

Service Manual

Portable CD Tuner System

CD Player with Tuner

COMPACT
disc
DIGITAL AUDIO

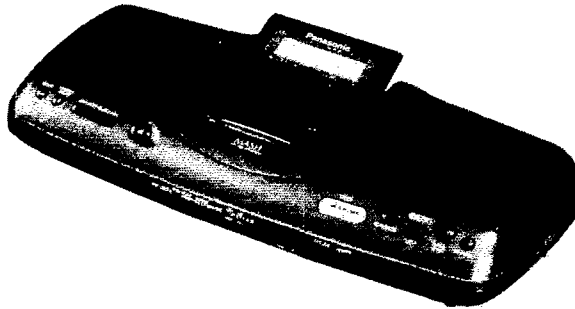
DIGITAL

SL-PH2

Colour

(K) Black Type

MASH*
multi-stage noise shaping



Areas

Suffix for Model No.	Area	Colour
(EB)	Great Britain	(K)
(EG)	Europe	

RX-DT501 TRAVERSE DECK SERIES (RAE0111Z)

■ SPECIFICATIONS

■ Radio

Frequency range: FM; 87.5–108 MHz (50 kHz steps)
AM; 522–1611 kHz (9 kHz steps)

Sensitivity: FM; 5 μ V/0.5 mW output
(–3 dB Limit Sens)
AM; 80 μ V/m/0.125 mW output
(Max. Sens.)

■ Disc player

Sampling frequency: 44.1 kHz

DA converter: 1 bit, MASH

Beam source: Semiconductor laser

Wavelength: 780 nm

No. of channels: 2 (left and right, stereo)

Frequency response: 20–20000 Hz (+0.5 dB, –1.5 dB)

S/N ratio: 94 dB

Wow and flutter: Below measurable limit

■ General

Power requirement: AC adaptor; AC 230–240 V, 50 Hz
(Included)
(EB: RFEA902B-X)
(EG: RFEA902E-X)
◇—◇—◇

Batteries: DC 9 V (Six R14/LR14, UM-2 size batteries, not included)

Power consumption: AC adaptor; 13 W

Power output: max. 2 W+2 W

Speakers: 8 cm×2, 4 Ω

Output jacks: LINE OUT; 50 k Ω , CD; 1 V/Tun.; 0.2 V
(Stereo mini jack \varnothing 3.5)
PHONES; 32 Ω , 20 mW
(Stereo mini jack \varnothing 3.5)

Dimensions (W×H×D): 340.3×73×155 mm

Weight: 1230 g without batteries

Notes:

- Specifications are subject to change without notice.
- Weight and dimensions are approximate.

*

- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
- MASH is a trademark of NTT.

Panasonic

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■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 μ W/VDE

Laser radiation from the pick up lens is safety level, but be sure the followings:

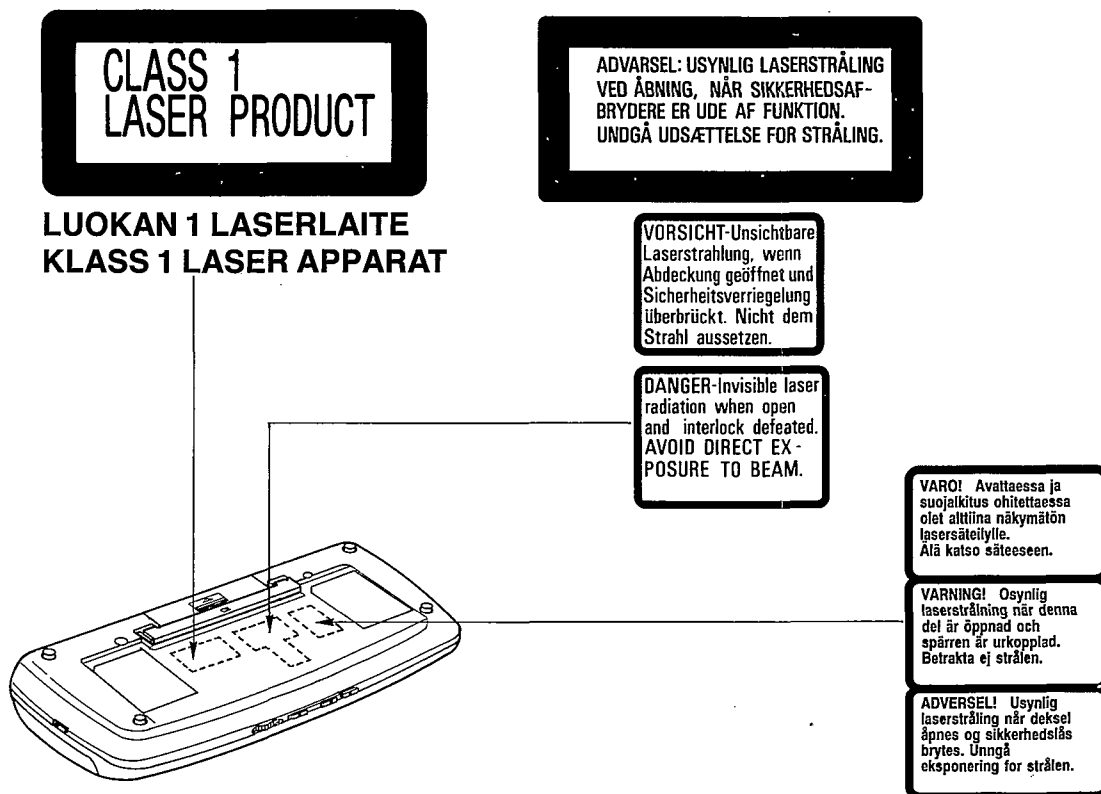
1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdioden. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

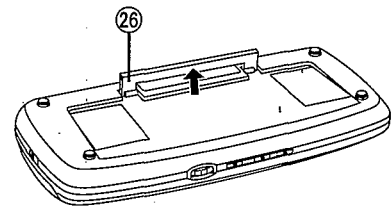
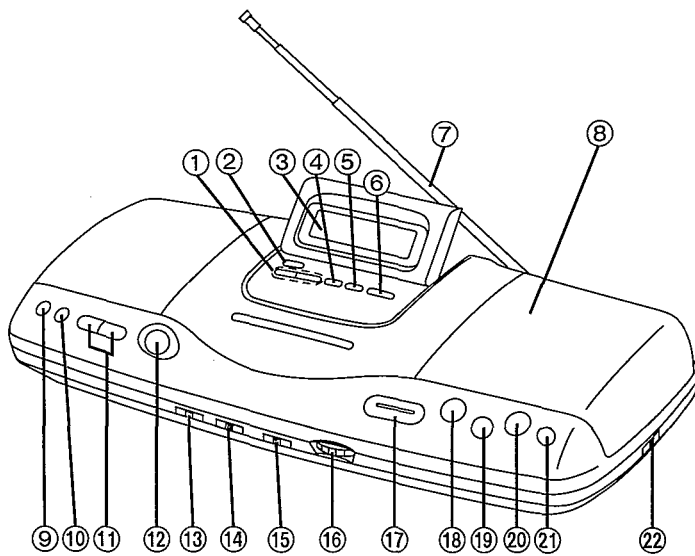
Wellenlänge: 780 nm
Maximale strahlungsleistung der lasereinheit: 100 μ W/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

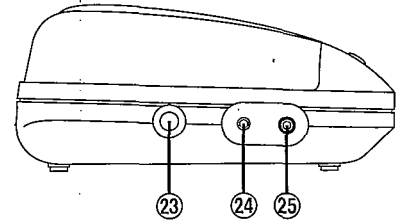
1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdioden gefährlich ist.
2. Den werksseitig justierten einstellregler der lasereinheit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.



■ LOCATION OF CONTROLS



(Bottom)

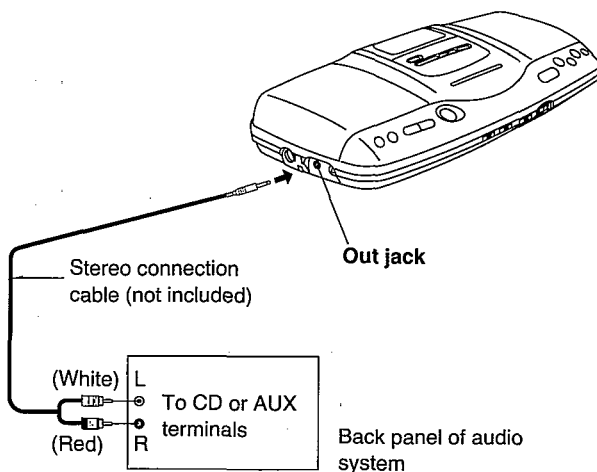


(Left side)

- | | | |
|--|---|--|
| <p>① Time adjust buttons (TIME ADJUST)</p> <p>② Pop up button (POP UP)
Press to raise the display. Please be careful not to put an alien substance under the display. Press the display gently to avoid possible damage to disc and/or the disc play mechanism.</p> <p>③ LCD-display</p> <p>④ Time set button (TIME SET)</p> <p>⑤ Timer button (TIMER)</p> <p>⑥ Sleep button (SLEEP)</p> <p>⑦ Telescopic antenna</p> <p>⑧ Speakers (8 cm, 4Ω)</p> <p>⑨ Repeat button (REPEAT)</p> <p>⑩ Memory/recall, memory button (MEMORY/RECALL, MEMORY)</p> <p>⑪ Skip/search, tuning buttons (◀◀ -SKIP/-SEARCH ▶▶, TUNING)</p> <p>⑫ Open button (OPEN)</p> | <p>⑬ Hold switch (HOLD)
Use to prevent unintended operation. You cannot activate functional buttons (except for POP UP and OPEN buttons) when the unit is in the hold state. The display shows "HOLD". Before operating the front panel buttons, be sure to release the unit from the hold state.</p> <p>⑭ Play mode selector (PLAY MODE)</p> <p>⑮ XBS selector (XBS)
Set this selector as desired for extra bass sound. To cancel this effect set this selector to OFF.
Note:
This function may cause distortion of sound. In this case, set the selector to MID or turn down the volume.</p> <p>⑯ Volume control (VOLUME)</p> <p>⑰ Doze button (DOZE)</p> | <p>⑱ Play/pause button (PLAY/PAUSE)</p> <p>⑲ Operation off, stop button (OPR OFF, STOP)</p> <p>⑳ Tuner/band button (TUNER/BAND)</p> <p>㉑ Memory select button (M.SELECT)</p> <p>㉒ FM mode selector (FM MODE)</p> <p>㉓ DC in jack (DC IN 9 V ⚡)</p> <p>㉔ Out jack (OUT)
(Stereo mini jack, Ø3.5, 50 kΩ)
(CD: 1 V)
(TUNER: 0.2 V)</p> <p>㉕ Headphones jack (Ω)
(Stereo mini jack, Ø3.5, 32Ω)</p> <p>㉖ Stand
Don't use the stand when carrying the unit.</p> |
|--|---|--|

■ CONNECTIONS

Listening through an audio system



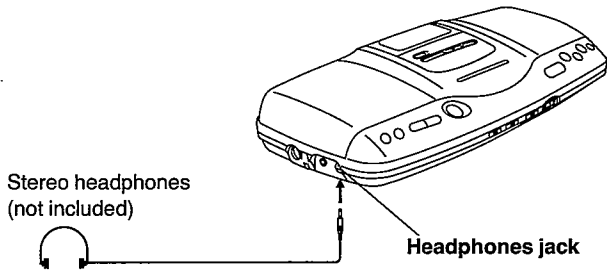
Before connecting the unit to your audio system, make sure to turn the power off on all other system components.

See operating instructions for your system components or portable AM/FM cassette system for details.

Use the stereo connection cable (not included) to connect this unit to your system components or portable AM/FM cassette system.

Do not connect this unit to the PHONO terminals of your system components or portable AM/FM cassette system.

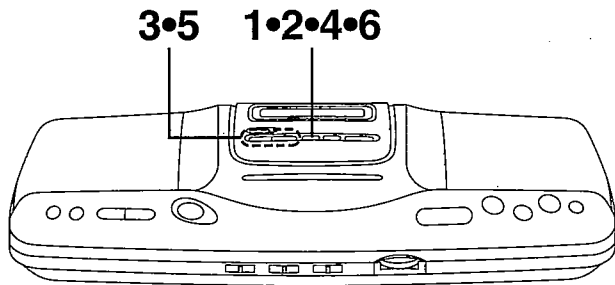
Listening through the stereo headphones (or earphones)



Connect the plug of the stereo headphones or stereo earphones to the headphones jack.

- Avoid listening for prolonged periods of time to prevent hearing damage.

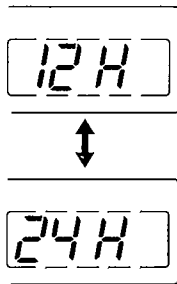
SETTING THE TIME



The clock of this unit employs both the 12-hour and 24-hour system.

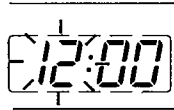
Release the unit from the hold state.

- 1 Press **TIME SET** to select either the 12-hour or 24-hour system. Press **TIME SET** for more than 5 seconds to select the desired system.

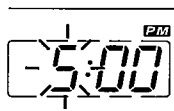


Select the 12-hour system. These instructions explain how to set the time for 5:25 PM.

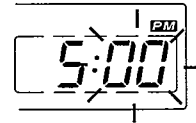
- 2 Press **TIME SET**. The hour display will flash.



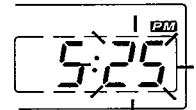
- 3 Press one of the **TIME ADJUST** buttons to select "5" and "PM".



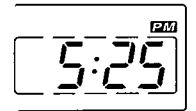
- 4 Press **TIME SET**. The minutes display will flash.



- 5 Press one of the **TIME ADJUST** buttons to select "25". Going from "59" to "00" on the minute display will not change the hour display.



- 6 Press **TIME SET**.

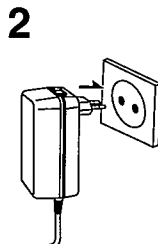
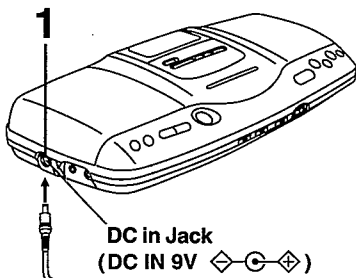


The clock will be reset to "0" second.

AC ADAPTOR

Use only the AC adaptor provided with this unit.

- 1 Insert the plug at the end of the AC adaptor cord into the DC in jack.



AC adaptor

- 2 Plug the AC adaptor into your household AC power outlet.

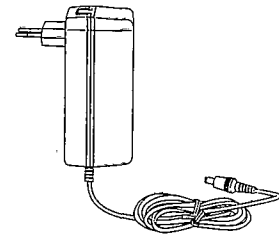
CAUTION

Do not use the AC adaptor provided with this unit for other products.

Notes:

- The configuration of the AC outlet and AC adaptor differs according to area.
- The unit is in the standby condition when the AC adaptor is plugged. The primary circuit is always "live" as long as the AC adaptor is plugged to an electrical outlet.

■ ACCESSORY



AC adaptor 1 pc.
(EB: RFEA902B-X)
(EG: RFEA902E-X)

Note:
The configuration of the AC adaptor differs according to area.

■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

● Handling of traverse deck (optical pickup)

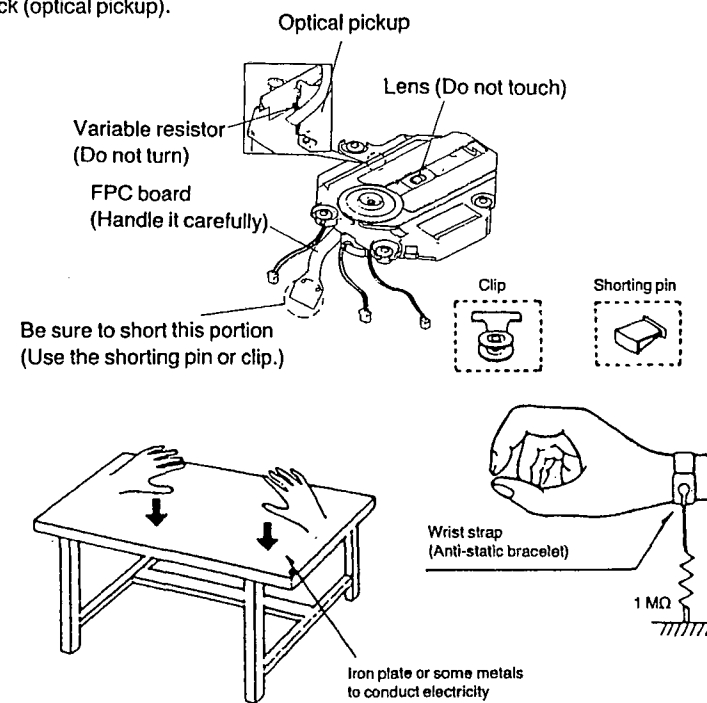
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

● Grounding for electrostatic breakdown prevention

1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ DISASSEMBLY INSTRUCTIONS

Warning: This product uses a laser diode. Refer to caution statements on page 2.

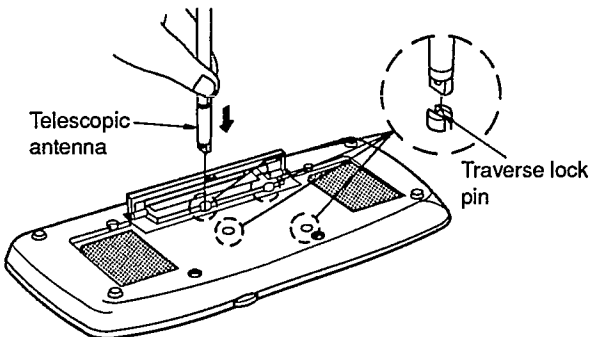
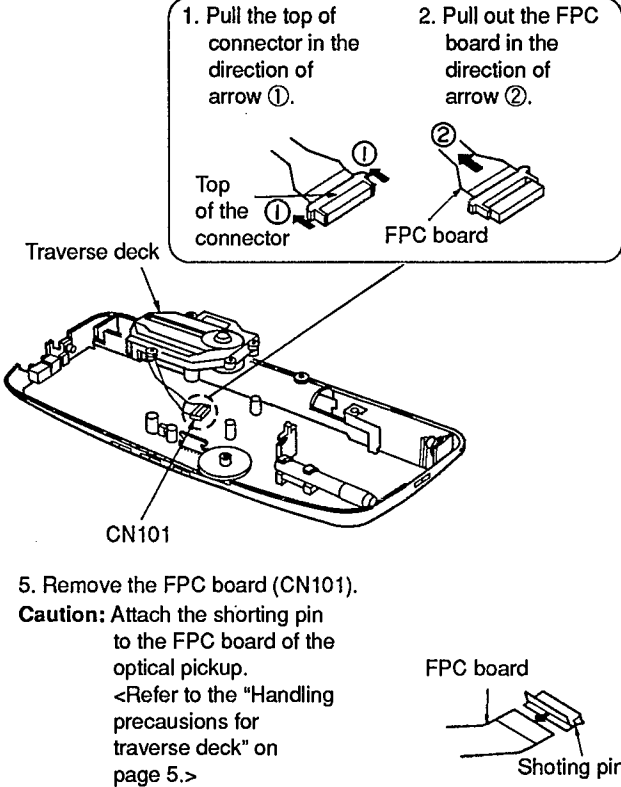
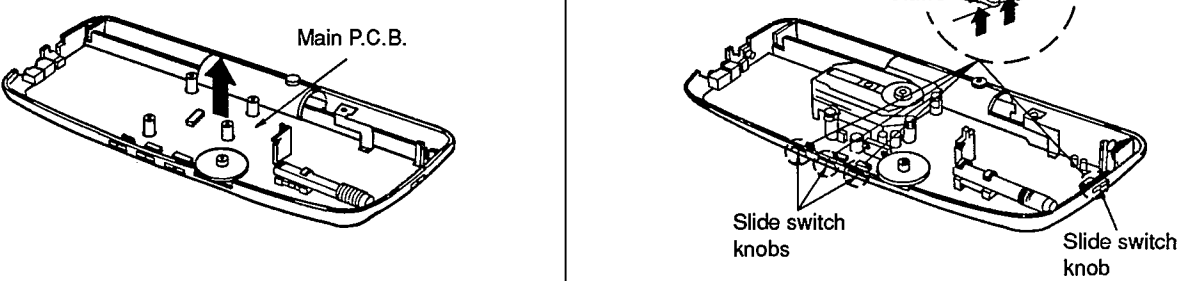
ACHTUNG: Die Lasereinheit nicht zerlegen.

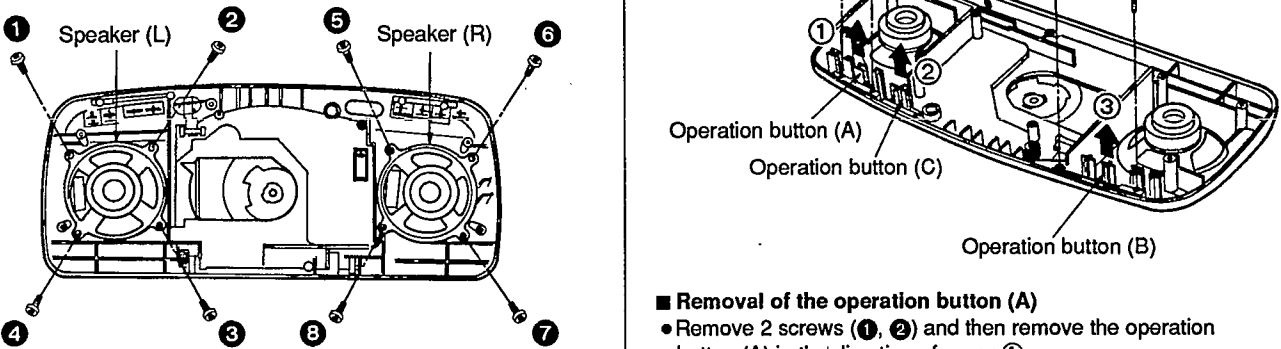
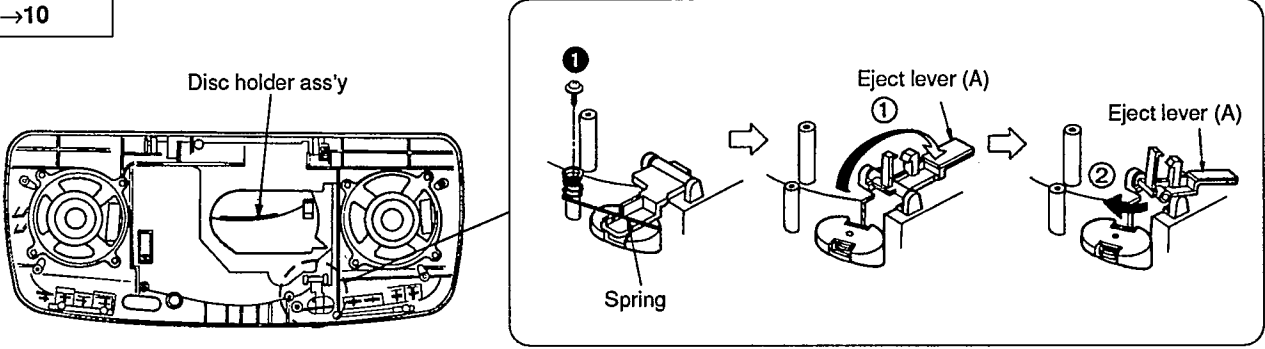
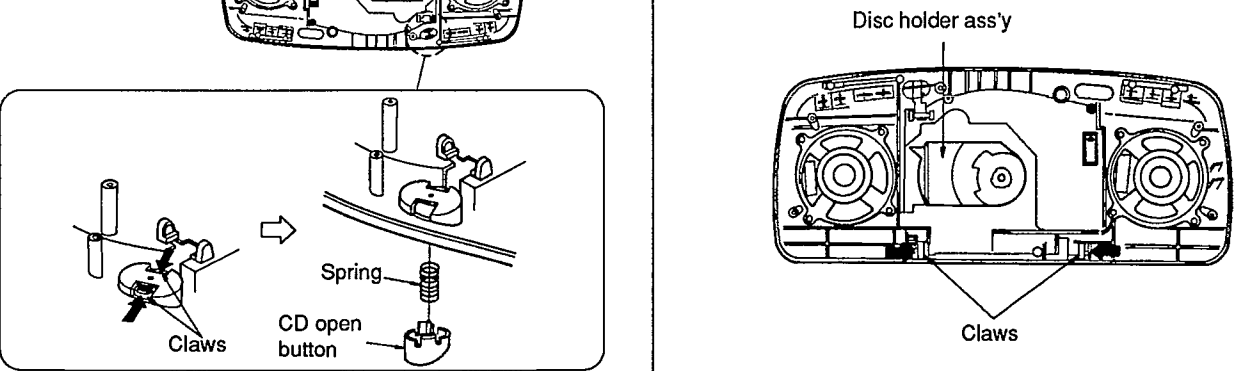
Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

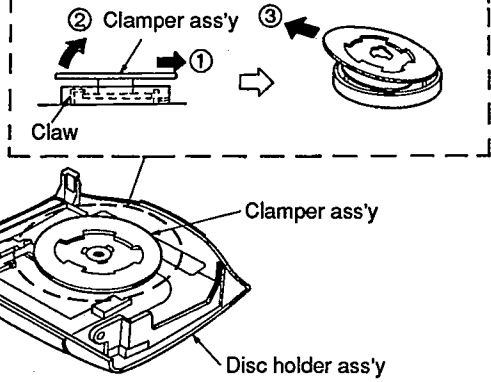
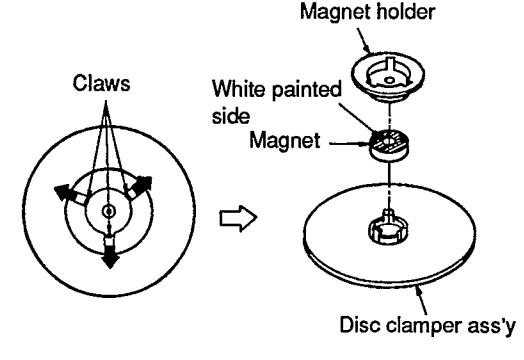
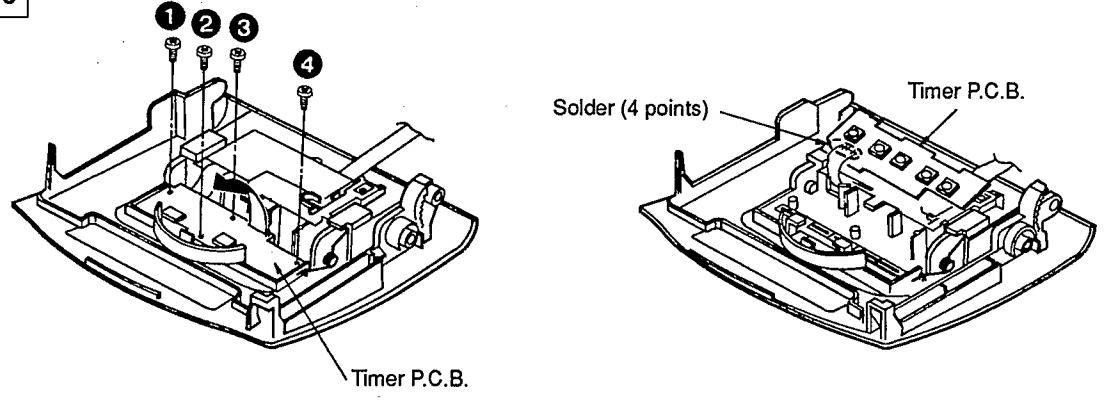
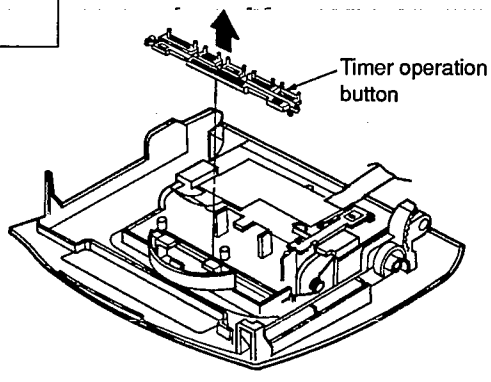
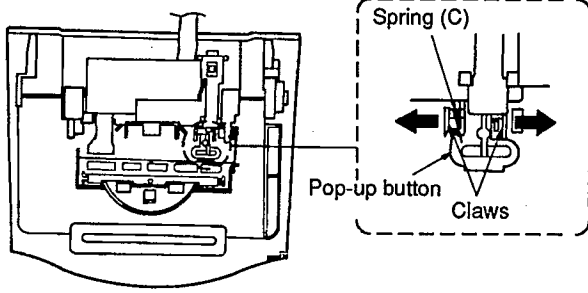
"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

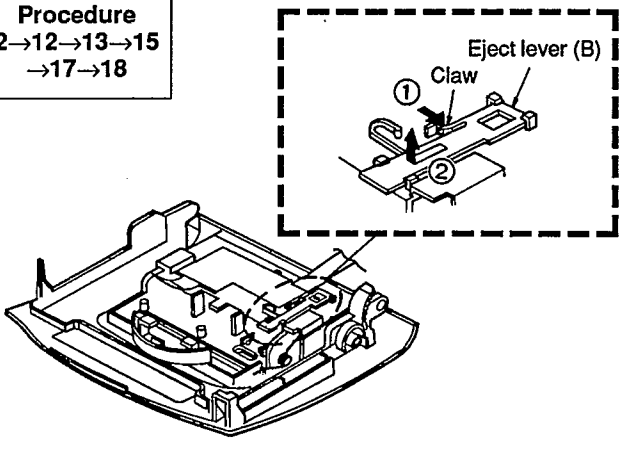
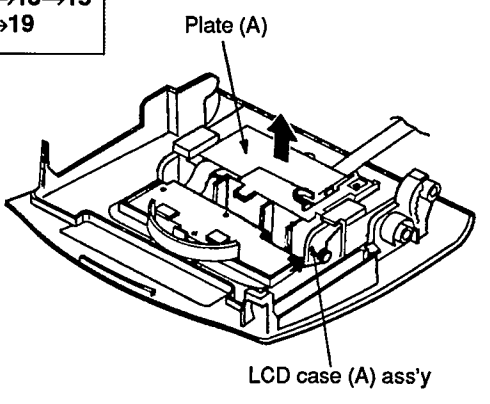
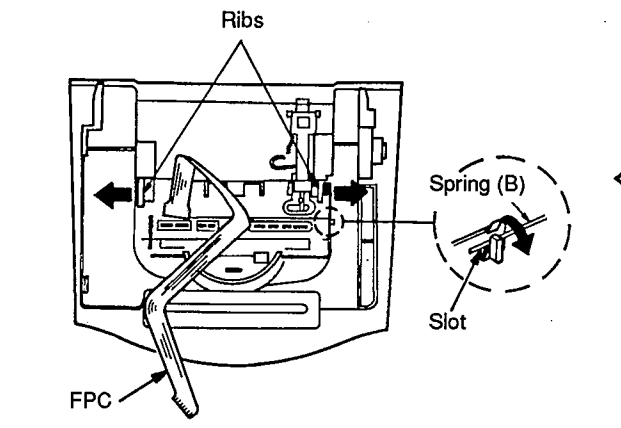
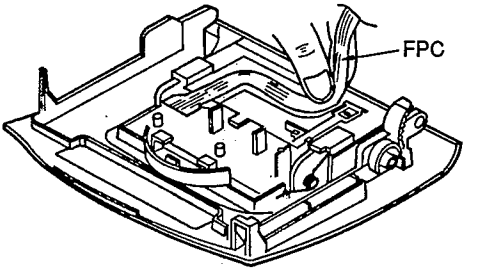
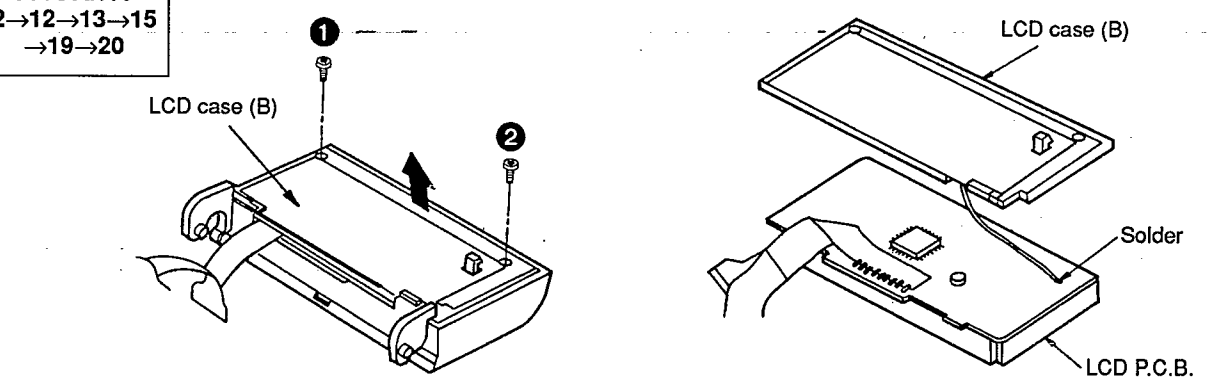
Ref. No. 1	Removal of the Stand
Procedure 1	<p>● Push 2 ribs in the direction of arrows and then remove the stand.</p>

Ref. No. 2	Removal of the Upper Cabinet Ass'y
Procedure 2	<p>1. Remove the battery cover. 2. Remove 10 screws (1~10).</p> <p>3. Remove the telescopic antenna. 4. Release 2 claws and then remove the upper cabinet ass'y in the direction of the arrow.</p>
Ref. No. 3	Removal of the Switch Rods (A), (B) and (C)
Procedure 2→3	<p>● Remove the switch rods (A), (B) and (C).</p>
Ref. No. 4	Removal of the Battery P.C.B. (+) / (-) Ass'y
Procedure 2→4	<p>● Removal of the Battery P.C.B. (+) Ass'y ● Remove the battery P.C.B. (+) ass'y in the direction of arrow ②.</p> <p>● Removal of the Battery P.C.B. (-) Ass'y ● Remove the battery P.C.B. (-) ass'y in the direction of arrow ①.</p>

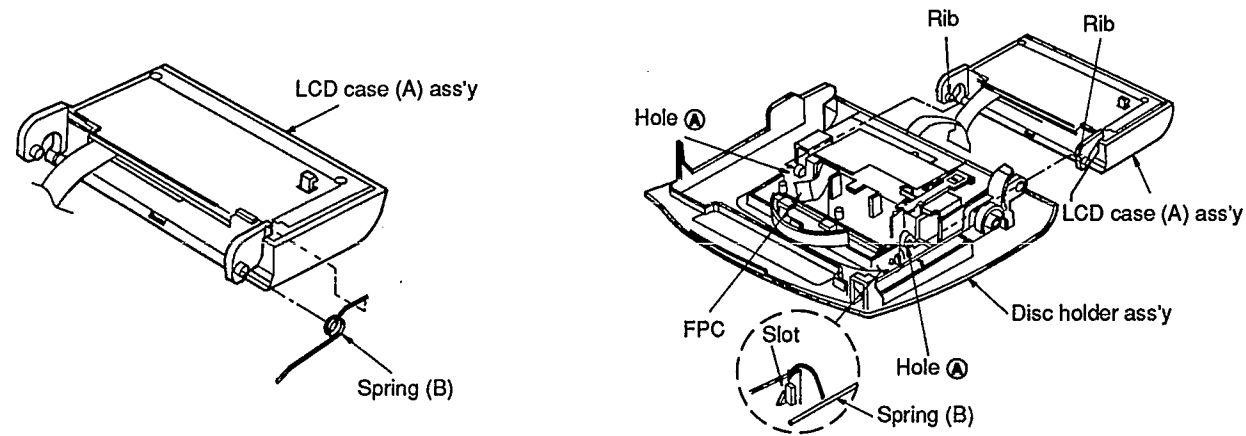
Ref. No. 5	Removal of the Traverse Deck	
Procedure 2→5		
 <p>1. Insert the telescopic antenna in the slot on the back side of the traverse lock pin as shown above and then wrench to release the traverse lock pin.</p> <p>2. Pull out 4 traverse lock pins (①-④).</p> <p>3. Remove 3 connectors (CN103, CN104, CN201).</p> <p>4. Remove the traverse deck in the direction of the arrow.</p>		
<p>Note for Traverse Deck Replacement</p>		
 <p>1. Pull the top of connector in the direction of arrow ①.</p> <p>2. Pull out the FPC board in the direction of arrow ②.</p> <p>5. Remove the FPC board (CN101).</p> <p>Caution: Attach the shorting pin to the FPC board of the optical pickup. <Refer to the "Handling precautions for traverse deck" on page 5.></p> <p>•As the traverse deck supplied by service route has 4 projections as shown above, trim them with the nipper or any similar tool.</p>		
Ref. No. 6	Removal of the Main P.C.B.	Ref. No. 7
Procedure 2→3→5→6		Procedure 2→4→7
 <p>•Remove the main P.C.B. in the direction of arrow.</p> <p>•Release 4 claws.</p>		

Ref. No. 8	Removal of the Speaker (L) / (R)	Ref. No. 9	Removal of the Operation Buttons (A), (B) and (C)
Procedure 2→8		Procedure 2→9	
 <p>•Remove 8 screws (①-⑧).</p> <p>■ Removal of the operation button (A)</p> <p>•Remove 2 screws (①, ②) and then remove the operation button (A) in the direction of arrow ①.</p> <p>■ Removal of the operation button (B)</p> <p>•Remove 2 screws (③, ④) and then remove the operation button (B) in the direction of arrow ③.</p> <p>■ Removal of the operation button (C)</p> <p>•Remove the operation (C) in the direction of arrow ②.</p>			
Ref. No. 10	Removal of the Eject Lever (A)		
Procedure 2→10	 <p>1. Push the CD open button and then open the disc holder ass'y.</p> <p>2. Remove the screw (①).</p> <p>3. Remove the lever spring.</p> <p>4. Rotate the eject lever (A) in the direction of arrow ① and then remove it in the direction of arrow ②.</p>		
Ref. No. 11	Removal of the CD Open Button	Ref. No. 12	Removal of the Disc Holder Ass'y
Procedure 2→10→11		Procedure 2→12	
 <p>•Push 2 claws in the direction of arrow and then remove the CD open button and the spring.</p> <p>•Push 2 claws in the direction of arrow and then remove the disc holder ass'y.</p>			

<p>Ref. No. 13</p>	<p>Removal of the Clamper Ass'y</p>	<p>Ref. No. 14</p>	<p>Clamper Ass'y Disassembling</p>
<p>Procedure 2→12→13</p>  <p>Clamper ass'y Claw Disc holder ass'y</p> <ol style="list-style-type: none"> 1. Push the clamper ass'y to release the claw in the direction of arrow ① and then remove the clamper ass'y in the direction of arrow ②. 2. Pull out the clamper ass'y in the direction of arrow ③. 		<p>Procedure 2→12→13→14</p>  <p>Magnet holder White painted side Magnet Claws Disc clamper ass'y</p> <ul style="list-style-type: none"> •Release 3 claws. 	
<p>Ref. No. 15</p>	<p>Removal of the Timer P.C.B.</p>	<p>Procedure 2→12→13→15</p>  <p>Timer P.C.B. Solder (4 points) Timer P.C.B.</p> <ol style="list-style-type: none"> 1. Remove 4 screws (①-④). 2. Remove the timer P.C.B. in the direction of arrow. 3. Unsolder 4 points. 	
<p>Ref. No. 16</p>	<p>Removal of the Timer Operation Button</p>	<p>Ref. No. 17</p>	<p>Removal of the Pop-up Button</p>
<p>Procedure 2→12→13→15→16</p>  <p>Timer operation button</p> <ul style="list-style-type: none"> •Remove the timer operation button in the direction of arrow. 		<p>Procedure 2→12→13→15→17</p>  <p>Spring (C) Pop-up button Claws</p> <ul style="list-style-type: none"> •Push 2 claws in the direction of arrow and then remove the pop-up button. 	

<p>Ref. No. 18</p>	<p>Removal of the Eject Lever (B)</p>	<p>Ref. No. 19</p>	<p>Removal of the LCD Case (A) Ass'y</p>
<p>Procedure 2→12→13→15→17→18</p>  <p>Eject lever (B) Claw</p> <ul style="list-style-type: none"> •Remove the eject lever (B) in the direction of arrow ② with pressing the claw of the eject lever (B) in the direction of arrow ①. 		<p>Procedure 2→12→13→15→19</p>  <p>Plate (A) LCD case (A) ass'y</p> <ol style="list-style-type: none"> 1. Remove the plate (A). 	
<p>Procedure 2→12→13→15→17→18</p>  <p>Ribs Spring (B) Slot FPC</p> <ol style="list-style-type: none"> 3. Remove the spring (B) from the slot. 4. Release 2 ribs in the direction of arrow. <p>Caution: When removing the LCD case (A) ass'y, be careful not to damage or bend the FPC.</p>		<p>2. Remove the FPC. Caution: When removing the FPC, peel the FPC gently not to bend it.</p>  <p>FPC</p>	
<p>Ref. No. 20</p>	<p>Removal of the LCD P.C.B.</p>		
<p>Procedure 2→12→13→15→19→20</p>  <p>LCD case (B) LCD case (B) LCD case (B) Solder LCD P.C.B.</p> <ol style="list-style-type: none"> 1. Remove 2 screws (①, ②). 2. Remove the LCD case (B) in the direction of arrow. 3. Unsolder the point. 			

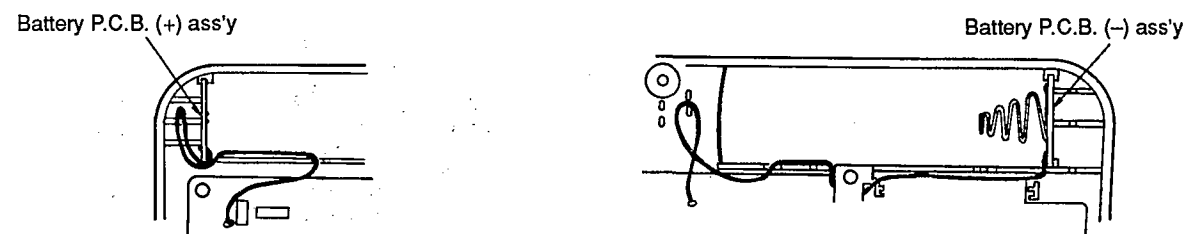
● Installation of LCD Case (A)



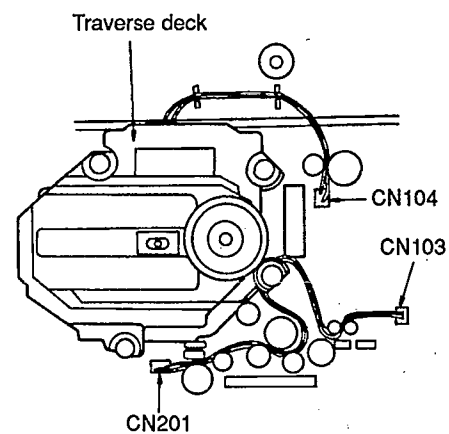
1. Install the spring (B) to the LCD case (A) ass'y.

2. Place the FPC in the disc holder ass'y as shown above.
3. Align 2 ribs of the LCD case (A) ass'y with 2 holes (A) of the disc holder ass'y.
4. Latch the spring (B) to the slot as shown above.

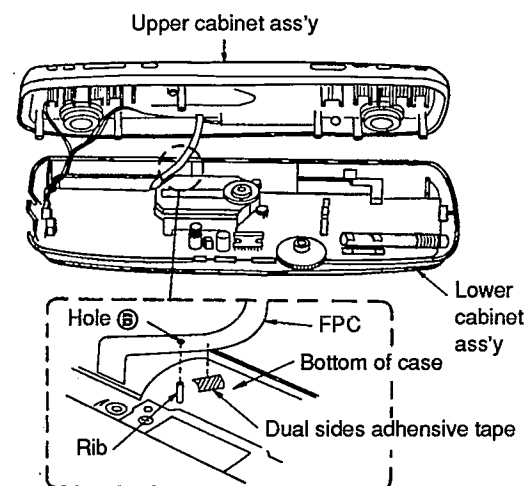
● Lead wire arrangement of battery P.C.B. ass'y



● Lead wire arrangement of traverse deck



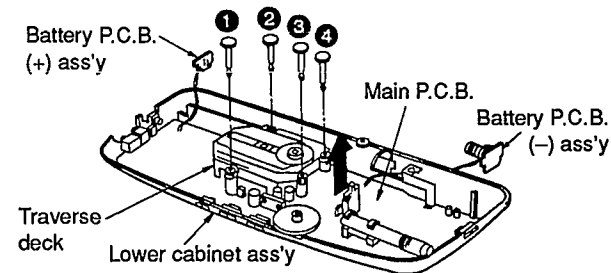
● Notice for installation for upper cabinet ass'y



● When installing the upper cabinet ass'y to the lower cabinet ass'y, align the hole (B) of FPC with the rib of the lower cabinet ass'y and then stick it with dual sides adhesive tape.

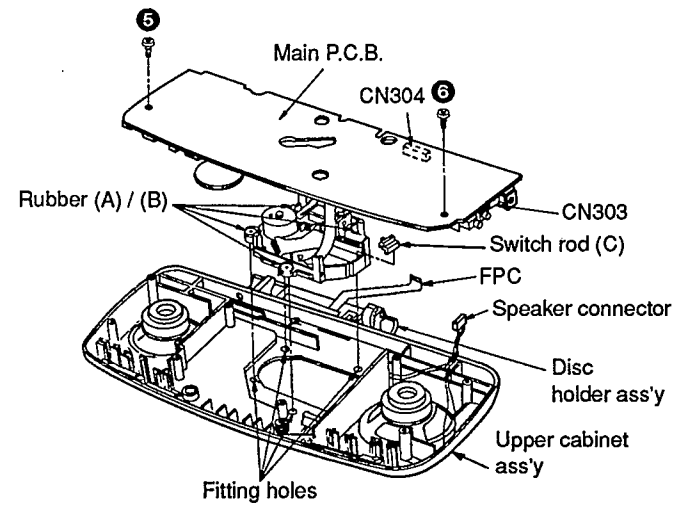
■ HOW TO CHECK THE MAIN P.C.B.

1. Remove the upper cabinet ass'y reference to the "Removal of the Upper Cabinet Ass'y" in Disassembly Instructions, Ref.No.2 on page 6.
2. Remove the battery P.C.B. (+) / (-) ass'y reference to the "Removal of the Battery P.C.B. (+) / (-) Ass'y" in Disassembly Instructions, Ref.No.4 on page 6.
3. Remove the disc holder ass'y reference to the "Removal of the Disc Holder Ass'y" in Disassembly Instructions, Ref.No.12 on page 8.
4. Remove the clamper ass'y reference to the "Removal of the Clamper Ass'y" in Disassembly Instructions, Ref.No.13 on page 9.



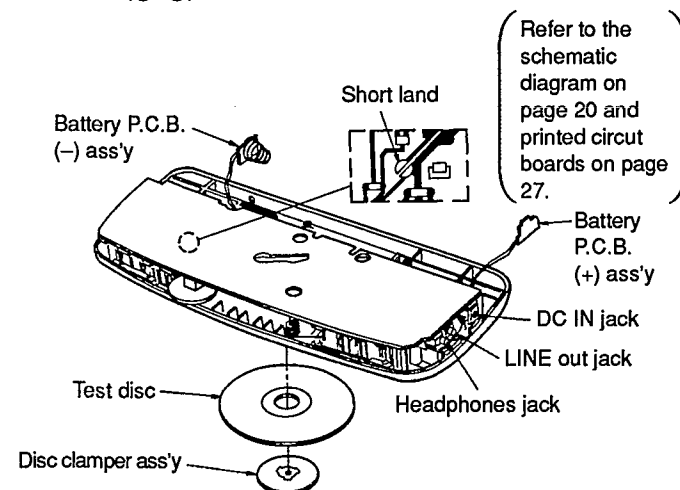
(Lower Cabinet Side)

5. Remove 4 traverse lock pins (1~4).
6. Lift up the traverse deck and main P.C.B. and then remove the lower cabinet ass'y.

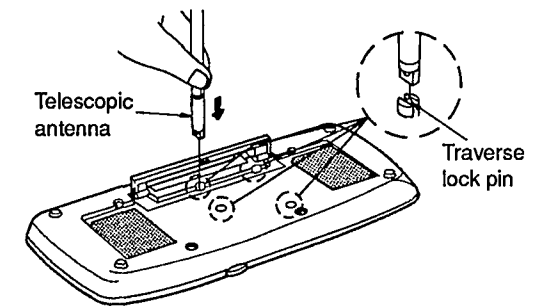


(Upper Cabinet Side)

7. Place the traverse deck and main P.C.B. on the upper cabinet ass'y.
8. Connect the speaker connector to the connector (CN303) on the main P.C.B.
9. Connect the FPC of the disc holder ass'y to the connector (CN304) on the main P.C.B.
10. Fix the main P.C.B. to the upper cabinet ass'y with 2 screws (5~6).

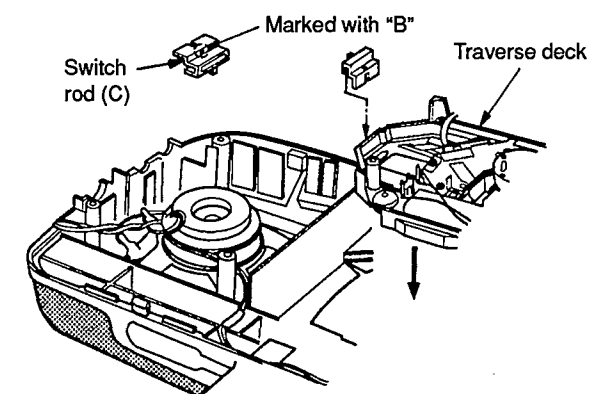


Removal of the Traverse Lock Pins



● Insert the telescopic antenna in the slot on the back side of the traverse lock pin as shown above and then wrench to release the traverse lock pin.

Note: ● Put the switch rod (C) marked with "B" on traverse deck before locating the traverse deck on the upper cabinet ass'y as shown below.



(Upper Cabinet Side)

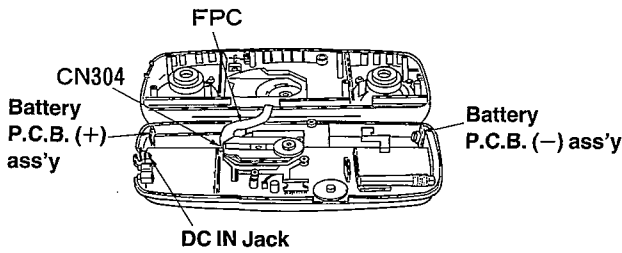
11. Place the test disc and then fix it with the disc clamper ass'y.
12. Short the short land on the main P.C.B. as shown left.
13. Apply DC +9V to the DC IN jack or battery P.C.B. (+) / (-) ass'y.
● Check the soldered side of main P.C.B. as shown left.
14. After checking the main P.C.B., make sure that the short land is open.

MEASUREMENTS AND ADJUSTMENTS

<TUNER SECTION>

●Alignment instructions

1. Remove the upper cabinet ass'y as shown in "Disassembly Instructions, Ref. No. 2. Removal of the upper cabinet ass'y" on page 6.



2. Connect the F.P.C. with the connector (CN304).
 3. Input 9 V DC to the battery P.C.B. (+)/(-) ass'y or DC IN jack.

●Adjust the tuner section in this condition.

Measuring Instruments and Special Tools

- AM/FM signal generator (AM/FM-SG)
- AM loop antenna

- DC electric voltmeter (EVM)
- FM dummy antenna (75Ω)

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

- Set the HOLD switch to OFF.
- Set the tuner/band switch to the desired band.

- Set the FM mode selector switch to STEREO.
- Set the XBS selector switch to OFF.
- Set the volume control to center.

Adjustment Method

- Adjust AM circuit using AM loop antenna.
 <400 Hz, 30% Mod., 74 dB/m>

- Adjust FM circuit using 75Ω dummy antenna.
 <400 Hz, 30% Mod., 60 dB>

●Adjustment points and test points

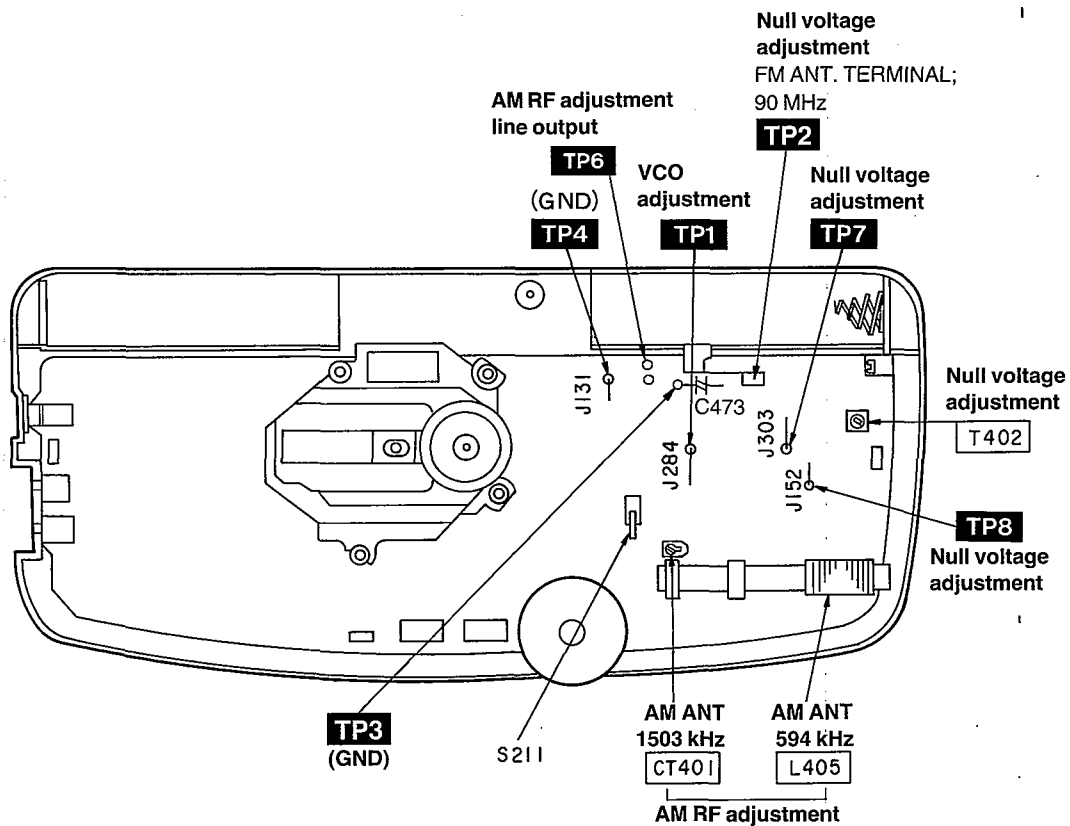


Fig. 1

●AM Adjustment

AM VCO CONFIRMATION						
BAND	FREQUENCY DISPLAY SETTING	DC DIGITAL VOLT METER	VOLTAGE RANGE	ADJUSTMENT (Refer to Fig. 1 on page 13.)	REMARKS	
AM	522 kHz (f-min)	TP1 ...(+)	0.8 V~1.8 V	—	Make sure that the voltage is indicated within the range at each frequency.	
	1611 kHz (f-max)	TP4 ...(-)	5.0 V~9.0 V			
AM-RF ALIGNMENT						
BAND	SIGNAL GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1 on page 13.)	REMARKS
	CONNECTIONS	FREQUENCY				
AM	Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	594 kHz	Turn to signal	TP6 ...(+) TP4 ...(-)	(*1) L405 (AM ANT Coil)	Adjust for maximum output. Adjust L405 by moving coil along the ferrite core.
	"	1503 kHz	"	"	CT401 (AM ANT Trimmer)	Adjust for maximum output.
(*1) Fix antenna coil with wax after completing alignment.						

●FM Adjustment

FM VCO CONFIRMATION						
BAND	FREQUENCY DISPLAY SETTING	DC DIGITAL VOLTMETER	VOLTAGE RANGE	ADJUSTMENT (Refer to Fig. 1 on page 13.)	REMARKS	
FM	87.5 MHz (f-min)	TP1 ...(+)	2.5 V~5.0 V	—	Make sure that the voltage is indicated within the range at each frequency.	
	108.0 MHz (f-max)	TP4 ...(-)	6.0 V~10.0 V			
NULL VOLTAGE ALIGNMENT						
BAND	SIGNAL GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1 on page 13.)	REMARKS
	CONNECTIONS	FREQUENCY				
FM	Connect to test point TP2 through FM dummy antenna. Negative side to test point TP3 .	90.0 MHz 60 dB	Turn to signal	TP8 ...(+) TP7 ...(-)	T402 (FM DET.)	Adjust the voltage at T402 to 0±50 mV TP8 and TP7 .

• Automatic adjustment

On our conventional type portable CD player, there were mounted 6 semi-fixed controls for each adjustment. Since the SL-PH2 servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-PH2.

On conventional portable CD player
Use for Old Servo IC (AN8373, AN8374)

1. Tracking Offset Adjustment VR (TOC)
2. Focus Offset Adjustment VR (FOC)
3. Tracking Gain Adjustment VR (TGC)
4. Focus Gain Adjustment VR (FGC)
5. Tracking Balance Adjustment VR (TBC)
6. Focus Balance Adjustment VR (FBC)

On SL-PH2
Use for New Servo IC (AN8383, AN8384)

Non Adjustment
Automatic Adjusting Circuit

Total 6 Adjustment VRs

No Adjustment VR

Although all discs are manufactured according to the same specifications, their characteristics are not always precisely the same because they are produced by different manufacturers in various lots, or have different warp etc.

SL-PH2 automatically controls the servo circuit to obtain optimum performance according to any disc's characteristics.

Therefore, no malfunction occurs because of mis-adjustment.

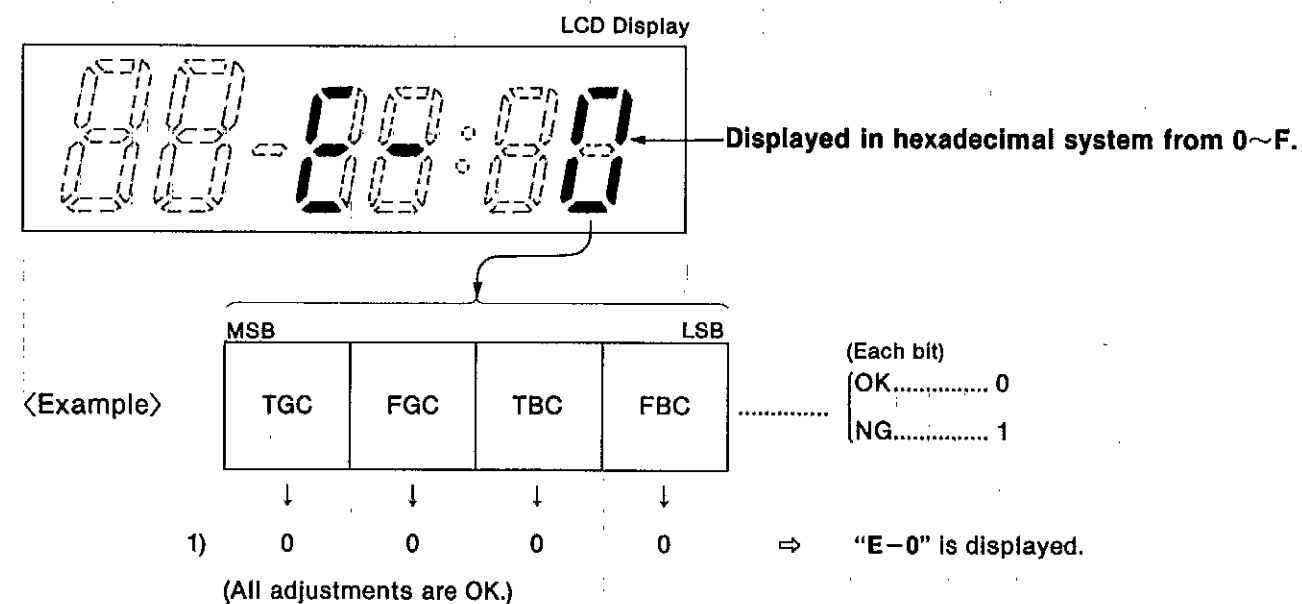
■ DISPLAY FUNCTION OF AUTOMATICALLY-ADJUSTED RESULTS (SELF-CHECK FUNCTION)

On this unit (SL-PH2), each automatically-adjusted result are displayed on the LCD. This function is convenient to check or identify which automatic adjustment circuit is incorrect. The followings are the contents of the automatically-adjusted result displays (self-check function).

• How to display automatically-adjusted results

1. Insert the test disc (SZZP1054C).
2. Press the ◀◀ (SKIP/SEARCH) and ▶▶ (SKIP/SEARCH) Buttons simultaneously and hold them, and additionally press the ▶/II (PLAY/PAUSE) Button.
3. Press the ■ (OPERATION OFF, STOP) Button once.
4. An automatically-adjusted result is displayed on the LCD. (Refer to the next page.)

• Display of automatically-adjusted results (self-check function)



2) 0 1 0 0 ⇒ "E-4" is displayed.

(OK) (NG) (OK) (OK)

(Focus gain adjustment is NG (Incorrect).)

3) 1 0 1 0 ⇒ "E-A" is displayed.

(NG) (OK) (NG) (OK)

(Tracking gain and tracking balance adjustments are NG.)

4) 1 1 1 1 ⇒ "E-F" is displayed.

(All adjustments are NG.)

<Example> Follow the below steps when "E-4" is displayed.

(Cause: Focus gain is set beyond the limit.)

• Check if

- (1) the waveform or voltage of the focus servo circuit is correct,
- (2) the focus coil of the optical pickup is correct (around 8 ohms), and
- (3) the optical pickup returns to the normal state by exchanging the traverse deck.

Follow the below steps when "E-1" is displayed.

(Cause: Focus balance is set beyond the limit.)

• Check if

- (1) R101 (4 resistors) is not defective by measuring the value,
- (2) the waveform or voltage of the focus servo circuit is correct, and
- (3) the optical pickup returns to the normal state by exchanging the traverse deck.

Note:

It is not always necessary to exchange the traverse deck when an error message is displayed. Be sure to check if the circuit is defective or not before exchanging the traverse deck.

Note:

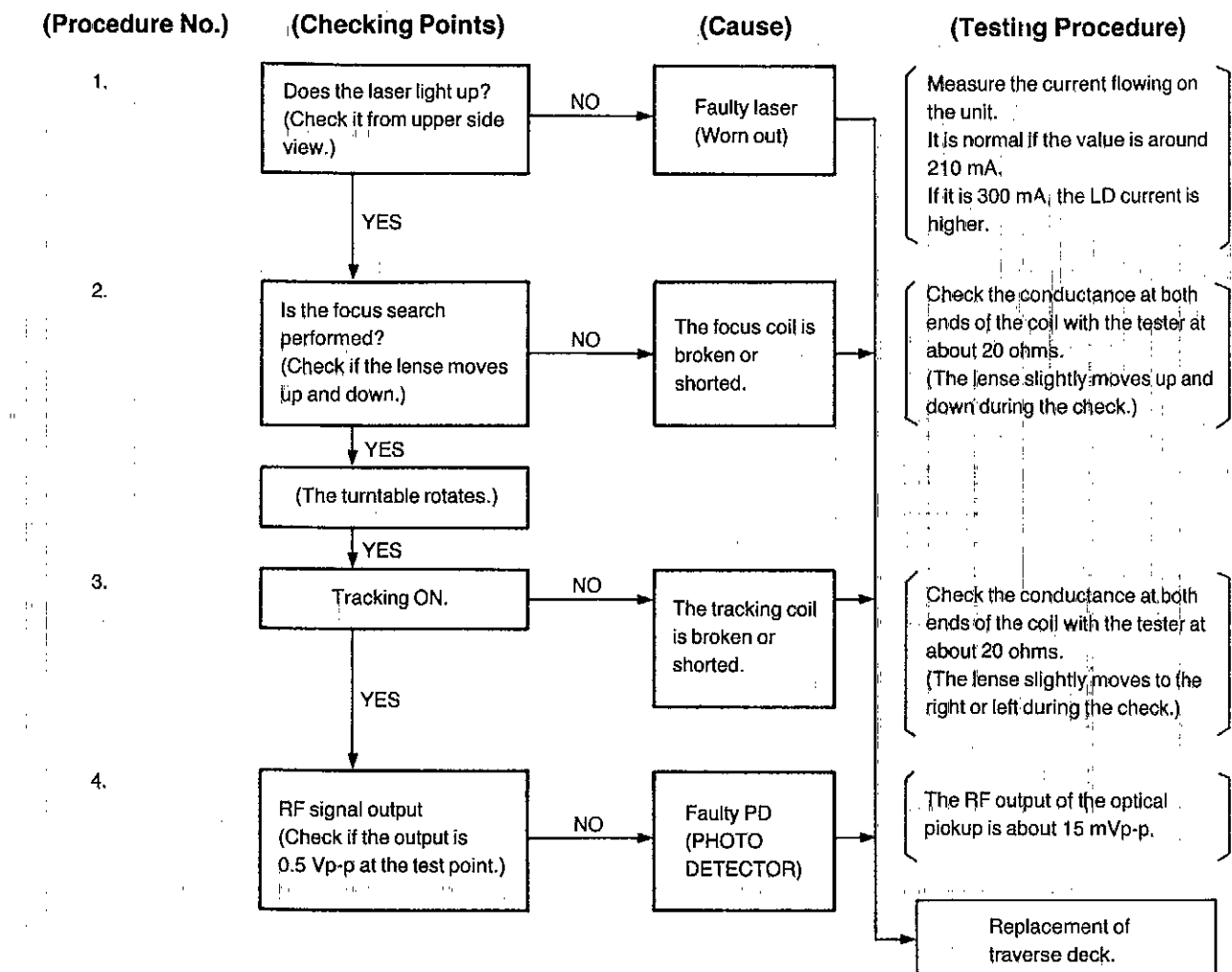
If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed. This is not a malfunction.

■ BEFORE REPLACING TRAVERSE DECK

Check the operation of the traverse deck (optical pickup) before replacing it by following the procedures below.

• Checking the operation of the traverse deck (Optical pickup)

Check the operation of the traverse deck (optical pickup) based on the checking points below.



Only the causes of possible problems with regard to the traverse deck (optical pickup) are listed here. If the traverse deck has operated properly after the testing procedures, then check the circuit.

If the traverse deck has operated properly after the operational checks 1.~4., adjust it again while checking the waveform described in (2) electrical adjustment.

CHECK OF PLAY OPERATION AFTER ADJUSTMENT

•Checking Skip Search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

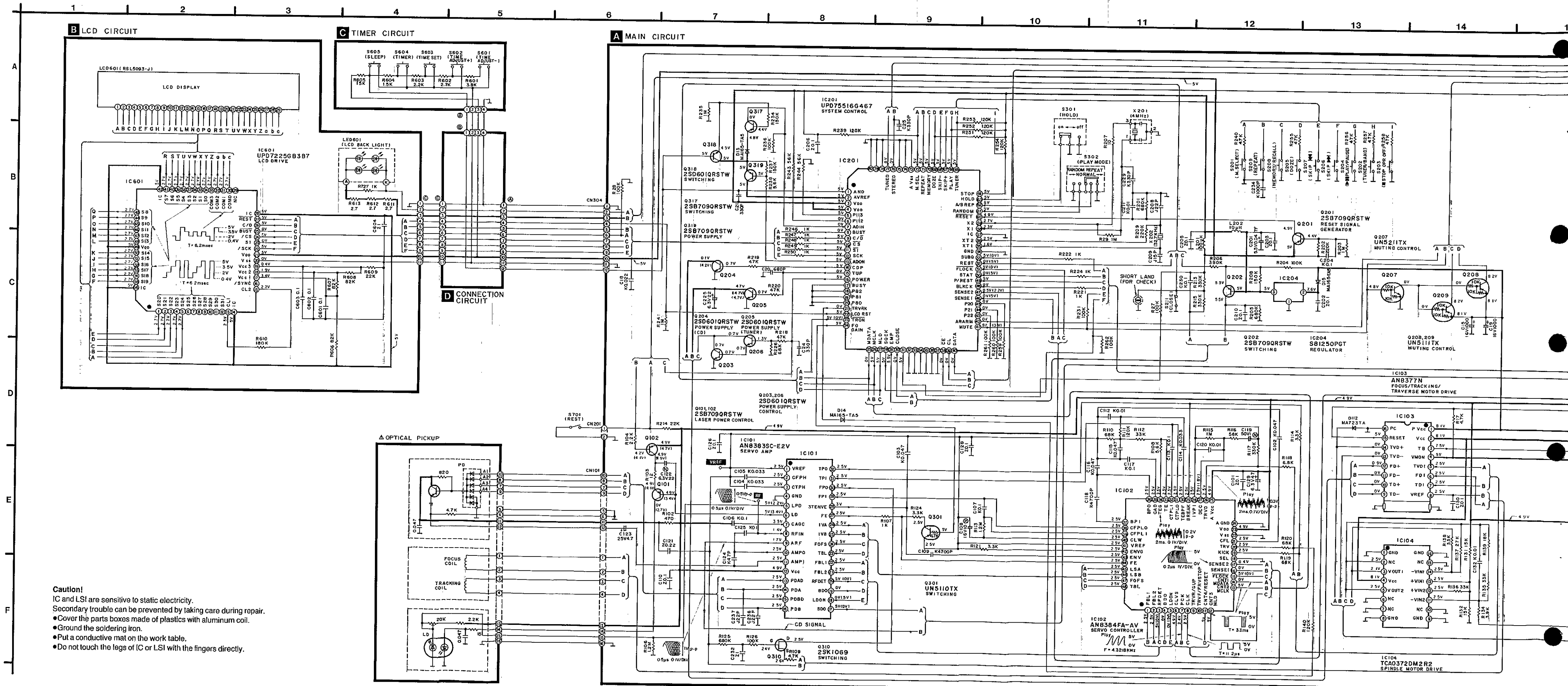
•Checking Manual Search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

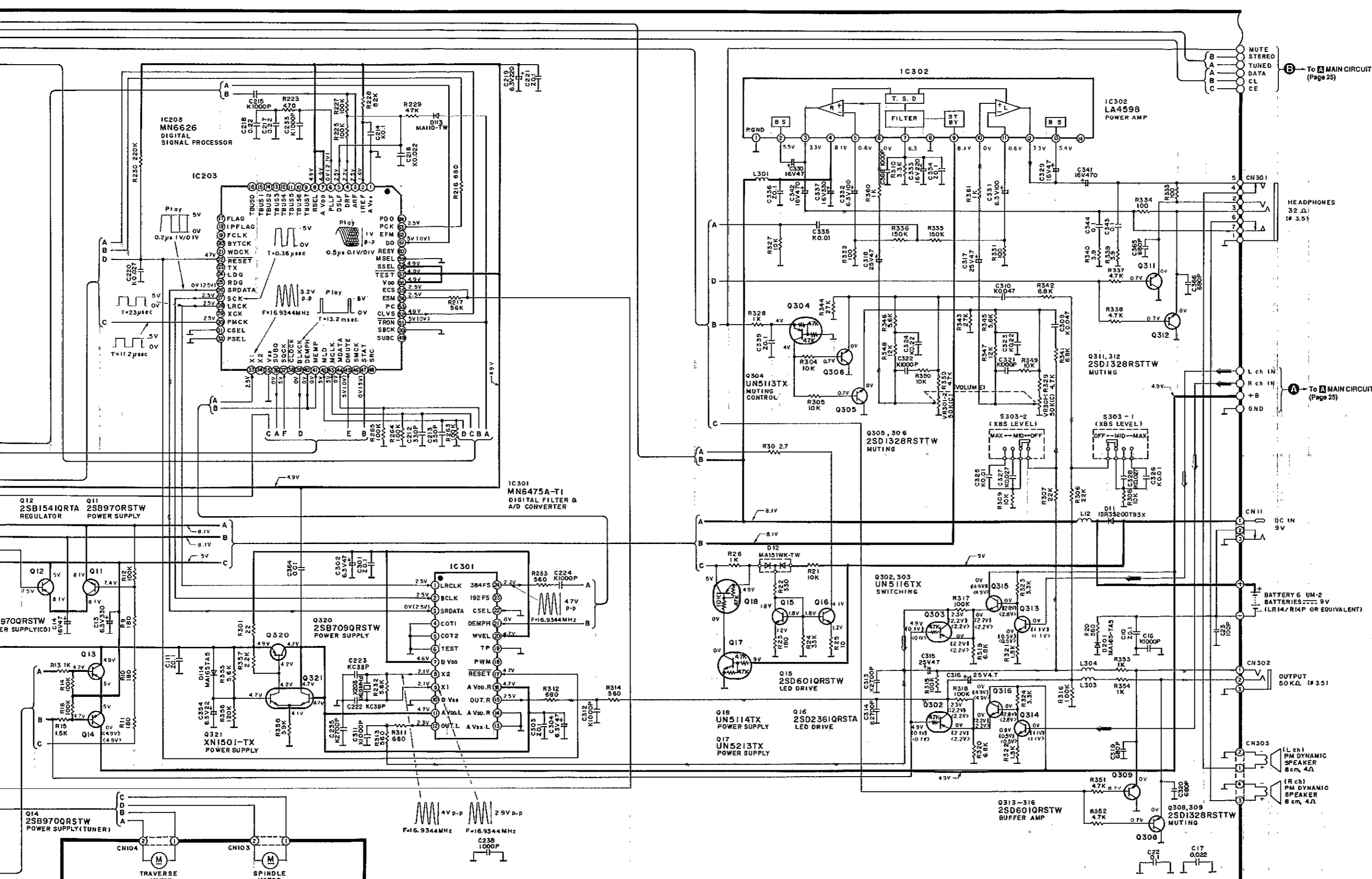
•Checking Using Defect Disc

1. Play the 0.7 mm black dot and the 0.7 mm wedge on the defect test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

SCHEMATIC DIAGRAM • MAIN, LCD, TIMER AND CONNECTION CIRCUIT (Parts list on pages 40~45.)



Caution!
 IC and LSI are sensitive to static electricity.
 Secondary trouble can be prevented by taking care during repair.
 ●Cover the parts boxes made of plastics with aluminum coil.
 ●Ground the soldering iron.
 ●Put a conductive mat on the work table.
 ●Do not touch the legs of IC or LSI with the fingers directly.



- Notes:**
- S201 : Memory select switch (M.SELECT)
 - S202 : Tuner/band switch (TUNER/BAND)
 - S203 : Operation off, stop switch (OPR OFF, STOP)
 - S204 : Play/pause switch (PLAY/PAUSE)
 - S205 : Doze switch (DOZE)
 - S206 : Skip/search, tuning switches (▶▶)
 - S207 : Skip/search, tuning switches (◀◀)
 - S208 : Memory/recall, memory switch (MEMORY/RECALL, MEMORY)
 - S209 : Repeat switch (REPEAT)
 - S211 : CD holder open/close detection switch
 - S301 : Hold switch (HOLD) in "on" position
 - S302 : Play mode selector switch (PLAY MODE) in "REPEAT" position
 - S303 : XBS selector switch (XBS) in "off" position
 - S401 : FM mode selector switch (FM MODE) in "STEREO" position
 - S601 : Time adjust switch (TIME ADJUST -)
 - S602 : Time adjust switch (TIME ADJUST +)
 - S603 : Time set switch (TIME SET)
 - S604 : Timer switch (TIMER)
 - S605 : Sleep switch (SLEEP)
 - S701 : Rest switch

•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

- () : AM voltage
- < > : FM voltage
- No mark : CD stop voltage
- () : CD play voltage

•Important safety notice:
 Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
 •This schematic diagram may be modified at any time with the development of new technology.

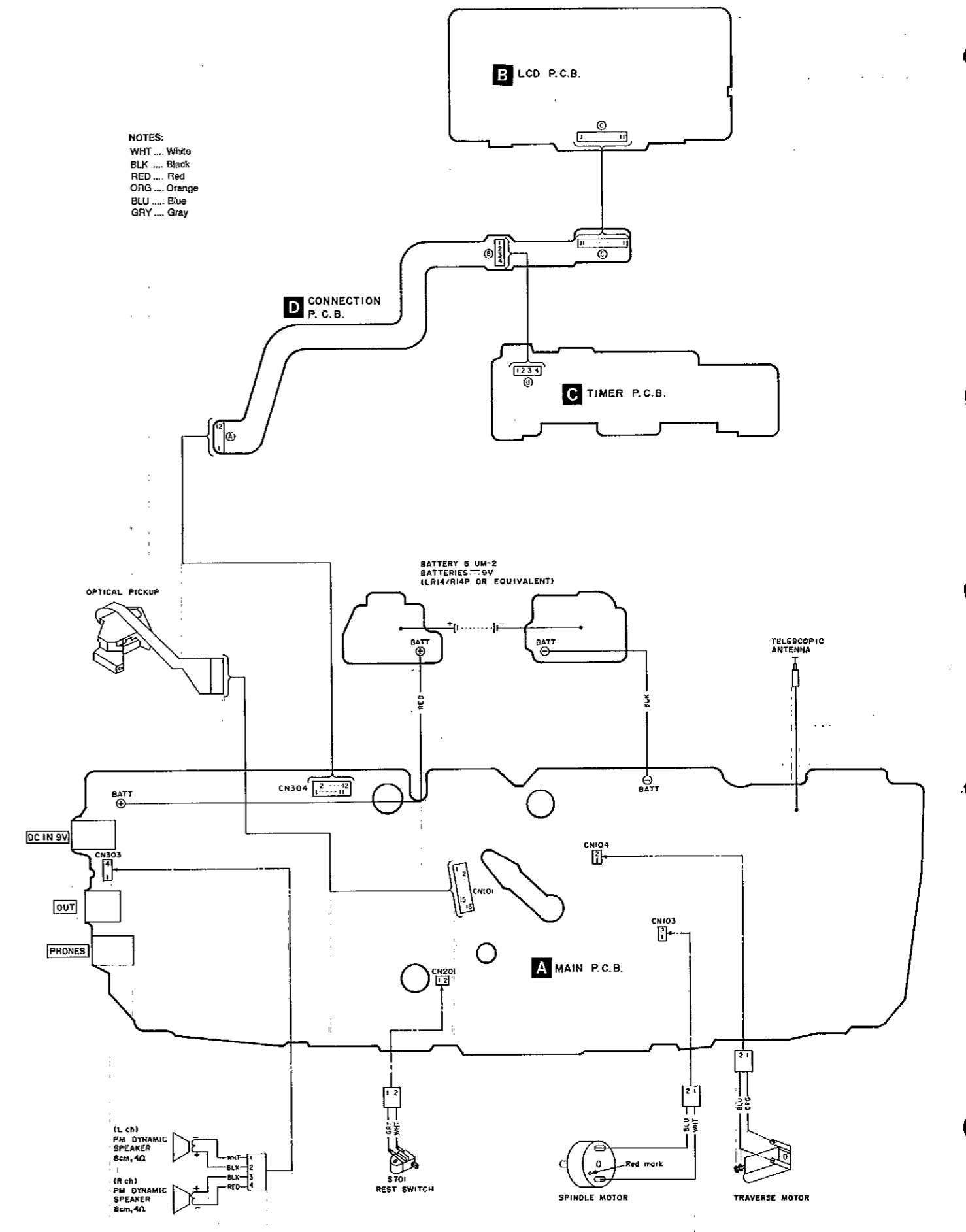
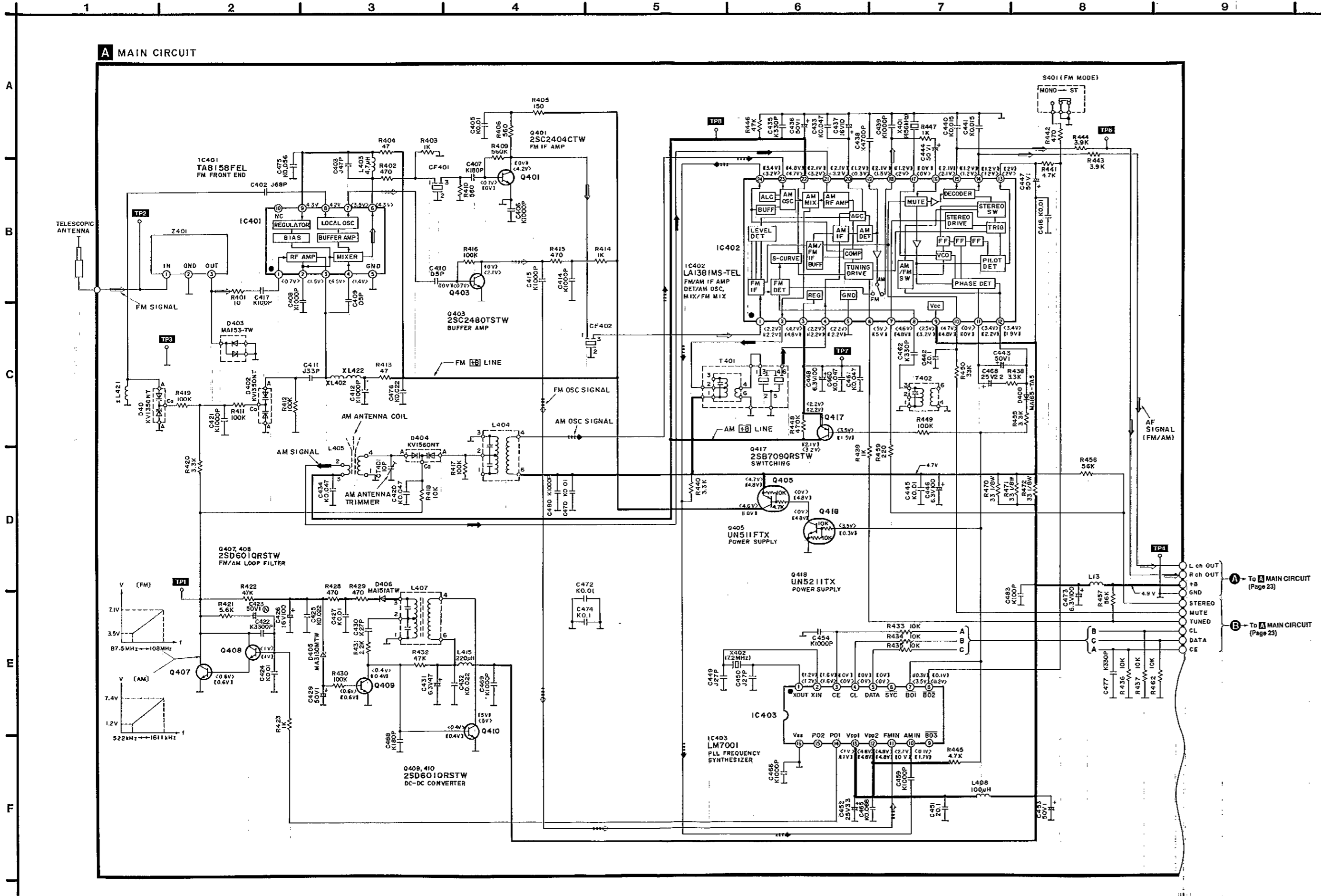
- : Positive voltage line
- ▶ : AM signal line
- ▶ : FM signal line
- ▶ : AM OSC signal line
- ▶ : FM OSC signal line
- ▶ : AF (FM/AM) signal line
- ▶ : CD signal line

•The supply part number is described alone in the replacement parts list.

Ref. No.	Production Parts No.	Supply Parts No.
IC101	AN8383SC-E2V	AN8383SCE2V

SCHEMATIC DIAGRAM • MAIN CIRCUIT (Parts list on pages 40~45.)

WIRING CONNECTION DIAGRAM



PRINTED CIRCUIT BOARDS

SL-PH2

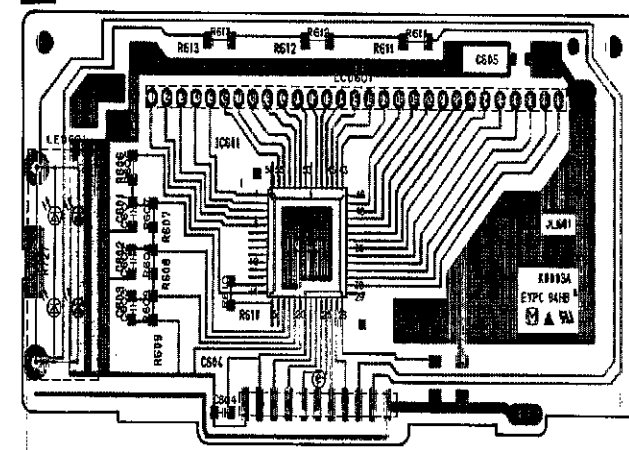
SL-PH2

SL-PH2

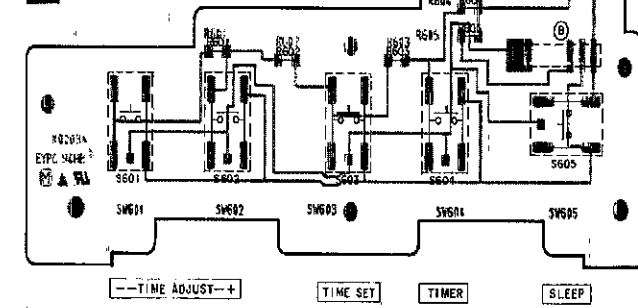
SL-PH2

SL-PH2

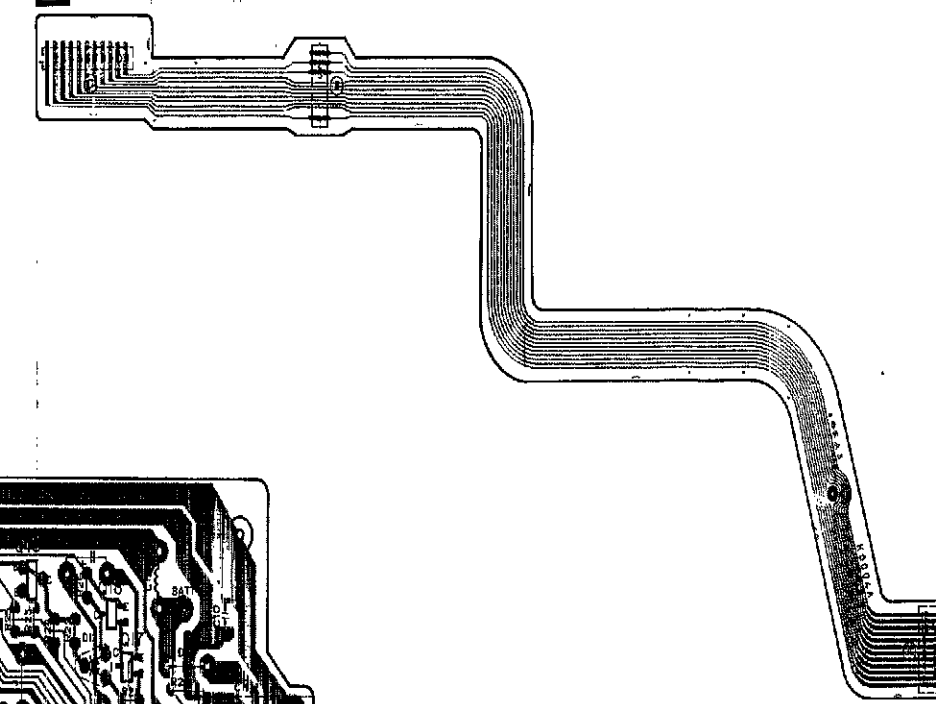
B LCD P.C.B. (REP.K0006B)



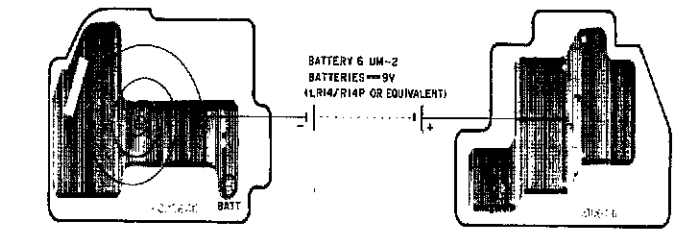
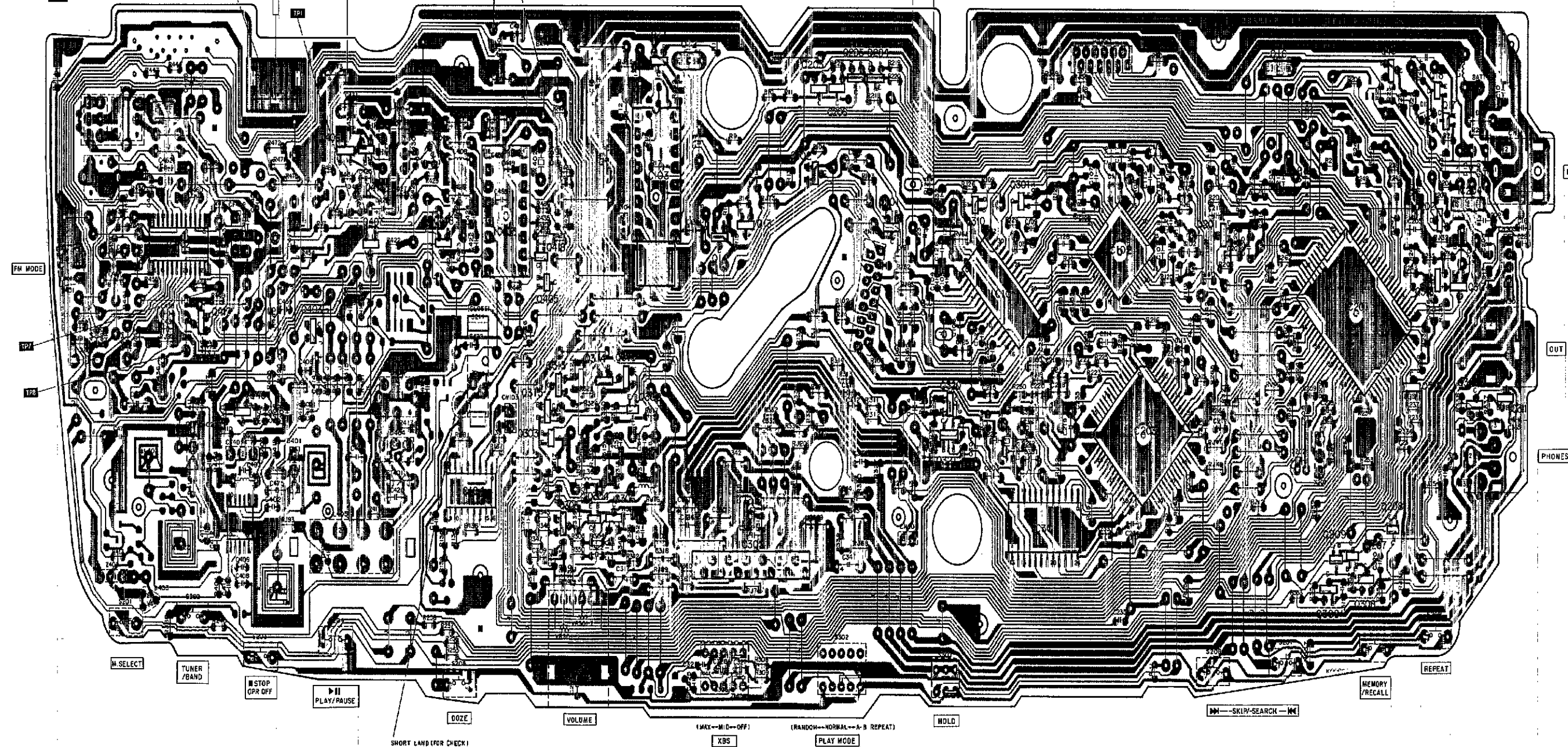
C TIMER P.C.B. (REP.K0006B)



D CONNECTION P.C.B. (RJBK0004A)



A MAIN P.C.B. (REP.K0005C)



This circuit board diagram may be modified at any time with the development of new technology.

Terminal guide of ICs, transistors and diodes

	TA8158FEL 10Pin TCA0372DM2R2 16Pin LA1831MS-TEL 24Pin MN6475A-T1 24Pin AN8383SC-E2V 32Pin		LM7001
	AN8377N		LA4598
	UPD75516G467		S81250PGT
	2SB709QRSTW 2SB970QRSTW 2SB970RSTW 2SC2404CTW 2SC2480TSTW 2SD601QRSTW 2SD1328RSTTW		2SB1541QRTA 2SD2361QRSTA
	UN511FTX UN5110TX UN5111TX UN5113TX UN5114TX UN5116TX UN5211TX		UN5213TX
	XN1501-TX		MA165-TA5 MA723TA 1SR35200T93X
	MA3130MTW		MA151ATW
	MA153-TW		KV1350NT KV1560NT
			MA110-TW

FUNCTIONS OF IC TERMINALS

● IC101 (AN8383SCE2V): Servo amp

Pin No.	Mark	I/O Division	Function
1	VREF	O	Reference voltage output
2	CFPH	I	Focus phase compensating capacitor terminal
3	CTPH	I	Tracking phase compensating capacitor terminal
4	GND	—	Ground terminal
5	LPD	I	Non-inverting laser power input
6	LD	O	Laser power auto control output
7	CAGC	I	AGC detecting capacitor terminal
8	RFIN	I	RF signal input
9	ARF	O	RF signal output
10	AMPO	O	RF signal output (Not used, open)
11	AMPI	I	RF signal input (×30 amp)
12	VCC	I	Power supply terminal
13	PDAD	I	Photo detector current input
14	PDA	I	Photo detector current input
15	PDBD	I	Photo detector current input
16	PDB	I	Photo detector current input
17	SDO	O	Dropout detection pulse output
18	LDON	I	Laser ON/OFF control input

● IC301 (MN6475A-T1): Digital filter & D/A converter

Pin No.	Mark	I/O Division	Function
1	LRCLK	I	L/R discriminating signal
2	BCLK	I	Serial bit clock input
3	SRDATA	I	Serial data output (MSB first)
4	COT 1	—	Test terminal (GND)
5	COT 2		
6	TEST		
7	D V _{DD}	I	Digital power supply terminal
8	X2	O	Clock terminal (f=16.9 MHz)
9	X1	I	
10	D V _{SS}	—	Digital GND terminal
11	AV _{DD} L	I	Analog power supply terminal (1)
12	OUT.L	O	Analog signal output (1)

Pin No.	Mark	I/O Division	Function
19	BDO	O	Dropout detection output
20	RFDET	O	RF detection signal output
21	FBL2	I	PD balance adjustment terminal (PDB)
22	FBL1	I	PD balance adjustment terminal (PDA)
23	TBL	I	Tracking balance adjustment terminal
24	FOFS	I	Focus offset adjustment terminal
25	IVB	O	Current/voltage conversion output (B)
26	IVA	O	Current/voltage conversion output (A)
27	FE	O	Focus error signal output
28	3TENVE	O	3T envelope signal output
29	FPI	I	Focus phase compensating amp input
30	FPO	O	Focus phase compensating output
31	TPI	I	Tracking phase compensating input
32	TPO	O	Tracking phase compensating output

Pin No.	Mark	I/O Division	Function
13	AV _{SS} .L	—	Analog GND terminal
14	AV _{DD} .R		
15	OUT.R	O	Analog signal output (R ch)
16	AV _{DD} .R	I	Analog power supply terminal (2)
17	RESET	I	Reset signal input (Active: L)
18	PWM	—	Not used
19	TP	—	Test terminal (GND)
20	WVEL	I	Double velocity ("H": double, "L": single)
21	DEMPH	I	Digital de-emphasis ON/OFF ("H": ON)
22	CSEL	I	Clock frequency select of 384 FS terminal (GND)
23	192FS	—	Not Used
24	384FS	O	384fs (16.9344 MHz) signal output

● IC102 (AN8384FA-AV): Servo controller

Pin No.	Mark	I/O Division	Function
1	FBL1	O	PD balance adjustment (PDA) terminal
2	FBL2	O	PD balance adjustment (PDB) terminal
3	RFDET	I	RF detection signal input
4	BDO	I	Dropout detection input
5	LDON	O	Laser ON/OFF control output
6	CLVS	I	Spindle servo condition det. terminal ("H": CLV, "L": Rough servo)
7	PCK	I	PLL extract clock (f=4.3218MHz)
8	CLK	I	Frequency division clock signal (f=88.2kHz) input
9	TRVR/GUP	—	Traverse backward input/gain up output terminal (Not used)
10	TRVF/FRV STOP	—	Traverse forward input/stop output terminal (Not used)
11	CNT4/RESET	I/O	CNT4 input/reset signal output terminal
12	CNT3/MLD	I/O	CNT3 input/command load signal output terminal
13	CNT2/MCLK	I/O	CNT2 input/command clock signal output terminal
14	CNT1/MDATA	I/O	CNT1 input/command data signal output terminal
15	FLOCK	O	Focus lock signal output
16	SENSE1	O	Selector output (1) terminal
17	SENSE2	O	Selector output (2) terminal
18	SEL	I	Parallel/serial select terminal (Not used, connected to GND)
19	KICK	O	Track kick F/B control terminal
20	TRV	O	Traverse F/B control terminal
21	CFL	I	Capacitor connection terminal
22	VSS	—	Ground terminal
23	VDD	I	Power supply terminal
24	A.GND	—	Ground terminal
25	A.VCC	I	Power supply terminal
26	TRVO	O	Traverse amp. output terminal (2)

● IC103 (AN8377N): Motor Drive

Pin No.	Mark	I/O Division	Function
1	PV _{CC}	I	Driver power supply (+8.9 input)
2	V _{CC}	I	Power supply (+8.9 V input)
3	TB	O	External transistor base driving output
4	VMON	O	Voltage output
5	TVDI	I	Traverse error signal input
6	FDI	I	Focus error signal input
7	TDI	I	Tracking error signal input
8	VREF	I	Reference voltage input

Pin No.	Mark	I/O Division	Function
27	DEC	O	Traverse amp. output terminal (1)
28	IVPI	I	Traverse amp. input terminal
29	BREAK	I	Break input terminal
30	TEBPF	I	Tracking error gain detecting filter
31	CTPLO	O	Tracking low level compensation amp. output terminal
32	CTPLI	I	Tracking low level compensation amp. input terminal
33	TE	O	Tracking error output
34	TEG	I	Tracking SW amp. input
35	CAD	O	Auto adjustment multiplier output terminal
36	BPO	O	Focus error for B.P.F. output terminal
37	BPI	I	Focus error for B.P.F. input terminal
38	CFPLO	O	Focus low level compensation amp. output terminal
39	CFPLI	I	Focus low level compensation amp. input terminal
40	CLW	O	Triangular wave oscillator output
41	VREF	I	Reference voltage input
42	ENVG	I	Envelope amp. gain adjustment terminal
43	ENV	I	Envelope amp. input terminal
44	FE	I	Focus SW amp. input terminal
45	LSA	I	Current/voltage conversion input (A)
46	LSB	I	Current/voltage conversion input (B)
47	FOFS	O	Focus offset adjustment output terminal
48	TBL	O	Tracking balance adjustment output terminal

Pin No.	Mark	I/O Division	Function
9	TD-	O	Inverting output of tracking driver
10	TD+	O	Non-inverting output of tracking driver
11	FD-	O	Inverting output of focus driver
12	FD+	O	Non-inverting output of focus driver
13	TVD-	O	Inverting output of traverse driver
14	TVD+	O	Non-inverting output of traverse driver
15	RESET	O	Reset signal output
16	PC	—	PC input (connect to GND)

●IC203 (MN6626): Digital signal processor

Pin No.	Mark	I/O Division	Function
1	AVSS	—	GND terminal
2	IREF	I	Reference current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias terminal (Not used, open)
5	DSLIF	I/O	DSL loop filter terminal
6	PLLF	I/O	PLL loop filter terminal
7	AVDD	I	Power supply terminal
8	RSEL	I	RF signal polarity setting terminal (Not used, connected to VDD)
9 16	TBUS7 TBUS0	O	Test terminal
17	FLAG	O	Flag terminal (Not used, open)
18	IPFLAG	O	Interpolation flag terminal (Not used, open)
19	FCLK	O	Crystal frame clock (Not used, open)
20	BYTCK	O	Byte clock (Not used, open)
21	WDCK	O	Word clock (Not used, open)
22	RESET	I	Reset terminal
23	TX	O	Digital audio signal (Not used, open)
24	LDG	O	Lch deglitch signal (Not used, open)
25	RDG	O	Rch deglitch signal (Not used, open)
26	SRDATA	O	Serial data output (MSB first)
27	SCK	O	Serial bit clock output
28	LRCK	O	L/R discriminating signal
29	XCK	O	Crystal OSC terminal (f=16.9344MHz) (Not used, open)
30	PMCK	O	Frequency division clock signal (Not used, open) ($f = \frac{1}{192} \times CK = 88.2\text{kHz}$)
31	CSEL	—	Test terminal (Connected to GND)
32	PSEL	—	Test terminal (Connected to GND)
33	X1	I	Crystal OSC terminal (f=16.9344MHz)
34	X2	O	Crystal OSC terminal (f=16.9344MHz) (Not used, open)
35	VSS	—	GND terminal
36	SUBQ	O	Sub-code Q data
37	SQCK	I	Sub-code Q register clock

Pin No.	Mark	I/O Division	Function
38	CLDCK	O	Sub-code frame clock (f=7.35kHz) (Not used, open)
39	BLKCK	O	Sub-code block clock (f=75Hz)
40	DEMPH	O	De-emphasis ON signal ("H": ON)
41	MEMP	I	Emphasis signal
42	MLD	I	Command load signal ("L": LOAD)
43	MCLK	I	Command clock signal
44	MDATA	I	Command data signal
45	D MUTE	I	Muting input ("H": MUTE)
46	SMCK	—	System clock (f=4.2336MHz) (Not used, open)
47	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
48	SRC	—	Sub-code CRC check terminal ("H": OK, "L": NG) (Not used, open)
49	SUBC	O	Sub-code serial output data (Not used, open)
50	SBCK	I	Sub-code serial input clock (Not used, connected to GND)
51	TRON	I	Tracking servo ON signal ("L": ON)
52	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo)
53	PC	O	Turntable motor ON signal ("L": ON) (Not used, open)
54	ESM	O	Turntable motor drive signal (Forced mode)
55	ECS	O	Turntable motor drive signal (Servo error signal)
56	VDD	I	Power supply terminal
57	TEST	I	Test terminal (Normal: "H")
58	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)
59	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz)
60	RESY	—	Re-synchronizing signal of frame sync. (Not used, open)
61	DO	I	Drop-out detection signal ("H": Drop-out) (Not used, connected to GND)
62	EFM	—	EFM signal (Not used, open)
63	PCK	O	PLL extract clock (f=4.3218MHz)
64	PDO	—	Phase compared signal of EFM and PCK (Not used, open)

●IC201 (UPD75516G467): System control

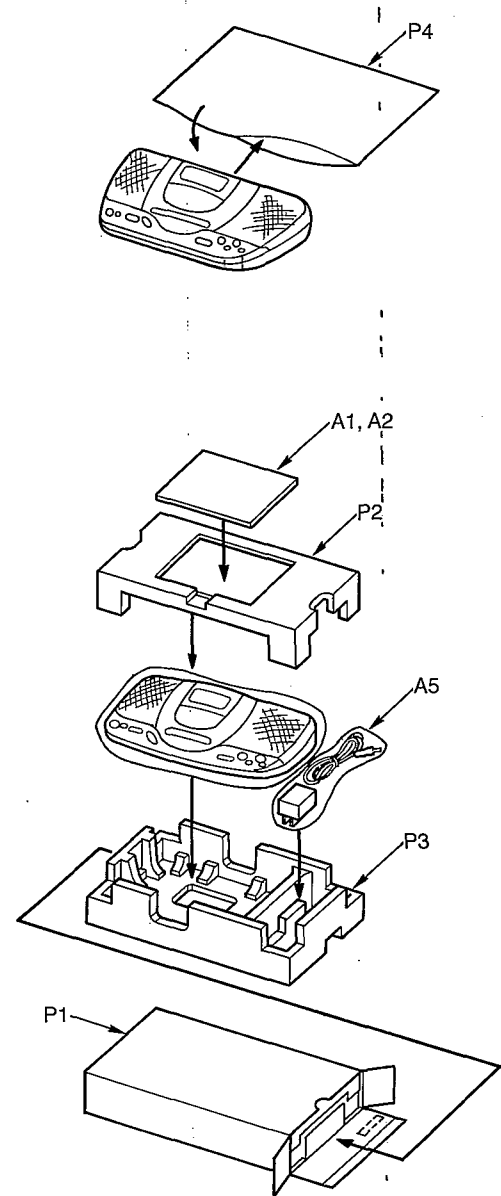
Pin No.	Mark	I/O Division	Function
1	ANO	I	Timer circuit switch signal input
2	AVREF	I	A/D converter reference voltage input (Connect to V _{DD})
3	V _{DD}	—	Power supply terminal
4			
5	P113	—	Destination switching Pin No Japan (P)(PC) (EB)(EG) 5 H H L 6 H L H
6	P112		
7	ADIN	I	Timer circuit switch signal input
8	BUSY	O	Communication prohibition signal output
9	C/D	O	Command data switching signal output
10	CS	O	Chip select signal output
11	SI	O	Control data output
12	SCK	O	Serial clock output
13	ADON	O	Q319 ON signal output (Reference voltage ON)
14	CDP	O	CD circuit power control signal output
15	TUP	O	Tuner circuit power control signal output
16	POWER	O	Power ON/OFF control signal output
17	BUSY	—	Not used (Connect to GND)
18	P82		
20	P80		
21	TRVRK	O	Traverse motor control signal output
22	LCD RST	O	IC601 reset signal output
23	TRON	O	IC203 control signal output (Tracking ON at "L")
24	FOGAIN	O	Focus adjustment signal output (Adjustment at "L")
25	MDATA	O	Command data output
26	MCLK	O	Command clock output
27	MLD	O	Command load signal output
28	SQCK	O	Sub-code (Q data) register clock output
29	EMP	I	Voltage reduction detection signal input
30	CLOSE	I	Disc holder open/close detection signal input
31	—	—	Not used (Connect to V _{DD})
32	—	—	Not used (Connect to GND)
37			

Pin No.	Mark	I/O Division	Function
38	CE	O	Chip enable signal output
39	CL	O	Data clock output
40	DATA	O	Data output
41	MUTE	O	Muting control signal output
42	ARARM	O	Alarm control signal output
43	P22	—	Not used
44	P21		
45	P20	—	Not used
46	SENSE1		
47	SENSE2	I	SENSE (2) signal input
48	BLKCK	I	Sub code block clock input
49	P/RESET	I	Reset signal input
50	STAT	I	Status signal input
51	FLOCK	I	Focus lock signal input
52	REST	I	REST switch signal input
53	SUBQ	I	Sub code (Q data) input
54	GND	—	GND terminal
55	XT1	I	Sub system clock oscillator crystal
56	XT2	O	
57	IC	—	Connect to GND
58	X1	I	Main system clock oscillator crystal
59	X2	O	
60	RESET	I	Reset signal input
61	RANDOM	I	Play mode switching signal input
62	A/B REP		
63	HOLD	I	HOLD switch signal input
64	STOP	I	Operation switch signal input
65	TUNER		
66	PLAY		
67	SKIP+		
68	SKIP-		
69	DOZE		
70	MEMORY		
71	REPEAT		
72	M. SEL	—	GND terminal
73	A. V _{SS}		
74	—		
75	—	—	Not used (Connect to GND)
76	STEREO	I	Stereo broadcasts receiving signal input for tuner
77	TUNED	I	Broadcasts receiving signal input
78	—	—	Not used (Connect to GND)
80			

●IC601 (UPD7225GB3B7): LCD drive

Pin No.	Mark	I/O Division	Function
1 }	S20 }	O	Segment drive signal output
5	S24		
6 }	S25 }	—	Not used
12	S31		
13	CL1	—	Connected to the resistor for the internal clock oscillation
14	IC	—	Connected to V _{DD} (5 V)
15	CL2	—	Connected to the resistor for the internal clock oscillation
16	/SYNC	—	Not used
17 }	V _{cc1} }	—	LCD drive power supply terminal
19	V _{cc3}		
20	V _{ss}	—	GND
21	V _{DD}	—	Power supply terminal
22	/SCK	I	Serial clock signal input
23	SI	I	Serial data signal input
24	/CS	I	Chip select signal input
25	$\overline{\text{BUSY}}$	I	Communication prohibition signal input
26	C/D	I	Command/data signal input
27	$\overline{\text{REST}}$	I	Reset signal input
28	IC	—	Connected to V _{DD}
29	NC	—	Not used
30 }	COM0 }	O	Common drive signal output
33	COM3		
34 }	S0 }	O	Segment drive signal output
41	S7		
42	IC	—	Connected to V _{DD}
43 }	S8 }	O	Segment drive signal output
48	S13		
49	V _{DD}	I	Power supply terminal
50 }	S14 }	O	Segment drive signal output
55	S19		
56	IC	—	Connected to V _{DD}

■ PACKAGING



REPLACEMENT PARTS LIST

Notes: *Important safety notice:

Components identified by Δ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indications can be used for all areas.

*Warning: This product uses a diode. Refer to caution statements on page 2.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT (S)		Q310	2SK1069	TRANSISTOR	
				Q311	2SD1328RSTTW	TRANSISTOR	
				Q312	2SD1328RSTTW	TRANSISTOR	
IC101	AN8383SCE2V	I. C, SERVO AMP.		Q313	2SD601QRSTW	TRANSISTOR	
IC102	AN8384FA-AV	I. C, SERVO CONTROL		Q314	2SD601QRSTW	TRANSISTOR	
IC103	AN8377N	I. C, BTL DRIVE		Q315	2SD601QRSTW	TRANSISTOR	
IC104	TCA0372DM2R2	I. C, SPINDLE MOTOR DRIVE		Q316	2SD601QRSTW	TRANSISTOR	
IC201	UPD75516G467	I. C, SYSTEM CONTROL		Q317	2SB709QRSTW	TRANSISTOR	
IC203	MN6626	I. C, SIGNAL PROCESSOR		Q318	2SD601QRSTW	TRANSISTOR	
IC204	S81250PGT	I. C, REGULATOR		Q319	2SB709QRSTW	TRANSISTOR	
IC301	MN6475A-T1	I. C, DAC		Q320	2SB709QRSTW	TRANSISTOR	
IC302	LA4598	I. C, POWER AMP.		Q321	XN1501-TX	TRANSISTOR	
IC401	TA8158FEL	I. C, FM FRONT END		Q401	2SC2404C	TRANSISTOR	
IC402	LA1831MS-TEL	I. C, FM/AM IF AMP.		Q403	2SC2480TSTW	TRANSISTOR	
IC403	LM7001	I. C, PLL FREQ. SYNTHESIZER		Q405	UN511FTX	TRANSISTOR	
IC601	UPD7225GB3B7	I. C, LCD DRIVE		Q407	2SD601QRSTW	TRANSISTOR	
		TRANSISTOR (S)		Q408	2SD601QRSTW	TRANSISTOR	
				Q409	2SD601QRSTW	TRANSISTOR	
Q11	2SB970RSTW	TRANSISTOR		Q410	2SD601QRSTW	TRANSISTOR	
Q12	2SB1541QRTA	TRANSISTOR		Q417	2SB709QRSTW	TRANSISTOR	
Q13	2SB970QRSTW	TRANSISTOR		Q418	UN5211TX	TRANSISTOR	
Q14	2SB970QRSTW	TRANSISTOR				DIODE (S)	
Q15	2SD601QRSTW	TRANSISTOR					
Q16	2SD2361QRSTA	TRANSISTOR		D11	1SR35200T93K	DIODE	
Q17	UN5213TX	TRANSISTOR		D12	MA151WK	DIODE	
Q18	UN5114TX	TRANSISTOR		D13	MA165	DIODE	
Q101	2SB709QRSTW	TRANSISTOR		D14	MA165	DIODE	
Q102	2SB709QRSTW	TRANSISTOR		D15	MA165	DIODE	
Q201	2SB709QRSTW	TRANSISTOR		D112	MA723TA	DIODE	
Q202	2SB709QRSTW	TRANSISTOR		D113	MA110TW	DIODE	
Q203	2SD601QRSTW	TRANSISTOR		D114	MA165	DIODE	
Q204	2SD601QRSTW	TRANSISTOR		D201	MA165	DIODE	
Q205	2SD601QRSTW	TRANSISTOR		D401	KV1350NT	DIODE	
Q206	2SD601QRSTW	TRANSISTOR		D402	KV1350NT	DIODE	
Q207	UN5211TX	TRANSISTOR		D403	MA153-TW	DIODE	
Q208	UN5111TX	TRANSISTOR		D404	KV1560NT	DIODE	
Q209	UN5111TX	TRANSISTOR		D405	MA3130MTW	DIODE	
Q301	UN5110TX	TRANSISTOR		D406	MA151ATW	DIODE	
Q302	UN5116TX	TRANSISTOR		D408	MA165	DIODE	
Q303	UN5116TX	TRANSISTOR		LED601	SLF322D	LED	
Q304	UN5113TX	TRANSISTOR				VARIABLE RESISTOR (S)	
Q305	2SD1328RSTTW	TRANSISTOR					
Q306	2SD1328RSTTW	TRANSISTOR					
Q308	2SD1328RSTTW	TRANSISTOR		VR301	EVJY00F15C54	V. R, VOLUME CONTROL	
Q309	2SD1328RSTTW	TRANSISTOR					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE CAPACITOR(S)		S205	EVQ21405R	SW, DOZE	
				S206	EVQ21405R	SW, F-SKIP	
CT401	RCV10AF1T-S	VARIABLE CAPACITOR		S207	EVQ21405R	SW, R-SKIP	
				S208	EVQ21405R	SW, MEMORY/RECALL	
		COIL (S)		S209	EVQ21405R	SW, REPEAT	
				S211	RSH1A012-U	SW, CLOSE DET.	
L12	RL1500050T-Y	COIL		S301	ESD11H220	SW, HOLD	
L13	RL1500050T-Y	COIL		S302	ESD177308	SW, A-B REPEAT/NORMAL/RANDOM	
L201	RLQZP101KT-Y	COIL		S303	ESD177308	SW, XBS	
L202	RLQZP100KT-Y	COIL		S401	ESD11H220	SW, TUNER MODE	
L301	RL1500050T-Y	COIL		S601	EVQQHVO1W	SW, TIME ADJUST (-)	
L303	RL1500050T-Y	COIL		S602	EVQQHVO1W	SW, TIME ADJUST (+)	
L304	RL1500050T-Y	COIL		S603	EVQQHVO1W	SW, TIME SET	
L403	RLQZP4R7JT-Y	COIL		S604	EVQQHVO1W	SW, TIMER	
L404	RL02B124-T	COIL		S605	EVQQHVO1W	SW, SLEEP	
L405	RLV2C008-0	COIL		S701	SSHD5	SW, REST	
L407	RL09B18-M	COIL					
L408	RLQZP101KT-Y	COIL				CONNECTOR(S)	
L415	RLQZP221KT-Y	COIL					
				CN11	RJJ4304-C	DC IN JACK	
		TRANSFORMER (S)		CN101	RJU035T016	SOCKET (16P)	
				CN103	RJP2G18ZA	PLUG (2P)	
T401	RL12Z012-T	TRANSFORMER		CN104	RJP2G18ZA	PLUG (2P)	
T402	RL14B014-T	TRANSFORMER		CN201	RJP2G18ZA	PLUG (2P)	
				CN301	RJJD7S2ZA-C	HEADPHONES JACK	
		COMPONENT COMBINATION (S)		CN302	SJJ130-3	LINE OUTPUT TERMINAL	
				CN303	RJP4G18ZA	PLUG (4P)	
Z401	RCRBWT002-H	COMPONENT COMBINATION		CN304	RJS1A7212	SOCKET (12P)	
		FILTER(S)					
CF401	RLFFETMLA02D	FILTER					
CF402	RLFFETMLA02D	FILTER					
		OSCILLATOR(S)					
X201	RVBCST4R00MT	OSCILLATOR (4MHz)					
X202	RSXD32K7F02	OSCILLATOR (32.7KHz)					
X203	RSXZ16M9M01T	OSCILLATOR (16.9MHz)					
X401	RSXZ456KM01	OSCILLATOR (456KHz)					
X402	RSXC7M20S03	OSCILLATOR (7.2MHz)					
		DISPLAY (S)					
LCD601	RSL5093-J	DISPLAY					
		SWITCH (ES)					
S201	EVQ21405R	SW, M. SELECT					
S202	EVQ21405R	SW, TUNER/BAND					
S203	EVQ21405R	SW, STOP					
S204	EVQ21405R	SW, PLAY/PAUSE					

Notes : * Capacity values are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R136	ERJ6GEYJ333V	1/10W 33K	R250	ERJ6GEYJ102V	1/10W 1K
			R137	ERJ6GEYJ273V	1/10W 27K	R251	ERJ6GEYJ124V	1/10W 120K
			R138	ERJ6GEYJ333V	1/10W 33K	R252	ERJ6GEYJ124V	1/10W 120K
R9	ERJ6GEYJ181V	1/10W 180	R139	ERJ6GEYJ183V	1/10W 18K	R253	ERJ6GEYJ124V	1/10W 120K
R10	ERJ6GEYJ181V	1/10W 180	R140	ERJ6GEYJ124V	1/10W 120K	R254	ERJ6GEYJ124V	1/10W 120K
R11	ERJ6GEYJ181V	1/10W 180	R201	ERJ6GEYJ684V	1/10W 680K	R255	ERJ6GEYJ473V	1/10W 47K
R12	ERJ6GEYJ104V	1/10W 100K	R202	ERJ6GEYJ224V	1/10W 220K	R256	ERJ6GEYJ473V	1/10W 47K
R13	ERJ6GEYJ102V	1/10W 1K	R203	ERJ6GEYJ105	1/10W 1M	R257	ERJ6GEYJ473V	1/10W 47K
R14	ERJ6GEYJ104V	1/10W 100K	R204	ERJ6GEYJ104V	1/10W 100K	R258	ERJ6GEYJ473V	1/10W 47K
R15	ERJ6GEYJ152V	1/10W 1.5K	R205	ERJ6GEYJ684V	1/10W 680K	R259	ERJ6GEYJ104V	1/10W 100K
R16	ERJ6GEYJ104V	1/10W 100K	R206	ERJ6GEYJ394V	1/10W 390K	R260	ERJ6GEYJ104V	1/10W 100K
R17	ERJ6GEYJ472V	1/10W 4.7K	R207	ERJ6GEYJ100	1/10W 10	R261	ERJ6GEYJ104V	1/10W 100K
R20	ERJ6GEYJ561V	1/10W 560	R208	ERJ6GEYJ154V	1/10W 150K	R262	ERJ6GEYJ104V	1/10W 100K
R21	ERJ6GEYJ103V	1/10W 10K	R209	ERJ6GEYJ224V	1/10W 220K	R263	ERJ6GEYJ104V	1/10W 100K
R22	ERJ6GEYJ331V	1/10W 330	R213	ERJ6GEYJ334V	1/10W 330K	R264	ERJ6GEYJ104V	1/10W 100K
R23	ERJ6GEYJ181V	1/10W 180	R214	ERJ6GEYJ223V	1/10W 22K	R265	ERJ6GEYJ104V	1/10W 100K
R24	ERJ6GEYJ333V	1/10W 33K	R215	ERJ6GEYJ334V	1/10W 330K	R301	ERJ6GEYJ220	1/10W 22
R25	ERJ6GEYJ100	1/10W 10	R216	ERJ6GEYJ681V	1/10W 680	R304	ERJ6GEYJ103V	1/10W 10K
R26	ERJ6GEYJ102V	1/10W 1K	R217	ERJ6GEYJ563V	1/10W 56K	R305	ERJ6GEYJ103V	1/10W 10K
R27	ERJ6GEYJ104V	1/10W 100K	R218	ERJ6GEYJ473V	1/10W 47K	R306	ERJ6GEYJ223V	1/10W 22K
R28	ERJ6GEYJ104V	1/10W 100K	R219	ERJ6GEYJ473V	1/10W 47K	R307	ERJ6GEYJ223V	1/10W 22K
R29	ERJ6GEYJ105	1/10W 1M	R220	ERJ6GEYJ473V	1/10W 47K	R308	ERJ6GEYJ103V	1/10W 10K
R30	ERJ6GEYJ2R7V	1/10W 2.7	R221	ERJ6GEYJ102V	1/10W 1K	R309	ERJ6GEYJ103V	1/10W 10K
R102	ERJ6GEYJ471V	1/10W 470	R222	ERJ6GEYJ102V	1/10W 1K	R310	ERJ6GEYJ332V	1/10W 3.3K
R103	ERJ6GEYJ120V	1/10W 12	R223	ERJ6GEYJ471V	1/10W 470	R311	ERJ6GEYJ681V	1/10W 680
R104	ERJ6GEYJ222V	1/10W 2.2K	R224	ERJ6GEYJ102V	1/10W 1K	R312	ERJ6GEYJ681V	1/10W 680
R106	ERJ6GEYJ125V	1/10W 1.2M	R225	ERJ6GEYJ104V	1/10W 100K	R313	ERJ6GEYJ561V	1/10W 560
R107	ERJ6GEYJ102V	1/10W 1K	R226	ERJ6GEYJ683V	1/10W 68K	R314	ERJ6GEYJ561V	1/10W 560
R108	ERJ6GEYJ562V	1/10W 5.6K	R227	ERJ6GEYJ104V	1/10W 100K	R315	ERJ6GEYJ104V	1/10W 100K
R109	ERJ6GEYJ472V	1/10W 4.7K	R228	ERJ6GEYJ823	1/10W 82K	R316	ERJ6GEYJ104V	1/10W 100K
R110	ERJ6GEYJ683V	1/10W 68K	R229	ERJ6GEYJ473V	1/10W 47K	R317	ERJ6GEYJ104V	1/10W 100K
R111	ERJ6GEYJ124V	1/10W 120K	R230	ERJ6GEYJ224V	1/10W 220K	R318	ERJ6GEYJ104V	1/10W 100K
R112	ERJ6GEYJ333V	1/10W 33K	R231	ERJ6GEYJ104V	1/10W 100K	R319	ERJ6GEYJ682V	1/10W 6.8K
R113	ERJ6GEYJ125V	1/10W 1.2M	R232	ERJ6GEYJ562V	1/10W 5.6K	R320	ERJ6GEYJ682V	1/10W 6.8K
R114	ERJ6GEYJ332V	1/10W 3.3K	R233	ERJ6GEYJ561V	1/10W 560	R321	ERJ6GEYJ152V	1/10W 1.5K
R115	ERJ6GEYJ105	1/10W 1M	R234	ERJ6GEYJ154V	1/10W 150K	R322	ERJ6GEYJ152V	1/10W 1.5K
R116	ERJ6GEYJ563V	1/10W 56K	R235	ERJ6GEYJ105	1/10W 1M	R323	ERJ6GEYJ332V	1/10W 3.3K
R117	ERJ6GEYJ334V	1/10W 330K	R236	ERJ6GEYJ104V	1/10W 100K	R324	ERJ6GEYJ332V	1/10W 3.3K
R118	ERJ6GEYJ682V	1/10W 6.8K	R237	ERJ6GEYJ154V	1/10W 150K	R327	ERJ6GEYJ103V	1/10W 10K
R119	ERJ6GEYJ683V	1/10W 68K	R238	ERJ6GEYJ562V	1/10W 5.6K	R328	ERJ6GEYJ102V	1/10W 1K
R120	ERJ6GEYJ683V	1/10W 68K	R239	ERJ6GEYJ124V	1/10W 120K	R329	ERJ6GEYJ472V	1/10W 4.7K
R121	ERJ6GEYJ332V	1/10W 3.3K	R240	ERJ6GEYJ473V	1/10W 47K	R330	ERJ6GEYJ472V	1/10W 4.7K
R124	ERJ6GEYJ332V	1/10W 3.3K	R241	ERJ6GEYJ105	1/10W 1M	R331	ERJ6GEYJ101V	1/10W 100
R125	ERJ6GEYJ684V	1/10W 680K	R243	ERJ6GEYJ563V	1/10W 56K	R332	ERJ6GEYJ101V	1/10W 100
R126	ERJ6GEYJ104V	1/10W 100K	R244	ERJ6GEYJ563V	1/10W 56K	R333	ERJ6GEYJ101V	1/10W 100
R131	ERJ6GEYJ153V	1/10W 15K	R246	ERJ6GEYJ102V	1/10W 1K	R334	ERJ6GEYJ101V	1/10W 100
R132	ERJ6GEYJ153V	1/10W 15K	R247	ERJ6GEYJ102V	1/10W 1K	R335	ERJ6GEYJ154V	1/10W 150K
R134	ERJ6GEYJ392V	1/10W 3.9K	R248	ERJ6GEYJ102V	1/10W 1K	R336	ERJ6GEYJ154V	1/10W 150K
R135	ERJ6GEYJ333V	1/10W 33K	R249	ERJ6GEYJ102V	1/10W 1K	R337	ERJ6GEYJ472V	1/10W 4.7K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R338	ERJ6GEYJ472V	1/10W 4.7K	R436	ERJ6GEYJ103V	1/10W 10K	C24	ECUVI1H31KBN	50V 330P
R339	ERJ6GEYJ389V	1/10W 3.9	R437	ERJ6GEYJ103V	1/10W 10K	C25	RCSB1H31JBY	50V 330P
R340	ERJ6GEYJ389V	1/10W 3.9	R438	ERJ6GEYJ332V	1/10W 3.3K	C101	ECUVI1E104ZFM	25V 0.1U
R341	ERJ6GEYJ682V	1/10W 6.8K	R439	ERJ6GEYJ102V	1/10W 1K	C102	ECUVI1E473KBM	25V 0.047U
R342	ERJ6GEYJ682V	1/10W 6.8K	R440	ERJ6GEYJ332V	1/10W 3.3K	C103	ECUVI1E473KBM	25V 0.047U
R343	ERJ6GEYJ273V	1/10W 27K	R441	ERJ6GEYJ472V	1/10W 4.7K	C104	ECUVI1E104KBM	25V 0.033U
R344	ERJ6GEYJ273V	1/10W 27K	R442	ERJ6GEYJ471V	1/10W 4.7K	C105	ECUVI1E333KBM	25V 0.033U
R345	ERJ6GEYJ562V	1/10W 5.6K	R443	ERJ6GEYJ392V	1/10W 3.9K	C106	ECUVI1E104KBM	25V 0.1
R346	ERJ6GEYJ562V	1/10W 5.6K	R444	ERJ6GEYJ392V	1/10W 3.9K	C107	ECUVI1E104KBM	25V 0.1
R347	ERJ6GEYJ123V	1/10W 12K	R445	ERJ6GEYJ472V	1/10W 4.7K	C108	ECEA1CKN100B	16V 10U
R348	ERJ6GEYJ123V	1/10W 12K	R446	ERJ6GEYJ473V	1/10W 47K	C109	ECUVI1H472KBN	50V 4700P
R349	ERJ6GEYJ103V	1/10W 10K	R447	ERJ6GEYJ102V	1/10W 1K	C110	ECUVI1E104ZFM	25V 0.1U
R350	ERJ6GEYJ103V	1/10W 10K	R448	ERJ6GEYJ474V	1/10W 470K	C111	ECUVI1E104ZFM	25V 0.1U
R351	ERJ6GEYJ472V	1/10W 4.7K	R449	ERJ6GEYJ104V	1/10W 100K	C112	ECUVI1E103KBN	25V 0.01U
R352	ERJ6GEYJ472V	1/10W 4.7K	R450	ERJ6GEYJ333V	1/10W 33K	C113	ECUVI1E104KBM	25V 0.1U
R353	ERJ6GEYJ102V	1/10W 1K	R455	ERJ6GEYJ332V	1/10W 3.3K	C114	ECUVI1E333KBM	25V 0.033U
R354	ERJ6GEYJ102V	1/10W 1K	R456	ERJ6GEYJ563V	1/10W 56K	C115	ECUVI1E473KBM	25V 0.047U
R355	ERJ6GEYJ562V	1/10W 5.6K	R457	ERJ6GEYJ563V	1/10W 56K	C116	ECUVI1E473KBM	25V 0.047U
R356	ERJ6GEYJ124V	1/10W 120K	R459	ERJ6GEYJ221V	1/10W 220	C117	ECUVI1E104KBM	25V 0.1U
R357	ERJ6GEYJ222V	1/10W 2.2K	R462	ERD25FJ103	1/4W 10K	C118	ECUVI1H472KBN	50V 4700P
R358	ERJ6GEYJ392V	1/10W 3.9K	R470	ERJ8GEYJ330V	1/8W 33	C119	ECEA1HKN010B	50V 1U
R360	ERJ6GEYJ102V	1/10W 1K	R471	ERJ8GEYJ330V	1/8W 33	C120	ECUVI1E103KBN	25V 0.01U
R361	ERJ6GEYJ102V	1/10W 1K	R472	ERJ8GEYJ330V	1/8W 33	C121	ECUVI1C224ZFM	16V 0.22U
R401	ERJ6GEYJ100	1/10W 10	R601	ERJ6GEYJ392V	1/10W 3.9K	C122	ECEA1JKW220B	6.3V 22U
R402	ERJ6GEYJ471V	1/10W 470	R602	ERJ6GEYJ272V	1/10W 2.7K	C123	ECEA1EK4R7	25V 4.7U
R403	ERJ6GEYJ102V	1/10W 1K	R603	ERJ6GEYJ222V	1/10W 2.2K	C124	ECUVI1H70KCN	50V 47P
R404	ERJ6GEYJ470V	1/10W 47	R604	ERJ6GEYJ152V	1/10W 1.5K	C125	ECUVI1E104KBM	25V 0.1U
R405	ERJ6GEYJ151V	1/10W 150	R605	ERJ6GEYJ153V	1/10W 15K	C126	ECUVI1E104ZFM	25V 0.1U
R406	ERJ6GEYJ561V	1/10W 560	R606	ERJ6GEYJ823	1/10W 82K	C128	ECUVI1E104ZFM	25V 0.1U
R409	ERJ6GEYJ564V	1/10W 560K	R607	ERJ6GEYJ823	1/10W 82K	C129	ECEA1JKS470	6.3V 47U
R410	ERJ6GEYJ561V	1/10W 560	R608	ERJ6GEYJ823	1/10W 82K	C130	ECUVI1E104ZFM	25V 0.1U
R411	ERJ6GEYJ104V	1/10W 100K	R609	ERJ6GEYJ223V	1/10W 22K	C132	ECUVI1E103KBN	25V 0.01U
R412	ERJ6GEYJ104V	1/10W 100K	R610	ERJ6GEYJ184V	1/10W 180K	C201	ECC5S85T473	5.5V 0.047F
R413	ERJ6GEYJ470V	1/10W 47	R611	ERJ8GEYJ2R7V	1/10W 2.7	C202	ECUVI1E104ZFM	25V 0.1U
R414	ERJ6GEYJ102V	1/10W 1K	R612	ERJ8GEYJ2R7V	1/10W 2.7	C203	ECUVI1E104ZFM	25V 0.1U
R415	ERJ6GEYJ471V	1/10W 470	R613	ERJ8GEYJ2R7V	1/10W 2.7	C204	ECUVI1E104KBM	25V 0.1U
R416	ERJ6GEYJ104V	1/10W 100K	R727	ERD25TJ102	1/4W 1K	C205	ECUVI1E104ZFM	25V 0.1U
R417	ERJ6GEYJ104V	1/10W 100K				C206	ECUVI1E104ZFM	25V 0.1U
R418	ERJ6GEYJ103V	1/10W 10K				C208	ECUVI1H220JCN	50V 22P
R419	ERJ6GEYJ104V	1/10W 100K				C209	ECUVI1H50JCN	50V 15P
R420	ERJ6GEYJ332V	1/10W 3.3K	C10	ECUVI1E104ZFM	25V 0.1U	C210	ECUVI1E104ZFM	25V 0.1U
R421	ERJ6GEYJ562V	1/10W 5.6K	C13	ECEA1JK331	6.3V 330U	C211	ECUVI1E103KBN	25V 0.01U
R422	ERJ6GEYJ473V	1/10W 47K	C14	ECEA1CK470	16V 47U	C212	ECUVI1H331KBN	50V 330P
R423	ERJ6GEYJ102V	1/10W 1K	C15	ECA1CM102B	16V 1000U	C213	ECUVI1H331KBN	50V 330P
R428	ERJ6GEYJ471V	1/10W 470	C16	ECUVI1H102KBN	50V 1000P	C214	ECUVI1E104KBM	25V 0.1U
R429	ERJ6GEYJ471V	1/10W 470	C17	ECUVI1E223KBM	25V 0.022U	C215	ECUVI1H102KBN	50V 1000P
R430	ERJ6GEYJ104V	1/10W 100K	C18	ECUVI1E223KBM	25V 0.022U	C216	ECUVI1E223KBM	25V 0.022U
R431	ERJ6GEYJ222V	1/10W 2.2K	C19	ECA1CM102B	16V 1000U	C217	ECUVI1C224KBM	16V 0.22U
R432	ERJ6GEYJ473V	1/10W 47K	C20	ECUVI1H681KBN	50V 680P	C218	ECUVI1C224KBM	16V 0.22U
R433	ERJ6GEYJ103V	1/10W 10K	C21	ECUVI1H31KBN	50V 330P	C219	ECEA1JKS221	6.3V 220U
R434	ERJ6GEYJ103V	1/10W 10K	C22	ECUVI1E104ZFM	25V 0.1U	C220	ECUVI1E273KBM	25V 0.027U
R435	ERJ6GEYJ103V	1/10W 10K	C23	ECUVI1H101K	50V 100P	C221	ECUVI1E104ZFM	25V 0.1U

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C222	ECUVI1H30KCN	50V 33P	C364	ECUVI1E103KBN	25V 0.01U	C459	ECUVI1H102KBN	50V 1000P
C223	ECUVI1H30KCN	50V 33P	C365	ECUVI1H681KBN	50V 680P	C460	ECUVI1E473KBM	25V 0.047U
C224	ECUVI1H102KBN	50V 1000P	C366	ECUVI1H681KBN	50V 680P	C461	ECUVI1E473KBM	25V 0.047U
C225	ECEA1JK220B	6.3V 22U	C368	ECUVI1H102KBN	50V 1000P	C462	ECUVI1H331KBN	50V 330P
C229	ECUVI1H31KBN	50V 330P	C402	ECUVI1H680JCN	50V 68P	C465	ECUVI1E683KBM	25V 0.068U
C230	ECUVI1E104KBM	25V 0.1U	C403	ECUVI1H470JCN	50V 47P	C466	ECUVI1H102KBN	50V 1000P
C232	ECUVI1C105ZFM	16V 1U	C405	ECUVI1E103KBN	25V 0.01U	C468	ECEA1HK2R2B	50V 2.2U
C233	ECUVI1H102KBN	50V 1000P	C406	ECUVI1H102KBN	50V 1000P	C469	ECUVI1H102KBN	50V 1000P
C234	ECUVI1H102KBN	50V 1000P	C407	ECUVI1H181KCN	50V 180P	C470	ECUVI1E103KBN	25V 0.01U
C235	ECUVI1H272KBN	50V 2700P	C408	ECUVI1H102KBN	50V 1000P	C472	ECUVI1E103KBN	25V 0.01U
C236	ECUVI1H220JCN	50V 22P	C409	ECUVI1H050DCN	50V 5P	C473	ECEA1JK101	6.3V 100U
C237	ECUVI1H220JCN	50V 22P	C410	ECUVI1H050DCN	50V 5P	C474	ECUVI1E104ZFM	25V 0.1U
C238	ECUVI1H102KBN	50V 1000P	C411	ECUVI1H30JCN	50V 33P	C475	ECUVI1E563KBM	25V 0.056U
C301	ECUVI1E104ZFM	25V 0.1U	C412	ECUVI1H102KBN	50V 1000P	C476	ECUVI1E223KBN	25V 0.022U
C302	ECEA1JKS470	6.3V 47U	C414	ECUVI1H102KBN	50V 1000P	C477	ECUVI1H331KBN	50V 330P
C303	ECUVI1E104ZFM	25V 0.1U	C415	ECUVI1H102KBN	50V 1000P	C480	ECUVI1H102KBN	50V 1000P
C304	ECEA1JKS470	6.3V 47U	C416	ECUVI1E103KBN	25V 0.01U	C483	ECUVI1H101KCN	50V 100P
C309	ECUVI1E473KBM	25V 0.047U	C417	ECUVI1H101KCN	50V 100P	C488	ECUVI1H181KCN	50V 180P
C310	ECUVI1E473KBM	25V 0.047U	C420	ECUVI1E473KBM	25V 0.047U	C601	ECUVI1E104ZFM	25V 0.1U
C311	ECUVI1H102KBN	50V 1000P	C421	ECUVI1H102KBN	50V 1000P	C602	ECUVI1E104ZFM	25V 0.1U
C312	ECUVI1H102KBN	50V 1000P	C422	ECUVI1H332KBN	50V 3300P	C603	ECUVI1E104ZFM	25V 0.1U
C313	ECUVI1H272KBN	50V 2700P	C423	ECEA1HKN010B	50V 1U	C604	ECUVI1C105ZFM	16V 1U
C314	ECUVI1H272KBN	50V 2700P	C424	ECUVI1E103KBN	25V 0.01U			
C315	ECEA1EUM4R7	25V 4.7U	C425	ECUVI1E223KBN	25V 0.022U			JUMPERS
C316	ECEA1EUM4R7	25V 4.7U	C426	ECEA1CK101	16V 100U			
C317	ECEA1EUM4R7	25V 4.7U	C427	ECUVI1E103KBN	25V 0.01U	RJ1	ERJ6GEYJ000V	1/10W 0
C318	ECEA1EUM4R7	25V 4.7U	C429	ECEA1HKN010B	50V 1U	RJ2	ERJ6GEYJ000V	1/10W 0
C319	ECUVI1H681KBN	50V 680P	C430	ECUVI1H270KCN	50V 27P	RJ3	ERJ6GEYJ000V	1/10W 0
C320	ECUVI1H681KBN	50V 680P	C431	ECEA1JK470	6.3V 47U	RJ4	ERJ6GEYJ000V	1/10W 0
C321	ECUVI1H102KBN	50V 1000P	C432	ECUVI1E223KBN	25V 0.022U	RJ5	ERJ6GEYJ000V	1/10W 0
C322	ECUVI1H102KBN	50V 1000P	C433	ECUVI1E473KBM	25V 0.047U	RJ6	ERJ6GEYJ000V	1/10W 0
C323	ECUVI1C224KBM	16V 0.22U	C434	ECUVI1E473KBM	25V 0.047U	RJ7	ERJ6GEYJ000V	1/10W 0
C324	ECUVI1C224KBM	16V 0.22U	C435	ECUVI1H331KBN	50V 330P	RJ8	ERJ6GEYJ000V	1/10W 0
C325	ECUVI1E103KBN	25V 0.01U	C436	ECEA1HKN010B	50V 1U	RJ10	ERJ6GEYJ000V	1/10W 0
C326	ECUVI1E103KBN	25V 0.01U	C437	ECEA1CK100B	16V 10U	RJ11	ERJ6GEYJ000V	1/10W 0
C327	ECUVI1E273KBN	25V 0.027U	C438	ECUVI1H472KBN	50V 4700P	RJ12	ERJ6GEYJ000V	1/10W 0
C328	ECUVI1E273KBN	25V 0.027U	C439	ECUVI1H102KBN	50V 1000P	RJ13	ERJ6GEYJ000V	1/10W 0
C329	ECEA1CK470	16V 47U	C440	ECUVI1E153KBN	25V 0.015U	RJ15	ERJ6GEYJ000V	1/10W 0
C330	ECEA1CK470	16V 47U	C441	ECUVI1E153KBN	25V 0.015U	RJ16	ERJ6GEYJ000V	1/10W 0
C331	ECEA1JKS101B	6.3V 100U	C442	ECUVI1E104ZFM	25V 0.1U	RJ17	ERJ6GEYJ000V	1/10W 0
C332	ECEA1JKS101B	6.3V 100U	C443	ECEA1HKN010B	50V 1U	RJ19	ERJ6GEYJ000V	1/10W 0
C333	ECEA1CK221	16V 220U	C444	ECEA1HKN010B	50V 1U	RJ20	ERJ6GEYJ000V	1/10W 0
C334	ECUVI1E104ZFM	25V 0.1U	C445	ECUVI1E103KBN	25V 0.01U	RJ21	ERJ6GEYJ000V	1/10W 0
C335	ECUVI1E103KBN	25V 0.01U	C446	ECEA1JK101	6.3V 100U	RJ31	ERJ6GEYJ000V	1/8W 0
C336	ECUVI1E104ZFM	25V 0.1U	C447	ECEA1HKN010B	50V 1U	RJ32	ERJ6GEYJ000V	1/8W 0
C337	ECEA1CK331	16V 330U	C448	ECEA1JK101	6.3V 100U	RJ33	ERJ6GEYJ000V	1/8W 0
C339	ECUVI1E104ZFM	25V 0.1U	C449	ECUVI1H270JCN	50V 27P	RJ34	ERJ6GEYJ000V	1/8W 0
C341	ECEA1CK471B	16V 470U	C450	ECUVI1H270JCN	50V 27P	RJ35	ERJ6GEYJ000V	1/8W 0
C342	ECEA1CK471B	16V 470U	C451	ECUVI1E104ZFM	25V 0.1U	RJ36	ERJ6GEYJ000V	1/8W 0
C343	ECUVI1H104JZ3	50V 0.1U	C452	ECEA1EK3R3B	25V 3.3U	RJ37	ERJ6GEYJ000V	1/8W 0
C344	ECUVI1H104JZ3	50V 0.1U	C453	ECEA1HKN010B	50V 1U	RJ38	ERJ6GEYJ000V	1/8W 0
C354	ECEA1JK220B	6.3V 22U	C454	ECUVI1H102KBN	50V 1000P	RJ39	ERJ6GEYJ000V	1/8W 0

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks			
RJ40	ERJ8GEYJ000V	1/8W 0	RJ95	ERJ8GEYJ000V	1/8W 0			
RJ41	ERJ8GEYJ000V	1/8W 0	RJ97	ERJ8GEYJ000V	1/8W 0			
RJ42	ERJ8GEYJ000V	1/8W 0						
R								

■ CABINET PARTS LOCATION

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS		44	RZM0001	LCD PLATE	
				45	SNSD38	SCREW	
				46	RMEK004	SPRING(A)	
1	RDG5782ZB	DAMPER GEAR		47	RMEK005	SPRING(B)	
2	RGUK006	OPERATION BUTTON (A)		48	RFKBLPH2PA-K	BATTERY P. C. B. (+) ASS'Y	
3	RGUK007	OPERATION BUTTON (B)		49	RFKBLPH2PB-K	BATTERY P. C. B. (-) ASS'Y	
4	RGUK008	OPERATION BUTTON (C)		50	EAS8P157A	SPEAKER	
5	XTW2+6S	SCREW		51	REEK001	LEAD WIRE ASS'Y	
6 Δ	RAED111Z	TRAVERSE DECK		52	REEK002	LEAD WIRE ASS'Y	
6-1	SHGD112	RUBBER(A)		53	REEK003	LEAD WIRE ASS'Y	
6-2	SHGD113-1	RUBBER(B)		54	REEK004	LEAD WIRE ASS'Y	
6-3	RDV0023	BELT				PACKING MATERIALS	
6-4	SNSD38	SCREW					
7	RMS0123-1	PIN					
8	RGZK001	SWITCH ROD(A)		P1	RPK0006	CARTON BOX	
9	RGZK002	SWITCH ROD(B)		P2	RPK0006	PAD	
10	RGZK003	SWITCH ROD(C)		P3	RPK0007	PAD	
11	RGWK001	KNOB, VOLUME		P4	XZB10X20A04	POLYETHYLENE BAG	
12	XEARS160D-1Y	TELESCOPIC ANTENNA				ACCESSORIES	
13	XTB3+16GFZ	SCREW		A1	RQTR0010-E	INSTRUCTIONS MANUAL (English)	(EB), (EG)
14	XTB3+8GFZ	SCREW		A1	RQTR0011-E	INSTRUCTIONS MANUAL (French), (Spanish), (Dutch), (Swedish)	(EG)
15	XYN3+F30FN	SCREW		A1	RQTR0012-E	INSTRUCTIONS MANUAL (German), (Italian)	(EG)
16	RKK0002	BATTERY COVER		A2	RQC00169	SERVICE CENTER LIST	
17	RMBK001	SPRING		A5 Δ	RFEA902E-X	AC ADAPTOR	(EG)
18	RGUK009	BUTTON, OPEN		A5 Δ	RFEA902B-X	AC ADAPTOR	(EB)
19	RMLK001	LEVER(A)					
20	RMBK003	SPRING					
21	RHD30014	SCREW					
22	XTV3+8G	SCREW					
23	RFKHLPH2EG-K	LOWER CABINET ASS'Y	(EG)				
23-1	RFKHLPH2EB-K	LOWER CABINET ASS'Y	(EB)				
24	RKAK001	FOOT					
25	RFKGLPH2EG-K	UPPER CABINET ASS'Y					
26	RKNK004	PLATE (A)					
27	RGUK011	BUTTON, TIMER OPERATION					
28	RHE5119YA	SCREW					
29	RFKXND55N-K	CLAMPER ASS'Y					
30	RJBR004A	FPC					
31	XTW2+8JFZ	SCREW					
32	RYQK003B-K	LCD CASE(A) ASS'Y					
33	RKSK002	LCD CASE(B)					
34	RKSK005	PLATE (B)					
35	RFKLLPH2EG-K	CD COVER ASS'Y					
36	RMLK002	LEVER(B)					
37	RGUK010	BUTTON, POP UP					
38	RMEK006	SPRING(C)					
39	RPM245ZA	MAGNET					
40	RMQ0152	MAGNET HOLDER					
41	RGVK004	KNOB, HOLD etc.					
42	RMR0362-K	STAND					
43	RJCK60001	BATTERY TERMINAL					
	RJBR001	ANTENNA TERMINAL					

