Panasonic

Operating Instructions <Quick Start Guide>

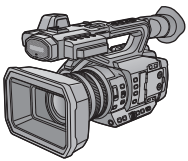
4K Video Camera

Manuel d'utilisation <Guide de prise en main rapide>

Camera vidéo 4K

Model No. / Modèle N°

HC-X2/HC-X20



Please read these instructions carefully before using this product, and save this manual for future use.

Veuillez lire attentivement les présentes instructions avant d'utiliser ce produit, et conserver ce manuel pour utilisation ultérieure.

More detailed operating instructions are available in "Operating Instructions <Complete Guide>" (HTML format/PDF format). This can be viewed with a PC or smartphone.

Un manuel d'utilisation plus détaillé est disponible en "Manuel d'utilisation <Guide complet>" (Format HTML/format PDF). Il peut être visionné à l'aide d'un PC ou d'un smartphone.

https://panasonic.jp/support/video/oi/X2/index.html

Web Site: http://www.panasonic.com

DVQX2254ZA
F0822GY0

E

For the AC mains plug of three pins

■ Caution for AC mains lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

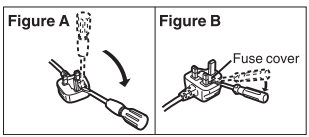
Before use

Remove the connector cover.

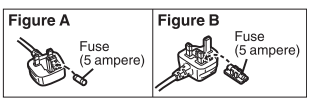
How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B).
Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



WARNING:

To reduce the risk of fire, electric shock or product damage,

- Do not expose this unit to rain, moisture, dripping or splashing.
- Do not place objects filled with liquids, such as vases, on this unit.
- Use the recommended accessories.
- Do not remove covers.
- Do not repair this unit by yourself. Refer servicing to qualified service personnel.

CAUTION!

To reduce the risk of fire, electric shock or product damage,

- Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.
- Do not obstruct this unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
- Do not place sources of naked flames, such as lighted candles, on this unit.

The mains plug is the disconnecting device. Install this unit so that the mains plug can be unplugged from the socket outlet immediately.

This unit is intended for use in moderate climates.

■ Concerning the battery

Warning

Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C or incinerate.

CAUTION

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
- When disposing of the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

■ EMC Electric and magnetic compatibility

This symbol (CE) is located on the rating plate.

■ Product identification marking

Product	Location
4K Video Camera	Bottom
AC adaptor	Bottom
Battery charger	Bottom

■ Disposal of Old Equipment and Batteries

Only for European Union and countries with recycling systems

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.
By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.
For more information about collection and recycling, please contact your local authority.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

Note for the battery symbol (bottom symbol):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

Declaration of Conformity (DoC) for EU:

Hereby, *"Panasonic Entertainment & Communication Co., Ltd."* declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Customers can download a copy of the original DoC for our RE products from our DoC server:
https://www.ptc.panasonic.eu/compliance-documents
Contact to Authorized Representative:
Panasonic Marketing Europe GmbH, Panasonic Testing Centre, Winsbergring 15, 22525 Hamburg, Germany

Declaration of Conformity (DoC) for UK:

Hereby, *"Panasonic Entertainment & Communication Co., Ltd."* declares that this product is in compliance with the essential requirements and other relevant provisions of the Radio Equipment Regulations 2017.
Customers can download a copy of the original DoC for our RE products from our DoC server:
https://www.ptc.panasonic.eu/compliance-documents
Contact to Importer for UK:
Panasonic UK, a branch of Panasonic Marketing Europe GmbH
Maxis 2, Western Road, Bracknell, Berkshire, RG12 1RT

Maximum power and operating frequency bands of transmitter

Type of wireless	Frequency band (central frequency)	Maximum power (dBm e.i.r.p.)
WLAN	2412-2462 MHz	13 dBm

For Turkey
AEEE Yönetmeliğine Uygundur.
AEEE Complies with Directive of Turkey.

Note regarding the Power Management function specified under COMMISSION REGULATION (EC) No 1275/2008 implementing Directive 2009/125/EC of the European Parliament and of the Council.

This device is designed and manufactured for use at a broadcasting station and/or in a similar environment.
This device is not equipped with a Power Management function or the Power Management function is set to OFF as it will prevent the device from fulfilling its intended purpose for the reasons below.

1. If the device is a Studio Camera, a Weather Camera, a Mixer or other processor:
   A Power Management function may cause the device to suddenly stop during recording or while On Air.
2. If the device is a Studio Monitor:
   A Power Management function may cause video for the confirmation of whether a signal is normal, or whether the signal has been lost, to be un-viewable.
3. If the device is a Camera Recorder:
   A professional camera recorder must be able to start quickly at any time, but a Power Management function will cause an increase in the time taken to resume from Stand-by mode.

AC Adaptor
Disconnect the AC mains plug from the AC mains socket when not in use.

For more information about the energy efficiency of the product, please visit our website, www.panasonic.com, and enter the model number in the search box.

Cautions for use

Keep this unit as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).

- If you use this unit on top of or near a TV, the pictures and/or sound on this unit may be disrupted by electromagnetic wave radiation.
- Do not use this unit near cell phones because doing so may result in noise adversely affecting the pictures and/or sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect this unit, disturbing the pictures and/or sound.
- If this unit is adversely affected by electromagnetic equipment and stops functioning properly, turn this unit off and remove the battery or disconnect AC adaptor. Then reinsert the battery or reconnect AC adaptor and turn this unit on.

Do not use this unit near radio transmitters or high-voltage lines.

If you record near radio transmitters or high-voltage lines, the recorded pictures and/or sound may be adversely affected.

When this unit is turned on, do not use it in direct contact with the skin for a long period of time.

- When using this unit for a long period of time, use a support such as a tripod. Low temperature burns may result if any high temperature part of this unit or hot air from the ventilation openings on the front side of the hand strap of this unit is in direct contact with the skin for a long period of time.

Caution regarding the lens and the viewfinder

- Do not aim the lens or the viewfinder at the sun or strong light. Doing so may cause the unit to malfunction.

Before using the unit

The date and time have not been set at the time of purchase. Before use, make sure you set the clock and time zone so that date and time information is correctly recorded. (➜ 20)

- When using this product during rain or snow or when at the beach, be careful that water, sand and/or dust do not get inside the camera.
- Clips recorded with devices other than this unit are not supported by this unit.
- Hold the handle or grip when carrying the camera, and handle it carefully.

- If you prepare to record important images, always shoot some advance test footage to verify that both pictures and sound are being recorded normally.

Battery

- Always remove the battery from the unit after use.

LCD monitor and viewfinder

- The LCD monitor and viewfinder are managed with high precision so that at least 99.99 % of the dots are effective pixels and 0.01 % or less are invalid pixels and always lit. This is not a malfunction and it has no effect whatsoever on the recorded images.

Memory cards

The SD cards can be used with the camera.

- Do not perform the following operations when accessing the memory card (the card 1 access lamp/card 2 access lamp is flashing in orange).
  - Removing the memory card
  - Disconnecting battery or the AC adaptor without turning off the main unit
  - Apply vibration of impact
- Keep the memory card out of reach of children to prevent swallowing.

❖ Speed Class during shooting

The memory card to use differs depending on the file format and the recording format.

Use memory cards compatible with the Speed Class or UHS Speed Class.

The recording may stop suddenly when a memory card not compatible with the required Speed Class is used.

Speed Class and UHS Speed Class are the speed specification regarding continuous writing. Check the display on the label and other information on the memory card.

File format	Recording bit rate or recording function	Supported memory cards and Speed Classes	Example of card display
MOV/MP4	200 Mbps, 150 Mbps, 100 Mbps, Super slow recording, VFR recording	• SDXC memory card with UHS Speed Class 3	
	72 Mbps, 50 Mbps	• SDXC memory card with UHS Speed Class 1 or better • SDXC memory card with Speed Class 10	
AVCHD	All	• SDHC/SDXC memory card with Speed Class 4 or better	

Using commercially-available products

- When using a commercially-available USB cable, use a USB Type-C cable that conforms with USB3.1 and that is a shielded product with a ferrite core. We recommend using a cable that is within 1.5 m where possible.
- Use a commercially-available Premium High Speed HDMI cable.
- Use a commercially-available 5C-FB or equivalent double-shielded cable for the BNC cable.
- For the cable that connects to the <LAN> terminal, use the one below.
  – LAN cable (STP (Shielded Twisted Pair), category 5e or above, maximum 100 m)
- You can remotely control some of the camera's functions by connecting a remote control unit (commercially-available) to the <REMOTE> terminal.

About using a headphone

- Excessive sound pressure from earphones and headphones can cause hearing loss.
- Listening at full volume for long periods may damage the user's ears.

Exemption of liability

Panasonic is not liable in any way regarding following.

1 Incidental, special, or consequential damages caused directly or indirectly by the unit

2 Damages, breakage of the unit, etc., caused by misuse or carelessness of the customer

3 When disassembly, repair, or modification of the unit is performed by the customer

4 Inconveniences, damnification, or damages by not being able to record and/or display the video due to any reasons including failure or malfunction of the unit and recording media

5 Inconveniences, damnification, or damages resulting from malfunction of the system combining with any third party equipment

6 A liability claim or any claim for a privacy violation by an individual or a group that was the subject of the video that the customer has shot (including recording) that became public by any reason (including using with the network user authentication turned OFF)

7 The registered information is lost due to any reason (including initializing this unit because the authentication information such as user name or password is forgotten)

❖ Be careful with regard to copyrights

Under copyright law, you may not use the images and audio you have recorded for other than personal enjoyment without the permission of the copyright holder.

How to read this document

Models described in these operating instructions

- The illustrations of the products, menu screens, etc., may differ from the actual items. Unless specifically stated otherwise, screen depictions and illustrations of the unit are of HC-X2.
- Not all models may be available depending on the region of purchase.
- Model numbers are abbreviated as follows in these operating instructions:

Model number	Abbreviation used in these operating instructions	
HC-X2	X2	[X2]
HC-X20	X20	[X20]

Conventions used in this manual

- Words and phrases in [ ] brackets indicate content displayed in the LCD monitor.
- Words and phrases in < > brackets indicate design text used on this unit, such as button names.

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For United Kingdom and Ireland customers

Sales and Support Information

Customer Communications Centre

- For customers within the UK: 0344 844 3899
- For customers within Ireland: 01 289 8333
- Monday–Friday 9:00 am – 5:00 pm (Excluding public holidays).
- For further support on your product, please visit our website: www.panasonic.co.uk

Direct Sales at Panasonic UK

- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Communications Centre Monday–Friday 9:00 am – 5:00 pm (Excluding public holidays).
- Or go on line through our Internet Accessory ordering application at www.pas-europe.com.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products. Take a browse on our website for further details.

Preparations before recording

Accessories

Check the accessories before using this unit.
Product numbers correct as of August 2022. These may be subject to change.

Battery pack
AG-VBR59
(This is referred to as battery pack or battery in this document.)

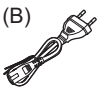
Battery charger
AG-BRD50[*1]

AC adaptor
SAE0011D

AC cable
• For AC adaptor
(A) K2CT3YY00034
(B) K2CQ2YY00082

(A)

(B)



Lens hood[*2]
X2 1YE19R12S1Z
X20 1YE4R12S0Z

Eye cup
DVYE1237Z

INPUT terminal cap (x2)
VJF1468

1AC2HCX2500Y
Microphone holder

Microphone holder mounting screws[*3]
1PP1HCX2500Y
• Length 12 mm (x2)

*1 The AG-BRD50 is available for purchase as an optional accessory package containing a battery charger, AC adaptor, and AC cable. Individual battery chargers are sold under the model number SAB0002A. Contact your dealer to purchase them.
*2 Pre-attached to the main unit.
*3 The microphone holder mounting screws are supplied with the microphone holder.

• Appropriately discard the AC cable cap (if attached) and packing materials after taking the product out.
• Keep the microphone holder mounting screws and INPUT terminal cap out of reach of children to prevent swallowing.

Description of parts

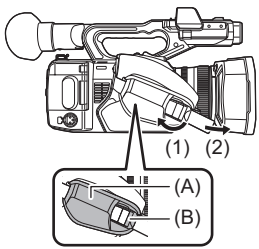
For “Description of parts”, refer to “Operating Instructions <Complete Guide>”.

https://panasonic.jp/support/av/cam/x2e_01.html

Attaching accessories

Adjusting the grip belt

- Adjust the grip belt so that it fits the size of your hand.
- If the buckle is difficult to tighten, move the pad forward and tighten the buckle again.
  (A) Pad
  (B) Buckle



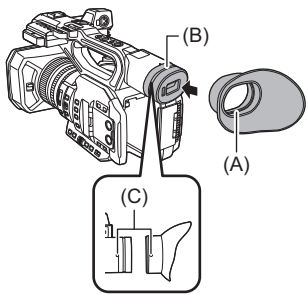
1 Open the buckle.

2 Pull the end of the belt.

Attaching the eye cup

1 Align the mounting mark on the eye cup with the mounting mark on the eye cup mount.

(A) Ridge
(B) Groove
(C) Mounting mark



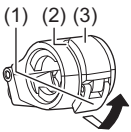
2 Attach the eye cup so that the ridge inside it is aligned with the groove on the eye cup mount.

Push the eye cup in until it reaches the mounting mark.

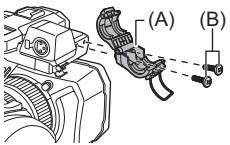
Attaching the external microphone

1 Open the microphone holder.

Open buckle (1), and detach fitting (2) from hook (3).



2 Attach the microphone holder to the microphone holder mounting section.

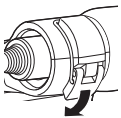


(A) Microphone holder
(B) Microphone holder mounting screws

- Attach using a commercially-available screwdriver.
- There will be some rubbing noises with the rubber when screwing in the microphone holder mounting screws, but please ensure they are done up tightly.

3 Attach the external microphone to the microphone holder, then close the buckle to secure the external microphone.

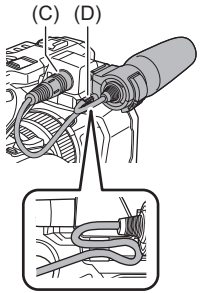
Attach the fitting to the hook and close the buckle in the direction indicated by the arrow.



4 Connect the microphone cable to the <AUDIO INPUT1> terminal.

(C) <AUDIO INPUT1> terminal
(D) Microphone cable clamp
When wiring the microphone cable, use the microphone cable clamp of this unit.

- Remove the microphone cable from the <AUDIO INPUT1> terminal while pushing the lever.



Power supply

A battery or the supplied AC adaptor can be used as the power supply for the unit.

- The unit is compatible to following batteries. (As of August 2022)
  – AG-VBR59 (supplied/optional, supports quick charging)
  – AG-VBR89/AG-VBR118 (optional, supports quick charging)
- Use the supplied AC adaptor. Do not use the AC adaptor of another device.
- The supplied AC cable is dedicated for this unit. Do not use with any other device. Also, do not use AC cable from other device on this unit.

❖ Charging the battery

The battery is not charged at the time of purchase. Use only after charging sufficiently. It is recommended that you have one extra battery.

- It is recommended to perform charging of the battery in a location with ambient temperature of 10 °C to 30 °C (same for the battery temperature).

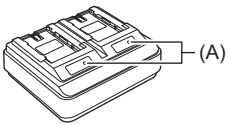
About the Battery Charger

This unit can charge two battery packs simultaneously and supports quick charging batteries.

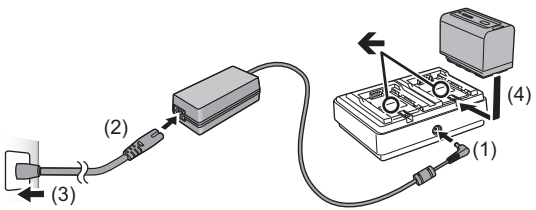
(A) CHARGE indicators <CHARGE1/CHARGE2>

Indicate the charge status as follows.

Indicator	Charge status
Lit green	Quick charging is in progress.
Lit orange	Normal charging is in progress.
Blinking orange	Charging has stopped due to an error.
Off	Charging is complete, or a battery pack is not inserted.



❖ Charging the battery



1 Connect the DC plug of the AC adaptor to the DC IN 12 V connector of battery charger.

2 Connect the AC mains lead to the AC adaptor.

- Perform step (2) first, and then step (3). Insert the AC mains lead all the way in until it stops.

3 Insert the battery into the battery charger.

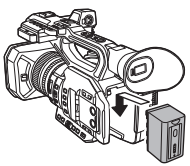
- Slide the battery horizontally into the battery charger along the "←" mark.
- The corresponding CHARGE indicator lights and charging starts.
- The CHARGE indicator turns off when charging is complete. Slide the battery to remove it.

- Do not use any other AC adaptors except the supplied one.
- We recommend using Panasonic batteries (➜ 16).
- If you use other batteries, we cannot guarantee the quality of this product.
- Do not heat or expose to flame.
- Do not leave the battery(ies) in a car exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not expose to low air pressure at high altitudes.
- Do not expose to extremely low air pressure, as this may result in explosions or leakage of flammable liquids and gases.
- The battery charger will determine the status of the battery after the battery is mounted. Therefore, it may take some time until the charging lamp is to illuminate. Mount the battery again if the charging lamp does not illuminate after ten seconds or longer has elapsed.
- Mount the battery to be charged prioritized on the <CHARGE1> side when charging.

Attaching and removing the battery

1 Install the battery by inserting it in the direction shown in the figure.

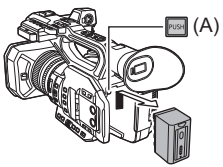
- Insert the battery until it clicks and locks.



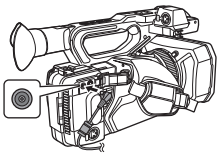
❖ Removing the battery

Make sure that the power switch is set to <OFF> and the status indicator is turned off, and then remove by holding onto it taking care not to drop. (➜ 19)

- While pressing the battery release button (A), remove the battery.



Connecting to the AC outlet



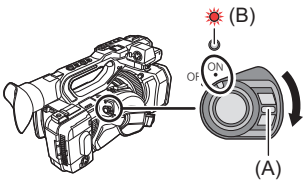
By connecting an AC adaptor to the <DC IN 12V> terminal on this unit and switching on the power of the unit, you can use it while it is being supplied with power from the power outlet.

- Even when you use the AC adaptor for recording images, keep the battery connected. This allows you to continue the recording even if a power failure occurs or the AC adaptor is unplugged from the AC outlet by accident.
- The AC adaptor is in the standby condition when the mains plug is connected. The primary circuit is always “live” as long as the mains plug is connected to an electrical outlet.

Turning the unit on/off

1 Set the power switch to <ON> while pressing the lock release button (A) to turn on the unit.

- The status indicator (B) lights on.



❖ To turn off the unit

Set the power switch to <OFF> while pressing the lock release button.
The status indicator goes off.

- To turn on the power again after [ECO MODE] functions, first switch the power switch to <OFF>, then switch it back to <ON>.

When turning on the power for the first time

The time zone, date, and time are not set when the unit is shipped.
[TIME ZONE] is displayed in the LCD monitor when the power is turned on for the first time.
Follow the guidance and make the settings in the order of [TIME ZONE] and then [CLOCK SETTING].

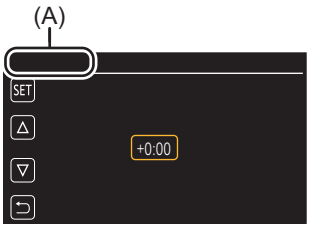
❖ [TIME ZONE]

Set the time difference from the Greenwich Mean Time.
(A) [TIME ZONE]

1 Set the time difference.

2 Select [SET].

Once the setting for [TIME ZONE] is completed, the [CLOCK SETTING] screen is displayed.



- The setting for the date/time of the main unit changes together with the time zone settings.

❖ [CLOCK SETTING]

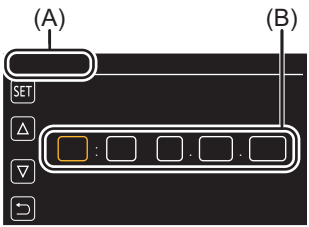
Set the year, month, date, and time.
(A) [CLOCK SETTING]
(B) 0 : 0 1. JAN. 2022

1 Set the year, month, date, and time.

The year can be set between 2021 and 2037.

2 Select [SET].

Once the setting is complete, the camera image screen is displayed.



Main specifications

Power	7.28 V ⎓ (when battery is used) 12 V ⎓ (when the AC adaptor is used)
Power consumption	X2 20.6 W (when the LCD monitor is used) X20 18.5 W (when the LCD monitor is used)

Ambient operating temperature	0 °C to 40 °C
Ambient operating humidity	10 % to 80 % (relative humidity, no condensation)
Mass	X2 Approx. 2040 g[*1]/Approx. 2490 g[*2] X20 Approx. 2000 g[*1]/Approx. 2430 g[*2] *1 Main unit only (including grip belt), excluding lens hood, battery, and supplied accessories *2 Including lens hood, supplied battery, eye cup, 2 SD cards, microphone holder and 2 INPUT terminal caps
External dimensions (W×H×D)	X2 173 mm×195 mm×344 mm X20 171 mm×195 mm×343 mm Including lens hood, excluding eye cup and microphone holder
Pickup device	1.0 type (1.0 ″) MOS solid-state image sensing device for colors Total pixels: approx. 20,920,000 pixels
Number of effective pixels	Approx. 15,030,000 pixels
Lens	Optical image stabilizer lens, motorized 20× zoom F value: F2.8 to F4.5 Focal length: f=8.8 mm to 176 mm 35 mm conversion: f=24.5 mm to 490 mm
Filter diameter	67 mm

USB terminal	USB Type-C®×1, USB3.1 Gen1, Host/device combined (switched with menu) Device: USB mass storage functionality (read only) Host: Supports bus power (5 V, 0.9 A) X2 USB tethering functionality X20 USB ethernet adaptor functionality
LCD monitor	8.8 cm (3.5 ″) LCD monitor: approx. 2,760,000 dots
Viewfinder	1.0 cm (0.39 ″) OLED (organic EL display): approx. 2,360,000 dots Video display area: approx. 1,770,000 dots

Wi-Fi

Compliance standard	IEEE802.11b/g/n compliant
Frequency range used (central frequency)	2412 MHz to 2462 MHz [1 to 11ch]
Encryption method	Wi-Fi compliant WPA™ / WPA2™
Access method	Infrastructure mode

AC adaptor

Power source	100 V – 240 V ~ 50 Hz/60 Hz, 1.2 A
	79 VA (100 V ~) – 99 VA (240 V ~)
Power output	12 V ⎓ 3.0 A

Battery charger

Input voltage	12 V ⎓ 3.0 A
Output voltage	8.4 V ⎓ 4.0 A

Battery pack (AG-VBR59)

Voltage/capacity	7.28 V ⎓ 5900 mAh 43 Wh

The symbols on this product (including the accessories) represent the following:

~	AC
⎓	DC
⧈	Class II equipment (The construction of the product is double-insulated.)

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1. Select the [NETWORK] menu ➡ [DEVICE SEL] ➡ [LAN]*, [WLAN] or [OFF].
2. Select the [OTHERS] menu ➡ [USB DEVICE] ➡ [SERVICE MODE] ➡ [YES].
   Select “LICENSE.TXT” in the external drive recognized by the computer.

* Available for setting when using X2.

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