

## Controlling the Camera: PTP/IP Mode

In PTP/IP mode, a camera equipped with a WT-2 can be controlled over a wireless network from a computer running Nikon Capture 4 version 4.2 or later (available separately) and photographs saved directly to the computer hard disk. Before the camera can be controlled from the computer, wireless settings must be adjusted appropriately and the camera and computer must be "paired" using special software. The principal steps involved in using PTP/IP mode for the first time are as follows:

- 1—Installing Pairing Software ..... 39
- 2—Setup Using the Connection Wizard ..... 14–16
- 3—Pairing ..... 17–19
- 4—Connecting to the Computer ..... 20
- 5—Controlling the Camera ..... 21

Steps 1–3 can be omitted once the WT-2 has been set up for connection to a particular computer.

### Installing Pairing Software

The Network Camera Pairing Wizard supplied with the WT-2 must be installed on the host computer before it can be paired with the camera. See page 39 for more information.

### Wireless Network Settings


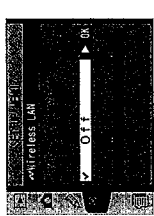

For information on adjusting wireless network settings without using the Connection Wizard, see "Menu Guide" (26–31). See page 25 for information on loading settings files created with a computer.

### Firewalls

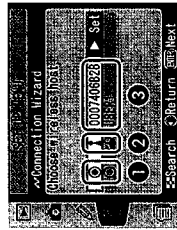
PTP/IP mode uses UDP port 5353. It may be necessary to adjust firewall settings before connecting to a computer behind a firewall.




### Setup Using the Connection Wizard

First-time setup can be completed with the help of the Connection Wizard. Make sure the network is active before starting. To prevent changes to settings from being lost should the camera monitor turn off automatically, use the optional AC adapter or choose the maximum camera monitor off delay.

- 1 Turn the camera on.  

- 2 Check that **Off** is selected for **Wireless LAN > Transceiver** in the camera setup menu (24).  

- 3 Select **PTP/IP** for **Wireless LAN > Mode** (24).  


4 In the top level of the wireless LAN menu, press the **OK** button to start the Connection Wizard. A list of available connections will be displayed. Press the multi-selector up or down to highlight the desired connection and press the multi-selector to the right to select it.



- 1 Selected connection is marked with  icon.
- 2 Infrastructure connections are marked with  icon, ad-hoc connections with  icon (27).
- 3 SS-ID (not displayed if SS-ID is unavailable).

### Connection Not Available

If the desired connection is not listed, press the **OK** button to search again. If the connection still can not be found, check settings on the network.

5 Press the **OK** button.



**SS-ID**  
If prompted for an SS-ID, press the multi-selector to the right and enter the connection SS-ID as described on page 26.



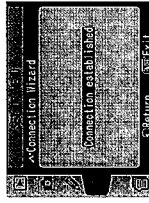
**Encryption Key**  
If prompted for an encryption key, press the multi-selector to the right and enter a key as described on page 27.



6 If the network is configured to supply an IP address automatically by DHCP server or Auto IP (51), press the multi-selector to the right to select **Obtain automatically**. If the network requires a fixed IP address or subnet mask, enter the information supplied by the network administrator (28). Press the **OK** button to proceed to Step 7.



7 The dialog shown at right is displayed when setup is complete. Press the **OK** button to exit the wizard and return to the wireless LAN menu.



#### **Errors**

If an error is displayed, press the multi-selector to the left to return to the previous dialog and enter a valid value for the affected setting.

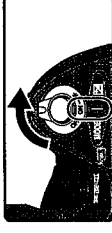
#### **"WIRELESS ERROR," "TCP/IP ERROR"**

The above errors indicate that the associated wireless network options are set incorrectly. After checking settings for the host or access point, press the **OK** button to restart the Connection Wizard and adjust camera settings to match.

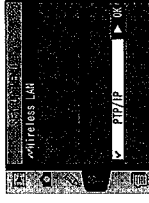
#### **Pairing**

Once wireless network settings have been adjusted, the camera and computer must be "paired" before they can communicate in PTP/IP mode for the first time. "Pairing" allows the computer to control the camera by establishing permissions between the two devices.

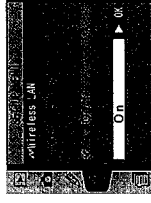
1 Turn the camera on.



2 Select **PTP/IP** for the **Wireless LAN > Mode** option in the camera setup menu (24).



3 Select **On** for **Wireless LAN > Transceiver** (24).



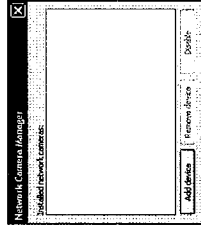
4 Confirm that "Now in PTP/IP mode/Waiting for connection" is displayed in the top level of the wireless LAN menu. For information on what to do if an error is displayed, see "Troubleshooting" (50).



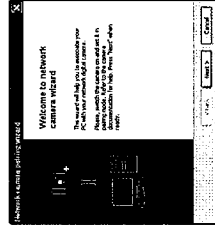
5 Press the camera **OK** button. The message shown at right will be displayed, with the camera name in blue (36).



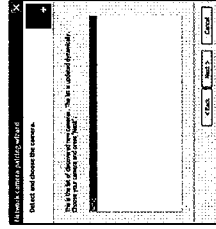
**6 On the computer:** Turn on the computer and start the Network Camera Manager. Click **Add device**.



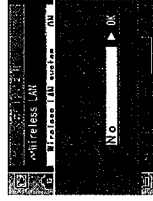
**7 On the computer:** Click **Next**.



**8 On the computer:** A list of available cameras will be displayed. Select the desired camera and click **Next**.



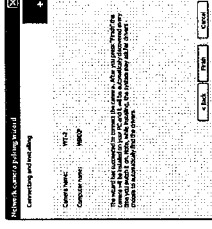
**9 On the camera:** A message will be displayed in the camera monitor stating that the computer is requesting a connection. Highlight **Yes** and press the multi-selector to the right. The message "Connected to (computer name)" will be displayed when pairing is complete.



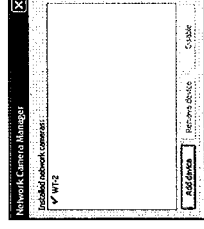
#### Mac OS X

Although the illustrations on these pages are taken from Windows XP, the pairing process for Mac OS X is identical to that described here.

**10 On the computer:** Click **Finish**. If instructed to install a driver, follow the on-screen instructions to complete installation. If a dialog appears prompting you to select a program to perform an action, click **Cancel**.

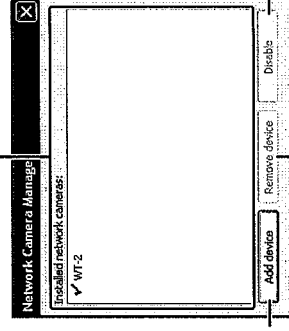


**11 On the computer:** A check mark will appear next to the camera name in the Network Camera Manager window. Pairing is now complete; close the Network Camera Manager.



#### The Network Camera Manager Window

**Installed network cameras:** A list of the cameras with which the computer can pair.



**Add device:** Add a camera to the list of installed network cameras.

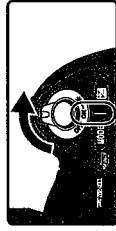
**Disable/Enable:** Disable or enable the selected pairing.

**Remove device:** Remove the selected device from the list of installed network cameras.

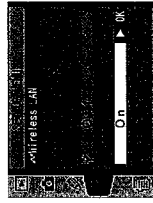
### Connecting to the Computer

1 Turn on a computer that has been paired with the camera (17) and wait for it to start up.

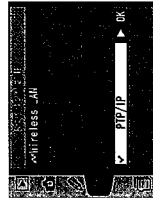
2 Turn the camera on.



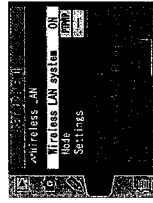
3 Select **PTP/IP** for the **Wireless LAN > Mode** option in the camera setup menu (24).



4 Select **On** for **Wireless LAN > Transceiver** (24).



5 Confirm that "Now in PTP/IP mode/Waiting for connection" is displayed in the top level of the wireless LAN menu. For information on what to do if an error is displayed, see "Troubleshooting" (50).



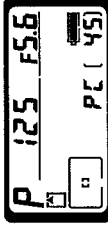
6 The connection is complete when the message, "Connected to (computer name)," is displayed in the pairing options menu. If the camera continues to display the "waiting for connection" message, repeat the steps described in "Pairing" (17).



### Controlling the Camera

1 Complete the steps in "Connecting to a Computer" (20).

2 Start Nikon Capture 4 Camera Control on the host computer and confirm that **PC** is displayed in the camera's top control panel.



3 Control the camera as described in the *Nikon Capture 4 User's Manual*. Any photographs taken while the camera is connected will be recorded directly to the computer hard disk.

### Network Status

The status of the link between the computer and the WT-2 is shown by the status LEDs and by the display in the top level of the wireless LAN menu.

### The Status LEDs

The POWER LED lights when the WT-2 is receiving power from the camera. Signal quality is shown by the LINK LED: the faster the LED blinks, the better the signal and the faster data can be transmitted. The BUSY LED lights when a connection is established.



Status	POWER	LINK	BUSY
Camera or exposure meters off, or <b>Off</b> selected for <b>Wireless LAN &gt; Transceiver</b>	● (off)	● (off)	● (off)
Connecting to computer	○ (on)	○ (on)	● (off)
Waiting for connection; pairing possible	○ (on)	⊙ (blinks)	● (off)
Connected; camera control possible	○ (on)	⊙ (blinks)	○ (on)
Connection error	⊙ (blinks)	● (off)	● (off)
WT-2 hardware malfunction	⊙ (blinks)	⊙ (blinks)	⊙ (blinks)

### The Status Display

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



<b>Status</b>	The status of the connection between the computer and the camera. "Connected to (computer name)" is displayed when the camera is connected.
<b>Signal</b>	A five-level indicator of signal quality.
<b>Error</b>	Any errors that prevent the camera from connecting to the computer.

## Menu Guide

This section describes the settings available for the **Wireless LAN** option in the camera setup menu when the WT-2 is connected.



### Transceiver

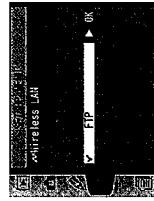
Turn the WT-2 transceiver on or off.



Option	Description
<b>Off</b> (default)	WT-2 receives no power from camera. Select this option to reduce drain on batteries.
<b>On</b>	WT-2 on; wireless communication possible. If ftp mode is selected, transmission of images marked with "send" icon begins immediately.

### Mode

Choose **FTP** for ftp mode (5), **PTP/IP** for PTP/IP mode (14).



### Settings

Adjust wireless network settings (25–35), ftp settings (36), or PTP/IP settings (37–38).



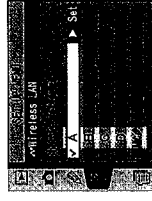
## Network Settings

Adjust settings for connection to a wireless network or ftp server (26–35, or see page 42 for sample ftp settings). These settings can also be made with the help of the Connection Wizard (6, 14) or by loading a settings file that has been saved to the camera memory card with a computer (25). To prevent the camera monitor from turning off while adjusting settings, set the **Monitor** off Custom Setting to **10m** or use an optional EH-6 AC adapter to power the camera.



### Choose Settings

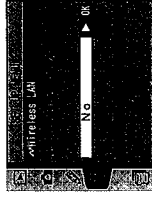
Camera network settings are saved in one of four banks. Any changes to settings using the menus or Connection Wizard will be saved in the current bank, and are recalled when this bank is selected again.



Option	Description
<b>A–D</b>	Select bank.
<b>Rename</b>	Rename selected bank.

### Load Settings File

Load a network settings file that has been saved to the camera memory card using a computer.



Option	Description
<b>No</b> (default)	Exit without changing settings.
<b>Yes</b>	Load <b>Wireless, TCP/IP, and FTP</b> settings from memory card.

### Creating a Settings File

An application for creating settings files is available from the websites listed on page 1 of this manual. After creating a settings file, save it to the root directory of the memory card using a CompactFlash card reader or PCMCIA memory card adapter. No more than one settings file should be stored on the memory card at a time. Additional information is available from the download site.

## Wireless

Adjust settings for connection to a wireless network. The wireless menu has two pages of options; to scroll between pages, press the multi-selector up or down.

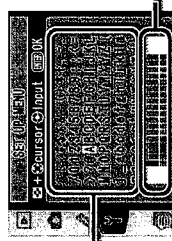
## Wireless Menu, Page 1/2

**SSID:** A BSS- or ESS-ID is required for connection to a wireless LAN adapter or access point. Leave this field blank to allow the network to set the SS-ID automatically ("any" connection). To change the BSS- or ESS-ID, highlight the current ID, press the multi-selector to the right, and enter a new ID as described in the note below. Press **ESC** to return to the wireless menu (1/2).



## Text Entry in the "Settings" Menu

If text entry is required to complete the selected setting, the following dialog will be displayed.



### Keyboard area

Use multi-selector to highlight letters, press center to select.

### Text display area

Text appears in this area. To move cursor, press **ESC** while using up, down, left, and right buttons on multi-selector.

Use the multi-selector to highlight the desired character in the keyboard area and press the center of the multi-selector to insert the highlighted character at the current cursor position. To delete the character under the cursor, press the **DEL** button. To move the cursor to a new position, press the **ESC** button while using the multi-selector. No more than thirty-two characters can be entered; if additional characters are entered when the display is full, all characters after the thirty-third will be deleted.

To complete entry and return to the previous menu, press the **ESC** button. To exit to the setup menu without completing text entry, press **ESC**.

**Communication mode:** Choose a mode according to how the wireless network is set up.

Option	Description
<b>Infrastructure</b> (default)	Connection to wireless network is via access point.
<b>Ad-hoc</b>	Direct peer-to-peer wireless connection to host using IEEE 802.11b standard (IEEE 802.11g is not available in this mode).

## Channel\*

1



Choose channel.†

2



Return to wireless menu (1/2).

\* Not required if **Infrastructure** is selected for **Communication mode**.

† The WT-2 offers a choice of thirteen channels (1–13), the WT-2A a choice of eleven channels (1–11).

## Wireless Menu, Page 2/2

## Encryption

1



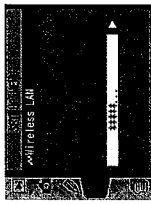
Highlight encryption method.

2




Return to wireless menu (2/2).

Highlight encryption key.




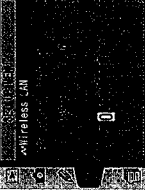


3



**4**  Edit encryption key:

- Base 16: press multi selector left or right to select character, up or down to change. 64-bit keys are 10 digits long, 128-bit keys 26 digits long.
- ASCII/TKIP: enter key as described on page 26. 64-bit keys are 5 characters long, 128-bit keys 13 characters long, TKIP keys 8 to 64 characters long.

**5**  Return to wireless menu (2/2).









#### TCP/IP


Adjust TCP/IP settings as described on the following pages. The TCP/IP menu has three pages of options; to scroll between pages, press the multi-selector up or down.


#### TCP/IP Menu, Page 1/3


**Obtain automatically:** Highlight this option and press the multi-selector right to toggle it on (✓) or off. Turn this option on if the wireless network is configured to supply an IP address automatically by DHCP server or Auto IP (51). Otherwise turn it off and enter the address and subnet mask supplied by the network administrator as described on the following page.






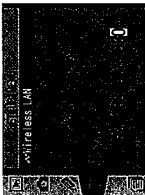
**1**  Highlight Address.





**2**  Enter edit mode.





**3**  Press multi-selector left or right to select, up or down to change.




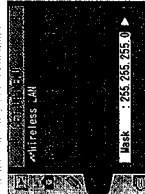
**4**  Exit to TCP/IP menu (1/3). If subnet mask is required, proceed to Step 5.





**5**  Highlight Mask.





**6**  Enter edit mode.



**7**  Choose subnet mask.



**8**  Exit to TCP/IP menu (1/3).





TCP/IP Menu, Page 2/3

**Use gateway:** Highlight this option and press the multi selector right to toggle it on (✓) or off. If the network requires a gateway address, turn this option on and enter the address supplied by the network administrator as described below.

1 Highlight **Address**.

2 Enter edit mode.

3 Press multi selector left or right to select, up or down to change.

4 Return to TCP/IP menu (2/3).

**Enable DNS:** Highlight this option and press the multi selector right to toggle it on (✓) or off. If a Domain Name Server (DNS) exists on the network, turn this option on and enter the address supplied by the network administrator as described below.

1 Highlight **Address**.

2 Enter edit mode.

3 Press multi selector left or right to select, up or down to change.

4 Return to TCP/IP menu (2/3).

TCP/IP Menu, Page 3/3

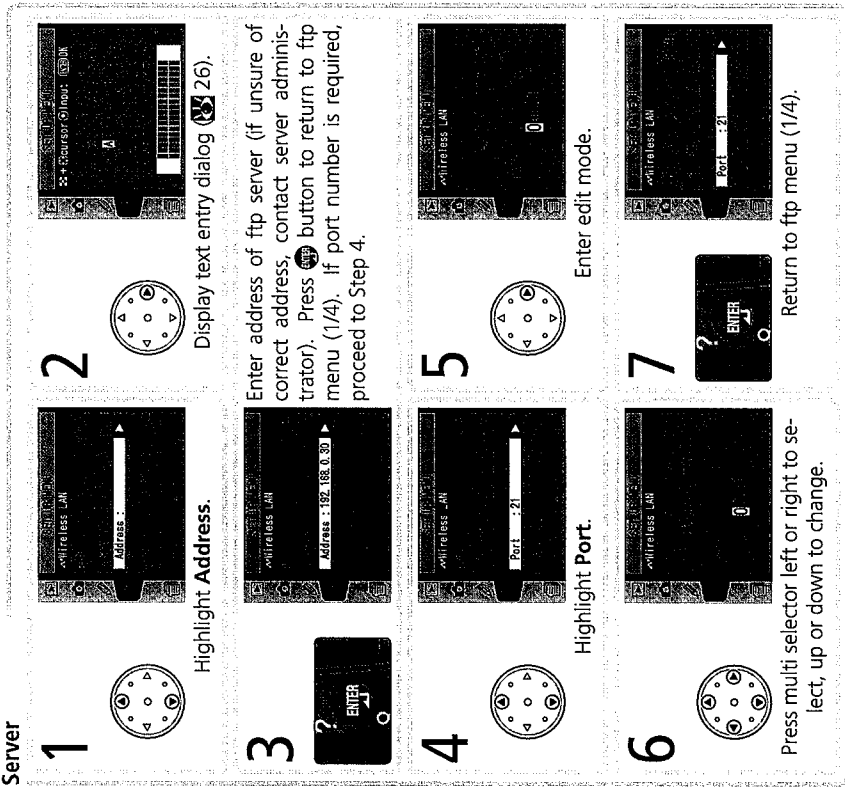
**MAC address:** This field lists the twelve-digit Media Access Control (MAC) address for the WT-2.

### FTP (FTP Mode Only)

Adjust ftp settings as described on the following pages. The ftp menu has four pages of options; to scroll between pages, press the multi selector up or down.

### FTP Menu, Page 1/4

#### Server



**1** Highlight **Address**.

**2** Display text entry dialog (2/4).

**3** Enter address of ftp server (if unsure of correct address, contact server administrator). Press **ENTER** button to return to ftp menu (1/4). If port number is required, proceed to Step 4.

**4** Highlight **Port**.

**5** Enter edit mode.

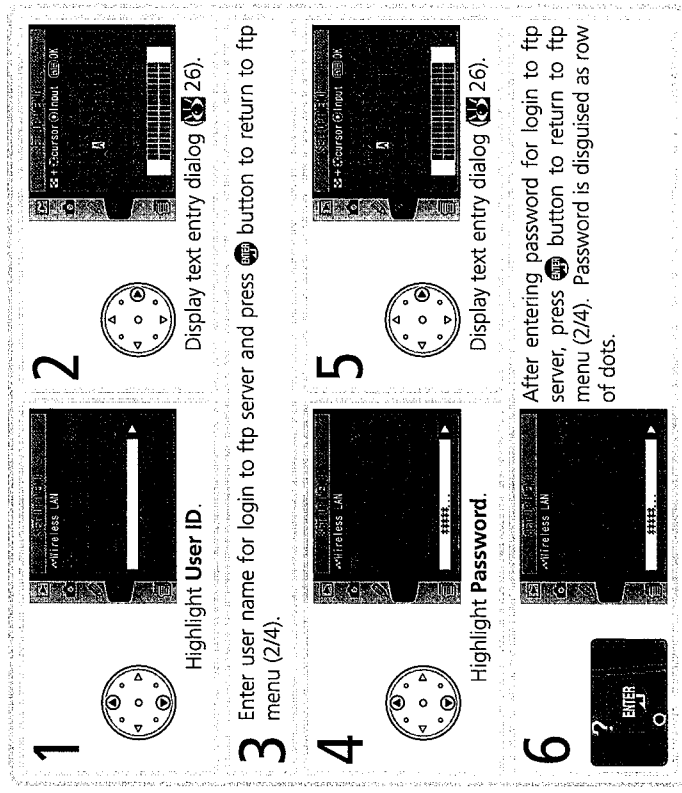
**6** Press multi selector left or right to select, up or down to change.

**7** Return to ftp menu (1/4).

**PASV mode:** Highlight this option and press the multi selector right to toggle PASV mode on (✓) or off. Turn this option off to use normal (PORT) mode. Be sure the server supports PASV mode before turning this option on.

### FTP Menu, Page 2/4

**Anonymous login:** Highlight this option and press the multi selector right to toggle it on (✓) or off. Turn this option on for anonymous login, off to enter a user name and password as described below.



**1** Highlight **User ID**.

**2** Display text entry dialog (2/4).

**3** Enter user name for login to ftp server and press **ENTER** button to return to ftp menu (2/4).

**4** Highlight **Password**.

**5** Display text entry dialog (2/4).

**6** After entering password for login to ftp server, press **ENTER** button to return to ftp menu (2/4). Password is disguised as row of dots.