SONY

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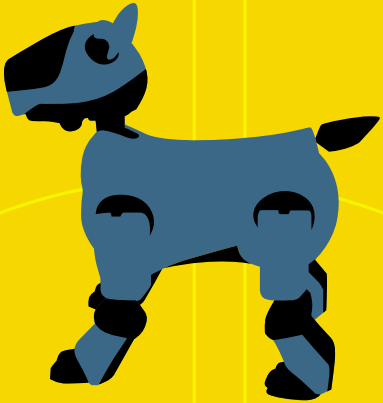

Entertainment Robot AIBO

Operating Instructions

ERS-210

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Safety Information

Owner's Record

The model number and serial number are located inside the stomach cover of the unit and on the side of the supplied AC adapter. Record the serial number in the space provided below. Refer to the model and serial number whenever you call upon your Sony AIBO Customer Link.

Model No. ERS-210

Serial No. _____

Warning

- To prevent fire or shock hazard, do not expose the robot to rain or moisture.
- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only. (Contact the AIBO Customer Link.)
- Parents—Periodically examine the transformer for conditions that may result in the risk of fire, electrical shock, or injury to persons (such as damage to the cords, blades, housing) and that in the event of such conditions, the transformer should not be used until properly repaired or replaced.
- Not Recommended for Children Under 8 Years.
- Parents-vérifiez périodiquement si le transformateur ne présente pas des conditions susceptibles de provoquer un incendie, des décharges électriques ou des blessures aux personnes (comme des dommages aux câbles, aux oreilles ou au boîtier) et, en présence de telles conditions, le transformateur ne peut plus être utilisé avant son réparation ou remplacement.
- Déconseillé aux enfants de moins de 8 ans.

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.

Note

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

For the Sony AIBO Customer Link you call 1-800-427-2988 in the United States or contact us via email at aibosupport@info.sel.sony.com.

- Do not handle damaged or leaking lithium ion battery.
- Danger of explosion if the battery is incorrectly replaced. Replace only with the ERA-210B1 or equivalent type recommended by the manufacturer. Use of another battery may present a risk of fire or explosion. Discard used batteries according to the manufacturer's instructions.
- The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 140°F (60°C) or incinerate. Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

Regulatory 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.

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

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

Customer Support

How can you contact the AIBO Customer Link?
Call 1-800-427-2988
Email address: aibosupport@info.sel.sony.com

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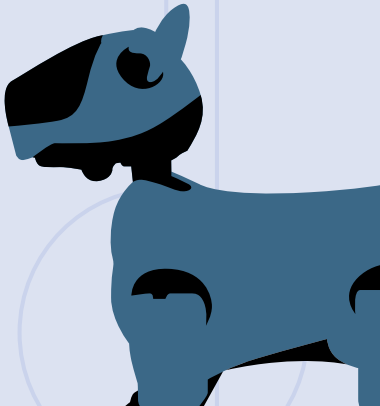
Meet AIBO

This chapter introduces you to the entertainment robot AIBO ERS-210, its supplied accessories, and the preparations that are required in order to play with it.



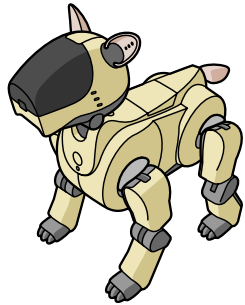
Introduction

What is AIBO?

"AIBO" is the name given to the Sony entertainment robot. Developed to encourage human and robot interaction, AIBO creates and introduces you to new pleasures and lifestyles.

The name "AIBO" is coined from the words "A.I. (Artificial Intelligence)," "eye" and "robot." In Japanese, the word "aibou" means "partner" or "pal."

For the newest information on AIBO, go to the following homepage:
http://www.aibo.com/



A four-legged robot with rich emotional expressions

To comfortably coexist with people, AIBO was designed with four legs, a head, and a tail, and a total of twenty internal actuators that enable it to sit or lie down in a natural way. It can also use eye lights, tail and ear movement to express emotions or entertain you in unique ways.

OPEN-R

"OPEN-R" is the standard interface for the entertainment robot system that Sony is actively promoting. This interface expands the capability of the entertainment robot through a flexible combination of hardware and interchangeable software to suit various applications. AIBO ERS-210 conforms to the OPEN-R version 1.1.

"AIBO," the AIBO logo, "OPEN-R," and the OPEN-R logo are registered trademarks of Sony Corporation. "Memory Stick," " MEMORY STICK ," and " " are trademarks of Sony Corporation. In this manual, the "™" mark has been omitted.

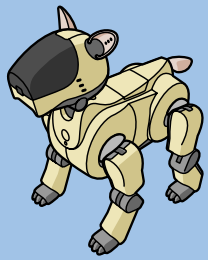
ERS-210

As the successor to the AIBO ERS-110/111, the AIBO ERS-210 is a second-generation entertainment robot featuring a wider repertoire of movements, more sensors, and the ability to incorporate optional AIBO-ware “Memory Stick” (not supplied) that allows you to raise AIBO and play with it.

- AIBO-ware “Memory Stick” is a “Memory Stick” intended for AIBO and contains an application software which runs AIBO.

With AIBO alone

AIBO responds in assorted ways when patted on the head or back. It responds to the supplied ball and performs in different ways when it grows bored.



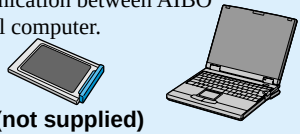
With AIBO-ware “Memory Stick”

This optional application allow AIBO to be raised, to play various games, or to understand and respond to words.

(not supplied)

With the AIBO wireless LAN card and application

The optional LAN card and software application allow communication between AIBO and a personal computer.

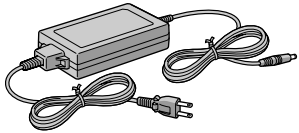


(not supplied)

Checking the supplied accessories

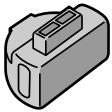
Check to make sure you have the following items before you play with AIBO.

■ **AC adapter ERA-201P1 (1)**



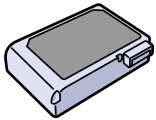
■ **Ball (1)**

■ **AC adapter conversion plug (1)**



■ **Pin for removing AIBO's extremities (1)**

■ **Lithium ion battery pack ERA-201B1 (1)**



■ **Documentation**

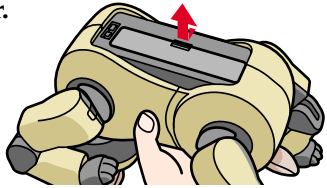
AIBO Operating Instructions

Preparing AIBO

The battery pack supplied with AIBO has been charged to some extent. It is recommended that you charge the battery pack fully (page 19) before you play with AIBO.

---

1 **Grasp AIBO securely by the body, turn it upside down, and open its stomach cover.**



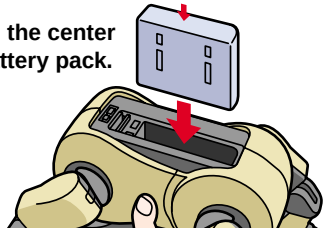
Notes

- Lift AIBO by the body, and not by its extremities.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

---

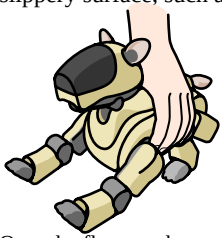
2 **Insert the supplied battery pack in the direction of the arrow until it clicks into place, then close the stomach cover.**

Press on the center of the battery pack.



3 Place AIBO on the floor as shown below.

Place it on a flat, non-slippery surface, such as a carpet with a short nap.

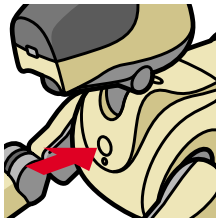


Notes

- Be sure to place AIBO on the floor as shown above. This will prevent AIBO from moving unexpectedly and being damaged when you press and release the pause button to start AIBO moving.
- For details on removing the battery pack, see page 34.

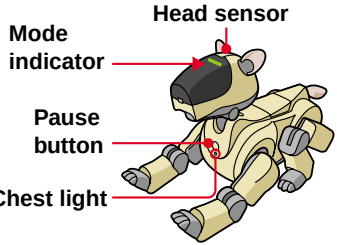
4 Push and release the pause button on AIBO's chest.

AIBO's pause mode is canceled and the chest light lights up green. Leave AIBO alone and enjoy watching it move.



Playing with AIBO

When you push the pause button on AIBO's chest and AIBO's chest light lights up green, AIBO's internal application program activates and AIBO begins moving on its own.



To enjoy AIBO's full capabilities, you must use at least one of the following AIBO-ware "Memory Stick" applications.

—AIBO Life (ERF-210AW01)
—Hello AIBO! Type-A (ERF-210AW02)
—Party Mascot (ERF-210AW03)

When you leave AIBO alone for a while

➧AIBO lies down, sits down, or behaves in a cute way. (AIBO is in autonomous mode, indicated by the lit mode indicator.)

When you pick AIBO up from the floor

➧AIBO stops moving and its legs become loose (the mode indicator flashes). To return AIBO to autonomous mode, place AIBO on the floor and press its head sensor for a few seconds.

If something gets caught in AIBO's leg joints

➧AIBO stops moving and its legs become loose (the mode indicator flashes). To return AIBO to autonomous mode, place AIBO on the floor and press its head sensor for a few seconds.

When you press AIBO's head too forcefully

➡AIBO will show anger through its eye lights.

When you pet AIBO's head from back to front a few times

➡AIBO's eye lights show joy.

When you keep pressing AIBO's head for a few seconds

➡AIBO emits a musical tone and its eye lights light up.

When you touch AIBO's chin

➡AIBO emits a musical tone.

When you show AIBO the supplied ball

➡AIBO sits down and its tail light lights up.

When you touch AIBO's back sensor

➡AIBO does the following sequence of actions: Takes 5 steps forward → Takes 5 steps backward → Kicks with its right leg → Kicks with its left leg.

When you place AIBO on top of the Energy Station (not supplied)

➡AIBO stops moving.

If AIBO stops moving

- Place AIBO on the floor and keep pressing on its head for a few seconds. AIBO stops moving whenever you pick it up from the floor or if an object gets caught in one of AIBO's leg joints. AIBO's mode indicator flashes green at both times.
- Charge the battery pack (page 19). When the battery pack is drained, AIBO's chest light turns off and AIBO stops moving.

Note

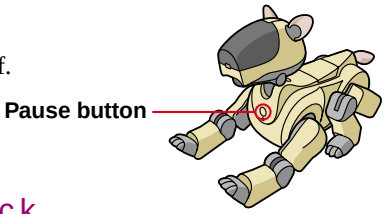
When AIBO is experiencing internal trouble (see page 58 for troubleshooting) or when your hand gets caught in one of its joints, press the pause button on AIBO's chest.

When not playing with AIBO

We recommend that you charge the battery pack so that AIBO will be ready to play at any time.

Pausing AIBO

Press the pause button on AIBO's chest.
The chest light flashes green and turns off.

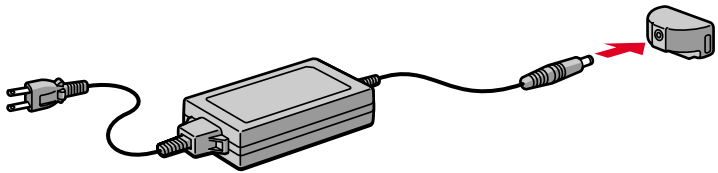


Charging the battery pack

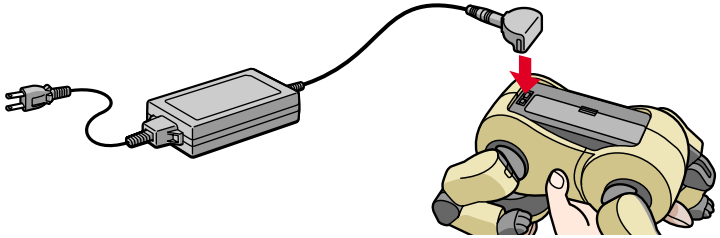
The battery pack is automatically charged whenever AIBO is connected to the supplied AC adapter. Charge the battery pack at room temperature (10˚C to 30˚C (50˚F to 86˚F)).

---

1 **Attach the AC adapter conversion plug to the AC adapter.**

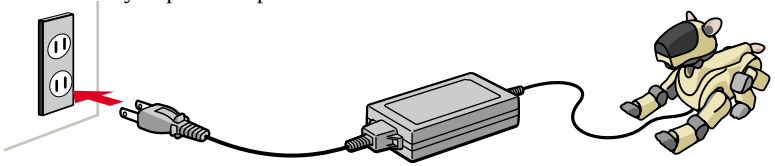


2 Connect the AC adapter conversion plug to AIBO's charging terminal.



3 Connect the AC adapter to a wall outlet and place AIBO in the posture shown below.

While the AC adapter is connected, AIBO will not change from pause mode even if you press the pause button on its chest.

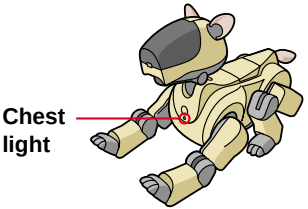


While charging

The chest light lights up orange.

When charging has finished

The chest light turns off.

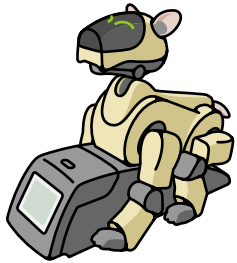


Notes

- If the chest light flashes orange while you are charging the battery pack, the charging may not be progressing normally. Replace the battery pack with new one or contact AIBO Customer Link (page 3, 5).
- If you connect the AC adapter to AIBO while it is in active mode, AIBO will change to pause mode automatically and charging of the battery pack starts.

Using the Energy Station

You can charge AIBO's internal battery pack by placing AIBO on the optional Energy Station. You can also charge an extra battery pack on the Energy Station at the same time. With an extra battery pack, you can replace AIBO's internal battery pack whenever it becomes drained in order to play with AIBO for a longer time. For details on replacing the battery pack, see page 33.

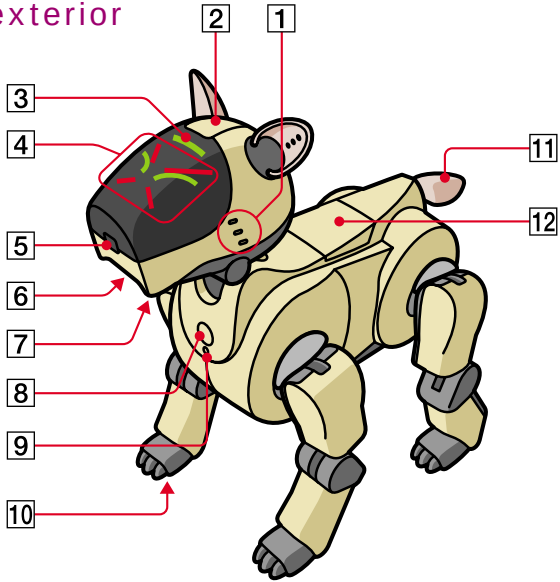


Knowing more about AIBO

This chapter helps you know more about AIBO by providing information about AIBO's parts and their functions, settings, and the installation of optional accessories.

Index to parts and controls

AIBO exterior



Notes

- Do not attach stickers on AIBO's color camera or transparent face cover.
- Do not attach stickers onto or insert anything into AIBO's joints or other movable parts.
- Lift AIBO by the body, not by its extremities.

1 Stereo microphone
Allows AIBO to pick up surrounding sounds.

2 Head sensor
Senses when a person taps or pets AIBO on the head.

3 Mode indicator
Shows AIBO's operation mode.

4 Eye lights
These light up in blue-green or red to indicate AIBO's emotional state.

5 Color camera
Allows AIBO to search for objects and recognize them by color and movement.

6 Speaker
Emits various musical tones and sound effects.

7 Chin sensor
Senses when a person touches AIBO on the chin.

8 Pause button
Press to activate AIBO or to pause AIBO.

9 Chest light
- Lights up green when AIBO is in active mode.
- Flashes green when AIBO is paused and saving data to the "Memory Stick."
- Lights up orange when the internal battery pack is being charged.
- Flashes orange when an error has occurred during charging.
- Turns off when AIBO is in pause mode.

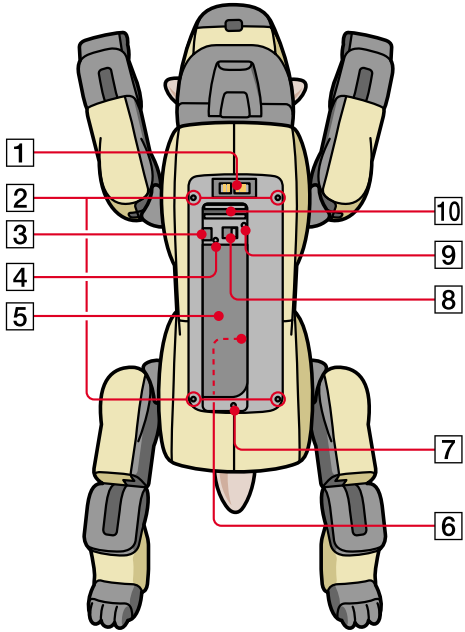
10 Paw sensors
Located on the bottom of each paw.

11 Tail light
Lights up blue or orange to show AIBO's emotional state.

12 Back sensor
Senses when a person touches AIBO on the back.

AIBO's stomach area

The illustration shows AIBO with its stomach cover open.



Note

Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

1 Charging terminal

Connect the supplied AC adapter here with the supplied AC adapter conversion plug. This terminal contacts with that of the Energy Station (not supplied) when charging AIBO's internal battery pack using the station.

2 Leg release holes

Insert the supplied pin into these hole to remove the respective leg.

3 Battery pack lock indicator

While AIBO is accessing the "Memory Stick," the battery pack release lever is locked and the battery pack cannot be removed. The battery pack lock indicator appears red during this time. While this indicator appears red, do not remove the "Memory Stick."

4 Battery pack unlock hole

Insert a pointed object into this hole to unlock the battery pack.

5 Battery pack insertion slot

Insert the supplied or an optional lithium ion battery pack into this slot.

6 Serial number sticker

7 Tail release hole

Insert the supplied pin into this hole to remove AIBO's tail.

8 Battery pack release lever

Slide this lever to remove the battery pack.

9 Head release hole

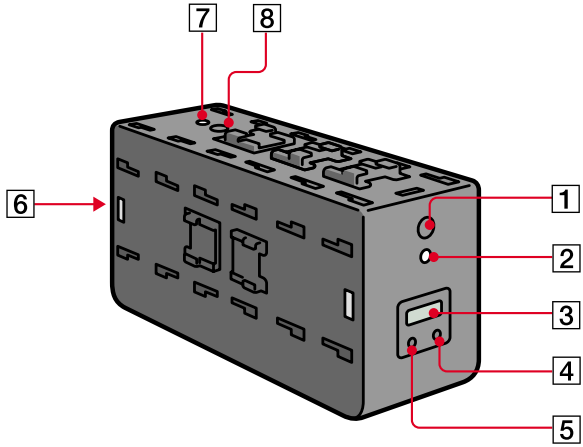
Insert the supplied pin into this hole to remove AIBO's head.

10 "Memory Stick" insertion slot

Insert the AIBO-ware "Memory Stick" (not supplied) into this slot.

Controls on the core unit

The core unit appears when AIBO's head, legs, and tail have been removed. For details on removing and attaching the respective parts, see page 30.



1 Pause button A (chest)

This button functions in the same way as 8 pause button on page 25.

2 Operation status indicator A (chest)

This functions in the same way as the chest light.

3 Display panel

Shows the current time, battery charging status, or volume level of AIBO's musical tones.

4 + button

Use to increase the setting values.

5 MODE button

Press to change the item to be set.

6 PC card insertion slot

Insert the PC card (not supplied) into this slot.

7 Operation status indicator B (back)

This indicator functions in the same way as 2 operation status indicator A. Additional functions may be added to this indicator in the future.

8 Pause button B (back)

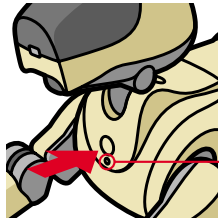
This button functions in the same way as 1 pause button A. Additional functions may be added to this button in the future.

Removing and attaching AIBO's extremities

You need to remove AIBO's legs, head, and tail to set the clock or volume level of the musical tone, and to insert a PC card (not supplied). You can also replace each part of AIBO's body with new parts which may be available in near future to give AIBO a different appearance.

Removing AIBO's extremities

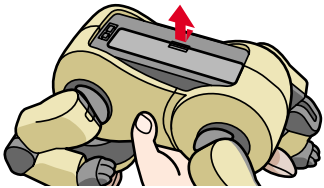
1 Press the pause button, and wait until the chest light turns off.



Note

While AIBO is accessing the "Memory Stick," the battery pack lock indicator appears red. Do not remove the "Memory Stick" during this time to prevent damaging AIBO. The battery pack is locked until the data-saving procedure is complete. Removing it forcibly may damage AIBO.

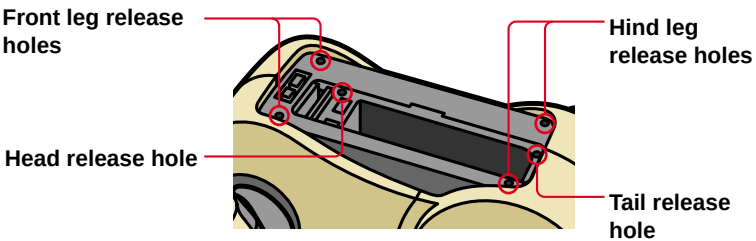
2 **Grasp AIBO securely by the body, turn it upside down, and then open the stomach cover.**



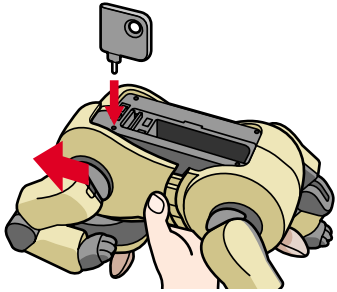
Notes

- Lift AIBO by the body, and not by its extremities.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

3 **Press a release hole of the part you want to remove with the supplied pin.**

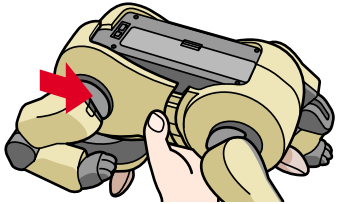


4 **While pressing the release hole, remove the part.**



Attaching AIBO's extremities

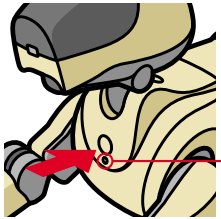
Grasp AIBO by the body, and attach the part until it clicks into place.



Replacing the battery pack

It is usual to connect the AC adapter to AIBO to charge the battery pack while it is still inserted. You can also change the battery pack in AIBO with another pack that has been charged on the optional Energy Station.

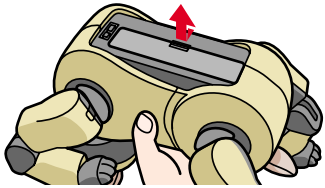
1 Press the pause button and wait until the chest light turns off.



Note

While AIBO is accessing the “Memory Stick,” the battery pack lock indicator appears red. Do not remove the “Memory Stick” during this time to prevent damaging AIBO. The battery pack is locked until the data-saving procedure is complete. Removing it forcibly may damage AIBO.

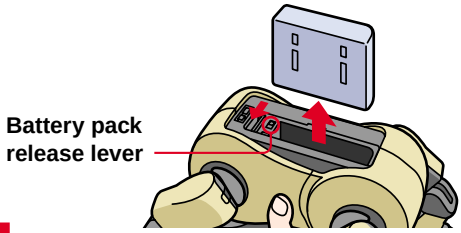
2 Grasp AIBO securely by the body, turn it upside down, and then open the stomach cover.



Notes

- Lift AIBO by the body, and not by its extremities.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

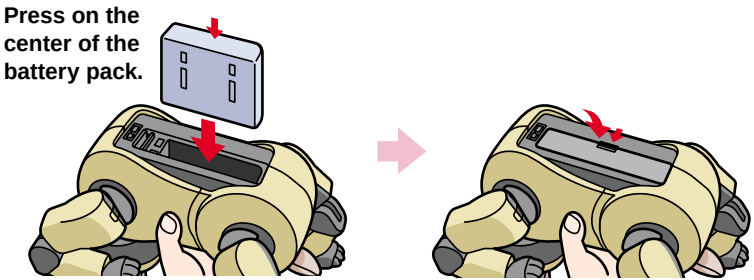
3 Slide the battery pack release lever and remove the battery pack.



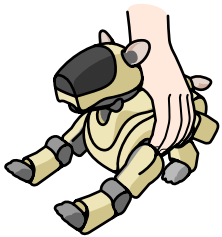
Notes

- When the battery pack lock indicator appears red, the battery pack is locked. Removing it forcibly at this time may damage AIBO.
- When removing the battery pack, be sure to hold it securely by your hand so that it will not come off and drop.

4 **Insert the charged battery pack in the direction of the arrow until the pack clicks into place, then close the stomach cover.**



5 **Place AIBO on the floor as shown below.**



Note

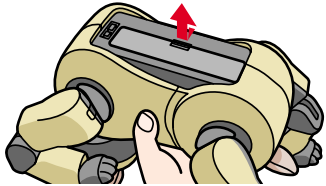
Be sure to place AIBO on the floor as shown above. This will prevent AIBO from moving unexpectedly and being damaged when you press and release the pause button to start AIBO.

Inserting or removing a “Memory Stick”

Be sure to insert or remove the “Memory Stick” only after pressing the pause button on AIBO’s chest to make AIBO pause.

Inserting a “Memory Stick”

1 Grasp AIBO by the body, turn it upside down, and then open its stomach cover.

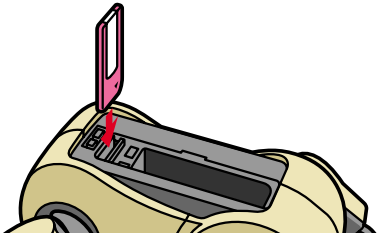


Notes

- Lift AIBO by the body, and not by its extremities.
- Do not touch the charging terminal with your hand. Doing so may soil the terminal and cause poor contact.

2 Insert the “Memory Stick,” and close the stomach cover.

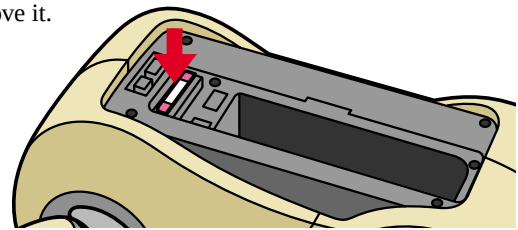
Making sure that the ▼ mark faces downward, insert the “Memory Stick” into the “Memory Stick” insertion slot until it clicks into place.



Removing the “Memory Stick”

Before removing the “Memory Stick” from AIBO, press the pause button to make AIBO pause, then check that the battery pack lock indicator appears white.

Open the stomach cover, push the “Memory Stick” lightly to make it pop out, and then remove it.



Notes

- To prevent damaging AIBO, do not remove the “Memory Stick” while the battery pack lock indicator appears red.
- If you set the safety switch in the “Memory Stick” to LOCK, AIBO will not be able to save data to the “Memory Stick.”

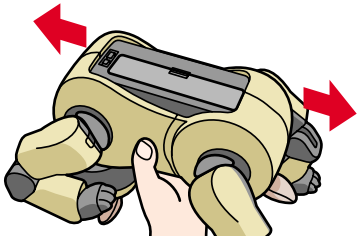
Inserting the optional wireless PC card

Be sure to insert the PC card only after pressing the pause button on AIBO's chest to make it pause. For details on inserting an optional LAN card, refer to the operating instructions supplied with ERA-201D1 AIBO Wireless LAN Card.

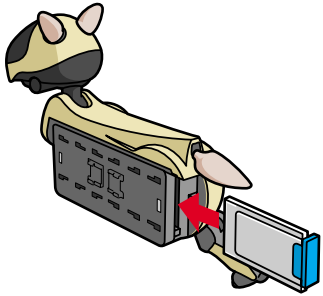
---

1 **Insert and press the supplied pin into the release holes for the left-front and left-hind legs, and remove them.**

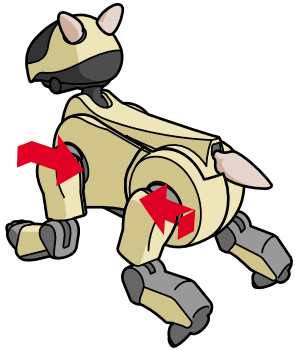
The PC card insertion slot appears.



2 **Push the PC card firmly into the slot as illustrated.**



3 **Replace the left-front and left-hind hind legs.**



Making various settings

After removing AIBO's extremities, you can set the following items using the display panel on the core unit.
The display panel is normally blank. When you press the MODE button, one of the following items appears for about 30 seconds. To set the item, press the MODE button again while the item is displayed.

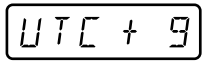
To cancel the setting

Press the MODE button while the item is flashing. The original value of the item reverts and is displayed.

Selecting the time zone

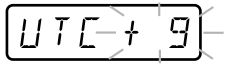
The time zone is a function that indicates the difference in hours from the time in the current location and the UTC (Universal Time Coordinated) time. This difference is expressed as a whole number from –12 to +12. For example, the time zone for Hawaii is –10. For details on the time zones of the world, see "Time zone table" on pages 48 and 49.

1 Press the MODE button repeatedly to display the time zone indication.



2 Press down the MODE button to select the time zone.

The time zone indication starts to flash.



3 Press the + button repeatedly to set the time zone. Then press the MODE button.

The setting is entered and the time zone indication resumes.

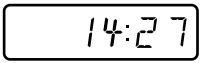
Note

The time zone function does not support daylight savings time.

Setting the clock

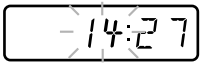
The time is displayed in a 24-hour clock.

1 Press the MODE button repeatedly to display the time indication.



2 Press down the MODE button to set the clock.

The hour indication starts to flash.



3 Press the + button repeatedly to set the hour. Then press the MODE button.

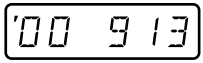
The minute indication starts to flash.

4 **Press the + button repeatedly to set the minute. Then press the MODE button.**

The setting is entered and the time indication returns.

Setting the date

1 **Press the MODE button repeatedly to display the date indication.**



2 **Press down the MODE button to set the date.**

The year indication starts to flash.

3 **Press the + button repeatedly to set the year. Then press the MODE button.**

The month indication starts to flash.

4 **Press the + button repeatedly to set the month. Then press the MODE button.**

The day indication starts to flash.

5 **Press the + button repeatedly to set the day. Then press the MODE button.**

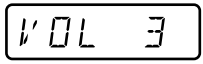
The setting is entered and the date indication returns.

Setting the volume level of the musical tone

The volume of the musical tones that AIBO emits can be adjusted in four levels.
If you select “0,” AIBO’s musical tone is muted.

---

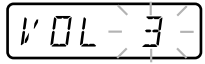
1 **Press the MODE button repeatedly to display the volume level indication.**



---

2 **Press down the MODE button to set the volume level.**

The volume level indication starts to flash.



---

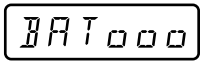
3 **Press the + button repeatedly to select a volume level of 0 to 3. Then press the MODE button.**

The setting is entered and the volume level indication returns.

Checking the battery pack level

Do the following procedure to check the remaining power of the battery pack inserted in AIBO.

1 Press the MODE button repeatedly to display the battery level indication.



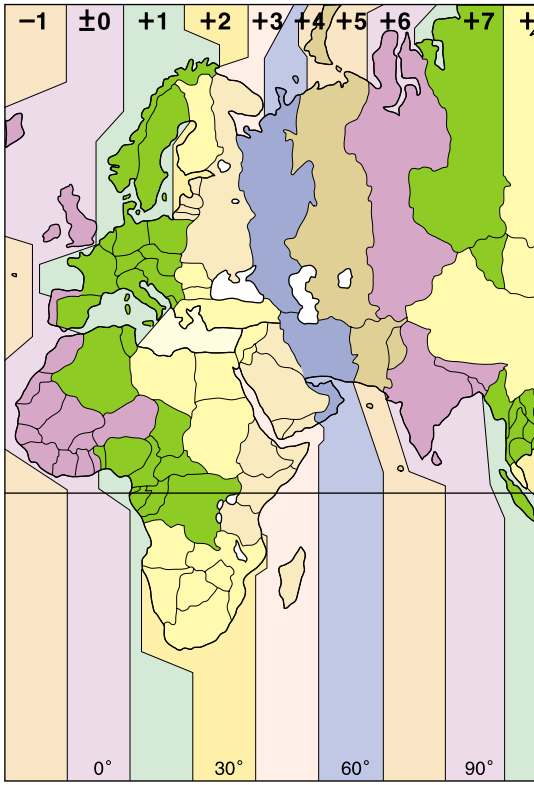
The battery level is displayed in one of the following four indications:
“BAT ” : Empty
“BAT o ” : Nearly empty
“BAT o o ” : Half full
“BAT o o o ” : Full

Note

“BAT - - - ” appears when no battery pack is inserted.

Time zone table

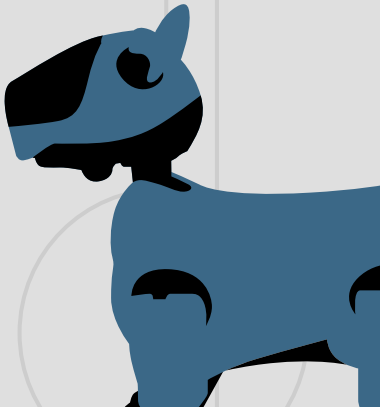
Use this table to enter the time zone.



−2
−3
−4
−5
−6
−7
−8
−9
−10
−11
+12
+11
+10
+9
30°
60°
90°
120°
150°
180°
150°
120°

Additional information

This chapter provides notes on usage, a troubleshooting guide, and other information concerning AIBO.



Notes on use

To prevent AIBO and its accessories from being damaged, observe the following precautions.

On handling AIBO

- Do not use AIBO in places subject to vibrations, on an incline, or at a place where it might drop.
- Do not press down hard on AIBO with your hand or elbow.
- Do not drop or shake AIBO as this may damage AIBO or cause data saved to the “Memory Stick” to be lost.
- Do not touch the charging terminal directly with your hand. Doing so may soil the terminal and cause poor contact.
- Lift AIBO by the body, and not by its extremities, such as the head, ears, tail or legs. Do not swing or twist AIBO.
- Do not leave AIBO in very hot places, such as a car parked in the sun, as this may deform or damage it.
- Do not allow foreign things, such as paper clips, get into AIBO or its joints.
- Do not use AIBO outdoors. If you do, moisture or other foreign matter may enter AIBO and cause damage.
- Do not use AIBO on concrete or other hard surface as this may damage AIBO.
- Do not allow AIBO to get wet.
- Do not touch the lens of the color camera directly with your hand.
- Do not allow AIBO’s head cover to be scratched.

- Do not apply stickers to the color camera or the head cover.
- Do not point the color camera at the sun, no matter whether AIBO is turned on or off, as this may damage the camera.
- Do not oil AIBO's joints or other movable parts.
- Do not apply stickers to AIBO's movable parts or insert anything between them as this may interfere with AIBO's movement.
- Do not disassemble or modify AIBO except specifically set forth in this manual.
- When transporting AIBO, put it in a cushioned box like the one it came in to protect its body, head, tail and legs from damage. You may also use the optional AIBO Carrying Bag ERA-210C1 to transport AIBO.
- Do not use AIBO in a place subject to strong electromagnetic waves or X-rays.
- The AIBO-ware applications designed for ERS-110/111 cannot be used with ERS-210.
- ERS-210 is not operable with a "Memory Stick" which does not conform to OPEN-R ver. 1.1.

Moisture condensation

If AIBO is brought directly from a cold place to a warm place, moisture may condense on AIBO's inside or outside surface, causing damage. If moisture condensation has occurred, wait for about one hour before operating AIBO.

On handling the AC adapter

- Be sure to use only the supplied AC adapter to charge AIBO's battery pack. Using any other adapter may cause damage to AIBO.
- Do not connect the AC adapter to electronic transformers designed for use by travelers, as this may cause AIBO to heat up or become damaged.

On handling the battery pack

- Do not expose the battery pack to temperatures above 45 °C (113 °F), such as in a car parked in the sun.
- Be careful not to let foreign matter like dust or sand get into the terminals. If it does, remove it with a soft stick, etc.
- If you are not going to play with AIBO for a long period, remove the battery pack and store it in a dry, cool place.
- The battery pack is constantly discharging even when it is not in use. Charge the battery pack right before using AIBO.
- Do not drop the battery pack or place heavy object on it. Do not apply strong pressure or physical shock to the battery pack.

On cleaning

- Clean AIBO with a clean, dry, soft cloth.
- Do not use volatile solvents that may damage AIBO's surface finish.
- When cleaning with chemical fabric, see its instructions.

Troubleshooting

If you experience any of the following difficulties, use this troubleshooting guide to help you remedy the problem. Should any problem persist, contact the AIBO Customer Link (page 5).

Symptom	Cause/Remedy
AIBO does not react to release of the pause button.	The battery pack is not inserted. ➔ Press the pause button and insert the battery pack (page 14). Restart AIBO by pressing the pause button again. The battery pack is drained. ➔ Check the battery pack level (page 47). If it is drained, recharge it or replace with the charged one. The AC adapter is connected to the charging terminal of AIBO. ➔ Disconnect the AC adapter and press the pause button again.
When you press the pause button, the chest light rapidly flashes in green and orange alternately.	Heat may have built up in the battery pack. ➔ Wait for a while until the battery pack becomes cool. There may be a problem with the battery pack. ➔ Replace it with a new one (page 33).

Symptom	Cause/Remedy
AIBO continues to emit a sad melody and does not move when the pause button is released.	The insertion of a “Memory Stick” without any AIBO-ware. The insertion of a “Memory Stick” that is not intended for AIBO.
The battery pack is locked and cannot be replaced.	The AIBO-ware is operating. Press the pause button to quit the program.
AIBO does not move when you place it on the Energy Station (not supplied).	The AIBO’s internal application software does not operate when you place it on the Energy Station.
It takes a long time for AIBO to start moving.	AIBO is loading the data from the “Memory Stick.” Wait for a while.
AIBO tries to walk but it does not go forward.	The floor may be slippery or the nap of the carpet is long. ➔ Place AIBO on a surface that is not too slippery, such as a carpet with a short nap.
AIBO falls often.	The floor may be too slippery, inclined or unstable. ➔ Place AIBO on a flat surface that is not too slippery.

Symptom	Cause/Remedy
After picking AIBO up, it stops moving.	AIBO stops moving whenever it is picked up from the floor. ➔ Check that the mode indicator is flashing, place AIBO on the floor, and then keep pressing on its head for several seconds.
The mode indicator is flashing and AIBO emits musical tones, but it does not walk.	AIBO stops moving whenever it is picked up from the floor or an object is caught in one of AIBO's leg joints. ➔ Check that the mode indicator is flashing, place AIBO on the floor, and then keep pressing on its head for several seconds.
The chest light flashes in orange.	There may be a problem with the battery pack. ➔ Replace it with a new one (page 33).
AIBO does not chase the supplied ball.	When running on an internal application, AIBO does not chase the ball, but responds to it.
AIBO does not walk.	When you touch AIBO on the back, it walks for about five seconds.

Symptom	Cause/Remedy
The chest light does not turn off when you press the pause button to make AIBO pause.	There may be a problem with the internal application. ➔ Remove the battery pack (page 33). When the battery pack is locked, insert a pointing object into the battery pack unlock hole to remove it (4 on page 27). Re-insert the battery pack and press the pause button again.
AIBO soon asks for charging even with a fully charged battery pack.	When the battery pack's operating time has become noticeably short, it may have reached its end of life. Replace it with a new battery pack (page 33).
No musical tone is emitted from AIBO.	AIBO's musical tone is muted. ➔ Adjust the volume level (page 46).

Limited warranty

SONY ELECTRONICS INC. (“SONY”) warrants this Product and its accessories against defects in material or workmanship as follows:

1. PRODUCTS: For a period of one (1) year from the date of purchase, SONY will, at its option, either repair or replace the defective parts and/or the Product (i.e., AIBO) with new or rebuilt replacements. After this one (1) year period, you must pay all parts and labor charges.

2. ACCESSORIES: For a period of thirty (30) days from the date of purchase, SONY will, at its option, either repair or replace defective parts and/or accessories (i.e., AC adapter and battery pack) with new or rebuilt replacements. After this thirty (30) day period, you must pay all parts and labor charges.

3. REPAIRS: For a period equal to the longer of (a) the remainder of the original limited warranty period on the original Product or accessory, or (b) for 90 days after the date of repair/replacement of Products or for 30 days after the date of repair/replacement of accessories, SONY will repair or replace defective parts, accessories and/or Products used in the repair or replacement of Products or accessories under this Limited Warranty with new or rebuilt replacements.

To obtain warranty service, you must first obtain an event number from AIBO Customer Link (page 5). You will need to return the Product and all accessories to SONY in the original carton, using the original packaging materials. All supplied accessories must be returned with the Product. SONY is not responsible for any damage during shipment arising from the failure to properly pack the Product or accessory being returned to SONY. For information on returning your Product or accessories for warranty repair, please contact the AIBO Customer Link.
This warranty does not cover customer instruction, installation or set up adjustments.

This warranty does not cover the cost of removal or reinstallation, cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence of, or to any part of the Product. This warranty does not cover lost profits, lost sales, loss of use of the Product, or other consequential loss or damage due to improper operation or maintenance, installation, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by SONY to service the Product. This warranty does not cover Products sold AS IS or WITH ALL FAULTS, or consumables (such as fuses). This warranty does not apply when the malfunction results from use of the Product in conjunction with accessories, products or ancillary or peripheral equipment not manufactured by SONY, and where it is determined by SONY that there is no fault with the Product itself.

SONY will pay shipping charges for all in-warranty service. However, if no trouble is found with the Product or accessory, if the trouble is from a non-covered charge or if it is determined that the warranty period has expired, you will be billed for the cost of shipping and handling.

This warranty is valid only in the United States.

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

This warranty is invalid if the factory applied serial number has been altered or removed from the Product.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. SONY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

For your convenience, SONY ELECTRONICS INC. has established telephone numbers for product information regarding the Entertainment Robot. Please call:

AIBO CUSTOMER LINK
1-800-427-2988

or write to: aibosupport@info.sel.sony.com

Other information about AIBO is also available on the internet site at:
www.aibo.com/

Service procedure

1. **Contact the AIBO Customer Link. Its E-mail address is aibosupport@info.sel.sony.com and its toll free number is 1-800-427-2988.**
2. **If the AIBO Customer Link determines that your unit needs repair, follow the procedure described below.**
   a. The AIBO Customer Link will give you the event number, which is valid for ten days.
   b. Following the procedure described on the label attached to the box, put AIBO and the designated accessories into the original box. If you did not keep the original box, the AIBO Customer Link will send a new box to you free of charge within the warranty period. The actual shipping and material cost will be charged to you after the warranty period.
   c. Mark your event number on the top of the box and send it to the designated address. The AIBO Customer Link will designate the shipping method and pay the shipping charges within the warranty period; after the warranty period, you must pre-pay the shipping charges.
   d. As soon as the repair is completed, your AIBO will be sent back to you. After the warranty period has expired, the actual shipping cost will be charged to you together with the repair cost.
3. **Please understand that the AIBO Customer Link only accepts credit cards for all the charges of repair, shipping and material after the warranty period has expired.**

User registration

All users are registered based on information from the purchaser.
If a different person takes over this unit, please inform the "AIBO Customer Link" of the change.

Specifications

AIBO

CPU 64-bit RISC processor

Main memory

32MB

Supplied application media

“Memory Stick” for AIBO

Movable parts

Mouth: 1 degree of freedom

Head: 3 degrees of freedom

Leg: 3 degrees of freedom ×4

Ear: 1 degree of freedom ×2

Tail: 2 degrees of freedom

(20 degrees of freedom in total)

Inputs A slot for PC card type II

Charging terminal

Video input 100,000-pixel CMOS image sensor

Audio input Stereo microphones

Audio output Speaker

LCD display Date, time, volume level, and battery level

Internal sensors

Thermometric sensor

Infrared distance sensor

Acceleration sensor

Pressure sensor (on the head), with switches on the chin, back, and paws

Vibration sensor

Power consumption

Approx. 9 W (in normal mode)

Operable duration

Approx. 1.5 hours (when operated with a fully-charged ERA-201B1, in normal mode)

Dimensions Approx. 152 × 281 × 250 mm ($6 \times 11\ ^{1}/_{8} \times 9\ ^{7}/_{8}$ inches) (w/h/d, not including its tail and ears)

Mass Approx. 1.5 kg (3 lb 3 oz) (including the battery pack and the “Memory Stick”)

Color Gold/silver/black

Operating temperature

5° C to 35° C (41° F to 95° F)

Operating humidity

10 % to 80 % (not condensed)

Operating wet-bulb temperature

Less than 29° C (84° F)

Storage temperature

–20° C to 60° C (–4° F to 140° F)

Storage humidity

10 % to 90 % (not condensed)

Storage wet-bulb temperature

Less than 29° C (84° F)

AC adapter

Input 120 V AC, 50 - 60 Hz, 0.75 A

Output 16 V DC, 2.5 A

Operating temperature

5˚C to 35˚C (41˚F to 95˚F) (temperature gradient less than 10˚C (18˚F)/hour)

Operating humidity

20% to 80% (not condensed), provided that humidity is less than 65% at 35˚C (95˚F) (hygrometer reading of less than 29˚C (84˚F))

Storage temperature

–20˚C to 60˚C (–4˚ F to 140˚ F) (temperature gradient less than 10˚C (18˚F)/hour)

Storage humidity

10% to 90% (not condensed), provided that humidity is less than 20% at 60˚C (140˚ F) (hygrometer reading of less than 35˚C (95˚F))

Dimensions Approx. 60 × 30 × 120 mm (w/h/d) (Approx. 2 $^{3}/_{8}$ × 1 $^{3}/_{16}$ × 4 $^{3}/_{4}$ inches)

Mass Approx. 325 g (11.5 oz.)

Cord length DC cord: Approx. 1.8 m (70 $^{7}/_{8}$ inches)

AC power cord: 1.8 m (70 $^{7}/_{8}$ inches)

Lithium ion battery pack

Battery used Lithium ion type battery

Main output voltage

7.4 V DC

Capacity 2300 mAh

Operating temperature

5°C to 40°C (41°F to 104°F) (temperature gradient less than 10°C (18°F)/hour)

Operating humidity

10% to 80% (not condensed)

Operating wet-bulb temperature

Less than 29°C (84°F)

Storage temperature	–20°C to 60°C (–4°F to 140°F) (temperature gradient less than 10°C (18°F)/hour)
Storage humidity	10% to 90% (not condensed)
Storage wet-bulb temperature	Less than 35°C (95°F)
Dimensions	Approx. 80.2 × 58.2 × 21 mm (Approx. $3\ ^{1}/_{4} \times 2\ ^{3}/_{8} \times\ ^{27}/_{32}$ inches) (w/h/d)
Mass	Approx. 170 g (6 oz)

Design and specifications are subject to change without notice.

■ Supplied accessories

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