117	1-216-839-11	METAL CHIP	33K 5% 1/16W	R428	1-216-857-11	METAL CHIP	1M 5% 1/16W
R118	1-216-843-11	METAL CHIP	68K 5% 1/16W	R429	1-216-857-11	METAL CHIP	1M 5% 1/16W
R119	1-216-843-11	METAL CHIP	68K 5% 1/16W	R430	1-216-857-11	METAL CHIP	1M 5% 1/16W
R120	1-216-846-11	METAL CHIP	120K 5% 1/16W	R431	1-216-854-11	METAL CHIP	560K 5% 1/16W
				R436	1-216-837-11	METAL CHIP	22K 5% 1/16W
				R491	1-216-295-00	METAL CHIP	0 5% 1/10W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R493	1-216-296-00	METAL CHIP	0 5% 1/16W	R654	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R501	1-217-671-11	METAL CHIP	1 5% 1/16W	R655	1-216-822-11	METAL CHIP	1.2K 5% 1/16W
R502	1-216-994-11	METAL CHIP	13K 0.50% 1/16W	R656	1-216-845-11	METAL CHIP	100K 5% 1/16W
R503	1-218-290-11	METAL CHIP	6.2K 0.50% 1/16W	R660	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R504	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R661	1-218-740-11	METAL CHIP	100K 0.50% 1/16W
R505	1-216-857-11	METAL CHIP	1M 5% 1/16W	R663	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R506	1-216-841-11	METAL CHIP	47K 5% 1/16W	R664	1-216-833-11	METAL CHIP	10K 5% 1/16W
R507	1-216-839-11	METAL CHIP	33K 5% 1/16W	R666	1-218-735-11	METAL CHIP	62K 0.50% 1/16W
R508	1-216-843-11	METAL CHIP	68K 5% 1/16W	R801	1-216-833-11	METAL CHIP	10K 5% 1/16W
R509	1-218-332-11	METAL GLAZE	130K 5% 1/16W	R803	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R510	1-216-850-11	METAL CHIP	270K 5% 1/16W	R804	1-216-857-11	METAL CHIP	1M 5% 1/16W
R511	1-216-845-11	METAL CHIP	100K 5% 1/16W	R806	1-216-845-11	METAL CHIP	100K 5% 1/16W
R512	1-216-822-11	METAL CHIP	1.2K 5% 1/16W	R811	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R513	1-216-833-11	METAL CHIP	10K 5% 1/16W	R821	1-216-837-11	METAL CHIP	22K 5% 1/16W
R514	1-216-833-11	METAL CHIP	10K 5% 1/16W	R822	1-216-837-11	METAL CHIP	22K 5% 1/16W
R515	1-218-739-11	METAL CHIP	91K 0.50% 1/16W	R823	1-216-837-11	METAL CHIP	22K 5% 1/16W
R516	1-216-843-11	METAL CHIP	68K 5% 1/16W	R824	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R522	1-216-864-11	METAL CHIP	0 5% 1/16W	R825	1-216-857-11	METAL CHIP	1M 5% 1/16W
R528	1-218-735-11	METAL CHIP	62K 0.50% 1/16W	R829	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R529	1-218-735-11	METAL CHIP	62K 0.50% 1/16W	R832	1-216-857-11	METAL CHIP	1M 5% 1/16W
R530	1-218-735-11	METAL CHIP	62K 0.50% 1/16W	R834	1-216-845-11	METAL CHIP	100K 5% 1/16W
R531	1-218-735-11	METAL CHIP	62K 0.50% 1/16W	R835	1-216-861-11	METAL CHIP	2.2M 5% 1/16W
R532	1-218-744-11	METAL CHIP	150K 0.50% 1/16W	R836	1-216-854-11	METAL CHIP	560K 5% 1/16W
R533	1-218-744-11	METAL CHIP	150K 0.50% 1/16W	R841	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R539	1-218-286-11	METAL GLAZE	91 5% 1/16W	R842	1-218-738-11	METAL CHIP	82K 0.50% 1/16W
R540	1-216-821-11	METAL CHIP	1K 5% 1/16W	R844	1-216-857-11	METAL CHIP	1M 5% 1/16W
R541	1-216-845-11	METAL CHIP	100K 5% 1/16W	R845	1-216-857-11	METAL CHIP	1M 5% 1/16W
R542	1-216-861-11	METAL CHIP	2.2M 5% 1/16W	R846	1-216-821-11	METAL CHIP	1K 5% 1/16W
R543	1-216-865-11	METAL CHIP	3K 5% 1/16W	R847	1-216-864-11	METAL CHIP	0 5% 1/16W
R571	1-216-797-11	METAL CHIP	10 5% 1/16W	R848	1-216-864-11	METAL CHIP	0 5% 1/16W
R601	1-216-835-11	METAL CHIP	15K 5% 1/16W	R849	1-216-864-11	METAL CHIP	0 5% 1/16W
R602	1-216-835-11	METAL CHIP	15K 5% 1/16W	R850	1-216-864-11	METAL CHIP	0 5% 1/16W
R603	1-216-845-11	METAL CHIP	100K 5% 1/16W	R851	1-216-809-11	METAL CHIP	100 5% 1/16W
R604	1-216-839-11	METAL CHIP	33K 5% 1/16W	R852	1-216-809-11	METAL CHIP	100 5% 1/16W
R605	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R853	1-216-809-11	METAL CHIP	100 5% 1/16W
R606	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	R854	1-216-809-11	METAL CHIP	100 5% 1/16W
R607	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R888	1-216-857-11	METAL CHIP	1M 5% 1/16W
R608	1-216-857-11	METAL CHIP	1M 5% 1/16W				< VARIABLE RESISTOR >
R609	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R612	1-216-809-11	METAL CHIP	100 5% 1/16W	RV650	1-238-088-11	RES, ADJ 2.2K	
R613	1-216-857-11	METAL CHIP	1M 5% 1/16W				< SWITCH >
R614	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R615	1-218-740-11	METAL CHIP	100K 0.50% 1/16W	S301	1-571-733-21	SWITCH, SLIDE (AVLS)	
R616	1-216-833-11	METAL CHIP	10K 5% 1/16W	S802	1-570-857-11	SWITCH, SLIDE (RESUME)	
R621	1-216-841-11	METAL CHIP	47K 5% 1/16W	S810	1-570-953-11	SWITCH, PUSH (1 KEY) (DOOR DET)	
R631	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	S811	1-571-275-31	SWITCH, SLIDE (HOLD)	
R650	1-216-057-00	METAL CHIP	2.2K 5% 1/10W				< TRANSFORMER >
R651	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R652	1-218-740-11	METAL CHIP	100K 0.50% 1/16W	△T401	1-423-636-11	TRANSFORMER, DC-DC CONVERTER	
R653	1-216-864-11	METAL CHIP	0 5% 1/16W				

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

Ref. No.	Part No.	Description	Remark
		< THERMISTOR >	
TH601	1-810-235-21	THERMISTOR, POSITIVE 1.5K	
		< VIBRATOR >	
X301	1-760-023-21	VIBRATOR, CRYSTAL (16.9MHz)	
X801	1-579-063-21	VIBRATOR, CERAMIC (4.19MHz)	
*****			
*	1-648-361-11	POWER SUPPLY BOARD *****	
		< CAPACITOR >	
C450	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C451	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C452	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
		< JACK >	
CNJ401	1-568-907-21	JACK, DC (POLARITY UNIFIED TYPE) (DC IN 4.5V)	
		< SWITCH >	
S401	1-572-126-21	SWITCH, PUSH (1 KEY) (BATTERY DET)	
*****			
		MISCELLANEOUS *****	
14	1-648-886-11	PC BOARD, FLEXIBLE	
△52	8-848-295-21	DEVICE, OPTICAL KSS-331C	
56	1-948-418-21	HARNESS	
LCD801	1-810-146-11	LCD	
M901	X-2625-485-1	T. T. MOTOR ASSY	
M902	X-2625-171-2	MOTOR, SLED ASSY	
S910	1-570-771-11	SWITCH (LIMIT SW)	
*****			
		ACCESSORIES & PACKING MATERIALS *****	
△	1-467-008-11	ADAPTOR, AC (AC-E455) (AEP)	
△	1-467-009-11	ADAPTOR, AC (AC-E455) (US, Canadian)	
△	1-467-011-11	ADAPTOR, AC (AC-E455) (E, Tourist)	
△	1-467-013-11	ADAPTOR, AC (AC-E455) (UK)	
	1-528-444-11	BATTERY PACK (BP-DM10) (Canadian, UK, E, Tourist)	
	1-528-444-21	BATTERY PACK (BP-DM10) (AEP)	
	1-528-444-31	BATTERY PACK (BP-DM10) (US)	
	1-555-658-21	CORD, CONNECTION (phono plug×2-stereo miniplug)	
△	1-569-007-11	ADAPTER, CONVERSION 2P (E, Tourist)	

Ref. No.	Part No.	Description	Remark
	1-575-195-11	CORD, CONNECTION	
*	3-703-034-01	LABEL, CAUTION (Tourist)	
	3-757-175-01	MANUAL, INSTRUCTION (Japanese) (Tourist)	
	3-757-175-11	MANUAL, INSTRUCTION (Spanish) (AEP, E, Tourist)	
	3-757-175-21	MANUAL, INSTRUCTION (English)	
	3-757-175-31	MANUAL, INSTRUCTION (French) (Canadian, AEP, E, Tourist)	
	3-757-175-41	MANUAL, INSTRUCTION (Dutch) (AEC)	
	3-757-175-51	MANUAL, INSTRUCTION (Swedish) (AEC)	
	3-757-175-61	MANUAL, INSTRUCTION (Portuguese) (AEC)	
	3-757-175-71	MANUAL, INSTRUCTION (German) (AEL)	
	3-757-175-81	MANUAL, INSTRUCTION (Italian) (AEL)	
*	4-957-230-01	CUSHION (UPPER) (US, Canadian, AEP, UK, E)	
*	4-959-771-01	INDIVIDUAL CARTON (US, Canadian)	
*	4-959-773-01	CUSHION (LOWER) (US, Canadian)	
*	4-959-774-01	CASE, INDIVIDUAL (Tourist)	
*	4-959-775-01	CUSHION (LOWER) (AEP, UK, E)	
*	4-960-130-01	INDIVIDUAL CARTON (AEP, UK, E)	
*	4-960-578-01	CUSHION, MAIN (Tourist)	
*	4-960-772-01	CASE, CARRYING (Tourist)	

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HARDWARE LIST  
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#1	7-627-552-38	SCREW, PRECISION +P 1.7X3
#2	7-627-552-78	SCREW, PRECISION +P 1.7X3.5
#3	7-685-107-19	SCREW +P 2X12 TYPE2 NON-SLIT

**Note:**  
There are two type of AEP models which are depend on countries.  
AEC model: Model for Netherlands, North Europe, Belgium and Poland.  
AEL model: Model for other European countries.

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.
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9-957-894-11  
[Including 9-957-894-81  
9-957-894-91]

**Sony Corporation**  
**General Audio Group**

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