Personal LCD Display

Operating Instructions

US

WARNING

YOUR FAILURE TO FOLLOW THESE OPERATING INSTRUCTIONS AND THE SUPPLIED IMPORTANT SAFEGUARDS MAY RESULT IN EYE FATIGUE, EYE DAMAGE, OR OTHER INJURY.

CAREFULLY READ THESE OPERATING INSTRUCTIONS AND THE SUPPLIED IMPORTANT SAFEGUARDS, AND BECOME FAMILIAR WITH ALL SAFETY INSTRUCTIONS FOR THIS PRODUCT.

THIS PRODUCT SHOULD NOT BE USED BY CHILDREN AGE 15 OR YOUNGER. IF YOU HAVE BEEN DIAGNOSED WITH EYE DISEASE OR EYE INJURY, CONSULT YOUR DOCTOR BEFORE USE AND DO NOT USE WITHOUT YOUR DOCTOR'S APPROVAL.

LDI-50B/50BE/D50B/D50BE

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.





This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This product is not intended to be serviced. Should the product cease to function in its intended manner, it should be returned to the manufacturer or to be discarded.

WARNING

The AC power cord must be changed only at qualified service shop.

The nameplate is located on the bottom of the power supply box.

Use a commercially available AC plug adapter, if necessary, depending on the design of the wall outlet.

CAUTION

To prevent electric shock, match wide blade of plug to wide slot, fully insert.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Precautions

- One blade of the plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- You can use your Personal LCD Display in any country or area with the supplied AC power adapter within 100 V to 240 V AC, 50/ 60 Hz. Use a commercially available AC plug adapter [a], if necessary, depending on the design of the wall outlet [b].



WARNING:

- To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.
- After operating the unit with an AC power adapter, disconnect the AC power adapter from the wall outlet if the set is not to be used for an extended period of time. The POWER switch on the power supply box does not turn the AC adapter off.
- The nameplate is located on the bottom exterior.
- Picture/sound distortion may occur if the model LDI series is positioned in close proximity to any equipment emitting electromagnetic radiation.

For the customers in Canada CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION

POUR EVITER LES CHOCS ELECTRIOUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

For the customers in Europe

This product conforms with the following European Directives:

73/23/EEC, 93/68/EEC (Low Voltage Directive) 89/336/EEC, 92/31/EEC (EMC Directive)

This equipment complies with EN55013 Class B for use in following areas: residential, business and light-industrial.

Dieses Gerät erfüllt die folgenden europäischen Richtlinien:

73/23/EEC, 93/68/EEC (Niederspannungsrichtlinie) 89/336/EEC, 92/31/EEC (EMV-Richtlinien)

Dieses Gerät erfüllt den Standard EN55013 Class B für folgende Gebiete: Wohngebiete, Gewerbegebiete und Leichtindustriegebiete.

Owner's record

The model and serial numbers are located at the rear of the power supply box. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No.	
Serial No.	

The Personal LCD Display is a brand-new concept in visual display

Congratulations on your purchase of a Sony Personal LCD Display. The Personal LCD Display, using current technology in small, lightweight visual displays, provides a television viewing experience similar to watching a 52-inch television from a distance of approximately 6.6 feet (2 m). (Viewing experience may differ according to individual perception.)

The Personal LCD Display creates an image through two separate liquid crystal displays, in close proximity to your eyes. To insure your safe use of the Personal LCD Display, please become familiar with its basic operations, including proper fitting instructions, and be aware of any symptoms of eye fatigue or other discomfort you may experience.

LDI-**D**50 series adopted the field sequence of right-ODD and left-EVEN to give a three-dimensional effect to the images.

Input a signal which is structured with a field sequence of right-ODD and left-EVEN to give a three-dimensional effect to the images.

WARNING

YOUR FAILURE TO FOLLOW THESE OPERATING INSTRUCTIONS AND THE SUPPLIED IMPORTANT SAFEGUARDS MAY RESULT IN EYE FATIGUE, EYE IMPAIRMENT, OR OTHER EYE INJURY, PROPERTY DAMAGE OR DEATH.

WARNING

THIS PRODUCT SHOULD NOT BE USED BY CHILDREN AGE 15 OR YOUNGER. THE EYES OF CHILDREN ARE STILL DEVELOPING AND MAY BE ADVERSELY AFFECTED FROM USE OF THIS PRODUCT.

Note on the LCD (Liquid Crystal Display)

The LCD screen is made with high-precision technology. However, black points or bright points of light (red, blue, or green) may appear constantly on the LCD screen. This is not a malfunction. (Effective dots: more than 99.99%)

US

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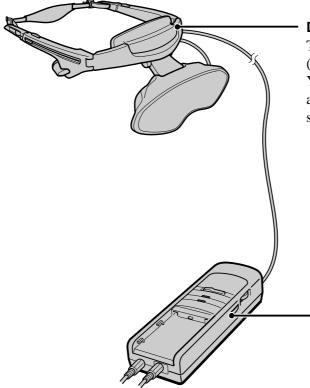
About the Personal LCD Display

Caution: The screen is always right in front of you.

The Personal LCD Display is a head-mounted display. With this type of display, the screen is always in front of you even if you move your head. Because of this feature, you can concentrate on the screen more easily compared with ordinary TVs and you have a sense of being in the action.

• It is easy to adjust the Personal LCD Display to your eyes. You can use the display unit even while wearing glasses.

The Personal LCD Display consists of the following items:



Display unit

The display unit is equipped with two small (left and right) LCDs.

You can adjust the sound volume. You can also use the SHUTTER switch to see the surrounding environment.

Power supply box

You can use Sony's recommended optional battery pack. You can also use the house current for viewing or for charging a battery pack. To use the Glasstron, connect your video equipment to A/V IN on the power supply box.

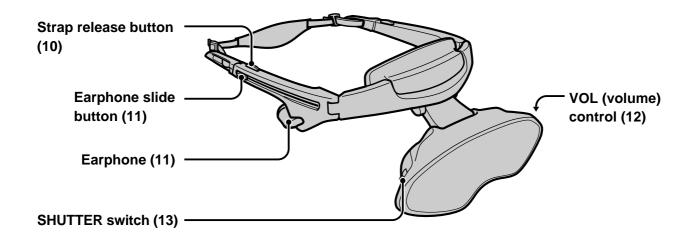
Features

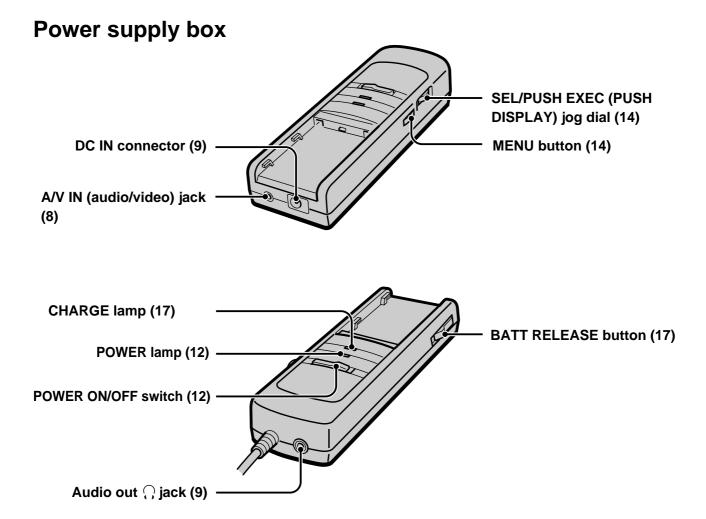
- A powerful, big screen experience comparable to watching a 52-inch screen from approximately 6.6 feet (2 m) away.
- Handy portable folding display.
- Solid and lightweight components made of magnesium alloy with the display unit weighing only 5.3 oz. (150 g).
- The see-through function allows you to see the surrounding environment even while wearing the Personal LCD Display.
- You can use the Personal LCD Display while wearing glasses.
- You can connect optional headphones to the headphones jack to enjoy the high quality sound.
- Approximate continuous use for up to 2 hours 20 minutes with Sony's recommended battery pack, NP-F550.

Locating the parts and controls

Refer to the pages indicated in parentheses () for details.

Display unit

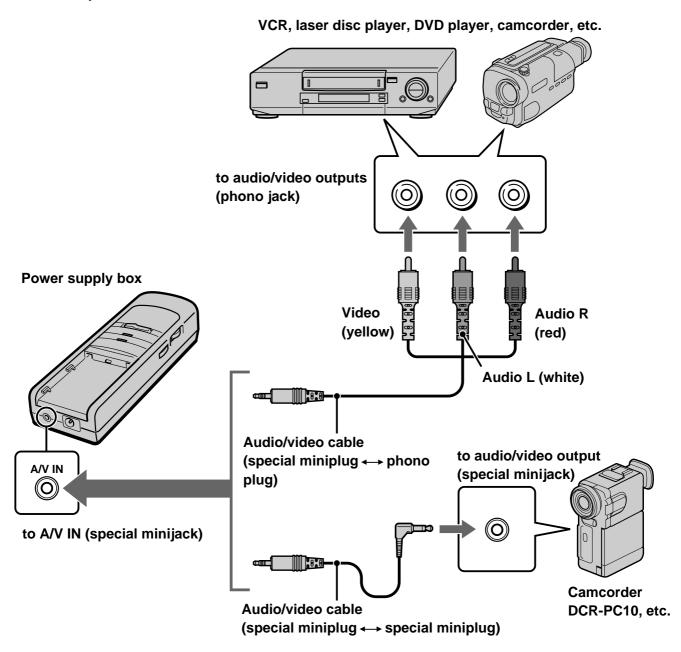




Connecting the Personal LCD Display

Connecting the video equipment

Connect a VCR, laser disc player, DVD player, or camcorder to the power supply box using a commercially available audio/video cables as shown below.



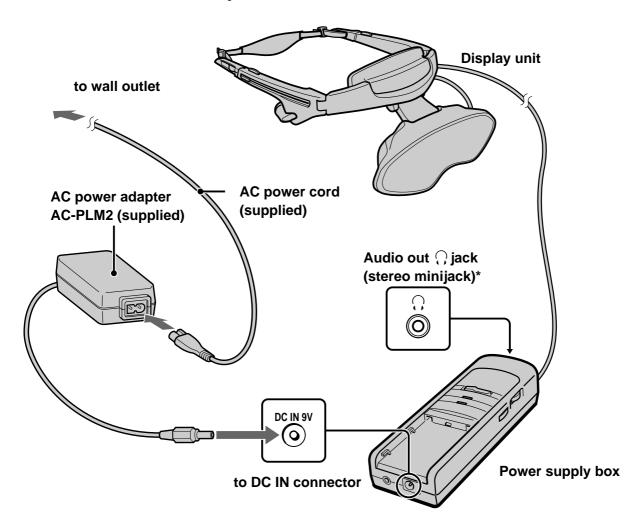
About the audio/video input jack The audio/video input jack of the Personal LCD Display is a special minijack, and the signal connections are aligned as shown on the right. This alignment may differ depending on the equipment. Audio L GND Video

Notes

- The audio and video signals may not be carried to the Personal LCD Display depending on the video source. In this case, contact an authorized service center.
- When you connect the Personal LCD Display to the audio output jacks (phono jacks) of your video equipment, connect the Personal LCD Display to both the right and left audio output jacks. If you connect the Personal LCD Display to just one audio output jack, you will hear sound from only one of the stereo earphones.

Connecting the power source

Connect the AC power adapter AC-PLM2 (supplied) to a wall outlet. Do not connect the power source until all other connections are complete.



Note

- LDI-**D**50 series adopted the field sequence of right-ODD and left-EVEN to give a three-dimensional effect to the images.

 Input a signal which is structured with a field sequence of right-ODD and left-EVEN to give a three-dimensional effect to the images.
- * You can connect an optional headphone set. When using an optional headphone set, the sound from the Personal LCD Display earphones is muted.

Wearing the Personal LCD Display

WARNING

- Failure to properly fit the product each time may result in eye fatigue, eye damage, or loss of visual functions and may result in accident or injury.
- This product should not be used by children age 15 or younger.

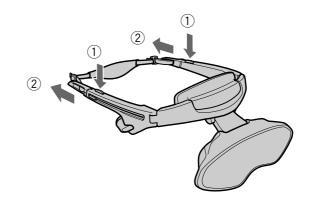
 The eyes of children are still developing and may be adversely affected by using this product, and it may cause eye fatigue, eye damage, or loss of visual functions.

 In addition, this product may not be adjusted to fit a child's head.

If you normally wear glasses while watching TV, you can use the Personal LCD Display while wearing glasses.

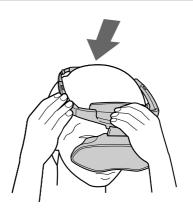
1 Loosen the back strap.

- 1 Press and hold the strap release buttons.
- 2 Then, loosen the back strap in the direction of the arrows.



2 Put on the Personal LCD Display.

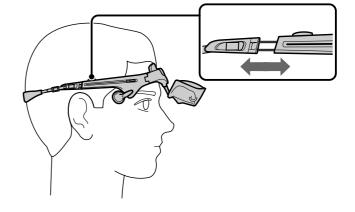
Hold the front pad against your forehead and place the rear strap so it is fixed firmly around the back of your head.



Adjust the strap.

Adjust the strap after putting on the Personal LCD Display.

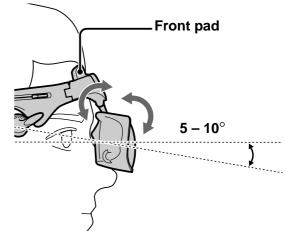
Make sure the strap is snug but comfortable.



4

Adjust the angle of the display unit.

While holding the front pad against your forehead, adjust the angle of the display unit using the two hinges. Move the display unit close to your eyes at a slight downward angle. If you wear glasses, move the display unit as close to the lenses as possible.

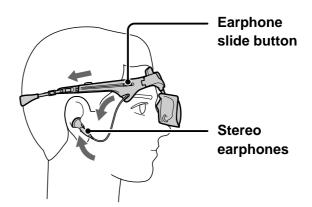


5

Adjust the stereo earphones.

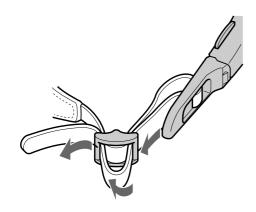
Pull the earphones out.

To adjust the slack, reel in the earphone cord by pressing the slide button in the direction of the arrow.



Adjusting the back strap

If the strap does not fit properly in step 3, adjust the strap by changing the belt length.



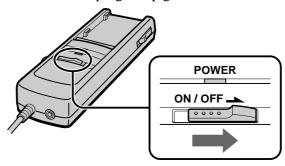
Using the Personal LCD Display

Before you start...

Be sure to follow the procedures in "Connecting the Personal LCD Display" (page 8) and "Wearing the Personal LCD Display" (page 10).

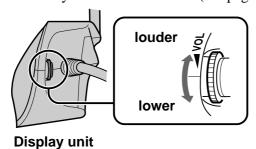
Turn on the Personal LCD Display using the POWER ON/OFF switch.

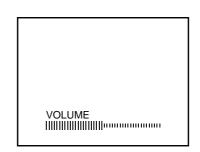
The POWER lamp lights up green.



- 2 Start playback on the video equipment connected to the Personal LCD Display.
- Adjust the volume by turning the VOL control.

 When you set AVLS (Auto Volume Limiter System) in the MENU to on, you cannot turn up the volume beyond the defined limit (see pages 14-16).





After you finish using the Personal LCD Display

Take off the Personal LCD Display, and turn off the power.

Note on the LCDs

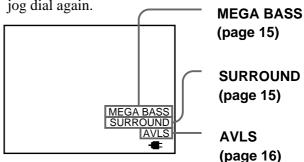
The LCD screen is made with high-precision technology. However, black points or bright points of light (red, blue, or green) may appear constantly on the LCD screen. This is not a malfunction.

(Effective dots: more than 99.99%)

Checking the display indication

Press the SEL/PUSH EXEC (PUSH DISPLAY) jog dial while the picture is displayed. The display indication appears on the screen for five minutes.

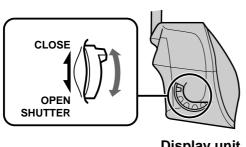
To turn off the indication immediately, press the jog dial again.



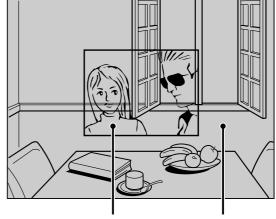
Viewing the surrounding environment (See-through)

While you are wearing the Personal LCD Display, you can view the surrounding environment through the screen by opening the shutter in the display unit.

Turn the SHUTTER switch to OPEN.



Display unit



The picture becomes transparent. The area surrounding the picture also becomes transparent.

Adjusting the sound and picture

You can adjust the following items using the menu display.

BRIGHTNESS: Adjusts the picture brightness.

HUE (NTSC mode only): Adjusts the hue, if the picture looks too reddish or greenish.

COLOR: Adjusts the color intensity.

MEGA BASS: Creates a deep, powerful sound by emphasizing the bass sound.

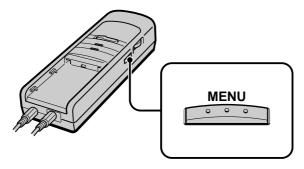
SURROUND: Gives presence to the sound.

AVLS (Auto Volume Limiter System): Keeps down the maximum volume to protect your ears.

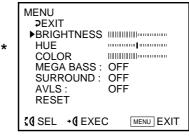
You cannot turn up the volume beyond the defined limit even if you try to turn it up.

1 Press MENU.

The menu display appears on the screen.



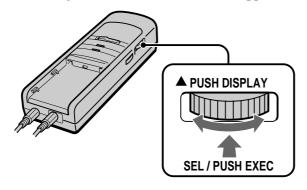
Screen



* NTSC mode only

Turn the SEL/PUSH EXEC jog dial to select the desired item, then press the jog dial.

The setting screen of the selected item appears.



3 Adjust the setting using the jog dial.

For details on each item, see pages 15 and 16.

To set other items, repeat steps 2 and 3.

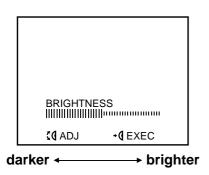
⚠ Press MENU.

The menu display goes off.

You can also turn off the menu display by selecting EXIT in the menu using the jog dial.

BRIGHTNESS

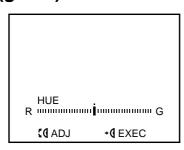
Turn the jog dial to adjust the brightness, then press the jog dial.



HUE (NTSC mode only)

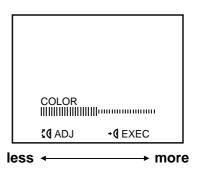
Turn the jog dial to adjust the hue, then press the jog dial.

- If the picture is too greenish, turn it to R (red).
- If the picture is too reddish, turn it to G (green).



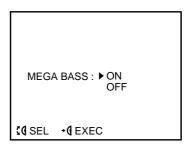
COLOR

Turn the jog dial to adjust the color intensity, then press the jog dial.



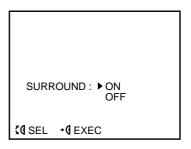
MEGA BASS

Turn the jog dial to set to ON, then press the jog dial.



SURROUND

Turn the jog dial to set to ON, then press the jog dial.

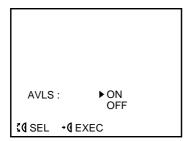


continued

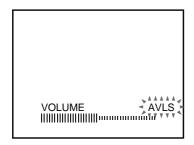
Adjusting the sound and picture (continued)

AVLS (Auto Volume Limiter System)

Turn the jog dial to set to ON, then press the jog dial.



If the volume bar indication reaches the center position when AVLS is on, the indication goes no further to the right and the AVLS indicator appears on the screen.

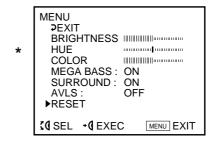


Note

If the audio input level is too high when AVLS is on, the sound may be distorted. In this case, turn the volume down using the VOL control on the display unit.

Resetting the adjustment to the factory preset level

Turn the jog dial to select RESET in the menu, then press the jog dial.



* NTSC mode only

Note

The settings are retained even when you turn off the power.

Using the optional battery pack

DISPOSAL OF LITHIUM ION BATTERY.

LITHIUM ION BATTERY.
DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center or Factory Service Center.

NOTE: In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only) For the Sony Factory Service Center nearest you call 416-499-SONY (Canada only)

Caution: Do not handle damaged or leaking lithium ion batteries.

If you use a battery pack, such as the NP-F550/F750/F950, you can use the Personal LCD Display without connecting to a wall outlet.

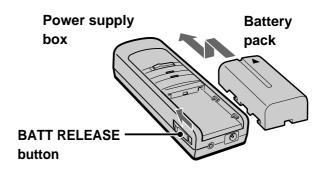
Charging the battery pack

Charge the battery pack before use. You can charge the battery pack using the power supply box. If you attach the battery pack as described below, the battery pack charges while you are not using the Personal LCD Display.

Attach the battery pack to the power supply box.

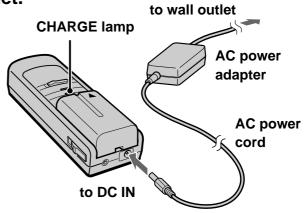
Install the battery pack properly making sure it is not crooked against the power supply box.

To remove the battery pack, while sliding BATT RELEASE, pull out the battery pack.



Connect the AC power adapter to the DC IN connector on the power supply box. Then, connect the AC power cord to the AC power adapter and to a wall outlet.

Charge the battery pack on a flat place without vibration. The CHARGE lamp lights up. When the battery pack is fully charged, the CHARGE lamp goes out. Battery life and charging time are shown in the table below.



continued

Using the optional battery pack (continued)

	Battery life (fully charged battery)	Charging time
NP-F550	Approx. 2 hours 20 minutes	Approx. 8 hours
NP-F750	Approx. 4 hours 40 minutes	Approx. 16 hours
NP-F950	Approx. 6 hours	Approx. 24 hours

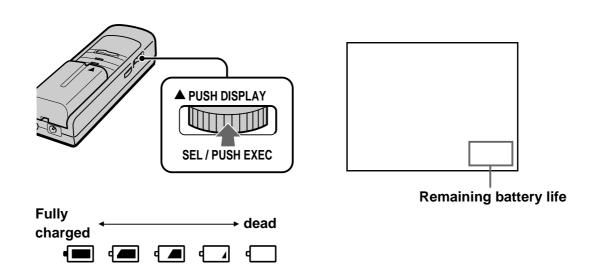
^{*} The battery life and charging time may change depending on the conditions of use.

Note

If the POWER lamp flashes while using the battery pack, charge the battery pack.

Checking the remaining battery life

When no indication or caution appears on the screen, press the jog dial.



When the battery pack is weak, the following message appears on the screen. Replace the battery pack with a charged one.



When using the AC power adapter, the " mark appears on the screen.

^{*} You can also use a battery pack such as the NP-F530/F730/F930 (not supplied) with the Personal LCD Display.

^{*} You can use an "InfoLITHIUMTM" battery pack with the Personal LCD Display. When using such a battery pack, the estimated remaining battery life is displayed not with the time counter but with the indicator.

Precautions

Use

 Operate the product only with the supplied AC power adapter. If you use a different AC power adapter, it may cause a malfunction.



Unified polarity plug

- Should any liquid or solid object fall into the cabinet, unplug the product and have it checked by qualified personnel before operating it further.
- Always turn the product off when you do not use it.
 Unplug the product from the wall outlet if you are not going to use it for several days or more.
 To disconnect the cord, pull it out by the plug.
 Never pull the cord itself.
- Do not overload wall outlets, extension cords, or convenience receptacles beyond their capacity, since this can result in fire or electric shock.
- Do not use attachments not recommended by the manufacturer, as they may cause hazards.
- Avoid using earphones at high volume.
 Hearing experts advise against continuous, loud, and extended play. If you experience a ringing in your ears, reduce volume or discontinue use.
- Do not touch the AC power adapter or power supply box with wet hands. If you fail to observe this, it may cause electric shock.
- Do not drop or give a mechanical shock to the product.

Installation

- To prevent internal heat build-up, do not block the ventilation openings.
- Avoid operating the product at temperatures below 41°F (5°C).
- Do not subject the product to high temperature or direct sunlight. If you do not observe the above instructions, the product may become deformed and the screens may become impossible to align. If you keep watching misaligned screens, you may develop eye fatigue. If you find the screens misaligned, have the product repaired at an authorized service center.
- Do not place the product in locations where it is wet, humid, dusty, smoky, or steamy. Do not use this product near or around water. It may cause fire or electric shock. Especially, do not use the product in the bathroom.
- If the product is transported directly from a cold to a warm location, or if the room temperature has changed suddenly, the picture may be blurred or show poor color. This is because moisture has condensed on the mirror or lenses inside. If this happens, let the moisture evaporate before using the product.
- Do not place the product on an unstable cart, stand, table, or shelf. The product may fall, causing serious injury to a child or an adult, and serious damage to the product.
- Do not allow anything to rest on or roll over the power cord, and do not place the product where the power cord is subject to wear or abuse.

Precautions (continued)

Others

- Unplug the product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - When the power cord or plug is damaged or frayed.
 - If liquid has been spilled into the product.
 - If the product has been exposed to rain or water.
 - If the product has been subject to excessive shock by being dropped, or the cabinet has been damaged.
 - If the product does not operate normally when following the operating instructions.
 Adjust only those controls that are specified in the operating instructions.
 Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
 - When the product exhibits a distinct change in performance — this indicates a need for service.
- Do not disassemble or remodel the product. It may cause fire or electric shock. Have the product checked and repaired at an authorized service center.
- Do not attempt to service the product yourself since opening the cabinet may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- When replacement parts are required, be sure the service technician certifies in writing that he has used replacement parts specified by the manufacturer that have the same characteristics as the original parts.
 Unauthorized substitutions may result in fire, electric shock, or other hazards.

- Upon completion of any service or repairs to the product, ask the service technician to perform routine safety checks (as specified by the manufacturer) to determine that the product is in safe operating condition, and to so certify.
- Unplug the product from the wall outlet before cleaning. Clean the product with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine.

Troubleshooting

If you have any questions or problems not listed below, contact an authorized service center.

Symptom	Cause	Remedy
The playback picture does not appear.	Connections are incorrect.	Connect the equipment correctly (pages 8 and 9).
The picture is dark or dim.	You are not wearing the Personal LCD Display correctly.	Put on the Personal LCD Display correctly (pages 10 and 11).
	_	Adjust the BRIGHTNESS in the menu screen (page 14).
	The inside window (where the picture is displayed) is dirty.	Clean the display unit with a soft, dry cloth (page 20).
The picture suddenly disappears.	The battery pack is dead.	Charge the battery pack (pages 17).
The picture has no sound.	_	Adjust the volume with the VOL control
The sound is noisy.		(page 12).
The volume does not become louder.	The AVLS function is on.	Set AVLS in the menu to OFF (page 16).
Sound from stereo earphones is muted.	The optional headphones are connected (page 9).	Disconnect the optional headphones.
The battery pack discharges	The battery pack is not charged	Charge the battery pack fully or use a
quickly.	enough.	new one (page 17).
	The battery pack is completely dead.	
The battery pack is not	The battery pack is not installed	Install the battery pack properly
charged.	properly.	(page 17).
	The battery pack is completely dead.	Replace the battery pack with a new one (page 17).
The black, red, and green dots do not disappear.	The LCD is made with high- precision technology. However, black points or bright points of light (red, blue, or green) may appear constantly on the LCD screen. This is not a malfunction. (Effective dots: more than 99.99%)	
The picture color is different.	The color intensity and hue* are not adjusted.	Adjust the COLOR intensity and HUE* in the menu screen (page 14).
The POWER switch does not function.	_	Disconnect the AC power cord from the wall outlet. After three minutes, reconnect the AC power cord.
The picture does not have three-dimensional effect.	The input signal is not structured with a field sequence of right-ODD and left-EVEN.	Input a signal which is structured with a field sequence of right-ODD and left-EVEN.
The picture has unnatural three-dimensional effect.	The input signal has reversed field sequence of right-ODD and left-EVEN.	Input a signal with a correct field sequence of right-ODD and left-EVEN.

^{*} NTSC mode only

Specifications

Power supply AC power adapter: AC-PLM2 100-240 V AC, 50/60 Hz, 16 W Output voltage 9 V, 1.3 A Battery pack: NP-F550/F750/F950 (not supplied) Power consumption 3.8 W (max.) Operating temperature 41°F to 95°F (5°C to 35°C) Storage temperature 14°F to 140°F (-10°C to 60°C) **Dimensions** Display unit: Approx. $6^{1/2} \times 2^{1/4} \times 4^{3/8}$ inches (Approx. $165 \times 56 \times 110 \text{ mm}$) (w/h/d)Power supply box: Approx. $2^{1/8} \times 1^{3/16} \times 5^{7/8}$ inches (Approx. $53 \times 30 \times 149 \text{ mm}$) (w/h/d)not including projecting parts and controls Mass Display unit: Approx. 5.3 oz (150 g) Power supply box: Approx. 3.9 oz (110 g) Video signal NTSC color, EIA standards PAL color, CCIR standards Audio/video input Special minijack 1 Vp-p, 75 ohms, unbalanced, sync negative Audio output Stereo minijack

Design and specifications are subject to change without notice.

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