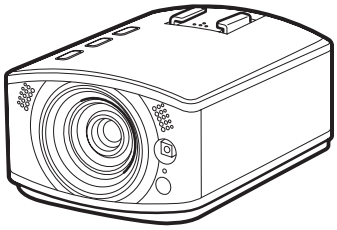
JVC

LIVE STREAMING CAMERA

Detailed User Guide

GV-LS1 U



LYT2498-002A

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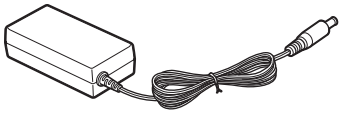
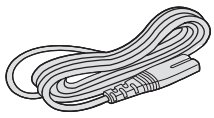
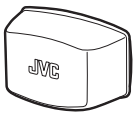
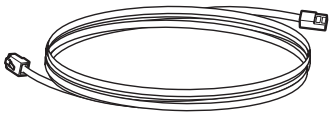
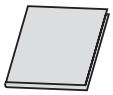
Verifying the Accessories

If any item is missing or damaged, please contact your place of purchase or customer support.

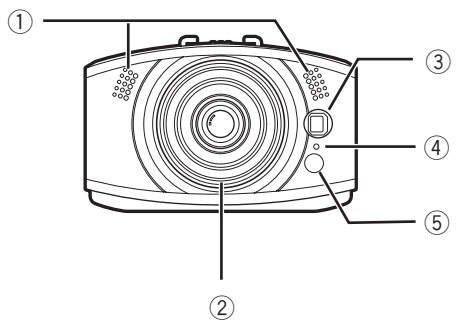
Camera 	Camera.
AC Adapter UIA312-0520 	Connect it to the camera or pantilter when using with AC power. **(➪ page 12)** * Attach the AC cord.
AC cord 	Use it when connecting the AC adapter.
Rear cover 	Attach this cover to rear of the camera when using the unit outdoor, etc. Attach the rear cover when you need the drip-proof mechanism. The unit works without the cover for normal use.
LAN cable (cross) 	Use it to connect the unit, computer, and access point (router). Also used when you configure the initial settings.
Software CD-ROM 	Use it to install the supplied software "JVC CAM Control". **(➪ page 37)**
Basic User Guide 	Describes the basic operations, "Safety Precautions" and "Cautions". Please read the instructions carefully before use and operate correctly as instructed.

- Purchase an SD card separately.
- When using the AC adapter overseas, use a commercially available conversion plug appropriate for the country or region.

Component Names and Functions

Camera

Front



① **Internal mic (stereo)**
Transmits/Records sounds coming through this mic when no external mic is connected.

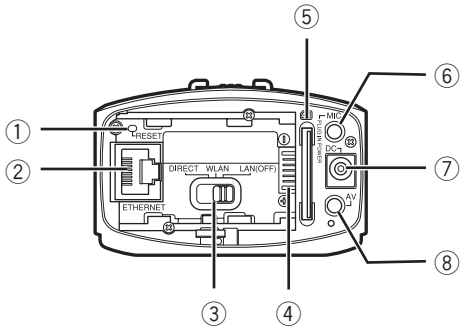
② **Lens**
Be careful not to touch directly or let anything come into contact.

③ **LED light**
Works as a light in dark places. Turn on/off from a browser. **(⇨ page 34)**

④ **Information lamp**
Can be lit up to indicate the recording status, etc.

⑤ **Camera sensor**
Adjusts the white balance automatically. Make sure that this sensor is not hidden behind any objects.

Back



① **Reset button**
Resets the network settings when you press and hold this button with the tip of a paper clip or the like for 3 seconds or longer while the AC adapter is connected. **(⇨ page 53)**
Use it e.g. if a wrong network setting has been configured and a connection cannot be established.

② **LAN terminal**
Connect a LAN cable to establish a wired connection to the computer or access point (router). **(⇨ page 25)**

③ **Network mode switch**
Switches the network mode. **(⇨ page 20)**
DIRECT: To connect to a computer wirelessly (Wi-Fi)
WLAN: To connect to an access point (wireless LAN router) wirelessly (Wi-Fi)
LAN(OFF): To establish a wired connection, or to establish no wireless connection

④ **Battery terminal**
Connect a separately purchased battery pack (BN-VG139U) e.g. when using outdoors. **(⇨ page 27)**

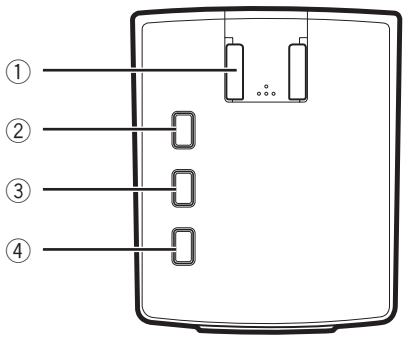
⑤ **SD card slot**
Insert an SD card here to save recorded data to the card.
For compatible cards, see **page 26**.

⑥ **Mic terminal**
Connect an external mic to transmit/record external sounds. **(⇨ page 28)**

⑦ **DC connector**
Connect the supplied AC adapter when using with AC power. **(⇨ page 12)**

⑧ **AV connector**
Connect a separately purchased AV cord to watch videos being transmitted/recorded. **(⇨ page 29)**

Top



① **Hot shoe**
Mount camera accessories.

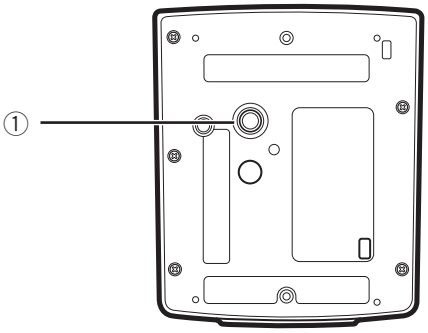
② **Record button**
Starts recording. To stop, press this button again.
The lamp indicates the current status.
Off: Recording not in progress
Blinking: Recording in progress
Blinking quickly (for 2 seconds): Recording error

③ **WPS button**
Press and hold to connect wirelessly (Wi-Fi) in WPS mode. **(⇨ page 21)**
The lamp indicates the current status.
Lit up: Online
Off: Offline
Blinking: Being connected

④ **Power button**
Press and hold to power on. To power off, press and hold this button again.
The lamp indicates the current status.
Off: Powered off
Lit up: Powered on
Blinking slowly: Setting being changed
Blinking rapidly: Battery being charged

* The shooting, WPS, and power buttons blink while the camera is reset **(⇨ page 53)**.

Bottom



① **Tripod mounting hole**
Mount a separately purchased tripod.

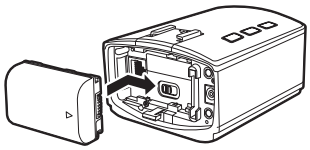
About drip-proof performance

Read the following and use the unit properly.
Malfunctions caused by incorrect usage are not covered by the warranty.
This unit is equipped with a drip-proof mechanism and complies with IEC Standard publication 529 IPX3. You can use the unit with in the rain, snow, or under water spray.
This unit is not water-proof or dust-proof.
- Do not pour water directly.
- Do not pour water on the side or bottom surface.
- Do not pour water hotter than 40 ˚C or hot-spring water.
- Do not use the unit underwater.

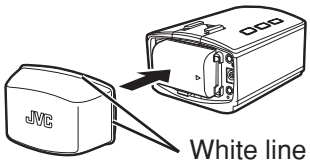
To use the unit with drip-proof performance, you need the battery (sold separately).

Before use

1 Attach the battery (sold separately).



2 Attach the rear cover firmly.



- Attach the rear cover firmly until the white lines on each side are not visible.
- Make sure there are no scratches or substances (hair, thread, sand, dust, water, etc.) adhered to the unit.
- If the cover or camera is scratched, stop using and contact your nearest dealer.

Cautions

- Do not remove the rear cover while wet.
- The drip-proof mechanism works only when the rear cover is attached.

After use

- Wipe drops of water with a soft cloth and dry the unit in well ventilated place avoiding direct sunlight.
- Turn the unit upside down to drain water around the microphone.
- Wipe off the stains after removing any sand, etc. so as not to scratch the unit.
- Do not wipe the unit with chemicals, soaps, neutral detergents,alcohol, etc.
- Do not expose to salt water. If salt water splashed, wipe the unit with soft, wet cloth.

Cautions

- Do not use a hot dryer to dry the unit; otherwise, the drip-proof performance will be decreased.
- Do not leave the unit in extremely low temperature or in high temperature over 40 ˚C (in direct sunlight, inside a car on a hot day, near a heater, etc.); otherwise, the drip-proof performance will be decreased.
- Do not remove the rear cover or connect cables while wet.
- Note that JVC KENWOOD Corporation bears no responsibility for any loss of data by inundation.
- We recommend changing the drip-proof parts once a year to maintain performance. Contact your nearest dealer (charge basis).

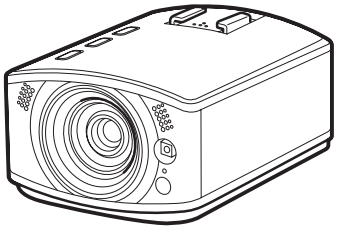
Configuring the Camera Settings Appropriate for Your Needs

The unit can be used for various purposes. See the following examples for how to set up and use appropriately:

Power?
- AC adapter **(⇨ page 12)**
- Battery **(⇨ page 27)**

Recorded data?
- Save to an SD card. **(⇨ page 17)**
- Transmit in high quality. **(⇨ page 17)**

Connection method?
- Wired connection **(⇨ page 20)**
- Wireless (Wi-Fi) connection **(⇨ page 21)**



Watch recorded data?
- Computer **(⇨ page 31)**
- Smartphone **(⇨ page 38)**
- Video streaming site **(⇨ page 37)**

Connection destination?
- Computer **(⇨ page 23)**
- Access point (wireless LAN router) **(⇨ page 21)**
- Not connected **(⇨ page 30)**

Example 1: Worried about your pet staying at home alone.

Setup
- Connect to the access point (wireless LAN router) via Wi-Fi. **(⇨ page 21)**

Setting
- Configure the DDNS setting to access via a network. **(⇨ page 18)**

Use
- Install the App beforehand to view on the smartphone from outside the home. **(⇨ page 38)**

Example 2: Record birds coming to a feeder on the balcony.

Setup

- Use the battery as the camera is set on a high shelf by the window. **(⇨ page 27)**
- Insert an SD card to save recorded data. **(⇨ page 26)**

Setting

- Do not connect to the computer or access point (router).
- Only records when the scene is changed. ("AUTO REC") **(⇨ page 34)**

Use

- After recording, transfer the recorded data to a computer and then play it. **(⇨ page 35)**

Example 3: Live-stream a performance in a studio.

Setup

- Use up to three cameras to capture all members.
- Establish a wired connection to the access point (router) to avoid noise. **(⇨ page 20)**
- Set up an external mic in the center of the stage, and connect it to the camera. **(⇨ page 28)**

Setting

- Transmit in high quality. **(⇨ page 17)**

Use

- Install the supplied software to stream the powerful live performance switching the cameras. **(⇨ page 37)**
- Use the video streaming site to stream the performance worldwide. **(⇨ page 37)**

In addition...

- Turn on the light in dark places **(⇨ page 34)**. Please enjoy a variety of usage!

Flow of Connection/Setup

Connect the unit to the computer, and configure the appropriate settings on a browser.

Starting shooting

1 **Connect the camera to your computer via the supplied LAN cable. (⇨ page 11)**
To set up the camera, first connect it to your computer.

2 **Connect the AC adapter. (⇨ page 12)**
Connect the supplied AC adapter when the connections are complete.

3 **Access the unit from a browser to configure the appropriate settings. (⇨ page 13)**
Set the password, image quality, connection destination, etc. Configuring the correct settings allows you to view recorded data on a computer or smartphone.

- Attach an optional item if necessary.
  Insert/Attach an SD card **(⇨ page 26)**, battery **(⇨ page 27)**, external mic **(⇨ page 28)**, and AV cord **(⇨ page 29)**.
- See **"Establishing a wired connection" (page 25)** to connect the unit with the LAN cable.

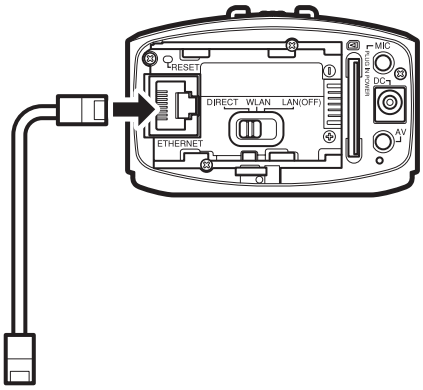
Connecting the Camera to Your Computer

To set up the camera, first connect it to your computer.

Required operating environment

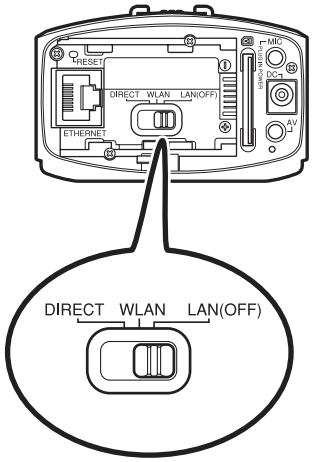
Browser: Internet Explorer 9 or later

1 **Attach the LAN cable to the unit.**



2 **Connect the camera to your computer via the LAN cable.**

3 **Set the network mode switch to "LAN(OFF)".**



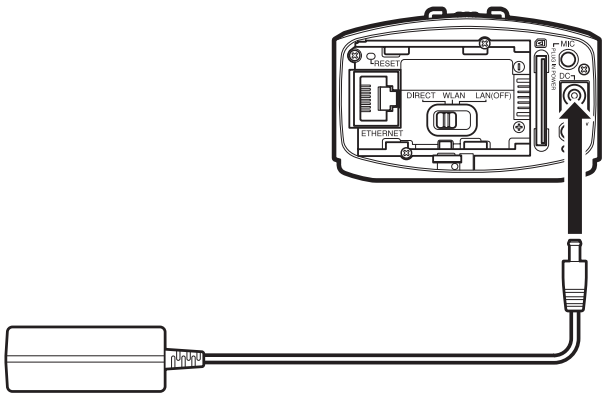
- If the network mode switch is set to [DIRECT] or [WLAN], the LAN terminal cannot be used.
- While the power is on, switching the network mode switch does not change the setting.

Connecting the AC Adapter

Connect the supplied AC adapter to the DC connector of the camera.

CAUTION

- Be sure to use the supplied AC adapter. Use of another AC adapter may cause a malfunction.
- Turn off the power before connecting/disconnecting the AC adapter.



AC adapter (supplied)

Configuring the Camera Settings Appropriate for Your Needs

Access the unit from your computer to set the network, streaming, etc.

Required operating environment
Browser: Internet Explorer 9 or later

Configuring the initial settings

To configure the settings for the first time after purchase, connect the camera directly to your computer via a LAN cable.

1 **Connect the camera to your computer via the LAN cable. (⇨ page 25)**

2 **Press and hold the power button to power on.**
The record button starts blinking. Wait until it stops blinking and off.

3 **Configure the network settings for the computer as follows:**
- **IP ADDRESS**
  Other than 192.168.1.100 within the range of 192.168.1.2 to 192.168.1.254
  (Example) 192.168.1.23
- **SUBNET MASK**
  255.255.255.0

CAUTION

To restore the settings of your computer after confirming the performance and completing the settings, write down the current settings before changing them.

4 **Start Internet Explorer, and enter "http://192.168.1.100:8000" in the address bar.**

5 **Enter the user name and password of the administrator.**
Initial setting: USERNAME "root", PASSWORD "password".
If login is successful, the setup screen appears.

- To configure the settings only to start using the unit, refer to **"Configuring the Camera Settings" (page 15)**, **"Selecting a Format of Images to be Streamed/Saved" (page 17)**, **"Allowing You to Connect from Outside (Monitoring Setting)" (page 18)**, and **"Changing the Connection Destination" (page 20)**.
- To confirm all the settings, refer to **"Setting Item List" (page 39)**.

Changing the settings after changing the connection destination

To change the settings after changing the connection destination **(⇨ page 20)**, visit the following address.

If a wired connection (⇨ page 20) is established to the access point
http://(condigured IP address):8000

If a wireless (Wi-Fi) connection (⇨ page 21) is established to the access point
http://(camera's IP address):8000

If a wireless connection (⇨ page 23) is established directly to your computer (Wi-Fi Direct)
http://192.168.1.1:8000

If multiple cameras are connected (⇨ page 24)
http://(condigured IP address):8000

Configuring the Camera Settings

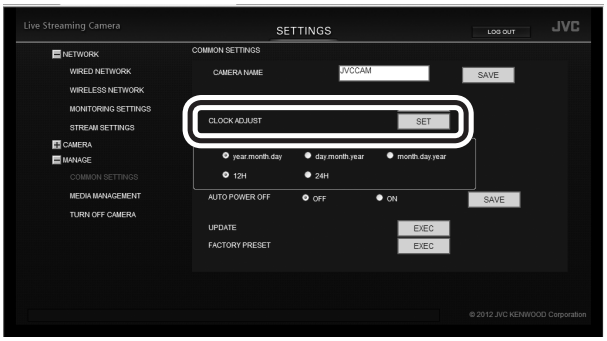
This section describes the settings necessary to use the unit. For the "MANAGE" settings not mentioned on these pages, refer to **page 44** .

Adjusting the clock

Adjust the internal clock. The time can be displayed when videos are transmitted.

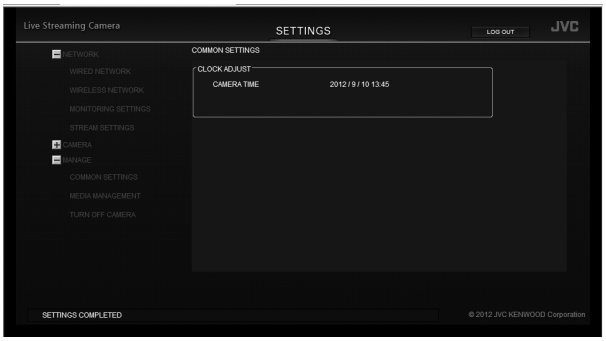
1 **Select "COMMON SETTINGS" in "MANAGE".**
If the sub settings are not displayed, click "+" on the left of "MANAGE".

2 **Click the "SET" button on the right of "CLOCK ADJUST".**



3 **Enter the date and time.**

4 **Click the "SET" button.**



The time is set, and the "COMMON SETTINGS" screen reappears.

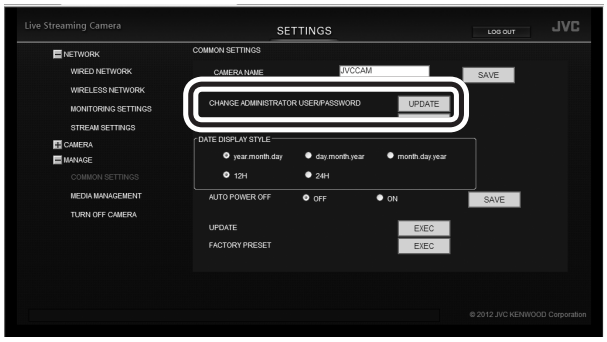
- If an incorrect value is entered, "INVALID DATA INPUT" appears. Check the entered value.
- If communication to the camera fails, "COMMUNICATION ERROR OCCURRED" appears. Check the connection.
- If "PROCESS FAILED" is displayed, check the camera and computer.

Setting the user name and password

The user name and password set at the time of purchase are common across all the units of this model. They should be changed as soon as possible for security reasons.

1 **Select "COMMON SETTINGS" in "MANAGE".**
If the sub settings are not displayed, click "+" on the left of "MANAGE".

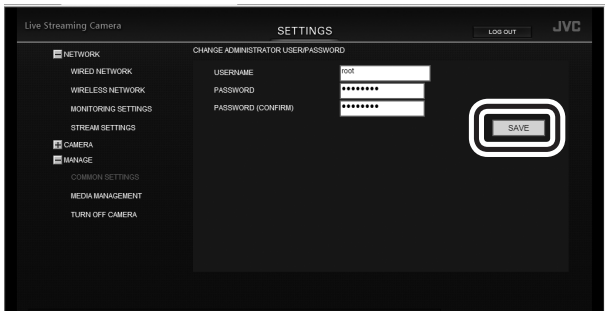
2 **Click the "UPDATE" button on the right of "CHANGE ADMINISTRATOR USER/ PASSWORD".**



3 **Enter "USERNAME", "PASSWORD", and "PASSWORD (CONFIRM)".**

Enter 1 to 32 characters for the user name, and 8 to 32 characters for the password. (1 byte alphanumeric characters and symbols only)

4 **Click the "SAVE" button.**



The new user name and password have been set.

Selecting the Format of Images to be Streamed/Saved

This unit can output up to two lines of images. Set the output method and image quality appropriate for your needs.
For the "NETWORK" settings not mentioned on these pages, refer to **page 39** .

1 **Select "STREAM SETTINGS" in "NETWORK".**
If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 **Select an option from "STREAM 1/STREAM 2".**

MotionJPEG(640x360)/NONE:
Select this to save recorded data inside the unit. MotionJPEG (640x360) is used to control remotely from a browser, etc.
MPEG-2 TS (720x480)/MotionJPEG (640x360):
Outputs low resolution data that can be used for streaming, etc.
MPEG-2 TS (1920x1080)/MotionJPEG (640x360):
Outputs high resolution data that can be used for streaming, etc.

3 **Select an option from "MAX FRAME RATE (MotionJPEG)".**

15 fps:
Outputs images at a rate of up to 15 frames per second. Suitable for shooting fast-moving subjects.
7.5 fps:
Outputs images at a rate of up to 7.5 frames per second. Suitable if the communication speed or terminal's throughput is low.
Selectable only when "STREAM 1/STREAM2" is set to "MotionJPEG(640x360)/NONE."

4 **Click the "SAVE" button.**

The output image quality has been set.

Allowing You to Connect from Outside (Monitoring Setting)

To view images from outside, you normally need to obtain a global IP address or URL to access from a browser. Entering the account of our DDNS service allows you to set these easily.

Obtaining a DDNS account

Access our website from a computer or smartphone for provisional registration.

1 **Visit the following URL to register an account provisionally.**
https://dd3.jvckenwood.com/user/
Enter your e-mail address for the user name.

2 **Receive the provisional registration mail with your e-mail address, and visit the URL described in the mail.**
Provisional registration is complete.

Setting up the DDNS account

Set the user name and password used for provisional registration on the unit. Follow the steps below within three days of the provisional registration. If three days or longer have passed, obtain an account again.

1 **Select "MONITORING SETTINGS" in "NETWORK".**
If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 **Set "DDNS" to "ON", and enter "USERNAME" and "PASSWORD".**

3 **Click the "SAVE" button.**

The DDNS account has been set. (The definitive registration)

- If you do not access the DDNS server for 1 year, the registration expires.

Adding a camera driver's user

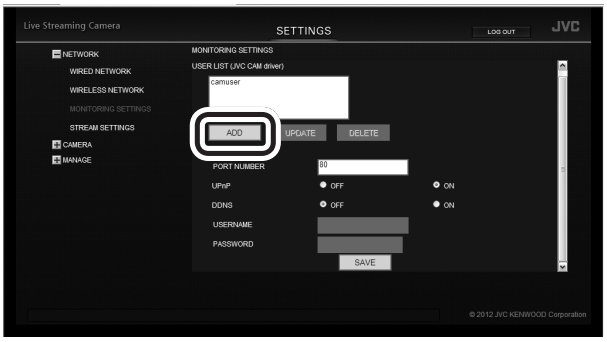
To access to the unit using the camera driver **(⇨ page 37)**, you need to set the user name and password beforehand. (Up to four users can be registered.)
Initial setting: USERNAME "camuser", PASSWORD "password".
They should be changed as soon as possible for security reasons.

* Multiple users cannot view simultaneously.

1 Select "MONITORING SETTINGS" in "NETWORK".

If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 Click the "ADD" button.



- Select a user from "USER (JVC CAM driver)" and click the "UPDATE" button to change the user name and password of the user.
- Select a user from "USER (JVC CAM driver)" and click the "DELETE" button to delete the user.

3 Enter "USERNAME", "PASSWORD", and "PASSWORD (CONFIRM)".

Enter 1 to 32 characters for the user name, and 8 to 32 characters for the password. (1 byte alphanumeric characters and symbols only)

4 Click the "SAVE" button.

The user has been registered.

Changing the Connection Destination

If necessary, change the connection destination to the access point (wireless LAN router).

Establishing a wired connection to the access point

1 Select "WIRED NETWORK" in "NETWORK".

If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 Configure the following settings:

- **IP ADDRESS**
  First three values separated by dot (.): Same as those of the access point
  Last value: Different from that of the access point within the range of 1 to 254
  (Example) If the access point is 192.168.1.1, set 192.168.1.2.
- **SUBNET MASK**
  Same as the access point
  (Example) 255.255.255.0
- **DEFAULT GATEWAY**
  Same as the IP address of the access point
  (Example) 192.168.1.1
- **PRIMARY DNS**
  Same as the IP address of the access point
  (Example) 192.168.1.1
- **SECONDARY DNS**
  Blank

CAUTION

- For how to set the access point, refer to the instruction manual, etc. of the access point.
- When multiple cameras are set up in the same network, assign different IP addresses so that they do not duplicate each other.
- If the network setting is set to "AUTO", the camera's IP address is assigned automatically by the access point. For values to be assigned, refer to the setting screen, etc. of the access point.
- If the IP address of the unit is unknown, confirm the displayed information of the PC application, Android application or iOS application.

3 Click the "SAVE" button to save the settings.

The settings to be configured on a browser have been complete. Close the browser, and shutdown the computer.

4 Press and hold the power button to power off.

5 Connect the camera to the LAN port of the access point via the LAN cable. (⇨ page 25)

6 Set the network mode switch to "LAN(OFF)".

7 Press and hold the power button to power on.

When the "WPS" button stops blinking and stays lit, the connection is complete.

Connecting to the access point wirelessly (Wi-Fi)

Using the WPS function

Connect to the access point equipped with the WPS function easily.

1 **Press and hold the power button to power off.**

2 **Disconnect the LAN cable that connects the camera to your computer.**

3 **Set the network mode switch to "WLAN".**

4 **Press and hold the power button to power on.**
The record button starts blinking. Wait until it stops blinking and off.

5 **Enable the WPS function of the access point.**
(Example) Press the "WPS" button.
For how to enable the WPS function, refer to the instruction manual of the access point.

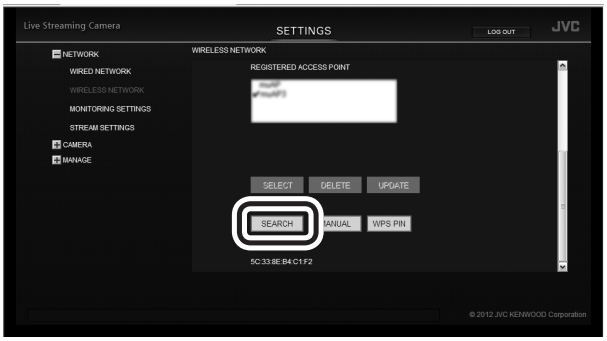
6 **Press and hold the "WPS" button.**
When the "WPS" button stops blinking and stays lit, the connection is complete.
If no connection can be established within two minutes, the "WPS" button turns off. Try again, or set up manually.

Searching and connecting to the access point

1 **Select "WIRELESS NETWORK" in "NETWORK".**

If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 **Click the "SEARCH" button.**



3 **Select an access point to connect to.**

If your preferred access point is not in the list, click the "SEARCH AGAIN" button.
It may not be found if there is a long distance or interference.

4 **Enter "PASSWORD".**

5 **Click the "SAVE" button.**

The settings to be configured on a browser have been complete. Close the browser, and shutdown the computer.

6 **Press and hold the power button to power off.**

7 **Disconnect the LAN cable that connects the camera to your computer.**

8 **Set the network mode switch to "WLAN".**

9 **Press and hold the power button to power on.**
When the "WPS" button stops blinking and stays lit, the connection is complete.

Connecting manually

1 **Select "WIRELESS NETWORK" in "NETWORK".**

If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 **Click the "MANUAL" button.**

3 **Enter the information, and click the "SAVE" button.**

The settings to be configured on a browser have been complete. Close the browser, and shutdown the computer.

4 **Press and hold the power button to power off, and disconnect the LAN cable that connects the camera to your computer.**

5 **Set the network mode switch to "WLAN".**

6 **Press and hold the power button to power on.**
When the "WPS" button stops blinking and stays lit, the connection is complete.

Connecting to a computer directly (Wi-Fi Direct)

Using the WPS function

1 **Press and hold the power button to power off.**

2 **Disconnect the LAN cable that connects the camera to your computer.**

3 **Set the network mode switch to "DIRECT".**

4 **Press and hold the power button to power on.**
The record button starts blinking. Wait until it stops blinking and off.

5 **Establish a WPS connection on the computer.**
For connection, refer to the instruction manual of the device.

6 **Press and hold the "WPS" button.**
When the "WPS" button stops blinking and stays lit, the connection is complete.
If no connection cannot be established within two minutes, the "WPS" button turns off. Try again, or set up manually.

Connecting manually

1 **Press and hold the power button to power off.**

2 **Disconnect the LAN cable that connects the camera to your computer.**

3 **Set the network mode switch to "DIRECT".**

4 **Press and hold the power button to power on.**
The record button starts blinking. Wait until it stops blinking and off.

5 **Connect to DIRECT-**JVCCAM via wireless LAN of the computer.**
- For connection, refer to the instruction manual of the device.
- The password is "password" at the time of purchase.

Connecting Multiple Cameras

To connect multiple cameras, configure the following settings.

1 **Select "MONITORING SETTINGS" in "NETWORK".**
If the sub settings are not displayed, click "+" on the left of "NETWORK".

2 **Change "PORT NUMBER" (1 to 65535) so that the numbers do not duplicate between the cameras.**

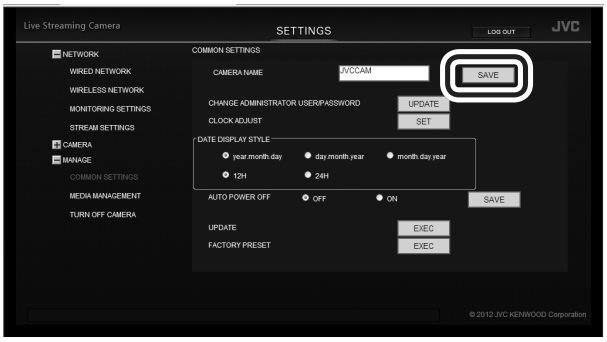
(example)
camera1: 10080
camera2: 10082
camera3: 10083

3 **Click the "SAVE" button.**

4 **Select "COMMON SETTINGS" in "MANAGE".**
If the sub settings are not displayed, click "+" on the left of "MANAGE".

5 **Change "CAMERA NAME" so that the names do not duplicate between the cameras.**

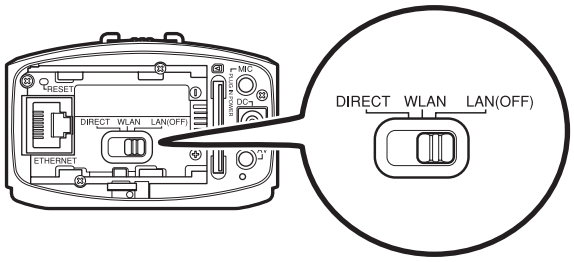
6 **Click the "SAVE" button.**



Establishing a wired connection

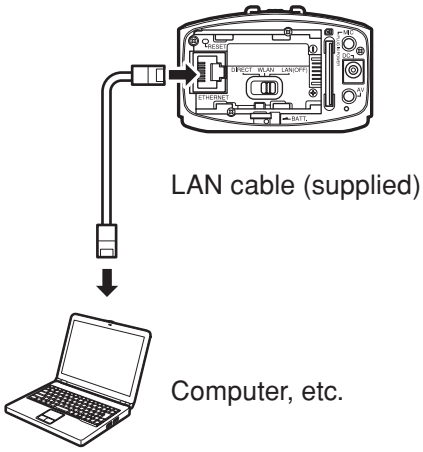
When establishing a wired connection to the computer or access point, attach the supplied LAN cable as follows.

1 Set the network mode switch to "LAN(OFF)".



- If the network mode switch is set to [DIRECT] or [WLAN], the LAN terminal cannot be used.
- While the power is on, switching the network mode switch does not change the setting.

2 Connect the camera to your computer or the access point via the LAN cable.



Inserting/Removing an SD Card

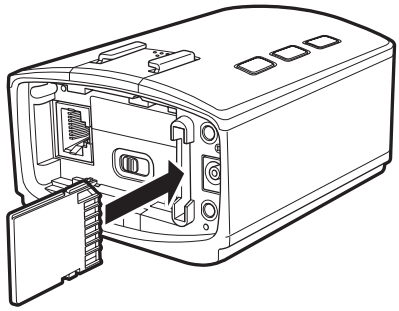
Insert a separately purchased SD card to save recorded data to the card. The saved data can be deleted/downloaded from a browser.

- Turn off the power before inserting/removing the SD card.
- The saved data can be played back by Windows Media Player 12 **(⇨ page 35)**.

Inserting

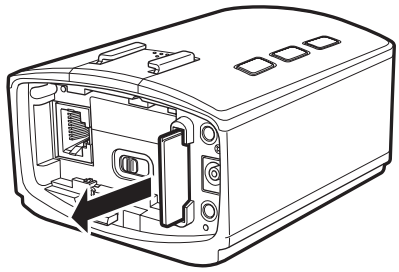
Insert the card straight with the terminal side facing right.

- Make sure that the write protect switch of the SD card is not set to LOCK (writing protected).



Removing

Push the card in once, and pull it out straight.



Compatible SD cards

Operation confirmed with the following SD cards.

Manufacturer	Panasonic TOSHIBA SanDisk
Video	Class 4 or higher compatible SD card (2 GB) Class 4 or higher compatible SDHC card (4 GB to 32 GB) Class 4 or higher compatible SDXC card (48 GB to 64 GB) (When recording with video quality "UXP", Class 6 or higher is recommended.)

- Using SD cards (including SDHC/SDXC cards) other than those specified above may result in recording failure or data loss.
- Not all SD card operations are guaranteed. Some operations may not be performed due to specification changes, etc.
- Do not touch the terminals of the SD card. Doing so may cause data loss.

Approximate recording times

Mode / Capacity	4 GB	8 GB	16 GB	32 GB	48 GB	64 GB
UXP	20 min.	40 min.	1 hr. 20 min.	2 hr. 50 min.	4 hr. 10 min.	5 hr. 40 min.
XP	30 min.	1 hr.	2 hr.	4 hr.	6 hr.	8 hr. 10 min.
SP	40 min.	1 hr. 20 min.	2 hr. 50 min.	5 hr. 50 min.	8 hr. 30 min.	11 hr. 30 min.
EP	1 hr. 40 min.	3 hr. 30 min.	7 hr. 10 min.	14 hr. 40 min.	21 hr. 30 min.	28 hr. 50 min.

The above times are only intended as an approximate guide. They may be shorter depending on the recording situation.

Attaching/Removing the Battery

The camera can run with the battery power only. When the battery (BN-VG139U) (sold separately) is attached, videos can be transmitted/recorded even in places where the AC adapter cannot be used.

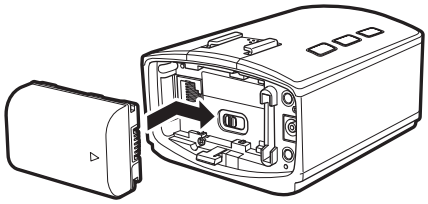
- Turn off the power before attaching/removing the battery.
- The following cannot be used while the battery is attached:
  – LAN terminal, network mode switch

CAUTION

- Be sure to use a battery of our manufacture. If a battery not of our manufacture is used, the safety and performance are not guaranteed.
- Charging may take time or may not be possible in places outside the operating temperature range.

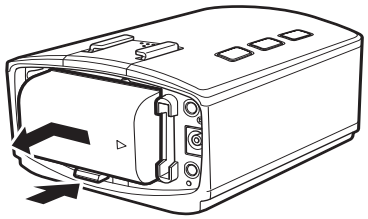
Attaching

Insert the battery deeply, and then slide it to the right until it clicks.



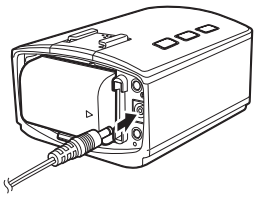
Removing

Slide the battery to the left, and pull it out toward you while pushing in the lever below the battery.



Charging

Connect the adapter to the DC connector of the camera, and turn off the power. Charging starts.
The power button of the camera blinks during charging.
The power button turns off when charging is complete.



Approximate charging times

	Charging time
BN-VG139U (sold separately)	6 hr. 10 min.

Approximate recording times

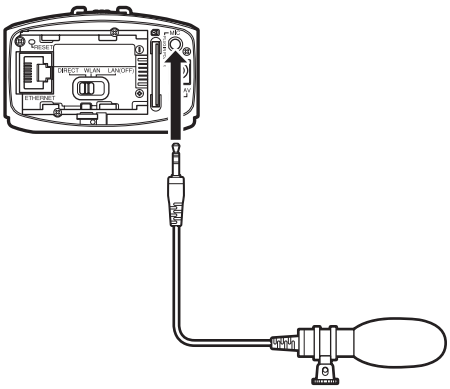
	Actual shooting time	Continuous shooting time
BN-VG139U (sold separately)	1 hr. 40 min.	3 hr. 00 min.

Connecting an External Mic

Connect an external mic to record external sounds.

- Use the plug-in power type.
- Turn off the power before connecting/disconnecting the mic.
- Without an external mic, the internal mic can record ambient sounds.
- When the sounds are too loud or too low, change the "MIC LEVEL SETTING". (⇨ **page 43)**

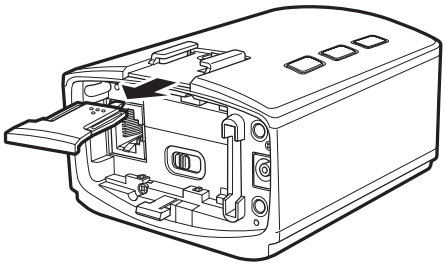
Connecting to the camera



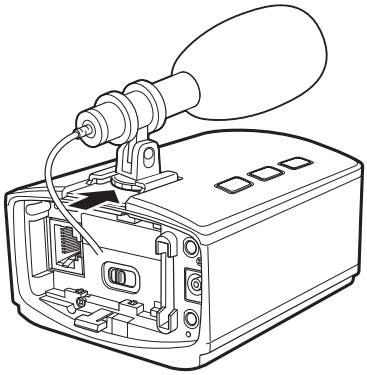
Mic (commercially available)
ϕ3.5 mm stereo mic jack

Attaching to the hot shoe

1 **Remove the hot shoe cover.**



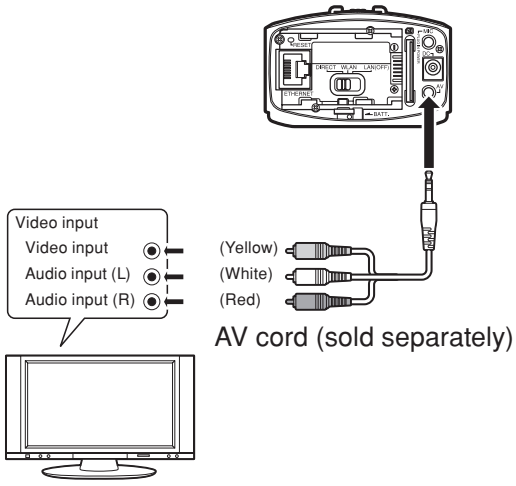
2 **Attach the mic.**



Connecting the AV Cord

Connecting to a TV or the like via an AV cord (sold separately) allows you to view images being recorded/transmitted even without a computer or mobile terminal.

- Turn off the power before connecting/disconnecting the AV cord.
- Use the ϕ3.5 mm 4-pole mini plug type.



AV cord (sold separately)

TV, etc.

Using the Unit Alone

Insert an SD card and attach the battery, so you can carry and use the unit as a normal video camera. Set whether to save recorded videos to the SD card or stream them wirelessly. **(⇨ page 39)**

Turning on/off the power

Turning on the power

Press and hold the power button.

The record button starts blinking. Wait until it stops blinking and off.

Turning off the power

Press and hold the power button again.

The power button turns off.

Starting/Stopping recording

Starting recording

Press the record button.

The record button blinks.

The button blinks quickly for 2 seconds if recording cannot start. Check the SD card or unit settings.

Stopping recording

Press the record button again.

The record button turns off.

CAUTION

- The power is automatically turned off if "AUTO POWER OFF" is set to "ON", the unit runs with the battery, and no operation is performed for 5 minutes. **(⇨ page 44)**
- Recording stops automatically as it cannot be performed for 12 or more consecutive hours.

Controlling from a Web Browser

You can control the unit from a web browser without installing additional software.
To watch a video via a network, "MONITORING SETTINGS" **(⇨ page 18)** must be set.

Required operating environment

OS: Windows 7
Browser: Internet Explorer 9 or later

Logging in

Use "USERNAME" and "PASSWORD" of the administrator **(⇨ page 16)**.

1 **If the power is not turned on, press and hold the power button to power on.**
The record button starts blinking. Wait until it stops blinking and off.

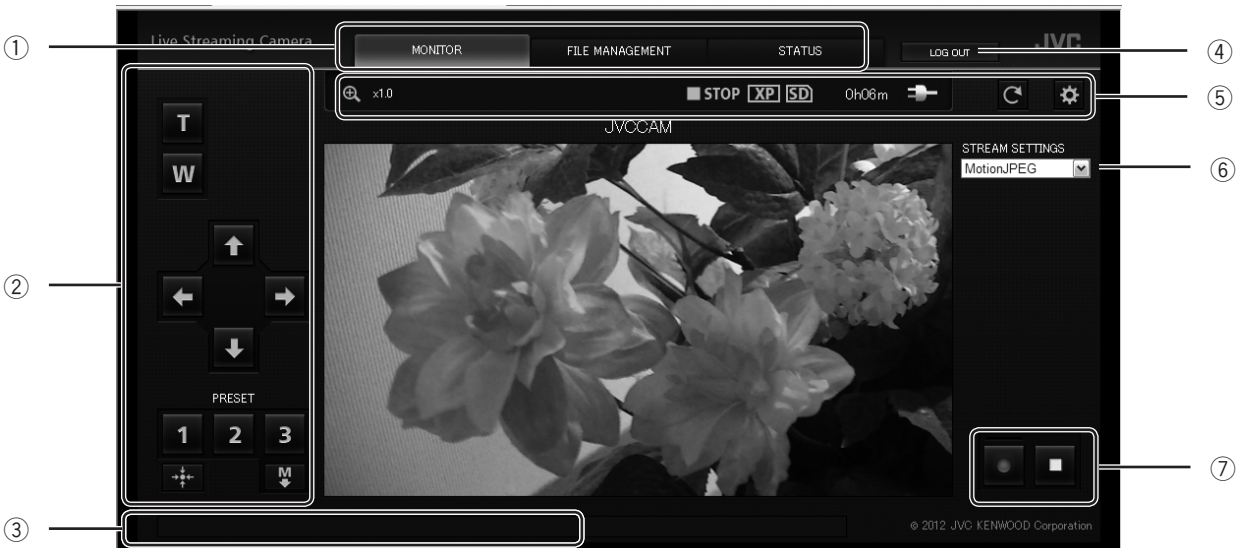
2 **Start Internet Explorer, and enter "http://(camera's IP address):80" in the address bar.**
- If a wired connection is established, the factory setting is that the camera's IP address is "192.168.1.100".
- If the camera is connected wirelessly, the factory setting is that the camera's IP address is assigned automatically by the access point. For values to be assigned, refer to the setting screen, etc. of the access point.
- To access the camera on the Internet, enter the URL obtained via the DDNS service instead of the camera's IP address. **(⇨ page 18)**

3 **Enter the user name and password of the administrator.**
Initial setting: USERNAME "root", PASSWORD "password".

4 **Click the "LOG IN" button.**
If login is successful, the "MONITOR" screen appears.

Controlling the camera ("MONITOR" tab)

Control the camera and view images on the "MONITOR" tab.



① **Tab**

Switch the display.

"MONITOR"

Control the camera and view streamed images.

"FILE MANAGEMENT"

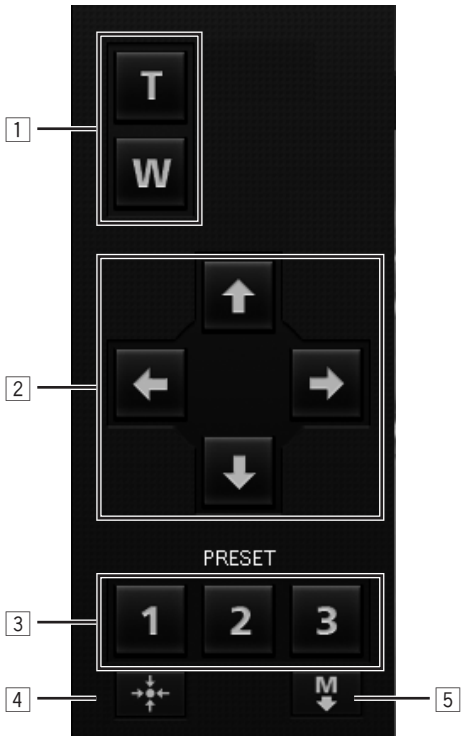
Delete video files stored on the SD card or download them to your computer. **(⇨ page 35)**

"STATUS"

Check the message history. **(⇨ page 36)**

② **Control panel**

Control the camera/electrical pantilter.



1 **Zoom**

You can change the zoom amount on the **"CAMERA SETTINGS" (page 43)**.

2 **Electrical pantilter**

While zooming is activated, Pan/Tilt the camera in the direction you clicked.

3 **"PRESET" buttons**

Click the "1", "2", or "3" button to move the camera to the position assigned to the respective button.

4 **"RETURN TO CENTER" button**

Reset the pan/tilt position to return the camera to the front.

5 **"SAVE AS PRESET" button**

Click this button and then the "1", "2", or "3" button to preset the current camera position to the respective button.

③ **Message bar**

Displays an error message, etc.

④ **"LOG OUT"**

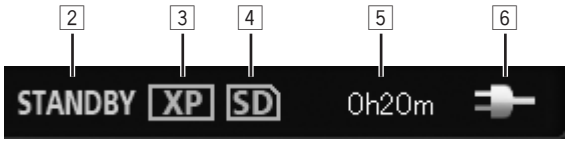
Click this to log out.

⑤ **Status**

Indicates the current status such as the remaining battery power.

1 **Zoom ratio**

Displays the current zoom ratio.



2 **Recording status**

Indicates the camera status.

STANDBY: Recording not in progress

REC: Recording in progress

3 **Recording mode**

Recording mode: UXP, XP, SP, EP

4 **SD card**

Indicates that an SD card can be used.

5 **Remaining recording time**

Indicates the remaining recording time.

6 **Power status**

Indicates the power status.

(Green): Remaining battery: 60 % or more

(Green): Remaining battery: 50 to 60 %

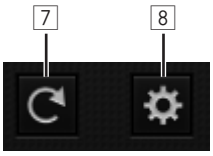
(Yellow): Remaining battery: 40 to 50 %

(Yellow): Remaining battery: 30 to 40 %

(Red): Remaining battery: 20 to 30 %

(Red): Remaining battery: 0 to 20 %

: Running with the AC adapter



7 **Reload button**

Update images.

8 **Setting button**

Displays the setting screen. **(⇨ page 34)**

⑥ **"STREAM SETTINGS"**

Select a stream format.

⑦ **Record button/Stop button**

●: Start recording.

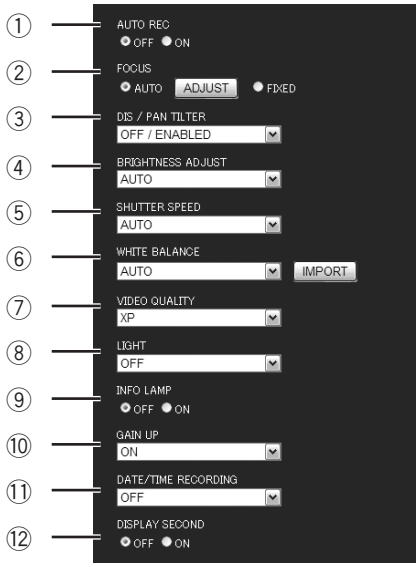
■: Stop recording.

CAUTION

- Recording stops automatically as it cannot be performed for 12 or more consecutive hours.

Configuring the camera settings

Change the camera settings.



① **"AUTO REC"**
Turn on/off the "AUTO REC" function that records only when the scene is changed.
When the setting is changed to "ON", the following settings are automatically changed:
"BRIGHTNESS ADJUST": "AUTO"
"DIS/PAN TILTER": "OFF"
"LIGHT": "OFF"
While set to ON, you cannot start recording, pan/tilt the camera, or change the "GAIN UP" setting. The digital zoom is automatically adjusted to the optical zoom range.

② **"FOCUS"***
Change the focus setting.
"AUTO": Focuses automatically on the subject when it moves or changes.
"FIXED": Fixes the current focus position.

③ **"DIS/PAN TILTER"***
Select "OFF/ENABLED", "SOFT/DISABLED", "MEDIUM/DISABLED", or "STRONG/DISABLED" for the image stabilizer.
(example)
"OFF/ENABLED": DIS is set to off and the electronic pantilter is enabled.

④ **"BRIGHTNESS ADJUST"**
Select "–6" to "+6" or "AUTO" for the brightness.

⑤ **"SHUTTER SPEED"**
Select "1/2" to "1/4000", or "AUTO" for the shutter speed.

⑥ **"WHITE BALANCE"**
Select "AUTO", "FINE", "CLOUD", "HALOGEN", "MWB" for the control that adjusts the camera's color sensitivity to best suit the ambient environment. "MWB" adjusts the white balance based on the current image you imported by clicking the "IMPORT" button. (Click the button with a white sheet of paper shot in full screen.)

⑦ **"VIDEO QUALITY"***
Select "UXP", "XP", "SP", or "EP" for the quality of videos to be saved to an SD card. For recording times in each mode, see **page 26** .

⑧ **"LIGHT"**
Select "OFF", "ON", or "AUTO" for the LED light status.

⑨ **"INFO LAMP"**
Select "OFF" or "ON" for the information lamp.

⑩ **"GAIN UP"***
Select "OFF", "ON", or "AUTO SLOW-SHUTTER" for how to handle when the image is not bright.

⑪ **"DATE/TIME RECORDING"**
Select "OFF" (Not recorded), "UPPER LEFT", "UPPER RIGHT", "LOWER LEFT", or "LOWER RIGHT" for the position where the date and time are recorded.

⑫ **"DISPLAY SECOND"**
Select "OFF" or "ON" for the second display for "DATE/TIME RECORDING".

* Cannot be changed during shooting.

Managing files stored on the SD card ("FILE MANAGEMENT" tab)

Use the "FILE MANAGEMENT" tab to transmit/delete files stored on the SD card.

① **"TRANSFER"**
To download a video file to your computer, first click this button. Then click a thumbnail to display the download screen on a browser.

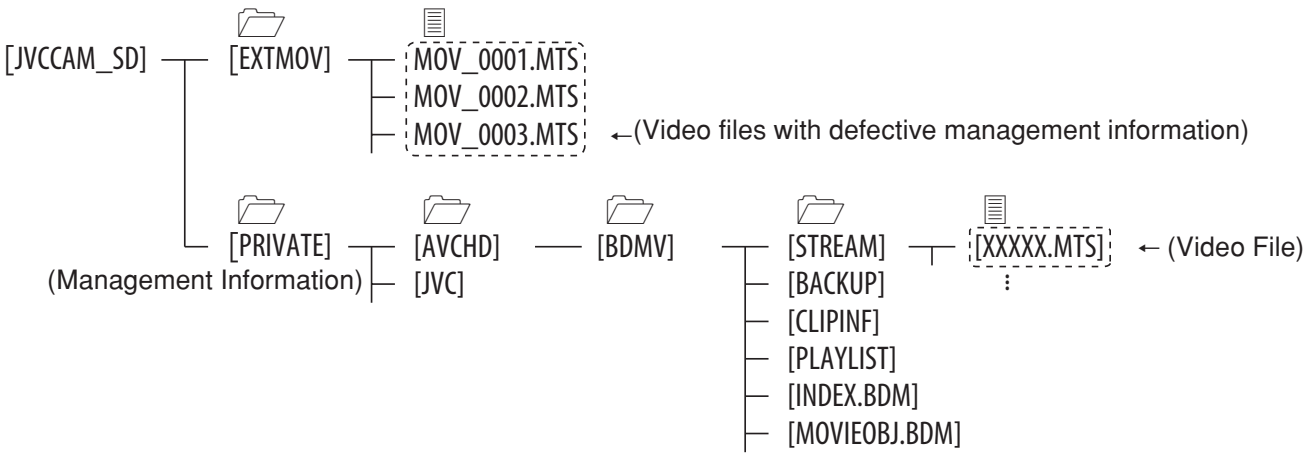
② **Thumbnail**
After clicking "TRANSFER" or "DELETE", click the thumbnail of the target file to be transferred or deleted.

③ **"DELETE"**
To delete a video file, first click this button. Then click a thumbnail to display the delete confirmation screen. To delete, click "YES".

④ **Page move**
Click "PREVIOUS PAGE" or "NEXT PAGE" to switch the thumbnail pages.

Folder/File lists

Folders and files are stored in an SD card as follows.
Folders and files are created when necessary.



- Do not delete/move/rename folders and files.
- The saved data can be played back by Windows Media Player 12.

Checking the message history ("STATUS" tab)

Use the "STATUS" tab to check error messages or currently connected users. The "STATUS" tab is categorized into "CAMERA", "NETWORK", and "LOG IN USER".

"CAMERA"

① **Tab**
Switch the display.

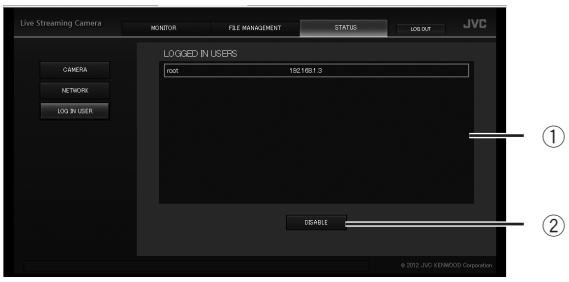
② **"ERROR INFO"**
Displays the error history of the camera.

"NETWORK"

① **"ERROR INFO"**
Displays the network error history.

② **"SETTING INFO"**
Displays the current settings.

"LOG IN USER"



① **"LOGGED IN USERS"**
Displays the logged in users.

② **"DISABLE" button**
Select a target user from "LOGGED IN USERS" to disallow connections from the user.

Using "JVC CAM Control"

The supplied "JVC CAM Control" allows you to control multiple cameras.

Required operating environment

Operating System: Windows® 7 Home Premium (32-bit/64-bit, Pre-install, with SP1)
CPU: Intel® Core™ 2 Duo 2 GHz or higher (Intel® Core™ 2 Quad 2.66 GHz or higher when using MPEG-2 TS(HD))
RAM: 2 GB or more

Installing "JVC CAM Control"

1 **Insert the supplied software CD-ROM into the CD/DVD drive of your computer.**

2 **Click "JVC_CAM_Control_1.0.0.0 (JVC_CAM_Control_1.0.0.0.exe)" on the auto play window.**

- If the auto play window does not appear, double-click the "JVC_CAM_Control_1.0.0.0 (JVC_CAM_Control_1.0.0.0.exe)" icon in the software CD-ROM.
- Follow the on-screen instructions to finish the installation.
- If the user account control window appears, click "Yes".
- 2 icons will appear on your desktop when the installation is finished.

Streaming images

Installing the supplied camera driver allows you to use this unit as a web camera. Use the distribution software or website for the web camera such as Ustream Producer (http://www.ustream.tv/producer) to stream the images.

The camera driver and "JVC CAM Control" are installed simultaneously.

Cameras may not work properly when connecting wirelessly. In this case, connect the unit with the LAN cable.

Using the Mobile Terminal

You can operate the camera intuitively on the touch panel of a smartphone/tablet terminal.

Names of Apps for mobile terminals

There are three types of Apps for mobile terminals: For smartphone (Android OS), for Android tablet, and for iOS. Download the appropriate App.

For smartphone (Android OS)
"JVC CAM Control Single"
Required operating environment: Android OS 2.3 or later
Download it from Google Play Store.

For Android tablet
"JVC CAM Control Multi"
Required operating environment: Android OS 2.3 or later, Screen size: 7 inches or more, Resolution: 1024 x 600 or more
Download it from Google Play Store.

For iPhone/iPod touch/iPad
"JVC CAM Control"
Required operating environment: iOS 5.1.1 or later
Download it from App Store.

Installing the App for mobile terminals

1 **Download the software appropriate for your environment.**
- **Smartphone (Android OS 2.3 or later)**
  Download "JVC CAM Control Single" from Google Play Store.
- **Android tablet (Android OS 2.3 or later, Screen size: 7 inches or more, Resolution: 1024 x 600 or more)**
  Download "JVC CAM Control Multi" from Google Play Store.
- **iPhone/iPod touch/iPad (iOS 5.1.1 or later)**
  Download "JVC CAM Control" from App Store.

2 **Follow the on-screen instructions to finish the installation.**

Setting Item List

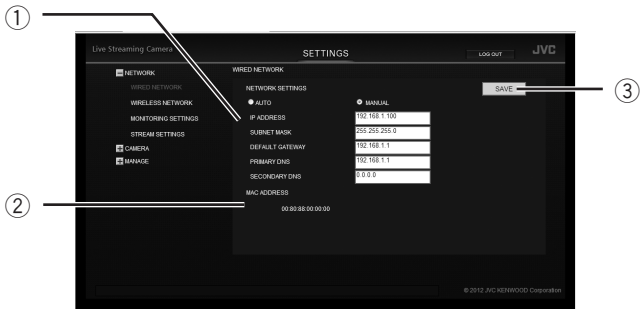
If you log in as an administrator on a browser of your computer, you can change the settings. The settings are categorized into "NETWORK", "CAMERA", and "MANAGE".
To display the setting item list, **"Configuring the Camera Settings Appropriate for Your Needs" (page 13).**

"NETWORK"

Configure the settings for the network and streaming on "NETWORK". "NETWORK" is categorized into "WIRED NETWORK", "WIRELESS NETWORK", "MONITORING SETTINGS" and "STREAM SETTINGS".

"WIRED NETWORK"

Change the settings for establishing a wired connection.



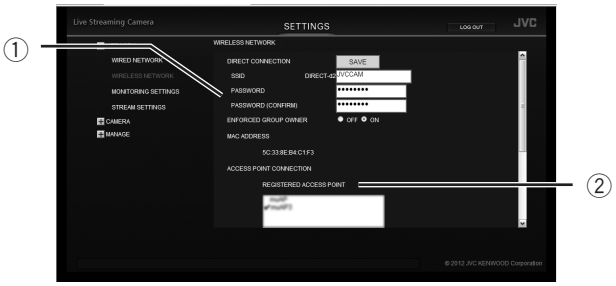
① **"NETWORK SETTINGS"**
Select "AUTO" or "MANUAL".
If "MANUAL" is selected, enter "IP ADDRESS", "SUBNET MASK", "DEFAULT GATEWAY", "PRIMARY DNS", and "SECONDARY DNS" appropriately for your environment.

② **"MAC ADDRESS"**
Displays the MAC address (physical address) of the unit. It may be required when you access from a computer or smartphone.

③ **"SAVE" button**
After changing the above settings, click this button to save the changes.

"WIRELESS NETWORK"

Change the settings for establishing a wireless connection.



① **"DIRECT CONNECTION"**
Setting for connecting directly to a computer wirelessly (Wi-Fi).

"SSID", "PASSWORD", "PASSWORD (CONFIRM)"
Change the SSID and password of the unit. The SSID and password will be displayed on your computer. Enter 2 to 25 characters for the SSID, and 8 to 63 characters for the password.

"ENFORCED GROUP OWNER"
Set whether to become a group owner enforcedly when connecting directly. Set it to "OFF" when you cannot connect to a Wi-Fi direct compatible device. (When it is set to "OFF", you cannot connect to any Wi-Fi direct incompatible device.)

"MAC ADDRESS"
Displays the MAC address (physical address) of the unit when connecting to a computer directly (Wi-Fi Direct). It may be required when you access from a computer or smartphone.

② **"ACCESS POINT CONNECTION"**

Setting for connecting to an access point (wireless LAN router) wirelessly (Wi-Fi).

"REGISTERED ACCESS POINT"

Lists up to eight access points that were connected before.

"SELECT" button

Select an access point from "REGISTERED ACCESS POINT" and click this button to change the connection destination.

"DELETE" button

Select an access point from "REGISTERED ACCESS POINT" and click this button to delete the connection information.

"UPDATE" button

Select an access point from "REGISTERED ACCESS POINT" and click this button to update the connection information.

③ **"ADD"**

Add a connection destination.

"SEARCH" button

Displays the "ADD (SEARCH)" screen to search and connect to an access point. Up to ten access points are listed.

1 **"SEARCH" button**

Search an access point again.

2 **"AUTHENTICATE METHOD"**

Displays the authentication method of the selected access point.

3 **"PASSWORD"**

Enter the password used for the connection.

4 **"NETWORK SETTINGS"**

Select "AUTO" or "MANUAL".

5 **"IP ADDRESS", "SUBNET MASK", "DEFAULT GATEWAY", "PRIMARY DNS", "SECONDARY DNS"**

If "MANUAL" is selected for "NETWORK SETTINGS", enter the values appropriate for your environment.

6 **"SAVE" button**

Save the connection information and return to the "WIRELESS NETWORK" screen.

"MANUAL" button

Displays the "ADD (MANUAL)" screen to enter the connection information manually.

1 **"SSID", "AUTHENTICATE METHOD", "PASSWORD"**

Enter the values appropriate for your environment.

2 **"NETWORK SETTINGS"**

Select "AUTO" or "MANUAL".

If "MANUAL" is selected, enter "IP ADDRESS", "SUBNET MASK", "DEFAULT GATEWAY", "PRIMARY DNS", and "SECONDARY DNS" appropriately for your environment.

3 **"SAVE" button**

Save the connection information and return to the "WIRELESS NETWORK" screen.

"WPS PIN" button

Displays the "ADD (WPS PIN)" screen to connect in WPS. Enter the displayed PIN code for the base unit, and click the "START" button.

1 **"START" button**

Start connection.

2 **"RETURN" button**

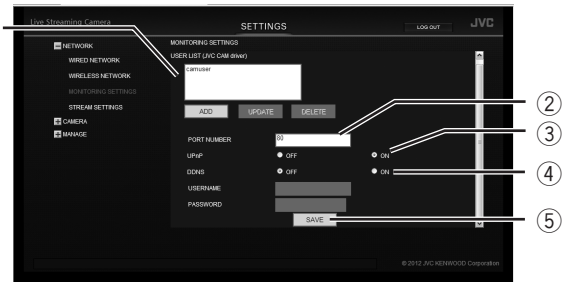
Stop connection and return to the "WIRELESS NETWORK" screen.

④ **"MAC ADDRESS"**

Displays the MAC address (physical address) of the unit when connecting to the access point. It may be required when you access from a computer or smartphone.

"MONITORING SETTINGS"

Change the settings for connecting via a network.



① **"USER (JVC CAM driver)"**

Lists the registered users.

For details, refer to **page 18** .

"ADD" button

Up to four camera driver's users can be added.

"UPDATE" button

Update the user name and password of the registered user.

"DELETE" button

Delete the registered user.

② **"PORT NUMBER"**

Change the port number assigned to the unit, e.g. if the unit conflicts with other devices.

③ **"UPnP"**

Select "OFF" or "ON" for the UPnP (Universal Plug and Play) function. Set it to "OFF" when you connect to a UPnP-incompatible access point (wireless LAN router) or multiple UPnP-compatible devices are connected.

CAUTION

If the camera's network setting is set to "MANUAL", the UPnP does not work.

In this case, set your access point so that you can access the camera on the Internet.

It may be called as follows depending on the access point:

– "IP Masquerade"

– "Network Address Translation"

– "Virtual Server"

④ **"DDNS"**

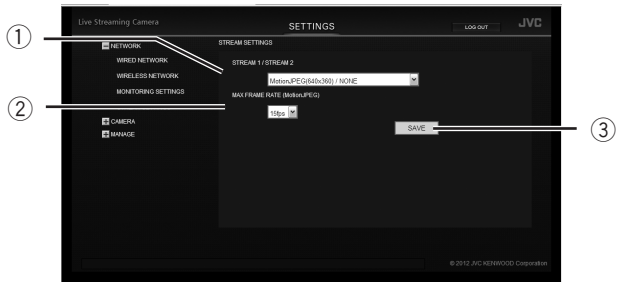
Select "OFF" or "ON" for the DDNS (Dynamic Domain Name System) function. To use our DDNS service, set it to "ON", and enter "USERNAME" and "PASSWORD". **(⇨ page 18)**

⑤ **"SAVE" button**

After changing the above settings, click this button to save the changes.

"STREAM SETTINGS"

Format for transmitting/recording.



① **"STREAM 1 / STREAM 2"**

Select the quality of images to be streamed from the following:

"MotionJPEG(640x360)/NONE"

"MPEG-2 TS (720x480)/MotionJPEG (640x360)"

"MPEG-2 TS (1920x1080)/MotionJPEG (640x360)"

② **"MAX FRAME RATE (MotionJPEG)"**

Select "15fps" or "7.5fps" for the maximum frame rate of MotionJPEG.

③ **"SAVE" button**

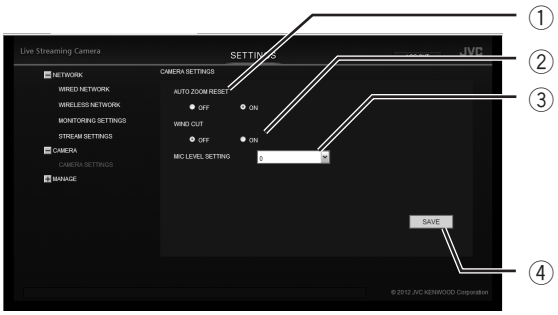
After changing the above settings, click this button to save the changes.

"CAMERA"

Configure the settings for the camera on "CAMERA".

"CAMERA SETTINGS"

Change the camera settings.



① **AUTO ZOOM RESET**

Select "OFF" or "ON" for the function that resets the zoom ratio automatically if no operation is performed for 5 minutes.

② **WIND CUT**

Select "OFF" or "ON" for the function that reduces noise such as wind sounds.

③ **MIC LEVEL SETTING**

Select "+2", "+1", "0", "-1", or "-2" for the audio input level of an external mic.

When the sounds are too loud, set it to a smaller value. When the sounds are too low, set it to a larger value.

④ **"SAVE" button**

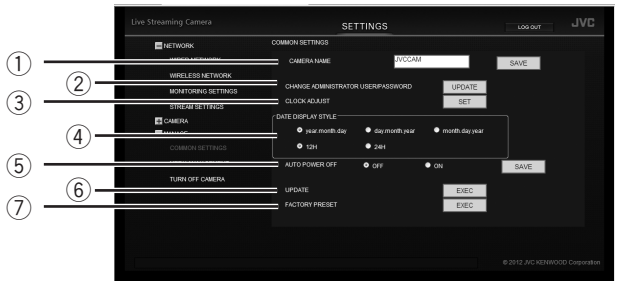
After changing the above settings, click this button to save the changes.

"MANAGE"

Configure the settings for the administrator and hardware on "MANAGE". Categorized into "COMMON SETTINGS", "MEDIA MANAGEMENT" and "TURN OFF CAMERA".

"COMMON SETTINGS"

Change the settings of the administrator and camera.



① **"CAMERA NAME"**

Enter 1 to 15 characters for the camera name displayed during viewing. (1 byte alphanumeric characters only)

② **"CHANGE ADMINISTRATOR USER/ PASSWORD"**

Click the "UPDATE" button on the right to change the user name and password of the administrator. **(➪ page 16)**

③ **"CLOCK ADJUST"**

Click the "SET" button on the right to set the internal clock. **(➪ page 15)**

④ **"DATE DISPLAY STYLE"**

Select "year.month.day", "day.month.year", or "month.day.year" for the format of the date displayed during viewing.
In addition, select "12H" (12-hour format) or "24H" (24-hour format) for the time display.

⑤ **"AUTO POWER OFF"**

Select "OFF" or "ON" for the function that turns off the power automatically if the unit runs with the battery and no operation is performed for 5 minutes.

⑥ **"UPDATE"**

Write the update data on the SD card, and then click the "EXEC" button to update the firmware. **(➪ page 54)**

⑦ **"FACTORY PRESET"**

Click the "EXEC" button to reset all the settings to factory default. **(➪ page 53)**

"MEDIA MANAGEMENT"

Format the SD card.

Information

"TURN OFF CAMERA"

Click the "EXEC" button to turn off the camera's power remotely.

CAUTION

*** The power cannot be turned on remotely.**

Troubleshooting

Connection

Problem	Check	Refer to
The battery cannot be charged.	• Check the remaining battery. The battery is no longer charged if already full.	**page 33**
The power does not turn on when the battery is used.	• Charge the battery. • Check if the connector is dirty. If it is dirty, clean it with a cotton swab or the like.	**page 27**
The SD card cannot be inserted.	• Check the orientation of the card.	**page 26**

Setup

Problem	Check	Refer to
You cannot connect to the unit even when you are at home. (You are requested to enter the URL.)	• Check if the wireless (Wi-Fi) connection is complete. • Check if the connection destination of a computer or mobile terminal is set to the camera. • Power on the unit, computer and mobile terminal again, and retry.	**page 20**
You entered the URL, but the unit cannot be found. (When connecting on the Internet)	• Check if the UPnP function of the access point (wireless LAN router) is activated. You cannot be connected if it is deactivated or incompatible. • You cannot be connected if multiple access points are used. • Check if DDNS is set correctly. • Check if the UPnP function of the unit is activated. You cannot be connected if it is deactivated. • UPnP is not available if you set the camera network (IP address) manually. • Check if the port number set on the unit is unique and set to be used on the access point. • Power on the unit, computer and mobile terminal again, and retry.	– – **page 18** **page 41** **page 41** **page 41** –
You entered the URL, but the unit cannot be accessed. (You are requested to enter the user name and password.)	• Enter the user name and password. For the administrator's account, the initial setting of the user name is "root", and that of the password is "password".	**page 16**
When the unit is connected, the Internet cannot be accessed from a computer.	• While the unit is connected directly to the computer, the computer cannot be connected to the access point (wireless LAN router). • Reconnect the computer to the access point. If the computer is unintentionally connected to the unit, delete the setup information on the unit from the computer. • Set the network mode switch of the unit to other than "DIRECT".	**page 5**
The connection is interrupted, or "COMPATIBLE DEVICE NOT FOUND" is displayed.	• Retry to connect in a better reception environment. If there is a long distance or interference or if there is a microwave or another wireless device nearby, the communication speed may slow down or the connection may not be established. • Power on the computer and mobile terminal again, and retry. • Cameras may not work properly depending on the connection environment. Reduce wireless connections by connecting a computer or a camera to the access point via LAN cable.	–

Problem	Check	Refer to
The access point (wireless LAN router) cannot be found.	• Retry to connect in a better reception environment. If there is a long distance or interference or if there is a microwave or another wireless device nearby, the communication speed may slow down or the connection may not be established. • If a stealth SSID is assigned to the access point, turn it off. • If there are many access points, the target access point may not be found. In this case, set up manually.	**page 21**
The access point (wireless LAN router) cannot be connected.	• If connected manually, check if the SSID and authentication method are correct.	–
You do not know the target access point (wireless LAN router).	• The initial setting of the access point is usually described on the unit or in the instruction manual. Refer to the unit or instruction manual.	–

Use

Problem	Check	Refer to
Shooting stopped automatically.	• Shooting stops automatically as it cannot be performed for 12 or more consecutive hours. • The unit stops automatically to protect the circuit when the temperature rises. Turn off the unit, wait for a while, and turn it on again.	–
A recorded file cannot be found.	• No file is saved if the playback time is less than one second.	–
Brightness changes irregularly.	• "AUTO" of "BRIGHTNESS ADJUST" may not work properly depending on the situation, e.g. if there are multiple light sources. Set it up manually.	**page 34**
The focus is not adjusted automatically.	• If you are recording in a dark place or a subject that has no contrast between dark and light, set "FOCUS" to "FIXED".	**page 34**
The motion is choppy.	• Use a high speed SD card (Class 4 or higher). • Check if the terminals of the SD card are dirty or there are too many files. If the card is formatted, the write speed may be improved. • Check if the line speed and computer performance are high enough.	**page 26** **page 44** –
Images are dark.	• Turn on the internal light. • Check the "BRIGHTNESS ADJUST" and "GAIN UP" settings.	**page 34**
The color looks different.	• Set “WHITE BALANCE” accordingly.	**page 34**
Sound or video is interrupted or slow.	• Check if the line speed and computer performance are high enough.	–
The computer cannot recognize the SDXC card.	• Confirm and update the Operating System of your computer. • Windows Vista and Windows 7 may need to be updated. • Mac OS X must be updated to 10.6.5 or later.	–
Data cannot be saved to the SD card.	• Set "STREAM 1 / STREAM 2" to "MotionJPEG(640x360)/NONE". • When using a new SD card or one that was used with other devices, format the card.	**page 42** **page 44**
Camera images do not appear./ Camera images are gone.	• Camera images disappear if no operation is performed for 120 hours. Perform one of the following so that images reappear: – Press the shooting button. (Shooting starts.) – Operate the electrical pantilter. – Press the reload button. – Disconnect and then connect the AV cable. • Camera images disappear automatically as it cannot transmit images 12 or more consecutive hours. Press the reload button to display images.	–

Error messages

Message	Check	Refer to
PLEASE INSERT MEMORY CARD!	• To record, insert an SD card into the camera.	**page 26**
NEED TO FORMAT MEMORY CARD.	• If a card is used for the first time after purchase or has been used with other devices, it may need to be formatted with this unit.	**page 44**
THIS CARD CANNOT BE USED FOR RECORDING OR EDITING ON THIS CAMERA	• Format the card.	**page 44**
INSUFFICIENT AVAILABLE SPACE	• Available space is insufficient. Delete unnecessary files.	**page 35**
SCENE QUANTITY EXCEEDED LIMIT	• There are too many recorded files. Delete unnecessary files.	**page 35**
CHECK CARD'S WRITE PROTECTION SWITCH	• The write-protection switch of the SD card is set to the "LOCK" position. Unprotect it.	–
VIDEO MANAGEMENT FILE IS DAMAGED, RECOVERY IN PROGRESS	• The management file must be recovered e.g. after the SD card read/write operation is performed on a computer, etc. Wait until it completes.	–
MANAGEMENT FILE IS DAMAGED	• The management file could not be recovered. Format the SD card.	**page 44**
RECORDING FAILURE	• The recorded file could not be saved. Check the SD card.	**page 26**
RECORDING CANCELLED	• The file could not be saved, and recording was cancelled. Check the transmission speed of the card.	**page 26**
MEMORY CARD ERROR!	• The SD card cannot be recognized. Check the card.	**page 26**
COMPATIBLE DEVICE NOT FOUND	• No WPS-compatible device can be found. Check if there is a distance or interference between the devices.	–
COMMUNICATION ERROR OCCURRED	• Check the connection and destination device.	–
UNABLE TO LOG IN CHECK THE USERNAME AND PASSWORD	• Enter the correct user name and password of the administrator. For the administrator's account, the initial setting of the user name is "root", and that of the password is "password".	–
UNABLE TO SWITCH DURING RECORDING	• You cannot open the "FILE MANAGEMENT" tab during recording. Stop recording.	**page 32**
UNABLE TO UPDATE DURING RECORDING	• You cannot change the "DIS"/"GAIN UP" setting during streaming/recording. Stop streaming/recording.	–
INVALID DATA INPUT	• Check the type of the entered text (character, number, single-byte/double-byte, etc.).	–
THE USERNAME IS ALREADY IN USE	• You cannot register a user name already in use. Enter another user name.	–

Message	Check	Refer to
INCORRECT PASSWORD	• The two passwords entered on the change password screen are different. Enter the same password in the two fields.	–
USE AC ADAPTER	• When updating the firmware, connect the AC adapter.	**page 12**
NO UPDATES AVAILABLE	• Check if the update file is written in the correct folder on the SD card.	–
UPDATE CORRUPTED	• Retrieve the firmware update file, and copy it to the SD card.	–
INSTALLED UPDATE ON THIS CAMERA CAN NOT BE USED	• Obtain the updater for the unit.	–
UPDATE IS SAME OR OLDER VERSION. NO INSTALLATION REQUIRED	• The firmware has already been updated. There is no need to update it.	–
POWER TURNED OFF TO CONSERVE BATTERY POWER	• The power is automatically turned off if "AUTO POWER OFF" is set to "ON", the unit runs with the battery, and no operation is performed for 5 minutes.	**page 44**
(12 HOURS LIMITATION) RECORDING CANCELLED	• Recording stops automatically as it cannot be performed for 12 or more consecutive hours.	–
POWER TURNED OFF AS CAMERA TEMPERATURE IS TOO HOT	• Wait for a while, and turn on the power again.	**page 6**
PROCESS FAILED	• Setup, file deletion, etc. failed for some reason. Check the connection, and retry.	–

Lamp Status List

	Status	POWER (Camera)	Record	WPS
Power/Activation	Power off	Turns off	–	–
	Power off (Charging)	Blinks slowly	–	–
	Power on (Activating)	Lights	Blinks	–
	Power on (Activation completed)	Lights	–	–
Network	Wireless/Wired disabled *1	–	–	Turns off
	Attempting connection *2	–	–	Blinks slowly
	Connection established *3	–	–	Lights
	Attempting WPS	–	–	Blinks
Media	No access (Unrelated to the existence of media)	–	Turns off	–
	Shooting impossible	–	Blinks quickly (only for 2 seconds)	–
	Accessing media	–	Blinks	–
	Shooting	–	Blinks	–
Pantilter	Power off (Pantilter)	–	–	–
	Power on (Pantilter)	–	–	–
	Pantilter error	–	–	–
Etc.	Changing the settings	Blinks	–	–
	Resetting	Blinks	Blinks	Blinks
	Updating the firmware	Blinks	Blinks	Blinks
	Formatting media	Blinks	Blinks	Blinks

*1 Wireless (Access point) mode: No access point is registered.
Wireless (Direct) mode: –
Wired mode : LAN cable is not connected.

*2 Wireless (Access point) mode : The access point is registered, but connection has not been established yet.
Wireless (Direct) mode: No device is connected.
Wired mode : LAN cable is connected and connection has been established.

*3 Wireless (Access point) mode: Connection to the access point is established.
Wireless (Direct) mode: The device is connected to the unit.
Wired mode : LAN cable is connected, and LAN setting has been received from the DHCP server or LAN setting is fixed.

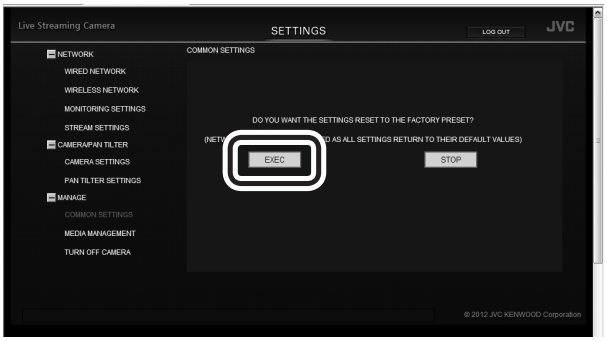
Resetting to the factory settings

Reset all the unit settings to factory default.

1 **Select "COMMON SETTINGS" in "MANAGE".**
If the sub settings are not displayed, click "+" on the left of "MANAGE".

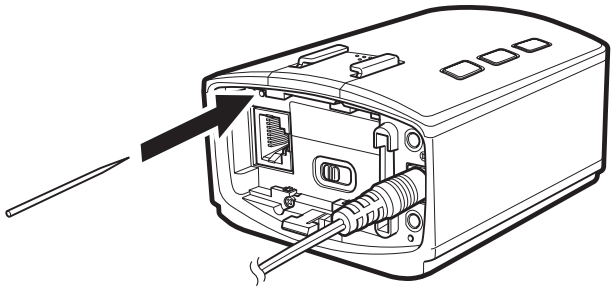
2 **Click the "EXEC" button on the right of "FACTORY PRESET".**

3 **To execute, click the "EXEC" button.**



Deleting (Resetting) the connection information

Delete the connection information stored in the unit.
Press and hold the reset button of the camera for three seconds with the AC adapter connected.
The shooting, WPS, and power buttons blink while the camera is reset. Wait until it stops blinking and stays lit.



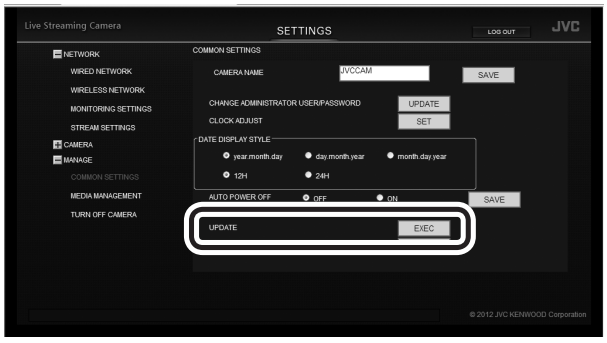
Updating the firmware

The firmware updater is sometimes uploaded to our website for operational improvement.
(There is no notice on our website until the firmware updating program is provided.)
http://www3.jvckenwood.com/dvmain/support/download/index.html

1 **Copy the update file to an SD card, and insert the card into the unit.**
Do not copy other files.

2 **Select "COMMON SETTINGS" in "MANAGE".**
If the sub settings are not displayed, click "+" on the left of "MANAGE".

3 **Click the "EXEC" button on the right of "UPDATE".**



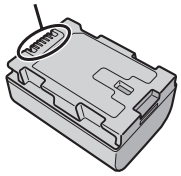
4 **Make sure that the AC adapter is connected, and click the "YES" button.**

CAUTION

- While updating the firmware, do not turn off the power or remove the SD card. If the update fails, the unit may no longer be usable, e.g. the power can no longer be turned on.

Battery Pack (optional)

Terminals



The battery pack is a lithium-ion battery. Before using the battery pack, be sure to read the following cautions:

- **To avoid hazards**
  - ... do not burn.
  - ... do not short-circuit the terminals. Keep it away from metallic objects when not in use. When transporting, carry the battery in a plastic bag.
  - ... do not modify or disassemble.
  - ... do not expose the battery to temperatures exceeding 60°C (140°F), as this may cause the battery to overheat, explode or catch fire.
  - ... use only specified chargers.
- **To prevent damage and prolong service life**
  - ... do not subject to unnecessary shock.
  - ... charge within the temperature range of 10°C to 35°C (50°F to 95°F). Cooler temperatures require longer charging time, or in some cases stop charging at all.
    Warmer temperatures prevent complete charging, or in some cases stop charging at all.
  - ... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
  - ... keep a 30% battery level (▭) if the battery pack is not to be used for a long period of time.
    In addition, fully charge and then fully discharge the battery pack every 6 months, then continue to store it at a 30% battery level (▭).
  - ... remove from charger or powered unit when not in use, as some machines use current even when switched off.
  - ... do not drop or subject to strong impact.

Specifications

Camera

Power supply	Using the AC adapter: DC 5 V, Using a battery pack: DC 3.6 V
Power consumption	4.2 W, Rated current consumption: 2 A
Dimensions (mm)	73 x 48 x 90 (2 7/8" x 1 15/16" x 3 9/16") (W × H × D)
Mass	Approx. 179 g (0.4 lbs) (camera only)
Operating environment	Allowable operating temperature: 0 ˚C to 40 ˚C (32 ˚F to 104 ˚F) Allowable storage temperature: – 20 ˚C to 50 ˚C (– 4 ˚F to 122 ˚F) Allowable relative humidity: 35 % to 80 %
Image element	1/2.3" 12,400,000 pixels
Recording area	8,290,000 to 510,000 pixels (DIS: OFF)
Lens	F2.8, f = 3.8 mm (3/16") 35 mm (1 7/16") conversion: 24.0 mm (1")
Lowest illumination	33 lux (GAIN UP: ON) 5 lux (GAIN UP: AUTO SLOW-SHUTTER)
Zoom	Digital zoom: Up to 4x
Recording media	SD/SDHC/SDXC card (commercially available)
Network standard	Wired: 10BASE-T/100BASE-TX Wireless: IEEE 802.11b/g/n 2.4GHz band only
Clock battery	Rechargeable battery

Connectors

AV output connector	Video output: 1.0 V (p-p), 75 Ω Audio output: 218 mV (rms), 1 kΩ
Mic connector	ϕ3.5 mm mini jack: stereo, analog, plug-in power supported

Video

Recording format	AVCHD standard Video: AVC/H.264 Audio: Dolby Digital 2ch
Extension	.MTS
Signal system	NTSC standard
Image quality (Video)	UXP: 1920 x 1080 pixels Average Approximate 24 Mbps XP: 1920 x 1080 pixels Average Approximate 17 Mbps SP: 1920 x 1080 pixels Average Approximate 12 Mbps EP: 1920 x 1080 pixels Average Approximate 4.8 Mbps
Sound quality (Audio)	48 kHz, 256 kbps

Stream output format

		Stream 1	Stream 2
Format 1	Video	JPEG (640x360)	None
	Audio	LPCM 16 kHz 16 bit 1 ch	
Format 2	System	MPEG-2 TS	—
	Video	H.264 Main Profile (720x480)	JPEG (640x360)
	Audio	AAC 48 kHz 16 bit 2 ch	LPCM 16 kHz 16 bit 1 ch
Format 3	System	MPEG-2 TS	—
	Video	H.264 High Profile (1920x1080)	JPEG (640x360)
	Audio	AAC 48 kHz 16 bit 2 ch	LPCM 16 kHz 16 bit 1 ch

AC adapter (UIA312-0520)

Power supply	AC 100 V – 240 V, 50 Hz/60 Hz
Output	DC 5 V, 2 A
Allowable operating temperature	0°C to 40°C (32 ˚F to 104 ˚F) (10°C to 35°C (50 ˚F to 95 ˚F) during charging)
Dimensions (mm)	50 x 27 x 69 (2" x 1 1/8" x 2 3/4") (W × H × D: excluding cord and AC plug)
Mass	Approx. 135 g (0.3 lbs)

• Specifications and appearance are subject to change without notice due to product improvements.

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