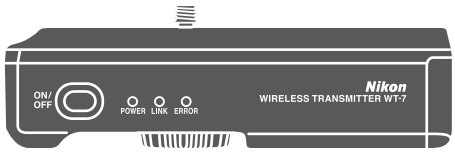
Nikon

Wireless Transmitter

WT-7

User's Manual



- Read this manual thoroughly before using the camera.
- To ensure proper use of the camera, be sure to read “For Your Safety” (page v).
- After reading this manual, keep it in a readily accessible place for future reference.

En

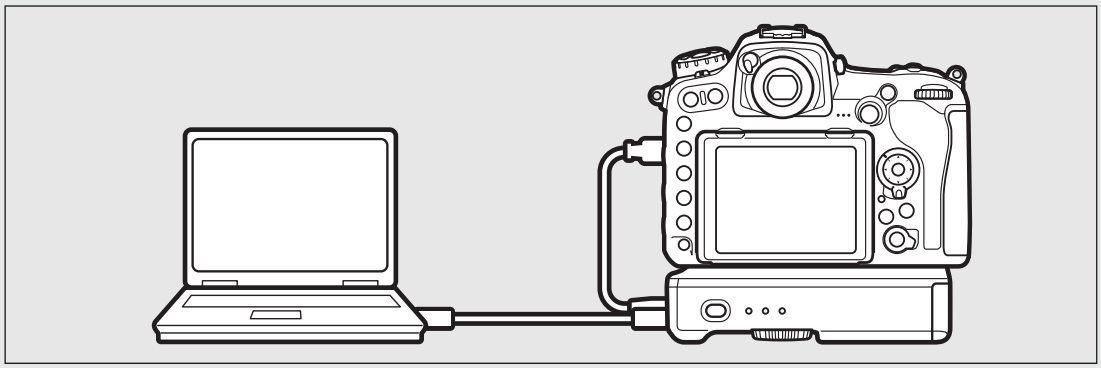
What the WT-7 Can Do for You

This manual describes how to attach the WT-7 to the camera and connect the camera to a computer, ftp server, or other device over Ethernet or wireless networks. It also describes the operations that can be performed once a connection is established.

Before connecting the WT-7, confirm that the firmware for the camera and WT-7 have been updated to the latest version. For more information, visit the websites listed on page xvi.

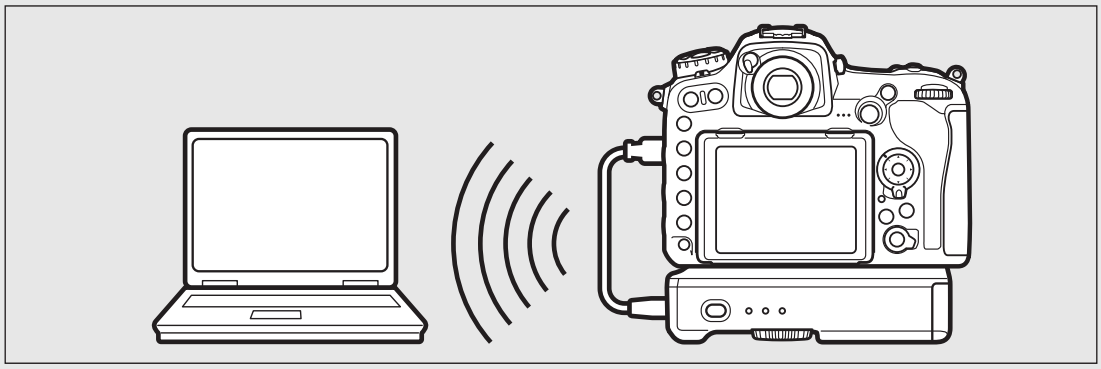
Before using the WT-7 network function, connect the camera to a network.

Ethernet Networks



For information on connecting to a computer, see page 10.
For information on connecting to an ftp server, see page 58.

Wireless Networks



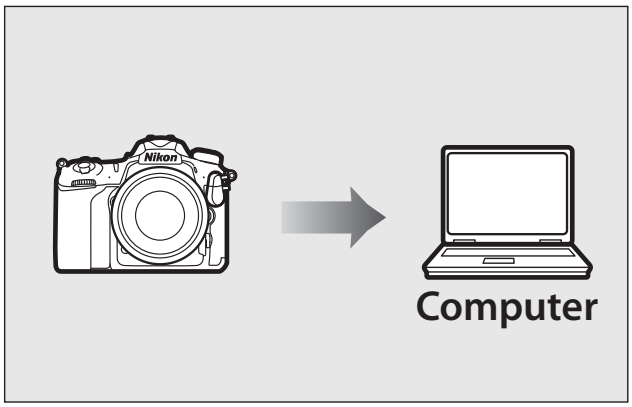
For information on connecting to a computer, see page 18.
For information on connecting to an ftp server, see page 65.

Model Name: WT-7 (N1504)
Model Name: WT-7A (N1534)
Model Name: WT-7B (N1535)
Model Name: WT-7C (N1536)

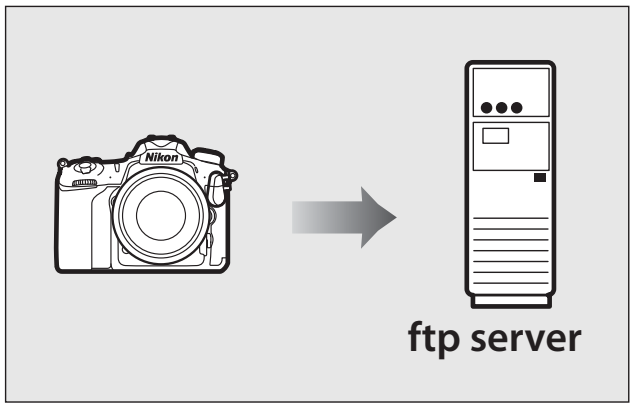
Once a network connection has been established, you can:

Upload existing photos and movies

Image Transfer (📖32)

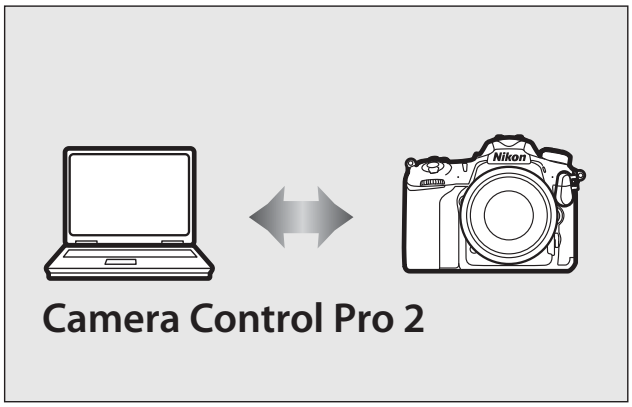


FTP Upload (📖78)

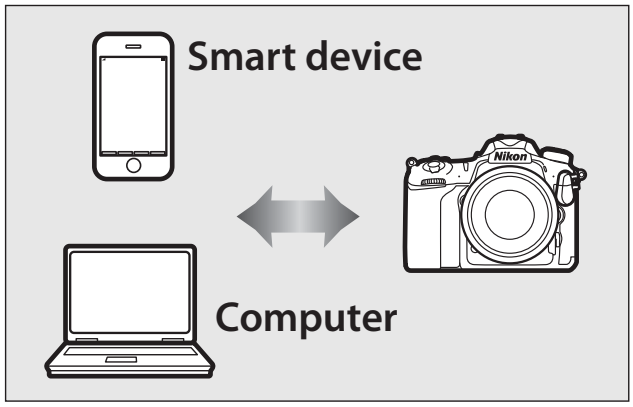


Take or browse photos remotely

Camera Control (📖37)



HTTP Server (📖40)



Nikon User Support for India and Australia

Contact a Nikon representative for technical assistance with the operation of your Nikon product or products. For information on the Nikon representatives in your area, visit *http://www.nikon-asia.com/support*.

Nikon Manual Viewer 2

Install the Nikon Manual Viewer 2 app on your smartphone or tablet to view Nikon digital camera manuals, anytime, anywhere. Nikon Manual Viewer 2 can be downloaded free of charge from the App Store and Google Play. Download of the app and any product manuals requires an Internet connection, for which fees may be levied by your phone or Internet service provider.

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Memory Cards

Throughout this manual, XQD and SD memory cards are referred to as "memory cards".

Apple Public Source License

This product includes Apple mDNS source code that is subject to the terms of the Apple Public Source License located at URL *http://developer.apple.com/opensource/*.

This file contains Original Code and/or Modifications of Original Code as defined in and that are subject to the Apple Public Source License Version 2.0 (the 'License'). You may not use this file except in compliance with the License. Please obtain a copy of the License at *http://www.opensource.apple.com/license/apsl/* and read it before using this file.

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For Your Safety

To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol:

> ⚠ This icon marks warnings, information that should be read before using this Nikon product to prevent possible injury.

■■ *WARNINGS*

⚠ **Do not disassemble**
Touching the product's internal parts could result in injury. In the event of malfunction, the product should be repaired only by a qualified technician. Should the product break open as the result of a fall or other accident, remove the battery and/or AC adapter and then take the product to a Nikon-authorized service center for inspection.

⚠ **Turn off immediately in the event of malfunction**
Should you notice smoke or an unusual smell coming from the equipment, immediately unplug the AC adapter and remove the battery, taking care to avoid burns. Continued operation could result in injury. After removing the battery, take the equipment to a Nikon-authorized service representative for inspection.

⚠ **Do not use in the presence of flammable gas**
Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire.

⚠ **Keep dry**
Do not immerse in or expose to water or rain. Failure to observe this precaution could result in injury or product malfunction due to fire or electric shock.

⚠ **Do not handle with wet hands**
Failure to observe this precaution could result in electric shock.

⚠ **Do not handle the power cable or go near the charger during thunderstorms**
Failure to observe this precaution could result in electric shock.

⚠ **Keep out of reach of children**

Failure to observe this precaution could result in injury. In addition, note that small parts constitute a choking hazard. Should a child swallow any part of this equipment, consult a physician immediately.

⚠ **Do not remain in contact with the wireless transmitter, battery, or charger for extended periods while the devices are on or in use**

Parts of the device become hot. Leaving the device in direct contact with the skin for extended periods may result in low-temperature burns.

⚠ **Do not leave the product where it will be exposed to extremely high temperatures, such as in an enclosed automobile or in direct sunlight**

Failure to observe this precaution could cause damage or fire.

⚠ **Observe proper precautions when handling batteries**

Batteries may leak, overheat, rupture, or catch fire if improperly handled. Observe the following precautions when handling batteries for use in this product:

- Use only batteries approved for use in this equipment.
- Do not short or disassemble the battery.
- Do not expose the battery or the device in which it is inserted to powerful physical shocks.
- Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged.
- Do not attempt to insert the battery upside down or backwards.
- Do not expose the battery to flame or to excessive heat.
- Do not immerse in or expose to water.
- Replace the terminal cover when transporting the battery. Do not transport or store the battery with metal objects such as necklaces or hairpins.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
- When the battery is not in use, attach the terminal cover and store in a cool, dry place.
- The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the wireless transmitter off and allow the battery to cool.
- Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation.

⚠ **Use appropriate cables**

When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose to maintain compliance with product regulations.

⚠ **Follow the instructions of airline and hospital personnel**

Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the appearance and specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

This product is controlled by the United States Export Administration Regulations (EAR). The permission of the United States government is not required for export to countries other than the following, which as of this writing are subject to embargo or special controls: Cuba, Iran, North Korea, Sudan, and Syria (list subject to change).

The use of wireless devices may be prohibited in some countries or regions. Contact a Nikon-authorized service representative before using the wireless features of this product outside the country of purchase.

Copyright

Comply with copyright notices. Under copyright law, photographs or recordings of copyrighted works made with the camera can not be used without the permission of the copyright holder. Exceptions apply to personal use, but note that even personal use may be restricted in the case of photographs or recordings of exhibits or live performances.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Security

Although one of the benefits of this product is that it allows others to freely connect for the wireless exchange of data anywhere within its range, the following may occur if security is not enabled:

- Data theft: Malicious third-parties may intercept wireless transmissions to steal user IDs, passwords, and other personal information.
- Unauthorized access: Unauthorized users may gain access to the network and alter data or perform other malicious actions. Note that due the design of wireless networks, specialized attacks may allow unauthorized access even when security is enabled.

Notice for Customers in the U.S.A. and Canada
This device complies with Part 15 of FCC Rules and Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

Nikon WT-7A
FCC ID: CGJ1252EA
IC: 4634A-1252EA

FCC CAUTION

1. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

FCC Radio Frequency Interference Statement

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

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

Notes on 5GHz band use

1. 5.15-5.35 GHz band is restricted to indoor operations only.
2. High-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Compliance with FCC requirement 15.407(c)

Data transmission is always initiated by software, which is the passed down through the MAC, through the digital and analog baseband, and finally to the RF chip. Several special packets are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets is being transmitted. In other words, this device automatically discontinue transmission in case of either absence of information to transmit or operational failure.

Compliance with IC (RSS-247 § A6.4(2))

Compliance with IC requirement RSS-247 A6.4(2) Data transmission is always initiated by software, which is the passed down through the MAC, through the digital and analog baseband, and finally to the RF chip. Several special packets are initiated by the MAC. These are the only ways the digital baseband portion will turn on the RF transmitter, which it then turns off at the end of the packet. Therefore, the transmitter will be on only while one of the aforementioned packets is being transmitted. In other words, this device automatically discontinue transmission in case of either absence of information to transmit or operational failure.

Co-location

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

FCC/IC RF Exposure Statement

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. WT-7A has been tested and found to comply with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules.

Nikon Inc.,
1300 Walt Whitman Road, Melville, New York
11747-3064, U.S.A. Tel.: 631-547-4200

Notice for Customers in Europe

R&TTE Directive

We, the manufacturer (Nikon Corporation) hereby declare that this Wireless Transmitter (WT-7) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

AT	BE	BG	CY	CZ	DK	EE	FI
FR	DE	GR	HU	IE	IT	LV	LT
LU	MT	NL	PL	PT	RO	SK	SI
ES	SE	GB	IS	LI	NO	CH	TR
HR							

Symbol for Separate Collection in European Countries

This symbol indicates that electrical and electronic equipment is to be collected separately.
The following apply only to users in European countries:

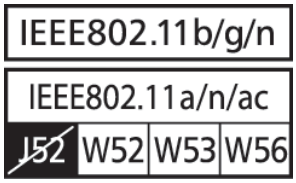
- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- Separate collection and recycling helps conserve natural resources and prevent negative consequences for human health and the environment that might result from incorrect disposal.
- For more information, contact the retailer or the local authorities in charge of waste management.

Declaration of Conformity

A copy of the original DoC for our products as it relates to R&TTE can be found at the following website:

http://imaging.nikon.com/support/pdf/DoC_WT-7.pdf

This device complies with radio-frequency regulations. The content of certification labels not affixed to the device is given below.



Available Channels

The WT-7 is available in four versions, each destined for use in a different region in compliance with local regulations governing the use of wireless devices (for information on countries not listed in the following table, contact a Nikon representative). Use each model only in the region for which it is intended.

Version	For use in	Channels	
		2.4 GHz band	5 GHz band
WT-7	The 32 countries of the EU-EFTA (Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom), Australia, Japan, New Zealand, Saudi Arabia, South Africa, Thailand, Turkey	1–13	36–64, 100–140
WT-7A	Argentina, Brazil, Canada, Chile, India, Mexico, Panama, U.S.A.	1–11	36–64, 149–165
WT-7B	Korea, Russia, Singapore	1–13	36–64
WT-7C	China, Hong Kong, Malaysia, Taiwan	1–13	149–165

5GHz band

The channels available for 5GHz band are listed below.

Version	Location	Mode	Channels			
			W52	W53	W56	W58
			36–48	52–64	100–140	149–165
WT-7	Indoor	Infrastructure	✔	✔	✔	—
		Access point	—	—	—	—
	Outdoor	Infrastructure	Prohibited	Prohibited	✔	—
		Access point	—	—	—	—
WT-7A	Indoor	Infrastructure	✔	✔	—	✔
		Access point	—	—	—	—
	Outdoor	Infrastructure	Prohibited	Prohibited	—	✔
		Access point	—	—	—	—
WT-7B	Indoor	Infrastructure	✔	✔	—	—
		Access point	—	—	—	—
	Outdoor	Infrastructure	✔	✔	—	—
		Access point	—	—	—	—
WT-7C	Indoor	Infrastructure	—	—	—	✔
		Access point	—	—	—	—
	Outdoor	Infrastructure	—	—	—	✔
		Access point	—	—	—	—

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Background Knowledge

This manual assumes basic knowledge of ftp servers and local area networks (LANs). For more information on installing, configuring, and using devices in a network, contact the manufacturer or network administrator.

Illustrations

The appearance and content of the software and operating system dialogs, messages, and displays shown in this manual may vary with the operating system used. For information on basic computer operations, see the documentation provided with the computer or operating system.

Camera Controls

The camera operations described in this manual are those for the D500. Operations for other cameras may differ.

Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

- **For users in the U.S.A.**: *http://www.nikonusa.com/*
- **For users in Europe and Africa:** *http://www.europe-nikon.com/support/*
- **For users in Asia, Oceania, and the Middle East**: *http://www.nikon-asia.com/*

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the following URL for contact information: *http://imaging.nikon.com/*

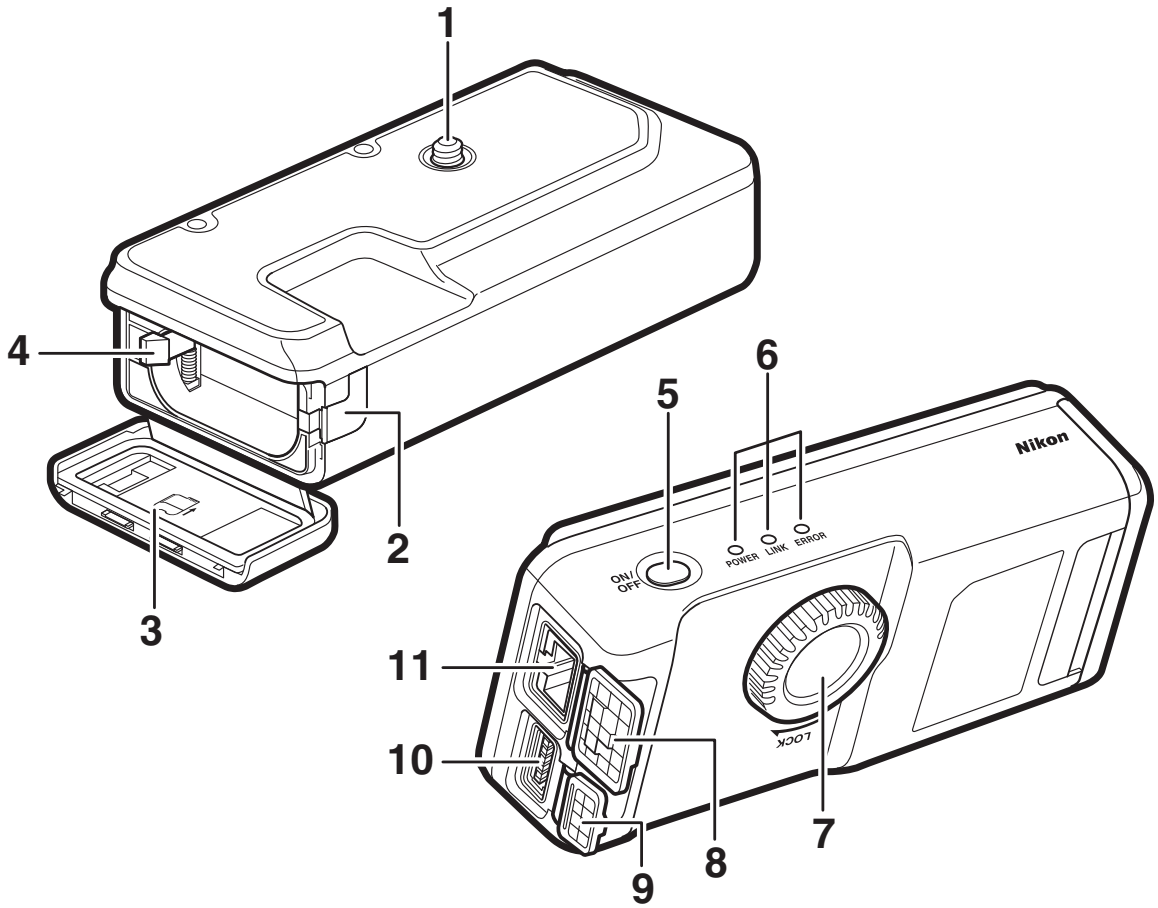
Introduction

Thank you for your purchase of a WT-7 wireless transmitter for compatible Nikon digital cameras. Please read this manual thoroughly and keep it where all those who use the product can read it.

The following symbols and conventions are used throughout this manual:

✔	This icon marks cautions, information that should be read before use to prevent damage to the product.
✎	This icon marks notes, information that should be read before using the device.
📖	This icon marks references to other pages in this manual.

Parts of the WT-7



1	Mounting screw 5	7	Attachment wheel 5
2	Power connector cover 7	8	Ethernet connector cover
3	Battery-chamber cover 4	9	USB connector cover
4	Battery latch 4	10	USB connector 5
5	Power switch 11, 20, 59, 66	11	Ethernet connector
6	Status LEDs ..... 35, 38, 44, 81 **POWER** (green/yellow), **LINK** (green), **ERROR** (orange)		

The POWER LED

When the WT-7 is on, the **POWER** LED glows green to indicate that the battery is fully charged or that an AC adapter is connected. At battery levels below 10%, it will flash to warn that the battery requires charging. When the WT-7 is turned off, the **POWER** LED briefly turns yellow as the product powers down.

Supplied Accessories

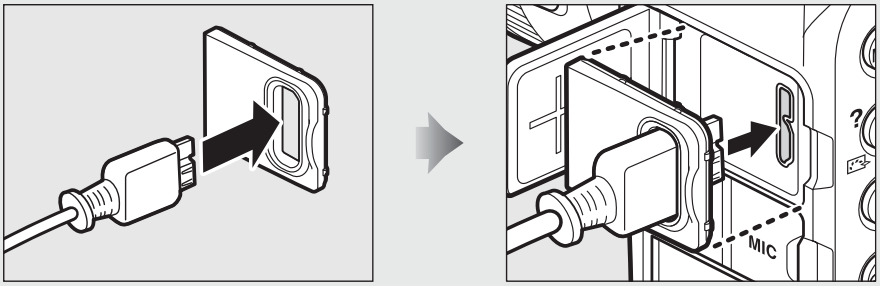
The following accessories are supplied with the WT-7 (batteries such as the EN-EL15 are not supplied):

- ❏*User's Manual* (this manual)
- ❏Warranty
- ❏CF-WT7 case
- ❏AN-CP24 Strap
- ❏USB cable B
- ❏UF3-RU14 USB cable gasket
- ❏UF-7 USB cable connector cover

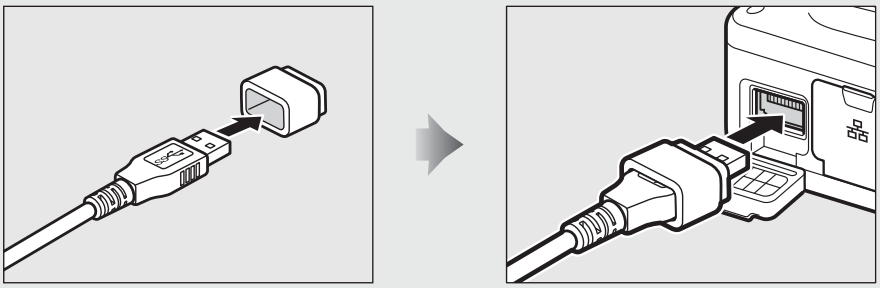
USB Cable Gaskets and Connector Covers

The USB cable gaskets and connector covers prevent accidental disconnections. Attach as shown below.

When connecting the USB cable to a camera, attach the supplied UF-7 cable connector cover as shown.



When connecting the USB cable to the WT-7, attach the supplied UF3-RU14 cable gasket as shown.



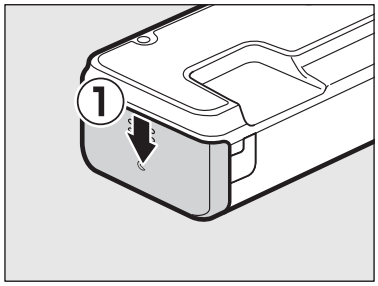
Getting Ready

Inserting the Battery

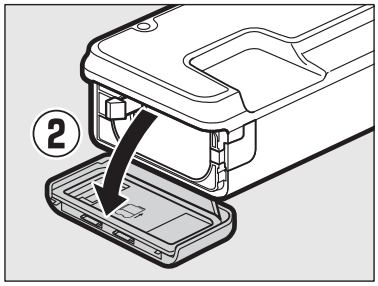
The WT-7 takes one EN-EL15 rechargeable Li-ion battery. Insert the battery as described below.

1 Open the battery-chamber cover.

Unlatch the cover by sliding it as shown (①).

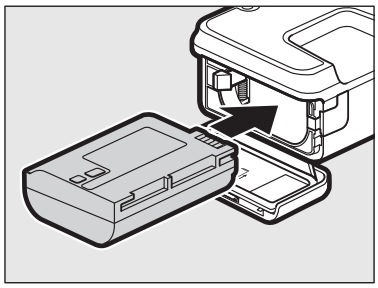


Open the cover (②).



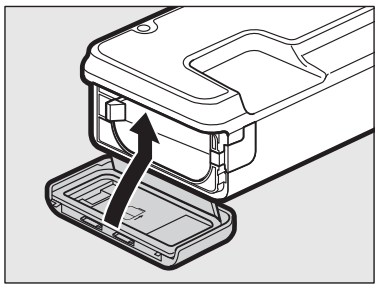
2 Insert the battery.

Using the battery to keep the battery latch pressed to one side, slide the battery in until the latch clicks back into place. For safety precautions and information on charging the battery, see the battery and charger manuals.



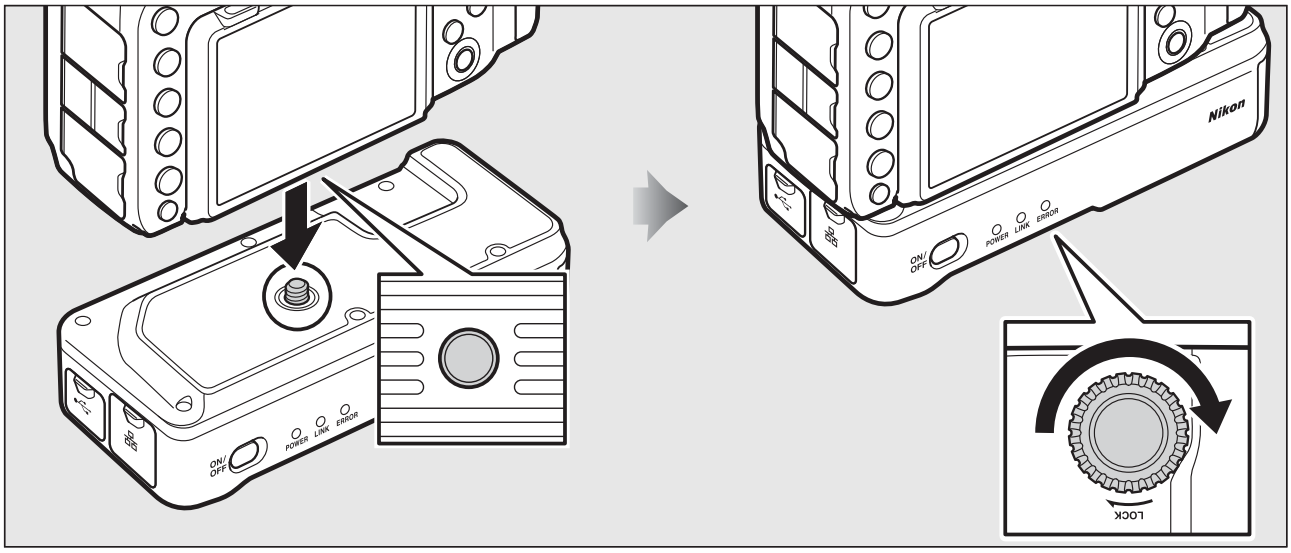
3 Close the battery-chamber cover.

Reverse the instructions in Step 1 to close and latch the cover as shown. Be sure the cover is securely latched.



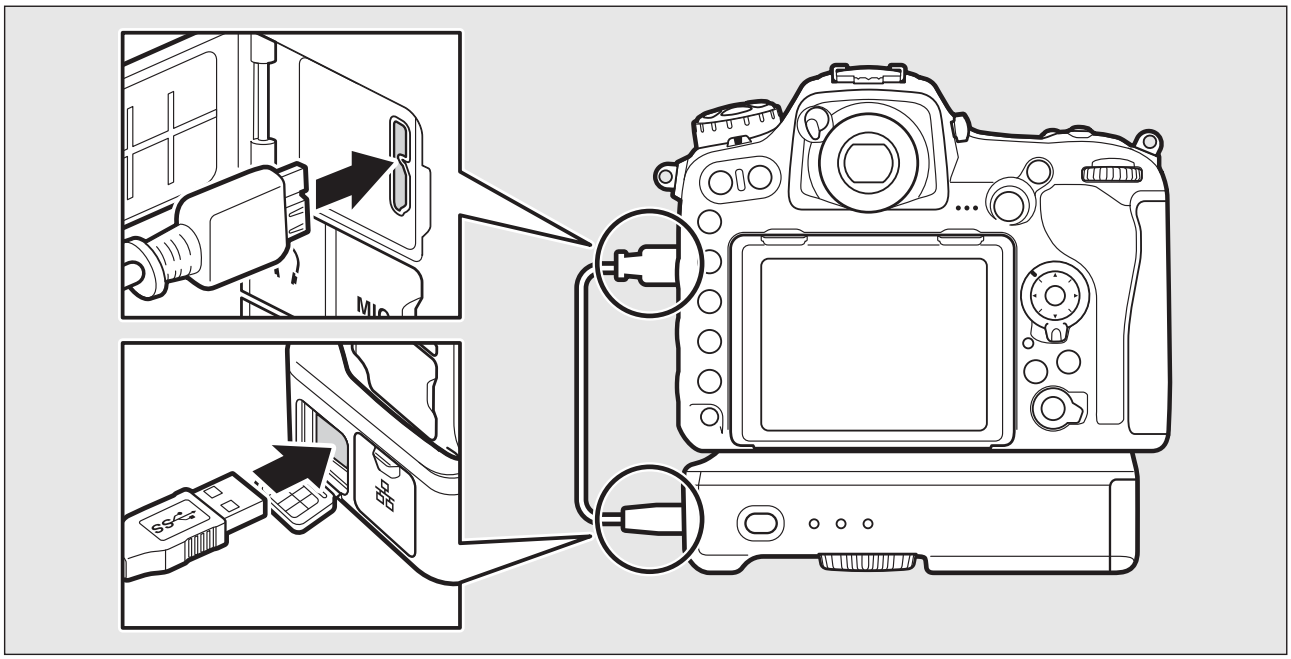
Attaching the WT-7

After checking that the camera is off, align the WT-7 mounting screw with the camera tripod socket and tighten by rotating the attachment wheel in the direction shown by the **LOCK** arrow.



Connecting the USB Cable

Connect the WT-7 to the camera using the supplied USB cable.



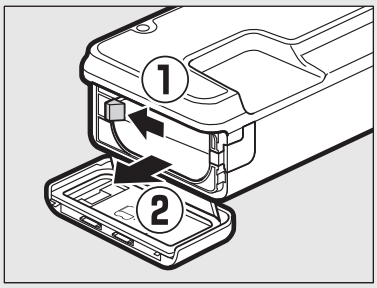
The Wireless Transmitter Utility

The Wireless Transmitter Utility is used for pairing in image transfer and camera control modes (📖16) and can also help create network profiles (📖93). You can install the utility after downloading it from the following website:
http://downloadcenter.nikonimglib.com/

Be sure to use the latest versions of the Wireless Transmitter Utility and the camera firmware.

Removing the Battery

Being careful not to drop the battery, open the WT-7 battery-chamber cover and remove the battery as shown at right.



Stand-By Mode

When the WT-7 is disconnected from the camera or the camera is turned off, the WT-7 will turn off automatically after the delay chosen for **Network** > **Options** > **Auto power off delay** in the setup menu (📖92), reducing the drain on the battery.

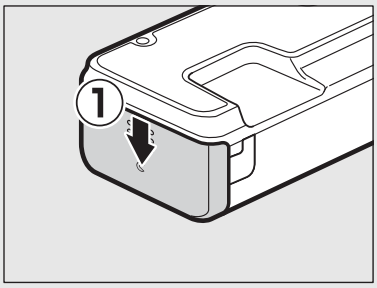
Battery Level

The level of the battery inserted in the WT-7 can be determined by connecting the WT-7 to the camera (□5) and checking the battery level using the **Options** > **Battery info** in the **Network** menu (□91).

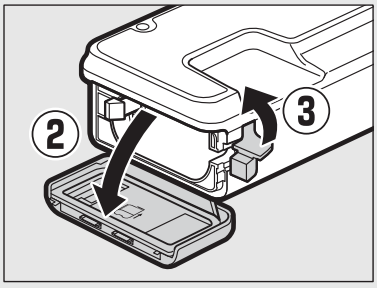
Using an AC Adapter

An optional EP-5B power connector and EH-5b or EH-5/EH-5a AC adapter can also be used to power the camera when the WT-7 is connected. Insert the power connector as shown below.

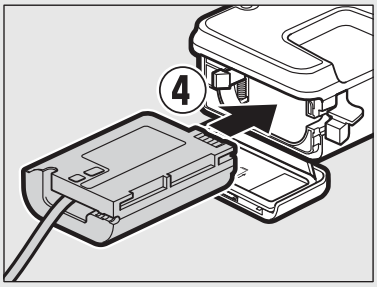
1 Unlatch the battery-chamber cover (①).



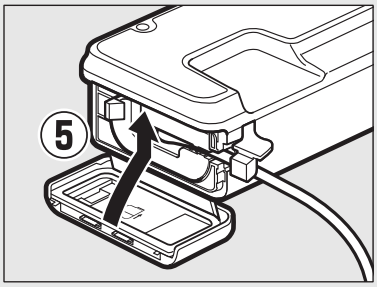
2 Open the battery-chamber (②) and power connector covers (③).



3 Using the power connector to keep the battery latch pressed to one side, slide the connector in until the latch clicks back into place (④).



4 Position the power connector so that the cord passes through the power connector slot and close the battery-chamber cover (⑤). Be sure that the cover is securely latched.



Supported Network Functions

The WT-7 wireless transmitter connects the camera to Ethernet and wireless networks. Photographs on the camera can then be transmitted to a computer or ftp server and the camera controlled remotely from a computer. The WT-7 supports the following functions:

FTP upload (📖78)	Upload existing photos and movies to a computer or ftp server, or upload new photos as they are taken.
Image transfer (📖32)	
Camera control (📖37)	Control the camera using optional Camera Control Pro 2 software and save new photos and movies directly to the computer.
HTTP server (📖40)	View and take pictures remotely using a browser-equipped computer or smart device.

Before data can be transferred over a wireless or Ethernet network, the camera must be supplied with a *network profile* providing information on the host computer or ftp server.

Choosing a Power Source

To prevent the camera or WT-7 powering off unexpectedly during setup or data transfer, use fully-charged batteries or optional AC adapters designated for use with the camera or WT-7. For more on camera power sources, see the camera manual.

FTP Servers

Servers can be configured using standard ftp services available with supported operating systems, such as IIS (Internet Information Services). Connection to computers on other networks via a router, Internet ftp connections and ftp servers running third-party software are not supported.

Ethernet Connection

No adjustments to wireless LAN settings are required when the camera is connected to a LAN by an Ethernet cable.

HTTP Server Mode

Internet connections are not supported in http server mode.

Routers

Connection to computers on other networks via a router is not supported.

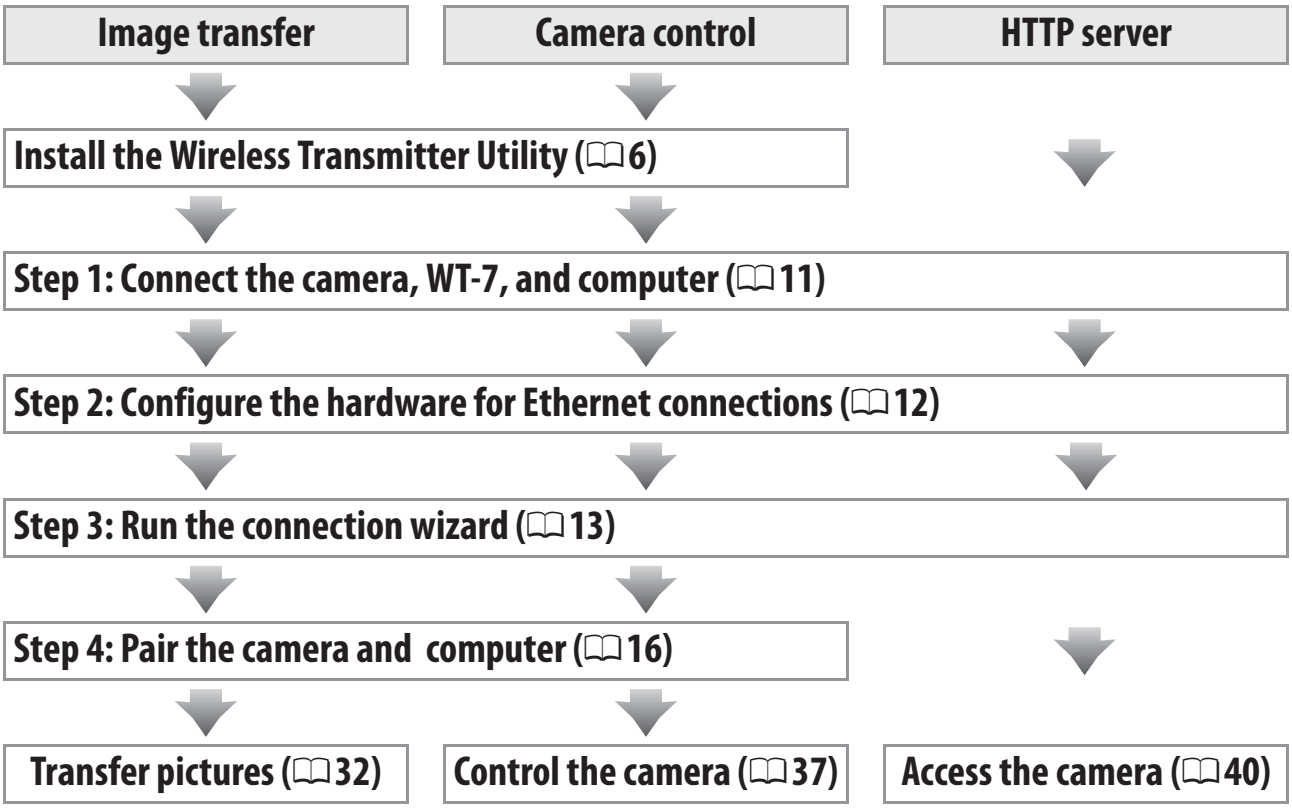
Firewall Settings

TCP ports 21 and 32768 through 61000 are used for ftp, TCP ports 22 and 32768 through 61000 for sftp, and TCP port 15740 and UDP port 5353 for connections to computers. File transfer may be blocked if the server firewall is not configured to allow access to these ports.

Transfer, Control, and HTTP

Ethernet Connections

Follow the steps below to connect via an Ethernet network. For information on wireless connections, see page 18.



Step 1: Connecting the Equipment

Before proceeding with the following steps, start the computer and log in.

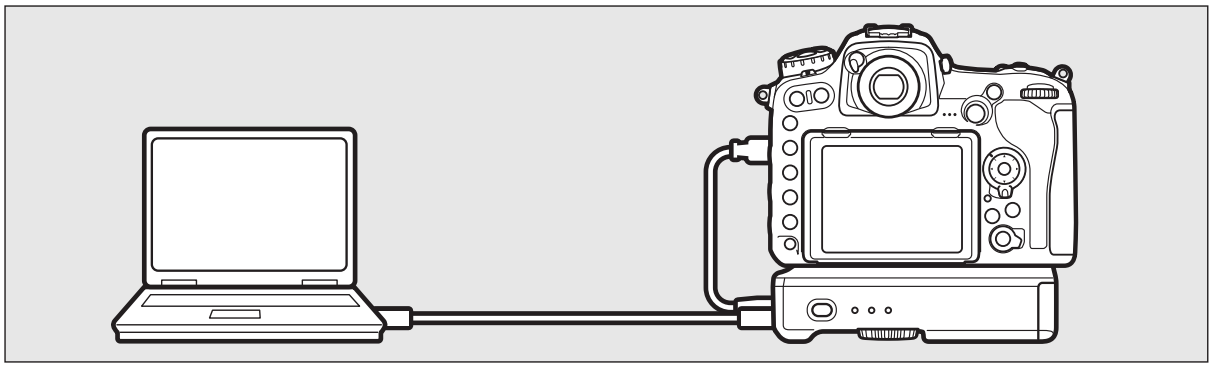
1 Insert a memory card.

Turn the camera off and insert a memory card (do not turn the camera off or disconnect the Ethernet cable while data are being transferred to the computer). This step can be omitted in camera control mode (📖37).

2 Attach the WT-7 (📖 5).

3 Connect an Ethernet cable.

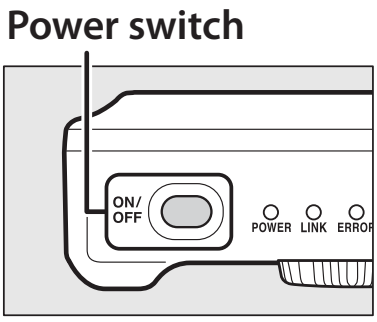
Connect the Ethernet cable as shown below. Do not use force or insert the connectors at an angle.



4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn the WT-7 on.

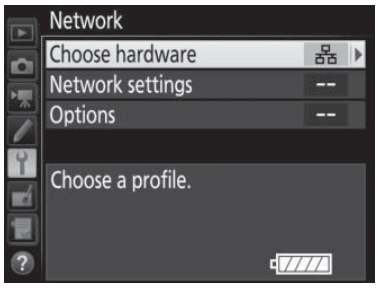


Step 2: Configuring the Hardware for Ethernet Connections

Configure the WT-7 for use with Ethernet networks.

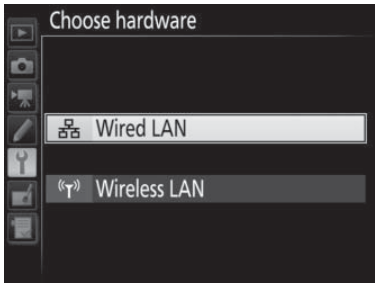
1 Select **Choose hardware.**

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶. The menu offers a choice of **Wired LAN** and **Wireless LAN**.



2 Select **Wired LAN.**

Highlight **Wired LAN** and press OK to select the highlighted option and return to the network menu.

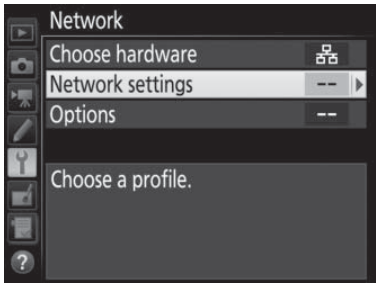


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

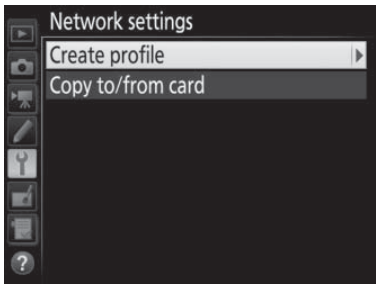
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



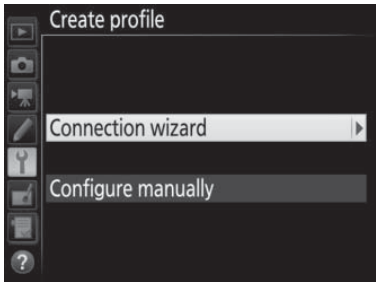
2 Select **Create profile.**

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (📖85).



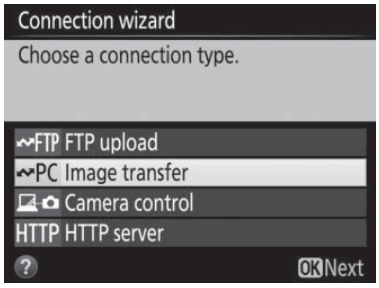
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.

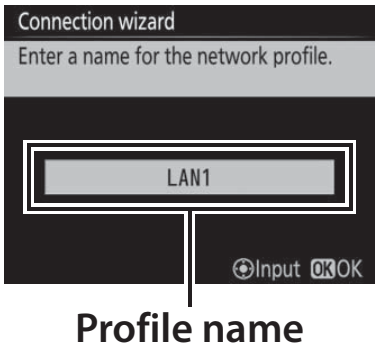


4 Choose a connection type (📖8).

Highlight **Image transfer**, **Camera control**, or **HTTP server** and press ▶.

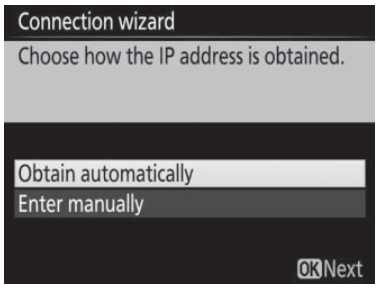


5 Name the new network profile.



A default profile name will be displayed; to edit or change the name as described in the camera manual, press the center of the multi selector (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard). The profile name will appear in the **Network** > **Network settings** list in the camera setup menu. Press OK to proceed to the next step when entry is complete.

6 Obtain or select an IP address.

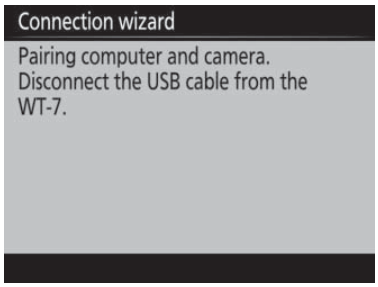


Highlight one of the following options and press OK.

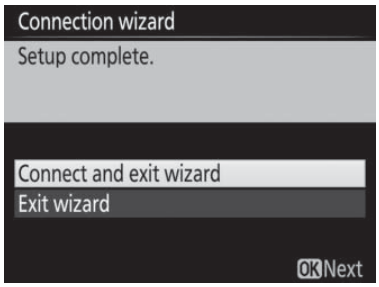
- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press OK to proceed when entry is complete.

7 Choose your next step.

The IP address will be displayed; press Ⓚ. Your next step depends on the connection type selected in Step 4 on page 13:

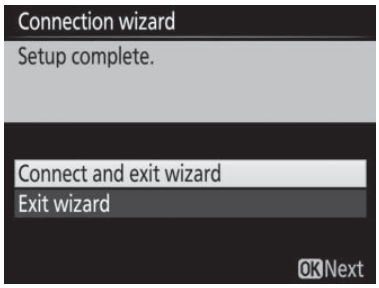


If you chose Image transfer or Camera control, proceed to page 16.



If you chose HTTP server, proceed to Step 8.

8 Exit the wizard.



Highlight one of the following options and press Ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

Proceed to "HTTP Server" (📖40).

Routers

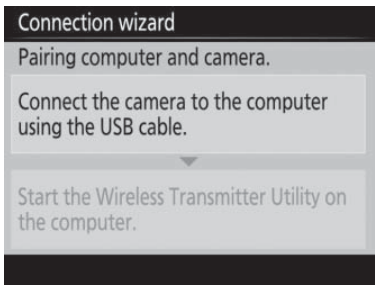
Connection to computers on other networks via a router is not supported.

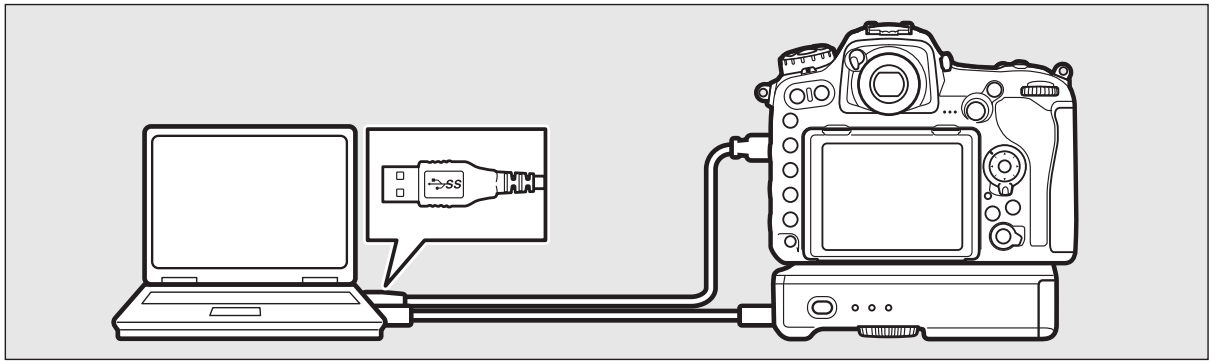
Step 4: Pairing

If you selected **Image transfer** or **Camera control** in Step 4 of the connection wizard (📖13), pair the camera with the computer as described below. Pairing allows the computer to connect to the camera.

1 Connect the camera to the computer via USB.

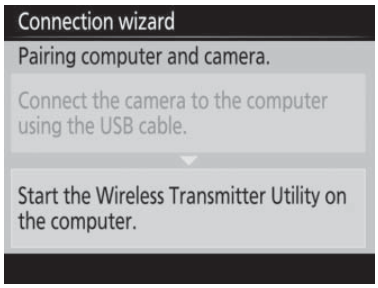
Disconnect the USB cable from the WT-7 and connect it to the computer.





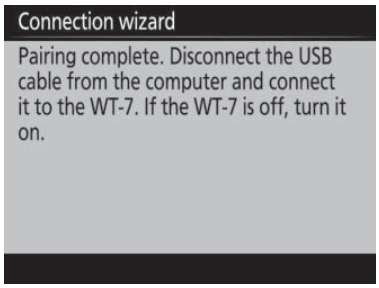
2 Start the Wireless Transmitter Utility.

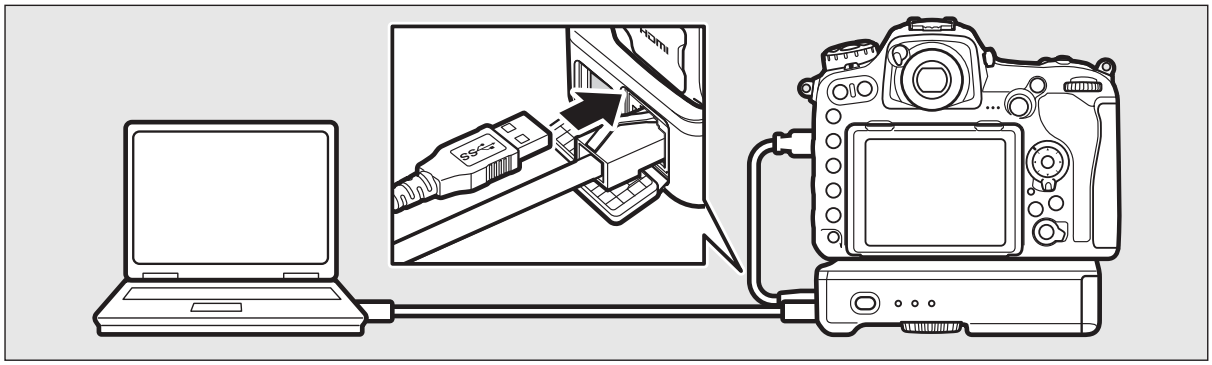
When prompted, start the copy of the Wireless Transmitter Utility installed on the computer. Pairing will begin automatically.



3 Disconnect the camera.

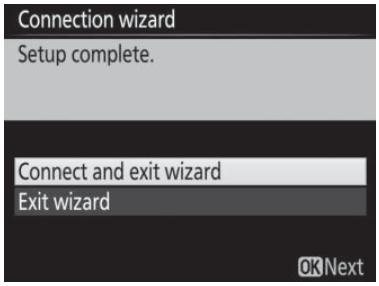
The message at right will be displayed when pairing is complete. Disconnect the USB cable from the computer and reconnect it to the WT-7.





4 Exit the wizard.

Highlight one of the following options and press Ⓚ.

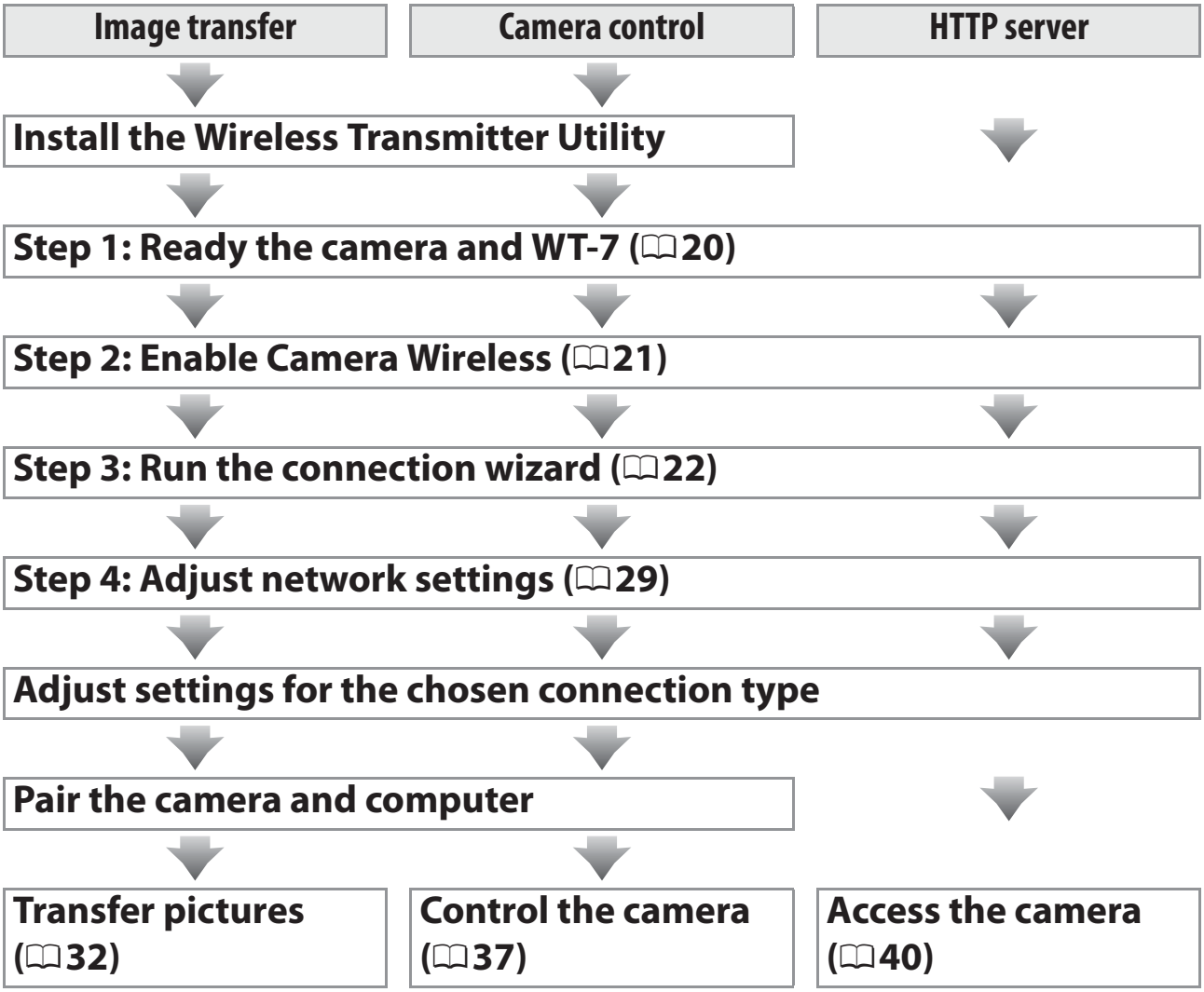


- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

Proceed to “Image Transfer” (📖32) or “Camera Control” (📖37).

Wireless Connections

Follow the steps below to connect to a wireless network.



Infrastructure and Access Point Modes

Connections to wireless networks may be in infrastructure or access point mode.

Infrastructure mode: Connection via a wireless LAN access point.

WT-7 Wireless LAN access point Computer or smart device

Access point mode: The camera serves as an access point for direct connection to a computer or smart device.

WT-7 Computer or smart device

Wireless LANs

These instructions are intended for customers with an existing wireless LAN, and in the case of infrastructure networks assume that the computer and access point are already connected to the network.

Step 1: Readying the Equipment

After starting the computer and logging in, ready the camera and WT-7 as described below.

1 Insert a memory card.

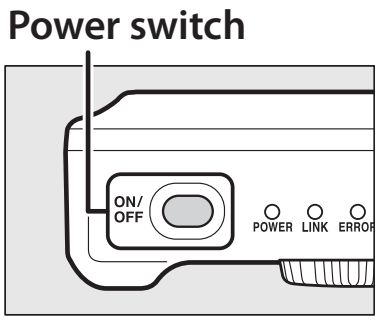
Turn the camera off and insert a memory card (do not turn the camera off while data are being transferred to the computer). This step can be omitted in camera control mode (□8).

2 Attach the WT-7 (□5).

3 Turn the camera on.

Rotate the power switch to turn the camera on.

4 Press the power switch for about a second to turn the WT-7 on.

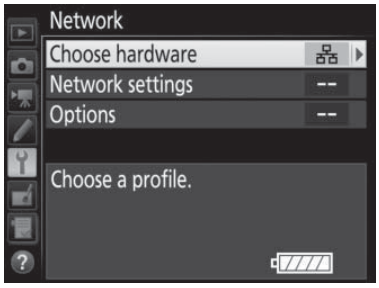


Step 2: Enable Camera Wireless

Ready the camera for connection to a wireless network.

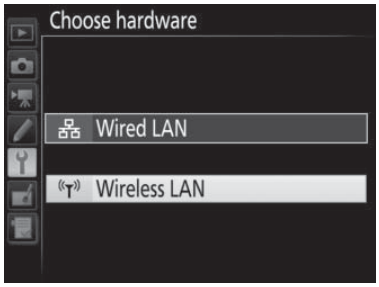
1 Select **Choose hardware.**

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶. The menu offers a choice of **Wired LAN** and **Wireless LAN**.



2 Select **Wireless LAN.**

Highlight **Wireless LAN** and press OK to select the highlighted option and return to the network menu.

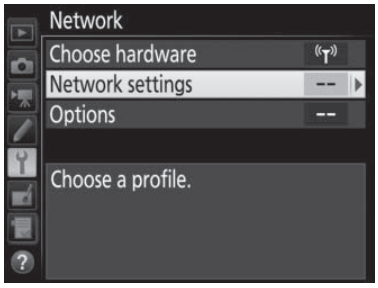


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

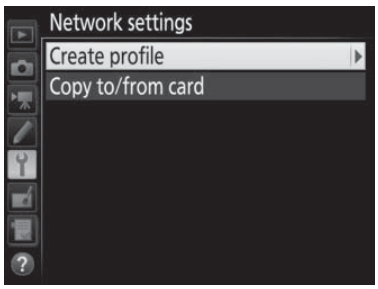
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



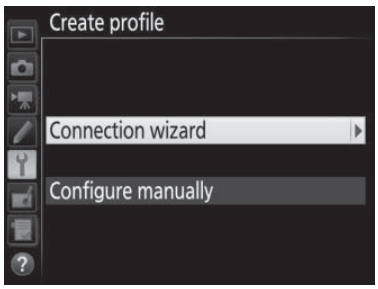
2 Select Create profile.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding.



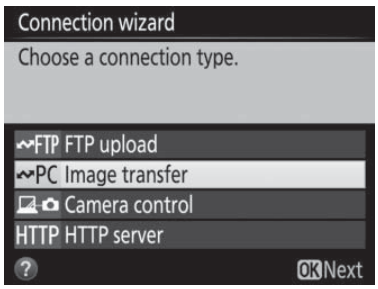
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.

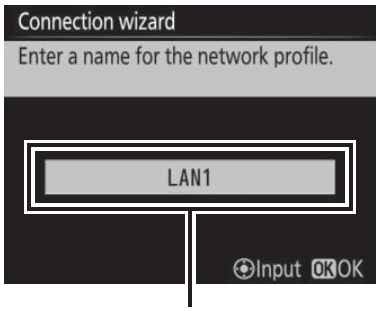


4 Choose a connection type (📖8).

Highlight **Image transfer**, **Camera control**, or **HTTP server** and press OK.



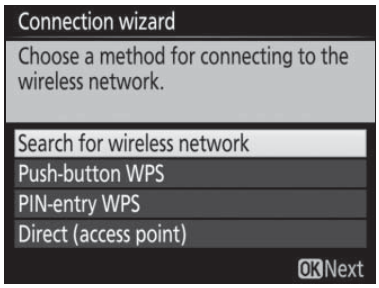
5 Name the new network profile.



Profile name

A default profile name will be displayed; to edit or change the name as described in the camera manual, press the center of the multi selector (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard). The profile name will appear in the **Network** > **Network settings** list in the camera setup menu. Press OK to proceed to the next step when entry is complete.

6 Choose a connection method.

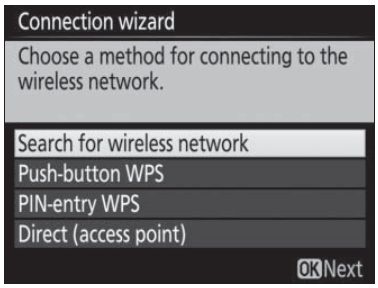


Highlight the connection method used by the network and press OK. More information can be found on the pages listed below.

Search for wireless network	Choose from a list of networks detected by the camera. Proceed to page 24.
Push-button WPS	Choose for wireless LAN access points with push-button WPS. Proceed to page 26.
PIN-entry WPS	Choose for wireless LAN access points with PIN-entry WPS. Proceed to page 27.
Direct (access point)	Connect directly to a host computer or ftp server in access point mode, with the camera serving as an access point. Proceed to page 28.

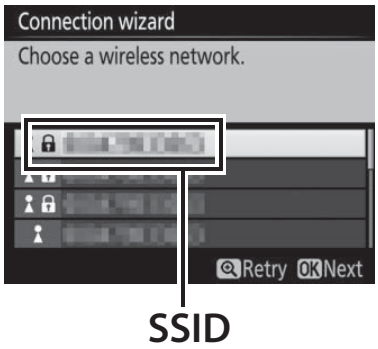
Search for Wireless Network

Select **Search for wireless network** in Step 6 on page 23 to choose from a list of the networks (wireless LAN access points) detected by the camera.



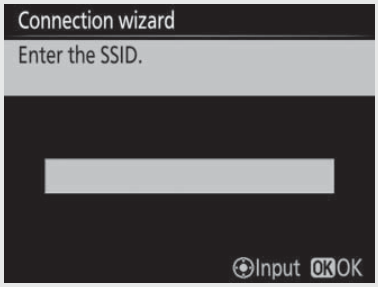
1 Choose a network.

Highlight a network SSID and press OK (if the desired network is not displayed, press 🔍 to search again). Encrypted networks are indicated by a 🔒 icon; if the selected network is encrypted, you will be prompted to enter the encryption key as described in Step 2. If the network is not encrypted, proceed to Step 3.



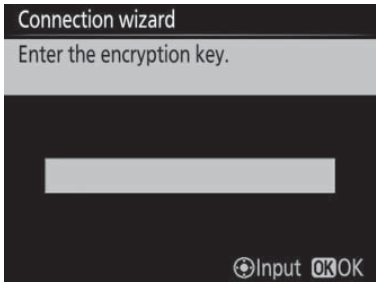
Hidden SSIDs

Networks with hidden SSIDs are indicated by blank entries in the network list. If you highlight a blank entry and press OK, you will be prompted to provide the network name; press the center of the multi selector, enter a name, and then press OK to proceed to Step 2.

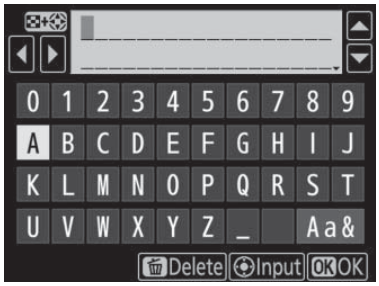


2 Enter the encryption key.

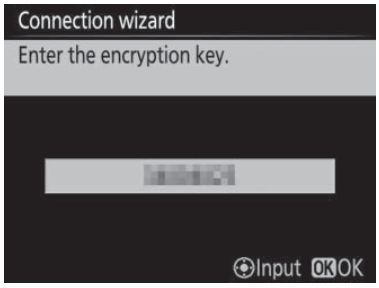
Press the center of the multi selector and enter the encryption key as described in the camera manual (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard).



Press Ⓚ when entry is complete.

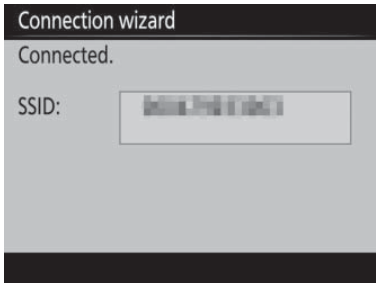


Press Ⓚ to establish a connection.



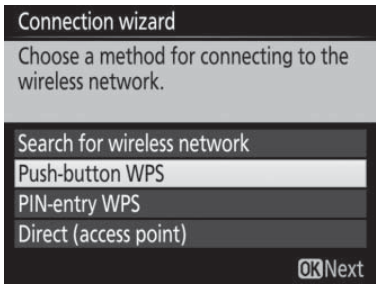
3 Choose your next step.

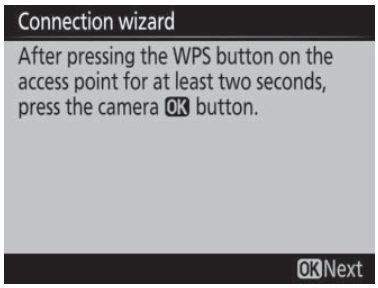
The message at right is displayed when a connection is established. Proceed to page 29.



Push-Button WPS

Choose **Push-button WPS** in Step 6 on page 23 if the wireless LAN access point uses push-button WPS.



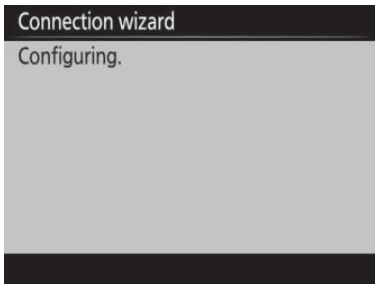


1 Press the WPS button on the wireless LAN access point.

For more information, see the documentation provided with the wireless LAN access point.

2 Press OK button on the camera.

The camera will connect to the access point automatically.

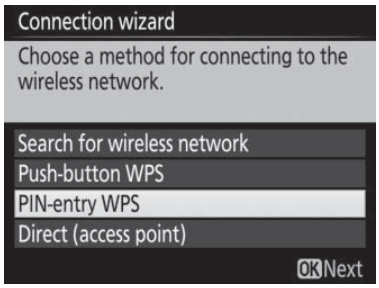


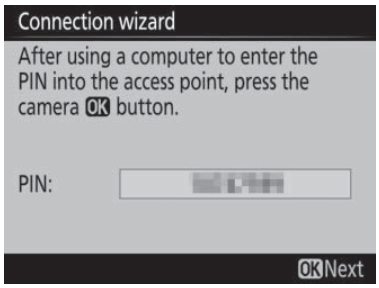
3 Choose your next step.

The message at right is displayed when a connection is established. Press OK and proceed to page 29.

■■ *PIN-Entry WPS*

Choose **PIN-entry WPS** in Step 6 on page 23 if the wireless LAN access point uses PIN-entry WPS.



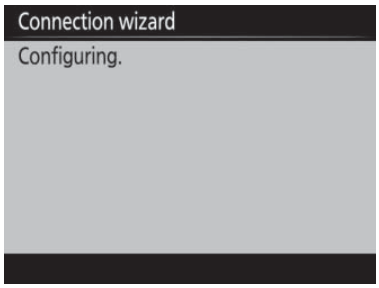


1 Enter the PIN for the wireless LAN access point.

From a computer, enter the PIN for the wireless LAN access point. For more information, see the documentation provided with the wireless LAN access point.

2 Press Ⓚ button on the camera.

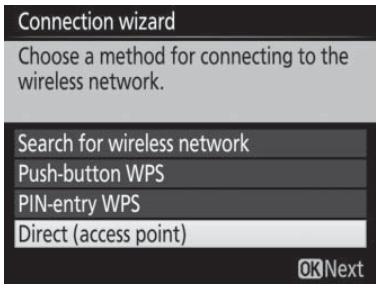
The camera will connect to the access point automatically.

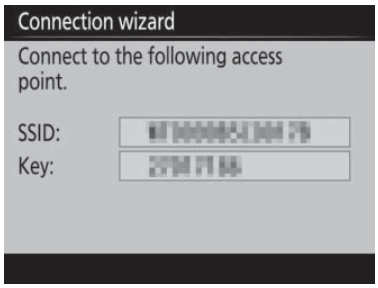


3 Choose your next step.

The message at right is displayed when a connection is established. Press Ⓚ and proceed to page 29.

Direct (Access Point)





Selecting **Direct (access point)** in Step 6 on page 23 enables access point mode, in which the camera serves as a wireless access point. The camera SSID and encryption key will be displayed in the monitor. On the computer or smart device, enter the SSID and encryption key displayed in the camera monitor. If you selected **Image transfer** or **Camera control** mode in Step 4 on page 22, proceed to Step 3 on page 30. If you selected **HTTP server** mode, proceed to Step 5 on page 31.

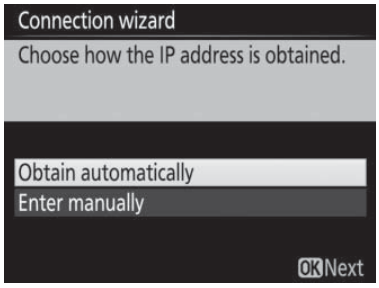
Step 4: Network Settings

If you selected **Search for wireless network**, **Push-button WPS**, or **PIN-entry WPS** in Step 6 on page 23, choose an IP address. If you selected **Direct (access point)**, your next step will depend on the connection type selected in Step 4 on page 22:

- If you selected **Image transfer** or **Camera control** mode, proceed to Step 3.
- If you selected **HTTP server** mode, proceed to Step 5.

1 Obtain or select an IP address.

Highlight one of the following options and press Ⓚ.



- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press Ⓚ to proceed when entry is complete.

Routers

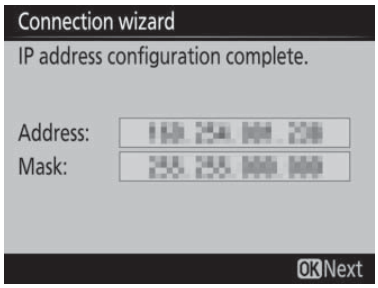
Connection to computers on other networks via a router is supported only when **HTTP server** is selected.

MAC Address Filtering

If the network uses MAC address filtering, the filter must be supplied with the MAC address of the WT-7. After attaching the WT-7 to the camera, choose **Network** > **Options** > **MAC address** from the camera setup menu and note the MAC address.

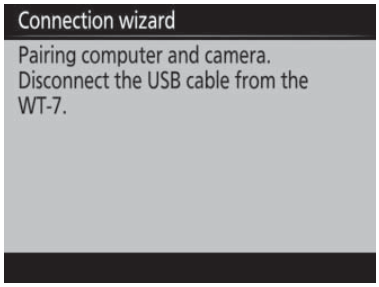
2 Confirm the IP address.

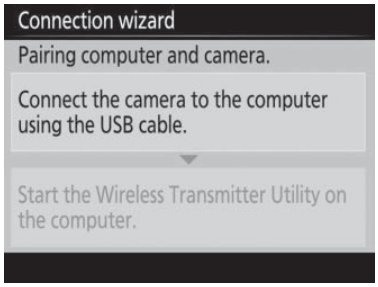
The camera IP address will be displayed as shown at right; press Ⓚ. If **Image transfer** or **Camera control** is selected, proceed to Step 3; otherwise, proceed to Step 5.

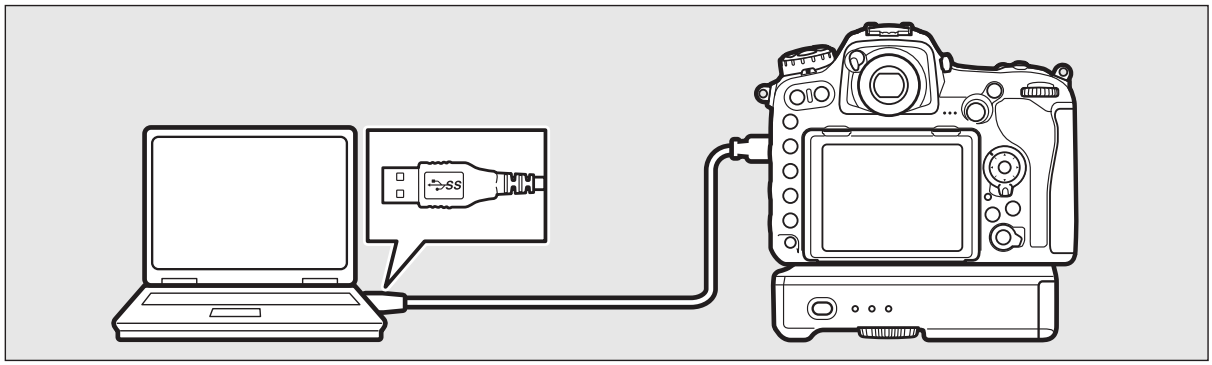


3 Connect the camera to the computer.

Disconnect the USB cable from the WT-7 and connect it to the computer.

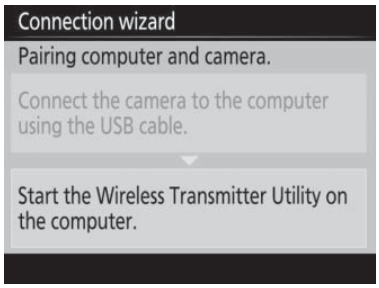






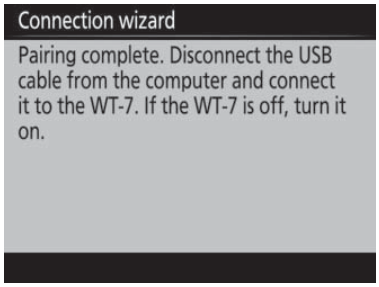
4 Start the Wireless Transmitter Utility.

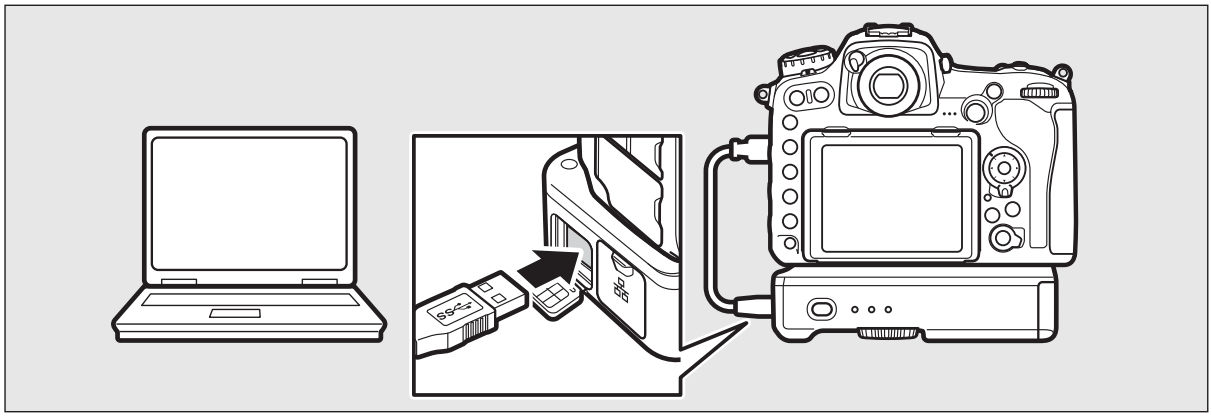
When prompted, start the copy of the Wireless Transmitter Utility installed on the computer (📖6). Pairing will begin automatically.



5 Disconnect the camera.

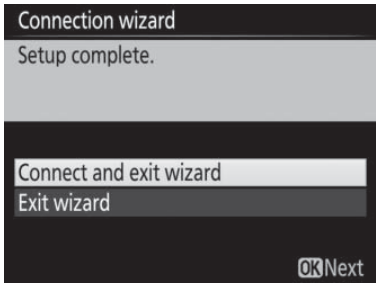
The message at right will be displayed when pairing is complete. Disconnect the USB cable from the computer and reconnect it to the WT-7.





6 Exit the wizard.

Highlight one of the following options and press Ⓚ.



- **Connect and exit wizard**: Save the new network profile and connect to the network.
- **Exit wizard**: Save the new network profile and exit.

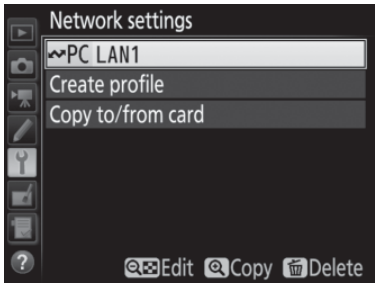
Proceed to “Image Transfer” (📖32), “Camera Control” (📖37), or “HTTP Server” (📖40).

Image Transfer

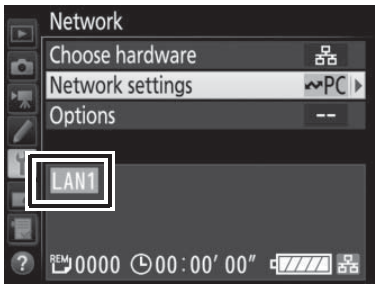
Image transfer is used to upload photographs and movies to the computer from a camera memory card. The explanation that follows assumes that existing pictures are used.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. Image transfer profiles are indicated by a ⁓PC icon. Highlight a profile and press Ⓚ to select the highlighted profile and return to the network menu.



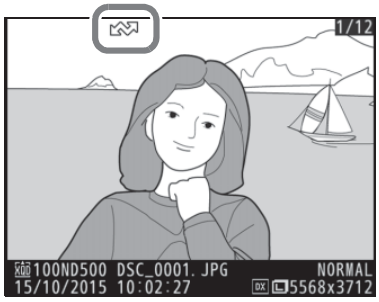
The profile name will be displayed in green when a connection is established.



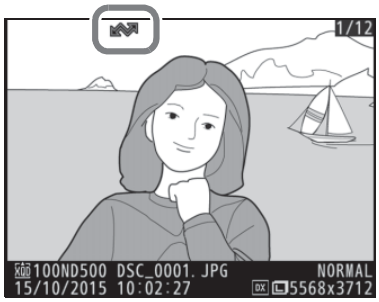
2 View pictures.

Press the ▶ button to view pictures. Display the first picture to be sent in single-image playback or highlight it in the thumbnail list.

3 Upload pictures.

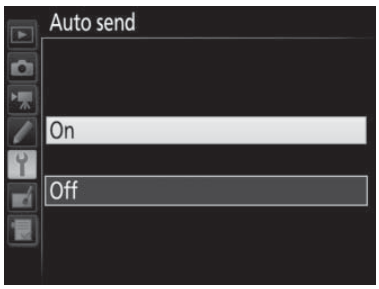


Press Ⓚ and the center of the multi selector. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue when upload is complete. Additional pictures will be uploaded in the order selected.



To upload a picture that has already been uploaded once, press Ⓚ and the center of the multi selector once to remove the blue transfer icon, and then press Ⓚ and the center of the multi selector again to mark the image with a white transfer icon.

Uploading New Photographs as They Are Taken



To upload new photographs as they are taken, select **On** for **Network** > **Options** > **Auto send** in the setup menu (📖89).

Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press Ⓚ and the center of the multi selector. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off
- Selecting **Yes** for **Network** > **Options** > **Deselect all?** (📖91; this option also removes transfer marking from all images)

✔ During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

Interval Timer Photography

Upload will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

Loss of Signal

Wireless transmission may be interrupted if the signal is lost, but can be resumed by turning the camera off and then on again.

Turning the Camera Off

"Send" marking will be saved if the camera or WT-7 is turned off while transmission is in progress. Transmission of images marked with a "send" icon will resume when the camera or WT-7 is turned on.

Destination Folders

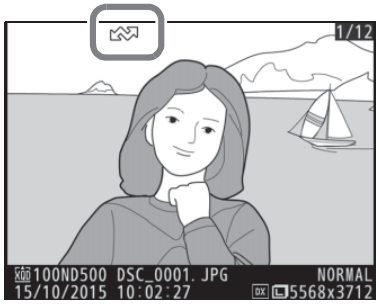
By default, images are uploaded to the following folders:

- **Windows**: \Users\(user name)\Pictures\Wireless Transmitter Utility
- **Mac:** /Users/(user name)/Pictures/Wireless Transmitter Utility

The destination folder can be selected using the Wireless Transmitter Utility.

Transfer Status

During playback, the status of images selected for upload is shown as follows:



: "Send"

Images that have been selected for upload are marked with a white icon.

: "Sending"

A green icon is displayed during upload.

: "Sent"

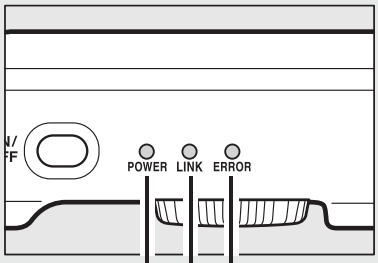
Images that have been uploaded successfully are marked with a blue icon.

Network Status

The status of the link between the host and the WT-7 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

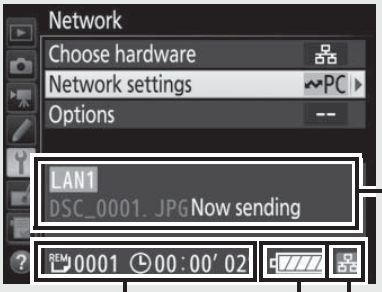
The **POWER** LED lights when the WT-7 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	POWER	LINK	ERROR
WT-7 off	● (off)	● (off)	● (off)
USB cable not connected	○ (on)	● (off)	● (off)
Connecting to host	○ (on)	○ (on)	● (off)
Waiting to send or sending data	○ (on)	☼ (flashes)	● (off)
Connection error	○ (on)	● (off)	☼ (flashes)
WT-7 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. While files are being transferred, the status display shows "Now sending" preceded by the name of the file being sent. Any errors that occur during transfer are also displayed here (📖105).

REM, ⏲: The estimated time required to send the remaining images.

Battery level: The charge state of the battery in the WT-7.

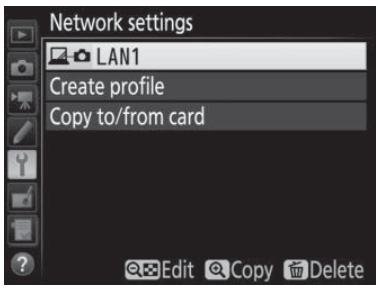
Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

Camera Control

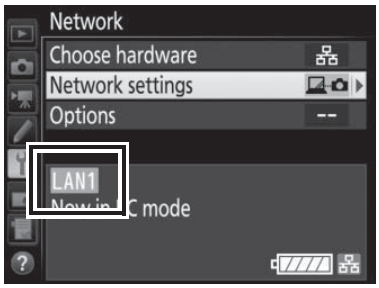
Select this option to control the camera from a computer running Camera Control Pro 2 (available separately) and save photographs directly to the computer hard disk instead of the camera memory card (movies will still be saved to the camera memory card; insert a memory card before shooting movies). Note that the camera standby timer do not turn off when the camera is in camera control mode.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. Camera control profiles are indicated by a icon. Highlight a profile and press OK to select the highlighted profile and return to the network menu.



The profile name will be displayed in green when a connection is established.



2 Start Camera Control Pro 2.

Start the copy of Camera Control Pro 2 (available separately) installed on the host computer. For information on using Camera Control Pro 2, see the Camera Control Pro 2 manual (pdf).

Ethernet Networks

Do not disconnect the Ethernet cable while the camera is on.

Wireless Networks

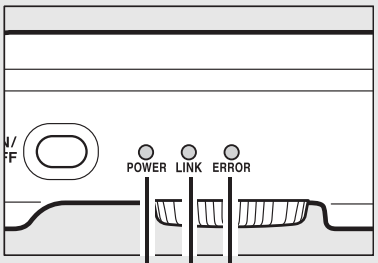
Operations may take longer on wireless networks. If the signal is disrupted while pictures are being transferred to Camera Control Pro 2, the LED on the WT-7 will flash orange; turn the camera off and then on again. Transfer will resume when the connection is re-established. Note that transfer can not be resumed if you turn the camera off again before transfer is complete.

Network Status

The status of the link between the host and the WT-7 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

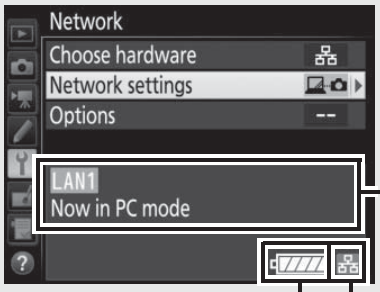
The **POWER** LED lights when the WT-7 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	POWER	LINK	ERROR
WT-7 off	● (off)	● (off)	● (off)
USB cable not connected	○ (on)	● (off)	● (off)
Connecting to host	○ (on)	○ (on)	● (off)
Waiting to send or sending data	○ (on)	☼ (flashes)	● (off)
Connection error	○ (on)	● (off)	☼ (flashes)
WT-7 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. Any errors that occur during transfer are also displayed here (📖105).

Battery level: The charge state of the battery in the WT-7.

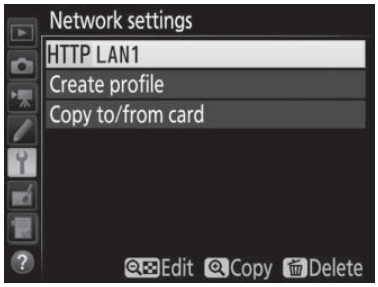
Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

HTTP Server

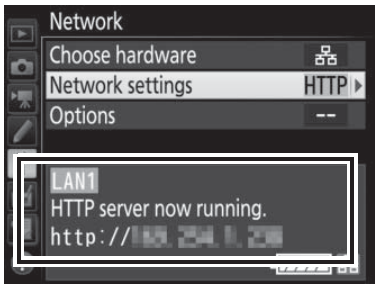
Select **HTTP server** to view the pictures on the camera memory card or take photographs from the web browser on a computer or smart device (see page 45 for system requirements). Up to five users can access the camera at one time, although only one can take photographs or edit text. Note that the standby timer do not turn off automatically when the camera is in http server mode.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. HTTP server profiles are indicated by a HTTP icon. Highlight a profile and press Ⓚ to select the highlighted profile and return to the network menu.



The URL used for connection to the camera is displayed when a connection is established.

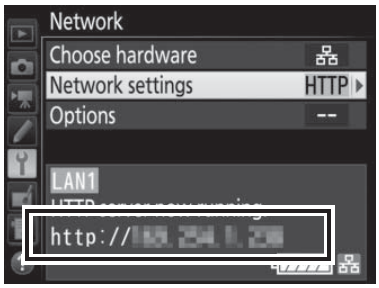


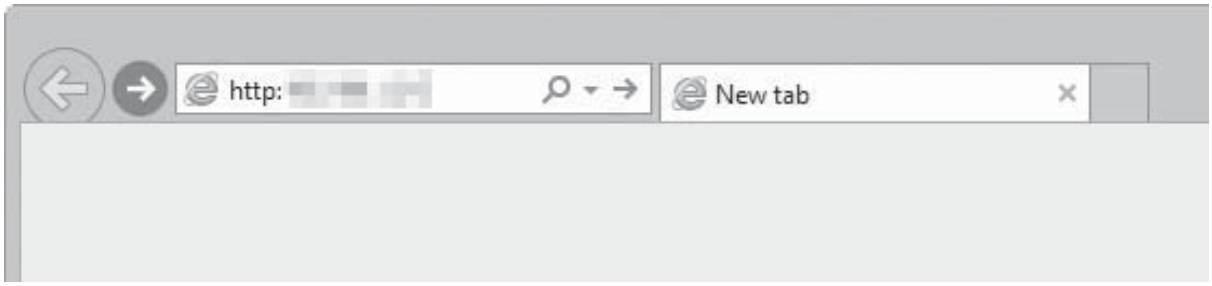
2 Launch the web browser.

Launch the web browser on the computer or smart device.

3 Enter the camera URL.

Enter the camera URL (“http://” followed by the camera IP address, as shown in the network menu) in the browser window address field.



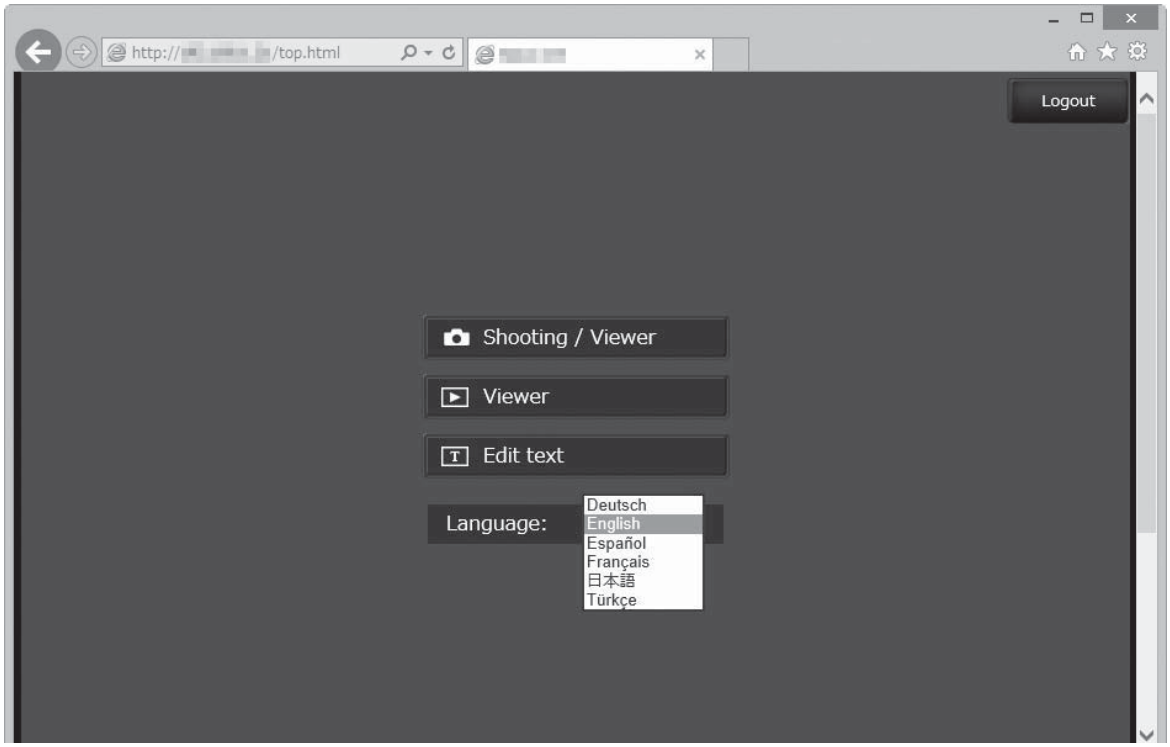


4 Log in.

Enter your user name and password in the web browser login dialog (the user name and password are set using **Network settings** > **Options** > **HTTP user settings** in the network menu as described on page 91; the default user name is “nikon” while the default password is blank).

5 Choose a language.

Click **Language**.



6 Choose an operating mode.

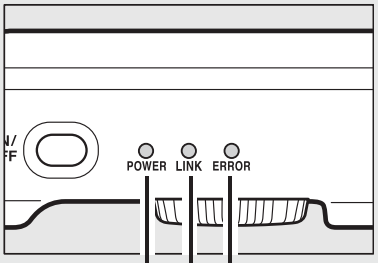
Choose **Shooting/Viewer** to take pictures (📖46, 53) and **Shooting/Viewer** or **Viewer** to view existing pictures (📖48, 55). To use the computer or smart device web browser to edit image comments and copyright and IPTC information stored on the camera, select **Edit text** (📖 50, 57). Up to five users at a time can connect using **Viewer**, but only one user at a time can connect using **Shooting/Viewer** or **Edit text** (if another user is already connected using **Shooting/Viewer** or **Edit text**, these options will not be displayed and only four users will be able to connect using **Viewer**).

Network Status

The status of the link between the host and the WT-7 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

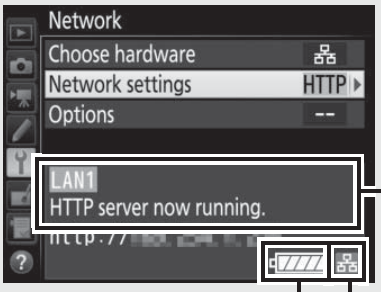
The **POWER** LED lights when the WT-7 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	POWER	LINK	ERROR
WT-7 off	● (off)	● (off)	● (off)
USB cable not connected	○ (on)	● (off)	● (off)
HTTP server starting up	○ (on)	○ (on)	● (off)
HTTP server in operation	○ (on)	☼ (flashes)	● (off)
Connection error	○ (on)	● (off)	☼ (flashes)
WT-7 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The camera URL is displayed in green when a connection is established. Errors are also displayed here (📖105).

Battery level: The charge state of the battery in the WT-7.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

HTTP Server System Requirements

Operation has been confirmed with the following systems:

Windows	
OS	Windows 10, Windows 8.1, Windows 7
Browser	• **Windows 10**: Microsoft Edge • **Windows 8.1**: Internet Explorer 11 • **Windows 7**: Internet Explorer 10
Monitor	• **Resolution**: 1,024 × 768 pixels (XGA) or more; 1,280 × 1,024 pixels (SXGA) or more recommended • **Color**: 24-bit color (True Color) or more

Mac	
OS	OS X version 10.11, 10.10, or 10.9
Browser	• **OS X version 10.11**: Safari 9 • **OS X version 10.10**: Safari 8 • **OS X version 10.9**: Safari 7
Monitor	• **Resolution**: 1,024 × 768 pixels (XGA) or more; 1,280 × 1,024 pixels (SXGA) or more recommended • **Color**: 24-bit color (millions of colors) or more

Android OS	
OS	Android 5.0, 4.4
Browser	Chrome

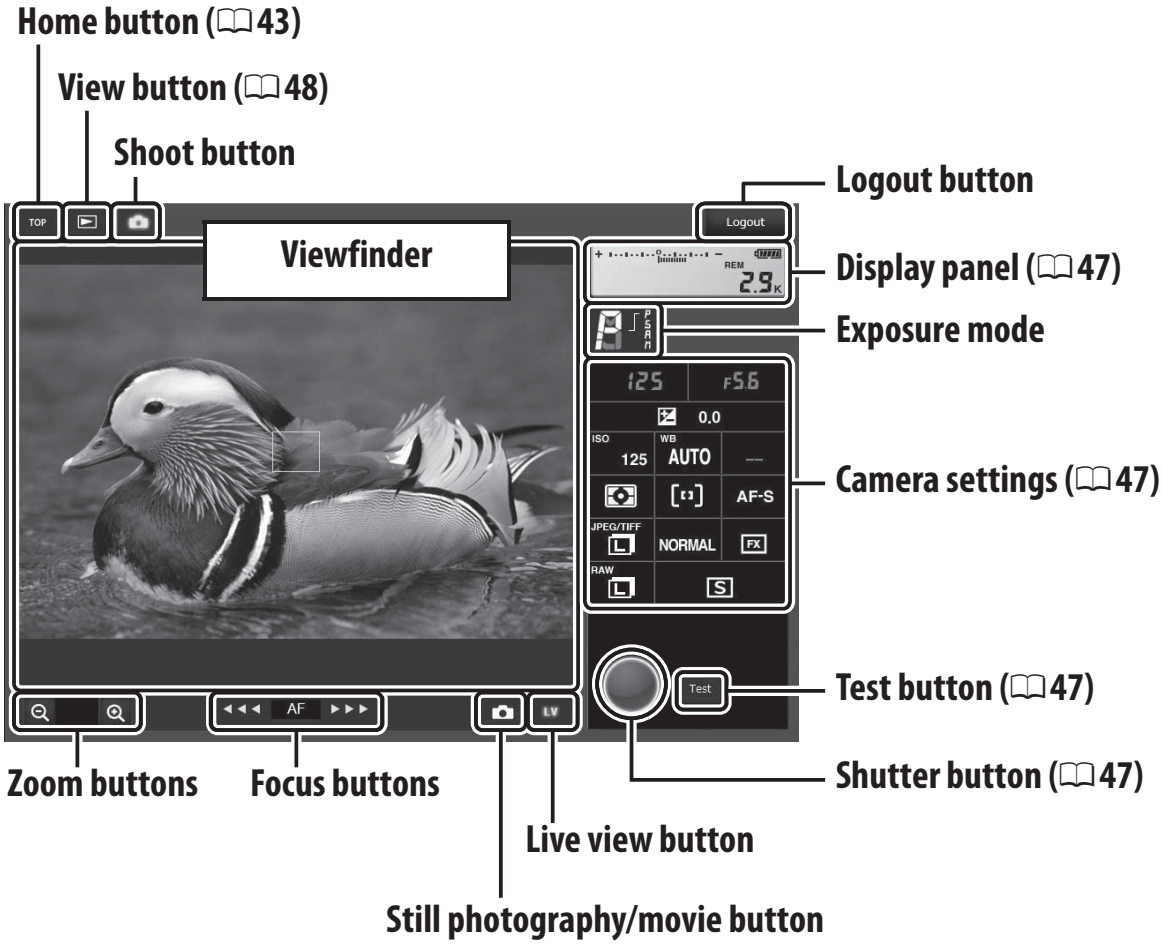
iOS	
OS	iOS 9, iOS 8
Browser	The version of Safari included with the operating system

Computer and Android Web Browsers

This section describes the http server displays for computer and Android web browsers (note that the display varies with the model of camera). Click or tap to adjust camera settings. For information on the displays for iPhones, see page 53.

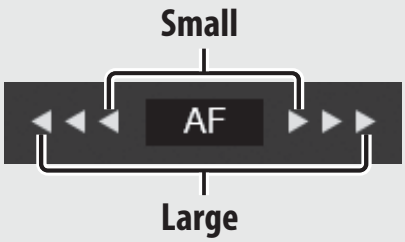
The Shooting Window

The following controls can be accessed by selecting **Shooting/ Viewer** on the server home page. To display the view through the camera lens in the viewfinder area, tap or click the live view button. Tap or click the button again to exit live view.



Focus Buttons

The size of the focus adjustment increases with the distance of the button from the center of the display.



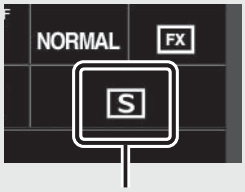
Display panel	Contains the exposure indicator and shows the battery level and number of exposures remaining.
Camera settings	Click or tap icons to adjust settings for photography or movie recording. See the camera manual for details.
Shutter button	Take a photograph or start and end movie recording. To focus, click or tap the desired subject in the viewfinder area.
Test button	Take a test photo and display it in the viewfinder without recording it to the camera memory card. Not available in movie live view.

Enabling Live View on the Camera

When the view through the camera lens is displayed in the viewfinder area, pressing the camera Lv button will display the view through the lens in the camera monitor. Press the button again to end live view on the camera.

The Release Mode Button

Clicking or tapping the live view button enables the release mode button, which can be used to choose from single-frame, high-speed continuous, and low-speed continuous release modes. In high- and low-speed continuous release modes, the camera takes photographs while the shutter button is pressed.



Release mode button

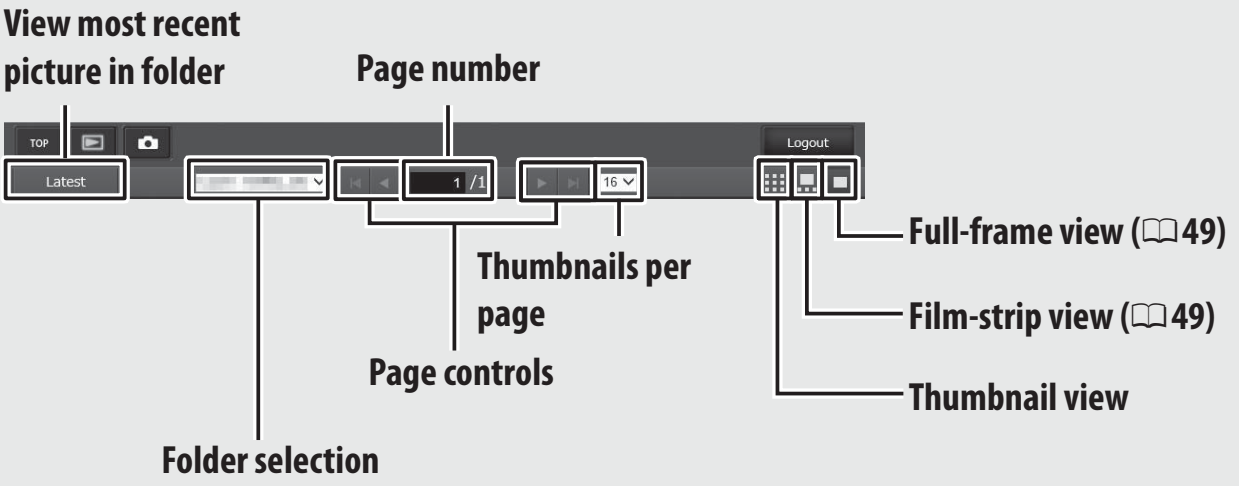
The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or clicking or tapping the view button in the shooting window. The viewer window offers a choice of thumbnail, film-strip (□49), and full-frame views (□49).

■■ *Thumbnail View*

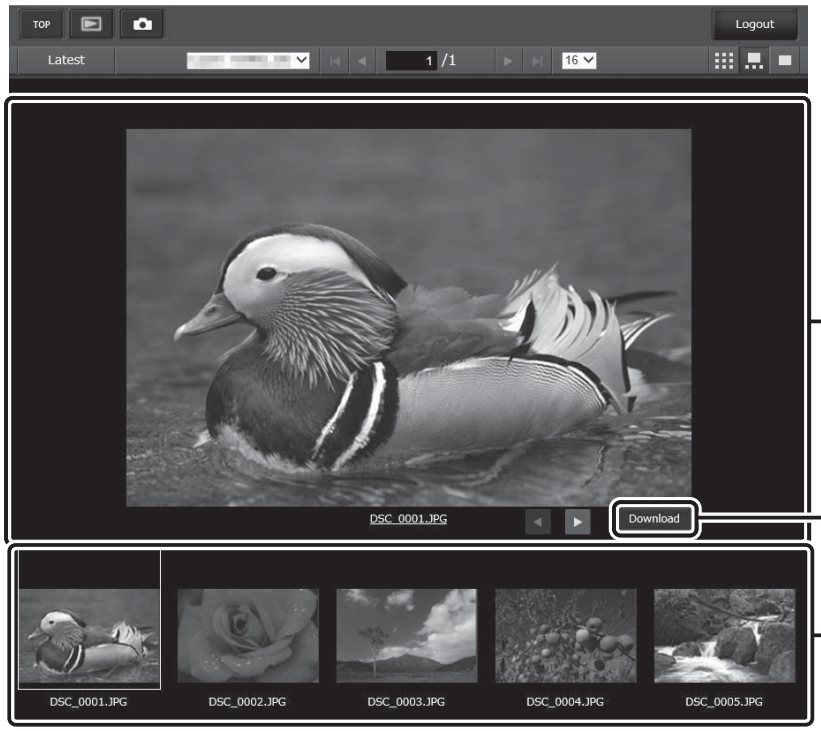
View multiple small ("thumbnail") images per page. The controls at the top of the window can be used for navigation.

Navigation Controls



Film-Strip View

Choose the picture displayed from the thumbnails at the bottom of the window.



Current picture (click or tap ◀ or ▶ to view additional pictures)

Copy current picture to computer or smart device

Thumbnails (click or tap to select)

Full-Frame View

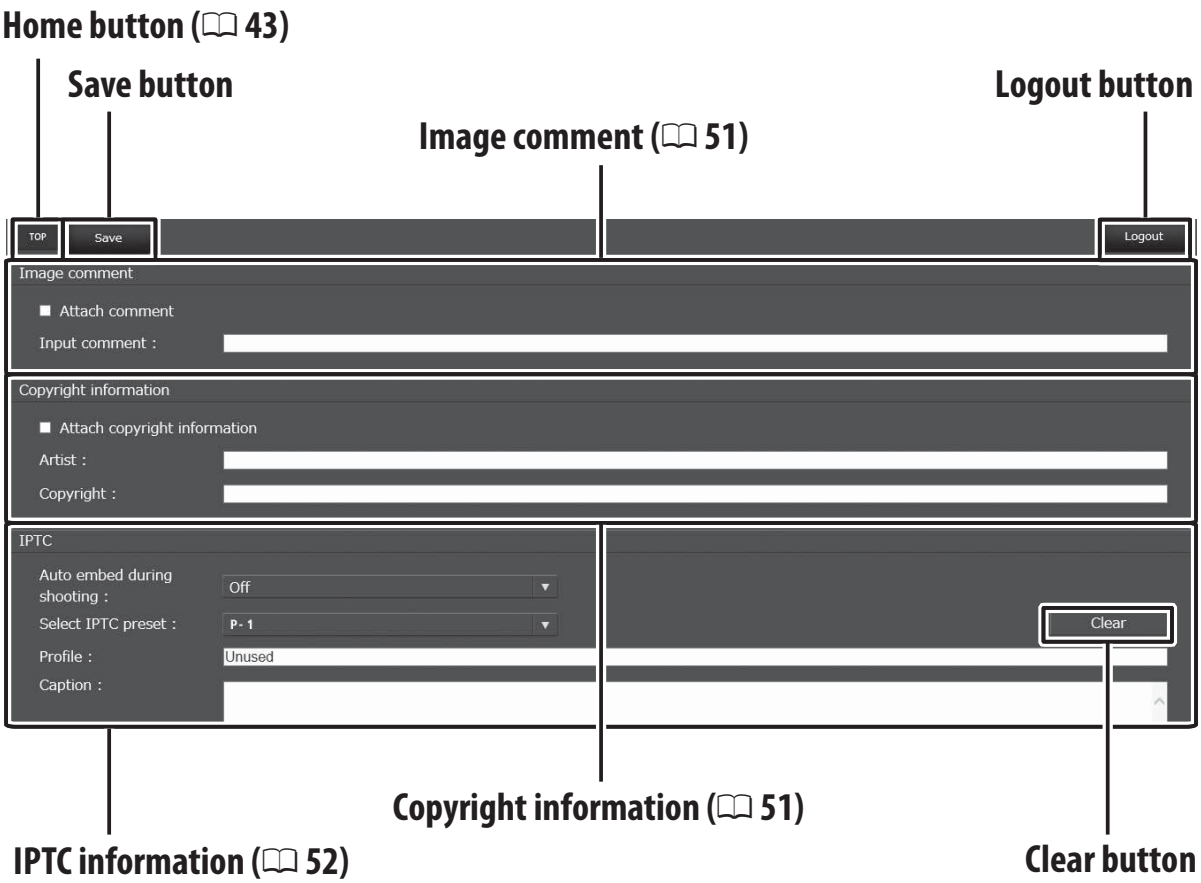
View pictures full frame.

Current picture (click or tap ◀ or ▶ to view additional pictures)

Copy current picture to computer or smart device

The Text Edit Window

The text edit window, which is used to edit image comments and copyright and IPTC information stored on the camera, can be accessed by selecting **Edit text** on the server home page.



☑ Saving Changes

Changes are not saved automatically. Click or tap the save button to save changes.

☑ The Clear Button

Clicking or tapping the clear button immediately deletes the displayed text, even if you exit without clicking the save button.

Image Comment

Create a comment that can be appended to subsequent images. Comments can be viewed as metadata in ViewNX-i or Capture NX-D. The following options are available:

- **Attach comment**: Select this option to attach the comment to all subsequent photographs.
- **Input comment**: Input a comment up to 36 characters long.

Copyright Information

Add copyright information to new photographs as they are taken. Copyright information can be viewed as metadata in ViewNX-i or in Capture NX-D. The following options are available:

- **Attach copyright information**: Select this option to attach copyright information to all subsequent photographs.
- **Artist/copyright**: Enter a photographer name up to 36 characters long and a copyright holder name up to 54 characters long.

Viewing Image Comments and Copyright Information on the Camera

Image comments and copyright information can be viewed during full-frame playback on the corresponding pages of the camera photo information display.

Copyright Information

To prevent unauthorized use of the artist or copyright holder names, make sure that **Attach copyright information** is not selected and that the **Artist** and **Copyright** fields are blank before lending or transferring the camera to another person. Nikon does not accept liability for any damages or disputes arising from the use of the **Copyright information** option.

IPTC Information

Embed IPTC presets in photographs as they are taken. The following options are available:

- **Auto embed during shooting**: Selecting this tab displays a list of IPTC presets; highlight a preset and press the save button to embed the selected preset in all subsequent photographs. Select **Off** to take photos with no IPTC presets.
- **Select IPTC preset**: Selecting this tab displays a list of IPTC presets. Choose a preset to copy to the camera.

IPTC Information

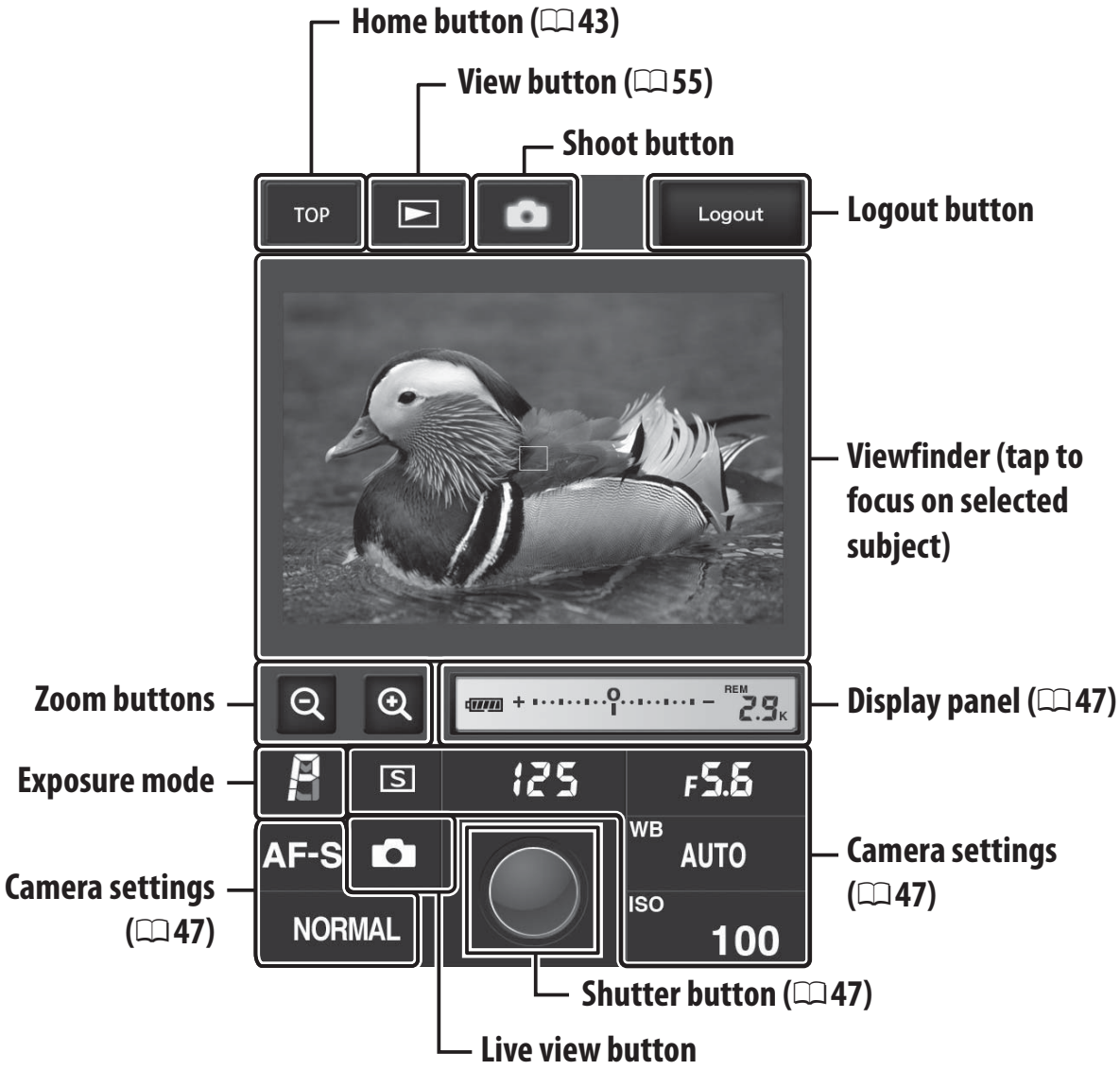
IPTC is a standard established by the International Press Telecommunications Council (IPTC) with the intent of clarifying and simplifying the information required when photographs are shared with a variety of publications. Embedded IPTC information can be viewed by selecting the IPTC page in the photo information display during full-frame playback. See the camera manual for more information.

iPhone Web Browsers

This section describes the http server displays for iPhone web browsers (note that the display varies with the model of camera). Tap to adjust camera settings. For information on computer, Android, or iPad displays, see page 46.

The Shooting Window

The following controls can be accessed by selecting **Shooting/ Viewer** on the server home page. Use the live view button to start live view photography (📷) or movie live view (🎥). The view through the camera lens will be displayed in the viewfinder area. To exit live view, use the live view button to turn live view off.

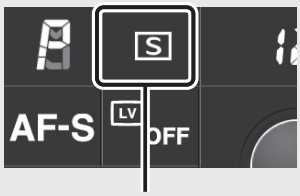


Enabling Live View on the Camera

When the view through the camera lens is displayed in the viewfinder area, pressing the camera Lv button will display the view through the lens in the camera monitor. Press the button again to end live view on the camera.

The Release Mode Button

Selecting photo (📷) or movie (🎥) live view with the live view button enables the release mode button, which can be used to choose from single-frame, high-speed continuous, and low-speed continuous release modes. In high- and low-speed continuous release modes, the camera takes photographs while the shutter button is pressed.



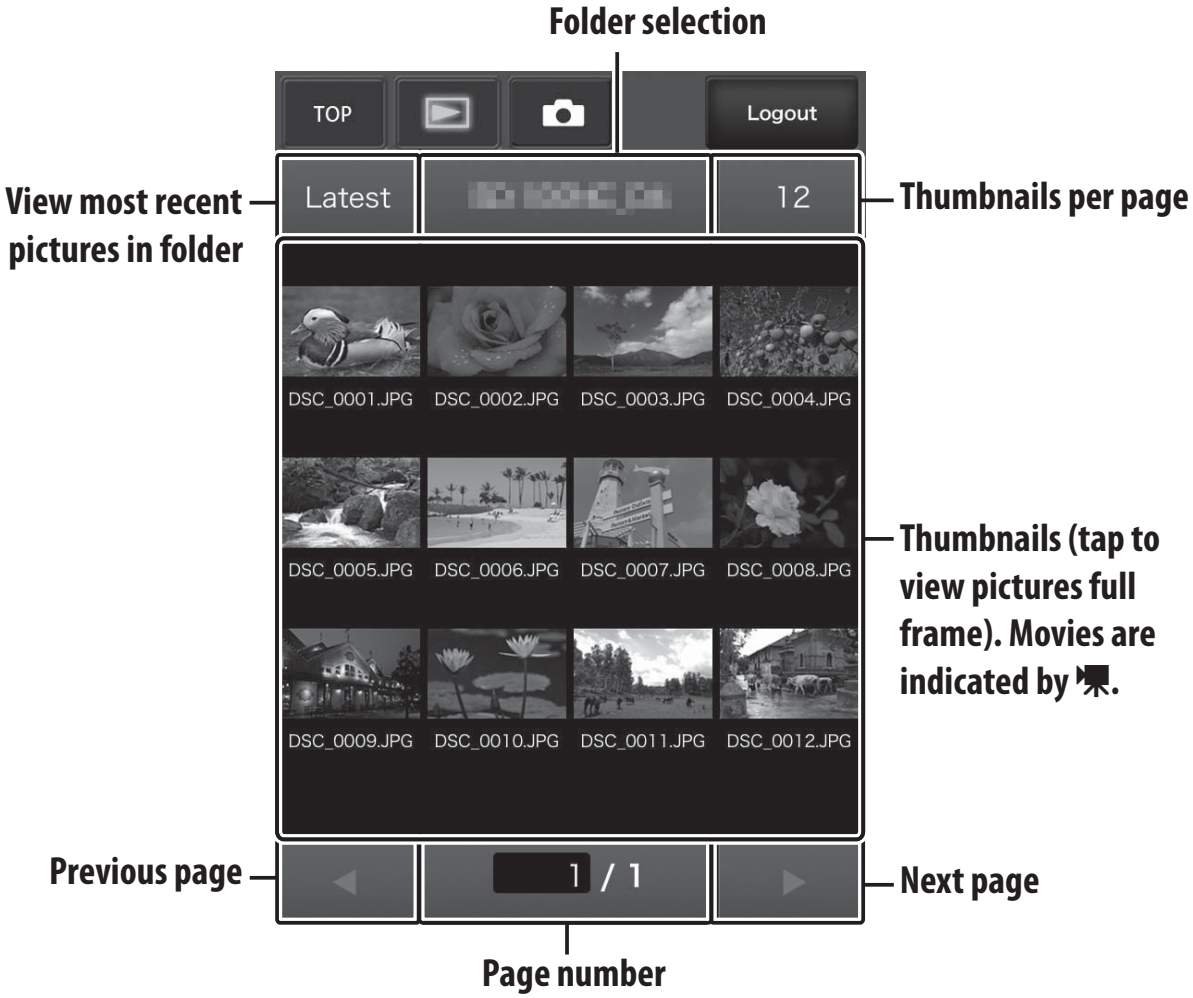
Release mode button

The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or tapping the view button in the shooting window. The viewer window for iPhone web browsers offers a choice of thumbnail and full-frame views (□56).

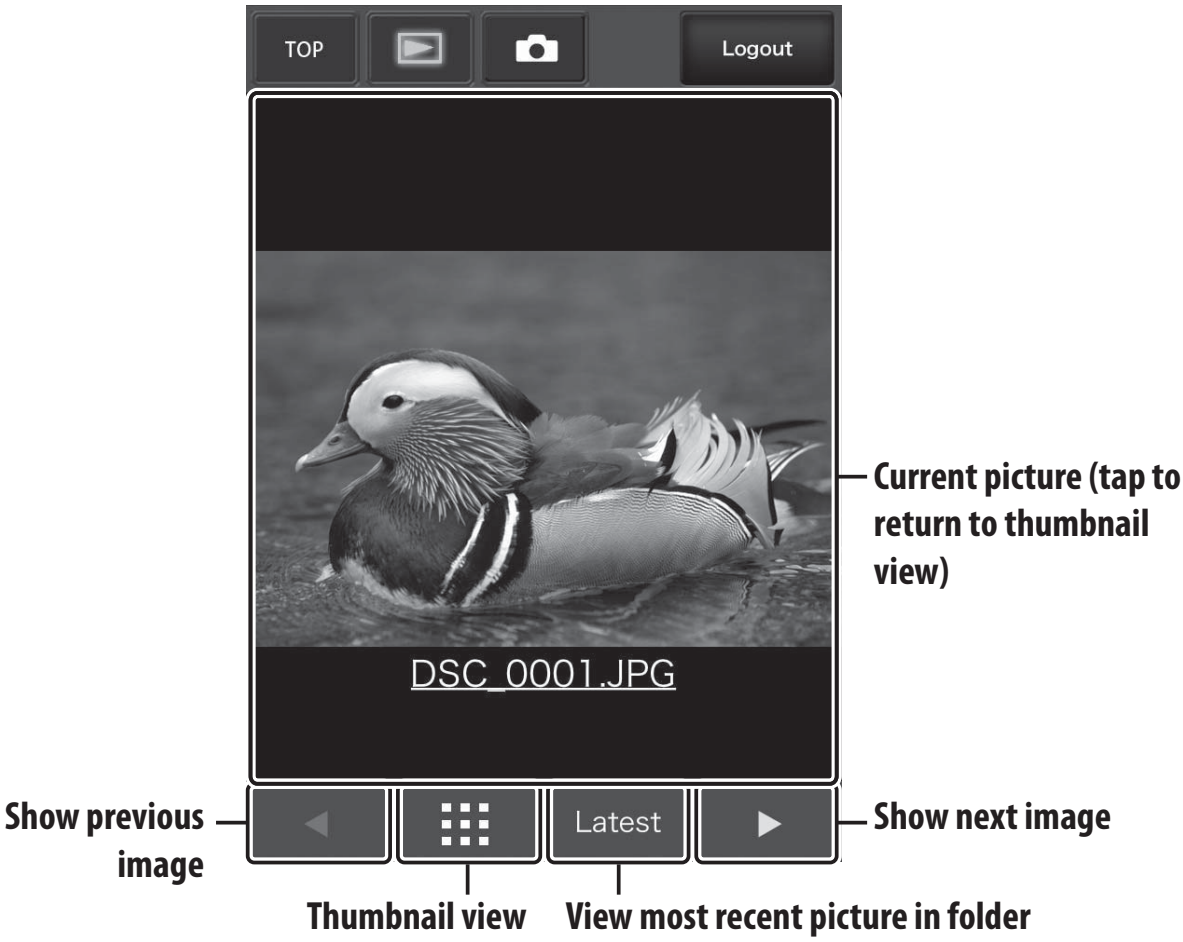
■■ *Thumbnail View*

View multiple small ("thumbnail") images per page. The controls at the top and bottom of the thumbnail area can be used for navigation.



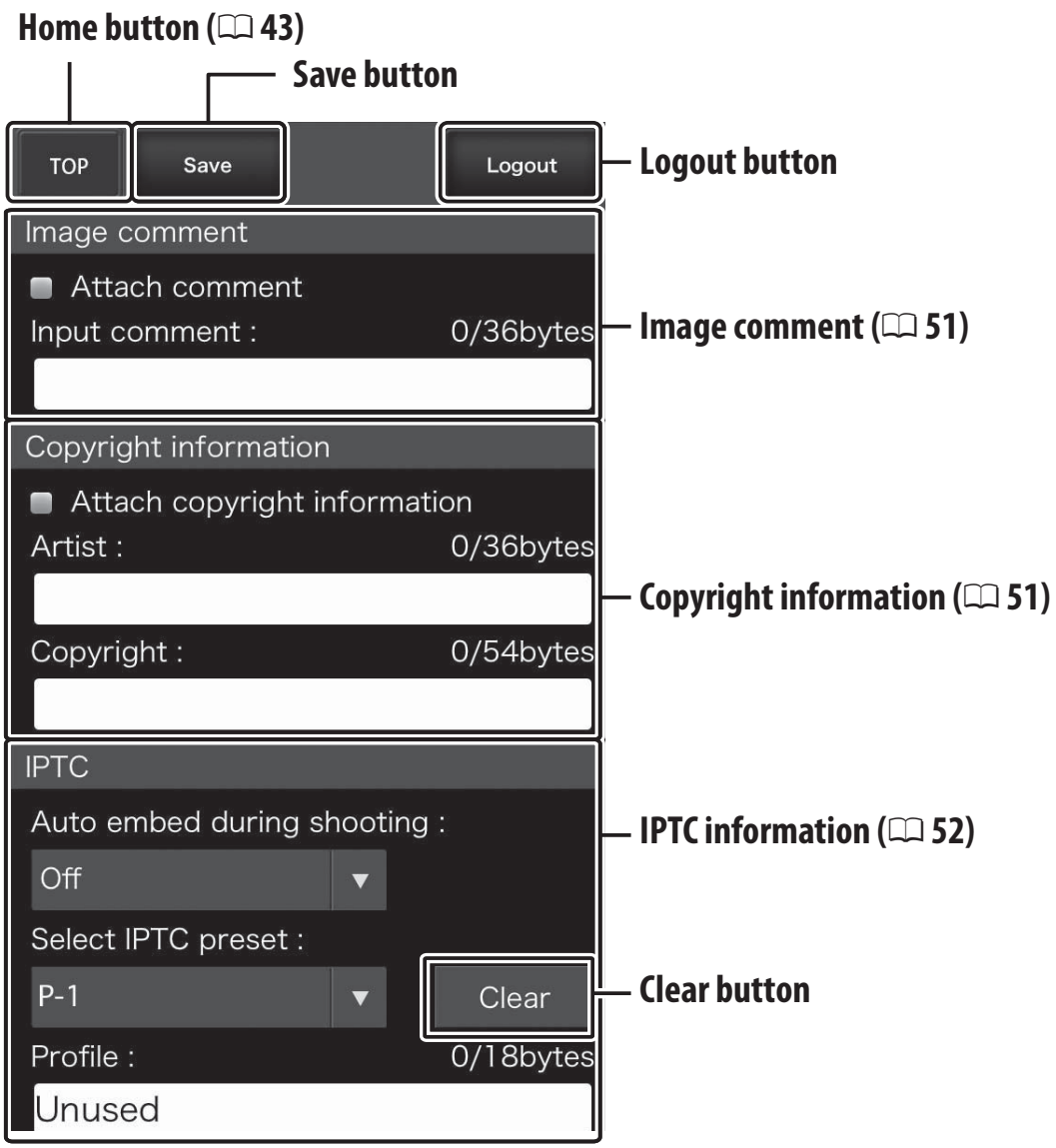
Full-Frame View

View pictures full frame.



The Text Edit Window

The text edit window, which is used to edit image comments and copyright and IPTC information stored on the camera, can be accessed by selecting **Edit text** on the server home page.



Saving Changes

Changes are not saved automatically. Tap the save button to save changes.

FTP

Ethernet Connections

Follow the steps below to connect to an ftp server via an Ethernet network. For information on wireless connections, see page 65.

FTP server

↓

Step 1: Connect the camera, WT-7, and ftp server (📖59)

↓

Step 2: Select Ethernet (📖60)

↓

Step 3: Run the connection wizard (📖61)

↓

Transfer pictures (📖78)

Choosing a Power Source

To prevent the camera or WT-7 powering off unexpectedly during setup or data transfer, use fully-charged batteries or optional AC adapters designated for use with the camera or WT-7. For more on camera power sources, see the camera manual.

FTP Servers

Servers can be configured using standard ftp services, such as IIS (Internet Information Services), available with supported operating systems (📖95). Connection to computers on other networks via a router, Internet ftp connections and ftp servers running third-party software are not supported.

Step 1: Connecting the Hardware

After starting the ftp server, connect the camera as described below.

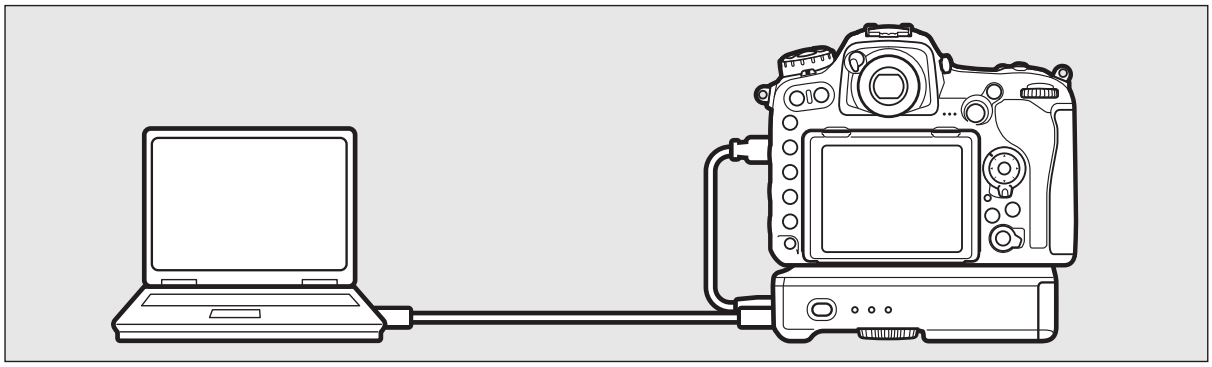
1 Insert a memory card.

Turn the camera off and insert a memory card (do not turn the camera off or disconnect the Ethernet cable while data are being transferred to the computer).

2 Attach the WT-7 (📖5).

3 Connect an Ethernet cable.

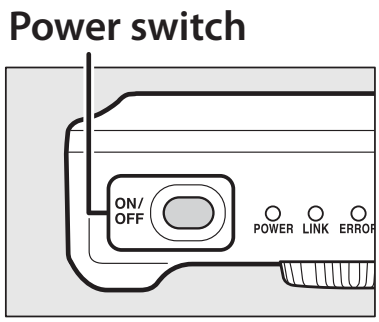
Connect the camera to the ftp server as shown below. Do not use force or insert the connectors at an angle.



4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn the WT-7 on.

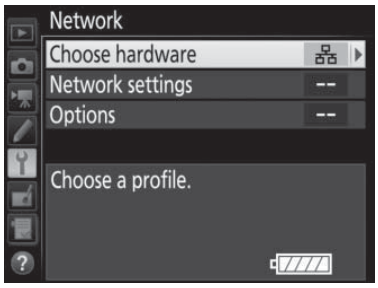


Step 2: Configuring the Hardware for Ethernet Connections

Configure the WT-7 for use with Ethernet networks.

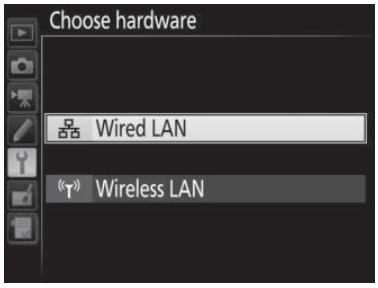
1 Select **Choose hardware.**

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶. The menu offers a choice of **Wired LAN** and **Wireless LAN**.



2 Select **Wired LAN.**

Highlight **Wired LAN** and press OK to select the highlighted option and return to the network menu.

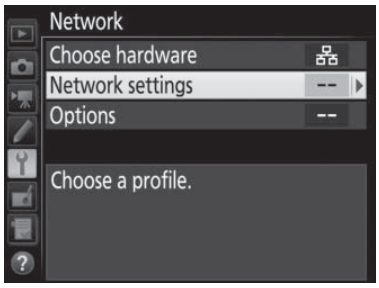


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

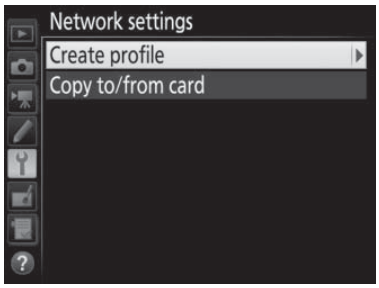
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



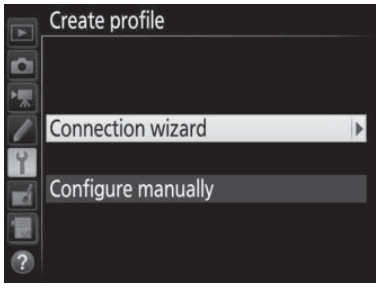
2 Select **Create profile.**

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (📖85).



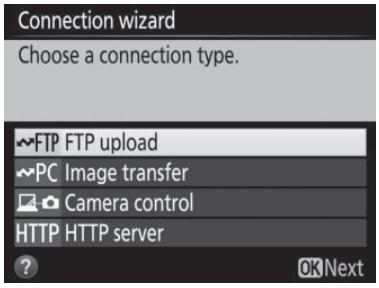
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.

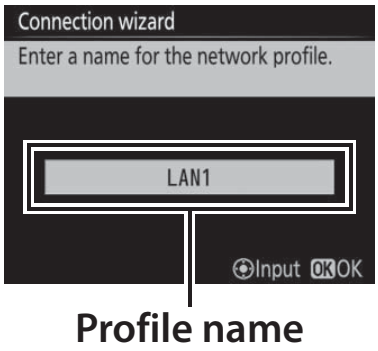


4 Choose a connection type.

Highlight **FTP upload** and press OK.

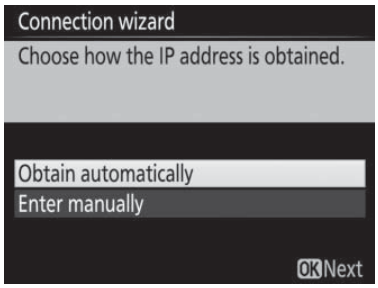


5 Name the new network profile.



A default profile name will be displayed; to edit or change the name as described in the camera manual, press the center of the multi selector (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard). The profile name will appear in the **Network** > **Network settings** list in the camera setup menu. Press OK to proceed to the next step when entry is complete.

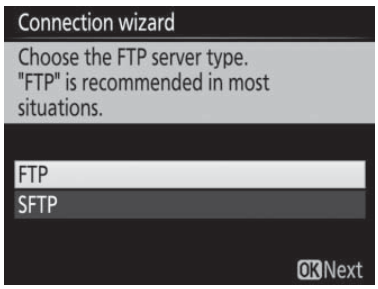
6 Obtain or select an IP address.



Highlight one of the following options and press OK.

- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press OK to proceed when entry is complete.

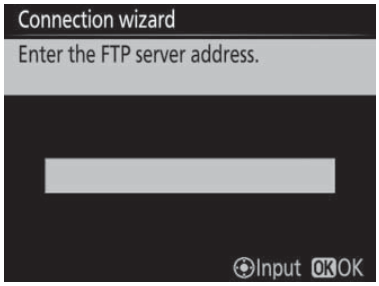
7 Choose the server type.



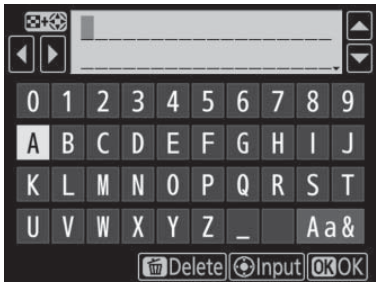
Highlight **FTP** or **SFTP** (secure ftp) and press ▶.

8 Enter the IP address.

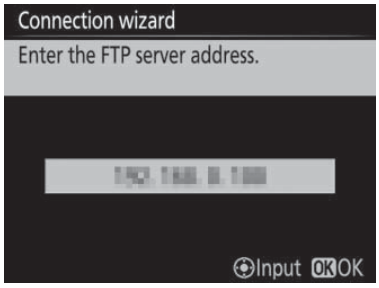
Press the center of the multi selector and enter the server URL or IP address as described in the camera manual (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard).



Press Ⓚ when entry is complete.

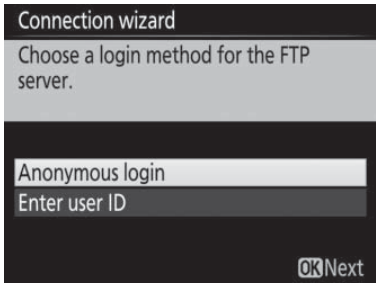


Press Ⓚ again to connect to the ftp server.



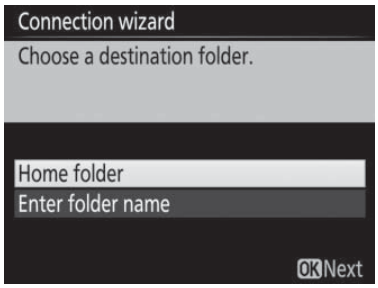
9 Log in.

Highlight one of the following options and press Ⓚ.



- **Anonymous login**: Select this option if the server does not require a user ID or password.
- **Enter user ID**: Enter a user ID and password when prompted and press Ⓚ.

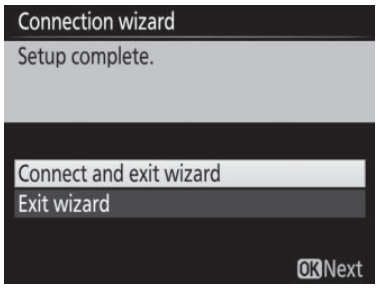
10 Choose a destination folder.



Highlight one of the following options and press Ⓚ.

- **Home folder**: Select this option to upload pictures to the server's home folder.
- **Enter folder name**: Select this option to upload pictures to another folder (the folder must already exist on the server). Enter a folder name and path when prompted and press Ⓚ.

11 Exit the wizard.



Highlight one of the following options and press Ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

Proceed to "FTP Upload" (📖78).

Wireless Connections

Follow the steps below to connect to a wireless network.

FTP upload

↓

Step 1: Ready the camera and WT-7 (📖66)

↓

Step 2: Configure the hardware for wireless networks (📖67)

↓

Step 3: Run the connection wizard (📖68)

↓

Step 4: Adjust network settings (📖75)

↓

Transfer pictures (📖78)

Infrastructure and Access Point Modes

Connections to wireless networks may be in infrastructure or access point mode.

Infrastructure mode: Connection via a wireless LAN access point.

WT-7 Wireless LAN access point Computer

Access point mode: The camera serves as an access point for direct connection to a computer.

WT-7 Computer

Wireless LANs

These instructions are intended for customers with an existing wireless LAN, and in the case of infrastructure networks assume that the computer and access point are already connected to the network.

Step 1: Connecting the Equipment

After starting the computer and logging in, ready the camera and WT-7 as described below.

1 Insert a memory card.

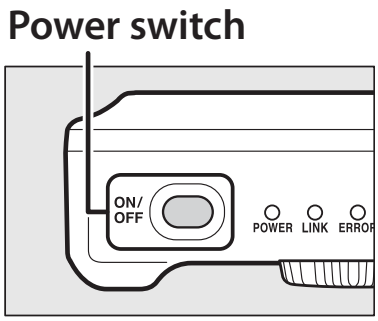
Turn the camera off and insert a memory card (do not turn the camera off while data are being transferred to the computer).

2 Attach the WT-7 (📖5).

3 Turn the camera on.

Rotate the power switch to turn the camera on.

4 Press the power switch for about a second to turn on the WT-7.

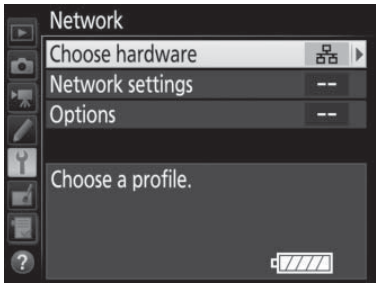


Step 2: Enable Camera Wireless

Ready the camera for connection to a wireless network.

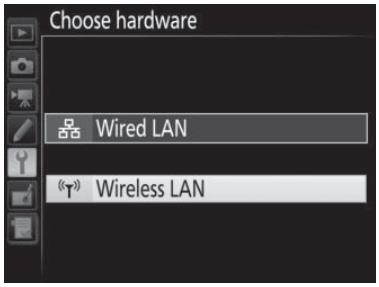
1 Select **Choose hardware.**

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶. The menu offers a choice of **Wired LAN** and **Wireless LAN**.



2 Select **Wireless LAN.**

Highlight **Wireless LAN** and press OK to select the highlighted option and return to the network menu.

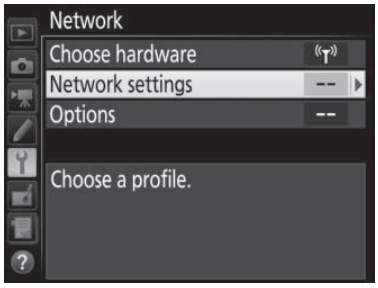


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

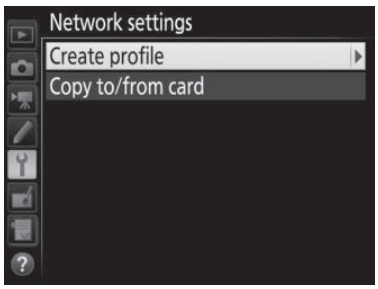
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



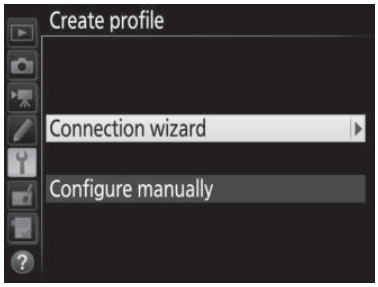
2 Select Create profile.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding.



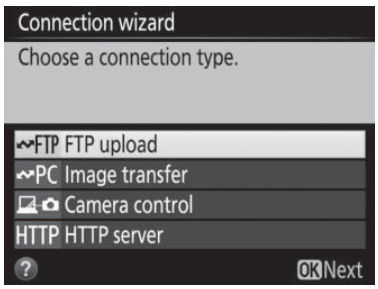
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.

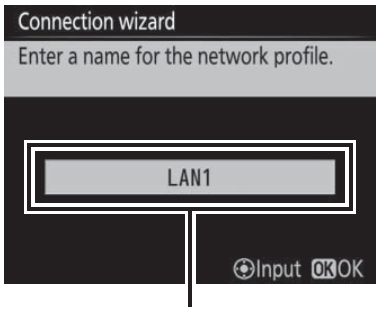


4 Choose FTP upload (📖8).

Highlight **FTP upload** and press OK.



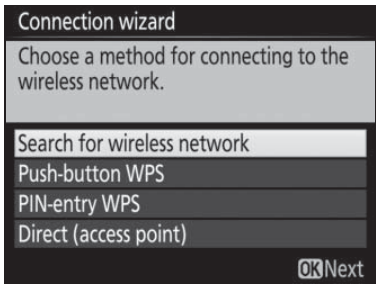
5 Name the new network profile.



Profile name

A default profile name will be displayed; to edit or change the name as described in the camera manual, press the center of the multi selector (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard). The profile name will appear in the **Network** > **Network settings** list in the camera setup menu. Press OK to proceed to the next step when entry is complete.

6 Choose a connection method.

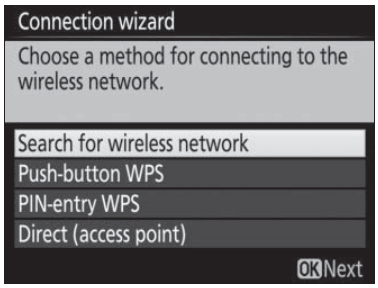


Highlight the connection method used by the network and press OK. More information can be found on the pages listed below.

Search for wireless network	Choose from a list of networks detected by the camera. Proceed to page 70.
Push-button WPS	Choose for wireless LAN access points with push-button WPS. Proceed to page 72.
PIN-entry WPS	Choose for wireless LAN access points with PIN-entry WPS. Proceed to page 73.
Direct (access point)	Connect directly to a host computer or ftp server in access point mode, with the camera serving as an access point. Proceed to page 74.

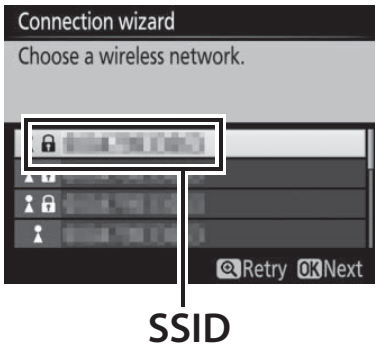
Search for Wireless Network

Select **Search for wireless network** in Step 6 on page 69 to choose from a list of the networks (wireless LAN access points) detected by the camera.



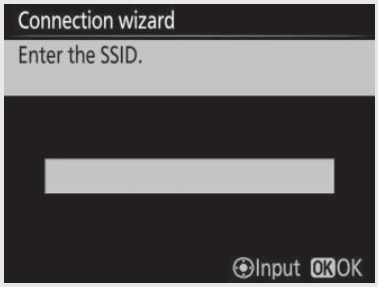
1 Choose a network.

Highlight a network SSID and press OK (if the desired network is not displayed, press 🔍 to search again). Encrypted networks are indicated by a 🔒 icon; if the selected network is encrypted, you will be prompted to enter the encryption key as described in Step 2. If the network is not encrypted, proceed to Step 3.



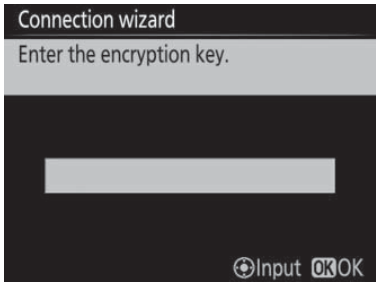
Hidden SSIDs

Networks with hidden SSIDs are indicated by blank entries in the network list. If you highlight a blank entry and press OK, you will be prompted to provide the network name; press the center of the multi selector, enter a name, and then press OK to proceed to Step 2.

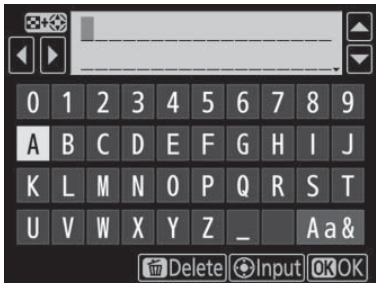


2 Enter the encryption key.

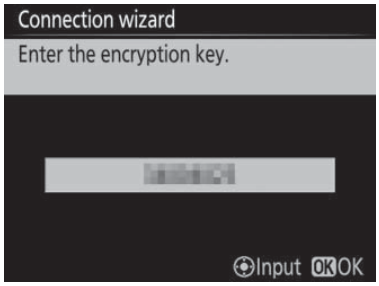
Press the center of the multi selector and enter the encryption key as described in the camera manual (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard).



Press OK when entry is complete.

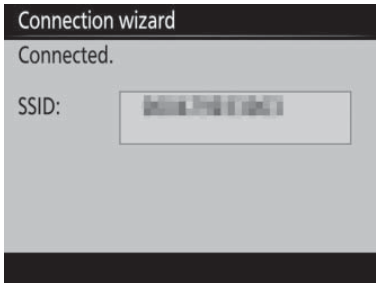


Press OK to establish a connection.



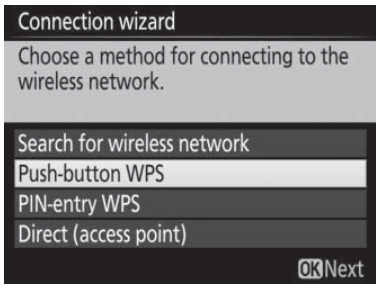
3 Choose your next step.

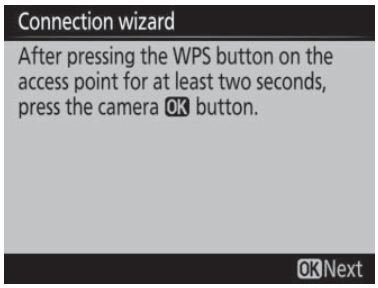
The message at right is displayed when a connection is established. Proceed to page 75.



Push-Button WPS

Choose **Push-button WPS** in Step 6 on page 69 if the wireless LAN access point uses push-button WPS.



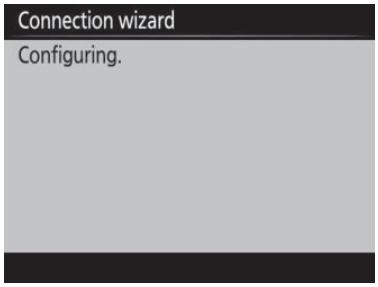


1 Press the WPS button on the wireless LAN access point.

For more information, see the documentation provided with the wireless LAN access point.

2 Press OK button on the camera.

The camera will connect to the access point automatically.

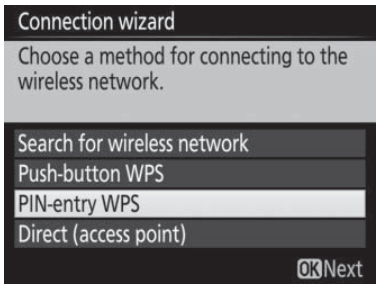


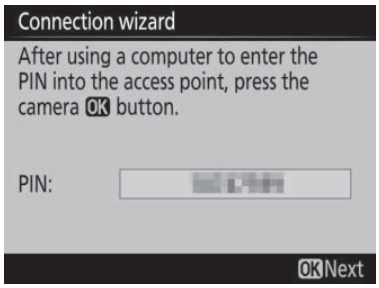
3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 75.

■■ *PIN-Entry WPS*

Choose **PIN-entry WPS** in Step 6 on page 69 if the wireless LAN access point uses PIN-entry WPS.



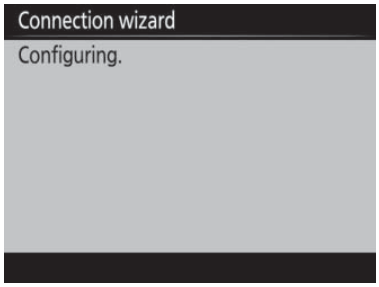


1 Enter the PIN for the wireless LAN access point.

From a computer, enter the PIN for the wireless LAN access point. For more information, see the documentation provided with the wireless LAN access point.

2 Press Ⓚ button on the camera.

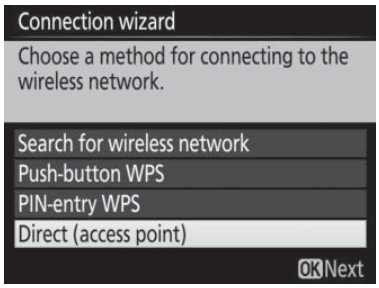
The camera will connect to the access point automatically.

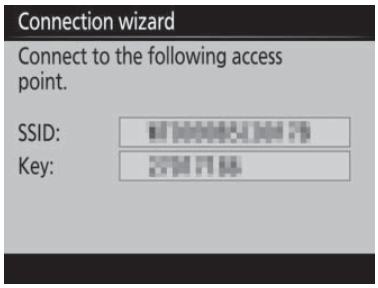


3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 75.

Direct (Access Point)



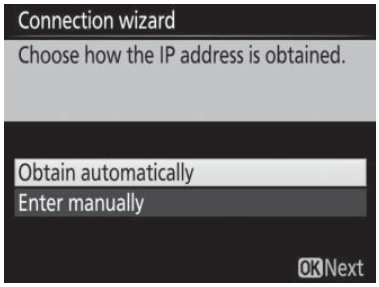


Selecting **Direct (access point)** in Step 6 on page 69 enables access point mode, in which the camera serves as a wireless access point. The camera SSID and encryption key will be displayed in the monitor. On the computer or smart device, enter the SSID and encryption key displayed in the camera monitor (for more information, see the documentation provided with the computer or smart device). Proceed to Step 2 on page 75.

Step 4: Network Settings

Follow the steps below to connect to the ftp server. Skip Step 1 if you selected **Direct (access point)** in Step 6 on page 69.

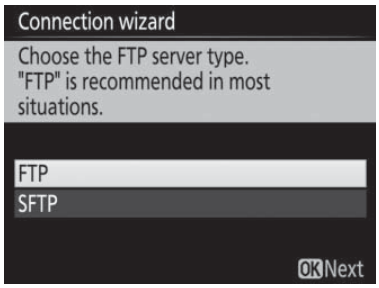
1 Obtain or select an IP address.



Highlight one of the following options and press Ⓚ.

- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically. The camera will display the IP address provided by the network; press Ⓚ to proceed.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press Ⓚ when entry is complete. The camera will display the selected IP address; press Ⓚ to proceed.

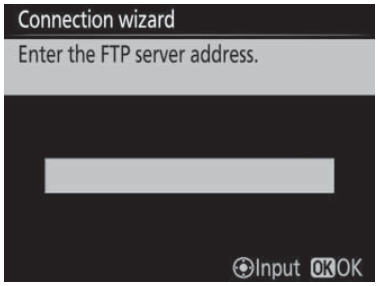
2 Choose the server type.



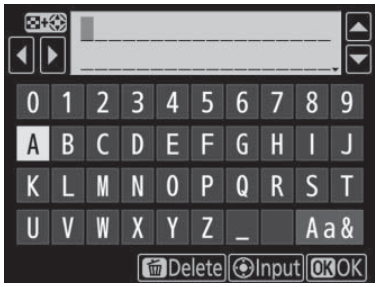
Highlight **FTP** or **SFTP** (secure ftp) and press Ⓚ. If you selected **Direct (access point)** in Step 6 on page 69, proceed to Step 4.

3 Enter the IP address.

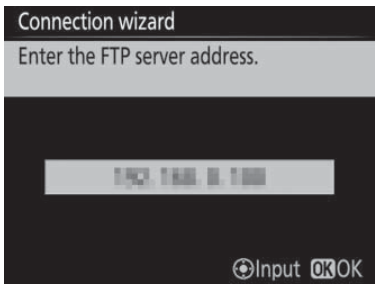
Press the center of the multi selector and enter the server URL or IP address as described in the camera manual (if the camera is a touch-screen model, you can enter characters by tapping the letters on the on-screen keyboard).



Press ⓚ when entry is complete.

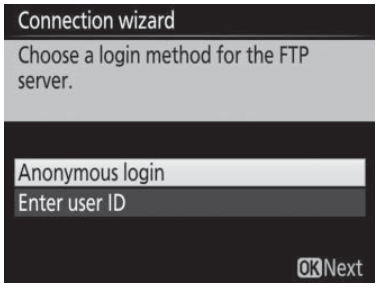


Press ⓚ again to connect to the ftp server.



4 Log in.

Highlight one of the following options and press ⓚ.

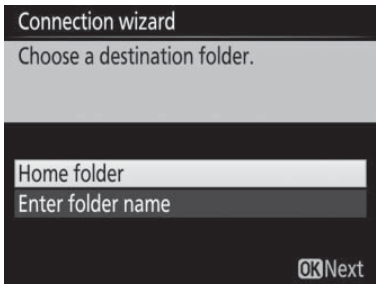


- **Anonymous login**: Select this option if the server does not require a user ID or password.
- **Enter user ID**: Enter a user ID and password when prompted and press ⓚ.

MAC Address Filtering

If the network uses MAC address filtering, the filter must be supplied with the MAC address of the WT-7. After attaching the WT-7 to the camera, choose **Network** > **Options** > **MAC address** from the camera setup menu and note the MAC address.

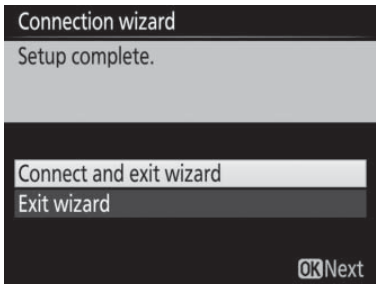
5 Choose a destination folder.



Highlight one of the following options and press Ⓚ.

- **Home folder**: Select this option to upload pictures to the server's home folder.
- **Enter folder name**: Select this option to upload pictures to another of the folders existing on the server. Enter a folder name and path when prompted and press Ⓚ.

6 Exit the wizard.



Highlight one of the following options and press Ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

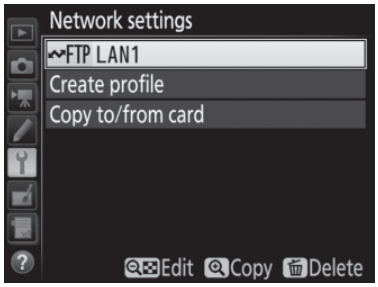
Proceed to "FTP Upload" (📖78).

FTP Upload

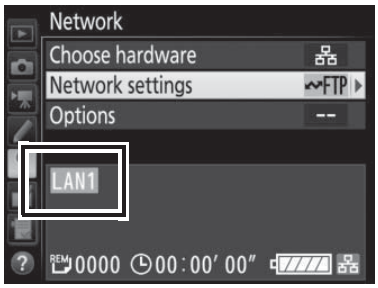
Photos and movies can be uploaded from camera memory cards to an ftp server as described below, or photos can be uploaded as they are taken. For information on setting up an ftp server, see page 95.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. FTP server profiles are indicated by a FTP icon. Highlight a profile and press OK to select the highlighted profile and return to the network menu.

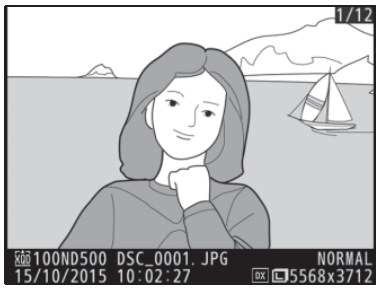


The profile name will be displayed in green when a connection is established.



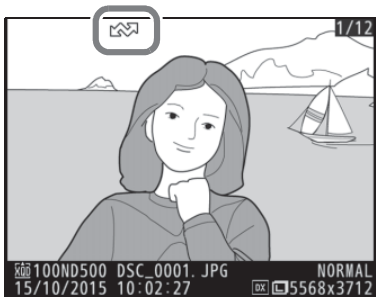
2 View pictures.

Press the ▶ button to view pictures. Display the first picture to be sent full frame or highlight it in the thumbnail list.

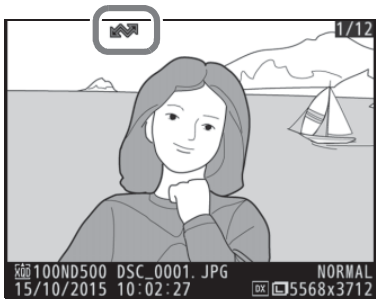


3 Upload pictures.

Press Ⓚ and the center of the multi selector. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue when upload is complete. Additional pictures will be uploaded in the order selected.

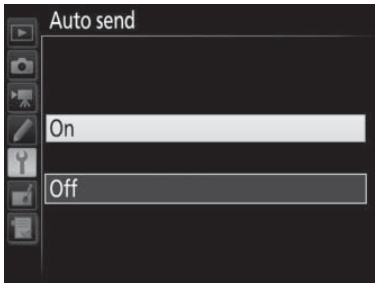


To upload a picture that has already been uploaded once, press Ⓚ and the center of the multi selector once to remove the blue transfer icon, and then press Ⓚ and the center of the multi selector again to mark the image with a white transfer icon.



Uploading New Photographs as They Are Taken

To upload new photographs as they are taken, select **On** for **Network** > **Options** > **Auto send** in the setup menu (□89).



Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press Ⓚ and the center of the multi selector. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off
- Selecting **Yes** for **Network** > **Options** > **Deselect all?** (□91; this option also removes transfer marking from all images)

During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

Interval Timer Photography

Upload will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

Loss of Signal

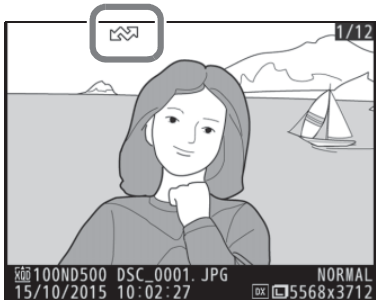
Wireless transmission may be interrupted if the signal is lost, but can be resumed by turning the camera off and then on again.

Turning the Camera Off

"Send" marking will be saved if the camera or WT-7 is turned off while transmission is in progress. Transmission of images marked with a "send" icon will resume when the camera or WT-7 is turned on.

Transfer Status

During playback, the status of images selected for upload is shown as follows:



: "Send"

Images that have been selected for upload are marked with a white icon.

: "Sending"

A green icon is displayed during upload.

: "Sent"

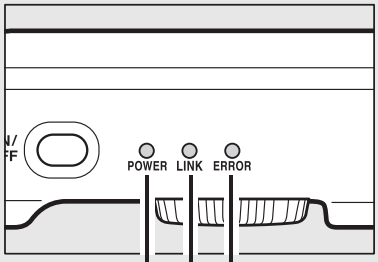
Images that have been uploaded successfully are marked with a blue icon.

Network Status

The status of the link between the host and the WT-7 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

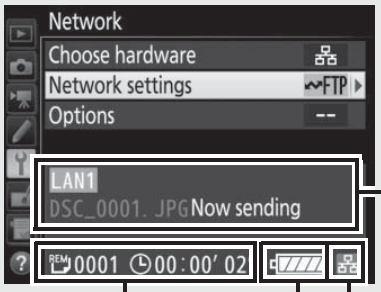
The **POWER** LED lights when the WT-7 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	POWER	LINK	ERROR
WT-7 off	● (off)	● (off)	● (off)
USB cable not connected	○ (on)	● (off)	● (off)
Connecting to host	○ (on)	○ (on)	● (off)
Waiting to send or sending data	○ (on)	☼ (flashes)	● (off)
Connection error	○ (on)	● (off)	☼ (flashes)
WT-7 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. While files are being transferred, the status display shows "Now sending" preceded by the name of the file being sent. Any errors that occur during transfer are also displayed here (📖105).

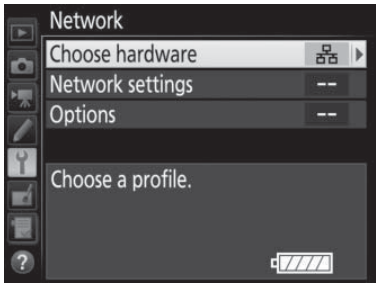
REM, ⏱: The estimated time required to send the remaining images.

Battery level: The charge state of the battery in the WT-7.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

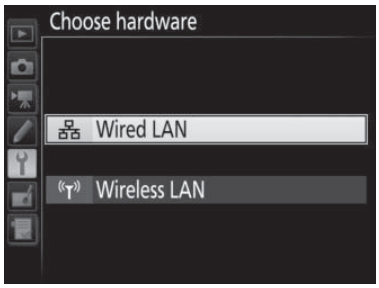
Menu Guide

This section describes the settings available for the **Network** option in the camera setup menu when the WT-7 is connected.



Choose Hardware

Choose the hardware used to connect to the network: Ethernet (**Wired LAN**) or wireless LAN (**Wireless LAN**).

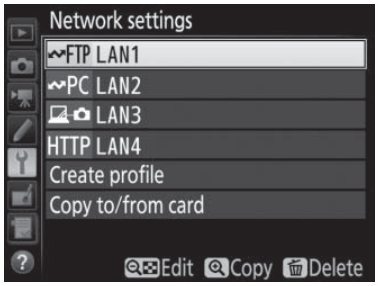


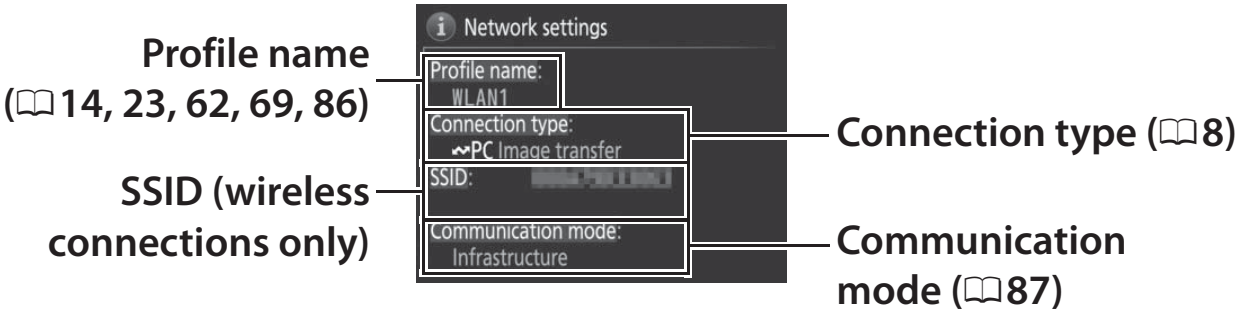
Network Settings

Highlight **Network settings** and press ⊕ to display the network profiles list, where you can create new profiles or select an existing profile.

The Profile List

The camera can store up to nine network profiles. Highlight a profile and press ⊕ to connect to the highlighted host computer or ftp server, or press 🗑 (FORMAT) to delete the highlighted profile (📖85). To view information on the highlighted profile, press 🔑 (✎/?).





To edit the highlighted profile, press ⊖ (⚡) (📖86).

Create Profile

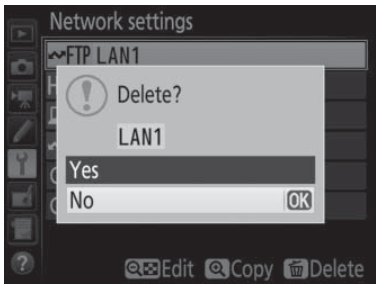
Choose **Connection wizard** to create network profiles with the help of a wizard (📖13, 22, 61, 68), **Configure manually** to enter ftp and http server settings manually (📖103).

Copy to/from Card

This option is available only with ftp and http server connections. Select **Copy profile from card** to copy profiles from the root directory of the memory card to the profile list. Selecting **Copy profile to card** displays the camera profile list; highlight a profile and press Ⓚ to copy the profile to the card (password-protected profiles can not be copied; □86). If there are two memory cards inserted in the camera, the card in the primary slot will be used for both “copy from” and “copy to” operations.

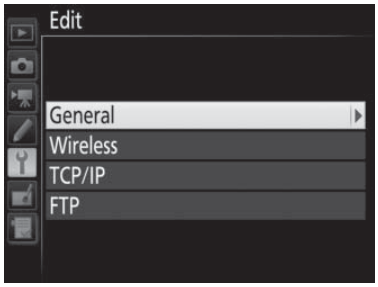
Deleting Network Profiles

Press 🗑 (FORMAT) to delete the profile currently highlighted in the profile list. A confirmation dialog will be displayed; highlight **Yes** and press Ⓚ.



Editing Network Profiles

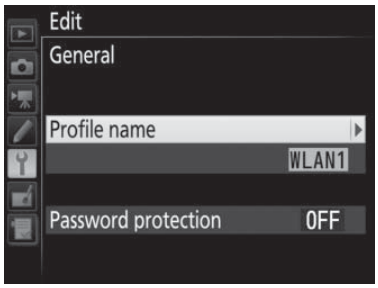
To edit network profiles, highlight the profile in the profile list, press ⊞ (⚡), and choose from the following options:



General	Edit the profile name and password.
Wireless	Edit wireless settings (wireless connections only; 📖87).
TCP/IP	Edit TCP/IP settings (📖88).
FTP	Edit ftp settings (📖88).

General

Choose **Profile name** to edit the profile name, **Password protection** to enter a profile password and enable or disable password protection. Enabling password protection prevents others from viewing network settings.



✔ Editing Profiles

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost.

■■ *Wireless*

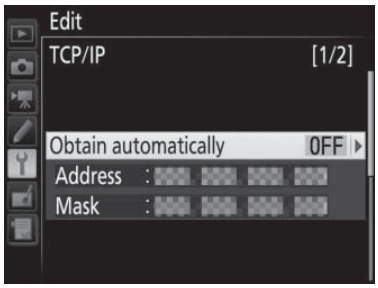
Edit the following wireless settings:

- **SSID (required)**: Enter the name (SSID) of the network on which the host computer or ftp server is located.
- **Communication mode**: Select **Infrastructure** for wireless communication via a wireless network access point, **Access point** to use the camera as an access point to connect to the ftp server or computer instead of connecting via a wireless network access point.
- **Channel**: Select a channel (access point mode only; in infrastructure mode, the channel will be selected automatically).
- **Authentication**: The authentication used on the network. Choose from open system, shared key, WPA-PSK, and WPA2-PSK (infrastructure) or open system and WPA2-PSK (access point mode).
- **Encryption**: The encryption used on the network. The options available depend on the authentication used:
  Open: None; 64- or 128-bit WEP available when **Infrastructure** is selected for **Communication mode**
  Shared: 64- or 128-bit WEP
  WPA-PSK: TKIP; AES
  WPA2-PSK: AES
- **Encryption key**: If the network uses encryption, enter the network key. The number of characters required depends on the type of key used:

	WEP (64-bit)	WEP (128-bit)	TKIP, AES
Number of characters (ASCII)	5	13	8–63
Number of characters (hex)	10	26	64

- **Key index**: If WEP64 or WEP128 is selected for **Encryption** in infrastructure mode, choose a key index matching that used by the access point or host computer. A key index is not required when **No encryption** is selected.

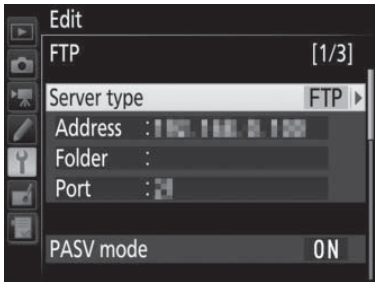
TCP/IP



If the network is configured to supply IP addresses automatically, select **Enable** for **Obtain automatically**. Otherwise select **Disable** and enter the following information:

- **Address/Mask**: Enter an IP address and subnet mask.
- **Gateway**: If the network requires a gateway address, select **Enable** and enter the address supplied by the network administrator.
- **Domain Name Server (DNS)**: If a Domain Name Server exists on the network, select **Enable** and enter the address supplied by the network administrator.

FTP



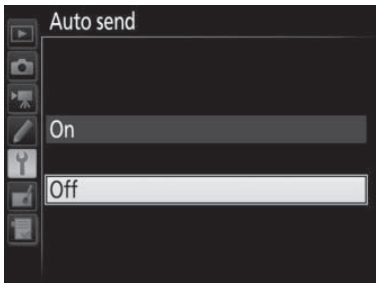
Edit the following ftp settings:

- **Server type**: Choose ftp or sftp and enter the URL or IP address (required), destination folder, and port number.
- **PASV mode**: Select **Enable** to enable PASV mode.
- **Anonymous login**: Select **Enable** for anonymous login, or select **Disable** to supply a **User ID** and **Password**.
- **Proxy server**: If a proxy server is required for ftp, select **Enable** and enter the address and port number for the proxy server.

Options

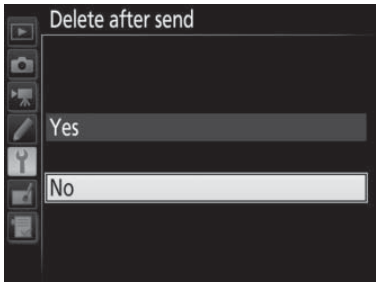
Edit the following settings.

Auto Send



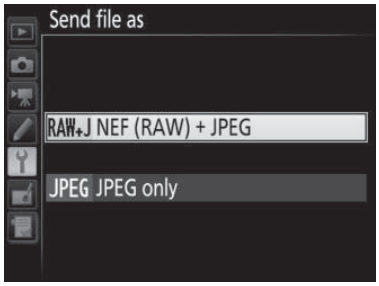
If **On** is selected for image transfer or ftp server connections, photos will automatically be uploaded to the computer or ftp server as they are taken (note, however, that photos can only be taken when a memory card is inserted in the camera). Movies can not be uploaded using this option; transfer movies during playback as described on pages 32 and 78.

Delete After Send



Select **Yes** to delete photographs from the camera memory card automatically once upload is complete (image transfer and ftp server connections only; files marked for transfer before this option is selected are unaffected). Regardless of the option selected for file number sequence in the camera Custom Settings menu, sequential number is used while this option is in effect, even if the folder changes or the memory card is replaced. Deletion may be suspended during some camera operations.

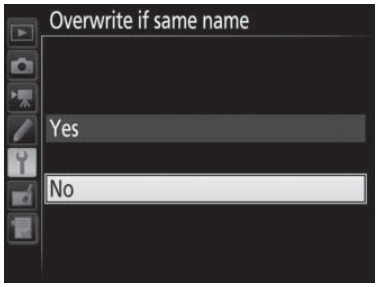
Send File As



When transferring NEF+JPEG images to a computer or ftp server (image transfer and ftp server connections only), choose whether to upload both the NEF (RAW) and JPEG files or only the JPEG copy.

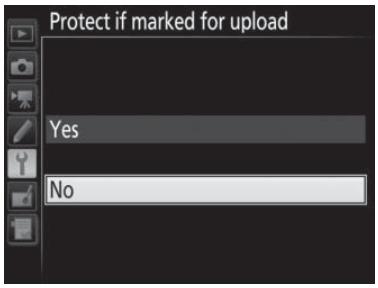
Overwrite If Same Name

Choose **Yes** to overwrite files with duplicate names during upload to an ftp server, **No** to add numbers to the names of newly uploaded files as necessary to prevent existing files being overwritten.



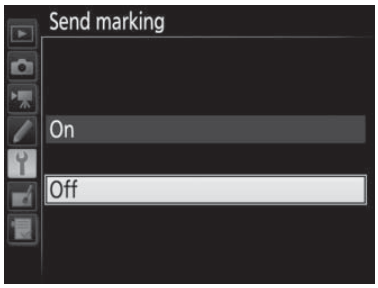
Protect If Marked for Upload

Select **Yes** to automatically protect files marked for upload to an ftp server. Protection is removed as the files are uploaded.



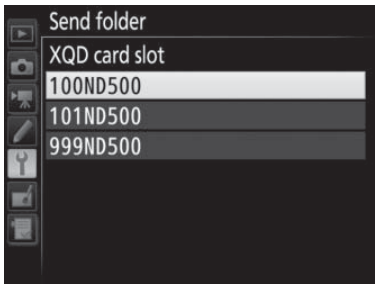
Send Marking (FTP Upload Mode Only)

Select **On** to add a timestamp to the pictures on the camera memory card giving the time of upload. The timestamp can be viewed using ViewNX-i or Capture NX-D. For more information, see online help for the software in question or the Capture NX-D manual.



Send Folder

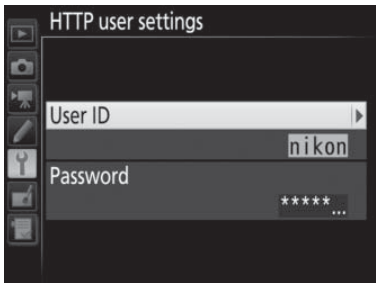
Select a folder for upload (image transfer and ftp server connections only). All photos in the selected folder (including those already marked as “sent”) will be uploaded, beginning immediately. Movies can not be uploaded using this option; transfer movies during playback as described on pages 32 and 78.



Deselect All?

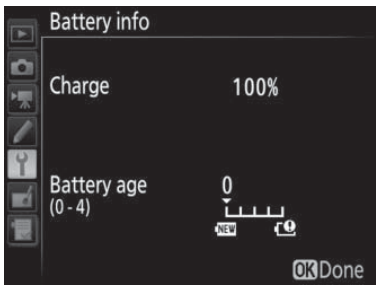
Select **Yes** to remove transfer marking from all images selected for upload to a computer or ftp server (image transfer and ftp server connections only). Upload of images with a "sending" icon will immediately be terminated.

HTTP User Settings



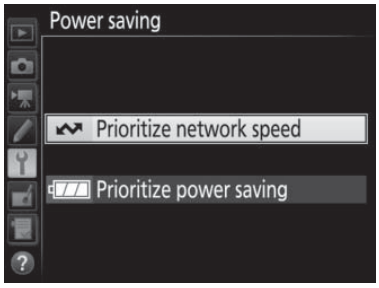
Enter a user name and password for connection to an http server (http server connections only).

Battery Info



Display information for the battery inserted in the WT-7. The five-level **Battery age** display shows the battery age: 0 indicates that battery performance is unimpaired, 4 that the battery has reached the end of its charging life and requires replacement.

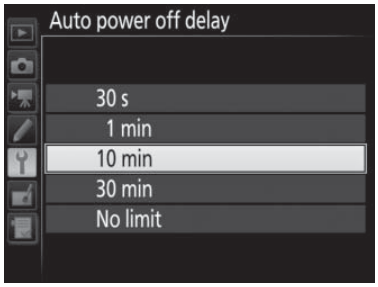
Power Saving



Choose **Prioritize network speed** for faster network speeds, **Prioritize power saving** for reduced power consumption. **Prioritize network speed** ensures that LAN connections remain active even when data are not being exchanged with the server and allows Ethernet connections using the high-speed 1000BASE-T standard. **Prioritize power saving** limits Ethernet connections to 100BASE-TX and ensures that LAN connections are terminated automatically when data transfer ends.

Auto Power off Delay

Choose how long the WT-7 remains on once the camera has turned off or the USB connection to the camera is terminated.

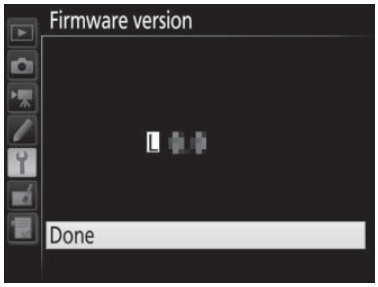


MAC Address

Display the MAC address of the hardware selected for **Choose hardware** (🕮83).

Firmware Version

View the current WT-7 firmware version.



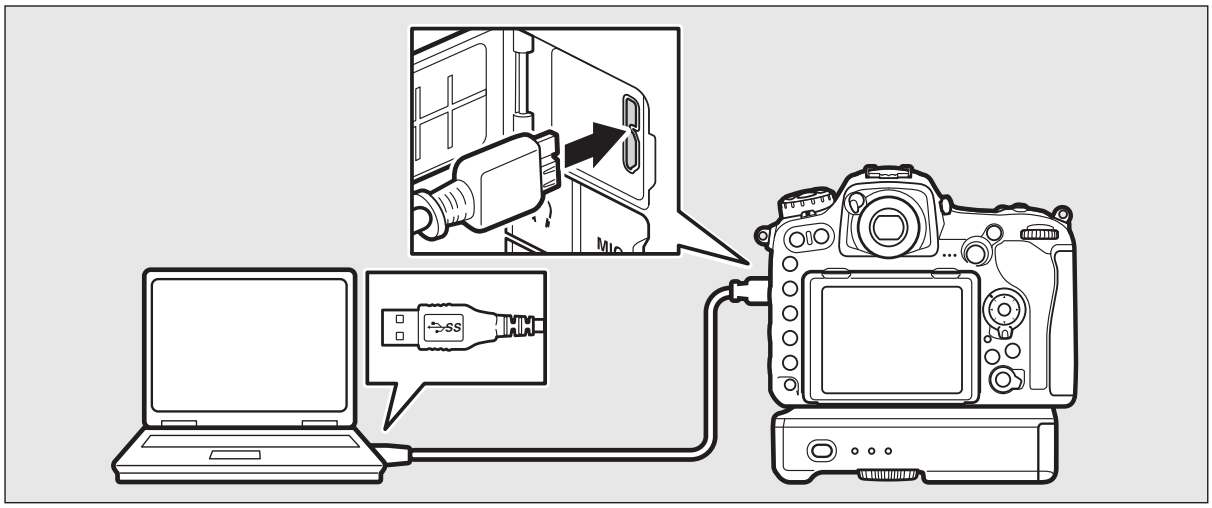
Appendices

Creating Profiles on a Computer

The Wireless Transmitter Utility (📖6) can be used to create network profiles.

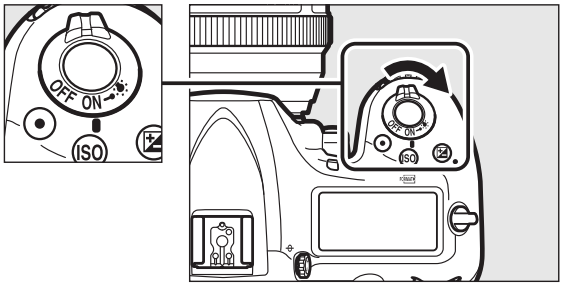
1 Connect the camera.

Start the computer and connect the camera using the supplied USB cable.



2 Turn the camera on.

Rotate the power switch to turn the camera on.



3 Start the Wireless Transmitter Utility.

Double-click the Wireless Transmitter Utility icon on the desktop (Windows) or click the Wireless Transmitter Utility icon in the Dock (Mac).

4 Create a profile.

Follow the on-screen instructions to create a network profile.

Creating an FTP Server

Images can be uploaded to ftp servers created using the standard ftp services included with Windows 10 (Enterprise/Pro/Home), Windows 8.1, Windows 8.1 (Enterprise/Pro), and Windows 7 (Professional/Enterprise/Ultimate). Under Windows, Internet Information Services (IIS) are required to configure ftp servers (installation instructions are available from Microsoft).

The following settings are used below for illustrative purposes:

ftp server

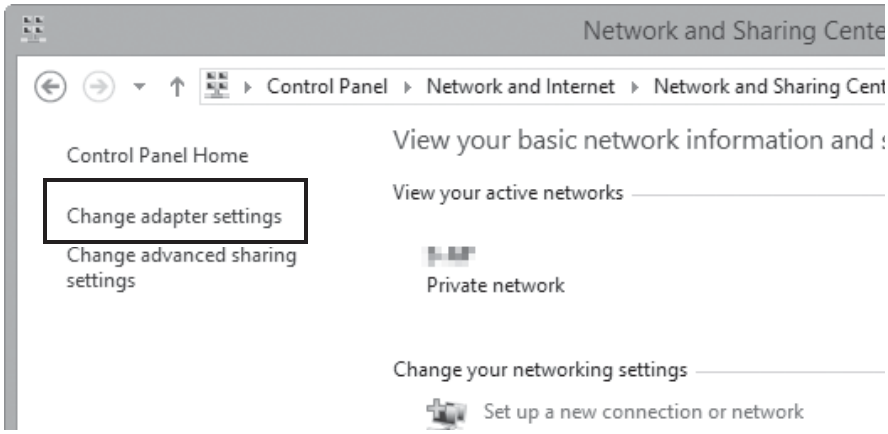
IP address: 192.168.1.3
Subnet mask: 255.255.255.0
ftp server port: 21

1 Go to Network and Sharing Center.

Click **Control Panel** > **Network and Internet** > **Network and Sharing Center**.

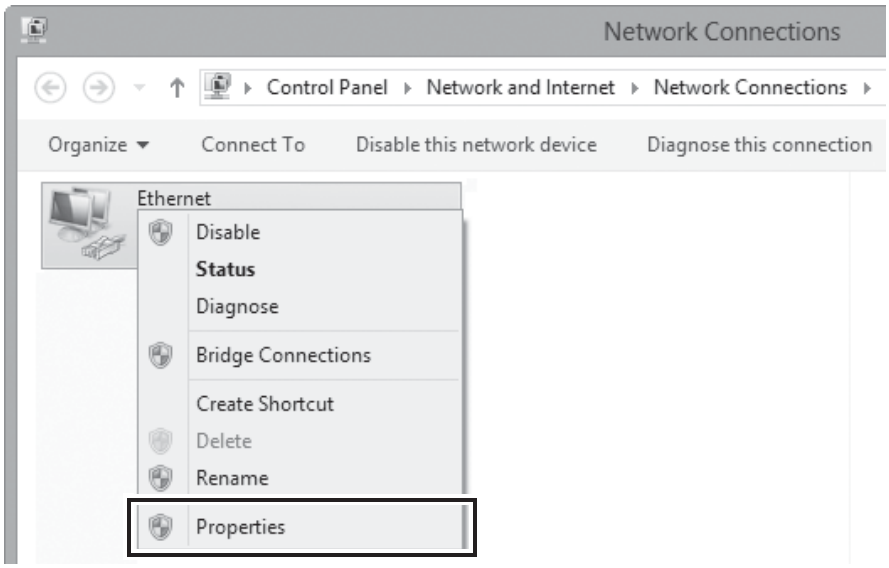
2 Display the network adapter list.

Click **Change adapter settings**.



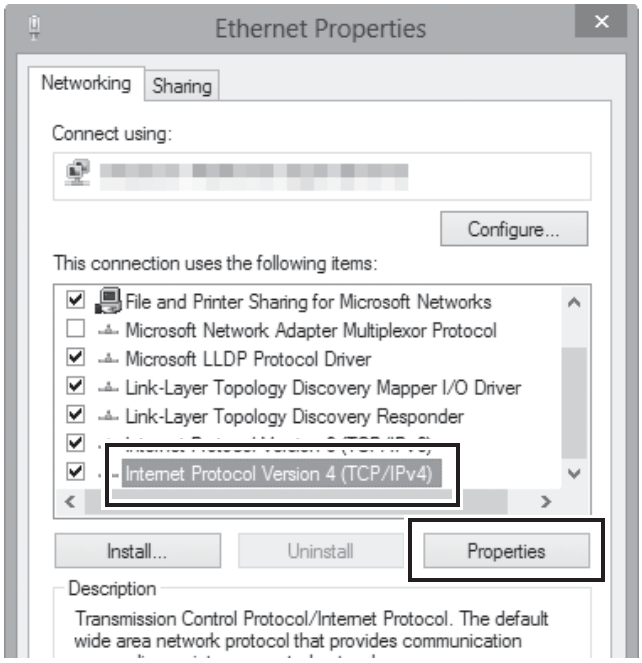
3 Open the network properties dialog.

If you are connecting via a wireless LAN adapter, right-click **Wi-Fi** (Windows 8.1) or **Wireless Network Connection** (Windows 7) and select **Properties**. If you are connecting via Ethernet, right-click **Ethernet** (Windows 8.1) or **Local Area Connection** (Windows 7) and select **Properties**.



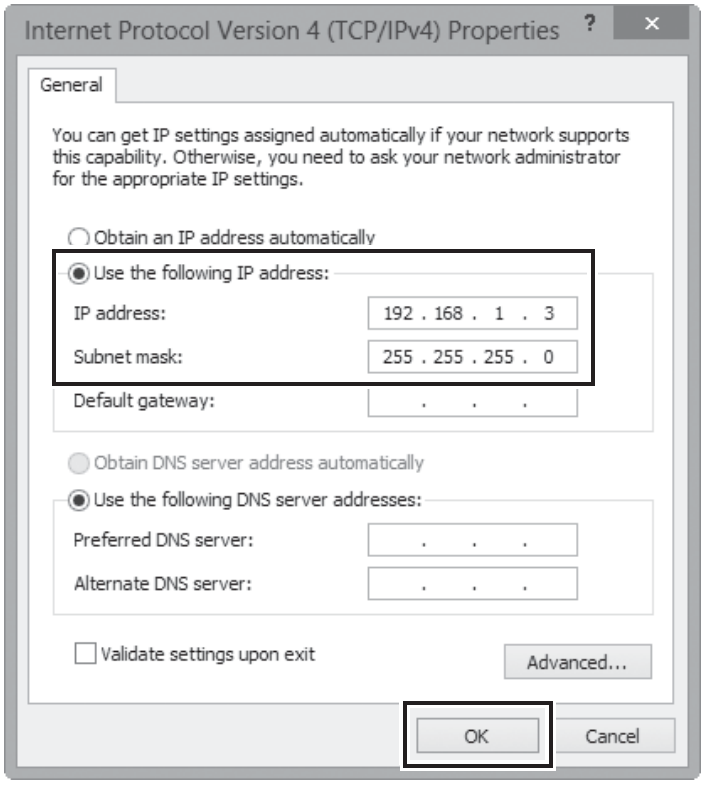
4 Display TCP/IP settings.

Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



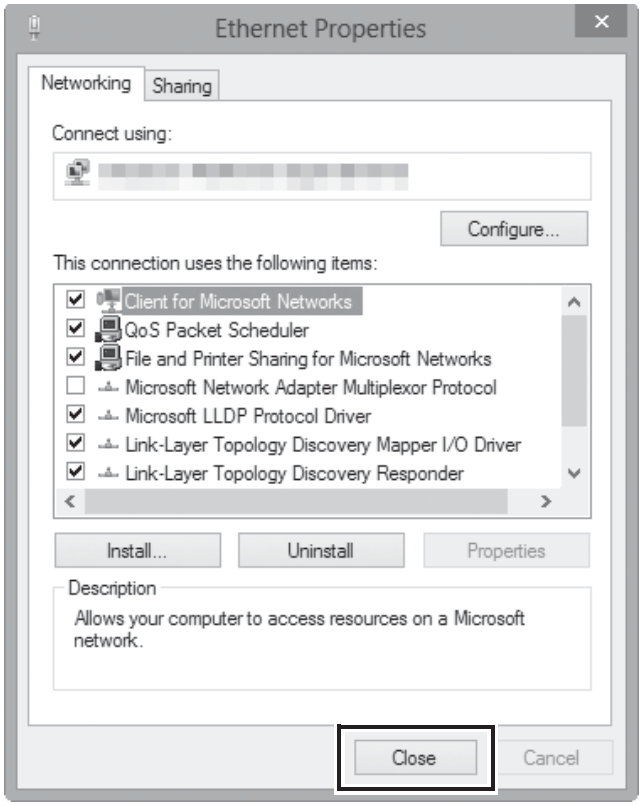
5 Enter an IP address and subnet mask.

Enter an IP address and subnet mask for the ftp server and click **OK**.



6 Close the network properties dialog.

Click **Close**.

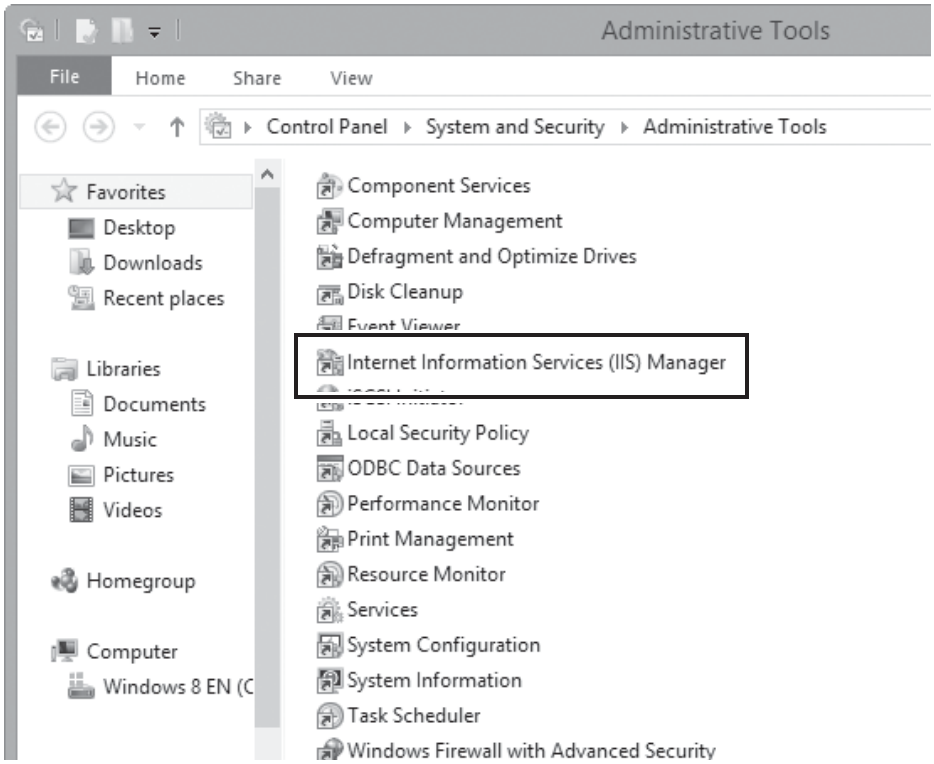


7 Open Administrative Tools.

Click **Control Panel** > **System and Security** > **Administrative Tools**.

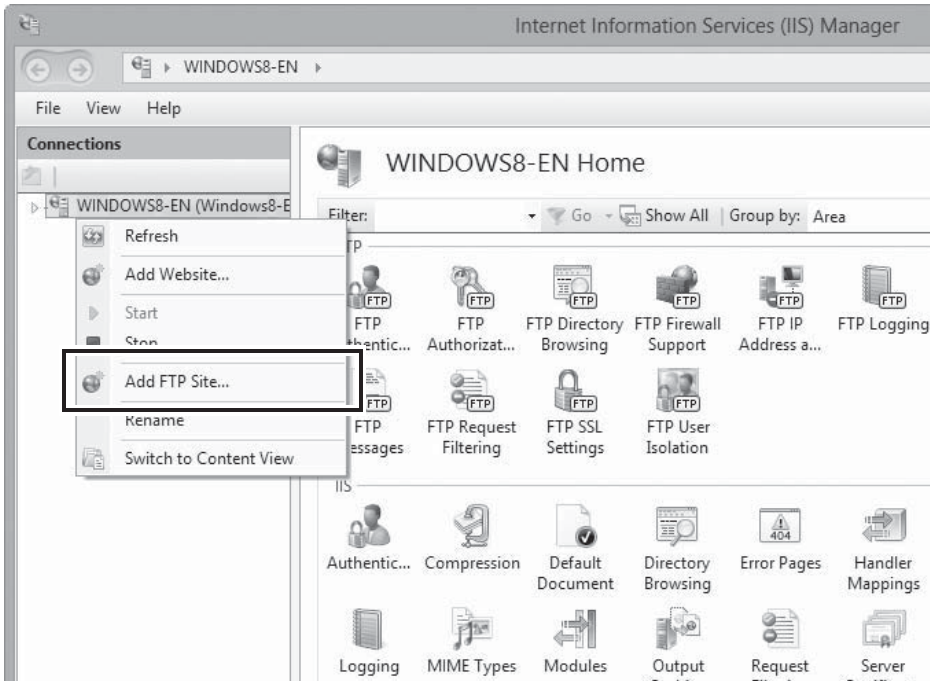
8 Open the IIS manager.

Double-click **Internet Information Services (IIS) Manager**.



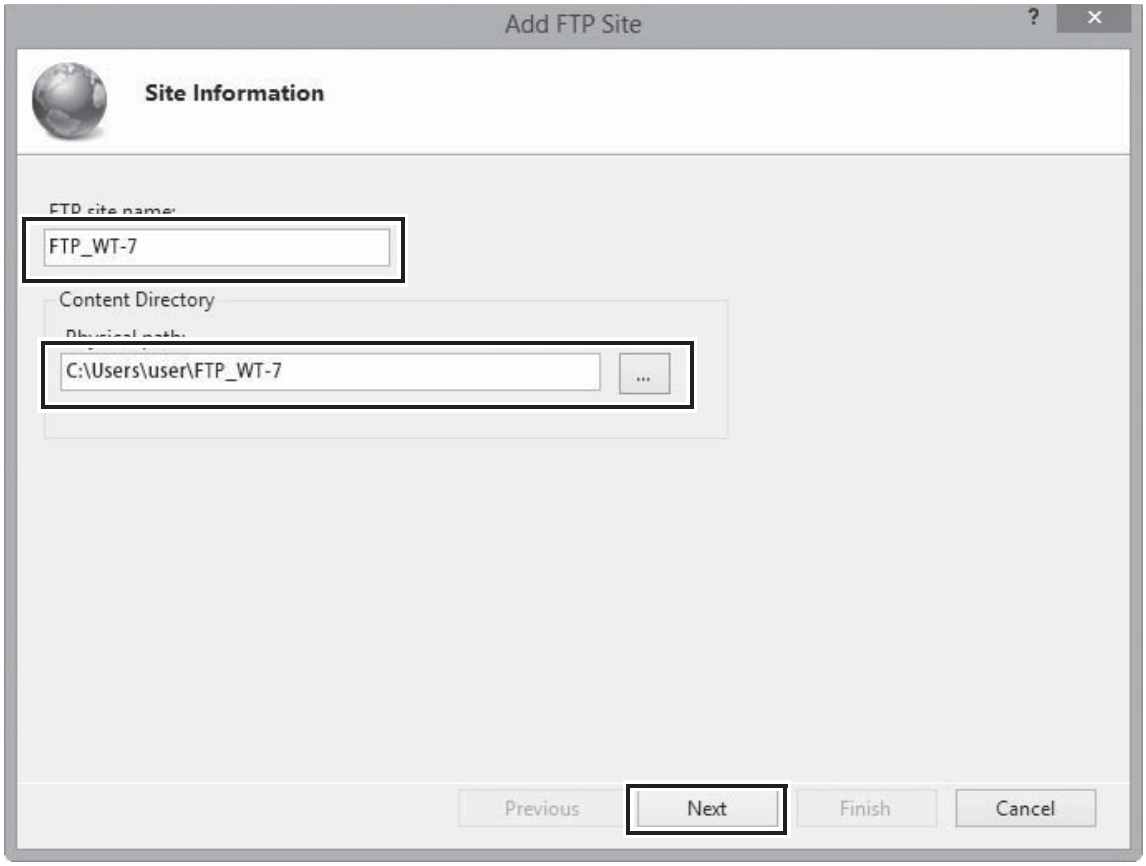
9 Select Add FTP Site…

Right-click the computer user name and select **Add FTP Site…**



10 Enter site information.

Name the site and choose the path to the folder that will be used for ftp upload. Click **Next** to proceed.

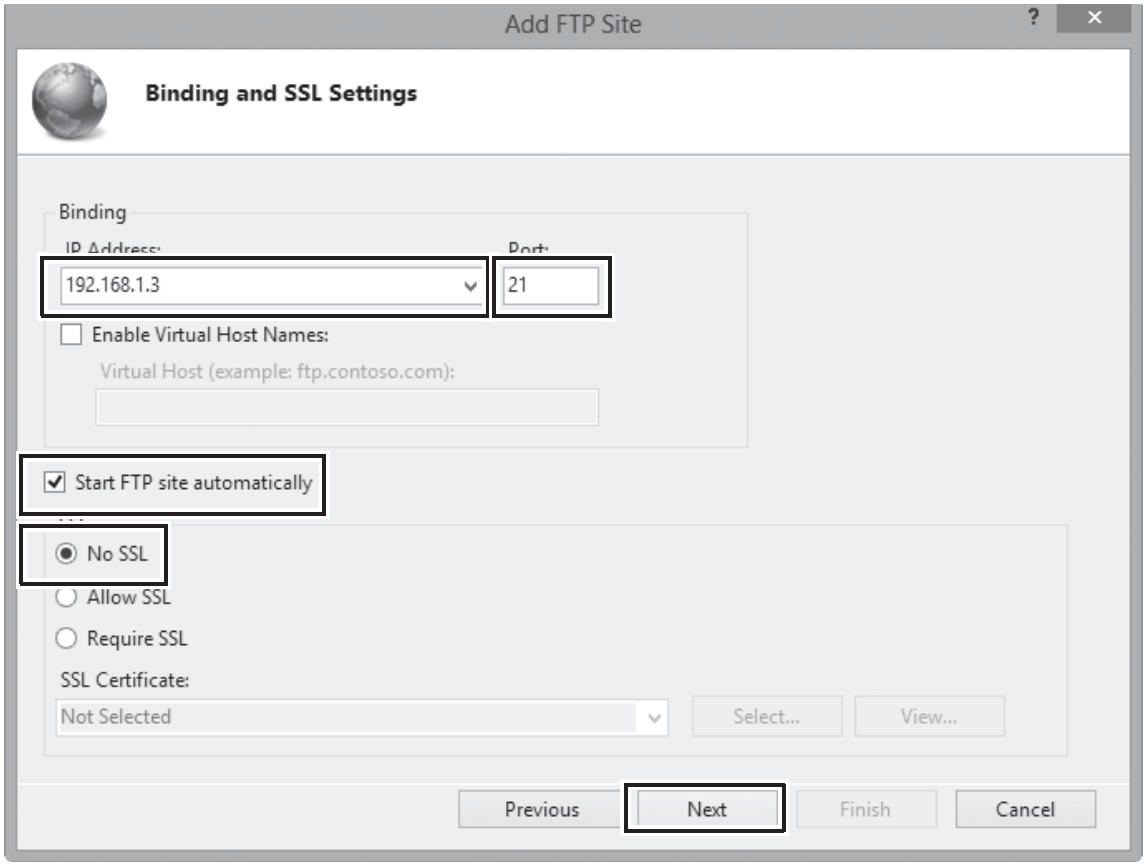


Anonymous Login

To allow anonymous login, select a folder in the user's public folder as the content directory.

11 Choose binding and SSL options.

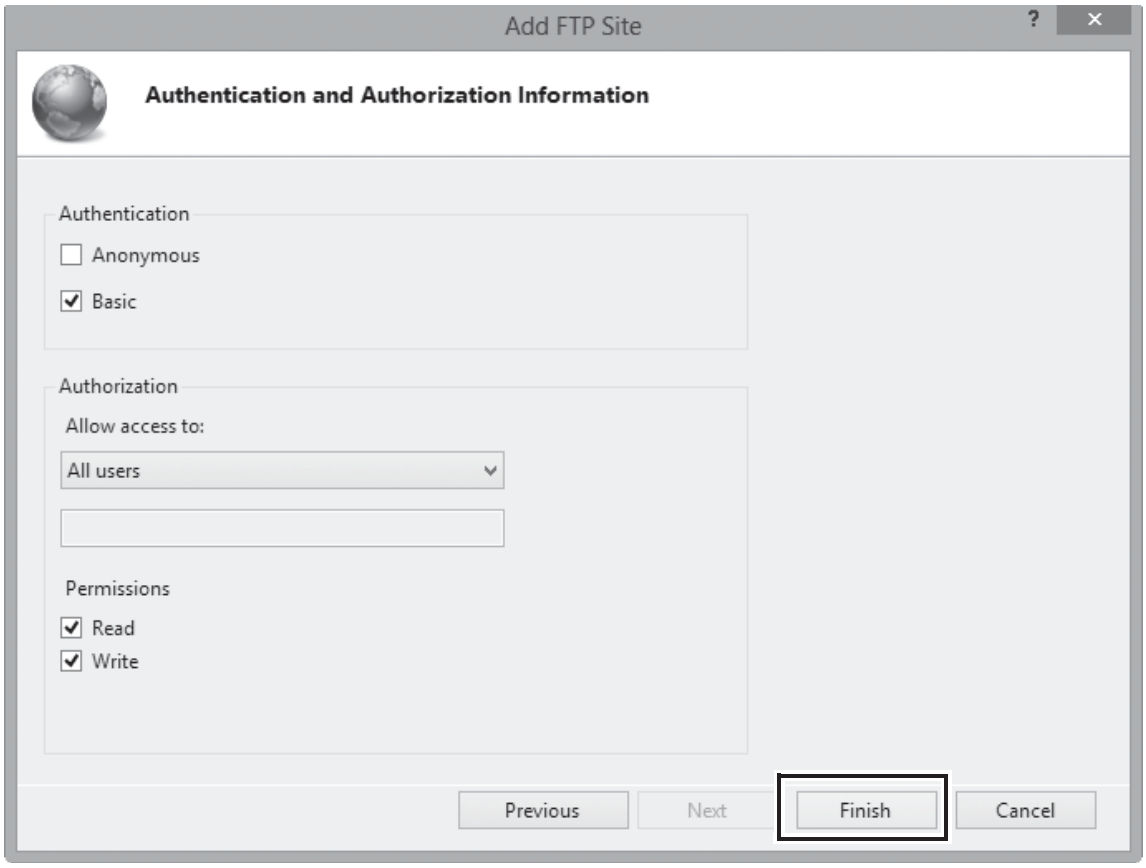
Select the IP address entered in Step 5, note the port number, select **Start FTP site automatically**, and check **No SSL**. Click **Next** to proceed.



12 Choose authentication options.

Adjust settings as described below and click **Finish**.

- **Authentication**: Basic
- **Allow access to**: All users
- **Permissions**: Read/Write

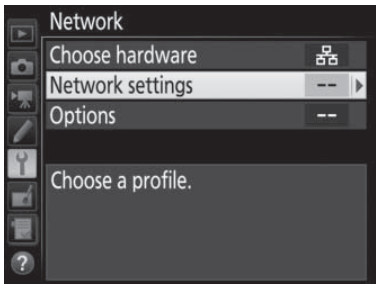


Manual Profile Creation

Follow the steps below to manually configure the camera for connection to ftp and http servers. Note that changes to the current profile will be lost if the camera is turned off during setup; to prevent unexpected loss of power, use fully-charged batteries or optional AC adapters designated for use with the camera and WT-7. If you are connecting to an ftp server behind a firewall, you may also need to adjust firewall settings to create exceptions for the ftp ports used by the camera (ports 21, 22, and 32768 through 61000).

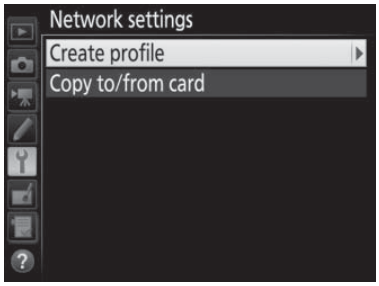
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



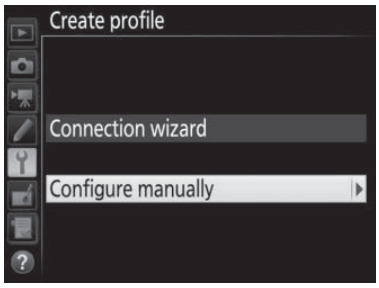
2 Select **Create profile.**

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (📖85).



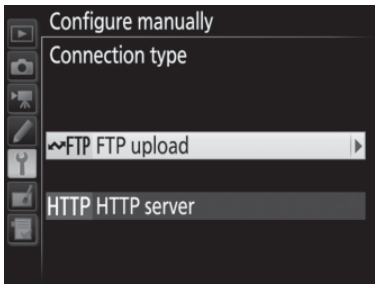
3 Select **Configure manually.**

Highlight **Configure manually** and press ▶.



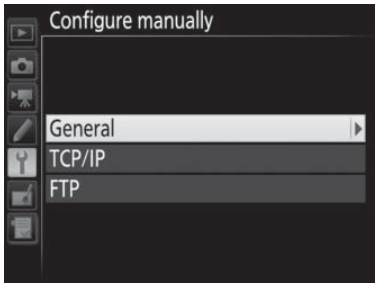
4 Select a connection type.

Highlight **FTP upload** or **HTTP server** and press ⊕.



5 Adjust settings.

Adjust settings as described in "Editing Network Profiles" (📖86).



✔ Editing Profiles

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost. Choose a longer monitor off delay for Custom Setting in the camera menus.

Troubleshooting

Problem	Solution	Page
"POWER" LED does not light.	• Turn the WT-7 on. • Confirm that the battery is inserted and fully charged.	11, 20, 59, 66 4, 91
Network option not available.	Confirm that the WT-7 is connected and on.	11, 20, 59, 66
Excessive radio interference.	Adjust the position of the wireless access point or host computer.	—
All LEDs flash at once.	WT-7 hardware or battery malfunction. Contact a Nikon-authorized service representative.	—
Camera displays TCP/IP or FTP error.	• Check settings for host and/or wireless LAN adapter and adjust camera settings appropriately. • Check firewall settings. • Confirm that you can write to the destination folder on the ftp server. • Highlight the network profile created with the camera and press the ⊖ (⚡) button, then select **FTP** and choose a different option for **PASV mode**.	10, 18, 58, 65, 86 9 — 88

Problem	Solution	Page
Camera displays wireless error.	• Confirm that host and wireless LAN adapter are on. • Ensure that there are no obstacles between WT-7 and wireless LAN adapter. • Check settings for host and/or wireless LAN adapter and adjust camera settings appropriately. • In direct (access point) mode, confirm that the computer or smart device is not connected to another network.	— — 18, 65, 86 —
Camera displays "Ethernet cable is not connected".	Connect Ethernet cable or select **Wireless LAN** for **Choose hardware**.	11, 59, 83
Memory card error displayed.	Confirm that memory card is properly inserted.	—
Transfer interrupted before all photographs are sent.	Transfer will resume if WT-7 is turned off and then on again.	11, 20, 59, 66
USB cable disconnected during transmission.	Reconnect the USB cable. Do not turn the camera off.	—
No connection is established when the camera URL is entered in a web browser (http server connections only).	Confirm that the browser is not using a proxy connection.	88

Specifications

Wireless Transmitter WT-7

Ethernet	
Standards	IEEE802.3ab (1000BASE-T)/IEEE 802.3u (100BASE-TX)/IEEE 802.3 (10BASE-T)
Data rates *	10/100/1000 Mbps with auto detect
Port	1000BASE-T/100BASE-TX/10BASE-T (AUTO-MDIX)
Wireless	
Standards	**WT-7/WT-7A/WT-7B/WT-7C**: 802.11a/b/g/n/ac
Communications protocols	**IEEE802.11a**: OFDM **IEEE802.11g**: OFDM **IEEE802.11b**: DSSS **IEEE802.11n**: OFDM **IEEE802.11ac**: OFDM
Operating frequency (MHz)	**WT-7**: 5180–5320 MHz (36/40/44/48/52/56/60/64 ch) 5500–5700 MHz (100/104/108/112/116/120/124/128/132/136/140 ch) 2412–2472 MHz (1–13 ch) **WT-7A**: 5180–5320 MHz (36/40/44/48/52/56/60/64 ch) 5745–5825 MHz (149/153/157/161/165 ch) 2412–2462 MHz (1–11 ch) **WT-7B**: 5180–5320 MHz (36/40/44/48/52/56/60/64 ch) 2412–2472 MHz (1–13 ch) **WT-7C**: 5745–5825 MHz (149/153/157/161/165 ch) 2412–2472 MHz (1–13 ch)

Wireless		
	Approximate range (line of sight) †	Approximately 200 m (656.1 ft)
	Data rates *	**IEEE 802.11a/g**: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps **IEEE 802.11b**: 1, 2, 5.5 and 11 Mbps **IEEE 802.11n**: 300 Mbps maximum **IEEE802.11ac**: 866.7 Mbps maximum
	Security	**Authentication**: Open system, shared key, WPA-PSK, WPA2-PSK **Encryption**: 128/64 bit WEP, TKIP, AES
	Wireless setup	Supports WPS2.0
	Access protocols	Infrastructure and access point modes
Power source		Rechargeable EN-EL15 Li-ion battery ×1 (available separately), EP-5B power connector and EH-5b AC adapter (available separately)
Operating environment		**Temperature**: 0 °C–40 °C (32 °F–131 °F) **Humidity**: 85% or less (no condensation)
Weight		Approximately 175 g/6.17 oz. (body only)
Dimensions (W × H × D)		Approximately 135mm×37mm×60mm

* Maximum logical data rates according to IEEE standard. Actual rates may differ.

† With large antenna at wireless LAN access point. Range may vary with signal strength and presence or absence of obstacles.

- Nikon reserves the right to change the appearance and specifications of the hardware and software described in this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.

Battery Life

The length of time batteries can be used and the number of shots that can be uploaded before recharging varies with the condition of the batteries, signal strength, and how camera and WT-7 are used. The following measurements were performed using a fully-charged EN-EL15 battery (1,900 mAh) at a temperature of 23 °C (73.4 °F) while continuously uploading images with an average file size of ## megabytes (equivalent to a large normal-quality JPEG image taken with the D500) to an ftp server configured using Internet Information Services (IIS) under Windows 8.1 over an infrastructure network with the WT-7 in FTP upload mode (all figures are approximate).

Network	Wireless (802.11ac)	Ethernet (1000BASE-TX)
No. of shots uploaded	#,###	##,###
Battery life	### min. (# hr.)	### min. (# hr.)

To ensure maximum battery performance:

- Keep the battery contacts clean. Soiled contacts can reduce battery performance.
- Use EN-EL15 batteries immediately after charging. Batteries will lose their charge if left unused.
- Periodically check the battery level using **Network** > **Options** > **Battery info**.
- The battery level displayed by the camera may vary with changes in temperature.
- A sharp drop in the length of time the battery can hold a charge indicates that the battery must be replaced.

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